Department of Environmental Conservation
Division of Environmental Remediation

Record of Decision

School Street Former Fire Training Area

Town of Colonie,
Albany County, New York
Site No. 4-01-044

August 2007

New York State Department of Environmental Conservation
ELIOT SPITZER, *Governor* Alexander B. Grannis, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

School Street Former Fire Training Area

Inactive Hazardous Waste Disposal Site
Town of Colonie, Albany County, New York
Site No. 4-01-044
August 2007

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the School Street Former Fire Training Area site, a Class 2 inactive hazardous waste disposal site. The selected remedial program was chosen in accordance with the New York State Environmental Conservation Law and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the School Street Former Fire Training Area inactive hazardous waste disposal site, and the public's input to the Proposed Remedial Action Plan (PRAP) presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Actual or threatened releases of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD, presents a current or potential significant threat to public health and/or the environment.

Description of Selected Remedy

Based on the results of the Remedial Investigation and Feasibility Study (RI/FS) for the School Street Former Fire Training Area site and the criteria identified for evaluation of alternatives, the Department has selected the following remedy:

- A remedial design program to provide the details necessary to implement the remedial program;
- Removal of approximately 100 cubic yards of nearshore sediment within the Mohawk River adjacent to the site;
- Development of a site management plan to address residual contamination and any future land use restrictions;
- Imposition of institutional controls in the form of an environmental easement; and
- Periodic certification of the institutional controls.

The components of the remedy are as follows:

1. The remedial design must meet the requirements of 6 NYCRR Part 608 and will include the details necessary for the construction, operation, maintenance and monitoring of the remedial program. The remedial design will include verification of previous sediment conditions.

2. Approximately 100 cubic yards of sediments located in the nearshore area containing the highest concentrations of PCBs would be mechanically dredged. The anticipated sediment removal area would extend along the shoreline from sediment sampling location SD-3 to location SD-6 and would extend outward from the shoreline a distance of approximately 4 feet past the sampling locations to a depth of 1 foot and to a depth of 1.5 feet at sampling location SD-5.

   Excavated sediment would be transferred directly from the excavation area to a dewatering pad constructed in the Former Fire Training Area. While the sediment is on the pad, river water would gravity drain to a lined collection sump where it would collect prior to characterization, transfer to a storage tank and eventual transport for off-site treatment. Measures to control sediment migration include the installation of silt curtains to section off the removal area from the rest of the river.

   Following dewatering/stabilization, the sediment would be characterized and transported for off-site disposal at a facility permitted to accept the material. After sediment removal within the defined limits has been completed, the dredged area would be restored with similar materials to provide habitat for benthic invertebrate colonization.

3. A site management plan (SMP) would be developed and implemented. The SMP would include the institutional controls and engineering controls to address residual contaminated soils that may be excavated from the site during future redevelopment. The plan would require soil characterization and, where applicable, disposal/reuse in accordance with NYSDEC regulations.

4. Imposition of an institutional control in the form of an environmental easement that would (a) require compliance with the approved SMP; (b) limit the use and development of the property to commercial or industrial uses only; and (c) require the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls. The SNIP will require the property owner to provide an Institutional ControllEngineering Control (ICIEC) certification, prepared and submitted by a professional engineer or environmental professional acceptable to the Department periodically which would certify that the institutional controls and engineering controls put in place, are unchanged from the previous certification and nothing has occurred that would impair the ability of the control to protect public health or the environment or constitute a violation or failure to comply with the SMP.

New York State Department of Health Acceptance

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

Declaration

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

AUG 9 2007

Date

Dale A. Desnoyers, Director
Division of Environmental Remediation

TABLE OF CONTENTS

SECTION **PAGE**

RECORD OF DECISION
School Street Former Fire Training Area
Inactive Hazardous Waste Disposal Site
Town of Colonie, Albany County, New York
Site No. 4-01-044
August 2007

SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), has selected this remedy for the School Street Former Fire Training Area located in the Town of Colonie, Albany County, New York ("the site"). The remedy will address remaining chemical constituents in environmental media associated with the former fire training activities at the site. The presence of hazardous waste has created a significant threat to human health and/or the environment that are addressed by this proposed remedy.

As more fully described in Sections 3 and 5 of this document, fire training activities were conducted at the site during the period from approximately 1968 through 1980. These activities consisted of igniting oil, including transformer oil, which was poured over props, and then extinguished using a combination of dry chemicals and water pumped from the adjacent Mohawk River. As a result of these activities, hazardous wastes, including polychlorinated biphenyls (PCBs) and semivolatile organic compounds (SVOCs) have been disposed at this facility. Soil at the site and sediment in the Mohawk River adjacent to the site are contaminated and are :

- a potential threat to human health associated with exposure to PCB and SVOC contaminated soils.
- a significant environmental threat associated with the exposure of benthic organisms to PCBs in Mohawk River sediment adjacent to the Former Fire Training Area.

To eliminate or mitigate these threats, the NYSDEC has selected the following remedy:

- A remedial design program to provide the details necessary to implement the remedial program;
- Removal of approximately 100 cubic yards of nearshore sediment within the Mohawk River adjacent to the site;
- Development of a site management plan to address residual contamination and any future land use restrictions;
- Imposition of institutional controls in the form of an environmental easement; and
- Periodic certification of the institutional controls.

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

SECTION 2: SITE LOCATION AND DESCRIPTION

The School Street Former Fire Training Area Site is located in the Town of Colonie, Albany County (Figure 1). The site is approximately 115 feet long by 35 feet wide, sloping to the east. The site is bordered by the Mohawk River to the east and Crescent Road North Mohawk Street to the west. A 1,280 foot feeder dam extends across the Mohawk River east of the School Street Former Fire Training Area. The School Street Hydroelectric Station is located approximately one mile downstream from the site. The water level within an approximately 0.9 mile long canal (referred to as the "power canal") leading to the hydroelectric station is controlled by an upper gatehouse (at the upstream end of the canal) and a lower gatehouse (at the downstream end of the canal). Immediately south of the Former Fire Training Area is a 375 foot concrete ice fender which protects the upper gatehouse and prevents winter ice flow from entering the power canal. The City of Cohoes municipal water intake (Figure 2) is approximately 200 feet upstream from the lower gatehouse.

SECTION 3: SITE HISTORY

3.1 : Operation and Disposal History

Fire training activities were conducted at the site during the period from approximately 1968 through 1 980. Employees from Niagara Mohawk Power Corporation (NMPC) took part in the training activities that were conducted intermittently throughout the summer and fall of each year of operation. Fire training activities conducted at the site consisted of igniting oil (including transformer oil), that was piped to or poured over training props. The fires were then extinguished using a combination of dry chemical fire extinguishers and water pumped from the river. Water was also utilized to cool the props after the fires had been extinguished. Oil burned at the site was reportedly stored in a tank located within or adjacent to the Former Fire Training Area.

It is believed that NMPC dredged sediment from the Mohawk River in the immediate vicinity of the ice fender as part of a project to rehabilitate the ice fender during the early 1980s. The sediment dredge spoils resulting from the project were placed in a low area north of the Former Fire Training Area. NMPC personnel also indicated that sediment dredged from the Mohawk River on either side of the feeder dam in 1998 was placed and graded in the area immediately south of the site. As discussed in Section 5.1.3, both these sediment dredge spoil areas were investigated during the RI and PCBs and SVOCs were not identified in the sediment dredge spoil areas at concentrations exceeding NYSDEC recommended soil cleanup objectives.

3.2: Remedial History

In 1998 an Environmental Site Assessment (ESA) was done. The ESA identified the presence of PCBs in subsurface soil within the Former Fire Training Area at concentrations exceeding the 10 parts per million (ppm) NYSDEC subsurface soil cleanup objective. A PSA was conducted in two phases during 1999 consisting of soil, groundwater and sediment investigation.

Based on the investigation findings, the NYSDEC subsequently listed the site in 2001 as a Class 2 site in the Registry of Inactive Hazardous Waste Disposal Sites in New York. A Class 2 site is a site where hazardous waste presents a significant threat to the public health or the environment and action is required.

In the period between July and October 2002, NMPC conducted an IRM to address impacted soils at the School Street Former Fire Training Area and nearshore sediment within a small area of the Mohawk River east of the Former Fire Training Area. Details of the IRM are discussed in Section 5.2.

A FFS was completed following the IRM to evaluate remedial alternatives to address the presence of PCBs in remaining near shore sediment of the Mohawk River adjacent to the Former Fire Training Area. The FFS is discussed in more detail in Section 7.

SECTION 4: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The NYSDEC and the NMPC entered into a Consent Order on March 3 1, 2000. The Order obligates the responsible parties to implement a full remedial program.

SECTION 5: SITE CONTAMINATION

Beginning in 1998 (in anticipation of NMPC's planned divestiture of the School Street Hydorelectric Station), a series of assessments were performed to evaluate site conditions. Based on the results of the assessments an RI was performed focusing on the Former Fire Training Area.

The remedial investigation/feasibility study (RIFS) was completed to evaluate conditions and has been conducted to evaluate the alternatives for addressing the significant threats to the environment.

The work performed and findings of the assessments/investigation are summarized below.

5.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The RI was conducted between October 2000 and February 2001. Findings of the investigations are described in the RI report and summarized in Table 1.

The following activities were conducted during the RI or were incorporated from previous investigations:

- Researching historical information, including early site investigations and PSA;
- Excavation of 27 test pits and advancement of one soil boring to examine subsurface soil conditions and to collect subsurface soil samples for visual characterization and laboratory analysis;
- Installation of five monitoring wells for analysis of soils and groundwater as well as physical properties of soil and hydrogeologic conditions;
- Sampling of five new and existing monitoring wells;
- Collection of 68 aquatic sediment samples; and
- Sampling of surface water, by the City of Cohoes and NMPC at the downstream end of the power canal at the intakes to the City of Cohoes raw water reservoir for the municipal water treatment plant. Water treated at the plant was also sampled. The sampling was initially performed on a monthly basis and was later performed on a quarterly basis.

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

- Groundwater, drinking water, and surface water SCGs are based on NYSDEC "Ambient Water Quality Standards and Guidance Values" and Part 5 of the New York State Sanitary Code.
- Soil SCGs are based on the NYSDEC ("Technical and Administrative Guidance Memorandum (TAGM) 4046; Determination of Soil Cleanup Objectives and Cleanup Levels" and 6 NYCRR Subpart 375-6 -Remedial Program Soil Cleanup Objectives).
- Sediment SCGs are based on the NYSDEC "Technical Guidance for Screening Contaminated Sediments."

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

5.1.1: Site Geology and Hydrogeology

The surface geology in the area is generally characterized as lacustrine silt and clay deposits. The lacustrine silt and clay deposits are generally laminated. Based on the subsurface soil characteristics observed during the investigation activities at the site, the overburden material across the majority of the Former Fire Training Area appears to be brown silt with some clay, sand and/or gravel (typically shale fragments) to depths generally ranging from 0 to 4 feet below the ground surface. The overburden in the southeastern portion of the Former Fire Training Area (near monitoring well cluster MW-2) appears to be primarily a brown-orange sand and silt to a depth of approximately 8 feet below the ground surface.

The overburden material south of the Former Fire Training Area generally consists ofbrown sand and gravel overlying silt and sand to depths of 3.5 to 5 feet below the ground surface. A weathered shale bedrock was encountered beneath the overburden across the site. Groundwater is present, generally near the surface, in the overburden and bedrock. Groundwater flow direction is to the east, toward the Mohawk River.

5.1.2: Nature of Contamination

As described in the RI report, many soil, groundwater and sediment samples were collected to characterize the nature and extent of contamination. As summarized in Table 1, the main categories of contaminants that exceeded their SCGs are polychlorinated biphenyls (PCBs)and semivolatile organic compounds (SVOCs).

The SVOCs of concern are 1,2,4-trichlorobenzene, di-n-butylphthalate, benzo(a)anthracene, chrysene, benzo(a)pyrene, and dibenzo(a,h)anthracene. The SVOCs detected at levels above NYSDEC recommended soil cleanup objectives were found in limited areas in surface soil only. Additionally, the SVOCs were found in locations where PCBs were also identified above NYSDEC recommended soil cleanup objectives. Many of the SVOCs are combustion byproducts that are most likely a result of the past fire training exercises.

PCBs were detected in the surface soil, subsurface soil, groundwater and sediment of the site. PCBs are the main contaminants of concern at this site.

PCBs are a group of 209 different synthetic organic chemicals which were used by industry because of their resistance to heat and degradation, their being good electrical insulators and dielectric fluids, and their having certain other useful properties. PCBs generally have relatively low solubility in water (are "hydrophobic"), relatively low volatility in air, and tend to preferentially associate with oils and fats (are "lipophilic"). PCBs also preferentially associate with organic carbon. In the environment, PCBs are relatively persistent, and are degraded only under certain conditions. PCBs bioaccumulate in animals; for example, PCBs in fish are frequently 100,000 or more times higher than levels found in water.

5.1.3: Extent of Contamination

This section describes the findings of the investigation for all environmental media that were investigated.

Chemical concentrations are reported in parts per billion (ppb) for water, parts per million (pprn) for soil and sediment. For comparison purposes, where applicable, SCGs are provided for each medium.

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

Surface Soil

Former Fire Training Area

The results of the RI for the School Street Former Fire Training area indicated the presence of PCBs at concentrations greater than the NYSDEC recommended surface soil cleanup objective of 1 pprn in 36 of 61 surface soil samples with the highest concentration value being 130 pprn in sample S-6 (0-0.5') collected in the northern portion of the Former Fire Training Area. Two surface soil samples contained PCBs in excess of the 50 pprn disposal criterion [S-6 (130 ppm) and S- 19 (74 pprn)] for a Toxic Substances Control Act (TSCA) regulated PCB waste and New York State Hazardous Waste.

Eleven surface soil samples were analyzed for SVOCs. Individual SVOCs were detected at concentrations greater than the NYSDEC recommended soil cleanup objectives in five of the samples. One sample had five SVOCs in excess of NYSDEC soil cleanup objectives (di-nbutylphthalate, benzo(a)anthracene, chrysene, benzo(a)pyrene and dibenzo(a,h)anthracene); the other samples contained one or two SVOCs at concentrations only slightly exceeding the soil cleanup objectives. At the conclusion of the IRM, no PCBs remained in the School Street Former Fire Training Area surface soils at concentrations greater than the NYSDEC recommended soil cleanup objective of 1 ppm.

North and South Sediment Dredge Spoil Area

It is believed that NMPC dredged sediment from the Mohawk River in the immediate vicinity of the ice fender as part of a project to rehabilitate the ice fender during the early 1980s. The sediment dredge spoils resulting from the project and an unknown volume dredged from the ice fender at the Green Island Hydroelectric Station were placed in a low area north of the Former Fire Training Area. NMPC personnel also indicated that sediment dredged from the Mohawk River on either side of the feeder dam in 1998 was placed and graded in the area immediately south of the Former Fire Training Area. No PCBs or SVOCs greater than the IWSDEC recommended soil cleanup objectives were detected in the samples collected in this area for surface and subsurface soils.

