Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

Site 518 Dredge Spoil Disposal Area
Town of Fort Edward, Washington County, New York
Site Number 558028

March 2009

New York State Department of Environmental Conservation
DAVID A. PATERSON, *Governor* PETE GRANNIS, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

Site 518 Inactive Hazardous Waste Disposal Site
Town of Fort Edward, Washington County, New York
Site No. 558028

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the Site 518 Dredge Spoil Disposal Area (Site 518), a Class 2 inactive hazardous waste disposal site. The selected remedial program was chosen in accordance with the New York State Environmental Conservation Law and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Site 518 inactive hazardous waste disposal site, and the public's input to the Proposed Remedial Action Plan (PRAP) presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

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

Description of Selected Remedy

Based on the results of the Remedial Investigation and Feasibility Study (RI/FS) for Site 518 and the criteria identified for evaluation of alternatives, the Department has selected Selective Excavation and On-Site Consolidation/Covering. The components of the remedy are as follows:

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program.

2. Contaminated soil in the northeastern portion of the site will be consolidated to the main area of dredge spoils in the central portion of the site prior to this area being covered.

3. A soil cover will be placed over the surface soils where the PCB concentrations in the top foot exceed 1 part per million (typically the surface over the former dredge spoil disposal area) to prevent exposure to contaminated soils. Non-vegetated areas (buildings, roadways, parking lots, etc.) will be covered by six inches of gravel. The 6 inch thick cover will consist of clean soil underlain by a geofabric and an indicator such as orange plastic snow fence to demarcate the cover soil from the subsurface soil. In areas to be covered that are currently grassed, the top of the cover will be of sufficient quality to support vegetation.

Clean soil will constitute soil that meets the Division of Environmental Remediation's criteria for backfill or local site background.

4. Imposition of an institutional control in the form of an environmental easement that will require (a) limiting the use and development of the property to commercial use, which will also permit industrial use; (b) compliance with the approved site management plan; and (c) the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

5. Development of a site management plan which will include the following institutional and engineering controls: (a) management of the final cover system to restrict excavation below the soil or gravel cover's demarcation layer, pavement, or buildings. Excavated soil will be tested, properly handled to protect the health and safety of workers and the nearby community, and will be properly managed in a manner acceptable to the Department; (b) monitoring of the groundwater once after 5 years; (c) identification of any use restrictions on the site; and (d) provisions for the continued proper maintenance of the cover system.

6. The property owner will provide a periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal will: (a) contain certification that the institutional controls and engineering controls put in place are still in place and are either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing has occurred that will impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

New York State Department of Health Acceptance

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

Declaration

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

MAR 3 1 2009
Date

Dale A. Desnoyers, Director
Division of Environmental Remediation

TABLE OF CONTENTS

SECTION **PAGE**

1: SUMMARY OF THE RECORD OF DECISION 1

2: SITE LOCATION AND DESCRIPTION 1

3: SITE HISTORY 2
- 3.1: Operational/Disposal History 2
- 3.2: Remedial History 2

4: ENFORCEMENT STATUS 3

5: SITE CONTAMINATION 3
- 5.1: Summary of the Remedial Investigation 3
- 5.2: Interim Remedial Measures 6
- 5.3: Summary of Human Exposure Pathways: 6
- 5.4: Summary of Environmental Assessment 7

6: SUMMARY OF THE REMEDIATION GOALS 8

7: SUMMARY OF THE EVALUATION OF ALTERNATIVES 8
- 7.1: Description of Remedial Alternatives 9
- 7.2 Evaluation of Remedial Alternatives 12

8: SUMMARY OF THE SELECTED REMEDY 14

9: HIGHLIGHTS OF COMMUNITY PARTICIPATION 16

Tables
- Table 1: Nature and Extent of Contamination 17
- Table 2: Remedial Alternative Costs 19

Figures
- Figure 1: Site Location Map 20
- Figure 2: Site Map 21
- Figure 3: Site Map 22
- Figure 4: Site Map 23
- Figure 5: Site Map 24

Appendices
- Appendix A: Responsiveness Summary A-1
- Appendix B: Administrative Record B-1

RECORD OF DECISION

Site 518 Dredge Spoil Disposal Area
Town of Fort Edward, Washington County, New York
Site No. 558028
March 2009

SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected this remedy for the Site 518 Dredge Spoil Disposal Area (Site 518). The presence of hazardous waste has created significant threats to human health and/or the environment that are addressed by this remedy. As more fully described in Sections 3 and 5 of this document, the deposition of dredge spoils have resulted in the disposal of hazardous wastes, including polychlorinated biphenyls (PCBs). These wastes have contaminated the soils at the site, and have resulted in:

- a significant threat to human health associated with current and potential exposure to PCB contaminated surface and subsurface soils.

- a significant environmental threat associated with the current and potential impacts of contaminants to wildlife.

To eliminate or mitigate these threats, the Department has selected consolidation and covering of contaminated soils, and an environmental easement with periodic certification.

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

SECTION 2: SITE LOCATION AND DESCRIPTION

The Site 518 Dredge Spoil Disposal Area is located in the southern part of the Village of Fort Edward, Washington County, New York (see Figure 1). The 10.5 acre site is currently occupied by a New York State Canal Corporation (NYSCC) maintenance garage and office building. A paved parking area and driveway occupy approximately 1 acre of the property. A strip of wooded land is present along the Hudson River. The Champlain Canal is immediately east and southeast of the site (Canal Lock 7 is approximately 1,000 feet south of the site) and the Fort Edward Terminal navigation channel of the Hudson River is located immediately west of the site. This section of river

is part of the United States Environmental Protection Agency's Hudson River PCBs Superfund Site, a site listed on the National Priority List. The Washington County Sewer District No. 2 wastewater treatment facility is located immediately to the north of the site. U.S. Route 4 runs along the eastern edge of the site from the site's northern boundary to the bridge that carries Route 4 over the Champlain Canal. This U.S. Route 4 was realigned in 1989 and a remnant of the former bridge embankment lies between Site 518 and the canal. There are residential areas on both sides of Route 4 beginning immediately north of the site.

The maintenance garage facility was constructed from 1976 to 1977. Based on 1972 Soil Conservation Service soil survey mapping and 1976 aerial photographs, it appears that the maintenance garage and office complex were built on fill, possibly including dredge spoils.

The majority of the site is believed to generally consist of clays with some silts and sands overlying Middle Ordovician Snake Hill Shale bedrock. Previous investigations reported total overburden thickness ranges from 20 to 50 feet, with natural subsurface soils encountered consisting of brown to gray clays and brown sands. These previous studies also identified that black silt and sandy dredge fill materials have been placed throughout the site, with up to four disposal areas believed to contain PCB-contaminated dredge spoils from the Hudson River. These disposal areas were not believed to be lined and the dredge spoil materials may not be covered.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

Records report that this dredge spoil disposal area received approximately 12,300 cubic yards of sediment and debris removed from the Hudson River in 1955. Records also reflect that this disposal area received dredge spoil material in 1963, but the quantity is unknown. Based on the results of the 1992 "Dredge Spoil Site Investigation," it is estimated that this site contains 23,600 cubic yards of PCB contaminated dredge spoils. The contaminated sediment and debris within this site have PCBs at levels greater than 2 ppm. The mass of PCBs at this site was estimated to be 1,600 pounds.

3.2: Remedial History

A 1992 study conducted by Malcolm Pirnie, Inc. for the Department found PCB contamination in dredge spoils at levels about 50 ppm, which is considered hazardous waste in New York State. In 1999, the Department listed the site as a Class 2 site in the Registry of Inactive Hazardous Waste Disposal Sites in New York. A Class 2 site is a site where hazardous waste presents a significant threat to the public health or the environment and action is required.

The 2004-2005 New York State budget as enacted in September of 2004 provided $2,501,000 in new Capital Project Funds and $640,000 in Fund Re-appropriations to the Division of Environmental Remediation in the New York Department of Environmental Conservation to be applied in part to initiate a focused Remedial Investigation/Feasibility Study at Site 518 and other Upland Disposal Sites.

In 2005, NYSDEC contracted Ecology & Environment Engineering, P.C. to perform an RI and FS to characterize the nature and extent of the dredge spoils and to develop remedial alternatives to address the contamination.

SECTION 4: ENFORCEMENT STATUS

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

The PRPs for the site, documented to date, include the New York State Department of Transportation and General Electric. After remedy selection, the Department will evaluate the site history for the consideration of further action against responsible parties regarding compliance with the law and cost recovery as required.

SECTION 5: SITE CONTAMINATION

A remedial investigation/feasibility study (RI/FS) has been conducted to evaluate the alternatives for addressing the significant threats to human health and/or the environment.

5.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The RI was conducted between October 2005 and September 2006. The field activities and findings of the investigation are described in the RI report.

The RI activities included an initial site reconnaissance; development of a work plan; a records search; sediment sampling; surface soil sampling; test pit excavations and sampling; borehole drilling and sampling; monitoring well installations and sampling; surveying; and preparation of this RI report. The investigation began in April 2005 with the site reconnaissance, the work plan was submitted in September 2005, the initial phase of field work was performed in October and November 2005, and quarterly groundwater sampling was performed in December 2005, and March, June, and September 2006.

5.1.1: Standards, Criteria, and Guidance (SCGs)

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

- Groundwater, drinking water, and surface water SCGs are based on the Department's "Ambient Water Quality Standards and Guidance Values" and Part 5 of the New York State Sanitary Code.

- Soil SCGs are based on the New York State Part 375 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR).

Based on the RI results, in comparison to the SCGs and potential public health and environmental exposure routes, certain media and areas of the site require remediation. These are summarized in Section 5.1.2. More complete information can be found in the RI report.

5.1.2: Nature and Extent of Contamination

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

As described in the RI report, many soil, groundwater and sediment samples were collected to characterize the nature and extent of contamination. As seen in Figures 2, 3 and 4 and summarized in Table 1, the main categories of contaminants that exceed their SCGs are polychlorinated biphenyls (PCBs), and some inorganics (metals). For comparison purposes, where applicable, SCGs are provided for each medium.

Chemical concentrations are reported in parts per billion (ppb) for water and parts per million (ppm) for waste, soil, and sediment. Air samples are reported in micrograms per cubic meter ($\mu g/m^3$).

Figures 2, 3 and 4 and Table 1 summarize the degree of contamination for the contaminants of concern in groundwater, surface and subsurface soils, and compare the data with the SCGs for the site. The following are the media which were investigated and a summary of the findings of the investigation.

Waste Materials

The waste materials on-site are the dredge spoils. The dredge spoils identified during the RI/FS will be addressed as surface and subsurface soils in the remedy selection process. The extent of the dredge spoil fill boundary is outlined in Figure 3.

Surface Soil

Thirty-one surface soil samples (0-2 inches) were collected from the site, with 21 sample locations selected within suspected disposal areas in the northwest, north, and southern portions of the site; three from drainage ditches/depressions that flow from the north-central area of the site into the Hudson River; six from depressions along the western border of the site, just a few feet above the Hudson River; and the remaining from locations outside of the fill and drainage areas. In total, 16 of the 31 total surface soil samples exceeded the unrestricted residential use SCO of 0.1 ppm for PCBs (See Figure 2.) No metals were present at concentrations exceeding unrestricted use SCOs.

PCB surface soil contamination identified during the RI/FS along the western border of the site (east channel of the Hudson River) will be addressed by the Phase 1 dredging of the EPA Hudson River PCBs Superfund Site. Therefore, no remedial alternatives need to be evaluated for contaminated soils sampled from site drainage ways and along the western edge of the site.

Surface soil contamination identified during the RI/FS, with the exception of the western border of the site discussed above, will be addressed in the remedy selection process.

Subsurface Soil

A total of 124 subsurface soil samples were collected for PCB analysis from five monitoring well borings, 9 test pits and 10 soil borings (See Figure 3). Overall, 45 of 124 subsurface soil samples exceeded the unrestricted use SCO of 0.1 ppm for PCBs. The subsurface soil samples exhibiting the highest PCB concentrations (20 ppm) were collected in the center of the spoil disposal area and PCB concentrations were generally highest between 3 to 7 feet below ground surface.

Subsurface soil samples slightly exceeded the unrestricted use SCO for chromium in 3 samples, for lead in 3 samples, and for mercury in one sample (see Table 1).

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

Groundwater

Figure 4 presents the groundwater PCB sampling data for the five monitoring wells installed at the site.

Four rounds of groundwater samples were collected from the five new monitoring wells installed at the site. The purpose of the monitoring wells is to assess groundwater conditions around the perimeter of the dredge spoil disposal area and determine if PCB contamination is present in the aqueous phase. PCBs were not detected in any of the monitoring wells during the four sampling events.

Four metals (iron, magnesium, manganese, and sodium) were found at levels exceeding New York State (NYS) Class GA standards or guidance values in most of the wells during the three rounds of sampling. Three of these metals (iron, manganese, and sodium) were found at three times the groundwater standards. However, the groundwater standards for these three metals are based on aesthetics, not protection of health, and are not considered to be of concern.

