James F. Morgan
Lead Senior Environmental Engineer
Environmental Department

July 29, 2008

Mr. Christopher O'Neill, P.E.
Project Manager
New York State Department of Environmental Conservation
Region 4
1130 North Westcott Road
Schenectady, New York 12306

Re: Brookfield Power, Inc.
(Former National Grid)
School Street Hydroelectric Station
Cohoes, New York
NYSDEC Site No. 401044
Remedial Action Summary Report

Dear Mr. O'Neill:

Enclosed, please find three copies (one unbound) of the *Remedial Action Summary Report* prepared by ARCADIS of New York, Inc. (ARCADIS) for the above-referenced project. The report summarizes remedial activities completed to address nearshore sediment east of the former fire training area that contained polychlorinated biphenyls.

Please do not hesitate to call me at (315) 428-3101 or Mr. John C. Brussel, P.E., of ARCADIS at (315) 671-9441 if you have any questions or require additional information.

Sincerely,

James F. Morgan
Lead Senior Environmental Engineer

cc: William Daigle, P.E., NYSDEC (2 copies)
Maureen E. Schuck, NYSDOH (2 copies)
William J. Holzhauer, Esq., National Grid (1 copy)
Ray Wingert, P.E., Brookfield Power, Inc. (1 copy)
Timothy Lukas, Brookfield Power, Inc. (1 copy)
Thomas Uncher, Brookfield Power, Inc. (1 copy)
James M. Nuss, P.E., ARCADIS (1 copy)
John C. Brussel, P.E., ARCADIS (1 copy)
Allen Evans, ARCADIS (1 copy)

Environmental Department, 300 Erie Boulevard West, Syracuse, New York 13202
T: (315) 428-3101 ■ F: (315) 460-9644 ■ James.F.Morgan@us.ngrid.com ■ www.nationalgrid.com

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National Grid and Brookfield Power, Inc.

Remedial Action Summary Report

Former Fire Training Area
Brookfield Power, Inc.
(Former National Grid)
School Street Hydroelectric Station
Cohoes, New York

July 2008

ARCADIS

James M. Nuss, PE
Senior Vice President

John C. Brussel, PE
Principal Engineer

Allen J. Evans
Project Engineer

Remedial Action Summary Report

Former Fire Training Area
Brookfield Power, Inc.
(Former National Grid)
School Street Hydroelectric Station
Cohoes, New York

Prepared for:
National Grid & Brookfield Power, Inc.

Prepared by:
ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse
New York 13214-0066
Tel 315.446.9120
Fax 315.449.4111

Our Ref.:
B0036643

Date:
July 2008

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Compact Disc

Data Validation Reports and Laboratory Analytical Data Packages

Certification Statement

I, James M. Nuss, as a licensed Professional Engineer in the State of New York, to the best of my knowledge and based on my inquiry of the persons under my direction and involved in observing the activities summarized herein, certify that the remedial action activities performed at the Brookfield Power, Inc. (Brookfield) School Street Hydroelectric Station (the site) located in Cohoes, New York, to remove nearshore sediment within the Mohawk River east of the former fire training area, were completed in general accordance with the following:

- The New York State Department of Environmental Conservation- (NYSDEC-) approved *Remedial Design* (ARCADIS, October 2007) prepared on behalf of National Grid and Brookfield Power, Inc. (Brookfield).

- The Order on Consent (Index No. A4-0416-003) between Niagara Mohawk (the former site owner, now known as National Grid) and the NYSDEC, which became effective on March 31, 2000 (the "Consent Order") and the Record of Decision (ROD) for the site issued by the NYSDEC on August 9, 2007.

- The Excavation and Fill permit (DEC# 4-0126-00656) and Part 401 Water Quality Certificate (WQC) (DEC#: 4-0726-00656/00001) and modifications included in Appendix A.

- Supplemental correspondence referenced through this report and included in Appendix B.

I also certify that, to the best of my knowledge, this Remedial Action Summary Report accurately summarizes the work activities performed and the analytical results obtained during the remedial activities.

James M. Nuss, PE
Senior Vice President
NY P.E. License No. 067963

ARCADIS
6723 Towpath Road, Box 66,
Syracuse, New York 13214-0066

1. Introduction

1.1 General

This Remedial Action Summary Report (RA Summary Report) summarizes the remedial activities that were implemented to address certain nearshore sediment of the Mohawk River east of the former fire training area at the School Street Hydroelectric Station located in Cohoes, New York (the site). The remedial activities were performed by D.A. Collins Environmental Services, Inc. (DAC) of Mechanicville, New York. The majority of the remedial activities were conducted in January and February 2008. Offsite transportation and treatment/disposal of wastewater was completed in April 2008, and certain final site restoration activities will be completed in late-summer 2008 following completion of unrelated work at the site. The remedial activities were observed by an onsite engineer from ARCADIS. The New York State Department of Environmental Conservation (NYSDEC) conducted periodic site visits during the implementation of the remedial activities.

The remedial activities were performed in general conformance with:

- The NYSDEC-approved *Remedial Design* (ARCADIS, October 2007) prepared on behalf of National Grid and Brookfield Power, Inc. (Brookfield).

- The Consent Order (Index No. A4-046-003, effective March 31, 2000) and Record of Decision (ROD) issued by the NYSDEC in August 2007.

- The Excavation and Fill permit (DEC# 4-0126-00656) and Part 401 Water Quality Certificate (WQC) (DEC#: 4-0726-00656/00001), which were issued on October 25, 2007, and modification dated January 28, 2008 (Appendix A).

- Supplemental correspondence referenced through this RA Summary Report and included in Appendix B.

In general, the remedial activities consisted of the removal of sediment located in the nearshore area (within an area approximately 200 feet long by 15 feet wide) where polychlorinated biphenyls (PCBs) had been identified at concentrations up to 7.3 parts per million (ppm). The work activities completed as part of the remedial action included the following:

- Mechanically removing approximately 100 cubic yards (CY) of PCB-containing sediment.

- Transferring the sediment to a lined staging area for dewatering/stabilization, as needed.

- Transporting the sediment for offsite disposal at a facility permitted to accept the sediment.

- Placing sand backfill material within the sediment removal area to the approximate original lines and grades.

The remedial activities performed were originally recommended in the *Focused Feasibility Study Report* (BBL [now known as ARCADIS], October 2004), hereinafter "the FFS Report" and incorporated, with minor revisions, into the ROD and the *Remedial Design*.

The organization of this RA Summary Report is presented below, followed by a brief summary of relevant background information related to the remedial activities.

1.2 Work Plan Organization

The RA Summary Report has been organized into the following sections.

Section	Purpose
Section 1 – Introduction	Provides a brief overview of the remedial activities and site background information.
Section 2 – Remedial Activities Summary	Presents a detailed description of the remedial activities performed at the site.
Section 3 – Modifications to *Remedial Design*	Presents modifications to the *Remedial Design* in response to changes in field conditions.
Section 4 – Summary and Conclusions	Presents a brief summary and conclusions based on the completed remedial activities.
Section 5 – References	Lists the sources referenced throughout this RA Summary Report.

Background information relevant to the remedial activities is presented below.

1.3 Background Information

This section summarizes relevant background information used as a basis for the remedial activities performed at the site. A description of the site is presented below, followed by a brief summary of historical information, topography and drainage in the vicinity of the site, and an overview of previous investigation and interim remedial measure (IRM) activities conducted to evaluate and address environmental concerns associated with the site.

1.3.1 Site Description

The School Street Hydroelectric Station is located on School Street in Cohoes, New York. A site location map is presented on Figure 1. The generating station is located along the south bank of the Mohawk River, which flows southeasterly through the City of Cohoes.

An approximately 1,280-foot-long dam extends across the Mohawk River approximately 0.9 miles north of the generating station. The dam diverts flow in the river through the approximately 0.9-mile-long power canal that leads to the generating station. The water level in the canal is controlled by two gatehouses, including an upper gatehouse adjacent to the western abutment of the dam and a lower gatehouse at the downstream end of the power canal. A 375-foot-long concrete ice fender north of the upper gatehouse prevents winter ice flow in the river from entering the power canal. The locations of the ice fender, the upper and lower gatehouses, the dam, and the power canal are shown on Figure 2.

Intakes and a pump house for the City of Cohoes public drinking water supply in the power canal, approximately 4,500 feet downstream from the upper gatehouse (approximately 200 feet upstream from the lower gatehouse). Water drawn from the power canal for public water supply is treated at the City of Cohoes Water Treatment Plant.

An upland area approximately 150 feet northwest of the ice fender and dam (situated along the southern bank of the Mohawk River in the Town of Colonie) was formerly utilized by Niagara Mohawk for fire training activities. The location of the former fire training area is shown on Figure 2. Access to the former fire training area is limited by a chain-link fence that runs parallel to Crescent Road and locked gates that block the access road to the north and south of the former fire training area.

The activities conducted at the former fire training area resulted in impacts to soil in the upland area and adjacent sediment along the shoreline. The impacted soil in and around the former fire training area was addressed by an IRM implemented in 2000. The impacted

sediment along the shoreline was partially addressed by the IRM and was further addressed by the remedial activities described in this document.

1.3.2 Site History

Fire training activities were conducted at the site during the summer/fall from approximately 1968 to 1980. The fire training activities consisted of igniting oil (including transformer oil) that was piped to or poured over training props, then extinguishing the fires using a combination of dry chemical fire extinguishers and water pumped from the river. The training props, an oil storage tank, and piping were removed after the fire training activities at the site were discontinued. The approximate layout of the former fire training area is shown on Figure 3.

1.3.3 Topography and Drainage

The former fire training area slopes moderately to the top of the riverbank. The slope of the riverbank is steep (>45º) in places. At its maximum elevation, the top of the riverbank is approximately 20 feet above the water level of the Mohawk River, which is maintained by the upstream New York Power Authority (NYPA) Crescent Hydroelectric Station and the adjacent School Street Hydroelectric Station, to the extent possible, at a target elevation of approximately 155 to 156 feet above mean sea level.

The Mohawk River and the power canal are the primary surface-water features in the vicinity of the former fire training area. Storm water runoff in the vicinity of the former fire training area drains via overland flow to the Mohawk River. A portion of the flow in the Mohawk River is diverted through the power canal by the dam.

1.3.4 Previous Investigations and Interim Remedial Measure

Several environmental investigations have been performed at the site, beginning with a two-phase environmental site assessment (ESA) in 1998 in preparation for the anticipated divestiture of the hydroelectric station. A Preliminary Site Assessment (PSA) was performed in 1999 to further evaluate conditions identified by the ESA. Based on the PSA results, the former fire training area was listed in the New York State Registry of Inactive Hazardous Waste Disposal Sites (Site No. 401044), and Niagara Mohawk entered into the Consent Order with the NYSDEC, which required development and implementation of a remedial program for the site. A Remedial Investigation (RI) was implemented in 2000 and 2001. Combined, these investigations resulted in the collection and analysis of nearly 180 soil, groundwater, and sediment samples. As part of the PSA and RI, sediment

investigation activities were conducted to evaluate the potential presence and extent of PCBs in sediment within the Mohawk River adjacent to the former fire training area. Work activities performed and results obtained for the environmental investigations are presented in the *Remedial Investigation Report* (BBL, 2001).

Based on the RI results, an IRM was performed in 2002 to remove PCB and semi-volatile organic compound (SVOC) impacted soil in the vicinity of the former fire training area and nearshore sediment in a small area of the Mohawk River east of the former fire training area that contained low concentrations of PCBs. Additional sediment investigation activities were performed during the IRM to delineate the extent of visibly oil-stained material encountered when impacted soil was excavated along the base of the riverbank east of the former fire training area. The IRM soil and sediment removal limits are shown on Figure 4. PCB-containing sediment within an approximately 120-foot section of the shoreline was removed via the IRM completed in 2002. The eastern edge of the excavation extended just beyond sediment sampling locations SD-101 through SD-103 (a distance of approximately 4 feet from the shoreline). IRM sediment removal activities are summarized in the *Interim Remedial Measure Summary Report* (BBL, 2003).

2. Remedial Activities Summary

2.1 General

This section presents a detailed description of remedial activities completed to address impacted nearshore sediment east of the former fire training area at the School Street Hydroelectric Station. The remedial activities are discussed in the following subsections:

- Section 2.2 – Pre-Construction Activities.
- Section 2.3 – Mobilization/Site Preparation.
- Section 2.4 – Sediment Removal.
- Section 2.5 – Surface Water Monitoring.
- Section 2.6 – Air Monitoring.
- Section 2.7 – Material Handling.
- Section 2.8 – Equipment Decontamination.
- Section 2.9 – Site Restoration.

As previously mentioned, the remedial activities were conducted by DAC and observed by an onsite ARCADIS engineer. Work activities conducted by ARCADIS' onsite engineer in connection with the remedial activities included:

- Reviewing/providing comments on contractor submittals, including a Site Management Plan, site-specific Health and Safety Plan, Erosion and Sedimentation Control Plan, Emergency Preparedness and Contingency Plan, and Decontamination Plan.
- Providing full-time, onsite engineering observation services for the duration of the project, and coordinating with DAC to complete the remedial activities in general accordance with the NYSDEC-approved *Remedial Design* (ARCADIS, October 2007) and contract documents.

- Documenting daily field activities, material quantities, onsite manpower, and equipment utilization. Copies of the daily field notes are included in Appendix C. Photographs documenting project activities are included in Appendix D.

- Conducting air monitoring activities in accordance with the NYSDOH's Community Air Monitoring Program, dated June 2000, to evaluate the presence of airborne particulates during the implementation of the remedial activities.

- Delineating the sediment removal limits and performing verification surveying to document removal limits/depths.

- Collecting waste characterization samples to evaluate offsite disposal requirements for the wastes generated during the remedial activities.

- Reviewing and signing waste manifests and bills of lading on behalf of National Grid for shipments of waste materials generated by the remedial activities.

A detailed discussion of each work task associated with the remedial activities is presented below.

2.2 Pre-Construction Activities

Various pre-construction activities were conducted prior to NYSDEC-approval of the *Remedial Design* to confirm the proposed sediment removal limits and evaluate disposal requirements for the sediment (i.e., to streamline subsequent implementation of the sediment removal). The pre-construction activities were performed by ARCADIS in accordance with the work plan contained in a letter from National Grid to the NYSDEC dated August 7, 2007 (included in Appendix B). The pre-construction activities were performed during the week of August 13, 2007 and included the following:

- Performing pre-removal survey activities to provide survey/control data needed for the remedial activities.