Subsurface Soil

Former Fire Training Area

PCBs were detected in 9 of the 26 subsurface soil (>1 foot) samples collected from the Former Fire Training Area at concentrations that exceeded the NYSDEC's recommended subsurface soil cleanup objective of 10 ppm. Only one SVOC (di-nbutyl phthalate) was detected at a concentration exceeding NYSDEC soil cleanup objectives in the subsurface soil samples collected from this area sample S-36 (0.5- 1.5') collected in the southern portion of the site. At the conclusion of the IRM, PCBs did not remain in the School Street Former Fire Training Area subsurface soils at concentrations greater than the NYSDEC recommended soil cleanup objective of 10 ppm.

Groundwater

Groundwater investigations included the installation and development of three bedrock monitoring wells (MW-1, MW-2D, MW-3) and one overburden monitoring well (MW-2S), which were all installed as part of the PSA. During the RI, an additional bedrock monitoring well MW-4 was installed north of the Former Fire Training Area. Three groundwater sampling events were completed as part of the PSA

(April 9, 1999; June 4, 1999; and November 22-23, 1999). Samples collected during each event were analyzed for PCBs. Samples collected during the first event were also analyzed for SVOCs. SVOCs were not identified in any of the samples at concentrations greater than the groundwater quality standards. During the April 9 sampling event, PCBs were detected in MW-3 at a concentration of 0.98 parts per billion (ppb). Detection of PCBs in groundwater was associated with high turbidity in the groundwater samples.

During the RI, one additional groundwater sampling event was conducted during November/December 2000. The results obtained for the analysis of the groundwater samples collected during this event indicated the presence of PCBs at a concentration of 0.13 ppb in the groundwater sample collected from monitoring well MW - 3.

Following the IRM, each of the bedrock monitoring wells were sampled. In 2002 and 2004, monitoring wells MW-1, MW-2D, MW-3 (with duplicate) and MW-4 were sampled for PCBs. In both sampling rounds PCBs were not detected above the NYSDEC groundwater standard of 0.09 ppb. Removal of PCBs in soil above SCGs during the IRM has reduced the potential for reoccurrence of PCB contamination in groundwater.

Sediments

During the 1999 PSA, sediment probing was conducted at six transect locations in the Mohawk River east of the Former Fire Training Area. Sediment samples were collected at one location along each of the six transects (transects TI-3 through T6), each approximately 10 feet from the shoreline, and an additional sediment sample was collected approximately 70 feet from the shoreline along transect T3. Surface sediment samples (0-6 inches) and sediment core samples (> 6 inches) were taken at each location. PCBs were detected in each surface sediment sample with concentrations ranging from 0.13 pprn to 7.3 ppm. PCBs were detected in 8 of the 24 PSA sediment core samples at concentrations ranging from 0.013 pprn to 2.6 ppm. PCBs were not detected in any of the PSA sediment core samples collected at a depth of greater than two feet below the sediment surface.

During the RI, additional sediment probing and sediment sampling was completed adjacent to the Former Fire Training Area and within the hydroelectric station power canal. Six additional sediment transects were established within the hydroelectric station power canal. Additional sediment probing was conducted along each of the transects established within the power canal. After completion of the sediment probing, surface sediment and sediment core samples were collected from the following locations (see Figure 9).

- Five locations within the Mohawk River east of the Former Fire Training Area (locations SD-8 through SD-12);
- One location between the ice fender and the upper gatehouse (SD- 13); and
- Four locations within the power canal (SD-14 through SD-2 7).

PCBs were detected in 9 of the 12 RI surface sediment samples at concentrations ranging from 0.01 5 pprn to 0.143 ppm. PCBs were detected in 11 of the 25 sediment core samples at concentrations ranging from 0.013 pprn to 0.45 ppm. Of these samples, 11 of the 15 samples obtained from the power canal had PCB concentrations ranging from 0.013 pprn to 0.143 ppm.

During the sediment investigations, field personnel noticed a sheen seeping from the west bank of the power canal approximately 800 feet from the downstream end of the power canal. The canal was dewatered at the time for maintenance. Samples SD-18 and SD-24 were obtained to investigate the seep area and were analyzed for VOCs, SVOCs, petroleum hydrocarbons, and PCBs. Sampling results indicated the presence of lube oil. The seep was determined to be a petroleum discharge unrelated to the site. This area will be investigated when the canal is dewatered during the remedial design or remedial action.

Surface Water

Surface water at the intakes for the City of Cohoes public drinking water supply was sampled on a monthly and semi-annual basis by the City of Cohoes. Additionally, quarterly monitoring was conducted by NMPC. The results of these sampling events indicated that PCBs were not detected in the source of drinking water for the City of Cohoes Water Treatment Plant.

5.2: Interim Remedial Measures

An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the RIFS.

In the period between July and October 2002, NMPC conducted an IRM at the School Street Former Fire Training Area. The IRM consisted of the following:

- Removal of surface and subsurface soil containing PCBs and SVOCs at concentrations greater than the NYSDEC recommended soil cleanup objectives and soils that exhibited staining. Soils were removed to bedrock or four feet below ground surface, whichever came first.

Surface soil was removed over an approximately 1.1 acre area and subsurface soil was removed over an approximately 0.4 acre area.

- Removal of nearshore sediment in a small area of the Mohawk River east of the Former Fire Training Area that contained < 14 ppm concentrations of PCBs.

- Approximately 3,925 cubic yards of PCB contaminated surface and subsurface soil in the vicinity of the Former Fire Training Area and approximately 25 cubic yards of impacted nearshore soil/sediment were excavated, characterized and transported for offsite disposal in accordance with applicable rules and regulations. Approximately 3,471 tons of material was brought in to backfill the areas excavated as part of the IRM. The backfill materials included clean run-of-bank gravel, topsoil, stone base course, washed ballast stone and rip-rap material. All soils containing PCBs at concentrations exceeding NYSDEC recommended soil cleanup objectives were removed. No residual PCBs at concentrations greater than 1 ppm remain in surface soil. PCBs remain in subsurface soil at concentrations less than 10 ppm, but these soils were covered with a minimum of 12 inches of clean gravel and soil as part of the IRM. There is one isolated location where soils containing one SVOC (di-n-butylphthalate) at a concentration greater than NYSDEC

recommended soil cleanup objectives remain. These impacted soils are covered by more than one foot of clean soils.

5.3: Summary of Human Exposure Pathways:

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the human exposure pathways can be found in Section 2.6 of the RI report.

An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements: [1] a contaminant source, [2] contaminant release and transport mechanisms, [3] a point of exposure, [4] a route of exposure, and [5] a receptor population.

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

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

The IRM completed at the site has reduced the potential for future exposures to site contaminants. However, residual contamination remains in onsite subsurface soil. PCB contamination also remains in sediment of the adjacent Mohawk River upstream of the City of Cohoes public water intake. PCBs have not been detected in the public water supply. Therefore, there are no current exposures through ingestion of contaminated water. Potential exposure pathways, which could exist in the future as a result of the residual contamination in on-site soil include:

- Direct contact, incidental ingestion and inhalation exposures to site contaminants in sub-surface soil by construction workers involved in future excavation activities. Exposure to sediment is not considered a complete or potential human exposure pathway because access to the site and adjacent sediments is unlikely as the area is fenced and locked.

5.4: Summary of Environmental Impacts

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

The Fish and Wildlife Impact Analysis, which is included in the RI report, presents a detailed discussion of the existing and potential impacts from the site to fish and wildlife receptors. The following environmental exposure pathway and ecological risk has been identified:

- Concentrations of PCBs (Aroclor 1260) in aquatic sediment exceed the NYSDEC sediment screening quality criteria. Fish and wildlife communities could be exposed to site-related contaminants present in the aquatic sediments by direct contact with contaminated sediments, ingestion of PCB contaminated sediments or water, or ingestion of prey, such as macroinvertebrates that are contaminated with PCBs.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

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

- the potential for exposures of persons at or around the site to PCB contamination in sub-surface soils and sediment; and
- the potential for environmental exposures of flora or fauna to PCB contamination in sediment,

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

- removal of sediment containing PCBs at concentrations greater than NYSDEC guideline values.

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. Potential remedial alternatives for the School Street Former Fire Training Area Site were identified, screened and evaluated in the FFS report which is available at the document repositories identified in Section 1.

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

7.1: Description of Remedial Alternatives

The following potential remedies were considered to address the contaminated sediments at the site.

Alternative 1: No Further Action

The No Further Action alternative recognizes remediation of the site conducted under a previously completed IRM. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

The no-further-action alternative serves as a baseline for comparison of the overall effectiveness of the other remedial alternatives. The no-further-action alternative would not involve the implementation of any remedial activities to remove, treat or contain the nearshore sediment of the Mohawk River east of the Former Fire Training Area, beyond the IRM activities already completed. The sediment would be allowed to remain in its current condition and no activities would be undertaken to change the current conditions.

Alternative 2: Institutional Controls

Present Worth: $30,000
Capital Cost: $6,750
Annual OM&M: Years 1-30: $1,500

This alternative would not involve the implementation of any remedial activities to remove, treat or contain the nearshore sediment east of the Former Fire Training Area. The sediment would be allowed to remain in its current condition.

An institutional control in the form of an environmental easement would be implemented. The institutional control would (a) require compliance with the approved Site Management Plan (SMP); (b) limit the use and development of the property to commercial or industrial uses only; and (c) require the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

Alternative 3: Monitored Natural Attenuation

Present Worth: $220,000
Capital Cost: $81,000
Annual OMM: Years 1-30: $12,000

Alternative 3 is essentially the same as Alternative 2 except that monitoring would be performed to evaluate natural sedimentation processes that could reduce the potential for human and fish and wildlife exposure to PCBs in the nearshore sediment of the Mohawk River adjacent to the Former Fire Training Area.

The monitoring would involve sediment probing and sampling at several locations in the nearshore area of the Mohawk River adjacent to the Former Fire Training Area. The monitoring would evaluate potential changes in sediment depths and PCB concentrations over time. The frequency of monitoring would be conducted every five years over a 30 year period.

In addition, an institutional control in the form of an environmental easement would be implemented. The institutional control would (a) require compliance with the approved SMP (b) limit the use and development of the property to commercial or industrial uses only; and © require the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

Alternative 4: Sediment Capping

Present Worth: *$690,000*
Capital Cost: *$439,830*
Annual OMM: Years 1-30: *$20,000*

This alternative involves the installation of an engineered cap over the nearshore sediment of the Mohawk River east of the Former Fire Training Area (see Figure 10). The cap would be installed to physically isolate areas of higher contamination in the sediment and reduce potential future human exposure to PCBs.

The engineered cap would cover an approximately 14,500 square foot area, encompassing 320 feet of shoreline and extend approximately 45 feet from the shoreline. The anticipated design would consist of 18 inches of coarse grain sand, medium sized washed gravel and large sized washed gravel over a geotextile fabric. Following completion of the cap installation, a long-term cap monitoring and maintenance program would be implemented. In addition, an institutional control in the form of an environmental easement would be implemented.

The institutional control would (a) require compliance with the approved SMP; (b) limit the use and development of the property to commercial or industrial uses only; and (c) require the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

Alernative 5: Sediment Removal in the "Wet"

Present Worth: *$870,000*
Capital Cost: *$850,000*
Annual OM&M: Years 1-30: *$1,500*

Under this alternative, nearshore sediment containing PCBs would be mechanically dredged through the surface water of the Mohawk River. This alternative extends further out from the shoreline to remove additional sediment containing less than 0.32 ppm PCB. The sediment removal area would encompass approximately 320 feet of shoreline and extend approximately 45 feet from the shoreline (see Figure 10). Based on an average sediment removal depth of one foot, approximately 550 cubic yards of sediment would be removed.

The environmental dredging approach would remove the submerged nearshore sediment. Measures to control resuspension of sediment include the installation of silt curtains to section off the removal area from the remainder of the river and as needed, to divide the sediment removal area into smaller working cells.

Following dewatering, the sediment would be characterized and transported for off-site disposal at a facility permitted to accept the material. Water collected in the dewatering pad would drain to a lined sump and be temporarily stored, characterized and properly disposed of at an approved off-site location.

Verification sediment sampling would be conducted following completion of the removal activities to evaluate the potential presence of PCBs in remaining sediment. Upon completion of this alternative, sediment containing PCBs at concentrations from 0.32 ppm to 7.3 ppm plus surrounding sediment will have been removed. Following sampling verification, the dredged sediment area would be restored with materials similar in physical characteristics to the native material removed from the area.

In addition, an institutional control in the form of an environmental easement would be implemented. The institutional control would (a) require compliance with the approved SMP; (b) limit the use and development of the property to commercial and industrial uses only; and (c) require the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

Alternative *6*: Sediment Removal in the 'Dry'

Present Worth: *$1,425,000*
Capital Cost: *$1,420,000*
Annual OM&M: Years 1-30: *$1,500*

This alternative would involve the construction of a temporary cellular-type, gravity cofferdam around the proposed removal area, dewatering of the area inside the cofferdam and sediment removal after the area is dewatered. This alternative extends further out from the shoreline to remove additional PCB sediment containing less than 0.32 ppm.PCB. The sediment removal area would encompass approximately 320 feet of shoreline and extend approximately 45 feet from the shoreline (see Figure 10). Based on an average sediment removal depth of one foot, approximately 550 cubic yards of sediment would be removed. Given site conditions, a cellular-type gravity cofferdam would appear to be the most practical and efficient method for sediment removal in the 'dry'.

Following dewatering, the sediment would be characterized and transported for off-site disposal at a facility permitted to accept the material. Water collected in the dewatering pad would drain to a lined sump and be temporarily stored, characterized and properly disposed of at an approved off-site location.

Verification sediment sampling would be conducted following completion of the removal activities to evaluate the potential presence of PCBs in the remaining sediment.

Upon completion of this alternative, sediment containing PCBs at concentrations from 0.32 ppm to 7.3 ppm plus surrounding sediment will have been removed. Following sampling verification, the dredged sediment area would be restored with materials similar in physical characteristics to the native material removed from the area.

In addition, an institutional control in the form of an environmental easement would be implemented. The institutional control would. (a) require compliance with the approved SMP; (b) limit the use and development of the property to commercial and industrial uses only; and (c) require the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

Alternate 7: Focused Sediment Removal

Present Worth: *$230,000*
Capital Cost: *$210,000*
Annual OM&M: Years 1-30: *$1,500*

Under this remedial alternative, sediments located in the nearshore area containing the highest concentrations of PCBs (i.e., PCBs at concentrations greater than 1 ppm) would be mechanically dredged in the wet. The anticipated sediment removal area, shown on Figure 11, would extend along the shoreline from sediment sampling location SD-3 to location SD-6 and would extend outward from the shoreline a distance of approximately 4 feet past the sampling locations. Based on an average sediment removal depth of 1 foot, for the majority of the dredging and 1.5 feet in one specific location (sampling location SD-5), approximately 100 cubic yards of sediment would be removed under this alternative. This alternative removes the nearshore core area of 0.32 pmm to 7.3 ppm PCB. The specific method would be determined during the remedial design phase (expected to be in the wet).

Sediment removed would be transferred directly from the excavation area to a dewatering pad constructed in the Former Fire Training Area.