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

Surface Water

There are currently no surface water bodies on this site. Surface water flow is limited and intermittent at the site, occurring only in heavy precipitation events. Although an attempt to collect runoff of overland flow was made during the RI activities, surface water samples were not collected due to insufficient surface water volumes.

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

Sediments

Aquatic sediments are not present at the site; therefore, no remedial alternatives need to be evaluated for sediment.

Soil Vapor/Sub-Slab Vapor/Air

No site-related soil vapor or indoor air contamination of concern was identified during the RI/FS. Therefore, no remedial alternatives need to be evaluated for this medium.

5.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS.

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

5.3: Summary of Human Exposure Pathways:

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the human exposure pathways can be found in Section 7-1 of the RI report. An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements: [1] a contaminant source, [2] contaminant release and transport mechanisms, [3] a point of exposure, [4] a route of exposure, and [5] a receptor population.

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

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

The site is used by NYSCC in a commercial/industrial capacity, and access to the site by the public is restricted.

Dredge spoils containing PCBs and various metals are below gravel and topsoil, limiting the potential for direct contact by those that occupy the site.

The surface soil pathway of exposure is not currently significant due to the relative low concentrations of PCBs in surface soil and the nature of site operations.

Soils along the western perimeter of the site containing elevated levels of PCBs could present the potential for exposure through direct contact; however, these soils are within a wooded area that is not used by NYSCC for site operations and is targeted for removal in Phase 1 of the remedial program for the EPA Hudson River PCBs Superfund Site.

The site is connected to the public water supply and on-site groundwater is not used.

5.4: Summary of Environmental Assessment

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

The Screening Level Ecological Assessment, which is included in the RI report, presents a detailed discussion of the existing and potential impacts from the site to fish and wildlife receptors.

The Screening Level Ecological Risk Assessment evaluated potential impacts of site-related contaminants on the ecological resources at Site 518. The assessment does not include the Hudson River or Champlain Canal, which are adjacent to the site, as these areas in the Hudson River are being addressed by the EPA Hudson River PCBs Superfund Site remedial program. The following information summarizes the assessment results:

- Although zinc concentrations in 13 soil samples exceeded benchmark criteria, this result is probably of little practical significance since physical factors (e.g., regular mowing, gravel cover, and vehicle traffic) are the primary stressors affecting the types and extent of plant communities at the site.

- Although the mercury screening benchmark was exceeded at four sampling locations and zinc at one sampling location, the risks to the soil invertebrate community from chemicals in soil at the site are limited.

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

- Based on food-chain modeling results, total PCBs in soil are likely to pose a risk to song birds, such as the American robin, and small mammals, such as the short-tailed shrew, that feed extensively on soil invertebrates. Risks to carnivorous birds and mammals are minimal.

Overall, the current levels of environmental contamination at the site pose little or no risk to communities of terrestrial plants and soil invertebrates, but may pose a risk to some wildlife species due to potential for exposures to shallow/surficial soils.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS

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

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

- exposures of persons at or around the site to PCBs in surface soils through ingestion and direct contact;

- potential exposures of persons at or around the site to PCBs in subsurface soils;

- environmental exposures of flora or fauna to PCBs in surface soils from ingestion and direct contact causing toxicity or impacts from bioaccumulation through the terrestrial food chain;

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

- Soil Cleanup Objectives (SCO's) for PCBs.

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. Potential remedial alternatives for the Site 518 were identified, screened and evaluated in the FS report which is available at the document repositories established for this site.

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

7.1: Description of Remedial Alternatives

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

Alternative 1: No Action

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

This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

Alternative 2: Institutional Controls and Monitoring

Present Worth: *$229,000*
Capital Cost: *$118,000*
Annual Costs:
(Years 1-5): *$3,800*
(Years 5-30): *$3,800*

This alternative includes: imposition of institutional controls including an environmental easement that would require limiting the use and development of the property to commercial or industrial use; physical barriers such as fencing and posting signs; and a site management plan to control activities at the site from creating additional potential for exposures to contaminated soil. Site fencing would be installed to encompass soil contamination. It would take less than a year to implement these institutional controls.

Monitoring is also included in this remedy consisting of sampling five existing groundwater wells located along the Hudson River to confirm that PCBs do not migrate via groundwater into the river from this site. These wells would be sampled once, five years following implementation of the remedy, and the results would be evaluated to determine if any remedy modifications are warranted.

Alternative 3: Selective Excavation and On-Site Consolidation/Covering

Present Worth: *$720,000*
Capital Cost: *$577,000*
Annual Costs:
(Years 1-5): *$4,800*
(Years 5-30): *$4,800*

This remedial alternative involves the consolidation and covering of surface soils where the PCB concentrations in the top foot exceed 1 part per million (typically the surface over the former dredge spoil disposal area). This would be done by placement of a six inch soil cover in areas that are currently grassed, placement of a six inch crushed stone cover in NYSCC work areas, and the implementation of institutional controls to protect the integrity of the cover and to prevent exposures to contaminated subsurface soils. . The 6 inch thick cover would consist of clean soil underlain by a geofabric and an indicator such as orange plastic snow fence to demarcate the cover soil from the subsurface soil. This alternative reduces direct contact exposure, migration of fugitive dust, reduces precipitation driven infiltration, and prevents potential erosion from the site to the Hudson River. The six inch thickness is proposed due to the general finding in the RI that the existing top six inch soil horizon averages less than 1 part per million PCB.

In an effort to minimize the area to be covered, contaminated soil in the northeastern portion of the site would be consolidated to the main area of dredge spoils in the central portion of the site prior to this area being covered. It is estimated that approximately 270 cubic yards of soil would be excavated to a maximum depth of 2.8 feet and consolidated on-site.

As shown in Figure 5, the covered area is estimated to encompass approximately 4 acres. Final cover configuration would be delineated during design. Existing metal buildings and equipment are assumed to be temporarily relocated during construction of the cover. The cover installation would be sloped to drain to remaining grassy areas surrounding the new cover. During the remedial design phase of this project, a stormwater management plan would need to be completed to make sure that current applicable standards and guidance are followed.

Installation of the cover system is estimated to be complete within one year.

This alternative also includes imposition of institutional controls including an environmental easement that would require limiting the use and development of the property to commercial use, posting signs, and a site management plan to control activities at the site to prevent potential for exposures to contaminated soil.

Monitoring is also included in this remedy consisting of sampling five existing groundwater wells located along the Hudson River to confirm that PCBs do not migrate via groundwater into the river from this site. These wells would be sampled once, five years following implementation of the remedy, and the results would be evaluated to determine if any remedy modifications are warranted.

Alternative 4: Excavation and Off-Site High-Temperature Thermal Desorption

Present Worth: *$7,500,000*
Capital Cost: *$7,500,000*
Annual Costs:
(Years 1-5): *$0*
(Years 5-30: *$0*

This alternative involves the excavation of PCB contaminated soils (the dredge spoils), off site treatment, and backfill of treated soils at the site. The area to be remediated under this alternatve is the same as that for Alternative 3, as shown in Figure 5. A total of approximately 31,000 cubic yards of soil would be excavated from the site and hauled to an off site high-temperature thermal desorption (HTTD) facility for treatment. Excavation of the contaminated soil would be performed using conventional construction equipment such as a hydraulic excavator and bulldozers. The maximum depth of excavation is approximately 8.5 feet below ground surface.

During the excavation process, PCB field screening tests would be used to establish final excavation limits.

Based on groundwater elevations collected during the Remedial Investigation, it does not appear that the excavation at this site would extend into the groundwater table. Therefore, excavation dewatering is not assumed at this site. Some site utilities (as shown in Figure 5) are anticipated to be encountered during excavation activities. Adequate protection of these utilities would be performed to prevent service interruption.

After excavation, contaminated soils would be loaded into trucks and transported to the HTTD treatment facility that can accept site soils. For this alternative, lined and covered dump trucks were assumed for transportation of site soils. After each dump truck unloads the contaminated soil at the treatment facility, the dump truck would then load soil that has been treated and return to the site to be used as backfill. The reuse of treated site soils versus new backfill was preferred as a cost-saving and resource saving alternative. Instead of trucks returning to the site (from the treatment facility) empty, they could return with the backfill needed for the site. Furthermore, reuse of treated soil eliminates the need for the treatment facility to dispose of the material and reduces the need to use soil. Excavation and thermal treatment of the contaminated soil is estimated to be complete in less than 1 year.

Negligible soil loss is anticipated through the treatment process, thus it was assumed no additional backfill would be required for the site. Considering activities at the site, a geotextile fabric and 6-inch layer of gravel or topsoil and grass would be placed to restore the site to pre-construction conditions.

Since all of the contaminated soils would be remediated at this site under this alternative, no institutional controls, monitoring or maintenance activities are included.

Alternative 5: Excavation and Off-Site Disposal

Present Worth: *$7,700,000*
Capital Cost: *$7,700,000*
Annual Costs:
(Years 1-5): *$0*
(Years 5-30): *$0*

This alternative involves the excavation and off-site disposal of PCB contaminated soils. Based on the volume estimate in the FS, approximately 31,000 cubic yards of contaminated soil would be excavated and disposed of as non-hazardous material. The excavated soil would be stockpiled, characterized, and properly disposed of off site. Due to the fact that contamination within this site does not exceed 50 mg/kg, according to NYS regulations the contaminated soil is considered to be a non-hazardous waste; therefore, the soils can be disposed of at a permitted solid waste landfill. Temporary facilities would be required for on-site staging of contaminated material after excavation. Clean fill would be used to backfill the excavated areas followed by placement of a geotextile fabric and 6-inch layer of gravel or topsoil and grass restore the site to pre-construction grades and conditions.

Excavation of the contaminated soil and analytical testing would be performed as described in Alternative 4. Excavated soils would be staged on-site until being loaded into truck for transport to an appropriate disposal facility.

Excavation and off-site disposal of the contaminated soil is estimated to be complete in less than 1 year.

Since all of the contaminated soils would be remediated at this site under this alternative, no institutional controls, monitoring or maintenance activities are included.

7.2 Evaluation of Remedial Alternatives

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

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

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

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

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

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

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

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

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

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

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

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

No comments were received that resulted in a significant change to the remedy.

SECTION 8: SUMMARY OF THE SELECTED REMEDY

Based on the Administrative Record (Appendix B) and the discussion presented below, the Department has selected Alternative 3, Selective Excavation and On-Site Consolidation/Covering, as the remedy for this site. The elements of this remedy are described at the end of this section.

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

Alternative 3 (consolidation and cover) is being selected because, as described below, it satisfies the threshold criteria and provides the best balance of the primary balancing criteria described in Section 7.2. It would achieve the remediation goals for the site by consolidating and covering contaminated soils that create the most significant threat to public health and the environment. Alternatives 4 (excavation and off-site thermal desorption), and 5 (excavation and removal) would also comply with the threshold selection criteria. Because Alternatives 3, 4, and 5 satisfy the threshold criteria, the five balancing criteria are particularly important in selecting a final remedy for the site. This alternative reduces direct contact exposure, migration of fugitive dust, reduces precipitation driven infiltration, and prevents potential erosion from the site to the Hudson River. The six inch thickness is proposed due to the general finding in the RI that the existing top six inch soil horizon averages less than 1 part per million PCB.

Alternatives 1 and 2 do not comply with SCGs because contaminated surface soils that exceed the commercial SCO of 1 ppm PCB would continue to serve as a potential route of exposure to humans and wildlife. Alternative 3 would comply with SCGs since the contaminated soil would be isolated beneath a six inch cover. Alternatives 4 and 5 would also comply with SCGs since contaminated soils would be either treated or disposed of off-site.

Alternative 1 provides no protection for potential exposure to contaminated soils. Alternative 2 provides limited protection from potential human exposures to contaminated soils via institutional controls but existing surficial PCB soil contamination would remain. By covering the contaminated areas of the site in Alternative 3, potential direct human and wildlife exposure pathways would be eliminated. Alternatives 4 and 5 provide the highest level of protection compared to Alternatives 2 and 3 because the contaminated soils would be excavated and either treated or properly disposed of off site. However, this is accomplished at a much higher cost for no significant reduction in potential exposure pathways compared to Alternative 3.

Short-term impacts are not anticipated for Alternatives 1 and 2, since no remediation activities would take place. Alternatives 3, 4 and 5 all have potential adverse, short-term impacts related to excavation of contaminated soils and transport of contaminated soil and backfill/cover material. Excavation of contaminated soil can cause dust and noise. Appropriate dust and noise monitoring and suppression activities would be performed during the excavations. NYSCC activities may be impacted due to relocation of equipment and metal buildings while the cover is being installed or excavation/backfilling takes place. Remedial activities would be coordinated to minimize interruption of NYSCC activities at this maintenance facility. Truck transport of excavated, contaminated soils for disposal and transport of backfill and/or cover material to the site create the potential for noise and traffic impacts, especially for Alternatives 4 and 5 compared to Alternative 3.