- Implementing sediment probing and sampling to verify previous sediment conditions as required by the NYSDEC under Section 8 of the ROD.

- Collecting in-situ waste characterization samples to evaluate disposal requirements for sediment to be removed during the remedial activities.

The sediment probing was performed to determine the sediment thickness along four revisited sediment transect lines established during the PSA and RI, which each extended through the proposed sediment removal area (sediment transect lines T-1 through T-4, as shown on Figure 5). Sediment probing was also performed to determine the sediment thickness along new transect lines established downstream and upstream of the proposed removal area (sediment transect lines T-0 and T-4A, respectively – also shown on Figure 5). The sediment surface elevation at each probing location was documented by surveying. These surveyed elevations/locations served as control points that were revisited during removal to assess whether target removal depths were being achieved.

Following completion of the probing activities, sediment core samples were collected from each probing location where measureable sediment was identified. Each sediment core sample was visually characterized and segmented into various intervals. Sediment samples collected at the proposed sediment removal limits were submitted for laboratory analysis for PCBs and total organic carbon (TOC) to determine if changes to proposed limits were needed. Sediment samples collected beyond the proposed sediment removal limits were submitted to the laboratory and archived for potential analysis, if needed, based on results for samples collected at the excavation limits. Sediment samples collected from within the proposed sediment removal limits were composited into one sample and submitted for laboratory analysis for PCBs, Toxicity Characteristic Leaching Procedure (TCLP) volatile organic compounds (VOCs), TCLP SVOCs, TCLP metals, ignitability, corrosivity, and reactivity to provide data to characterize sediment for disposal purposes.

An analytical sample summary, which identifies the samples that were collected and analysis performed on each sample, is included in Table 1. Results of the sediment probing are presented in Table 2. Visual characterization information for each sediment sample collected as part of the pre-construction sampling activities is presented in Table 3. The verification sediment analytical results for PCBs and TOC are presented in Tables 4 and 5, respectively. The results of the pre-construction verification sediment sampling supported the removal limits identified the *Remedial Design*. A detailed summary of the work performed and results obtained for the pre-construction activities is presented in a letter from National Grid to the NYSDEC dated September 26, 2007 (included in Appendix B). Further discussion of waste characterization sampling and analysis is presented in Subsection 2.7.

2.3 Mobilization/Site Preparation

Following mobilization, and prior to implementing actual sediment removal activities, DAC implemented the following site preparation activities:

- Identifying and marking the locations of aboveground and underground utilities near the proposed work areas.

- Installing erosion and sedimentation control measures and performing clearing and grubbing activities, as necessary, within the upland area adjacent to the sediment removal area.

- Constructing a lined material staging area (dewatering pad) for gravity dewatering and stabilization of sediment from the removal area.

- Removing floating debris (tree branches, leaves, etc.) from along the ice fender, as necessary, to facilitate turbidity barrier installation and sediment removal.

- Installing turbidity barriers and flow deflection barriers to section off the sediment removal area from the remainder of the Mohawk River.

Details of the erosion and sedimentation control measures installation, material staging area construction, and turbidity barrier installation are presented below.

2.3.1 Erosion and Sedimentation Control

DAC installed erosion and sediment control measures consisting of silt fencing and hay bales along the top of the riverbank to minimize the potential migration of soil disturbed by machinery. All measures were installed prior to start of sediment removal operations. Throughout the project, the erosion and sediment control measures were repaired or replaced by DAC, as necessary, to maintain performance as intended.

2.3.2 Material Staging Area Construction

The material staging area was constructed in the upland area near the existing site access road to facilitate loading of sediment into trucks for offsite disposal. The final size and configuration of the material staging area was approximately 60-feet long by 30-feet wide (interior dimensions). The staging area was constructed using:

- A 4-inch to 24-inch thick granular fill base layer placed over existing soil to level the staging area.

- A 40-mil high-density polyethylene (HDPE) liner (overlapping sheets) placed over the base layer.

- A 4-inch thick crushed stone layer placed over the liner.

The HDPE liner was extended over approximately 32-inch-high sidewalls formed using concrete Jersey barriers and nailed to wooden batten strips. The material staging area sloped toward a lined collection sump that collected water which drained from the excavated sediment.

2.3.3 Turbidity Barrier Installation

Turbidity barriers were installed to section off the sediment removal area from the remainder of the river and minimize potential sediment migration during removal. The outer turbidity barrier was constructed with a semi-permeable 6-ounce woven geotextile instead of the 18-ounce (minimum) polyvinyl chloride [PVC] coated fabric identified in the *Remedial Design*. This change was made in response to higher flow conditions than were anticipated due to various factors, as summarized in a letter from National Grid to the NYSDEC dated December 7, 2007 (the Remedial Design Modification). NYSDEC approval of the Remedial Design Modification is provided in a letter to National Grid dated December 12, 2007. The woven geotextile was capable of withstanding higher flow velocities and was better suited to deflect current from the inner impermeable barrier. The inner turbidity barrier was constructed as a 22-ounce PVC coated fabric that exceeded the material specification presented in the *Remedial Design*. The inner turbidity barrier was installed approximately 5- to 10- feet outside the proposed sediment removal limits, and the outer turbidity barrier was installed approximately 5 feet outside the inner barrier.

Installation of the turbidity barriers occurred in two phases in conjunction with the sediment removal sequence presented in Subsection 2.4. During the first phase, the barriers were installed to enclose the upper approximately 100 feet of the removal area ("the upstream area"). Following removal and backfilling in the upstream area, the turbidity barriers were installed around the downstream removal area (which extended from the ice fender to approximately 100 feet upstream of the ice fender). The turbidity barriers were installed so that the bottom of the barrier (the lower skirt) was no more than approximately 1 foot above the river bottom during sediment removal (i.e., close to the river bottom, but not in direct contact with the sediment). Additional anchors (concrete blocks) were attached to the lower skirt of the barrier to keep the barrier vertical (to the extent practical).

Based on high flow conditions experienced during the remedial activities, flow deflection barriers were installed to deflect river flow and reduce the force of the current on the barriers. The deflection barriers were steel trench boxes approximately 8 feet tall by 20 feet long. The flow deflection barriers were installed between the inner and outer turbidity

barriers immediately upstream of the sediment removal area (where the turbidity barriers were aligned perpendicular to the direction of the river current and the force of the current on the turbidity barriers would otherwise have been the greatest) and at other critical locations as determined by DAC.

2.4 Sediment Removal

Sediment located in the nearshore area (within an area approximately 200-feet long by 15-feet wide) was removed via mechanical means from January 24, 2008 to February 5, 2008. The sediment removal area, shown on Figure 5, extended along the shoreline from just north of previous sediment sampling location SD-3 to just south of previous sediment sampling location SD-6. The removal area extended outward from the shoreline a distance of approximately 15 feet. Sediment within this area was removed to a minimum depth of 1-foot or bedrock, whichever was encountered first. Sediment near sampling location SD-5 was removed to a minimum depth of 1.5 feet, as shown on Figure 5.

It was originally anticipated that sediment removal would occur in connection with a draw-down of the water level in the proposed removal area. However, based on high flow conditions at the time of removal (as summarized in the Remedial Design Modification), seven gates in the upper gate house, including three “tainter gates” and four “slide gates”, were closed, and hydroelectric power generation was reduced. River flow exceeded flow through the canal, resulting in spill over the dam. These operational changes resulted in: (1) a reduced flow velocity in the area upstream from the gatehouse (particularly in the nearshore sediment removal area); and (2) a change in the flow pattern so that flow was directed toward the eastern end of the ice fender/gatehouse and dispersed over the dam (and not channeled through the work area as it otherwise would have been). A graph of United States Geologic Survey (USGS) daily flow data for the Mohawk River, as measured downstream of the hydroelectric generating station during the period of removal, is included in Appendix E.

In response to a request made by Brookfield, the City of Cohoes temporarily stopped withdrawing water from the power canal during the sediment removal activities (the water supply intakes at the downstream end of the power canal were closed while removal was ongoing). Brookfield coordinated with the City of Cohoes to open or close the intake gates based upon the activities being performed at the site each day. No sediment removal was performed until the intake gates were confirmed to be closed. A chronology of sediment removal activities and the status of the water supply intake gates, the upper gatehouse gates, and power generation during the removal activities are presented in Table 6.

Sediment removal was performed using a crane that was operated from two setup pads in the upland area, including one pad aligned near the northern removal limit and a second pad aligned with the approximate center of the removal area. The pads provided a level working surface for safe crane operations. The two pads were sufficient for the crane to reach the sediment within the entire removal area. Based on the use of the two pads, DAC chose to perform the sediment removal and site restoration (backfilling) in two phases. In the first phase, removal was performed in the northern half of the sediment removal area (the upstream section) with the crane operating from the northern pad. After removal and backfilling in the northern half of the sediment removal area were completed, the crane was then repositioned on the second crane pad, and removal and backfilling in the southern half of the removal area were completed. The two removal areas overlapped by approximately two to three feet.

Sediment removal was initially performed using a closed environmental bucket attached to the crane. However, due to the dense nature of the sand in the removal area and the presence of large cobbles, the environmental bucket was generally not able to remove greater than 0.1 CY of sediment per attempt (as determined by surveying performed after several attempts). On January 25, 2008, ARCADIS contacted the NYSDEC to request a modification to the 401 WQC to allow the use of a conventional clamshell bucket. In response, the NYSDEC issued a modification to the 401 WQC on January 28, 2008. This modification allowed the use of a conventional bucket, and also required surface water samples be analyzed using 24-hour turnaround time for delivery of preliminary results as discussed in Subsection 2.5. Following the change to a conventional clamshell bucket, the rate of removal was increased and work was subsequently completed without the need for any additional methodology changes.

Sediment removed by the crane was transferred directly to the material staging area for gravity dewatering and stabilization. Polyethylene sheeting was placed beneath the swing area of the crane to serve as a barrier for liquids that dripped from the bucket when sediment was transferred to the material staging area.

Surveying was performed in connection with the sediment removal. Immediately prior to removal, ARCADIS conducted a baseline survey at the removal limits and at several locations to establish existing top of sediment elevations. Following removal, surveying was performed at these same locations to assess whether sediment had been removed to the target depths. Post-removal survey elevations (pre-backfill) were compared to the baseline elevations and the pre-construction sediment probing results. Additional sediment removal was performed in certain areas to achieve target depths. Following confirmation that sediment removal limits had been achieved, backfill was placed as described in Subsection

2.9. A summary of pre- and post-removal survey confirmation results is presented in Table 7.

2.5 Surface Water Monitoring

Surface water monitoring was performed in connection with the sediment removal activities to provide data to confirm the effectiveness of the turbidity barriers. The surface water monitoring included measurement of water turbidity and collection of water column samples for laboratory analysis for PCBs and total suspended solids (TSS) as discussed below. Surface water monitoring was performed in accordance with the *Remedial Design* and the NYSDEC Part 401 WQC Permit.

2.5.1 Measurement of Water Turbidity

During active sediment removal, surface water monitoring for turbidity was performed using a turbidity meter. Hourly turbidity measurements were obtained approximately 100 feet upstream and approximately 500 feet downstream from the removal area using a turbidity meter. Sediment removal activities were to be modified (e.g., slowed or halted) or additional measures implemented (e.g., placement of additional turbidity barrier) if the downstream turbidity measurement was 10 nephelometric turbidity units (NTU) higher than the upstream measurement. However, no differences of 10 NTU or greater were measured during the sediment removal, and no work stoppages (or modifications) were required. Turbidity measurements obtained during sediment removal are summarized in Table 8.

2.5.2 Collection of Water Samples for Laboratory Analysis

Two daily water column samples were collected for PCB and TSS analysis one day prior to the start of scheduled sediment removal, during each day of active sediment removal, and following completion of sediment removal (on both the first and second days after removal). Additional water column samples were collected based on the sequencing of removal activities, to provide additional data for documentation purposes. The timeline for the sediment removal and related water column sampling is presented in Table 6. The daily water column sampling included:

- One sample collected from a background location, approximately 100 feet upstream from the sediment removal area (identified by the prefix “SW-US-” followed by the sampling date [in the format of month, date, and year, as -- mmddyyyy]).

- One sample collected from a location 500 feet downstream from the sediment removal area (identified by the prefix "SW-DS-" followed by the sampling date [mmddyyyy]).

Each sample was a composite sample formed using water collected from the mid-height of the water column at multiple locations. Three sets of quality assurance/quality control (QA/QC) water samples, including blind duplicate, matrix spike, matrix spike duplicate samples, were collected in connection with the sampling. The water column samples were submitted to Northeast Analytical, Inc. (NEA), a New York State Department of Health-(NYSDOH-) certified laboratory, for analysis, as follows:

- All samples were analyzed for TSS using USEPA Method 160.2.

- Samples from January 23 through January 25, 2008 were analyzed for PCBs using USEPA Method 508 in accordance with the 401 WQC Permit. The analysis was performed on an expedited turnaround (approximately 36 hours) for reporting of preliminary results.

- Following the NYSDEC's modification to the 401 WQC on January 28, 2008 (allowing the use of a conventional clamshell bucket), samples were analyzed using USEPA Method 608 so that analysis could be performed on a faster turnaround time (24 hours) for reporting of preliminary results.

ARCADIS distributed preliminary results to the NYSDEC, National Grid, and Brookfield upon receipt (preliminary result e-mail transmittals are included with the project correspondence in Appendix B). No PCBs were detected above the 0.05 parts per billion (ppb) laboratory detection limit in any of the surface water samples collected prior to, during, or after the sediment removal activities. The validated analytical PCB and TSS results are presented in Table 9. Data validation reports and the laboratory analytical data packages are included on the attached CD.

2.6 Air Monitoring

Monitoring for airborne particulates (dust) was conducted continuously for the duration of the remedial activities in accordance with the NYSDOH's Community Air Monitoring Program, dated June 2000. Monitoring was performed continuously at the upwind and downwind perimeters of the work area at temporary particulate monitoring stations, except during periods of precipitation or wet conditions. The airborne particulate monitoring was conducted using a DustTrack aerosol monitor capable of measuring particulate matter less than 10 micrometers in size and capable of integrating over a period of 15 minutes for

comparison to the airborne particulate action level. The monitoring equipment was equipped with an alarm to indicate exceedance of the action level. The equipment was calibrated daily, prior to the start of work activities. The results of airborne particulate monitoring were continuously recorded by the instrument data logger and recorded by the onsite health and safety supervisor (or designated alternate) at a minimum frequency of once per hour. A listing of dates when air monitoring was performed and the results obtained for the monitoring are presented in Appendix F.