Measures to control sediment migration would follow the requirements of 6NYCRR Part 608. During the excavation work, the gates to the power canal would remain open thereby lowering the water level in the area by as much as two feet. The lowering of the water level is expected to improve the effectiveness of the remedial work. All the work in the power canal would be coordinated with the City of Cohoes. All work would be conducted in a manner that is protective of the public water supply. The dredging is anticipated to occur during August and/or September, traditional low flow periods for the Mohawk River. Surface water sampling would be performed during and following completion of removal activities to document control effectiveness.

Following dewatering/stabilization, the sediment would be characterized and transported for off-site disposal at a facility permitted to accept the material. Water collected in the dewatering pad would drain to a lined sump and would be pumped to an onsite temporary water storage container. The water would be characterized and then properly disposed

Based on the results of previous sediment sampling activities, verification sediment sampling would not be conducted following the completion of the removal activities. After sediment removal within the defined limits has been completed, the dredged area would be restored with clean materials of similar gradation to those removed to provide habitat for benthic invertebrate colonization.

In addition, an institutional control in the form of an environmental easement would be implemented. The institutional control would (a) require compliance with the approved SMP; (b) limit the use and development of the property to commercial and industrial uses only; and (c) require the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

7.2 Evaluation of Remedial Alternatives

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

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the NYSDEC has determined to be applicable on a case-specific basis.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Short-term Effectiveness. The potential short term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain onsite after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

5. Reduction of Toxicity. Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

7. Cost-Effectiveness. Capital costs and operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision. The costs for each alternative are presented in Table #2.

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

8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the PRAP have been evaluated. The responsiveness summary (Appendix A) presents the public comments received and the manner in which the Department addressed the concerns raised.

SECTION 8: SUMMARY OF THE SELECTED REMEDY

Based on the Administrative Record (Appendix B) and the discussion presented below, the Department has selected Alternative #7, Focused Sediment Removal as the remedy for this site. The elements of this remedy are described at the end of this section.

The selected remedy is based on the results of the RI and the evaluation of alternatives presented in the FFS.

Altemative 7 is being proposed because, as described below, it satisfies the threshold criteria and provides the best balance of the primary balancing criteria described in Section 7.2. It would achieve the remediation goals for the site by removing the sediments located in the nearshore area which contain the highest concentrations of PCBs to levels consistent with upstream concentrations and thereby minimize potential exposures to fish and wildlife.

During the 2002 IRM, all upland sources of PCBs to the nearshore sediment of the Mohawk River were removed, including a small area of nearshore sediment that contained PCBs.

Alterative 2 would allow PCBs to remain in the sediment in concentrations ranging from less than 0.04 ppm to 7.3 ppm, which could possibly become resuspended during future maintenance activities or floodstorm events. Under Alternative 2, there would not be any removal of PCB contaminated sediments or long term monitoring of surface water or sediments to verify that there is no potential for human exposure.

The additional efforts and short-term adverse impacts associated with Alternatives 4, 5 and 6, when compared to Alternative 7 and weighed against potential long-term benefits do not warrant the implementation of Alternatives 4, 5 or 6. The focused removal of sediments under Alternative 7 would result in a reduction of PCBs in the nearshore sediment by removing the highest levels of PCBs.

Remedial costs should be proportional to the overall effectiveness of the remedial efforts. The detailed analysis for Alternative 7 indicates that this alternative, alone, would effectively mitigate potential future human and fish and wildlife exposure to nearshore sediment containing PCBs. Therefore, as compared to Alternative 7, the higher costs associated with Alternatives 3 through 6, for the potential small increase in longterm benefits, are not justified.

The estimated present worth cost to implement the remedy is $230,000. The cost to construct the remedy is estimated to be $2 10,000. There will be annual costs associated with maintaining the institutional controls and periodic certification.

The elements of the selected remedy are as follows:

- The remedial design must meet the requirements of 6 NYCRR Part 608 and will include the details necessary for the construction, operation, maintenance and monitoring of the remedial program. The remedial design will include verification of previous sediment conditions.

- Approximately 100 cubic yards of sediments located in the nearshore area containing the highest concentrations of PCBs will be mechanically dredged. The anticipated sediment removal area would extend along the shoreline from sediment sampling location SD-3 to location SD-6 and will extend outward from the shoreline a distance of approximately 4 feet past the sampling locations to a depth of 1 foot and to a depth of 1.5 feet at sampling location SD-5.

  Excavated sediment would be transferred directly from the excavation area to a dewatering pad constructed in the Former Fire Training Area. While the sediment is on the pad, river water would gravity drain to a lined collection sump where it would collect prior to characterization, transfer to a storage tank and eventual transport for off-site treatment. Measures to control sediment migration include the installation of silt curtains to section off the removal area from the rest of the river.

  Following dewatering/stabilization, the sediment will be characterized and transported for off-site disposal at a facility permitted to accept the material. After sediment removal within the defined limits has been completed, the dredged area would be restored with similar materials to provide habitat for benthic invertebrate colonization.

- A site management plan (SMP) will be developed and implemented. The SMP will include the institutional controls and engineering controls to: (a) address residual contaminated soils that may be excavated from the site during future redevelopment. The plan will require soil characterization and, where applicable, disposal/reuse in accordance with NYSDEC regulations.

- Imposition of an institutional control in the form of an environmental easement that will (a) require compliance with the approved SMP; (b) limit the use and development of the property to commercial or industrial uses only; and (c) require the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls. The SNIP will require the property owner to provide an Institutional Control Engineering Control (ICIEC) certification, prepared and submitted by a professional engineer or environmental professional acceptable to the Department periodically which would certify that the institutional controls and engineering controls put in place, are unchanged from the previous certification and nothing has occurred that would impair the ability of the control to protect public health or the environment or constitute a violation or failure to comply with the SMP.

SECTION 9: HIGHLIGHTS OF COMMUNITY PARTICIPATION

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

- Repositories for documents pertaining to the site were established.

- A public contact list, which included nearby property owners, elected officials, local media and other interested parties, was established.

- A public meeting was held on (date) to present and receive comment on the PRAP.

- A responsiveness summary (Appendix A) was prepared to address the comments received during the public comment period for the PRAP.

Table 1

August 1998 - October 2003

SURFACE SOIL	Contaminant of Concern	Concentration Range Detected (ppm)[b]	SCG[c] (ppm)[b]	Frequency of Exceeding SCG
Polychlorinated Biphenyls (PCBs)				
Pre-IRM[a]	Total PCBs	0.029 J[d] - 130	1	39/68
Post-IRM[a]	Total PCBs	0.029 J[d] - 0.69	1	0/13
Semi-Volatile Organic Compounds (SVOCs)				
Pre-IRM[a]	1,2,4-Trichlorobenzene	12.0 - 15.0 D[e]	3.4	2/12
	Di-n-butylphthalate	0.15 J[d] - 20 D[e]	8.1	1/12
	Benzo(a)anthracene	0.12 J[d] - 0.78 J[d]	0.224 or MDL	2/12
	Chrysene	0.059 J[d] - 0.87 J[d]	0.4	3/12
	Benzo(a)pyrene	0.16 J[d] - 0.57 J[d]	0.061 or MDL	3/12
	Dibenzo(a,h)anthracene	0.094 J[d]	0.014 or MDL	1/12
Post-IRM[a]	1,2,4-Trichlorobenzene	ND[h] (Detection Limits Between 0.34 and 0.37)	3.4	0/4
	Di-n-butylphthalate	3.0 D[e]	8.1	0/4
	Benzo(a)anthracene	ND[h] (Detection Limits Between 0.34 and 0.37)	0.224 or MDL	0/4
	Chrysene	0.059 J[d]	0.4	0/4
	Benzo(a)pyrene	ND[h] (Detection Limits Between 0.34 and 0.37)	0.061 or MDL	0/4
	Dibenzo(a,h)anthracene	ND[h] (Detection Limits Between 0.34 and 0.37)	0.014 or MDL	0/4

SUBSURFACE SOIL	Contaminant of Concern	Concentration Range Detected (ppm)[b]	SCG[c] (ppm)[b]	Frequency of Exceeding SCG
Polychlorinated Biphenyls (PCBs)				
Pre-IRM[a]	Total PCBs	0.006 J[d] - 66 J[d]	10	10/40
Post-IRM[a]	Total PCBs	0.06 - 5.6 D[e]	10	0/50

August 1998 - October 2003

SUBSURFACE SOIL	Contaminant of Concern	Concentration Range Detected (ppm)[b]	SCG[c] (ppm)[b]	Frequency of Exceeding SCG
Semi-Volatile Organic Compounds (SVOCs)				
Pre-IRM[a]	Di-n-butylphthalate	ND[h] - 20 D[e]	8.0	1/11
Post-IRM[a]	Di-n-butylphthalate	ND[h] - 20 D[e]	8.0	1/9

SEDIMENTS	Contaminant of Concern	Concentration Range Detected (ppm)[b]	SCG[c,f] (ppm)[b]	Frequency of Exceeding SCG
Pre-IRM[a]	Total PCBs	0.013 J[d] - 14 D[e]	Wildlife Bioaccumulation: 0.002 - 0.161	16/19[g]
			Benthic Aquatic Life Chronic Toxicity: 0.03 - 2.22	6/19[g]
			Benthic Aquatic Life Acute Toxicity: 4.4 - 317.5	0/19[g]
Post-IRM[a]	Total PCBs	0.013 J[d] - 7.3	Wildlife Bioaccumulation: 0.002 - 0.161	15/18[g]
			Benthic Aquatic Life Chronic Toxicity: 0.03 - 2.22	5/18[g]
			Benthic Aquatic Life Acute Toxicity: 4.4 - 317.5	0/18[g]

GROUNDWATER	Contaminant of Concern	Concentration Range Detected (ppb)[b]	SCG[c] (ppb)[b]	Frequency of Exceeding SCG
Pre-IRM[a]	Total PCBs	0.12 - 0.98	0.09	3/17
Post-IRM[a]	Total PCBs	0.021 - 0.044	0.09	0/10

SURFACE WATER	Contaminant of Concern	Concentration Range Detected (ppb)[b]	SCG[c] (ppb)[b]	Frequency of Exceeding SCG
Pre-IRM[a]	Total PCBs	ND[h] (Detection Limits Between 0.030 and 0.056)	i	--
Post-IRM[a]	Total PCBs	ND[h] (Detection Limits Between 0.050 and 0.056)	i	--

Notes:

[a]IRM= Interim Remedial Measure. Pre-IRM refers to conditions present prior to completion of the IRM. Post-IRM refers to conditions present following completion of the IRM.

[b]ppb = parts per billion, which is equivalent to micrograms per liter, ug/L, in water;
ppm = parts per million, which is equivalent to milligrams per kilogram, mglkg, in soil.

[c]SCG = standards, criteria, and guidance values.

[d]J = estimated concentration.

[e]D = concentration is based on a diluted sample analysis.

[f]Sample-specific sediment SCGs (guidance values) were calculated using the ecological, risk-based screening criteria in the NYSDEC Division of Fish, Wildlife and Marine Resources document entitled, "Technical Guidance for Screening Contaminated Sediments," dated January 1999, and the concentration of TOC (where available) detected in individual sediment samples. Sediment guidance values were calculated for the protection of benthic aquatic life from acute and chronic toxicity, and for the protection of wildlife from bioaccumulation. The calculated guidance values were compared with the analytical results obtained for surface sediment samples (0 to 0.5 feet). In accordance with the above-referenced guidance document, the sediment screening criteria are appropriate for providing an initial assessment of potential environmental impacts. Additional site-specific information on actual impacts such as toxicity and/or bioaccumulation should be used to develop site-specific cleanup objectives. However, in the absence of such site-specific information, the sediment screening criteria may be established as final cleanup objectives for a specific site.

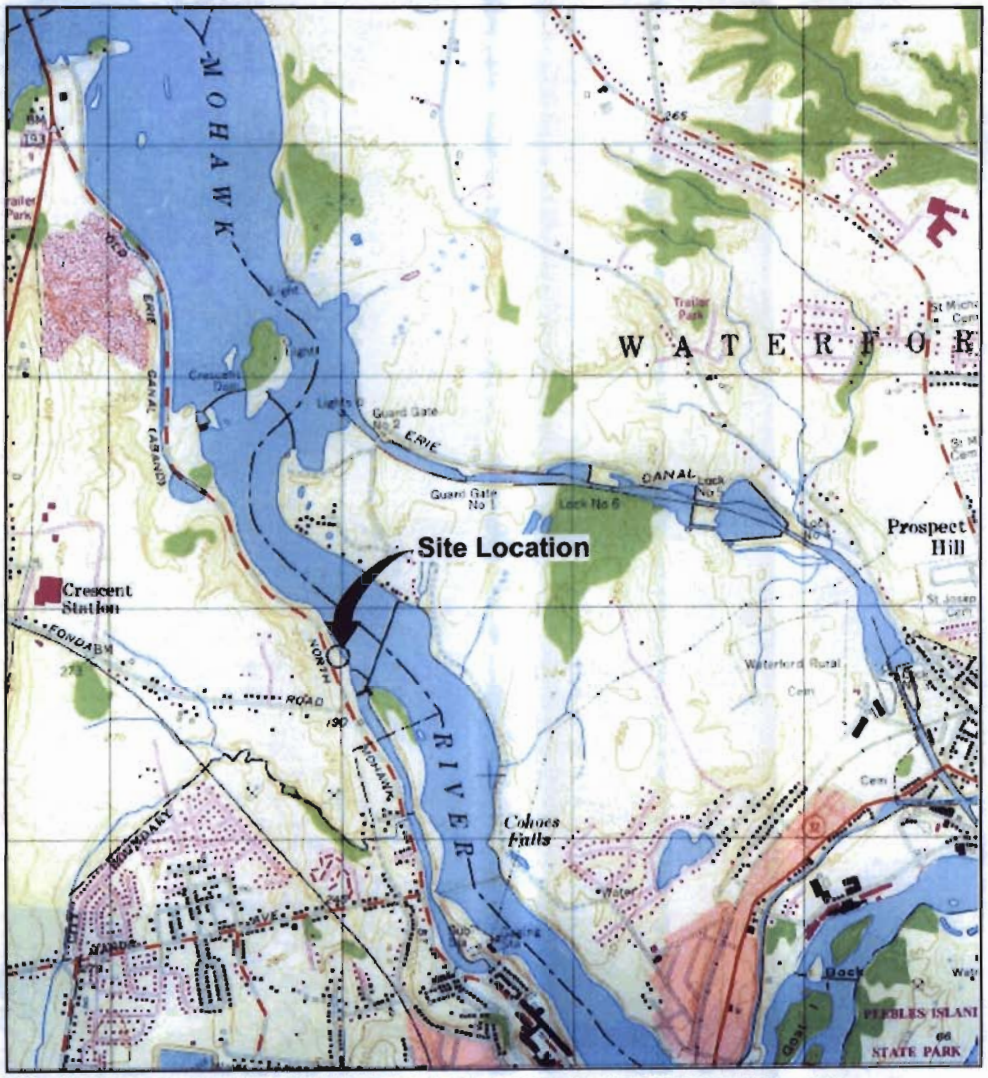
[g]Low concentrations of PCBs were detected in surface sediment samples collected at locations SD-7 and SD-24 (0.045 J and 0.092 ppm, respectively). However, these samples were not submitted for TOC analysis and, therefore, location-specific guidance values are unavailable for these sampling locations. Therefore, these locations are excluded from the "Frequency of Exceeding SCG" assessment.

