TECHNICAL REPORT

Preliminary Site Assessment Soil/Subsurface Structure Investigation Report and Interim Remedial Measures Plan

Volume I of II

Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

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1. Introduction

1.1 General

This document presents a description of the work activities performed and results obtained for the Preliminary Site Assessment (PSA) soil and subsurface structure investigations conducted at the Niagara Mohawk Power Corporation (NMPC) Harper Substation located in Niagara Falls, New York. This document also presents an Interim Remedial Measures (IRM) Plan which describes IRMs that are proposed to address the findings of the PSA soil and subsurface structure investigations.

NMPC voluntarily elected to implement the PSA of the Harper Substation to evaluate potential environmental concerns associated with electrical transmission and distribution operations at the site. The PSA was conducted under the multi-site Order on Consent (Index D0-001-9612, as amended May 1997) between NMPC and the New York State Department of Environmental Conservation (NYSDEC). The PSA consisted of a soil investigation, a ground-water investigation, and a subsurface structure investigation. Initial PSA investigation activities were performed by Blasland, Bouck & Lee, Inc. (BBL) during July and August 1999 in accordance with the following NYSDEC-approved documents:

- The PSA Work Plan (BBL, November 1998) and supporting documents, including the Field Sampling Plan (FSP), Quality Assurance Project Plan (QAPP), and Health and Safety Plan (HASP); and

- A May 21, 1999 letter from NMPC to the NYSDEC which responded to NYSDEC comments on the PSA Work Plan and supporting documents.

In addition to the PSA activities summarized in the above-listed documents, NMPC also collected additional surface and subsurface soil samples in the vicinity of electrical equipment at the substation based on a request from the NYSDEC during a June 24, 1999 PSA kickoff meeting. The PSA investigation field activities were observed by an on-site geologist from the NYSDEC.

The results of the PSA ground-water investigation activities conducted during July and August 1999 and recommendations for additional ground-water investigation activities (including continuous water level measurements at each monitoring well, an additional round of ground-water sampling, and light non-aqueous phase liquid [LNAPL] removal from one well) were previously presented to the NYSDEC in a February 7, 2000 letter from NMPC. BBL conducted the additional ground-water investigation activities during April/May 2000 in accordance with NMPC's February 7, 2000 letter and a March 30, 2000 letter from NMPC which responded to NYSDEC comments on the proposed activities.

The results of the ground-water investigation activities conducted during April/May 2000 were summarized in a July 18, 2000 letter from NMPC to the NYSDEC. The letter also proposed additional ground-water investigation activities to further evaluate ground-water conditions at the site (including the installation of four new overburden/bedrock interface monitoring wells, ground-water level measurements at each new and existing monitoring well, and the collection of an additional round of ground-water samples). BBL implemented the additional ground-water investigation activities during August and September 2000 and the results will be summarized and transmitted to the NYSDEC in a separate document.

Based on the complexity of the ground-water issues identified by the PSA ground-water investigation activities conducted to date (and the possible need for further investigation activities), NMPC proposes to implement IRMs to address the relatively straight-forward issues identified by the soil and subsurface structure investigations (as summarized herein) and will continue to evaluate/monitor ground-water impacts in the vicinity of the site. The proposed IRMs consist of the following:

- Excavating surface soil in the vicinity of the existing and former 25-cycle transformers which is visibly oil-stained and contains elevated concentrations of polychlorinated biphenyls (PCBs);

- Excavating surface soil in the area south and east of the former Echota Building which is visibly oil-stained and contains elevated concentrations of semi-volatile organic compounds (SVOCs);

- Cleaning electrical subways, electrical manholes, and storm sewer manholes/catch basins at the site to address the presence of noticeable petroleum-type sheens/oil droplets on standing water, debris which is visibly oil-stained, and debris which contains elevated concentrations of PCBs and lead;

- Removing accumulated oil/debris from the concrete pads for the existing and former 25-cycle transformers located west of the former Echota Building; and

- Removing the abandoned underground gasoline storage tank located south of the Storage Building, and excavating petroleum-impacted soil encountered in the tank excavation.

A detailed description of these IRM activities is presented in this report. The report organization is outlined below, followed by a discussion of relevant background information.

1.2 Report Organization

The PSA Soil/Subsurface Structure Investigation Report and IRM Plan is organized into the following sections:

Section	Purpose
Section 1 - Introduction	Provides background information on the Harper Substation.
Section 2 - PSA Soil/Subsurface Structure Investigation	Presents a detailed summary of the PSA soil and subsurface structure investigation activities and results which form the basis for the proposed IRMs.
Section 3 - Interim Remedial Measure Objectives	Presents the objectives for the proposed IRMs.
Section 4 - Proposed Interim Remedial Measures	Presents a detailed description and evaluation of the proposed IRMs as well as a schedule for implementing the IRMs.

A summary of relevant background information relating to the NMPC Harper Substation is presented below.

1.3 Background Information

The location, topography and drainage, and geologic and hydrogeologic settings of the Harper Substation are discussed below, followed by a detailed facility description and site history.

1.3.1 Location

The Harper Substation is located on Royal Avenue (between 47th Street and Hyde Park Boulevard) in the City of Niagara Falls, Niagara County, New York. A site location map is included as Figure 1. The substation is located on a 25-acre rectangular parcel which is surrounded by industrial facilities to the north, south, and east. The substation is bordered to the west by a grass field which serves as the right-of-way for two large subsurface

aqueducts that convey water from intakes on the Niagara River (approximately 0.5 miles south of the substation) to the New York Power Authority (NYPA) Niagara Power Project forebay canal (approximately 3.5 miles northwest of the substation). The subsurface aqueducts consist of twin 46-foot wide by 66-foot tall concrete-lined tunnels which are each capable of conveying up to 375,000 gallons of water per second. The volume of water diverted to the aqueducts is regulated under a treaty signed by the United States and Canada in 1950.

A residential area is located to the west of the NYPA right-of-way for the subsurface aqueducts (approximately 1,000 feet west of the substation). The main access road to the substation extends from Royal Avenue which borders the substation property to the north.

1.3.2 Topography and Drainage

Topographic mapping of the area in the vicinity of the Harper Substation indicates that the site is fairly level with surface elevations ranging between approximately 572 and 574 feet above mean sea level (AMSL). Storm water drainage is conveyed off-site via overland flow and various subsurface drainage structures, including drain tile, catch basins, and selected electrical manholes which discharge to a municipal combined storm/sanitary sewer. The majority of the subsurface drainage from the site is conveyed to the Falls Street Tunnel, which is a 6-foot by 7-foot unlined trunk sewer extending in an east-west direction beneath Royal Avenue. The Falls Street Tunnel conveys flow to the Gorge Pump Station (the former Niagara Falls Wastewater Treatment Plant) where it is pumped to the present City of Niagara Falls Wastewater Treatment Plant located on Buffalo Avenue. In addition, a 6-foot diameter interceptor sewer known as the Southside Interceptor Tunnel is located immediately south of the Falls Street Tunnel and conveys combined sanitary/storm water runoff directly to the Buffalo Avenue Wastewater Treatment Plant. Overflow connections between the Falls Street Tunnel and the Southside Interceptor Tunnel convey runoff between the two sewers during high flow events. A 4.5-foot diameter sanitary sewer located east of the Harper Substation (the Iroquois Street Sanitary Sewer) discharges flow south and east of the Harper Substation to the Southside Interceptor Tunnel. Surface drainage from the substation property (overland flow) is likely collected by storm water catch basins and subsequently conveyed to either the Buffalo Avenue Wastewater Treatment Plant (via combined storm/sanitary sewers). The layout of the sewer system in the vicinity of the Harper Substation is shown on Figure 2.

1.3.3 Geology and Hydrogeology

Soil in the vicinity of the substation has been reworked by industrial development. A review of information presented in the United States Department of Agriculture (USDA) Soil Conservation Service (SCS) document entitled "Soil Survey Maps of Niagara County, New York (USDA, 1972)," indicates that soil in the vicinity of the substation has not been mapped due to the extensive development in the Niagara Falls area.

Based on the soil investigation activities completed as part of the PSA, the majority of the substation is covered with fill material (i.e., crushed stone, sand, and gravel) that extends, on average, to a depth of approximately 3 feet below the ground surface. Overburden soil encountered beneath the fill material consists primarily of glaciolacustrine deposits (mainly brown sand and silt overlying a reddish-brown clay and silt) which extends to bedrock. The top of bedrock was encountered at depths of approximately 14 to 22 feet below the ground surface. Bedrock encountered beneath the overburden consists of highly fractured dolomite. Based on extensive information available from the construction of the NYPA subsurface aqueducts and environmental issues associated with adjacent industrial facilities, the bedrock beneath the substation consists of the Lockport Dolomite, which extends to depths of 140 feet or more. The Lockport Dolomite formation exhibits complex horizontal and vertical fracturing.

Ground water was encountered at depths ranging from approximately 12 to 17 feet below the ground surface during the PSA. Based on continuous water level measurements obtained during the PSA, ground-water levels at the substation change daily by up to 2.5 feet in magnitude. The changing ground-water levels at the substation coincide

with fluctuating water levels in the NYPA Niagara Power Project forebay canal. The water level fluctuations in the forebay canal are transmitted via drains surrounding the subsurface aqueducts. Based on the continuous water level measurements obtained during the PSA, the average direction of ground water flow within overburden and shallow bedrock beneath the substation appears to be toward the northeast. Subsurface utilities (including a 12-inch diameter city sewer running east-west across the substation, the 4.5 foot diameter Iroquois Street sanitary sewer located east of the substation, and the 6-foot by 7-foot Falls Street Tunnel located north of the substation) may also influence ground-water flow within overburden/bedrock in the vicinity of the substation property.

1.3.4 Facility Description and Site History

A site map of the Harper Substation property is presented as Figure 2. The substation was originally constructed in the early 1920s by the Niagara Falls Power Corporation (a predecessor to Niagara Mohawk Power Corporation). A former building associated with past substation operations known as the "Echota Building" was demolished between March and July 2000. Based on NMPC site drawings, the former Echota Building housed several pieces of electrical equipment and consisted of a multi-story brick structure which contained various support facilities (including a control room, a pump room, a crane and repair building, and a room labeled "Niagara Junction Rotary Building"). In addition, a former two-story brick structure referred to as the "Terminal Building" was also demolished under the same contract for the Echota Building demolition. The Terminal Building formerly contained electric equipment (i.e., circuit breakers and switching equipment) associated with on-site electrical operations.

BBL collected samples of the concrete building materials from both the Echota Building and the Terminal Building during September 1999 as part of a Building Material Investigation. Based on the analytical results obtained from the laboratory analysis of the concrete samples (as summarized in an October 19, 1999 letter report from BBL to NMPC), none of the concrete samples exhibited the characteristics of a hazardous waste. The results indicated the presence of PCBs in 7 of the 11 concrete samples at concentrations ranging from an estimated 0.035 parts per million (ppm) to 1.5 ppm. During the demolition activities, brick and concrete debris from the buildings were processed through an on-site crusher and placed as fill material within the basement of the former Echota Building and on the ground surface over the footprints of the two buildings. In addition, brick and concrete debris were graded beyond the footprint of the former Echota Building on the south and east sides of the former building.

As indicated on Figure 2, the remaining primary site features at the Harper Substation Property include the following:

- An outdoor 25-cycle electrical substation and switching structure located near the center of the fenced substation area. The 25-cycle electrical substation and switching structure formerly consisted of six large transformers, each containing approximately 3,000 to 3,500-gallons of mineral oil. The transformers were arranged in two banks (Transformer Banks 7 and 11). Each bank contained three transformers which were mounted on a concrete pad located over an electrical subway. The three transformers which made up Transformer Bank 11 (located to the north of Transformer Bank 7) were recently removed from the substation. Transformer Bank 7 is currently energized. Numerous concrete foundations which formerly supported electrical equipment (including large concrete foundations for synchronous condensers and condenser switches) remain southeast of the transformers.

- A 60-cycle electrical substation and switching structure located in the western portion of the fenced substation area. The 60-cycle substation (installed during the 1940s) includes two large 115-kilovolt (kV), three-phase transformers which each contain approximately 5,500-gallons of mineral oil. The substation also includes several smaller pieces of electrical equipment. A small substation control building is located along the east side of the 60-cycle substation and switching structure.

- A concrete block storage building located along the eastern property boundary. The storage building is not currently in use and contains miscellaneous materials and surplus equipment. Based on NMPC substation

drawings and field observation, a floor drain connecting to a 6-inch sewer line which discharges to a 12-inch city sewer line at manhole S-2 is located within the storage building. An underground gasoline storage tank was encountered in a test pit excavated directly south of the storage building during the PSA.

- Three abandoned concrete-lined structures (which formerly served as cooling ponds for water-filled electrical equipment at the substation) located northwest of the storage building. The cooling ponds were filled during the late 1970s/early 1980s with miscellaneous construction and demolition debris.

In addition to the electrical equipment that is in service at the substation, several spare substation electrical equipment items are currently stored for potential reuse in the area north of the former Echota Building. Treated wood utility poles are also stored on concrete and steel storage racks in the southern portion of the substation property.

According to NMPC records, oil containing PCBs has historically been used at the substation. Two pieces of electrical equipment in the 60-cycle substation are currently labeled as PCB-contaminated (indicating that the oil within the equipment contains PCBs at a concentration between 50 and 499 ppm). NMPC records indicate that electrical equipment in service at the substation as of 1991 contained approximately 15 gallons of PCB oil (PCB concentrations greater than 500 ppm) and approximately 15,500 gallons of PCB-contaminated oil. Records also indicate that by the end of 1996, electrical equipment at the substation contained 15 gallons of PCB oil and 750 gallons of PCB-contaminated oil.

NMPC substation drawings indicate that two horizontally mounted, aboveground oil storage tanks (with capacities of approximately 6,100 and 7,300 gallons) were previously located south of the storage building. The oil storage tanks were installed in the late 1920s and were removed in 1990. The concrete tank saddles remain at the substation and subsurface piping formerly associated with the storage tanks has been cut and capped at the ground surface (subsurface piping associated with the tanks appears to remain in place). In addition, an NMPC substation drawing entitled, "Harper Outdoor Substation General Plan" dated April 26, 1922 indicates the presence of three aboveground oil storage tanks located immediately west of the Crane and Repair Room of the former Echota Building. NMPC substation drawings indicate that these tanks were associated with a system of underground oil supply and return piping utilized in servicing equipment. A separate substation drawing entitled, "Plan Showing Transmission Lines, Railroad Sidings, etc." dated April 26, 1922 indicates that two additional aboveground oil storage tanks may have been located north of the former Echota Building (in the area between the building and the cooling ponds). No evidence of the two tanks (e.g., tank saddles, etc.) is apparent at the site at the location indicated on the NMPC substation drawing. An NMPC substation drawing entitled "Harper Transmission Station 1941 Addition - Duct Line from Transformer Bank #10 Foundation to Building Subway" (dated January 31, 1941) also indicates the presence of an underground gasoline storage tank immediately south of the storage building. As indicated above, the underground gasoline storage tank was encountered in a test pit excavated south of the storage building.

NMPC site drawings indicate that a relatively complex system of underground utilities extends throughout the substation property, including underground conduits, electrical manholes and subways for equipment control cables, subsurface power feeds from the substation to various industrial facilities in the vicinity of the property, municipal sanitary sewers, and water supply piping. Several former or active industrial process pipelines (which convey material between industrial facilities in the vicinity of the property) also extend along the southern and eastern boundaries of the substation property. The locations of identified subsurface structures and utilities in the immediate vicinity of the substation are shown on Figure 3.

Based on NMPC substation drawings and field observation, nine ground-water monitoring wells (three monitoring well clusters containing three wells each) were installed on the Harper Substation property by Conestoga-Rovers & Associates (CRA) during the late 1980s/early 1990s as part of an environmental investigation of the Occidental

Chemical facility located southwest of the site. The locations of the well clusters (OW-652, OW-654, and OW-657) were surveyed by NMPC and are shown on Figure 2. In addition, bedrock monitoring well cluster OW-651 (which consists of two ground-water monitoring wells, as shown on Figure 2) was installed directly west of the Harper Substation property (on the NYPA right-of-way) by CRA as part of Occidental's environmental investigation.

2. PSA Soil/Subsurface Structure Investigation

2.1 General

This section presents a summary of the PSA soil and subsurface structure investigation activities and results. As previously mentioned, NMPC voluntarily elected to implement the PSA of the Harper Substation to evaluate potential environmental concerns associated with electrical transmission and distribution operations at the site. The PSA was conducted under the multi-site Order on Consent (Index D0-001-9612, as amended May 1997) between NMPC and the NYSDEC. The PSA consisted of a soil investigation, a ground-water investigation, and a subsurface structure investigation. As indicated in Section 1.0 of this document, ground-water issues identified by the PSA will be separately summarized and submitted to the NYSDEC following completion of on-going ground-water investigation activities at the site. The results of the PSA soil and subsurface structure investigations form the basis for the IRMs detailed in the IRM Plan. A summary of the field activities conducted as part of the PSA soil and subsurface structure investigations is presented below followed by a discussion of the investigation results.

2.2 Preliminary Site Assessment Field Activities

A summary of the PSA soil investigation activities is presented below followed by a summary of the PSA subsurface structure investigation activities.

2.2.1 Soil Investigation Activities

The PSA soil investigation activities were conducted to achieve the following objectives:

- Determine the potential presence, concentration, and relative extent (horizontal and vertical) of PCBs, volatile organic compounds (VOCs), SVOCs, and Target Analyte List (TAL) inorganic constituents in soil at the site;
- Evaluate soil conditions at the perimeter of the site to determine whether chemical constituents may be migrating to and/or from the site;
- Provide data to assess potential risks to human health and the environment associated with constituents detected in the soil; and
- Provide data to evaluate potential remedial activities to address conditions identified by the soil investigation activities.

The following soil investigation activities were conducted in support of the above objectives:

- Collecting surface soil samples for laboratory analysis; and
- Excavating test pits to facilitate the visual assessment of subsurface conditions and the collection of subsurface soil samples for laboratory analysis.

The soil investigation activities were conducted in accordance with the detailed field sampling protocols and the quality assurance/quality control protocols included in the QAPP which was prepared in support of the PSA Work Plan (BBL, November 1998). Soil samples collected as part to the PSA were handled, labeled, packaged, and transported to the laboratory in accordance with the protocols outlined in the QAPP. Soil samples selected for laboratory analysis as part of the soil investigation activities were submitted to Galson Laboratories, Inc. (Galson) and analyzed using one or more of the following methods as referenced in the NYSDEC 1995 Analytical Services Protocol (ASP):

Parameter	Analytical Method
PCBs	United States Environmental Protection Agency (USEPA) SW-846 Method 8082
VOCs	USEPA SW-846 Method 8260
SVOCs	USEPA SW-846 Method 8270
Target Analyte List (TAL) Inorganic Constituents	USEPA SW-846 Method 6010 (except mercury by USEPA Method 7470/7471 and cyanide by USEPA Method 9010)
Note: Galson subcontracted with O'Brien & Gere Laboratories, Inc. of Syracuse, New York for the analysis of two subsurface soil samples [TP-24 (7.5-8') and TP-25 (8-8.5')] for VOCs.	

The analyses performed on the soil samples collected as part of the PSA are listed in Table 1. The specific VOCs and SVOCs which were analyzed as part of the PSA included all of the VOCs/SVOCs on the compound lists established for the above-referenced methods by the USEPA (and selected VOCs on the supplemental compound list established for Method 8260 by the USEPA). The analytical methods used for analysis of soil samples collected as part of the PSA provided data for each of the VOCs/SVOCs included in Tables 1 and 2 of the NYSDEC document entitled "Spill Technology and Remediation Series, Petroleum-Contaminated Soil Guidance Policy (STARS Memo #1)," dated August 1992, with the exception of methyl tert-butyl ether (MTBE), which is not included under the standard compound list or the supplemental compound list for USEPA SW-846 Method 8260.

A detailed description of the soil investigation activities conducted as part of the PSA is presented below.

Surface Soil Sampling

Surface soil samples were collected at 24 locations (sample locations S-1 through S-23 and S-30, as shown on Figure 2). The surface soil samples were designated by an "SS-" prefix and a number corresponding to each sampling location (e.g., sample SS-1 was collected at sampling location S-1). Surface soil samples collected during the PSA were distributed as follows:

- Four surface soil samples located in the vicinity of the former Echota Building (samples SS-1, SS-2, SS-3, and SS-30). Sample SS-30 was collected at the request of the NYSDEC to characterize a visibly-stained area along the eastern side of the former Echota Building;
- One surface soil sample at the former location for two horizontally-mounted, aboveground oil storage tanks south of the storage building (sample SS-4);
- One surface soil sample north of the storage building (sample SS-5);
- Nine surface soil samples in the vicinity of the 25-cycle electrical substation west of the former Echota Building (samples SS-6 through SS-12, SS-22, and SS-23). Surface soil sample SS-8 was collected north of the former Echota Building near the suspected location for two former aboveground oil storage tanks (shown on Figure 2). Surface soil sample SS-22 was collected west of the former Echota Building near the former location for three above-ground oil storage tanks (shown on Figure 2). Surface soil samples SS-22 and SS-23 were collected pursuant to a NYSDEC request during the June 1999 project kickoff meeting;
- Two surface soil samples between the 25-cycle electrical substation and the Terminal Building (samples SS-13 and SS-14);

- One surface soil sample immediately west of the Terminal Building (sample SS-15);
- Four surface soil samples in the vicinity of the 60-cycle electrical substation structure (samples SS-16 and SS-18 through SS-20);
- One surface soil sample north of all the electrical equipment within the fenced electrical substation area (sample SS-17); and
- One surface soil sample south of the storage building at the location of an existing underground gasoline storage tank (sample SS-21).

After exposing the surface soil, one composite sample was collected at each surface soil sampling location. Each composite sample was formed from six to eight subsamples collected at a depth of approximately 0-6 inches below the soil surface. The eight subsamples were collected from within a one-square-meter area centered around the sampling location. Each composite surface soil sample was submitted for laboratory analysis for PCBs. Surface soil samples collected at nine of the sampling locations (samples SS-2, SS-9, SS-11, SS-15, SS-18, SS-19, SS-20, SS-23, and SS-30) were also submitted for laboratory analysis for SVOCs and TAL inorganic constituents. Surface soil samples for laboratory analysis for SVOCs and TAL inorganic constituents were selected based on the characterization of the samples by on-site field personnel (e.g., the presence of visual staining and/or noticeable odors) and the distribution of the surface soil sampling locations (in order to provide a uniform distribution across the site).

One discrete soil grab sample from each surface soil sampling location was placed in a container for headspace screening using a photoionization detector (PID) to measure the relative concentration of total VOCs. The discrete grab samples were selected for headspace screening based on the presence of any visible staining and/or noticeable odors at the individual subsample locations that were utilized to form each composite surface soil sample. PID headspace screening results for the surface soil samples are presented in Table 2. Elevated PID headspace screening results were not obtained at any of the surface soil sampling locations. Therefore, no surface soil samples were submitted for laboratory analysis for VOCs.

Galson inadvertently exceeded the allowable holding time for analysis of surface soil sample SS-20 for PCBs. Therefore, BBL re-mobilized to the site during August 1999 and collected an additional surface soil sample at sampling location S-20 for PCB analysis.

Quality assurance/quality control (QA/QC) samples, including one blind duplicate sample (sample DUP-1 [8/19/99] collected at location S-20), one matrix spike sample, and one matrix spike duplicate sample, were collected in support of the soil sampling activities as required by the QAPP included in the PSA Work Plan.

Subsurface Soil Sampling

As part of the PSA soil investigation, NMPC personnel excavated a total of 31 test pits at locations S-1 through S-29 and CP-1 and CP-2 (as shown on Figure 2) using a Case Model 580L rubber-tire backhoe. The test pits were excavated to depths ranging from approximately 3 to 11 feet below the ground surface. The objectives for the test pit excavations were as follows:

- *Locations S-1 through S-23* - Test pits at these locations were excavated to depths ranging from approximately 3 to 6.5 feet below the ground surface to facilitate visual observation of subsurface soil conditions and the collection of subsurface soil samples for laboratory analysis.

- *Locations S-24 through S-27* - Test pits at these locations were excavated to depths ranging from approximately 8.5 feet to 11 feet below the ground surface to facilitate visual characterization of soil/utility backfill in the immediate vicinity of subsurface utilities and the collection of samples of the soil/backfill material surrounding the utilities for laboratory analysis.

- *Locations S-28 and S-29* - Judgmental test pits at these locations were excavated to determine the size of the underground gasoline storage tank which was encountered in the test pit excavated at location S-21 and to determine the potential extent of visibly-stained soil surrounding the tank. The test pits at location S-28 and S-29 were excavated to depths of approximately 2 and 6 feet, respectively (the top of the tank was encountered at S-28 approximately 2 feet below the ground surface).

- *Locations CP-1 and CP-2* - Test pits at these locations were excavated to depths of approximately 5 and 5.5 feet to determine the type of the fill material and debris used to backfill the cooling ponds and evaluate the potential presence of chemical constituents within the fill material/debris.

The subsurface soil sampling activities completed at the above-listed sampling locations are summarized below.

Locations S-1 through S-23

Subsurface soil samples were collected at approximately two-foot depth intervals from the test pits excavated at locations S-1 through S-23 for visual characterization (i.e., staining, soil type, etc.) and headspace screening using a PID. The headspace screening measurements are summarized in Table 2. Test pit logs which summarize the subsurface soil conditions encountered at each test pit location are presented in Appendix A.

One subsurface soil sample collected from the sidewall of each test pit (with the exception of locations S-7 and S-10) was submitted to Galson for laboratory analysis for PCBs. Subsurface soil samples were not collected at locations S-7 and S-10 due to the presence of 2 to 3 inch diameter stone at the sidewalls and a concrete footer at the base of the test pits. The subsurface soil samples selected for laboratory analysis were designated by a "TP" prefix, along with the number and depth corresponding to the sample location [e.g., sample TP-1 (0.5-1.5') was collected at a depth of 0.5 to 1.5 feet at sampling location S-1]. Soil samples were selected for laboratory analysis for PCBs based on the presence of noticeable odors or elevated PID headspace screening results. For test pits where no odors were encountered, the subsurface soil sample collected from the 6- to 18-inch depth interval of the test pit was submitted for PCB analysis. Subsurface soil samples collected from 11 of the 23 test pits [TP-2 (1.5-3.5'), TP-4 (1-2'), TP-9 (1.5-2.5'), TP-11 (1-2'), TP-12 (2-3'), TP-15 (1-2'), TP-18 (1.5-2.5'), TP-19 (1.5-2.5'), TP-20 (2-3'), TP-21 (6.5-7'), and TP-23 (1-2')] were also submitted to Galson for laboratory analysis for VOCs, SVOCs, and TAL inorganic constituents (based on the presence of noticeable odors, elevated PID headspace screening results and to provide a uniform distribution across the site). Subsurface soil conditions that were encountered within the sampling intervals selected for laboratory analysis for VOCs, SVOCs, and TAL inorganic constituents are summarized below.

Sample Location	Subsurface Soil Sample	Conditions Observed at the Sampling Locations
S-2	TP-2 (1.5-3.5')	Black gravel and sand. Sample submitted based on black color.
S-4	TP-4 (1-2')	Dark brown/gray silt with a slight odor. Sample submitted based on slight odor.
S-9	TP-9 (1.5-2.5')	Gray to black sand, ash, and stone and buried debris (red-colored brick, clay tile). Sample submitted based on buried debris.

Sample Location	Subsurface Soil Sample	Conditions Observed at the Sampling Locations
S-11	TP-11 (1-2')	Light brown silt with some clay. First soil interval below crushed stone gravel surface. Sample submitted to provide distribution across site.
S-12	TP-12 (2-3')	Brown silt and sand with some black streaks (no staining was observed). Sample submitted to provide distribution across site.
S-15	TP-15 (1-2')	Light brown silt and sand with some black streaks (no staining was observed). Sample submitted to provide distribution across site.
S-18	TP-18 (1.5-2.5')	Light to dark brown silt, sand, and clay. Sample submitted to provide distribution across site.
S-19	TP-19 (1.5-2.5')	Brown silt and sand with some gravel. Sample submitted to provide distribution across site.
S-20	TP-20 (2-3')	Brown to dark brown silty sand with some rock. First soil interval below crushed stone gravel surface.
S-21	TP-21 (6.5-7')	Gray silt and sand with noticeable petroleum-type odor (collected from test pit adjacent to former underground gasoline storage tank). The sample headspace result was 517 ppm. Sample submitted based on noticeable odor and elevated headspace screening result.
S-23	TP-23 (1-2')	Brown silt and sand fill material with some black streaks (no staining was observed in the sample). Sample collected based on location beneath visibly oil-stained surface soil.

Locations S-24 through S-27

Subsurface soil samples were collected from the soil/backfill material around subsurface utilities encountered in the test pits excavated at locations S-24 and S-25, as described below.

- Sample TP-24 (7.5-8') was collected immediately adjacent to an approximately 8-inch diameter clay pipe (believed to be the private sewer shown on Figure 2). The sample consisted of a reddish-colored clay; and

- Sample TP-25 (8-8.5') was collected immediately adjacent to an approximately 20-inch diameter cast iron pipe (believed to be the Kimberly Clark water line shown on Figure 2). The sample consisted of a reddish-gray colored silty clay.

The samples of backfill material collected at locations S-24 and S-25 were submitted to Galson for laboratory analysis for PCBs, VOCs, SVOCs, and inorganic constituents. Galson, in turn, subcontracted with O'Brien & Gere Laboratories, Inc. (OBG Laboratories) of Syracuse, New York for the analysis of the backfill material samples for VOCs. Subsurface soil samples were not collected from the test pits at locations S-26 and S-27 because subsurface utilities were not encountered at these locations (at depths of 11 and 9 feet, respectively). Subsurface soil conditions encountered at sampling locations S-24 through S-27 are summarized on the test pit logs presented in Appendix A.

Locations S-28 and S-29

As indicated above, judgmental test pits were excavated at locations S-28 and S-29 for the purpose of determining the size and orientation of the underground gasoline storage tank south of the storage building. No samples were collected for laboratory analysis from the judgmental test pits excavated at sampling locations S-28 and S-29.

Locations CP-1 and CP-2

One subsurface soil sample was collected from each test pit excavated in the abandoned cooling ponds to characterize the backfill material in the ponds. The samples, TP-CP1 (3.5-5') and TP-CP2 (3-5'), consisted of a combination of silt, sand, and gravel. The samples were submitted to Galson for laboratory analysis for PCBs, VOCs, SVOCs, and TAL inorganic constituents. However, Galson inadvertently exceeded the allowable holding times for analysis of both samples for PCBs. Therefore, additional soil samples were collected for PCB analysis from shallow hand-excavated soil borings which were completed to depths of 1 to 2 feet during August 1999. Subsurface soil conditions encountered at sampling locations CP-1 and CP-2 are summarized on the test pit logs presented in Appendix A.

QA/QC samples, including three blind duplicate samples (sample DUP-1 [7/13/99] collected at location S-4, sample DUP-2 [7/13/99] collected at location S-11, and sample DUP-3 [7/14/99] collected at location S-15), three matrix spike samples, and three matrix spike duplicate samples, were collected in support of the soil sampling activities as required by the NYSDEC-approved PSA Work Plan.

2.2.2 Subsurface Structure Investigation Activities

The objectives of the PSA subsurface structure investigation activities were as follows:

- Evaluate whether the subsurface structures at the site are acting as potential pathways for the migration of chemical constituents to and/or from soil and ground water; and
- Determine whether remedial activities are required to address the presence of chemical constituents in debris within subsurface structures and associated drainage piping.

Field activities implemented for the subsurface structure investigation consisted of the following:

- Performing a field reconnaissance of the substation to verify the subsurface structure locations;
- Visually inspecting representative subsurface structures at the substation; and
- Collecting samples of accumulated debris within selected subsurface structures for laboratory analysis for PCBs, VOCs, SVOCs, and TAL inorganic constituents.

Detailed descriptions of subsurface structure investigation activities conducted as part of the PSA are presented below.

Subsurface Structure Reconnaissance

The initial effort associated with the subsurface structure investigation consisted of performing a field reconnaissance to verify the locations of subsurface structures at the substation. The subsurface structures which were identified by the field reconnaissance include the following (shown on Figure 3):

- Twelve storm/sanitary sewer manholes and catch basins which discharge flow to the private and city sewers located on site (designated by BBL as S-1 through S-11 and S-13);

- Three valve boxes formerly used to control the flow of water to/from the cooling ponds (designated by BBL as CP-1 through CP-3) and one valve box for the Kimberly Clark water line located north of the fenced portion of the substation property (designated by BBL as W-1);

- Seven subsurface control cable vaults (referred to as Subway Nos. 1 through 7, as shown on Figure 3) which extend beneath various areas of the substation. The control cable vaults include one subway east of the former Echota Building (Subway No. 1, which was demolished and backfilled with concrete/brick debris generated by the building demolition activities), one subway beneath the railroad tracks northwest of the Echota Building (Subway No. 2), three subways associated with the 25-cycle substation (Subway Nos. 3, 4, and 5), and two subways associated with the 60-cycle substation (Subway Nos. 6 and 7). Each subway was observed to be a concrete vault housing electrical control cables. Manhole covers located at evenly-spaced intervals along the subways provide access to the subsurface control cable vaults, as indicated in the table below (manhole cover locations are shown on Figure 3):

Subway No.	Manhole Covers Providing Access
1	EB-1 through EB-5
2	M-1 through M-5
3	M-6 through M-30
4	M-31 through M-46
5	M-48 through M-63
6	M-65 through M-72
7	M-73 through M-79

- Four electrical manholes in the vicinity of the subways, including manhole M-47 between Subway Nos. 4 and 5, manhole M-64 between Subway Nos. 6 and 7, and manholes M-80 and M-81 which are located southeast of Subway No. 3. Electrical cables were not observed in electrical manholes M-64, M-80, or M-81;

- Twelve electrical manholes north of the Echota Building which contained electrical conduits and control cables (eleven of the manholes are designated on NMPC substation drawings as H-2, H-4, H-6, through H-8, H-10, and H-11 through H-15, and the remaining manhole was designated by BBL as E-1); and

- Twenty electrical manholes situated primarily around the perimeter of the electrical substation, many of which contained electrical conduits and energized electrical cables (designated on NMPC substation drawings as structures 1501, 1601, 1701, 1702, 1803, 1805, 1900, 1902, 1903, 2501, 2503, 2504, 2505, 2506, 2601, 2602, 2604, 2702, 2703, and 2704).

Following the reconnaissance activities, inspections of the subsurface structures at the substation were conducted as described below.

Inspection of Subsurface Structures

As part of this work task, BBL inspected the majority of the subsurface structures identified by the reconnaissance activities. The inspections were conducted from the ground surface without entering the structures. The subsurface structures which were inspected included the following:

- Each identified storm/sanitary sewer manhole (i.e., manholes S-1, S-2, S-4 through S-10, and S-13);
- Two identified catch basins (i.e., catch basins S-3 and S-11);
- Three of the four identified valve boxes (i.e., valve boxes CP-1, CP-3, and W-1);
- Each electrical subway (by removing a minimum of two manhole covers from each subway). A total of 31 covers were removed to inspect the interiors of the electrical subways;
- The four observed electrical manholes in the vicinity of the subways (manholes M-47, M-64, M-80, and M-81);
- The twelve electrical manholes identified north of the Echota Building (manholes H-2, H-4, H-6 through H-8, H-10 through H-15, and E-1); and
- Nineteen electrical manholes situated primarily around the perimeter of the electrical substation (manholes 1501, 1601, 1701, 1702, 1803, 1805, 1900, 1902, 1903, 2501, 2504, 2505, 2506, 2601, 2602, 2604, 2702, 2703, and 2704).

Prior to each subsurface structure inspection, the air inside the structure was monitored for levels of volatile organic vapors, oxygen, combustible gases, carbon monoxide, and hydrogen sulfide using a Multi-RAE gas detector. Following the air monitoring, the subsurface structure covers were removed and the structures were visually inspected (from the ground surface) to determine the following information:

1. The dimensions of the structure, including the following:
   - The type and size (i.e, length and width, or diameter) of the cover;
   - The depth from the rim to the base of each structure; and
   - The depth from the rim to the inverts for piping entering or leaving the structure.
2. The size, orientation, and material of construction for all pipes entering or exiting the subsurface structure;
3. The material(s) of construction for the sidewalls and base of the subsurface structure (i.e., concrete, brick and mortar, etc.) and the overall observed condition of the subsurface structure (i.e., cracks, corrosion, infiltration of ground water, etc.);
4. The presence and depth of any accumulated water, the presence of any petroleum/oil sheen on the surface of accumulated water, and/or the presence of any flowing water within the subsurface structure; and
5. The presence and depth of debris in the subsurface structure.

Subsurface structure inspection forms presenting the above-listed information for each structure that was inspected are presented in Appendix B. The orientation of pipes that enter and exit the storm/sanitary sewer manholes and catch basins are referenced by clock position (where the discharge pipe that conveys water from the structure is referred to as the 12:00 pipe, and all other pipes within the subsurface structure are referred to relative to the

discharge pipe). The layout of the subsurface structures and drainage piping at the substation is shown on Figure 3 (as identified by the inspection activities and NMPC's substation design drawings). Following the inspections, samples of debris from selected subsurface structures was collected for laboratory analysis, as discussed below.

Collection of Subsurface Structure Debris Samples

During the subsurface structure inspections, BBL observed accumulated debris (ranging from trace amounts to approximately 2 inches deep) in each inspected valve box, electrical subway, and electrical manhole. Accumulated debris was encountered in 9 of the 12 inspected storm sewer manholes and catch basins at depths ranging from approximately 2 to 30 inches. Based on the results of the subsurface structure inspections, BBL collected five grab samples of accumulated debris from the structures as summarized below:

- Sample S-2 was collected from storm/sanitary sewer manhole S-2 (the deepest manhole identified at the site, with an invert elevation approximately 15.5 feet below the ground surface). The debris sample collected from manhole S-2 consisted of a wet, dark brown silt and sand which exhibited a slight odor;

- Sample S-3 was collected from catch basin S-3 located northeast of the abandoned cooling ponds. The debris sample collected from catch basin S-3 consisted of a damp, dark gray silt, sand, and gravel which exhibited a noticeable petroleum-type odor;

- Sample M-5 was collected from Subway No. 2 (below manhole cover M-5) based on the presence of a thin film of oil floating on the water surface in this portion of the subway. The debris sample collected at this location consisted of an oil-saturated, gray-black silt and sand material which exhibited a noticeable petroleum-type odor;

- Sample M-21 was collected from Subway No. 3 (directly below the southernmost bank of 25-cycle transformers and below manhole cover M-21) based on the presence of oil droplets floating on the water surface in this portion of the subway. The debris sample collected at this location consisted of a wet, brown silt and sand; and

- Sample M-75 was collected from Subway No. 7 (below manhole cover M-75) to provide data for debris in the subways associated with the 60-cycle substation. The debris sample collected at this location consisted of a wet, gray silt and sand.

The debris samples were handled, labeled, and packaged in accordance with the procedures specified in the NYSDEC-approved PSA Work Plan. The debris samples were submitted to Galson for laboratory analysis for PCBs, VOCs, SVOCs, and TAL inorganic constituents. Galson, in turn, subcontracted with OBG Laboratories to analyze the debris samples for VOCs. Analytical methods used for the laboratory analysis of the debris samples are summarized in the table below.

Parameter	Analytical Method
PCBs	USEPA SW-846 Method 8082
VOCs	USEPA SW-846 Method 8260
SVOCs	USEPA SW-846 Method 8270
TAL Inorganic Constituents	USEPA SW-846 Method 6010 (except mercury by Method 7470/7471 and cyanide by Method 9010).

QA/QC samples, including one blind duplicate sample (sample DUP-4 collected from catch basin S-3), one matrix spike sample, and one matrix spike duplicate sample, were collected in support of the subsurface structure debris sampling activities as required by the NYSDEC-approved PSA Work Plan.

In addition to the debris sampling activities described above, BBL also collected a sample of oil which was observed floating on the water surface in electrical manhole H-15, north of the Echota Building. The oil sample (sample Oil-H-15) was submitted to Galson for laboratory analysis for PCBs.

2.3 Preliminary Site Assessment Results

The results of the PSA soil and subsurface structure investigations are summarized below. Analytical results obtained for the laboratory analysis of the PSA soil and subsurface structure debris samples were reported using NYSDEC ASP Category B deliverables. Laboratory analytical results (Form I results) for soil and debris samples collected for the PSA are presented in Volume II of this document. The full NYSDEC ASP Category B data deliverables for the laboratory analysis of the PSA soil and subsurface structure debris samples will be retained by BBL in order to perform future data validation, if required.

For the purpose of evaluating and interpreting the PSA results, the analytical results from analysis of the surface and subsurface soil samples for PCBs and TAL inorganic constituents have been compared to the recommended soil cleanup objectives presented in the NYSDEC Technical and Administrative Guidance Memorandum entitled, "Determination of Soil Cleanup Objectives and Cleanup Levels," HWR-94-4046 (TAGM 4046), dated January 24, 1994. The recommended soil cleanup objectives are appropriate for evaluating whether concentrations of PCBs and inorganic constituents in surface or subsurface soil at the site represent a potential risk to human health and/or the environment, and whether the constituents may be a potential source of impacts to ground water beneath the site. The analytical results obtained from laboratory analysis of the surface soil samples for SVOCs and subsurface soil samples for VOCs and SVOCs have been compared to the toxicity characteristic leaching procedure (TCLP) alternative guidance values presented in STARS Memo #1. The TCLP alternative guidance values are appropriate for evaluating whether the concentrations of VOCs/SVOCs in surface and subsurface soil could potentially impact ground-water quality beneath the site. The TCLP alternative guidance values presented in STARS Memo #1 are generally more conservative than the VOC and SVOC soil cleanup objectives presented in TAGM 4046.

No directly-applicable NYSDEC cleanup standards/guidance values were identified for accumulated debris within the subsurface structures at the substation. The analytical results obtained for the PCB analysis of the oil sample collected from electrical manhole H-15 have been compared to the New York State hazardous waste/Toxic Substances Control Act (TSCA) regulatory limit of 50 ppm.

2.3.1 Soil Investigation Results

The results obtained for the PSA soil investigation, including visual characterization information, sample headspace screening results, and analytical results obtained from the laboratory analysis of the surface and subsurface soil samples, are presented below.

Surface Soil Sampling Results

Visual characterization and headspace screening results for the PSA surface soil samples are presented below, followed by a discussion of analytical results obtained from the laboratory analysis of the surface soil samples for PCBs, SVOCs, and TAL inorganic constituents.

Visual Characterization Results

BBL personnel visually observed each surface soil sample to determine the presence of visual staining. Field personnel also noted the presence of any obvious odors and recorded any other relevant observations in the project field notebook. The following observations were noted by BBL personnel:

- Visibly oil-stained sand and gravel was observed at three sampling locations in the vicinity of the 25-cycle transformers (sampling locations S-9, S-10, and S-23) and at one sampling location directly east of the Echota Building (sampling location S-30). Discarded brick and clay tile were also observed at sampling location S-9;

- Brown topsoil (sand/silt with organic material) was observed at four sampling locations (sampling locations S-1, S-13, S-15, and S-17); and

- The soil observed at the remainder of the surface soil sampling locations consisted of dark-brown to gray-colored gravel, sand, and silt.

Headspace Screening Results

The results of the headspace screening of the surface soil samples are summarized in Table 2. As listed in Table 2, sampling location S-23 was the only location where volatile organic vapors were detected (at a concentration of 1.2 ppm).

Surface Soil Analytical Results

Analytical results obtained from the laboratory analysis of the PSA surface soil samples for PCBs, SVOCs, and TAL inorganic constituents are summarized below.

- PCBs were detected at concentrations exceeding laboratory detection limits in 17 of the 24 surface soil samples that were submitted for laboratory analysis. The concentrations of PCBs detected in surface soil samples SS-9, SS-10, SS-11, SS-22, and SS-23 (located in the vicinity of the 25-cycle substation) exceed the 1 ppm NYSDEC-recommended surface soil cleanup objective presented in TAGM 4046. The concentration of PCBs detected in surface soil sample SS-10 (150 ppm) exceeds the New York State hazardous waste/TSCA regulatory limit of 50 ppm. The analytical results obtained from the laboratory analysis of the surface soil samples for PCBs are listed in Table 3 and shown on Figure 4.

- SVOCs were detected at concentrations exceeding the TCLP alternative guidance values presented in STARS Memo #1 in 8 of the 9 surface soil samples that were submitted for SVOC analysis. The highest concentrations of SVOCs were detected in surface soil sample SS-30, which was collected from an area of visibly-stained soil immediately east of the former Echota Building. Elevated concentrations of SVOCs were also detected in surface soil sample SS-2 which was collected immediately south of the former Echota Building, in the vicinity of a concrete electrical equipment pad. SVOCs were detected at concentrations slightly exceeding the TCLP alternative guidance values presented in STARS Memo #1 in surface soil samples SS-11, SS-15, SS-18, SS-19, SS-20, and SS-23. SVOC tentatively identified compounds (TICs) were detected in 8 of the 9 surface soil samples submitted for SVOC analysis at concentrations ranging from an estimated 0.88 ppm in sample SS-15 to an estimated 388 ppm in sample SS-30. The analytical results obtained from the laboratory analysis of the surface soil samples for SVOCs are listed in Table 4 and shown on Figure 5.

- Inorganic constituents were detected in each of the surface soil samples at concentrations exceeding the NYSDEC-recommended soil cleanup objectives presented in TAGM 4046. Lead was detected in five surface soil samples (samples SS-9, SS-11, SS-15, SS-23, and SS-30) at concentrations exceeding the 500 ppm average

background lead concentration for metropolitan/suburban areas as presented in TAGM 4046. Based on the industrial setting of the substation, the concentrations of inorganic constituents detected in the surface soil samples may be representative of background concentrations in the vicinity of the site. As established under TAGM 4046, site background concentrations may be used as appropriate cleanup criteria for all inorganic constituents except mercury (which was detected at concentrations exceeding the 0.1 ppm NYSDEC-recommended soil cleanup objective in 8 of the 9 surface soil samples analyzed for TAL inorganic constituents). The presence of mercury in surface soil at the site is probably associated with off-site industrial sources in the vicinity of the substation. The analytical results obtained from the laboratory analysis of the surface soil samples for TAL inorganic constituents are listed in Table 5 and shown on Figure 6.

Subsurface Soil Sampling Results

Visual characterization and headspace screening results for subsurface soil samples collected from the test pits excavated as part of the PSA are presented below, followed by a discussion of analytical results obtained from the laboratory analysis of the subsurface soil samples for PCBs, VOCs, SVOCs, and TAL inorganic constituents.

Visual Characterization Results

Visual characterization of subsurface soil conditions encountered in the test pits excavated during the PSA indicates the following:

- Ground water (perched soil water) was encountered in the test pit excavated directly north of the storage building (TP-5) at a depth of approximately 5 feet below the ground surface. Ground water was not encountered in any of the other test pits excavated during the PSA.

- Miscellaneous debris was encountered in seven test pits at depths ranging from approximately 0.5 to 5.5 feet below the ground surface, as described below:

  - Electrical insulators were encountered in test pit TP-6 (0.5 to 3 feet). Soil in the test pit near the insulators did not appear to be visibly oil-stained and did not exhibit a noticeable odor;

  - Brick, clay tile fragments, and/or glass were encountered in test pits TP-9 (0.5-2.5'), TP-13 (1.5-2'), TP-14 (0.5-3'), TP-17 (0.5-2'); and

  - Concrete, scrap metal, wire, cable, metal piping, insulators, fencing, rubber tires, rags, and rope were encountered in the test pits excavated in the abandoned cooling ponds (TP-CP-1 and TP-CP-2) from the ground surface to approximately 5.5 feet deep. Rusted, empty steel drums (which had been crushed) were also encountered in test pits TP-CP-1 and TP-CP-2.

- A large, steel underground gasoline storage tank was encountered at a depth of approximately 3 feet below the ground surface in test pit TP-21, located approximately 16.5 feet south of the storage building. After encountering the storage tank, the test pit was moved northward to continue the excavation activities along the north side the tank. Soil excavated from approximately 4.5 to 6.5 feet below the ground surface (at the bottom of the test pit) exhibited a noticeable petroleum-type odor. However, no visible staining was observed within the test pit. Judgmental test pits TP-28 and TP-29 were excavated to the west and east of test pit TP-21 (respectively) in an attempt to determine the size and orientation of the tank and the extent of potentially impacted soil surrounding the tank. The tank was encountered in test pit TP-28 and was not encountered in test pit TP-29. Black-stained silt/sand which exhibited a noticeable petroleum-type odor was encountered at a depth of 6.5 to 8 feet below the ground surface in test pit TP-29 (no staining or odors were noticed in TP-28). Based on the test pitting activities, BBL estimates that the tank is approximately 6-feet in diameter and is

approximately 28 feet long (with a capacity of approximately 6,000 gallons). The presence of liquid/debris within the tank was not determined by the investigation activities.

Headspace Screening Results

PID headspace screening results obtained for subsurface soil samples collected from each two-foot sampling interval within test pits TP-1 through TP-23 are presented in Table 2. As indicated in Table 2, sample TP-21 (4-6') exhibited a PID headspace screening result of 517 ppm and sample TP-23 (0.5-2') exhibited a PID headspace screening result of 0.6 ppm. Elevated PID headspace screening results were not obtained for any of the other subsurface soil samples collected from the remaining test pits.

Subsurface Soil Analytical Results

Analytical results obtained from the laboratory analysis of the PSA subsurface soil samples for PCBs, VOCs, SVOCs, and TAL inorganic constituents are summarized below.

- PCBs were detected in subsurface soil samples collected from 5 of the 25 subsurface soil sampling locations. Detected PCB concentrations in the subsurface soil samples ranged from 0.034 ppm in sample TP-16 (1-2') to 1.2 ppm in sample TP-CP2 (1-2'). The concentrations of PCBs detected in the subsurface soil samples do not exceed the NYSDEC-recommended subsurface soil cleanup objective of 10 ppm as presented in TAGM 4046. The analytical results obtained from the laboratory analysis of the subsurface soil samples for PCBs are listed in Table 6 and shown on Figure 7.

- One or more VOCs were detected at concentrations exceeding laboratory detection limits in each subsurface soil sample submitted for laboratory analysis for VOCs. The analytical results indicate that ethylbenzene, total xylenes, isopropylbenzene, n-propylbenzene, 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, sec-butylbenzene, and p-isopropyltoluene were detected in subsurface soil sample TP-21 (6.5-7') (collected adjacent to the underground gasoline storage tank south of the Storage Building) at concentrations exceeding the TCLP alternative guidance values presented in STARS Memo #1. VOCs were not detected in any of the other PSA subsurface soil samples at concentrations exceeding the TCLP alternative guidance values. VOC TICs were detected at concentrations exceeding laboratory detection limits in 3 of the 18 subsurface soil samples analyzed for VOCs. The estimated concentrations of total VOC TICs in the subsurface soil samples were 0.006 ppm in sample TP-24 (7.5-8'), 0.007 ppm in sample TP-25 (8-8.5'), and 19.1 ppm in sample TP-21 (6.5-7'). The analytical results obtained from the laboratory analysis of the subsurface soil samples for VOCs are listed in Table 7 and shown on Figure 8.

- SVOCs were detected in 14 of the 15 subsurface soil samples that were submitted for laboratory analysis for SVOCs. SVOCs were detected at 11 of the 15 sampling locations selected for SVOC analysis at concentrations exceeding the TCLP alternative guidance values presented in STARS Memo #1 [including subsurface soil samples TP-2 (1.5-3.5'), TP-4 (1-2'), TP-9 (1.5-2.5'), TP-11 (1-2'), TP-12 (2-3'), TP-21 (6.5-7'), TP-23 (1-2'), TP-24 (7.5-8'), TP-25 (8-8.5'), TP-CP1 (3.5-5'), and TP-CP2 (3-5')]. SVOC TICs were detected in each subsurface soil sample selected for SVOC analysis at concentrations ranging from an estimated 0.36 ppm in sample TP-15 (1-2') and TP-23 (1-2') to an estimated 51 ppm in sample TP-2 (1.5-3.5'). The analytical results obtained from the laboratory analysis of the subsurface soil samples for SVOCs are listed in Table 7 and shown on Figure 8.

- Inorganic constituents were detected in each of the subsurface soil samples at concentrations exceeding NYSDEC-recommended soil cleanup objectives presented in TAGM 4046. Based on the industrial setting of the substation, the detected concentrations of inorganic constituents may be representative of background concentrations in the vicinity of the site. As established under TAGM 4046, site background concentrations

may be used as appropriate cleanup criteria for all inorganic constituents except mercury (which was detected at concentrations greater than the 0.1 ppm NYSDEC-recommended soil cleanup objective in 6 of the 15 subsurface soil samples). The analytical results obtained from the laboratory analysis of subsurface soil samples for TAL inorganic constituents are listed in Table 8 and shown on Figure 9.

2.3.2 Subsurface Structure Investigation Results

The results of the subsurface structure investigation, including information developed by the subsurface structure inspections and analytical results obtained from the laboratory analysis of debris samples collected from the structures, are presented below.

Subsurface Structure Inspection Results

Detailed information for each subsurface structure that was inspected (including the results of air monitoring conducted within each structure and the dimensions, materials of construction, orientation of pipes, and presence of water/debris within the structures) is presented on the inspection forms included as Appendix B. A summary of the subsurface structure inspection information is presented in Table 9. A discussion of the information obtained from the subsurface structure inspection activities is presented below.

Air Monitoring

Prior to removing the cover(s) to visually inspect each subsurface structure, BBL personnel monitored the air inside each structure using a Multi-RAE gas detector (which was equipped to monitor the concentrations of total organic vapors, carbon monoxide, and hydrogen sulfide and the levels of oxygen and combustible gases). The air monitoring did not indicate the presence of hazardous atmospheres within any of the subsurface structures that were inspected at the substation.

Construction Materials

The construction materials for the sidewalls and base of each inspected subsurface structure are presented on the subsurface structure inspection forms presented in Appendix B and summarized below:

- Brick and mortar sidewalls were observed in each inspected storm/sanitary sewer manhole and catch basin, except for catch basin S-11 which had both concrete and brick/mortar sidewalls. A concrete base was identified in catch basin S-11 and in storm/sanitary sewer manholes S-4, S-7, S-8, S-9, and S-10. The bases of the remaining storm/sanitary sewer manholes that were inspected could not be observed due to the presence of accumulated debris or standing water, but each base appeared to be solid based on probing with a metal rod.

- Concrete sidewalls and a concrete base were observed in each inspected valve box, each inspected electrical subway, and each electrical manhole, with the following exceptions:

  - Steel, concrete, and brick sidewalls were observed in electrical manhole M-47;

  - Brick and mortar sidewalls were observed in electrical manholes E-1 and 1803;

  - A soil base was observed in electrical manhole E-1;

  - The construction material for the base of electrical manholes M-47, 1803, and 2506 was not identified due to the presence of accumulated water and debris in the structures; and

- The construction materials for the sidewalls and base of electrical manholes 1900 and 2505 were not identified due to the size and configuration of the manholes.

Debris and Water in Subsurface Structures

BBL noted the following conditions during the subsurface structure inspections:

- Standing water was observed in 5 of the 10 storm/sanitary sewer manholes (S-4, S-6, S-7, S-10, and S-13), in one catch basin (S-3), in 2 of the 3 valve boxes (CP-1 and CP-3); in four subways (Subway Nos. 3, 4, 5, and 7); and in 8 of the 35 electrical manholes (M-64, H-8, H-10, E-1, 1902, 2505, 2602, and 2604). The depth of standing water ranged from 1 inch (or less) in 11 of the subsurface structures to 60 inches at electrical manholes H-11 and H-15;

- Slight petroleum-type sheens were observed on the surface of standing water in Subway No. 2 (below manhole cover M-1), in Subway No. 3 (below manhole covers M-20, M-25, and M-27), and in electrical manholes H-4, H-12, H-13, 1701, 1702, 1805, 1900, 1903, and 2504;

- Oil droplets were observed on the surface of standing water in Subway No. 2 (below manhole cover M-5) and in Subway No. 3 (below manhole covers M-19 and M-21);

- An oil film was observed on the water surface in manhole H-15, located north of the former Echota Building. As previously mentioned, a sample of the oil material (sample Oil-H-15) was submitted to Galson for laboratory analysis for PCBs;

- Accumulated debris was encountered in 9 of the 10 storm/sanitary sewer manholes (S-1, S-4 through S-10, and S-13), both catch basins (S-3 and S-11), each valve box, each electrical subway, and each electrical manhole at depths ranging from less than 1 inch in 28 of the subsurface structures to approximately 30 inches at catch basin S-3;

- The accumulated debris encountered in Subway No. 2 (below manhole cover M-5) and in the western portion of Subway No. 4 (below manhole covers M-43 and M-46) consisted of a black-stained silt/sand; and

- A slight odor was noticed in a sample of the debris collected from storm/sanitary sewer manhole S-2, while a noticeable petroleum-type odor was detected in a sample of the debris collected from catch basin S-3.

Subsurface Structure Debris Sampling Results

The analytical results obtained from the laboratory analysis of the PSA subsurface structure debris samples for PCBs, VOCs, SVOCs, and TAL inorganic constituents are presented below.

- PCBs were detected in the debris samples collected from each of the five subsurface structure debris sampling locations at concentrations ranging from an estimated 0.14 ppm in debris sample M-75 to 44 ppm in debris sample M-21. The concentrations of PCBs detected in the debris samples do not exceed the New York State hazardous waste/TSCA regulatory limit of 50 ppm. The analytical results obtained from the laboratory analysis of the subsurface structure debris samples for PCBs are listed in Table 10 and shown on Figure 10.

- A total of 21 different VOCs were detected at concentrations exceeding laboratory detection limits in debris samples collected from four of the five subsurface structure debris sampling locations. VOC TICs were detected in subsurface structure debris samples collected from each sampling location at concentrations ranging from an estimated 0.14 ppm in sample S-3 to an estimated 1,132 ppm in sample M-21. The analytical results obtained

from the laboratory analysis of the subsurface structure debris samples for VOCs are listed in Table 11 and shown on Figure 11.

- Several SVOCs were detected at concentrations exceeding laboratory detection limits in debris samples collected from each of the five debris sampling locations. SVOC TICs were also detected in subsurface structure debris samples collected from each of the debris sampling locations at concentrations ranging from an estimated 3.95 ppm in sample S-3 to an estimated 955 ppm in sample S-2. The analytical results obtained from the laboratory analysis of the subsurface structure debris samples for SVOCs are listed in Table 11 and shown on Figure 11.

- Lead was detected in each of the subsurface structure debris samples at concentrations ranging from 181 ppm in sample S-2 to 13,200 ppm in sample M-75. Mercury was detected in each debris sample at concentrations ranging from 0.7 ppm in sample S-2 to 11.9 ppm in sample M-5. The analytical results obtained from the laboratory analysis of the subsurface structure debris samples for TAL inorganic constituents are listed in Table 12 and shown on Figure 12.

As previously mentioned, BBL also collected a sample of the oil which was observed floating on the water surface in electrical manhole H-15 (north of the former Echota Building) for laboratory analysis for PCBs. The analytical result from laboratory analysis of the oil sample indicated that the oil contains PCBs at a concentration of 54 ppm (which exceeds the New York State hazardous waste/TSCA regulatory limit of 50 ppm).

3. Interim Remedial Measure Objectives

3.1 General

This section presents detailed IRM objectives for activities that are proposed to address environmental concerns identified at the NMPC Harper Substation. Based on the results of the PSA soil and subsurface structure investigation activities, NMPC proposes to implement the following IRM activities:

- *Soil Excavation:* Removing surface soil from the vicinity of the existing and former 25 cycle transformers (near sampling locations S-9, S-10, S-11, S-22, and S-23) where visibly oil-stained soil was observed and PCBs were detected at elevated concentrations. For the purpose of selecting a cleanup objective for PCBs in site soil, NMPC considers the 25 ppm cleanup level for bulk PCB remediation waste in a low occupancy setting, as presented in the TSCA regulations contained in 40 CFR 761.61(a)(4)(I)(B), to be directly applicable to this site. The 25 ppm cleanup level was developed to be protective of human health in a low occupancy setting (such as the Harper Substation) where individuals spend, on average, less than 6.7 hours per week. NMPC also considers the 10 ppm NYSDEC-recommended subsurface soil cleanup objective presented in TAGM 4046 (which was developed to be protective of ground-water quality) to be potentially applicable to the Harper Substation. NMPC believes that the 1 ppm NYSDEC-recommended surface soil cleanup objective presented in TAGM 4046 is too restrictive for this site considering the current/likely future site usage as a substation, the restricted site access, and the industrialized setting of the site. Based on the review of potentially applicable cleanup objectives, NMPC proposes to use a cleanup objective of 10 ppm for both surface and subsurface soil at the site. As part of this proposed IRM activity, surface soil will also be removed from areas south and east of the former Echota Building (near sampling locations S-2 and S-30) where oil-stained soil was observed and SVOCs were detected at concentrations exceeding the STARS TCLP alternative guidance values by several orders of magnitude;

- *Subsurface Structure Cleaning:* Removing standing water and accumulated debris from each existing electrical subway, 10 electrical manholes, one storm/sanitary sewer manhole, and two catch basins located at the site. This IRM activity will address subsurface structures where petroleum-type sheens/oil droplets or oil-stained debris were observed and where the PSA debris sampling results indicate the presence of elevated concentrations of PCBs and lead;

- *Concrete Surface Cleaning:* Removing accumulated oil from the concrete pads for the existing and former 25-cycle transformers west of the former Echota Building; and

- *Underground Storage Tank Removal:* Removing the underground gasoline storage tank located south of the Storage Building and excavating petroleum-impacted soil surrounding the tank.

The overall objective of the IRM activities is to minimize the potential migration of chemical constituents identified in soil and subsurface structure debris and mitigate potential risks to human health and the environment. Based on this general objective, the specific objectives for the proposed IRMs are presented below.

3.2 Soil Excavation Objective

NMPC has identified three IRM soil removal areas (Excavation Areas 1 through 3) to address concerns identified by the PSA. The approximate limits of each proposed excavation area are shown on Figure 13. The objectives of the soil removal activities within each excavation area are discussed below.

- *Excavation Area 1 (Vicinity of Sampling Locations S-9, S-10, S-11, S-22, and S-23)* - Surface soil which is visibly oil-stained and contains PCBs at concentrations greater than 10 ppm will be removed from Excavation Area 1. In addition, subsurface soil which is visibly oil-stained and/or contains PCBs at concentrations

exceeding 10 ppm (if encountered during the IRM activities) will also be removed from Excavation Area 1. Based on the elevated concentration of PCBs detected in surface soil sample SS-10 (i.e. 150 ppm) and the fact that subsurface material encountered in test pit TP-10 consists predominantly of crushed stone (which would not likely prevent the downward migration of PCBs), subsurface soil in the vicinity of test pit TP-10 will be removed to a minimum depth of approximately 3 feet. The soil removal activities in Excavation Area 1 will also address the presence of SVOCs at concentrations slightly exceeding the STARS TCLP alternative guidance values and the presence of lead at concentrations exceeding the 500 ppm average urban background concentration for lead.

- *Excavation Area 2 (Vicinity of Sampling Location S-2)* - Surface soil which contains elevated concentrations of SVOCs (e.g., exceeding the STARS TCLP alternative guidance values by several orders of magnitude) will be removed from Excavation Area 2. Prior to the soil removal activities in Excavation Area 2, brick/concrete debris which was spread over the area following the demolition of the Echota Building will be removed to expose the impacted surface soil in this area. The excavated brick/concrete debris will be temporarily staged adjacent to the excavation area for later use as backfill following the receipt of verification soil sampling results which indicate that the proposed cleanup objectives have been achieved.

- *Excavation Area 3 (Vicinity of Sampling Location S-3)* - Surface soil which is visibly oil-stained and contains elevated concentrations of SVOCs (e.g., exceeding the STARS TCLP alternative guidance values by several orders of magnitude) will be removed from Excavation Area 3. The soil removal activities in this area will also address the presence of lead which was detected at a concentration of 5,880 ppm (which exceeds the 500 ppm average urban background concentration for lead). As with Excavation Area 2, brick/concrete debris which was spread over Excavation Area 3 following the demolition of the Echota Building will be removed to expose the surface soil in this excavation area.

Although SVOCs were detected at concentrations slightly exceeding the NYSDEC STARS List TCLP alternative guidance values at sampling locations S-15, S-18, S-19, and S-20 (the concentration of each individual SVOC in surface soil at these locations is less than 1.0 ppm), NMPC does not propose to conduct IRM activities to address the sampling results for these locations. Based on the industrialized setting of the substation, the restricted site access, and the fact that ground-water in the area is not used as a source of drinking water, the detected SVOC concentrations at sampling locations S-15, S-18, S-19, and S-20 do not appear to represent a concern with regard to potential risks to ground-water quality or human health. However, NMPC will conduct additional ground-water monitoring for SVOCs in accordance with the recommendations to be included in a letter to the NYSDEC that summarizes the results of the ground-water investigation activities conducted during August and September 2000.

3.3 Subsurface Structure Cleaning Objective

The objective of the proposed subsurface structure cleaning IRM is to remove standing water and debris from on-site subsurface structures where the following conditions were encountered during the PSA:

- Petroleum-type sheens or oil droplets on standing water;

- Visibly oil-stained debris; and/or

- Debris which contains elevated concentrations of PCBs, VOCs, SVOCs, lead, and mercury.

Implementation of this IRM will minimize the potential migration of chemical constituents to soil and ground-water beneath the substation. This IRM will also minimize the potential for migration of chemical constituents through the on-site storm/sanitary sewer system. The subsurface structures to be cleaned include each existing electrical subway (Subway Nos. 2 through 7), 10 electrical manholes (H-4, H-12, H-13, H-15, 1701, 1702, 1805, 1900, 1903,

2504), one storm/sanitary sewer manhole (S-2), and two catch basins (S-3 and S-11). The locations of the subsurface structures to be cleaned are shown on Figure 14. Water and debris removed from the subsurface structures will be containerized for off-site disposal based on the results of waste characterization sampling (by NMPC's on-site representative). In addition, the oil film observed floating on the water surface in electrical manhole H-15 will be separately containerized from the water removed from the structures for off-site disposal as a TSCA-regulated/New York State hazardous waste. Following cleaning of the subsurface structures, inspections will be conducted to confirm that the water and debris have been removed to the extent practical.

3.4 Concrete Pad Cleaning Objective

The objective of the proposed concrete pad cleaning IRM is to remove accumulated oil from the concrete pads for the existing and former 25-cycle transformers (Transformer Banks 7 and 11) located west of the former Echota Building. The cleaning will be conducted to minimize future migration of accumulated oil on the pad to surface soil in the vicinity of the pad.

3.5 Underground Storage Tank Removal Objective

The objective of the underground storage tank removal IRM is to remove the underground gasoline storage tank which was identified immediately south of the storage building, and to excavate petroleum-impacted soil encountered in the vicinity of the tank for off-site disposal.

4. Description of Interim Remedial Measures

4.1 General

This section presents a detailed description of the proposed IRMs to be implemented at the Harper Substation. The IRM activities will be implemented by a qualified Contractor selected by NMPC based on competitive bidding. The selected Contractor will prepare submittals for review and approval by NMPC prior to mobilization to the site (including a Site Management Plan, a site-specific HASP, an Emergency Preparedness and Contingency Plan, an Erosion and Sedimentation Control Plan, and a Decontamination Plan). Mobilization activities which will be conducted by the selected Contractor prior to implementing the IRM activities include the following:

- Identifying and flagging/staking the locations of aboveground and underground utilities, equipment, and structures at and in the vicinity of the proposed excavations;

- Constructing an equipment decontamination area and on-site material staging area outside the limits of the IRM activities. Both the equipment decontamination and material staging areas will be bermed and lined with a low-permeability material (e.g., polyethylene sheeting) that will slope to a lined collection sump. Wastewater storage tanks and solid waste generated by the remedial activities (in soil piles or rolloff waste containers) will be staged within the material staging area;

- Installing a temporary fence (i.e., high visibility orange safety fence with caution tape) to limit unauthorized access into the IRM excavation areas; and

- Installing erosion and sedimentation control measures in accordance with the provisions of the Erosion and Sedimentation Control Plan. Erosion and sedimentation control measures may include the use of silt fences, silt curtains, and straw bale dikes. Erosion and sedimentation control measures will be installed prior to implementing excavation activities in each excavation area.

A detailed description of the proposed IRM activities is presented below.

4.2 Soil Excavation

NMPC anticipates that a total of approximately 130 cubic yards (CY) of soil will be removed from Excavation Areas 1 through 3 to achieve the IRM soil excavation objectives. A detailed discussion of the work to be performed in each excavation area is presented below.