Minimal or no visible dust was generated during the remedial activities because: (1) all sediment was removed from below the water surface; (2) work was performed in generally wet weather conditions; (3) work was sequenced such that loading of dewatered sediment was not conducted during high wind events; and (4) polyethylene sheeting was used to cover stockpiled materials. Based on the air monitoring results (there was no visible dust leaving the work area, and there were no exceedances of dust monitoring action levels), no active dust suppression activities or work stoppages were needed during sediment removal, handling, and loading.

2.7 Material Handling

Sediment removed from the nearshore area was dewatered via gravity drainage in the material staging area prior to offsite transportation and disposal. Lime was added to the stockpiled sediment and mixed using an excavator to stabilize the sediment to meet landfill acceptability requirements. Sediment stockpiled in the material staging area was covered with a low permeability liner (at the end of each workday or when precipitation was anticipated) to minimize contact with precipitation and potential migration/siltation of sediment beyond the staging area.

2.7.1 Waste Characterization

As indicated in Subsection 2.2, in-situ waste characterization was conducted as part of the pre-construction sediment verification sampling. One composite sample was formed from the sediment recovered from four sediment probing/core sampling locations (collected throughout the removal area) using the portion of sediment recovered to the proposed removal depth. The composite sample was submitted for laboratory analysis for PCBs, TCLP VOCs, TCLP SVOCs, TCLP metals, ignitability, corrosivity, and reactivity using the USEPA methods identified in the table below.

Parameter	Analytical Method
PCBs	USEPA SW-846 Method 8082
TCLP VOCs	USEPA SW-846 Method 1311/8260
TCLP SVOCs	USEPA SW-846 Method 1311/8270
TCLP Metals	USEPA SW-846 Method 1311/6010/7470
Ignitability	USEPA SW-846 Method 1020A
Corrosivity	USEPA SW-846 Method 9040B
Reactivity	USEPA SW-846 Method 7.3.3.2 and 7.3.4.2

The analysis of the sediment indicated that the material was non-hazardous. Nearshore sediment waste characterization analytical results are presented in Table 10.

Liquids (wastewater) that accumulated within the material staging area lined collection sump were pumped into temporary onsite storage tanks. A composite sample was collected to characterize the liquids for offsite treatment/disposal. The sample was submitted for laboratory analysis for PCBs, VOCs, SVOCs, and inorganic constituents using the methods identified 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
Inorganics	USEPA SW-846 Method 6010/7470/9010

The analysis of the wastewater indicated that the material was non-hazardous. Wastewater analytical results are presented in Table 11.

2.7.2 Waste Disposal

The dewatered/stabilized sediment and the sacrificial stone material and liners used to construct the material staging area were loaded in dump trailers with an excavator. These materials were transported from January 31, 2008 to February 8, 2008 for offsite disposal at the Seneca Meadows Landfill in Waterloo, New York. All trailers used to transport impacted materials from the site were lined with at least one layer of polyethylene sheeting. In addition, all waste containers were covered with a tarp prior to departing the site.

The liquids were removed from the onsite portable storage tank using a vacuum tank truck on April 15, 2007 and transported to Norlite Corporation in Cohoes, New York for offsite treatment.

A waste shipment summary is presented in Table 12. Non-hazardous waste bills of lading and daily weigh ticket summaries are included in Appendix G.

2.8 Equipment Decontamination

Project equipment, including the clamshell buckets and excavator buckets that came into contact with impacted sediments, was decontaminated prior to handling clean fill material and prior to being demobilized from the site. Decontamination activities were conducted over the material staging area and were continued until no visible materials were present on the equipment surfaces (as determined by the ARCADIS onsite representative). Solids generated by the equipment decontamination activities were transported for offsite disposal with the sediment. Washwaters generated by the equipment decontamination activities were containerized for offsite disposal with the liquids collected in the material staging area lined collection sump. The temporary storage tanks were decontaminated, and all washwater was collected by a vacuum truck and transported to Norlite Corporation in Cohoes, New York for offsite treatment.

2.9 Site Restoration

Work activities performed to restore the sediment removal area and the upland area are discussed below.

2.9.1 Sediment Removal Area Restoration

Site restoration activities were conducted in both halves of the sediment removal area (the northern and southern halves as discussed in Subsection 2.4) after confirmation surveying conducted by ARCDADIS had determined that sediment had been removed to the target depths. The sediment removal area was backfilled (restored) by placing an imported washed sand backfill material. The sand backfill was placed to the approximate pre-removal grades as determined by surveying performed by ARCADIS during the backfill process. Final backfill grades are presented in Table 7. The turbidity barriers were kept in-place during the backfill activities.

Before the sand backfill was brought onsite, samples were collected from the backfill source to verify that the proposed sand did not exhibit constituents at concentrations exceeding the

Class A Sediment Threshold Values presented in the NYSDEC Division of Water Technical & Operational Guidance Series document titled "In-Water and Riparian Management of Sediment and Dredged Material" (TOGS 5.1.9), dated November 2004.

One composite sample was formed from four discrete grab sub-samples collected from the fill source. The composite sample was submitted for laboratory analysis for PCBs, pesticides, SVOCs, and metals using the methods identified in the table below.

Analytical Parameters	Analytical Method
PCBs	USEPA SW-846 Method 8082
Pesticides	USEPA SW-846 Method 8081
SVOCs	USEPA SW-846 Method 8270
Metals	USEPA SW-846 Method 6010/7471/9010

In addition, a portion of each discrete sample was placed in a sample jar for headspace screening for VOCs using a photoionization detector (PID). VOCs were not identified in the headspace of any of the sub-samples. Based on the headspace screening results, the sub-samples were composited and submitted for laboratory analysis for VOCs using USEPA SW-846 Method 8260. A sample of the proposed fill material was also submitted for analysis for gradation by weight using American Society of Testing and Materials (ASTM) Method D422.

Backfill laboratory analytical results are presented on Table 13, and results of the gradation testing are presented in Appendix H. The laboratory analytical results indicated that the backfill did not exhibit constituents at concentrations exceeding the TOGS 5.1.9 Class A Sediment Threshold Values, and the fill gradation was found to be in general conformance with the specification presented in the *Remedial Design*.

2.9.2 Upland Area Restoration

Following completion of sediment removal area restoration and transportation/disposal of sediment, the upland area was restored. The remaining portions of the material staging area (i.e., the granular fill base layer and jersey barriers which had been covered by a liner and sacrificial stone) were removed. Granular fill and crushed stone fill used for the northern crane pads (including associated access ramps) were graded onto the existing site access road. Excess granular fill material was stockpiled at Brookfield's request.

Brookfield is currently implementing power canal construction and restoration activities (unrelated to the remedial activities at the site). The southern crane pad and access ramp were left in place and are being used as part of these additional, unrelated construction activities. Following completion of this work in early Fall 2008, the southern crane pad and access pad will be removed. Topsoil will be re-graded in disturbed portions of the upland area, as needed. Grass seed, fertilizer, and mulch will then be broadcast over the topsoil to promote vegetation growth. Erosion and sedimentation control measures will be kept in-place until vegetation is restored in the area.

3. Modifications to Remedial Design

Modifications made to the NYSDEC-approved *Remedial Design* based on field conditions encountered are summarized below. All of the correspondence with the NYSDEC referenced below is included in Appendix B.

- Prior to mobilization, an increase in flow in the Mohawk River, particularly in the nearshore sediment removal area, was observed. The NYSDEC was notified of the change in flow conditions in e-mail correspondence dated November 26, 2007. Due to flow conditions, it was determined that the drawdown of the river level described in the *Remedial Design* would not be possible. Proposed modifications to the *Remedial Design* to facilitate installation and performance of the turbidity barrier were developed in coordination with Brookfield, National Grid and DAC and presented in a letter to the NYSDEC dated December 7, 2008. The NYSDEC approved the proposed modifications in a letter dated December 12, 2007. The following approved remedial modifications were subsequently implemented:

  - Seven gates at the upper gatehouse nearest the shore were closed during the turbidity barrier installation and sediment removal activities. The gate closure coincided with reduced hydroelectric power generation, resulting in a reduction in the total flow through the ice fender into the power canal.

  - The outer turbidity barrier was constructed with a semi-permeable 6-ounce woven geotextile instead of the 18-ounce (minimum) PVC coated fabric identified in the *Remedial Design.* The inner turbidity barrier was constructed as a 22-ounce PVC coated fabric that exceeded the material specification presented in the *Remedial Design.*

- Due to high flow conditions in the Mohawk River, the turbidity barrier system was modified to include flow deflection barriers to deflect river flow and reduce the force of the river current on the turbidity barriers in accordance with e-mail correspondence to the NYSDEC dated December 18, 2007. As described in Subsection 2.3.2, deflection barriers were installed between the inner and outer turbidity barriers immediately upstream of the sediment removal area and at other critical locations.

- Sediment removal was initially performed using a crane equipped with a closed environmental bucket operating from the shoreline. Due to the dense nature of the sand in the sediment removal area and the presence of large cobbles, the environmental bucket was generally not able to remove greater than 0.1 CY of

sediment per attempt (as determined by surveying performed after several attempts). In e-mail correspondence to the NYSDEC dated January 25, 2008, ARCADIS requested a modification to the 401 WQC to allow the use of a conventional clamshell bucket. The NYSDEC issued a modification to the 401 WQC on January 28, 2008 allowing the use of a conventional clamshell bucket. Pursuant to the modification, surface water samples were analyzed on a 24-hour turnaround time for laboratory reporting of preliminary results.

4. Summary and Conclusions

The remedial activities resulted in the removal of sediment from the nearshore area where PCBs had been identified at concentrations up to 7.3 ppm. Sediment removed by the remedial activities was characterized and transported for offsite disposal in accordance with applicable rules and regulations. Based on the verification sediment sampling and surveying performed in support of the sediment removal activities, no further sediment removal is proposed for the nearshore area.

In accordance with the Consent Order and ROD, the next steps to be performed by National Grid and Brookfield to complete the remedial program for the site are as follows:

- Prepare a Site Management Plan (SMP) to address residual impacted soils that may be excavated from the former fire training area during future site maintenance or development.

- Work with the NYSDEC to establish an institutional control (in the form of an environmental easement) that will require compliance with the SMP, limit the use and development of the former fire training area for commercial/industrial purposes only, and require an annual certification related to the institutional controls, site condition, and site use.

After the NYSDEC approves the SMP and the environmental easement, the obligations under the existing Consent Order between National Grid and the NYSDEC (Index No. A4-046-003) will have been fulfilled. At that time, the Consent Order can be terminated and the site can be re-classified or de-listed from the New York State Registry of Inactive Hazardous Waste Disposal sites. Brookfield will subsequently prepare and submit an annual Institutional Control/Engineering Control certification in accordance with the ROD.

5. References

ARCADIS. 2007. *Remedial Design*. Prepared on behalf of Brookfield Power, Inc. and National Grid, School Street Hydroelectric Station, Cohoes, New York (October 2007).

BBL. 2000. *Remedial Investigation/Feasibility Study Work Plan*. Prepared for Orion Power Holdings, Inc. (former National Grid), School Street Hydroelectric Station, Cohoes, New York (June 2000).

BBL. 2001. *Remedial Investigation Report*. Prepared for Orion Power Holdings, Inc. (former National Grid), School Street Hydroelectric Station, Cohoes, New York (August 2001).

BBL. 2003. *Interim Remedial Measure Summary Report*. Prepared for Reliant Energy (former Orion Power/National Grid), School Street Hydroelectric Station, Cohoes, New York (March 2003).

BBL. 2004. *Focused Feasibility Study Report*. Prepared for Brascan Power New York (former Reliant Energy/National Grid), School Street Hydroelectric Station, Cohoes, New York (October 2004).New York State Department of Environmental Conservation (NYSDEC). 1989. Technical and Administrative Guidance Memorandum (TAGM) #4031, *Fugitive Dust Suppression and Particulate Monitoring at Inactive Hazardous Waste Sites*. (October 27, 1989).

NYSDEC. 2004. *Technical & Operational Guidance Series (TOGS) 5.1.9, In-Water Riparian Management of Sediment and Dredged Material, November 2004.*

NYSDEC and National Grid. 2000. Order on Consent between National Grid and the NYSDEC (Index No. A4-0416-0003, Site No. 401044). March 31, 2000.

NYSDEC. 2007. *Record of Decision, School Street Former Fire Training Area, Town of Colonie, Albany County, New York, Site No. 4-01-044*. NYSDEC Division of Environmental Remediation. (August 2007).