[h]ND = non-detect.

[i]There are three surface water standards for PCB. The most stringent is the standard to protect human consumers of fish at $1x10^6$ ppb. The standard to protect wildlife is $1.2x10^4$ ppb. The standard to protect sources of water supply is 0.09 ppb. See the NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1) for a definition of water classes and types

Table 2
Remedial Alternative Costs

Remedial Alternative	Capital Cost	Annual OM&M	Total Present Worth
No Further Action	$0	$0	$0
Institutional Controls	$6,750	$1,500	$30,000
Monitored Natural Attenuation	$8 1,000	$12,000	$220,000
Sediment Capping	$439,830	$20,000	$690,000
Sediment Removal in the "Wet"	$850,000	$1,500	$870,000
Sediment Removal in the "Dry"	$1,400,000	$1,500	$1,420,000
Focused Sediment Removal	$2 10,000	$1,500	$230,000



REFERENCE: BASE MAP USGS 7.5 MIN. QUAD., TROY NORTH, NY, 1954, PHOTOREVISED 1980.

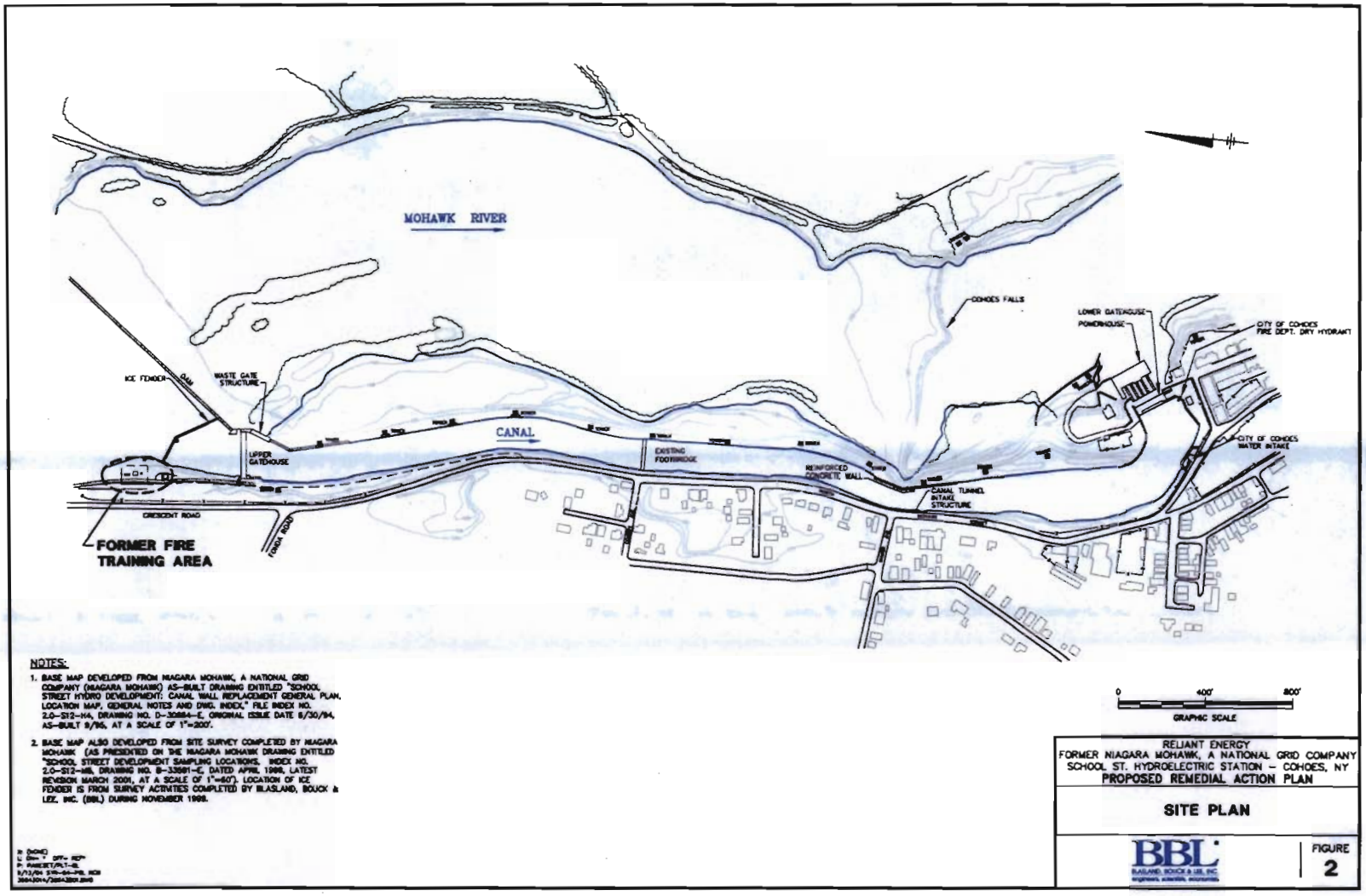
09/10/04 SYR-065-DJH
36643014/36643n01.cdr

RELIANT ENERGY
FORMER NIAGARA MOHAWK, A NATIONAL GRID COMPANY
SCHOOL ST. HYDROELECTRIC STATION - COHOES, NY
PROPOSED REMEDIAL ACTION PLAN

SITE LOCATION MAP

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

FIGURE
1



NOTES:

1. BASE MAP DEVELOPED FROM NIAGARA MOHAWK, A NATIONAL GRID COMPANY (NIAGARA MOHAWK) AS-BUILT DRAWING ENTITLED "SCHOOL STREET HYDRO DEVELOPMENT: CANAL WALL REPLACEMENT GENERAL PLAN, LOCATION MAP, GENERAL NOTES AND DWG. INDEX," FILE INDEX NO. 2.0-S12-H4, DRAWING NO. D-30884-E, ORIGINAL ISSUE DATE 6/30/94, AS-BUILT 9/96, AT A SCALE OF 1"=200'.
2. BASE MAP ALSO DEVELOPED FROM SITE SURVEY COMPLETED BY NIAGARA MOHAWK (AS PRESENTED ON THE NIAGARA MOHAWK DRAWING ENTITLED "SCHOOL STREET DEVELOPMENT SAMPLING LOCATIONS, INDEX NO. 2.0-S12-H8, DRAWING NO. B-33581-E, DATED APRIL 1998, LATEST REVISION MARCH 2001, AT A SCALE OF 1"=60'). LOCATION OF ICE FENDER IS FROM SURVEY ACTIVITIES COMPLETED BY BLASLAND, BOUCK & LEE, INC. (BBL) DURING NOVEMBER 1998.

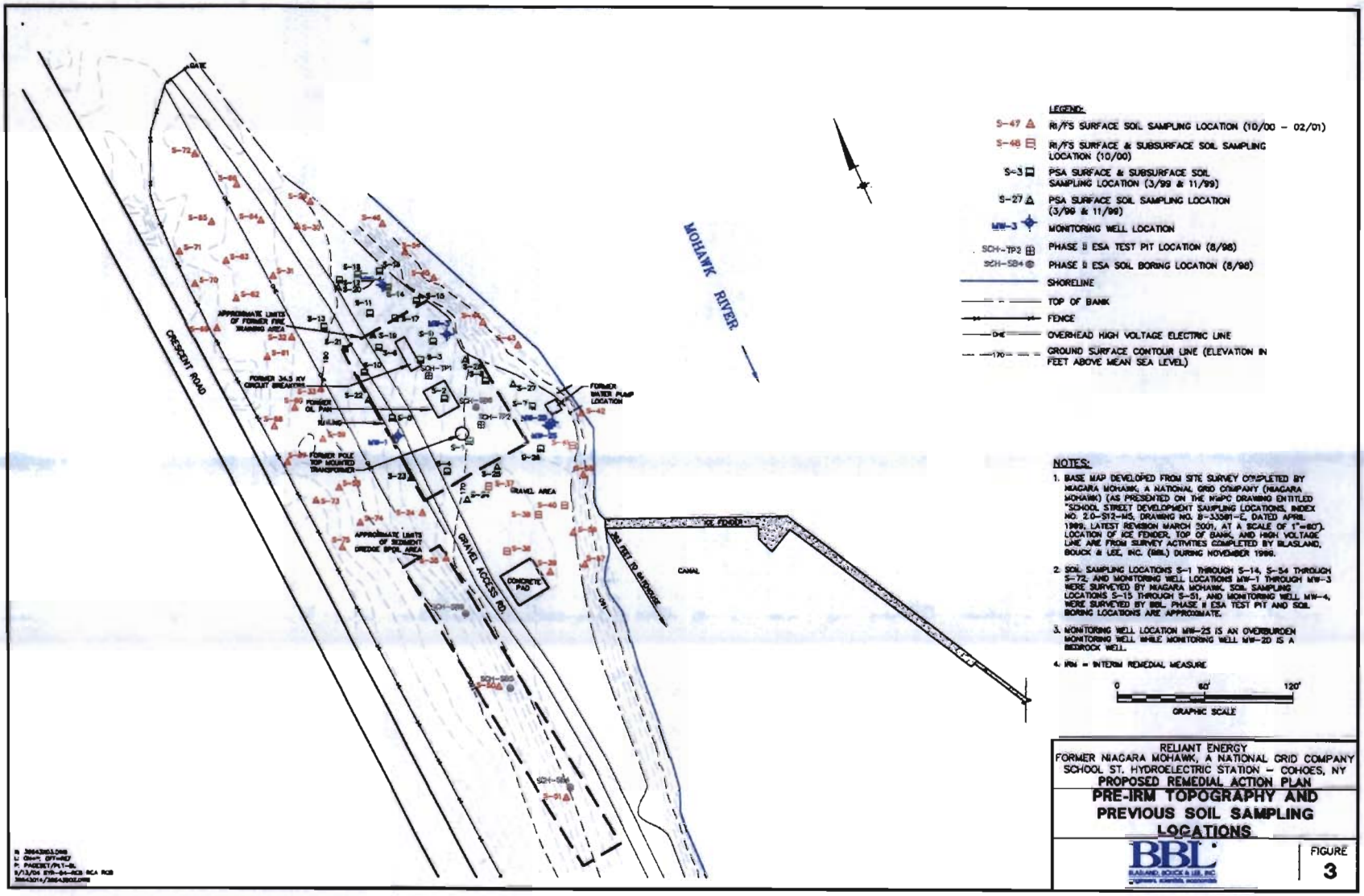
0 400' 800'
GRAPHIC SCALE

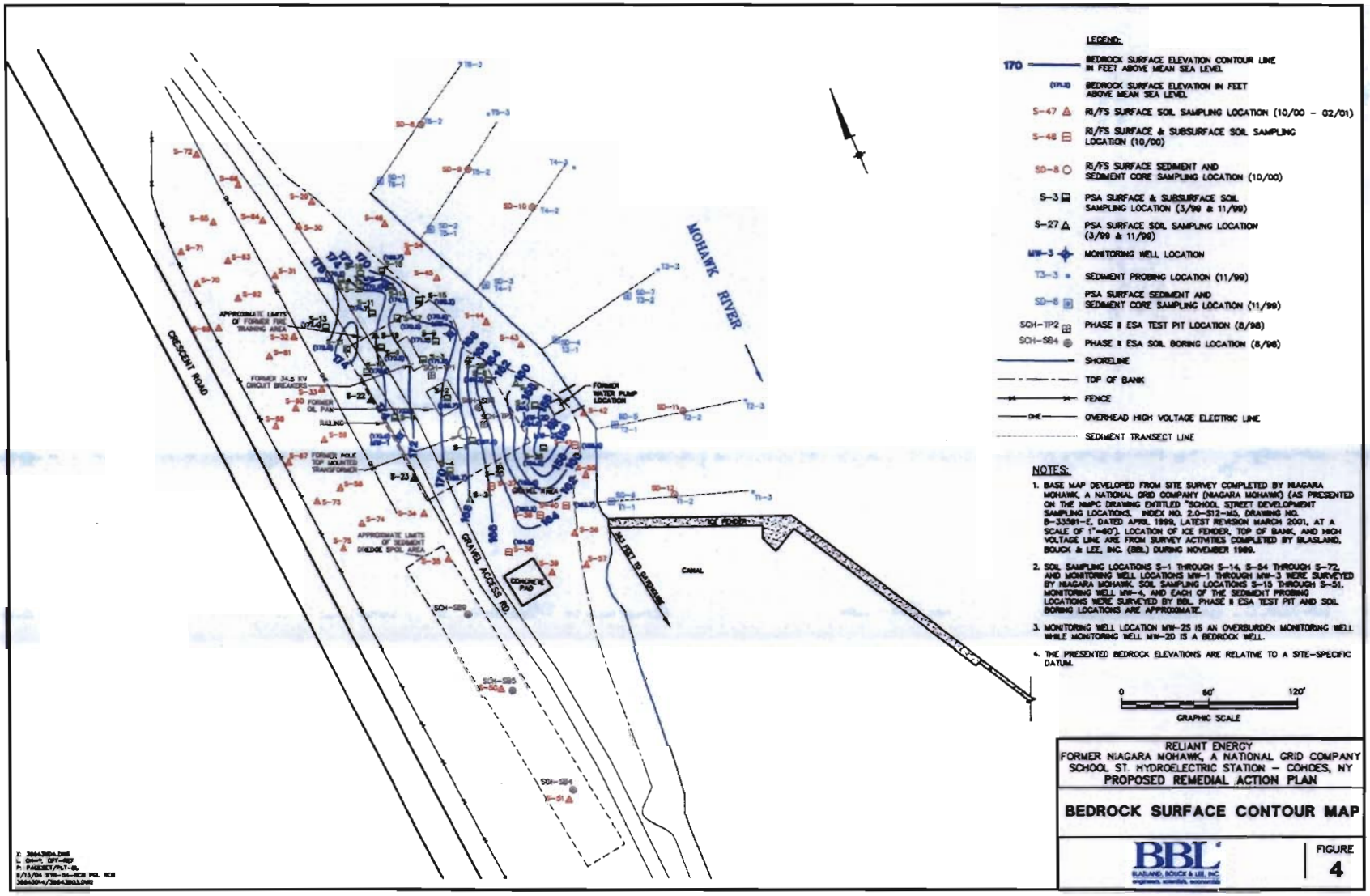
RELIANT ENERGY
FORMER NIAGARA MOHAWK, A NATIONAL GRID COMPANY
SCHOOL ST. HYDROELECTRIC STATION – COHOES, NY
PROPOSED REMEDIAL ACTION PLAN

