FINAL
FEASIBILITY STUDY REPORT
3456 ONEIDA STREET
SITE NO. 633049

WORK ASSIGNMENT NO. D004434-23

Prepared for:

New York State Department of Environmental Conservation
Albany, New York

Prepared by:

MACTEC Engineering and Consulting, P.C.
Portland, Maine

MACTEC: 3650070089

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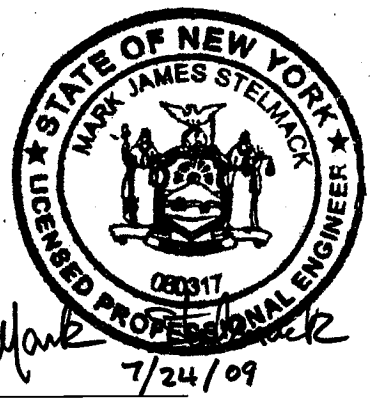

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GLOSSARY OF ACRONYMS AND ABBREVIATIONS

bgs	below ground surface
C&D	construction and demolition
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COCs	contaminants of concern
CSM	Conceptual Site Model
CSP	Conceptual Sampling Plan
DFW	Division of Fish and Wildlife
DUSR	Data Usability Summary Report
FS	Feasibility Study
FS Report	3456 Oneida Feasibility Study Report
FWIA	Fish and Wildlife Impact Analysis
GAC	granular activated carbon
IRM	interim remedial measure
K_{oc}	organic carbon partition coefficient
MACTEC	MACTEC Engineering and Consulting, P.C.
mg/kg	milligrams per kilogram
mg/L	milligram per liter
ml/g	milliliter(s) per gram
NGWA	National Ground Water Association
NIOSH	National Institute of Occupational Safety and Health
NRCS	Natural Resources Conservation Service
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation

GLOSSARY OF ACRONYMS AND ABBREVIATIONS

O&M	Operation and Maintenance
OMB	Office of Management and Budget
PAHs	polycyclic aromatic hydrocarbons
PCB	polychlorinated biphenyl
PID	photoionization detector
PISCES	passive in-situ chemical extraction samplers
ppm	parts per million
PSA	Preliminary Site Assessment
PW	present worth
QA	Quality Assurance
QC	Quality Control
QHHEA	Qualitative Human Health Exposure Assessment
RAOs	Remedial Action Objectives
RI	Remedial Investigation
SCGs	Standards, Criteria, and Guidance
SCOs	Soil Cleanup Objectives
Site	3456 Oneida Street site
SVOC	semi-volatile organic compound
TSCA	Toxic Substances Control Act
TOGs	Technical and Operational Guidance Series
USEPA	United States Environmental Protection Agency
VCP	Voluntary Cleanup Program
VOC	volatile organic compound
WA	work assignment

1.0 INTRODUCTION

MACTEC Engineering and Consulting, P.C. (MACTEC), under contract to the New York State Department of Environmental Conservation (NYSDEC), is submitting this Feasibility Study (FS) Report (FS Report) for the 3456 Oneida Street site (Site) in New Hartford, Oneida County, New York (Figures 1.1 and 1.2). The Site, Site No. 6-33-049, is listed as a Class 2 hazardous waste Site in the Registry of Hazardous Waste Sites in New York State. This FS Report has been prepared in accordance with the NYSDEC requirements in Work Assignment (WA) No. D003826-28 dated February 7, 2006, and WA D004434-23 dated April 12, 2007 and with the July 1997 Superfund Standby Contract between MACTEC and the NYSDEC.

The FS for the Site has been conducted in accordance with the WA, as well as with applicable portions of the following documents:

- NYSDEC Draft DER-10 "Technical Guidance for Site Investigation and Remediation"(NYSDEC, 2002)
- 6 New York Codes, Rules and Regulations (NYCRR) Part 375 "Environmental Remediation Programs"
- United States Environmental Protection Agency (USEPA) "Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA" (USEPA, 1988)

A Remedial Investigation (RI) has been completed for the Site. The purpose of the RI was to characterize the nature and distribution of contamination at the Site, and to qualitatively assess the human-health and ecological risks associated with site-specific contamination. During the completion of the RI field investigation, groundwater, surface water, sediment, soil, sludge, and biota samples were collected from the Site, as well as from off-site locations adjacent to, and upgradient and downgradient, of the Site. Results of the RI, including a Qualitative Human Health Exposure Assessment (QHHEA) and a Fish and Wildlife Impact Analysis (FWIA) are presented in the Final RI and FWIA Report for the Site (MACTEC, 2008b).

2.0 PURPOSE

The purpose of this FS Report is to develop and evaluate alternatives for remedial action at the Site (see Figure 1.2). The RI Report identified Chemical-Specific Standards, Criteria, and Guidance (SCGs) which apply to the contaminants and environmental media (e.g., sediment) present at the Site and the immediate vicinity. Contamination located upgradient of the Site identified during the RI at concentrations in excess of Chemical-Specific SCGs, as discussed herein, is excluded the scope of this FS.

The approach to the FS involves integration of data and conclusions presented in the Final RI and FWIA Report (MACTEC, 2008b), with development, screening, and evaluation of proposed remedial alternatives from engineering, environmental, public health, and economic perspectives. This FS Report is organized into the following sections.

- Section 1.0 – Introduction
- Section 2.0 – Purpose
- Section 3.0 – Site Description and History
- Section 4.0 – Summary of RI and Exposure Assessment
- Section 5.0 – Development of Remedial Action Goals and Objectives
- Section 6.0 – Identification of General Response Actions and Extent of Contamination Requiring Remedial Action
- Section 7.0 – Identification and Screening of Technologies
- Section 8.0 – Development and Screening of Alternatives
- Section 9.0 – Detailed Analysis of Alternatives
- Section 10.0 – Comparative Analysis

3.0 SITE DESCRIPTION AND HISTORY

The Site is located at 3456 Oneida Street in the Village of Chadwicks, Town of New Hartford, Oneida County and consists of an irregularly shaped parcel of approximately 4.61 acres. As depicted in Figure 1.2, the Site is mostly vacant (Figure 1.2, c. 2003 aerial photography, depicts the former location of a pole building – subsequently removed - that occupied the central portion of the Site). Residential property abuts the southern boundary of the Site, and to the north, the Site is bounded by commercial property owned by Mohawk Limited. The Site is bounded on the east by railroad tracks (Delaware and OTSEGO).

There are three primary surface water features at the Site; Sauquoit Creek, an Unnamed Tributary, and an Unnamed Drainage Ditch. The primary surface water feature at the Site is Sauquoit Creek, which flows northerly and acts as the western boundary of the Site. Due to its proximity to Sauquoit Creek, the Site is within the 500-year floodplain. The Unnamed Tributary flow westerly from a wetlands area located east of the Site, enters the Site via a culvert that underlies the railroad tracks along the eastern border of the Site, and flows across the southern portion of the Site and into Sauquoit Creek. This Unnamed Tributary appears, for the most part, to be a perennial water feature, although it may stagnate somewhat during dry weather patterns. The seasonally wet Unnamed Drainage Ditch runs parallel to the location of the former pole building and then flows west across the Site, flows through a 48-inch culvert, and drains into Sauquoit Creek.

The Site has areas of construction and demolition (C&D) debris disposal, mostly on the southern portion. The Site is located in a suburban area surrounded by residential, commercial, and industrial development. With the exception of vegetated areas along the Unnamed Tributary and Sauquoit Creek and C&D debris piles, the Site is open to vehicle access. The Site is accessed from Oneida Street to the northwest by way of a private driveway that includes a steel deck bridge over Sauquoit Creek.

Starting around, or before, 1880, the Site was part of the former Willowvale Bleachery and used for storage. The northwest corner of the Site was part of a mill pond until around 1955 when the property was obtained by John Weeks Erecting Company. It appears, based upon comparison of a 1955 United States Geological Survey map with aerial photography from 1956, that the mill pond

was filled between 1955 and 1956. Based upon available information, at some time between 1964 and 1977 a barn was constructed on the Site.

The John Weeks Erecting Company conducted heavy millwright work and steel rigging activities until approximately 1979, when the property was sold to Thomas (Sr.) and Rita Madden and was renamed Central Steel Erecting Company. Starting circa 1980, machines from General Electric (Sidney, NY) and Kelsey Hayes (Whitesboro or Whitestown, NY) were reportedly cleaned at the Site. Runoff generated from on-site cleaning activities discharged to a new on-site Mill Pond which had been developed after 1957 and continued until approximately 1988 when the Mill Pond was filled in. In 1988, site runoff entered Sauquoit Creek via an on-site sluiceway. This discharge became the subject of NYSDEC Spill File #880037, which was closed in accordance with NYSDEC standards following a soil removal action at the Site.

During the time period of 1991 to 1996, it is unclear to what extent cleaning operations continued. In 1994, the property was subdivided with Mohawk, Ltd. Several studies, including the use of passive in-situ chemical extraction samplers (PISCES) were conducted in the mid-1990s to evaluate the source of polychlorinated biphenyl (PCB) impacts downstream of the Site. In 2001, the Division of Fish and Wildlife (DFW) published a report which concluded that PCB impacts to Sauquoit Creek exist starting at the confluence with the Unnamed Tributary at the southern edge of the Site, to as far as 5 miles downstream. Subsequently, the NYSDEC conducted a Preliminary Site Assessment (PSA) at the Site, which included sediment and soil sampling. Results of the soil and sediment sampling prompted the NYSDEC to list the Site as a Class 2 Inactive Hazardous Waste Site. Thomas Madden (Jr.), then owner of the Site, applied for the Voluntary Cleanup Program (VCP) in 2003 and prepared and submitted a Draft Work Plan in 2004. The NYSDEC rejected the Draft VCP Work Plan on the basis that the scope was inadequate. Thomas Madden (Jr.) has since transferred the Site ownership to Valley Used Steel, LLC.

As described above, previous investigative activities at the Site included a study by the DFW and a PSA which have identified the Site as a source of PCB contamination in Sauquoit Creek. The results of the previous investigation activities concluded that the Site appears to be a persistent source of PCBs to Sauquoit Creek via an Unnamed Tributary along the southern border of the Site. This has resulted in an “eat none” restriction on brown trout in the Sauquoit Creek. Additionally, volatile organic compound (VOC), semi-volatile organic compound (SVOC), and PCB

concentrations above Chemical-Specific SCGs have been detected in surface soils and sediments at the Site.

4.0 SUMMARY OF REMEDIAL INVESTIGATION AND EXPOSURE ASSESSMENT

The purpose of the RI field investigation was to determine the nature and distribution of contamination associated with the Site. The investigation was conducted to gather data necessary to assess the potential threats to human health and the environment from the Site by locating potential contamination source areas, delineating the extent of contamination, and identifying receptors potentially impacted by this contamination. The following subsections present a summary of the RI field investigation activities, the nature and distribution of contamination in the various site media, and the results of the QHHEA and FWIA.

4.1 RI Field Investigation Activities

To meet the project objectives, MACTEC completed RI activities consistent with the USEPA guidelines related to the "Triad" approach for Site characterization and remediation (USEPA, 2003). The Triad approach is a modernization of the former "Expedited Site Characterization Process" created by the Department of Energy in the early 1990's (NGWA, 1995). The Triad approach consists of the following three key elements:

1. ***Systematic Project Planning*** – Involves the preparation of a dynamic (i.e., able to be modified based on additional site data or objectives) Conceptual Site Model (CSM) and other planning tools in order to help translate project goals into the technical approach required to meet those goals. For example, the CSM helps to identify data gaps that exist at a site.
2. ***Dynamic Work Strategies*** – Consists of a decision matrix approved by the regulatory authority that helps guide the project team during field activities. Keys to the successful implementation of dynamic work strategies include experienced staff, good communication between the regulator(s) and the contractors, and between the project team and project manager.
3. ***Real-Time Measurement Technologies*** – Includes rapid field analysis or rapid sampling methodologies such as geophysical surveys and direct push technologies, when appropriate, to provide quick access to data as well as the ability to share those data.

To complete the RI at the Site, the Triad approach was utilized wherever applicable. In particular, this was accomplished by the generation and utilization of a CSM and a corresponding Conceptual Sampling Plan (CSP) as part of the RI/FS Work Plan (MACTEC, 2006). The overall objectives were to:

- address data gaps to further characterize the Site;
- determine and further define the potential and actual threat to human health and the environment; and
- evaluate potential remedial actions for the Site.

Existing data for the Site indicated that surface water, sediment, and biota had been impacted, primarily with PCBs, at concentrations greater than applicable SCGs. Based upon the previous investigations, it was not known if groundwater had been impacted. Although air was not anticipated to be a media of concern, air monitoring was performed during the RI field investigations. A photoionization detector (PID) was used during the excavation of all test pits, during collection of soil samples, and during fill pile sampling to monitor air quality as well as to provide qualitative information that may identify potential areas of VOC contamination.

Prior to commencing the Phase I RI field work, a review of the historical data was conducted and a CSM was developed. The CSM presented a succinct description of the media affected, source of impact, types of contamination, contaminants of potential concern, primary or secondary release mechanisms, migration pathways, and potential receptors. It was anticipated that the CSM would be modified and updated based on data to be collected at the Site during the course of the RI field work. Specifically, the goal of the Data Gap Analysis Plan developed for the RI field work was to review the CSM after each phase of work and revise as necessary.

The CSP was divided into the following categories:

- Phase I (Survey) Field Data Collection Activities
- Phase II (Principal) Field Data Collection Activities

Phase I activities were designed primarily to locate source contamination and included a geophysical survey, installation of well points for potentiometric measurements, debris characterization, test pitting, and surface soil screening. The CSP and the Data Gap Analysis Plan provided for the preparation of a Data Gap Analysis if significant impacts were observed during the Phase I activities. The Phase I activities identified both significant impacts and potential source areas, triggering the preparation of the Data Gap Analysis. Additionally, the majority of the

proposed Phase II activities were completed during the Phase I field work. The Data Gap Analysis was presented in the Final Preliminary RI and FWIA Report (MACTEC, 2007a) and used in the preparation the Phase II Work Plan for the remaining Phase II RI activities.

An integral component to utilizing the Triad Approach is the ability to collect quantitative data in the field that can be used to refine the work scope and focus the investigation activities. To meet this objective, MACTEC utilized several technologies that allowed for such real-time quantitative and qualitative analyses of site conditions during the RI field work, including:

- Geophysical equipment for assessment/determination of anomalies and to refine test pit and soil sample locations
- Immunoassay field kits for on-site rapid (same day) qualitative analysis of soil for PCBs
- PIDs for total quantitative analysis of headspace measurements from soil samples

The majority of Phase I surface soil, as well as a subset of fill pile, test pit, soil boring, and sediment samples were analyzed on-site using a Dexsil PCB immunoassay test, either exclusively, or in combination with off-site laboratory analysis. A correlation analysis utilizing the actual (unvalidated) PCB immunoassay results was performed on samples analyzed both on-site using the Immunoassay kits and off-site for PCBs. The unvalidated data, which are data recorded during the on-site field analysis for PCBs, was used rather than data validated in the manner previously described. This allowed for a comparison of on-site results that were less than 3.0 milligrams per kilogram (mg/kg) to the corresponding off-site results. The correlation analysis demonstrated that there were very few false negatives (i.e., immunoassay results less than analytical results) at or near the 1.0 mg/kg level, and that correlation between on-site and off-site for results above 10 mg/kg with the PCB immunoassay analysis reporting limit at 9 mg/kg was very good. Furthermore, based on the evaluation of this data set, the immunoassay kits detect PCBs fairly consistently with the laboratory analytical data between 3 and 9 mg/kg, though the PCB immunoassay results tend to be biased high within this range.

4.1.1 PHASE I RI FIELD INVESTIGATIONS – AUGUST AND DECEMBER 2006

The following activities were conducted during the Phase I field work in August and December of 2006:

- a geophysical survey
- surface soil sampling
- test pit investigation and sampling
- fill pile sampling
- subsurface soil sampling
- surface water and sediment sampling
- groundwater well point installation and sampling
- biological tissue sampling

The subsurface soil, surface water, sediment, and biological tissue sampling were identified as Phase II activities in the CSP, but were conducted during the Phase I field work. The only Phase II activities not conducted during the Phase I field work were the installation and sampling of permanent monitoring wells and the collection of eight surface soil exposure samples. In order to meet the Triad Approach preference for using Real-Time Measurement Technologies, the majority of surface soil samples, as well as a subset of the fill pile, test pit, sediment, and soil boring samples, were collected for on-site PCB immunoassay analysis. The methodology for biological sampling is discussed in detail in the RI.

Figure 4.1 depicts the locations of samples collected during the Phase I field activities; a summary of the samples collected and the corresponding laboratory analysis performed is presented in Table 4.1.

4.1.2 PHASE II RI FIELD INVESTIGATIONS – OCTOBER TO DECEMBER 2007

Phase II RI activities included the installation and sampling of permanent monitoring wells and the collection of additional surface soil exposure samples. In addition to these activities, the Phase II RI Work Plan proposed additional surface and subsurface soil sampling to provide further characterization of the extent of PCB contamination, and the collection of Site surface waters for PCBs analysis using PISCES, to fill data gaps identified in the Final Preliminary RI and FWIA (MACTEC, 2007a). Specific data gaps to be filled included:

- further delineation of PCB contamination immediately north of the Site where PCBs appear to extend into the adjoining property

- the area in the eastern side of the Site, along and east of the railroad tracks
- the very southeastern portion of the Site where PCB contamination may extend to the east and south of the Site
- the immediate area south-to-southwest of the Site and adjacent to the residential properties located there.

Additionally, further delineation of potential PCB source areas identified during the Phase I RI was proposed

The following activities were conducted during the Phase II field work in 2007:

- surface soil sampling
- subsurface soil sampling
- monitoring well installation and groundwater sampling
- groundwater well point sampling
- sediment sampling
- PISCES sampling
- synoptic groundwater elevation measurements
- base map survey

Figure 4.2 depicts the locations of samples collected during the Phase II field activities; a summary of the samples collected and the corresponding laboratory analysis is presented in Table 4.1.

4.1.3 SUPPLEMENTAL FIELD INVESTIGATIONS – NOVEMBER 2008

A Supplemental Investigation was conducted in November 2008 to address potential data gaps that would likely impact completion of the FS. The goal of the investigation was to further define:

1. the horizontal extent of PCB surface soil contamination on the residential property located south of the Site and within the northern portion of the Site where PCB contamination extends off site to the north
2. the extent of PCB sediment contamination within discrete depositional areas along the eastern bank of the Sauquoit Creek
3. the vertical the extent of PCB contamination within the sediment of the Unnamed Tributary

During the RI, sediment samples were generally collected from 0 to 0.5 feet below ground surface (bgs), with a subset of samples collected from 0.5 to 1 foot bgs. Sediment samples collected from the Unnamed Tributary during the Supplemental Investigation were collected from 1 to 2 feet bgs to determine whether PCB contamination was present within this depth interval. Figure 4.3 depicts the locations of samples collected during the Supplemental Investigation field activities; a summary of the samples collected is presented in Table 4.1. Results of the Supplemental Investigation (refer to Table 4.2) indicate significant concentrations of PCBs, comparable to concentrations present within the upper 1 foot, within the sediment samples collected from 1 to 2 feet bgs. The Supplemental Investigation results also indicated concentrations of PCBs in Sauquoit Creek sediment within discrete depositional areas along the eastern bank of the Sauquoit Creek sediment contain concentrations of PCBs greater than 1 mg/kg, while concentrations of PCBs in surface soil samples collected on the residential property located south of the Site and within the northern portion of the Site were less than 1 mg/kg.