TABLE 1
ANALYTICAL SAMPLE SUMMARY

REMEDIAL ACTION SUMMARY REPORT
BROOKFIELD POWER, INC.
(FORMER NATIONAL GRID)
SCHOOL STREET HYDROELECTRIC STATION
COHOES, NEW YORK

Sample ID	Sample Interval	Date Sampled	SDG#	Analyses							
				PCBs	PCB Extraction & Archive (only)	TOC	TSS	TCLP: VOCs, SVOCs, & Metals; Ignitability, Corrosivity & Reacitivity	TCL VOCs, TCL SVOCs, TAL Inorganics	Flashpoint & pH	Pesticides
Pre-Construction Verification Sampling											
V0-1 (0-0.3)	0-0.3'	8/16/07	--		X						
V1-2 (0-0.5)	0-0.5'	8/16/07	K084	X		X					
V1-2 (1-1.5)	1-1.5'	8/16/07	--		X						
V1-3 (0-0.5)	0-0.5'	8/16/07	--		X						
V2-2 (0-0.5)	0-0.5'	8/16/07	K084	X		X					
V2-3 (0-0.5)	0-0.5'	8/16/07	--		X						
V3-2 (0-0.5)	0-0.5'	8/16/07	K084	X		X					
V3-3 (0-0.5)	0-0.5'	8/15/07	--		X	X					
V3-3 (1-1.5)	1-1.5'	8/15/07	--		X						
V4-1 (1-1.5)	1-1.5'	8/15/07	K084	X		X					
V4-2 (0-0.5)	1-1.5'	8/15/07	K084	X		X					
DUP-1 [V4-2 (0-0.5)]	0-0.5'	8/15/07	K084	X	X						
V4-3 (0-0.5)	0-0.5'	8/15/07	--		X						
V4-3 (1-1.5)	1-1.5'	8/15/07	--		X						
V4A-1 (0-0.5)	0-0.5'	8/15/07	--		X						
V4A-1 (1-1.5)	1-1.5'	8/15/07	--		X						
V4A-1 (2-3)	2-3'	8/15/07	--		X						
V4A-1 (3-3.8)	3-3.8'	8/15/07	--		X						
V4A-2 (0-0.5)	0-0.5'	8/15/07	--		X						
V4A-2 (1-1.5)	1-1.5'	8/15/07	--		X						
V4A-2 (2-3)	2-3'	8/15/07	--		X						
V4A-2 (3-3.9)	3-3.9'	8/15/07	--		X						
V4A-3 (0-0.5)	0-0.5'	8/15/07	--		X						
V4A-3 (1-1.5)	1-1.5'	8/15/07	--		X						
V-US (0-0.5)	0-0.5'	8/15/07	K084	X		X					
V-US (1-1.5)	1-1.5'	8/15/07	--		X						
V-US (2-3)	2-3'	8/15/07	--		X						
V-US (3-4)	3-4'	8/15/07	--		X						
Pre-Construction In-Situ Nearshore Sediment Waste Characterization Sampling											
SED-WC-1	Note 4	8/16/07	K084	X				X			

TABLE 1
ANALYTICAL SAMPLE SUMMARY

REMEDIAL ACTION SUMMARY REPORT
BROOKFIELD POWER, INC.
(FORMER NATIONAL GRID)
SCHOOL STREET HYDROELECTRIC STATION
COHOES, NEW YORK

Sample ID	Sample Interval	Date Sampled	SDG#	Analyses							
				PCBs	PCB Extraction & Archive (only)	TOC	TSS	TCLP: VOCs, SVOCs, & Metals; Ignitability, Corrosivity & Reacitivity	TCL VOCs, TCL SVOCs, TAL Inorganics	Flashpoint & pH	Pesticides
Surface Water Monitoring											
SW-US-01232008	--	1/23/08	8010249	X			X				
SW-DS-01232008	--	1/23/08	8010249	X			X				
SW-US-01242008	--	1/24/08	8010258	X			X				
SW-DS-01242008 (SW-DUP-01242008)	--	1/24/08	8010258	X			X				
SW-US-01252008	--	1/25/08	8010267	X			X				
SW-DS-01252008	--	1/25/08	8010267	X			X				
SW-US-01292008	--	1/29/08	8010289	X			X				
SW-DS-01292008	--	1/29/08	8010289	X			X				
SW-US-01302008	--	1/30/08	8010303	X			X				
SW-DS-01302008	--	1/30/08	8010303	X			X				
SW-US-01312008	--	1/31/08	8010316	X			X				
SW-DS-01312008	--	1/31/08	8010316	X			X				
SW-US-02012008	--	2/1/08	8020002	X			X				
SW-DS-02012008	--	2/1/08	8020002	X			X				
SW-US-02012008-02	--	2/1/08	8020007	X			X				
SW-DS-02012008-02 (SW-DUP-02012008)	--	2/1/08	8020007	X			X				
SW-US-02022008	--	2/2/08	8020007	X			X				
SW-DS-02022008	--	2/2/08	8020007	X			X				
SW-US-02042008	--	2/4/08	8020014	X			X				
SW-DS-02042008	--	2/4/08	8020014	X			X				
SW-US-02052008	--	2/5/08	8020025	X			X				
SW-DS-02052008	--	2/5/08	8020025	X			X				
SW-US-02062008	--	2/6/08	8020031	X			X				
SW-DS-02062008	--	2/6/08	8020031	X			X				
SW-US-02072008	--	2/7/08	8020039	X			X				
SW-DS-02072008 (SW-DUP-02072008)	--	2/7/08	8020039	X			X				
Construction Wastewater Waste Characterization Sampling											
WA-CHAR-02062008	--	8/16/07	A08-1278	X					X	X	
Imported Backfill Characterization Sampling											
Fill-1	--	8/16/07	N763	X					X		X

TABLE 1
ANALYTICAL SAMPLE SUMMARY

REMEDIAL ACTION SUMMARY REPORT
BROOKFIELD POWER, INC.
(FORMER NATIONAL GRID)
SCHOOL STREET HYDROELECTRIC STATION
COHOES, NEW YORK

Notes:

1. SDG = Sample delivery group.
2. Samples collected by ARCADIS (formerly known as ARCADIS BBL) on the dates indicated.
3. Sample designations indicate the following:
   - V - Verification Sample
   - WC - Sediment Waste Characterization Sample
   - SW - Surface Water Sample
   - US - Upstream
   - DS - Downstream
   - WA-CHAR - Wastewater Characterization Sample
   - Fill - Imported Backfill Sample
   - DUP - Field Duplicate Sample
3. Pre-construction verification samples were analyzed by TestAmerica of Edison, New Jersey using the following methods referenced in the New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocol (ASP):
   - Polychlorinated biphenyls (PCBs) using United States Environment Protection Agency (USEPA) SW-846 Method 8082; and
   - Total organic carbon (TOC) using the Lloyd Kahn method.
4. Pre-construction in-situ waste characterization sample was composited from four discrete sample locations: V1-1 (0-0.8), V2-1(0-0.5), V3-1 (0-0.2), and V4-1 (0-1).
5. Pre-construction in-situ waste characterization sample was analyzed by TestAmerica of Edison, New Jersey using the following methods as referenced in the NYSDEC 2000 ASP:
   - PCBs using USEPA SW-846 Method 8082;
   - Toxicity Characteristic Leaching Procedure (TCLP) volatile organic compounds (VOCs) using USEPA SW-846 Method 1311/8260;
   - TCLP semi-volatile organic compounds (SVOCs) using USEPA SW-846 Method 1311/8270;
   - TCLP metals using USEPA SW-846 Method 1311/6010/7470;
   - Reactive Cyanide using USEPA SW-846 Method 7.3.3; and
   - Reactive Sulfide using USEPA SW-846 Method 7.3.4.
   - Ignitability using USEPA SW-846 Method 1010;
   - Corrosivity using USEPA SW-846 Method 9045C;
6. Surface water samples were analyzed by Northeast Analytical, Inc. of Schenectady, NY using the following methods as referenced in the NYSDEC 2000 ASP:
   - PCBs using USEPA Method 508 for samples collected on 1/23/2008 through 1/25/2008;
   - PCBs using USEPA Method 608 for samples collected after 1/25/2008; and
   - Total suspended solids (TSS) using USEPA SW-846 Method 160.2.
7. Construction wastewater waste characterization sample was analyzed by TestAmerica of Buffalo, New York using the following methods as referenced in the NYSDEC 2000 ASP:
   - PCBs using USEPA SW-846 Method 8082;
   - Target Compound List (TCL) VOCs using USEPA SW-846 Method 8260;
   - TCL SVOCs using USEPA SW-846 Method 8270;
   - Target Analyte List (TAL) inorganic constituents using USEPA SW-846 Method 6010/7470;
   - Flashpoint (Ignitability) using USEPA SW-846 Method 1010; and
   - pH using USEPA SW-846 Method 9040.
8. Imported backfill sample was analyzed by TestAmerica of Edison, New Jersey using the following methods as referenced in the NYSDEC 2000 ASP:
   - PCBs using USEPA SW-846 Method 8082;
   - TCL VOC using USEPA SW-846 Method 8260;
   - TCL SVOCs using USEPA SW-846 Method 8270;
   - TAL inorganic constituents using USEPA SW-846 Method 6010/7470/9010; and
   - Pesticides using USEPA SW-846 Method 8081.

TABLE 2
VERIFICATION SEDIMENT PROBING RESULTS

REMEDIAL ACTION SUMMARY REPORT
BROOKFIELD POWER, INC.
(FORMER NATIONAL GRID)
SCHOOL STREET HYDROELECTRIC STATION
COHOES, NEW YORK

Transect/Location	Water Depth (feet)	Sediment Depth (feet)
Transect T0		
V0-1	5.5	0.3-1.0
V0-2	7.5	0.2
V0-3	8.3	0.2
Transect T1		
V1-1	2.0	2.0
V1-2	3.0	1.3
V1-3	5.3	0.9
Transect T2		
V2-1	2.6	2.2
V2-2	4.7	1.6
V2-3	6.4	1.5
Transect T3		
V3-1	1.0	0.1
V3-2	2.9	0.2
V3-3	5.0	0.6
Transect T4		
V4-1	1.2	2.1
V4-2	2.9	3.0
V4-3	5.6	2.6
Transect T4A		
V4A-1	0.4	5.1
V-US*	1.1	6.4
V4A-2	1.7	6.0
V4A-3	4.8	3.3

Notes:
1. Pre-construction sediment probing was conducted by ARCADIS BBL during August 2007
2. Sediment probing locations were accessed by boat or wading
3. Sediment probing was conducted using a 0.5-inch diameter hollow ste rod equipped with an end cap
4. Sediment probing locations were surveyed by ARCADIS BBL.
5. * V-US is located at the proposed upstream limit of the sediment remova approximately 10 feet from the shoreline and 10 feet downstream fron Transect 4A.

TABLE 3
SEDIMENT SAMPLE VISUAL CHARACTERIZATION RESULTS

REMEDIAL ACTION SUMMARY REPORT
BROOKFIELD POWER, INC.
(FORMER NATIONAL GRID)
SCHOOL STREET HYDROELECTRIC STATION
COHOES, NEW YORK

Sample ID/ Depth Interval	Description
V0-1	
0-0.3'	Gray-brown fine-to-coarse GRAVEL & ORGANICS (twigs, vegetation, water chestnuts), trace silt and fine sand (collected with hand auger)
V1-1	
0-0.8'	Dark gray-brown, ORGANICS (twigs-wood-water chestnuts-shells), little Silt, trace fine sand
V1-2	
0.0-0.5'	Dark gray-brown, ORGANICS (shells-water chestnuts-twigs-wood-vegetation)
0.5-1.0'	Same as above
1.0-1.5'	Dark gray-brown, very loose SILT and ORGANICS (twigs-wood-vegetation)
V1-3	
0.0-0.5'	Dark gray-brown, ORGANICS (twigs-wood-water chestnuts-shells), little Silt, trace fine sand
V2-1	
0.0-0.5'	Dark gray-brown, silty fine-to-medium GRAVEL, little fine Sand, trace organics (wood-vegetation-zebra muscles)
V2-2	
0.0-0.5'	Dark gray-brown, fine-to-medium GRAVEL, little Sand and Silt, trace organics (vegetation)
V2-3	
0.0-0.5'	Dark gray-brown, silty fine SAND, little fine-to-medium Gravel and Organics (wood-vegetation-zebra muscles)
V3-1	
0.0-0.2	Dark gray-brown, fine-to-medium GRAVEL, little Silt and fine Sand (collected with hand auger)
V3-2	
0.0-0.5'	Dark gray-brown, fine-to-medium GRAVEL, little Silt and fine Sand, and little organics (zebra muscles and vegetation)
V3-3	
0.0-0.5'	Dark gray-brown, fine-to-medium GRAVEL, little fine Sand and organics (zebra muscles and vegetation)
0.5-1.0'	Same as above
1.0-1.5'	Dark gray-brown, fine-to-medium GRAVEL, trace fine sand and silt
V4-1	
0.0-1.0'	Dark gray-brown, fine SAND, trace silt and organics (shells)
1.0-1.5'	Dark gray-brown, fine SAND, little Silt, trace fine-to-medium gravel
V4-2	
0.0-0.5'	Dark gray-brown, loose SILT, trace fine sand
0.5-1.0'	Same as above
1.0-1.5'	Dark gray-brown, silty fine SAND, little Organics (wood)
V4-3	
0.0-0.5'	Dark gray-brown, loose SILT, trace very fine sand and organics (shells and twigs)
0.5-1.0'	Same as above
1.0-1.5'	Dark gray-brown, fine SAND, little Silt, trace organics (shells)
V-US	
0.0-0.5'	Dark gray-brown, sandy SILT, trace organics (shells)
0.5-1.0'	Same as above
1.0-1.5'	Dark gray-brown, silty fine SAND, trace organics (shells and twigs)
1.5-2.0'	Same as above
2.0-3.0	Dark gray-brown, silty fine SAND, trace fine gravel, trace organics (shells and twigs)
3.0-4.0'	Dark gray-brown, silty fine SAND, trace fine gravel

TABLE 3
SEDIMENT SAMPLE VISUAL CHARACTERIZATION RESULTS

REMEDIAL ACTION SUMMARY REPORT
BROOKFIELD POWER, INC.
(FORMER NATIONAL GRID)
SCHOOL STREET HYDROELECTRIC STATION
COHOES, NEW YORK

Sample ID/ Depth Interval	Description
V4A-1	
0.0-0.5'	Dark gray-brown, silty fine SAND, trace fine-to-medium gravel.
0.5-1.0'	Same as above
1.0-1.5'	Same as above
1.5-2.0'	Same as above
2.0-3.0'	Dark gray-brown, silty fine SAND, trace fine gravel, trace organics (shells)
3.0-3.75'	Same as above
V4A-2	
0.0-0.5	Dark gray-brown, silty fine SAND, trace organics (wood-shells)
0.5-1.0'	Same as above
1.0-1.5'	Dark gray-brown, fine SAND, little Silt, trace organics (shells)
1.5-2.0'	Same as above
2.0-3.0'	Dark gray-brown, silty fine SAND, trace organics (shells)
3.0-3.9'	Same as above
V4A-3	
0.0-0.5'	Dark gray-brown, loose SILT, trace very fine sand and organics (twigs)
0.5-1.0'	Same as above
1.0-1.5'	Dark gray-brown, silty fine SAND, trace organics (twigs-vegetation)

Notes:
1. Pre-construction sediment probing was conducted by ARCADIS BBL during August 2007.
2. Samples were collected by driving 2-inch diameter Lexan tubing through the sediment until refusal, except where noted.