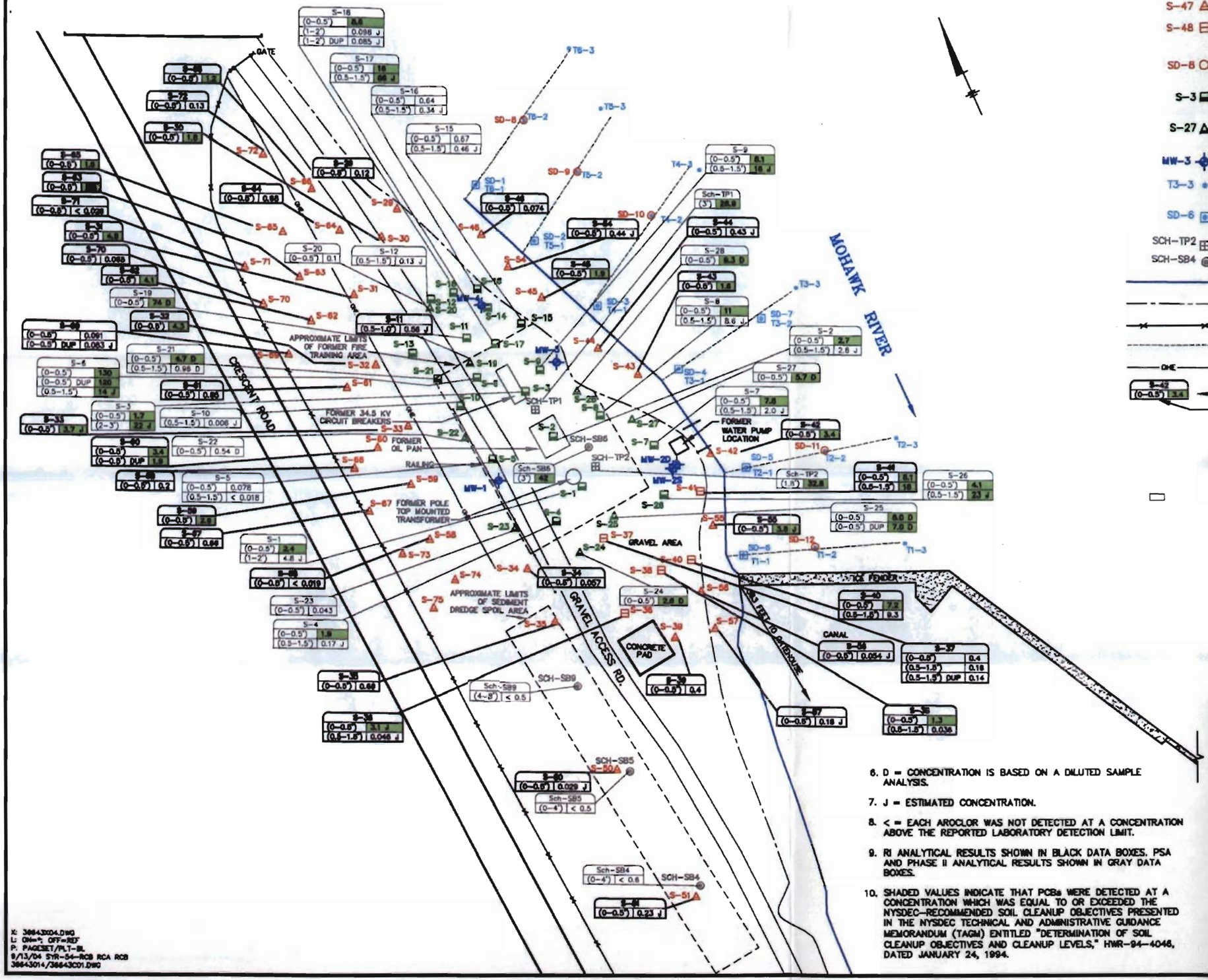
SITE PLAN

BBL BLASLAND, BOUCK & LEE, INC.

FIGURE 2


LEGEND:
S-47 RI/FS SURFACE SOIL SAMPLING LOCATION (10/00 - 02/01)
S-48 RI/FS SURFACE & SUBSURFACE SOIL SAMPLING LOCATION (10/00)
S-3 PSA SURFACE & SUBSURFACE SOIL SAMPLING LOCATION (3/99 & 11/99)
S-27 PSA SURFACE SOIL SAMPLING LOCATION (3/99 & 11/99)
MW-3 MONITORING WELL LOCATION
SCH-TP2 PHASE II ESA TEST PIT LOCATION (8/98)
SCH-SB4 PHASE II ESA SOIL BORING LOCATION (8/98)
SHORELINE
TOP OF BANK
FENCE
OHE OVERHEAD HIGH VOLTAGE ELECTRIC LINE
170 GROUND SURFACE CONTOUR LINE (ELEVATION IN FEET ABOVE MEAN SEA LEVEL)
MOHAWK RIVER
CRESCENT ROAD
GATE
GRAVEL ACCESS RD.
GRAVEL AREA
CONCRETE PAD
CANAL
ICE FENDER
BELFIELD BARRIER
APPROXIMATE LIMITS OF FORMER FIRE TRAINING AREA
FORMER 34.5 KV CIRCUIT BREAKERS
FORMER OIL PAN
FORMER POLE TOP MOUNTED TRANSFORMER
FORMER WATER PUMP LOCATION
APPROXIMATE LIMITS OF SEDIMENT DREDGE SPOIL AREA
NOTES:
1. BASE MAP DEVELOPED FROM SITE SURVEY COMPLETED BY NIAGARA MOHAWK, A NATIONAL GRID COMPANY (NIAGARA MOHAWK) (AS PRESENTED ON THE NMPC DRAWING ENTITLED "SCHOOL STREET DEVELOPMENT SAMPLING LOCATIONS, INDEX NO. 2.0-S12-M5, DRAWING NO. 8-33381-E, DATED APRIL 1999, LATEST REVISION MARCH 2001, AT A SCALE OF 1"=80'). LOCATION OF ICE FENDER, TOP OF BANK, AND HIGH VOLTAGE LINE ARE FROM SURVEY ACTIVITIES COMPLETED BY BLASLAND, BOUCK & LEE, INC. (BBL) DURING NOVEMBER 1999.
2. SOIL SAMPLING LOCATIONS S-1 THROUGH S-14, S-54 THROUGH S-72, AND MONITORING WELL LOCATIONS MW-1 THROUGH MW-3 WERE SURVEYED BY NIAGARA MOHAWK. SOIL SAMPLING LOCATIONS S-15 THROUGH S-51, AND MONITORING WELL MW-4, WERE SURVEYED BY BBL. PHASE II ESA TEST PIT AND SOIL BORING LOCATIONS ARE APPROXIMATE.
3. MONITORING WELL LOCATION MW-2S IS AN OVERBURDEN MONITORING WELL WHILE MONITORING WELL MW-2D IS A BEDROCK WELL.
4. IRM = INTERIM REMEDIAL MEASURE
0 60' 120'
GRAPHIC SCALE
RELIANT ENERGY
FORMER NIAGARA MOHAWK, A NATIONAL GRID COMPANY
SCHOOL ST. HYDROELECTRIC STATION - COHOES, NY
PROPOSED REMEDIAL ACTION PLAN
PRE-IRM TOPOGRAPHY AND PREVIOUS SOIL SAMPLING LOCATIONS
BBL
BLASLAND, BOUCK & LEE, INC.
FIGURE
3


LEGEND:
BEDROCK SURFACE ELEVATION CONTOUR LINE IN FEET ABOVE MEAN SEA LEVEL
BEDROCK SURFACE ELEVATION IN FEET ABOVE MEAN SEA LEVEL
RI/FS SURFACE SOIL SAMPLING LOCATION (10/00 - 02/01)
RI/FS SURFACE & SUBSURFACE SOIL SAMPLING LOCATION (10/00)
RI/FS SURFACE SEDIMENT AND SEDIMENT CORE SAMPLING LOCATION (10/00)
PSA SURFACE & SUBSURFACE SOIL SAMPLING LOCATION (3/99 & 11/99)
PSA SURFACE SOIL SAMPLING LOCATION (3/99 & 11/99)
MONITORING WELL LOCATION
SEDIMENT PROBING LOCATION (11/99)
PSA SURFACE SEDIMENT AND SEDIMENT CORE SAMPLING LOCATION (11/99)
PHASE II ESA TEST PIT LOCATION (8/98)
PHASE II ESA SOIL BORING LOCATION (8/98)
SHORELINE
TOP OF BANK
FENCE
OVERHEAD HIGH VOLTAGE ELECTRIC LINE
SEDIMENT TRANSECT LINE
NOTES:
1. BASE MAP DEVELOPED FROM SITE SURVEY COMPLETED BY NIAGARA MOHAWK, A NATIONAL GRID COMPANY (NIAGARA MOHAWK) (AS PRESENTED ON THE NMPC DRAWING ENTITLED "SCHOOL STREET DEVELOPMENT SAMPLING LOCATIONS, INDEX NO. 2.0-S12-MS, DRAWING NO. B-33581-C, DATED APRIL 1999, LATEST REVISION MARCH 2001, AT A SCALE OF 1"=60'). LOCATION OF ICE FENDER, TOP OF BANK, AND HIGH VOLTAGE LINE ARE FROM SURVEY ACTIVITIES COMPLETED BY BLASLAND, BOUCK & LEE, INC. (BBL) DURING NOVEMBER 1999.
2. SOIL SAMPLING LOCATIONS S-1 THROUGH S-14, S-54 THROUGH S-72, AND MONITORING WELL LOCATIONS MW-1 THROUGH MW-3 WERE SURVEYED BY NIAGARA MOHAWK. SOIL SAMPLING LOCATIONS S-15 THROUGH S-51, MONITORING WELL MW-4, AND EACH OF THE SEDIMENT PROBING LOCATIONS WERE SURVEYED BY BBL. PHASE II ESA TEST PIT AND SOIL BORING LOCATIONS ARE APPROXIMATE.
3. MONITORING WELL LOCATION MW-2S IS AN OVERBURDEN MONITORING WELL WHILE MONITORING WELL MW-2D IS A BEDROCK WELL.
4. THE PRESENTED BEDROCK ELEVATIONS ARE RELATIVE TO A SITE-SPECIFIC DATUM.
0
60'
120'
GRAPHIC SCALE
MOHAWK RIVER
CRESCENT ROAD
GRAVEL ACCESS RD.
CANAL
CONCRETE PAD
FORMER WATER PUMP LOCATION
APPROXIMATE LIMITS OF FORMER FIRE TRAINING AREA
APPROXIMATE LIMITS OF SEDIMENT DREDGE SPOIL AREA
FORMER 34.5 KV CIRCUIT BREAKERS
FORMER OIL PAN
RAILING
FORMER POLE TOP MOUNTED TRANSFORMER
GRAVEL AREA
TO SPILLWAY
RELIANT ENERGY
FORMER NIAGARA MOHAWK, A NATIONAL GRID COMPANY
SCHOOL ST. HYDROELECTRIC STATION - COHOES, NY
PROPOSED REMEDIAL ACTION PLAN
BEDROCK SURFACE CONTOUR MAP
BBL
BLASLAND, BOUCK & LEE, INC.
FIGURE
4



LEGEND:

- S-47 — RI/FS SURFACE SOIL SAMPLING LOCATION (10/00 – 02/01)
- S-48 — RI/FS SURFACE & SUBSURFACE SOIL SAMPLING LOCATION (10/00)
- SD-8 — RI/FS SURFACE SEDIMENT AND SEDIMENT CORE SAMPLING LOCATION (10/00)
- S-3 — PSA SURFACE & SUBSURFACE SOIL SAMPLING LOCATION (3/99 & 11/99)
- S-27 — PSA SURFACE SOIL SAMPLING LOCATION (3/99 & 11/99)
- MW-3 — MONITORING WELL LOCATION
- T3-3 — SEDIMENT PROBING LOCATION (11/99)
- SD-6 — PSA SURFACE SEDIMENT AND SEDIMENT CORE SAMPLING LOCATION (11/99)
- SCH-TP2 — PHASE II ESA TEST PIT LOCATION (8/98)
- SCH-SB4 — PHASE II ESA SOIL BORING LOCATION (8/98)
- SHORELINE
- TOP OF BANK
- FENCE
- SEDIMENT TRANSECT LINE
- OHE — OVERHEAD HIGH VOLTAGE ELECTRIC LINE
- S-42 (0-0.5') 3.4 — TOTAL PCB CONCENTRATION (ppm)
- SAMPLE DEPTH

NOTES:

1. BASE MAP DEVELOPED FROM SITE SURVEY COMPLETED BY NIAGARA MOHAWK, A NATIONAL GRID COMPANY (NIAGARA MOHAWK) (AS PRESENTED ON THE NIAGARA MOHAWK DRAWING ENTITLED "SCHOOL STREET DEVELOPMENT SAMPLING LOCATIONS, INDEX NO. 2.0-S12-M5, DRAWING NO. B-33591-E, DATED APRIL 1999, LATEST REVISION MARCH 2001, AT A SCALE OF 1"=60'). LOCATION OF ICE FENDER, TOP OF BANK, AND HIGH VOLTAGE LINE ARE FROM SURVEY ACTIVITIES COMPLETED BY BLASLAND, BOUCK & LEE, INC. (BBL) DURING NOVEMBER 1999.
2. SOIL SAMPLING LOCATIONS S-1 THROUGH S-14, S-54 THROUGH S-72, AND MONITORING WELL LOCATIONS MW-1 THROUGH MW-3 WERE SURVEYED BY NIAGARA MOHAWK. SOIL SAMPLING LOCATIONS S-15 THROUGH S-51, MONITORING WELL MW-4, AND EACH OF THE SEDIMENT PROBING LOCATIONS WERE SURVEYED BY BBL. PHASE II ESA TEST PIT AND SOIL BORING LOCATIONS ARE APPROXIMATE.
3. MONITORING WELL LOCATION MW-2S IS AN OVERBURDEN MONITORING WELL WHILE MONITORING WELL MW-2D IS A BEDROCK WELL.
4. PCBs = POLYCHLORINATED BIPHENYLS.
5. ALL CONCENTRATIONS ARE REPORTED IN PARTS PER MILLION (PPM).
6. D = CONCENTRATION IS BASED ON A DILUTED SAMPLE ANALYSIS.
7. J = ESTIMATED CONCENTRATION.
8. < = EACH AROCLOR WAS NOT DETECTED AT A CONCENTRATION ABOVE THE REPORTED LABORATORY DETECTION LIMIT.
9. RI ANALYTICAL RESULTS SHOWN IN BLACK DATA BOXES. PSA AND PHASE II ANALYTICAL RESULTS SHOWN IN GRAY DATA BOXES.
10. SHADED VALUES INDICATE THAT PCBs WERE DETECTED AT A CONCENTRATION WHICH WAS EQUAL TO OR EXCEEDED THE NYSDEC-RECOMMENDED SOIL CLEANUP OBJECTIVES PRESENTED IN THE NYSDEC TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM (TAGM) ENTITLED "DETERMINATION OF SOIL CLEANUP OBJECTIVES AND CLEANUP LEVELS," HWR-94-4046, DATED JANUARY 24, 1994.