Although Alternatives 4 and 5 would eliminate the cost of maintenance and monitoring, the amount of OM&M for Alternatives 2 and 3 are minimal.

Reduction in toxicity, mobility, or volume through treatment would be achieved in Alternative 4. Alternatives 1, 2, 3, and 5 would not treat contaminated soils, therefore, reduction in toxicity, mobility, or volume through treatment would not take place. However, Alternative 3 is expected to reduce mobility of contamination through covering of contaminated soils. Similarly, Alternative 5 would essentially eliminate concerns of toxicity, mobility, and volume of contaminated soil at the site through off-site disposal at a permitted disposal facility.

There are no actions to implement for Alternative 1. Alternatives 2 through 5 are readily implemented using standard construction means and methods.

The cost of the alternatives varies significantly. Alternatives 4 and 5 are much more expensive than Alternative 3, but for little difference in protectiveness. The cover system in Alternative 3 will eliminate the potential for exposures to contaminated surface soils and the environmental easement and site management plan would ensure the protectiveness of the cover system remedy.

The estimated present worth cost to implement the remedy is $720,000. The cost to construct the remedy is estimated to be $577,000 and the estimated average annual costs for 30 years is $4,800.

The elements of the selected remedy are as follows:

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program.

2. Contaminated soil in the northeastern portion of the site will be consolidated to the main area of dredge spoils in the central portion of the site prior to this area being covered.

3. A soil cover will be placed over the surface soils where the PCB concentrations in the top foot exceed 1 part per million (typically the surface over the former dredge spoil disposal area) to prevent exposure to contaminated soils. Non-vegetated areas (buildings, roadways, parking lots, etc.) will be covered by six inches of gravel. The 6 inch thick cover will consist of clean soil underlain by a geofabric and an indicator such as orange plastic snow fence to demarcate the cover soil from the subsurface soil. In areas to be covered that are currently grassed, the top of the cover will be of sufficient quality to support vegetation. Clean soil will constitute soil that meets the Division of Environmental Remediation's criteria for backfill or local site background.

4. Imposition of an institutional control in the form of an environmental easement that will require (a) limiting the use and development of the property to commercial use, which will also permit industrial use; (b) compliance with the approved site management plan; and (c) the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

5. Development of a site management plan which will include the following institutional and engineering controls: (a) management of the final cover system to restrict excavation below the soil or gravel cover's demarcation layer, pavement, or buildings. Excavated soil will be tested, properly handled to protect the health and safety of workers and the nearby community, and will be properly managed in a manner acceptable to the Department; (b) monitoring of the groundwater once after 5 years; (c) identification of any use restrictions on the site; and (d) provisions for the continued proper maintenance of the cover system.

6. The property owner will provide a periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal will: (a) contain certification that the institutional controls and engineering controls put in place are still in place and are either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing has occurred that will impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

SECTION 9: HIGHLIGHTS OF COMMUNITY PARTICIPATION

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

- Repositories for documents pertaining to the site were established.
- A public contact list, which included nearby property owners, elected officials, local media and other interested parties, was established.
- A fact sheet that describes that PRAP and announces the public meeting was sent and distributed.
- A public meeting was held on March 11, 2009 to present and receive comment on the PRAP.
- A responsiveness summary (Appendix A) was prepared to address the comments received during the public comment period for the PRAP.

TABLE 1
Nature and Extent of Contamination
October 2005-September 2006

SURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
PCB/Pesticides	Total PCB	ND (0.02) to 14	0.1	16 of 31
Inorganic Compounds	Cadmium	ND (0.23) to 0.78	2.5	0 of 8
	Chromium	11.0 to 22.5	30	0 of 8
	Lead	17.5 to 49.7	63	0 of 8
	Mercury	ND (0.20) to 0.042	0.81	0 of 8

SUBSURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
PCB/Pesticides	Total PCB	ND (0.02) to 20	0.1	45 of 124
Inorganic Compounds	Cadmium	ND (0.21) to 1.5	2.5	0 of 19
	Chromium	6.3 to 38.6	30	3 of 19
	Lead	ND (1.4) to 118	63	3 of 19
	Mercury	ND (0.020) to 0.216	0.18	1 of 19

GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
PCB/Pesticides	Aroclor 1016	ND (0.47)	0.09	0 of 24
	Aroclor 1221	ND (0.47)	0.09	0 of 24
	Aroclor 1232	ND (0.47)	0.09	0 of 24
	Aroclor 1242	ND (0.47)	0.09	0 of 24
	Aroclor 1248	ND (0.47)	0.09	0 of 24
	Aroclor 1254	ND (0.47)	0.09	0 of 24
	Aroclor 1260	ND (0.47)	0.09	0 of 24

TABLE 1
Nature and Extent of Contamination
October 2005-September 2006

GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Inorganic Compounds	Chromium	ND (4.0)	50	0 of 24
	Lead	ND (5.0)	25	0 of 24
	Mercury	ND (0.200)	0.7	0 of 24
	Iron	185 to 52,900	300	22 of 24
	Magnesium	10,600 to 47,600	35,000	5 of 24
	Manganese	464 to 3510	300	24 of 24
	Sodium	14,400 to 145,000	20,000	15 of 24

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

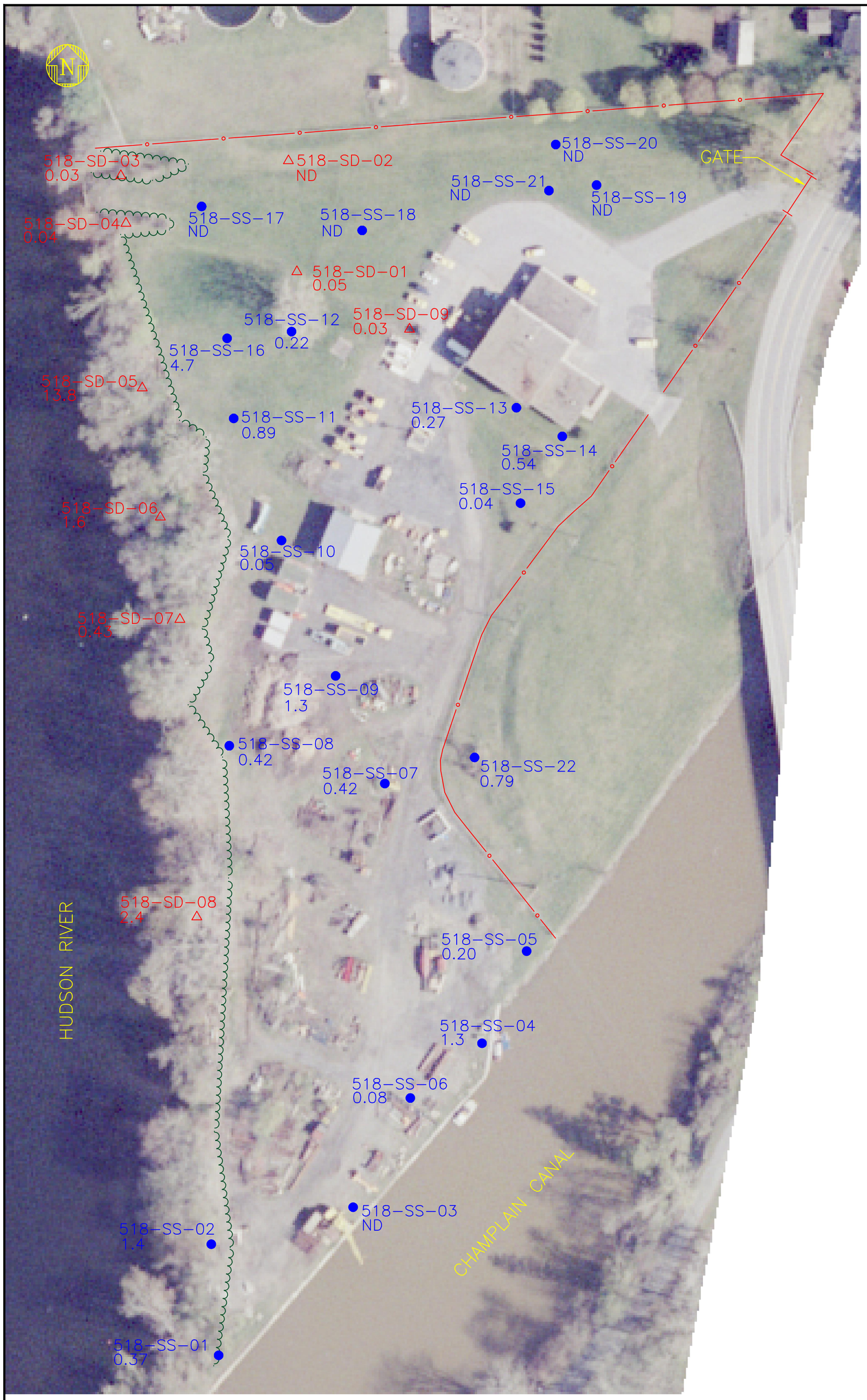
[b] SCG = standards, criteria, and guidance values;
Surface Soil = Part 375-6.8 Unrestricted Use Soil Cleanup Objective
Subsurface Soil = Part 375-6.8 Unrestricted Use Soil Cleanup Objective
Groundwater = NYSDEC Technical and Operational Guidance #1.1.1: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, 1998 Table 1, Type E or W (fresh water)

ND = Non-Detect (followed by Detection Limit)

Table 2
Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
1.No Action	$ 0	$ 0	$ 0
2. Institutional Controls and Long-Term Monitoring	$118,000	$2,800	$229,000
3. Selective Excavation and On-Site Consolidation/Covering	$577,000	$4,800	$720,000
4. Excavation and Off-Site Temperature Thermal Desorption	$7,500,000	$ 0	$7,500,000
5. Excavation and Off-Site Disposal	$7,700,000	$ 0	$7,700,000

Figure 1 - Site Location Map
Site 518 Dredge Spoil Disposal Area
NYSDEC Remedial Investigation and Feasibility Study



LEGEND

518-SS-22 ●	EEEPC SURFACE SOIL LOCATION (2005)
518-SD-06 △	EEEPC SEDIMENT/DRAINAGE PATH LOCATION (2005)
—o—	CHAINLINK FENCE
⌒⌒⌒	APPROXIMATE EDGE OF TREES

NOTE: VALUES ARE MAXIMUM TOTAL PCB CONCENTRATION (SCREENING OR CONFIRMATION SAMPLES) FOR A LOCATION IN mg/Kg.

SCALE IN FEET

0 75 150 225

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SITE 518 DREDGE SPOIL DISPOSAL AREA

Fort Edward - New York

FIGURE 2
SEDIMENT/DRAINAGE PATH AND SURFACE SOIL SAMPLE LOCATIONS AND RESULTS

SCALE	DATE ISSUED	C.A.D. FILE NO.	DRAWING NO.
1"=75'	-	FIG5-1.DWG	Figure 2

MAXIMUM TOTAL PCB CONCENTRATIONS IN SUBSURFACE SOIL, 0.5-5 FEET BELOW GRADE

MAXIMUM TOTAL PCB CONCENTRATIONS IN SUBSURFACE SOIL, >5 FEET BELOW GRADE

LEGEND

518-MW-05	EEEPC MONITORING WELL (2005)
518-BH-03	EEEPC BORING LOCATION (2005)
	MALCOLM PIRNIE BORING LOCATION (1992)
518-BH-03	EEEPC TEST PIT BORING LOCATION (2005)
518-TP-08	EEEPC TEST PIT LOCATION (2005)
	CHAINLINK FENCE
	APPROXIMATE EDGE OF TREES
	APPROXIMATE DREDGE SPOIL FILL BOUNDARY
NA	SAMPLE NOT AVAILABLE AT THIS DEPTH INTERVAL
ND	PCBS NOT DETECTED
BH	BOREOLE SAMPLE
MW	MONITORING WELL SAMPLE
1	TOTAL PCB CONCENTRATION CONTOUR IN PPM (DASHED WHERE INFERRED)
	EXCEEDS REGULATORY CRITERIA OF 1 PPM