TABLE 4
NEARSHORE VERIFICATION SEDIMENT ANALYTICAL RESULTS FOR PCBs (ppm)

REMEDIAL ACTION SUMMARY REPORT
BROOKFIELD POWER, INC.
(FORMER NATIONAL GRID)
SCHOOL STREET HYDROELECTRIC STATION
COHOES, NEW YORK

Pre-Construction Sampling Location	Approximate Distance from Shoreline	Nearby PSA/IRM Sampling Location	Approximate PSA/IRM Total Sediment Depth	Maximum PSA/IRM PCB Analytical Result (ppm) & Corresponding Depth	Approximate Pre-Construction Total Sediment Depth Based on:		Pre-Construction PCB Verification Sediment Analytical Results (ppm)				
					Coring Depth	Sample Recovery	(0-0.5')	(0.5-1.0')	(1.0-1.5')	(2.0-3.0')	(3.0-4.0')
V-US	8'	SD-105	2.7'	<0.04 (2.2-2.7')	6.0'	4.0'	**0.15**	--	Archive	Archive	Archive
V-DS	8'	NA	NA	NA	Obstructed		Accumulated floating woody debris prevented sample collection				
Transect 0											
V0-1	8'	NA	NA	NA	0.3'	0.3'	Archive	**Bedrock**			
V0-2	15'	NA	NA	NA	0.0'	0.0'					
V0-3	22'	NA	NA	NA	0.0'	0.0'					
Transect 1											
V1-1	8'	SD-6	0.7'	1.6 (0-0.7')	2.0'	1.0'	Waste Characterization*		**Bedrock**		
V1-2	15'	NA	NA	NA	2.0'	1.8'	**<0.21**	--	Archive		
V1-3	22'	NA	NA	NA	0.9'	0.8'	Archive	--			
Transect 2											
V2-1	8'	SD-5	1.5'	1.9 (0-0.5')	1.0'	0.7'	Waste Character-ization*	**Bedrock**			
V2-2	15'	NA	NA	NA	1.6'	1.0'	**0.14**	--			
V2-3	22'	NA	NA	NA	1.0'	0.8'	Archive	--			
Transect 3											
V3-1	8'	SD-107	0.2'	6.1 (0-0.5')	0.2'	0.2'	Waste Character-ization*	**Bedrock**			
V3-2	15'	SD-4	1.0'	3.0 (0-0.5')	0.7'	0.6'	**0.5**	--			
V3-3	22'	NA	NA	NA	1.6'	1.2'	Archive	--	Archive		
Transect 4											
V4-1	8'	SD-3	2.0'	7.3 (0-0.5')	2.3'	1.8'	Waste Characterization*		**<0.093**	**Bedrock**	
V4-2	15'	NA	NA	NA	2.0'	1.9'	**<0.11 [<0.1]**	--	Archive		
V4-3	22'	NA	NA	NA	2.1'	1.8'	Archive	--	Archive		
Transect 4A											
V4A-1	8'	NA	NA	NA	4.9'	3.7'	Archive	--	Archive	Archive	Archive
V4A-2	15'	NA	NA	NA	5.7'	4.0'	Archive	--	Archive	Archive	Archive
V4A-3	22'	NA	NA	NA	3.3'	2.2'	Archive	--	Archive	**Bedrock**	

TABLE 4
NEARSHORE VERIFICATION SEDIMENT ANALYTICAL RESULTS FOR PCBs (ppm)

REMEDIAL ACTION SUMMARY REPORT
BROOKFIELD POWER, INC.
(FORMER NATIONAL GRID)
SCHOOL STREET HYDROELECTRIC STATION
COHOES, NEW YORK

Notes:

1. All sediment samples were collected by ARCADIS BBL.
2. Previous sampling locations are from the sediment sampling performed as part of the Preliminary Site Assessment (PSA) in 1999 or the interim remedial measure (IRM) performed in 2002.
3. The approximate previous total sediment depth is based on sample recovery at the PSA and IRM sediment sampling locations
4. Laboratory analysis for polychlorinated biphenyls (PCBs) was performed using United States Environmental Protection Agency (USEPA) SW-846 Method 8082
5. PCB analytical results are reported in parts per million (ppm), which is equivalent to milligrams per kilogram (mg/kg).
6. Aroclor 1260 was the only Aroclor detected in the above-identified PSA, IRM, and pre-construction PCB sediment samples.
7. < = No Aroclors were identified above the reported laboratory detection limit.
8. All reported depths are in feet.
9. Duplicate PCB sample result (for sample V4-1 (1.0-1.5')) is shown in brackets [ ].
10. **Bedrock** = Sediment was not encountered at this depth during this probing/sampling event.
11. **Archive** = Sample was submitted to TestAmerica for extraction and then archive of the sample extract (for potential future analysis, if needed).
12. * - Pre-construction in-situ waste characterization sample was a composite of sediment from four discrete sediment sampling locations [V1-1 (0-0.5), V2-1(0-0.5), V3-1 (0-0.2), and V4-1 (0-1)] and analyzed for PCBs, Toxicity Characteristic Leaching Procedure (TCLP) volatile organic compounds (VOCs), TCLP semi-volatile organic compounds (SVOCs), TCLP metals, ignitability, corrosivity, and reactivity **(refer to Table 10 for waste characterization analytical results)**.
13. -- = No sample collected.
14. Results have been validated.

TABLE 5
NEARSHORE VERIFICATION SEDIMENT
ANALYTICAL RESULTS FOR TOC (ppm)

REMEDIAL ACTION SUMMARY REPORT
BROOKFIELD POWER, INC.
(FORMER NATIONAL GRID)
SCHOOL STREET HYDROELECTRIC STATION
COHOES, NEW YORK

Sampling Location	TOC Concentration (ppm)
V1-2 (0-0.5)	73,100
V2-2 (0-0.5)	25,800
V3-2 (0-0.5)	15,900
V4-1 (1-1.5)	15,700
V4-2 (0-0.5)	23,900
DUP-1 [V4-2 (0-0.5)]	24,700
V-US (0-0.5)	21,200

Notes:
1. Sediment samples were collected by ARCADIS BBL during August 2007.
2. Samples were analyzed by TestAmerica of Edison, New Jersey for total organic carbon (TOC) using the Lloyd Kahn method.
3. Results are reported in parts per million (ppm), which is equivalent to milligrams per kilogram (mg/kg).
4. Results have been validated.

TABLE 6
TIMELINE FOR GATE CLOSURES, SEDIMENT REMOVAL & SURFACE WATER SAMPLING

REMEDIAL ACTION SUMMARY REPORT
BROOKFIELD POWER, INC.
(FORMER NATIONAL GRID)
SCHOOL STREET HYDROELECTRIC STATION
COHOES, NEW YORK

Date	Day	Key Activities Performed	Gates at Upper Gatehouse Closed & Generation Flow Reduced	City of Cohoes Municipal Water Supply Gate Closed	Sediment Removal Activities Conducted	PCB Surface Water Samples Collected
Week of 1/20/08						
1/21/2008	Monday	Mobilization/upland site preparation work performed.				
1/22/2008	Tuesday	Flow diversion barriers installed.				
1/23/2008	Wednesday	Turbidity barrier deployment begins around upstream removal area. PCB surface water sampling performed one day prior to start of sediment removal in accordance with Remedial Design.				X
1/24/2008	Thursday	1st day of sediment removal. Removal began after turbidity barrier deployment completed. Gates closed prior to removal. Environmental bucket used for removal, but extent was limited due to conditions (dense sand).	X	X	X	X
1/25/2008	Friday	No sediment removal performed. Request submitted to NYSDEC to remove sediment using conventional instead of environmental bucket. PCB surface water samples collected for post-removal verification purposes.	X	Gates were opened in afternoon to replenish raw water reservoir		X
1/26/2008	Saturday	No work performed.	X			
Week of 1/27/08						
1/27/2008	Sunday	No work performed.	X			
1/28/2008	Monday	NYSDEC issued a modification to the 401 Water Quality Certificate and Excavation & Fill Permit allowing use of a conventional bucket.	X			

TABLE 6
TIMELINE FOR GATE CLOSURES, SEDIMENT REMOVAL & SURFACE WATER SAMPLING

REMEDIAL ACTION SUMMARY REPORT
BROOKFIELD POWER, INC.
(FORMER NATIONAL GRID)
SCHOOL STREET HYDROELECTRIC STATION
COHOES, NEW YORK

Date	Day	Key Activities Performed	Gates at Upper Gatehouse Closed & Generation Flow Reduced	City of Cohoes Municipal Water Supply Gate Closed	Sediment Removal Activities Conducted	PCB Surface Water Samples Collected
1/29/2008	Tuesday	2nd day of sediment removal (1st day using conventional bucket). Gates closed prior to removal. Removal in upstream area completed, and removal limits verified by survey.	X	X	X	X
1/30/2008	Wednesday	Backfilling of upstream removal area performed until late morning when crane operation was halted due to high winds. Gates remained closed.	X	X		X
1/31/2008	Thursday	Backfilling of upstream removal area completed, and fill limits verified by survey. Flow deflection barriers moved from upstream to downstream removal area. Relocation of turbidity barriers from upstream to downstream underway.	X			X
2/1/2008	Friday	Turbidity barrier deployment around downstream removal area completed. Sediment removal in downstream area initiated (3rd day of sediment removal).	X	X	X	2 sets of samples collected (1 in morning and 1 in afternoon)
2/2/2008	Saturday	No work performed. PCB surface water samples collected for verification purposes.				X
Week of 2/3/08						
2/3/2008	Sunday	No work performed.				
2/4/2008	Monday	Continue sediment removal in downstream area (4th day of sediment removal).	X	X	X	X

TABLE 6
TIMELINE FOR GATE CLOSURES, SEDIMENT REMOVAL & SURFACE WATER SAMPLING

REMEDIAL ACTION SUMMARY REPORT
BROOKFIELD POWER, INC.
(FORMER NATIONAL GRID)
SCHOOL STREET HYDROELECTRIC STATION
COHOES, NEW YORK

Date	Day	Key Activities Performed	Gates at Upper Gatehouse Closed & Generation Flow Reduced	City of Cohoes Municipal Water Supply Gate Closed	Sediment Removal Activities Conducted	PCB Surface Water Samples Collected
2/5/2008	Tuesday	5th day of sediment removal. Removal in downstream area completed, and removal limits verified by survey. Backfilling of downstream sediment removal area initiated.	X	X	X	X
2/6/2008	Wednesday	Backfilling of downstream sediment removal area completed, and fill limits verified by survey. Flow diversion structures and turbidity barriers removed from river.	X	X		X
2/7/2008	Thursday	PCB surface water sampling performed on second day following sediment removal completion in accordance with Remedial Design.				X

Notes:
1. Brookfield reduced power generation to a maximum of 9 megawatts and closed seven gates in the upper gatehouse to reduce flow in work area.
2. City of Cohoes municipal water supply gate closed by City of Cohoes and confirmed by Brookfield prior to performing any sediment removal work.
3. X = designated activity was performed.

TABLE 7
PRE- AND POST-REMOVAL SURVEY CONFIRMATION DATA

REMEDIAL ACTION SUMMARY REPORT
BROOKFIELD POWER, INC.
(FORMER NATIONAL GRID)
SCHOOL STREET HYDROELECTRIC STATION
COHOES, NEW YORK

Confirmation Location	Pre-Removal Survey			Post-Removal Survey			Dredge Depth	Backfill Survey			Backfill Depth
	Northing	Easting	Elevation	Northing	Easting	Elevation		Northing	Easting	Elevation	
1	1441087.2	704624.3	151.6	1441086.6	704624.8	150.0	1.6	1441086.6	704624.8	151.5	1.5
2	1441012.7	704658.9	152.7	1441015.8	704660.0	151.4	1.3	1441012.3	704659.1	152.9	1.5
3	1440996.7	704676.9	149.0	1440997.8	704678.3	148.0	1.0	1440996.2	704676.7	149.0	1.0
4	1440959.1	704680.8	147.8	1440957.7	704679.7	146.6	1.2	1440958.3	704679.9	148.5	1.9
5	1440941.5	704678.9	148.1	1440941.9	704679.3	147.1	1.0	1440941.2	704679.4	148.5	1.4
6	1440907.5	704670.4	148.7	1440907.5	704670.0	147.1	1.6	1440907.3	704670.1	149.7	2.6
7	1440884.5	704650.5	149.2	1440885.0	704650.3	148.2	1.0	1440884.6	704650.1	149.8	1.6
8	1440889.2	704642.8	154.3	1440889.3	704643.0	153.0	1.3	1440889.8	704642.7	154.4	1.4
9	1440896.1	704645.9	154.1	1440896.2	704646.0	152.5	1.6	1440897.1	704644.7	154.1	1.6
10	1440915.2	704658.2	153.0	1440915.3	704658.8	150.7	2.3	NR	NR	NR	--
11	1440943.6	704666.0	152.3	1440943.7	704666.1	149.6	2.7	1440942.8	704667.2	152.5	2.9
12	1440958.6	704665.5	152.1	1440958.0	704664.8	150.1	2.0	1440957.6	704666.0	152.5	2.4
13	1440977.5	704666.3	152.5	1440977.7	704666.5	150.5	2.0	1440977.5	704666.8	152.8	2.3
14	1440991.9	704665.6	152.7	1440991.3	704665.4	151.1	1.6	1440990.6	704664.5	152.7	1.6
15	1441018.8	704643.1	154.9	1441017.3	704642.9	153.5	1.4	1441018.4	704642.4	155.7	2.2
16	1441081.9	704614.1	154.3	1441082.1	704616.0	153.1	1.2	1441082.4	704613.9	154.4	1.3
17	1441071.7	704625.2	153.6	1441073.5	704625.3	152.4	1.2	1441071.4	704625.0	154.0	1.6
18	1441058.7	704629.9	153.0	1441059.3	704628.6	151.6	1.4	1441059.3	704629.8	153.9	2.3
19	1441043.5	704637.9	153.6	1441044.1	704638.0	151.7	1.9	1441042.8	704637.5	153.8	2.1
20	1440962.8	704672.7	149.7	1440963.4	704673.0	147.9	1.8	1440962.1	704673.1	150.1	2.2
21	1440929.1	704670.9	150.8	1440927.2	704668.8	149.1	1.7	1440926.6	704667.8	151.1	2.0
22	1440904.1	704656.1	151.8	1440904.4	704656.8	150.5	1.3	1440904.0	704656.6	152.1	1.6

Notes:
1. Pre- and post-removal confirmation survey was conducted by ARCADIS.
2. Survey locations were accessed by boat or wading.
3. Confirmation location ID corresponds locations shown on Figure 5 of the Remedial Action Summary Report.
4. NR = Not Recorded.