To determine whether the off-site laboratory data associated with the Supplemental Investigation met the project-specific criteria for data quality and data use a Data Usability Summary Report (DUSR) was prepared in accordance with the "Guidance for the Development of Data Usability Reports" (NYSDEC, 1997). The DUSR and validated off-site laboratory results are included in Appendix A. As indicated in the Appendix A, no data was rejected, but a subset of results was qualified as estimated during completion of the DUSR. Based on the information summarized in Appendix A, the Supplemental Investigation data used in this FS Report meets the data quality project-specific objectives.

4.2 INTERIM REMEDIAL MEASURES

Results of the Phase I RI field work indicated that a potential surface soil PCB source area existed within the central portion of the Site, located adjacent to the southwest corner of the former pole barn. This area of surface soil was within an area of the Site open to vehicle access and represented a potential exposure pathway. As a result, an interim remedial measure (IRM) Work Plan (MACTEC, 2007b) was prepared for the excavation and off-site transportation and disposal of this soil. The IRM Work Plan defined the extent of the proposed IRM excavation as an area of soil generally exceeding 10 mg/kg, to a depth of 2 feet bgs, and totaling an estimated 250 cubic yards.

The IRM activities were completed by Royal Environmental of Rochester, New York, under contract to MACTEC, between November 26, 2007 and December 6, 2007 in accordance with the IRM Work Plan. Confirmation sampling was conducted during the IRM, with a value of 10 mg/kg used as the decision criteria for conducting additional excavation. A total of 37 IRM confirmation surface soil samples were collected and analyzed on-site for PCBs using PCB immunoassay analysis. Eight samples were also sent for off-site confirmatory analysis (see Figure 4.4).

During the IRM, the depth of the excavation was increased based on the results of on-Site analysis of confirmation samples. One of the confirmation samples contained concentrations of PCBs greater than 10 mg/kg at 3 feet bgs, but no further excavation was conducted at the direction of the NYSDEC. The final horizontal extent of the excavation met the extent proposed in the IRM Work Plan. Vertically, however, the excavation extended as much as 2 feet deeper, with at least one-half of the proposed 2-foot excavation excavated to 3 feet bgs. A discrete area was excavated to 3.5 feet, and the northern proposed 1-foot excavation excavated to 3 feet bgs. This resulted in the excavation of approximately 150 more cubic yards of soil than the 250 cubic yards projected in the IRM Work Plan. A total of approximately 400 cubic yards (632 tons) of PCB-contaminated soil was excavated during the IRM and transported to CWM Chemical Services, LLC, Model City, New York for disposal. Backfill consisted of 169 tons (roughly 94 cubic yards) of stone, placed so that that the common borrow backfill could be properly placed and compacted, and approximately 320 cubic yards of common borrow. Further details and certification of the IRM are presented in the "Final Interim Remedial Measure Completion Report for PCB-Impacted Soils" (MACTEC, 2008a).

4.3 Nature and Extent of Contamination

This subsection presents the nature and extent of contamination identified during the RI and Supplemental Investigation in the various Site media.

4.3.1 EXTENT OF CONTAMINATION

This subsection presents the extent of contamination identified during completion of the RI, IRM, and Supplemental Investigation, as well as historical investigations conducted at the Site, and is organized by the various environmental media that were sampled.

Groundwater

Iron, manganese, selenium, sodium, and thallium were detected in groundwater samples collected at the Site at concentrations that exceed Ambient Water Quality Standards and Guidance Values. Several VOCs and SVOCs were detected at concentrations below the Ambient Water Quality Standards and Guidance Values. PCBs were not detected in groundwater at the Site.

Surface Water

No analytes were detected in surface water samples collected during the Phase I field investigation; however, the reporting limits for SVOCs and PCBs were several orders of magnitude higher than the Ambient Water Quality Standards and Guidance Values. During the Phase II field investigation, an alternative sampling method known as PISCES was conducted to meet the data quality objective of delineating PCB contamination in surface water. The primary PCB site contaminant, Aroclor 1254, was detected in samples collected from the Site within the Unnamed Tributary at location BS-3, BS-4, and BS-5, and in the Unnamed Drainage Ditch at location BS-11, as well as sample locations BS-08 and BS-09 located in Sauquoit Creek directly downstream from the confluence with the Unnamed Tributary, and at location BS-12 directly downstream from the Unnamed Drainage Ditch, indicating that the Unnamed Tributary and the Unnamed Drainage Ditch are sources of Aroclor 1254; no other PCBs were detected in any of the PISCES samples.

Sediment

During completion of the RI, PCBs were detected in sediment samples SED-018 and SD-002 through SD-011 from the Unnamed Tributary, SD-013 located in Sauquoit Creek adjacent to the Site, SD-014, SD-015 and SED-BS11 from the Unnamed Drainage Ditch, and SD-020 and SD-021 located in Sauquoit Creek downgradient of the convergence with the Unnamed Tributary (refer to Figures 4.5 and 4.6). All detected PCB concentrations and analytical reporting limits were above the Sediment Screening Benchmark of 0.0052 mg/kg. The maximum detected concentration of PCBs in sediment was reported during the Phase I program in the duplicate sample from location SD-011 (8,900 mg/kg) within the Unnamed Tributary near the downstream end of the culvert. Results from this sample location, along with locations SD-010 (300 mg/kg) and SED-018 (1,400 mg/kg), suggest potential for a PCB source area in the Unnamed Tributary. These results correlate well with the on-site PCB immunoassay results. Additional sediment samples were collected from a greater depth interval (1 to 2 feet bgs) within the Unnamed Tributary during the Supplemental

Investigation to further delineate the vertical extent of PCBs. The Supplemental Investigation results indicate that elevated PCB concentrations (greater than 10 mg/kg) are also present in samples from 1 to 2 feet bgs.

SVOCs were detected in all sediment samples submitted for SVOC analysis except in SD-001 and SD-012, which are located upgradient of the Site in the Unnamed Tributary; SD-013, located adjacent to the Site in Sauquoit Creek; SD-015, located in the Unnamed Drainage Ditch; and, SD-029, located downgradient of the Site in Sauquoit Creek. SVOCs detected include polycyclic aromatic hydrocarbons (PAHs).

In general, the Sediment Screening Benchmarks are below the analytical reporting limits, due to the large dilutions and/or high moisture contents that were associated with the samples.

Surface Soil (0 to 1 foot bgs)

PCBs were detected in the vast majority of surface soil samples collected for off-site PCB analysis; PCBs were generally not detected in samples collected to the east of the Site (refer to Figure 4.5). The results indicate surface soils at the Site and both north (commercial property) and south-southeast (residential property) of the Site contain PCB concentrations which exceed the Unrestricted Use Soil Cleanup Objective (SCOs). Surface soil PCB concentrations that exceed the Commercial Use SCOs are generally confined to central portion of the Site within or adjacent to the fill piles, areas adjacent to the Unnamed Tributary, to the north of the Site on commercial property, and within the far southern corner of the Site. It should be noted, however, that samples were not collected for off-site PCB analysis from locations within the eastern and northwestern portion of the Site. PCB concentrations in surface soil at location SS-106, located on residential property south of the Site, exceed Commercial Use SCOs. The distribution of off-site surface soil PCB analytical results correlates well with the distribution of on-site PCB immunoassay results. Results of the 2008 Supplemental Investigation support the results of the RI surface soil samples collected from within the northwestern portion of the Site and from the off-site residential property south of the Site; results of Supplemental Investigation surface soil samples indicates that concentrations of PCBs in these samples are generally below the Unrestricted Use SCOs, and do not exceed Commercial Use SCOs.

To identify Site contamination which presents a direct exposure risk to human health, a total of fourteen RI surface soil samples (SS-094 through SS-107) and five 2008 Supplemental Investigation surface soil samples (SS-162 through SS-166) were collected from the 0- to 2-inch bgs depth interval and analyzed for PCBs. In addition, four of the surface soil exposure samples were analyzed for SVOCs (SS-094 through SS-097). Results show SVOCs were detected in all four samples, but at concentrations below both Unrestricted Use and Commercial Use SCOs. PCB (Aroclor 1254) results for the fourteen RI soil samples range from 0.045 mg/kg (SS-107) to 160 mg/kg (SS-097). Results for SS-107 do not exceed Unrestricted Use SCOs (0.1 mg/kg). The results for sample SS-096 exceed the Unrestricted Use SCOs (0.1 mg/kg). Concentrations of PCBs in the remaining RI samples exceed the Commercial Use SCOs. The 2008 Supplemental Investigation surface soil samples were collected from the 0- to 2-inch bgs depth interval from off-site residential property to the south of the Site, and concentrations of PCBs in these samples exceed Unrestricted Use SCOs at only one location.

At least one SVOC analyte was detected in all surface soil samples analyzed for SVOCs during the Phase I program. Surface soil samples collected during the Phase II program were not analyzed for SVOCs.

Surface soil samples were not collected during the RI program for VOC analysis. To monitor for VOCs throughout the program, however, PID readings were recorded during collection of surface soil samples. The only PID reading recorded above ambient conditions in surface soil was 1.7 parts per million (ppm) which was noted during the sampling activities at surface soil location SS-001.

Subsurface Soil (greater than 1 foot bgs)

Results of off-site PCB analysis conducted during the RI indicate approximately two-thirds of subsurface samples exceed the Unrestricted Use SCO of 0.1 mg/kg, approximately half exceed the Commercial Use SCO of 1.0 mg/kg, and one-quarter exceed the Protection of Groundwater SCO (refer to Figures 4.6 and 4.7). As with the surface soils, the distribution of PCBs in subsurface soils at the Site is centered on the central and southeastern portions. Furthermore, the off-site PCB analytical results correlate well with the on-site PCB Immunoassay results. Outside of the area of subsurface soil contamination near the southern end of the former pole barn, the highest subsurface soil PCB concentrations are associated with the various fill piles at the Site.

SVOCs were detected in all subsurface soil samples analyzed for SVOCs. A subset of the soil, fill pile, and test pit sample locations exceeded one or more of the SCOs. As with the surface soil SVOC results, the majority of the SVOCs detected are PAHs. In addition to PAHs, results from FP-005 also show detections for three phenols which were observed as being above both the Protection of Groundwater and the Commercial Use SCOs.

PID readings were collected throughout the Phase I investigation from test pit, fill pile, and soil boring sampling locations. PID readings above ambient conditions were observed at TP-003 and TP-006 (6.6 ppm at both locations). VOCs detected during the Phase I and Phase II field investigation include 2-butanone and acetone, the latter of which was reported at a concentration above the Protection of Groundwater SCO.

During the Phase I investigation, 13 fill pile and eight Test Pit locations were sampled for metals (refer to Table 4.1). Results for arsenic exceeded the Protection of Groundwater and Commercial Use SCOs in several fill pile and test pit samples, and exceeded the Unrestricted Use SCO in over half these locations. Chromium, lead, and nickel were also detected in at least one sample at concentrations above criteria. Calcium, iron, and magnesium, for which there are no published SCOs, were detected in the majority of subsurface soil samples at concentrations greater than the Technical and Administrative Guidance Memorandum # 4046 guidance values (NYSDEC, 1994). Lead was detected in the sample from location TP-007 at a concentration of 2,200 mg/kg which is an order of magnitude higher than the next highest concentration of 371 mg/kg detected in the sample location FP-005. This result is likely the result of refuse disposal at this location

Biota

Biological tissue sampling was conducted at 5 areas along Sauquoit Creek and the Unnamed Tributary - an upstream background location (Sample Area 1 – Upstream Sauquoit), a tributary passing through the Site (Sample Area 2 – Unnamed Tributary), and three downstream locations (Sample Areas 3 - through 5) (refer to Figure 4.8). Results from sediment and biota sampling indicate significant impacts to wildlife in the Unnamed Tributary, and adjacent Sauquoit Creek areas of the Site from elevated concentrations of PCBs in sediment, macroinvertebrates (e.g., crayfish), and forage fish. Results of biota sampling indicate significant impacts to wildlife in the Immediately Downstream Sauquoit Creek area; however, the sediment in this area does not pose a

risk to fish and wildlife. In the Unnamed Tributary, adjacent Sauquoit Creek and Immediately Downstream Sauquoit Creek areas the biota tissue concentrations for all species are at least a magnitude greater than the screening criteria. Based on concentrations observed, the Unnamed Tributary and Unnamed Drainage Ditch appear to be sources of PCBs for Sauquoit Creek.

Source Areas

Results of the RI suggest four potential source areas of PCB contamination exist at the Site. These areas have generally been delineated by PCB concentrations in excess 10 mg/kg, with discrete areas of PCB contamination with concentrations in excess of the TSCA waste threshold limit of 50 mg/kg. The four potential PCB source areas are depicted on Figure 4.9, and are referred to as Source Area 1 through Source Area 4 (shown west to east). Figure 4.9 presents off-site PCB analytical results, and, where off-site results were not available, on-site PCB analytical results. The highest concentrations of SVOCs and metals detected at the Site are primarily associated with the fill pile areas.

Source Area 1 was removed during the IRM consisting of excavation and off-site disposal of PCB-contaminated soils generally exceeding 10 mg/kg, as discussed in Subsection 4.2.

Source Area 2 consists of PCB-contaminated soil and sediment located within and adjacent to upper on-site portion of the Unnamed Tributary, extending from near the upstream culvert to approximately one-half the distance to Sauquoit Creek. A total of 21 surface and subsurface samples from Source Area 2 exceeded the threshold PCB concentration limit of 10 mg/kg, with concentrations ranging from 11 mg/kg (SB-041) to 8900 mg/kg (SD-011). The vertical extent of the PCB contaminated soils extends to at least a depth of approximately 11 feet bgs, based upon results from SB-041 (off-site analysis result of 11 mg/kg). Ten of the eleven sediment samples collected from the Unnamed Tributary within the delineated limits of Source Area 2 contain PCBs at concentrations exceeding 10 mg/kg. Two PCB sediment samples SD-003 (140 mg/kg) and SD-004 (12 mg/kg) collected downstream from a depositional area near the confluence of the Unnamed Tributary are likely the result of the transport and deposition of PCB-contaminated sediments within the Unnamed Tributary.

Source Area 3 consists of PCB-contaminated subsurface soil located at a depth of approximately 4 to 6 feet bgs, due north of Source Area 2. This area is defined by three subsurface soil samples,

ranging in concentrations from 11 mg/kg (SB-059) to 15 mg/kg (TP-011) and may be contiguous with Source Area 2.

Source Area 4 consists of PCB-contaminated soil located in the southeastern corner of the Site. This area is defined by eight surface and subsurface soil samples, ranging in concentrations from 13 mg/kg (SB-026) to 510 mg/kg (SS-127). The highest concentration of PCBs in Source Area 4 is located just east of the Site property boundary (SS-127). The vertical extent of PCB contaminated soil above 10 mg/kg appears to extend to depth of three to four feet bgs, based upon subsurface soil samples SB-026 and SB-056 (11 mg/kg and 15 mg/kg, respectively). The areal extent of PCB contaminated soil in Source Area 4 extends off-site to the east and potentially off-site to the south, as depicted in Figure 4.9.

In addition to the four potential source areas discussed above, a small area of surface soil containing elevated PCB concentrations is located off-site on the adjacent property to the north. This area is defined by four surface soil samples with PCB concentrations exceeding 10 mg/kg, which range in PCB concentrations of 11.6 mg/kg (SB-011) to 61 mg/kg (SS-145). The vertical extent of this area of elevated PCB contamination appears to be limited to the top one foot of soil. This contamination is located upgradient of the Site, and is interpreted to not be related to migration of PCB contamination from the Site.

4.3.2 FATE AND TRANSPORT

Contaminants detected in Site media at concentrations above SCG values include PCBs, several SVOCs (PAHs), and several inorganics, including arsenic, chromium, copper, lead, mercury, nickel, silver, and zinc. The environmental media impacted by these contaminants are generally limited to surface and subsurface soils and sediments at the Site. Low concentrations were reported in surface water at and downgradient of the Site.

The primary contamination at the Site consists of PCBs in surface and subsurface soils across the Site and sediments within the Unnamed Tributary. There are no known natural sources of PCBs. PCBs are commercially manufactured mixtures of up to 209 individual chlorinated compounds (known as congeners) (ASTDR, 2001). PCBs are characterized as either oily liquids or solids that are colorless to light yellow. Some PCBs can exist as a vapor in air. PCBs generally have no smell

or taste. Many commercial PCB mixtures are known in the United States by the trade name Aroclor and have been used as coolants and lubricants in transformers, capacitors, and other electrical equipment because they do not burn easily and are good insulators. The last two digits of the Aroclor names (e.g., Aroclor 1254) indicate the average chlorine content, in percent. PCBs were not manufactured in the U.S. after 1977; products made before 1977 that may contain PCBs include old fluorescent lighting fixtures and electrical devices containing PCB capacitors, and old microscope and hydraulic oils.

The predominant PCB detected in soil and sediment at the Site is Aroclor 1254, though Aroclor 1248 was detected in one surface soil sample, and Aroclor 1260 was detected in soil at several locations. Aroclor 1254 exhibits a solubility at 24 degrees Celsius of 0.057 milligrams per Liter (mg/L) (Hutzinger et al., 1974), Log K_{ow} of 6.5 (Hutzinger et al., 1974), and vapor pressure at 25 degrees Celsius of 7.71 x 10^{-5} mm Hg (USEPA, 1979). Aroclor 1254 is characterized as a light yellow viscous liquid, with a mild hydrocarbon odor (NIOSH, 1997). Aroclor 1260 exhibits a solubility at 24 degrees Celsius of 0.08 mg/L (Hollifield, 1979), Log K_{ow} of 6.8 (Hutzinger et al., 1974), and vapor pressure at 25 degrees Celsius of 4.05 x 10^{-5} mm Hg (USEPA, 1979). Aroclor 1260 is characterized as a light yellow sticky resin.

The majority of SVOCs detected at the Site are PAHs, which are typically found in fuels, asphalt and partially burned material (i.e., wood, coal, etc). The PAHs at the Site may be the result of the disposal of C&D debris that contained some of these materials. Metals are also the likely result of the disposal of C&D debris, since they appear to be primarily related to the debris piles.

PCBs, and to a lesser extent PAHs, do not readily break down in the environment. Organic compounds with high adsorption characteristics (i.e., high organic carbon partition coefficient [K_{oc}] values) such SVOCs and PCBs (K_{oc} on order of 5.3 x 10^{5} milliliters per gram (ml/g) [Mabey, et al., 1984]), and many inorganics tend to bind strongly to soils, limiting the transport from surface soils to groundwater (although some metals may dissolve more readily with rainwater infiltration). Once bound to soil particles, the primary transport mechanisms are via erosion from rainwater runoff and via wind transport of fugitive dust. Both of these migration paths can transport PCBs, SVOCs, and metals to surface water. Once in the surface water, contaminants are transported either as a dissolved phase or adsorbed onto entrained particulate matter. The majority of these contaminants tend to adsorb to organic particles and bottom sediments. The contaminants in

bottom sediments can be dissolved back into the water column, or be transported bound to sediment particles that are mobilized with stream flow. This results in continuous transport of contaminants, primarily PCBs adsorbed to sediments, within the surface water bodies at and downstream of the Site.