0 60' 120'

GRAPHIC SCALE

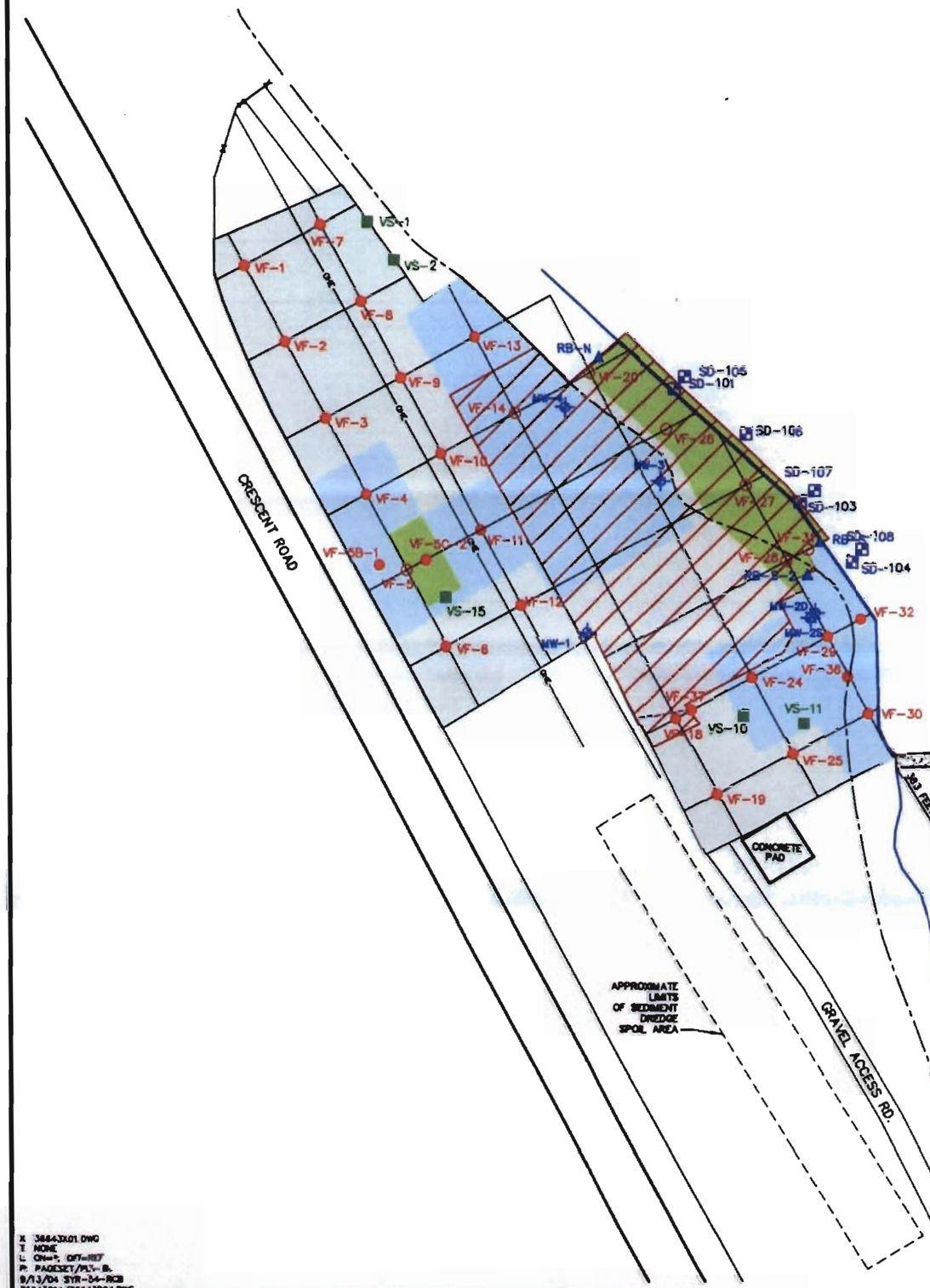
RELIANT ENERGY
FORMER NIAGARA MOHAWK, A NATIONAL GRID COMPANY
SCHOOL ST. HYDROELECTRIC STATION – COHOES, NY
PROPOSED REMEDIAL ACTION PLAN

PREVIOUS SOIL SAMPLING RESULTS FOR TOTAL PCBs (ppm)

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

FIGURE 5

X: 36643X04.DWG
L: DW=*; OFF=80'
P: PAGESET/PLT-BL
9/13/04 SYR-54-RCB RCA RCB
36643014/36643C01.DWG



LEGEND:

- SD-101 — APPROXIMATE SEDIMENT SAMPLING LOCATION
- RB-N — APPROXIMATE RIVERBANK SOIL SAMPLING LOCATION
- VF-5 — APPROXIMATE VERIFICATION SOIL SAMPLING LOCATION PRIOR TO REACHING FINAL EXCAVATION LIMITS
- VF-1 — APPROXIMATE FINAL VERIFICATION SOIL SAMPLING LOCATION ALONG EXCAVATION FLOOR
- VS-1 — APPROXIMATE VERIFICATION SOIL SAMPLING LOCATION ALONG EXCAVATION WALL
- APPROXIMATE LIMITS OF SURFACE SOIL REMOVAL (TO A DEPTH OF 1 FOOT)
- APPROXIMATE LIMITS OF SUBSURFACE SOIL REMOVAL (TO DEPTHS RANGING FROM 2 FEET TO 4 FEET)
- APPROXIMATE LIMITS OF SUBSURFACE SOIL REMOVAL (TO A DEPTH OF APPROXIMATELY 5 FEET)
- APPROXIMATE LIMITS OF SURFACE AND SUBSURFACE SOIL REMOVAL (TO THE TOP OF BEDROCK)
- MW-3 — MONITORING WELL LOCATION
- SHORELINE
- TOP OF BANK
- FENCE
- ONE — OVERHEAD HIGH VOLTAGE ELECTRIC LINE
- APPROXIMATE LOCATION OF 8-INCH DIAMETER HDPE REPLACEMENT PIPE

NOTES:

1. BASE MAP DEVELOPED FROM SITE SURVEY COMPLETED BY NIAGARA MOHAWK, A NATIONAL GRID COMPANY (NIAGARA MOHAWK) (AS PRESENTED ON THE NIAGARA MOHAWK DRAWING ENTITLED "SCHOOL STREET DEVELOPMENT SAMPLING LOCATIONS, INDEX NO. 2.0-S12-M3, DRAWING NO. B-33591-E, DATED APRIL 1999, LATEST REVISION MARCH 2001, AT A SCALE OF 1"=50'). LOCATION OF ICE FENDER, TOP OF BANK, AND HIGH VOLTAGE LINE ARE FROM SURVEY ACTIVITIES COMPLETED BY BLASLAND, BOUCK & LEE, INC. (BBL) DURING NOVEMBER 1999.
2. MONITORING WELL LOCATIONS MW-1 THROUGH MW-3 WERE SURVEYED BY NIAGARA MOHAWK. MONITORING WELL LOCATION MW-4, WAS SURVEYED BY BBL.
3. VERIFICATION SOIL SAMPLING LOCATIONS AND SEDIMENT SAMPLING LOCATIONS ARE BASED ON FIELD MESUREMENTS AND ARE APPROXIMATE.
4. VERIFICATION SAMPLE VS-15 WAS A COMPOSITE SAMPLE OF 4 SUBSAMPLES COLLECTED FROM EACH SIDEWALL OF THE APPROXIMATELY 5 FOOT DEEP EXCAVATION LOCATED ADJACENT TO VERIFICATION SAMPLE LOCATION VF-5.

0 60' 120'

GRAPHIC SCALE

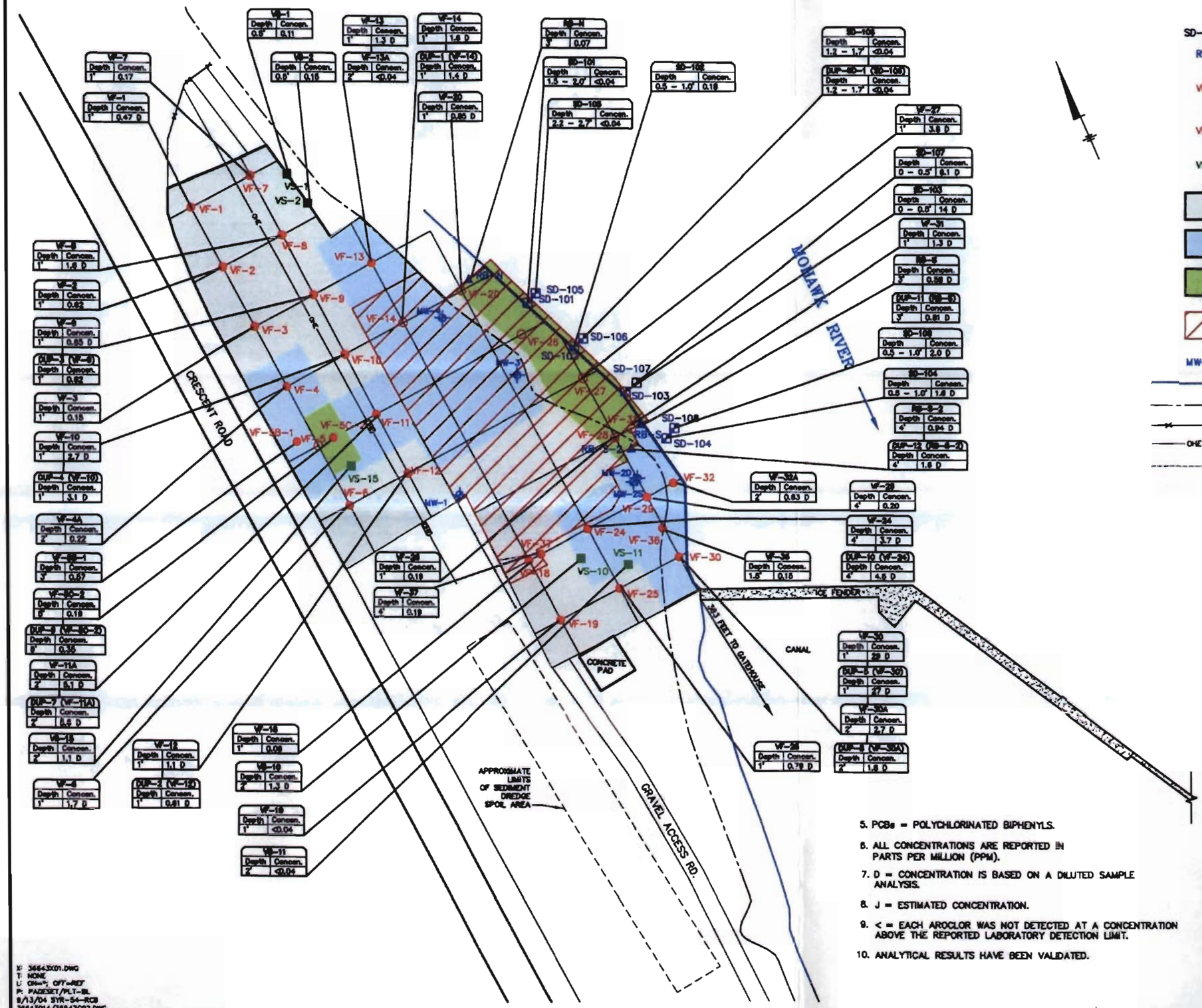
RELIANT ENERGY
FORMER NIAGARA MOHAWK, A NATIONAL GRID COMPANY
SCHOOL ST. HYDROELECTRIC STATION – COHOES, NY
PROPOSED REMEDIAL ACTION PLAN

APPROXIMATE SOIL EXCAVATION LIMITS AND VERIFICATION SOIL AND SEDIMENT SAMPLING LOCATIONS

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

FIGURE 6

X: 38643X01.DWG
T: NONE
L: ON=*; OFF=REF
P: PAGESET/PLT=B.
9/13/04 SYR-54-RCB
38643014/38643804.DWG



LEGEND:

- SD-101 — APPROXIMATE SEDIMENT SAMPLING LOCATION
- RB-N — APPROXIMATE RIVERBANK SOIL SAMPLING LOCATION
- VF-5 — APPROXIMATE VERIFICATION SOIL SAMPLING LOCATION PRIOR TO REACHING FINAL EXCAVATION LIMITS
- VF-1 — APPROXIMATE FINAL VERIFICATION SOIL SAMPLING LOCATION ALONG EXCAVATION FLOOR
- VS-1 — APPROXIMATE VERIFICATION SOIL SAMPLING LOCATION ALONG EXCAVATION WALL
- APPROXIMATE LIMITS OF SURFACE SOIL REMOVAL (TO A DEPTH OF 1 FOOT)
- APPROXIMATE LIMITS OF SUBSURFACE SOIL REMOVAL (TO DEPTHS RANGING FROM 2 FEET TO 4 FEET)
- APPROXIMATE LIMITS OF SUBSURFACE SOIL REMOVAL (TO A DEPTH OF APPROXIMATELY 5 FEET)
- APPROXIMATE LIMITS OF SURFACE AND SUBSURFACE SOIL REMOVAL (TO THE TOP OF BEDROCK)
- MW-3 — MONITORING WELL LOCATION
- SHORELINE
- TOP OF BANK
- FENCE
- OHE — OVERHEAD HIGH VOLTAGE ELECTRIC LINE
- APPROXIMATE LOCATION OF 8-INCH DIAMETER HDPE REPLACEMENT DRAIN PIPE

NOTES:

1. BASE MAP DEVELOPED FROM SITE SURVEY COMPLETED BY NIAGARA MOHAWK, A NATIONAL GRID COMPANY (NIAGARA MOHAWK) (AS PRESENTED ON THE NIAGARA MOHAWK DRAWING ENTITLED "SCHOOL STREET DEVELOPMENT SAMPLING LOCATIONS, INDEX NO. 2.0-S12-M5, DRAWING NO. B-33591-E, DATED APRIL 1999, LATEST REVISION MARCH 2001, AT A SCALE OF 1"=60'). LOCATION OF ICE FENDER, TOP OF BANK, AND HIGH VOLTAGE LINE ARE FROM SURVEY ACTIVITIES COMPLETED BY BLASLAND, BOUCK & LEE, INC. (BBL) DURING NOVEMBER 1999.
2. MONITORING WELL LOCATIONS MW-1 THROUGH MW-3 WERE SURVEYED BY NIAGARA MOHAWK. MONITORING WELL LOCATION MW-4, WAS SURVEYED BY BBL.
3. VERIFICATION SOIL SAMPLING LOCATIONS AND SEDIMENT SAMPLING LOCATIONS ARE BASED ON FIELD MESUREMENTS AND ARE APPROXIMATE.
4. VERIFICATION SAMPLE VS-15 WAS A COMPOSITE SAMPLE OF 4 SUBSAMPLES COLLECTED FROM EACH SIDEWALL OF THE APPROXIMATELY 5 FOOT DEEP EXCAVATION LOCATED ADJACENT TO VERIFICATION SAMPLE LOCATION VF-5.
5. PCBs = POLYCHLORINATED BIPHENYLS.
6. ALL CONCENTRATIONS ARE REPORTED IN PARTS PER MILLION (PPM).
7. D = CONCENTRATION IS BASED ON A DILUTED SAMPLE ANALYSIS.
8. J = ESTIMATED CONCENTRATION.
9. < = EACH AROCLOR WAS NOT DETECTED AT A CONCENTRATION ABOVE THE REPORTED LABORATORY DETECTION LIMIT.
10. ANALYTICAL RESULTS HAVE BEEN VALIDATED.