TABLE 8
SURFACE WATER TURBIDITY MEASUREMENTS

REMEDIAL ACTION SUMMARY REPORT
BROOKFIELD POWER, INC.
(FORMER NATIONAL GRID)
SCHOOL STREET HYDROELECTRIC STATION
COHOES, NEW YORK

Date	Time	Turbidity Readings (NTU)			Net Turbidity Change Exceeds 10 NTU (see note 5)
		Upstream	Downstream	Net Change (Upstream to Downstream)	
1/23/2008	1014	6.63	4.88	-1.75	No
	1340	4.48	7.23	2.75	No
1/24/2008	0800	6.0	4.5	-1.5	No
	1245	9.3	4.9	-4.4	No
	1435	10.0	5.4	-4.6	No
	1530	9.8	6.7	-3.1	No
1/29/2008	0830	14.0	8.1	-5.9	No
	1000	12.3	8.1	-4.2	No
	1045	3.8	3.4	-0.4	No
	1150	6.1	7.2	1.1	No
	1300	5.6	4.0	-1.6	No
	1400	5.1	4.7	-0.4	No
	1515	6.9	9.2	2.3	No
1/30/2008	0750	4.1	3.8	-0.3	No
	0845	3.4	7.8	4.4	No
1/31/2008	0800	3.6	4.0	0.4	No
	0900	4.2	5.6	1.4	No
	1000	5.3	5.0	-0.3	No
2/1/2008	1405	6.2	9.6	3.4	No
	1550	9.8	10.1	0.3	No
2/4/2008	0935	9.7	11.9	2.2	No
	1020	8.3	14.2	5.9	No
	1255	10.9	12.5	1.6	No
	1422	11.2	15.8	4.6	No
	1530	20.0	22.1	2.1	No
	1630	21.3	19.8	-1.5	No
	1715	15.7	22.0	6.3	No
2/5/2008	0830	23.2	18.5	-4.7	No
	0935	28.2	15.6	-12.6	No
	1115	27.6	24.2	-3.4	No
	1330	17.9	26.1	8.2	No
	1415	28.2	23.5	-4.7	No
	1515	26.3	24.1	-2.2	No
	1600	13.3	20.3	7	No
2/6/2008	0740	29.6	23.1	-6.5	No
	0830	26.7	32.3	5.6	No
	0930	36.9	32.6	-4.3	No
	1020	34.2	27.5	-6.7	No

Notes:
1. Samples were collected by ARCADIS on the dates indicated.
2. Upstream sampling location was approximately 100 feet upstream of the sediment removal area.
3. Downstream sampling location was approximately 500 feet downstream of the sediment removal area.
4. NTU = nephelometric turbidity units.
5. Action level for net change in turbidity from upstream to downstream was 10 NTU per the New York State Department of Environmental Conservation (NYSDEC) Part 401: Water Quality Certificate (WQC). No exceedances of this action level were observed during the project.

TABLE 9
SURFACE WATER ANALYTICAL REULTS FOR PCBs AND TSS

REMEDIAL ACTION SUMMARY REPORT
BROOKFIELD POWER, INC.
(FORMER NATIONAL GRID)
SCHOOL STREET HYDROELECTRIC STATION
COHOES, NEW YORK

Parameter:	Total Suspended Solids (mg/L)		Total PCBs (ppb)	
Sampling Location:	Upstream	Downstream	Upstream	Downstream
Date:				
1/23/2008	< 2.0	< 2.0	< 0.05	< 0.05
1/24/2008	5.6	2.4	< 0.05	< 0.05
1/25/2008	2.4	4.35	< 0.05	< 0.05 J
1/29/2008	3.6	< 2.0	< 0.05	< 0.05
1/30/2008	3.71	2.4	< 0.05	< 0.05
1/31/2008	2.6	< 1.0	< 0.05	< 0.05
2/1/2008 AM	< 1.8	4.4	< 0.05	< 0.05
2/1/2008 PM	3.13	3.9	< 0.05	< 0.05
2/2/2008	3.3	2.7	< 0.05	< 0.05
2/4/2008	6.49	2.21	< 0.05	< 0.05
2/5/2008	< 1.04	4.48	< 0.05	< 0.05
2/6/2008	14.6	12.6	< 0.05	< 0.05
2/7/2008	151	186	< 0.05	< 0.05

Notes:
1. Samples were collected by ARCADIS on the dates indicated.
2. PCBs = Polychlorinated biphenyls.
3. TSS = Total suspended solids.
4. Samples were analyzed by Northeast Analytical, Inc. (NEA) of Schenectady, NY for:
   - Total suspended solids (TSS) using United States Environment Protection Agency (USEPA) Method 160.2.
   - Polychlorinated biphenyls (PCBs) using USEPA Method 508 for samples collected on 1/23/08 through 1/25/08 and Method 608 for all samples collected after 1/25/08.
5. mg/L = milligrams per liter.
6. ppb = parts per billion, which is equivalent to micrograms per liter (ug/L).
7. < = Not detected above the reported sample detection limit.
8. J = Indicates and estimated value.
9. Results have been validated.

TABLE 10
NEARSHORE SEDIMENT WASTE CHARACTERIZATION ANALYTICAL RESULTS

REMEDIAL ACTION SUMMARY REPORT
BROOKFIELD POWER, INC.
(FORMER NATIONAL GRID)
SCHOOL STREET HYDROELECTRIC STATION
COHOES, NEW YORK

Constituent	Regulatory Level for Hazardous Waste	SED-WC-1 (8/16/07)
PCBs (ppm)		
PCBs	50	0.26
TCLP VOCs (ppm)		
1,1-Dichloroethene	0.7	<0.002
1,2-Dichloroethane	0.5	<0.002
2-Butanone	200	<0.005
Benzene	0.5	<0.001
Carbon Tetrachloride	0.5	<0.002
Chlorobenzene	100	<0.005
Chloroform	6.0	<0.005
Tetrachloroethene	0.7	<0.001
Trichloroethene	0.5	<0.001
Vinyl Chloride	0.2	<0.005
TCLP SVOCs (ppm)		
1,4-Dichlorobenzene	7.5	<0.04
2-Methylphenol (o-Cresol)	200.0	<0.04
2,4-Dinitrotoluene	0.13	<0.008
2,4,5-Trichlorophenol	400	<0.04
2,4,6-Trichlorophenol	2.0	<0.04
3- & 4-Methylphenol (m- & p-Cresol)	200.0	<0.04
Hexachlorobenzene	0.13	<0.004
Hexachlorobutadiene	0.5	<0.008
Hexachloroethane	3.0	<0.004
Nitrobenzene	2.0	<0.004
Pentachlorophenol	100	<0.12
Pyridine	5.0	<0.04
TCLP Metals (ppm)		
Arsenic	5.0	<0.016
Barium	100	0.61 B
Cadmium	1.0	<0.002
Chromium	5.0	<0.008
Lead	5.0	0.02 B
Mercury	0.2	<0.0001
Selenium	1.0	<0.021
Silver	5.0	<0.007
Other Hazardous Waste Characteristic Information		
Corrosivity (S.U.)	*	7.89
Ignitability	NEG	NEG
Reactivity Cyanide (ppm)	**	< 25
Reactivity Sulfide (ppm)	**	< 20

TABLE 10
NEARSHORE SEDIMENT WASTE CHARACTERIZATION ANALYTICAL RESULTS

REMEDIAL ACTION SUMMARY REPORT
BROOKFIELD POWER, INC.
(FORMER NATIONAL GRID)
SCHOOL STREET HYDROELECTRIC STATION
COHOES, NEW YORK

Notes:

1. Sample SED-WC-1 was collected by ARCADIS BBL on August 16, 2007 and is a composite of sediment from four discrete sampling locations: V1-1 (0-0.5), V2-1(0-0.5), V3-1 (0-0.2), and V4-1 (0-1).
2. Sample was analyzed by TestAmerica of Edison, New Jersey for the following constituents using methods as referenced in the New York State Department of Environmental Conservation (NYSDEC) 2005 Analytical Services Protocol (ASP):
   - PCBs = Polychlorinated biphenyls using USEPA SW-846 Method 8082.
   - Toxicity Characteristic Leaching Procedure (TCLP) volatile organic compounds (VOCs) using USEPA SW-846 Method 1311/8260.
   - TCLP semi-volatile organic compounds (SVOCs) using USEPA SW-846 Method 1311/8270.
   - TCLP metals using USEPA SW-846 Method 1311/6010/7470.
   - Ignitability using USEPA SW-846 Method 1010.
   - Corrosivity using USEPA SW-846 Method 9045C.
   - Reactive Cyanide using USEPA SW-846 Method 7.3.3.

   Reactive Sulfide using USEPA SW-846 Method 7.3.4.
3. ppm = parts per million.
4. < = Constituent was not identified at a concentration exceeding the reported laboratory detection limit.
5. B = Reported value is less than the reporting limit but greater than the instrument detection limit.
6. * = Sample is corrosive if pH is less than or equal to 2 or greater than or equal to 12.5 S.U.
7. NEG - Sample is not ignitable if it does not ignite at less than 140^{o}F.
8. ** = Sample which does not exceed the USEPA action level of 250 mg cyanide/kg waste and/or 500 mg sulfide/kg waste in accordance with SW-846, is not reactive.
9. Regulatory levels for a toxicity characteristic are from 40 CFR Part 261.24 and 6 NYCRR Part 371.3.

TABLE 11
WASTEWATER ANALYTICAL RESULTS

REMEDIAL ACTION SUMMARY REPORT
BROOKFIELD POWER, INC.
(FORMER NATIONAL GRID)
SCHOOL STREET HYDROELECTRIC STATION
COHOES, NEW YORK

Constituent	WA-CHAR-02062008
Detected PCBs (ppb)	
Aroclor-1260	0.27 J
Total PCBs	0.27 J
Detected TCL VOCs (ppb)	
1,1,1-Trichloroethane	0.74 J
1,1-Dichloroethene	0.56 J
Bromoform	24 J
Methyl Ethyl Ketone	2.6
Detected TCL SVOCs (ppb)	
Cresol, p-	0.5 J
Di-n-butyl phthalate	0.3 J
Detected TAL Inorganic Constituents (ppb)	
Aluminum	6,940
Barium	110
Calcium	266,000
Chromium	13.9
Cobalt	5.4
Copper	39.2
Iron	8,730
Lead	23.4
Magnesium	3,460
Manganese	208
Nickel	19.4
Potassium	4,710
Sodium	20,700
Vanadium	20.6
Zinc	55.7
Other Waste Characterization Data	
Flashpoint (°F)	>176
pH	11.9

Notes:
1. Sample collected by ARCADIS on February 6, 2008.
2. Sample was analyzed by TestAmerica of Buffalo, New York the following methods as referenced in the NYSDEC 2000 Analytical Services Protocol (ASP):
   - Polychlorinated biphenyls (PCBs) using United States Environmental Protection Agency (USEPA) SW-846 Method 8082;
   - Target Compound List (TCL) volatile orgainc compounds (VOCs) using USEPA SW-846 Method 8260;
   - TCL semi-volatile organic compounds (SVOCs) using USEPA SW-846 Method 8270;
   - Target Analyte List (TAL) inorganic constituents using USEPA SW-846 Method 6010/7470;
   - Flashpoint (ignitability) using USEPA SW-846 Method 1010; and
   - pH using USEPA SW-846 Method 9040.
3. ppb = parts per billion, which is equivalent to micrograms per liter (ug/L).
4. °F = Degrees Fahrenheit.
5. J = indicates an estimated value.

TABLE 12
WASTE SHIPMENT SUMMARY

REMEDIAL ACTION SUMMARY REPORT
BROOKFIELD POWER, INC.
(FORMER NATIONAL GRID)
SCHOOL STREET HYDROELECTRIC STATION
COHOES, NEW YORK

Manifest #	Date	Disposal Receipt #	Waste Classification	Transporter	Treatment/Disposal Facility	Quantity (tons)	
						Estimated	Invoiced (Actual)
Sediment							
36643.019.01	1/31/2008	1608094	Non-Hazardous	Mangiardi	Seneca Meadows Landfill, Waterloo, NY	30	29.84
36643.019.02	1/31/2008	1608092				35	36.19
36643.019.03	2/7/2008	1609715				35	37.73
36643.019.04	2/7/2008	1609718				34	37.08
36643.019.05	2/7/2008	1609758				36	40.56
36643.019.06	2/7/2008	1609945				34	35.25
36643.019.07	2/8/2008	1610010				35	32.6
36643.019.08	2/8/2008	1610037				33	30.35
36643.019.09	2/8/2008	1610323				30	31.51
					Total Sediment:		**311.11**
Wastewater							
010	4/15/2008	--	Non-Hazardous	United Industrial Services	Norlite Corporation, Cohoes, NY	3,800	3,682
011	4/15/2008	--				1080	848
					Total Wastewater:		**4,530**

Note: Disposal receipt # indicates the weight ticket number provided by Seneca Meadows Landfill.