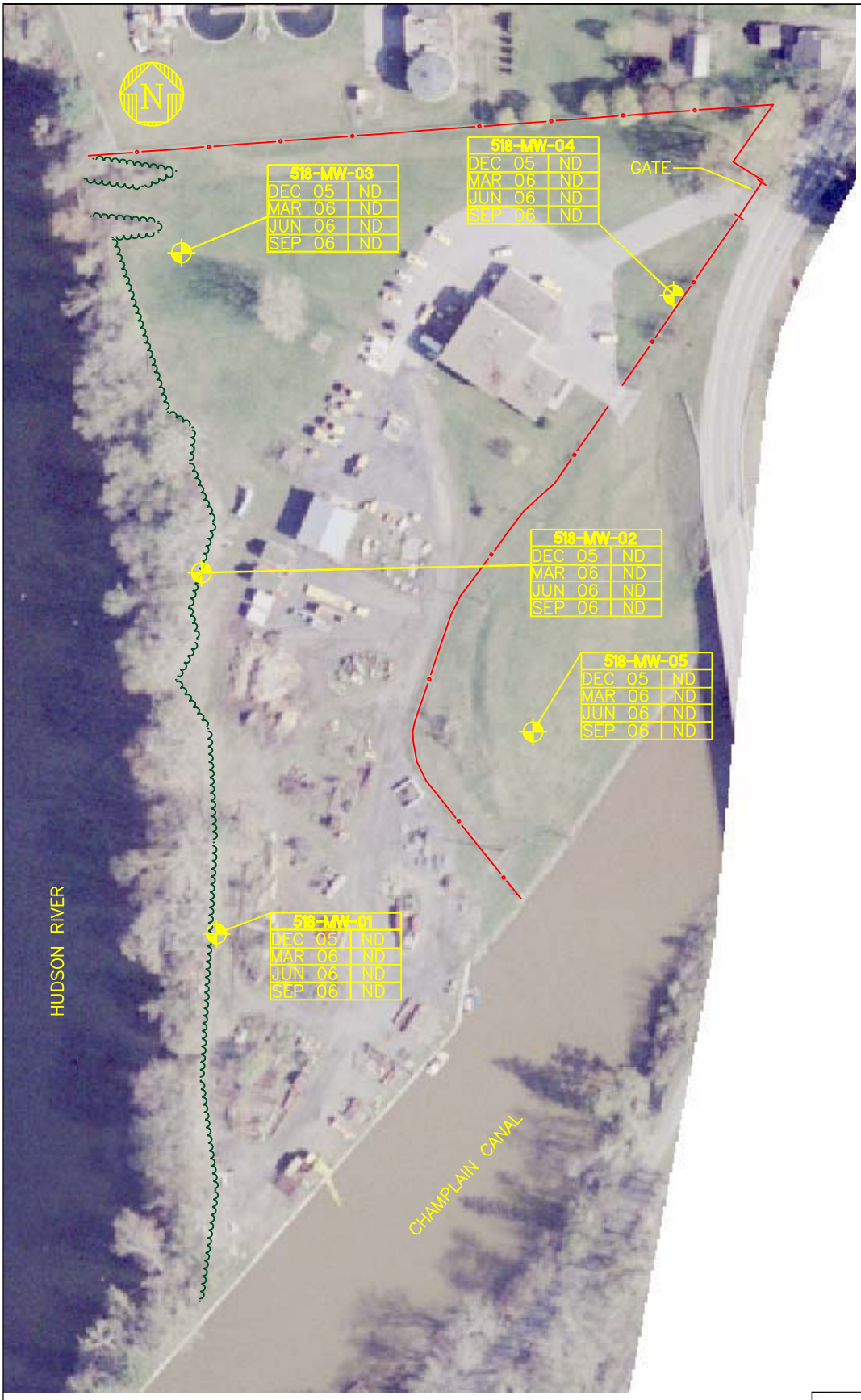
NOTE: VALUES ARE MAXIMUM TOTAL PCB CONCENTRATION (SCREENING OR CONFIRMATION SAMPLES) FOR A LOCATION IN mg/Kg.

SCALE IN FEET
0 60 120 180

NYSDEC
SITE 518 DREDGE SPOIL DISPOSAL AREA
FORT EDWARD - NEW YORK

FIGURE 3
MAXIMUM TOTAL PCB CONCENTRATIONS IN SUBSURFACE SOIL

SCALE	DATE ISSUED	C.A.D. FILE NO.	DRAWING NO.
1"=60'	-	FIG5-3.DWG	Figure - 3



LEGEND

MW–05 — MONITORING WELL

CHAINLINK FENCE

APPROXIMATE EDGE OF TREES

ND = NON–DETECT

PCB CONCENTRATIONS IN ug/L (PPB)

SCALE IN FEET

0 75 150 225

NYSDEC

SITE 518 DREDGE SPOIL DISPOSAL AREA

FORT EDWARD - NEW YORK

FIGURE 4
SITE 518 GROUNDWATER PCB CONCENTRATIONS

SCALE	DATE ISSUED	C.A.D. FILE NO.	DRAWING NO.
1"=150'		SITE518_FIG5-3.DWG	Figure 4

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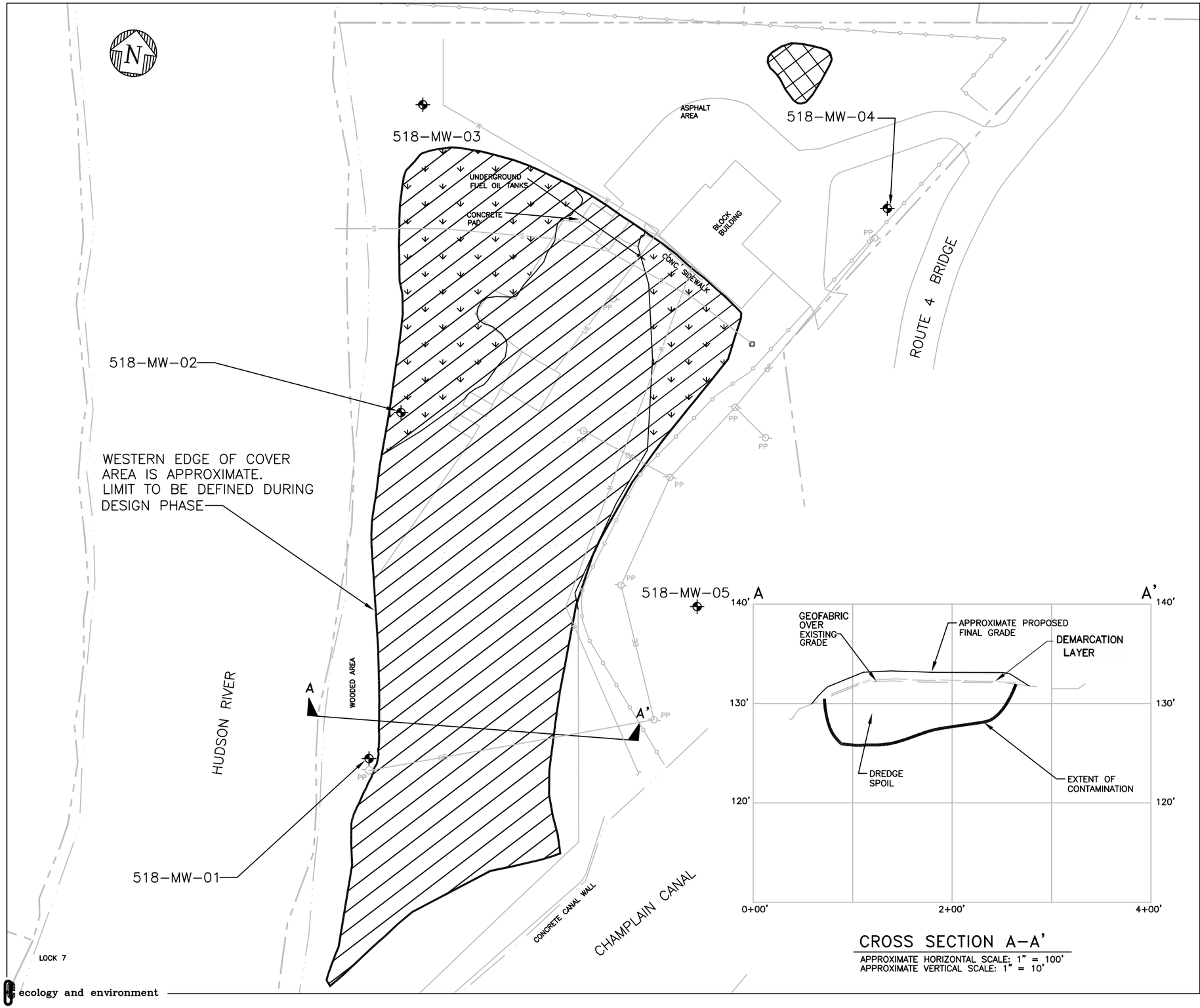

CROSS SECTION A–A'

APPROXIMATE HORIZONTAL SCALE: 1" = 100'
APPROXIMATE VERTICAL SCALE: 1" = 10'

LEGEND:

- APPROXIMATE EDGE OF WATER BOUNDARY
- APPROXIMATE LOCATION OF PROPERTY BOUNDARY (SEE NOTE 2)
- EXISTING FENCE
- OE — EXISTING OVERHEAD ELECTRIC
- UE — APPROXIMATE LOCATION OF UNDERGROUND ELECTRIC
- W — APPROXIMATE LOCATION OF EXISTING WATER LINE
- S — APPROXIMATE LOCATION OF EXISTING STORM SEWER LINE
- APPROXIMATE LOCATION OF EXISTING STRUCTURE
- 518–MW–02 — EXISTING MONITORING WELL IN LTM PROGRAM
- PP — EXISTING POWER POLE
- PROPOSED GRAVEL COVER AREA
- PROPOSED SOIL COVER AREA
- PROPOSED SOIL AREAS TO BE EXCAVATED TO MAXIMUM OF 2.8 FEET BELOW GROUND SURFACE AND CONSOLIDATED UNDER CAP AREA

NOTES:

1. SITE FEATURE LOCATIONS BASED ON 2003 AERIAL PHOTOGRAPHY.
2. PROPERTY LINES ARE APPROXIMATE IN LOCATION AND ARE BASED ON WASHINGTON COUNTY PARCEL DATA, 2006.
3. EXISTING ABOVEGROUND UTILITIES, AND POWER POLES TAKEN FROM LU ENGINEERS DRAWING 10623–07 AREA 518.DWG, DATED 11/07/05. EXISTING SUBSURFACE UTILITIES APPROXIMATELY LOCATED BASED ON DISCUSSIONS WITH CANAL CORPORATION PERSONNEL (JULY 2007). ADDITIONAL ABANDONED UTILTIES EXIST THROUGHOUT THE SITE, HOWEVER NOT IDENTIFIED ON THIS FIGURE.
4. EXISTING FENCE LOCATION TAKEN FROM DRAWING 0623–07 AREA 518.dwg, PROVIDED BY LU ENGINEERS, DATED 11/07/05.

APPROXIMATE SCALE IN FEET

0 100 200 300

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FIGURE 5 – ALTERNATIVE 3 – SELECTIVE EXCAVATION AND ON–SITE CONSOLIDATION/CONTAINMENT
SITE 518
FORT EDWARD, NEW YORK

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Site 518 Dredge Spoil Disposal Area
Town of Fort Edward, Washington County, New York
Site No. 558028

The Proposed Remedial Action Plan (PRAP) for the Site 518 Dredge Spoil Disposal Area (Site 518), was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on February 27, 2009. The PRAP outlined the remedial measure proposed for the contaminated soil at Site 518.

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

A public meeting was held on March 11, 2009, which included a presentation of the Remedial Investigation (RI) and the Feasibility Study (FS) as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on March 28, 2009.

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

COMMENT 1: There is a concern that the groundwater sampling data from 2006 may not be representative of the current conditions.

RESPONSE 1: There were five monitoring wells installed at the site in 2005, and all five were sampled four times over a year to account for any seasonal fluctuations in groundwater and to verify the site conditions. None of the twenty samples had any detections for PCBs. In general, contaminant concentrations in groundwater do not vary significantly with time absent active sources of contamination or an active treatment system in the aquifer. There was enough information about the groundwater conditions in the Remedial Investigation of this site to determine that the groundwater is not currently impacted by the contaminants at this site.

COMMENT 2: Are there spoils under the new building built by the sewer district?

RESPONSE 2: There are no contaminated dredge spoils underlying this building.

COMMENT 3: What testing was done under the building?

RESPONSE 3: There was no testing under the main office building during the Remedial Investigation phase of the project because there are no dredge spoils underlying this building. Historic testing, consisting of garage slab subsurface sampling, was done during the investigation of a historic spill related to the removal of a former fuel tank.

COMMENT 4: Does the deed restriction or environmental easement pertain to the whole parcel, or would it only concern the area that needs restoration?

RESPONSE 4: The environmental easement would pertain to the whole parcel, but restrictions would pertain to the portion of the property where the contaminated dredge spoils are covered.

COMMENT 5: Are we fixed on crushed stone or would a sub-base be amenable?

RESPONSE 5: The details of the gradation of the soil or stone cover material to be used in a given location will be determined during the remedial design phase of the project. A design objective will be to allow for continued site use by the New York State Canal Corporation (NYSCC), including vehicular traffic and lay-down/staging of heavy equipment in discrete areas.

COMMENT 6: What kind of sequencing would you follow considering NYSCC uses most of the area proposed for cover?

RESPONSE 6: As stated in the Response to Comment 5, above, a design objective will be to allow for continued site use by NYSCC. The Department will consult with NYSCC during design with respect to construction schedule and work sequence in this regard.