Excavation Area 1 - Visibly Oil-Stained/PCB-Impacted Soil in the Vicinity of the 25-Cycle Transformers

Soil will be removed to a depth of approximately 1 foot from this approximately 2,175 square foot (SF) excavation area in the vicinity of the existing and former 25-cycle transformers (as shown on Figure 13). The soil removal activities will address the presence of visibly oil-stained surface soil and surface soil that contains PCBs at concentrations exceeding 10 ppm. In addition, soil will be removed to a depth of approximately 3 feet in the vicinity of sampling location S-10 where PCBs were identified in surface soil at a concentration of 150 ppm (which exceeds the New York State hazardous waste/TSCA regulatory limit of 50 ppm). Hand shovels and/or a vacuum truck will be used to excavate impacted soil in the vicinity of energized subsurface electrical conduit, as necessary. As part of this activity, NMPC's remedial contractor will demolish concrete foundations formerly used to support three aboveground oil storage tanks west of the former Echota Building. The demolition will be conducted using an excavator and/or a hydraulic ram-hoe. Based on the anticipated size of the excavation, approximately 113 CY (in-place) of soil/concrete debris will be removed from Excavation Area 1.

Excavation Area 2 - SVOC-Impacted Soil South of the Former Echota Building

Following the removal of the brick/concrete debris (generated by the demolition of the former Echota Building) over the proposed limits of Excavation Area 2, soil will be removed to a depth of approximately 1 foot from a 15-foot long by 15-foot wide area adjacent to a former concrete pad south of the former Echota Building. As indicated above, the soil removal activities in Excavation Area 2 will address the presence of elevated SVOCs (at concentrations exceeding the NYSDEC STARS TCLP alternative guidance values by several orders of magnitude) in surface soil sample SS-2. Based on the anticipated excavation size, approximately 10 CY of soil will be removed from Excavation Area 2.

Excavation Area 3 - Visibly Oil-Stained/SVOC-Impacted Soil East of the former Echota Building

Following the removal of the brick/concrete debris (generated by the demolition of the former Echota Building) over the proposed limits of Excavation Area 3, soil will be removed to a depth of approximately 1 foot from a 10-foot long by 10-foot wide area along the east side of the former Echota Building. As indicated above, the soil removal activities in Excavation Area 3 will address the presence of visibly oil-stained soil and elevated SVOCs (at concentrations exceeding the NYSDEC STARS TCLP alternative guidance values by several orders of magnitude) in surface soil sample SS-30. Based on the anticipated excavation size, approximately 4 CY of soil will be removed from Excavation Area 2.

Soil removed from the excavation areas will be transported to two separate staging areas for waste characterization sampling prior to off-site disposal. One of the staging areas will be used exclusively for staging the soil removed from the portion of Excavation Area 1 in the vicinity of sampling location S-10 (which NMPC anticipates transporting for off-site disposal as a TSCA-regulated/New York State hazardous waste). The second staging area will be used for the remaining soil removed from Excavation Area 1 and for the soil removed from Excavation Areas 2 and 3 (which NMPC anticipates will be transported for off-site disposal as a non-hazardous waste). Soil will be transported to the material staging areas using a loader, dump truck, or other appropriate equipment. If the excavated material is saturated, the transport equipment will be lined with polyethylene sheeting (as appropriate) to minimize seepage of water onto the ground surface. Saturated soil (if encountered) will be dewatered in the staging area prior to transport for off-site disposal.

Based on the anticipated volume of soil to be excavated as part of the IRM, one waste characterization sample will be collected for each staging area. Each waste characterization sample will be submitted for laboratory analysis for PCBs, TCLP VOCs, TCLP SVOCs, TCLP metals, ignitability, corrosivity, and reactivity. If additional soil excavation activities are required (based on field conditions and/or soil verification samples), additional waste characterization samples will be collected at a frequency of one waste characterization sample per 200 CY of excavated soil. The soil within each staging area will be transported for off-site disposal in accordance with applicable rules and regulations based on the waste characterization sampling results.

All dump trailers, dump truck boxes, and roll-off waste containers used to transport excavated non-hazardous material from the site will be lined with one layer of polyethylene sheeting. In addition, all dump trailers and roll-off waste containers used to transport excavated TSCA-regulated material or Resource Conservation and Recovery Act-(RCRA-) regulated material from the site will be lined with two layers of polyethylene sheeting.

NMPC anticipates that the majority of the soil removal will be accomplished using conventional excavation equipment (e.g., backhoe, excavator, etc.). Where necessary, due to obstructions, portions of the soil removal activities may be accomplished using hand shovels and/or a vacuum truck. Upon reaching the anticipated extent of soil removal in the excavation areas, the following activities will be performed by NMPC's on-site observer:

- *Visual Inspection* - The sidewalls and bottom of each excavation area will be visually inspected to determine if the limits of visibly oil-stained soil have been reached. If visibly oil-stained soil is observed at the limits of the excavation, additional soil will be removed from the excavation, and an additional visual inspection of the excavation will be performed.

- *Jar Testing* - Upon reaching the limits of visibly oil-stained soil, grab samples will be collected from the excavation sidewalls (at a frequency of one sample per 40 feet of sidewall, with a minimum of one sample per sidewall) and the excavation floor (at a frequency of one sample per 400 square feet of floor area, with a minimum of one floor sample per excavation) for jar testing to check for the presence of petroleum sheens or droplets of separate phase materials. Jar testing will consist of filling a jar approximately 90% full with equal parts of soil and tap water, shaking the contents of the jar, and visually determining whether any sheens or oil droplets are present on the surface of the soil/water mixture in the jar. If sheens or oil droplets are identified by the jar testing, additional soil will be removed from the excavation (as appropriate) and additional jar testing will be performed.

- *PCB Field Screening* - Upon achieving jar testing results for soil at the limits of Excavation Area 1 that indicate the absence of petroleum sheens or oil droplets, composite samples will be collected from the excavation sidewalls (at a frequency of one sample per 40 feet of sidewall, with a minimum of one sample per sidewall) and the excavation floor (at a frequency of one sample per 400 square feet of floor area) and screened for PCBs using immunoassay PCB field test kits with detection limits of 1 ppm and 10 ppm. The sidewall samples will be collected at a depth of approximately 6 inches below the ground surface. Each field screening sample will be a composite sample formed from 6 to 8 individual grab samples collected within an approximately one-square meter area sampling area. The composite sampling approach is intended to reduce the potential effects of local spatial variation on the concentration of PCBs (if present). If PCBs are detected in a field screening sample at a concentration greater than 10 ppm, then additional soil will be removed from the corresponding sidewall/floor and additional field screening for PCBs will be performed.

- *Verification Sampling* - Upon obtaining satisfactory jar testing and/or PCB field screening results, verification soil samples will be collected from the sidewalls and floor of each excavation area in accordance with the verification sampling procedures presented in STARS Memo #1. Verification soil samples collected from each excavation area will be submitted for laboratory analysis for the following constituents on a 48-hour turnaround basis:

  - PCBs using USEPA SW-846 Method 8082;
  - STARS List TCLP SVOCs using USEPA SW-846 Method 1311 for sample extraction and Method 8270 for sample analysis; and
  - Total lead using USEPA SW-846 Method 6010.

  Composite verification soil samples will be collected at each verification sampling location. The verification sampling locations selected for Excavation Area 1 will correspond with the PCB field screening sampling locations as described above. A verification soil sample will not be collected from the sidewall of the excavation if the sidewall consists of either a concrete foundation (i.e., a concrete pad or concrete sidewall of an electrical subway) or brick/concrete debris used as fill material following demolition of the former Echota Building. Composite verification soil samples will be formed in the field from 6 to 8 individual grab samples collected within an approximately one square meter area surrounding the sampling location. The total number of verification samples collected in Excavation Areas 1, 2, and 3 will be determined using the protocol described above for the PCB field screening samples (i.e., one sample per 40 feet of excavation sidewall and one sample for 400 square feet of excavation floor area, with a minimum of one sample from each sidewall and the floor of the excavation). Based on the anticipated size of each excavation, the proposed number of verification soil samples to be collected from each excavation area is presented in the table below.

Excavation Area	Sidewall Verification Samples	Floor Verification Samples
1	10	8
2	4	1
3	4	1

PCB verification soil sample results will be compared to the site-specific cleanup objective of 10 ppm. SVOC verification soil sample results will be compared to the TCLP guidance values presented in STARS Memo #1. Lead verification soil sample results will be compared to the 500 ppm average urban background concentration for lead in metropolitan/suburban areas as presented in TAGM 4046. If the verification soil samples collected from an excavation area contain PCBs, SVOCs, or lead at concentrations exceeding the criteria identified above, additional soil will be removed from the excavation area (if practical) and additional verification samples will be collected.

Additional activities to be conducted in connection with the removal of soil from the excavation areas include the following:

- Performing airborne particulate monitoring (dust monitoring) within the worker breathing zone at a minimum frequency of once per hour during work activities that have a potential for generating dust. Particulate monitoring will not be required if ambient conditions do not support the generation of dust (i.e., soil is saturated). If dust monitoring indicates that ambient dust levels in worker breathing zones exceed the action level of 150 micrograms per cubic meter ($\mu g/m^3$) above background for a period of fifteen minutes or more (using the protocols to be outlined in the HASP), appropriate dust control measures will be implemented by the contractor and additional monitoring downwind of the work area perimeter will be performed.

- Maintaining the excavations until the analytical results of the verification soil samples indicate that the remedial objectives have been achieved.

- Decontaminating project equipment (including excavation equipment, trucks, hand-tools, etc.) and materials that come in contact with impacted site media prior to demobilizing from the site and prior to handling clean backfill. If applicable, equipment used to handle TSCA-regulated soil from the vicinity of sampling location S-10 (in Excavation Area 1) will be decontaminated prior to handling non-hazardous soil at the site. The decontamination activities will be performed until no visible soil or other debris are present on the equipment surfaces (as determined by NMPC's on-site representative). Washwater, solids, and other waste materials generated by the equipment decontamination activities will be containerized for off-site disposal.

- Importing, placing, and compacting clean backfill in the excavation areas following receipt of verification soil sampling results which indicate that the cleanup objectives for the excavation areas have been achieved. Backfilling activities will be completed in accordance with NMPC requirements for the type of fill and will be compacted to the satisfaction of NMPC's on-site representative using a vibratory roller or plate compactor. Excavation Area 1 will be restored to the original lines and grades using imported crushed stone. Excavation Areas 2 and 3 will be restored to the original lines and grades using the brick/concrete debris which was removed and staged prior to soil excavation activities.

4.3 Subsurface Structure Cleaning

As part of the subsurface structure cleaning activity, NMPC proposes to remove standing water and accumulated debris from electrical subway Nos. 2 through 7; electrical manholes H-4, H-12, H-13, H-15, 1701, 1702, 1805, 1900,

1903, 2504; storm/sanitary sewer manhole S-2; and catch basins S-3 and S-11 (as shown on Figure 14). Work activities to be conducted in connection with the subsurface structure cleaning activities include the following:

- Exposing the subsurface structures (if necessary) by removing crushed stone and/or soil. The cover over each structure will be removed to provide access to the structure;

- Placing a layer of low permeability material (e.g., rubber, polyethylene sheeting) on the ground surface around the opening of each subsurface structure to prevent wastewater or debris from contacting the ground surface around the structures during the cleaning activities;

- Conducting a pre-cleaning visual inspection of the interior surfaces of each subsurface structure. The inspector will determine the presence/depth of standing water and debris within the structure and the presence/absence of a sheen or visible oil droplets on the water surface within the structures. The pre-cleaning inspections will serve as a baseline for evaluating the effectiveness of the subsequent cleaning activities;

- Removing the oil encountered on the water surface in electrical manhole H-15. The material will be containerized for off-site disposal as a TSCA-regulated/New York State hazardous waste. Any accumulated oil observed on the surface of standing water in the remaining structures will also be removed and containerized for off-site disposal;

- Removing standing water from the subsurface structures (where observed) using a vacuum truck or submersible pump. The standing water will be transferred to an on-site storage tank to allow for settling of suspended solids. After the solids have settled, NMPC's on-site observer will collect a sample of the water within the tank for waste characterization purposes. The water will be transported for off-site treatment/disposal based on the waste characterization sampling results;

- Removing debris from the subsurface structures identified above using a vacuum truck or via manual methods (i.e., manned entry into the structure and hand shoveling). The debris removed from the structures will be transferred to the on-site material staging area for gravity dewatering/stabilization, as necessary. Debris which settles in the bottom of the on-site storage tank will also be transferred to the material staging area for gravity dewatering/stabilization, as necessary. NMPC's on-site observer will collect samples of the debris in the material staging area for waste characterization purposes (at a frequency of one sample per 200 CY of removed debris, or other sampling frequency required by the disposal facility). The debris will be transported for off-site treatment/disposal based on the waste characterization sampling results;

- Cleaning the interior surfaces of subsurface structures where residual debris/oil staining is observed (with the exception of subsurface structures which contain energized electrical cable). The cleaning will be conducted using a steam cleaner/pressure washer. Prior to cleaning each structure, drains identified in the base of the structure (if any) will be plugged in an effort to prevent the migration of washwaters from the structure. Washwaters generated by the cleaning will be transferred to the on-site storage tank using a vacuum truck or submersible pump and hose; and

- Conducting a post-cleaning visual inspection of the interior surfaces of each subsurface structure. The results of the post-cleaning inspections will be compared to the results of the inspection performed prior to the cleaning activities to assess the effectiveness of the cleaning activities and to determine if additional stream cleaning/pressure washing is required. If visible amounts of debris remain within the structure, the pressure washing procedure will be repeated and another visual inspection performed until no visible accumulations of debris are evident.

After cleaning each subsurface structure, the Contractor will remove the low permeability material placed around the structure. The low-permeability material will be decontaminated and used for subsequent subsurface structure cleaning activities or transferred to the material staging area for off-site disposal. The cover will be replaced on the structure, and any surfaces disturbed by the cleaning activities will be restored (e.g., replacing soil and/or crushed stone). Prior to demobilization, the Contractor will decontaminate equipment utilized during the cleaning activities (including pumps, hoses, attachments, hand-tools, etc.) in accordance with the Decontamination Plan.

4.4 Concrete Foundation Cleaning

NMPC proposes to remove accumulated oil from the concrete foundations for the existing and former 25-cycle transformers located west of the former Echota Building. Concrete foundation cleaning activities will be conducted in accordance with the double wash/rinse procedures presented in 40 CFR 761 Subpart S. Visible oil on the concrete surface to be cleaned will be wiped/mopped with an absorbent paper or cloth until no liquid is visible on the surface. After removing the visible oil, the following washing/rinsing activities will be performed:

- *First Wash:* The entire concrete surface will be covered with a concentrated or industrial strength detergent or non-ionic surfactant solution. Rough surfaces will be scrubbed with a scrub brush or scrubbing pad, while smooth surfaces will be wiped using a solution-soaked disposable absorbent pad. Cleaning solution will be added so that the surface being cleaned is wet. Each one square foot of surface area will be scrubbed for approximately one minute. The residual cleaner solution will be mopped up using clean, disposable absorbent pads until the surface appears dry.

- *First Rinse:* The wash solution will be rinsed off using approximately one gallon of clean water per square foot. The rinse water will be collected and transferred to an appropriate waste container. The wet surface will be mopped using an absorbent pad until the surface appears dry.

- *Second Wash:* The entire concrete surface will be covered with an organic solvent in which PCBs are soluble to at a minimum of 5 percent by weight. Rough surfaces will be scrubbed with a scrub brush or scrubbing pad, while smooth surfaces will be wiped using a solution-soaked disposable absorbent pad. Cleaning solution will be added so that the surface being cleaned is wet. Each one square foot of surface area will be scrubbed for approximately one minute. The solvent will be wiped/mopped up using disposable absorbent pads until no visible traces of the solvent remain.

- *Second Rinse:* The concrete surface will be wetted with clean rinse solvent so that the entire surface is wet for approximately one minute. The residual solvent will be wiped off the surface using clean, disposable absorbent pads until no liquid is visible on the surface.

Scrubbers and absorbent pads used during the second rinse will be re-used (as appropriate) for the first wash of uncleaned portions of the concrete. Liquids generated during the cleaning activities will be containerized for off-site disposal as a TSCA-regulated waste. In addition, debris generated by the cleaning activities (consisting of scrub brushes, rags, cloths, etc.) will also be containerized for off-site disposal as a TSCA-regulated waste.

4.5 Underground Storage Tank Removal

NMPC proposes to remove the underground gasoline storage tank located approximately 16.5 feet south of the storage building (believed to be an approximately 6,000 gallon tank) and excavate petroleum-impacted soil encountered in the vicinity of the tank for off-site disposal. As previously mentioned, the top of the tank is approximately 3 feet below the ground surface. The approximate location of the underground storage tank is shown on Figure 13. Work activities to be conducted as part of the underground storage tank removal include the following:

- Identifying all aboveground and underground utilities in the vicinity of the underground storage tank.

- Excavating soil (by hand as necessary) to expose the top half of the tank, and staging the soil for potential use as backfill material.

- Conducting a pre-cleaning visual inspection of the interior of the tank (through accessible manways, vents, etc.). The inspector will determine the presence/depth of product and/or debris within the tank.

- Removing liquid and solid materials from the tank (if encountered) and staging, containerizing, and characterizing the materials for off-site disposal. After allowing the debris to separate via gravity settling, the liquid will be pumped into an appropriate container(s) for off-site disposal in accordance with applicable rules and regulations. The debris (if encountered) will be transferred to the on-site material staging area for gravity dewatering/stabilization prior to off-site disposal.

- Testing the atmosphere inside and outside the tank (for percent oxygen, combustible gas level, etc.) to determine if a potentially hazardous atmosphere exists.

- Purging the tank and appurtenances, as necessary, with dry ice or an inert gas such as nitrogen (N_2) or carbon dioxide (CO_2).

- Excavating and removing the tank using mechanical means in accordance with applicable rules and regulations. After removal, the tank will be placed in a lined material staging area to facilitate cleaning of the interior and exterior surfaces to the satisfaction of NMPC's on-site representative using a detergent and high pressure water spray. Washwaters from the tank cleaning activities will be collected/containerized for off-site disposal in accordance with applicable regulations. Based on the presence of PCBs identified in site soil, wipe samples will be collected to evaluate the potential presence of PCBs on the interior/exterior tank surfaces.

- Cutting the tank, as appropriate, to render the tank unusable and to facilitate transportation of the steel for off-site smelting (provided that the wipe sampling results indicate that PCBs are not present on the tank surfaces at concentrations greater than or equal to the 100 micrograms per 100 square centimeters [$\mu g/100\ cm^2$] decontamination standard for smelting of non-porous surfaces as presented in 40 CFR 761.79) or off-site disposal in accordance with applicable rules and regulations. Cutting methods shall be non-heat generating.

- Excavating soil at the limits of the underground storage tank excavation which is visibly stained and exhibits noticeable petrolcum-type odors. Following removal of the soil which is visibly stained and exhibits noticeable petroleum-type odors, the following work will be performed:

  - One soil sample will be collected from each sidewall and the bottom of the excavation for headspace screening using a PID to determine the potential presence of volatile organic vapors in the soil. If the PID headspace screening results exceed background levels, then additional soil will be removed from the excavation (and additional headspace screening will be performed);

  - Following headspace screening which indicates that volatile organic vapors are not present at levels exceeding background concentrations, the soil samples used for headspace screening will be subjected to jar testing to determine the potential presence of petroleum sheens or droplets of separate phase materials. Jar testing will consist of filling a jar approximately 90 percent full with equal parts of soil and water, shaking the contents of the jar, and observing the contents of the jar for the presence of a sheen or oil droplets. If a sheen/oil droplets are observed in any of the jar tests, then additional soil will be removed from the excavation (and additional jar testing will be performed); and

- Upon obtaining satisfactory jar testing results (as described above), a minimum of five verification soil samples will be collected from the limits of the excavation in accordance with the sampling protocols presented in the NYSDEC STARS Memo #1. One composite sample will be collected from each of the excavation sidewalls at a distance approximately one-third up from the bottom of the excavation. One composite sample will also be collected from the bottom of the excavation. Each composite sample will be formed from 6 to 8 subsamples collected from an approximately one square meter area centered around the sampling location. The composite verification soil samples will be submitted for laboratory analysis for PCBs using USEPA SW-846 Method 8082, STARS List TCLP SVOCs using USEPA SW-846 Method 1311/8270, and lead using USEPA SW-846 Method 6010. In addition, discrete grab verification soil samples will be collected from each of the excavation sidewalls and the bottom of the excavation for laboratory analysis of STARS List TCLP VOCs using USEPA SW-846 Method 1311/8021. Laboratory analysis of the verification soil samples will be performed on a 72-hour turnaround basis for reporting of preliminary analytical results. No further soil excavation will be required if the verification soil sampling results indicate that PCB concentrations are less than 10 ppm, VOC and SVOC concentrations are less than the STARS TCLP extraction guidance values, and lead concentrations are less than the 500 ppm average urban background level.

- Capping the exposed ends of former distribution and supply pipes associated with the tank using a non-shrink grout material.

- Transporting the petroleum-impacted soil removed from the tank excavation to the on-site material staging area for waste characterization purposes. The soil from the tank excavation will be staged and characterized separately from the PCB- and SVOC-impacted soil to be removed from Excavation Areas 1, 2, and 3. If the excavated material is saturated, the haul equipment (i.e., loader or dump truck) will be lined with polyethylene sheeting (as necessary) to minimize seepage of water onto the ground and haul road surface. If necessary, the excavated material will be stabilized in the material staging area prior to transport for off-site disposal. The waste characterization samples will be submitted for laboratory analysis for PCBs, TCLP VOCs, TCLP SVOCs, TCLP metals, ignitability, corrosivity, and reactivity.

- Importing, placing, and compacting clean fill material in the excavation following the receipt of verification soil sample results which indicate that the soil cleanup objectives have been achieved. A general sand/gravel fill material will be used to backfill the excavation to within 3 inches of the surrounding grade. The fill material will be compacted in 6-inch lifts using a plate/walk-behind compactor to the satisfaction of NMPC's on-site representative. The area will be restored by placing 3 inches of topsoil, grass seed, and mulch.

Prior to demobilization, the Contractor will decontaminate equipment utilized during the tank removal activities (including pumps, hoses, attachments, hand-tools, etc.) in accordance with the Decontamination Plan to be prepared by the Contractor.

4.6 Schedule

This subsection presents the anticipated duration of key events related to the implementation of remedial activities at the NMPC Harper Substation. The estimated time to complete specific components of the remedial activities are as follows:

Work Activity	Estimated Time to Complete Work Activity
Pre-Interim Remedial Measures	
NYSDEC Review/Approval of PSA Soil/Subsurface Structure Investigation Report and IRM Plan	3 weeks
Prepare Contractor Scope of Work	2 weeks
Interim Remedial Measures	
Contractor Bid Preparation	2 weeks
Evaluate Contractor Bids/Award IRM Contract	1 week
Preparation of Draft Contractor Plans and Submittals	1 week
Review/Finalize Contractor Plans	1 week
Implement IRM Activities	3 weeks
Post-Remedial Activities	
Prepare IRM Summary Report	3 weeks

As indicated above, NMPC anticipates that the field activities associated with the IRMs will take approximately three weeks to complete. Based on this schedule, NMPC intends to solicit bids from Remedial Contractors and implement the IRMs during the early spring of 2001. The estimated time to complete the IRM activities could be impacted by weather conditions, unexpected field conditions, and verification soil sampling results which may indicate that additional excavation activities are required to reach the limits of impacted soil in the proposed excavations. NMPC will notify the NYSDEC regarding delays that impact the schedule for completion of the IRMs. Following completion of the IRMs, an IRM Summary Report describing the IRM activities implemented at the site and the results of the verification soil samples collected from the excavations will be submitted to the NYSDEC for review.

Tables

Table 1

Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

Preliminary Site Assessment (PSA)
Analytical Sample Summary

Matrix	Sample ID	Sample Interval	Date Sampled	SDG#	Analyses			
					PCBs	VOCs	SVOCs	Inorganics
Surface Soil	SS-1	(0-0.5')	07/12/99	L52647	X			
	SS-2	(0-0.5')	07/12/99	L52647	X		X	X
	SS-3	(0-0.5')	07/12/99	L52647	X			
	SS-4	(0-0.5')	07/13/99	L52675	X			
	SS-5	(0-0.5')	07/12/99	L52647	X			
	SS-6	(0-0.5')	07/13/99	L52675	X			
	SS-7	(0-0.5')	07/13/99	L52675	X			
	SS-8	(0-0.5')	07/13/99	L52675	X			
	SS-9	(0-0.5')	07/13/99	L52675	X		X	X
	SS-10	(0-0.5')	07/14/99	L52693	X			
	SS-11	(0-0.5')	07/13/99	L52647	X		X	X
	SS-12	(0-0.5')	07/14/99	L52693	X			
	SS-13	(0-0.5')	07/14/99	L52693	X			
	SS-14	(0-0.5')	07/14/99	L52693	X			
	SS-15	(0-0.5')	07/14/99	L52693	X		X	X
	SS-16	(0-0.5')	07/14/99	L52693	X			
	SS-17	(0-0.5')	07/14/99	L52693	X			
	SS-18	(0-0.5')	07/15/99	L52675	X		X	X
	SS-19	(0-0.5')	07/15/99	L52675	X		X	X
	SS-20	(0-0.5')	07/15/99	L52675			X	X
	SS-20	(0-0.5')	8/19/99	L53678	X			
	DUP-1 (SS-20)	(0-0.5')	8/19/99	L53678	X			
	SS-21	(0-0.5')	07/13/99	L52675	X			
	SS-22	(0-0.5')	07/13/99	L52675	X			

Table 1
(cont'd)
Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

Preliminary Site Assessment (PSA)
Analytical Sample Summary

Matrix	Sample ID	Sample Interval	Date Sampled	SDG#	Analyses			
					PCBs	VOCs	SVOCs	Inorganics
Surface Soil (Cont'd)	SS-23	(0-0.5')	07/14/99	L52693	X		X	X
	SS-30	(0-0.5')	07/22/99	L52926	X		X	X
Subsurface Soil	TP-1	(0.5-1.5')	07/12/99	L52647	X			
	TP-2	(1.5-3.5')	07/12/99	L52647	X		X	X
				L52675		X		
	TP-3	(1-2')	07/12/99	L52647	X			
	TP-4	(1-2')	07/13/99	L52675	X	X	X	X
	DUP-1 (TP-4)	(1-2')	07/13/99	L52647	X		X	X
				L52675		X		
	TP-5	(0.5-1.5')	07/12/99	L52647	X			
	TP-6	(2-3')	07/13/99	L52675	X			
	TP-8	(1.5-2.5')	07/13/99	L52675	X			
	TP-9	(1.5-2.5')	07/13/99	L52675	X	X	X	X
	TP-11	(1-2')	07/13/99	L52647	X		X	X
				L52675		X		
	DUP-2 (TP-11)	(1-2')	07/13/99	L52647	X		X	X
				L52675		X		
	TP-12	(2-3')	07/14/99	L52693	X	X	X	X
	TP-13	(1-2')	07/14/99	L52693	X			
	TP-14	(1-2')	07/14/99	L52693	X			
	TP-15	(1-2')	07/14/99	L52693	X	X	X	X
	DUP-3 (TP-15)	(1-2')	07/14/99	L52693	X	X	X	X
	TP-16	(1-2')	07/14/99	L52693	X			
	TP-17	(0.5-1.5')	07/14/99	L52693	X			

Table 1
(cont'd)
Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

Preliminary Site Assessment (PSA)
Analytical Sample Summary

Matrix	Sample ID	Sample Interval	Date Sampled	SDG#	Analyses			
					PCBs	VOCs	SVOCs	Inorganics
Subsurface Soil (cont'd)	TP-18	(1.5-2.5')	07/15/99	L52675	X	X	X	X
	TP-19	(1.5-2.5')	07/15/99	L52675	X	X	X	X
	TP-20	(2-3')	07/15/99	L52675	X	X	X	X
	TP-21	(6.5-7')	07/13/99	L52675	X	X	X	X
	TP-22	(0.5-1.5')	07/13/99	L52647	X			
	TP-23	(1-2')	07/14/99	L52693	X	X	X	X
	TP-24	(7.5-8')	07/21/99	L52926	X	X*	X	X
	TP-25	(8-8.5')	07/21/99	L52926	X	X*	X	X
	TP-CP1	(1-2')	08/19/99	L53678	X			
		(3.5-5')	07/15/99	L52675		X	X	X
	TP-CP2	(1-2')	08/19/99	L53678	X			
		(3-5')	07/15/99	L52675		X	X	X
Oil/NAPL	Oil-H-15	--	07/22/99	L52926	X			
Debris	M-5	--	07/22/99	L52926	X	X*	X	X
	M-21	--	07/22/99	L52926	X	X*	X	X
	M-75	--	07/22/99	L52926	X	X*	X	X
	S-2	--	07/22/99	L52926	X	X*	X	X
	S-3	--	07/22/99	L52926	X	X*	X	X
	DUP-4 (S-3)	--	07/22/99	L52926	X	X*	X	X

NOTES:
1. All samples were collected by Blasland, Bouck & Lee, Inc. (BBL) of Syracuse, New York.
2. SDG = Sample delivery group.
3. Sample designations indicate the following:
   - SS = Surface soil sample;
   - DUP or D = Blind duplicate sample;
   - TP = Subsurface soil sample collected from a test pit;
   - M = Debris sample collected from an electrical manhole;

Table 1
(cont'd)
Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

Preliminary Site Assessment (PSA)
Analytical Sample Summary

NOTES (Cont'd):

- S = Debris sample collected from a storm/sanitary sewer manhole; and

3. Soil and debris samples were analyzed using the following methods, as referenced in the NYSDEC 1995 Analytical Services Protocol (ASP):
   - PCBs = Polychlorinated biphenyls using USEPA SW-846 Method 8082;
   - VOCs = Volatile organic compounds using USEPA SW-846 Method 8260 (including the following supplemental parameters: n-butylbenzene; sec-butylbenzene; tert-butylbenzene; isopropylbenzene; p-isopropyltoluene; n-propylbenzene; 1,2,4-trimethylbenzene; and 1,3,5-trimethylbenzene);
   - SVOCs = Semi-volatile organic compounds using USEPA SW-846 Method 8270; and
   - Inorganics = TAL inorganic constituents using USEPA SW-846 Method 6010 with the following exceptions: mercury was analyzed using Method 7470/7471, and cyanide was analyzed using Method 9010.
4. All laboratory analyses were performed by Galson Laboratories, Inc. of East Syracuse, New York except where indicated by an asterisk.
5. * = Sample analysis for VOCs or cyanide was performed by O'Brien & Gere Laboratories, Inc. of Syracuse, New York.
6. Analytical results have not been validated.

Table 2

Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

Preliminary Site Assessment (PSA)
Headspace Screening Summary

Sample Location	Sample Depth (feet)	PID Measurement (ppm)
S-1	0-0.5 0.5-2 2-4 4-6	0.0 0.0 0.0 0.0
S-2	0-0.5 0.5-2 2-4 4-6	0.0 0.0 0.0 0.0
S-3	0-0.5 0.5-2 2-4 4-6	0.0 0.0 0.0 0.0
S-4	0-0.5 0.5-2 2-4 4-6	0.0 0.0 0.0 0.0
S-5	0-0.5 0.5-2 2-4	0.0 0.0 0.0
S-6	0-0.5 0.5-2 2-4 4-6	0.0 0.0 0.0 0.0
S-7	0-0.5	0.0
S-8	0-0.5 0.5-2 2-4	0.0 0.0 0.0
S-9	0-0.5 0.5-2 2-4	0.0 0.0 0.0

Table 2
(Cont'd)
Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

Preliminary Site Assessment (PSA)
Headspace Screening Summary

Sample Location	Sample Depth (feet)	PID Measurement (ppm)
S-10	0-0.5 0.5-2	0.0 0.0
S-11	0-0.5 2-4	0.0 0.0
S-12	0-0.5 0.5-2	0.0 0.0
S-13	0-0.5 0.5-2	0.0 0.0
S-14	0-0.5 0.5-2 2-4	0.0 0.0 0.0
S-15	0-0.5 0.5-2 2-4	0.0 0.0 0.0
S-16	0-0.5 0.5-2 2-4	0.0 0.0 0.0
S-17	0-0.5 0.5-2 2-4	0.0 0.0 0.0
S-18	0-0.5 0.5-2 2-4	0.0 0.0 0.0
S-19	0-0.5 0.5-2 2-4	0.0 0.0 0.0
S-20	0-0.5 0.5-2 2-4	0.0 0.0 0.0
S-21	0-0.5 0.5-2 2-4 4-6	0.0 0.0 0.0 **517**
S-22	0-0.5 0.5-2 2-4	0.0 0.0 0.0

Table 2
(Cont'd)
Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

Preliminary Site Assessment (PSA)
Headspace Screening Summary

Sample Location	Sample Depth (feet)	PID Measurement (ppm)
S-23	0-0.5	1.2
	0.5-2	0.6
	2-4	0.0

NOTES:

1. PID = Photoionization detector.
2. ppm = Parts per million.
3. Sample location designations indicate the following:
   - S = Soil sampling location

Table 3

Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Soil Investigation
Surface Soil Analytical Results for Total PCBs (ppm)

Sample ID	Total PCB Concentration
SS-1 (0-0.5')	0.04
SS-2 (0-0.5')	<0.018
SS-3 (0-0.5')	<0.092 D
SS-4 (0-0.5')	<0.017
SS-5 (0-0.5')	0.096
SS-6 (0-0.5')	0.019
SS-7 (0-0.5')	0.77 D
SS-8 (0-0.5')	0.43 D
SS-9 (0-0.5')	13.0 D
SS-10 (0-0.5')	150 D
SS-11 (0-0.5')	1.0 D
SS-12 (0-0.5')	0.11
SS-13 (0-0.5')	<0.018
SS-14 (0-0.5')	0.037
SS-15 (0-0.5')	<0.019
SS-16 (0-0.5')	0.137
SS-17 (0-0.5')	0.031
SS-18 (0-0.5')	0.073
SS-19 (0-0.5')	<0.025
SS-20 (0-0.5')	0.024
DUP-1 (SS-20)	<0.018
SS-21 (0-0.5')	<0.017
SS-22 (0-0.5')	2.1 D
SS-23 (0-0.5')	4.0 D
SS-30 (0-0.5')	0.38 D

NOTES:

1. Samples collected by Blasland, Bouck & Lee, Inc. (BBL) during July 1999 (except for samples SS-20 and DUP-1 [SS-20] which were collected during August 1999).
2. Samples analyzed by Galson Laboratories, Inc. (Galson) of East Syracuse, New York using USEPA SW-846 Method 8082 as referenced in New York State Department of Environmental Conservation (NYSDEC) 1995 Analytical Services Protocol (ASP).
3. Concentrations reported in parts per million (ppm) or milligrams per kilogram (mg/kg).
4. Sample designations indicate the following:
   SS = Surface soil sample
5. < = Each Aroclor was not detected above the presented concentration.
6. D = Constituent concentration is based on a diluted sample analysis.
7. Shaded values indicate that the constituent was detected at a concentration exceeding the recommended surface soil cleanup objective of 1 ppm presented in the NYSDEC document entitled, "Technical and Administrative Guidance Memorandum (TAGM): Determination of Soil Cleanup Objectives and Cleanup Levels" HWR-94-4046 (TAGM 4046), dated January 24, 1994.
8. Analytical results have not been validated.

Table 4

Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Soil Investigation
Surface Soil Analytical Results for Detected SVOCs (ppm)

Constituent	STARS TCLP Alternative Guidance Value	SS-2	SS-9	SS-11	SS-15	SS-18	SS-19	SS- 20	SS-23	SS-30
1,4-Dichlorobenzene	NA	<0.38	<7.2	0.037 J	<0.38	<0.43	<0.47	<0.39	<22.0	<5.6
1,2,4-Trichlorobenzene	NA	<0.38	<7.2	0.066 J	<0.38	<0.43	<0.47	<0.39	<22.0	<5.6
Naphthalene	0.2	0.093 J	<7.2	0.047 J	<0.38	<0.43	<0.47	<0.39	<22.0	23
2-Methylnaphthalene	NA	0.094 J	<7.2	0.059 J	<0.38	<0.43	<0.47	<0.39	<22.0	8.4
Acenaphthylene	NA	0.29 J	<7.2	<0.36	<0.38	<0.43	<0.47	<0.39	<22.0	4.5 J
2,6-Dinitrotoluene	NA	<0.38	<7.2	<0.36	<0.38	<0.43	<0.47	<0.39	<22.0	5.2 J
Acenaphthene	0.4	0.30 J	<7.2	<0.36	<0.38	<0.43	<0.47	<0.39	<22.0	31
Dibenzofuran	NA	0.36 J	<7.2	<0.36	<0.38	<0.43	<0.47	<0.39	<22.0	28
Fluorene	1	0.56	<7.2	<0.36	<0.38	<0.43	<0.47	0.052 J	<22.0	40
Phenanthrene	1	7.8 D	<7.2	0.29 J	0.062 J	0.18 J	0.1 J	0.49	3.1 J	360 D
Anthracene	1	1.3	<7.2	0.067 J	<0.38	<0.43	<0.47	0.049 J	<22.0	65
Di-n-butylphthalate	NA	<0.38	<7.2	<0.36	<0.38	0.5 B	16.0 DB	0.3 JB	3.3 J	<5.6
Fluoranthene	1	9.2 D	<7.2	0.51	0.10 J	0.19 J	0.16 J	0.44	2.2 J	330 D
Pyrene	1	6.3 D	<7.2	0.32 J	0.075 J	0.35 J	0.16 J	0.59	<22.0	300 D
Benzo(a)anthracene	0.00004	4.0	<7.2	0.20 J	0.045 J	0.12 J	0.059 J	0.21 J	<22.0	130 D
Chrysene	0.00004	3.9	<7.2	0.30 J	0.069 J	0.18 J	0.10 J	0.27 J	<22.0	140 D
Bis(2-ethylhexyl)phthalate	NA	<0.38	<7.2	0.083 J	<0.38	0.34 JB	0.28 JB	0.23 JB	<22.0	0.63 J
Benzo(b)fluoranthene	0.00004	3.1	<7.2	0.29 J	0.059 J	0.16 J	0.085 J	0.25 J	<22.0	110 D
Benzo(k)fluoranthene	0.00004	3.3	<7.2	0.20 J	0.047 J	0.18 J	0.073 J	0.31 J	<22.0	140 D
Benzo(a)pyrene	0.00004	3.6	<7.2	0.19 J	0.051 J	0.076 J	<0.47	0.22 J	<22.0	130 D
Indeno(1,2,3-cd)pyrene	0.00004	2.3	<7.2	0.12 J	<0.38	<0.43	<0.47	<0.39	<22.0	76
Dibenzo(a,h)anthracene	1	1.0	<7.2	<0.36	<0.38	<0.43	<0.47	<0.39	<22.0	37
Benzo(g,h,i)perylene	0.00004	2.6	<7.2	0.15 J	<0.38	<0.43	<0.47	<0.39	<22.0	74
Total TICS	NA	49.98 J	-	2.67 J	0.88 J	4.21 J	3.54 J	2.18 J	254 J	388.2 J

Table 5

Niagara Mohawk Power Coporation
Harper Substation
Niagara Falls, New York

PSA Soil Investigation

Surface Soil Analytical Results for TAL Inorganic Constituents (ppm)

Constituent	NYSDEC-Recommended Soil Cleanup Objective	SS-2	SS-9	SS-11	SS-15	SS-18	SS-19	SS-20	SS-23	SS-30
Aluminum	SB	6,760	2,610	10,600	6,290	25,000	7,650	7,290	15,500	8,640
Antimony	SB	<0.56	5.3 B	<0.54	0.98 B	<0.65	<0.77	<0.60	<0.54	2.1 B
Arsenic	7.5 or SB	82.2	7.7	6.2	4.9	6.1	6.4	5.4	9	19.6
Barium	300 or SB	76.7	672	156	68.9	306	81.5	107	527	1,100
Beryllium	0.16 or SB	0.45 B	0.44 B	1.6	0.38 B	4.3	0.74 B	0.65	2.6	1.1
Cadmium	1.0 or SB	0.99	4.1	3.7	1.1	2.8	0.87	1.7	4.1	12.2
Calcium	SB	72,700	142,000	153,000	34,000	150,000	101,000	46,200	155,000	102,000
Chromium	10 or SB	88.7	59.6	44.9	21.6	83.2	176	51.4	56.9	169
Cobalt	30 or SB	6.5	13.4	43.1	12.4	44.1	28.4	11.6	36.8	85.9
Copper	25 or SB	54.8	566	306	133	343	191	70.3	313	369
Iron	2000 or SB	13,000	17,600	7,910	14,400	16,400	18,200	17,300	10,200	33,800
Lead	SB	169	1,600	528	519	412	124	273	622	5,880
Magnesium	SB	12,400	82,600	59,700	8,690	33,200	35,600	18,300	42,500	21,300
Manganese	SB	360	1,160	1,430	367	2,600	725	475	3,290	2,730
Mercury	0.1	0.09 B	2.8	0.46	0.23	0.63	0.43	0.22	0.53	0.9
Nickel	13 or SB	14.6	31.3	45.6	21.1	52.7	40.1	24.6	50.1	121
Potassium	SB	1,330	365 B	856	600	2,450	1,010	774	1,470	1,010
Selenium	2.0 or SB	1.2	1.3	1.3	0.94	3.2	1.5	0.72	2.2	2.7
Silver	SB	<0.22	1.6	<0.22	<0.22	<0.26	<0.31	0.38 B	<0.22	1.8
Sodium	SB	336 B	356 B	543 B	106 B	648 B	171 B	106 B	984	500 B
Thallium	SB	<0.67	<0.64	0.90 B	<0.66	1.6	<0.92	<0.72	2.1	<0.68
Vanadium	150 or SB	32.2	91.9	31.2	19.5	50.4	24.1	32.6	68.7	268
Zinc	20 or SB	191	1,460	1,060	177	534	182	236	1,100	2,910
Cyanide	***	<0.56	<0.53	<0.54	<0.44	<0.64	<0.60	<0.52	<0.52	<0.56

Table 5

Niagara Mohawk Power Coporation
Harper Substation
Niagara Falls, New York

PSA Soil Investigation

Surface Soil Analytical Results for TAL Inorganic Constituents (ppm)

NOTES:

1. Samples collected by Blasland, Bouck & Lee, Inc. (BBL) during July 1999.
2. TAL = Target Analyte List.
3. Samples analyzed by Galson Laboratories, Inc. (Galson) of East Syracuse, New York using USEPA SW-846 Method 6010 with the following exceptions:
   - Mercury was analyzed using Method 7470/7471; and
   - Cyanide was analyzed using Method 9010.
4. Concentrations reported in parts per million (ppm) or milligrams per kilogram (mg/kg).
5. Sample designations indicate the following:
   SS = Surface soil sample
6. < = Constituent was not detected at a concentration exceeding the laboratory detection limit.
7. B = Indicates a value which is greater than or equal to the instrument detection limit, but less than the contract required detection limit.
8. SB = Site background.
9. *** = Site-specific form(s) of cyanide shall be considered when establishing soil cleanup objectives.
10. NYSDEC-recommended soil cleanup objectives from the NYSDEC document entitled, "Technical and Administrative Guidance Memorandum (TAGM): Determination of Soil Cleanup Objectives and Cleanup Levels" HWR-94-4046 (TAGM 4046), dated January 24, 1994.
11. Analytical results have not been validated.

Table 6

Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Soil Investigation
Subsurface Soil Analytical Results for Total PCBs (ppm)

Sample ID	Sample Depth	Total PCB Concentration
TP-1	(0.5-1.5')	<0.019
TP-2	(1.5-3.5')	<0.019
TP-3	(1-2')	<0.019
TP-4	(1-2')	<0.020
DUP-1 (TP-4)	(1-2')	<0.020
TP-5	(0.5-1.5')	<0.022
TP-6	(2-3')	<0.019
TP-8	(1.5-2.5')	<0.020
TP-9	(1.5-2.5')	0.084
TP-11	(1-2')	<0.018
DUP-2 (TP-11)	(1-2')	<0.019
TP-12	(2-3')	<0.019
TP-13	(1-2')	<0.019
TP-14	(1-2')	<0.018
TP-15	(1-2')	<0.019
DUP-3 (TP-15)	(1-2')	<0.019
TP-16	(1-2')	0.034
TP-17	(0.5-1.5')	0.053
TP-18	(1.5-2.5')	<0.023
TP-19	(1.5-2.5')	<0.019
TP-20	(2-3')	<0.023
TP-21	(6.5-7')	<0.020
TP-22	(0.5-1.5')	<0.019
TP-23	(1-2')	<0.018
TP-24	(7.5-8')	<0.020
TP-25	(8-8.5')	<0.021
TP-CP1	(1-2')	0.21
TP-CP2	(1-2')	1.2 D

NOTES:

1. Samples collected by Blasland, Bouck & Lee, Inc. (BBL) during July 1999.
2. Samples analyzed by Galson Laboratories, Inc. (Galson) of East Syracuse, New York using USEPA SW-846 Method 8082 as referenced in NYSDEC 1995 ASP.
3. Concentrations reported in parts per million (ppm) or milligrams per kilogram (mg/kg).
4. Sample designations indicate the following:
   TP = Test pit (subsurface soil sample)
   TP-CP = Test pit excavateed in former cooling pond (subsurface soil sample)
   DUP = Duplicate sample
5. < = Each Aroclor was not detected above the presented concentration.
6. D = Constituent concentration based on a diluted sample analysis.
7. The NYSDEC-recommended subsurface soil cleanup objective for PCBs as presented in the NYSDEC document entitled, "Technical and Administrative Guidance Memorandum (TAGM): Determination of Soil Cleanup Objectives and Cleanup Levels" HWR-94-4046 (TAGM 4046), dated January 24, 1994, is 10 ppm.
8. Analytical results have not been validated.

Table 7

Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Soil Investigation
Subsurface Soil Analytical Results for Detected VOCs and SVOCs (ppm)

Constituent	STARS TCLP Alternative Guidance Value	TP-2 (1.5-3.5')	TP-4 (1-2')	DUP-1 <TP-4> (1-2')	TP-9 (1.5-2.5')
VOCs					
Acetone	NA	<0.012	0.25	0.5 D	<0.012
Methylene chloride	NA	0.043 B	0.029 B	0.029 B	0.043 B
2-Butanone	NA	<0.012	0.061	0.12	<0.012
Benzene	0.014	0.001 J	<0.012	<0.013	<0.012
Toluene	0.10	0.006 J	<0.012	0.017	0.002 J
Tetrachloroethene	NA	<0.012	<0.012	<0.013	<0.012
Ethylbenzene	0.10	<0.012	<0.012	<0.013	<0.012
Xylene (Total)	0.10	<0.012	<0.012	<0.013	<0.012
Isopropylbenzene	0.10	<0.012	<0.012	<0.013	<0.012
n-Propylbenzene	0.10	<0.012	<0.012	<0.013	<0.012
1,3,5-Trimethylbenzene	0.10	<0.012	<0.012	<0.013	<0.012
1,2,4-Trimethylbenzene	0.10	<0.012	<0.012	<0.013	<0.012
sec-butylbenzene	0.10	<0.012	<0.012	<0.013	<0.012
p-Isopropyltoluene	0.10	<0.012	<0.012	<0.013	<0.012
Total TICs	NA	ND	ND	ND	ND
SVOCs					
Benzyl alcohol	NA	<0.40	<0.41	<0.41	<0.39
Isophorone	NA	<0.40	<0.41	<0.41	<0.39
Naphthalene	0.2	0.097 J	<0.41	<0.41	<0.39
2-Methylnaphthalene	NA	0.15 J	<0.41	<0.41	<0.39
Acenaphthylene	NA	0.041 J	0.91 J	<0.41	<0.39
Acenaphthene	0.4	<0.40	<0.41	<0.41	<0.39
Dibenzofuran	NA	0.057 J	<0.41	<0.41	<0.39
Fluorene	1	<0.40	<0.41	<0.41	<0.39
N-Nitrosodiphenylamine	NA	<0.40	<0.41	<0.41	<0.39
Phenanthrene	1	0.35 J	0.14 J	0.069 J	0.12 J
Anthracene	1	0.063 J	0.047 J	<0.41	<0.39
Di-n-butylphthalate	NA	<0.40	<0.41	<0.41	<0.39
Fluoranthene	1	0.52	0.34 J	0.18 J	0.13 J
Pyrene	1	0.45	0.23 J	0.11 J	0.11 J
Benzo(a)anthracene	0.00004	0.28 J	0.17 J	0.075 J	0.11 J
Chrysene	0.00004	0.28 J	0.27 J	0.1 J	0.20 J
Bis(2-Ethylhexyl)phthalate	NA	<0.40	<0.41	<0.41	0.052 J
Benzo(b)fluoranthene	0.00004	0.20 J	0.26 J	0.092 J	0.52
Benzo(k)fluoranthene	0.00004	0.23 J	0.25 J	0.065 J	0.18 J
Benzo(a)pyrene	0.00004	0.24 J	0.22 J	0.062 J	0.41
Indeno(1,2,3-cd)pyrene	0.00004	0.12 J	0.15 J	<0.41	0.36 J
Dibenzo(a,h)anthracene	1	<0.40	0.041 J	<0.41	0.15 J
Benzo(g,h,i)perylene	0.00004	0.13 J	0.18 J	<0.41	0.59
Total TICs	NA	51.13 J	4.27 J	2.71 J	1.96 J

- see notes on page 6.

Table 7

Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Soil Investigation
Subsurface Soil Analytical Results for Detected VOCs and SVOCs (ppm)

Constituent	STARS TCLP Alternative Guidance Value	TP-11 (1-2')	DUP-2 <TP-11> (1-2')	TP-12 (2-3')	TP-15 (1-2')
VOCs					
Acetone	NA	<0.011	<0.012	<0.011	<0.012
Methylene chloride	NA	0.027 B	0.028 B	0.023 B	0.07 B
2-Butanone	NA	<0.011	<0.012	<0.011	<0.012
Benzene	0.014	<0.011	<0.012	0.002 J	<0.012
Toluene	0.10	0.004 J	0.005 J	0.002 J	<0.012
Tetrachloroethene	NA	<0.011	<0.012	<0.011	<0.012
Ethylbenzene	0.10	<0.011	<0.012	<0.011	<0.012
Xylene (Total)	0.10	<0.011	<0.012	<0.011	<0.012
Isopropylbenzene	0.10	<0.011	<0.012	<0.011	<0.012
n-Propylbenzene	0.10	<0.011	<0.012	<0.011	<0.012
1,3,5-Trimethylbenzene	0.10	<0.011	<0.012	<0.011	<0.012
1,2,4-Trimethylbenzene	0.10	<0.011	<0.012	<0.011	<0.012
sec-butylbenzene	0.10	<0.011	<0.012	<0.011	<0.012
p-Isopropyltoluene	0.10	<0.011	<0.012	<0.011	<0.012
Total TICs	NA	ND	ND	ND	ND
SVOCs					
Benzyl alcohol	NA	<0.38	<0.37	<0.36	<0.39
Isophorone	NA	<0.38	<0.37	<0.36	<0.39
Naphthalene	0.2	<0.38	<0.37	<0.36	<0.39
2-Methylnaphthalene	NA	<0.38	<0.37	<0.36	<0.39
Acenaphthylene	NA	<0.38	<0.37	<0.36	<0.39
Acenaphthene	0.4	<0.38	<0.37	<0.36	<0.39
Dibenzofuran	NA	<0.38	<0.37	<0.36	<0.39
Fluorene	1	<0.38	<0.37	<0.36	<0.39
N-Nitrosodiphenylamine	NA	<0.38	<0.37	<0.36	<0.39
Phenanthrene	1	0.41	<0.37	0.092 J	<0.39
Anthracene	1	0.11 J	<0.37	<0.36 J	<0.39
Di-n-butylphthalate	NA	<0.38	<0.37	<0.36	<0.39
Fluoranthene	1	0.79	0.070 J	0.14 J	<0.39
Pyrene	1	0.56	0.055 J	0.12 J	<0.39
Benzo(a)anthracene	0.00004	0.37 J	0.043 J	0.072 J	<0.39
Chrysene	0.00004	0.36 J	0.056 J	0.10 J	<0.39
Bis(2-Ethylhexyl)phthalate	NA	<0.38	<0.37	<0.36	<0.39
Benzo(b)fluoranthene	0.00004	0.27 J	0.056 J	0.068 J	<0.39
Benzo(k)fluoranthene	0.00004	0.31 J	0.060 J	0.076 J	<0.39
Benzo(a)pyrene	0.00004	0.32 J	0.052 J	0.061 J	<0.39
Indeno(1,2,3-cd)pyrene	0.00004	0.16 J	<0.37	<0.36	<0.39
Dibenzo(a,h)anthracene	1	<0.38	<0.37	<0.36	<0.39
Benzo(g,h,i)perylene	0.00004	0.16 J	<0.37	<0.36	<0.39
Total TICs	NA	6.05 J	7.83 J	0.4 J	0.36 J

- see notes on page 6.

Table 7

Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Soil Investigation
Subsurface Soil Analytical Results for Detected VOCs and SVOCs (ppm)

Constituent	STARS TCLP Alternative Guidance Value	DUP-3 <TP-15> (1-2')	TP-18 (1.5-2.5')	TP-19 (1.5-2.5')	TP-20 (2-3')
VOCs					
Acetone	NA	<0.012	<0.014	<0.012	<0.015
Methylene chloride	NA	0.019 B	0.018 B	0.015 B	0.009 JB
2-Butanone	NA	<0.012	<0.014	<0.012	<0.015
Benzene	0.014	0.002 J	<0.014	<0.012	<0.015
Toluene	0.10	0.003 J	<0.014	0.001 J	<0.015
Tetrachloroethene	NA	<0.012	<0.014	<0.012	<0.015
Ethylbenzene	0.10	<0.012	<0.014	<0.012	<0.015
Xylene (Total)	0.10	0.002 J	<0.014	<0.012	<0.015
Isopropylbenzene	0.10	<0.012	<0.014	<0.012	<0.015
n-Propylbenzene	0.10	<0.012	<0.014	<0.012	<0.015
1,3,5-Trimethylbenzene	0.10	<0.012	<0.014	<0.012	<0.015
1,2,4-Trimethylbenzene	0.10	<0.012	<0.014	<0.012	<0.015
sec-butylbenzene	0.10	<0.012	<0.014	<0.012	<0.015
p-Isopropyltoluene	0.10	<0.012	<0.014	<0.012	<0.015
Total TICs	NA	ND	ND	ND	ND
SVOCs					
Benzyl alcohol	NA	<0.38	0.054 J	<0.39	0.053 J
Isophorone	NA	<0.38	<0.46	<0.39	<0.45
Naphthalene	0.2	<0.38	<0.46	<0.39	<0.45
2-Methylnaphthalene	NA	<0.38	<0.46	<0.39	<0.45
Acenaphthylene	NA	<0.38	<0.46	<0.39	<0.45
Acenaphthene	0.4	<0.38	<0.46	<0.39	<0.45
Dibenzofuran	NA	<0.38	<0.46	<0.39	<0.45
Fluorene	1	<0.38	<0.46	<0.39	<0.45
N-Nitrosodiphenylamine	NA	<0.38	<0.46	<0.39	<0.45
Phenanthrene	1	0.056 J	<0.46	<0.39	<0.45
Anthracene	1	<0.38	<0.46	<0.39	<0.45
Di-n-butylphthalate	NA	<0.38	0.53 B	0.16 JB	0.48 B
Fluoranthene	1	0.058 J	<0.46	<0.39	<0.45
Pyrene	1	0.045 J	<0.46	<0.39	<0.45
Benzo(a)anthracene	0.00004	<0.38	<0.46	<0.39	<0.45
Chrysene	0.00004	<0.38	<0.46	<0.39	<0.45
Bis(2-Ethylhexyl)phthalate	NA	<0.38	0.32 JB	0.12 JB	0.24 JB
Benzo(b)fluoranthene	0.00004	<0.38	<0.46	<0.39	<0.45
Benzo(k)fluoranthene	0.00004	<0.38	<0.46	<0.39	<0.45
Benzo(a)pyrene	0.00004	<0.38	<0.46	<0.39	<0.45
Indeno(1,2,3-cd)pyrene	0.00004	<0.38	<0.46	<0.39	<0.45
Dibenzo(a,h)anthracene	1	<0.38	<0.46	<0.39	<0.45
Benzo(g,h,i)perylene	0.00004	<0.38	<0.46	<0.39	<0.45
Total TICs	NA	ND	3.43 J	2.24 J	3.53 J

- see notes on page 6.

Table 7

Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Soil Investigation
Subsurface Soil Analytical Results for Detected VOCs and SVOCs (ppm)

Constituent	STARS TCLP Alternative Guidance Value	TP-21 (6.5-7')	TP-23 (1-2')	TP-24 * (7.5-8')	TP-25 * (8-8.5')
VOCs					
Acetone	NA	<0.061	<0.011	<0.012	<0.013
Methylene chloride	NA	0.099 B	0.021 B	<0.006	<0.006
2-Butanone	NA	<0.061	<0.011	<0.012	<0.013
Benzene	0.014	<0.061	<0.011	<0.003	0.0007 J
Toluene	0.10	<0.061	<0.011	0.0008	0.001 J
Tetrachloroethene	NA	<0.061	<0.011	<0.003	<0.003
Ethylbenzene	0.10	0.11	<0.011	<0.003	<0.003
Xylene (Total)	0.10	0.17	<0.011	<0.003	0.0008 J
Isopropylbenzene	0.10	0.14	<0.011	<0.003	<0.003
n-Propylbenzene	0.10	0.25	<0.011	<0.003	<0.003
1,3,5-Trimethylbenzene	0.10	0.30	<0.011	<0.003	<0.003
1,2,4-Trimethylbenzene	0.10	0.63	<0.011	<0.003	<0.003
sec-butylbenzene	0.10	0.22	<0.011	<0.003	<0.003
p-Isopropyltoluene	0.10	0.17	<0.011	<0.003	<0.003
Total TICs	NA	19.1 J	ND	0.006 J	0.007 J
SVOCs					
Benzyl alcohol	NA	<0.40	<0.36	0.040 J	0.045 J
Isophorone	NA	0.31 J	<0.36	<0.40	<0.42
Naphthalene	0.2	<0.40	<0.36	<0.40	0.088 J
2-Methylnaphthalene	NA	<0.40	<0.36	<0.40	<0.42
Acenaphthylene	NA	0.077 J	<0.36	<0.40	<0.42
Acenaphthene	0.4	0.062 J	<0.36	<0.40	0.12 J
Dibenzofuran	NA	0.18 J	<0.36	<0.40	0.11 J
Fluorene	1	0.44	<0.36	<0.40	0.17 J
N-Nitrosodiphenylamine	NA	0.072 J	<0.36	<0.40	<0.42
Phenanthrene	1	2.5	0.047 J	0.065 J	1.7
Anthracene	1	0.52	<0.36	<0.40	0.29 J
Di-n-butylphthalate	NA	<0.40	<0.36	0.99 B	0.59 B
Fluoranthene	1	2.1	0.11 J	0.19 J	1.9
Pyrene	1	1.4	0.099 J	0.13 J	1.2
Benzo(a)anthracene	0.00004	0.86	0.063 J	0.14 J	0.65
Chrysene	0.00004	0.81	0.084 J	0.18 J	0.65
Bis(2-Ethylhexyl)phthalate	NA	<0.40	0.038 J	0.14 J	0.20 J
Benzo(b)fluoranthene	0.00004	0.44	0.076 J	0.16 J	0.45
Benzo(k)fluoranthene	0.00004	0.55	0.075 J	0.13 J	0.59
Benzo(a)pyrene	0.00004	0.51	0.074 J	0.14 J	0.54
Indeno(1,2,3-cd)pyrene	0.00004	0.24 J	<0.36	0.062 J	0.31 J
Dibenzo(a,h)anthracene	1	0.091 J	<0.36	<0.40	0.11 J
Benzo(g,h,i)perylene	0.00004	0.21 J	<0.36	<0.40	0.28 J
Total TICs	NA	32.76 J	0.36 J	3.69 J	3.8 J

- see notes on page 6.

Table 7

Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Soil Investigation
Subsurface Soil Analytical Results for Detected VOCs and SVOCs (ppm)

Constituent	STARS TCLP Alternative Guidance Value	TP-CP1 (3.5-5')	TP-CP2 (3-5')
VOCs			
Acetone	NA	<0.012	<0.012
Methylene chloride	NA	0.017 B	0.020 B
2-Butanone	NA	<0.012	<0.012
Benzene	0.014	<0.012	<0.012
Toluene	0.10	<0.012	<0.012
Tetrachloroethene	NA	0.005 J	<0.012
Ethylbenzene	0.10	<0.012	<0.012
Xylene (Total)	0.10	<0.012	<0.012
Isopropylbenzene	0.10	<0.012	<0.012
n-Propylbenzene	0.10	<0.012	<0.012
1,3,5-Trimethylbenzene	0.10	<0.012	<0.012
1,2,4-Trimethylbenzene	0.10	<0.012	<0.012
sec-butylbenzene	0.10	<0.012	<0.012
p-Isopropyltoluene	0.10	<0.012	<0.012
Total TICs	NA	ND	ND
SVOCs			
Benzyl alcohol	NA	0.056 J	<0.38
Isophorone	NA	<0.39	<0.38
Naphthalene	0.2	0.051 J	0.076 J
2-Methylnaphthalene	NA	0.050 J	0.084 J
Acenaphthylene	NA	<0.39	<0.38
Acenaphthene	0.4	<0.39	0.071 J
Dibenzofuran	NA	<0.39	0.042 J
Fluorene	1	<0.39	0.038 J
N-Nitrosodiphenylamine	NA	<0.39	<0.38
Phenanthrene	1	0.52	0.55
Anthracene	1	0.099 J	0.12 J
Di-n-butylphthalate	NA	0.22 JB	0.76 B
Fluoranthene	1	0.71	0.82
Pyrene	1	0.67	1.4
Benzo(a)anthracene	0.00004	0.43	0.74
Chrysene	0.00004	0.57	0.89
Bis(2-Ethylhexyl)phthalate	NA	0.16 JB	0.33 JB
Benzo(b)fluoranthene	0.00004	0.50	0.69
Benzo(k)fluoranthene	0.00004	0.37 J	0.77
Benzo(a)pyrene	0.00004	0.41	0.91
Indeno(1,2,3-cd)pyrene	0.00004	0.21 J	<0.38
Dibenzo(a,h)anthracene	1	0.04 J	<0.38
Benzo(g,h,i)perylene	0.00004	0.21 J	<0.38
Total TICs	NA	5.65 J	6.79 J

- see notes on page 6.

Table 7

Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Soil Investigation
Subsurface Soil Analytical Results for Detected VOCs and SVOCs (ppm)

NOTES:

1. Samples collected by Blasland, Bouck & Lee, Inc. (BBL) during July 1999.
2. Samples analyzed by Galson Laboratories, Inc. (Galson) of East Syracuse, New York for VOCs using USEPA SW-846 Method 8260 and for SVOCs using USEPA SW-846 Method 8270 except where noted by an asterisk (*). Samples identifications marked with an asterisk were analyzed by O'Brien & Gere Laboratories, Inc. of Syracuse, New York using the above-refernced methods.
3. Concentrations reported in parts per million (ppm) or milligrams per kilogram (mg/kg).
4. Sample designations indicate the following:
   TP = Test pit (subsurface soil sample)
   TP-CP =Test pit excavated in a former cooling pond (subsurface soil sample)
   DUP = Duplicate sample
5. VOCs analytical results samples TP-2, TP-9, TP-12, DUP-3, TP-18, TP-19, TP-CP1, and TP-CP2 are from analysis of re-extracted samples. SVOCs analytical results for sample TP-9 are from re-analysis of initial sample extraction.
6. < = Constituent was not detected at a concentration exceeding the laboratory detection limit.
7. B = Compound was identified in the sample as well as its associated blank.
8. J = Indicates an estimated value.
9. STARS TCLP Alternative Guidance Values from the NYSDEC document entitled, "Spill Technology and Remediation Series (STARS) Memo #1: Petroleum-Contaminated Soil Guidance Policy" (August 1992).
10. Shaded values indicate constituent was detected at concentration exceeding the STARS TCLP alternative guidance value.
11. TIC = Tentatively identified compound.
12. ND = Indicated no TICs detected.
13. Analytical results have not been validated.

Table 8

Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Soil Investigation
Subsurface Soil Analytical Results for TAL Inorganic Constituents (ppm)

Constituent	NYSDEC-Recommended Soil Cleanup Objectives	TP-2 (1.5-3.5')	TP-4 (1-2')	DUP-1 <TP-4> (1-2')	TP-9 (1.5-2.5')	TP-11 (1-2')	DUP-2 <TP-11> (1-2')	TP-12 (2-3')	TP-15 (1-2')	DUP-3 <TP-15> (1-2')	TP-18 (1.5-2.5')
Aluminum	SB	2,590	9,580	8,730	2,940	8,150	5,800	4,820	6,560	6,130	9,950
Antimony	SB	<0.61	<0.62	<0.61	1.1 B	<0.56	<0.57	<0.57	<0.60	<0.59	<0.70
Arsenic	7.5 or SB	62.3	4.0	2.3	7.2	7.8	15.7	41.7	2.8	4.5	6.5
Barium	300 or SB	48.0	62.7	61.4	65	83.0	56.8	419	46.1	49.4	64.5
Beryllium	0.16 or SB	0.35 B	0.7	0.44 B	0.37 B	0.77	0.31 B	0.30 B	0.31 B	0.35 B	0.81
Cadmium	1.0 or SB	0.43 B	0.40 B	0.47 B	1.0	1.0	0.84	1.2	0.44 B	1.1	0.43 B
Calcium	SB	5,110	8,600	11,900	28,800	68,900	31,100	66,900	40,400	39,800	18,300
Chromium	10 or SB	6.4	24.8	24.4	14.9	21.2	31.1	126	12.3	16.9	25.6
Cobalt	30 or SB	4.8 B	8.0	7.4	4.5 B	4.6 B	6.0	7.5	6.0	7.5	10.1
Copper	25 or SB	21.6	19.8	16	89.2	49.6	26.0	34.6	32.7	85.2	23.3
Iron	2000 or SB	18,900	20,100	16,300	5,930	9,440	14,200	10,200	13,200	14,700	20,800
Lead	SB	52.7	23.7	35.3	129	73.0	57.3	72.7	61.8	160	25.3
Magnesium	SB	488 B	3,520	4,960	9,820	21,500	9,960	30,600	9,140	9,180	5,930
Manganese	SB	38.3	222	219	225	433	307	985	272	302	396
Mercury	0.1	0.08 B	0.08 B	0.07 B	0.14	0.09 B	0.06 B	0.21	0.08 B	0.06 B	0.14 B
Nickel	13 or SB	8.5	17.2	16.2	13.9	12.1	14.2	16.3	14.8	15.9	21.6
Potassium	SB	417 B	673	617	395 B	578	6.49	536 B	517 B	513 B	970
Selenium	2.0 or SB	2.0	0.73	0.45 B	0.61	<0.34	<0.34	0.65	<0.36	0.6	1.4
Silver	SB	<0.24	<0.25	<0.24	<0.23	<0.22	<0.23	<0.23	<0.24	<0.23	<0.28
Sodium	SB	85.4 B	<66.9	<65.6	192 B	241 B	211 B	226 B	91.7 B	130 B	<75.6
Thallium	SB	<0.73	<0.75	<0.73	<0.70	<0.67	<0.69	<0.68	<0.72	<0.70	<0.85
Vanadium	150 or SB	10.9	18.8	16.2	16.4	11.7	15.3	12.7	13.0	15.6	23.4
Zinc	20 or SB	15.4	80.2	79.4	254	243	166	231	111	256	76.9
Cyanide	***	<0.60	<0.62	<0.63	<0.59	<0.47	<0.57	<0.50	<0.56	<0.52	<0.70

- see notes on page 3

Table 8

Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Soil Investigation
Subsurface Soil Analytical Results for TAL Inorganic Constituents (ppm)

Constituent	NYSDEC-Recommended Soil Cleanup Objectives	TP-19 (1.5-2.5')	TP-20 (2-3')	TP-21 (6.5-7')	TP-23 (1-2')	TP-24 (7.5-8')	TP-25 (8-8.5')	TP-CP1 (3.5-5')	TP-CP2 (3-5')
Aluminum	SB	7,400	8,050	7,860	5,180	12,700	7,330	8,190	7,840
Antimony	SB	<0.58	<0.73	<0.61	<0.56	<0.63	<0.64	0.96 B	<0.60
Arsenic	7.5 or SB	3.9	4.7	7.8	6.4	5.1	4.6	10.2	5.2
Barium	300 or SB	39.3	71.5	49.6	61.7	94.9	40.3	93.9	111
Beryllium	0.16 or SB	0.63	0.68 B	0.59 B	0.35 B	0.69	0.44 B	0.66	0.64
Cadmium	1.0 or SB	0.28 B	1.3	0.28 B	0.79	0.32 B	0.21 B	1.2	0.93
Calcium	SB	26,100	52,300	71,700	47,600	57,900	22,900	56,400	70,800
Chromium	10 or SB	15.9	73.3	28.1	84.1	49.9	15.6	21.6	32.0
Cobalt	30 or SB	8.1	10.9	8.6	5.3 B	10.5	7.6	7.6	8.2
Copper	25 or SB	17.6	35.9	19.1	30.7	22.5	22.6	98.9	45.9
Iron	2000 or SB	16,400	17,500	17,200	13,000	25,800	18,500	19,300	17,000
Lead	SB	33.6	71.1	11.6	72.5	10.8	15.7	311	85.8
Magnesium	SB	6,830	18,100	11,400	19,400	10,200	6,800	18,100	29,300
Manganese	SB	331	373	459	430	629	332	682	563
Mercury	0.1	<0.06	0.11 B	<0.06	0.09 B	<0.06	<0.06	0.41	0.55
Nickel	13 or SB	16.9	20.0	18.1	13.4	24.2	18.2	20.9	20.1
Potassium	SB	711	784	906	560 B	2,040	858	1,310	1,380
Selenium	2.0 or SB	0.77	0.74	0.54 B	<0.34	0.38 B	<0.39	0.93	0.58 B
Silver	SB	<0.23	<0.29	<0.24	<0.23	<0.25	<0.26	<0.24	<0.24
Sodium	SB	76.6 B	98.7 B	124 B	121 B	191 B	105 B	157 B	183 B
Thallium	SB	<0.70	<0.88	<0.73	<0.68	<0.76	<0.77	<0.73	<0.72
Vanadium	150 or SB	16.0	20.8	17.2	11.6	26.2	18.3	21.4	23.1
Zinc	20 or SB	60.6	130	49.6	177	60.1	66.5	280	671
Cyanide	***	<0.56	<0.62	<0.60	<0.50	<0.61	<0.51	<0.51	<0.59

- see notes on page 3

Table 8

Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Soil Investigation
Subsurface Soil Analytical Results for TAL Inorganic Constituents (ppm)

NOTES:

1. Samples collected by Blasland, Bouck & Lee, Inc. (BBL) during July 1999.
2. TAL = Target Analyte List.
3. Samples analyzed by Galson Laboratories, Inc. (Galson) of East Syracuse, New York using USEPA SW-846 Method 6010 with the following exceptions:
   - Mercury was analyzed using Method 7470/7471; and
   - Cyanide was analyzed using Method 9010.
4. Concentrations reported in parts per million (ppm) or milligrams per kilogram (mg/kg).
5. Sample designations indicate the following:
   TP = Subsurface soil sample collected from a test pit
   TP-CP = Test pit excavated in a former cooling pond (subsurface soil sample)
   DUP = Duplicate sample
6. < = Constituent was not detected at a concentration exceeding the laboratory detection limit.
7. B = Indicates a value which is greater than or equal to the instrument detection limit, but less than the contract required detection limit.
8. SB = Site background.
9. *** = Site-specific form(s) of cyanide shall be considered when establishing soil cleanup objective.
10. NYSDEC-recommended soil cleanup objectives from the NYSDEC document entitled, "Technical and Administrative Guidance Memorandum (TAGM): Determination of Soil Cleanup Objectives and Cleanup Levels" HWR-94-4046 (TAGM 4046), dated January 24, 1994.
11. Analytical results have not been validated.