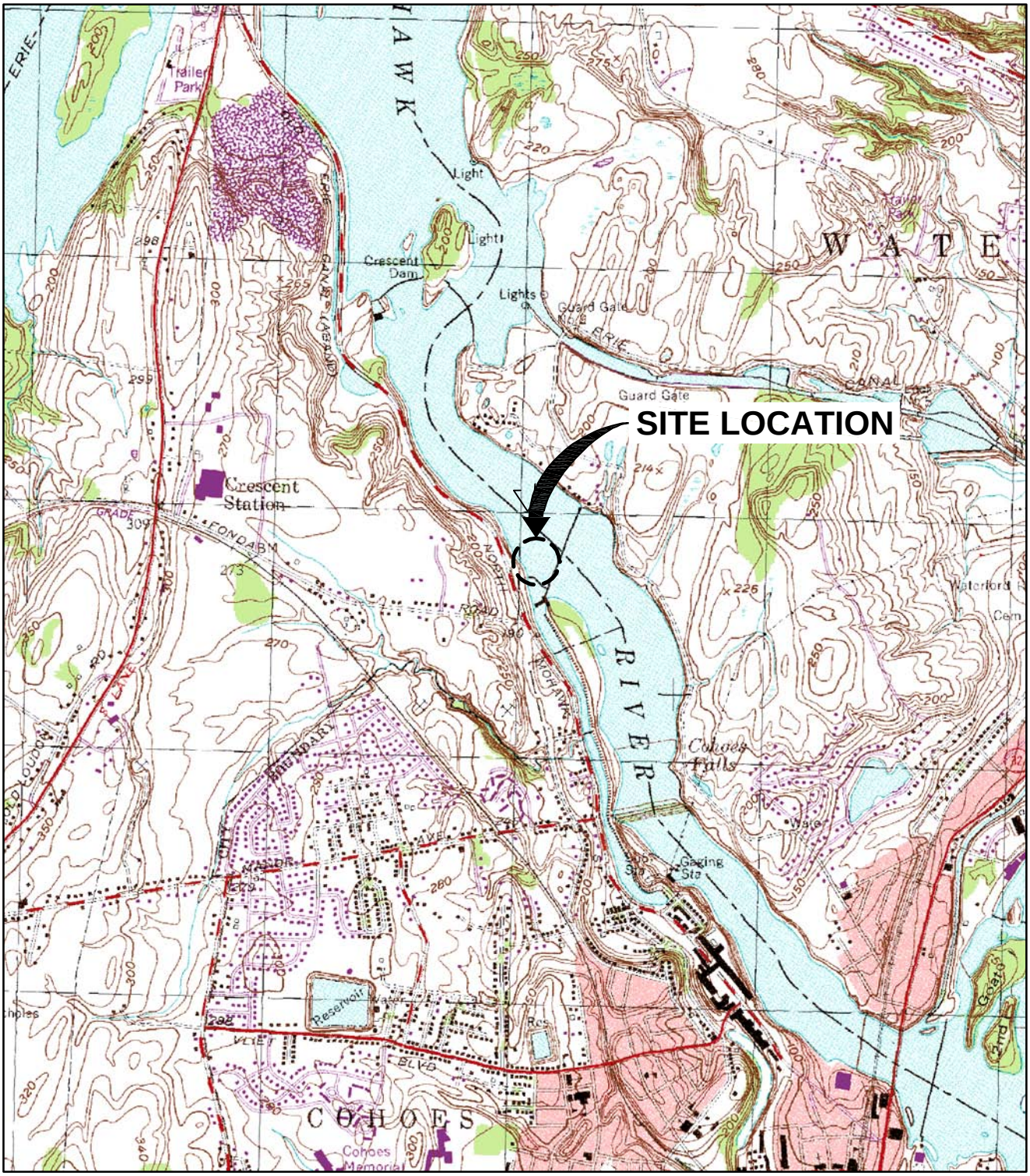
TABLE 13
IMPORTED SAND BACKFILL ANALYTICAL RESULTS (ppm)

REMEDIAL ACTION SUMMARY REPORT
BROOKFIELD POWER, INC.
(FORMER NATIONAL GRID)
SCHOOL STREET HYDROELECTRIC STATION
COHOES, NEW YORK

Constituent	TOGS 5.1.9 Class A Sediment Threshold Values	FILL-1
PCBs		
All Aroclors	<0.1 (sum of Aroclors)	<0.072
Detected TCL VOCs		
Acetone	--	0.017
Methylene Chloride	--	0.0044
Toluene	<0.96 for total BTEX (sum of benzene, toluene, ethylbenzene, and xylenes)	0.0032 J
Detected TCL SVOCs		
None Detected	<4 for total PAHs (polycyclic aromatic hydrocarbons)	NA
Detected TAL Inorganic Constituents		
Aluminum	--	5,410
Arsenic	<14	3.3
Barium	--	24.5 B
Beryllium	--	0.16 B
Cadmium	<1.2	0.29 B
Calcium	--	24,900
Chromium	--	8.8
Cobalt	--	5 B
Copper	<33	14.4
Iron	--	14,600
Lead	<33	6.6
Magnesium	--	9,250
Manganese	--	250
Nickel	--	13.1
Potassium	--	518 B
Sodium	--	86.8 B
Vanadium	--	10.3 B
Zinc	--	32.2
Detected Pesticides		
None Detected	Various	NA

Notes:

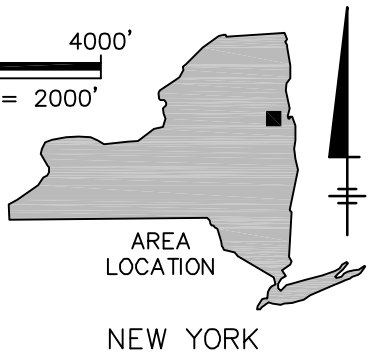
1. Sample FILL-1 was collected by ARCADIS BBL on November 15, 2007.
2. Sample was a composite collected from the D.A. Collins pit located at 101 Route 67, Mechanicsville, New York.
3. Sample was analyzed by TestAmerica of Edison, New Jersey the following methods as referenced in the New York State Department of Environmental Conservation (NYSDEC) 2000 Analytical Analytical Services Protocol (ASP):
   - PCBs = Polychlorinated biphenyls using USEPA SW-846 Method 8082; and
   - Target Compound List (TCL) volatile organic compound (VOC) using USEPA SW-846 Method 8260;
   - TCL semi-volatile organic compounds (SVOCs) using USEPA SW-846 Method 8270;
   - TAL inorganic constituents using USEPA SW-846 Method 6010/7471/9010; and
   - Pesticides using USEPA SW-846 Method 8081.
4. Concentrations reported in parts per million (ppm), which is equivalent to milligrams per kilogram (mg/kg).
5. B = Reported value is less than the reporting limit but greater than the instrument detection limit.
6. J = Indicates an estimated value.
7. NA = Not applicable.
8. -- = No criteria listed.
9. TOGS 5.1.9 Class A Sediment Threshold Values are from the NYSDEC Division of Water, Technical and Operational Guidance Series document titled "In-Water and Riparian Management of Sediment and Dredged Material" (TOGS 5.1.9), dated November 2004.



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

0 2000' 4000'

Approximate Scale: 1" = 2000'



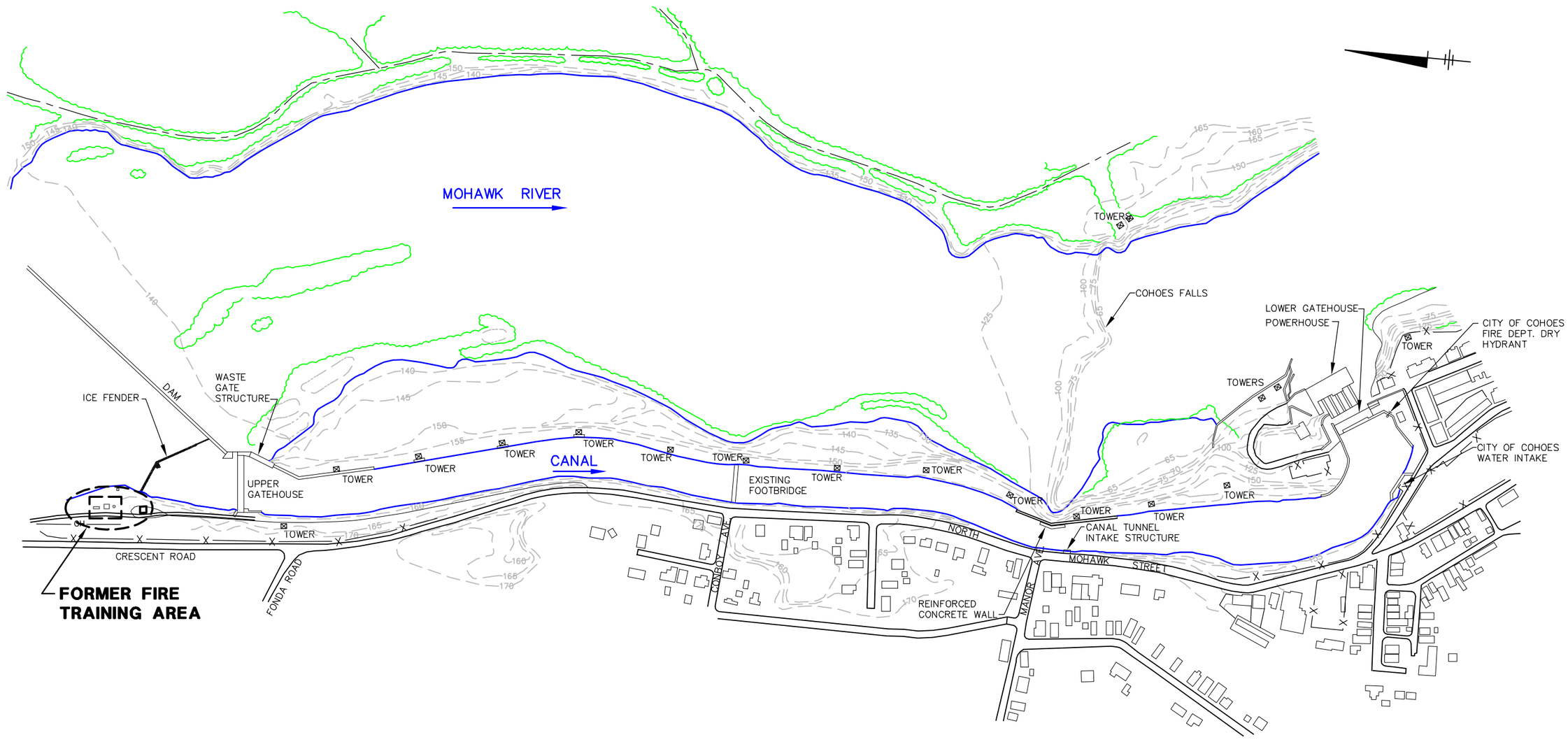
BROOKFIELD POWER - FORMER NATIONAL GRID
SCHOOL ST. HYDROELECTRIC STATION - COHOES, NY
REMEDIAL ACTION SUMMARY REPORT

SITE LOCATION MAP

ARCADIS

FIGURE
1

CITY: SYRACUSE DIV/GROUP: 85/CAD DB: LJP LD: AM: PD: TM: TR: LYR:ON=*;OFF=*REF*
G:\CAD\ACTIVE\36643\0000\00020\DWG\RASR\36643B01.DWG LAYOUT: 1SAVED: 2/15/2008 1:04 PM ACADVER: 17.0S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 2/15/2008 1:22 PM BY: POSENAUER, LISA
XREFS: IMAGES: PROJECTNAME: ---
36643X01.tif



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–30664–E, ORIGINAL ISSUE DATE 6/30/94, AS–BUILT 9/95, AT A SCALE OF 1"=200'.

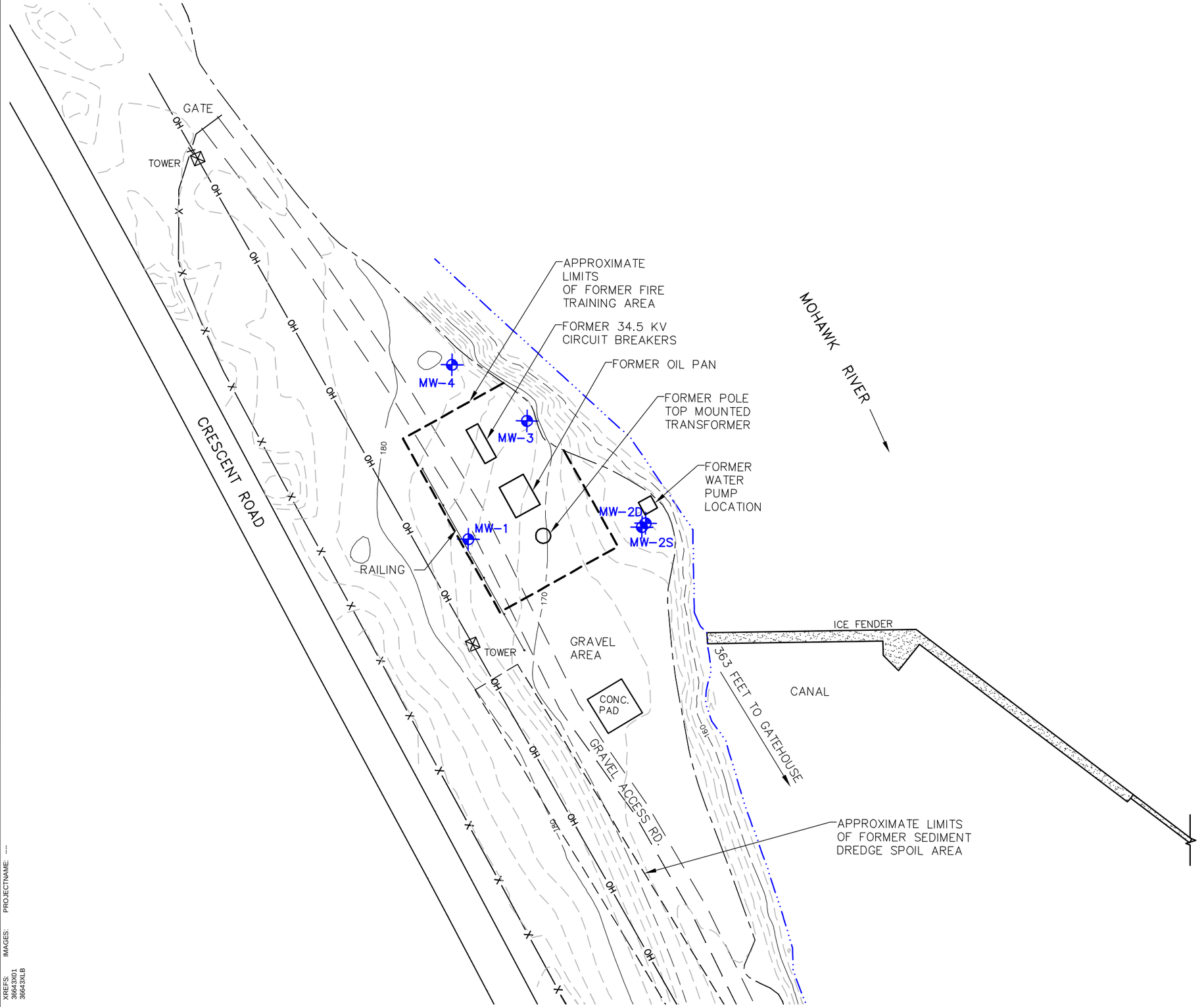
2. BASE MAP ALSO DEVELOPED FROM SITE SURVEY COMPLETED BY NIAGARA MOHAWK (AS PRESENTED ON THE NIAGARA MOHAWK DRAWING ENTITLED "SCHOOL STREET DEVELOPMENT SAMPLING LOCATIONS, INDEX NO. 2.0–S12–M5, DRAWING NO. B–33591–E, DATED APRIL 1999, LATEST REVISION MARCH 2001, AT A SCALE OF 1"=60'). LOCATION OF ICE FENDER IS FROM SURVEY ACTIVITIES COMPLETED BY BLASLAND, BOUCK & LEE, INC. (BBL) DURING NOVEMBER 1999.