COMMENT 7: When would the next round of groundwater sampling be done? By this spring?

RESPONSE 7: The next round of groundwater monitoring would be done five years following implementation of the remedy, and the results would be evaluated to determine if any remedy modifications are warranted.

COMMENT 8: Why are you not removing all of the contamination? You need to clean up the site before dredging starts.

RESPONSE 8: No. The Site 518 contaminated dredge spoils are not serving as a source of PCB to the river; therefore, this site's remedial schedule does not have any bearing on the Upper Hudson remedial dredging that EPA plans to commence in the Spring 2009. Alternative 3 (Consolidation and Covering) was selected over Alternatives 4 (Excavation and Off-Site Thermal Desorption) and 5

(Excavation and Off-Site Disposal) because the soil/stone cover will achieve the same level of protectiveness at considerably less short term adverse impacts and cost.

COMMENT 9: Will the relocation of the northern area of contamination make the other area worse?

RESPONSE 9: No. The PCB concentrations of the northeastern area dredge spoils are not higher than PCB concentrations found in the central area of the site.

COMMENT 10: Who will fund the design and remedial action of this phase of the project?

RESPONSE 10: After the remedy is selected, General Electric will again be contacted to assume responsibility for the remedial program. If an agreement cannot be reached with General Electric, the Department will evaluate the site for further action. General Electric is subject to legal actions by the state for recovery of all response costs the state has incurred.

COMMENT 11: The current State Appropriation was to fund the current RI/FS portion of the project?

RESPONSE 11: Yes.

COMMENT 12: Is there a significant ongoing exposure? Would the State move quickly to address it?

RESPONSE 12: Where warranted by site conditions, the Department implements Interim Remedial Measures, including soil removals, in order to respond quickly to immediate threats posed by a site. This site did not present any threats that warranted such a response.

COMMENT 13: Why not spend additional money to remove spoils instead of a soil cover?

RESPONSE 13: See the Response to Comment 9, above.

COMMENT 14: What will happen if the remedy is not implemented this year?

RESPONSE 14: To abate potential exposures, the Department may pursue development and implementation of the requisite Institutional Controls/Environmental Easements this year independent of the design and construction of the soil/stone cover.

COMMENT 15: NYSCC currently uses most of the current dredge spoils footprint for normal NYSCC use. How will the remedial action be implemented given the current use of the site?

RESPONSE 15: See Response to Comment 6, above.

COMMENT 16: What about the Investigation Derived Waste (IDW) at the site? There are three barrels that still reside at the site. What will happen to them?

RESPONSE 16: The three barrels of investigation derived waste (consisting of soil cuttings from drilling and PPE) were removed from the site on March 24, 2009.

COMMENT 17: We should clean up the land. The river is the least of our worries. We need to remove all of the PCBs, and will save money in the end.

RESPONSE 17: See the Response to Comment 8, above.

Carmella R. Mantello, the Director of the New York State Canal Corporation, submitted a letter on March 23, 2009 which included the following comments:

COMMENT 18: The implementation of Alternative #3 will likely disrupt normal NYSCC operations at Site 518. Coordination of activities at this working site will be important to address in the design phase. The site is a working site, necessary for maintenance work efforts for the entire Champlain Canal, including 60 miles of canal, 11 locks, and the Glens Falls Feeder Canal. As the project will impact the majority of the site, the impact to Champlain Canal maintenance could be significant. Logistics, timeframes and coordination will be an important consideration during design.

RESPONSE 18: It is the intention of the Department to coordinate remedial activities with NYSCC. The details of scheduling and logistics will be addressed in the design phase. (See Response to Comment 6.)

COMMENT 19: Implementation of the Phase 1 and Phase 2 dredging related to the Hudson River dredging project may require the use of this property by General Electric and/or their subcontractors. Therefore, in addition to coordination with the Corporation, if necessary, implementation should also be coordinated with General Electric and their subcontractors.

RESPONSE 19: Implementation of the Site 518 remedy will be coordinated with implementation of the Hudson River PCBs site remedy as may be needed or appropriate.

COMMENT 20: This site is occasionally used by others to load or unload equipment or vessels into or from the water. Often these activities have an important economic or public function. Coordination with these activities should be considered.

RESPONSE 20: Insofar as these activities by others are permitted by NYSCC, the Department will attempt to coordinate implementation of the remedy with such activities. The details of scheduling and logistics will be addressed in the design phase.

COMMENT 21: The proposed cover is adjacent to several structures. Excavation will be required at those locations in order to meet grade. Excavation to meet adjacent grades is not mentioned in the proposal. The structures include the main office building, the back storage building, pavement and the working Canal wall. Excavating and only adding fill at those locations identified would make those structures less accessible to NYSCC operations, and possibly significantly impact the use of the wall for loading and unloading of materials and equipment.

RESPONSE 21: The replacement of these structures was included in the costs of the remedial alternative, if replacement is necessary. Any grading issues that could impact activities around the hard wall will be addressed during design. An objective will be to minimize impacts to normal NYSCC operations.

COMMENT 22: The NYSCC is not in a position to make any certifications associated with the proposed cleanup or on future cover integrity. The Plan should identify what entity will be making these certifications.

RESPONSE 22: The remedial party or owner must provide certification regarding the continued effectiveness of any institutional and/or engineering controls required by the ROD on a periodic basis. This certification is to be included in a corresponding report. The certification must identify any required institutional and/or engineering controls and evaluate whether:

1. The controls should remain in place, and;
2. They remain effective for the protection of public health and the environment.

Where engineering controls are a component of the remedy, such as the soil cover, the corresponding institutional controls must be maintained.

COMMENT 23: Since institutional controls are required on NYSCC property, the NYSCC should be permitted to comment on the proposed controls and potential impacts to NYSCC operations and maintenance.

RESPONSE 23: As stated above, it is the intention of the Department to coordinate remedial activities with NYSCC. There will be opportunity for NYSCC to comment on the proposed controls, particularly as the controls may pertain to NYSCC operations and maintenance.

COMMENT 24: The site cover design and the institutional controls must be considered in tandem. As this is an active work site, and institutional controls are required to ensure that the cap is not compromised, the risk of damaging the cap with normal operations on site must be considered. During the public meeting held on March 11, 2009, it was mentioned that stone fill would be used to cover certain areas of the site. The cover should be designed to have enough integrity to withstand

appropriate on-site operational conditions such as heavy and light equipment use and maintenance. If stone fill is used on parking and driving surfaces, the NYSCC must be consulted to determine whether the design will withstand such impacts. Simply placing six inches or more of a cover material will not allow use of the site without the risk of cap compromise. A soil cap will be damaged with continuation of current activity.

RESPONSE 24: During the public meeting held on March 11, 2009, it was mentioned by Department staff that the current use of the specific areas would help inform which cover material is used. It was said that that specific stone fill was not determined yet and would be chosen during the remedial design phase.

COMMENT 25: All utilities must be located and marked out as part of the Plan. Where utilities are below locations where the cap is to be placed, relocation of the utilities must be considered. The Plan needs to address what will be required and expected from the NYSCC if excavations under or near the cap are needed to repair any of these utilities.

RESPONSE 25: Utilities will be located during the remedial design, and any utilities that would interfere with the cover would be re-located during the implementation of the remedy. The Site Management Plan would be developed to address procedures to be followed if excavations under or near the cap are needed to repair any of these utilities.

COMMENT 26: The Proposed Remedial Action Plan (PRAP) correctly designates NYSDOT and GE as the Potentially Responsible Party. Site 518 jurisdiction was transferred to the NYSCC from the State (NYSDOT) as part of the "Thruway 2000" legislation (Chapter 766 of the Laws of 1992) and it is the position of the NYSCC that the indemnification as set forth in Canal Law Section 6(6) is applicable to Site 518.

RESPONSE 26: The Department and the State take no formal position in this document on comments received regarding the legal liability of any particular party or the applicability of any affirmative defenses to such liability and hereby reserves all rights thereto. The text in the ROD has been changed to reflect this position.

COMMENT 27: A NYSCC Work Permit will be required in order to conduct any work on NYSCC property. Therefore, the Corporation must review and approve the final design.

RESPONSE 27: Provisions relative to obtaining permits and other approvals for remedial work is governed by the Environmental Conservation Law § 27-1313(10).

Ed Stimson, of 28 Broadway in Fort Edward, called David Tromp on March 27, 2009 with a question regarding the proposed remediation.

COMMENT 28: Will the dust generated at the site during excavation and backfill be of concern to local residents?

RESPONSE 28: Regarding the potential for dust being generated during remedy implementation, the site will have a Community Air Monitoring Plan (CAMP) developed during remedial design that will include real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at the site.

If the wind creates a dust problem, dust suppression techniques would be implemented or the site operations would need to stop.

John G. Haggard, Manager of Site Evaluation and Remediation Program for General Electric, submitted a letter on March 30, 2009 which included the following comments:

COMMENT 29: The Remedial Investigation (RI) establishes a comprehensive dataset that demonstrates hazardous waste is not present at the Site 518 Dredge Spoil Disposal Site (the "Site"). Therefore the Department should remove the Site from the Inactive Hazardous Waste Disposal Site Registry. Current regulation identifies 50 ppm as the concentration which defines PCBs as a hazardous waste.

RESPONSE 29: As indicated on page 1 of the commenter's letter, data available at the time of listing indicated that there were three locations that had concentrations in excess of 50 ppm of PCBs. Current state regulations at 6 NYCRR Part 375-1.2(w) define "hazardous waste" as "a waste which appears on the list or satisfies the characteristics promulgated by the Commissioner pursuant to ECL 27-0903 and any substance which appears on the list promulgated pursuant to ECL 37-0103." PCBs are on the list promulgated pursuant to ECL 37-0103. The definition does not include any applicable, minimum concentration value. Therefore, there is no basis to remove the Site from the Inactive Hazardous Waste Disposal Site Registry based on the concentration of PCB waste present.

COMMENT 30: The environmental media and conditions identified at the Site can be effectively managed as a solid waste under 6 NYCRR Part 360, further demonstrating that the Site should not be on the Inactive Hazardous Waste Disposal Site Registry.

RESPONSE 30: By definition, many hazardous wastes are also solid wastes as is the case with this site. Clean up of this site is rightfully being conducted pursuant to the Environmental Remediation program under 6 NYCRR Part 375.

COMMENT 31: The Site classification - "Class 2: at which contamination constitutes a significant threat to public health or the environment" - is not supported by information available to the NYS DEC at the time it was placed on the Registry of IHWDS or, at a minimum, should have been reclassified following completion of the RI.

RESPONSE 31: As stated in the Record of Decision for the Site, the impacts of the wastes disposed at the Site have resulted in:

- a significant threat to human health associated with current and potential exposure to PCB contaminated surface and subsurface soils, as well as
- a significant environmental threat associated with the current and potential impacts of contaminants to wildlife.

Therefore, the current Class 2 Site classification is appropriate.

COMMENT 32: The Human Health Risk Evaluation (Section 7 of the RI) is inconsistent with the NYS DOH guidelines for Qualitative Human Health Exposure Assessment and typical risk assessment practices defined under the National Contingency Plan (NCP); however, its conclusion that there is no unacceptable human health risk is appropriate.

RESPONSE 32: The Remedial Investigation Report included a quantitative human health risk assessment; however, during remedial decision making, the NYSDOH relies on qualitative exposure assessments to identify pathways of exposure presented by contaminants at a site and applicable NYS Standards, Criteria, and Guidance. Specifically, for Site 518, 6 NYCRR Part 375 was used to make remedial decisions. Under Part 375, surficial soil within the top one foot in a commercial setting must achieve 1 ppm. To comply with the Part 375 requirements, the selected remedy calls for the addition of 6-inches of clean cover over the existing clean topsoil and/or gravel, so that the top one foot of cover material at the site will meet the Soil Cleanup Objectives for PCBs in soil.

COMMENT 33: The Screening-Level Ecological Risk Assessment (Section 8 of the RI) is inconsistent with NYSDEC DER-10, Fish and Wildlife Resource Impact Assessment (FWRIA) guidance and the US EPA ecological risk assessment guidelines established under the NCP and therefore is not the appropriate assessment tool to determine remedial needs.

Notwithstanding the fact that remedial decisions should not be based on the results of a SLERA, review of the SLERA indicates that the assumptions made for the following parameters were overly conservative for determining remedial needs: ingestion rates, soil exposure point concentrations, bioaccumulation factors and toxicity reference values.

RESPONSE 33: The RI Report explains that the risk assumptions related to robins are not as conservative as they could be, based on some of the applicable literature. Furthermore, as documented in the RI Report, the exposures/ecological risk to the short-tailed shrew, who feed extensively on soil invertebrates, is due to PCBs in soil.

COMMENT 34: The remediation goals in the PRAP are either already met under existing conditions and/or can be met with the establishment of institutional controls.