0 60' 120'

GRAPHIC SCALE

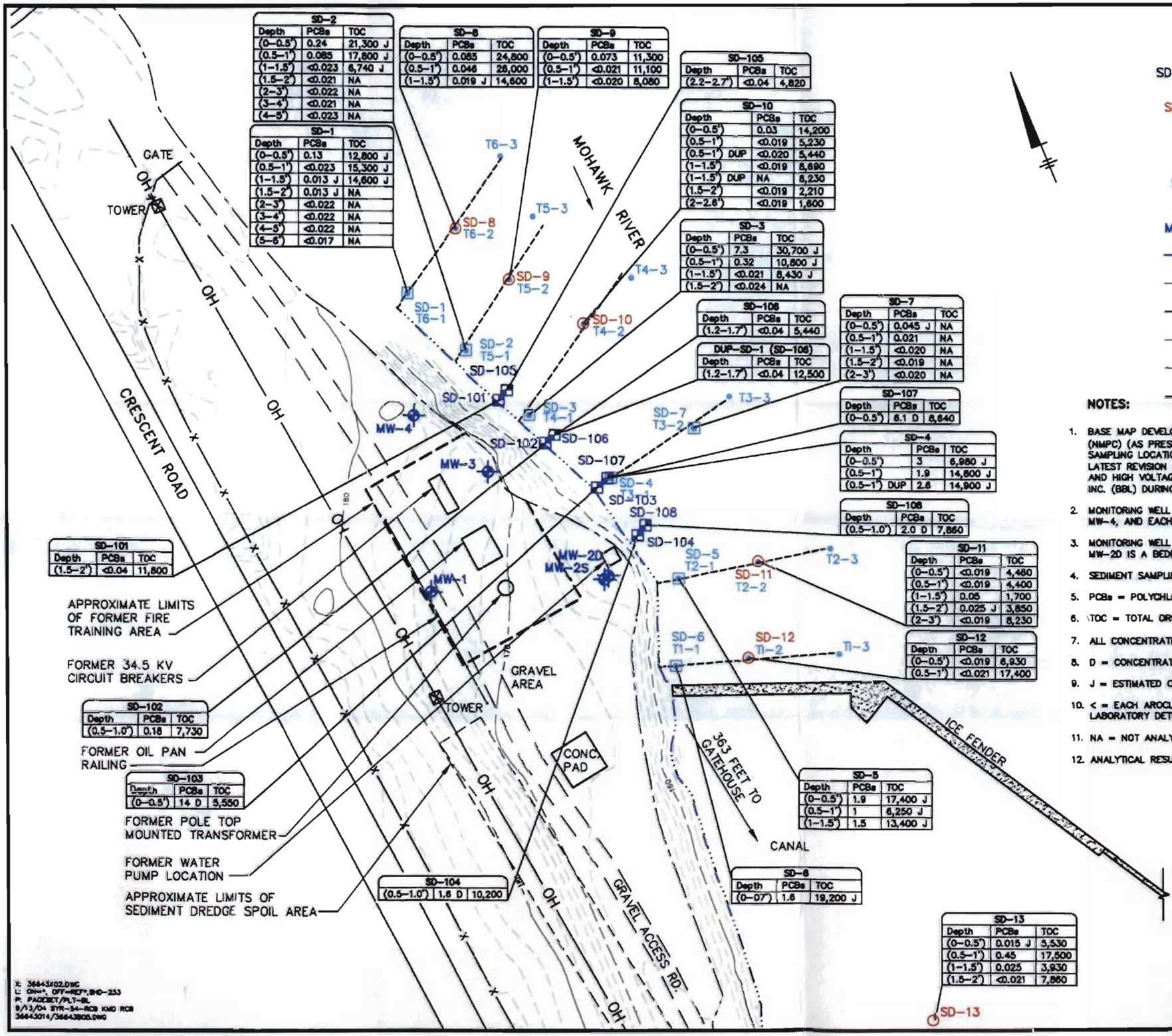
RELIANT ENERGY
FORMER NIAGARA MOHAWK, A NATIONAL GRID COMPANY
SCHOOL ST. HYDROELECTRIC STATION – COHOES, NY
PROPOSED REMEDIAL ACTION PLAN

FINAL VERIFICATION SOIL AND SEDIMENT SAMPLING RESULTS FOR TOTAL PCBs (ppm)

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

FIGURE 7

X: 38643X01.DWG
T: NONE
L: ON=*; OFF=REF
P: PAGESET/PLT-BL
9/13/04 SYR-54-RCB
38643014/38643002.DWG



NOTES:

1. BASE MAP DEVELOPED FROM SITE SURVEY COMPLETED BY NIAGARA MOHAWK POWER CORPORATION (NMPC) (AS PRESENTED ON THE NMPC DRAWING ENTITLED "SCHOOL STREET DEVELOPMENT SAMPLING LOCATIONS, INDEX NO. 2.0-S12-M5, DRAWING NO. B-33591-E, DATED APRIL 1999, LATEST REVISION MARCH 2001, AT A SCALE OF 1"=80'). LOCATION OF ICE FENDER, TOP OF BANK, AND HIGH VOLTAGE LINE ARE FROM SURVEY ACTIVITIES COMPLETED BY BLASLAND, BOUCK & LEE, INC. (BBL) DURING NOVEMBER 1999.
2. MONITORING WELL LOCATIONS MW-1 THROUGH MW-3 WERE SURVEYED BY NMPC. MONITORING WELL MW-4, AND EACH OF THE SEDIMENT PROBING LOCATIONS WERE SURVEYED BY BBL.
3. MONITORING WELL LOCATION MW-2S IS AN OVERBURDEN MONITORING WELL WHILE MONITORING WELL MW-2D IS A BEDROCK WELL.
4. SEDIMENT SAMPLING LOCATIONS ARE BASED ON FIELD MEASUREMENTS AND ARE APPROXIMATE.
5. PCBs = POLYCHLORINATED BIPHENYLS.
6. TOC = TOTAL ORGANIC CARBON.
7. ALL CONCENTRATIONS ARE REPORTED IN PARTS PER MILLION (PPM).
8. D = CONCENTRATION IS BASED ON A DILUTED SAMPLE ANALYSIS.
9. J = ESTIMATED CONCENTRATION.
10. < = EACH AROCLOR WAS NOT DETECTED AT A CONCENTRATION ABOVE THE REPORTED LABORATORY DETECTION LIMIT.
11. NA = NOT ANALYZED.
12. ANALYTICAL RESULTS HAVE BEEN VALIDATED.

0 80' 120'
GRAPHIC SCALE

RELIANT ENERGY
FORMER NIAGARA MOHAWK, A NATIONAL GRID COMPANY
SCHOOL ST. HYDROELECTRIC STATION – COHOES, NY
PROPOSED REMEDIAL ACTION PLAN

SEDIMENT SAMPLING LOCATIONS AND ANALYTICAL RESULTS FOR TOTAL PCBs & TOC (ppm)

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

FIGURE 8

X: 36443X02.DWG
L: ON=*, OFF=REF*,BHD-253
P: PAGESET/PLT-BL
9/13/04 SYR-54-RCB KMD RCB
36443014/36443B05.DWG

MOHAWK RIVER

DAM

ICE FENDER

SEE FIGURE 4A

TOP OF BANK

WASTE GATE STRUCTURE

UPPER GATEHOUSE

CANAL

EXISTING FOOTBRIDGE

COHOES FALLS

LOWER GATEHOUSE

POWERHOUSE

REINFORCED CONCRETE WALL

CITY OF COHOES FIRE DEPT. DRY HYDRANT

CITY OF COHOES WATER INTAKE

CRESCENT ROAD

FONDA ROAD

NORTH

CONBOY AVE.

MOHAWK STREET

CANAL TUNNEL INTAKE STRUCTURE

MANOR AVE.

TOWER

SD-14		
Depth	PCBs	TOC
(0-0.5')	0.048	5,380
(0.5-1')	< 0.020	12,600

SD-15		
Depth	PCBs	TOC
(0-1.5')	0.018 J	3,880
(1.5-3')	< 0.022	115,000
(3-3.5')	0.013 J	83,100
(3.5-4')	0.015 J	10,800
(3.5-4') DUP	0.048	13,500
(4-4.5')	0.04	11,300
(4-4.5') DUP	NA	11,900
(4.5-5')	0.047 J	NA

SD-13		
Depth	PCBs	TOC
(0-0.5')	0.015 J	5,530
(0.5-1')	0.45	17,500
(1-1.5')	0.025	3,930
(1.5-2')	<0.021	7,860

SD-16		
Depth	PCBs	TOC
(0-0.5')	< 0.020	10,200
(0.5-1')	< 0.020	2,550
(1-1.5')	< 0.021	3,460

SD-17		
Depth	PCBs	TOC
(0-0.5')	0.143	36,700
(0.5-1')	0.076	7,380

SD-18		
Depth	PCBs	TOC
(0-0.5')	0.126	24,000
(0-0.5') DUP	0.105	NA

SD-24		
Depth	PCBs	TOC
(0-0.5')	0.092	NA

0 400' 800'

GRAPHIC SCALE

LEGEND:

T8-2 • SEDIMENT PROBING LOCATION

SD-8 ○ RI/FS SURFACE SEDIMENT & SEDIMENT CORE SAMPLING LOCATION (10/00 – 2/01)

T4 --- TRANSECT LINE

NOTES:

1. BASE MAP DEVELOPED FROM NIAGARA MOHAWK POWER CORPORATION (NMPC) AS-BUILT DRAWING ENTITLED "SCHOOL STREET HYDRO DEVELOPMENT: CANAL WALL REPLACEMENT GENERAL PLAN, LOCATION MAP, GENERAL NOTES AND DWG. INDEX," FILE INDEX NO. 2.0-S12-H4, DRAWING NO. D-30884-E, ORIGINAL ISSUE DATE 6/30/94, AS-BUILT 9/95, AT A SCALE OF 1"=200'.
2. BASE MAP ALSO DEVELOPED FROM SITE SURVEY COMPLETED BY NMPC (AS PRESENTED ON THE NMPC DRAWING ENTITLED "SCHOOL STREET DEVELOPMENT SAMPLING LOCATIONS, INDEX NO. 2.0-S12-M5, DRAWING NO. B-33591-E, DATED APRIL 1999, LATEST REVISION MARCH 2001, AT A SCALE OF 1"=60'). LOCATION OF ICE FENDER IS FROM SURVEY ACTIVITIES COMPLETED BY BLASLAND, BOUCK & LEE, INC. (BBL) DURING NOVEMBER, 1999.
3. TRANSECT LOCATIONS T1 THROUGH T7 WERE SURVEYED BY BBL. TRANSECT LOCATIONS T8 THROUGH T12 WERE POSITIONED RELATIVE TO EXISTING SITE FEATURES, AS SHOWN.
4. PCBs = POLYCHLORINATED BIPHENYLS.
5. TOC = TOTAL ORGANIC CARBON.
6. ALL CONCENTRATIONS ARE REPORTED IN PARTS PER MILLION (ppm).
7. < = EACH AROCLOR WAS NOT DETECTED AT A CONCENTRATION ABOVE THE REPORTED LABORATORY DETECTION LIMIT.
8. NA = NOT ANALYZED.
9. J = ESTIMATED CONCENTRATION.