PCBs, SVOCs, and metals in surface waters and adsorbed to sediments can be ingested by small organisms and fish in water, and be subsequently taken up by other animals, and humans, that eat these aquatic animals as food. PCBs accumulate in fish and mammals, reaching concentration levels that may be many thousands of times higher than the concentration present in the water (ASTDR, 2001).

4.3.3 SITE CONCEPTUAL MODEL

Based upon the historical data review and results of the RI, a CSM has been developed. This CSM presents a succinct description of the media affected, the source(s) of contamination, types of contamination, contaminants of potential concern, primary or secondary release mechanisms, migration pathways, and potential receptors. The CSM is presented graphically as Figure 4.10.

The primary contamination at the Site consists of PCBs in surface and subsurface soils across the Site and sediments within the Unnamed Tributary, and to a lesser extent surface water. VOCs, SVOCs, and metals were also detected in soil and/or sediment at the Site. Based upon review of historical data, and the results of the RI field work, suspected sources of contamination at the Site include historical discharge of process water from former cleaning operations containing VOCs, SVOCs, PCBs, and metals and disposal/placement of contaminated fill materials containing SVOCs, PCBs, and metals. The historical data suggested that storage areas at the Site may have contributed to contamination at the Site, but no potential sources were identified during the completion of the RI. Based upon groundwater data collected during the RI, contamination does not appear to be leaching to groundwater at concentrations of concern (i.e., above SCGs).

If not remediated, these contaminants, particularly those present in surface soils and sediments, will remain accessible to potential receptors. The potential receptors of on-site contaminants include aquatic life, semi-aquatic life, terrestrial wildlife, commercial-industrial workers, and area residents. Potentially complete exposure pathways for the Site are presented in Figure 4.10.

4.4 Fish and Wildlife Impact Analysis

Steps I (Site Description) and II (Contaminant-Specific Impact Assessment) of a FWIA have been completed for the Site in accordance with NYSDEC guidance (NYSDEC, 1994), and are presented in their entirety in the Final RI and FWIA Report (MACTEC, 2008b). Their purpose was to:

- identify fish and wildlife resources in the vicinity of the Site
- determine the potential impacts of Site-related contaminants on fish and wildlife resources
- provide information necessary for identifying and evaluating remedial alternatives to address the potentially complete ecological exposure pathways

Step III (Ecological Effects of Remedial Alternatives), Step IV (Fish and Wildlife Requirements for Implementation of Remedial Actions), and Step V (Monitoring Program) are incorporated into the development and evaluation of remedial alternatives in this FS Report.

Results of the criteria-specific analysis (Step II) indicate that significant impacts to fish and wildlife resources are likely from sediment-related exposures in the Adjacent Unnamed Tributary, Unnamed Drainage Ditch and the Adjacent Sauquoit Creek. The highest concentrations of PCBs in sediment were observed in the Adjacent Unnamed Tributary area. Also there do not appear to be significant impacts to fish and wildlife resources from sediment-related exposures in the Downstream Sauquoit Creek area. Based on the results of the downstream sediment sampling, sediment contamination does not appear to be migrating off-site.

Although there were no PCBs detected above the laboratory detection limit, it is unclear whether PCBs are present above the NYSDEC Surface Water Quality Standard. The NYSDEC Surface Water Quality Standard for total PCBs is 1.2E-7 mg/L. The laboratory detection limit for the PCB analysis in surface water was 1.0E-4 mg/L. Therefore there is the potential for PCBs to be present above the standard and less than the laboratory detection limit.

Results from sediment and biota sampling indicate significant impacts to wildlife in the Unnamed Tributary, and Adjacent Sauquoit Creek areas of the Site, from elevated concentrations of PCBs in sediment, macroinvertebrates (e.g., crayfish), and forage fish. Results of biota sampling indicate

significant impacts to wildlife in the Immediately Downstream Sauquoit Creek area; however, the sediment in this area does not pose a risk to fish and wildlife. In the Unnamed Tributary, Adjacent Sauquoit Creek and Immediately Downstream Sauquoit Creek areas, the biota tissue concentrations for all species are at least an order of magnitude greater than the screening criteria. Based on concentrations observed, the Unnamed Tributary and Unnamed Drainage Ditch appear to be sources of PCBs for Sauquoit Creek.

A toxic effect analysis is normally completed as the next phase of the contaminant-specific impact assessment (Step II). This analysis will not be performed for the Site areas given the high magnitude of sediment and tissue benchmark exceedances, which indicate aquatic and semi-aquatic life may be significantly impacted.

4.5 Qualitative Human Health Exposure Assessment

A QHHEA was performed in accordance with NYSDEC Technical Guidance for Site Investigation and Remediation (NYSDEC, 2002), and is presented in its entirety in the RI Report (MACTEC, 2008b). Consistent with this guidance, the QHHEA evaluated the populations of humans that may potentially occur at and in the vicinity of the Site, the mechanisms or exposure pathways by which those humans may be potentially exposed to contamination associated with the Site, and the significance of exposure that may occur through the potential exposure pathways. This process involves three steps:

1. characterization of the exposure setting in terms of physical characteristics, current and future uses of the Site, and the populations that may be potentially exposed to Site-related contamination under the current and future land uses
2. identification of potential exposure pathways and exposure points to which the populations may be exposed
3. screening of potentially complete exposure pathways to identify the pathways and Site-related constituents of greatest concern from a health risk perspective

The QHHEA concluded that human-health exposure points at the Site primarily consist of PCB-contaminated surface soils, sediment, and aquatic biota, specifically brown trout. Additionally, the available data indicate that PCB-contaminated surface soils exist on commercial property (north) and residential property (south) located adjacent to the Site. The route of exposure to surface soil and sediment contamination is primarily dermal absorption, but also includes incidental ingestion

and inhalation of fugitive dust. The route of exposure to aquatic biota includes consumption of brown trout, but it should be noted that there is currently an "eat none" restriction on brown trout in Sauquoit Creek.

The human receptor populations that are present in the vicinity of the Site include commercial/industrial workers who may be working at adjacent commercial/industrial properties and area residents who may live at immediately adjacent residential properties or who may access the property en route to other locations. The Site is readily accessible to both foot and vehicle traffic.

Potentially complete exposure pathways for commercial/industrial workers include direct contact with, and ingestion of, surface soils and inhalation of fugitive dust containing PCBs in excess of SCG values. Potentially complete exposure pathways for area residents who may access the Site include direct contact with, and ingestion of, surface soils and sediment and inhalation of fugitive dust containing PCBs in excess of SCG values.

5.0 DEVELOPMENT OF REMEDIAL ACTION GOALS AND OBJECTIVES

Remedial Action Objectives (RAOs) form the basis for identifying remedial technologies and developing remedial alternatives. RAOs are medium-specific or operable unit-specific objectives for the protection of public health and the environment and are developed based on contaminant-specific SCGs (NYSDEC, 2002).

Site-specific contaminants of concern (COCs) were determined by comparison of contaminant levels to Chemical-Specific SCGs, which include 6 NYCRR Parts 700-706 Water Quality Standards (NYSDEC, 1998), Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (NYSDEC, 1998), Technical Guidance for Screening of Contaminated Sediments (NYSDEC, 1998), and 6 NYCRR Part 375 Remedial Program SCOs (NYSDEC, 2006).

The RI results indicate that soil and sediment contamination exceeds Chemical-Specific SCGs at or in the vicinity of the Site.

RAOs have been developed consistent with the remedy selection process set forth in 6 NYCRR Part 375 (NYSDEC, 2006) and DER-10 (NYSDEC, 2002). The goal for remedial action is to restore the Site to pre-disposal/pre-release conditions, to the extent practicable. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contaminants disposed at the Site through the proper application of scientific and engineering principles (NYSDEC, 2002).

5.1 Remedial Action Objectives for Surface Soil

The QHHEA concluded that potentially complete human-health exposure pathways for surface soil at the Site include commercial/industrial worker and area resident (including recreational users) direct contact with, and ingestion of, surface soil and inhalation of fugitive dust containing PCBs in excess of Chemical-Specific SCG values. The RI also concluded that surface soil presents a potential source to sediment contamination at the Site due to transport of PCB contaminated

surface soils via erosion from rainwater runoff and via wind transport of fugitive dust to the Unnamed Tributary and Sauquoit Creek.

The QHHEA concluded that for off-site residential property to the south of the Site, potentially complete human-health exposure pathways for area residents include direct contact with, and ingestion of, surface soil and inhalation of fugitive dust containing PCBs in excess of Chemical-Specific SCG values.

Therefore, the RAOs for surface soils at, and in the vicinity of, the Site are:

- prevent direct contact with, and ingestion of, contaminated surface soil containing contaminants in excess of SCOs by potential human health receptors
- prevent migration of contaminants in surface soil that would result in groundwater, sediment, or surface water contamination

5.2 Remedial Action Objectives for Subsurface Soil

The QHHEA did not identify subsurface soil as a potentially complete human health exposure pathway at, or in the vicinity of, the Site. However, subsurface soil within the fill piles at the Site and subsurface soil at discrete locations at the Site contains contamination in excess of SCOs.

The RAOs for subsurface soils at, and in the vicinity of, the Site are:

- prevent direct contact with, and ingestion of, contaminated subsurface soil exceeding SCOs by potential human health receptors
- prevent migration of contaminants in subsurface soil that would result in groundwater contamination

5.3 Remedial Action Objectives for Sediment

The QHHEA presented in the RI concluded that potentially complete human health exposure pathways at the Site include area resident (including recreational users) direct contact with, and ingestion of, PCB-contaminated sediment. The RI also concluded that sediment within the

Unnamed Tributary and the Unnamed Ditch presents a potential source to off-site sediment contamination due to transport of PCB-contamination within the water column.

The FWIA, completed in accordance with NYSDEC guidance, concluded that significant impacts to fish and wildlife resources are likely attributable to sediment-related exposures in the Unnamed Tributary, Unnamed Drainage Ditch and adjacent portions of the Sauquoit Creek.

Therefore, the RAOs for sediment at, and in the vicinity of, the Site are:

- prevent direct contact with contaminated sediments in the Unnamed Tributary, Unnamed Ditch, and adjacent portions of the Sauquoit Creek by potential human receptors
- prevent surface water contamination that may result in fish advisories
- prevent releases of contaminants from sediments that would result in surface water levels in excess of Ambient Water Quality Standards and Guidance Values
- prevent impacts to biota from ingestion/direct contact with sediments in the Unnamed Tributary, Unnamed Ditch, and adjacent portions of the Sauquoit Creek that may cause toxicity or impacts from bioaccumulation through the aquatic food chain

6.0 IDENTIFICATION OF GENERAL RESPONSE ACTIONS AND EXTENT OF CONTAMINATION REQUIRING REMEDIAL ACTION

General response actions describe those actions that will satisfy the RAOs (USEPA, 1988). General response actions may include treatment, containment, excavation, disposal, institutional actions, or a combination of these. Like RAOs, general response actions are medium-specific. The general response actions presented in the following subsections address those media identified as potential threats to human health and the environment at the Site:

- surface and subsurface soil contamination at the Site and to the south of the Site on residential property
- sediment at the Site within the Unnamed Tributary, Unnamed Ditch, and adjacent Sauquoit Creek

Site-specific RAOs were developed to address the contamination requiring remedial action for surface and subsurface soil and sediment, including the identified source areas. Source Area 1 identified during the RI was addressed through a surface soil removal action implemented as an IRM in 2007.

6.1 General Response Actions for Soil

The following general response actions would address the RAOs identified for surface and subsurface soil:

- no action
- access restrictions
- removal
- in-situ treatment
- containment
- ex-situ treatment

These general response actions are appropriate for site-specific soil contamination requiring remediation.

6.2 General Response Actions for Sediment

The following general response actions would address the RAOs identified for sediment:

- no action
- access restrictions
- removal
- in-situ Treatment
- containment
- ex-situ treatment

These general response actions are appropriate for site-specific sediment contamination requiring remediation.

6.3 Contamination Requiring Remedial Action

This subsection identifies the extent of contaminated media to which the RAOs and general response actions identified above and the remedial alternatives developed in Section 8.0 apply.

Figure 4.5 through 4.7 present the extent of both on-site and off-site PCB soil and surface soil contamination to be addressed by remedial action.

Pursuant to 6 NYCRR Subpart 375-4.8(d)(2)(i), this FS Report also evaluates a remedial alternative which would achieve the Unrestricted Use SCOs and provide unrestricted future use of the Site. As such, Figures 4.5 through 4.7 present the estimated extent of PCB soil contamination exceeding the Unrestricted Use SCOs and detected concentrations of PCB in sediment. In addition to the widespread soil and sediment PCB contamination at the Site and on residential property to the south of the Site, the fill piles, which contain C&D debris that has been identified as containing PCB, SVOC, and metals contamination, will require remedial action.

The remedial alternatives developed in Section 8.0 consider the distribution of the contaminants, both horizontally and vertically, co-location of various types of contaminants, and the distribution of contaminants by media.

7.0 IDENTIFICATION AND SCREENING OF TECHNOLOGIES

This section presents the identification and screening of potential remedial technologies. Technologies are identified for the purpose of attaining the RAOs established in Subsection 5.1. Identified technologies correspond to the categories of general response actions described in Section 6.0.

Following identification, candidate technologies are screened based on their applicability to site- and contaminant-limiting characteristics. The purpose of the screening is to produce an inventory of suitable technologies that can be assembled into remedial alternatives capable of mitigating actual or potential risks at the Site. Potential technologies representing a range of general response actions are considered. The result of technology screening is a list of potential remedial technologies that may be developed into candidate remedial alternatives.

7.1 TECHNOLOGY IDENTIFICATION

Table 7.1 lists remedial technologies and associated process options identified for screening. These technologies were identified based on USEPA's guidance for Conducting RI/FS (USEPA, 1988) and on experience preparing FS documents and performing site remediation. General response actions were developed for soil and sediment in Section 6.0.

7.2 TECHNOLOGY SCREENING

The technology screening process reduces the number of potentially applicable technologies and process options by evaluating factors that may influence process-option effectiveness and implementability. This overall screening is consistent with guidance for conducting an FS under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (USEPA, 1988). Effectiveness and implementability are incorporated into two screening criteria: waste- and site-limiting characteristics. Waste-limiting characteristics consider the suitability of a technology based on contaminant types, individual compound properties (e.g., volatility, solubility, specific gravity, adsorption potential, and biodegradability), and interactions that may occur between mixtures of compounds. Site-limiting characteristics consider the effect of site-specific physical

features on the implementability of a technology, such as site topography and geology, the location of buildings and underground utilities, available space, and proximity to sensitive operations. Technology screening serves a two-fold purpose of screening out technologies whose applicability is limited by site-specific waste or site considerations, while retaining as many potentially applicable technologies as possible.

Table 7.1 presents the technology-screening process. Technologies and process options judged ineffective or prohibitively difficult to implement were eliminated from further consideration. The technologies retained following screening (see Table 7.1) represent an inventory of technologies considered most suitable for remediation of soil and sediment at the Site and may be used alone or integrated with other technologies to develop remedial alternatives. Pilot-scale treatability studies may be required prior to final technology selection to confirm the effectiveness of a given technology.

8.0 DEVELOPMENT AND SCREENING OF ALTERNATIVES

The retained technologies identified in Table 7.1 are considered technically feasible and applicable to the waste types and physical conditions at the Site. These medium-specific technologies were assembled into potential Site-specific remedial alternatives capable of achieving the RAOs for the contaminated media requiring remediation.

8.1 Development of Remedial Alternatives for the Site

The retained remedial technologies presented in Table 7.1 have been combined into the following remedial alternatives:

8.1.1 ALTERNATIVE 1: NO ACTION.

This alternative will be used as a baseline for comparison to other remedial alternatives. No actions would be taken to address contaminated surface soil, subsurface soil, sediment, or fill pile C&D debris at the Site.

8.1.2 ALTERNATIVE 2: Source Removal, On-Site Consolidation and Capping of Surface Soil and C&D Debris, and Limited Sediment Excavation

Alternative 2 includes excavation and off-site disposal of soil and sediment with PCB concentrations greater than or equal to 10 mg/kg, the TSCA threshold for high-occupancy areas below which PCB-contaminated soil can remain on site if an acceptable cover and land-use controls are in place. The proposed cover system would consist of a one-foot thick soil cover. Based on current and reasonably anticipated future commercial land use at the Site, soil with PCB concentrations greater than 1.0 but less than 10 mg/kg would be managed on-site consistent with the requirements of 6 NYCRR Subpart 375-3.8(e)(4)(iii)(b) for Track 4 Commercial Sites. Soil in off-site residential areas with PCB concentrations greater than 1.0 but less than 10 mg/kg is managed consistent with the requirements of 6 NYCRR Subpart 375-3.8(e)(4)(iii)(a) for Track 4 Residential Sites. A combination of excavation, off-site disposal, and cover system

implementation is used to manage exposure to sediments with PCB concentrations exceeding the NYSDEC sediment PCB remediation goal of 0.1 mg/kg, but less than 10 mg/kg.

Alternative 2 includes the following components:

1. excavation and off-site disposal of soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill
2. excavation and on-site consolidation and capping of remaining on-site soil 0 to 1 feet bgs and C&D debris (all depths) with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
3. excavation and on-site consolidation and capping of remaining C&D debris and garbage
4. excavation and on-site consolidation and capping of remaining off-site residential soil 0 to 2 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
5. excavation and on-site consolidation and capping of remaining surface soil 0 to 1 feet bgs from the Unnamed Drainage Ditch and Culvert with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
6. excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 3 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg and 3 to 5 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill and a two-foot restoration to original grade
7. excavation and off-site disposal of Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade
8. land-use restrictions in accordance with NYCRR Part 375 Restricted-Commercial Use

8.1.3 ALTERNATIVE 3: Source Removal, Partial Removal of Surface Soil and C&D Debris, and Limited Sediment Excavation

Alternative 3 has been developed with consideration for the anticipated future land use and regulatory requirements that were the basis for development of Alternative 2. Unlike Alternative 2, this alternative includes off-site disposal of remaining on-site soil 0 to 1 feet bgs and off-site residential soil 0 to 2 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg.

Alternative 3 includes the following components:

1. excavation and off-site disposal of soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill

2. excavation and off-site disposal of remaining on-site soil 0 to 1 feet bgs and C&D debris (all depths) with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
3. excavation and on-site consolidation and capping of remaining C&D debris and garbage
4. excavation and off-site disposal of remaining off-site residential soil 0 to 2 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
5. excavation and off-site disposal of remaining surface soil 0 to 1 feet bgs from the Unnamed Drainage Ditch and Culvert with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
6. excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 3 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg and 3 to 5 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill and a two-foot restoration to original grade
7. excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade
8. land-use restrictions in accordance with NYCRR Part 375 Restricted-Commercial Use.