RESPONSE 34: The remediation goals in the PRAP are not already met based on the potential exposures to humans and the environment currently posed by the site. Institutional controls will not

protect the ecological receptors and the soil cover will provide a more effective protection against potential human exposures than institutional controls alone. Many areas of the site will continue to be used by NYSCC and the soil cover will significantly reduce potential exposures that could otherwise result based on site uses.

COMMENT 35: An alternate remedy requiring institutional controls would meet the threshold criteria pursuant to 6 NYCRR Section 375-1.8.

RESPONSE 35: An alternate remedy requiring only institutional controls would not meet the threshold criteria pursuant to 6 NYCRR Section 375-1.8 as discussed in Response 34 above. Many areas of the site will continue to be used by NYSCC and the soil cover will significantly reduce potential exposures that could otherwise result based on site uses.

COMMENT 36: An alternate remedy requiring institutional controls would also satisfy the balancing criteria pursuant to 6 NYCRR Section 375-1.8.

RESPONSE 36: See Response 37 above.

COMMENT 37: The proposed remedy is inconsistent with the NCP because an Institutional Control remedy provides a greater degree of overall effectiveness.

RESPONSE 37: See Response 37 above. Both remedies are comparable in regards to reduction in toxicity, mobility or volume through treatment. Although the institutional controls have less short-term impacts and are easy to implement, the advantage of exposure abatement presented by the selected remedy makes it the alternative with the highest overall effectiveness.

COMMENT 38: The Enforcement Section of the PRAP is in Error.

RESPONSE 38: The Department and the State take no formal position in this document on comments received regarding the legal liability of any particular party or the applicability of any affirmative defenses to such liability and hereby reserves all rights thereto. The text in the ROD has been changed to reflect this position.

APPENDIX A-1

Comment Letter from New York State Canal Corporation

New York State Canal Corporation

www.nyscanals.gov

John L. Buono
Chairman

Michael R. Fleischer
Executive Director

Carmella R. Mantello
Director

March 23, 2009

Mr. David Tromp
NYSDEC, Division of Environmental Remediation
625 Broadway
Albany, NY 12233-7013

RE: Proposed Remedial Action Plan (PRAP) for Site 518 Dredge Spoil Disposal Area, February 2009

Dear Mr. Tromp:

The Canal Corporation has reviewed the Proposed Remedial Action Plan (PRAP) for Site 518 Dredge Spoil Disposal Area, dated February 2009, and offer the comments listed below.

As you know, this site is currently owned and maintained by the New York State Canal Corporation. The proposed remedy is listed as Alternative #3, Selective Excavation and On-Site Consolidation/Covering, and comments are provided based on that remedy. The following are the comments raised by Canal Corporation staff regarding the PRAP:

- The implementation of Alternative #3 will likely disrupt normal Canal Corporation operations at Site 518. Coordination of activities at this working site will be important to address in the design phase. The site is a working site, necessary for maintenance work efforts for the entire Champlain Canal, including 60 miles of canal, 11 locks, and the Glens Falls Feeder Canal. As the project will impact the majority of the site, the impact to Champlain Canal maintenance could be significant. Logistics, timeframes and coordination will be an important consideration during design.

- Implementation of the Phase 1 and Phase 2 dredging related to the Hudson River dredging project may require the use of this property by General Electric and/or their subcontractors. Therefore, in addition to coordination with the Corporation, if necessary, implementation should also be coordinated with General Electric and their subcontractors.

- This site is occasionally used by others to load or unload equipment or vessels into or from the water. Often these activities have an important economic or public function. Coordination with these activities should be considered.

- The proposed cover is adjacent to several structures. Excavation will be required at those locations in order to meet grade. Excavation to meet adjacent grades is not mentioned in the proposal. The structures include the main office building, the back storage building, pavement

and the working Canal wall. Excavating and only adding fill at those locations identified would make those structures less accessible to Canal operations, and possibly significantly impact the use of the wall for loading and unloading of materials and equipment.

- The Canal Corporation is not in a position to make any certifications associated with the proposed cleanup or on future cover integrity. The Plan should identify what entity will be making these certifications.

- Since institutional controls are required on Canal property, the Canal Corporation should be permitted to comment on the proposed controls and potential impacts to Canal operations and maintenance.

- The site cover design and the institutional controls must be considered in tandem. As this is an active work site, and institutional controls are required to ensure that the cap is not compromised, the risk of damaging the cap with normal operations on site must be considered. During the public meeting held on March 11, 2009, it was mentioned that stone fill would be used to cover certain areas of the site. The cover should be designed to have enough integrity to withstand appropriate on-site operational conditions such as heavy and light equipment use and maintenance. If stone fill is used on parking and driving surfaces, the Canal Corporation must be consulted to determine whether the design will withstand such impacts. Simply placing six inches or more of a cover material will not allow use of the site without the risk of cap compromise. A soil cap will be damaged with continuation of current activity.

- All utilities must be located and marked out as part of the Plan. Where utilities are below locations where the cap is to be placed, relocation of the utilities must be considered. The Plan needs to address what will be required and expected from the Canal Corporation if excavations under or near the cap are needed to repair any of these utilities.

- The Proposed Remedial Action Plan (PRAP) correctly designates NYSDOT and GE as the Potentially Responsible Party. Site 518 jurisdiction was transferred to the Canal Corporation from the State (NYSDOT) as part of the "Thruway 2000" legislation (Chapter 766 of the Laws of 1992) and it is the position of the Canal Corporation that the indemnification as set forth in Canal Law Section 6(6) is applicable to Site 518.

- A Canal Work Permit will be required in order to conduct any work on Canal Corporation property. Therefore, the Corporation must review and approve the final design.

Thank you for the opportunity to comment on the Proposed Remedial Action Plan for Site 518.

Sincerely,

Carmella R. Mantello
Director

APPENDIX A-2

Comment Letter from General Electric

John G. Haggard
Manager,
Site Evaluation and Remediation Program

GE
319 Great Oaks Blvd.
Albany, NY 12203

T 518 862 2739
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John.Haggard@corporate.ge.com

Via E-Mail, Federal Express, and Hand Delivery

March 30, 2009

David Tromp, Environmental Engineer
NYSDEC Central Office
625 Broadway
Albany, NY 12233-7013

Re: Comments on New York State Department Of Environmental Conservation's Proposed Remedial Action Plan: Site 518 Dredge Spoil Disposal Area Town of Fort Edward, Washington County, New York Site No. 558028

Dear Mr. Tromp:

Attached find the General Electric Company's (GE) written comments on the Proposed Remedial Action Plan (PRAP) for the above referenced site.

Sincerely,

John G. Haggard
Manager, Site Evaluation and Remediation Program

JGH/bg

Attachment

Comments on the Proposed Remedial Action Plan
Site 518 Dredge Spoil Disposal Area
Site No. 558028
Town of Fort Edward, Washington County, New York

1) ***The Remedial Investigation (RI) establishes a comprehensive dataset that demonstrates hazardous waste is not present at Site 518 Dredge Spoil Disposal (the "Site"). Therefore the Department should remove the Site from the Inactive Hazardous Waste Disposal Site Registry.***

The original placement of the Site on the Registry of Inactive Hazardous Waste Disposal Sites (IHWDS) was based on a 1992 report containing results from sampling conducted at the Site in 1990.[1] During the 1990 sampling event, a total of 26 samples were collected from 13 locations and analyzed for PCBs. Fifty percent of the samples were non-detect for PCBs and fully 88% were below the threshold for consideration of a hazardous waste under the regulations. Only three (3) samples exhibited even an PCB concentration in excess of 50 mg/kg (parts per million-ppm). The highest was only 56 mg/kg[2]. These three (3) locations were DOT-11, DOT-12 and DOT-13. It should be noted that a second column PCB concentrations in DOT-11 and DOT-12 were less than 50 ppm; a lab result report was not provided for DOT-13 and therefore a second column concentration for this sample is not known. Therefore, it appears that it was the existence of these three "upper range" values that were presumably the determining factor that hazardous waste was present at the Site. Additional detail regarding these results is presented below.

With a few exceptions that do not apply to this Site, hazardous waste in New York State (NYS) is defined as a waste that appears on the list or satisfies the characteristics promulgated by the commissioner.[3] Current regulation identifies 50 ppm as the concentration which defines PCBs as a hazardous waste.[4] One sample collected during the 1990 sampling event was subject to toxicity characteristic leaching procedure (TCLP) metals analysis and all concentrations were below the TCLP limits. Hence, no hazardous waste characteristic was identified in the sampling.

Additional sampling of these areas was undertaken by the NYS Canal Corporation (a subsidiary of the NYS Thruway Authority) in 1995 and 1998. A total of four (4) samples were collected from one location in 1995 and analyzed for PCBs using a similar analytical method as was used in the 1990 analysis (i.e., USEPA SW-846 Method 8080) while six (6) soil samples were collected from two locations and analyzed for PCBs using USEPA SW-846 Method 8081A/8082. All the 1995 and 1998 samples were collected in the vicinity of the 1990 sample locations (DOT-11, DOT-12 and DOT-13), which had exhibited PCB concentrations in excess of 50 ppm.

The results from the 1995 and 1998 NYS Canal Corporation sampling had a maximum concentration of 2.5 ppm, all well below 50 ppm.[5] NYSDEC corresponded with the NYS Canal Corporation twice in 1999 requesting additional data before deciding to place the Site on the Registry of IHWDS.[6] (Note, it is unclear whether NYSDEC was already in possession of the NYS Canal Corporation's 1995 and 1998 analytical data at this time).

The NYSDEC notified the NYS Canal Corporation in June 1999 that the Site had been placed on the IHWDS Registry because PCBs in excess of 50 ppm had been observed and soil with PCBs in excess of 50 ppm is classified as a hazardous waste.[7] Hence, the basis for placing the Site on the registry was the three (3) sample results in 1990 which contained PCBs in excess of 50 ppm with a maximum of 56 ppm even though subsequent samples in the area did not confirm PCB concentrations in excess of 50 ppm.

Following placement of the Site on the Registry, the NYS Thruway Authority conducted yet another soil sampling in the fall of 1999. A total of 53 soil samples were collected. 100% of the samples collected were below the hazardous waste threshold of 50 ppm. In fact, the average PCB concentration in these samples was less than 1 ppm.[8] Based on the proposed sampling scope, the samples were to be collected from the 1 to 3-inch interval[9]. Six of the 53 samples exhibited PCB concentrations in excess of 1 ppm with a maximum concentration of 3.2 ppm.[10] The NYS Canal Corporation submitted this 1999 soil sampling data to the NYS Department of Health (NYS DOH). In a letter dated January 3, 2000 the NYS DOH responded that based on low levels of PCBs in surface soil (1 to 3.2 ppm) and the use of the property, there is no reason to restrict use of the property[11]; NYSDEC was copied on this response.

The available records indicate that USEPA SW-846 Method 8080 was used by the laboratory to analyze PCBs in the soil samples collected in 1990. Method SW-846 Method 8080 is different than the analytical protocol (USEPA SW-846 Method 8082) used during the RI. Method 8080 is a low resolution packed column Gas Chromatography/Electro Capture Detection method (PGC/ECD) that relied on second column confirmation to confirm the presence of PCBs and Pesticides. PCBs were identified in this method by matching the peak pattern from a single Aroclor standard, with a single peak used for quantitation. Later analytical methods (such as Method 8082) relied on up to five peaks for identification and quantitation with further confirmation of the presence of PCBs by mass spectrometry (MS).

In PCB analysis, the choice of peaks used for quantitation and recognition may be complicated by alteration (weathering) of Aroclors in the environment and/or coeluting analytes. The older method 8080 makes no provision for accounting for weathering/coelution. In fact, the prescriptive requirements of Method 8080 resulted in "force fitting" by laboratories of PCB patterns into Aroclor identification

without sufficient critical evaluation of other possibilities. Catherman[12] reports that at a site where PCBs in excess of 25 ppm were detected by PGC/ECD analysis (Method 8080), subsequent on-site analysis using gas chromatography/mass spectrometry indicated that on-site PCB concentrations were actually less than 2 ppm. Consequently, it is highly likely that the Method 8080 analysis conducted in 1990 overestimated the actual PCB concentrations in Site soil, particularly in light of subsequent, more accurate data.

During performance of the RI, a total of 171 samples were collected from former areas of sediment dredge disposal across the Site. The samples included nine (9) upland sediment samples, 22 surface soil samples and 140 subsurface samples from soil borings, monitoring well borings and test pits.[13] In addition, five (5) monitoring wells were installed and four (4) rounds of groundwater samples were collected and analyzed. With respect to sediment and soil samples 145 more soil samples were collected during the RI, than had been collected during the 1990 assessment. Hence, the RI represents a significantly more intense sample frequency of soil. Significantly, the RI sampling program, using a newer analytical method with greater precision and accuracy, confirmed that PCBs in excess of 50 ppm are not present at the Site.