Table 9
Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Subsurface Structure Investigation
Subsurface Structure Inspection Summary

Manhole/Catch Basin Identification	Sample Collected	Construction Material and Structural Condition of the Manhole/Catch Basins	Approximate Water Depth (Inches)	Description of Water	Approximate Depth of Debris (Inches)	Description of Debris
Storm/Sanitary Sewer Manholes and Catch Basins						
S-1	No	Brick and mortar sidewalls. Construction of bottom undetermined. Sidewalls appear to be in good condition based on visual inspection and probing.	12	No Visible Sheen Apparent on Water Surface.	6	Silt/Gravel
S-2	Debris Sample S-2	Brick and mortar sidewalls. Construction of bottom undetermined. Sidewalls appear to be in good condition based on visual inspection and probing.	6	No Visible Sheen Apparent on Water Surface.	<1	Silt/Sand
S-3	Debris Sample S-3	Brick and mortar sidewalls. Construction of bottom undetermined. Sidewalls appear to be in good condition based on visual inspection and probing.	0	Not Applicable.	30	Silt/Sand/Gravel
S-4	No	Brick and mortar sidewalls. Concrete bottom. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	0	Not Applicable	10	Silt/Sand
S-5	No	Brick and mortar sidewalls. Construction of bottom undetermined. Sidewalls appear to be in good condition based on visual inspection and probing.	<1	No Visible Oil Sheen Apparent on Water Surface.	4	Silt/Sand/Rock/Brick

Table 9
Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Subsurface Structure Investigation
Subsurface Structure Inspection Summary

Manhole/Catch Basin Identification	Sample Collected	Construction Material and Structural Condition of the Manhole/Catch Basins	Approximate Water Depth (Inches)	Description of Water	Approximate Depth of Debris (Inches)	Description of Debris
S-6	No	Brick and mortar sidewalls. Construction of bottom undetermined. Sidewalls appear to be in good condition based on visual inspection and probing.	0	Not Applicable	4-6	Silt/Sand/Brick/Metal/ Clay Tile
S-7	No	Brick and mortar sidewalls. Construction of bottom appears to be concrete. Sidewalls and bottom appear to be in fair to good condition based on visual inspection and probing.	0	Not Applicable	<1	Silt/Sand/Rust
S-8	No	Brick and mortar sidewalls. Construction of bottom appears to be concrete. Sidewalls and bottom appear to be in fair to good condition based on visual inspection and probing.	8	No Visible Oil Sheen Apparent on Water Surface.	<1	Gravel/Sand
S-9	No	Brick and mortar sidewalls. Construction of bottom appears to be concrete. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	6	No Visible Oil Sheen Apparent on Water Surface.	3-4	Silt/Sand
S-10	No	Brick and mortar sidewalls. Construction of bottom appears to be concrete. Sidewalls and bottom appear to be in fair to good condition based on visual inspection and probing.	0	Not Applicable.	9	Silt/Sand

Table 9
Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Subsurface Structure Investigation
Subsurface Structure Inspection Summary

Manhole/Catch Basin Identification	Sample Collected	Construction Material and Structural Condition of the Manhole/Catch Basins	Approximate Water Depth (Inches)	Description of Water	Approximate Depth of Debris (Inches)	Description of Debris
S-11	No	Brick and concrete sidewalls. Construction of bottom appears to be concrete. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	1	No Visible Oil Sheen Apparent on Water Surface.	2	Silt/Sand
S-13	No	Brick and mortar sidewalls. Construction of bottom appears to be concrete. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	0	Not Applicable	6	Silt/Sand
Valve Boxes						
CP-1	No	Concrete sidewalls. Concrete bottom. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	0	Not Applicable.	<1	Silt/Sand
CP-3	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	0	Not Applicable.	<1	Silt/Sand
W-1	No	Concrete sidewalls and bottom. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	78	No Visible Sheen Apparent on Water Surface.	<1	Silt/Sand

Table 9
Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Subsurface Structure Investigation
Subsurface Structure Inspection Summary

Manhole/Catch Basin Identification	Sample Collected	Construction Material and Structural Condition of the Manhole/Catch Basins	Approximate Water Depth (Inches)	Description of Water	Approximate Depth of Debris (Inches)	Description of Debris
Subway Access Points						
EB-1 to EB-5 Subway No. 1	No	Concrete sidewalls. Concrete bottom. Sidewalls and bottom appear to be in good condition based on visual inspection.	1	No Visible Sheen Apparent on Water Surface.	Trace to 1	Sand/Silt/Brick
M-1 to M-5 Subway No. 2	Collected debris sample below M-5 based on oil on water surface in structure.	Concrete sidewalls. Concrete bottom. Sidewalls and bottom appear to be in fair to good condition based on visual inspection and probing.	1	Film of Oil Observed Below Cover	Trace to 1	Silt/Sand/Rusted Metal (oil-soaked gray-black silt and sand material below M-5)
M-6 to M-30 Subway No. 3	Collected debris sample below M-21 based on oil droplets on water surface.	Concrete sidewalls. Concrete bottom. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	0 to 6	Oil droplets observed below cover of M-19 and M-21. Slight sheen below M-20, M-25, and M-27.	Trace to 1	Silt/Sand/Rusted Metal
M-31 to M-46 Subway No. 4	No	Concrete sidewalls. Concrete bottom. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	0	Not Applicable	Trace to 1	Black -Stained Silt/Sand Below Cover of M-43 and M-46 and Silt/Sand Below Remaining Covers
M-48 to M-63 Subway No. 5	No	Concrete sidewalls. Concrete bottom. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	0 to Trace	NoVisible Oil Sheen Apparent on Water Surface.	0 to <1	Sand/Silt
M-65 to M-72 Subway No. 6	No	Concrete sidewalls. Concrete bottom. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	10 to 15	No Visible Oil Sheen Apparent on Water Surface.	<1	Silt/Sand

Table 9
Niagara Mohawk Power Corporation
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PSA Subsurface Structure Investigation
Subsurface Structure Inspection Summary

Manhole/Catch Basin Identification	Sample Collected	Construction Material and Structural Condition of the Manhole/Catch Basins	Approximate Water Depth (Inches)	Description of Water	Approximate Depth of Debris (Inches)	Description of Debris
M-73 to M-79 Subway No. 7	Collected debris sample below M-75.	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	0 to <1	No Visible Oil Sheen Apparent on Water Surface.	0 to <1	Silt/Sand
Electrical Manholes in Vicinity of Subways						
M-47	No	Brick, concrete, and steel sidewalls. Construction of bottom undetermined.	24	NoVisible Oil Sheen	<1	Silt/Sand
M-64	No	Concrete sides and bottom. Good condition based on visual inspection.	0	NA	< 1	Sand/Silt
M-80	No	Concrete sidewalls. Concrete bottom. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	<1	No Sheen Observed.	1	Silt/Sand/Gravel
M-81	No	Concrete sidewalls. Concrete bottom. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	8	No Visible Sheen Apparent on Water Surface.	<1	Silt/Sand/Gravel
Electrical Manholes North of Echota Building						
H-2	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	19	No Visible Sheen Apparent on Water Surface.	1	Silt/Sand/Gravel

Table 9
Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Subsurface Structure Investigation
Subsurface Structure Inspection Summary

Manhole/Catch Basin Identification	Sample Collected	Construction Material and Structural Condition of the Manhole/Catch Basins	Approximate Water Depth (Inches)	Description of Water	Approximate Depth of Debris (Inches)	Description of Debris
H-4	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	<1	Slight Sheen Apparent on Water Surface.	1-2	Silt/Sand
H-6	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	1	No Visible Sheen Apparent on Water Surface.	2	Sand/Gravel
H-7	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	1	No Visible Sheen Apparent on Water Surface	1	Sand
H-8	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	0	Not Applicable	1	Sediment/Sand
H-10	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	0	Not Applicable	1	Silt/Sand/Gravel

Table 9
Niagara Mohawk Power Corporation
Harper Substation
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PSA Subsurface Structure Investigation
Subsurface Structure Inspection Summary

Manhole/Catch Basin Identification	Sample Collected	Construction Material and Structural Condition of the Manhole/Catch Basins	Approximate Water Depth (Inches)	Description of Water	Approximate Depth of Debris (Inches)	Description of Debris
H-11	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	60	No Visible Sheen Apparent on Water Surface.	2	Sand
H-12	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	<1	Slight Sheen Apparent on Water Surface.	<1	Silt/Sand
H-13	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	<1	Slight Sheen Apparent on Water Surface.	1	Silt/Sand
H-14	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	1	No Visible Sheen Apparent on Water Surface.	1	Silt/Sand
H-15	Collected Oil Sample	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	60	Thin Film of Oil on Water Surface	Trace	Not Applicable

Table 9
Niagara Mohawk Power Corporation
Harper Substation
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PSA Subsurface Structure Investigation
Subsurface Structure Inspection Summary

Manhole/Catch Basin Identification	Sample Collected	Construction Material and Structural Condition of the Manhole/Catch Basins	Approximate Water Depth (Inches)	Description of Water	Approximate Depth of Debris (Inches)	Description of Debris
E-1	No	Brick and mortar sidewalls. Soil bottom. Brick debris observed on bottom of structure.	0	Not Applicable.	2	Brick/Soil
Electrical Manholes Primarily around Perimeter of Site						
1501	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	29	No Visible Sheen Apparent on Water Surface.	<1	Silt/Sand
1601	No	Concrete sidewalls. Concrete bottom. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	24	No Visible Sheen Apparent on Water Surface.	<1	Silt/Sand
1701	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	23	Slight Sheen Apparent on Water Surface after Probing Debris.	2	Silt/Sand
1702	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	28	Slight Sheen Apparent on Water Surface.	2	Silt/Sand

Table 9
Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Subsurface Structure Investigation
Subsurface Structure Inspection Summary

Manhole/Catch Basin Identification	Sample Collected	Construction Material and Structural Condition of the Manhole/Catch Basins	Approximate Water Depth (Inches)	Description of Water	Approximate Depth of Debris (Inches)	Description of Debris
1803	No	Brick and mortar sidewalls. Sidewalls appeared to be in good condition, bottom construction unknown.	12	No Apparent Sheen Visible on Water Surface.	1	Silt/Sand
1805	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	24	Slight Sheet Apparent on Water Surface.	Trace	Silt/Sand
1900	No	Construction material for sidewalls and bottom were not recorded by the on-site engineer.	30	Slight Sheen Apparent on Water Surface.	<1	Silt/Sand
1902	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	0	Not Applicable.	1-2	Silt/Rusted Metal
1903	No	Concrete sidewalls. Solid bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	16	Slight Sheet Apparent on Water Surface.	1-3	Silt/Sand

Table 9
Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Subsurface Structure Investigation
Subsurface Structure Inspection Summary

Manhole/Catch Basin Identification	Sample Collected	Construction Material and Structural Condition of the Manhole/Catch Basins	Approximate Water Depth (Inches)	Description of Water	Approximate Depth of Debris (Inches)	Description of Debris
2501	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to	22	No Apparent Sheen Visible on Water Surface.	<1	Silt/Sand
2503	No	Could Not Access	NA	NA	NA	NA
2504	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	8	Slight Sheen Apparent on Water Surface.	1	Silt/Sand
2505	No	Unknown Construction.	0	Not Applicable.	<1	Silt/Sand
2506	No	Concrete sidewalls. Unknown Construction for bottom. Sidewalls appear to be in good condition based on visual inspection.	<1	No Apparent Sheen Visible on Water Surface.	<1	Silt/Sand
2601	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	30	No Apparent Sheen Visible on Water Surface.	<1	Sand/Silt

Table 9
Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Subsurface Structure Investigation
Subsurface Structure Inspection Summary

Manhole/Catch Basin Identification	Sample Collected	Construction Material and Structural Condition of the Manhole/Catch Basins	Approximate Water Depth (Inches)	Description of Water	Approximate Depth of Debris (Inches)	Description of Debris
2602	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection.	0	Not Applicable.	<1	Sand/Silt
2604	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection.	0	Not Applicable.	<1	Silt/Sand
2702	No	Concrete sidewalls. Concrete based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	30	No Apparent Sheen Visible on Water Surface.	<1	Silt/Sand
2703	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing.	28	No Apparent Sheen Visible on Water Surface.	<1	Silt/Sand
2704	No	Concrete sidewalls. Concrete bottom based on probing. Sidewalls and bottom appear to be in good condition based on visual inspection and probing	16	No Apparent Sheen Visible on Water Surface.	1	Silt/Sand

Table 10

Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Subsurface Structure Investigation
Debris Analytical Results for Total PCBs (ppm)

Sample ID	Total PCB Concentration
M-5	1.6 D
M-21	44 D
M-75	0.14 D
S-2	3.7 D
S-3	2.2 D
DUP-4 (S-3)	2.3 D

NOTES:

1. Samples collected by Blasland, Bouck & Lee, Inc. (BBL) during July 1999.
2. Samples analyzed by Galson Laboratories, Inc. (Galson) of East Syracuse, New York using USEPA SW-846 Method 8082 as referenced in New York State Department of Environmental (NYSDEC) 1995 Analytical Services Protocol (ASP).
3. Concentrations reported in parts per million (ppm) or milligrams per kilogram (mg/kg).
4. Sample designations indicate the following:
   M = Debris sample collected from an electrical manhole
   S = Debris sample collected from a storm/sanitary sewer manhole
   DUP = Duplicate sample
5. < = Each Aroclor was not detected above the presented concentration.
6. D = Constituent concentration based on a diluted sample analysis.
7. Analytical results have not been validated.

Table 11

Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Subsurface Structure Investigation
Debris Analytical Results for Detected VOCs and SVOCs (ppm)

Constituent	M-5	M-21	M-75	S-2	S-3	DUP-4 (S-3)
VOCs						
Acetone	0.2	0.29	<0.015	0.11	<0.013	0.015
Carbon disulfide	0.002 J	0.003 J	<0.004	0.005 J	0.001 J	0.003 J
1,1-Dichloroethane	<0.005	0.002 J	<0.004	<0.020	<0.003	<0.003
2-Butanone	0.036	<0.022	<0.015	<0.078	<0.013	<0.013
1,1,1-Trichloroethane	<0.005	0.004 J	<0.004	<0.020	<0.003	<0.003
Benzene	<0.005	0.001 J	<0.004	<0.020	<0.003	0.0007 J
Trichloroethene	<0.005	0.007	<0.004	<0.020	<0.003	<0.003
Toluene	<0.005	0.001 J	<0.004	0.051	<0.003	0.001 J
Tetrachloroethene	<0.005	0.012	<0.004	<0.020	<0.003	<0.003
Chlorobenzene	<0.005	<0.006	<0.004	1.2	<0.003	<0.003
Xylene (total)	<0.005	<0.006	<0.004	0.46	<0.003	0.0009 J
Isopropylbenzene	<0.005	<0.006	<0.004	0.41	<0.003	<0.003
n-Propylbenzene	<0.005	<0.006	<0.004	0.8	<0.003	<0.003
1,3,5-Trimethylbenzene	<0.005	<0.006	<0.004	1.2	<0.003	<0.003
n-Butylbenzene	<0.005	<0.006	<0.004	2.5	<0.003	<0.003
1,2,4-Trimethylbenzene	0.012	<0.006	<0.004	20.0 D	<0.003	<0.003
sec-butylbenzene	0.002 J	<0.006	<0.004	2.4	<0.003	<0.003
1,3-Dichlorobenzene	0.005 J	<0.006	<0.004	23.0 D	<0.003	<0.003
1,4-Dichlorobenzene	0.013	<0.006	<0.004	50.0 D	<0.003	<0.003
p-Isopropyltoluene	<0.005	<0.006	<0.004	2.2	<0.003	<0.003
1,2-Dichlorobenzene	0.004 J	<0.006	<0.004	9.7 D	<0.003	<0.003
Total TICs	0.647 J	0.917 J	0.207 J	1,132 J	0.136 J	0.349 J
SVOCs						
1,4-Dichlorobenzene	0.43 J	0.38 J	<5.1	140 D	0.086 J	0.31 J
1,2-Dichlorobenzene	<1.3	<3.6	<5.1	36	<0.43	<0.4
Benzyl alcohol	<1.3	<3.6	<5.1	<4.6	<0.43	0.049 J
N-Nitroso-di-n-propylamine	<1.3	<3.6	<5.1	77 D	<0.43	<0.40
1,2,4-Trichlorobenzene	0.71 J	0.67 J	<5.1	70 D	0.098 J	0.32 J
Naphthalene	0.72 J	0.45 J	<5.1	4.2 J	0.074 J	0.27 J
Hexachlorobutadiene	<1.3	<3.6	<5.1	0.94 J	<0.43	<0.40
2-Methynaphthalene	0.34 J	<3.6	<5.1	3.3 J	0.074 J	0.23 J
2,4,5-Trichlorophenol	<1.3	<3.6	<5.1	5.7 JD	<0.43	<040
Acenaphthylene	0.74 J	2.3 J	<5.1	0.9 J	0.090 J	0.26 J
Acenaphthene	0.86 J	0.49 J	<5.1	1.8 J	<0.43	0.10 J
Dibenzofuran	0.83 J	<3.6	<5.1	2.8 J	0.070 J	0.19 J
Fluorene	1.1 J	<3.6	<5.1	1.6 J	0.11 J	0.28 J
Hexachlorobenzene	<1.3	<3.6	<5.1	9.3	<0.43	<0.40
Phenanthrene	12.0	22.0	8.7	13.0	0.7	2.2
Anthracene	2.6	3.2 J	2.3 J	2.9 J	0.13 J	0.43
Di-n-butylphthalate	<1.3	<3.6	<5.1	<4.6	0.24 JB	0.25 JB
Fluoranthene	14	48	20	4.7	1.1	4.2
SVOCs (Cont'd)						
Pyrene	20	45 JD	14	16	1.6	5.0 D
Benzo(a)anthracene	5.4	36	9.9	3.7 J	0.5	1.8

Table 11

Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

PSA Subsurface Structure Investigation
Debris Analytical Results for Detected VOCs and SVOCs (ppm)

Constituent	M-5	M-21	M-75	S-2	S-3	DUP-4 (S-3)
Chrysene	6.3	42	11	5.8	0.82	2.8
bis(2-Ethylhexyl)phthalate	<1.3	15	2.4 J	7.6	0.19 J	0.33 J
Di-n-octylphthalate	<1.3	<3.6	0.51 J	<4.6	<0.43	<0.40
Benzo(b)fluoranthene	5.5	37	9.8	<4.6	0.69	3
Benzo(k)fluoranthene	5.6	25	12	<4.6	0.65	2
Benzo(a)pyrene	5.4	25	10	<4.6	0.48	1.9
Indeno(1,2,3-cd)pyrene	2.6	13	4.0 J	<4.6	0.25 J	1.2
Dibenzo(a,h)anthracene	<1.3	2.7 J	0.94 J	<4.6	<0.43	<0.40
Benzo(g,h,i)perylene	2.3	13	3.6 J	<4.6	0.17 J	1
Total TICs	37.86 J	64.6 J	11.5 JD	955 J	3.95 J	5.68 J

NOTES:

1. Samples collected by Blasland, Bouck & Lee, Inc. (BBL) during July 1999.
   Samples analyzed for VOCs by O'Brien & Gere Laboratories, Inc. (OBG) of Syracuse, New York using
2. Concentrations reported in parts per million (ppm) or milligrams per kilogram (mg/kg).
3. Sample designations indicate the following:
   M = Debris sample collected from an electrical manhole
   S = Debris sample collected from a storm/sanitary sewer manhole
   DUP = Duplicate sample
4. Laboratory analysis results presented for VOCs in debris samples M-75 and S-3 are from re-extraction
5. < = Constituent was not detected at a concentration exceeding the laboratory detection limit.
6. B = Compound was identified in the sample as well as its associated blank.
7. D = Constituent concentration based on a diluted sample analysis.
8. J = Indicates an estimated value.
9. TIC = Tentatively identified compound.
10. Analytical results have not been validated.

Table 12

Niagara Mohawk Power Corporation
Harper Substation
Niagara Falls, New York

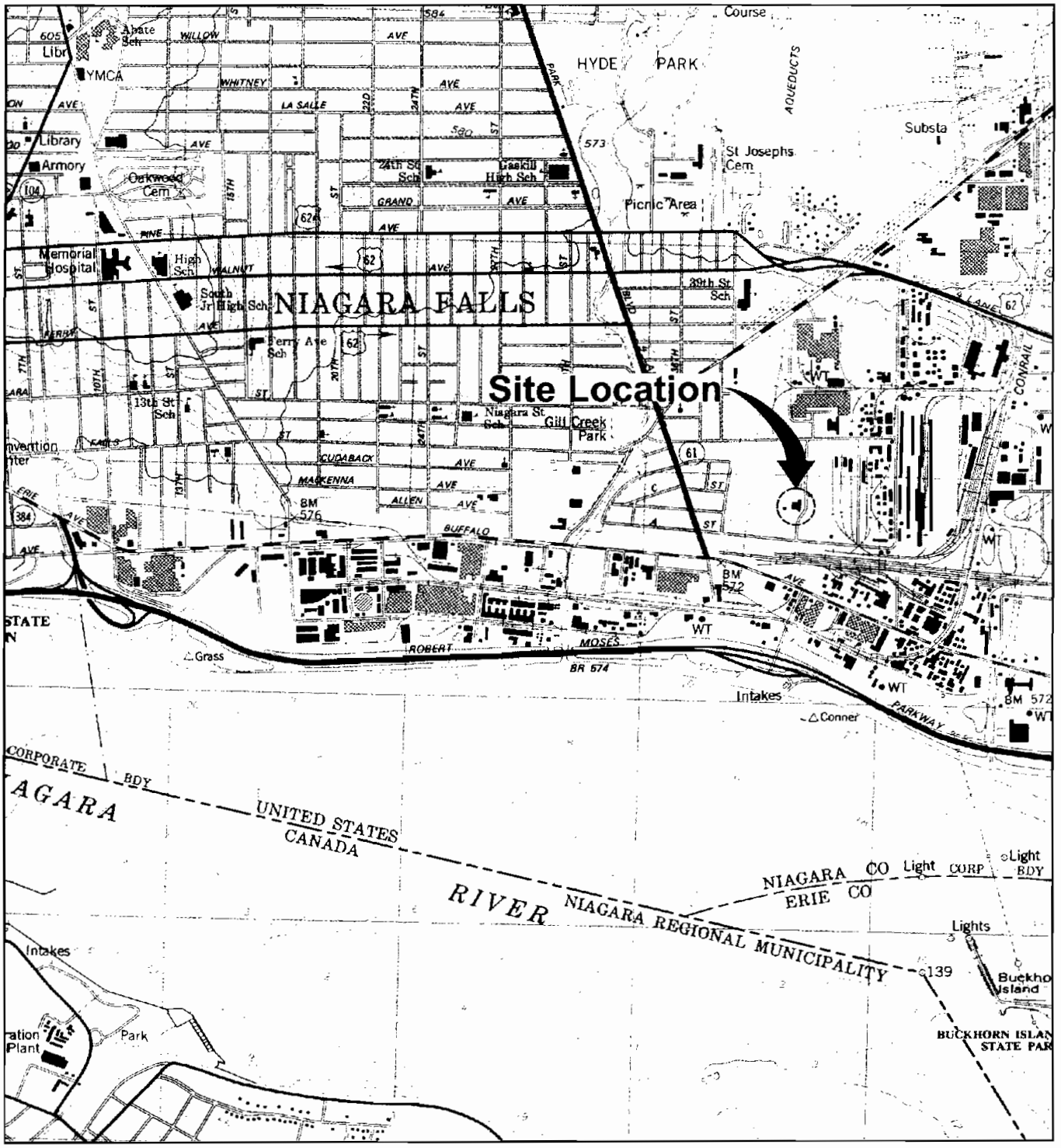
PSA Subsurface Structure Investigation
Debris Analytical Results for TAL Inorganic Constituents (ppm)

Constituent	M-5	M-21	M-75	S-2	S-3	DUP-4 (S-3)
Aluminum	6,090	4,580	6,630	1,950	2,810	2,290
Antimony	3.8 B	5.0 B	120	<0.69	0.83 B	<0.62
Arsenic	21.4	76.5	35.4	6.6	6.4	6.6
Barium	224.0	497	907	11,400	63	61.5
Beryllium	0.70 B	0.56 B	0.64 B	<0.28	<0.25	<0.25
Cadmium	4.6	11.7	41.4	0.85	1.1	1.2
Calcium	88,000	88,400	54,900	124,000	149,000	142,000
Chromium	166	252	264	48.5	92.8	115
Cobalt	87.9	60.1	41.1	5.8	16.8	19.2
Copper	355	1,860	6,490	46	65.2	61.9
Iron	30,700	112,000	189,000	15,900	7,170	7,530
Lead	3,120	3,920	13,200	181	553	711
Magnesium	20,000	16,600	9,200	41,700	78,400	73,900
Manganese	986	2,210	3,510	825	772	747
Mercury	11.9	1.3	0.93	0.7	1.1	1
Nickel	115	166	235	26.6	28.4	25.7
Potassium	1,030 B	630 B	690 B	384 B	534 B	539 B
Selenium	2.4	3.9	0.54 B	0.69	1.2	0.88
Silver	0.85 B	2.0 B	6.7	<0.28	<0.25	<0.25
Sodium	312 B	720 B	1,010	246 B	292	279 B
Thallium	<1.2	<1.4	<3.7	<0.83	<0.76	<0.75
Vanadium	90.2	176	227	16.8	15.9	18.6
Zinc	952	4,760	9,960	176	243	274
Cyanide	<0.94	<1.1	<0.70	<0.62	<0.54	<0.57

NOTES:

1. Samples collected by Blasland, Bouck & Lee, Inc. (BBL) during July 1999.
2. TAL = Target Analyte List.
3. Samples analyzed by Galson Laboratories, Inc. (Galson) of East Syracuse, New York using USEPA SW-846 Method 6010 with the following exceptions:
   - Mercury was analyzed using Method 7470/7471; and
   - Cyanide was analyzed using Method 9010.
4. Concentrations reported in parts per million (ppm) or milligrams per kilogram (mg/kg).
5. Sample designations indicate the following:
   M = Debris sample collected from an electrical manhole
   S = Debris sample collected from a storm/sanitary sewer manhole
   DUP = Duplicate sample
6. < = Constituent was not detected at a concentration exceeding the laboratory detection limit.
7. B = Indicates a value which is greater than or equal to the instrument detection limit, but less than the contract required detection limit.
8. Analytical results have not been validated.

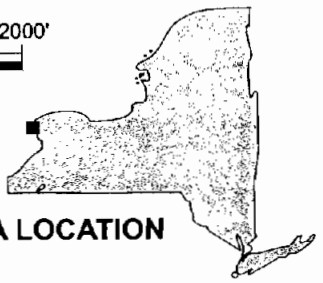
Figures



REFERENCE: BASE MAP USGS 7.5 MIN. QUAD., NIAGARA FALLS, NY-ONT. 1980.

2000' 0 2000'

Approximate Scale: 1" = 2000'



AREA LOCATION

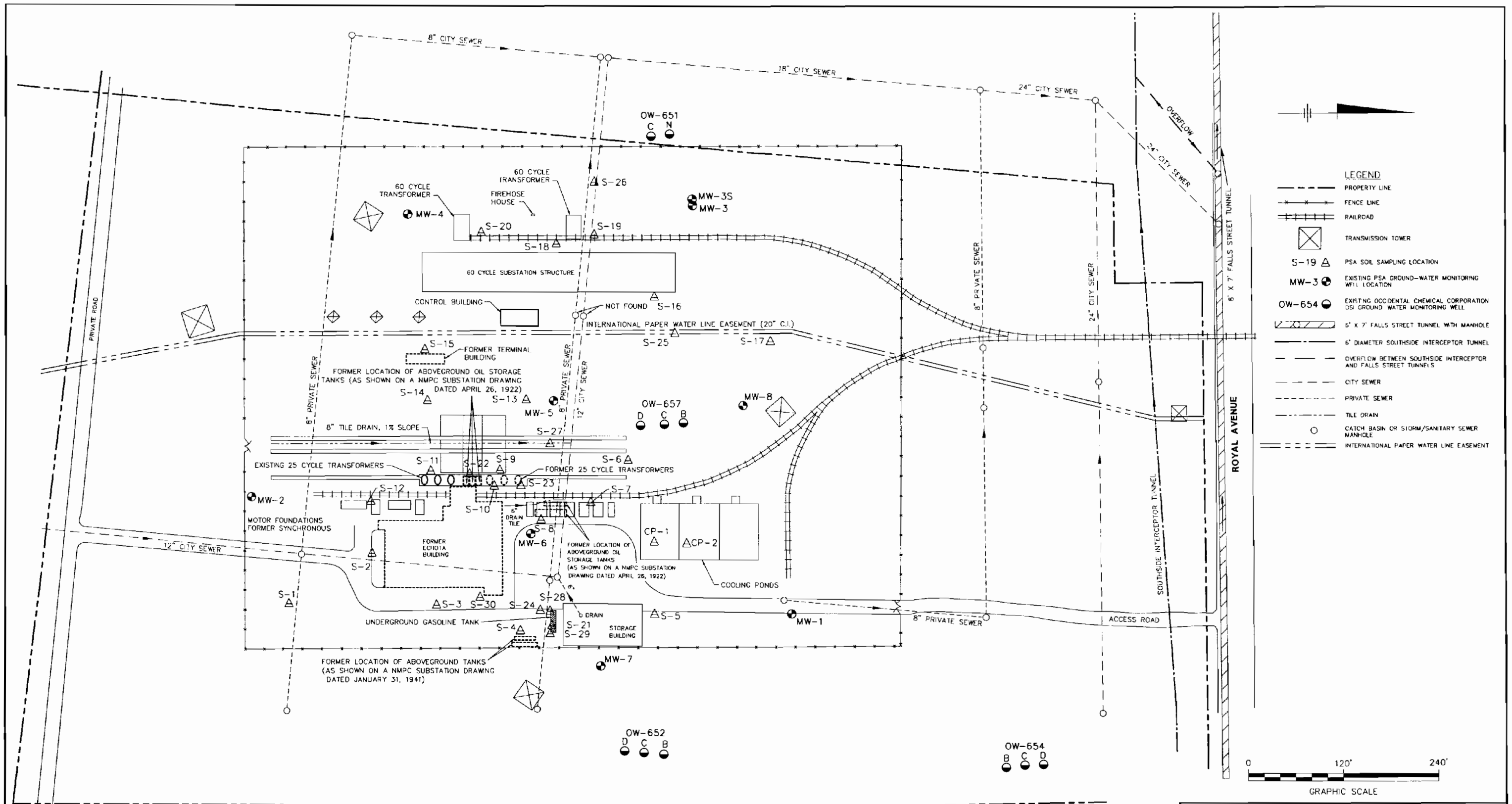
NIAGARA MOHAWK POWER CORPORATION
HARPER SUBSTATION
NIAGARA FALLS, NEW YORK

SITE LOCATION MAP

BBL BLASLAND, BOUCK & LEE, INC. *engineers & scientists*

FIGURE 1

06/00 SYR-D54-DJH
36487007/36487n01.cdr



NOTES:

1. BASE MAP WAS DIGITIZED FROM NIAGARA MOHAWK POWER COMPANY MAP DATED 12/8/41. ADDITIONAL SITE AND DRAINAGE FEATURES WERE ADDED FROM A CITY OF NIAGARA FALLS COMBINATION SEWER PLAN AND VARIOUS OTHER NMPC SITE PLANS.
2. SAMPLING LOCATIONS ARE FROM NIAGARA MOHAWK POWER CORPORATION SURVEY DRAWING #D-61367-W, DATED SEPT. 9, 1999 (EXCEPT FOR SAMPLING LOCATION S-27, WHICH IS APPROXIMATE).
3. SITE AND DRAINAGE FEATURES ARE APPROXIMATE.
4. OTHER UNDERGROUND UTILITIES AND STRUCTURES MAY EXIST, THE LOCATION OF WHICH ARE UNKNOWN.
5. LOCATIONS OF THE OCCIDENTAL CHEMICAL CORPORATION OFF-SITE INVESTIGATION MONITORING WELLS ARE APPROXIMATE.
6. LOCATION OF UNDERGROUND GASOLINE STORAGE TANK BASED ON FIELD OBSERVATION/MEASUREMENT.

X: 36805X02.DWG
L: ON=*,OFF=*REF*
P: STD-PCP/DL OR 801.PCP
9/29/00 SYR-54-RCB PGL RCB
36805003/36805B02.DWG

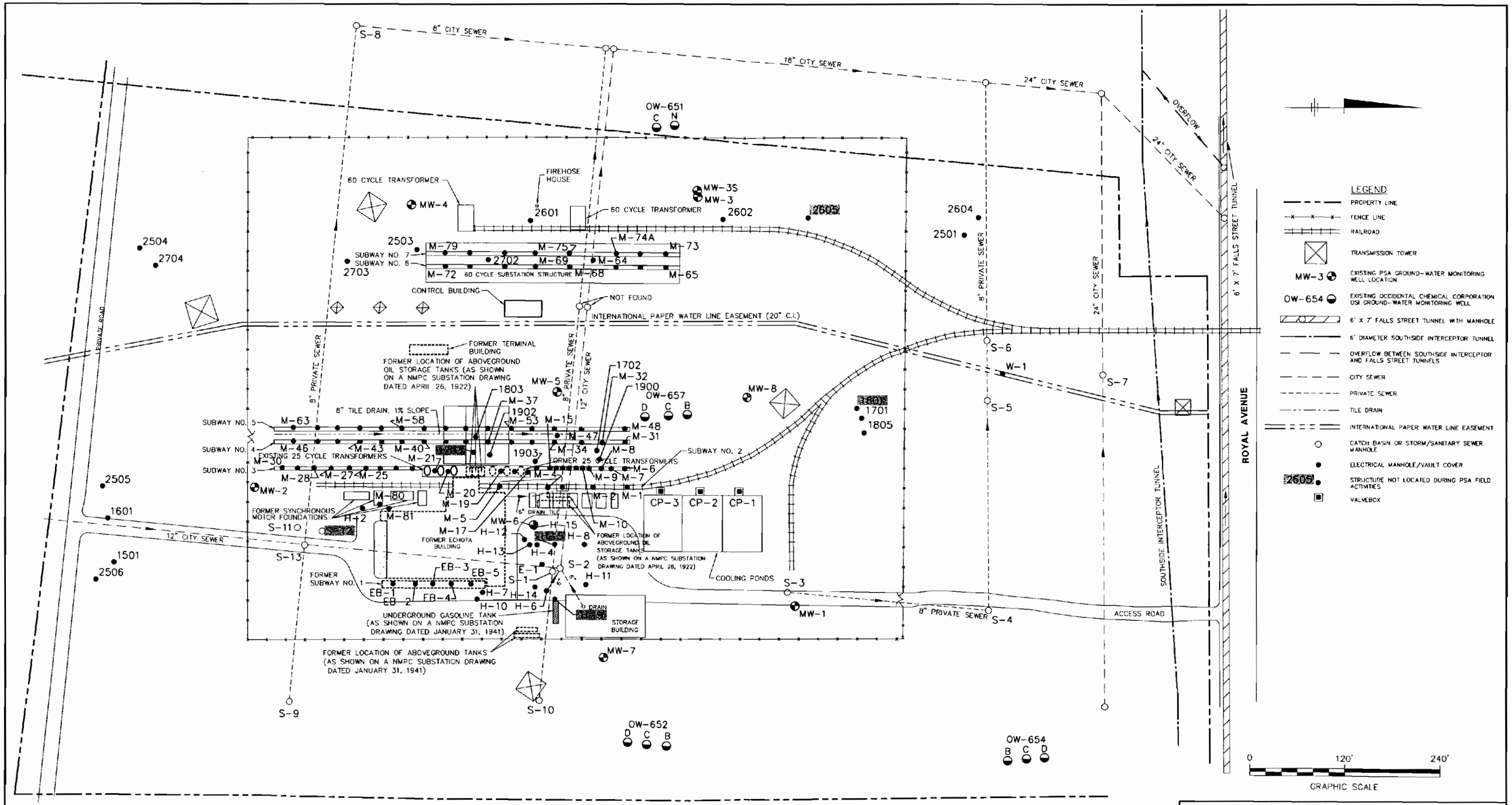
NIAGARA MOHAWK POWER CORPORATION
HARPER SUBSTATION
NIAGARA FALLS, NEW YORK

PRELIMINARY SITE ASSESSMENT

SITE PLAN

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 2



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2. LOCATIONS OF ELECTRICAL VAULT COVERS ARE APPROXIMATE
3. SITE AND DRAINAGE FEATURES ARE APPROXIMATE.
4. OTHER UNDERGROUND UTILITIES AND STRUCTURES MAY EXIST, THE LOCATION OF WHICH ARE UNKNOWN.

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9/25/00 SYR-54-JER CBW RCA PGL
36605003/36605B03.DWG

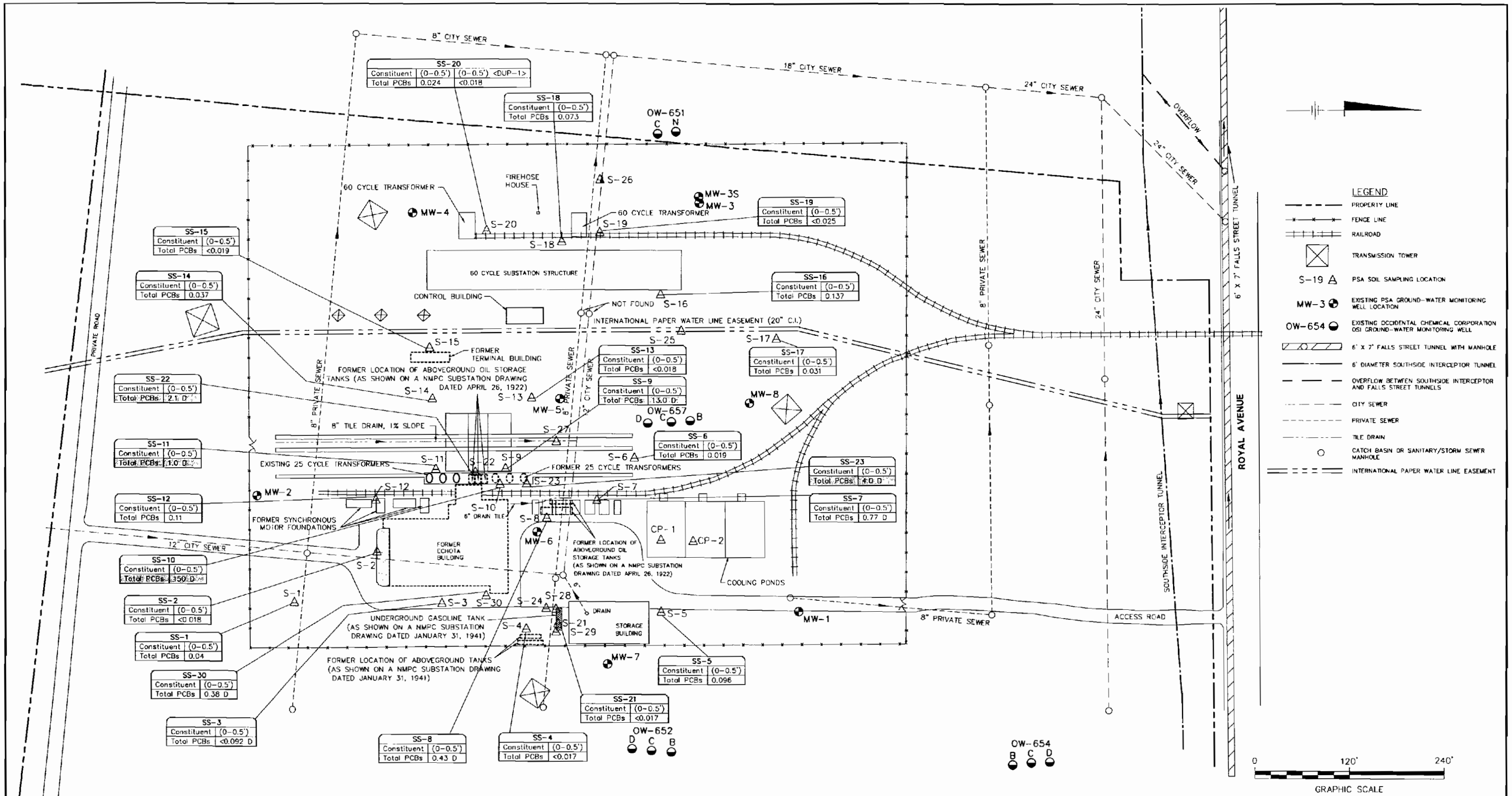
NIAGARA MOHAWK POWER CORPORATION
HARPER SUBSTATION
NIAGARA FALLS, NEW YORK

PRELIMINARY SITE ASSESSMENT

SUBSURFACE STRUCTURE LOCATIONS

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 3



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3. SITE AND DRAINAGE FEATURES ARE APPROXIMATE.
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5. ALL CONCENTRATIONS ARE IN PARTS PER MILLION (PPM).
6. DUP = DUPLICATE SAMPLE.
7. SS = SURFACE SOIL SAMPLE.
8. D = CONSTITUENT CONCENTRATION IS BASED ON A DILUTED SAMPLE ANALYSIS.
9. < = EACH AROCHLOR WAS NOT DETECTED ABOVE THE PRESENTED CONCENTRATION.
10. SHADED VALUES INDICATE THE CONSTITUENT WAS DETECTED AT A CONCENTRATION WHICH WAS EQUAL TO OR EXCEEDED THE NYSDEC-RECOMMENDED SURFACE SOIL CLEANUP OBJECTIVE OF 1 PPM PRESENTED IN THE NYSDEC TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM (TAGM) HWR-94-4046, DATED JANUARY 24, 1994.

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9/25/00 SYN-54-JER CBM RCA PGL
36605003/36605C01.DWG

NIAGARA MOHAWK POWER CORPORATION
HARPER SUBSTATION
NIAGARA FALLS, NEW YORK
PRELIMINARY SITE ASSESSMENT

SURFACE SOIL SAMPLING RESULTS - TOTAL PCBs (ppm)

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 4

SS-20	
Constituent	(0-0.5')
SVOCs	
Fluorene	0.052 J
Phenanthrene	0.49
Anthracene	0.049 J
Di-n-butylphthalate	0.30 JB
Fluoranthene	0.44
Pyrene	0.59
Benzo(a)anthracene	0.21 J
Chrysene	0.27 J
Bis(2-Ethylhexyl)phthalate	0.23 JB
Benzo(b)fluoranthene	0.25 J
Benzo(k)fluoranthene	0.31 J
Benzo(a)pyrene	0.22 J

SS-18	
Constituent	(0-0.5')
SVOCs	
Phenanthrene	0.18 J
Di-n-butylphthalate	0.5 B
Fluoranthene	0.19 J
Pyrene	0.35 J
Benzo(a)anthracene	0.12 J
Chrysene	0.18 J
Bis(2-Ethylhexyl)phthalate	0.34 JB
Benzo(b)fluoranthene	0.16 J
Benzo(k)fluoranthene	0.18 J
Benzo(a)pyrene	0.076 J

SS-19	
Constituent	(0-0.5')
SVOCs	
Phenanthrene	0.1 J
Di-n-butylphthalate	16.0 DB
Fluoranthene	0.16 J
Pyrene	0.16 J
Benzo(a)anthracene	0.059 J
Chrysene	0.10 J
Bis(2-Ethylhexyl)phthalate	0.28 JB
Benzo(b)fluoranthene	0.085 J
Benzo(k)fluoranthene	0.073 J

SS-15	
Constituent	(0-0.5')
SVOCs	
Phenanthrene	0.062 J
Fluoranthene	0.10 J
Pyrene	0.075 J
Benzo(a)anthracene	0.045 J
Chrysene	0.069 J
Benzo(b)fluoranthene	0.059 J
Benzo(k)fluoranthene	0.047 J
Benzo(a)pyrene	0.051 J

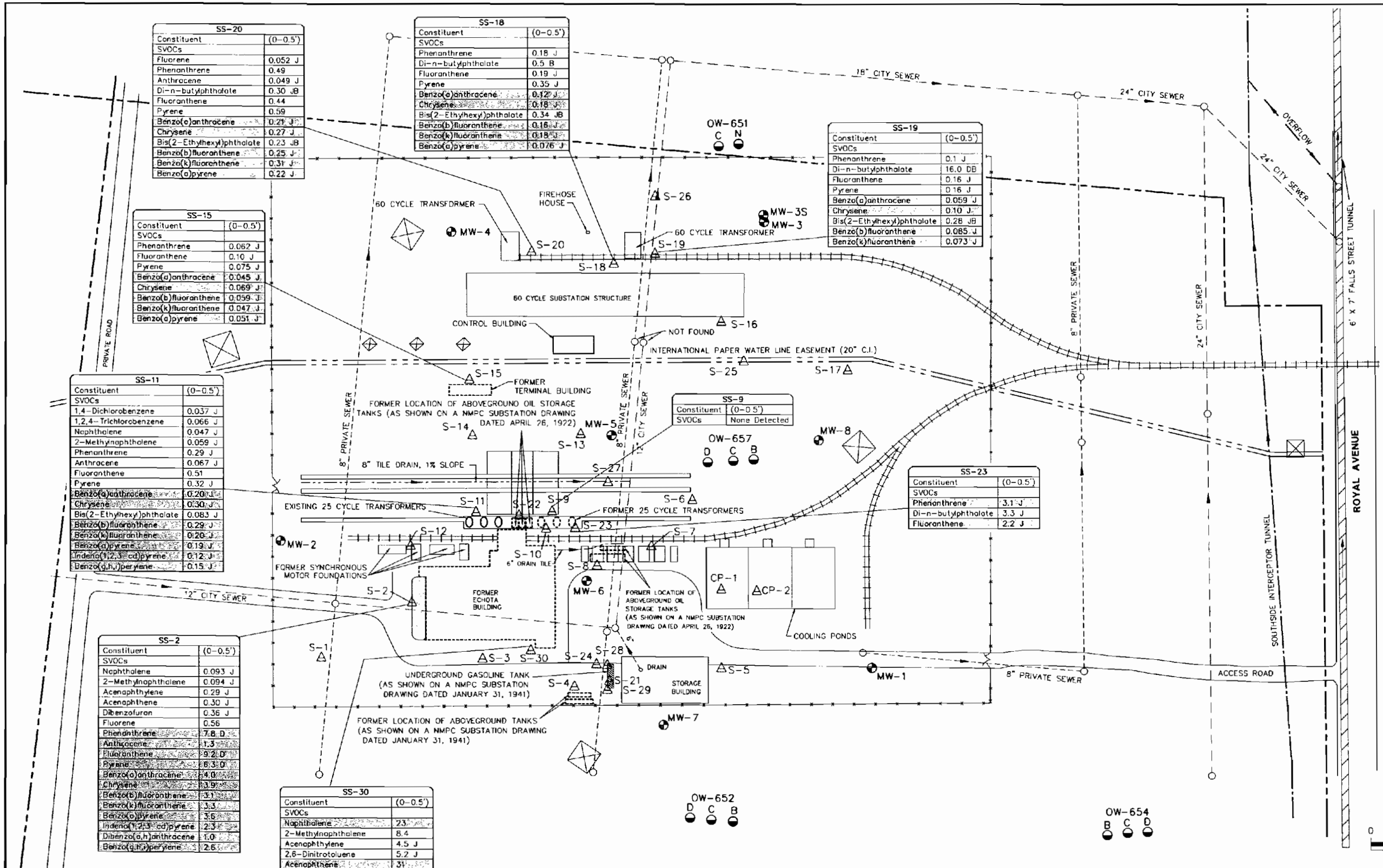
SS-11	
Constituent	(0-0.5')
SVOCs	
1,4-Dichlorobenzene	0.037 J
1,2,4-Trichlorobenzene	0.066 J
Naphthalene	0.047 J
2-Methylnaphthalene	0.059 J
Phenanthrene	0.29 J
Anthracene	0.067 J
Fluoranthene	0.51
Pyrene	0.32 J
Benzo(a)anthracene	0.20 J
Chrysene	0.30 J
Bis(2-Ethylhexyl)phthalate	0.083 J
Benzo(b)fluoranthene	0.29 J
Benzo(k)fluoranthene	0.20 J
Benzo(a)pyrene	0.19 J
Indeno(1,2,3-cd)pyrene	0.12 J
Benzo(g,h,i)perylene	0.15 J

SS-9	
Constituent	(0-0.5')
SVOCs	None Detected

SS-23	
Constituent	(0-0.5')
SVOCs	
Phenanthrene	3.1 J
Di-n-butylphthalate	3.3 J
Fluoranthene	2.2 J

SS-2	
Constituent	(0-0.5')
SVOCs	
Naphthalene	0.093 J
2-Methylnaphthalene	0.094 J
Acenaphthylene	0.29 J
Acenaphthene	0.30 J
Dibenzofuran	0.36 J
Fluorene	0.56
Phenanthrene	7.8 D
Anthracene	1.3
Fluoranthene	9.2 D
Pyrene	6.3 D
Benzo(a)anthracene	4.0
Chrysene	3.9
Benzo(b)fluoranthene	3.1
Benzo(k)fluoranthene	3.3
Benzo(a)pyrene	3.6
Indeno(1,2,3-cd)pyrene	2.3
Dibenz(a,h)anthracene	1.0
Benzo(g,h,i)perylene	2.6

SS-30	
Constituent	(0-0.5')
SVOCs	
Naphthalene	23
2-Methylnaphthalene	8.4
Acenaphthylene	4.5 J
2,6-Dinitrotoluene	5.2 J
Acenaphthene	31
Dibenzofuran	28
Fluorene	40
Phenanthrene	360 D
Anthracene	65
Fluoranthene	330 D
Pyrene	300 D
Benzo(a)anthracene	130 D
Chrysene	140 D
Bis(2-Ethylhexyl)phthalate	0.63 J
Benzo(b)fluoranthene	110 D
Benzo(k)fluoranthene	140 D
Benzo(a)pyrene	130 D
Indeno(1,2,3-cd)pyrene	76
Dibenz(a,h)anthracene	37
Benzo(g,h,i)perylene	74



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9. J = ESTIMATED VALUE.
10. SHADED VALUES INDICATE THE CONSTITUENT WAS DETECTED AT A CONCENTRATION WHICH WAS EQUAL TO OR EXCEEDED THE STARS TCLP ALTERNATIVE GUIDANCE VALUE PRESENTED IN THE NYSDEC SPILL TECHNOLOGY AND REMEDIATION SERIES (STARS) MEMO #1, DATED AUGUST 1992.

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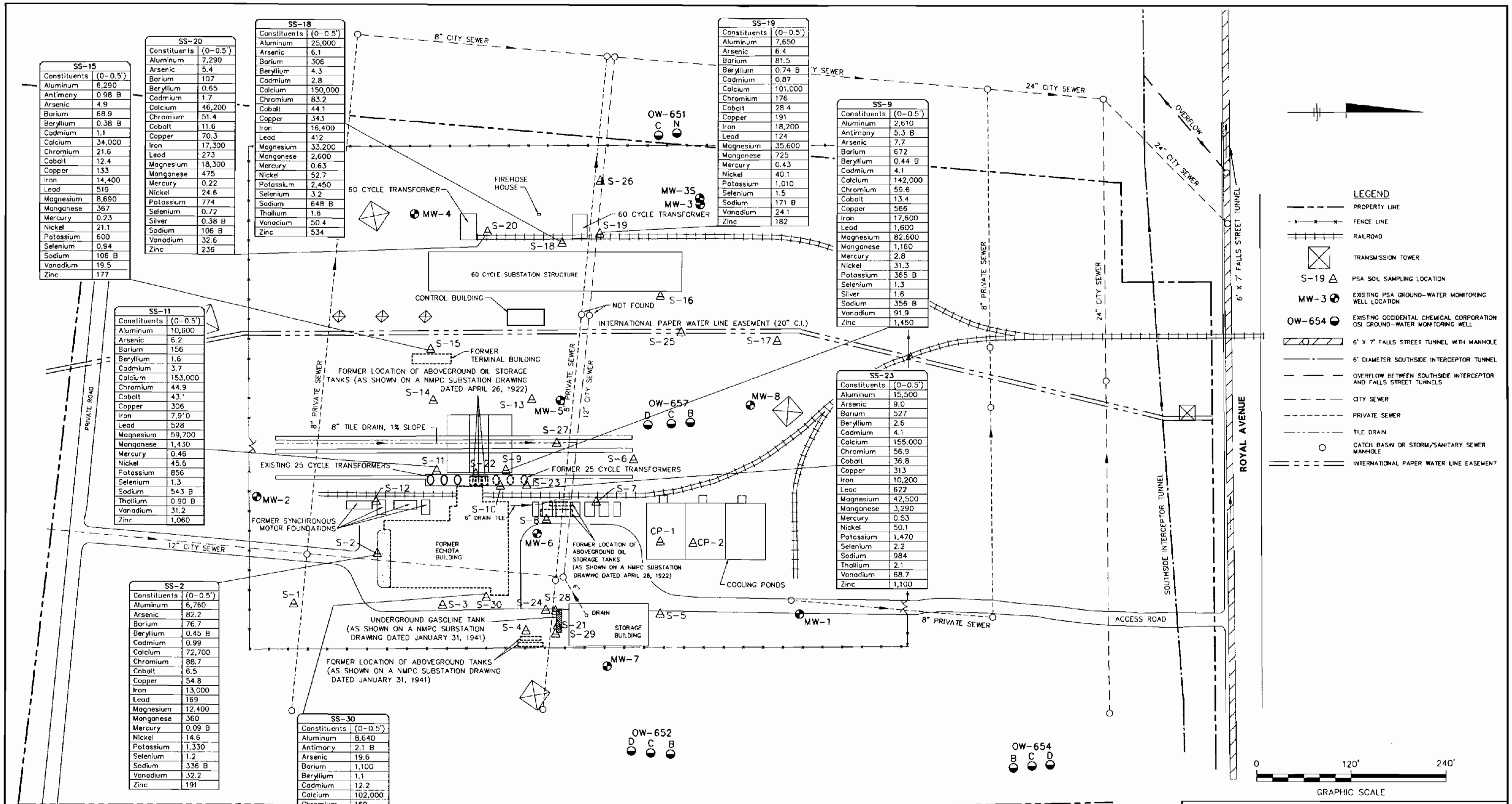
P: STD-PCP.TDL
9/25/00 SYR-54-JER CBM RCA PGL
36605003/36605C02.DWG

NIAGARA MOHAWK POWER CORPORATION
HARPER SUBSTATION
NIAGARA FALLS, NEW YORK
PRELIMINARY SITE ASSESSMENT

SURFACE SOIL SAMPLING RESULTS - DETECTED SVOCs (ppm)

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 5



SS-15	
Constituents	(0-0.5')
Aluminum	6,290
Antimony	0.98 B
Arsenic	4.9
Barium	68.9
Beryllium	0.38 B
Cadmium	1.1
Calcium	34,000
Chromium	21.6
Cobalt	12.4
Copper	133
Iron	14,400
Lead	519
Magnesium	8,690
Manganese	367
Mercury	0.23
Nickel	21.1
Potassium	600
Selenium	0.94
Sodium	106 B
Vanadium	19.5
Zinc	177

SS-20	
Constituents	(0-0.5')
Aluminum	7,290
Arsenic	5.4
Barium	107
Beryllium	0.65
Cadmium	1.7
Calcium	46,200
Chromium	51.4
Cobalt	11.6
Copper	70.3
Iron	17,300
Lead	273
Magnesium	18,300
Manganese	475
Mercury	0.22
Nickel	24.6
Potassium	774
Selenium	0.72
Silver	0.38 B
Sodium	106 B
Vanadium	32.6
Zinc	236

SS-18	
Constituents	(0-0.5')
Aluminum	25,000
Arsenic	6.1
Barium	306
Beryllium	4.3
Cadmium	2.8
Calcium	150,000
Chromium	83.2
Cobalt	44.1
Copper	343
Iron	16,400
Lead	412
Magnesium	33,200
Manganese	2,600
Mercury	0.63
Nickel	52.7
Potassium	2,450
Selenium	3.2
Sodium	648 B
Thallium	1.6
Vanadium	50.4
Zinc	534

SS-19	
Constituents	(0-0.5')
Aluminum	7,650
Arsenic	6.4
Barium	81.5
Beryllium	0.74 B
Cadmium	0.87
Calcium	101,000
Chromium	176
Cobalt	28.4
Copper	191
Iron	18,200
Lead	124
Magnesium	35,600
Manganese	725
Mercury	0.43
Nickel	40.1
Potassium	1,010
Selenium	1.5
Sodium	171 B
Vanadium	24.1
Zinc	182

SS-9	
Constituents	(0-0.5')
Aluminum	2,610
Antimony	5.3 B
Arsenic	7.7
Barium	672
Beryllium	0.44 B
Cadmium	4.1
Calcium	142,000
Chromium	59.6
Cobalt	13.4
Copper	566
Iron	17,600
Lead	1,600
Magnesium	82,600
Manganese	1,160
Mercury	2.8
Nickel	31.3
Potassium	365 B
Selenium	1.3
Silver	1.6
Sodium	356 B
Vanadium	91.9
Zinc	1,450

SS-11	
Constituents	(0-0.5')
Aluminum	10,600
Arsenic	6.2
Barium	156
Beryllium	1.6
Cadmium	3.7
Calcium	153,000
Chromium	44.9
Cobalt	43.1
Copper	306
Iron	7,910
Lead	528
Magnesium	59,700
Manganese	1,430
Mercury	0.46
Nickel	45.6
Potassium	856
Selenium	1.3
Sodium	543 B
Thallium	0.90 B
Vanadium	31.2
Zinc	1,060

SS-23	
Constituents	(0-0.5')
Aluminum	15,500
Arsenic	9.0
Barium	527
Beryllium	2.6
Cadmium	4.1
Calcium	155,000
Chromium	56.9
Cobalt	36.8
Copper	313
Iron	10,200
Lead	622
Magnesium	42,500
Manganese	3,290
Mercury	0.53
Nickel	50.1
Potassium	1,470
Selenium	2.2
Sodium	984
Thallium	2.1
Vanadium	68.7
Zinc	1,100

SS-2	
Constituents	(0-0.5')
Aluminum	6,760
Arsenic	82.2
Barium	76.7
Beryllium	0.45 B
Cadmium	0.99
Calcium	72,700
Chromium	88.7
Cobalt	6.5
Copper	54.8
Iron	13,000
Lead	169
Magnesium	12,400
Manganese	360
Mercury	0.09 B
Nickel	14.6
Potassium	1,330
Selenium	1.2
Sodium	336 B
Vanadium	32.2
Zinc	191

SS-30	
Constituents	(0-0.5')
Aluminum	8,640
Antimony	2.1 B
Arsenic	19.6
Barium	1,100
Beryllium	1.1
Cadmium	12.2
Calcium	102,000
Chromium	169
Cobalt	85.9
Copper	369
Iron	33,800
Lead	5,880
Magnesium	21,300
Manganese	2,730
Mercury	0.9
Nickel	121
Potassium	1,010
Selenium	2.7
Silver	1.8
Sodium	500 B
Vanadium	268
Zinc	2,910

NOTES:

1. BASE MAP WAS DIGITIZED FROM NIAGARA MOHAWK POWER COMPANY MAP DATED 12/8/41. ADDITIONAL SITE AND DRAINAGE FEATURES WERE ADDED FROM A CITY OF NIAGARA FALLS COMBINATION SEWER PLAN AND VARIOUS OTHER NMPC SITE PLANS.
2. SAMPLING LOCATIONS ARE FROM NIAGARA MOHAWK POWER CORPORATION SURVEY DRAWING #D-61,367-W, DATED SEPT. 9, 1999 (EXCEPT FOR SAMPLING LOCATION S-27, WHICH IS APPROXIMATE).
3. SITE AND DRAINAGE FEATURES ARE APPROXIMATE.
4. OTHER UNDERGROUND UTILITIES AND STRUCTURES MAY EXIST, THE LOCATION OF WHICH ARE UNKNOWN.
5. ALL CONCENTRATIONS ARE IN PARTS PER MILLION (PPM).
6. TAL = TARGET ANALYTE LIST
7. SS = SURFACE SOIL SAMPLE.
8. DUP = DUPLICATE SAMPLE.
9. B = INDICATES THAT THE CONSTITUENT WAS DETECTED AT A CONCENTRATION WHICH IS GREATER THAN OR EQUAL TO THE INSTRUMENT DETECTION LIMIT, BUT LESS THAN THE CONTRACT REQUIRED DETECTION LIMIT.

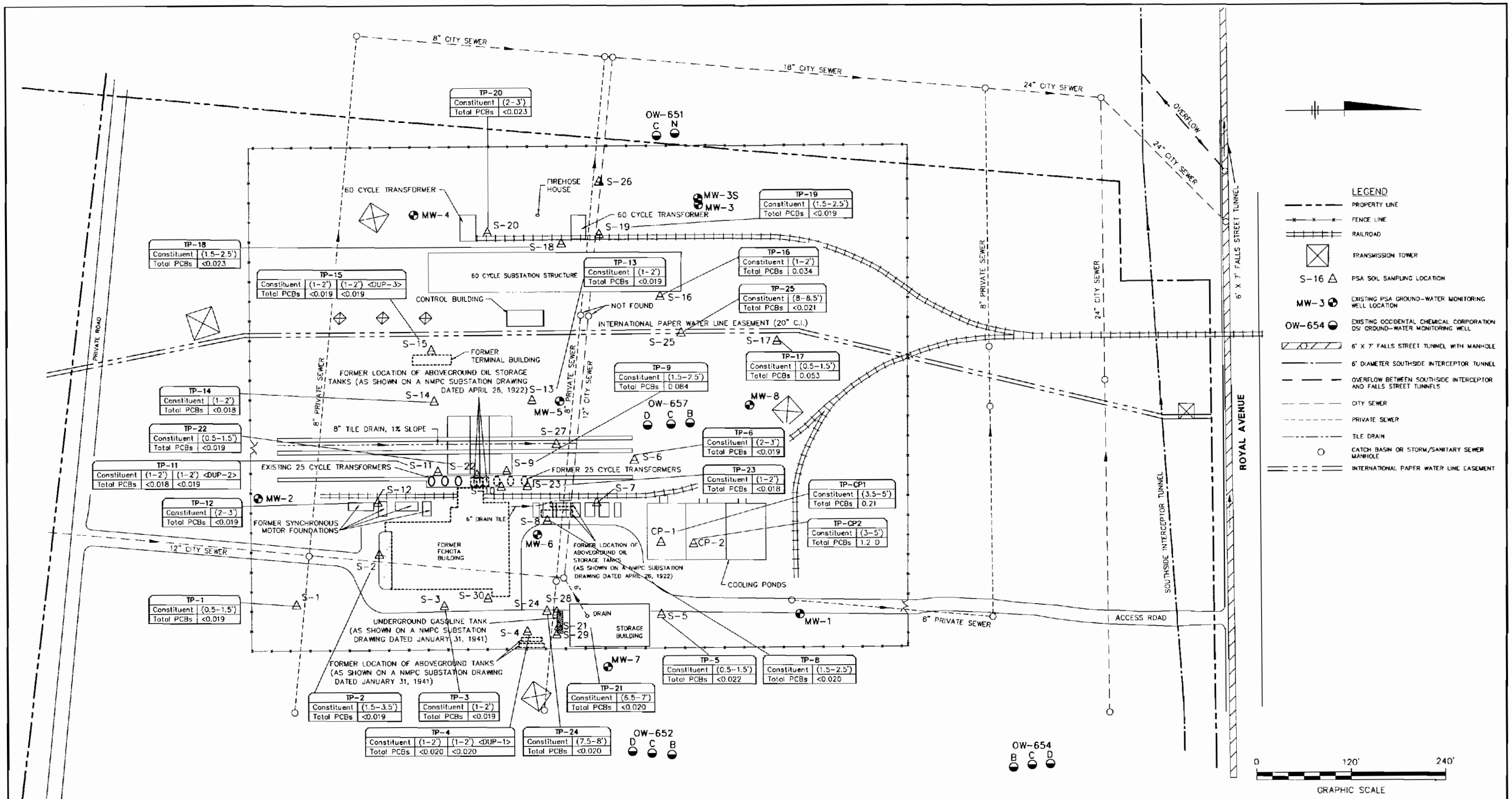
K: 36605X02.DWG
L: ON=*;OFF=*REF*
P: STD-PCP/DL
9/25/00 SYR-54-JER CBM RCA PGL
36605D03/36605C03.DWG

NIAGARA MOHAWK POWER CORPORATION
HARPER SUBSTATION
NIAGARA FALLS, NEW YORK
PRELIMINARY SITE ASSESSMENT

SURFACE SOIL SAMPLING RESULTS - DETECTED TAL INORGANIC CONSTITUENTS (ppm)

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 6



NOTES:

1. BASE MAP WAS DIGITIZED FROM NIAGARA MOHAWK POWER COMPANY MAP DATED 12/8/41. ADDITIONAL SITE AND DRAINAGE FEATURES WERE ADDED FROM A CITY OF NIAGARA FALLS COMBINATION SEWER PLAN AND VARIOUS OTHER NMPC SITE PLANS.
2. SAMPLING LOCATIONS ARE FROM NIAGARA MOHAWK POWER CORPORATION SURVEY DRAWING #D-61367-W, DATED SEPT 9, 1999 (EXCEPT FOR SAMPLING LOCATION S-27, WHICH IS APPROXIMATE).
3. SITE AND DRAINAGE FEATURES ARE APPROXIMATE.
4. OTHER UNDERGROUND UTILITIES AND STRUCTURES MAY EXIST, THE LOCATION OF WHICH ARE UNKNOWN.
5. ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).
6. TP = TEST PIT (SUBSURFACE SOIL SAMPLE).
7. TP-CP = TEST PIT EXCAVATED IN A FORMER COOLING POND (SUBSURFACE SOIL SAMPLE).
8. < = EACH AROCLOR WAS NOT DETECTED ABOVE THE PRESENTED CONCENTRATION.
9. D = CONSTITUTENT CONCENTRATION IS BASED ON A DILUTED SAMPLE ANALYSIS.