BROOKFIELD POWER - FORMER NATIONAL GRID
SCHOOL ST. HYDROELECTRIC STATION - COHOES, NY
REMEDIAL ACTION SUMMARY REPORT

SITE PLAN

ARCADIS

FIGURE
2



LEGEND:

- SHORELINE
- TOP OF BANK
- X — FENCE
- OH — OVERHEAD HIGH VOLTAGE ELECTRIC LINE
- —170— GROUND SURFACE CONTOUR LINE (ELEVATION IN FEET ABOVE MEAN SEA LEVEL)

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. 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. GROUND SURFACE CONTOUR LINES INDICATE TOPOGRAPHY OF SITE PRIOR TO IMPLEMENTATION OF INTERIM REMEDIAL MEASURES (WHICH WAS COMPLETED DURING 2002)
3. MONITORING WELL LOCATIONS MW–1 THROUGH MW–3 WERE SURVEYED BY NIAGARA MOHAWK.
4. MONITORING WELL MW–4 WAS SURVEYED BY BBL.
5. MONITORING WELL LOCATION MW–2S IS AN OVERBURDEN MONITORING WELL WHILE MONITORING WELL MW–2D IS A BEDROCK WELL.

0 60' 120'

GRAPHIC SCALE

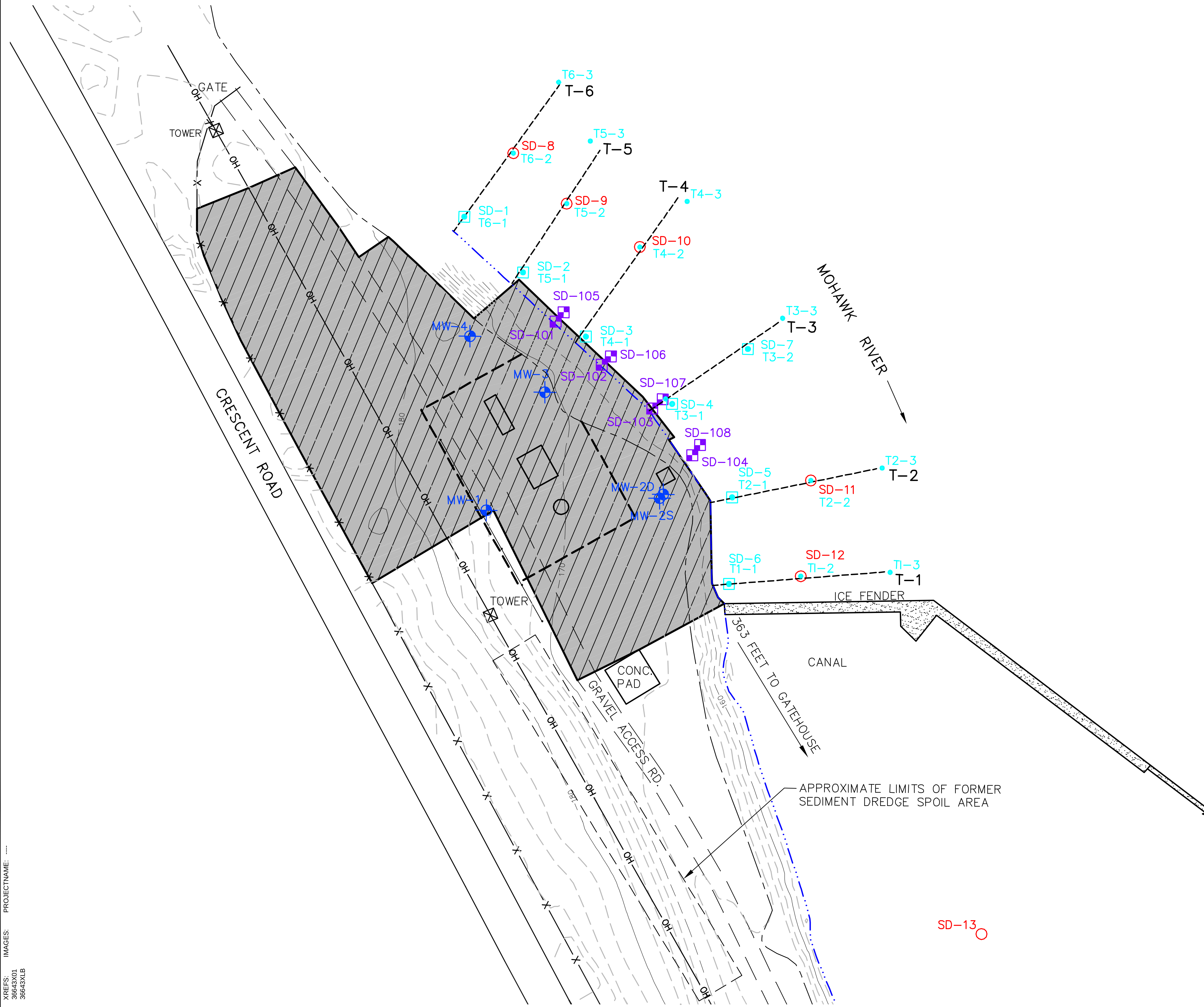
BROOKFIELD POWER - FORMER NATIONAL GRID
SCHOOL ST. HYDROELECTRIC STATION - COHOES, NY
REMEDIAL ACTION SUMMARY REPORT

FORMER FIRE TRAINING AREA FEATURES

ARCADIS

FIGURE
3

CITY: SYRACUSE DIV/GROUP: 141/CAD DB: LJP LD: AM: PD: TM: TR: LYR:ON=*;OFF=*REF
G:\CAD\ACTIB\00366430\000\0020\DWG\RASR\36643B11.DWG LAYOUT: 3SAVED: 7/16/2008 8:48 AM ACADVER: 17.0S (LMS TECH) PAGESETUP:
XREFS: IMAGES: PROJECTNAME: ---
36643X01
36643XLB
---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/16/2008 11:33 AM BY: POSENAUER, LISA



LEGEND:

SD-101 — IRM SEDIMENT SAMPLING LOCATION (9/02)

SD-8 — RI/FS SURFACE SEDIMENT AND SEDIMENT CORE SAMPLING LOCATION (10/00 & 12/00)

T3-3 — SEDIMENT PROBING LOCATION (11/99)

SD-6 — PSA SURFACE SEDIMENT AND SEDIMENT CORE SAMPLING LOCATION (11/99)

MW-3 — MONITORING WELL LOCATION

APPROXIMATE LIMITS OF IRM EXCAVATION AREA

T-2 — SEDIMENT TRANSECT LINE

SHORELINE

TOP OF BANK

X — FENCE

OH — 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-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. SEDIMENT SAMPLING LOCATIONS ARE BASED ON FIELD MEASUREMENTS AND ARE APPROXIMATE.

0 60' 120'
GRAPHIC SCALE

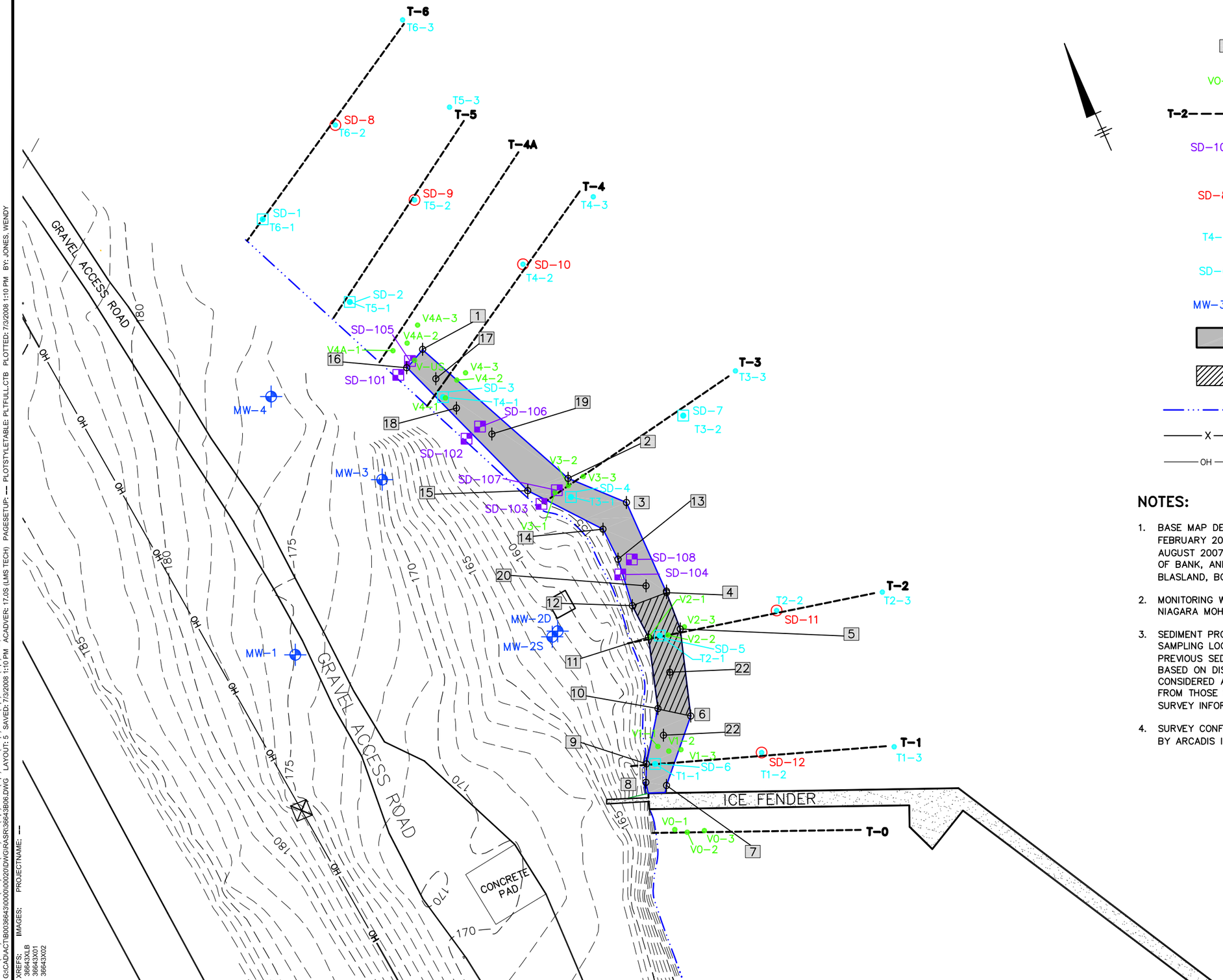
BROOKFIELD POWER - FORMER NATIONAL GRID
SCHOOL ST. HYDROELECTRIC STATION - COHOES, NY
REMEDIAL ACTION SUMMARY REPORT

PREVIOUS IRM SOIL/SEDIMENT REMOVAL LIMITS

ARCADIS

FIGURE
4

CITY:SYRACUSE DIV/GROUP: 141/CAD DB: LJP LD: AM: PD: TM: TR: LYR:ON=*;OFF=*REF*
G:\CAD\ACT\B0036643\0000\00020\DWG\RASR\36643B12.DWG LAYOUT: 4SAVED: 7/16/2008 8:47 AM ACADVER: 17.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/16/2008 11:34 AM BY: POSENAUER, LISA
XREFS: 36643X01 36643XLB IMAGES: PROJECTNAME: ----



LEGEND:

- 3 ϕ — SURVEY CONFIRMATION POINT LOCATION
- VO–1 — PRE–DREDGING VERIFICATION SAMPLING/PROBING LOCATION
- T–2 — SEDIMENT TRANSECT LINE
- SD–101 — EXISTING IRM SEDIMENT SAMPLING LOCATION (9/02)
- SD–8 — EXISTING RI/FS SURFACE SEDIMENT AND SEDIMENT CORE SAMPLING LOCATION (10/00 & 12/00)
- T4–3 — SEDIMENT PROBING LOCATION (11/99)
- SD–6 — EXISTING PSA SURFACE SEDIMENT AND SEDIMENT CORE SAMPLING LOCATION (11/99)
- MW–3 — EXISTING MONITORING WELL LOCATION
- EXTENT OF SEDIMENT REMOVAL TO A DEPTH OF APPROXIMATELY 1 FOOT
- EXTENT OF SEDIMENT REMOVAL TO A DEPTH OF APPROXIMATELY 1.5 FEET
- SHORELINE
- X — FENCE
- OH — OVERHEAD HIGH VOLTAGE ELECTRIC LINE

NOTES:

1. BASE MAP DEVELOPED FROM SITE SURVEY COMPLETED BY D.A. COLLINS DURING FEBRUARY 2008 AND BANK/SHORELINE SURVEY DATA OBTAINED BY ARCADIS IN AUGUST 2007 AND JANUARY/FEBRUARY 2008. 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 PROBING LOCATIONS AND PRE–DREDGING VERIFICATION SEDIMENT SAMPLING LOCATIONS ARE BASED ON SURVEY PERFORMED BY ARCADIS BBL. THE PREVIOUS SEDIMENT SAMPLING LOCATIONS (FROM THE PSA, RI, AND IRM) ARE BASED ON DISTANCE MEASUREMENTS FROM THE SHORELINE AND ARE CONSIDERED APPROXIMATE. SAMPLE LOCATIONS SD–104 AND SD–108 REVISED FROM THOSE SHOWN IN THE REMEDIAL DESIGN BASED UPON REVISED SHORELINE SURVEY INFORMATION OBTAINED IN 2007/2008.
4. SURVEY CONFIRMATION POINT LOCATIONS ARE BASED UPON SURVEY PERFORMED BY ARCADIS IN JANUARY/FEBRUARY 2008.

0 40’ 80’
GRAPHIC SCALE

BROOKFIELD POWER - FORMER NATIONAL GRID
SCHOOL ST. HYDROELECTRIC STATION - COHOES, NY
REMEDIAL ACTION SUMMARY REPORT

FINAL SEDIMENT REMOVAL LIMITS

ARCADIS

FIGURE 5