In summary, in spite of limited data that suggested the presence of hazardous waste at the Site (i.e., PCBs in excess of 50 ppm), these results were not confirmed in a second column in at least two of the three samples. Further, the presence of hazardous waste (i.e., PCBs in excess of 50 ppm) was not confirmed in subsequent, more extensive investigations conducted by the NYS Canal Corporation\NYS Thruway Authority. Specifically, samples collected in 1995 and 1998 in the vicinity of the prior 1990 samples (i.e., DOT-11, DOT-12 and DOT-13), exhibited much lower PCB concentrations, >95% below the New York State hazardous waste threshold for PCBs, ranging from 0.25 to 2.5 ppm. In reviewing the more extensive 1999 sampling data provided by the NYS Thruway Authority, the NYSDOH confirmed that there is no reason to restrict use of the property. Then, a more robust RI sampling program confirmed that PCBs <u>are not</u> present in excess of 50 ppm. If the RI had been the original assessment, it would have been determined that the Site does not contain hazardous waste (i.e., PCBs in excess of 50 ppm) and consequently, did not belong on the Registry of IHWDS. Therefore, at the conclusion of the RI, the NYS DEC knew that the Site did not pose a significant threat and should have removed it from the IHWDS program or reclassified it accordingly.

2) ***The environmental media and conditions identified at the Site can be effectively managed as a solid waste under 6 NYCRR Part 360, further demonstrating that the Site should not be on the Inactive Hazardous Waste Disposal Site Registry.***

Given that the dredge material does not exhibit PCBs in excess of 50 ppm the dredge material at the Site meets the definition of a solid waste.[14] Although dredge material

may be excluded from the definition of a solid waste if placed and disposed of in accordance with certain permits[15], it is unknown at this time whether any such permits were issued for the dredge material at the Site.

If such permits had been issued at the times the dredge materials were placed at the Site, the materials should be managed in accordance with that applicable permit in the absence of a hazardous waste determination. If such permits had not been issued, the dredge materials would consequently meet the definition of a solid waste and hence, be subject to the solid waste regulations that were applicable at the time they were placed at the Site.[16]

In fact, NYSDEC Region 3 affirms that dredge sediments, which are not managed in accordance with a permit, are a solid waste subject to regulation under 6 NYCRR Part 360 Solid Waste Management Facilities Regulations.[17] Region 3 acknowledges that dredge spoils may exhibit moderate levels of contamination and be eligible for beneficial use subject to a case-specific beneficial use determination (BUD) issued by the Department in accordance with 6 NYCRR Section 360-1.15(d).[18] Based on the BUD applications that have been approved by NYSDEC, dredge materials are clearly eligible for beneficial reuse.[19]

In summary, in lieu of the IHWDS program and absent a prior permit for the placement of dredge materials at the Site, 6 NYCRR Part 360 regulations in effect at the time the dredge materials were placed at the Site provide a suitable regulatory mechanism to manage the environmental conditions identified at the Site.

Notwithstanding the above comments that question whether the Site should still be in the IHWDS program and/or an alternate State regulatory program to address the identified environmental conditions, the remaining comments focus on the appropriateness of NYSDEC's proposed remedy in the context of the National Contingency Plan (NCP) and the IHWDS remedial program process/procedures/criteria.

3) ***The Site classification - "Class 2: at which contamination constitutes a significant threat to public health or the environment" - is not supported by information available to the NYS DEC at the time it was placed on the Registry of IHWDS or, at a minimum, should have been reclassified following completion of the RI.***

As discussed above, sampling was conducted by the NYS Canal Corporation/NYS Thruway Authority before and after the Site was placed on the Registry (i.e., in 1995, 1998 and 1999). PCBs were not present at concentrations in excess of 50 ppm in any of the 63 samples collected from 1995 to 1999. Further, based on the results of the 1999 sampling, the NYS DOH concluded in January 2000 that based on low levels of

PCBs in surface soil (1 to 3.2 ppm) and use of the property, there is no reason to restrict use of the property.

Previously in 1992, the NYSDOH had communicated to the NYSDEC regarding use restrictions at certain dredge sites. In that communiqué, NYSDOH stated that children should not play and that vegetables should not be grown at the Rogers Island, Old Moreau and 204 Annex dredge spoil sites as PCB concentrations in the upper 2-inches of soil ranged from 10 to 15 ppm. Although Site 518 is also referenced in this communication, it is unclear if the NYS DOH extended this conclusion to Site 518 as they acknowledged that PCB concentrations in surface soil at Site 518 were likely lower than the other dredge sites.[20] Nevertheless, neither of these uses is envisioned under commercial use of the Site.

The Human Health Risk Evaluation contained in the RI report (Section 7) concluded that the Site soil did not pose any unacceptable risks to human health. Furthermore, the results of the highly conservative Screening-Level Ecological Risk Assessment (SLERA) (Section 8) indicated that current chemical concentrations at the Site are unlikely to pose a risk to the soil invertebrate community and those risks to carnivorous birds and mammals are minimal. In addition, as noted in the Feasibility Study, more than 45% of the Site is covered by gravel (primarily over the spoil fill area) and buildings, which inhibits the existence of ecological resources that can constitute an important component of the environment.

In light of the above, NYSDEC should have, at a minimum, either classified the Site a "Class 3" upon placing it on the Registry of IHWDS or reclassified it as "Class 3" following completion of the RI. Pursuant to regulation, the classification of any site on the Registry can be reviewed at any time, but must be reviewed at least annually not later than March 31 of each year.[21] A Class 3 site classification would have acknowledged that though contamination might exist at the Site, said contamination did not constitute a significant threat to the public health or the environment, a finding confirmed by the NYSDOH and subsequent ecological risk assessment.

4) ***The Human Health Risk Evaluation (Section 7 of the RI) is inconsistent with the NYS DOH guidelines for Qualitative Human Health Exposure Assessment and typical risk assessment practices defined under the National Contingency Plan (NCP); however, its conclusion that there is no unacceptable human health risk is appropriate.***

The NCP provides for the determination of human health and ecological risks based on the calculation of an exposure point concentration that represents the reasonable maximum exposure based on the available dataset.[22] In accordance with regulatory guidance, the 95% upper confidence limit (UCL) is intended to represent the reasonable maximum exposure scenario (RMES).

During the RI, a total of 171 soil samples were collected and analyzed for PCBs[23]. These samples were designated as surface soil, sediment and subsurface samples. In accordance with NYSDEC guidance, surface soil at a depth of two inches below ground surface (excluding vegetative cover) is relied upon to evaluate public health exposure. Surface soil to a depth of six inches below ground surface is relied upon to assess potential impacts arising from garden soils.[24] A total of nine (9) upland sediment and 22 surface soil samples were collected from the upper 2-inches. An additional 14 samples were collected in the upper 6-inches. The remaining samples were subsurface.

As discussed above, NYSDEC guidance recommends that public health exposure should consider surface soil at a depth of two inches below ground surface. However, the Human Health Risk Evaluation in the RI used a 95% UCL for PCBs (0 – 6 inches) of 3.49 ppm for the adult industrial worker and adult and child visitor, and 4.08 ppm (0 – 10 ft) for the future adult construction/excavation and future adult and child resident. Using these conservative values, the Human Health Risk Evaluation still concluded that calculated risks fell with an acceptable risk range for carcinogens and were below a hazard index of 1 for non-cancer risks.[25] (Note: these 95% UCL values could not be replicated using the dataset provided in the RI; rather lower values were calculated). Based on the above conclusions, remedial action to address human heath risks is not warranted.

5) ***The Screening-Level Ecological Risk Assessment (Section 8 of the RI) is inconsistent with NYSDEC DER-10, Fish and Wildlife Resource Impact Assessment (FWRIA) guidance and the US EPA ecological risk assessment guidelines established under the NCP and therefore is not the appropriate assessment tool to determine remedial needs.***

The RI included a SLERA to assess potential impacts to ecological receptors. Due to the overly conservative nature of SLERAs, it is neither appropriate nor consistent with the NCP to use the results of the SLERA to identify remedial needs or require remedial actions. And, according to DER-10, the ecological impact assessment should follow applicable state and federal guidance or scientific literature.

Notwithstanding the fact that remedial decisions should not be based on the results of a SLERA, review of the SLERA indicates that the assumptions made for the following parameters were overly conservative for determining remedial needs: ingestion rates, soil exposure point concentrations, bioaccumulation factors and toxicity reference values. Some specific examples include, but are not limited to:

- Ingestion Rate: The SLERA includes a conservative assumption that the robin consumes 100% earthworms, yet the studies from which the ingestion rate was taken stated that robin diets consist of 89 to 100% vegetation[26].

- Exposure Point Concentration: The SLERA conservatively uses a maximum concentration in the upper six feet for the EPC rather than the 95% UCL on the mean in the upper six inches of soil. Furthermore, the 0-6 inch depth interval would be the appropriate soil profile to consider for exposure to the identified receptors and is consistent with DER-10.

- Bioaccumulation Factors: BAFs that were not appropriate for PCBs were assumed. As stated in the cited reference for this value, the authors acknowledge that the equation for PCBs in earthworms overestimated uptake 81 percent of the time (Sample et al, 1998a).

- Toxicity Reference Values (TRV): More appropriate TRVs can be found in other documents not utilized in the SLERA, including but not limited to Region 9 BTAG[27] and values used and accepted by USEPA on other large PCB sites[28].

Use of more appropriate values for the above parameters demonstrates that that Site soil does not pose risks in excess of a hazard quotient of 1. In summary, it can be concluded that an ERA conducted in accordance with the NCP would conclude that there is no need to conduct remedial actions at this Site to mitigate ecological risks.

6) ***The remediation goals in the PRAP are either already met under existing conditions and/or can be met with the establishment of institutional controls.***

The PRAP defines three goals of the remediation which are intended to eliminate or reduce to the extent practicable: 1) exposures of persons at or around the Site to PCBs in surface soils through ingestion or direct contact; 2) potential exposures of persons in and around the Site to PCBs in subsurface soil; and 3) environmental exposures of flora or fauna to PCBs in surface soils from ingestion and direct contact causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

Human exposures to surface soil are limited by the existing gravel cover. Moreover, the risk assessment concluded that potential human health risks were in the acceptable risk range or below a Hazard Index of 1, establishing that this goal is already met. To the extent it is prudent to continue to limit future exposure to surface as well as subsurface soil, institutional controls are capable of meeting these goals.

As indicated in Comment No. 5 above, potential risks to fauna were overstated in the SLERA. The assessment included overly conservative exposure factors (e.g., ingestion rates, bioaccumulation factors), toxicity benchmarks and exposure point concentrations (EPCs). For example, using the 95% UCL for PCB exposure would not indicate an ecological risk. Hence, this remediation goal is essentially met under existing conditions.

Finally, the PRAP acknowledges that the average PCB concentration in the upper six inch soil horizon is less than 1 ppm.[29] This finding establishes that the surface soil also meets the Soil Cleanup Objective (SCO) for PCBs for commercial properties.[30]

Given the current, and likely future commercial/industrial use of the Site by the NYS Canal Corporation, the remediation goals set forth in the PRAP have fundamentally been met. The Site is currently used for commercial/industrial use and is zoned as Community Service land. Simple institutional control elements (e.g., declaration of environmental restriction, development of a Site Management Plan, etc.) would formalize procedures and practices to ensure these conditions are maintained into the future.

7) ***An alternate remedy requiring institutional controls would meet the threshold criteria pursuant to 6 NYCRR Section 375-1.8.***

6 NYCRR Section 375-1.8 (f) (Remedy Selection) sets forth nine factors that the Department considers in selecting a remedy. The first two factors, "overall protectiveness of the public heath and the environment" and "standards, criteria and guidance" (SCGs) are similar to the "threshold criteria" set forth in the NCP. (Threshold criteria are ones a remedy must meet to be eligible for selection).

With respect to "overall protectiveness of the public health and the environment", as indicated by NYSDEC, "there are a few locations where PCBs are present in surface soil, but the concentrations of PCBs are low and do not represent a significant potential for exposure[31]". Also, NYS DOH concluded in January 2000 that based on the low levels of PCBs and the commercial use of the property, there was no need to restrict site use. When appropriate assumptions are made for risk parameters, the findings show that existing conditions do not present an ecological risk. Given these conclusions, current conditions augmented by institutional controls in the form of access and use restrictions would be the most appropriate remedial action for the Site. This would include limiting the Site to commercial use (its past, current and likely future use) and implementing a Soil Management Plan (SMP) for future subsurface work.

Moreover, the Institutional Controls remedial action alternative included in the 2009 Feasibility Study report (Alternative No. 2 – Institutional Controls and Long Term Monitoring) would not need to include long term ground water monitoring. PCBs were not detected in groundwater during the RI and as stated in the RI "considering that PCBs have been present in site soils since sometime in the 1950s, it is unlikely that infiltration is a significant route of contaminant migration at this site"[32]. As groundwater is not of concern at the Site, there is no need for long-term groundwater monitoring for PCBs.