X: 36605X02.DWG
L: ON=*,OFF=*REF*
P: STD-PCP/DL CR B01.PCP
9/25/00 SYR-54-JER CBM RCA PQL
36605003/36605C07.DWG

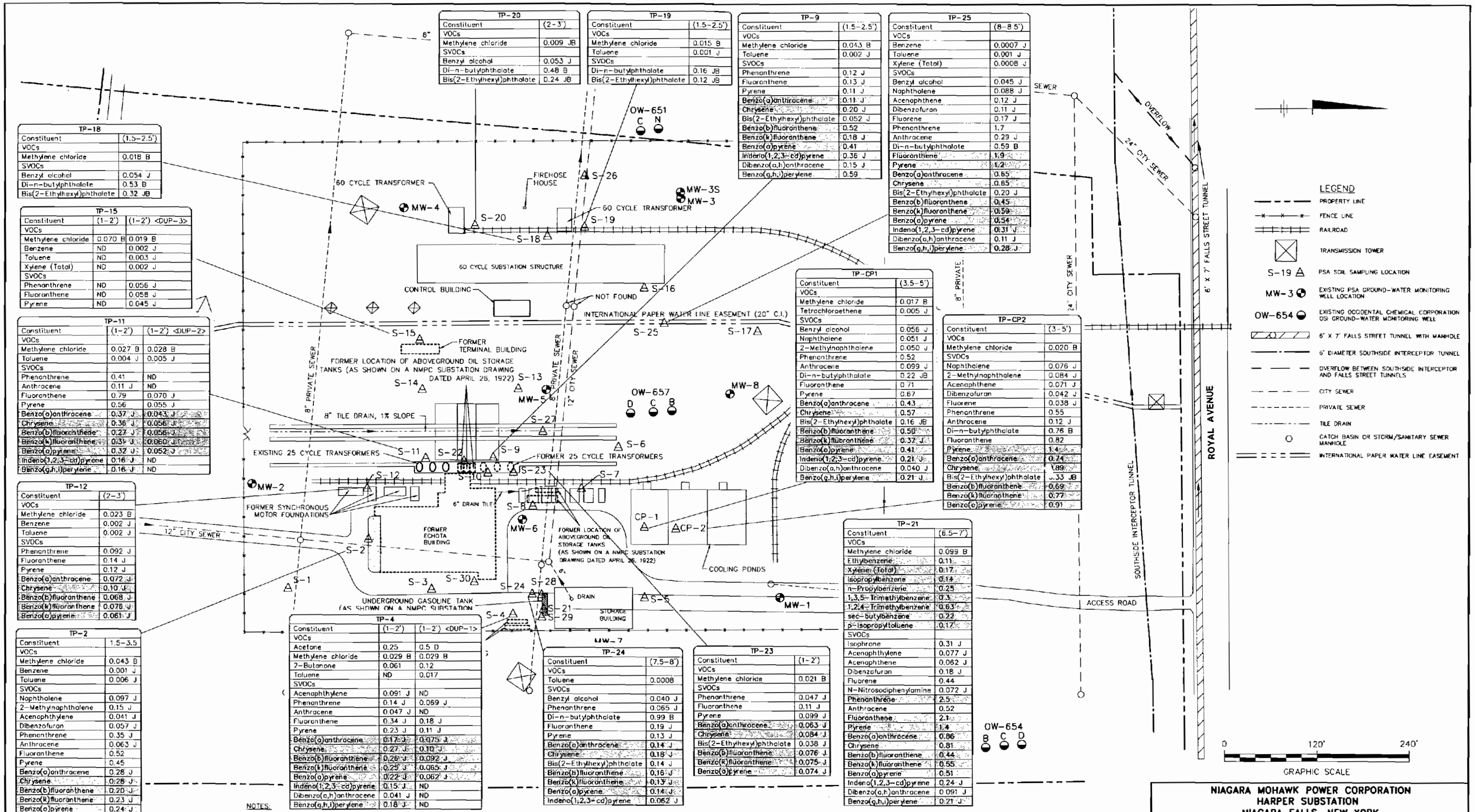
NIAGARA MOHAWK POWER CORPORATION
HARPER SUBSTATION
NIAGARA FALLS, NEW YORK

PRELIMINARY SITE ASSESSMENT

SUBSURFACE SOIL SAMPLING RESULTS - TOTAL PCBs (ppm)

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 7



NOTES:

1. BASE MAP WAS DIGITIZED FROM NIAGARA MOHAWK POWER COMPANY MAP DATED 12/8/41. ADDITIONAL SITE AND DRAINAGE FEATURES WERE ADDED FROM A CITY OF NIAGARA FALLS COMBINATION SEWER PLAN AND VARIOUS OTHER NMPC SITE PLANS.
2. SAMPLING LOCATIONS ARE FROM NIAGARA MOHAWK POWER CORPORATION SURVEY DRAWING #D-61367-W, DATED SEPT. 9, 1999 (EXCEPT FOR SAMPLING LOCATION S-27, WHICH IS APPROXIMATE).
3. SITE AND DRAINAGE FEATURES ARE APPROXIMATE.
4. OTHER UNDERGROUND UTILITIES AND STRUCTURES MAY EXIST, THE LOCATION OF WHICH ARE UNKNOWN.
5. ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).
6. TP = TEST PIT (SUBSURFACE SOIL SAMPLE).
7. TP-CP = TEST PIT EXCAVATED IN A FORMER COOLING POND (SUBSURFACE SOIL SAMPLE).
8. DUP = DUPLICATE SAMPLE.
9. B = COMPOUND WAS DETECTED IN SAMPLE AS WELL AS ITS ASSOCIATED BLANK.
10. D = CONSTITUTENT CONCENTRATION IS BASED ON A DILUTED SAMPLE ANALYSIS.
11. J = ESTIMATED VALUE.
12. ND = CONSTITUENT NOT DETECTED ABOVE LABORATORY DETECTION LIMITS.
13. SHADED VALUES INDICATE THE CONSTITUENT WAS DETECTED AT A CONCENTRATION WHICH WAS EQUAL TO OR EXCEEDED THE STARS FCLP ALTERNATIVE GUIDANCE VALUE PRESENTED IN THE NYSDEC SPILL TECHNOLOGY AND REMENDIATION SERIES (STARS) MEMO #1, DATED AUGUST 1992.

X: 36605X02.DWG
L: ON=*;OFF=*REF*
P: STD-PCP/DL GR B01.PCP
9/25/00 SYR-54-JER CBM RCA PGL
36605303/36605C08.DWG

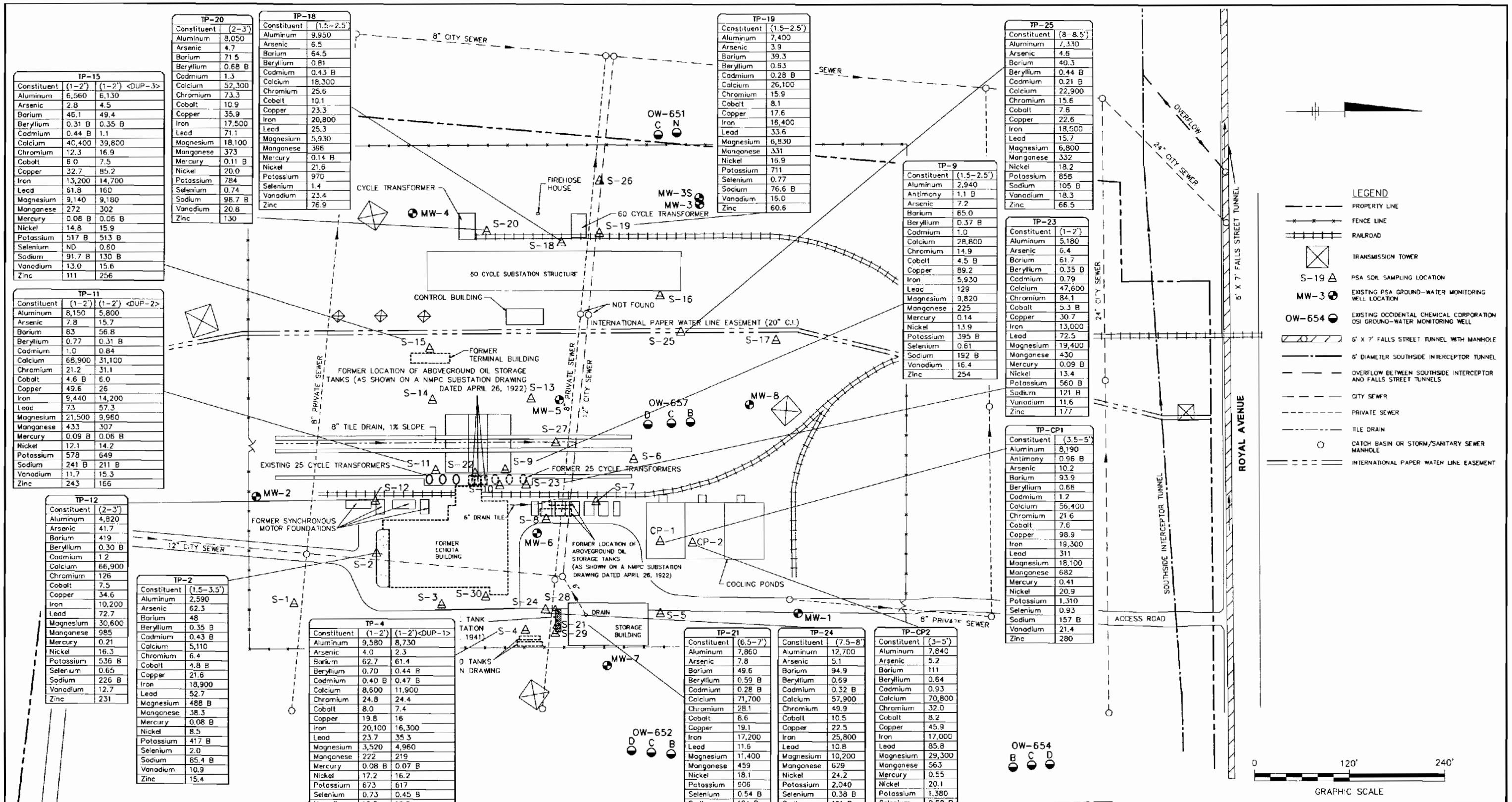
NIAGARA MOHAWK POWER CORPORATION
HARPER SUBSTATION
NIAGARA FALLS, NEW YORK

PRELIMINARY SITE ASSESSMENT

SUBSURFACE SOIL SAMPLING RESULTS - DETECTED VOCs & SVOCs (ppm)

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 8



TP-15		
Constituent	(1-2')	(1-2') <DUP-3>
Aluminum	6,560	6,130
Arsenic	2.8	4.5
Barium	46.1	49.4
Beryllium	0.31 B	0.35 B
Cadmium	0.44 B	1.1
Calcium	40,400	39,800
Chromium	12.3	16.9
Cobalt	6.0	7.5
Copper	32.7	85.2
Iron	13,200	14,700
Lead	61.8	160
Magnesium	9,140	9,180
Manganese	272	302
Mercury	0.08 B	0.06 B
Nickel	14.8	15.9
Potassium	517 B	513 B
Selenium	ND	0.60
Sodium	91.7 B	130 B
Vanadium	13.0	15.6
Zinc	111	256

TP-11		
Constituent	(1-2')	(1-2') <DUP-2>
Aluminum	8,150	5,800
Arsenic	7.8	15.7
Barium	83	56.8
Beryllium	0.77	0.31 B
Cadmium	1.0	0.84
Calcium	68,900	31,100
Chromium	21.2	31.1
Cobalt	4.6 B	6.0
Copper	49.6	26
Iron	9,440	14,200
Lead	73	57.3
Magnesium	21,500	9,960
Manganese	433	307
Mercury	0.09 B	0.06 B
Nickel	12.1	14.2
Potassium	578	649
Sodium	241 B	211 B
Vanadium	11.7	15.3
Zinc	243	166

TP-12	
Constituent	(2-3')
Aluminum	4,820
Arsenic	41.7
Barium	419
Beryllium	0.30 B
Cadmium	1.2
Calcium	66,900
Chromium	126
Cobalt	7.5
Copper	34.6
Iron	10,200
Lead	72.7
Magnesium	30,600
Manganese	985
Mercury	0.21
Nickel	16.3
Potassium	536 B
Selenium	0.65
Sodium	226 B
Vanadium	12.7
Zinc	231

TP-2	
Constituent	(1.5-3.5')
Aluminum	2,590
Arsenic	62.3
Barium	48
Beryllium	0.35 B
Cadmium	0.43 B
Calcium	5,110
Chromium	6.4
Cobalt	4.8 B
Copper	21.6
Iron	18,900
Lead	52.7
Magnesium	488 B
Manganese	38.3
Mercury	0.08 B
Nickel	8.5
Potassium	417 B
Selenium	2.0
Sodium	85.4 B
Vanadium	10.9
Zinc	15.4

TP-20	
Constituent	(2-3')
Aluminum	8,050
Arsenic	4.7
Barium	71.5
Beryllium	0.68 B
Cadmium	1.3
Calcium	52,300
Chromium	73.3
Cobalt	10.9
Copper	35.9
Iron	17,500
Lead	71.1
Magnesium	18,100
Manganese	373
Mercury	0.11 B
Nickel	20.0
Potassium	784
Selenium	0.74
Sodium	98.7 B
Vanadium	20.8
Zinc	130

TP-18	
Constituent	(1.5-2.5')
Aluminum	9,950
Arsenic	6.5
Barium	64.5
Beryllium	0.81
Cadmium	0.43 B
Calcium	18,300
Chromium	25.6
Cobalt	10.1
Copper	23.3
Iron	20,800
Lead	25.3
Magnesium	5,930
Manganese	396
Mercury	0.14 B
Nickel	21.6
Potassium	970
Selenium	1.4
Vanadium	23.4
Zinc	76.9

TP-4		
Constituent	(1-2')	(1-2')<DUP-1>
Aluminum	9,580	8,730
Arsenic	4.0	2.3
Barium	62.7	61.4
Beryllium	0.70	0.44 B
Cadmium	0.40 B	0.47 B
Calcium	8,600	11,900
Chromium	24.8	24.4
Cobalt	8.0	7.4
Copper	19.8	16
Iron	20,100	16,300
Lead	23.7	35.3
Magnesium	3,520	4,960
Manganese	222	219
Mercury	0.08 B	0.07 B
Nickel	17.2	16.2
Potassium	673	617
Selenium	0.73	0.45 B
Vanadium	18.8	16.2
Zinc	80.2	79.4

TP-19	
Constituent	(1.5-2.5')
Aluminum	7,400
Arsenic	3.9
Barium	39.3
Beryllium	0.63
Cadmium	0.28 B
Calcium	26,100
Chromium	15.9
Cobalt	8.1
Copper	17.6
Iron	16,400
Lead	33.6
Magnesium	6,830
Manganese	331
Nickel	16.9
Potassium	711
Selenium	0.77
Sodium	76.6 B
Vanadium	15.0
Zinc	60.6

TP-21	
Constituent	(6.5-7')
Aluminum	7,860
Arsenic	7.8
Barium	49.6
Beryllium	0.59 B
Cadmium	0.28 B
Calcium	71,700
Chromium	28.1
Cobalt	8.6
Copper	19.1
Iron	17,200
Lead	11.6
Magnesium	11,400
Manganese	459
Nickel	18.1
Potassium	906
Selenium	0.54 B
Sodium	124 B
Vanadium	17.2
Zinc	49.6

TP-24	
Constituent	(7.5-8')
Aluminum	12,700
Arsenic	5.1
Barium	94.9
Beryllium	0.69
Cadmium	0.32 B
Calcium	57,900
Chromium	49.9
Cobalt	10.5
Copper	22.5
Iron	25,800
Lead	10.8
Magnesium	10,200
Manganese	629
Nickel	24.2
Potassium	2,040
Selenium	0.38 B
Sodium	191 B
Vanadium	26.2
Zinc	60.1

TP-CP2	
Constituent	(3-5')
Aluminum	7,840
Arsenic	5.2
Barium	111
Beryllium	0.64
Cadmium	0.93
Calcium	70,800
Chromium	32.0
Cobalt	8.2
Copper	45.9
Iron	17,000
Lead	85.8
Magnesium	29,300
Manganese	563
Mercury	0.55
Nickel	20.1
Potassium	1,380
Selenium	0.58 B
Sodium	183 B
Vanadium	23.1
Zinc	671

TP-9	
Constituent	(1.5-2.5')
Aluminum	2,940
Antimony	1.1 B
Arsenic	7.2
Barium	85.0
Beryllium	0.37 B
Cadmium	1.0
Calcium	28,800
Chromium	14.9
Cobalt	4.5 B
Copper	89.2
Iron	5,930
Lead	129
Magnesium	9,820
Manganese	225
Mercury	0.14
Nickel	13.9
Potassium	395 B
Selenium	0.61
Sodium	192 B
Vanadium	16.4
Zinc	254

TP-25	
Constituent	(8-8.5')
Aluminum	7,330
Arsenic	4.6
Barium	40.3
Beryllium	0.44 B
Cadmium	0.21 B
Calcium	22,900
Chromium	15.6
Cobalt	7.6
Copper	22.6
Iron	18,500
Lead	15.7
Magnesium	6,800
Manganese	332
Nickel	18.2
Potassium	858
Sodium	105 B
Vanadium	18.3
Zinc	66.5

TP-23	
Constituent	(1-2')
Aluminum	5,180
Arsenic	6.4
Barium	61.7
Beryllium	0.35 B
Cadmium	0.79
Calcium	47,600
Chromium	84.1
Cobalt	5.3 B
Copper	30.7
Iron	13,000
Lead	72.5
Magnesium	19,400
Manganese	430
Mercury	0.09 B
Nickel	13.4
Potassium	560 B
Sodium	121 B
Vanadium	11.6
Zinc	177

TP-CP1	
Constituent	(3.5-5')
Aluminum	8,190
Antimony	0.96 B
Arsenic	10.2
Barium	93.9
Beryllium	0.66
Cadmium	1.2
Calcium	56,400
Chromium	21.6
Cobalt	7.6
Copper	98.9
Iron	19,300
Lead	311
Magnesium	18,100
Manganese	682
Mercury	0.41
Nickel	20.9
Potassium	1,310
Selenium	0.93
Sodium	157 B
Vanadium	21.4
Zinc	280

NOTES:

1. BASE MAP WAS DIGITIZED FROM NIAGARA MOHAWK POWER COMPANY MAP DATED 12/8/41. ADDITIONAL SITE AND DRAINAGE FEATURES WERE ADDED FROM A CITY OF NIAGARA FALLS COMBINATION SEWER PLAN AND VARIOUS OTHER NMPC SITE PLANS.
2. SAMPLING LOCATIONS ARE FROM NIAGARA MOHAWK POWER CORPORATION SURVEY DRAWING #D-61367-W, DATED SEPT. 9, 1999 (EXCEPT FOR SAMPLING LOCATION S-27, WHICH IS APPROXIMATE).
3. SITE AND DRAINAGE FEATURES ARE APPROXIMATE.
4. OTHER UNDERGROUND UTILITIES AND STRUCTURES MAY EXIST, THE LOCATION OF WHICH ARE UNKNOWN.
5. ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).
6. TP = TEST PIT (SUBSURFACE SOIL SAMPLE)
7. TP-CP = TEST PIT EXCAVATED IN A FORMER COOLING POND (SUBSURFACE SOIL SAMPLE).
8. DUP = DUPLICATE SAMPLE.
9. B = INDICATES THAT THE COMPOUND WAS DETECTED AT A CONCENTRATION WHICH IS GREATER THAN OR EQUAL TO THE INSTRUMENT DETECTION LIMIT, BUT LESS THAN THE CONTRACT REQUIRED DETECTION LIMIT.
10. ND = CONSTITUENT NOT DETECTED ABOVE LABORATORY DETECTION LIMITS.

X: 36605X02.DWG
L: ON=*, OFF=*REF*
P: STD-PCP/DL OR_B01.PCP
9/25/00 SYR-54-JER CBM RCA PGL
36605003/36605C09.DWG

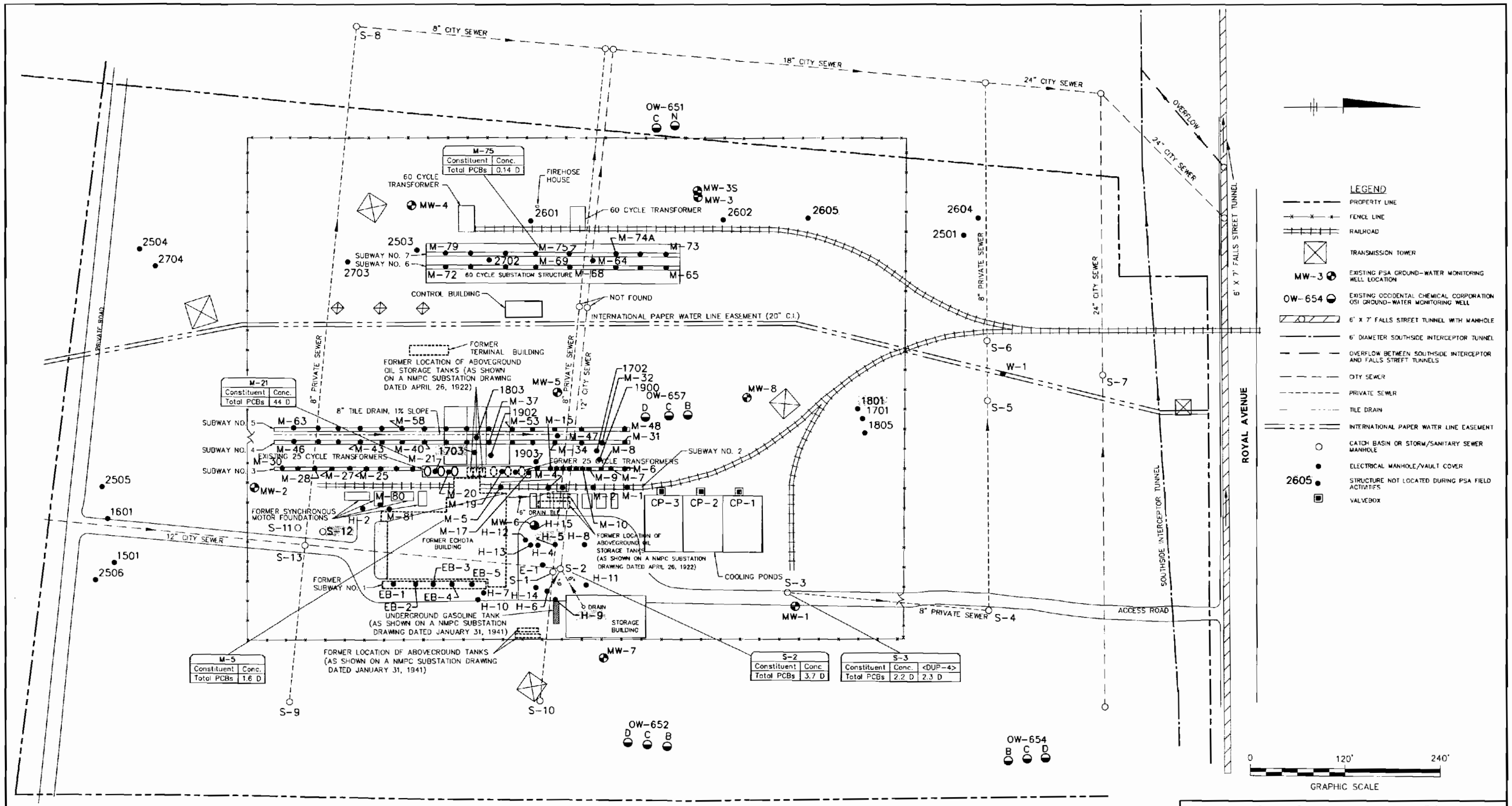
NIAGARA MOHAWK POWER CORPORATION
HARPER SUBSTATION
NIAGARA FALLS, NEW YORK

PRELIMINARY SITE ASSESSMENT

SUBSURFACE SOIL SAMPLING RESULTS - DETECTED INORGANIC CONSTITUENTS (ppm)

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 9



NOTES:

1. BASE MAP WAS DIGITIZED FROM NIAGARA MOHAWK POWER COMPANY MAP DATED 12/8/41. ADDITIONAL SITE AND DRAINAGE FEATURES WERE ADDED FROM A CITY OF NIAGARA FALLS COMBINATION SEWER PLAN AND VARIOUS OTHER NMPC SITE PLANS.
2. LOCATIONS OF ELECTRICAL VAULT COVERS ARE APPROXIMATE.
3. SITE AND DRAINAGE FEATURES ARE APPROXIMATE.
4. OTHER UNDERGROUND UTILITIES AND STRUCTURES MAY EXIST, THE LOCATION OF WHICH ARE UNKNOWN.
5. ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).
6. M = DEBRIS SAMPLE COLLECTED FROM AN ELECTRICAL MANHOLE.
7. S = DEBRIS SAMPLE COLLECTED FROM A STORM/SANITARY SEWER MANHOLE.
8. DUP = DUPLICATE SAMPLE.
9. D = CONSTITUENT CONCENTRATION IS BASED ON A DILUTED SAMPLE ANALYSIS.

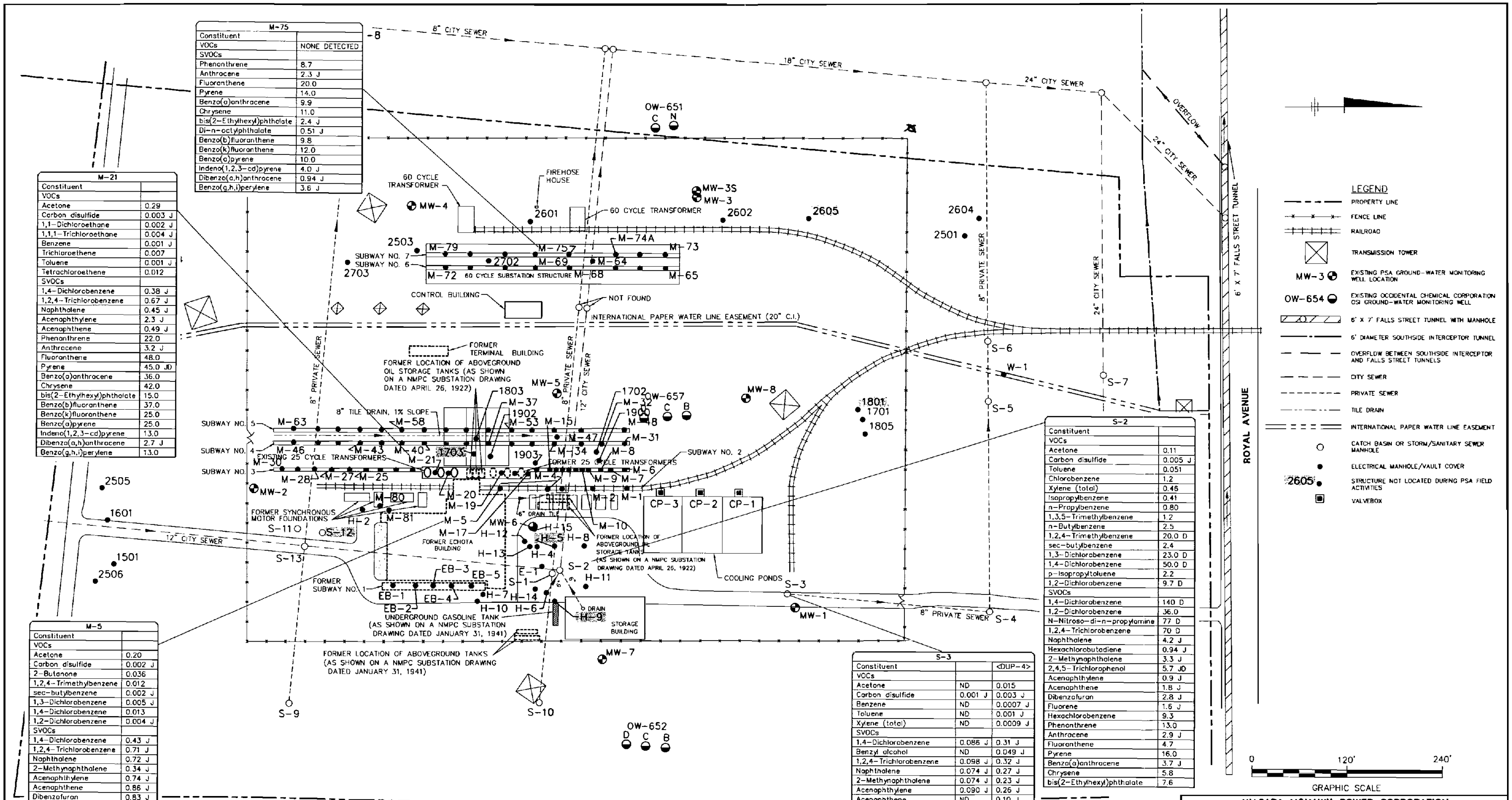
X: 36605X02.DWG
L: ON= * OFF= *REF*
P: STD-PCP/DL OR BIG.PCP
9/25/00 SYR-SA-JER CBM RCA PGL
36605003/36605C13.DWG

NIAGARA MOHAWK POWER CORPORATION
HARPER SUBSTATION
NIAGARA FALLS, NEW YORK
PRELIMINARY SITE ASSESSMENT

SUBSURFACE STRUCTURE DEBRIS SAMPLING RESULTS - DETECTED PCBs (ppm)

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 10



M-75	
Constituent	
VOCs	NONE DETECTED
SVOCs	
Phenanthrene	8.7
Anthracene	2.3 J
Fluoranthene	20.0
Pyrene	14.0
Benzo(a)anthracene	9.9
Chrysene	11.0
bis(2-Ethylhexyl)phthalate	2.4 J
Di-n-octylphthalate	0.51 J
Benzo(b)fluoranthene	9.8
Benzo(k)fluoranthene	12.0
Benzo(a)pyrene	10.0
Indeno(1,2,3-cd)pyrene	4.0 J
Dibenzo(a,h)anthracene	0.94 J
Benzo(g,h,i)perylene	3.6 J

M-21	
Constituent	
VOCs	
Acetone	0.29
Carbon disulfide	0.003 J
1,1-Dichloroethane	0.002 J
1,1,1-Trichloroethane	0.004 J
Benzene	0.001 J
Trichloroethene	0.007
Toluene	0.001 J
Tetrachloroethene	0.012
SVOCs	
1,4-Dichlorobenzene	0.38 J
1,2,4-Trichlorobenzene	0.67 J
Naphthalene	0.45 J
Acenaphthylene	2.3 J
Acenaphthene	0.49 J
Phenanthrene	22.0
Anthracene	3.2 J
Fluoranthene	48.0
Pyrene	45.0 JD
Benzo(a)anthracene	36.0
Chrysene	42.0
bis(2-Ethylhexyl)phthalate	15.0
Benzo(b)fluoranthene	37.0
Benzo(k)fluoranthene	25.0
Benzo(a)pyrene	25.0
Indeno(1,2,3-cd)pyrene	13.0
Dibenzo(a,h)anthracene	2.7 J
Benzo(g,h,i)perylene	13.0

M-5	
Constituent	
VOCs	
Acetone	0.20
Carbon disulfide	0.002 J
2-Butanone	0.036
1,2,4-Trimethylbenzene	0.012
sec-butylbenzene	0.002 J
1,3-Dichlorobenzene	0.005 J
1,4-Dichlorobenzene	0.013
1,2-Dichlorobenzene	0.004 J
SVOCs	
1,4-Dichlorobenzene	0.43 J
1,2,4-Trichlorobenzene	0.71 J
Naphthalene	0.72 J
2-Methynaphthalene	0.34 J
Acenaphthylene	0.74 J
Acenaphthene	0.86 J
Dibenzofuran	0.83 J
Fluorene	1.1 J
Phenanthrene	12.0
Anthracene	2.8
Fluoranthene	14.0
Pyrene	20.0
Benzo(a)anthracene	5.4
Chrysene	6.3
Benzo(b)fluoranthene	5.5
Benzo(k)fluoranthene	5.6
Benzo(a)pyrene	5.4
Indeno(1,2,3-cd)pyrene	2.6
Benzo(g,h,i)perylene	2.3

S-3		<DUP-4>
Constituent		
VOCs		
Acetone	ND	0.015
Carbon disulfide	0.001 J	0.003 J
Benzene	ND	0.0007 J
Toluene	ND	0.001 J
Xylene (total)	ND	0.0009 J
SVOCs		
1,4-Dichlorobenzene	0.086 J	0.31 J
Benzyl alcohol	ND	0.049 J
1,2,4-Trichlorobenzene	0.098 J	0.32 J
Naphthalene	0.074 J	0.27 J
2-Methynaphthalene	0.074 J	0.23 J
Acenaphthylene	0.090 J	0.26 J
Acenaphthene	ND	0.10 J
Dibenzofuran	0.070 J	0.19 J
Fluorene	0.11 J	0.28 J
Phenanthrene	0.70	2.2
Anthracene	0.13 J	0.43
Di-n-butylphthalate	0.24 JB	0.25 JB
Fluoranthene	1.1	4.2
Pyrene	1.6	5.0 D
Benzo(a)anthracene	0.5	1.8
Chrysene	0.82	2.8
bis(2-Ethylhexyl)phthalate	0.19 J	0.33 J
Benzo(b)fluoranthene	0.69	3.0
Benzo(k)fluoranthene	0.65	2.0
Benzo(a)pyrene	0.48	1.9
Indeno(1,2,3-cd)pyrene	0.25 J	1.2
Benzo(g,h,i)perylene	0.17 J	1.0

S-2	
Constituent	
VOCs	
Acetone	0.11
Carbon disulfide	0.005 J
Toluene	0.051
Chlorobenzene	1.2
Xylene (total)	0.46
Isopropylbenzene	0.41
n-Propylbenzene	0.80
1,3,5-Trimethylbenzene	1.2
n-Butylbenzene	2.5
1,2,4-Trimethylbenzene	20.0 D
sec-butylbenzene	2.4
1,3-Dichlorobenzene	23.0 D
1,4-Dichlorobenzene	50.0 D
p-Isopropyltoluene	2.2
1,2-Dichlorobenzene	9.7 D
SVOCs	
1,4-Dichlorobenzene	140 D
1,2-Dichlorobenzene	36.0
N-Nitroso-di-n-propylamine	77 D
1,2,4-Trichlorobenzene	70 D
Naphthalene	4.2 J
Hexachlorobutadiene	0.94 J
2-Methynaphthalene	3.3 J
2,4,5-Trichlorophenol	5.7 JD
Acenaphthylene	0.9 J
Acenaphthene	1.8 J
Dibenzofuran	2.8 J
Fluorene	1.6 J
Hexachlorobenzene	9.3
Phenanthrene	13.0
Anthracene	2.9 J
Fluoranthene	4.7
Pyrene	16.0
Benzo(a)anthracene	3.7 J
Chrysene	5.8
bis(2-Ethylhexyl)phthalate	7.6

NOTES:

1. BASE MAP WAS DIGITIZED FROM NIAGARA MOHAWK POWER COMPANY MAP DATED 12/9/41. ADDITIONAL SITE AND DRAINAGE FEATURES WERE ADDED FROM A CITY OF NIAGARA FALLS COMBINATION SEWER PLAN AND VARIOUS OTHER NMPC SITE PLANS.
2. LOCATIONS OF ELECTRICAL VAULT COVERS ARE APPROXIMATE
3. SITE AND DRAINAGE FEATURES ARE APPROXIMATE.
4. OTHER UNDERGROUND UTILITIES AND STRUCTURES MAY EXIST, THE LOCATION OF WHICH ARE UNKNOWN.
5. ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).
6. M = DEBRIS SAMPLE COLLECTED FROM AN ELECTRICAL MANHOLE.
7. S = DEBRIS SAMPLE COLLECTED FROM A STORM/SANITARY SEWER MANHOLE.
8. DUP = DUPLICATE SAMPLE.
9. B = COMPOUND WAS DETECTED IN SAMPLE AS WELL AS ASSOCIATED SAMPLE BLANK.
10. D = CONSTITUENT CONCENTRATION IS BASED ON A DILUTED SAMPLE ANALYSIS.
11. J = ESTIMATED VALUE.
12. ND = CONSTITUENT NOT DETECTED ABOVE LABORATORY DETECTION LIMITS.

X: 36605X02.DWG
L: ON= * OFF= *REF*
P: STD-PCP/DL OR B01.PCP
8/8/00 SYR-34-KR CBM RCA
36605003/36605C11.DWG

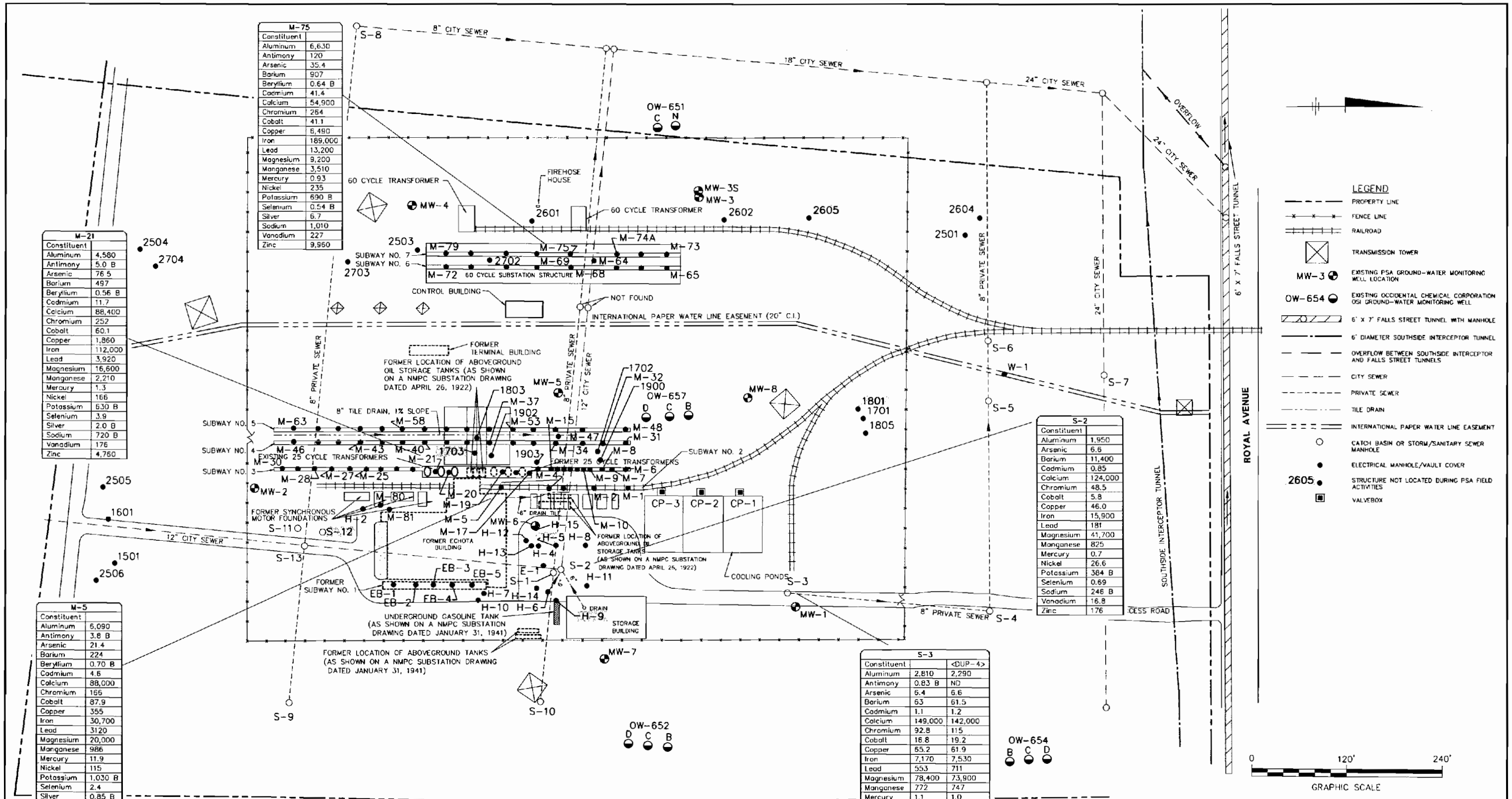
NIAGARA MOHAWK POWER CORPORATION
HARPER SUBSTATION
NIAGARA FALLS, NEW YORK

PRELIMINARY SITE ASSESSMENT

SUBSURFACE STRUCTURE DEBRIS SAMPLING RESULTS - DETECTED VOCs/SVOCs (ppm)

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 11



M-75	
Constituent	
Aluminum	6,630
Antimony	120
Arsenic	35.4
Barium	907
Beryllium	0.64 B
Cadmium	41.4
Calcium	54,900
Chromium	264
Cobalt	41.1
Copper	6,490
Iron	189,000
Lead	13,200
Magnesium	9,200
Manganese	3,510
Mercury	0.93
Nickel	235
Potassium	690 B
Selenium	0.54 B
Silver	6.7
Sodium	1,010
Vanadium	227
Zinc	9,950

M-21	
Constituent	
Aluminum	4,580
Antimony	5.0 B
Arsenic	76.5
Barium	497
Beryllium	0.56 B
Cadmium	11.7
Calcium	88,400
Chromium	252
Cobalt	60.1
Copper	1,860
Iron	112,000
Lead	3,920
Magnesium	16,600
Manganese	2,210
Mercury	1.3
Nickel	166
Potassium	630 B
Selenium	3.9
Silver	2.0 B
Sodium	720 B
Vanadium	176
Zinc	4,760

M-5	
Constituent	
Aluminum	6,090
Antimony	3.8 B
Arsenic	21.4
Barium	224
Beryllium	0.70 B
Cadmium	4.6
Calcium	88,000
Chromium	166
Cobalt	87.9
Copper	355
Iron	30,700
Lead	3120
Magnesium	20,000
Manganese	986
Mercury	11.9
Nickel	115
Potassium	1,030 B
Selenium	2.4
Silver	0.85 B
Sodium	312 B
Vanadium	90.2
Zinc	952

S-2	
Constituent	
Aluminum	1,950
Arsenic	6.6
Barium	11,400
Cadmium	0.85
Calcium	124,000
Chromium	48.5
Cobalt	5.8
Copper	46.0
Iron	15,900
Lead	181
Magnesium	41,700
Manganese	825
Mercury	0.7
Nickel	26.6
Potassium	384 B
Selenium	0.69
Sodium	246 B
Vanadium	16.8
Zinc	176

S-3		
Constituent		<DUP-4>
Aluminum	2,810	2,290
Antimony	0.83 B	ND
Arsenic	6.4	6.6
Barium	63	61.5
Cadmium	1.1	1.2
Calcium	149,000	142,000
Chromium	92.8	115
Cobalt	16.8	19.2
Copper	55.2	61.9
Iron	7,170	7,530
Lead	553	711
Magnesium	78,400	73,900
Manganese	772	747
Mercury	1.1	1.0
Nickel	28.4	25.7
Potassium	534 B	539 B
Selenium	1.2	0.88
Sodium	292	279 B
Vanadium	15.9	18.6
Zinc	243	274

NOTES:

1. BASE MAP WAS DIGITIZED FROM NIAGARA MOHAWK POWER COMPANY MAP DATED 12/8/41. ADDITIONAL SITE AND DRAINAGE FEATURES WERE ADDED FROM A CITY OF NIAGARA FALLS COMBINATION SEWER PLAN AND VARIOUS OTHER NMPC SITE PLANS.
2. LOCATIONS OF ELECTRICAL VAULT COVERS ARE APPROXIMATE.
3. SITE AND DRAINAGE FEATURES ARE APPROXIMATE.
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7. S = DEBRIS SAMPLE COLLECTED FROM A STORM/SANITARY SEWER MANHOLE.
8. DUP = DUPLICATE SAMPLE.
9. B = INDICATES THAT THE COMPOUND WAS DETECTED AT A CONCENTRATION WHICH IS GREATER THAN OR EQUAL TO THE INSTRUMENT DETECTION LIMIT, BUT LESS THAN THE CONTRACT REQUIRED DETECTION LIMIT.
10. ND = CONSTITUENT NOT DETECTED ABOVE LABORATORY DETECTION LIMITS.

X: 36605X02.DWG
L: ON= * OFF= *REF*
P: STD-PCP/DL OR B01.PCP
9/25/00 SYR-54-JER CBM RCA PCL
36605003/36605C12.DWG

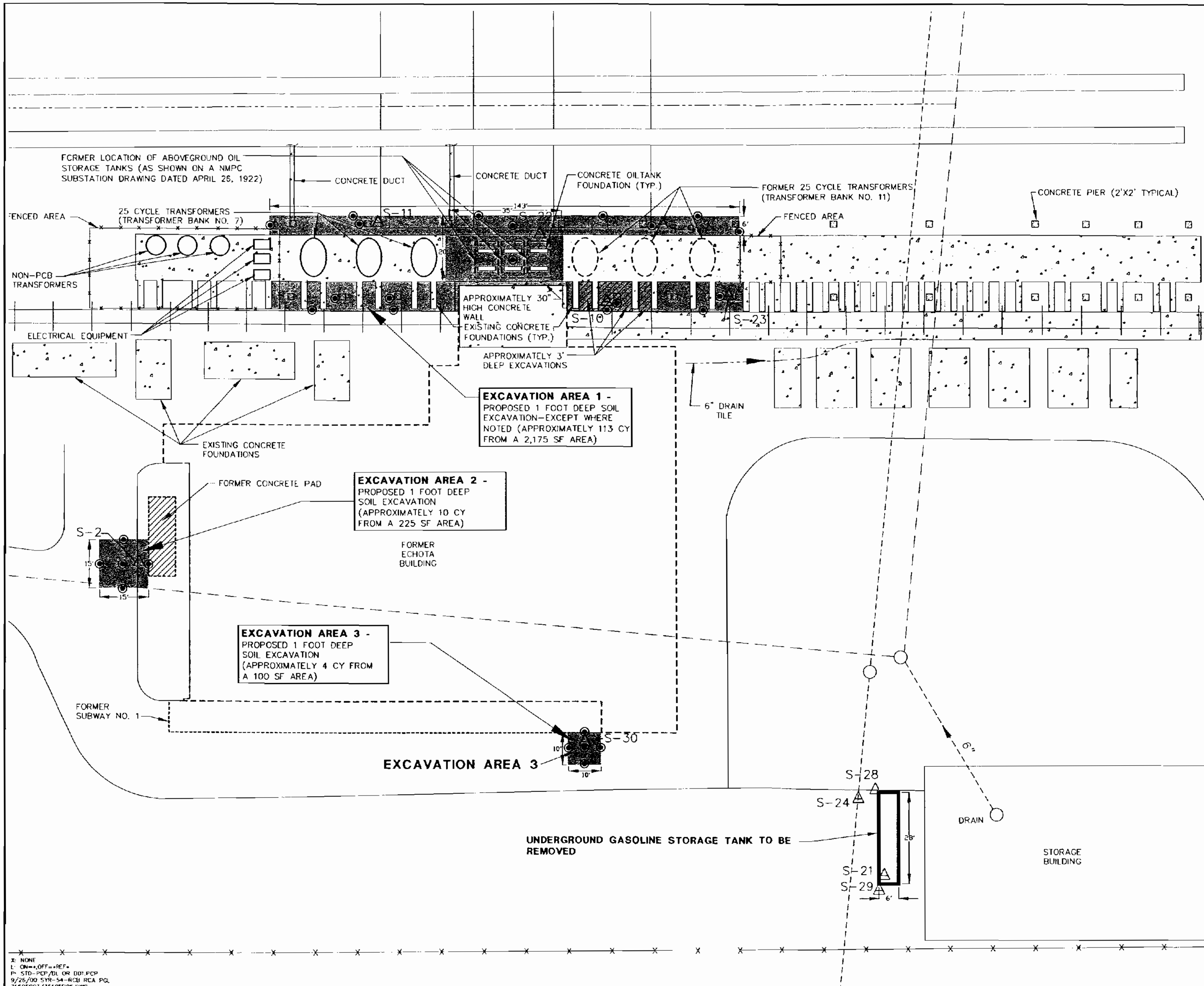
NIAGARA MOHAWK POWER CORPORATION
HARPER SUBSTATION
NIAGARA FALLS, NEW YORK

PRELIMINARY SITE ASSESSMENT

SUBSURFACE STRUCTURE DEBRIS SAMPLING RESULTS - DETECTED TAL INORGANIC CONSTITUENTS (ppm)

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 12


FORMER LOCATION OF ABOVEGROUND OIL STORAGE TANKS (AS SHOWN ON A NMPC SUBSTATION DRAWING DATED APRIL 26, 1922)
CONCRETE DUCT
CONCRETE DUCT
CONCRETE OILTANK FOUNDATION (TYP.)
FORMER 25 CYCLE TRANSFORMERS (TRANSFORMER BANK NO. 11)
CONCRETE PIER (2'X2' TYPICAL)
FENCED AREA
25 CYCLE TRANSFORMERS (TRANSFORMER BANK NO. 7)
FENCED AREA
NON-PCB TRANSFORMERS
ELECTRICAL EQUIPMENT
APPROXIMATELY 30" HIGH CONCRETE WALL
EXISTING CONCRETE FOUNDATIONS (TYP.)
APPROXIMATELY 3' DEEP EXCAVATIONS
S-11
S-10
S-23
6" DRAIN TILE
EXCAVATION AREA 1 - PROPOSED 1 FOOT DEEP SOIL EXCAVATION-EXCEPT WHERE NOTED (APPROXIMATELY 113 CY FROM A 2,175 SF AREA)
EXISTING CONCRETE FOUNDATIONS
FORMER CONCRETE PAD
EXCAVATION AREA 2 - PROPOSED 1 FOOT DEEP SOIL EXCAVATION (APPROXIMATELY 10 CY FROM A 225 SF AREA)
FORMER ECHOTA BUILDING
S-2
EXCAVATION AREA 3 - PROPOSED 1 FOOT DEEP SOIL EXCAVATION (APPROXIMATELY 4 CY FROM A 100 SF AREA)
FORMER SUBWAY NO. 1
S-30
EXCAVATION AREA 3
S-28
S-24
S-21
S-29
UNDERGROUND GASOLINE STORAGE TANK TO BE REMOVED
DRAIN
STORAGE BUILDING
LEGEND
PROPOSED EXTENT OF NON-HAZARDOUS SOIL REMOVAL TO A DEPTH OF 1 FOOT
PROPOSED EXTENT OF TSCA SOIL REMOVAL TO A DEPTH OF 3 FEET
S-11 PSA SOIL SAMPLING LOCATION
PROPOSED VERIFICATION SOIL SAMPLING LOCATION
CITY SEWER
PRIVATE SEWER
FENCE LINE
RAILROAD
CATCH BASIN OR STORM/SANITARY SEWER MANHOLE
0
30'
60'
APPROXIMATE GRAPHIC SCALE

NOTES:

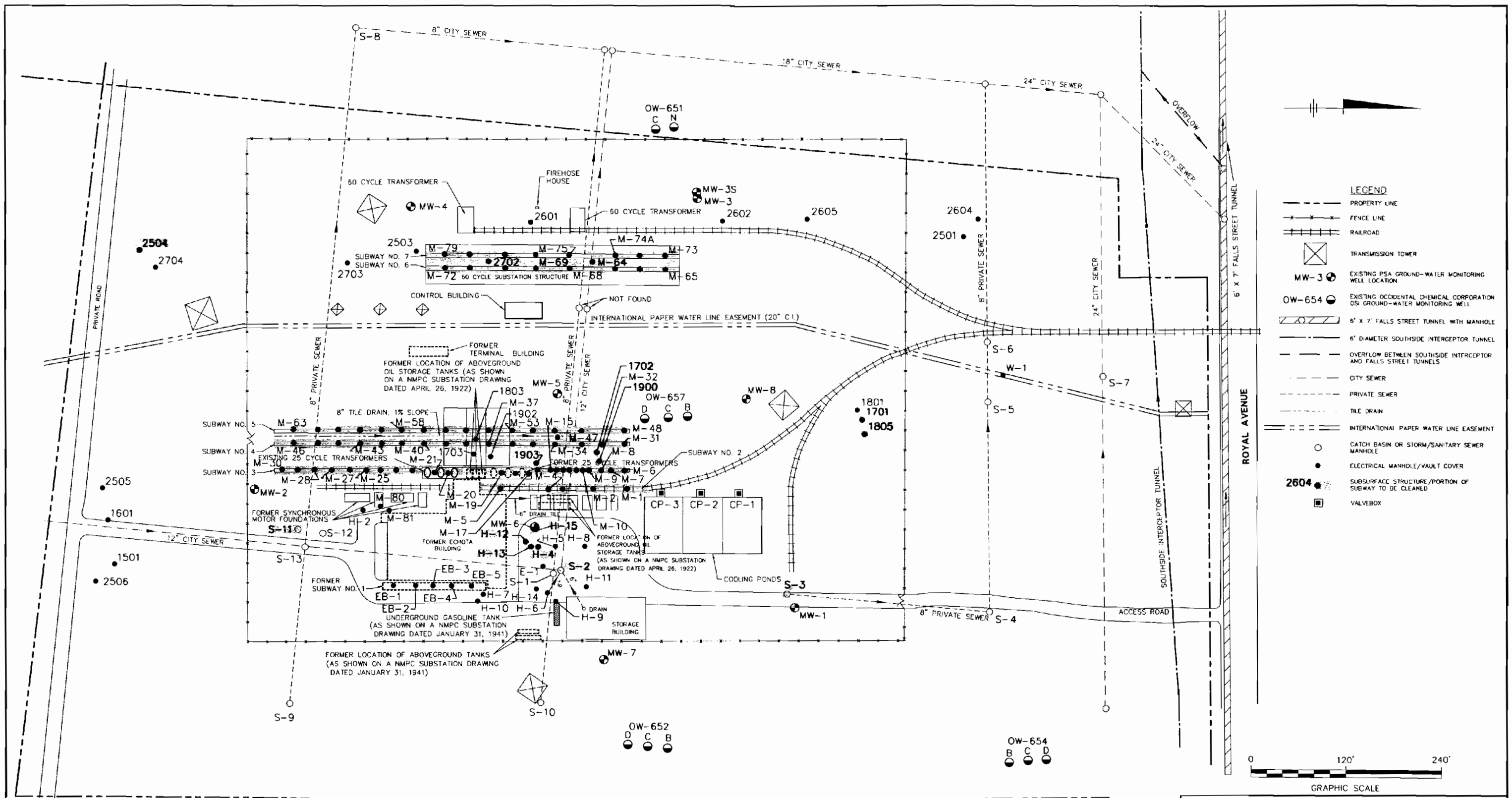
1. BASE MAP WAS DIGITIZED FROM NIAGARA MOHAWK POWER COMPANY MAP DATED 12/8/41. ADDITIONAL SITE AND DRAINAGE FEATURES WERE ADDED FROM A CITY OF NIAGARA FALLS COMBINATION SEWER PLAN AND VARIOUS OTHER NMPC SITE PLANS.
2. SAMPLING LOCATIONS ARE FROM NIAGARA MOHAWK POWER CORPORATION SURVEY DRAWING #D-61367-W, DATED SEPT. 9, 1999.
3. SITE AND DRAINAGE FEATURES ARE APPROXIMATE.
4. OTHER UNDERGROUND UTILITIES AND STRUCTURES EXIST, THE LOCATION OF WHICH ARE NOT SHOWN.

NIAGARA MOHAWK POWER CORPORATION
HARPER SUBSTATION
NIAGARA FALLS, NEW YORK
REMEDIAL MEASURES

PROPOSED LIMITS OF INTERIM REMEDIAL MEASURES

BBL BLASLAND, BOUCK & LEE, INC. *engineers & scientists*

FIGURE **13**



NOTES:

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3. SITE AND DRAINAGE FEATURES ARE APPROXIMATE.
4. OTHER UNDERGROUND UTILITIES AND STRUCTURES MAY EXIST, THE LOCATION OF WHICH ARE UNKNOWN.

X: 36605X02.DWG
L: ON= *, OFF= *REF*
P: STD-PCP/DL OR B01.PCP
9/26/00 SYR-54-JER CBM RCA PGL
36605003/36605B04.DWG

NIAGARA MOHAWK POWER CORPORATION
HARPER SUBSTATION
NIAGARA FALLS, NEW YORK

INTERIM REMEDIAL MEASURES

PROPOSED LOCATIONS OF SUBSURFACE STRUCTURE CLEANING ACTIVITIES

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 14

Appendices

Appendix A - Test Pit Logs

BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists
6723 Towpath Road, Box 66, Syracuse, N.Y. 13214-0066
TEL (315) 446-9120

PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/12/99

TEST PIT LOG

TP-1

HEADSPACE (ppm)		SOIL TYPE	SAMPLES COLLECTED
0	0'		0
0-6": 0.0		0-0.5': Topsoil - brown Silt/Sand w/roots	SS-1 (0-0.5') -PCBs
	1'	0.5-6': Light Brown to Gray Silt & Sand	1'
6"-2': 0.0			TP-1 (0.5-1.5') -PCBs
	2'		2'
2-4': 0.0	3'		3'
	4'		4'
4-6': 0.0	5'		5'
	6'		6'

- TP-1 excavated to ~6' depth
- No water encountered
- No visible staining observed
- No odors noticed

NOTES: Photographs : Before : 1-1
During : 1-2
After : 1-3

BBL
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engineers & scientists
6723 Towpath Road, Box 66, Syracuse, N.Y. 13214-0066
TEL (315) 446-9120

PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/12/99

TEST PIT LOG
TP-2

HEADSPACE (ppm)		SOIL TYPE	SAMPLES COLLECTED
0	0'		0
0-6": 0.0		0-0.5': Dark gray gravel/stone	SS-2(0-0.5') - PCBs, SVOCs, Inorganics, & CN
6"-2': 0.0	1'	0.5-1.5': Light Brown Silt/Sand	1'
	2'	1.5-3.5': Black gravel/sand	2' TP-2 (1.5-3.5') - PCBs, VOCs, SVOCs, Inorganics, & CN
2-4': 0.0	3'		3'
	4'	3.5-6': Light Brown/Reddish Silt w/some sand	4'
4-6': 0.0	5'		5'
	6'		6'

- TP-2 excavated to ~6' depth
- No water encountered
- No visible staining observed
- No noticeable odors

NOTES: Photographs: Before: 1-4
During: 1-5
After: 1-6

BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists
6723 Towpath Road, Box 66, Syracuse, N.Y. 13214-0066
TEL (315) 446-9120

PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/12/99

TEST PIT LOG

TP-3

HEADSPACE (ppm)		SOIL TYPE	SAMPLES COLLECTED
0			0
0-6": 0.0		0-1.5': Gravel/Sand - Gray	SS-3 (0-0.5') - PCBs
	1'		1'
6"-2': 0.0		1.5-3': Gray to Light Brown Silt w/Sand	TP-3 (1-2') - PCBs
	2'		2'
2-4': 0.0	3'	3-4': Black Gravel/Sand	3'
	4'	4-6': Light Brown Silt	4'
4-6': 0.0	5'	- Concrete encountered @ ~6'	5'
	6'		6'

- TP-3 excavated to ~6' depth
- No water encountered
- No visible staining observed
- No noticeable odors

NOTES: Photographs: Before: 1-7
During: 1-8
After: 1-9

BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists
6723 Towpath Road, Box 66, Syracuse, N.Y. 13214-0066
TEL (315) 446-9120

PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/13/99

TEST PIT LOG

TP-4

HEADSPACE (ppm)		SOIL TYPE	SAMPLES COLLECTED
0			0
0-6": 0.0		0-1': Dark Brown Sand w/gravel	SS-4 (0-0.5') -PCBs
	1'		1'
6"-2': 0.0		1-3': Dark Brown/Gray Silt -slight odor	TP-4 (1-2')
	2'		2' -PCBs, VOCs, SVOCs, Inorganics, & CN
2-4': 0.0	3'	3-6': Gray to Brown Silt w/Sand	3'
	4'		4'
4-6': 0.0	5'		5'
	6'		6'
		TP-4 excavated to ~6' depth • No water encountered	

NOTES: Photographs: Before: 1-12
During: 1-13
After: 1-14

BBL
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engineers & scientists
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TEL (315) 446-9120

PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/12/99

TEST PIT LOG

TP-5

HEADSPACE (ppm)	SOIL TYPE	SAMPLES COLLECTED
0-6": 0.0	0-0.5': Black/Gray/Dark Brown Silt/Sand/Gravel	SS-5 (0-0.5') -PCBs
6"-2': 0.0	0.5-2': Dark Brown/Gray Sand/silt	TP-5 (0.5-1.5') -PCBs
2-5': 0.0	2-5': Light Brown silt w/some clay -moist @ ~4'	
	TP-5 excavated to ~5' depth • Water seeping into TP-5 @ 5' • No visible staining • No noticeable odors	

NOTES: Photographs: Before: 1-10
During: 1-11

BBL
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PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/13/99

TEST PIT LOG
TP-6

HEADSPACE (ppm)		SOIL TYPE	SAMPLES COLLECTED
0			0
0-6": 0.0		0-0.5': Dark Brown Sand w/gravel	SS-6 (0-0.5') - PCBs
6"-2': 0.0	1'	0.5-1.5': Light brown silt w/sand	1'
	2'	1.5-3': Gray to Dark Brown/Black Sand (Coarse) - Buried Insulators encountered @ 0-3'	2' TP-6 (2-3') - PCBs
2-4': 0.0	3'	3-5': Light Brown Silt w/Sand some clay	3'
	4'		4'
4-': 0.0	5'	TP-6 excavated to ~5' depth • No water encountered	5'
	6'		6'

NOTES: Photographs: Before: 1-24
During: 1-25
After: 2-1

BBL
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engineers & scientists
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TEL (315) 446-9120

PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/13/94

TEST PIT LOG
TP-7

HEADSPACE (ppm)	SOIL TYPE	SAMPLES COLLECTED
0-6": 0.0	0-3': Large Stone (2-3") w/some dark gray/brown sand	SS-7 (0-0.5') - PCBs
6"-2': NA		
2-4': NA	• Excavated TP-7 to ~3' depth • No water encountered • No noticeable odors	
4-6': NA	• TP-7 excavation ceased @ 3' due to presence of concrete spread footers	

NOTES: Photographs:
During: 2-2

BBL
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engineers & scientists
6723 Towpath Road, Box 66, Syracuse, N.Y. 13214-0066
TEL (315) 446-9120

PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/13/99

TEST PIT LOG

TP-8

HEADSPACE (ppm)		SOIL TYPE	SAMPLES COLLECTED
0			0
0-6": 0.0		0-2': Gravel / Stone w/some sand	SS-8 (0-0.5') - PCBs
	1'		1'
6"-2': 0.0			
	2'		2' TP-8 (1.5-2.5') - PCBs
		2-3': Dark Brown Silt/sand	
2-4': 0.0	3'		3'
		3-6.5': Light Brown Silt	
	4'		4'
		- Concrete footer encountered - electrical conduit duct encountered	
	5'		5'
	6'		6'
		TP-8 excavated to ~6.5' depth • No water encountered • No staining observed • No noticeable odors	

NOTES: Photographs: Before: 1-21
During: 1-22
After: 1-23

BBL
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engineers & scientists
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TEL (315) 446-9120

PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/13/99

TEST PIT LOG
TP-9

HEADSPACE (ppm)		SOIL TYPE	SAMPLES COLLECTED
0			0
0-6": 0.0		0-2.5': Gray to Black Sand, Ash, Large stone, buried brick, Clay Tile	SS-9 (0-0.5') - PCBs, [redacted], SVOCs, & Metals/CN
6"-2': 0.0	1'	- layer of red brick @ 2.5'	1'
	2'	2.5-4': Ash/Gravel/Sand - Tightly Compact - Gray/Black - layer of brown	2' TP-9 (1.5-2.5') - PCBs, SVOCs, VOCs, & Metals/CN
2-4': 0.0	3'		3'
	4'	4': Hard-Packed Clay-Silt	4'
4-6': NA	5'	• TP-9 excavated to ~4' depth • No Water encountered • Encountered cooling water piping during excavation	5'
	6'		6'

NOTES: Photographs: Before: 2-3 2-7 (surface soil sampling location SS-9)
During: 2-4, 2-5
After: 2-6

BBL
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engineers & scientists
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TEL (315) 446-9120

PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/14/99

TEST PIT LOG
TP-10

HEADSPACE (ppm)		SOIL TYPE	SAMPLES COLLECTED
0			0
0-6": 0.0		0-0.5': Black-stained gravel/sand	SS-10 (0-0.5')
6"-2': 0.0	1'	0.5-3': 2" stone w/some sand	1' -PCBs
	2'		2'
	3'		3'
		TP-10 excavated to ~3' depth	
	4'	• No water encountered	4'
		• Encountered concrete spread footers @ ~3'	
	5'		5'
		• No subsurface soil sample collected.	
	6'		6'

NOTES: Photographs: Before: 2-16
During: 2-17
After: 2-18

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PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/13/99

TEST PIT LOG

TP-11

HEADSPACE (ppm)		SOIL TYPE	SAMPLES COLLECTED
0			0
0-6": 0.0		0-1': Gray Sand / Gravel	SS-11 (0-0.5')
	1'	1-2.5': Light brown silt w/some clay	1' - PCBs, SVOCs, & Metals/CN
6"-2': 0.0	2'		2' TP-11 (1-2')
		2.5-3.5': Reddish brown Sand w/some pebbles	- PCBs, VOCs, SVOCs,
2-4': 0.0	3'		3' & Metals/CN
		3.5-4.5': Light Brown clayey silt	
	4'		4'
		TP-11 excavated to ~4.5' depth	
4-6': NA	5'	• No water encountered	5'
	6'	• No noticeable odors	6'
		• Encountered water piping during TP-11 excavation	

NOTES: Photographs: Before: 2-11
After: 2-12

BBL
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engineers & scientists
6723 Towpath Road, Box 66, Syracuse, N.Y. 13214-0066
TEL (315) 446-9120

PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/14/99

TEST PIT LOG

TP-12

HEADSPACE (ppm)	SOIL TYPE	SAMPLES COLLECTED
0		0
0-6": 0.0	0-0.5': Gray fine sand/gravel	SS-12 (0-0.5') -PCBs
6"-2': 0.0	0.5-3': Brown silt/sand w/some black streaks	TP-12 (2-3') -PCBs, SVOCs, Metals, VOCs
1'		1'
2'		2'
3'		3'
	TP-12 excavated to ~3' depth • No water encountered • Encountered water pipe @ 3' - unable to relocate TP-12 due to presence of electrical conduit in area	
4'		4'
5'		5'
6'		6'

NOTES: Photographs: Before: 2-19
During: 2-20
After: 2-21

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PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/14/99

TEST PIT LOG

TP-13

HEADSPACE (ppm)		SOIL TYPE	SAMPLES COLLECTED
0			0
0-6": 0.0		0-0.5': Topsoil - fine sand	SS-13 (0-0.5') - PCBs
	1'	0.5-1.5': Light brown sand - very compact	1'
6"-2': 0.0		1.5-2': Black sand/ash - compact w/ red brick	TP-13 (1-2') - PCBs
	2'	2-3': Red Clay	2'
	3'		3'
		TP-13 excavated to ~3' depth	
	4'	• No water encountered	4'
		• TP-13 halted @ 3' due to hard soil (concrete?) @ bottom	
	5'		5'
	6'		6'

NOTES: Photographs: Before: 2-25
During: 3-1
After: 3-2

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PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/14/99

TEST PIT LOG
TP-14

HEADSPACE (ppm)		SOIL TYPE	SAMPLES COLLECTED
0	0'		0
0-6": 0.0		0-0.5': gray/black sand & gravel	SS-14(0-0.5') -PCBs
6"-2': 0.0	1'	0.5-3': black sand/ash (crystaline) -fire brick, 2" stone, red brick, glass	1' TP-14(1-2') -PCBs
	2'		2'
2-4': 0.0	3'	3-4': Reddish/Dark Brown clayey silt	3'
	4'	4-6': Light Brown clay w/silt	4'
	5'		5'
	6'		6'
		TP-14 excavated to ~6' depth -No water encountered	

NOTES: Photographs: Before: 2-22
During: 2-23
After: 2-24

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PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/14/99

TEST PIT LOG
TP-15

HEADSPACE (ppm)		SOIL TYPE	SAMPLES COLLECTED
0			0
0-6": 0.0		0-0.5': Topsoil	SS-15(0-0.5') -PCBs, SVOCs, & Metals/CN
6"-2': 0.0	1'	0.5-4': Light Brown Silty Sand w/some black streaks	1'
	2'		2' TP-15(1-2') -PCBs, SVOCs, VOCs, Metals/CN
2-4': 0.0	3'	4-5.5': Reddish Brown Silty Sand	3'
	4'		4' • collected MS, MSD, & DUP-3
	5'		5'
	6'	TP-15 excavated to ~5.5' depth • No water encountered • No staining/odors encountered	6'

NOTES: Photographs: Before: 3-10
During: 3-11
After: 3-12

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PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/14/99