8.1.4 ALTERNATIVE 4: Source Removal, Removal of Surface Soil and C&D Debris to Restricted-Commercial SCOs, and Sediment Excavation

Alternative 4 has been developed with consideration for the anticipated future land use and regulatory requirements that were the basis for development of Alternatives 2 and 3. Unlike Alternatives 2 and 3, Alternative 4 does not include on-site consolidation of contaminated soil or C&D debris. Alternative 4 also includes excavation and off-site disposal of remaining Unnamed Tributary sediment 3 to 5 feet bgs with PCB concentrations greater than 0.1 mg/kg, compared to greater than 1 mg/kg for Alternatives 2 and 3.

Alternative 4 includes the following components:

1. excavation and off-site disposal of soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill
2. excavation and off-site disposal of remaining on-site soil 0 to 1 feet bgs and C&D debris (all depths) with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
3. excavation and off-site disposal of remaining C&D debris and garbage

4. excavation and off-site disposal of remaining off-site residential soil 0 to 2 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
5. excavation and off-site disposal of remaining off-site commercial soil 0 to 1 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
6. excavation and off-site disposal of remaining surface soil 0 to 1 feet bgs from the Unnamed Drainage Ditch and Culvert with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
7. excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 5 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill and a two-foot restoration to original grade
8. excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade
9. excavation and off-site disposal of sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg within off-site commercial property storm drains
10. land-use restrictions in accordance with NYCRR Part 375 Restricted-Commercial Use

8.1.5 ALTERNATIVE 5: Source Removal, Removal of Surface Soil and C&D Debris to Restricted-Residential SCOs, and Sediment Excavation

Alternative 5 has been developed with consideration for potential future restricted-residential land use. Alternative 5 generally consists of the similar components as Alternative 4, with the exception that on-site soil with PCB concentrations greater than 1.0 but less than 10 mg/kg is managed consistent with the requirements of 6 NYCRR Subpart 375-3.8(e)(4)(iii)(a) for Track 4 Residential Sites.

Alternative 5 includes the following components:

1. excavation and off-site disposal of soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill
2. excavation and off-site disposal of remaining on-site soil 0 to 2 feet bgs and C&D debris (all depths)with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
3. excavation and off-site disposal of remaining C&D debris and garbage

4. excavation and off-site disposal of remaining off-site residential soil 0 to 2 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
5. excavation and off-site disposal of remaining off-site commercial soil 0 to 1 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
6. excavation and off-site disposal of remaining surface soil 0 to 2 feet bgs from the Unnamed Drainage Ditch and Culvert with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
7. excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 5 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill and a two-foot restoration to original grade
8. excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade
9. excavation and off-site disposal of sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg within off-site commercial property storm drains
10. land-use restrictions in accordance with NYCRR Part 375 Restricted-Residential Use

8.1.6 ALTERNATIVE 6: Source Removal, Removal of Surface Soil and C&D Debris to Residential SCOs, and Sediment Excavation

Alternative 6 has been developed with consideration for potential future residential land use. Alternative 6 consists generally of the similar components as Alternative 5, with the exception that on-site soil with PCB concentrations greater than 1.0 but less than 10 mg/kg is managed such that land-use restrictions would not be required for residential use of the property.

Alternative 6 includes the following components:

1. excavation and off-site disposal of all soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill
2. excavation and off-site disposal of remaining on-site soil and C&D debris containing PCB concentrations greater than 1 mg/kg but less than 10 mg/kg
3. excavation and off-site disposal of remaining C&D debris and garbage
4. excavation and off-site disposal of all remaining off-site residential soil with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill

5. excavation and off-site disposal of remaining off-site commercial soil 0 to 1 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
6. excavation and off-site disposal of all remaining soil from the Unnamed Drainage Ditch and Culvert with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
7. excavation and off-site disposal of remaining Unnamed Tributary sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill and a two-foot restoration to restore to original grade
8. excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade
9. excavation and off-site disposal of sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg within off-site commercial property storm drains

8.1.7 ALTERNATIVE 7: Restoration to Pre-Disposal Conditions

Alternative 7 consists of remedial actions that would restore the Site to pre-disposal conditions and provide for unrestricted future use, consistent with DER-10 (NYSDEC, 2002) and Subpart 375-4.8(d)(2)(i) (NYSDEC, 2006), respectively. Alternative 7 would include removal of contaminated soils in excess of the Unrestricted Use SCOs and contaminated sediments containing concentrations of PCBs greater than or equal to 0.1 mg/kg.

Alternative 7 includes the following components:

1. excavation and off-site disposal of all soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill
2. excavation and off-site disposal of all remaining on-site soil and C&D debris containing PCB concentrations greater than 0.1 mg/kg but less than 10 mg/kg
3. excavation and off-site disposal of remaining C&D debris and garbage
4. excavation and off-site disposal of all remaining off-site residential soil with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill
5. excavation and off-site disposal of all remaining off-site commercial soil with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill
6. excavation and off-site disposal of all remaining soil from the Unnamed Drainage Ditch and Culvert with PCB concentrations greater than 0.11 but less than 10 mg/kg, followed by placement of clean backfill

7. excavation and off-site disposal of remaining Unnamed Tributary sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill and a two-foot restoration to restore to original grade
8. excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade
9. excavation and off-site disposal of all remaining Sauquoit Creek sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill and two-foot restoration to original grade
10. excavation and off-site disposal of sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg within off-site commercial property storm drains

8.2 SCREENING OF ALTERNATIVES

This Subsection presents a screening of the remedial alternatives developed for soil and sediment. Consistent with DER-10, the developed medium-specific remedial alternatives are screened on the basis of whether they are technically implementable for the Site (Implementability) and whether they can meet the RAOs (Effectiveness). Additionally, based upon available information, the relative cost of each remedial alternative is also evaluated. Those remedial alternatives which are not technically implementable, would not achieve RAOs for the Site, or would incur costs significantly higher than other remedial alternatives without providing greater effectiveness or implementability, are not evaluated further.

The medium-specific screening of remedial alternatives is present in Table 8.1. The No Action alternative is not evaluated according to the screening criteria; it passes through screening to be evaluated during the detailed analysis as a baseline for other retained alternatives.

As indicated in Table 8.1, the remedial alternatives developed in Subsection 8.1 are all retained for detailed analysis in Section 9.0.

9.0 DETAILED ANALYSIS OF ALTERNATIVES

This section presents the detailed analyses of remedial action alternatives for soil and sediment at the Site. The detailed analysis is intended to provide decision-makers with relevant information to aid in selection of a site remedy. The detailed description of technologies or processes used for each alternative includes, where appropriate, a discussion of limitations, assumptions, and uncertainties for each component. The descriptions provide a conceptual design of each alternative and are intended to support alternatives-comparison and cost-estimation.

The detailed analysis of each alternative includes evaluation using the evaluation criteria identified in DER-10 (NYSDEC, 2002) and Subpart 375-1.8(f) (NYSDEC, 2006). A description of each of the evaluation criteria are presented in the following paragraphs.

Compliance with Standards, Criteria, and Guidance. Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance. SCGs for the Site will be listed along with a discussion of whether or not the remedy will achieve compliance. For those SCGs that will not be met, there will be a discussion and evaluation of the impacts of each, and whether waivers are necessary. Chemical-specific SCGs were previously identified in this FS Report. Location- and Action-specific SCGs will be identified for each alternative in this Section.

Overall Protection of Public Health and the Environment. This criterion is an evaluation of the remedy's ability to protect public health and the environment, assessing how risks posed through each existing or potential pathway of exposure are eliminated, reduced or controlled through removal, treatment, engineering controls or institutional controls. The remedy's ability to achieve each of the RAOs will be evaluated.

Short-term Impacts and Effectiveness. The potential short-term adverse impacts and risks of the remedy upon the community, the workers, and the environment during the construction and/or implementation are evaluated. A discussion of how the identified adverse impacts and health risks to the community or workers at the Site will be controlled, and the effectiveness of the controls, will be presented, along with a discussion of engineering controls that will be used to mitigate short

term impacts (e.g., dust control measures). The length of time needed to achieve the remedial objectives will be estimated.

Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedy after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items will be evaluated:

1. magnitude of remaining risks
2. adequacy of the engineering and institutional controls intended to limit the risk
3. reliability of these controls
4. ability of the remedy to continue to meet RAOs in the future

Effectiveness of alternatives in protecting human health and the environment after RAOs are met will be evaluated. This will include an evaluation of the permanence of the alternative, the magnitude of residual risk, and the adequacy and reliability of controls required to manage wastes or residuals remaining at the Site.

Reduction of Toxicity, Mobility, or Volume with Treatment. The remedy's ability to reduce the toxicity, mobility or volume of site contamination will be evaluated. Preference will be given to remedies that permanently and significantly reduce the toxicity, mobility, or volume of the wastes at the Site.

Implementability. The technical and administrative feasibility of implementing the remedy will be evaluated. Technical feasibility includes the difficulties associated with the construction and the ability to monitor the effectiveness of the remedy. For administrative feasibility, the availability of the necessary personnel and material will be evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, or other issues.

Cost-Effectiveness. Capital and Site Management costs, including Operation, Maintenance and Monitoring costs, will be estimated for the remedy and presented on a present worth (PW) basis.

Community Acceptance. The public's comments, concerns and overall perception of the remedy will be evaluated following a public meeting presenting the proposed remedial action plan in a

format that responds to questions that are raised (i.e., the responsiveness summary). This criterion is not evaluated in this FS Report.

Land Use. The current, intended, and reasonably anticipated future land uses of the Site and its surroundings will be considered in the evaluation of remedial alternatives.

9.1 COST ANALYSIS PROCEDURES

Estimated costs presented in this FS Report are intended to be within the target accuracy range of minus 30 to plus 50 percent of actual cost (USEPA, 1988). Costs are presented as a PW and as a total cost for up to a 30-year period.

A summary of the costs for each alternative identifying capital and PW costs are included in each alternative's cost description. Each cost estimate includes a PW analysis to evaluate expenditures that occur over different time periods. The analysis discounts future costs to a PW and allows the cost of remedial alternatives to be compared on an equal basis. PW represents the amount of money that, if invested now and disbursed as needed, would be sufficient to cover costs associated with the remedial action over its planned life. A discount rate of 3.1 percent, as published by the Office of Management and Budget (OMB), was used to prepare the cost estimates (OMB, 2008).

Consistent with USEPA FS cost estimating guidance (USEPA, 2000), the remedial alternative cost estimates include costs for project management, remedial design, construction management, technical support, and scope contingency.

Project management includes planning and reporting, community relations support during construction or Operation and Maintenance (O&M), bid or contract administration, permitting (not already provided by the construction or O&M contractor), and legal services outside of institutional controls.

Remedial design applies to capital cost and includes services to design the remedial action. Activities that are part of remedial design include pre-design collection and analysis of field data, engineering survey for design, treatability study/pilot-scale testing, and the various design components such as design analysis, plans, specifications, cost estimate, and schedule.

Construction management applies to capital cost and includes services to manage construction or installation of the remedial action, except any similar services provided as part of regular construction activities. Activities include review of submittals, design modifications, construction observation or oversight, engineering survey for construction, preparation of O&M manual, documentation of quality control (QC)/quality assurance (QA), and record drawings.

Technical support during O&M includes services to monitor, evaluate, and report progress of remedial action. This includes oversight of O&M activities, update of O&M manual, and progress reporting and is generally between 10 percent and 20 percent of total annual O&M costs depending on complexity of the remedial action (USEPA, 2000).

Scope contingency represents project risks associated with the feasibility-level of design presented in this FS Report. This type of contingency represents costs, unforeseeable at the time of estimate preparation, which are likely to become known as the remedial design proceeds. Scope contingency ranges from 10 to 25 percent, with higher values appropriate for alternatives with greater levels of cost growth potential (USEPA, 2000).

Project management, remedial design, and construction management costs presented in this FS Report are based upon the following matrix presented in the USEPA FS cost estimating guidance (USEPA, 2000).

Professional and Technical Costs as Percentage of Direct Costs					
Indirect Cost	< $100K (%)	$100K-$500K (%)	$500K-$2M (%)	$2M-$10M (%)	>$10M (%)
Project Management	10	8	6	5	5
Remedial Design	20	15	12	8	6
Construction Management	15	10	8	6	6

9.2 GENERAL ASSUMPTIONS

Details and assumptions pertaining to the cost estimates are included in each alternative's cost description. In addition to the alternative-specific assumptions, the following cost assumptions were applied, as applicable:

- the Unnamed Drainage Ditch would be removed and not be restored as part of any remedial alternative, and, as such, sediments from within the Unnamed Drainage Ditch would be managed as soil, not sediment
- confirmation sampling would be conducted at a rate of one sample per 30 linear feet of sidewall and one per 900 square feet of excavation bottom in accordance with DER-10
- waste characterization sampling would be conducted at a rate of one sample per 500 cubic yards, or more frequently if required by the disposal facility
- long-term activities would be conducted for no more than 30 years
- five percent of long-term monitoring samples would be collected in duplicate, or for QA/QC purposes, and analyzed off-site
- institutional control inspections would be conducted every year up to a total of 30 years

The following remedial alternatives developed in Section 8.0 were retained for detailed analysis.

- Alternative 1: No Action
- Alternative 2: Source Removal, On-Site Consolidation and Capping of Surface Soil and C&D Debris, and Limited Sediment Excavation
- Alternative 3: Source Removal, Partial Removal of Surface Soil and C&D Debris, and Limited Sediment Excavation
- Alternative 4: Source Removal, Removal of Surface Soil and C&D Debris to Restricted-Commercial SCOs, and Sediment Excavation
- Alternative 5: Source Removal, Removal of Surface Soil and C&D Debris to Restricted-Residential SCOs, and Sediment Excavation
- Alternative 6: Source Removal, Removal of Surface Soil and C&D Debris to Residential SCOs, and Sediment Excavation
- Alternative 7: Restoration to Pre-Disposal Conditions

The following subsections present a conceptual design and cost estimate for each of these remedial alternatives and a discussion of each alternative relative to the evaluation criteria as set forth in DER-10 (NYSDEC, 2002). Figures 9.1 through 9.6 present the extent of soil, sediment, and C&D

debris to be excavated for on-site consolidation and/or off-site disposal under Alternatives 2 through 7.

9.3 Alternative 1: NO ACTION

This alternative would not include any actions to address soil and sediment contamination at the Site.

Compliance with Standards, Criteria, and Guidance. This alternative would not meet Chemical-specific SCGs because it would not address sediment contamination in excess of the screening criteria established in the Technical Guidance for Screening of Contaminated Sediments (NYSDEC, 1998), the Site-specific sediment RG for PCBs of 0.1 mg/kg, or soil contamination in excess of the 6 NYCRR Part 375 Remedial Program SCOs (NYSDEC, 2006). This alternative would not trigger any Location- or Action-specific SCGs.

Overall Protection of Public Health and the Environment. This remedial alternative would not protect public health and the environment through eliminating, reducing, or controlling existing or potential exposure pathways through removal, treatment, engineering controls, or institutional controls. This remedial alternative would not achieve the RAOs for soil and sediment.

Short-term Effectiveness. Because no actions would be taken, this alternative would not result in short-term adverse impacts and risks to the community, site workers, and the environment.

Long-term Effectiveness and Permanence. This alternative would not include actions to address contaminated soils and sediments at and in the vicinity of the Site. This remedy does not currently meet RAOs for soil and sediment and, due to the properties of the Site-specific COCs (e.g., longevity of PCBs), would not be expected to meet RAOs in the future.

Reduction of Toxicity, Mobility, or Volume with Treatment. This alternative would not result in the reduction of toxicity, mobility, or volume of soil or sediment contamination through treatment.

Implementability. No actions would be conducted, therefore there are no technical difficulties associated with this alternative. However, obtaining regulatory and/or public approval of this alternative would be difficult.

Land Use. The current and reasonably anticipated future land use of the Site is for commercial purposes; however, residential property is located immediately to the south of the Site. Because no actions would be taken as part of this alternative and there would be no restrictions to future use, this alternative would not be protective of potential occupants/visitors to the Site and the immediate vicinity.

Cost. There are no costs associated with this alternative.

9.4 Alternative 2: Source Removal, On-Site Consolidation and Capping of Surface Soil and C&D Debris, and Limited Sediment Excavation.

Alternative 2 consists of the following components:

- pre-design investigations and studies
- mobilization and temporary facilities and controls
- excavation and off-site disposal of all soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill
- excavation and on-site consolidation and capping of remaining on-site soil 0 to 1 feet bgs and C&D debris (all depths) with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
- excavation and on-site consolidation and capping of remaining C&D debris and garbage
- excavation and on-site consolidation and capping of remaining off-site residential soil 0 to 2 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
- excavation and on-site consolidation and capping of remaining surface soil 0 to 1 feet bgs from the Unnamed Drainage Ditch and Culvert with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
- excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 3 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg and 3 to 5 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill and a two-foot restoration to original grade
- excavation and off-site disposal of Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-

foot restoration to original grade construction of a one-foot thick soil cover over consolidated soil, C&D debris, and garbage

- institutional controls
- long-term monitoring
- annual institutional control and cover inspections and reporting

9.4.1 DETAILED DESCRIPTION OF ALTERNATIVE 2

Pre-Design Investigations and Studies. Pre-design investigations and/or studies would be conducted to support the remedial design, and would include, but not be limited to:

- survey and characterization of the Unnamed Tributary alignment and habitat
- stormwater and hydraulic modeling

The survey and characterization of the Unnamed Tributary alignment and habitat will include characterization of existing conditions, including surveying the slope, sinuosity and embedment of the tributary, bank and stream bed characterization, wetland delineation and photo documentation. The wetlands on site will be delineated following the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual (Technical Report Y-87-1).

Stormwater and hydraulic modeling would be conducted in support of the design and implementation of temporary and permanent erosion and sediment control measures and restoration of the Unnamed Tributary and a Sauquoit Creek east bank.

Mobilization and Temporary Facilities and Controls. Site preparation, mobilization, and temporary facilities and controls would include activities required to prepare the Site for construction, including, but not limited to:

- delivery and setup of site trailers
- installation of temporary utilities
- temporary diversion of the Unnamed Tributary
- construction of material stockpile containment areas
- construction of wastewater treatment facilities and equipment decontamination facilities
- implementation of erosion and sediment control measures
- site clearing and grubbing;

- survey layout of the various work extents

Stream flow to on-site portions of the Unnamed Tributary from off-site (to the north) would be temporarily diverted during the duration of excavation of the Unnamed Tributary sediments. Observations made during completion of the RI and other site work suggest that the Unnamed Tributary, for the most part, is a perennial water feature, although it may stagnate somewhat during dry weather patterns. For cost estimating purposes, it has been assumed that construction would occur during low-flow conditions, and that flow would be temporarily diverted around the on-site portion of the Unnamed Tributary directly to the Sauquoit Creek using pumps and flexible piping. Additionally, erosion and sediment control measures including temporary stabilized berms would be implemented as described below. In addition to base flow of the Unnamed Tributary, stormwater runoff and shallow groundwater intrusion are anticipated during completion of this work, which will require dewatering during excavation of the Unnamed Tributary sediments.