The existing cover is adequately protective as "it is unlikely that infiltration is a significant route of contaminant migration at this site"[33] and the HHRA and the revised ecological risk assessment demonstrate that Site soil does not pose an unacceptable risk. Based on the above information, an Institutional Control remedial action would provide adequate protection of human health and the environment and its selection would meet this threshold requirement of 6 NYCRR Section 375-1.8 (f).

With respect to "standards, criteria and guidance", the average concentration of PCBs in surface soil (i.e., the upper 2-inches for human receptors and the upper 6-inches for ecological receptors) is less than 1 ppm. Thus, the Soil Cleanup Objectives (SCOs) for commercial exposure (as well as residential and restricted residential) and protection of ecological receptors, both 1 ppm, are essentially met in their respective intervals[34]. In any event, a remedy that couples current conditions (e.g., gravel cover, commercial use, etc.) with institutional controls as described above would meet this second threshold criteria in a manner equal to the proposed remedy (i.e., the proposed remedy also manages residual PCB impacted soil on Site).

In conclusion, an Institutional Control remedial action provides adequate protection of human health and the environmental and compliance with SCGs. As such, institutional controls would meet the threshold criteria at significantly less cost than the proposed remedy while achieving the same proportional risk reduction.

8) ***An alternate remedy requiring institutional controls would also satisfy the balancing criteria pursuant to 6 NYCRR Section 375-1.8.***

6 NYCRR Section 375-1.8 (f) (Remedy Selection) sets forth the nine factors that the Department considers in selecting a remedy; the first two were discussed in Comment 7. Factors three (3) through nine (9) are similar to the "balancing criteria" set forth in the NCP. The balancing criteria in 6 NYCRR Section 375-1.8 (f) include: long-term effectiveness and permanence; short-term impacts and effectiveness; implementability; reduction in toxicity, mobility or volume through treatment; cost-effectiveness; community acceptance; and land use. (Balancing criteria are considered in weighing the advantages and disadvantages of remedial alternatives that meet the threshold criteria in order to select a preferred remedy for a site).

A remedy that couples current conditions (e.g., gravel cover, commercial use, etc.) with institutional controls as described above would provide long-term effectiveness, have no short term impacts and is readily implementable. In contrast, the proposed remedy would have short-term impacts, disrupting operations at the Site, and would likely pose considerable disruption to ongoing Site commercial operations and thus present some implementability issues.

The proposed remedy does not reduce the toxicity, mobility or volume. Hence, current conditions coupled with institutional controls would meet this criterion to the same degree as the proposed remedy.

Coupling existing conditions with institutional controls is less costly than the proposed remedy. Also, the Department can be reasonably certain of future commercial/industrial land use at the Site[35] in light of the occupancy by the NYS Canal Corporation, a use completely consistent with managing residual impacted soil on-Site, in a manner similar to what has been done in the past so long as formal institutional controls are put in place.

In conclusion, an institutional control remedy coupled with the existing conditions would also satisfy the balancing criteria at significantly less cost than the proposed remedy while achieving the same proportional risk reduction.

9) ***The proposed remedy is inconsistent with the NCP because an Institutional Control remedy provides a greater degree of overall effectiveness***

Threshold criteria are used to determine whether a specific remedial alternative is eligible to be selected. As demonstrated above, coupling existing conditions at the Site with institutional controls would result in the same degree of "overall protectiveness of the public heath and the environment" while meeting "standards, criteria and guidance" as set forth in 6 NYCRR Section 375-1.8 (f). Hence, the NYSDEC-proposed remedy offers no proportional benefit.

When evaluating the relative benefits of various remedial alternatives that meet the threshold criteria, the balancing criteria are relied upon to make a selection. When balancing the trade-offs among remedial alternatives, the NCP compares the costs and overall effectiveness.[36] Overall effectiveness includes long-term effectiveness and permanence, reduction in toxicity, mobility or volume through treatment, and short-term effectiveness. The relationship between overall effectiveness and cost is examined across all alternatives to identify those that provide effectiveness that are proportional to their cost.[37]

As mentioned above, a remedy that couples existing conditions with institutional controls offers similar benefits in long-term effectiveness and permanence, and reduction in toxicity, mobility or volume through treatment as the proposed remedy. Hence, with respect to these criteria, the overall effectiveness of the proposed remedy **is not** proportional to the effectiveness that can be achieved given the option of an institutional control remedy.

And in the case of short-term impacts and effectiveness, a remedy based on institutional controls under current conditions actually would have fewer short-term impacts and hence, be more effective. Moreover, an institutional control remedy would avoid negative life-cycle impacts associated with the proposed remedy (e.g.,

green house gas emissions associated with the excavation and importation of fill, off-site and on-site transportation and placement on-site), particularly when such actions would not improve the overall effectiveness of the remedy.

The alternative that ensures institutional controls remain in place ($118,000) represents the remedy whose overall effectiveness is proportional to its cost given the environmental conditions and current and future Site use. (Note, this referenced cost omits the annual O&M, which is presumed to relate to ground water monitoring since the ground water findings in the RI do not support a need for continued monitoring).

10) The "Enforcement Section" of the PRAP is in Error

Section 4 of the PRAP, entitled "Enforcement Status", contains the following statement:

> "The PRPs for the Site, documented to date, include the New York State Department of Transportation and General Electric. . . . After the remedy is selected, General Electric will again be contacted to assume responsibility for the remedial program. If an agreement cannot be reached with General Electric, the Department will evaluate the site for further action. General Electric is subject to legal actions by the state for recovery of all response costs the state has incurred."

This statement is unexplained and otherwise unsupported in the PRAP and is of no legal consequence. Nevertheless, General Electric wishes to make clear that the assertion that GE bears responsibility for conditions at Site 518 is both factually and legally flawed. GE has no liability for the costs of response at that site; to the contrary, others bear sole responsibility and liability for site cleanup, including but not limited to the New York State Department of Transportation. In any event, any claims that DEC might otherwise have had against GE for conditions at Site 518 were finally and irrevocably released by the Agreement dated September 8, 1976 between GE and DEC concerning GE's discharges of PCBs to the Hudson River.

Based on the foregoing, General Electric requests the Department correct the PRAP accordingly, and ensure that the Record of Decision (ROD) reflects the fact that General Electric is not a potentially responsible party at Site 518 or otherwise subject to legal action for recovery of any response costs.

CONCLUSION

As presented above, GE regards the inclusion of Site 518 on the Registry of Inactive Hazardous Waste Disposal Sites as unfounded since the Site does not contain hazardous waste, and calls upon NYSDEC to remove the Site from the Registry.

Even assuming for the sake of argument that NYSDEC were to continue to list the Site on the Registry, it is clear that the Site does not pose "a significant threat to public health or the environment" and is more appropriately classified as a Class 3, and the ROD should be prepared with that reality in mind. With such a reclassification, the Department does not have the authority to order a PRP to develop and implement a remedial program for the Site pursuant to Section 27-1313 of the Environmental Conservation Law. Similarly, such a reclassification would result in the Department being precluded from accessing the Hazardous Waste Remedial Fund, pursuant to Section 97-b of the State Finance Law, for its own performance of such a remedial program.

It is also clear that even if the Department were to continue to classify the Site as a Class 2, the remedy it has designated as its preferred remedy in the PRAP does not meet the tests of either the NCP or 6 NYCRR Part 375. Under that circumstance, the establishment of institutional controls is the most appropriate remedial option and should be selected by DEC in the ROD.

Finally, GE reiterates its position that it is not a PRP at Site 518, and is thus not subject to legal action for recovery of any response costs. The PRAP should be corrected in this regard, and the ROD should clearly reflect this fact as well.

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[1] Letter from NYSDEC to the NYS Thruway Authority dated 7 June 1999 transmitting the Inactive Hazardous Waste Disposal Report

[2] The PCB concentrations reported in the 1990 data tables indicated a concentration range rather than the absolute values tabulated in the body of the 1992 report

[3] Environmental Conservation Law §27-1301 (1)

[4] 6 NYCRR Section 371.4(e)(1), Lists of Hazardous Waste

[5] Laboratory Report for NYS Thruway, prepared by Adirondack dated 25 May 2005, Laboratory Report for NYS Thruway Authority prepared by H2M Labs dated 22 September 1998 and associated maps denoting sample locations.

[6] Letters from NYSDEC to the NYS Canal Corporation dated 1 February 1999 and 16 April 1999.

[7] Reference listing notification document

[8] Letter from NYSDOH to the NYS Canal Corporation dated 3 January 2000.

[9] Proposal from Marcor to NYS Thruway Authority dated 7 July 1999.

[10] See endnote 8

[11] See endnote 8

[12] Catherman DR. Proceedings 25th Midatlantic Industrial Waste Conference, 1993, pp. 348-356, CA120(14:172549Y)

[13] These totals exclude duplicates as well as duplicate samples analyzed via method 8082 and method 8082-screen

[14] 6 NYCRR Section 360-1.2(a)(1), Definitions
[15] 6 NYCRR Section 360 -1.2(1)(4)(ix), Definitions
[16] Pursuant to NYCRR Section 360-1.7(3)(i)(c), Permit Requirements, Exemptions and Variances , "The permittee of a permit to operate that was issued before the effective date of this Part must comply with the conditions of the permit and the solid waste management facility regulations in effect on the day when such permit was issued for the duration of that permit. In the event of renewal or expansion, the permittee must comply with the operational requirements of this Part."
[17] See http://www.dec.ny.gov/chemical/8734.html
[18] Ibid
[19] See http://www.dec.ny.gov/docs/materials_minerals_pdf/budwst.pdf
[20] Letter from NYSDOH to the NYSEC dated 17 March 1992.
[21] NYCRR Section 375-2.7 (D) (1)
[22] 40 CFR Section 300.430 (e) (2), Response to Comments, page 8716 (March 8. 1990)
[23] See endnote 13
[24] See DER-10, Section 1.3 Definitions," Surface Soil", page 17 (December 2002)
[25] FINAL Remedial Investigation Report for the Site 518 Dredge Spoil Disposal Area Fort Edward, New York. , page 7-6 (February 2009). A hazardous index of > 1 was indicated for a future child resident but this potential risk was put in perspective by referencing the reference dose uncertainty and the conservative assumption that this exposure would result from a future residence following relocation of impacted material to the surface during construction.
[26] USEPA. 1993. *Wildlife Exposure Factors Handbook. Volume 1.* EPA/600/R-93/187a. U.S. Environmental Protection Agency, Office of Research and Development, Washington, DC.

[27] DON. 1998. Interim Final: Development of Toxicity Reference Values as Part of a Regional Approach for Conducting Risk Assessments at Naval Facilities in California. Prepared by U.S. Department of the Navy, Engineering Field Activity West, Naval Facilities Engineering Command
[28] USEPA. 2003. Ecological Risk Assessment for General Electric (GE)/Housatonic River Site, Rest Of River. Prepared by Weston Solutions, Inc. for the U.S. Army Corps of Engineers, New England District, and the U.S. Environmental Protection Agency, New England Region, West Chester, Pennsylvania. July.
[29] Ibid, page 15
[30] 6 NYCRR Section 375-6.8, Soil cleanup objectives tables
[31] Fact Sheet, Remedy Proposed for Site 518, February 26, 2009
[32] FINAL Remedial Investigation Report for the Site 518 Dredge Spoil Disposal Area Fort Edward, New York., page 6-3 (February 2009)
[33] FINAL Remedial Investigation Report for the Site 518 Dredge Spoil Disposal Area Fort Edward, New York
[34] See endnote 31
[35] 6 NYCRR Section 375-1.8 (f) (9)
[36] 40 CFR Section 300.430 (f), Response to Comments, page 8725 (March 8, 1990)
[37] Ibid, page 8728

APPENDIX B

Administrative Record

Administrative Record

Site 518 Dredge Spoil Disposal Area
Site No. 558028

1. Proposed Remedial Action Plan for the Site 518 Dredge Spoil Disposal Area, dated February 2009, prepared by the Department.

2. Remedial Investigation/Feasibility Study Work Plan at the Site 518 Dredge Spoil Disposal Area, August 2005, Ecology & Environment Engineering, P.C.

3. Final Remedial Investigation Report, February 2009, Ecology & Environment Engineering, P.C.

4. Final Feasibility Study Report, February 2009, Ecology & Environment Engineering, P.C.

5. Dredge Spoils Investigation in the Upper Hudson River Valley – Upland Disposal Sites, May 2001, NYSDEC

6. Hudson River PCB Project - Dredge Spoil Sites Investigation, December 1992, Malcolm Pirnie Inc.

7. Migration of PCBs from Landfills and Dredge Spoil Site in the Hudson River Valley, New York – Final Report, November 1978, Weston Environmental Consultants

8. Fact Sheet, Proposed Remedial Action Plan, February 2009, NYSDEC

9. Letter dated March 23, 2009 from Carmella R. Mantello, the Director of the New York State Canal Corporation.

10. Letter dated March 30, 2009 from John G. Haggard, the Manager of Site Evaluation and Remediation Program of General Electric.