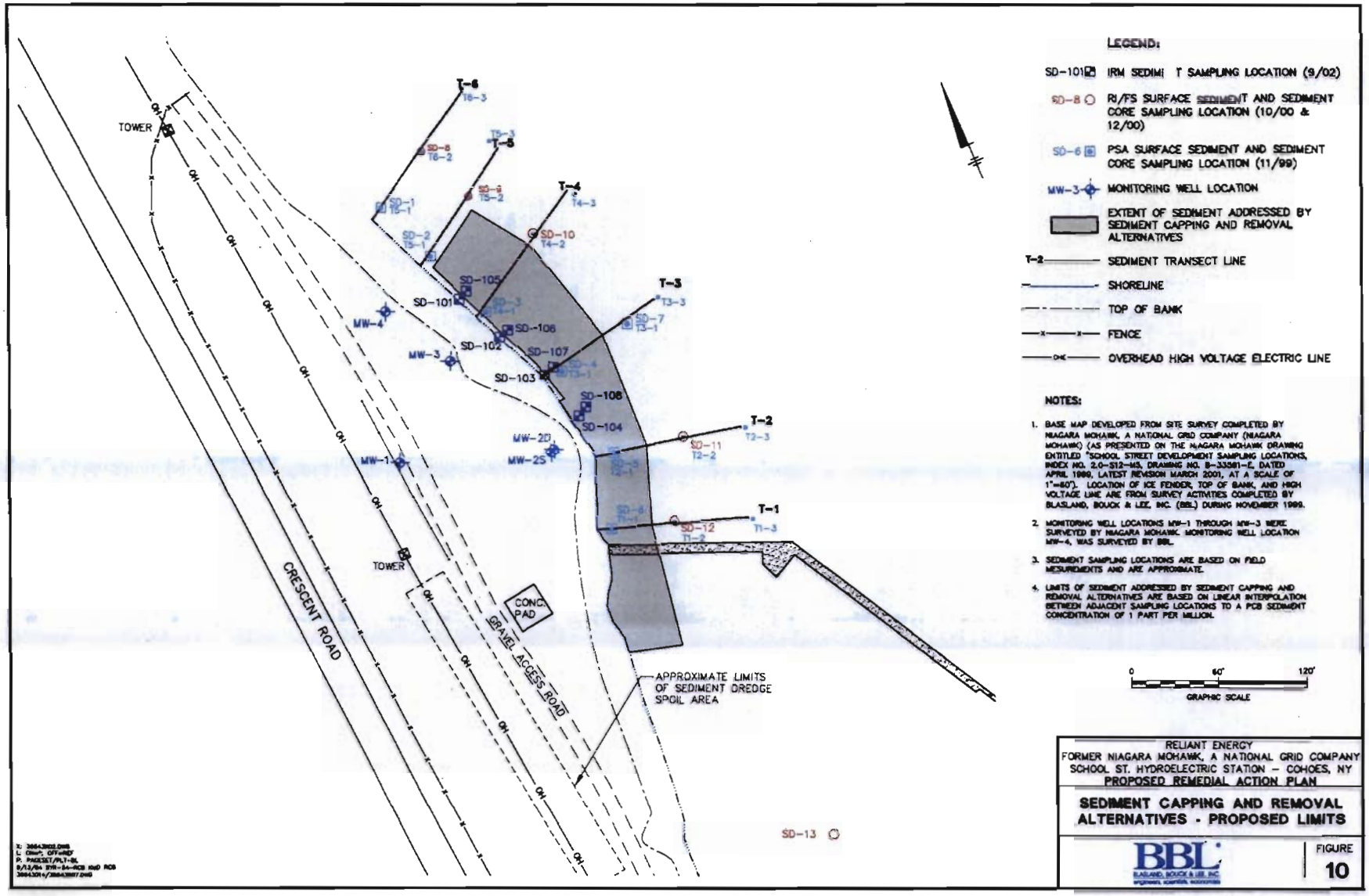
X: NONE
P: PAGESET/PLT-BL
9/13/04 SYR-S4-PCL AND RCB
36843014/36843808.DWG

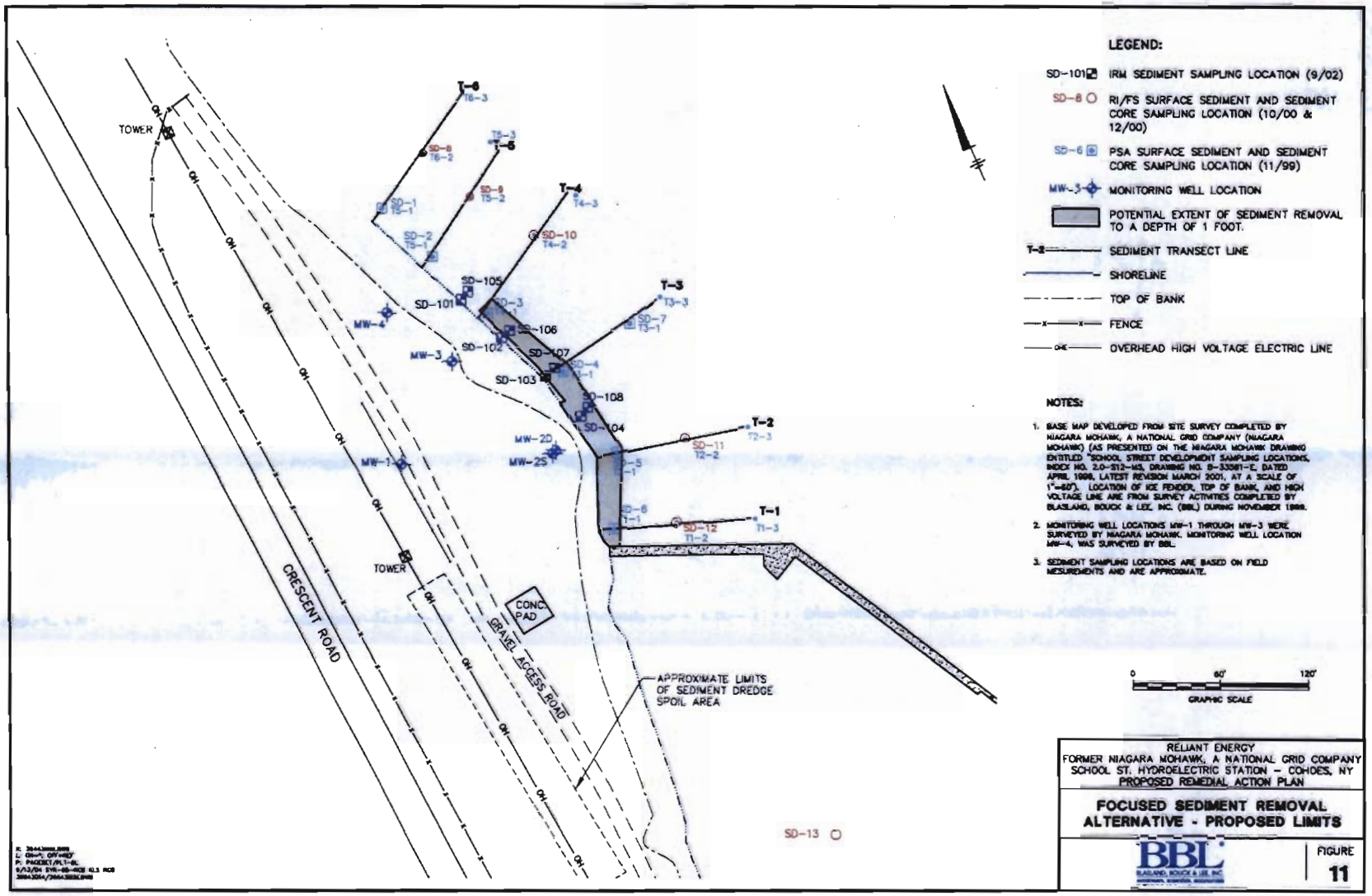
RELIANT ENERGY
FORMER NIAGARA MOHAWK, A NATIONAL GRID COMPANY
SCHOOL ST. HYDROELECTRIC STATION – COHOES, NY
PROPOSED REMEDIAL ACTION PLAN

SEDIMENT SAMPLING LOCATIONS AND ANALYTICAL RESULTS FOR TOTAL PCBs & TOC (ppm)

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

FIGURE 9


LEGEND:
SD-101 IRM SEDIMENT SAMPLING LOCATION (9/02)
SD-8 RI/FS SURFACE SEDIMENT AND SEDIMENT CORE SAMPLING LOCATION (10/00 & 12/00)
SD-6 PSA SURFACE SEDIMENT AND SEDIMENT CORE SAMPLING LOCATION (11/99)
MW-3 MONITORING WELL LOCATION
EXTENT OF SEDIMENT ADDRESSED BY SEDIMENT CAPPING AND REMOVAL ALTERNATIVES
T-2 SEDIMENT TRANSECT LINE
SHORELINE
TOP OF BANK
FENCE
OVERHEAD HIGH VOLTAGE ELECTRIC LINE
NOTES:
1. BASE MAP DEVELOPED FROM SITE SURVEY COMPLETED BY NIAGARA MOHAWK, A NATIONAL GRID COMPANY (NIAGARA MOHAWK) (AS PRESENTED ON THE NIAGARA MOHAWK DRAWING ENTITLED "SCHOOL STREET DEVELOPMENT SAMPLING LOCATIONS, INDEX NO. 2.0-312-MS, DRAWING NO. B-33361-E, DATED APRIL 1999, LATEST REVISION MARCH 2001, AT A SCALE OF 1"=60'). LOCATION OF ICE FENDER, TOP OF BANK, AND HIGH VOLTAGE LINE ARE FROM SURVEY ACTIVITIES COMPLETED BY BLASLAND, BOUCK & LEE, INC. (BBL) DURING NOVEMBER 1999.
2. MONITORING WELL LOCATIONS MW-1 THROUGH MW-3 WERE SURVEYED BY NIAGARA MOHAWK. MONITORING WELL LOCATION MW-4, WAS SURVEYED BY BBL.
3. SEDIMENT SAMPLING LOCATIONS ARE BASED ON FIELD MEASUREMENTS AND ARE APPROXIMATE.
4. LIMITS OF SEDIMENT ADDRESSED BY SEDIMENT CAPPING AND REMOVAL ALTERNATIVES ARE BASED ON LINEAR INTERPOLATION BETWEEN ADJACENT SAMPLING LOCATIONS TO A PCB SEDIMENT CONCENTRATION OF 1 PART PER MILLION.
0 60' 120'
GRAPHIC SCALE
T-6
T-5
T-4
T-3
T-2
T-1
TOWER
TOWER
MW-1
MW-2D
MW-2S
MW-3
MW-4
SD-101
SD-102
SD-103
SD-104
SD-105
SD-106
SD-107
SD-108
SD-10
SD-11
SD-12
SD-13
SD-7
CONC. PAD
GRAVEL ACCESS ROAD
CRESCENT ROAD
APPROXIMATE LIMITS OF SEDIMENT DREDGE SPOIL AREA
RELIANT ENERGY
FORMER NIAGARA MOHAWK, A NATIONAL GRID COMPANY
SCHOOL ST. HYDROELECTRIC STATION – COHOES, NY
PROPOSED REMEDIAL ACTION PLAN
SEDIMENT CAPPING AND REMOVAL ALTERNATIVES - PROPOSED LIMITS
BBL
BLASLAND, BOUCK & LEE, INC.
FIGURE
10


LEGEND:
SD-101 IRM SEDIMENT SAMPLING LOCATION (9/02)
SD-8 RI/FS SURFACE SEDIMENT AND SEDIMENT CORE SAMPLING LOCATION (10/00 & 12/00)
SD-6 PSA SURFACE SEDIMENT AND SEDIMENT CORE SAMPLING LOCATION (11/99)
MW-3 MONITORING WELL LOCATION
POTENTIAL EXTENT OF SEDIMENT REMOVAL TO A DEPTH OF 1 FOOT.
T-2 SEDIMENT TRANSECT LINE
SHORELINE
TOP OF BANK
FENCE
OHE OVERHEAD HIGH VOLTAGE ELECTRIC LINE
NOTES:
1. BASE MAP DEVELOPED FROM SITE SURVEY COMPLETED BY NIAGARA MOHAWK, A NATIONAL GRID COMPANY (NIAGARA MOHAWK) (AS PRESENTED ON THE NIAGARA MOHAWK DRAWING ENTITLED "SCHOOL STREET DEVELOPMENT SAMPLING LOCATIONS, INDEX NO. 2.0-312-163, DRAWING NO. S-33381-E, DATED APRIL 1998, LATEST REVISION MARCH 2001, AT A SCALE OF 1"=60'). LOCATION OF ICE FENDER, TOP OF BANK, AND HIGH VOLTAGE LINE ARE FROM SURVEY ACTIVITIES COMPLETED BY BLASLAND, BOUCK & LEE, INC. (BBL) DURING NOVEMBER 1999.
2. MONITORING WELL LOCATIONS MW-1 THROUGH MW-3 WERE SURVEYED BY NIAGARA MOHAWK. MONITORING WELL LOCATION MW-4, WAS SURVEYED BY BBL.
3. SEDIMENT SAMPLING LOCATIONS ARE BASED ON FIELD MEASUREMENTS AND ARE APPROXIMATE.
0 60' 120'
GRAPHIC SCALE
TOWER
CRESCENT ROAD
GRAVEL ACCESS ROAD
CONC PAD
APPROXIMATE LIMITS OF SEDIMENT DREDGE SPOIL AREA
SD-13
RELIANT ENERGY
FORMER NIAGARA MOHAWK, A NATIONAL GRID COMPANY
SCHOOL ST. HYDROELECTRIC STATION – COHOES, NY
PROPOSED REMEDIAL ACTION PLAN
FOCUSED SEDIMENT REMOVAL ALTERNATIVE - PROPOSED LIMITS
BBL
FIGURE 11

APPENDIX A

Responsiveness Summary

Responsiveness Summary
School Street Former Fire Training Area
Inactive Hazardous Waste Disposal Site
Town of Colonie, Albany County, New York
Site No. 4-01-044
August 2007

The Proposed Remedial Action Plan (PRAP) for the School Street Former Fire Training Area site, was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on February 2007. The PRAP outlined the remedial measure proposed for the contaminated soil and sediment at the School Street Former Fire Training Area site.

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

A public meeting was held on May 2, 2007, which included a presentation of the Remedial Investigation (RI) and the Feasibility Study (FS) as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on May 19, 2007.

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

No written comments were received. Following are responses to comments and questions raised at the public meeting.

COMMENT 1: You said that this site was a Superfund site; what has EPA's involvement been?

RESPONSE 1: This site is on the New York State Registry of Inactive Hazardous Waste Disposal Sites, which make it a State Superfund Site. This site is not on the EPA National Priorities List and, therefore, there is no EPA involvement.

COMMENT 2: What public participation has been done for this site?

RESPONSE 2: The RI work plan contained the CP plan. A mailing list was developed and used during the RI, at the time of the IRM, and for the PRAP public meeting to distribute fact sheets. A document repository was also established at the Cohoes City Library, as well as the one at the Region 4 office.

COMMENT 3: Why was a CAC not established for this site?

RESPONSE 3: The Department does not typically establish CACs for State Superfund sites.

COMMENT 4: I searched the website and found reference to a requirement for public open house meetings early in the process for sites. Were any held?

RESPONSE 4: CP was performed in accordance with the approved CP plan. In addition, the City of Cohoes was periodically contacted during the project in relation to the City water supply intake downstream of the site.

COMMENT 5: The DEC website says that DEC is required to have public open houses.

RESPONSE 5: This activity is discretionary, depending on the level of public interest. Only one public meeting is required. The level of past public interest did not warrant additional meetings.

COMMENT 6: The first time you mentioned CP in your presentation was not until slide 33 (list of remedy selection criteria).

RESPONSE 6: Multiple fact sheets were mailed to the project contact list. This list included local media outlets, municipal officials, and nearby residents. There are approximately 50-70 people on the contact list for this site.

COMMENT 7: How many pages is the PRAP document? Can it be made available on the DEC website?

RESPONSE 7: The Department does not normally post the PRAPs for all sites on the website. Additionally, the Department website upgrade is currently preventing new PRAP postings on the website. The Department does not have the ability to post all documents reliably on the web, but we agree it is a worthwhile objective.

COMMENT 8: Did you evaluate the use of suction dredging?

RESPONSE 8: The dredge type will be evaluated and selected during the remedial design. The project is very small.

COMMENT 9: The site is near the water intake, very similar to the NiMo Queensbury site. I expected a lot more information on the evaluation of dredge techniques. Did you evaluate the use of a cofferdam? A small site means a small cofferdam.

RESPONSE 9: Cofferdam use at this site is a time issue. The project will take only two days of dredging, while installation of a cofferdam would take much longer. It would take much longer to place and remove a cofferdam. The site of a cofferdam will be taken into account in developing the design.

COMMENT 10: What is the depth defined as "surface"? During the presentation, you referred to two feet; at NiMo Queensbury the 10 parts per million subsurface PCB number was applied at one foot.

RESPONSE 10: (AG, refers to MS) DOH. For commercial and residential property, surface soil is one foot.

COMMENT 11: What are the dimensions of the area to be dredged?

RESPONSE 11: Approximately two hundred feet by 15 feet.

COMMENT 12: The shore based equipment; will it be staged on the bluff or on the shoreline?

RESPONSE 12: The staging of equipment will be determined in design. Long reach excavators could work from the bluff or shoreline, as well as a crane mounted clamshell dredge.

COMMENT 13: Did you evaluate the use of a floating barge for the dredging?

RESPONSE 13: No. Staging from the shoreline is much simpler than from a barge.

APPENDIX B

Administrative Record

Administrative Record
School Street Former Fire Training Area
Inactive Hazardous Waste Disposal Site
Town of Colonie, Albany County, New York
Site No. 4-01-044
June 2007

1. Proposed Remedial Action Plan for the School Street Former Fire Training Area site, dated February 2007 prepared by the Department.

2. Order on Consent, Index No. A4-0416-0003, between the Department and Niagara Mohawk, executed on 3/31/2000.

3. Remedial Investigation/Feasibility Study Work Plan: Volumes I and II, June 2000, prepared by Blasland, Bouck, & Lee, Inc.

4. Remedial Investigation Report: Volumes I and II, August 2001, prepared by Blasland, Bouck, & Lee, Inc.

5. Focused Feasibility Study Report, July 2003, Revised October, 2004, prepared by Blasland, Bouck, & Lee, Inc.

6. Interim Remedial Measure Summary Report, Volumes I and II, March 2003, prepared by Blasland, Bouck, & Lee, Inc.

7. Citizen Participation Plan (Appendix 4 to the RI/FS Work Plan) June 2000, prepared by Blasland, Bouck, & Lee, Inc.

9. Fact Sheets:
   - Remedial Investigation under way this Fall at School Street Hydroelectric Station, October 2000
   - Remedial Investigation at School Street Hydroelectric Station complete; cleanup to begin this Spring, May 2002
   - Remedy proposed for former (closed) Fire Training area near the School Street Hydroelectric Station, April 2007