Material stockpile containment areas would be constructed to segregate the excavated materials according to the various identified waste streams, which consist of soils and sediments containing PCB concentrations greater than or equal to 10 mg/kg, soils and sediments with PCBs less than 10 mg/kg, C&D debris with PCB concentrations greater than or equal to 10 mg/kg, and C&D debris with concentrations less than 10 mg/kg. The stockpile areas would consist of lined bermed areas with a stone-lined sump to allow for pumping of accumulated water to the wastewater treatment facility. Stockpiled materials would be covered with secured tarpaulins overnight and/or during rainfall events to minimize the amount of water requiring treatment.

An on-site wastewater treatment facility would be provided to process the wastewater generated during excavation dewatering, dewatering of stockpiled materials, and equipment decontamination. The system would consist of an influent flow equalization tank, electrically driven pumps, solids settling units, particulate filtration consisting of bag filtration (four bag filters in series/parallel configuration to allow for continual operation), and granular activated carbon (GAC) filtration (in series/lead-lag configuration). A flowmeter would be provided to measure flow rate and total flow. Sample valves/taps would be provided before and after each bag filter and GAC vessel. Daily treated effluent samples would be collected and analyzed for PCBs, SVOCs, VOCs, and metals.

Erosion and sediment control measures would consist of siltation fence, temporary stabilized berms, siltation curtains, and air/dust monitoring procedures applied in accordance with local, state, and federal requirements, in accordance with a site-specific erosion and sedimentation control plan and community air monitoring plan.

Site clearing and grubbing would be conducted to facilitate access to proposed work areas. It is assumed that approximately 1.5 acres of medium brush and/or medium trees would require clearing and grubbing.

Excavation and Off-site Disposal of Soil, C&D Debris, and Sediment with PCB Concentrations Greater than or Equal to 10 mg/kg, Followed by Placement of Clean Backfill. Contaminated soils, sediments, and C&D debris material containing PCBs at concentrations greater than or equal to 10 mg/kg would be excavated, stockpiled together, and allowed to dewater prior to transportation off-site for treatment and/or disposal. Based upon interpretation of the existing analytical data, the extent of source area materials consists of approximately 910 cubic yards of soil, 489 cubic yards of sediment, and 1300 cubic yards of C&D material (refer to Appendix B – Calculations).

Due to the presence of large C&D piles and the physical location of source area materials, construction sequencing will be a critical component of remedial action at the Site. It is anticipated that excavation of source area soils and sediments would be the first work initiated, beginning with excavation of C&D debris in the area of Source Area 3 and extending, as necessary, until adequate working space is provided to construct the Unnamed Tributary temporary diversion. Excavation of the remaining source materials would be generally postponed until the Unnamed Tributary diversion was completed, at which time excavation of the source areas would resume. Access to the remaining source area soils and sediments would be maintained via a crossing of the now diverted Unnamed Tributary by way of the temporary crossing. Excavated source area soils and sediments would be stockpiled, dewatered, and/or stabilized prior to transportation and off-site treatment/disposal.

Excavation and On-site Consolidation and Capping of Remaining On-site Soil 0 to 1 feet bgs and C&D Debris (all depths) with PCB Concentrations Greater than 1 but less than 10 mg/kg, Followed by Placement of Clean Backfill. Remaining on-site soil 0 to 1 feet bgs and

C&D debris with PCB concentrations greater than 1 but less than 10 mg/kg, an estimated 1770 cubic yards and 3938 cubic yards, respectively, would be excavated and stockpiled on-site for consolidation and capping (refer to Appendix B, Table B.1).

Excavation and On-site Consolidation and Capping of Remaining C&D Debris and Garbage. The remaining C&D debris and garbage with PCB concentrations less than 0.1 mg/kg, an estimated 262 cubic yards, would be excavated and consolidated for capping.

Excavation and On-site Consolidation and Capping of Remaining Off-site Residential Soil 0 to 2 feet bgs with PCB Concentrations Greater than 1 but less than 10 mg/kg, Followed by Placement of Clean Backfill. Residential soil containing PCBs greater than 1 mg/kg but less than 10 mg/kg, an estimated 16 cubic yards, would be excavated to a depth of two feet and stockpiled on site prior to on-site consolidation and capping. If confirmation or characterization sampling indicate surface soils containing PCB concentrations greater than 10 mg/kg, the impacted soils will be combined with source area materials to be disposed off site. The excavation area(s) will be backfilled with certified clean backfill and loamed and seeded.

Excavation and On-site Consolidation and Capping of Remaining Surface Soil 0 to 1 feet bgs from the Unnamed Drainage Ditch and Culvert with PCB Concentrations Greater than 1 but less than 10 mg/kg, Followed by Placement of Clean Backfill. The remaining surface soil 0 to 1 feet bgs within the Unnamed Drainage Ditch, and soil within the associated culvert would be excavated and stockpile for on-site consolidation and capping. The culvert would be crushed for consolidation beneath the proposed cap. Following excavation, the Unnamed Drainage Ditch would be backfilled with clean fill to match surrounding grades. This material would be handled as on-site soil as described above.

Excavation and Off-site Disposal of Remaining Unnamed Tributary Sediment 0 to 3 feet bgs with PCB Concentrations Greater than 0.1 but less than 10 mg/kg and 3 to 5 feet bgs with PCB Concentrations Greater than 1 but less than 10 mg/kg, Followed by Placement of Clean Fill and a Two-foot Restoration to Original Grade. Following source removal, contaminated sediments containing PCB concentrations greater than 0.1 mg/kg but less than 10 mg/kg within the Unnamed Tributary would be excavated to a depth of three feet, both horizontally into the banks and vertically, an estimated 283 cubic yards, followed by excavation of contaminated sediments

within the 3 to 5 feet bgs depth interval, both horizontally into the banks and vertically, containing PCB concentrations greater than 1 mg/kg but less than 10 mg/kg, an estimated 88 cubic yards. Excavated sediments would be stockpiled and dewatered prior to transportation off site for treatment and/or disposal. Confirmation sampling would be conducted at a rate of one sample per 30 linear feet of sidewall and one per 900 square feet of excavation bottom consistent with DER-10. Waste characterization sampling would be conducted at a rate of one sample per 500 cubic yards, or more frequently as required by the disposal facility.

Following excavation of contaminated sediments to the final limits, the Unnamed Tributary would be restored in accordance with state and federal regulations and available guidance documents including, but not limited to, NYCRR Part 608 and the United States Department of Agriculture, Natural Resources Conservation Service (NRCS), Part 654 National Engineering Handbook, Stream Restoration Design, August 2007 (NRCS, 2007).

The Unnamed Tributary will be reconstructed, to the extent practicable, to match the existing flow path and bathymetry. This will be achieved through the placement of clean backfill and a two-foot restoration layer, as described herein. The banks of the Unnamed Tributary will be restored and erosion control measures such as erosion control blankets will be installed. The stream bed (restoration layer) will consist of material (i.e., gravel, cobble, and boulders) of the same size and distribution as the existing stream bed. The excavation and restoration of the Unnamed Tributary should occur during the period of lowest annual flow. During the mitigation and restoration, flow in the Unnamed Tributary will be diverted (i.e., piped to Sauquoit Creek) allowing the mitigation and restoration work to be done in the dry. The restoration of the Unnamed Tributary will included constructing riffle and run habitat as well as shallow pools, consistent with existing conditions. In addition, trees cut from the Site in preparation for the soil mitigation, should be left on site as logs and incorporated in the restoration of the Unnamed Tributary (i.e., used to create structure and bank stabilization).

The riparian area adjacent to the Unnamed Tributary has been impacted by human activities at the Site and adjacent residential property, including the establishment of managed lawn along portions of the north and south sides of the Unnamed Tributary. The north side of the Unnamed Tributary also includes overgrown areas. Planting of trees and shrubs, and application of wetland and upland seed mixes will be incorporated into the Site restoration activities to reestablish a riparian

vegetative buffer along the Unnamed Tributary and stabilize the restored stream bank. The objective of the plantings is to reestablish a riparian shrub/forest habitat along the Unnamed Tributary using native trees and shrubs. Trees in the 2 to 3 foot size and shrubs in the 18 to 24 inch size will be used. The final placement of trees and shrubs will be left to the discretion of the wetland scientist overseeing the restoration. In addition, live stakes will also be used when installing erosion control measures such as erosion control blankets. An herbaceous seed mix will be applied on all disturbed areas, and will be applied at the rates specified by the supplier. The wetland scientist providing oversight will identify areas where wetland, moist site and dry site seed mixes will be sown.

Excavation and Off-site Disposal of Sauquoit Creek East Bank Sediment 0 to 2 feet bgs with PCB Concentrations Greater than 0.1 but less than 10 mg/kg, Followed by Placement of Two-foot Restoration to Original Grade. Contaminated sediments containing PCB concentrations greater than 0.1 mg/kg but less than 10 mg/kg from the east bank of the Sauquoit Creek would be excavated to a depth of two feet, an estimated 135 cubic yards, for off-site disposal. The excavation of these sediments would require damming along the Sauquoit Creek, such as with water-inflated portable dams, and dewatering to prevent undermining of the dam(s) and to facilitate excavation. Additionally, turbidity curtains may be utilized to control Sauquoit Creek sediment mobilized during the course of work. Handling of these sediments, and the associated confirmation and waste characterization sampling, would be handled similar to the Unnamed Tributary sediments as discussed above. Following excavation, a two-foot restoration in accordance with NYCRR Part 608 requirements would be placed to return the Sauquoit Creek to original grade.

Construction of a One-foot Thick Soil Cover Over Consolidated Soil, C&D Debris, and Garbage. A one-foot soil cover would be constructed over areas of consolidated soil and C&D debris and garbage. It is anticipated that the soil cover(s) proposed for portions of the Site located southeast of the Unnamed Tributary would be constructed prior to restoration of the Unnamed Tributary to minimize disturbance and/or recontamination of the restored Unnamed Tributary. Based upon interpretation of the existing data, an estimated 0.9 acres of soil cover would be required.

Institutional Controls. Institutional controls would be implemented to restrict future use of the Site as part of an environmental easement. Implementation of the environmental easement would

include the development of a Site Management Plan which would set forth the institutional controls necessary to manage exposure to contamination remaining at a Site. Institutional controls would likely include implementation of land-use restrictions restricting subsurface activity, prohibiting installation of drinking water wells in the area of contamination, and restricting changes in zoning of the Site (e.g., change from commercial to residential use). Land-use restrictions would be implemented through legal instruments such as deeds and/or water well permitting processes.

Long-term Monitoring. Long-term monitoring would be implemented to evaluate effectiveness of the remediation and restoration of the Unnamed Tributary. This monitoring would include annual inspection of vegetation and other features of the restoration, as well as sampling and analysis of sediment, surface water, and biota from the Unnamed Tributary and the adjacent Sauquoit Creek. A report would be prepared for each long-term monitoring event. It is assumed that long-term monitoring would be required for five years.

Annual Institutional Control and Cover Inspections and Reporting. Annual inspections would be conducted to evaluate the condition of the soil cover and to ensure deed and land-use restrictions are being enforced. An annual report would be prepared documenting the inspection and the conditions observed. Long-term maintenance of the soil cover would be conducted as needed. It is assumed that the soil cover would require minimal restoration once every five years.

9.4.2 DETAILED EVALUATION OF ALTERNATIVE 2

Compliance with Standards, Criteria, and Guidance. Alternative 2 would meet Chemical-specific SCGs by removing sediment contamination in excess of the NYSDEC sediment PCB remediation goal of 0.1 mg/kg to 3 feet bgs (in excess of 1 mg/kg 3 to 5 feet bgs) from within the Unnamed Tributary and to 2 feet bgs along the east bank of the Sauquoit Creek, and by removing and/or capping of soil contamination in excess of the 6 NYCRR Part 375 Remedial Program SCOs consistent with the current and anticipated future use of the Site (commercial use) and adjacent property (residential use). Institutional controls would be implemented as required under 6 NYCRR Part 375.

Alternative 2 would likely trigger Location-Specific SCGs associated with disturbance of wetlands and construction within a flood plain, and Action-Specific SCGs associated with dust control,

erosion and sediment control, transportation and disposal of hazardous wastes, and stream restoration. Table 9.1 presents a summary of Location- and Action-Specific SCGs associated with remedial alternatives evaluated in this Section.

Overall Protection of Public Health and the Environment. This remedial alternative would protect public health and the environment through eliminating, reducing, or controlling existing or potential exposure pathways through removal, treatment and/or disposal, engineering controls, or institutional controls. This remedial alternative would achieve the RAOs for soil and sediment. Alternative 2 would allow for commercial use of the Site and residential use of the adjacent property in accordance with 6 NYCRR Part 375. Alternative 2 would accommodate neither residential use of the Site because soil containing contaminants in excess of the Residential Use SCOs would remain in place within two feet bgs, nor unrestricted use of the adjacent residential property because soils containing contaminants in excess of Unrestricted Use SCOs would remain in place.

Short-term Effectiveness. This alternative would result in short-term adverse impacts and risks to the community, site workers, and the environment as a result of implementation. Implementation of this alternative would include preparation of and adherence to a construction work plan and health and safety plan. It is estimated that this alternative could be fully implemented in less than one year, at which time Alternative 2 would meet the RAOs for soil and sediment. Alternative 2 involves the least disturbance of soil and sediment of the active candidate alternatives and therefore presents the least potential of short-term adverse impacts and risks to the community, site workers, and the environment as a result of implementation.

Long-term Effectiveness and Permanence. This alternative would result in residual wastes remaining at and within the vicinity of the Site. Soil and C&D debris with PCB concentrations greater than 1 but less than 10 mg/kg would remain on site beneath a one-foot soil cover. This would limit future Site use to industrial or commercial purposes. Sediment within the Unnamed Tributary with PCB concentrations greater than 1 but less than 10 mg/kg would remain in place beneath a one-foot soil cover and two-foot restoration, which would not allow for unrestricted use of the Unnamed Tributary. Sediment on the east bank of the Sauquoit Creek with PCB concentrations less than 0.1 mg/kg would remain in place and contaminated sediment within the Sauquoit Creek would not be removed. Soil contamination with PCB concentrations greater than 1

but less than 10 mg/kg greater than 2 feet bgs would remain in place on residential property to the south of the Site. This would not allow for unrestricted use of the residential property. This alternative would not address soil with PCB concentrations less than 10 mg/kg on commercial property located north of the Site. Engineering controls would limit potential future exposure to on-site soils and sediments. Annual inspections would serve to provide long-term effectiveness and permanence. Institutional controls would limit future use of the Site and adjacent residential property, thereby limiting potential future exposure to soil and sediment contamination.

Reduction of Toxicity, Mobility, or Volume with Treatment. This alternative would result in the reduction of mobility and volume of soil and sediment contamination at and in the vicinity of the Site through excavation and off-site disposal or on-site capping. This alternative would not result in a reduction in the toxicity of contamination unless contaminated soil and sediment removed from the Site receive off-site treatment prior to disposal.

Implementability. There would be limited technical issues with implementing this alternative, associated primarily with excavation and restoration of the Unnamed Tributary. State or Federal regulations for construction within a flood plain may complicate implementation of this alternative. Property owner cooperation would be required to place an environmental easement; implementability of this alternative would be contingent upon this cooperation.

Land Use. The current and reasonably anticipated future land use of the Site is for commercial purposes, and residential property is located immediately to the south of the Site. This alternative would be compatible with current land use and reasonably anticipated future land use. It includes institutional controls to restrict future use that could result in potential exposure to residual contamination.

Cost. The capital cost estimate for this Alternative is $2,910,000. The PW of this Alternative is estimated to be $3,228,000. A summary of the costs associated with this alternative is presented in Table 9.2. Detailed cost analysis backup is provided in Appendix C.

9.5 Alternative 3: Source Removal, Partial Removal of Surface Soil and C&D Debris, and Limited Sediment Excavation

Alternative 3 consists of the following components:

- pre-design investigations and studies
- mobilization and temporary facilities and controls
- excavation and off-site disposal of soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill
- excavation and off-site disposal of remaining on-site soil 0 to 1 feet bgs and C&D debris (all depths) with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
- excavation and on-site consolidation and capping of remaining C&D debris and garbage
- excavation and off-site disposal of remaining off-site residential soil 0 to 2 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
- excavation and off-site disposal of remaining surface soil 0 to 1 feet bgs from the Unnamed Drainage Ditch and Culvert with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
- excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 3 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg and 3 to 5 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill and a two-foot restoration to original grade
- excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade institutional controls
- long-term monitoring
- annual institutional control and cover inspections and reporting

9.5.1 DETAILED DESCRIPTION OF ALTERNATIVE 3

Pre-Design Investigations and Studies. Pre-design investigations and/or studies would be conducted similar to Alternative 2 to support the remedial design.

Mobilization and Temporary Facilities and Controls. Site preparation, mobilization, and temporary facilities and controls would be implemented as described for Alternative 2.

Excavation and Off-site disposal of Soil, C&D Debris, and Sediment with PCB Concentrations Greater than or Equal to 10 mg/kg, Followed by Placement of Clean Backfill. Excavation and off-site disposal of soil, C&D debris, and sediments with PCB concentrations greater than or equal to 10 mg/kg would be conducted similar to Alternative 2.

Excavation and Off-site Disposal of Remaining On-site Soil 0 to 1 feet bgs and C&D Debris (all depths) with PCB Concentrations Greater than 1 but less than 10 mg/kg, Followed by Placement of Clean Backfill. Excavation and stockpiling of remaining on-site soil 0 to 1 feet bgs and C&D debris (all depths) with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill, would be conducted similar to Alternative 2. However, unlike Alternative 2, Alternative 3 includes off-site disposal of this material(an estimated 1770 and 3938 cubic yards, respectively).

Excavation and Off-Site Disposal of Remaining C&D Debris and Garbage. Excavation and on-site consolidation and capping of remaining C&D debris and garbage at the Site would be conducted similar to Alternative 2.

Excavation and Off-site Disposal of Remaining Off-site Residential Soil 0 to 2 feet bgs with PCB Concentrations Greater than 1 but less than 10 mg/kg, Followed by Placement of Clean Backfill. Excavation and stockpiling of remaining off-site residential soil 0 to 2 feet bgs containing PCBs greater than 1 mg/kg but less than 10 mg/kg, followed by placement of clean backfill, would be conducted similar to Alternative 2. Unlike Alternative 2, Alternative 3 includes off-site disposal of this material (an estimated 16 cubic yards).

Excavation and Off-site Disposal of Remaining Surface Soil 0 to 1 feet bgs from the Unnamed Drainage Ditch and Culvert with PCB Concentrations greater than 1 but less than 10 mg/kg, Followed by Placement of Clean Backfill. Excavation and stockpiling of remaining surface soil 0 to 1 feet bgs from the Unnamed Drainage Ditch and Culvert containing PCBs greater than 1 mg/kg but less than 10 mg/kg, followed by placement of clean backfill, would be conducted similar to Alternative 2. Unlike Alternative 2, Alternative 3 includes off-site disposal of the associated soil and culvert.