TEST PIT LOG
TP-16

HEADSPACE (ppm)		SOIL TYPE	SAMPLES COLLECTED
0			0
0-6": 0.0		0-1': Gravel/sand	SS-16(0-0.5') -PCBs
	1'	1-2': Bluish/Brown sand w/2" stone	1' TP-16(1-2')
6"-2': 0.0			
	2'	2-4': Gray to Greenish Sandy silt -some wood fragments	2' -PCBs
2-4': 0.0	3'		3'
		4-4.5': Gray silty Clay	
	4'		4'
	5'	TP-16 excavated to ~4.5' depth	5'
		-No water encountered	
	6'		6'

NOTES: Photographs: Before: 3-7
During: 3-8
After: 3-9

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PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/14/99

TEST PIT LOG
TP-17

HEADSPACE (ppm)	SOIL TYPE	SAMPLES COLLECTED
0-6": 0.0	0-0.5': Topsoil w/organic roots	SS-17(0-0.5') -PCBs
6"-2': 0.0	0.5-2': Silt/Sand (Fill) w/rock, brick, concrete -some red clay	TP-17(0.5-1.5') -PCBs
2-4': 0.0	2-6': Brown sand & silt	
	TP-17 excavated to ~6' depth • No water encountered	

NOTES: Photographs: Before: 3-4
During: 3-5
After: 3-6

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PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/15/99

TEST PIT LOG

TP-18

HEADSPACE (ppm)		SOIL TYPE	SAMPLES COLLECTED
0			0
0-6": 0.0	1'	0-1': gravel w/sand	SS-18 (0-0.5')
		1-1.5': red clay	1' - PCBs, SVOCs, & Metals/CN
6"-2': 0.0	2'	1.5-2.5': dark to light brown silt/sand/clay	2' TP-18 (1.5-2.5') - PCBs, SVOCs, VOCs, & Metals/CN
2-4': 0.0	3'	2.5-5': light brown silty sand (fine)	3'
	4'		4'
	5'	TP-18 excavated to ~5' depth	5'
	6'	• No water encountered	6'

NOTES: Photographs: Before: 3-24
During: 3-25
After: 4-1

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PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/15/99

TEST PIT LOG
TP-19

HEADSPACE (ppm)		SOIL TYPE	SAMPLES COLLECTED
0			0
0-6": 0.0		0-0.5': gravel	SS-19 (0-0.5')
	1'	0.5-1': light brown silt/sand	1' - PCBs, SVOCs, & Metals/CN
6"-2': 0.0		1-1.5': dark gravel/sand	
	2'	1.5-3.5': brown silt/sand w/gravel	2' TP-19 (1.5-2.5') - PCBs, SVOCs,
2-4': 0.0	3'	3.5-5.5': reddish brown silty clay	3' VOCs, & Metals/CN
	4'		4'
	5'		5'
	6'	TP-19 excavated to ~5.5' depth • No water encountered	6'

NOTES: Photographs: Before: 4-1
During: 4-3

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PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/15/99

TEST PIT LOG

TP-20

HEADSPACE (ppm)		SOIL TYPE	SAMPLES COLLECTED
0	0'		0
0-6": 0.0		0-1': gravel w/some sand	SS-20(0-0.5') -PCBs, SVOCs, & Metals/CN
6"-2': 0.0	1'	1-3': brown to dark brown silty sand w/rock	1'
	2'		2' TP-20(2-3') -PCBs, VOCs, SVOCs, & Metals/CN
2-4': 0.0	3'	3-5': light brown silty clay	3'
	4'		4'
	5'		5'
		TP-20 excavated to ~5' depth	
	6'	• No water encountered	6'

NOTES: Photographs: Before: 3-21
During: 3-22
After: 3-23

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PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/13/99

TEST PIT LOG
TP-21

HEADSPACE (ppm)		SOIL TYPE	SAMPLES COLLECTED
0			0
0-6": 0.0		0-1.5': Gray/Brown Sand w/gravel	SS-21 (0-0.5')
	1'		1' - PCBs
6"-2': 0.0		1.5-4.5': Light to Dark Brown/Gray Silt w/Sand	
	2'		2'
		- Large Metal Fuel Tank encountered @ 3' depth	TP-21 (6.5-7')
2-4': 0.0	3'	- Vent piping encountered within excavation	3' - PCBs, VOCs, SVOCs, Inorganics, & CN
	4'		4'
		4.5-6.5': Gray Silt/Sand - noticeable petroleum odor	
4-6': 517	5'		5'
	6'	6.5': Wet dark gray silt/sand - noticeable odors	6'
		TP-21 excavated to ~6.5' depth	
		• Noticeable petroleum odors encountered	
		•	

NOTES: Photographs: Before: 1-15
During: 1-16, 1-17, 1-18, 1-19
After: 1-20

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PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/13/99

TEST PIT LOG
TP-22

HEADSPACE (ppm)		SOIL TYPE	SAMPLES COLLECTED
0	0'		0
0-6": 0.0		0-0.5': gravel	SS-22 (0-0.5') - PCBs
6"-2': 0.0	1'	0.5-3': light brown silt w/some clay	1'
	2'		2' TP-22 (0.5-1.5') - PCBs
2-4': 0.0	3'	3-4': black sand/ash - compact (hard)	3'
	4'	4-5': light brown silt w/clay	4'
	5'		5'
		TP-22 excavated to ~5' depth	
	6'	• No water encountered	6'
		• No visual staining	

NOTES: Photographs: Before: 2-8
During: 2-9
After: 2-10

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LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/14/99

TEST PIT LOG
TP-23

HEADSPACE (ppm)		SOIL TYPE	SAMPLES COLLECTED
0	0'		0
0-6": 1.2		0.-0.5': Black stained gravel w/sand	SS-23 (0-0.5') -PCBs
6"-2': 0.6	1'	0.5-4': Brown silt/sand (fill) -some black streaks -2" stone on southern wall of TP-23	1'
	2'		2' TP-23 (1-2') -PCBs, SVOCs, VOCs, & Metals/CN
2-4': 0.0	3'	4': light brown/reddish brown silt w/clay	3'
	4'	TP-23 excavated to ~4' depth	4'
	5'	• No water encountered	5'
	6'	• Black-stained @ surface	6'

NOTES: Photographs: Before: 2-13
During: 2-14
After: 2-15

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PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/21/99

TEST PIT LOG
TP-24

HEADSPACE (ppm)	SOIL TYPE	SAMPLES COLLECTED
0-6": N/A 6"-2': N/A 2-4': N/A 4-6': N/A	0-3': Sand/Gravel - Brown to Gray - 4" pipe encountered @ west of TP-24 - 4" pipe encountered @ north of TP-24 3-7.5': Silty Clay - brown to Red 7.5-8.5': Red Clay - Clay tile pipe encountered @ ~7.5' depth - Concrete block w/ piping & electrical wire removed from excavation (may be former pump base) - Electrical vault (H-8) encountered @ southern edge of TP-24 • No water encountered • No bedding material encountered TP-24 excavated to ~8.5' depth	4' TP-24 (7.5-8') - PCBs, VOCs, SVOCs, 6 Metals/CN

NOTES: Photographs: Before: 7-24
During: 7-25, 8-1, 8-2, 8-3, 8-4

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PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/21/99

TEST PIT LOG
TP-25

HEADSPACE (ppm)		SOIL TYPE	SAMPLES COLLECTED
0	0		0
0-6": N/A		0-1': Silt/Sand - Brown	
	1'	1-6': Red/Brown Silt w/clay	1'
6"-2': N/A			
	2'		2'
2-4': N/A	3'	6-8.5': Red/Gray Silty Clay	3' TP-25(8-8.5') - PCBs, VOCs, SVOCs, & Metals/CN
	4'		4'
4-6': N/A	5'		5'
	6'	• Encountered 24" OD cast iron pipe (Kimberly Clark Water Line) @ ~6.5' depth	6'
	7'	• No water encountered	
		• No bedding material encountered	
	8'	• No staining/odors encountered	

TP-25 excavated to ~ 8.5' depth

NOTES: Photographs: Before: 8-13
During: 8-14

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PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/22/99

TEST PIT LOG
TP-26

HEADSPACE (ppm)	SOIL TYPE	SAMPLES COLLECTED
0		0
0-6": N/A	0-1': Topsoil/Gravel	
6"-2': N/A	1-6': Brown/Red Silt/Sand (Fill)	1' • No SAMPLES Collected
2-4': N/A	6-11': Red Silt/Clay	
4-6': N/A	• TP-26 excavated to ~11' depth • No water encountered • No underground utilities encountered	

1' 2' 3' 4' 5' 6' 7' 8'

NOTES: Photographs: Before: 8-15
During: 8-16

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PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/22/99

TEST PIT LOG
TP-27

HEADSPACE (ppm)		SOIL TYPE	SAMPLES COLLECTED
0			0
0-6": N/A	1'	0-0.5': gravel/sand 0.5-1.5': Red/brown silty sand	1'
6"-2': N/A	2'	1.5-2.5': black/gray ash	2' No SAMPLES collected
2-4': N/A	3'	2.5-8': brown to red silt w/clay	3'
	4'	8-9': Red clay	4'
4-6': N/A	5'		5'
	6'		6'
	7'	• TP-27 excavated to ~9' depth • No water encountered • No underground debris/tile encountered	
	8'		

NOTES: Photographs: Before: 8-17
During: 8-18

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PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/15/99

TEST PIT LOG

TP-CP1

HEADSPACE (ppm) | SOIL TYPE | SAMPLES COLLECTED

0-5.5':
0.0

0-5.5': Fill - silt/sand/stone w/Buried Debris

- Debris encountered: Concrete, rags, rope, poly, buried metal drum (encased) (yellow)

TP-CP1 excavated to ~5' depth
- No water encountered

TP-CP1 (3.5-5')
- PCBs, VOCs, SVOCs, & Metals/CN

1' 2' 3' 4' 5' 6'

NOTES: Photographs: Before: 3-13
During: 3-14 (encased metal drum) - 3-15

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PROJECT NAME PSA
PROJECT NUMBER 364.87
LOCATION NMPC - Harper Substation
LOGGED BY CEG DATE 7/15/99

TEST PIT LOG
TP-CP2

HEADSPACE (ppm)	SOIL TYPE	SAMPLES COLLECTED
0		0
0-5.5': 0.0	0-5.5': Fill - silt/sand/gravel w/ debris	TP-CP2(3-5') - PCBs, VOCs, SVOCs, & Metals/CN
1'		1'
	Debris encountered: concrete, rubber tire, fencing, metal, insulators, rags, wood, wire, cable, poly, metal piping, empty/ rusted metal drum, and an old electrical panel	
2'		2'
3'		3'
4'		4'
5'		5'
6'	TP-CP2 excavated to ~ 5.5' depth • No water encountered	6'

NOTES: Photographs: During: 3-16 (Excavated material), 3-17

Appendix B - Subsurface Structure Inspection Forms

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Storm/Sanitary Sewer Manholes and Catch Basins

(Designations by BBL: S-1 through S-11, S-13)

BLASLAND, BOUCK & LEE, INC.
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Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Friday, July 16, 1999
Weather: Sunny - Hot/Humid
Temperature: 85-90 F
Wind: Light Wind
Inspector/Recorder: JCB/CEG

Job Number: 364.87.03

Structure ID: S-1

Cover

Location: (In Pavement) / Concrete / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 24" Distance Above Grade: 0'
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: (Manhole) / Catch Basin / Conduit Vault / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Steel (Circle One)
Sidewalls: (Brick&Mortar) / Concrete Block / Concrete / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / Other: ND (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 11"
Depth from Rim to Bottom of Structure: 7.6'
Interior Dimensions of Structure: 24" - 40"
Depth of Water in Structure: 12"
Sheen Present on Water (Y/N): N
Depth of Debris in Structure: 6"
Description of Debris: Silt/Gravel
Debris Sample ID (if collected): —
Time Collected: —

Pipe Information ND - Not Determine

O'Clock Position	12:00	6:00		
Pipe Material	Clay	Clay		
Pipe Diameter	8"	8"		
Rim to Invert	7.6'	7.6'		
Flow (Y/N)	N	N		
Amount/Type Sediment	—	—		

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 21.1

Photograph #: 4-5
Facing: (N) / S / E / W

Other Information: _____

<< see sketch on reverse side >>

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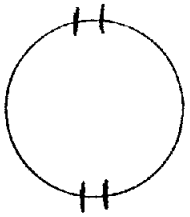
S-1



Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Friday, July 16, 1999
Weather: Sunny - Hot/Humid
Temperature: 85-90 F
Wind: Light Wind
Inspector/Recorder: JCB/CEG

Job Number: 364.87.03

Structure ID: S-2

Cover

Location: (In Pavement) / Concrete / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 24" Distance Above Grade: 0" (Circle One)
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: (Manhole) / Catch Basin / Conduit Vault / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Steel (Circle One)
Sidewalls: ~~Brick&Mortar~~ / Concrete Block / Concrete / Other: (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / Other: Not Determined (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 10"
Depth from Rim to Bottom of Structure: 15.5'
Interior Dimensions of Structure: 24"-(0-7.5') - 36"(7.5'+)
Depth of Water in Structure: 6"
Sheen Present on Water (Y/N): No
Depth of Debris in Structure: ND
Description of Debris: Silt/Sand
Debris Sample ID (if collected): S-2
Time Collected: 7/22/99 - 15:00

Pipe Information ND- Not Determined

O'Clock Position	12:00	5:00	6:00	7:00
Pipe Material	ND	ND	Clay	Clay
Pipe Diameter	12" - based on drawing	6"	6"	6"
Rim to Invert	15.5' ±	~15' ±	~5'	~15' ±
Flow (Y/N)	Y ~1-2 gpm	Y	N	Y
Amount/Type Sediment	—	—	—	—

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 21.1

Photograph #: 4-6
Facing: (N) / S / E / W

Other Information: Slight odor in sample

<< see sketch on reverse side >>

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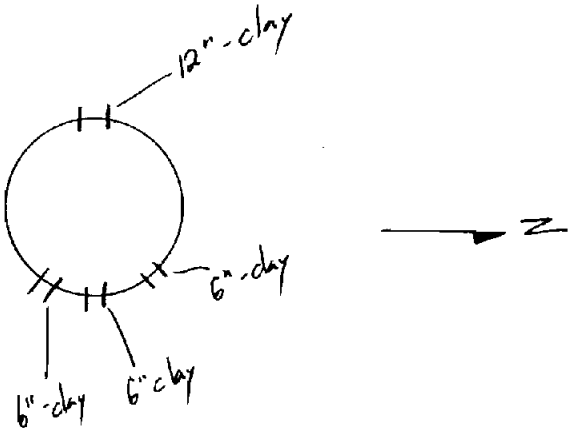
S-2



Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Friday, July 16, 1999
Weather: Sunny - Hot/Humid
Temperature: 85-90 F
Wind: Light Wind
Inspector/Recorder: JCB/CEG

Job Number: 364.87.03

Structure ID: 5-3

Cover

Location: In Pavement / Concrete / Crushed Stone / Grass / Other: Edge of Driveway (Circle One)
Dimensions: 24" Distance Above Grade: 1'
Type of Cover: Solid Steel / Catch Basin Type / Other: (Circle One)

Subsurface Structure

Type of Structure: Manhole / (Catch Basin) / Conduit Vault / Other:
Construction Materials:
Riser Section: Brick&Mortar / (Concrete) / Other: (Circle One)
Sidewalls: (Brick&Mortar) / Concrete Block / Concrete / Other: (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / Other: ND (Circle One)
Overall Condition of Structure: Fair
Height of Riser Section: 6"
Depth from Rim to Bottom of Structure: 6.5'
Interior Dimensions of Structure: 5' x 5'
Depth of Water in Structure: 0"
Sheen Present on Water (Y/N): NA
Depth of Debris in Structure: 2.5' ±
Description of Debris: Silt/Sand/Gravel
Debris Sample ID (if collected): 5-3
Time Collected: 7/22/99 - 13:50

NA - Not Applicable ND - Not Determined

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 21.2

Photograph #: 4-18
Facing (N) / S / E / W

Other Information:
- Inlet/Outlet pipes cannot be observed
- Odor observed on debris sample collected
- Brick sidewall are dark

<< *see sketch on reverse side* >>

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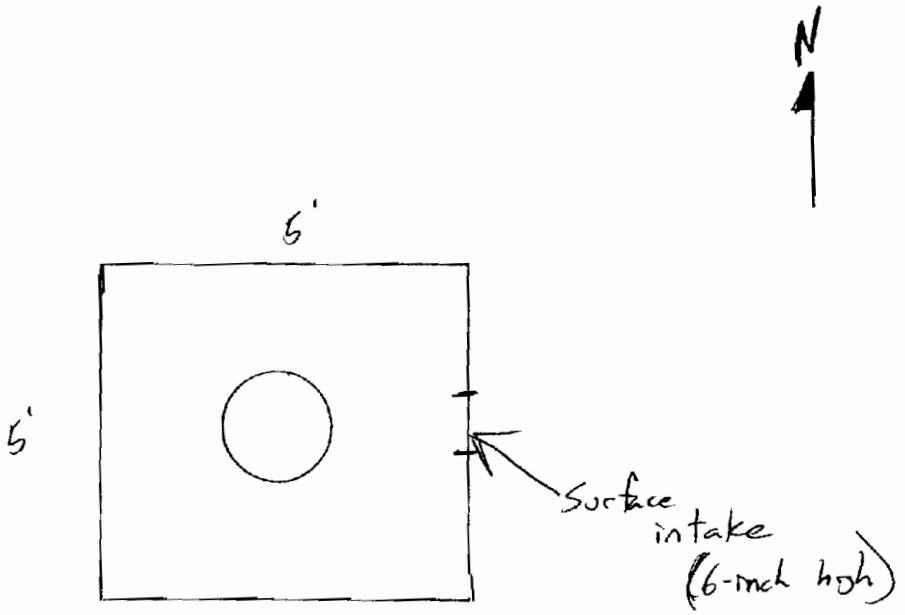
N
5'
5'
Surface intake (6-inch high)

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: S-4

Cover

Location: In Pavement / Concrete / Crushed Stone / (Grass) / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other): Storm Sewer Manhole
Construction Materials:
Riser Section: Brick&Mortar / (Concrete) / Other: _____ (Circle One)
Sidewalls: (Brick&Mortar) / Concrete Block / Concrete / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 114 inches
Depth from Rim to Bottom of Structure: 4.3 feet
Interior Dimensions of Structure: 36 inches
Depth of Water in Structure: 0
Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: 0.8 feet
Description of Debris: silt/sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 1.0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.9

Photograph #: 6-17
Facing: (N) / S / E / W

Other Information: _____

<< see sketch on reverse side >>

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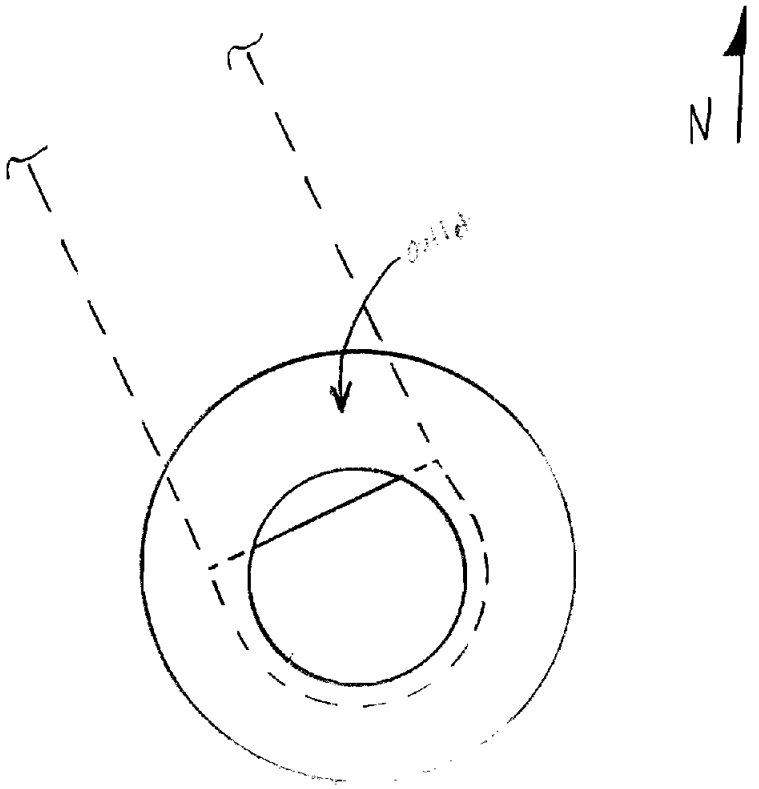
N

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: S-5

Cover

Location: In Pavement / Concrete / Crushed Stone / (Grass) / Other: _____ (Circle One)
Dimensions: 24 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / Other: drain/storm sewer
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other: Steel) (Circle One)
Sidewalls: (Brick&Mortar) / Concrete Block / Concrete / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / (Other: Unknown) (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 8 inches
Depth from Rim to Bottom of Structure: 6.8 feet
Interior Dimensions of Structure: 36 inch diameter
Depth of Water in Structure: 51 inch
Sheen Present on Water (Y/N): _____
Depth of Debris in Structure: 4 inches
Description of Debris: silt/sand/rock/brick
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0.4
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.7

Photograph #: 6-14
Facing: (N) / S / E / W

Other Information: _____

<< see sketch on reverse side >>

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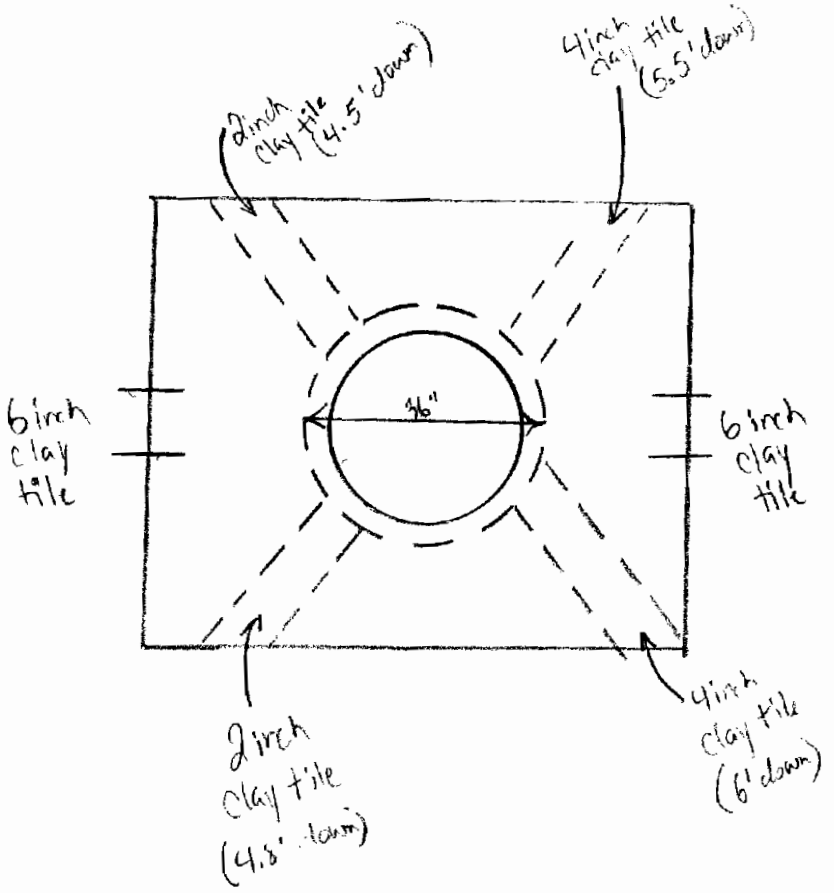
2inch clay tile (4.5' down)
4inch clay tile (5.5' down)
6inch clay tile
36"
6inch clay tile
2inch clay tile (4.8' down)
4inch clay tile (6' down)

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: S-6

Cover

Location: In Pavement / Concrete / Crushed Stone / (Grass) / Other: (Circle One)
Dimensions: 24 inches Distance Above Grade: 6 inches
Type of Cover: (Solid Steel) / Catch Basin Type / Other: (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other): Storm Sewer Manhole
Construction Materials:
Riser Section: (Brick&Mortar) / Concrete / Other: (Circle One)
Sidewalls: (Brick&Mortar) / Concrete Block / Concrete / Other: (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / (Other): Unknown (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 8 inches
Depth from Rim to Bottom of Structure: 7 feet
Interior Dimensions of Structure: unknown
Depth of Water in Structure: 0
Sheen Present on Water (Y/(N)): ____
Depth of Debris in Structure: (6) 4-6 inches
Description of Debris: silt/sand/rock/brick/metal/clay tile
Debris Sample ID (if collected): ____
Time Collected: ____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 1.2
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.8

Photograph #: 6-15
Facing: (N) / S / E / W

Other Information: Pipe discharge undetermined

<< see sketch on reverse side >>

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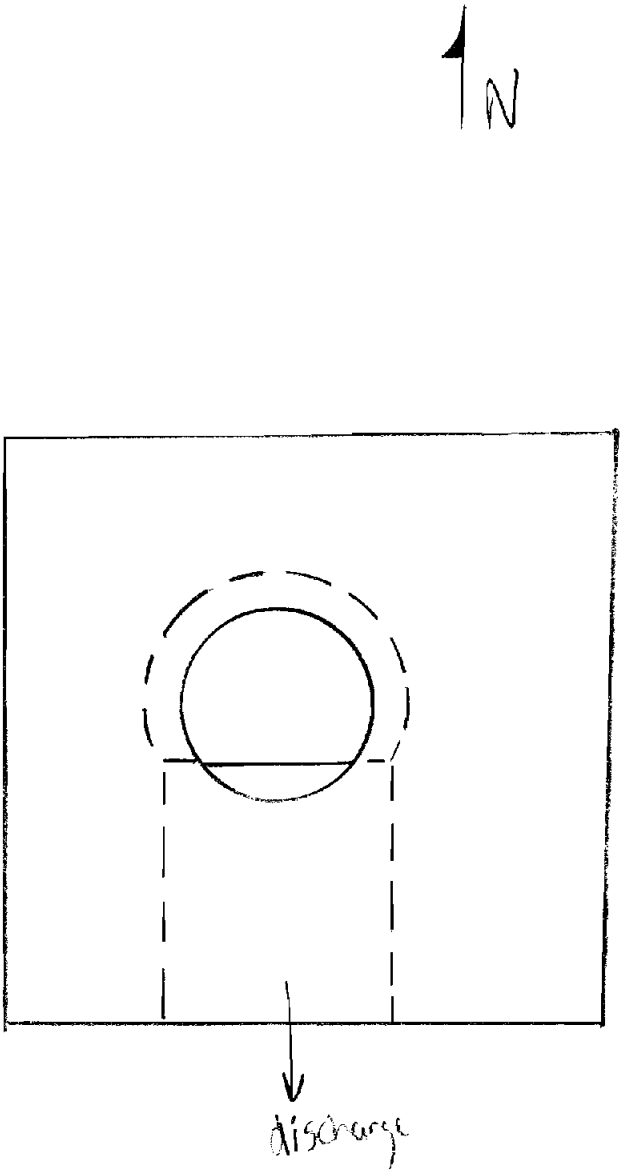
N
discharge

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: S-7

Cover

Location: In Pavement / Concrete / Crushed Stone / (Grass) / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 8 inches
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: (Manhole) / Catch Basin / Conduit Vault / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other) Steel (Circle One)
Sidewalls: (Brick&Mortar) / Concrete Block / Concrete / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good to fair
Height of Riser Section: 0.3 feet
Depth from Rim to Bottom of Structure: 6.5 feet
Interior Dimensions of Structure: 36 inches
Depth of Water in Structure: 0
Sheen Present on Water (Y/(N))
Depth of Debris in Structure: 4 inch
Description of Debris: silt/sand/rusted metal
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.8

Photograph #: 6-18
Facing: N / (S) E / W

Other Information: _____

<< see sketch on reverse side >>

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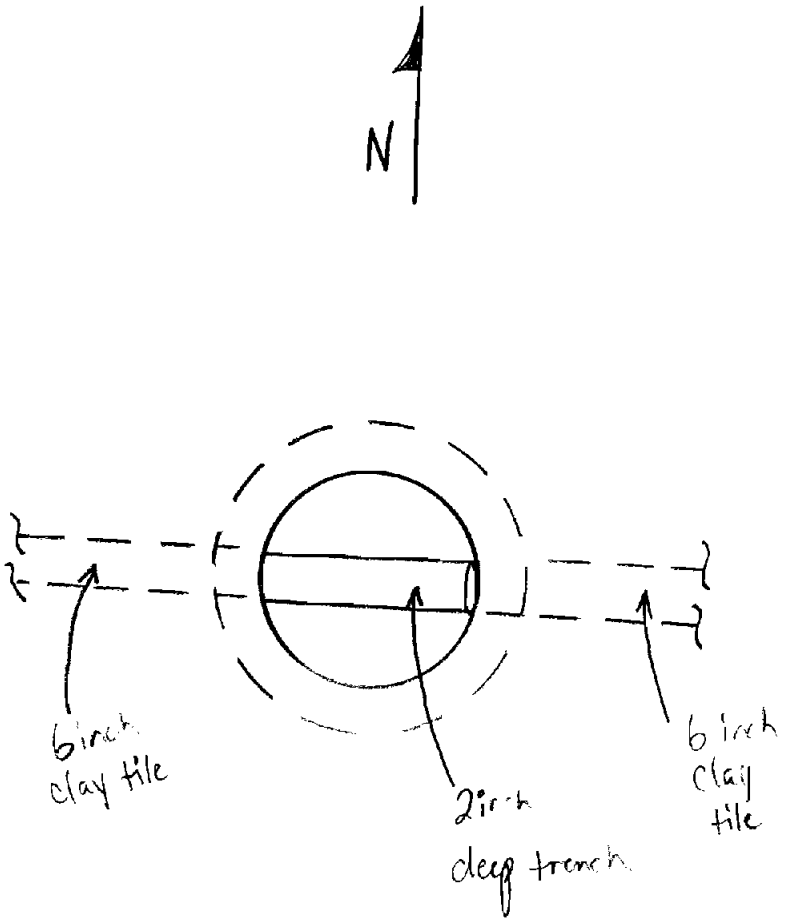
N
6 inch clay tile
2 inch deep trench
6 inch clay tile

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: S-8

Cover

Location: In Pavement / Concrete / Crushed Stone / (Grass) / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 3-4 inches
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other): Storm Sewer Manhole
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other): Steel (Circle One)
Sidewalls: (Brick&Mortar) / Concrete Block / Concrete / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good to fair
Height of Riser Section: 8 inches
Depth from Rim to Bottom of Structure: 6.9 feet
Interior Dimensions of Structure: 36 inch diameter
Depth of Water in Structure: 8 inches in channel
Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: < 1 inch
Description of Debris: gravel/sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00	3:00	6:00	
Pipe Material	clay tile	→	→	
Pipe Diameter	6 inches	→	→	
Rim to Invert	12 inches	→	→	
Flow (Y/N)	no	→	→	
Amount/Type Sediment	< 1 inch gravel/sand	→	→	

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.8

Photograph #: 7-4
Facing: (N) / S / E / W

Other Information: _____

<< see sketch on reverse side >>

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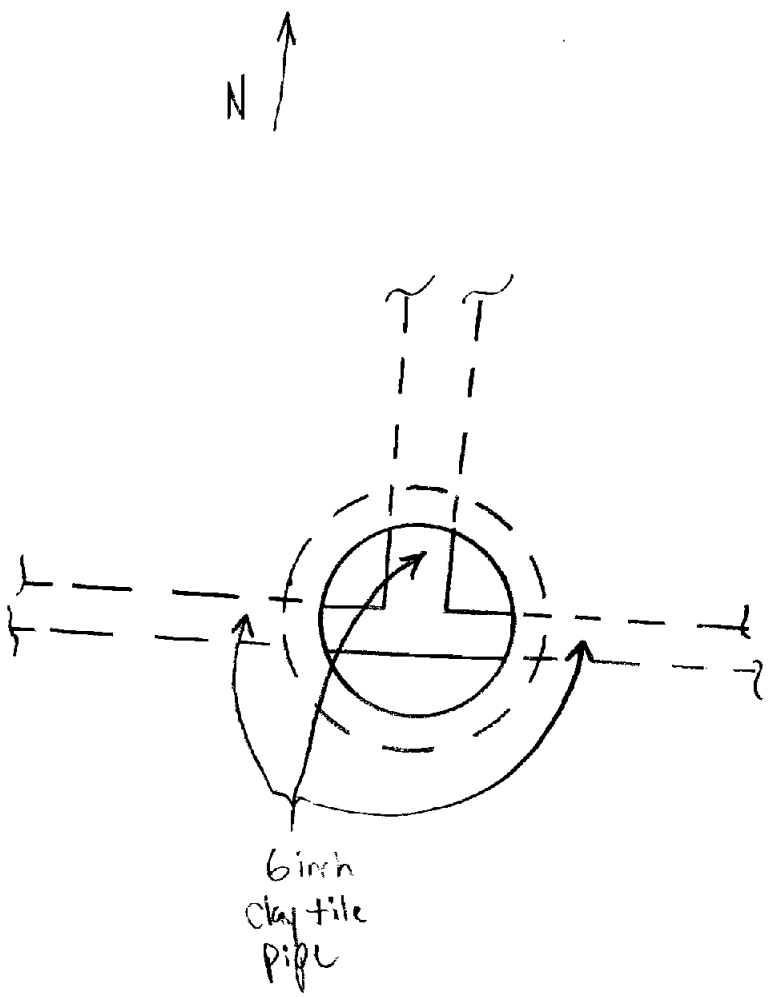
N
6 inch
clay tile
pipe

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: S-9

Cover

Location: In Pavement / Concrete / Crushed Stone / (Grass) / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other): Sewer Manhole
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other): Steel (Circle One)
Sidewalls: (Brick&Mortar) / Concrete Block / Concrete / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 8 inches
Depth from Rim to Bottom of Structure: 6.5 Feet
Interior Dimensions of Structure: 36 inch diameter
Depth of Water in Structure: 0.5 Feet
Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: 3-4 inches
Description of Debris: Silt/Sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material	Clay tile			
Pipe Diameter	6 inches			
Rim to Invert	6 feet			
Flow (Y/N)	No			
Amount/Type Sediment	3-4 inches silt/sand			

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.8

Photograph #: 7-5
Facing: (N) / S / E / W

Other Information: Water is dark in Color. No other pipes visible

<< see sketch on reverse side >>

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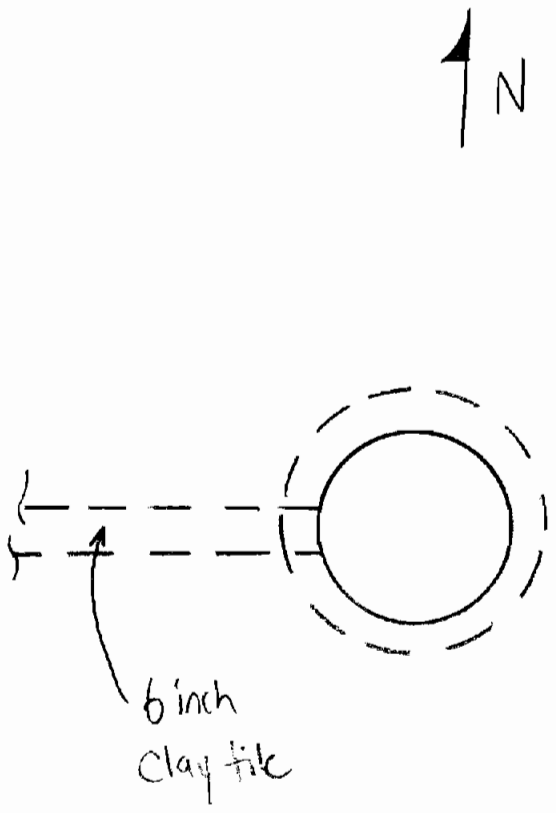
N
6 inch
clay tile

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: S-10

Cover

Location: In Pavement / Concrete / Crushed Stone / (Grass) / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other) Sewer Manhole
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other) Steel/Brick (Circle One)
Sidewalls: (Brick&Mortar) / Concrete Block / Concrete / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good to fair
Height of Riser Section: 3 Feet
Depth from Rim to Bottom of Structure: 6.25 Feet
Interior Dimensions of Structure: 36 inches (diameter)
Depth of Water in Structure: 0
Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: 4 inches
Description of Debris: Silt/Sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 21.2

Photograph #: 7-6
Facing: N / S / E / (W)

Other Information: _____

<< *see sketch on reverse side* >>

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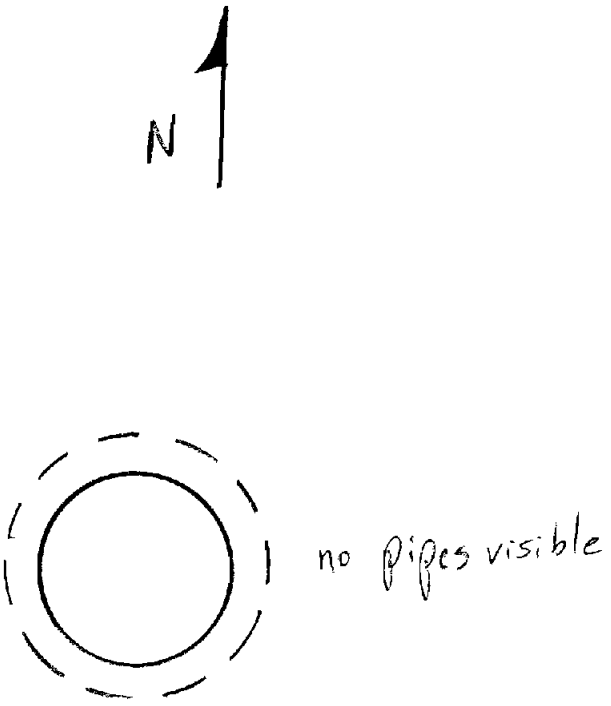
N
no pipes visible

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: S-11

Cover

Location: In Pavement / Concrete / Crushed Stone / (Grass) / Other: _____ (Circle One)
Dimensions: 35 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / (Catch Basin) / Conduit Vault / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / (Concrete) / Other: _____ (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / Concrete / (Other: Concrete/Brick) (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 6 inches
Depth from Rim to Bottom of Structure: 6 feet
Interior Dimensions of Structure: 4 foot diameter
Depth of Water in Structure: 1 inch
Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: 2 inches
Description of Debris: silt/sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 21.3

Photograph #: 7-8
Facing: N / S / (E) / W

Other Information: _____

<< see sketch on reverse side >>

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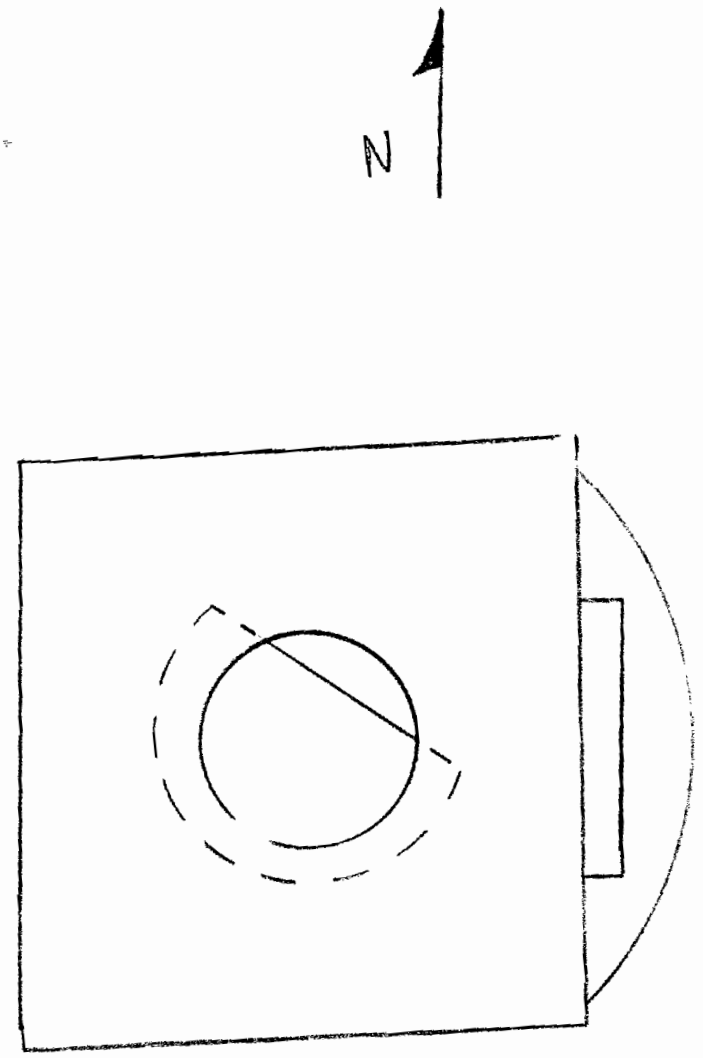
N

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Thursday, July 22, 1999
Weather: Sunny
Temperature: 85-90 F
Wind: Light Wind
Inspector/Recorder: CEG

Job Number: 364.87.03

Structure ID: S-13

Cover

Location: (In Pavement) / Concrete / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: (Manhole) / Catch Basin / Conduit Vault / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other): brick/steel (Circle One)
Sidewalls: (Brick&Mortar) / Concrete Block / Concrete / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 2.5 feet
Depth from Rim to Bottom of Structure: 7.1 feet
Interior Dimensions of Structure: 36 inches
Depth of Water in Structure: 0
Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: 6 inches
Description of Debris: silt/sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00	1:00	6:00	7:00	11:00
Pipe Material	Clay tile				→
Pipe Diameter	6 inch				→
Rim to Invert	7.1 feet				→
Flow (Y/N)	no				→
Amount/Type Sediment	6 inch silt/sand				→

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.8

Photograph #: 8-20
Facing: N / S / E / W

Other Information: _____

<< see sketch on reverse side >>

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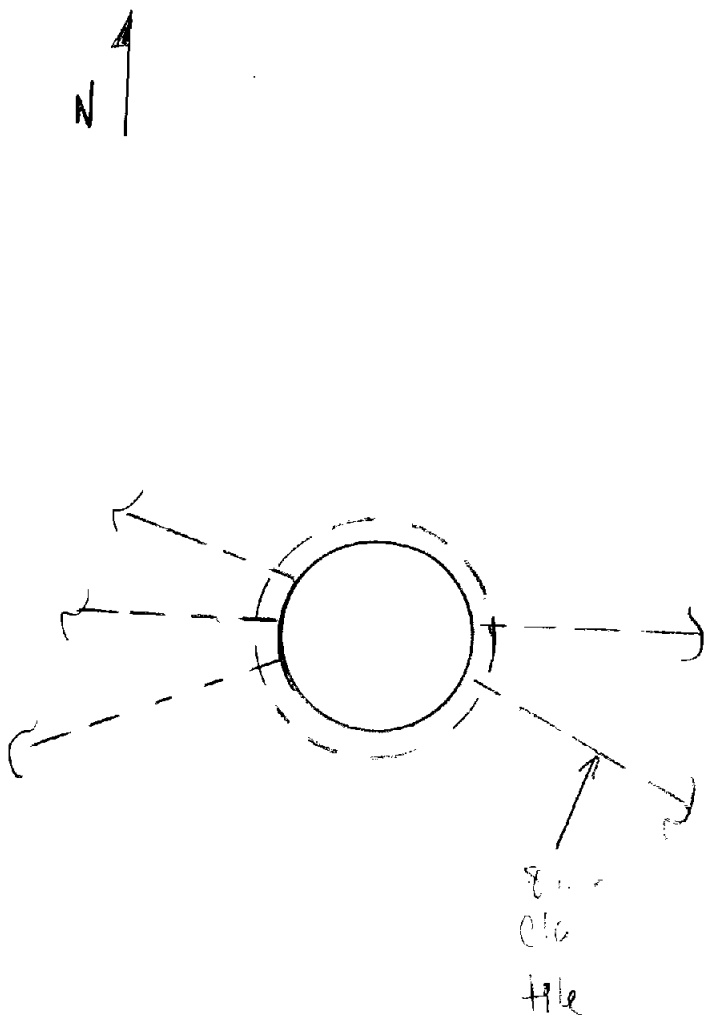
N

Valve Boxes

(Designations by BBL: W-1, CP-1, CP-3)

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Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: W-1

Cover

Location: In Pavement / Concrete / Crushed Stone / (Grass) / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / Other: Water pit
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other:) Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 8 inches
Depth from Rim to Bottom of Structure: 6.5 feet Interior Dimensions of Structure: 5.5 feet x 5.5 feet
Depth of Water in Structure: < 1 inch Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: 1 inch Description of Debris: silt/sand
Debris Sample ID (if collected): _____ Time Collected: _____

Pipe Information

O'Clock Position	12:00	6:00		
Pipe Material	Cast iron	Cast iron		
Pipe Diameter	24 inches od	24 inches od		
Rim to Invert	6 feet	6 feet		
Flow (Y/N)	not determined	not determined		
Amount/Type Sediment	NA	NA		

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 2 Oxygen (%): ~~20.8~~ 20.8

Photograph #: 6-16 Facing: (N) S / E / W

Other Information: Associated with Kimberly-Clark waterline

<< see sketch on reverse side >>

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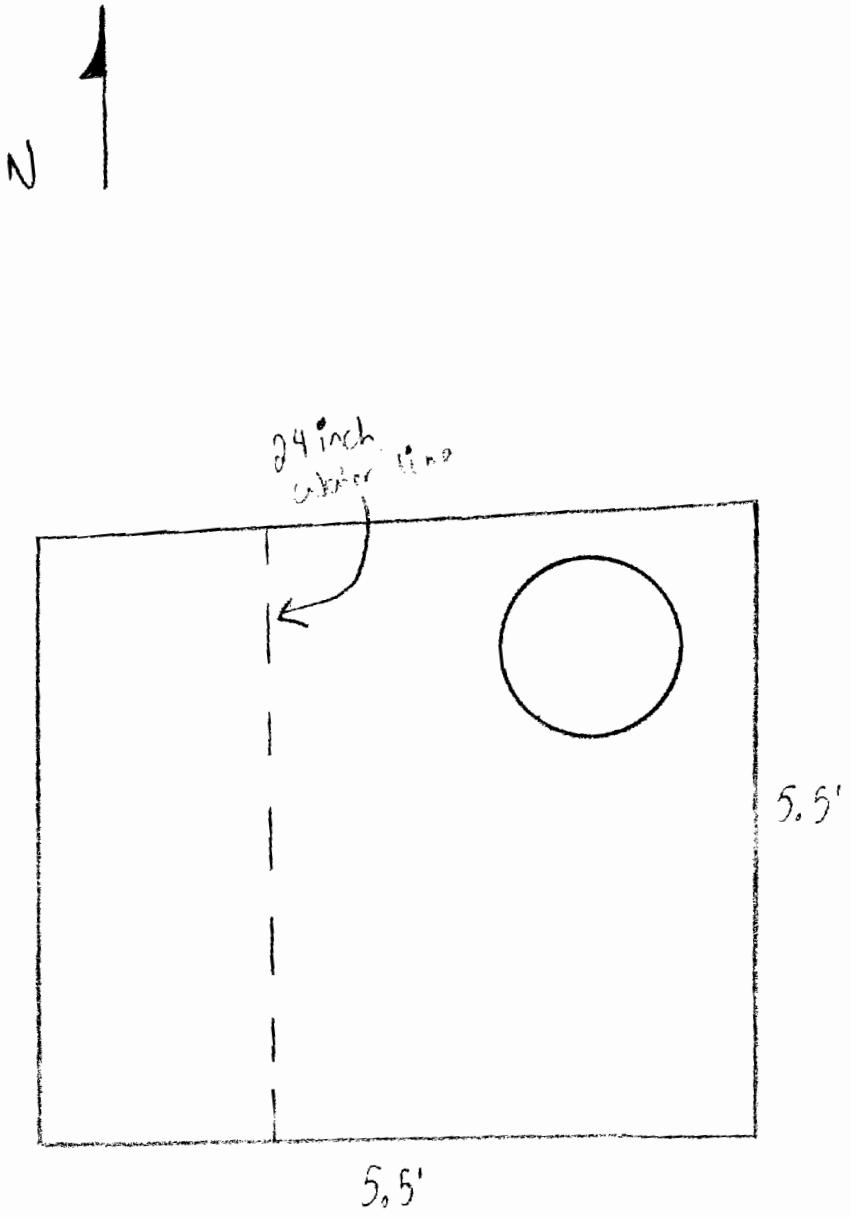
N
24 inch
5.5'
5.5'

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Friday, July 16, 1999
Weather: Sunny - Hot/Humid
Temperature: 85-90 F
Wind: Light Wind
Inspector/Recorder: JCB/CEG

Job Number: 364.87.03

Structure ID: CP-1

Cover

Location: In Pavement / Concrete / Crushed Stone / Grass / Other: Adjacent to Cooling Pond (Circle One)
Dimensions: 30" Distance Above Grade: 1'
Type of Cover: Solid Steel / Catch Basin Type / Other: (Circle One)

Subsurface Structure

Type of Structure: (Manhole) / Catch Basin / Conduit Vault / Other:
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 6"
Depth from Rim to Bottom of Structure: 6.4'
Interior Dimensions of Structure: 5.5' x 6'
Depth of Water in Structure: 0"
Sheen Present on Water (Y/N): NA
Depth of Debris in Structure: <1"
Description of Debris: Silt/Sand
Debris Sample ID (if collected): —
Time Collected: —

Pipe Information NA - Not Applicable

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 21.4

Photograph #: 4-21
Facing: (N) / S / E / W

Other Information:

<< see sketch on reverse side >>

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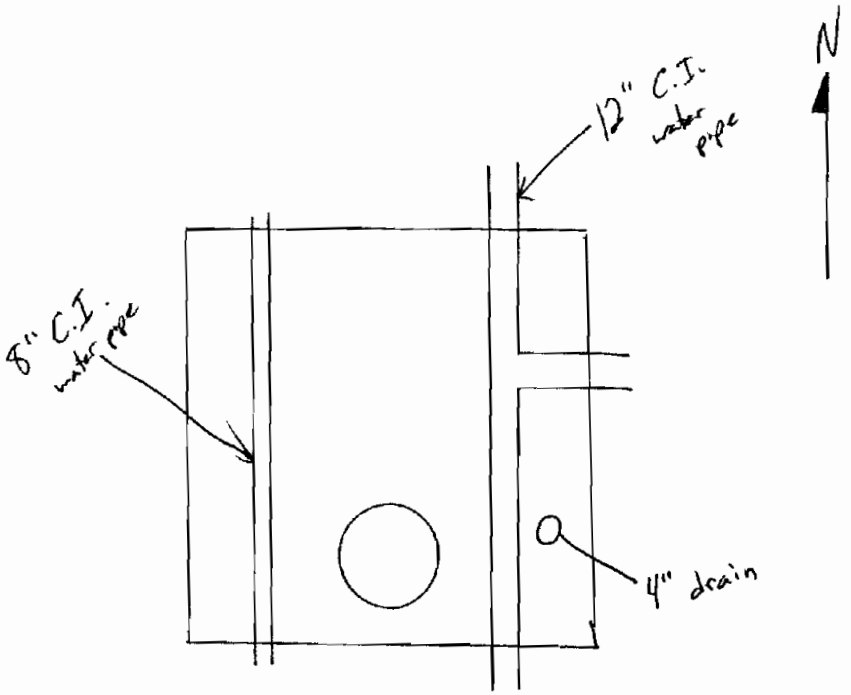
N
12" C.I. water pipe
8" C.I. water pipe
4" drain

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Friday, July 16, 1999
Weather: Sunny - Hot/Humid
Temperature: 85-90 F
Wind: Light Wind
Inspector/Recorder: JCB/CEG

Job Number: 364.87.03

Structure ID: CP-3

Cover

Location: In Pavement / Concrete / Crushed Stone / Grass / Other: Adjacent to Cooling Towers (Circle One)
Dimensions: 30" Distance Above Grade: 1'
Type of Cover: Solid Steel / Catch Basin Type / Other: (Circle One)

Subsurface Structure

Type of Structure: (Manhole) / Catch Basin / Conduit Vault / Other:
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 6"
Depth from Rim to Bottom of Structure: 6.5' Interior Dimensions of Structure: 5.5' x 6'
Depth of Water in Structure: 0" Sheen Present on Water (Y/N): NA
Depth of Debris in Structure: < 1" Description of Debris: Silt / Sand
Debris Sample ID (if collected): — Time Collected: —

Pipe Information NA - Not Applicable

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 21.2

Photograph #: 4-22 Facing: N / S / E / (W)

Other Information:

<< *see sketch on reverse side* >>

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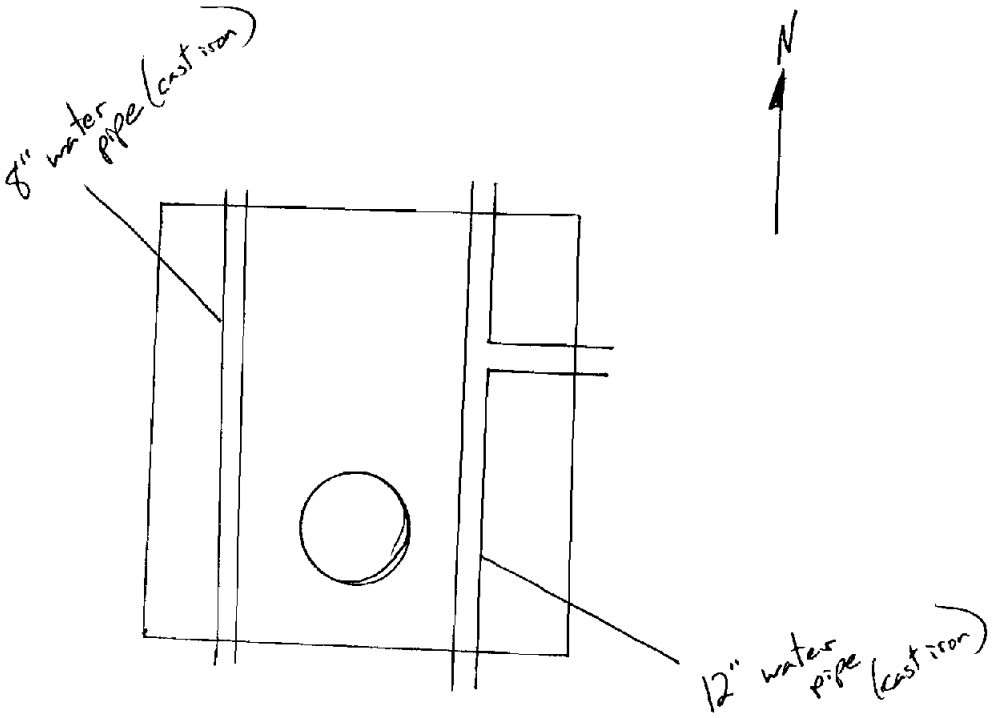
8" water pipe (cast iron)
N
12" water pipe (cast iron)

Subway Access Points/ Associated Electrical Manholes

(Designations by BBL: M-1, 2, 4, 5, 6, 10, 17, 19, 20, 21, 25, 27, 30, 32, 34, 37, 40, 43, 46, 47, 48, 53, 58, 63, 64, 65, 68, 72, 73, 75, 79, 80, and M-81; and EB-1, EB-4)

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Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Friday, July 16, 1999
Weather: Sunny - Hot/Humid
Temperature: 85-90 F
Wind: Light Wind
Inspector/Recorder: JCB/CEG

Job Number: 364.87.03

Structure ID: EB-1

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30" Distance Above Grade: 0"
Type of Cover: ~~Solid Steel~~ / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other: Electrical Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / ~~Concrete~~ / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: Good - Steel collar ⇒ Deteriorating
Height of Riser Section: 6"
Depth from Rim to Bottom of Structure: 6.8' Interior Dimensions of Structure: 9' wide
Depth of Water in Structure: 1" Sheen Present on Water (Y/(N))
Depth of Debris in Structure: Trace Description of Debris: Silt/Sand/Brick
Debris Sample ID (if collected): — Time Collected: —

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 5
Hydrogen Sulfide (ppm): 0 Oxygen (%): 21.2

Photograph #: 4-13 Facing: (N) / S / E / W

Other Information:
• Connected to Electrical Subway east of Exhaust Building

<< see sketch on reverse side >>

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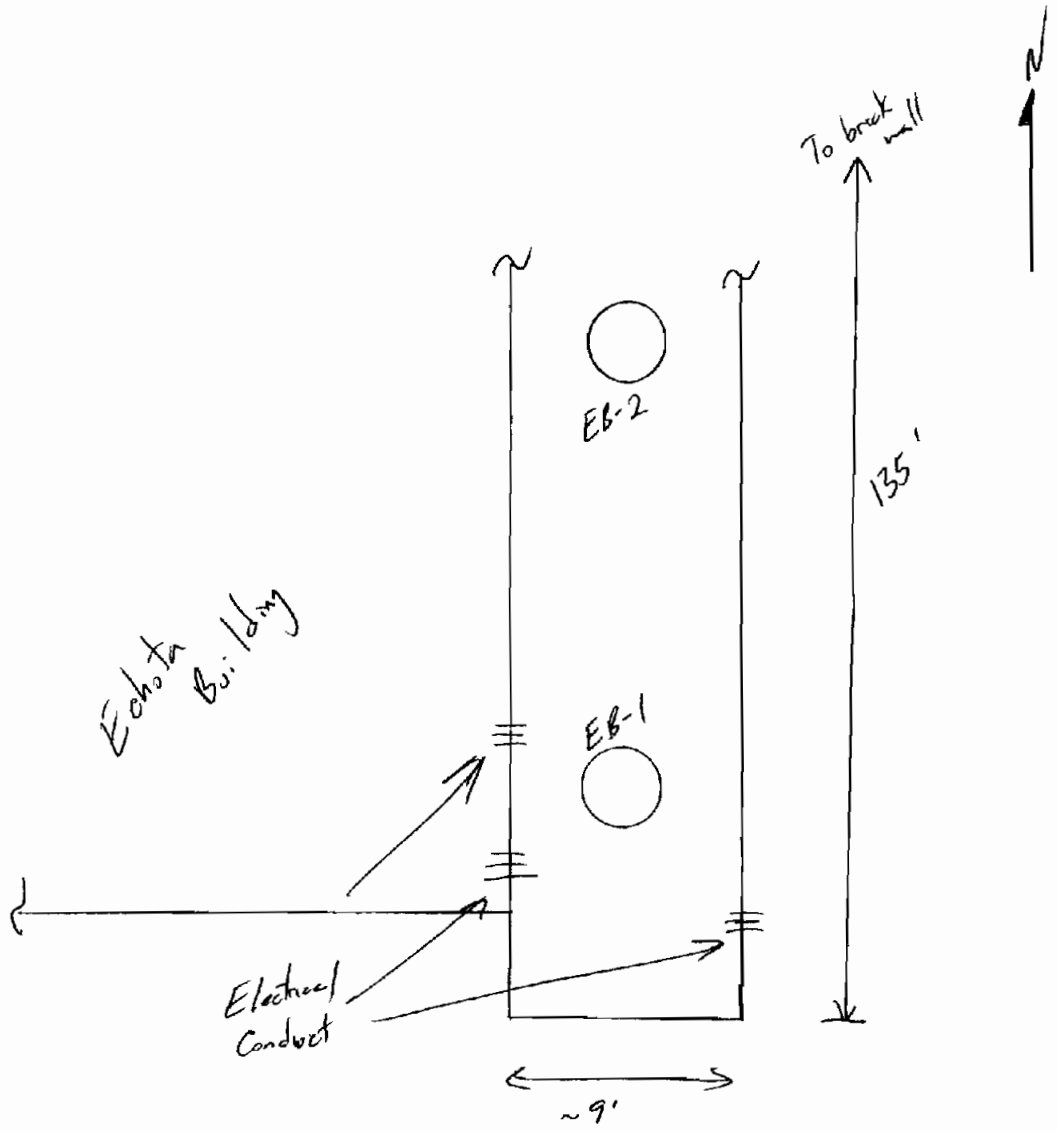
N
To back wall
EB-2
135'
Eohsta Building
EB-1
Electrical Conduct
~9'

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Friday, July 16, 1999
Weather: Sunny - Hot/Humid
Temperature: 85-90 F
Wind: Light Wind
Inspector/Recorder: JCB/CEG

Job Number: 364.87.03

Structure ID: EB-4

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30" Distance Above Grade: 0" _____
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other: Electrical Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: ~~Concrete~~ Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 6"
Depth from Rim to Bottom of Structure: 6.8' Interior Dimensions of Structure: 9'
Depth of Water in Structure: 1" Sheen Present on Water (Y/(N)): N
Depth of Debris in Structure: 1" Description of Debris: Silt / Sand
Debris Sample ID (if collected): — Time Collected: —

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 21.2

Photograph #: 4-14 Facing: (N) / S / E / W

Other Information:
• Part of Electrical Subway east of Echota Building

<< *see sketch on reverse side* >>

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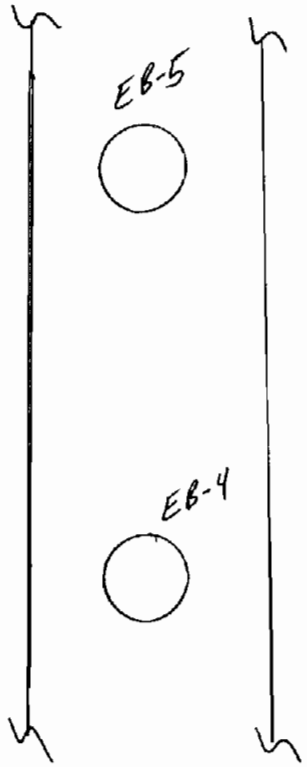
EB-4



Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-1

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 32 inches Distance Above Grade: 4-6 inches
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other): Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other) Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: fair to good
Height of Riser Section: 10 inches
Depth from Rim to Bottom of Structure: 5.4 feet
Interior Dimensions of Structure: 4 feet wide
Depth of Water in Structure: 1 inch
Sheen Present on Water (Y/N): Slight
Depth of Debris in Structure: trace
Description of Debris: Sand/Silt
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.7

Photograph #: 5-1
Facing: N / (S) / E / W

Other Information: _____

<< see sketch on reverse side >>

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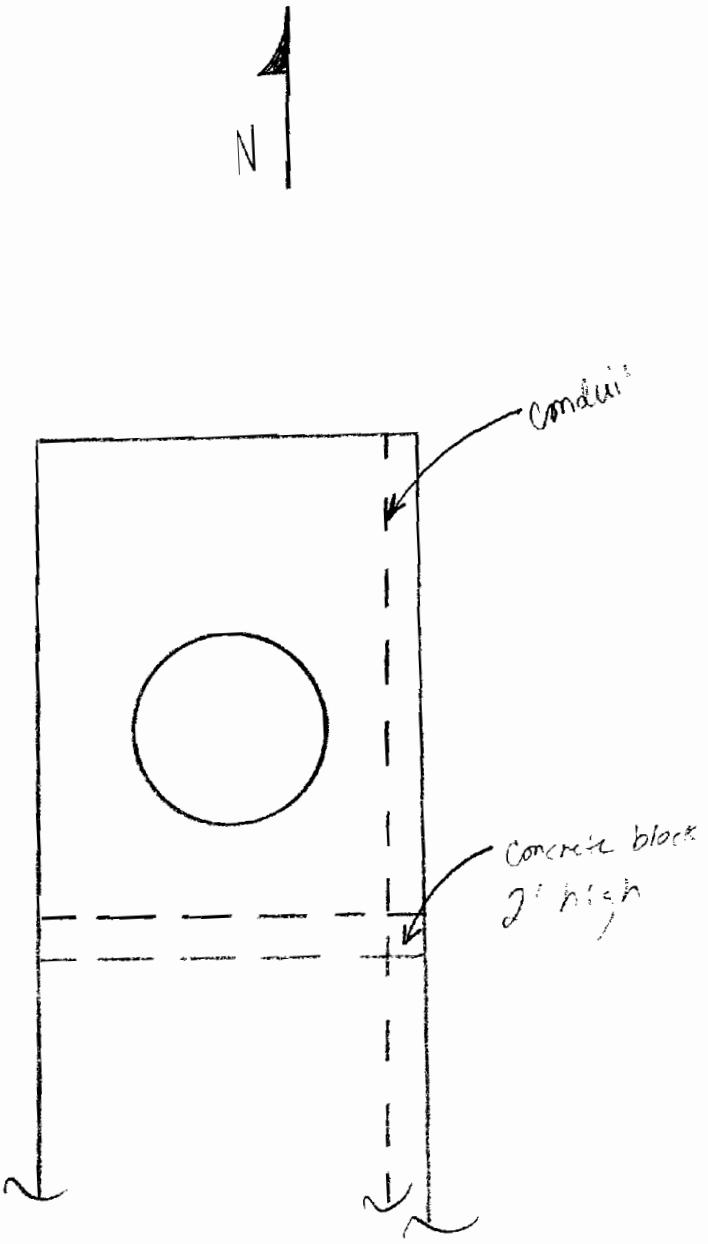
N
Conduit
Concrete block
2' high

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-2

Cover

Location: In Pavement / Concrete / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30" Distance Above Grade: 0
Type of Cover: Solid Steel / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / Other: Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 1'
Depth from Rim to Bottom of Structure: 6.3'
Interior Dimensions of Structure: 4' wide
Depth of Water in Structure: <1"
Sheen Present on Water (Y/N): N
Depth of Debris in Structure: <1"
Description of Debris: Silt/Sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.8

Photograph #: S-2
Facing: N / (S) / E / W

Other Information: _____

<< see sketch on reverse side >>

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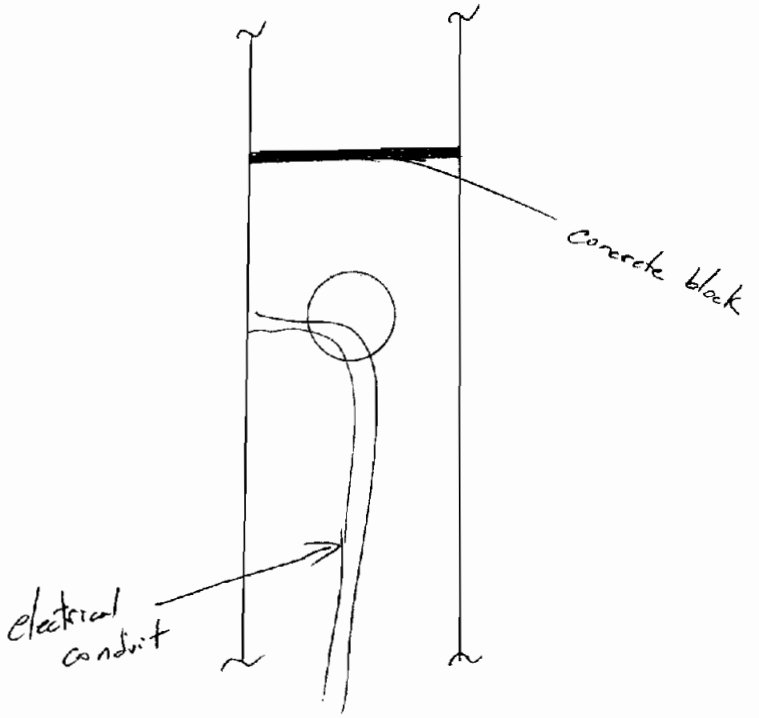
N

M-2



Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-4

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30" Distance Above Grade: 0"
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / Other: Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Concrete/steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: Good - access ladder deteriorated
Height of Riser Section: 1'
Depth from Rim to Bottom of Structure: 5.8'
Interior Dimensions of Structure: 4' wide
Depth of Water in Structure: <1"
Sheen Present on Water (Y/N): _____
Depth of Debris in Structure: 1"
Description of Debris: Silt/Sand - rusted metal
Debris Sample ID (if collected): —
Time Collected: —

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.8

Photograph #: 5-3
Facing: N / S / E / (W)

Other Information:

<< see sketch on reverse side >>

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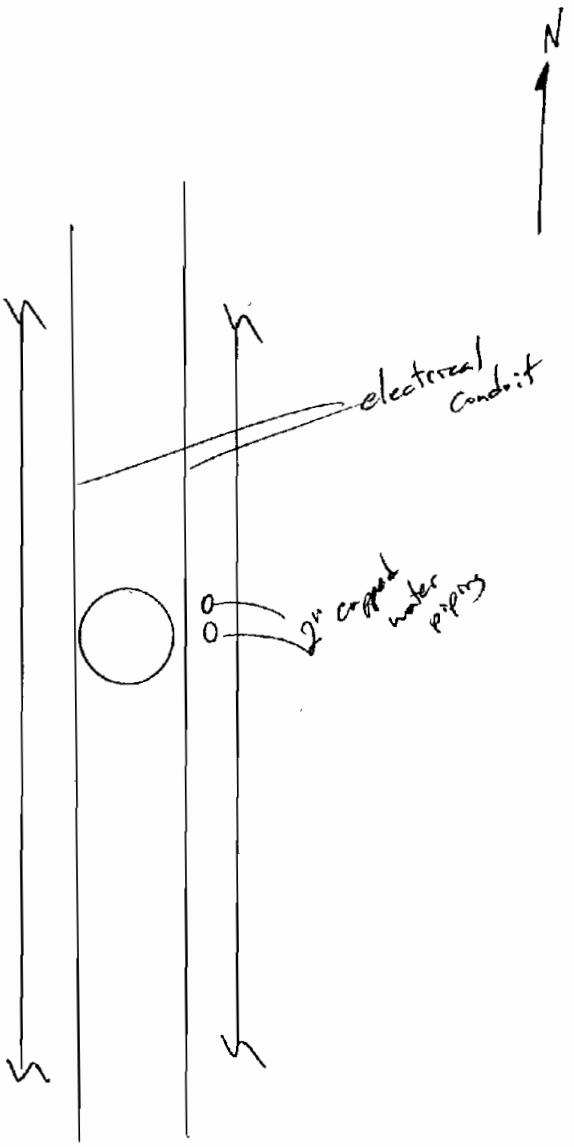
M-4



Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-5

Cover
Location: In Pavement / Concrete (Concrete Subway) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30" Distance Above Grade: 0
Type of Cover: Solid Steel / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure
Type of Structure: Manhole / Catch Basin / Conduit Vault / Other: Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Concrete/steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 1'
Depth from Rim to Bottom of Structure: 5.3'
Interior Dimensions of Structure: 4'-wide
Depth of Water in Structure: <1"
Sheen Present on Water (Y/N): oil present
Depth of Debris in Structure: 1"
Description of Debris: silt/sand
Debris Sample ID (if collected): M-5
Time Collected: 7/22/99 - 12:00

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results
Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.8

Photograph #: S-4 (S) - S-5 (N) - S-6 (W)
Facing: N / S / E / W

Other Information: • Oil observed in bottom of structure
• Wood boards observed in bottom of structure

<< see sketch on reverse side >>

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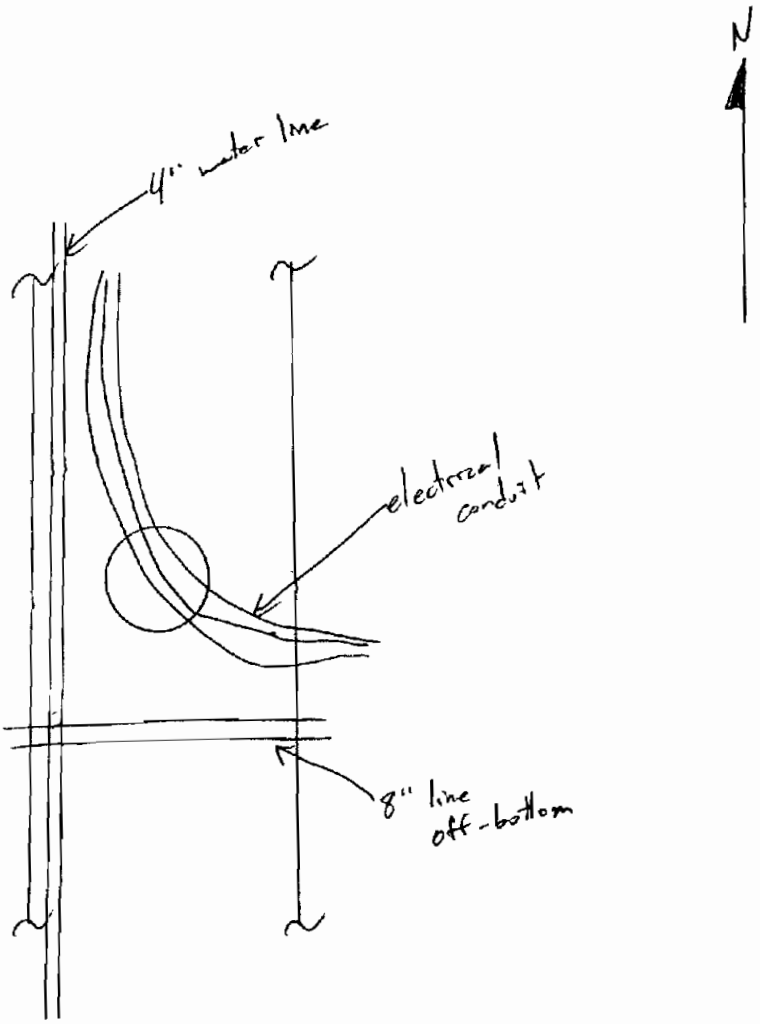
N
4" water line
electrical conduit
8" line off-bottom

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-6

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other): Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other): Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 1 foot
Depth from Rim to Bottom of Structure: 6 8 feet Interior Dimensions of Structure: 6 feet wide
Depth of Water in Structure: 1 inch Sheen Present on Water (Y/(N)):
Depth of Debris in Structure: 1 inch Description of Debris: silt/sand
Debris Sample ID (if collected): _____ Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 20.8

Photograph #: 5-10 Facing: N / (S) / E / W

Other Information:

<< see sketch on reverse side >>

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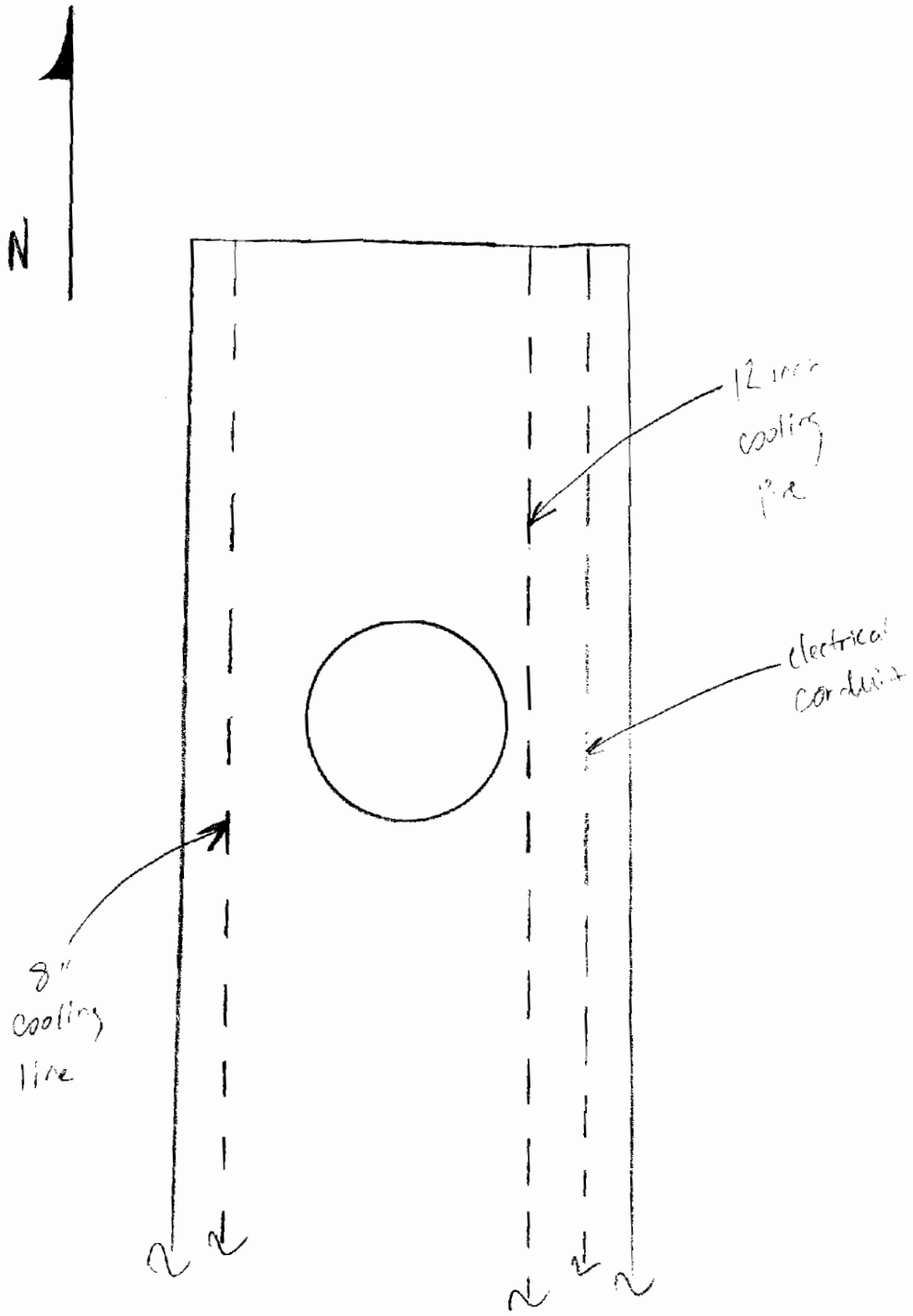
N
12 inch cooling pipe
electrical conduit
8" cooling line

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-10

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other): Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other): Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 1 foot
Depth from Rim to Bottom of Structure: 7.0 feet
Interior Dimensions of Structure: 6-5 feet wide
Depth of Water in Structure: 0
Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: 1 inch
Description of Debris: silt/sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0
Oxygen (%): 21.3

Photograph #: 5-11
Facing: N /(S) E / W

Other Information: _____

<< see sketch on reverse side >>

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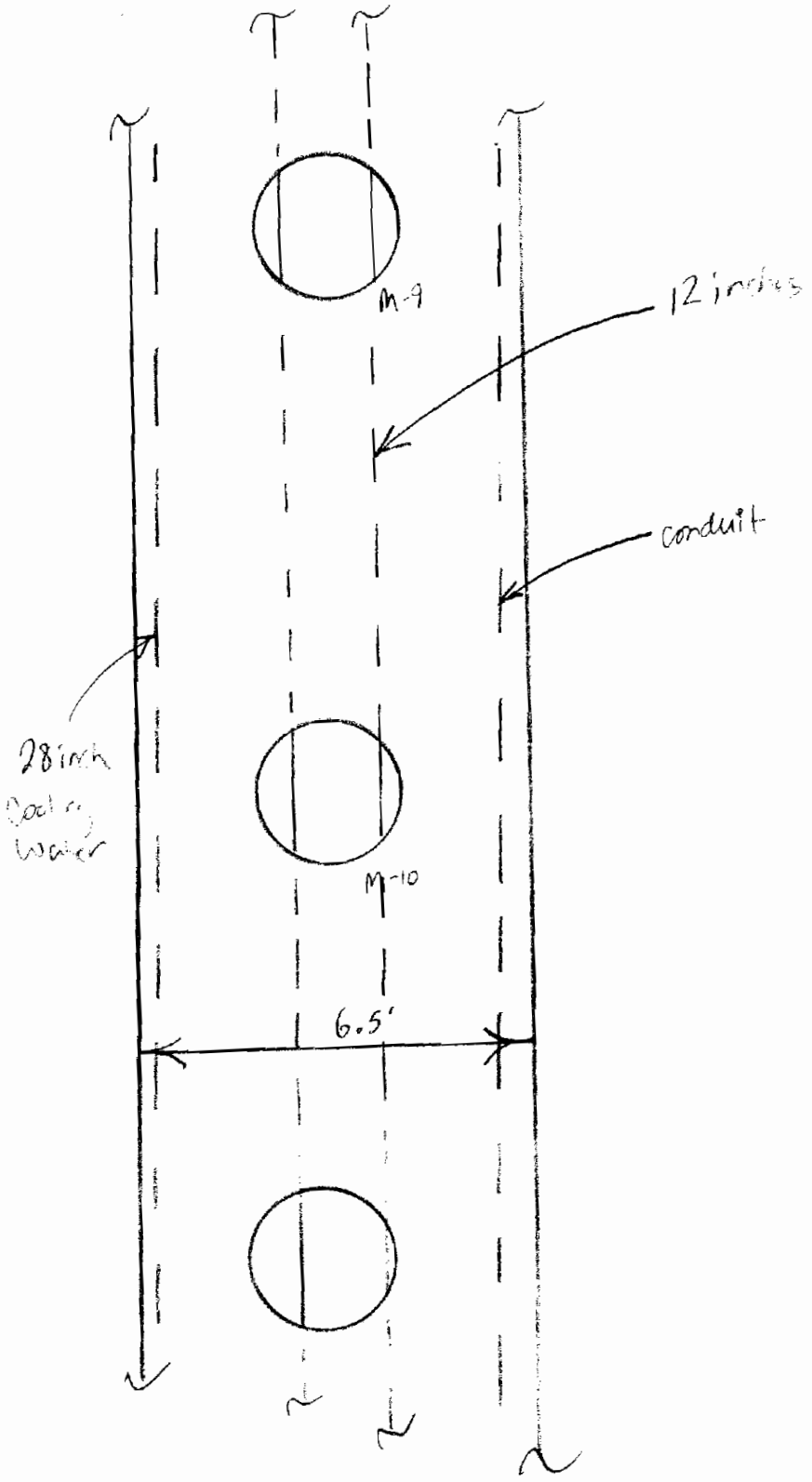
M-9
12 inches
conduit
28 inch
Coating
Water
M-10
6.5'

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-17

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other) Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other): Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 1 Foot
Depth from Rim to Bottom of Structure: 7.0 feet
Interior Dimensions of Structure: 6.5 feet wide
Depth of Water in Structure: 0
Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: 1 inch
Description of Debris: silt/sand/rusted metal
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 21.2

Photograph #: 5-13
Facing: N / S / (E) / W

Other Information: M-13 could not be opened. Western Sidewall Visually Stained

<< see sketch on reverse side >>

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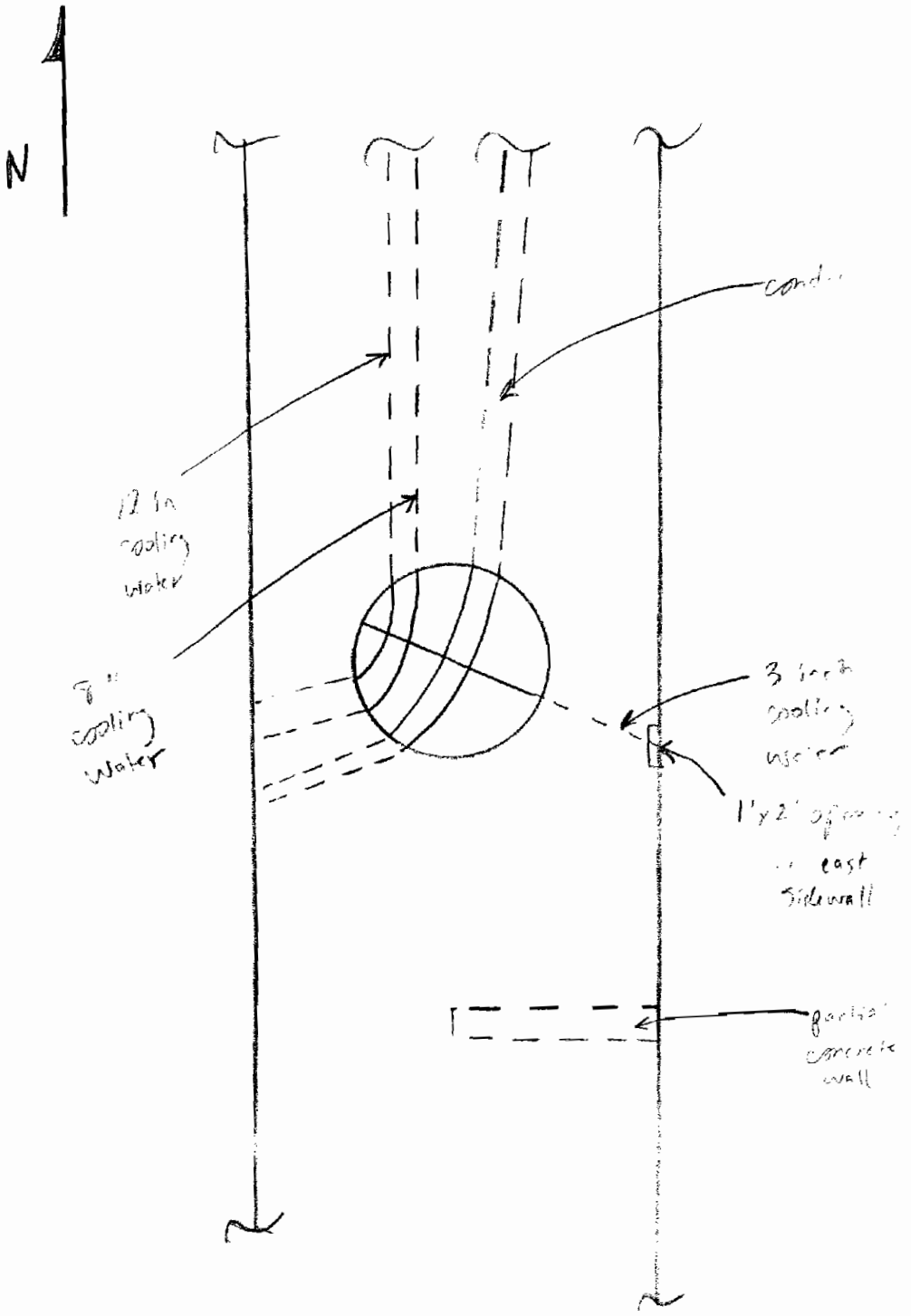
N
cond...
12 in
cooling
water
8"
cooling
water
3 inch
cooling
water
1'x2' opening
... east
sidewall
Partial
concrete
wall

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-19

Cover

Location: In Pavement / Concrete / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: Solid Steel / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / Other: Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 1 foot
Depth from Rim to Bottom of Structure: 7.0 feet
Interior Dimensions of Structure: 6.3 feet wide
Depth of Water in Structure: 2 inches
Sheen Present on Water (Y/N): 2-3 droplets
Depth of Debris in Structure: trace
Description of Debris: silt/sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 21.3

Photograph #: 5-14(W) [redacted] 5-15(S), 5-16(N)

~~Facing: N / S / E / W~~

Other Information: _____

<< see sketch on reverse side >>

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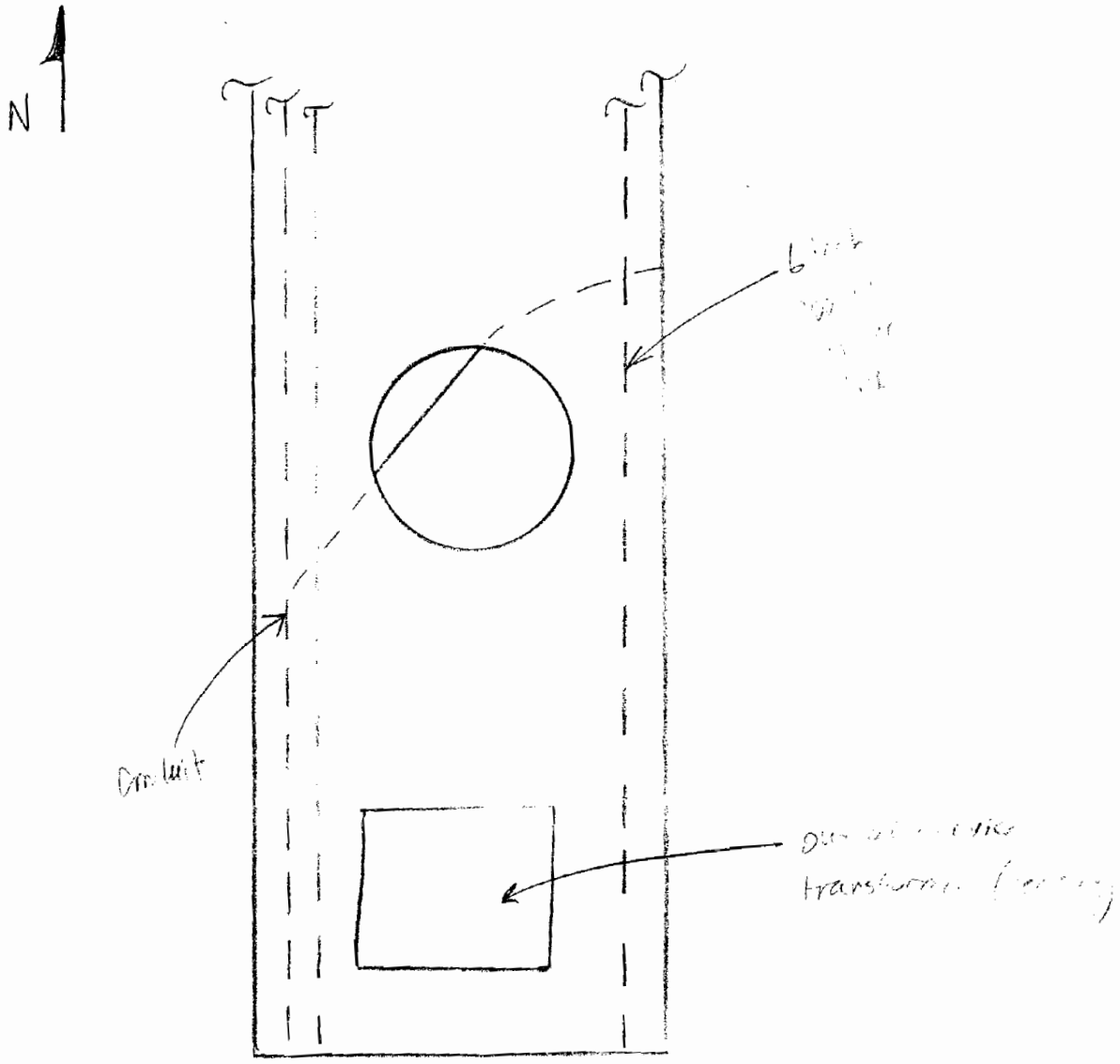
7/26/99
STRCTRE 719


N
Conduit

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-20

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other): Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other): Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 1 foot
Depth from Rim to Bottom of Structure: 7.0 feet
Interior Dimensions of Structure: 6.5 feet wide
Depth of Water in Structure: 6 inches
Sheen Present on Water (Y/(N)): (N) slight sheen
Depth of Debris in Structure: 1 inch
Description of Debris: silt/sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 21.2

Photograph #: 5-17

Facing: (N) / S / E / W

Other Information: Northern - most manhole associated w/concrete subway.

<< see sketch on reverse side >>

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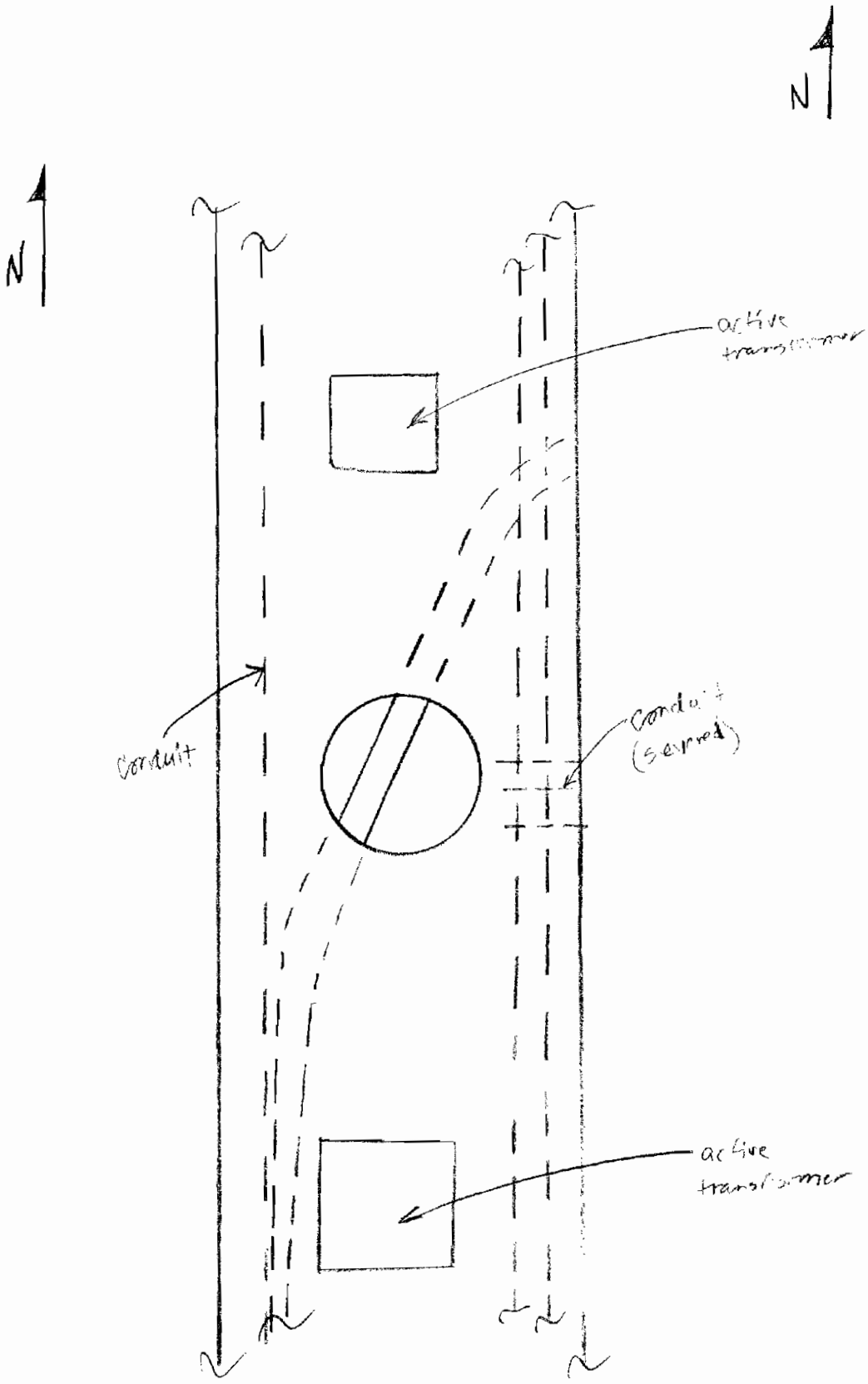
N
N
active transformer
conduit
conduit (served)
active transformer

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Thursday, July 22, 1999
Weather: Sunny
Temperature: 85-90 F
Wind: Light Wind
Inspector/Recorder: CEG

Job Number: 364.87.03

Structure ID: M-21

Cover

Location: In Pavement / Concrete / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 2.5' Distance Above Grade: _____
Type of Cover: Solid Steel / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / Other: Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: _____
Depth from Rim to Bottom of Structure: 6.5 feet
Interior Dimensions of Structure: 7 feet wide
Depth of Water in Structure: 0.5 feet
Sheen Present on Water (Y/N): petroleum droplets
Depth of Debris in Structure: 1 inch
Description of Debris: silt/sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.8

Photograph #: S-21
Facing: N / S / E / W

Other Information: _____

<< see sketch on reverse side >>

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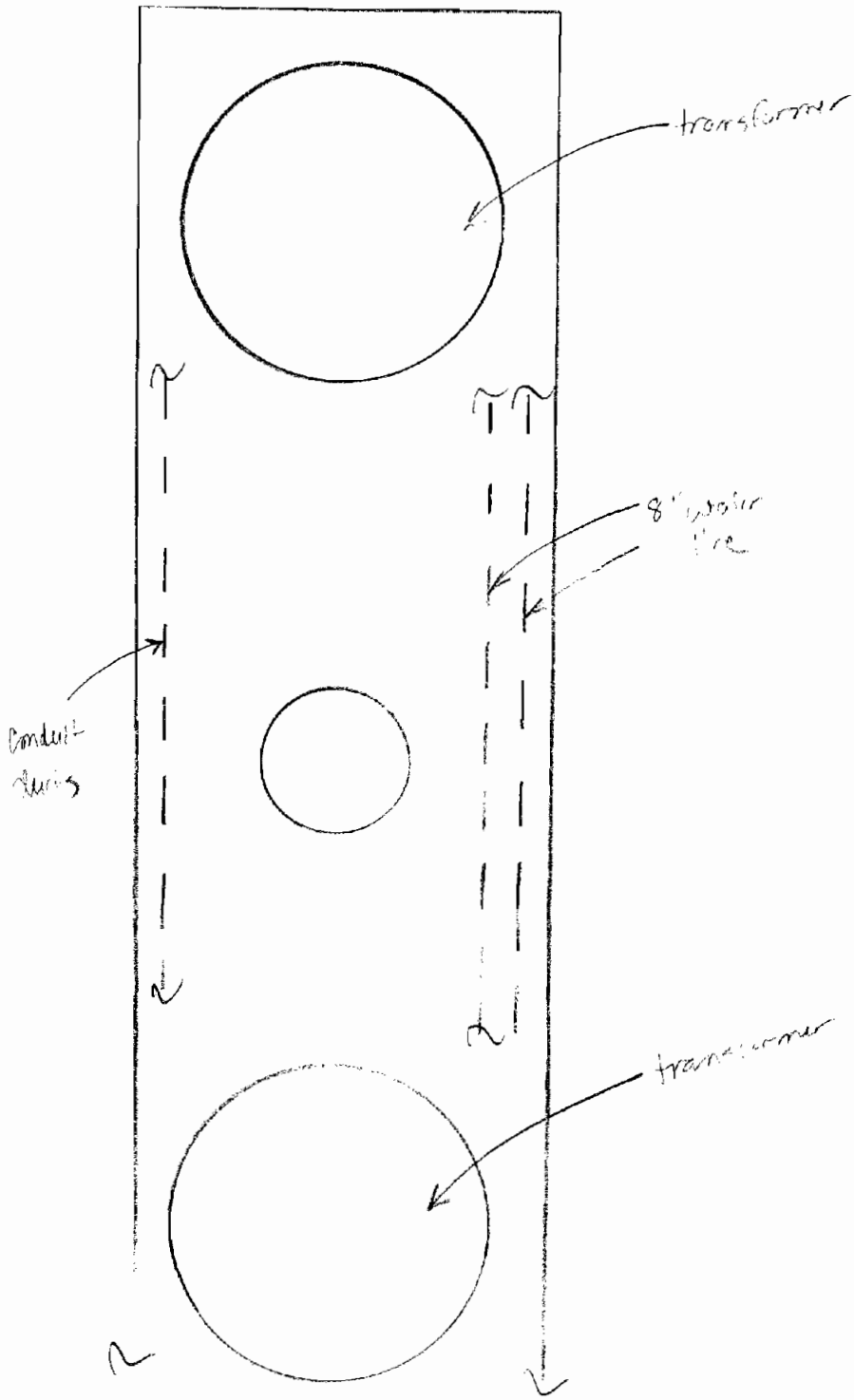
transformer
conduit
transformer

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-25

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other:) Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other:) Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 1 foot
Depth from Rim to Bottom of Structure: 7.0 feet
Interior Dimensions of Structure: 6.5 feet wide
Depth of Water in Structure: 5 inches
Sheen Present on Water (Y/N): Slight
Depth of Debris in Structure: trace
Description of Debris: sand/silt
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 1.2
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.8

Photograph #: 5-15

Facing: N / (S) / E / W

Other Information: _____

<< see sketch on reverse side >>

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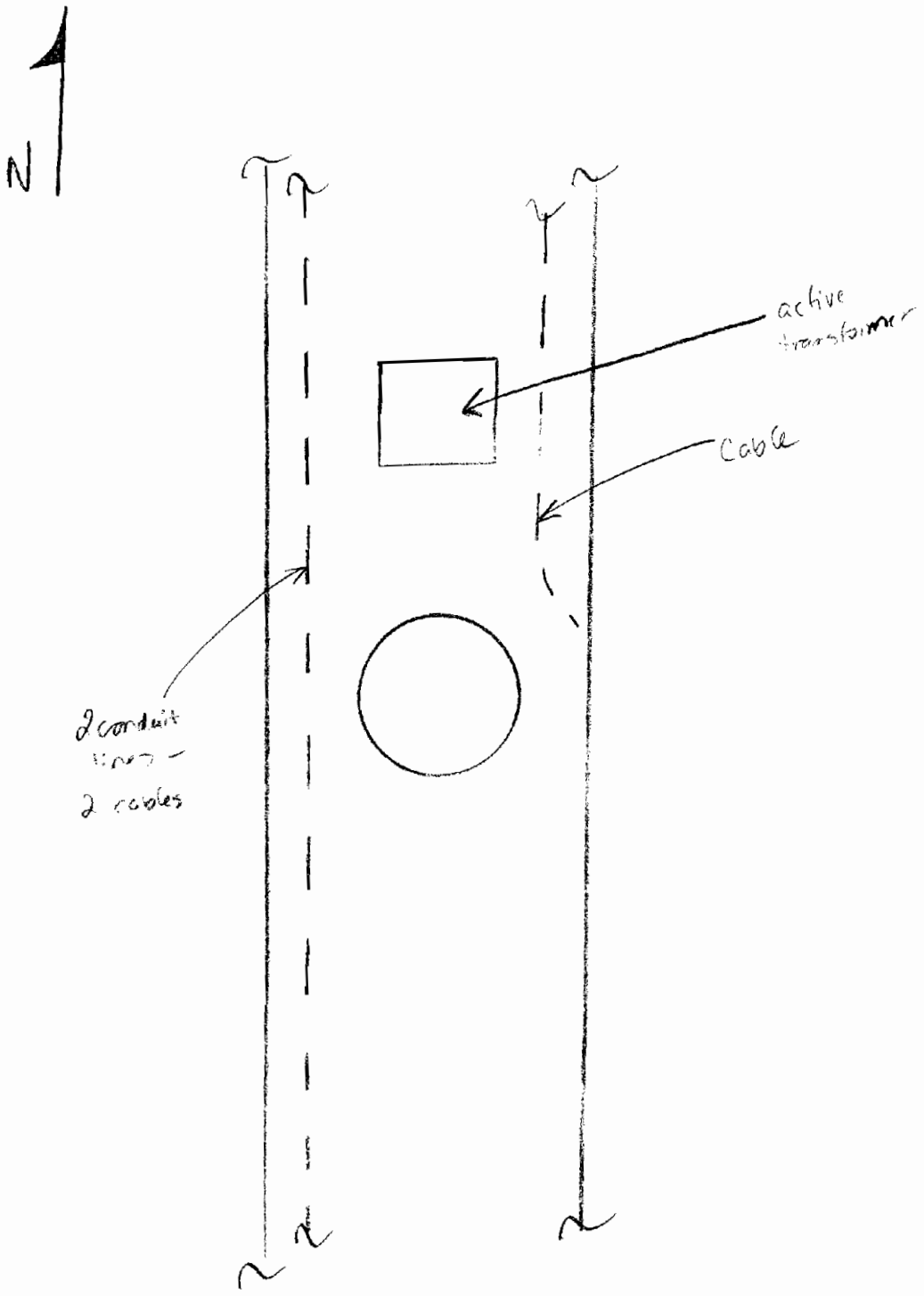
N
active transformer
cable
2 conduit lines - 2 cables

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-27

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other): Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other): Concrete Subway (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 1 Foot
Depth from Rim to Bottom of Structure: 7.0 feet
Interior Dimensions of Structure: 6.5 Feet wide
Depth of Water in Structure: 5 inches
Sheen Present on Water (Y/N): Slight
Depth of Debris in Structure: trace
Description of Debris: Silt/Sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 21.0

Photograph #: 5-19
Facing: N / (S) / E / W

Other Information: _____

<< see sketch on reverse side >>

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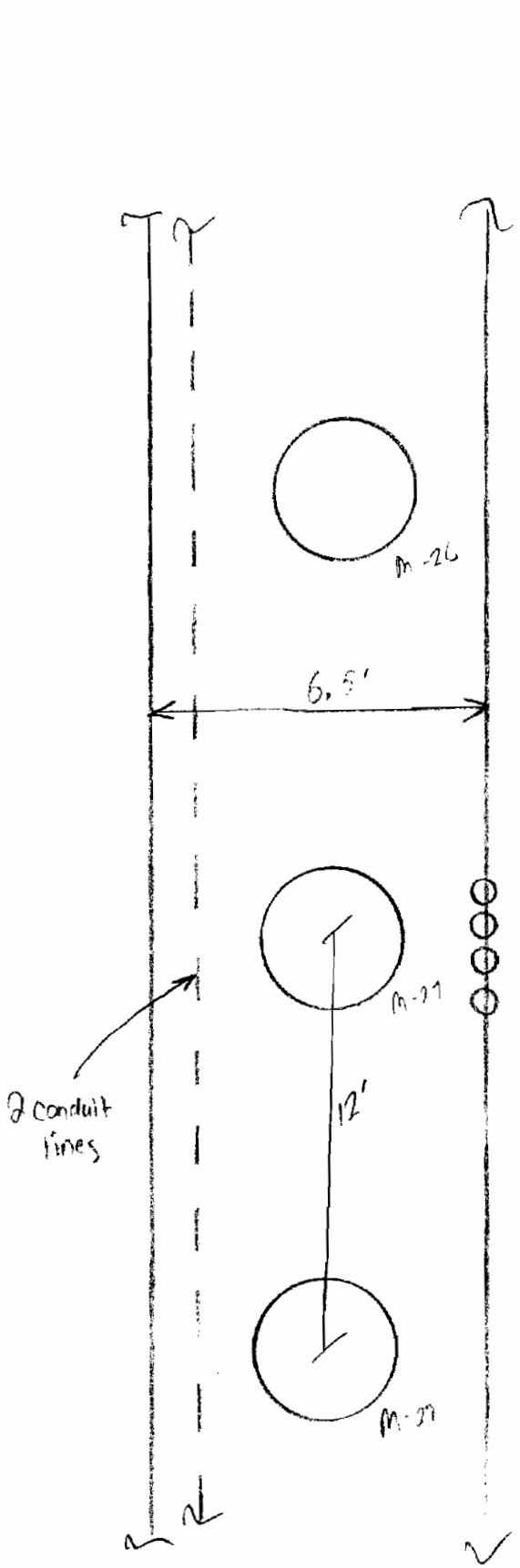
N
M-26
6.5'
M-27
2 conduit lines
12'
M-27

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-30

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other): Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other): Concrete / Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 1 foot
Depth from Rim to Bottom of Structure: 7.0 feet
Interior Dimensions of Structure: 6.5 feet wide
Depth of Water in Structure: 5 inches
Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: 0
Description of Debris: N/A
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 1.0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 21.0

Photograph #: 5-20
Facing: (N) / S / E / W

Other Information: Southern-most Manhole

<< see sketch on reverse side >>

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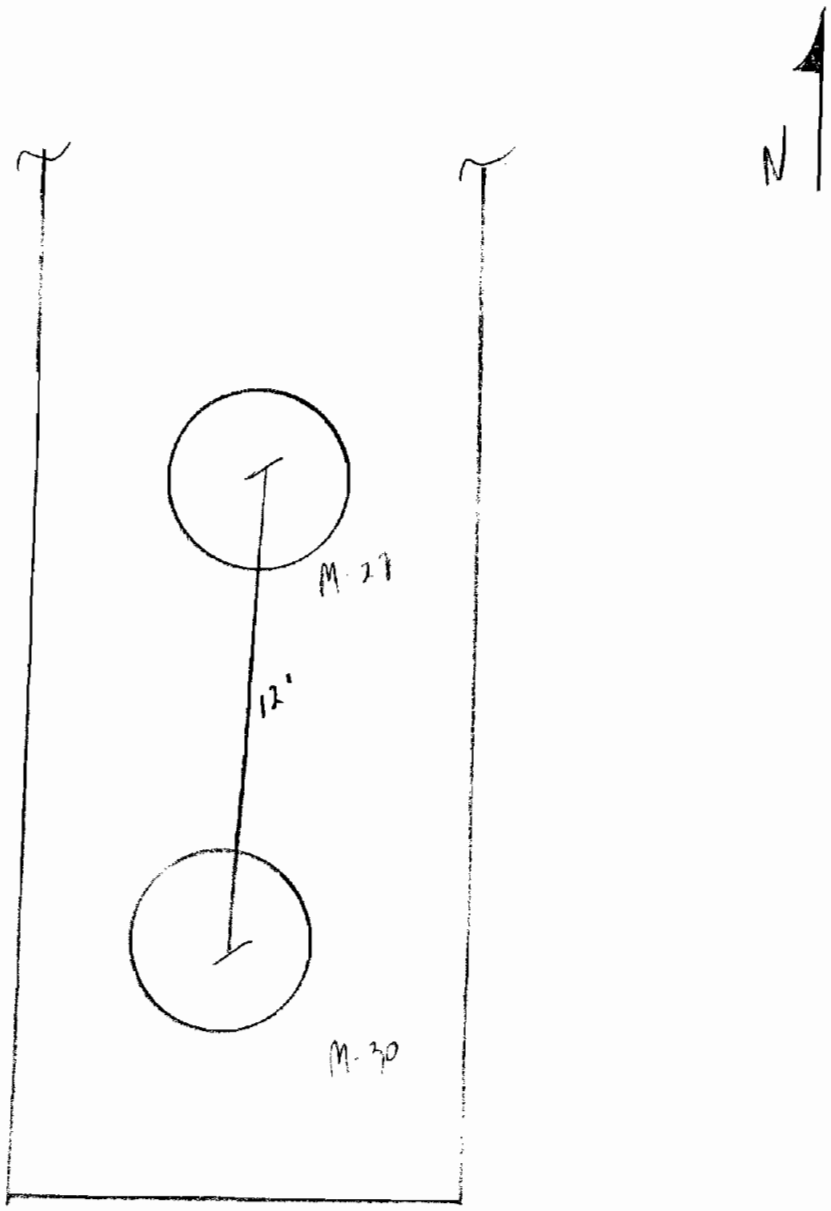
N
M. 29
12'
M. 30

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-32

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other): Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other): Concrete / Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 1 foot
Depth from Rim to Bottom of Structure: 6.5 feet Interior Dimensions of Structure: 4.5 feet wide
Depth of Water in Structure: 0 Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: 1 inch Description of Debris: Silt/Sand
Debris Sample ID (if collected): _____ Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 21.1

Photograph #: 5-21 Facing: (N) / S / E / W

Other Information: _____

<< see sketch on reverse side >>

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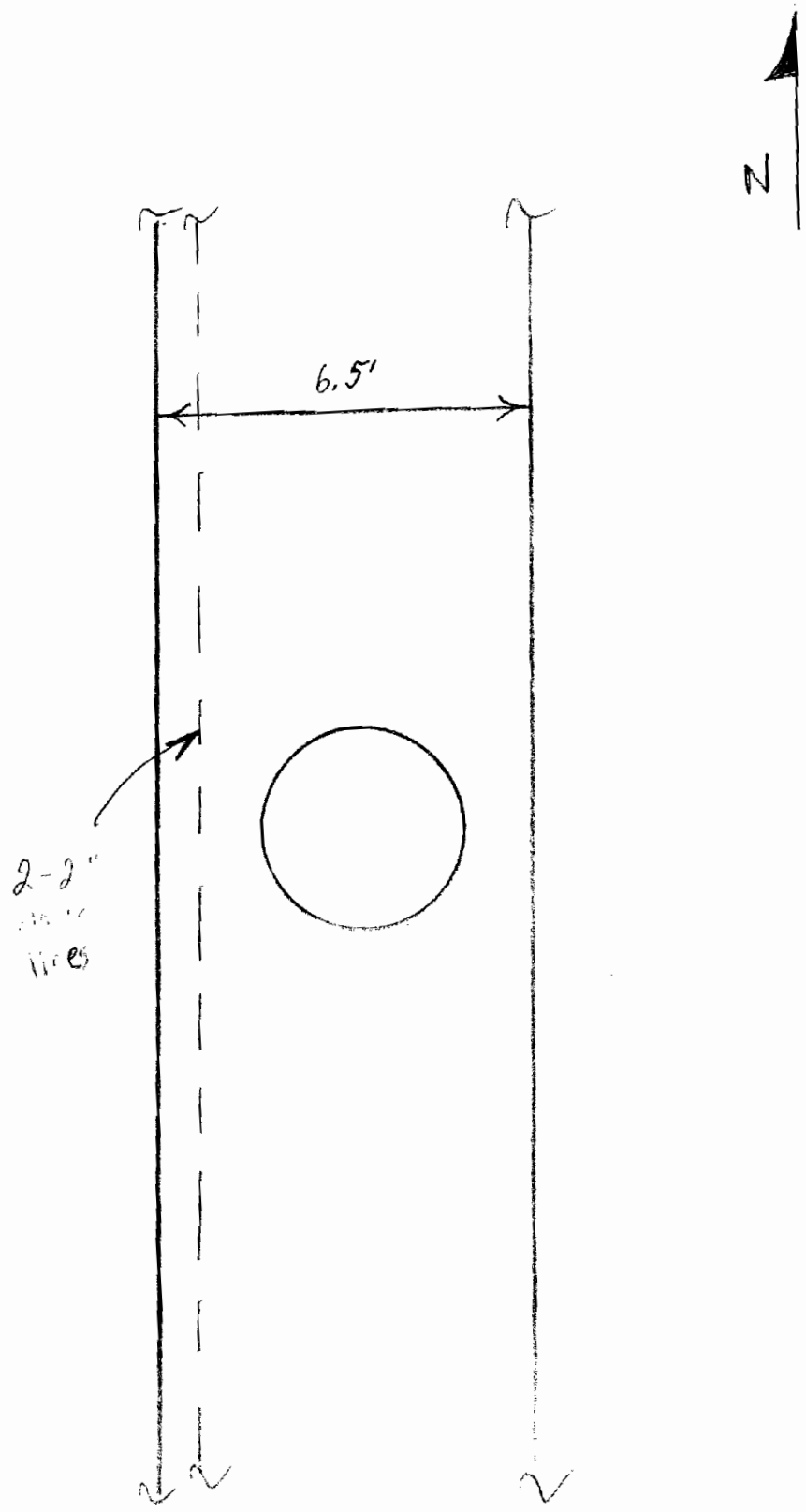
N
6.5'
2-2"
lines

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-34

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other): Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other): Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 1 foot
Depth from Rim to Bottom of Structure: 7.0 Feet
Interior Dimensions of Structure: 4.5 Feet wide
Depth of Water in Structure: 2
Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: <1 inch
Description of Debris: silt/sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 8
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.9

Photograph #: 5-22
Facing: N (S) E / W

Other Information: _____

<< see sketch on reverse side >>

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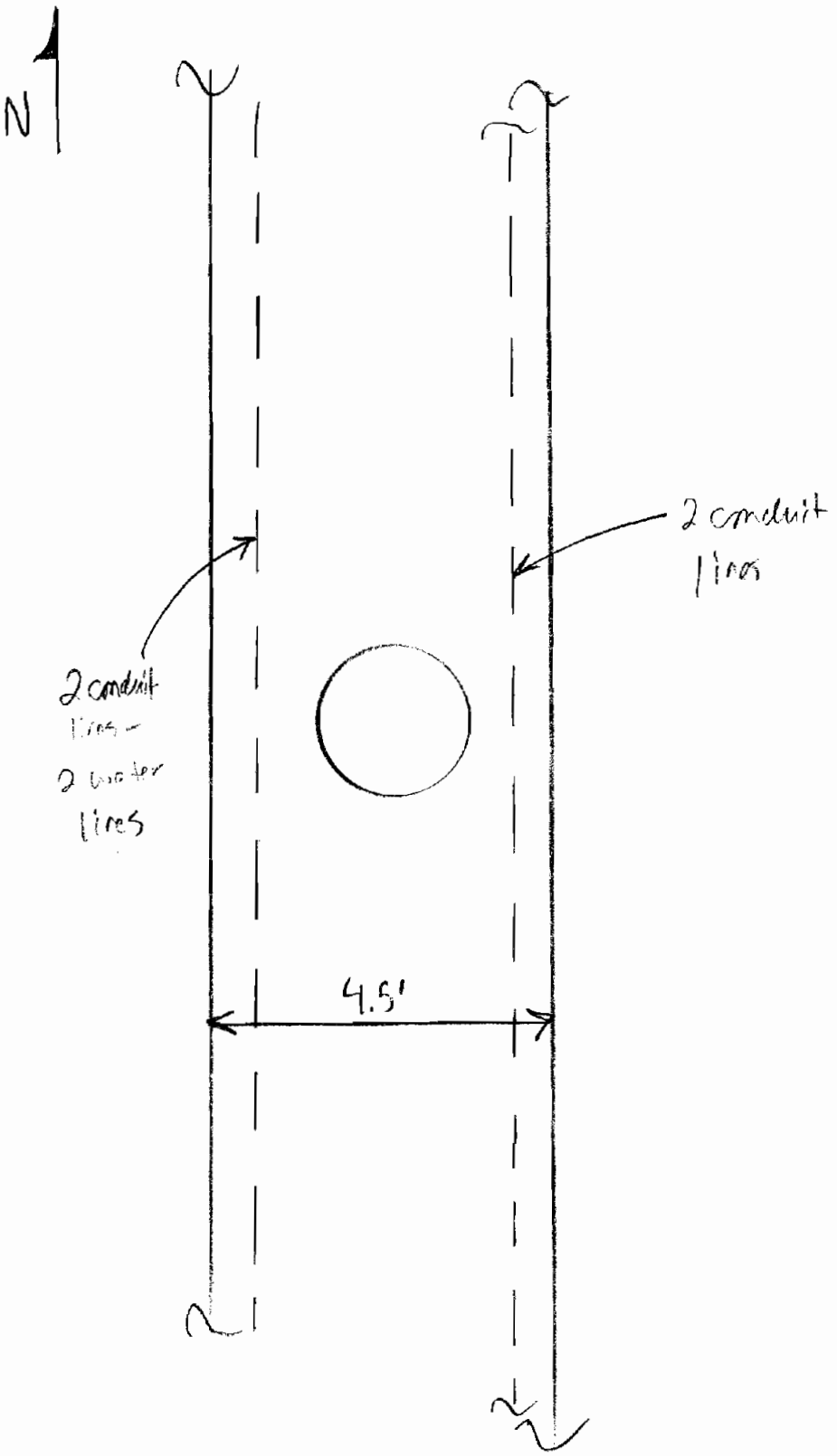
N
2 conduit lines
2 conduit lines – 2 water lines
4.5'

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-37

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 20 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other): Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other): Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 1 foot
Depth from Rim to Bottom of Structure: 7 feet
Interior Dimensions of Structure: 4.5 feet wide
Depth of Water in Structure: 0
Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: trace
Description of Debris: Silt/Sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): _____
Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0
Oxygen (%): 20.9

Photograph #: 5-23
Facing: N (S) / E / W

Other Information: _____

<< see sketch on reverse side >>

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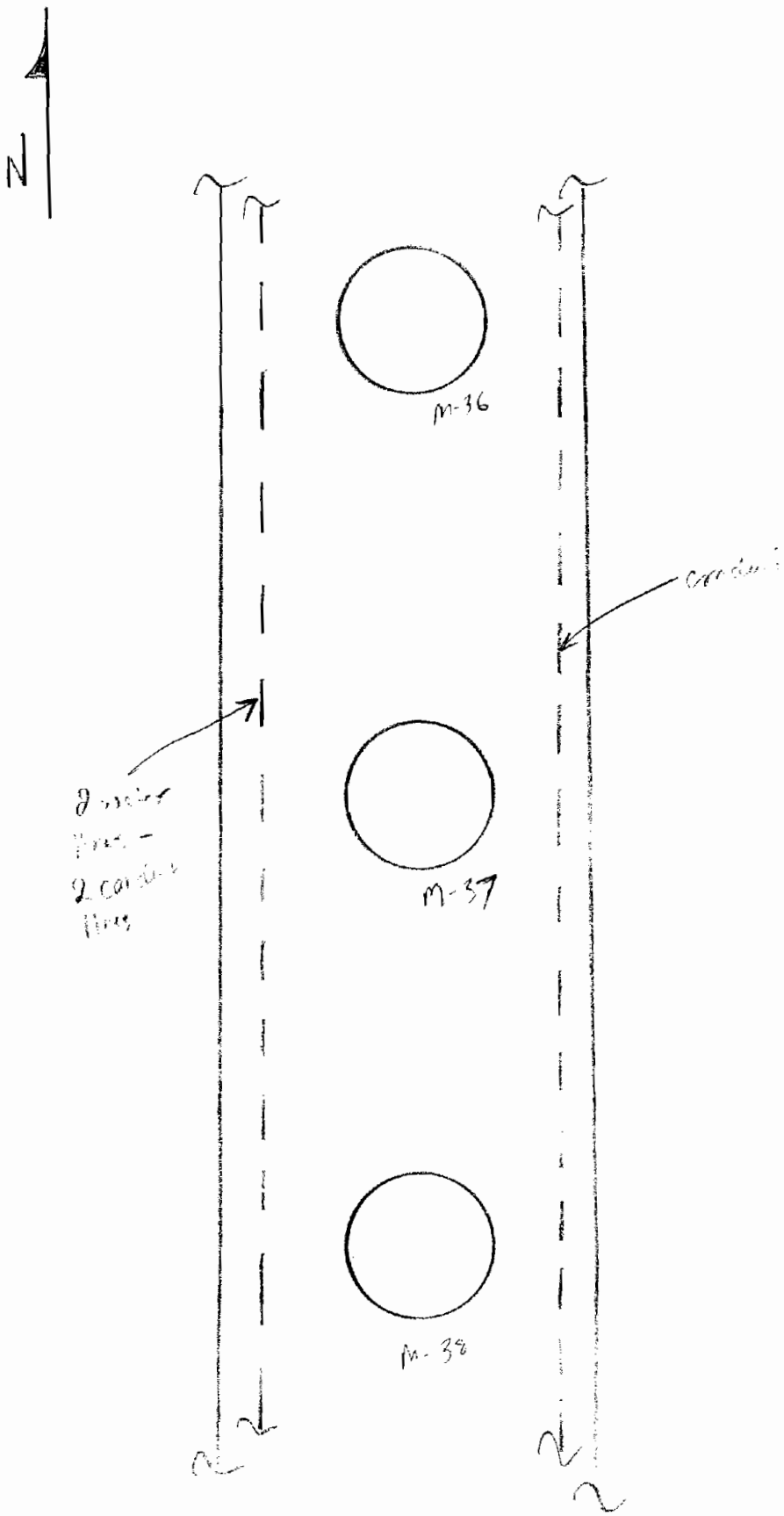
N
M-36
M-37
M-38

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-40

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other) Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other) Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 6 inches
Depth from Rim to Bottom of Structure: 7 feet
Interior Dimensions of Structure: 4.5 feet wide
Depth of Water in Structure: 0
Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: trace
Description of Debris: Silt / sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.9

Photograph #: 5-24
Facing: N / (S) / E / W

Other Information: _____

<< see sketch on reverse side >>

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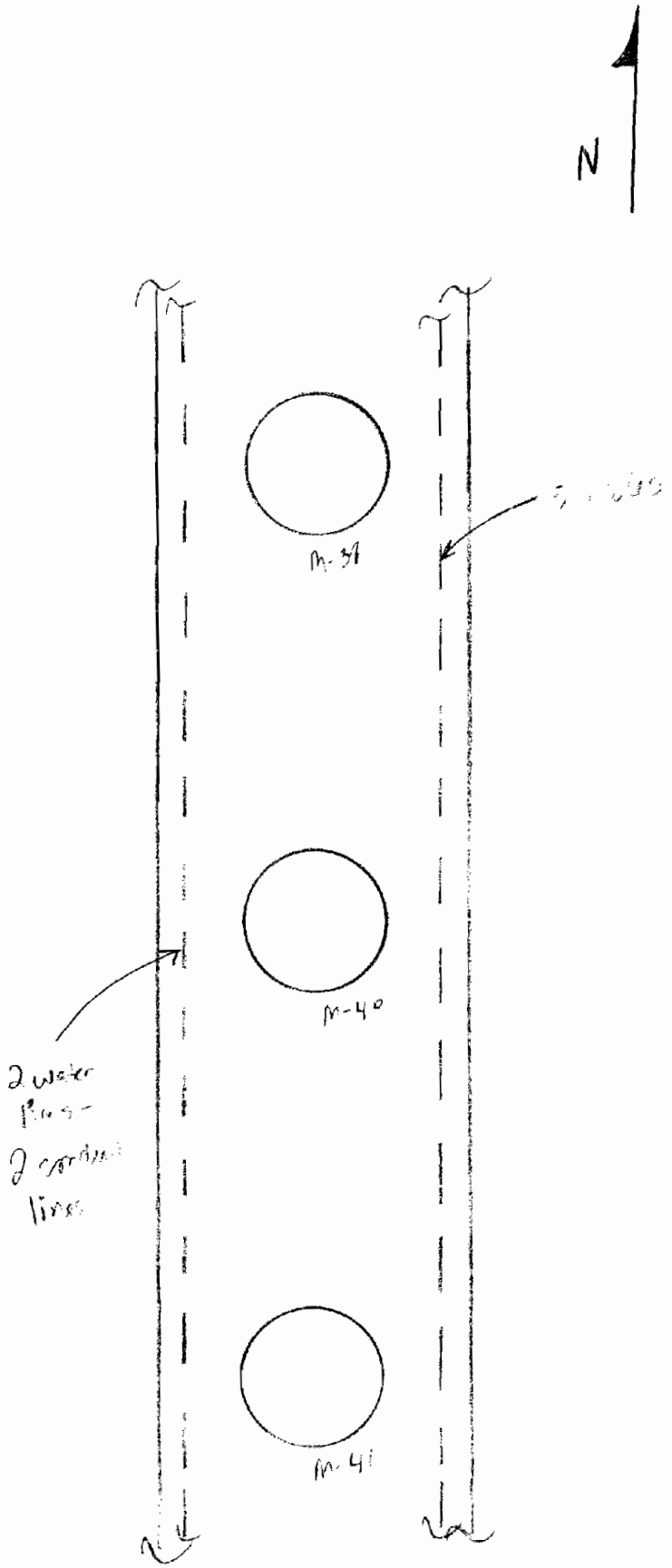
N
M-39
M-40
M-41
2 water
2

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-43

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 4-6 inches
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other): Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other): Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 6 inches
Depth from Rim to Bottom of Structure: 7 feet
Interior Dimensions of Structure: 4 to 5 feet wide
Depth of Water in Structure: 0
Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: 1 inch
Description of Debris: black stained silt/sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.9

Photograph #: 5-25
Facing: N / S / (E) W

Other Information: _____

<< see sketch on reverse side >>

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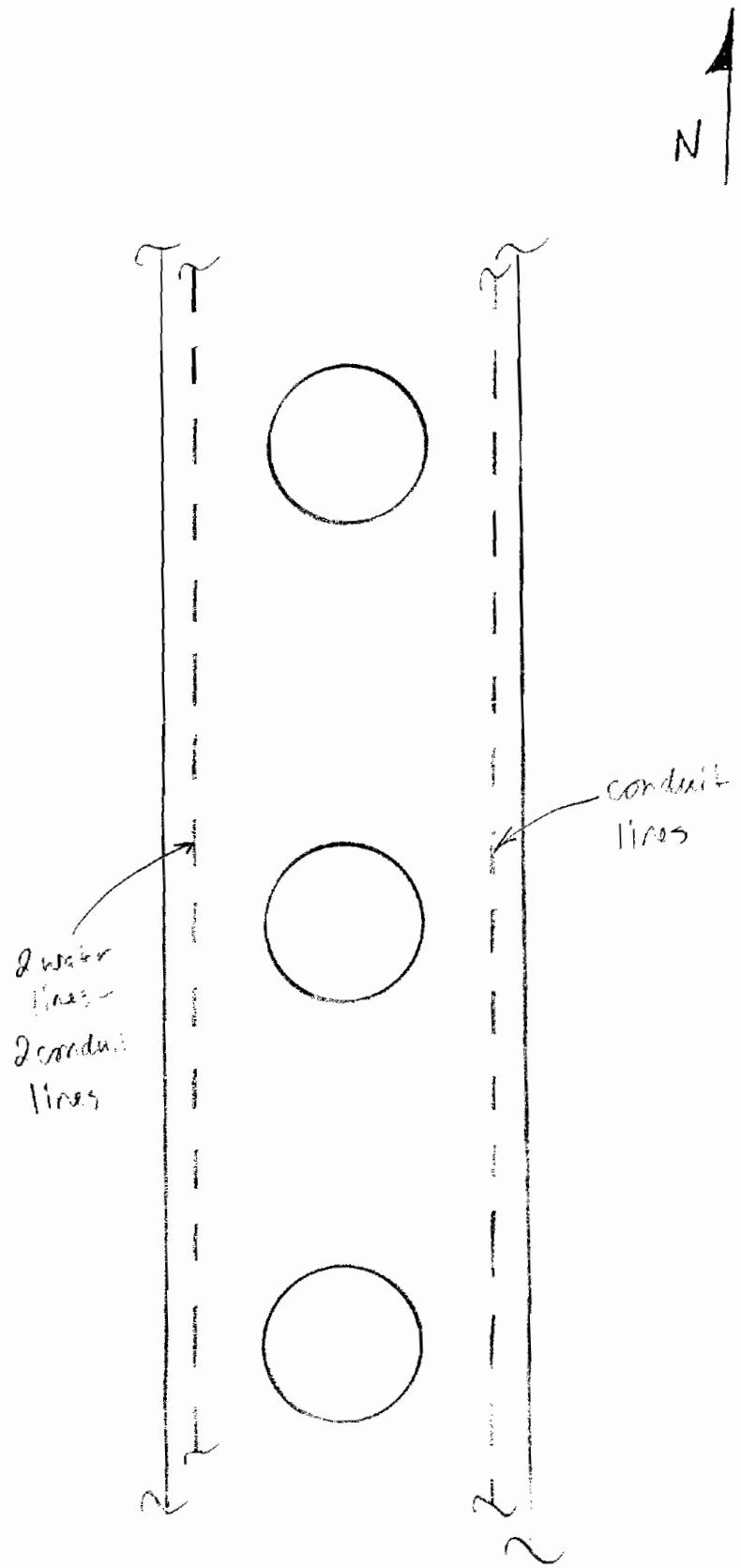
N
conduit lines
2 water lines
2 conduit lines

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-16

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other) Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other) Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 6 inches
Depth from Rim to Bottom of Structure: 7 feet
Interior Dimensions of Structure: 4.5 feet wide
Depth of Water in Structure: 0
Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: 5 inch
Description of Debris: black stained silt/sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.9

Photograph #: 5-25
Facing: N / S / (E) / W

Other Information: Southern-most manhole

<< see sketch on reverse side >>

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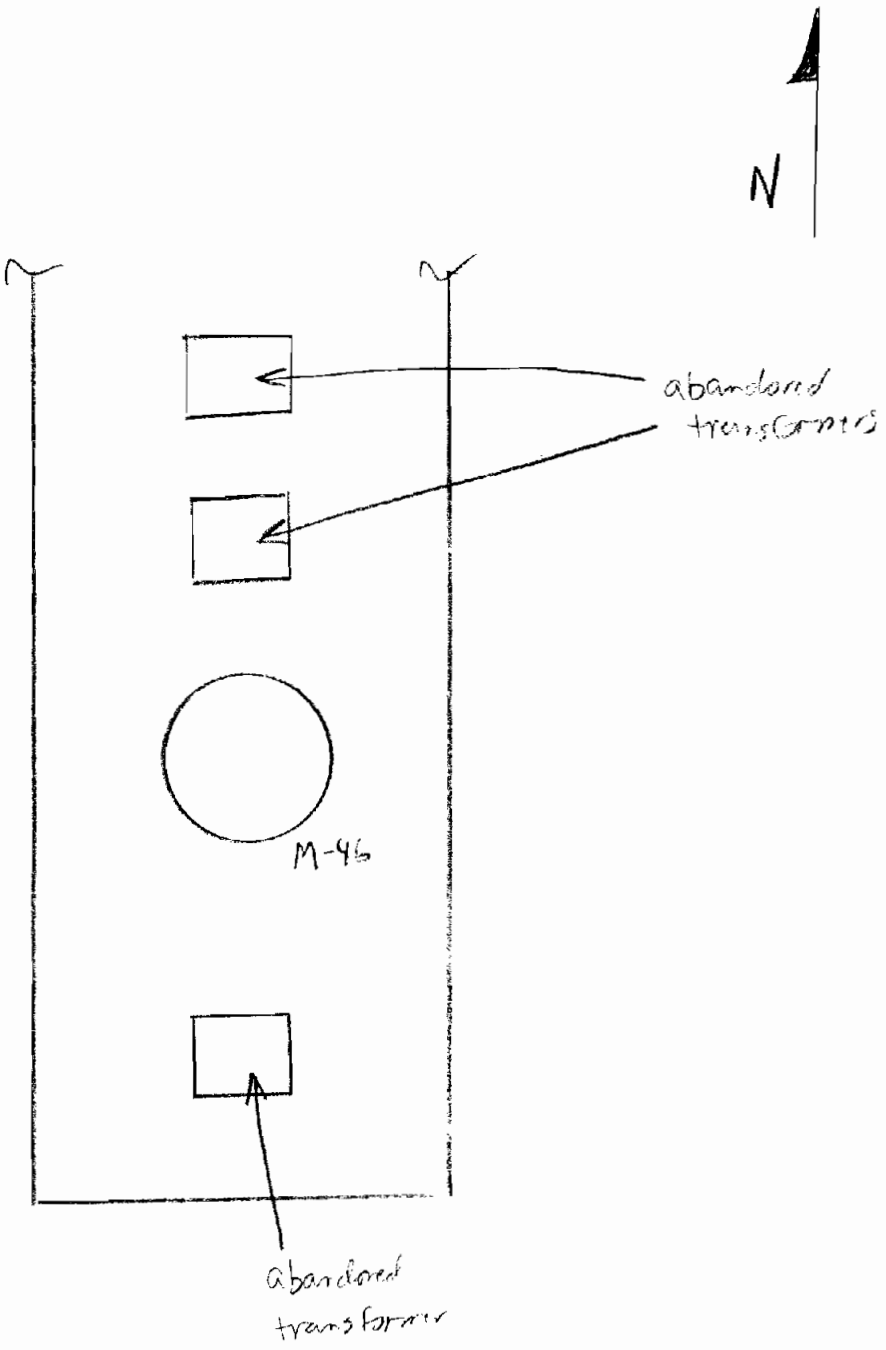
N
abandoned transformers
M-46
abandoned transformer

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-47

Cover

Location: In Pavement / Concrete / Crushed Stone / (Grass) / Other: _____ (Circle One)
Dimensions: ~~@~~ 35 inches Distance Above Grade: 0"
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other) Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / Concrete / (Other) Brick/Concrete/Steel (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / (Other) undetermined (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 1 foot
Depth from Rim to Bottom of Structure: 4.5' deep
Interior Dimensions of Structure: undetermined
Depth of Water in Structure: 2' deep
Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: 2 inch
Description of Debris: silt/sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.8

Photograph #: 6-6
Facing: (N) / S / E / W

Other Information: _____

<< see sketch on reverse side >>

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Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-48

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: (Circle One)
Dimensions: 30" Distance Above Grade: 4-6 inches
Type of Cover: (Solid Steel) / Catch Basin Type / Other: (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / Other: Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other) Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 6 inches
Depth from Rim to Bottom of Structure: 4.2 feet
Interior Dimensions of Structure: 4.5' w.c.
Depth of Water in Structure: trace
Sheen Present on Water (Y/N):
Depth of Debris in Structure: 0.5 inches
Description of Debris: silt/sand
Debris Sample ID (if collected):
Time Collected:

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.8

Photograph #: 6-5
Facing: (N) / S / E / W

Other Information:

<< see sketch on reverse side >>

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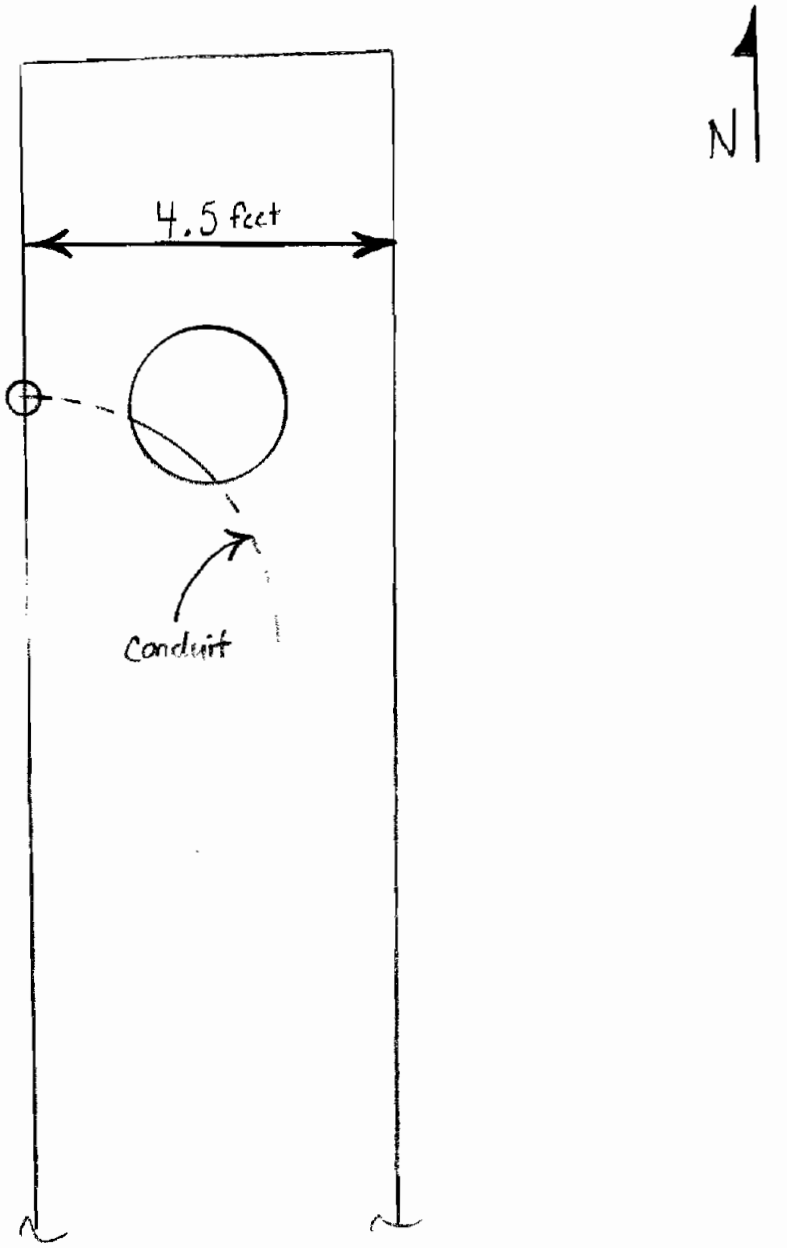
N
4.5 feet
Conduit

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-53

Cover

Location: In Pavement / Concrete / Crushed Stone / Grass / Other: (Circle One)
Dimensions: 30 inch Distance Above Grade: 4-6 inches
Type of Cover: Solid Steel / Catch Basin Type / Other: (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / Other: Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / Concrete / Other: (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / Other: (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 6 inch
Depth from Rim to Bottom of Structure: 4.5 feet
Interior Dimensions of Structure: 4.5 Feet wide
Depth of Water in Structure: trace
Sheen Present on Water (Y/N): N
Depth of Debris in Structure: < 1 inch
Description of Debris: Sand/silt
Debris Sample ID (if collected):
Time Collected:

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.8

Photograph #: 6-7
Facing: N / S / E / W

Other Information: some conduit line

<< see sketch on reverse side >>

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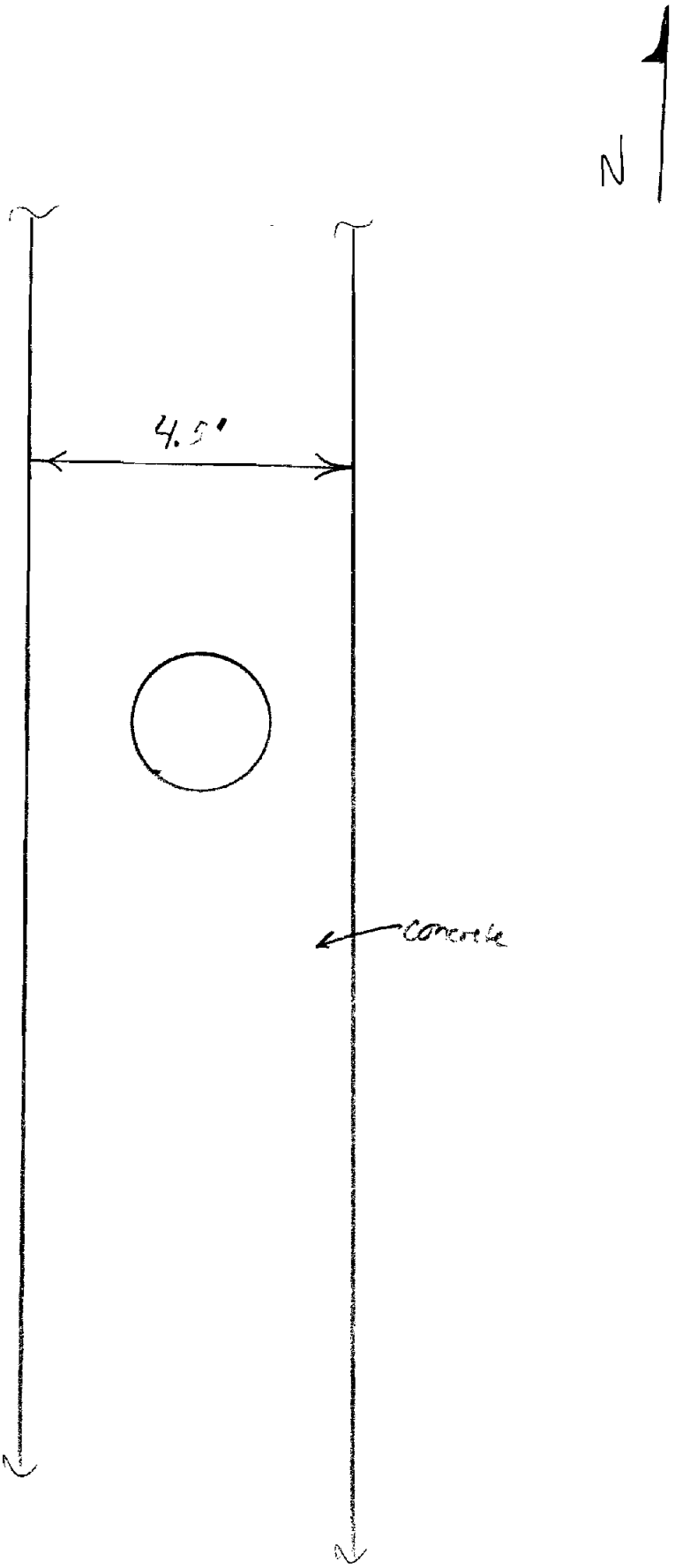
N
4.5'
Concrete

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-58

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 inch Distance Above Grade: 4-6 inches
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / Other: Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other): Skid (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 6 inches
Depth from Rim to Bottom of Structure: 4.5 feet
Interior Dimensions of Structure: 4.5 feet wide
Depth of Water in Structure: 0 inches
Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: 0.5 inches
Description of Debris: Sand/Silt
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.8

Photograph #: 6-9
Facing: (N) / S / E / W

Other Information: _____

<< see sketch on reverse side >>

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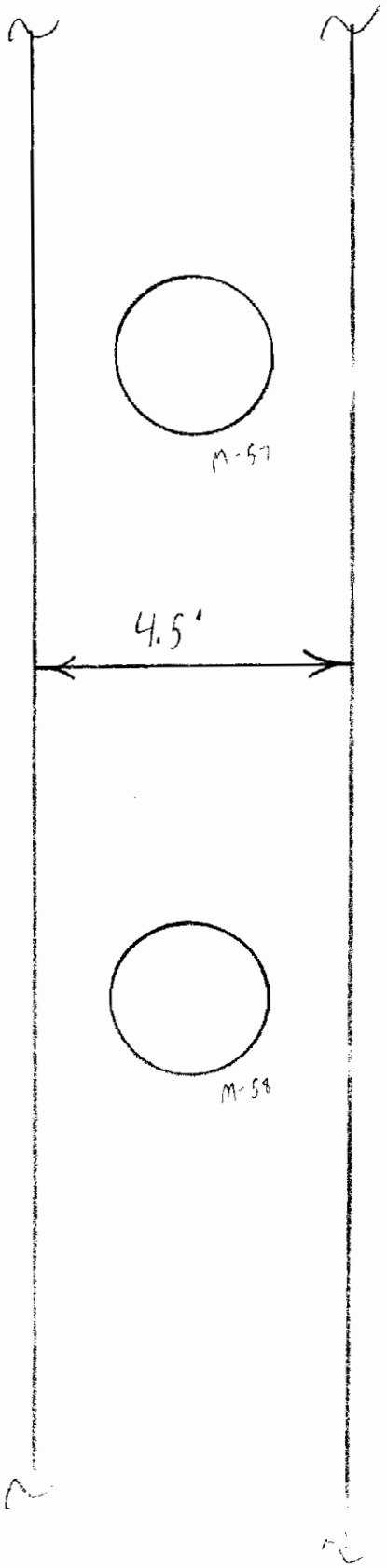

N

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-63

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: (Circle One)
Dimensions: 30 inches Distance Above Grade: 4-6 inches
Type of Cover: (Solid Steel) / Catch Basin Type / Other: (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other): Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other): Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 6 inches
Depth from Rim to Bottom of Structure: 4.5 feet
Interior Dimensions of Structure: 4.5 feet wide
Depth of Water in Structure: 0 inches
Sheen Present on Water (Y/(N)):
Depth of Debris in Structure: 0.5 inches
Description of Debris: sand/silt
Debris Sample ID (if collected):
Time Collected:

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.8

Photograph #:
Facing: N / S / E / W

Other Information: Southern-most manhole.