Excavation and Off-site Disposal of Remaining Unnamed Tributary Sediment 0 to 3 feet bgs with PCB Concentrations Greater than 0.1 but less than 10 mg/kg and 3 to 5 feet bgs with PCB Concentrations Greater than 1 but less than 10 mg/kg, Followed by Placement of Clean Backfill and Two-foot Restoration to Original Grade. The excavation and off-site disposal of remaining Unnamed Tributary sediment to an overall depth of 5 feet bgs followed by the placement of clean backfill and a two-foot restoration would be conducted similar to Alternative 2.

Excavation and Off-site Disposal of Remaining Unnamed Sauquoit Creek East Bank Sediment 0 to 2 feet bgs with PCB Concentrations Greater than 0.1 but less than 10 mg/kg, Followed by Placement of Two-foot Restoration to Original Grade. The excavation and off-site disposal of remaining Sauquoit Creek east bank sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade, would be conducted similar to Alternative 2.

Construction of a One-foot Thick Soil Cover Over Consolidated C&D Debris and Garbage. Construction of a one-foot thick soil cover over consolidated C&D debris and garbage with PCB concentrations 0.1 mg/kg would be conducted similar to Alternative 2. Based upon interpretation of the existing data, an estimated one-fifth acre of soil cover would be required.

Institutional Controls. Institutional controls would be implemented similar to Alternative 2.

Long-term Monitoring. Long-term monitoring would be implemented similar to Alternative 2.

Annual Institutional Control and Cover Inspections and Reporting. Annual institutional control and cover inspections and reporting would be implemented similar to Alternative 2.

9.5.2 DETAILED EVALUATION OF ALTERNATIVE 3

Compliance with Standards, Criteria, and Guidance. Alternative 3 would meet Chemical-specific SCGs by removing sediment contamination in excess of the NYSDEC sediment PCB remediation goal of 0.1 mg/kg, to 5 feet bgs in the Unnamed Tributary, and 2 feet bgs along the east bank of Sauquoit Creek, and by removing soil contamination in excess of the 6 NYCRR Part 375 Remedial Program SCOs consistent with the current and anticipated future use of the Site

(commercial use) and adjacent property (residential use). Institutional controls would be implemented as required under 6 NYCRR Part 375.

Alternative 3 would likely trigger Location-Specific SCGs associated with disturbance of wetlands and construction within a flood plain, and Action-Specific SCGs associated with dust control, erosion and sediment control, transportation and disposal of hazardous wastes, and stream restoration. Table 9.1 presents a summary of Location- and Action-Specific SCGs associated with remedial alternatives evaluated in this Section.

Overall Protection of Public Health and the Environment. This remedial alternative would protect public health and the environment through eliminating, reducing, or controlling existing or potential exposure pathways through removal, treatment and/or disposal, engineering controls, or institutional controls. This remedial alternative would achieve the RAOs for soil and sediment. Alternative 3 would allow for commercial use of the Site and residential use of the adjacent property in accordance with 6 NYCRR Part 375. Alternative 3 would accommodate neither residential use of the Site because soil containing contaminants in excess of the Residential Use SCOs would remain in place within two feet bgs, nor unrestricted use of the adjacent residential property because soils containing contaminants in excess of Unrestricted Use SCOs would remain in place.

Short-term Effectiveness. This alternative would result in short-term adverse impacts and risks to the community, site workers, and the environment as a result of implementation. Implementation of this alternative would include preparation of and adherence to a construction work plan and health and safety plan. It is estimated that this alternative could be fully implemented in less than one year, at which time Alternative 3 would meet the RAOs for soil and sediment. Alternative 3 involves the second least amount of disturbance of soil and sediment of the active candidate alternatives and presents a low potential of short-term adverse impacts and risks to the community, site workers, and the environment as a result of implementation.

Long-term Effectiveness and Permanence. This alternative would result in residual wastes remaining at and within the vicinity of the Site. Soil greater than 1 foot bgs with PCB concentrations greater than 1 but less than 10 mg/kg would remain on site and C&D debris with PCB concentrations greater than 1 but less than 10 mg/kg would remain on site beneath a one-foot

soil cover. This would limit future Site use to industrial or commercial purposes. Sediment within the Unnamed Tributary with PCB concentrations greater than 1 but less than 10 mg/kg would remain in place beneath a soil cover (up to three feet thick) and two-foot restoration, which would not allow for unrestricted use of the Unnamed Tributary. Sediment along and the east bank of the Sauquoit Creek greater than 2 feet bgs with PCB concentrations less than 0.1 mg/kg would remain in place and contaminated sediment within the Sauquoit Creek would also remain in-place. Soil contamination with PCB concentrations greater than 1 but less than 10 mg/kg greater than 2 feet bgs would remain in place on residential property to the south of the Site. This would not allow for unrestricted use of the residential property. This alternative would not address soil with PCB concentrations less than 10 mg/kg on commercial property located north of the Site. Engineering controls would limit potential future exposure to on-site soils and sediments. Annual inspections would serve to preserve long-term effectiveness and permanence. Institutional controls would limit future use of the Site and adjacent residential property, thereby limiting potential future exposure to soil and sediment contamination.

Reduction of Toxicity, Mobility, or Volume with Treatment. This alternative would result in the reduction of mobility and volume of soil and sediment contamination at and in the vicinity of the Site through excavation and off-site disposal. This alternative would not result in a reduction in the toxicity of contamination unless contaminated soil and sediment removed from the Site receive off-site treatment prior to disposal.

Implementability. There would be limited technical issues with implementing this alternative, associated primarily with excavation and restoration of the Unnamed Tributary. State or Federal regulations for construction within a flood plain may complicate implementation of this alternative. Property owner cooperation would be required to place an environmental easement; implementability of this alternative would be contingent upon this cooperation.

Land Use. The current and reasonably anticipated future land use of the Site is for commercial purposes, and residential property is located immediately to the south of the Site. This alternative would be compatible with current land use and reasonably anticipated future land use. It includes institutional controls to restrict future use that could result in potential exposure to residual contamination.

Cost. The capital cost estimate for this Alternative is $4,350,000. The PW of this Alternative is estimated to be $4,650,000. A summary of the costs associated with this alternative is presented in Table 9.3. Detailed cost analysis backup is provided in Appendix C.

9.6 ALTERNATIVE 4: Source Removal, Removal of Surface Soil and C&D Debris to Restricted-Commercial SCOs, and Sediment Excavation.

Alternative 4 consists of the following components:

- pre-design investigations and studies
- mobilization and temporary facilities and controls
- excavation and off-site disposal of all soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill
- excavation and off-site disposal of remaining on-site soil 0 to 1 feet bgs and C&D debris (all depths) with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
- excavation and off-site disposal of remaining C&D debris and garbage
- Excavation and off-site disposal of remaining off-site residential soil 0 to 2 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill;
- excavation and off-site disposal of remaining off-site commercial soil 0 to 1 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
- excavation and off-site disposal of remaining surface soil 0 to 1 feet bgs from the Unnamed Drainage Ditch and Culvert with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
- excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 5 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill and a two-foot restoration to original grade
- excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade
- excavation and off-site disposal of sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg within off-site commercial property storm drains;
- institutional controls
- long-term monitoring
- annual institutional control and cover inspections and reporting

9.6.1 DETAILED DESCRIPTION OF ALTERNATIVE 4

Pre-Design Investigations and Studies. Pre-design investigations and/or studies would be conducted similar to Alternative 2 to support the remedial design.

Mobilization and Temporary Facilities and Controls. Site preparation, mobilization, and temporary facilities and controls would be implemented as described for Alternative 2.

Excavation and Off-site Disposal of Soil, C&D Debris, and Sediment with PCB Concentrations Greater than or Equal to 10 mg/kg, Followed by Placement of Clean Backfill. Excavation and off-site disposal of soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg would be conducted similar to Alternatives 2 and 3.

Excavation and Off-site Disposal of Remaining On-site Soil 0 to 1 feet bgs and C&D Debris (all depths) with PCB Concentrations Greater than 1 but less than 10 mg/kg, Followed by Placement of Clean Backfill. Excavation and off-site disposal of remaining on-site soil 0 to 1 feet bgs and C&D debris (all depths) with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill, would be conducted similar to Alternative 3.

Excavation and Off-Site Disposal of Remaining C&D Debris and Garbage. The remaining C&D debris and garbage with PCB concentrations less than 0.1 mg/kg, an estimated 262 cubic yards, would be excavated for off-site disposal.

Excavation and Off-site Disposal of Remaining Off-site Residential Soil 0 to 2 feet bgs with PCB Concentrations Greater than 1 but less than 10 mg/kg, Followed by Placement of Clean Backfill. Excavation and off-site disposal of remaining off-site residential soil 0 to 2 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill, would be conducted similar to Alternative 3.

Excavation and Off-site Disposal of Remaining Off-site Commercial Soil 0 to 1 feet bgs with PCB Concentrations Greater than 1 but less than 10 mg/kg, Followed by Placement of Clean Backfill. Contaminated off-site commercial soil 0 to 1 feet bgs with PCB concentrations greater

than 1 but less than 10 mg/kg (an estimated 523 cubic yards) would be excavated for off-site disposal. The excavation areas would be backfilled with clean backfill.

Excavation and Off-site Disposal of Remaining Surface Soil 0 to 1 feet bgs from the Unnamed Drainage Ditch and Culvert with PCB Concentrations Greater than 1 but less than 10 mg/kg, Followed by Placement of Clean Backfill. Excavation and stockpiling of remaining surface soil 0 to 1 feet bgs from the Unnamed Drainage Ditch and Culvert containing PCBs greater than 1 mg/kg but less than 10 mg/kg, followed by placement of clean backfill, would be conducted similar to Alternative 3.

Excavation and Off-site Disposal of all Remaining Unnamed Tributary Sediment 0 to 5 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, Followed by Placement of Clean Backfill and a Two-foot Restoration. Alternative 4 includes the excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 5 feet bgs (an estimated 472 cubic yards) with PCB concentrations greater than 0.1 mg/kg but less than 10 mg/kg followed by the placement of clean backfill and a one-foot restoration.

Excavation and Off-site Disposal of Remaining Sauquoit Creek East Bank Sediment with PCB Concentrations Greater than 0.1 but less than 10 mg/kg, Followed by Placement of Two-Foot Restoration to Original Grade. The excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs containing PCBs greater than 0.1 mg/kg but less than 10 mg/kg, followed by placement two-foot restoration to original grade, would be conducted similar to Alternatives 2 and 3.

Excavation and Off-Site Disposal of Sediment with PCB Concentrations Greater than 0.1 but less than 10 mg/kg within Off-Site Commercial Property Storm Drains. Alternative 4 includes the excavation and off-site disposal of sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg from storm drains located on off-site commercial property to the north of the Site.

Institutional Controls. Institutional controls would be implemented similar to Alternatives 2 and 3.

Long-term Monitoring. Long-term monitoring would be implemented similar to Alternatives 2 and 3.

Annual Institutional Control and Cover Inspections and Reporting. Annual institutional control and cover inspections and reporting would be implemented similar to Alternatives 2 and 3.

9.6.2 DETAILED EVALUATION OF ALTERNATIVE 4

Compliance with Standards, Criteria, and Guidance. Alternative 4 would meet Chemical-specific SCGs by removing sediment contamination in excess of the NYSDEC sediment PCB remediation goal of 0.1 mg/kg to a depth of 5 feet bgs from the Unnamed Tributary and a depth of 2 feet bgs from the east bank of the Sauquoit Creek, and by removing soil contamination in excess of the 6 NYCRR Part 375 Remedial Program SCOs consistent with the current and anticipated future use of the Site (commercial use) and adjacent property (residential use to the south and commercial use to the north). Institutional controls would be implemented as required under 6 NYCRR Part 375.

Alternative 4 would likely trigger Location-Specific SCGs associated with disturbance of wetlands and construction within a flood plain, and Action-Specific SCGs associated with dust control, erosion and sediment control, transportation and disposal of hazardous wastes, and stream restoration. Table 9.1 presents a summary of Location- and Action-Specific SCGs associated with remedial alternatives evaluated in this Section.

Overall Protection of Public Health and the Environment. This remedial alternative would protect public health and the environment through eliminating, reducing, or controlling existing or potential exposure pathways through removal, treatment and/or disposal, engineering controls, or institutional controls. This remedial alternative would achieve the RAOs for soil and sediment. Alternative 4 would allow for commercial use of the Site and commercial property to the north, and residential use of the adjacent property in accordance with 6 NYCRR Part 375. Alternative 4 would accommodate neither residential use of the Site because soil containing contaminants in excess of the Residential Use SCOs would remain in place within two feet bgs, nor unrestricted use of the adjacent residential property because soils containing contaminants in excess of Unrestricted Use SCOs would remain in place.

Short-term Effectiveness. This alternative would result in short-term adverse impacts and risks to the community, site workers, and the environment as a result of implementation. Implementation of this alternative would include preparation of and adherence to a construction work plan and health and safety plan. It is estimated that this alternative could be fully implemented in less than one year, at which time Alternative 4 would meet the RAOs for soil and sediment. Alternative 4 involves remediation of Unnamed Tributary sediments above 0.1 mg/kg to a depth of up to 5 feet bgs, and presents potential for short-term adverse impacts and risks to the community, site workers, and the environment as a result of implementation.

Long-term Effectiveness and Permanence. This alternative would result in residual wastes remaining at and within the vicinity of the Site. Soil greater than 1 foot bgs with PCB concentrations greater than 1 but less than 10 mg/kg would remain on site. This would limit future Site use to industrial or commercial purposes. Sediment within the Unnamed Tributary with PCB concentrations greater than 1 but less than 10 mg/kg would remain in place beneath a soil cover (up to three feet thick) and two-foot restoration, which would not allow for unrestricted use of the Unnamed Tributary. Sediment along the east bank of the Sauquoit Creek with PCB concentrations less than 0.1 mg/kg would remain in place below 2 feet bgs, and contaminated sediment within Sauquoit Creek would not be addressed under this alternative. Soil contamination with PCB concentrations greater than 1 but less than 10 mg/kg greater than 2 feet bgs would remain in place on residential property to the south of the Site. This would not allow for unrestricted use of the residential property. Soil contamination with PCB concentrations greater than 1 but less than 10 mg/kg greater than 1 feet bgs would remain in-place on commercial property to the north of the Site. Engineering controls would limit potential future exposure to on-site soils and sediments. Annual inspections would serve to preserve long-term effectiveness and permanence. Institutional controls would limit future use of the Site and adjacent residential property, thereby limiting potential future exposure to soil and sediment contamination.

Reduction of Toxicity, Mobility, or Volume with Treatment. This alternative would result in the reduction of mobility and volume of soil and sediment contamination at and in the vicinity of the Site through excavation and off-site disposal. This alternative would not result in a reduction in the toxicity of contamination unless contaminated soil and sediment removed from the Site receive off-site treatment prior to disposal.

Implementability. There would be limited technical issues with implementing this alternative, associated primarily with excavation and restoration of the Unnamed Tributary. State or Federal regulations for construction within a flood plain may complicate implementation of this alternative. Property owner cooperation would be required to place an environmental easement; implementability of this alternative would be contingent upon this cooperation.

Land Use. The current and reasonably anticipated future land use of the Site and property immediately to the north of the Site is for commercial purposes, and residential property is located immediately to the south of the Site. This alternative would be compatible with current land use and reasonably anticipated future land use. It includes institutional controls to restrict future use that could result in potential exposure to residual contamination.

Cost. The capital cost estimated for this Alternative is $4,515,000 on Table 9.4. The PW of this Alternative is estimated to be $4,812,000. A summary of the costs associated with this alternative is presented in Table 9.4. Detailed cost backup is provided in Appendix C.

9.7 ALTERNATIVE 5: Source Removal, Removal of Surface Soil and C&D Debris to Restricted-Residential SCOs, and Sediment Excavation.

Alternative 5 consists of the following components:

- pre-design investigations and studies
- mobilization and temporary facilities and controls
- excavation and off-site disposal of all soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill
- excavation and off-site disposal of remaining on-site soil 0 to 2 feet bgs and C&D debris (all depths) with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
- excavation and off-site disposal of remaining C&D debris and garbage
- excavation and off-site disposal of remaining off-site residential soil 0 to 2 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
- excavation and off-site disposal of remaining off-site commercial soil 0 to 1 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill

- excavation and off-site disposal of remaining surface soil 0 to 2 feet bgs from the Unnamed Drainage Ditch and Culvert with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
- excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 5 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill and a two-foot restoration to original grade
- excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade
- excavation and off-site disposal of sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg within off-site commercial property storm drains;
- institutional controls
- long-term monitoring
- annual institutional control and cover inspections and reporting

9.7.1 DETAILED DESCRIPTION OF ALTERNATIVE 5

Pre-Design Investigations and Studies. Pre-design investigations and/or studies would be conducted similar to Alternatives 2, 3, and 4 to support the remedial design.

Mobilization and Temporary Facilities and Controls. Site preparation, mobilization, and temporary facilities and controls would be implemented as described for Alternatives 2, 3, and 4.

Excavation and Off-site Disposal of Soil, C&D debris, and Sediment with PCB Concentrations Greater than or Equal to 10 mg/kg, Followed by Placement of Clean Backfill. Excavation and off-site disposal of soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg would be conducted similar to Alternatives 2, 3, and 4.

Excavation and Off-site Disposal of Remaining On-site soil 0 to 2 feet bgs and C&D Debris (all depths) with PCB Concentrations Greater than 1 but less than 10 mg/kg, Followed by Placement of Clean Backfill. Alternative 5 includes the excavation and off-site disposal of remaining on-site soil 0 to 2 feet bgs and C&D debris (all depths) with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill. This results in the excavation and off-site disposal of approximately 2040 and 3697 cubic yards of soil and C&D debris, respectively.

Excavation and Off-Site Disposal of Remaining C&D Debris and Garbage. The remaining C&D debris and garbage with PCB concentrations less than 0.1 mg/kg, an estimated 262 cubic yards, would be excavated for off-site disposal similar to Alternative 4.

Excavation and Off-site Disposal of Remaining Off-site Residential Soil 0 to 2 feet bgs with PCB Concentrations Greater than 1 but less than 10 mg/kg, Followed by Placement of Clean Backfill. Excavation and off-site disposal of remaining off-site residential soil 0 to 2 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill, would be conducted similar to Alternatives 3 and 4.

Excavation and Off-site Disposal of Remaining Off-site Commercial Soil 0 to 1 feet bgs with PCB Concentrations Greater than 1 but less than 10 mg/kg, Followed by Placement of Clean Backfill. Excavation and off-site disposal of remaining off-site commercial soil 0 to 1 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill, would be conducted similar to Alternative 4.

Excavation and Off-site Disposal of Remaining Surface Soil 0 to 2 feet bgs from the Unnamed Drainage Ditch and Culvert with PCB Concentrations Greater than 1 but less than 10 mg/kg, Followed by Placement of Clean Backfill. The remaining surface soil 0 to 2 feet bgs within the Unnamed Drainage Ditch, and the culvert and associated soil, would be excavated and stockpiled for off-site disposal. Following excavation, the Unnamed Drainage Ditch would be backfilled with clean fill to match surrounding grades.