<< see sketch on reverse side >>

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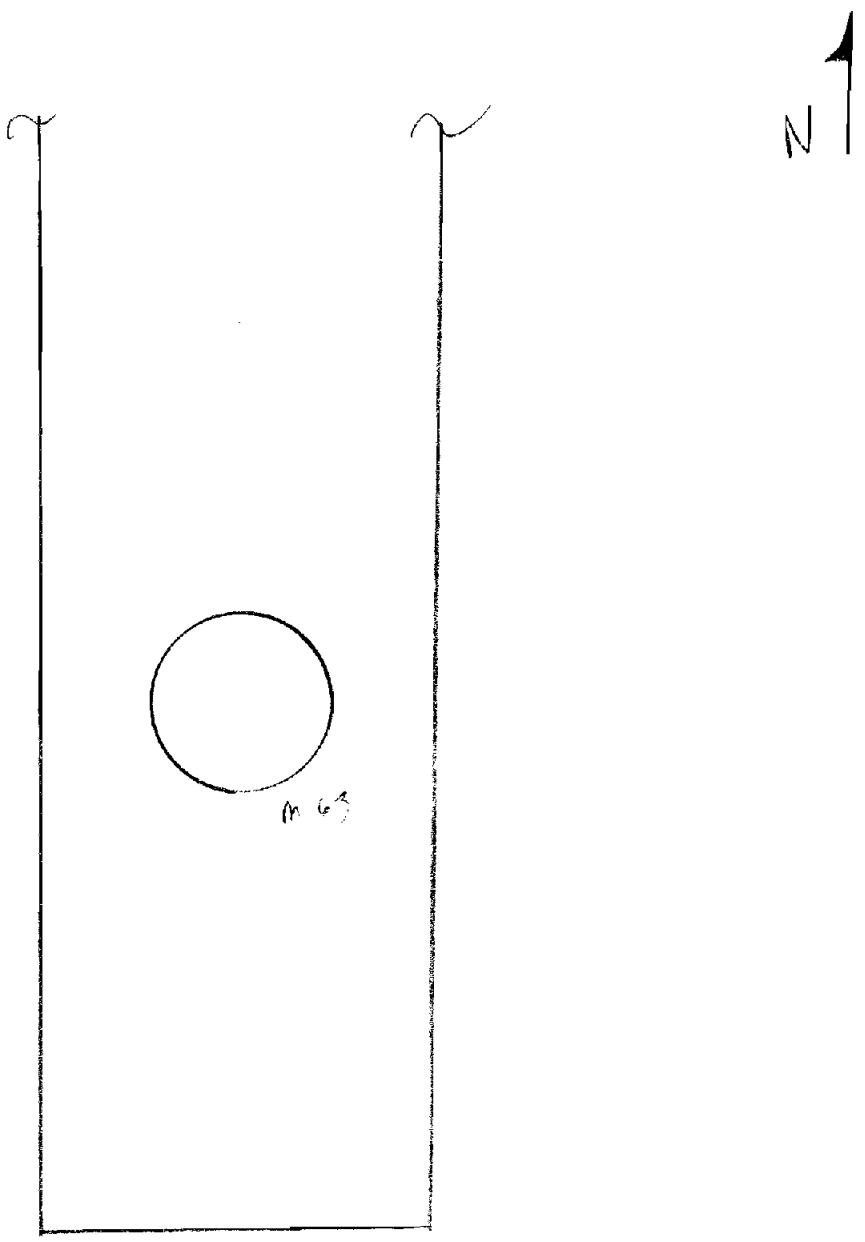
N
M 63

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-64

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other:
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other: Steel/Concrete) (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 2.5 feet
Depth from Rim to Bottom of Structure: 8 feet Interior Dimensions of Structure: 8' x 12'
Depth of Water in Structure: 0 Sheen Present on Water (Y/(N)):
Depth of Debris in Structure: 4 1 inch Description of Debris: Sand/Silt
Debris Sample ID (if collected): Time Collected:

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0.5
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.9

Photograph #: 7-18 Facing: N (S) E / W

Other Information:

<< see sketch on reverse side >>

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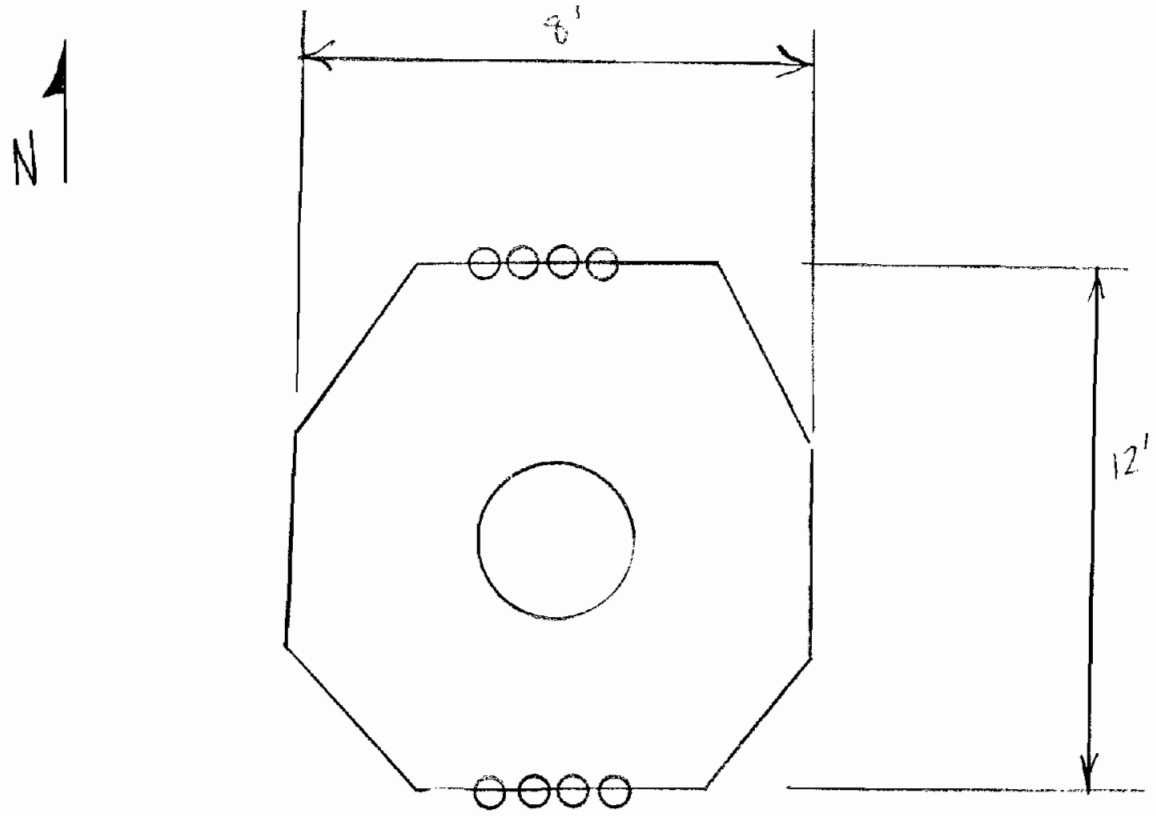

no conduit present

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-65

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 Inches Distance Above Grade: 4-6 inches
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / Other: Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other): Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 8 Inches
Depth from Rim to Bottom of Structure: 7 feet
Interior Dimensions of Structure: 4.5 feet wide
Depth of Water in Structure: 1.2 feet
Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: 1 inch
Description of Debris: Silt/Sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0.3
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.9

Photograph #: 7-21
Facing: N / (S) / E / W

Other Information: _____

<< see sketch on reverse side >>

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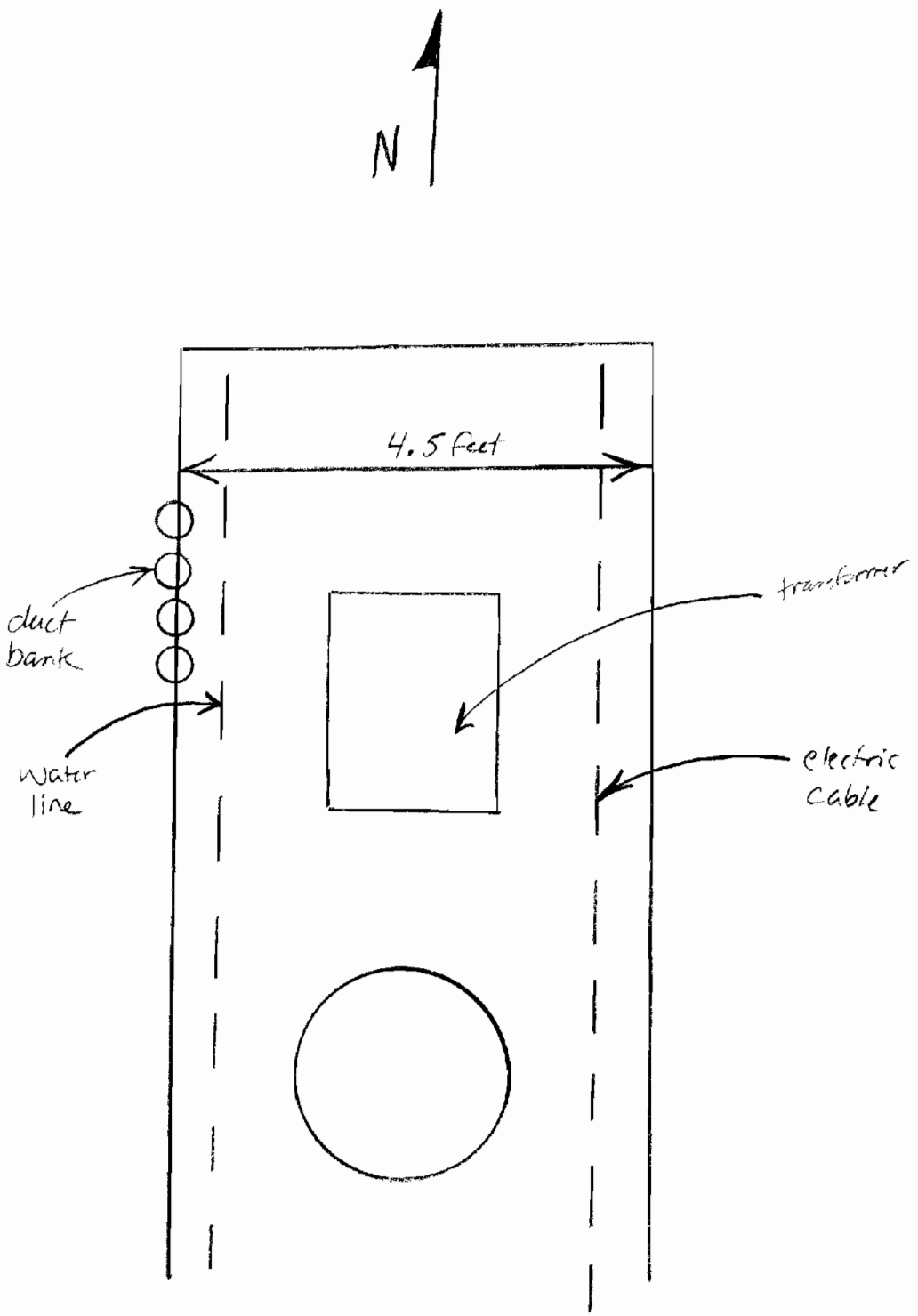
N
4.5 feet
duct bank
water line
transformer
electric cable

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-69

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: (Circle One)
Dimensions: 30 inches Distance Above Grade: 4 inches
Type of Cover: (Solid Steel) / Catch Basin Type / Other: (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other) Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other): Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 6 inches
Depth from Rim to Bottom of Structure: 7.1 feet
Interior Dimensions of Structure: 4.5 feet wide
Depth of Water in Structure: 0.8 feet
Sheen Present on Water (Y/(N)):
Depth of Debris in Structure: 4 inch
Description of Debris: silt/sand
Debris Sample ID (if collected):
Time Collected:

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0.2
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.9

Photograph #: 7-16
Facing: (N) S / E / W

Other Information:

<< see sketch on reverse side >>

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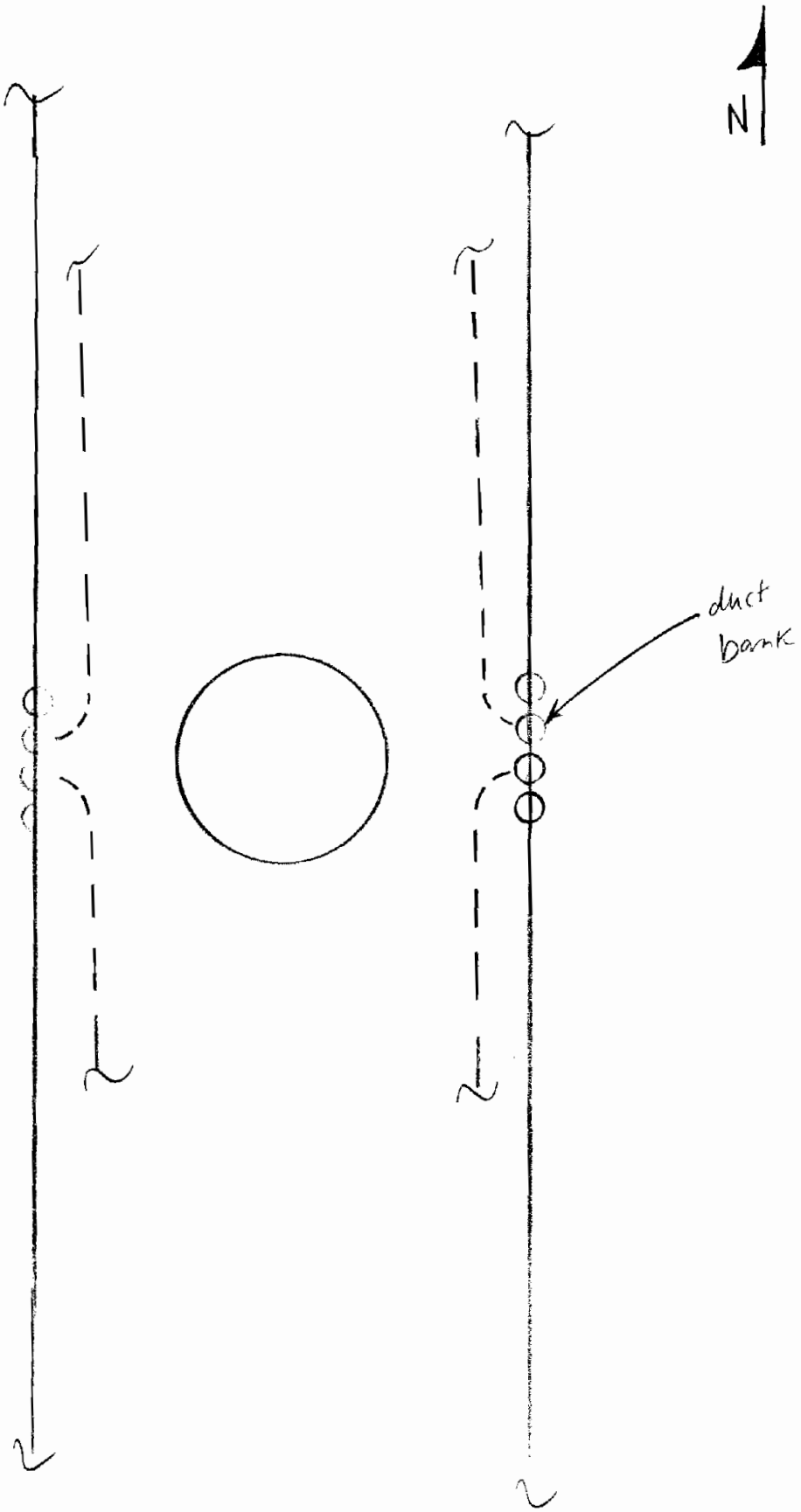
N
duct
bank

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-72

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: (Circle One)
Dimensions: 30 inches Distance Above Grade: 6-12 inches
Type of Cover: (Solid Steel) / Catch Basin Type / Other: (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / Other: Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other): Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 97 inches
Depth from Rim to Bottom of Structure: 7.1 feet Interior Dimensions of Structure: 4'8 feet wide
Depth of Water in Structure: 1.2 feet Sheen Present on Water (Y/(N)):
Depth of Debris in Structure: 41 inch Description of Debris: sand/silt
Debris Sample ID (if collected): Time Collected:

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0.2
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 20.9

Photograph #: 7-14 Facing: (N) / S / E / W

Other Information:

<< see sketch on reverse side >>

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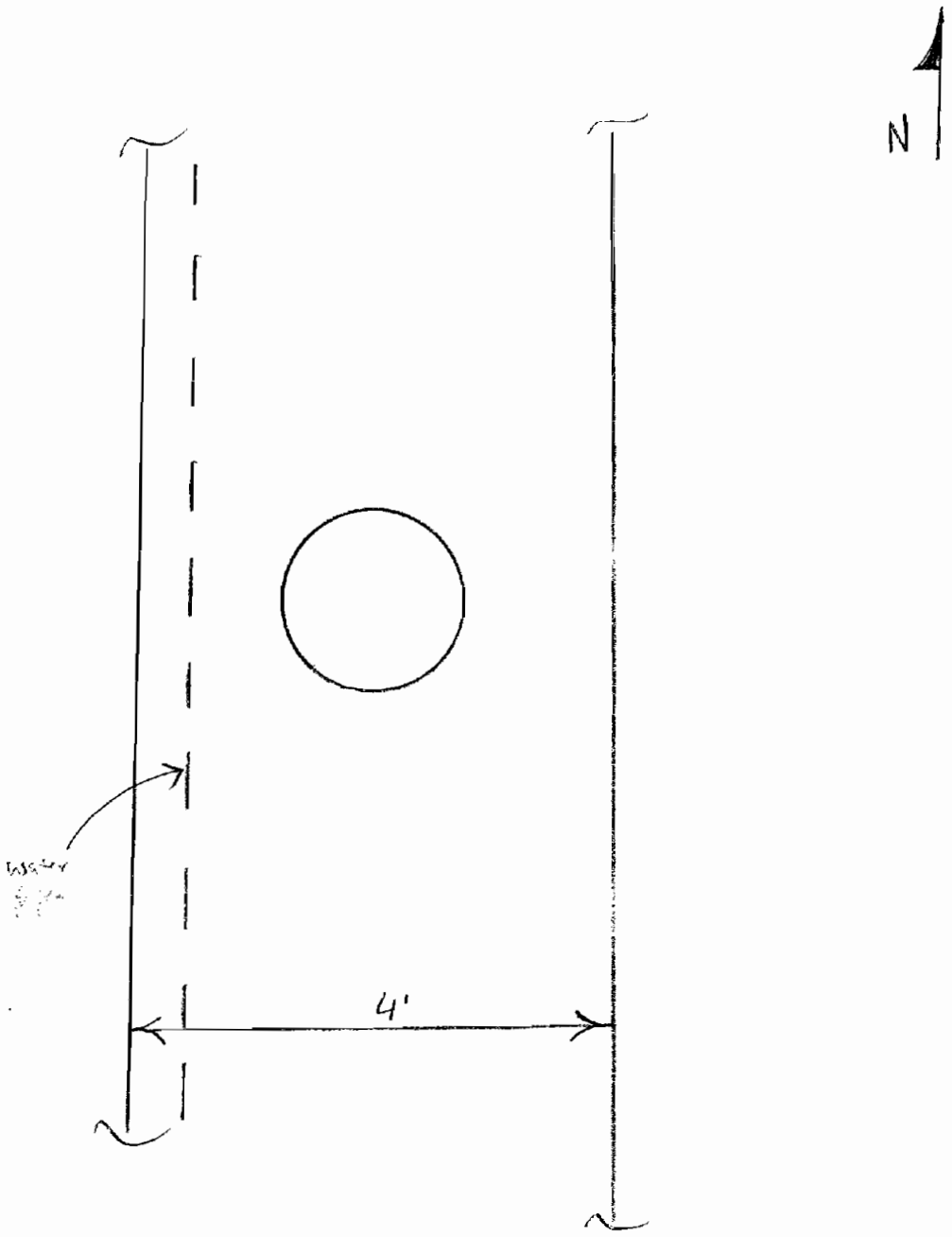
N
4'

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-[redacted] 73

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 6-8 inches
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / Other: Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other) Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 8 inches
Depth from Rim to Bottom of Structure: 7.4 feet Interior Dimensions of Structure: 9.5 feet wide
Depth of Water in Structure: 0 Sheen Present on Water (Y/(N)
Depth of Debris in Structure: 0 Description of Debris: NA
Debris Sample ID (if collected): _____ Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0.4
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 20.9

Photograph #: 7-19 (North), 7-20 (North) Facing: ~~N/S/E/W~~

Other Information: _____

<< see sketch on reverse side >>

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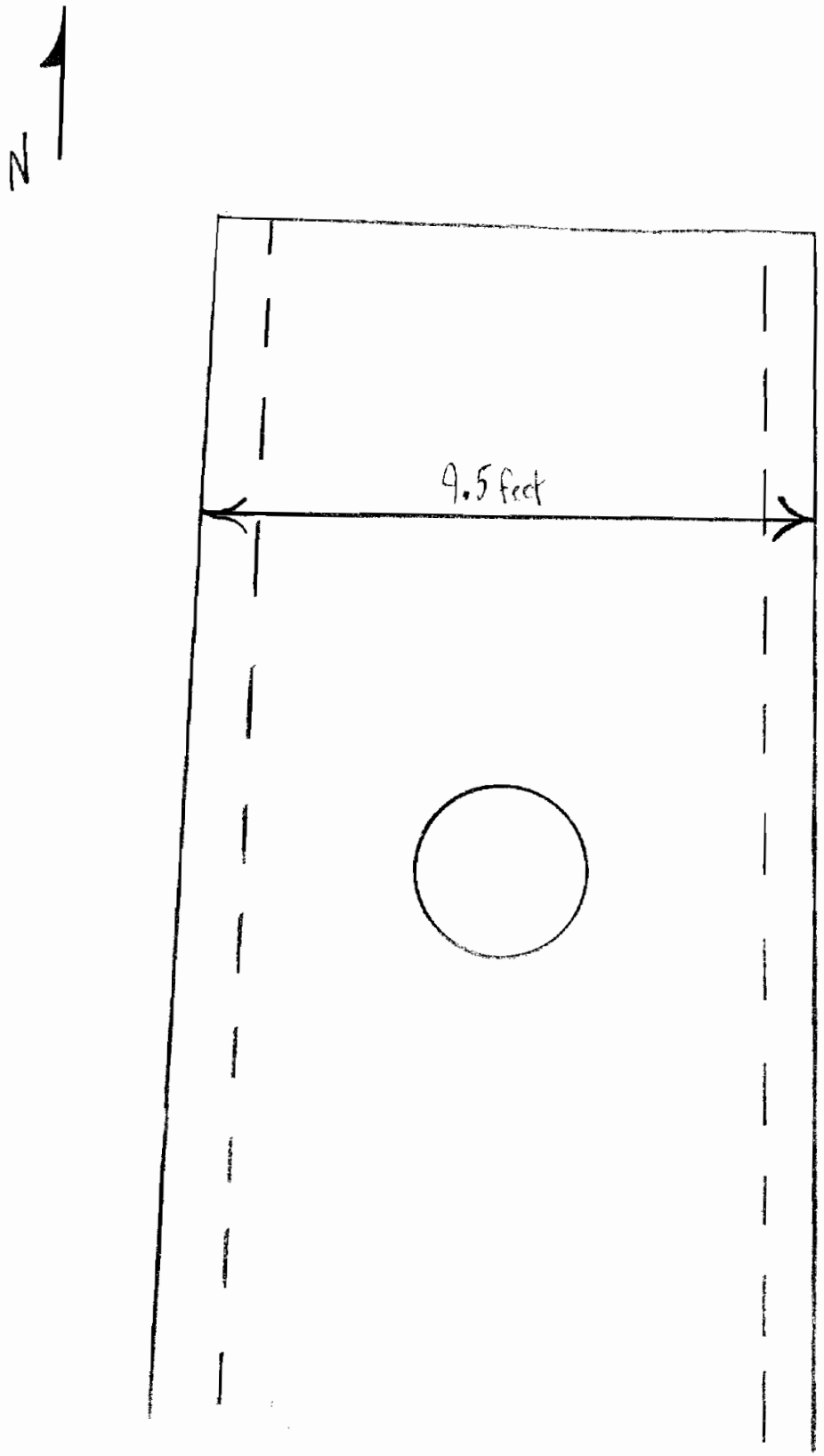
N
9.5 feet

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-75

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 4-6 inches
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other): Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other): Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 18 inches
Depth from Rim to Bottom of Structure: 7.2 feet Interior Dimensions of Structure: 9.5 feet wide
Depth of Water in Structure: < 1 inch Sheen Present on Water (Y/N): N
Depth of Debris in Structure: < 1 inch Description of Debris: silt/sand
Debris Sample ID (if collected): _____ Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0.1
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 20.9

Photograph #: (7) 7-17 Facing: N / (S) E / W

Other Information: _____

<< see sketch on reverse side >>

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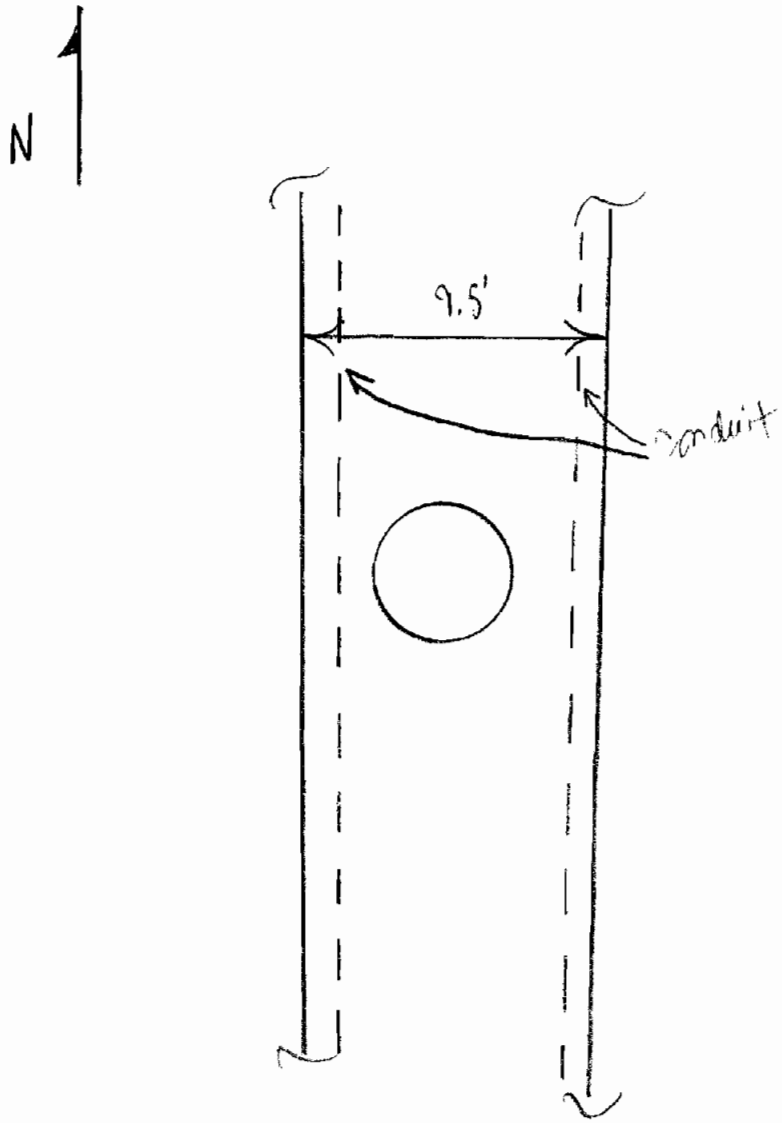
N
9.5'
conduit

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-79

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: (Circle One)
Dimensions: 30 inches Distance Above Grade: 8-12 inches
Type of Cover: (Solid Steel) / Catch Basin Type / Other: (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other): Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other) Concrete / Subway (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 97 inches
Depth from Rim to Bottom of Structure: 8 Feet Interior Dimensions of Structure: 9.5 feet wide
Depth of Water in Structure: 0 Sheen Present on Water (Y/(N)):
Depth of Debris in Structure: 4 inch Description of Debris: silt/sand
Debris Sample ID (if collected): Time Collected:

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0.5
Carbon Monoxide (ppm): 9 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 20.9

Photograph #: 7-13 Facing: (N) / S / E / W

Other Information:

<< see sketch on reverse side >>

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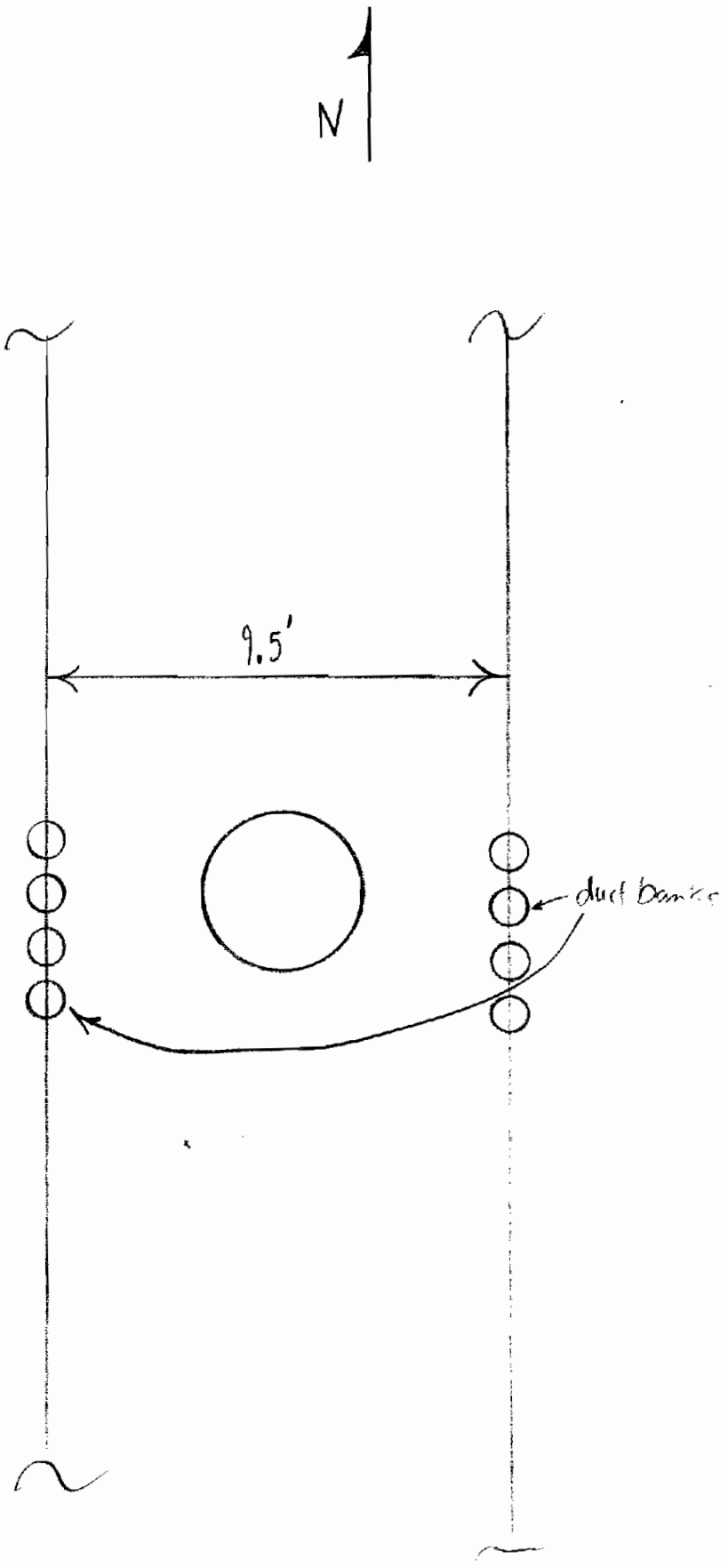
N
9.5'
duct banks

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-80

Cover

Location: In Pavement / (Concrete) / Crushed Stone / ~~Grass~~ / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 6-8 inches
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other: Concrete/Steel) (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 8 inches
Depth from Rim to Bottom of Structure: 7 Feet Interior Dimensions of Structure: 7'x17'
Depth of Water in Structure: 5 inch Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: 1 inch Description of Debris: silt/sand/gravel
Debris Sample ID (if collected): _____ Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 21.3

Photograph #: 7-10 Facing: N / S / E / (W)

Other Information: _____

<< see sketch on reverse side >>

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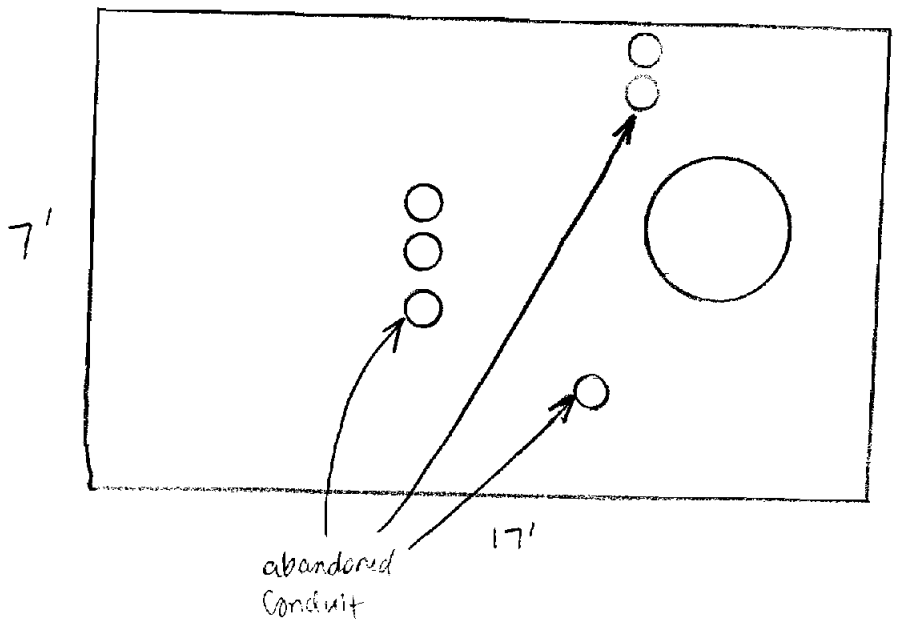

no conduit

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: M-81

Cover

Location: In Pavement / (Concrete) / Crushed Stone / (Grass) / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 6-8 inches
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other: Concrete/Steel) (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 8 inches
Depth from Rim to Bottom of Structure: 6.4 Feet Interior Dimensions of Structure: 6' x 6'
Depth of Water in Structure: 0.7 Feet Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: <1 inch Description of Debris: Silt/Sand/gravel
Debris Sample ID (if collected): _____ Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 21.3

Photograph #: 7-11 Facing: N / S / (E) / W

Other Information: _____

<< see sketch on reverse side >>

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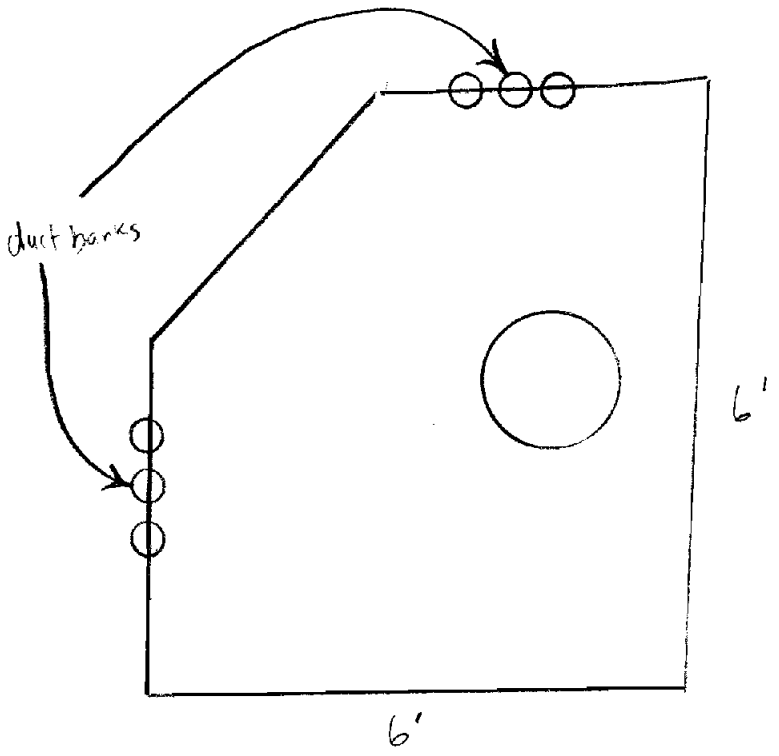
N

N



no conduit

Electrical Manholes - Locations North of Former Echota Building

(Designations by NMPC: H-2, 4, 6, 7, 8, 10, 11, 12, 13, 14, and H-15)
(Designation by BBL: E-1)

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Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: H-2

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other: Concrete/Steel) (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 8 inches
Depth from Rim to Bottom of Structure: 6.3 feet
Interior Dimensions of Structure: 6' x 6'
Depth of Water in Structure: 1.6 feet
Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: 1 inch
Description of Debris: silt/sand/gravel
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 21.3

Photograph #: 7-9
Facing: N / S / E / (W)

Other Information: _____

<< see sketch on reverse side >>

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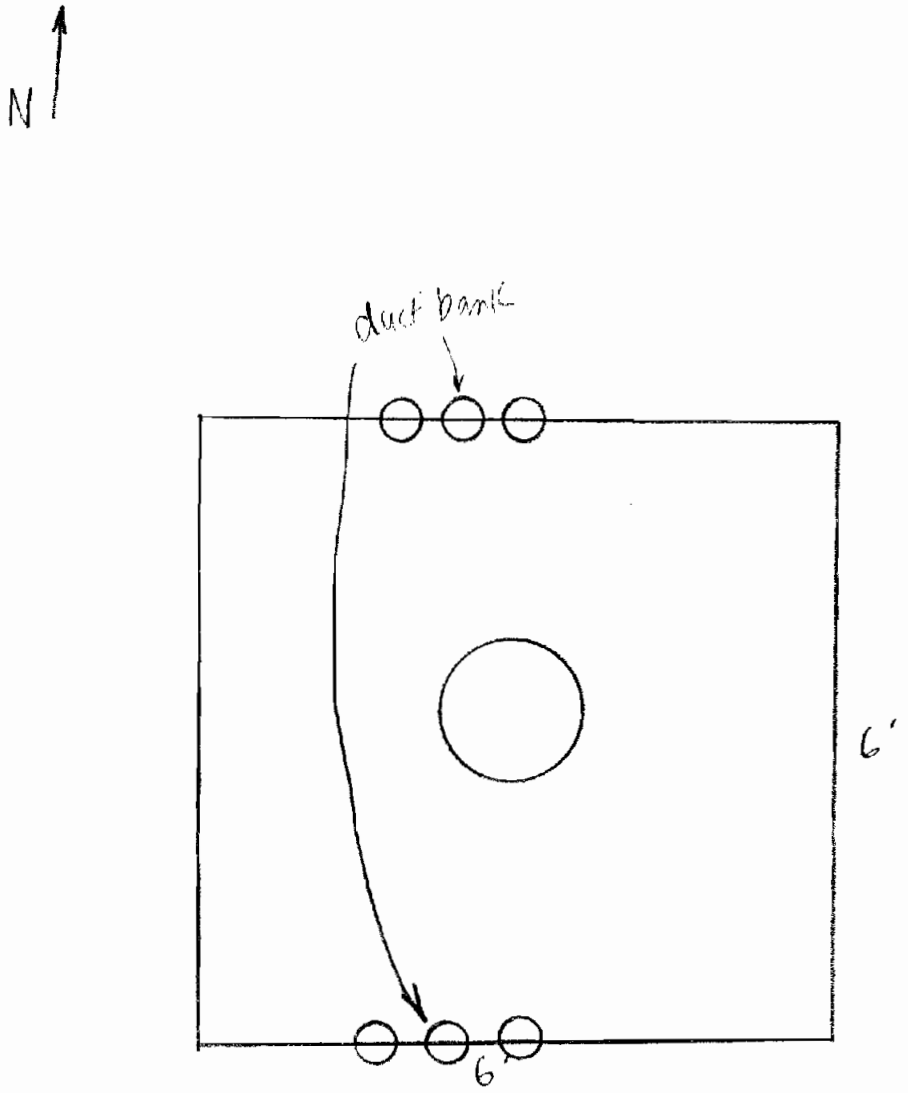
N
duct bank
6'
6'

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: H-4

Cover

Location: (In Pavement) / Concrete / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Concrete Block (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 1 foot
Depth from Rim to Bottom of Structure: 5.8 feet
Interior Dimensions of Structure: 6'x9'
Depth of Water in Structure: 21 inch
Sheen Present on Water (Y/N): Slight
Depth of Debris in Structure: 1-2 inches
Description of Debris: Silt/Sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): ≤ 2
Lower Explosive Limit (%): 0
Oxygen (%): 20.9

Photograph #: 4-23
Facing: N / E / W

Other Information: Sheen generated on water surface upon mixing debris. No energized conductors present. Presence of drain undetermined based upon water/debris.

<< *see sketch on reverse side* >>

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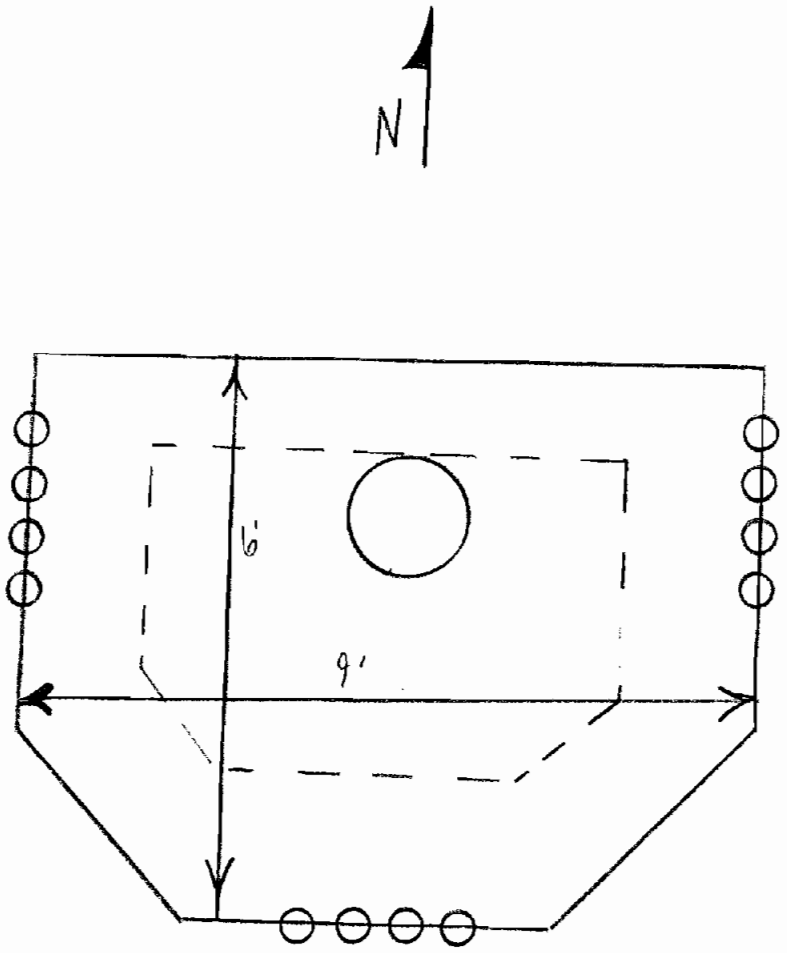
N
6'
9'

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Friday, July 16, 1999
Weather: Sunny - Hot/Humid
Temperature: 85-90 F
Wind: Light Wind
Inspector/Recorder: JCB/CEG

Job Number: 364.87.03

Structure ID: H-6

Cover

Location: In Pavement / Concrete / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30" Distance Above Grade: 0"
Type of Cover: Solid Steel / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 1'
Depth from Rim to Bottom of Structure: 7.3' Interior Dimensions of Structure: 6' x 8'
Depth of Water in Structure: 1" Sheen Present on Water (Y/N): N
Depth of Debris in Structure: ~2" Description of Debris: Sand/Gravel
Debris Sample ID (if collected): — Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 21.2

Photograph #: H-9 Facing: N / S / E / W

Other Information: _____

<< see sketch on reverse side >>

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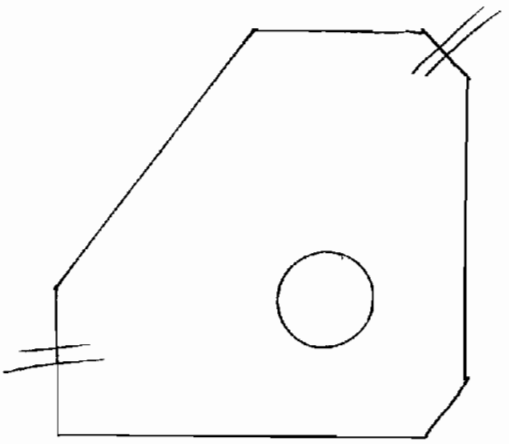
H-6



Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Friday, July 16, 1999
Weather: Sunny - Hot/Humid
Temperature: 85-90 F
Wind: Light Wind
Inspector/Recorder: JCB/CEG

Job Number: 364.87.03

Structure ID: H-7

Cover

Location: In Pavement / Concrete / (Crushed Stone) / Grass / Other: _____ (Circle One)
Dimensions: 30" Distance Above Grade: 1"
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 1'
Depth from Rim to Bottom of Structure: 6.7' Interior Dimensions of Structure: 6'x8'
Depth of Water in Structure: ~1" Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: ~1" Description of Debris: Sand
Debris Sample ID (if collected): _____ Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 21.2

Photograph #: 4-11 Facing: (N) / S / E / W

Other Information: Cannot determine if drains are present

<< see sketch on reverse side >>

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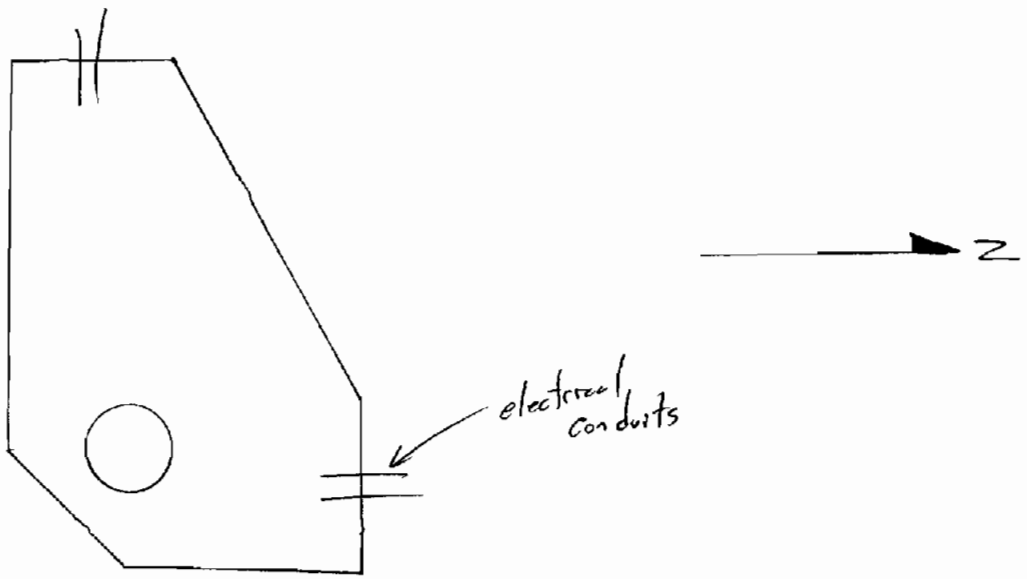
H-7



Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Friday, July 16, 1999
Weather: Sunny - Hot/Humid
Temperature: 85-90 F
Wind: Light Wind
Inspector/Recorder: JCB/CEG

Job Number: 364.87.03

Structure ID: H-8

Cover

Location: In Pavement / Concrete / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30" Distance Above Grade: 0"
Type of Cover: Solid Steel / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Steel/Concrete (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 1'
Depth from Rim to Bottom of Structure: 7.5' Interior Dimensions of Structure: 6' x 10'
Depth of Water in Structure: 0" Sheen Present on Water (Y/N): NA
Depth of Debris in Structure: 1" Description of Debris: Sediment/Sand
Debris Sample ID (if collected): _____ Time Collected: _____

Pipe Information NA - Not Applicable

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 21.3

Photograph #: 4-15 Facing: N / S / E / W

Other Information: _____

<< see sketch on reverse side >>

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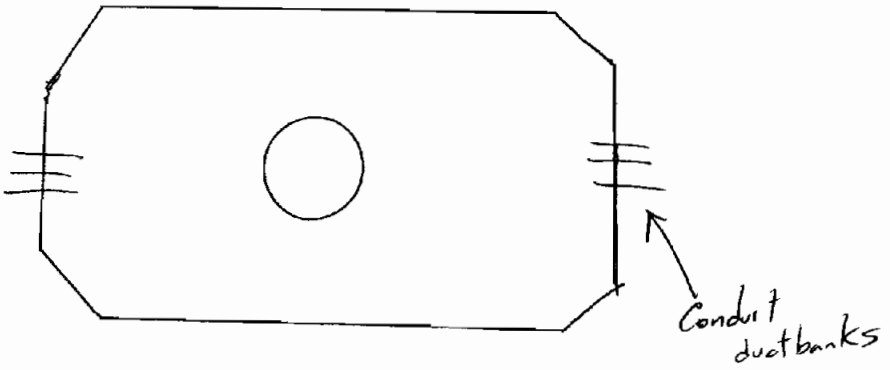
H-8



Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Friday, July 16, 1999
Weather: Sunny - Hot/Humid
Temperature: 85-90 F
Wind: Light Wind
Inspector/Recorder: JCB/CEG

Job Number: 364.87.03

Structure ID: H-10

Cover

Location: In Pavement / Concrete / (Crushed Stone) / Grass / Other: _____ (Circle One)
Dimensions: 30" Distance Above Grade: 0"
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Concrete /Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 1'
Depth from Rim to Bottom of Structure: 6.5' Interior Dimensions of Structure: 6'x8'
Depth of Water in Structure: 0" Sheen Present on Water (Y/N): NA
Depth of Debris in Structure: 1" Description of Debris: Sand /Silt-Gravel
Debris Sample ID (if collected): — Time Collected: —

Pipe Information NA - Not Applicable

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 21.2

Photograph #: 4-12 Facing: (N) / S / E / W

Other Information: _____

<< see sketch on reverse side >>

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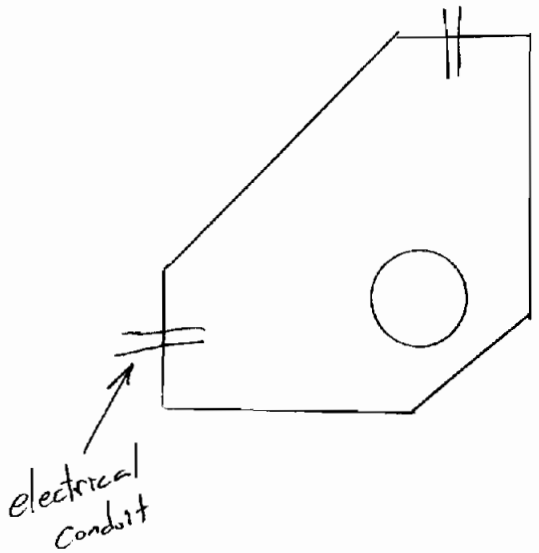
H-10



Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Friday, July 16, 1999
Weather: Sunny - Hot/Humid
Temperature: 85-90 F
Wind: Light Wind
Inspector/Recorder: JCB/CEG

Job Number: 364.87.03

Structure ID: H-11

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30" Distance Above Grade: 0"
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Concrete/steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 11"
Depth from Rim to Bottom of Structure: 10.25'
Interior Dimensions of Structure: 6'x6'
Depth of Water in Structure: 5'
Sheen Present on Water (Y/N): N
Depth of Debris in Structure: ~2'
Description of Debris: Sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 21.2

Photograph #: 4-8
Facing: N / S / E / W (SW)

Other Information: _____

<< see sketch on reverse side >>

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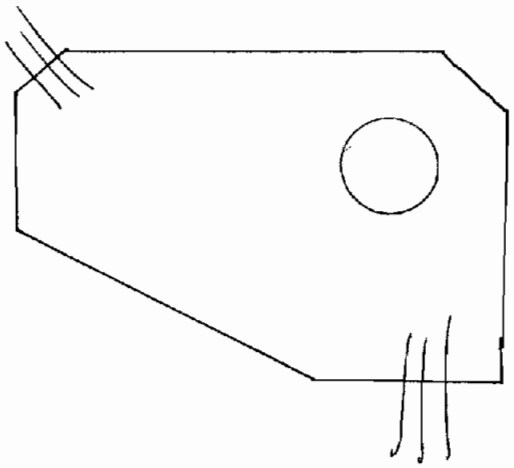
H-11



Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: H-12

Cover

Location: (In Pavement) / Concrete / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30" Distance Above Grade: 0"
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 1'
Depth from Rim to Bottom of Structure: 7.5'
Interior Dimensions of Structure: 4'x7'
Depth of Water in Structure: <1"
Sheen Present on Water (Y/N): Slight Sheen
Depth of Debris in Structure: Trace - <1"
Description of Debris: silt/sand
Debris Sample ID (if collected): —
Time Collected: —

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.9

Photograph #: 4-25
Facing: N / S / E / (W)

Other Information: _____

<< see sketch on reverse side >>

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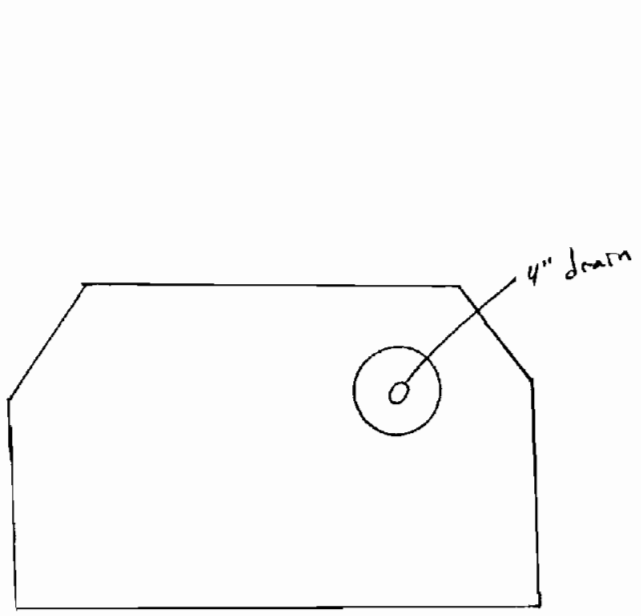
H-12



Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: H-13

Cover

Location: In Pavement / Concrete / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: Solid Steel / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 1 Foot
Depth from Rim to Bottom of Structure: 7.4 feet
Interior Dimensions of Structure: 7' x 7'
Depth of Water in Structure: 4 inch
Sheen Present on Water (Y/N): Slight Sheen
Depth of Debris in Structure: 1 inch
Description of Debris: Silt / Sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.8

Photograph #: 4-14
Facing: N / S / E / W

Other Information: Slight sheen upon mixing sediment. No presence of live conduit

<< see sketch on reverse side >>

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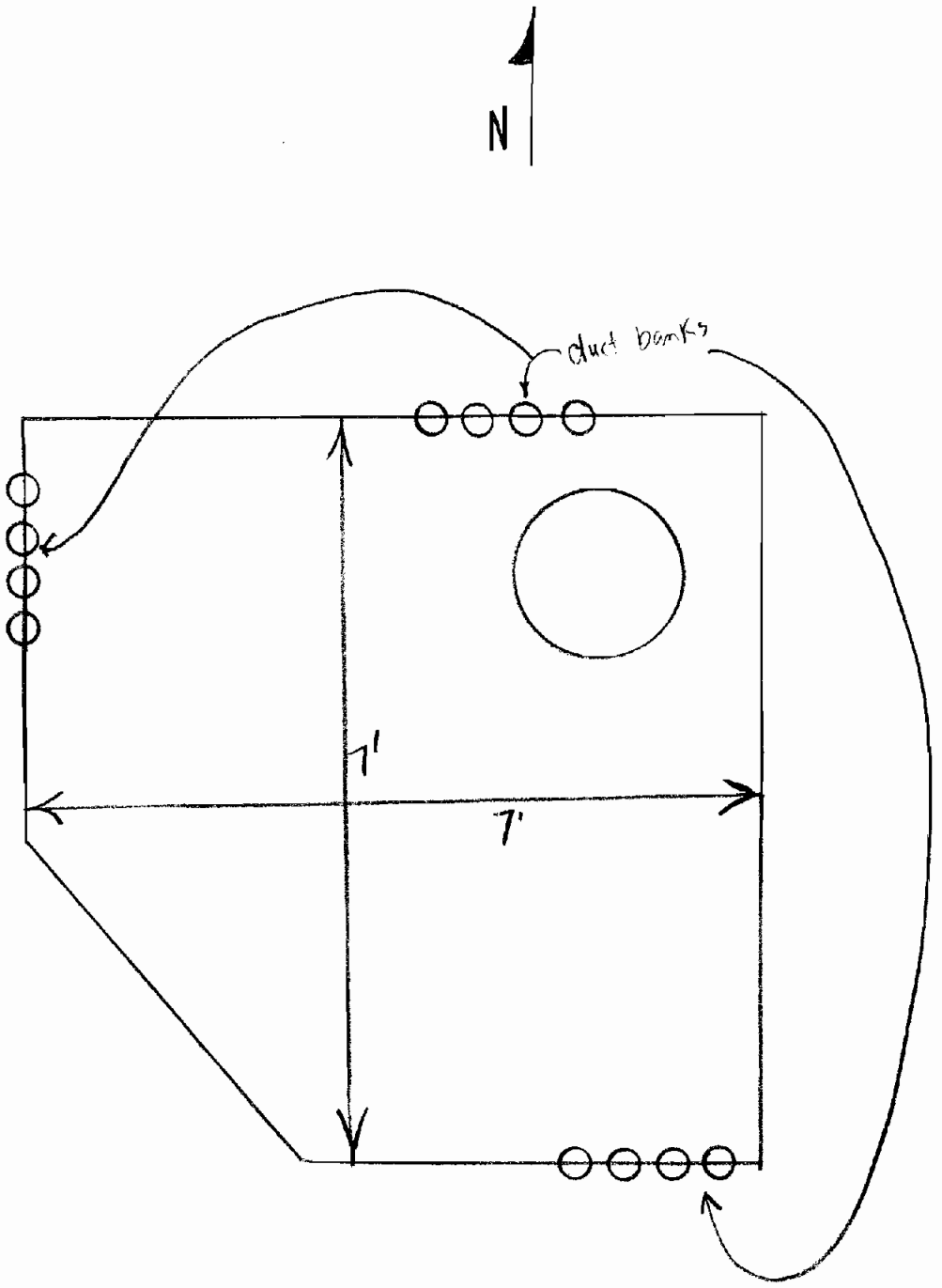
N
duct banks
7'
7'

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Friday, July 16, 1999
Weather: Sunny - Hot/Humid
Temperature: 85-90 F
Wind: Light Wind
Inspector/Recorder: JCB/CEG

Job Number: 364.87.03

Structure ID: H-14

Cover

Location: In Pavement / Concrete / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30" Distance Above Grade: 0"
Type of Cover: Solid Steel / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Concrete / Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 1'
Depth from Rim to Bottom of Structure: 7.2' Interior Dimensions of Structure: 6'x8"
Depth of Water in Structure: ~1" Sheen Present on Water (Y/N): _____
Depth of Debris in Structure: 1" Description of Debris: Silt / Sand
Debris Sample ID (if collected): _____ Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 5 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 21.2

Photograph #: 4-10 Facing: N / S / E / (W)

Other Information: No electrical conduit present

<< see sketch on reverse side >>

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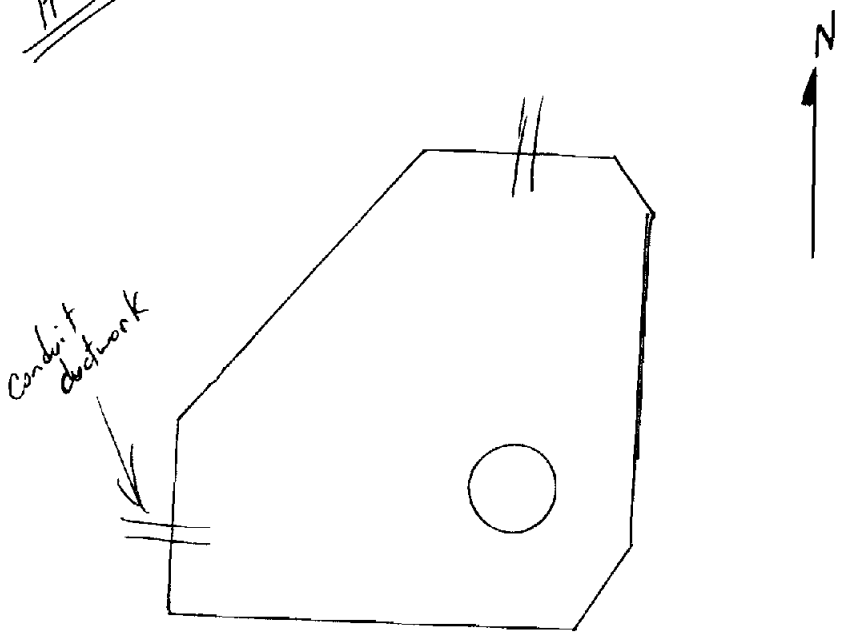
H-14



Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Friday, July 16, 1999
Weather: Sunny - Hot/Humid
Temperature: 85-90 F
Wind: Light Wind
Inspector/Recorder: JCB/CEG

Job Number: 364.87.03

Structure ID: H-15

Cover

Location: In Pavement / Concrete / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30" Distance Above Grade: 0"
Type of Cover: Solid Steel / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: _____ (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 1'
Depth from Rim to Bottom of Structure: 11'
Interior Dimensions of Structure: 6' x 10'
Depth of Water in Structure: 5'
Sheen Present on Water (Y/N): Oil/Film on Surface
Depth of Debris in Structure: Trace
Description of Debris: —
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 2
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 21.3

Photograph #: 4-16 (N) / 4-17 (W)
Facing: N / S / E / W

Other Information: _____

<< see sketch on reverse side >>

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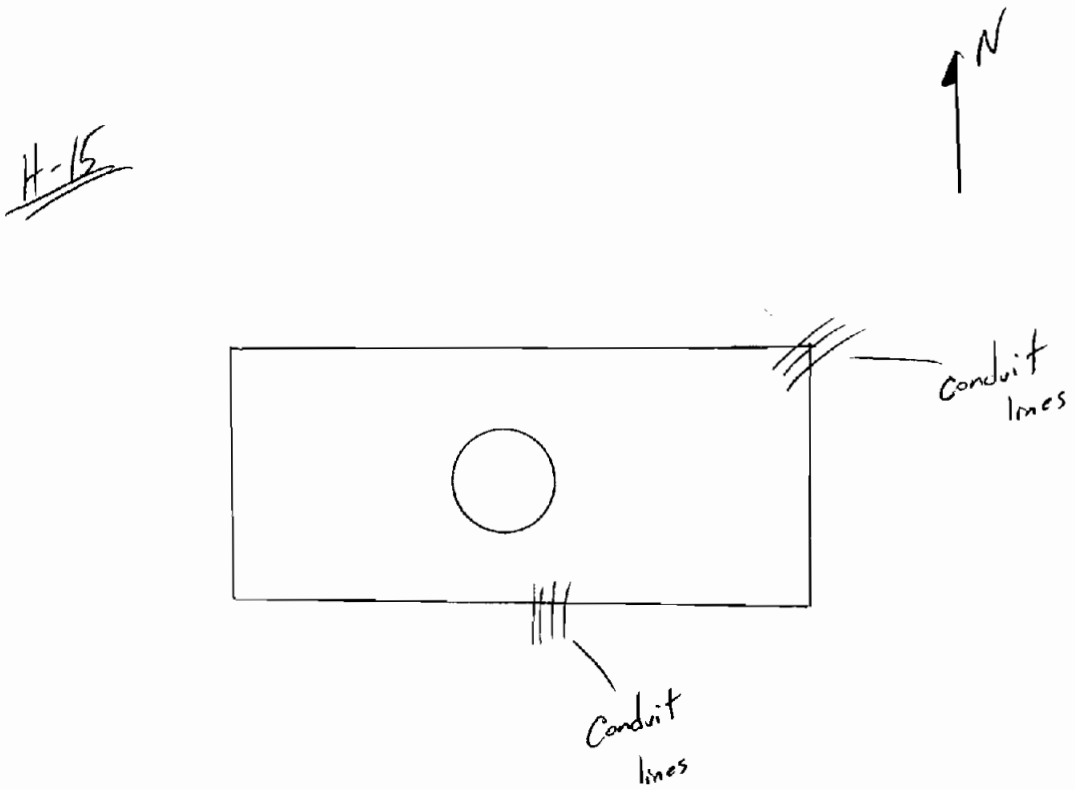
H-15



Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Friday, July 16, 1999
Weather: Sunny - Hot/Humid
Temperature: 85-90 F
Wind: Light Wind
Inspector/Recorder: JCB/CEG

Job Number: 364.87.03

Structure ID: E-1

Cover

Location: ~~In Pavement~~ / Concrete / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30" Distance Above Grade: 0
Type of Cover: ~~Solid Steel~~ / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / Other: Soil (Circle One)
Overall Condition of Structure: Brick debris
Height of Riser Section: —
Depth from Rim to Bottom of Structure: 37" Interior Dimensions of Structure: 30" x 30"
Depth of Water in Structure: 0" Sheen Present on Water (Y/N): NA
Depth of Debris in Structure: 2" Description of Debris: Brick/Soil
Debris Sample ID (if collected): — Time Collected: —

Pipe Information NA - Not Applicable

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 20.9

Photograph #: 4-4 Facing: N / S / E / W (NW)

Other Information: _____

<< see sketch on reverse side >>

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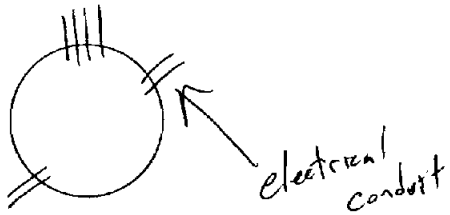
N

E-1



Electrical Manholes - Perimeter Locations

(Designations by NMPC: 1501, 1601, 1701, 1702, 1803, 1805, 1900, 1902, 1903, 2501, 2503, 2504, 2505, 2506, 2601, 2602, 2604, 2702, 2703, 2704)

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Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: 1501

Cover

Location: In Pavement / Concrete / Crushed Stone / (Grass) / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) 2 / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other) Concrete/brick/steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 2feet
Depth from Rim to Bottom of Structure: 7.5 feet
Interior Dimensions of Structure: (6'x6')x2
Depth of Water in Structure: 2.4 feet
Sheen Present on Water (Y/N): N
Depth of Debris in Structure: 1 inch
Description of Debris: Silt/Sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.8

Photograph #: 6-24(W) + 6-25(E)
Facing: ~~N/S/E/W~~

Other Information: _____

<< see sketch on reverse side >>

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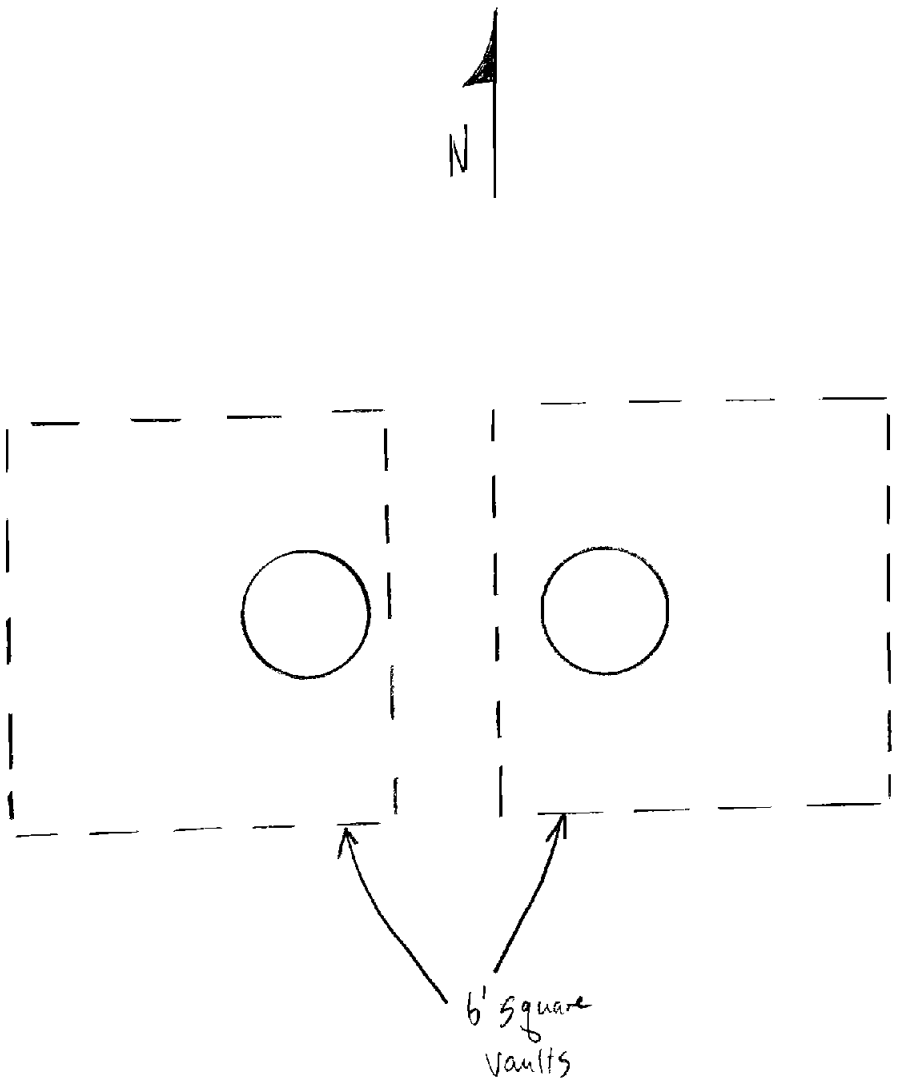
N
6' Square
Vaults

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: 1601

Cover

Location: In Pavement / Concrete / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: Solid Steel / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault (2) / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 1 foot
Depth from Rim to Bottom of Structure: 8 foot, 7.5 feet Interior Dimensions of Structure: 2- 6'x4' vaults
Depth of Water in Structure: 2 feet, 1.5 feet Sheen Present on Water (Y/N): _____
Depth of Debris in Structure: 1 inch Description of Debris: silt/sand
Debris Sample ID (if collected): _____ Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 20.8

Photograph #: 6-19, 20(N) 6-21(S) Facing: ~~N/S/E/W~~

Other Information: _____

<< see sketch on reverse side >>

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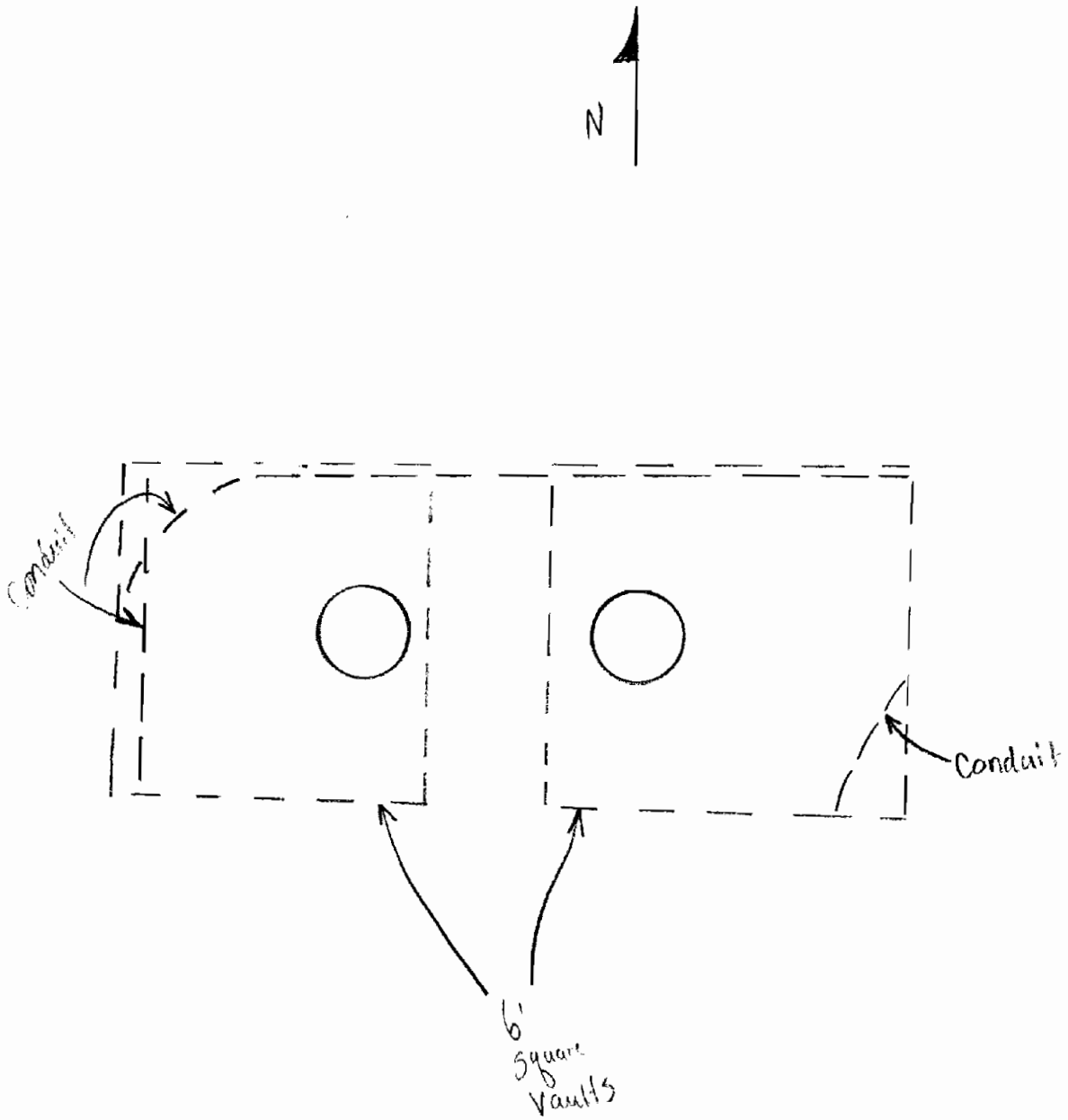
N
Conduit
Conduit
6'
square
vaults

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Friday, July 16, 1999
Weather: Sunny - Hot/Humid
Temperature: 85-90 F
Wind: Light Wind
Inspector/Recorder: JCB/CEG

Job Number: 364.87.03

Structure ID: 1701

Cover

Location: In Pavement / Concrete / Crushed Stone / (Grass) / Other: _____ (Circle One)
Dimensions: 30" Distance Above Grade: 0"
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 1.2'
Depth from Rim to Bottom of Structure: 7.5'
Interior Dimensions of Structure: 5'x5'
Depth of Water in Structure: 1.9'
Sheen Present on Water (Y/N): Slight sheen upon stirring debris
Depth of Debris in Structure: ~2"
Description of Debris: Silt Sand
Debris Sample ID (if collected): —
Time Collected: —

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 21.3

Photograph #: 4-20
Facing: N / S / E / (W)

Other Information: No electrical conduit present

<< see sketch on reverse side >>

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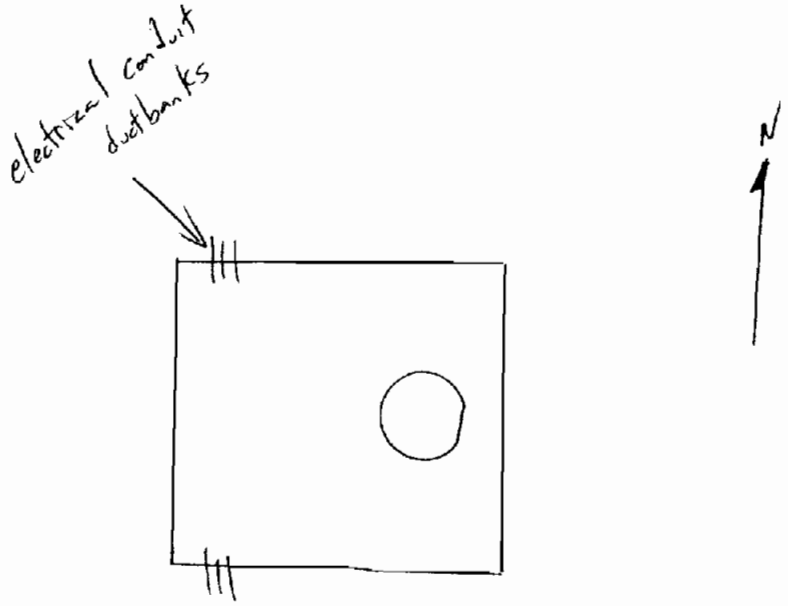
1701



Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: 1702

Cover

Location: In Pavement / Concrete / Crushed Stone / Grass / (Other) gravel/grass (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other:
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other) Concrete/brick/steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 4.5 feet
Depth from Rim to Bottom of Structure: 10.8 feet Interior Dimensions of Structure: undetermined
Depth of Water in Structure: 2.3 feet Sheen Present on Water (Y)/N):
Depth of Debris in Structure: 2 inches Description of Debris: silt/sand
Debris Sample ID (if collected): Time Collected:

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 20.8

Photograph #: 6-4 Facing: N / S / E / (W)

Other Information: can't determine dimensions

<< see sketch on reverse side >>

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N

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: ~~Thursday~~ Monday, July ~~22~~ 19, 1999
Weather: ~~Sunny~~ P. cloudy
Temperature: ~~85-90 F~~ 80-85° F
Wind: Light Wind
Inspector/Recorder: CEG

Job Number: 364.87.03

Structure ID: 1803

Cover

Location: In Pavement / Concrete / Crushed Stone / (Grass) / Other: (Circle One)
Dimensions: 35 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other): Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other): Concrete/Steel/brick (Circle One)
Sidewalls: (Brick&Mortar) / Concrete Block / Concrete / Other: (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / (Other): unknown (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 4.8 feet
Depth from Rim to Bottom of Structure: 12 feet
Interior Dimensions of Structure: unknown
Depth of Water in Structure: 1 foot
Sheen Present on Water (Y/N):
Depth of Debris in Structure: 1 inch
Description of Debris: Silt/sand
Debris Sample ID (if collected):
Time Collected:

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.8

Photograph #: 6-11
Facing: N / S (E) / W

Other Information:

<< see sketch on reverse side >>

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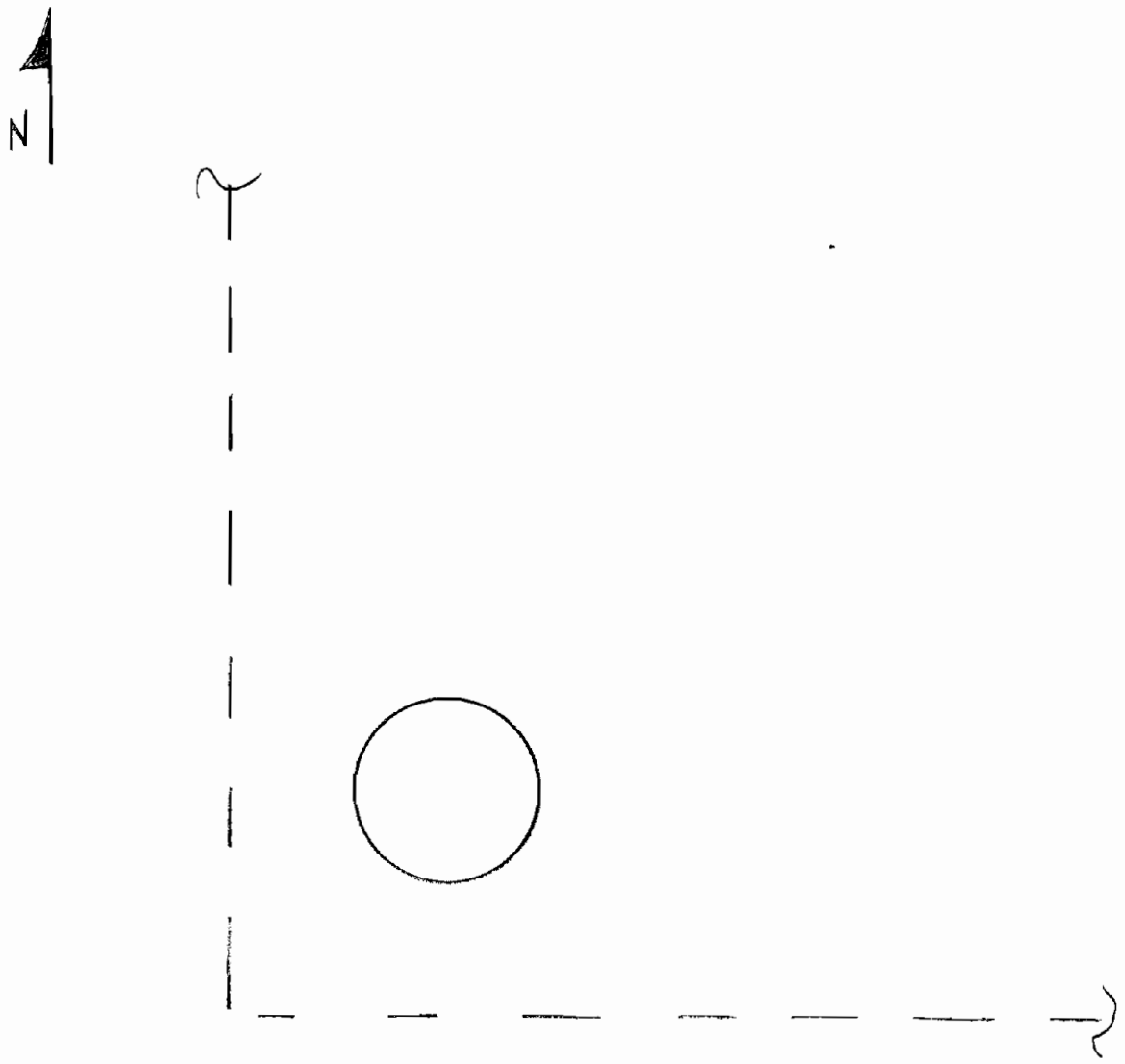
N

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Friday, July 16, 1999
Weather: Sunny - Hot/Humid
Temperature: 85-90 F
Wind: Light Wind
Inspector/Recorder: JCB/CEG

Job Number: 364.87.03

Structure ID: 1805

Cover

Location: In Pavement / Concrete / Crushed Stone / (Grass) / Other: (Circle One)
Dimensions: 30" Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other:
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Steel/Concrete (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 1.2'
Depth from Rim to Bottom of Structure: 7.5' Interior Dimensions of Structure: 5'x5'
Depth of Water in Structure: 2' Sheen Present on Water (Y)/N: Slight Sheen
Depth of Debris in Structure: trace Description of Debris: silt/sand
Debris Sample ID (if collected): — Time Collected: —

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 21.3

Photograph #: 4-19 Facing: N / S / E / (W)

Other Information: No conduit present

<< see sketch on reverse side >>

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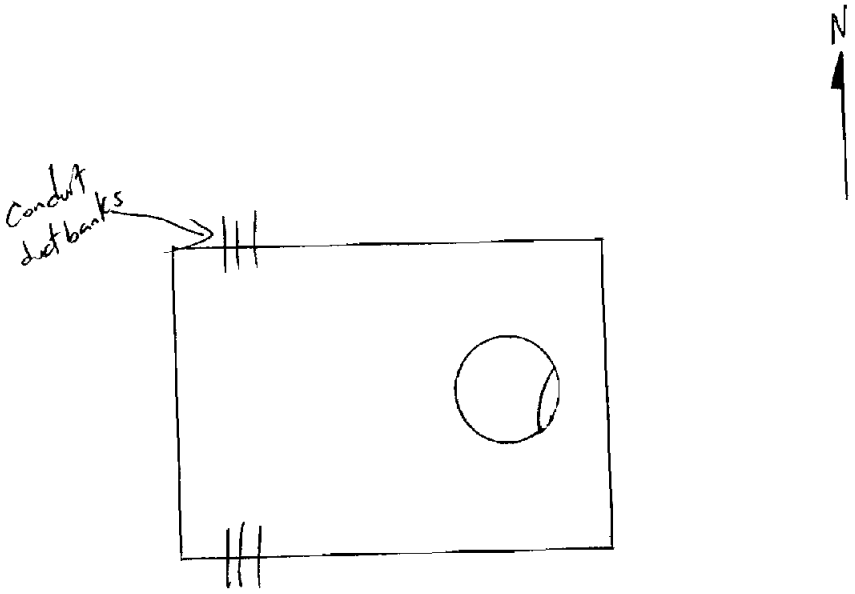
1805



Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: 1900

Cover

Location: In Pavement / Concrete / Crushed Stone / Grass / (Other: gravel) (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other:
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Concrete/brick/steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / Concrete / Other: unknown (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / Other: unknown (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 4.3 feet
Depth from Rim to Bottom of Structure: 11 feet
Interior Dimensions of Structure: unknown
Depth of Water in Structure: 2.5 feet
Sheen Present on Water (Y/N): slight sheen
Depth of Debris in Structure: < 1 inch
Description of Debris: silt/sand
Debris Sample ID (if collected):
Time Collected:

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.8

Photograph #: 6-5
Facing: N / S / (E) W

Other Information: Can't determine dimensions

<< see sketch on reverse side >>

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N

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: 1402

Cover

Location: In Pavement / Concrete / Crushed Stone / Grass / (Other: Gravel) (Circle One)
Dimensions: 35 inches Distance Above Grade: 1 inch
Type of Cover: (Solid Steel) / Catch Basin Type / Other: (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault (Other: Concrete Subway)
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other: Steel/Brick) (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 2.5 feet
Depth from Rim to Bottom of Structure: 8.5 feet
Interior Dimensions of Structure: Unknown
Depth of Water in Structure: 0
Sheen Present on Water (Y/(N)):
Depth of Debris in Structure: 1-2 inches
Description of Debris: rust/silt
Debris Sample ID (if collected):
Time Collected:

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.9

Photograph #: 6-1
Facing: (N) / S / E / W

Other Information: Sidewalls are stained

<< see sketch on reverse side >>

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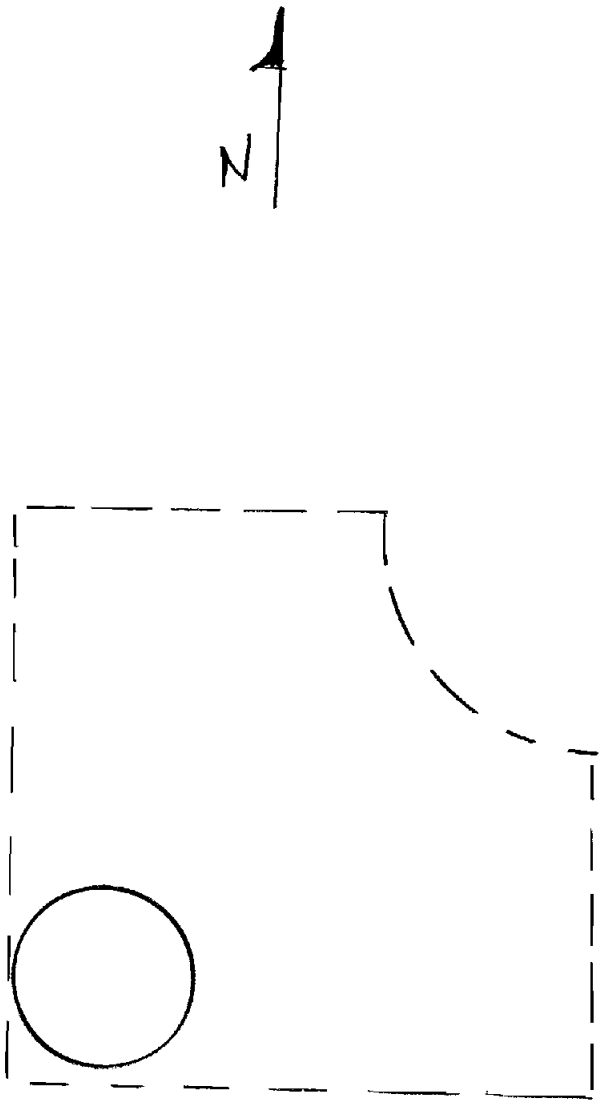
N

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: 1903

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 30 inches Distance Above Grade: 3 inches
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other: Steel/Concrete) (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 8 inches
Depth from Rim to Bottom of Structure: 9.2 feet
Interior Dimensions of Structure: 6' x 7.5'
Depth of Water in Structure: 1.3 feet
Sheen Present on Water (Y/N): Slight
Depth of Debris in Structure: 1-3 inches
Description of Debris: Silt/Sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.9

Photograph #: 6-2
Facing: N / S / E / (W)

Other Information: _____

<< see sketch on reverse side >>

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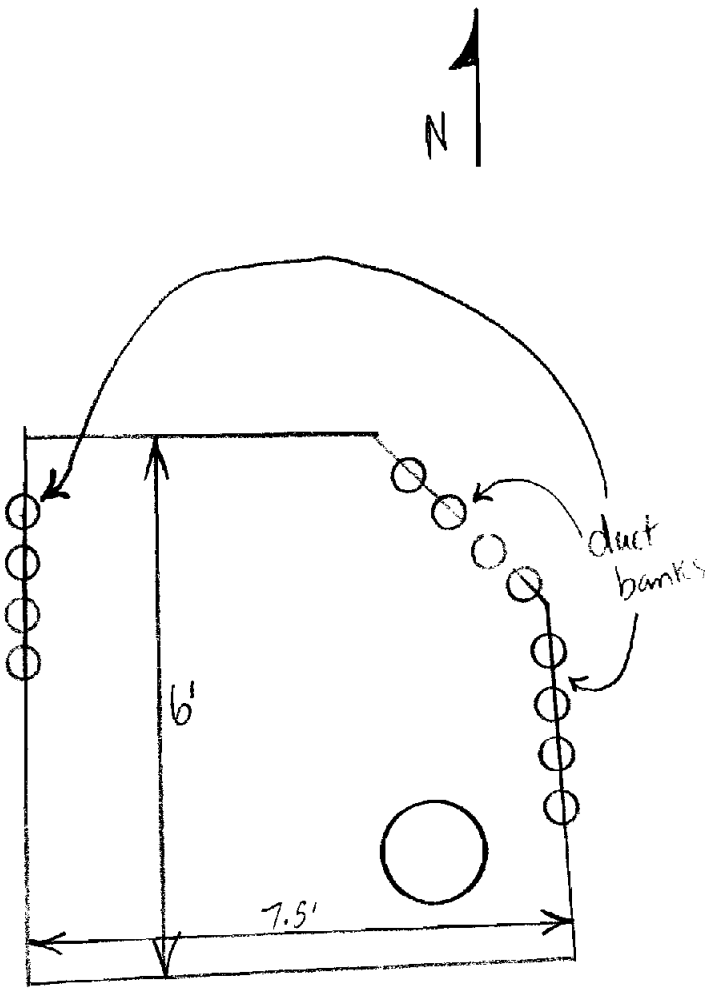
N
duct banks
6'
7.5'

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Monday, July 19, 1999
Weather: Partly Cloudy
Temperature: 80-85 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: 2501

Cover

Location: In Pavement / Concrete / Crushed Stone / (Grass) / Other: (Circle One)
Dimensions: 35 inches Distance Above Grade: ~3 inches
Type of Cover: (Solid Steel) / Catch Basin Type / Other: (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other:
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other: Steel/Concrete) (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 1.1 Foot
Depth from Rim to Bottom of Structure: 7.3 feet Interior Dimensions of Structure: 6'x10'
Depth of Water in Structure: 1.8 feet Sheen Present on Water (Y/(N)):
Depth of Debris in Structure: < 1 inch Description of Debris: Silt/Sand
Debris Sample ID (if collected): Time Collected:

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 20.8

Photograph #: 6-13 Facing: (N) / S / E / W

Other Information:

<< see sketch on reverse side >>

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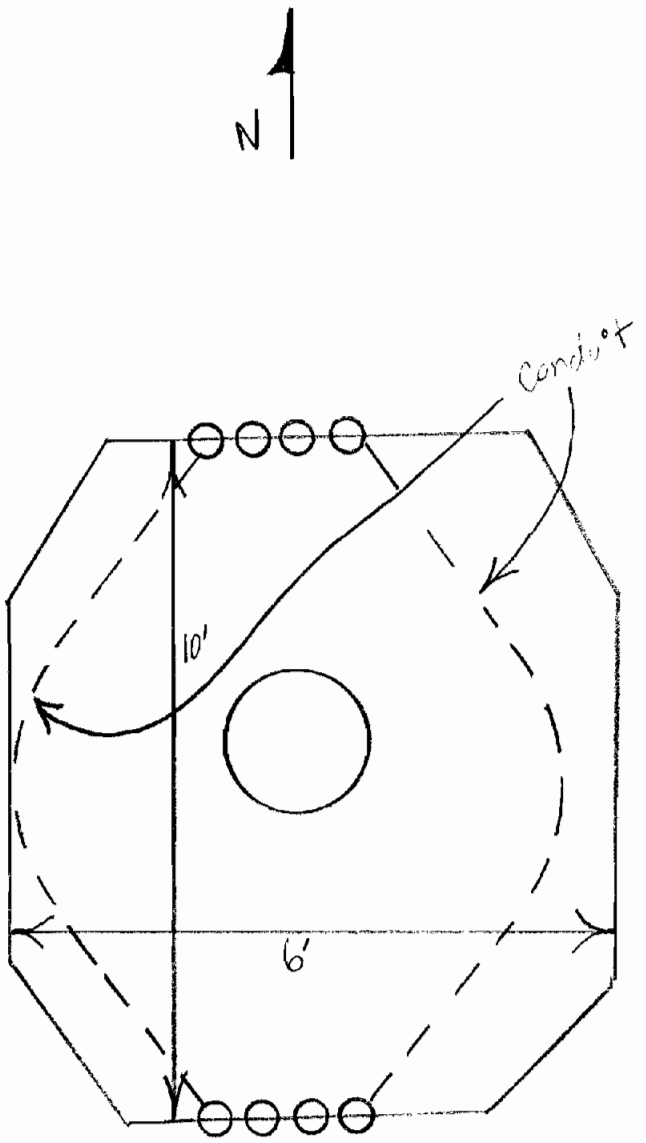
N
Conduit
10'
6'

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: 2503

Cover

Location: In Pavement / Concrete / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: _____ Distance Above Grade: _____
Type of Cover: Solid Steel / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: _____ (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / Other: _____ (Circle One)
Overall Condition of Structure: _____
Height of Riser Section: _____
Depth from Rim to Bottom of Structure: _____ Interior Dimensions of Structure: _____
Depth of Water in Structure: _____ Sheen Present on Water (Y/N): _____
Depth of Debris in Structure: _____ Description of Debris: _____
Debris Sample ID (if collected): _____ Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0.2
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 20.8

Photograph #: _____ Facing: N / S / E / W

Other Information: could not access

<< see sketch on reverse side >>

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Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: ~~Monday, July 19~~ Tuesday 20, 1999
Weather: Partly Cloudy
Temperature: 80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03
Structure ID: 2504

Cover

Location: In Pavement / Concrete / Crushed Stone / Grass / Other: (Circle One)
Dimensions: 30 inches Distance Above Grade: 0
Type of Cover: Solid Steel / Catch Basin Type / Other: (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / Other:
Construction Materials:
Riser Section: Brick&Mortar / Concrete / Other: Corrug Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / Concrete / Other: (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / Other: (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 1.5 feet
Depth from Rim to Bottom of Structure: 8 feet
Interior Dimensions of Structure: 12' x 8'
Depth of Water in Structure: 0.7 feet
Sheen Present on Water (Y/N): Slight
Depth of Debris in Structure: 1 inch
Description of Debris: Silt/Sand
Debris Sample ID (if collected):
Time Collected:

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.8

Photograph #: 7-2
Facing: N / S / E / W

Other Information:

<< see sketch on reverse side >>

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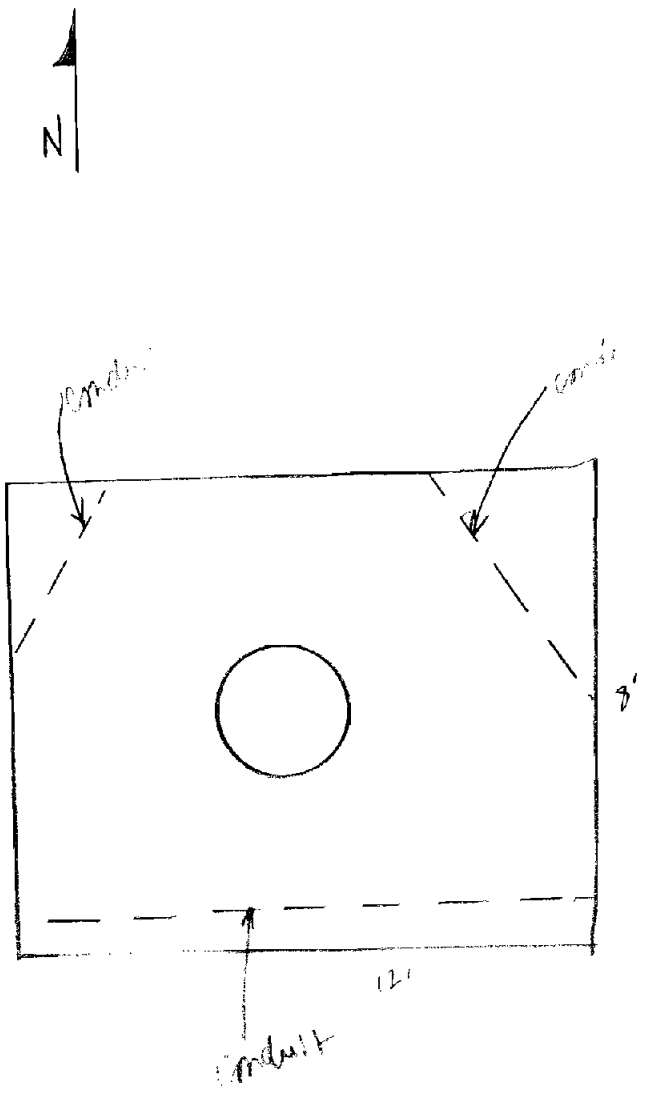
N
8'
12'

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: 2505

Cover

Location: In Pavement / Concrete / Crushed Stone / (Grass) / Other: _____ (Circle One)
Dimensions: 36 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other): brick/concrete/steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / Concrete / Other: unknown (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / Other: unknown (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 2.5 feet
Depth from Rim to Bottom of Structure: 10.7 feet Interior Dimensions of Structure: unknown
Depth of Water in Structure: 0 Sheen Present on Water (Y/N): _____
Depth of Debris in Structure: 6 inch Description of Debris: silt/sand
Debris Sample ID (if collected): _____ Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 20.9

Photograph #: 6-22 Facing: N / (S) / E / W

Other Information: _____

<< see sketch on reverse side >>

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Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: 2506

Cover

Location: In Pavement / Concrete / Crushed Stone / (Grass) / Other: (Circle One)
Dimensions: 35 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other:
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other) Concrk/brick/steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Bottom: Brick&Mortar / Concrete Block / Concrete / Other: unknown (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 3.5 feet
Depth from Rim to Bottom of Structure: 10.5 feet Interior Dimensions of Structure: unknown
Depth of Water in Structure: 41 inch Sheen Present on Water (Y/(N)):
Depth of Debris in Structure: 42 inch Description of Debris: silt/sand
Debris Sample ID (if collected): Time Collected:

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 20.8

Photograph #: 7-1 Facing: N (S) E / W

Other Information:

<< see sketch on reverse side >>

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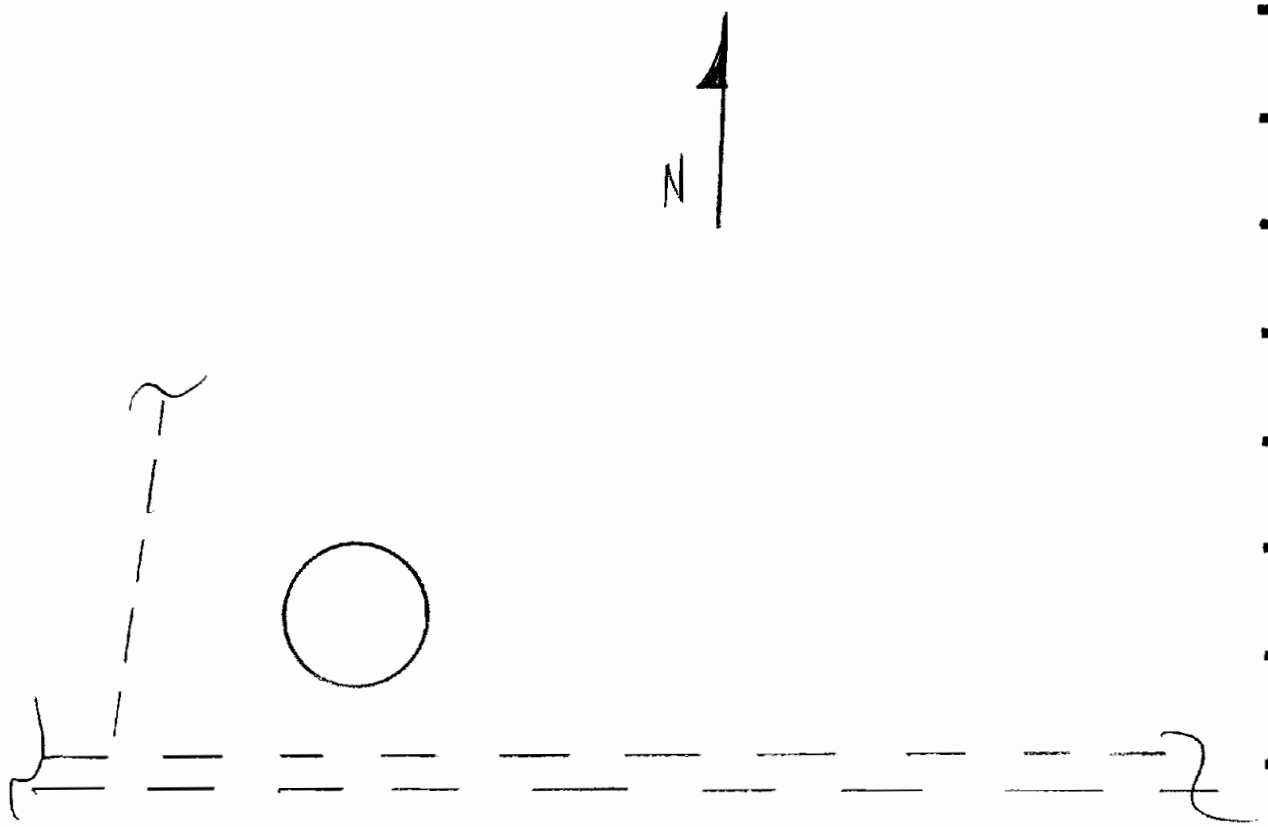
N

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: 2601

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 35 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other: Concrete/Steel) (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 1 foot
Depth from Rim to Bottom of Structure: 7.3 feet
Interior Dimensions of Structure: 8' x 12'
Depth of Water in Structure: 2.5 feet
Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: 1 inch
Description of Debris: Sand/Silt
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.9

Photograph #: 7-23
Facing: (N) / S / E / W

Other Information: _____

<< see sketch on reverse side >>

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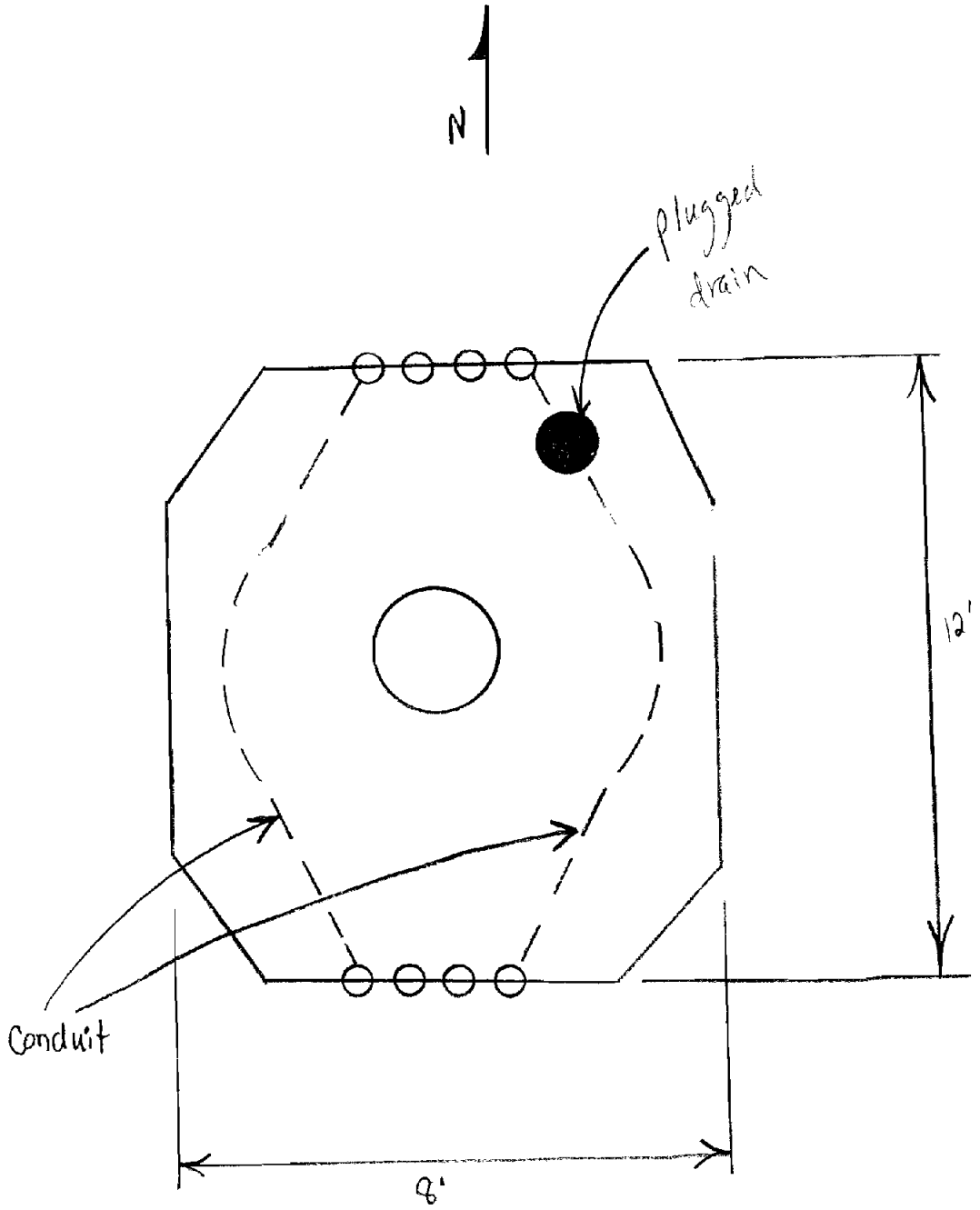
N
plugged drain
12'
Conduit
8'

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: 7602

Cover

Location: In Pavement / (Concrete) / Crushed Stone / Grass / Other: _____ (Circle One)
Dimensions: 35 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other: Concrete/Steel) (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 1 foot
Depth from Rim to Bottom of Structure: 7.5 feet
Interior Dimensions of Structure: 8' x 12'
Depth of Water in Structure: 0
Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: < 1 inch
Description of Debris: Sand/silt
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0.5
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.8

Photograph #: 7-22
Facing: (N) / S / E / W

Other Information: _____

<< see sketch on reverse side >>

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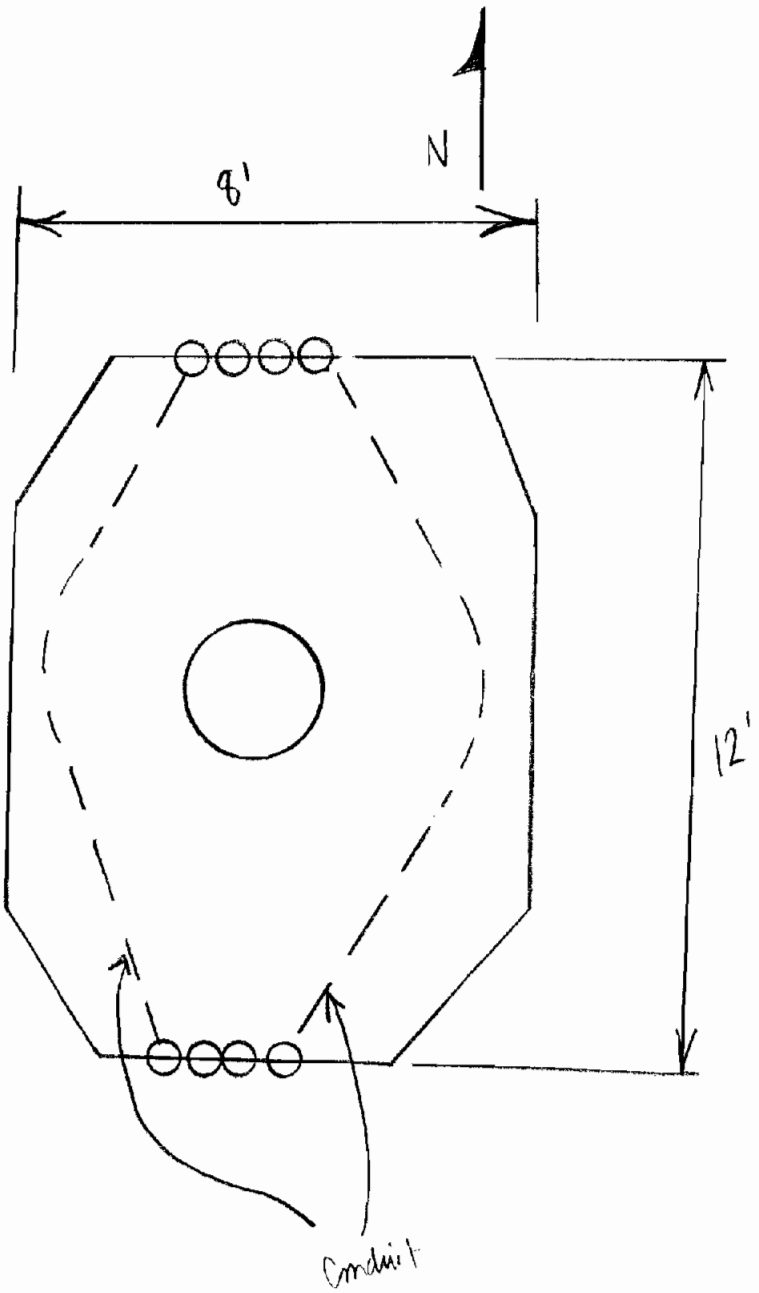
N
8'
12'
Conduit

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: ~~Monday~~ Tuesday, July ~~19~~ 20, 1999
Weather: ~~Partly Cloudy~~ Overcast
Temperature: ~~80-85 F~~ 75°F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: 2604

Cover

Location: In Pavement / Concrete / Crushed Stone / (Grass) / Other: (Circle One)
Dimensions: 32 Inches Distance Above Grade: 2-3 inches
Type of Cover: ~~Solid Steel~~ / Catch Basin Type / Other: (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / Conduit Vault / (Other): Concrete Subway
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other): Concrete/Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 10.1 Feet
Depth from Rim to Bottom of Structure: 7.6 Feet
Interior Dimensions of Structure: 8 feet wide ~~8 feet x 16~~
Depth of Water in Structure: 0
Sheen Present on Water (Y/N): (N)
Depth of Debris in Structure: < 1 inch
Description of Debris: Silt/Sand
Debris Sample ID (if collected):
Time Collected:

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0.4
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.5

Photograph #: 6-12
Facing: N / S / E / (W)

Other Information:

<< see sketch on reverse side >>

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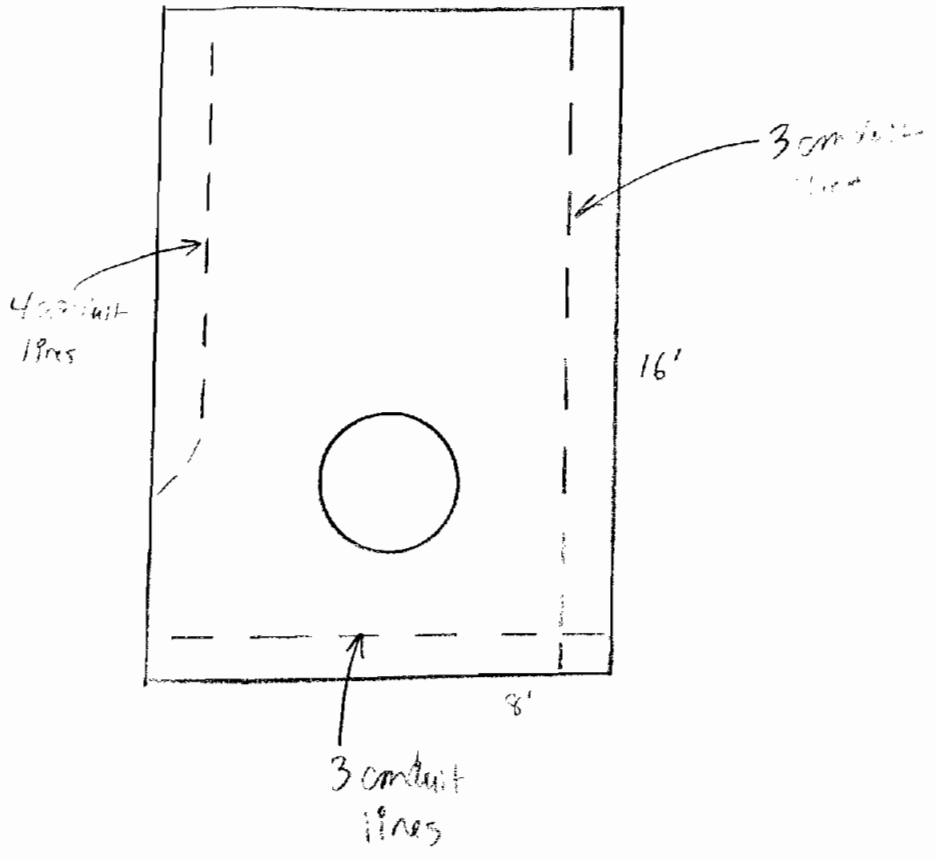
3 conduit lines
4 conduit lines
16'
8'
3 conduit lines
N

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: 2702

Cover

Location: In Pavement / Concrete / Crushed Stone / (Grass) / Other: (Circle One)
Dimensions: 35 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other:
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other) Steel (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 2.5 feet
Depth from Rim to Bottom of Structure: 9.3 feet Interior Dimensions of Structure: 8' x 12'
Depth of Water in Structure: 2.5 feet Sheen Present on Water (Y/(N)):
Depth of Debris in Structure: 2 inch Description of Debris: Silt/Sand
Debris Sample ID (if collected): Time Collected:

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0 Lower Explosive Limit (%): 0
Hydrogen Sulfide (ppm): 0 Oxygen (%): 20.8

Photograph #: 7-15 Facing: N / (S) / E / W

Other Information:

<< see sketch on reverse side >>

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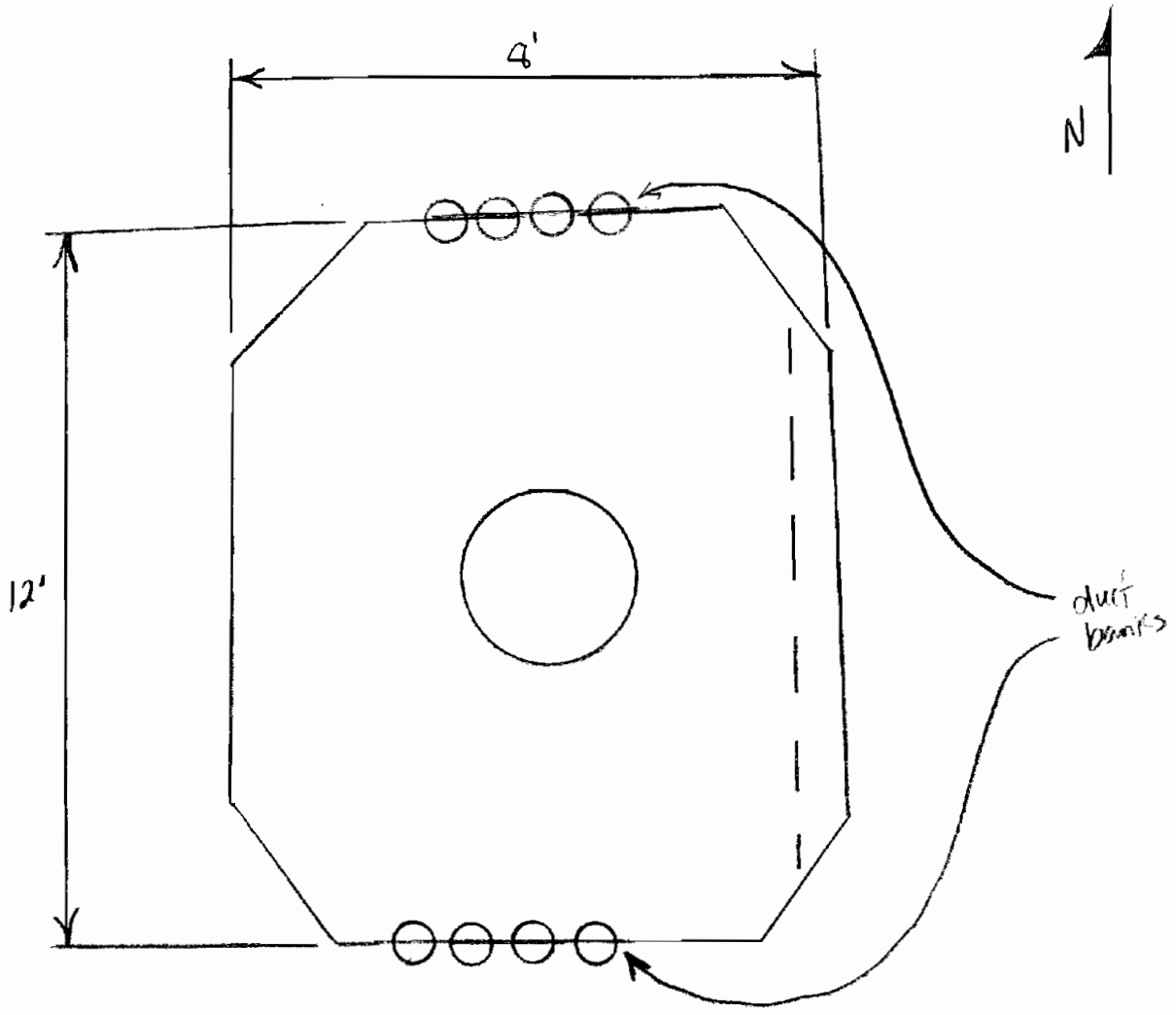
4'
N
12'
duct
boots

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: Tuesday, July 20, 1999
Weather: Overcast
Temperature: 75-80 F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: 2703

Cover

Location: In Pavement / Concrete / Crushed Stone / (Grass) / Other: _____ (Circle One)
Dimensions: 35 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: _____ (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other: _____
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other: Steel) (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: _____ (Circle One)
Overall Condition of Structure: Good
Height of Riser Section: 6 inches
Depth from Rim to Bottom of Structure: 8 feet
Interior Dimensions of Structure: 3' x 2'
Depth of Water in Structure: 2.3 feet
Sheen Present on Water (Y/(N)): _____
Depth of Debris in Structure: <1 inch
Description of Debris: Silt/Sand
Debris Sample ID (if collected): _____
Time Collected: _____

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 21.3

Photograph #: 7-12
Facing: (N) / S / E / W

Other Information: _____

<< see sketch on reverse side >>

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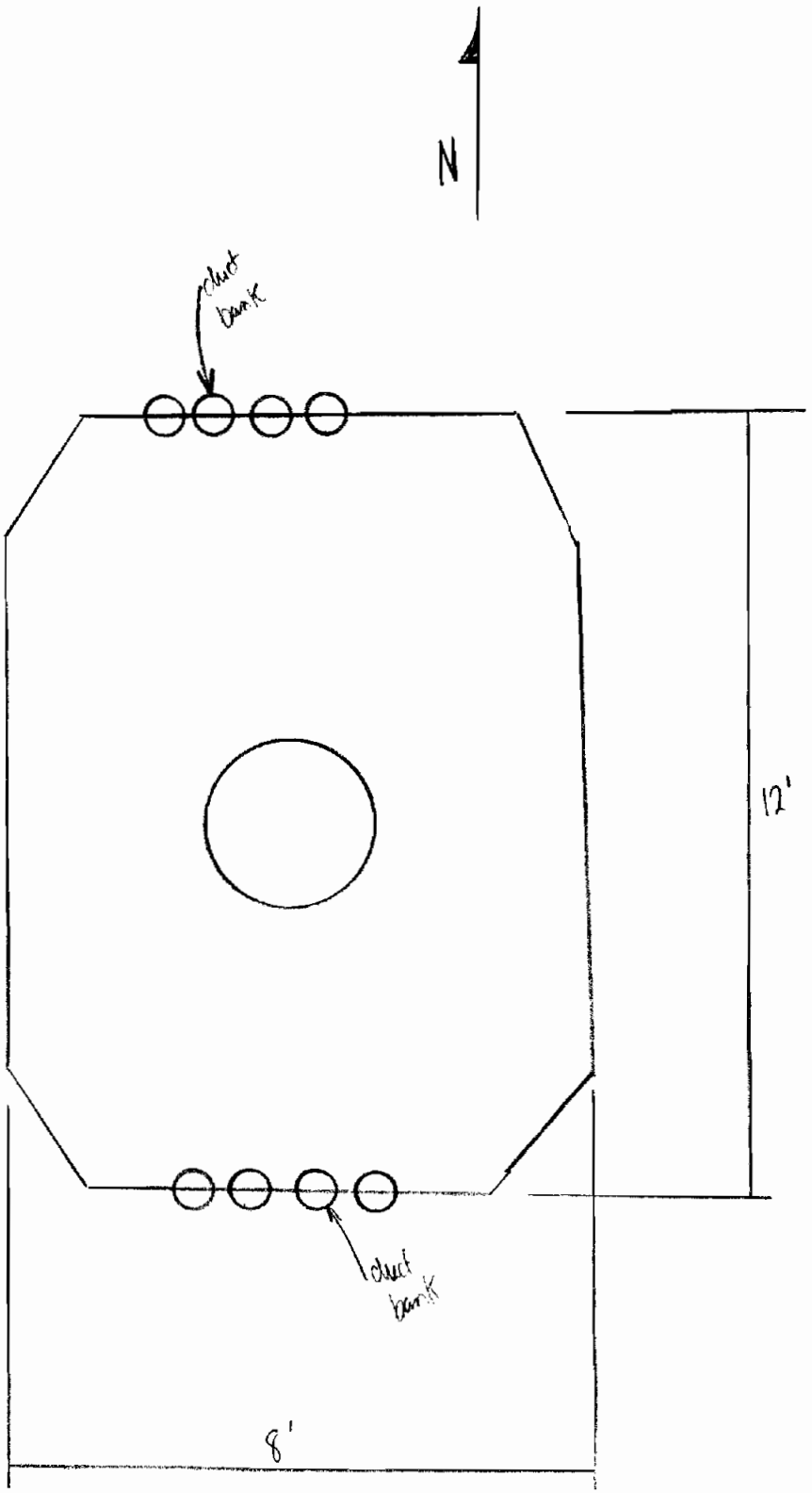
N
duct bank
12'
duct bank
8'

Subsurface Structure Inspection Form

Client: *Niagara Mohawk*
Site: *Harper Substation*
Location: *Niagara Falls, New York*
Project: *Preliminary Site Assessment*

Day/Date: ~~Monday~~ Tuesday 20 July ~~19~~, 1999
Weather: Partly Cloudy
Temperature: 80-~~90~~ F
Wind: Light Wind
Inspector/Recorder: CEG/WPH

Job Number: 364.87.03

Structure ID: 2704

Cover

Location: In Pavement / Concrete / Crushed Stone / (Grass) / Other: (Circle One)
Dimensions: 35 inches Distance Above Grade: 0
Type of Cover: (Solid Steel) / Catch Basin Type / Other: (Circle One)

Subsurface Structure

Type of Structure: Manhole / Catch Basin / (Conduit Vault) / Other:
Construction Materials:
Riser Section: Brick&Mortar / Concrete / (Other: Concrete/Steel) (Circle One)
Sidewalls: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Bottom: Brick&Mortar / Concrete Block / (Concrete) / Other: (Circle One)
Overall Condition of Structure: good
Height of Riser Section: 1.5 feet
Depth from Rim to Bottom of Structure: 8 feet
Interior Dimensions of Structure: 12' x 8'
Depth of Water in Structure: 1.3 feet
Sheen Present on Water (Y/(N)):
Depth of Debris in Structure: 1 inch
Description of Debris: Silt/Sand
Debris Sample ID (if collected):
Time Collected:

Pipe Information

O'Clock Position	12:00			
Pipe Material				
Pipe Diameter				
Rim to Invert				
Flow (Y/N)				
Amount/Type Sediment				

Air Monitoring Results

Total Organic Vapors (ppm): 0
Carbon Monoxide (ppm): 0
Hydrogen Sulfide (ppm): 0
Lower Explosive Limit (%): 0
Oxygen (%): 20.5

Photograph #: 7-3
Facing: (N) / S / E / W

Other Information:

<< see sketch on reverse side >>

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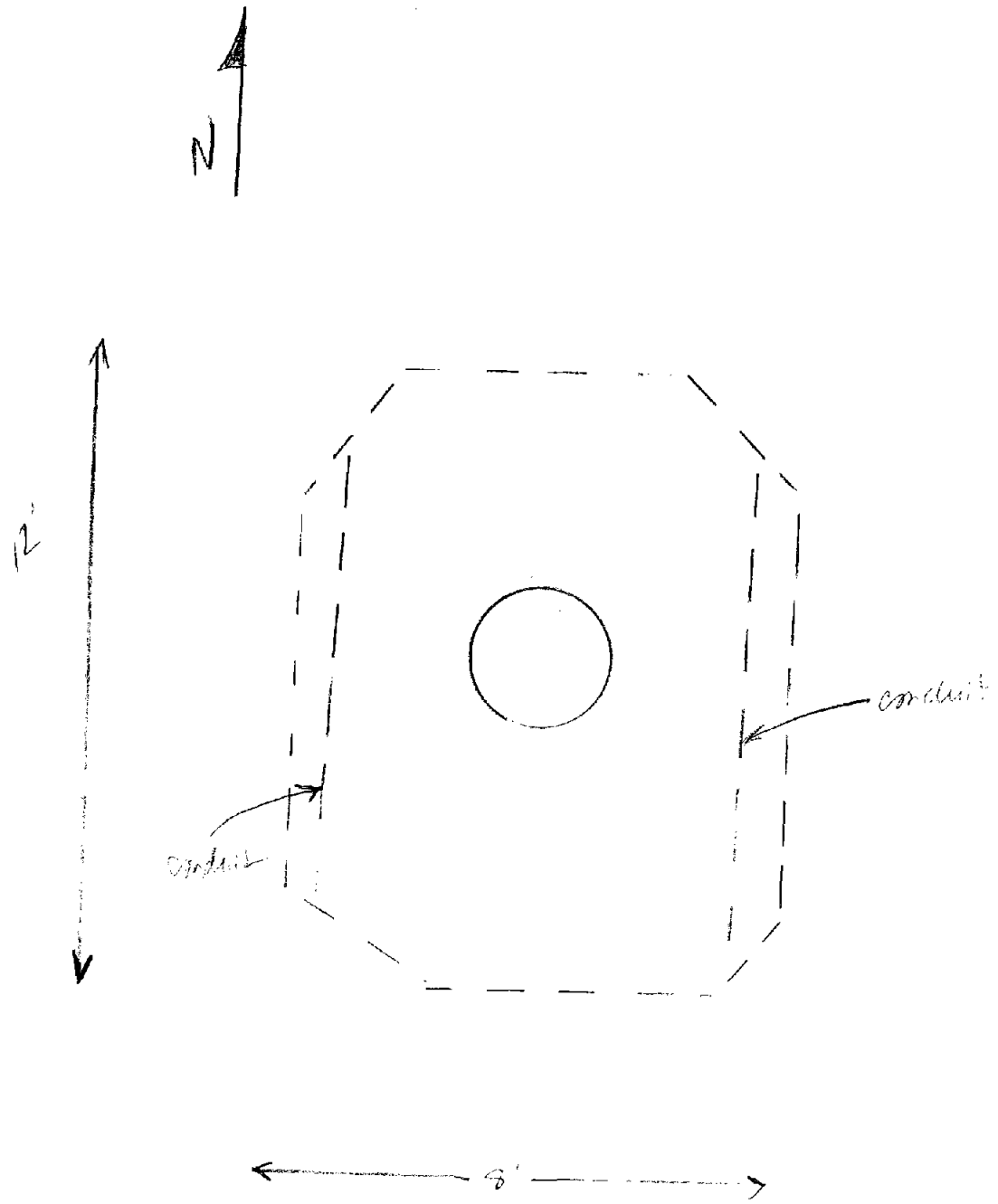
N
12'
conduit
conduit
8'