Excavation and Off-site Disposal of Remaining Unnamed Tributary Sediment 0 to 5 feet bgs with PCB Concentrations Greater than 0.1 but less than 10 mg/kg, Followed by Placement of Clean Backfill and Two-foot Restoration to Original Grade. Alternative 5 includes the excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 5 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by the placement of clean backfill and a two-foot restoration similar to Alternative 4.

Excavation and Off-site Disposal of Remaining Sauquoit Creek East Bank Sediment with PCB Concentrations Greater than 0.1 but less than 10 mg/kg, Followed by Placement of Two-

foot Restoration to Original Grade. The excavation and off-site disposal of remaining Unnamed Ditch and Sauquoit Creek sediment containing PCBs greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade, would be conducted similar to Alternatives 2, 3, and 4.

Excavation and Off-Site Disposal of Sediment with PCB Concentrations Greater than 0.1 but less than 10 mg/kg within Off-Site Commercial Property Storm Drains. Excavation and off-site disposal of sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg from storm drains located on off-site commercial property to the north of the Site would be conducted similar to Alternative 4.

Institutional Controls. Institutional controls would be implemented similar to Alternatives 2, 3, and 4.

Long-term Monitoring. Long-term monitoring would be implemented similar to Alternatives 2, 3, and 4.

Annual Institutional Control and Cover Inspections and Reporting. Annual institutional control and cover inspections and reporting would be implemented similar to Alternatives 2, 3, and 4.

9.7.2 DETAILED EVALUATION OF ALTERNATIVE 5

Compliance with Standards, Criteria, and Guidance. Alternative 5 would meet Chemical-specific SCGs by removing sediment contamination in excess of the NYSDEC sediment PCB remediation goal of 0.1 mg/kg to a depth of 5 feet bgs from the Unnamed Tributary and a depth of 2 feet bgs from the east bank of the Sauquoit Creek, and by removing soil contamination in excess of the 6 NYCRR Part 375 Remedial Program SCOs that would allow future restricted-residential use of the Site and continued residential use of the adjacent property. Institutional controls would be implemented as required under 6 NYCRR Part 375.

Alternative 5 would likely trigger Location-Specific SCGs associated with disturbance of wetlands and construction within a flood plain, and Action-Specific SCGs associated with dust control,

erosion and sediment control, transportation and disposal of hazardous wastes, and stream restoration. Table 9.1 presents a summary of Location- and Action-Specific SCGs associated with remedial alternatives evaluated in this Section.

Overall Protection of Public Health and the Environment. This remedial alternative would protect public health and the environment through eliminating, reducing, or controlling existing or potential exposure pathways through removal, treatment and/or disposal, engineering controls, or institutional controls. This remedial alternative would achieve the RAOs for soil and sediment. Alternative 5 would allow for restricted-residential use of the Site and residential use of the adjacent property in accordance with 6 NYCRR Part 375. Alternative 5 would allow for restricted-residential use of the Site because soil containing contaminants in excess of the Residential Use SCOs would removed from within two feet of ground surface. Alternative 5 would not provide for unrestricted use of the Site or the adjacent residential property because soils containing contaminants in excess of Unrestricted Use SCOs would remain in place.

Short-term Effectiveness. This alternative would result in short-term adverse impacts and risks to the community, site workers, and the environment as a result of implementation. Implementation of this alternative would include preparation of and adherence to a construction work plan and health and safety plan. It is estimated that this alternative could be fully implemented in less than one year, at which time Alternative 5 would meet the RAOs for soil and sediment. Alternative 5 involves remediation of Unnamed Tributary sediments above 0.1 mg/kg to a depth of up to 5 feet bgs, and presents potential for short-term adverse impacts and risks to the community, site workers, and the environment as a result of implementation.

Long-term Effectiveness and Permanence. This alternative would result in residual wastes remaining at and within the vicinity of the Site. Soil greater than 2 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg would remain on site. This would not allow for unrestricted use of the Site. Sediment within the Unnamed Tributary with PCB concentrations greater than 1 but less than 10 mg/kg would remain in place beneath a soil cover (up to 3 feet thick) and two-foot restoration, which would not allow for unrestricted use of the Unnamed Tributary. Sediment along the east bank of Sauquoit Creek with PCB concentrations less than 0.1 mg/kg would remain in place below 2 feet bgs. Soil contamination with PCB concentrations greater than 1 but less than 10 mg/kg greater than 2 feet bgs would remain in place on residential property to the

south of the Site. This would not allow for unrestricted use of the residential property. Engineering controls would limit potential future exposure to on-site soils and sediments. Annual inspections would serve to preserve long-term effectiveness and permanence. Institutional controls would limit future use of the Site and adjacent residential property, thereby limiting potential future exposure to soil and sediment contamination.

Reduction of Toxicity, Mobility, or Volume with Treatment. This alternative would result in the reduction of mobility and volume of soil and sediment contamination at and in the vicinity of the Site through excavation and off-site disposal. This alternative would not result in a reduction in the toxicity of contamination unless contaminated soil and sediment removed from the Site receive off-site treatment prior to disposal.

Implementability. There would be limited technical issues with implementing this alternative, associated primarily with excavation and restoration of the Unnamed Tributary. State or Federal regulations for construction within a flood plain may complicate implementation of this alternative. Property owner cooperation would be required to place an environmental easement; implementability of this alternative would be contingent upon this cooperation.

Land Use. The current and reasonably anticipated future land use of the Site is for commercial purposes, and residential property is located immediately to the south of the Site. This alternative would be compatible with current land use and reasonably anticipated future land use. It includes institutional controls to restrict future use that could result in potential exposure to residual contamination.

Cost. The capital cost estimate for this Alternative is $4,618,000 on Table 9.5. The PW of this Alternative is estimated to be $4,915,000. A summary of the costs associated with this alternative is presented in Table 9.5. Detailed cost backup is presented in Appendix C.

9.8 Alternative 6: Source Removal, Removal of Surface Soil and C&D Debris to Residential SCOs, and Sediment Excavation.

Alternative 6 consists of the following components:

- pre-design investigations and studies

- mobilization and temporary facilities and controls
- excavation and off-site disposal of all soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill
- excavation and off-site disposal of all remaining on-site soil and C&D debris containing PCB concentrations greater than 1 mg/kg but less than 10 mg/kg
- excavation and off-site disposal of remaining C&D debris and garbage
- excavation and off-site disposal of all remaining off-site residential soil with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
- excavation and off-site disposal of remaining off-site commercial soil 0 to 1 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
- excavation and off-site disposal of all remaining soil from the Unnamed Drainage Ditch and Culvert with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
- excavation and off-site disposal of remaining Unnamed Tributary sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill and a two-foot restoration to restore to original grade
- excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade
- excavation and off-site disposal of sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg within off-site commercial property storm drains

9.8.1 DETAILED DESCRIPTION OF ALTERNATIVE 6

Pre-Design Investigations and Studies. Pre-design investigations and/or studies would be conducted similar to Alternatives 2, 3, 4 and 5 to support the remedial design.

Mobilization and Temporary Facilities and Controls. Site preparation, mobilization, and temporary facilities and controls would be implemented as described for Alternatives 2, 3, 4, and 5.

Excavation and Off-site Disposal of all Soil, C&D debris, and Sediment with PCB Concentrations Greater than or equal to 10 mg/kg, Followed by Placement of Clean Backfill. Excavation and off-site disposal of all soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill would be conducted similar to Alternatives 2, 3, 4, and 5.

Excavation and Off-site Disposal of Remaining On-site Soil and C&D Debris with PCB Concentrations Greater than 1 but less than 10 mg/kg, Followed by Placement of Clean Backfill. Alternative 6 includes the excavation and off-site disposal of all remaining on-site soil and C&D debris with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill. This results in the excavation and off-site disposal of an estimated 2,040 and 3,697 cubic yards of soil and C&D debris, respectively.

Excavation and Off-Site Disposal of Remaining C&D Debris and Garbage. The remaining C&D debris and garbage with PCB concentrations less than 0.1 mg/kg, an estimated 262 cubic yards, would be excavated for off-site disposal similar to Alternative 3, 4, and 5.

Excavation and Off-site Disposal of Remaining Off-site Residential Soil Containing PCBs Greater than 1 but less than 10 mg/kg, Followed by Placement of Clean Backfill. Alternative 6 includes the excavation and off-site disposal of remaining off-site residential soil with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill. This results in the excavation and off-site disposal of 24 cubic yards of soil.

Excavation and Off-site Disposal of all Remaining Off-site Commercial Soil with PCB Concentrations Greater than 1 but less than 10 mg/kg, Followed by Placement of Clean Backfill. Alternative 6 includes the excavation and off-site disposal of all remaining off-site commercial soil with PCB concentrations greater than 1 but less than 10 mg/kg, and estimated 785 cubic yards, followed by placement of clean backfill.

Excavation and Off-site Disposal of all Remaining Soil from the Unnamed Drainage Ditch and Culvert with PCB Concentrations Greater than 1 but less than 10 mg/kg, Followed by Placement of Clean Backfill. Alternative 6 includes the excavation and off-site disposal of all remaining soil within the Unnamed Drainage Ditch, including the culvert and associated soil, with PCB concentrations greater than 1 but less than 10 mg/kg. Following excavation, the Unnamed Drainage Ditch would be backfilled with clean fill to match surrounding grades.

Excavation and Off-site Disposal of Remaining Unnamed Tributary Sediment 0 to 5 feet bgs with PCB Concentrations Greater than 0.1 but less than 10 mg/kg, Followed by Placement of

Clean Backfill and Two-foot Restoration to Original Grade. Alternative 6 includes the excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 5 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by the placement of clean backfill and a two-foot restoration similar to Alternatives 4 and 5.

Excavation and Off-site Disposal of Remaining Sauquoit Creek East Bank Sediment with PCB Concentrations Greater than 0.1 but less than 10 mg/kg, Followed by Placement of Two-foot Restoration to Original Grade. The excavation and off-site disposal of remaining Unnamed Ditch and Sauquoit Creek sediment containing PCBs greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade, would be conducted similar to Alternatives 2, 3, 4, and 5.

Excavation and Off-Site Disposal of Sediment with PCB Concentrations Greater than 0.1 but less than 10 mg/kg within Off-Site Commercial Property Storm Drains. Excavation and off-site disposal of sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg from storm drains located on off-site commercial property to the north of the Site would be conducted similar to Alternatives 4 and 5.

Long-term Monitoring. Long-term monitoring would be implemented similar to Alternatives 2, 3, 4, and 5.

9.8.2 DETAILED EVALUATION OF ALTERNATIVE 6

Compliance with Standards, Criteria, and Guidance.

Alternative 6 would meet Chemical-specific SCGs by removing sediment contamination in excess of the NYSDEC sediment PCB remediation goal of 0.1 mg/kg to a depth of 5 feet bgs from the Unnamed Tributary and a depth of 2 feet bgs from the east bank of the Sauquoit Creek, and by removing soil contamination in excess of the 6 NYCRR Part 375 Remedial Program SCOs that would allow future residential use of the Site and continued residential use of the adjacent property. Institutional controls would be implemented as required under 6 NYCRR Part 375.

Alternative 6 would likely trigger Location-Specific SCGs associated with disturbance of wetlands and construction within a flood plain, and Action-Specific SCGs associated with dust control, erosion and sediment control, transportation and disposal of hazardous wastes, and stream restoration. Table 9.1 presents a summary of Location- and Action-Specific SCGs associated with remedial alternatives evaluated in this Section.

Overall Protection of Public Health and the Environment. This remedial alternative would protect public health and the environment through eliminating, reducing, or controlling existing or potential exposure pathways through removal, treatment and/or disposal, engineering controls, or institutional controls. This remedial alternative would achieve the RAOs for soil and sediment. Alternative 6 would allow for residential use of the Site and residential use of the adjacent residential property in accordance with 6 NYCRR Part 375.

Short-term Effectiveness. This alternative would result in short-term adverse impacts and risks to the community, site workers, and the environment as a result of implementation. Implementation of this alternative would include preparation of and adherence to a construction work plan and health and safety plan. It is estimated that this alternative could be fully implemented in less than one year, at which time Alternative 6 would meet the RAOs for soil and sediment and allow for unrestricted use. Alternative 6 involves remediation of Unnamed Tributary sediments above 0.1 mg/kg to a depth of up to 5 feet bgs, and presents potential or short-term adverse impacts and risks to the community, site workers, and the environment as a result of implementation.

Long-term Effectiveness and Permanence. This alternative would result in residual wastes remaining at and within the vicinity of the Site that would not allow for unrestricted use, but would address soil and sediment contamination such as to allow for residential use of the Site and adjacent residential property in accordance with 6 NYCRR Part 375.

Reduction of Toxicity, Mobility, or Volume with Treatment. This alternative would result in the reduction of mobility and volume of soil and sediment contamination at and in the vicinity of the Site through excavation and off-site disposal. This alternative would not result in a reduction in the toxicity of contamination unless contaminated soil and sediment removed from the Site receive off-site treatment prior to disposal.

Implementability. There would be limited technical issues with implementing this alternative, associated primarily with excavation and restoration of the Unnamed Tributary.. State or Federal regulations for construction within a flood plain may complicate implementation of this alternative. Property owner cooperation would not be a significant issue as this alternative would not require the institution of land use restrictions.

Land Use. The current and reasonably anticipated future land use of the Site is for commercial purposes, and residential property is located immediately to the south of the Site. This alternative would be compatible with current land use and reasonably anticipated future land use. This alternative would allow for residential use of the Site and the adjacent residential property.

Cost. The capital cost estimate for this Alternative is $4,637,000 on Table 9.6. The PW of this Alternative is estimated to be $4,934,000. A summary of the costs associated with this alternative is presented in Table 9.6. Detailed cost backup is presented in Appendix C.

9.9 Alternative 7: Restoration to Pre-Disposal Conditions.

Alternative 7 consists of the following components:

- pre-design investigations and studies
- mobilization and temporary facilities and controls
- excavation and off-site disposal of all soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill
- excavation and off-site disposal of all remaining on-site soil and C&D debris containing PCB concentrations greater than 0.1 mg/kg but less than 10 mg/kg
- excavation and off-site disposal of remaining C&D debris and garbage
- excavation and off-site disposal of all remaining off-site residential soil with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill
- excavation and off-site disposal of all remaining off-site commercial soil with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill
- excavation and off-site disposal of all remaining soil from the Unnamed Drainage Ditch and Culvert with PCB concentrations greater than 0.11 but less than 10 mg/kg, followed by placement of clean backfill

- excavation and off-site disposal of remaining Unnamed Tributary sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill and a two-foot restoration to restore to original grade
- excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade
- excavation and off-site disposal of all remaining Sauquoit Creek sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill and two-foot restoration to original grade
- excavation and off-site disposal of sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg within off-site commercial property storm drains

9.9.1 DETAILED DESCRIPTION OF ALTERNATIVE 7

Pre-Design Investigations and Studies. Pre-design investigations and/or studies would be conducted similar to Alternatives 2 through 6 to support the remedial design.

Mobilization and Temporary Facilities and Controls. Site preparation, mobilization, and temporary facilities and controls would be implemented as described for Alternatives 2 through 6.

Excavation and Off-site Disposal of all Soil, C&D debris, and Sediment with PCB Concentrations Greater than or equal to 10 mg/kg, Followed by Placement of Clean Backfill. Excavation and off-site disposal of all soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill would be conducted similar to Alternatives 2 through 6.

Excavation and Off-site Disposal of all Remaining On-site Soil and C&D Debris with PCB Concentrations Greater than 0.1 but less than 10 mg/kg, Followed by Placement of Clean Backfill. Alternative 7 includes the excavation and off-site disposal of all remaining on-site soil with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill. This results in the excavation and off-site disposal of an estimated 11,841 and 4,923 cubic yards of soil and C&D debris, respectively.

Excavation and Off-Site Disposal of Remaining C&D Debris and Garbage. The remaining C&D debris and garbage with PCB concentrations less than 0.1 mg/kg, an estimated 262 cubic yards, would be excavated for off-site disposal similar to Alternatives 3 through 6.

Excavation and Off-site Disposal of all Remaining Off-site Residential Soil Containing PCBs Greater than 0.1 but less than 10 mg/kg, Followed by Placement of Clean Backfill. Alternative 7 includes the excavation and off-site disposal of all remaining off-site residential soil with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill. This results in the excavation and off-site disposal of 173 cubic yards of soil.

Excavation and Off-site Disposal of all Remaining Off-site Commercial Soil with PCB Concentrations Greater than 0.1 but less than 10 mg/kg, Followed by Placement of Clean Backfill. Alternative 7 includes the excavation and off-site disposal of all remaining off-site commercial soil with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill. This results in the excavation and off-site disposal of 785 cubic yards of soil.

Excavation and Off-site Disposal of all Remaining Soil from the Unnamed Drainage Ditch and Culvert with PCB Concentrations Greater than 0.1 but less than 10 mg/kg, Followed by Placement of Clean Backfill. Alternative 7 includes the excavation and off-site disposal of all remaining soil within the Unnamed Drainage Ditch, including the culvert and associated soil, with PCB concentrations greater than 0.1 but less than 10 mg/kg. Following excavation, the Unnamed Drainage Ditch would be backfilled with clean fill to match surrounding grades.

Excavation and Off-site Disposal of Remaining Unnamed Tributary Sediment with PCB Concentrations Greater than 0.1 but less than 10 mg/kg, Followed by Placement of Clean Backfill and Two-foot Restoration to Original Grade. Alternative 7 includes the excavation and off-site disposal of remaining Unnamed Tributary sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by the placement of clean backfill and a two-foot restoration. This results in the excavation and off-site disposal of 472 cubic yards of soil.

Excavation and Off-site Disposal of all Remaining Sauquoit Creek East Bank Sediment 0 to 2 feet bgs with PCB Concentrations Greater than 0.1 but less than 10 mg/kg, Followed by

Placement of Two-foot Restoration to Original Grade. The excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs containing PCBs greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade, would be conducted similar to Alternatives 2 through 6.

Excavation and Off-site Disposal of Remaining Sauquoit Creek East Bank Sediment with PCB Concentrations Greater than 0.1 but less than 10 mg/kg, Followed by Placement of Two-foot Restoration to Original Grade. The excavation and off-site disposal of remaining Unnamed Ditch and Sauquoit Creek sediment containing PCBs greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade, would be conducted similar to Alternatives 2 through 6.

Excavation and Off-site Disposal of Sauquoit Creek Sediments with PCB Concentrations Greater than 0.1 but less than 10 mg/kg. Alternative 7 includes the excavation and off-site disposal of remaining Sauquoit Creek sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by the placement of clean backfill and a two-foot restoration. This results in the excavation and off-site disposal of 113 cubic yards of soil.

Excavation and Off-Site Disposal of Sediment with PCB Concentrations Greater than 0.1 but less than 10 mg/kg within Off-Site Commercial Property Storm Drains. Excavation and off-site disposal of sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg from storm drains located on off-site commercial property to the north of the Site would be conducted similar to Alternatives 4 through 6.

Long-term Monitoring. Long-term monitoring would be implemented similar to Alternatives 2 through 6.

9.9.2 DETAILED EVALUATION OF ALTERNATIVE 7

Compliance with Standards, Criteria, and Guidance. Alternative 7 would meet Chemical-specific SCGs by removing PCB sediment contamination above 0.1 mg/kg and by removing soil contamination in excess of the 6 NYCRR Part 375 Remedial Program SCOs that would allow future unrestricted use of the Site and the adjacent residential property.

Alternative 7 would likely trigger Location-Specific SCGs associated with disturbance of wetlands and construction within a flood plain, and Action-Specific SCGs associated with dust control, erosion and sediment control, transportation and disposal of hazardous wastes, and stream restoration. Table 9.1 presents a summary of Location- and Action-Specific SCGs associated with remedial alternatives evaluated in this Section.

Overall Protection of Public Health and the Environment. This remedial alternative would protect public health and the environment through eliminating, reducing, or controlling existing or potential exposure pathways through removal, treatment and/or disposal, engineering controls, or institutional controls. This remedial alternative would achieve the RAOs for soil and sediment. Alternative 7 would allow for unrestricted use of the Site and unrestricted use of the adjacent residential property in accordance with 6 NYCRR Part 375.

Short-term Effectiveness. This alternative would result in short-term adverse impacts and risks to the community, site workers, and the environment as a result of implementation. Implementation of this alternative would include preparation of and adherence to a construction work plan and health and safety plan. It is estimated that this alternative could be fully implemented in less than one year, at which time Alternative 7 would meet the RAOs for soil and sediment and allow for unrestricted use. Alternative 7 involves remediation of Unnamed Tributary sediments above 0.1 mg/kg, and presents potential for short-term adverse impacts and risks to the community, site workers, and the environment as a result of implementation.

Long-term Effectiveness and Permanence. This alternative would provide long-term effectiveness and permanence by removing all detectable concentrations of PCB sediment contamination and all on-site and off-site residential soil greater than the Unrestricted Use SCOs, which would allow for unrestricted use of the Site and adjacent residential property.

Reduction of Toxicity, Mobility, or Volume with Treatment. This alternative would result in the reduction of mobility and volume of soil and sediment contamination at and in the vicinity of the Site through excavation and off-site disposal. This alternative would not result in a reduction in the toxicity of contamination unless contaminated soil and sediment removed from the Site receive off-site treatment prior to disposal.

Implementability. There would be significant technical issues with implementing this alternative, associated primarily with excavation of all detectable concentrations of PCBs from the Unnamed Tributary and Sauquoit Creek. State or Federal regulations for construction within a flood plain may complicate implementation of this alternative.

Land Use. The current and reasonably anticipated future land use of the Site is for commercial purposes, and residential property is located immediately to the south of the Site. This alternative would be compatible with current land use and reasonably anticipated future land use. This alternative would allow for unrestricted use of the Site and the adjacent residential property.

Cost. The capital cost estimate for this Alternative is $8,713,000 on Table 9.7. The PW of this Alternative is estimated to be $9,010,000. A summary of the costs associated with this alternative is presented in Table 9.7. Detailed cost backup is presented in Appendix C.

10.0 COMPARATIVE ANALYSIS OF ALTERNATIVES

The comparative analysis evaluates the relative performance of each alternative using the same criteria by which the detailed analysis of each alternative was conducted. The purpose of the comparative analysis is to identify the advantages and disadvantages of each alternative relative to one another to aid in selecting an overall remedy for the Site.

The comparative analysis includes a narrative discussion of the strengths and weaknesses of the alternatives relative to one another with respect to each criterion, and how reasonable variations of key uncertainties could change the expectations of their relative performance, as applicable. The comparative analysis presented in this document uses a qualitative approach to comparison, with the exceptions of comparing alternative costs and the required time to implement each alternative.

A comparison of the capital and long-term costs associated with the remedial alternatives is presented in Table 10.1. Detailed cost analysis backup is provided in Appendix C.

Compliance with Standards, Criteria, and Guidance.

Alternative 1 would not meet Chemical-specific SCGs because it would not address contamination at and in the vicinity of the Site which exceeds applicable SCG values.

Alternatives 2 through 4 would meet Chemical-specific SCGs by removing sediment contamination in excess of the NYSDEC sediment PCB remediation goal of 0.1 mg/kg to a depth of 3 feet bgs within the Unnamed Tributary and a depth of 2 feet bgs from the east bank of the Sauquoit Creek and by removing and/or capping of soil contamination in excess of the 6 NYCRR Part 375 Remedial Program SCOs consistent with the current and anticipated future use of the Site (commercial use) and adjacent property (residential use). Alternatives 2 and 3 would remove PCB contamination 3 to 5 feet bgs within the Unnamed Tributary in excess of 1 mg/kg, while Alternative 4 would remove PCB contamination in excess of 0.1 mg/kg from this depth interval.

Alternatives 2 and 3 rely upon, to varying degrees, maintenance of engineering controls consisting of a soil cover to prevent future exposure to contamination remaining on the Site. Unlike

Alternative 2 and 3, Alternative 4 would rely upon removal, rather than consolidation and/ capping, of on-site soils in excess of the Commercial Use SCOs.

Alternative 5 would meet Chemical-specific SCGs by removing sediment contamination in excess of the NYSDEC sediment PCB remediation goal of 0.1 mg/kg to a depth of 5 feet bgs within the Unnamed Tributary and to a depth of 2 feet bgs from the east bank of the Sauquoit Creek, and by removing soil contamination in excess of the 6 NYCRR Part 375 Remedial Program SCOs to accommodate future restricted-residential use of the Site (the anticipated future use of the Site is commercial use) and future use of the adjacent property for residential purposes.

Alternatives 2 through 5 would require institutional controls be implemented as required under 6 NYCRR Part 375 to prevent future exposure to contaminated soils and sediments left in-place and/or capped at and in the vicinity of the Site.

Alternative 6 would meet Chemical-specific SCGs by removing sediment contamination in excess of the NYSDEC sediment PCB remediation goal of 0.1 mg/kg to a depth of 5 feet bgs within the Unnamed Tributary and a depth of 2 feet bgs from the east bank of the Sauquoit Creek and by removing a soil contamination in excess of the 6 NYCRR Part 375 Remedial Program SCOs that would allow for future residential use of the Site (the anticipated future use of the Site is commercial use) and future use of the adjacent property for residential purposes. Alternative 5 would not require the implementation of institutional controls.

Alternative 7 would meet Chemical-specific SCGs by removing PCB sediment contamination in excess of 0.1 mg/kg and soil contamination in excess of the Unrestricted Use SCOs, thereby providing for unrestricted future use of the Site, adjacent residential property, and areas adjacent to Sauquoit Creek.

Alternatives 2 through 7 would likely trigger Location-Specific SCGs associated with disturbance of wetlands and construction within a flood plain, and Action-Specific SCGs associated with dust control, erosion and sediment control, transportation and disposal of hazardous wastes, and stream restoration. Table 9.1 presents a summary of Location- and Action-Specific SCGs associated with remedial alternatives evaluated in this Section.

Overall Protection of Public Health and the Environment. Alternative 1 would not protect public health and the environment through eliminating, reducing, or controlling existing or potential exposure pathways through removal, treatment, engineering controls, or institutional controls. This remedial alternative would not achieve the RAOs for soil and sediment.

Alternatives 2 through 7 would protect public health and the environment through eliminating, reducing, or controlling existing or potential exposure pathways through removal, treatment and/or disposal, engineering controls, or institutional controls. These remedial alternatives would achieve RAOs for soil and sediment.

Alternatives 2 through 4 would allow for commercial use of the Site and residential use of the adjacent property in accordance with 6 NYCRR Part 375, but would not allow for residential use of the Site because soil containing contaminants in excess of the Residential Use SCOs would remain in place within two feet bgs. Alternative 5 would allow for restricted-residential use of the Site and residential use of the adjacent residential property, while Alternative 6 would allow for residential use of the Site and adjacent residential property.

Alternatives 2 and 3 would not address PCB contamination greater than or equal to 1 mg/kg but less than 10 mg/kg on commercial property to the north of the Site; Alternatives 4 through 7 would meet 6 NYCRR Part 375 requirements for commercial use, at a minimum.

Alternative 7 would provide the greatest protection of public health and the environmental by returning the Site to pre-disposal conditions to the extent practicable. Alternative 7 would allow for unrestricted future use of the Site, adjacent residential property, and areas adjacent to Sauquoit Creek.

Short-term Effectiveness. Because no actions would be taken, Alternative 1 would not result in short-term adverse impacts and risks to the community, site workers, and the environment.

Alternatives 2 through 7 would result in short-term adverse impacts and risks to the community, site workers, and the environment during implementation. Implementation of these alternatives would include preparation of and adherence to a construction work plan and health and safety plan. It is estimated that these alternatives could be fully implemented in less than one year, at which

time they would achieve the RAOs for soil and sediment. Alternatives 2 and 3 include the least disturbance of contaminated soils, sediments, and C&D debris, and therefore present the least potential short-term adverse impacts and risks to the community, site workers, and the environment. Alternatives 4 through 6 would result in significant disturbance of sediments within the Unnamed Tributary, resulting in an increased potential for adverse impacts and risks. Alternative 7 would require significant disturbance of soil, C&D debris, and sediment, which would result in the most potential for short-term adverse impacts and risks of the seven alternatives.

Long-term Effectiveness and Permanence. Alternative 1 would not include actions to address contaminated soils and sediments at and in the vicinity of the Site. This remedy does not currently meet RAOs for soil and sediment and, due to the properties of the Site-specific COCs (e.g., longevity of PCBs), would not be expected to meet RAOs in the future.

Alternatives 2 and 3 would result in sediment within the Unnamed Tributary with PCB concentrations greater than or equal 0.1 but less than 1 mg/kg remaining in place at depths greater than 3 feet bgs, while Alternatives 4 through 6 would address PCB contamination greater than or equal to 0.1 mg/kg to a depth of 5 feet bgs. Alternative 7 would address PCB sediment contamination greater than or equal to 0.1 mg/kg regardless of depth.

Alternatives 2 through 6 would result in soil and/or C&D debris with PCB concentrations greater than 1 but less than 10 mg/kg remaining on site. This would limit future use of the Site to industrial or commercial use under Alternatives 2 through 4, restricted-residential use under Alternative 5, and residential use under Alternative 6. Alternatives 2 and 3 would rely upon both engineering and institutional controls to control potential future human exposure to contamination left on site. Alternatives 4 and 5 would require only institutional controls to prevent potential future human exposure to contamination left on site. Alternative 6 institutional controls to achieve long-term effectiveness.

Alternative 7 would allow for unrestricted use of the Site, adjacent residential property, and areas adjacent to Sauquoit Creek, and would not require the use of engineering or institutional controls to prevent future exposure.

Reduction of Toxicity, Mobility, or Volume with Treatment. Alternative 1 would not result in the reduction of toxicity, mobility, or volume of soil or sediment contamination through treatment.

Alternatives 2 through 7 would result in the reduction of mobility and volume of soil and sediment contamination at and in the vicinity of the Site through excavation and off-site disposal or on-site capping. These alternatives would not result in a reduction in the toxicity of contamination unless contaminated soil and sediment removed from the Site receive off-site treatment prior to disposal.

Implementability. Alternative 1 includes no actions, therefore there are no technical difficulties associated with this alternative. However, obtaining regulatory approval of this alternative would be difficult.

There would be limited technical issues with implementing Alternatives 2 through 6, primarily with excavation and restoration of the Unnamed Tributary. The proposed extent of excavation within the Unnamed Tributary associated with Alternatives 4 through 6 would present additional technical considerations than that proposed under Alternatives 2 and 3. State or Federal regulations for construction within a flood plain may complicate implementation of these alternatives. There would likely be significant technical issues with implementing Alternative 7, with respect to excavation of sediment containing PCB concentrations greater than or equal to 0.1 mg/kg from the Unnamed Tributary and Sauquoit Creek.

Land Use. The current and reasonably anticipated future land use of the Site is for commercial purposes; however, residential property is located immediately to the south of the Site. Because no actions would be taken as part of Alternative 1 and there would be no restrictions to future use, Alternative 1 would not be protective of potential occupants/visitors to the Site and the immediate vicinity.

Alternatives 2 through 7 would be compatible with current land use and reasonably anticipated future land use. Alternatives 2 through 4 would allow for commercial use of the Site. Alternative 5 would allow for potential future restricted-residential use of the Site. Alternatives 2 through 5 include institutional controls to restrict future use that could result in potential exposure to residual contamination. Alternative 6 would allow for future residential use of the Site. Alternative 7

would allow for unrestricted use of the Site, adjacent residential property, and areas adjacent to Sauquoit Creek.

Cost. A comparison of the capital and long-term costs associated with the remedial alternatives is presented in Table 10.1.

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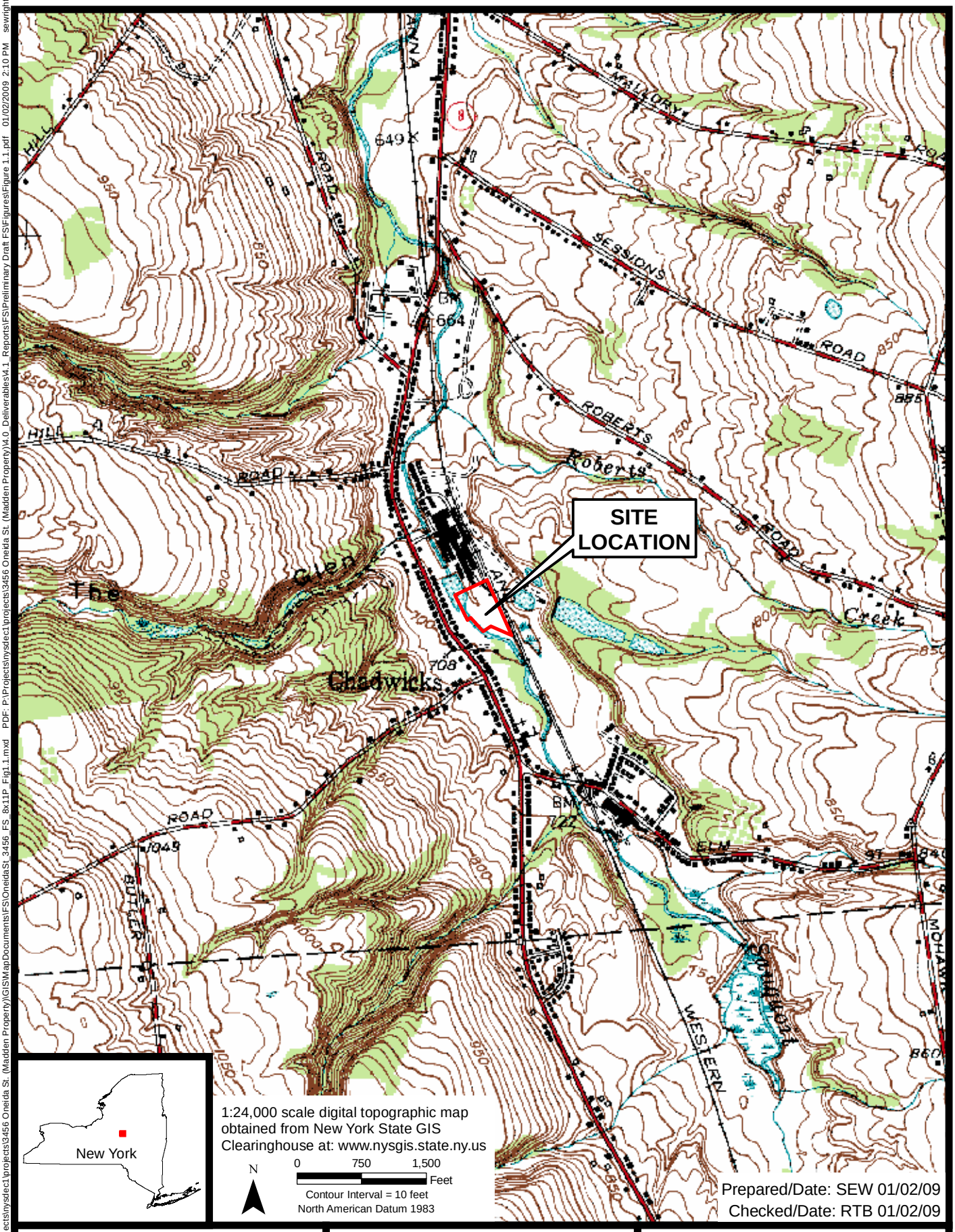
FIGURES



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Site Location
3650-07-0089
Figure 1.1

Legend

- Drainage Invert
- Rebar w/ Cap
- Bridge
- Drainage Culvert Pipe
- Ditch
- Edge of Water
- Building
- Major Contours
- Minor Contours
- Fence
- Property Lines
- Railroad
- Utility Pole

Contour Interval = 1 foot
North American Datum 1983

N
0 40 Feet

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Penfield, New York 14526
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Site Map

Project 3650-07-0089 Figure 1.2

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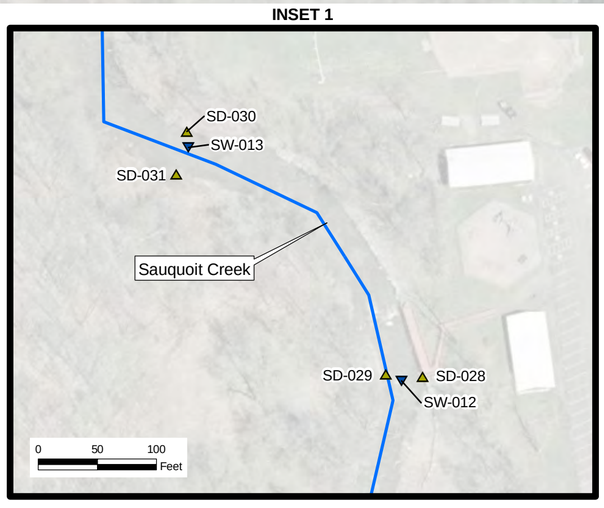
INSET 1



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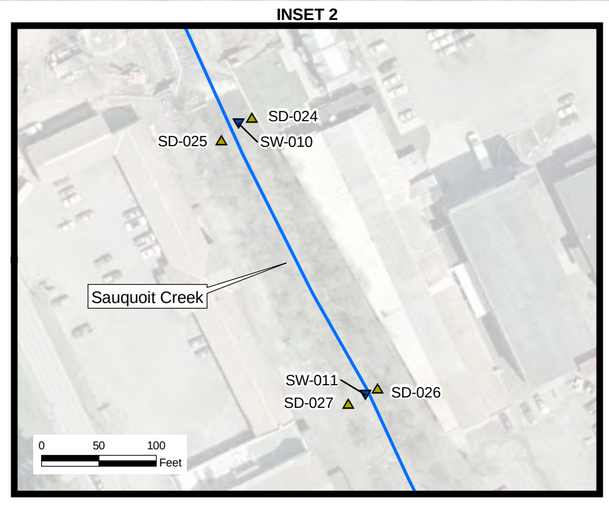

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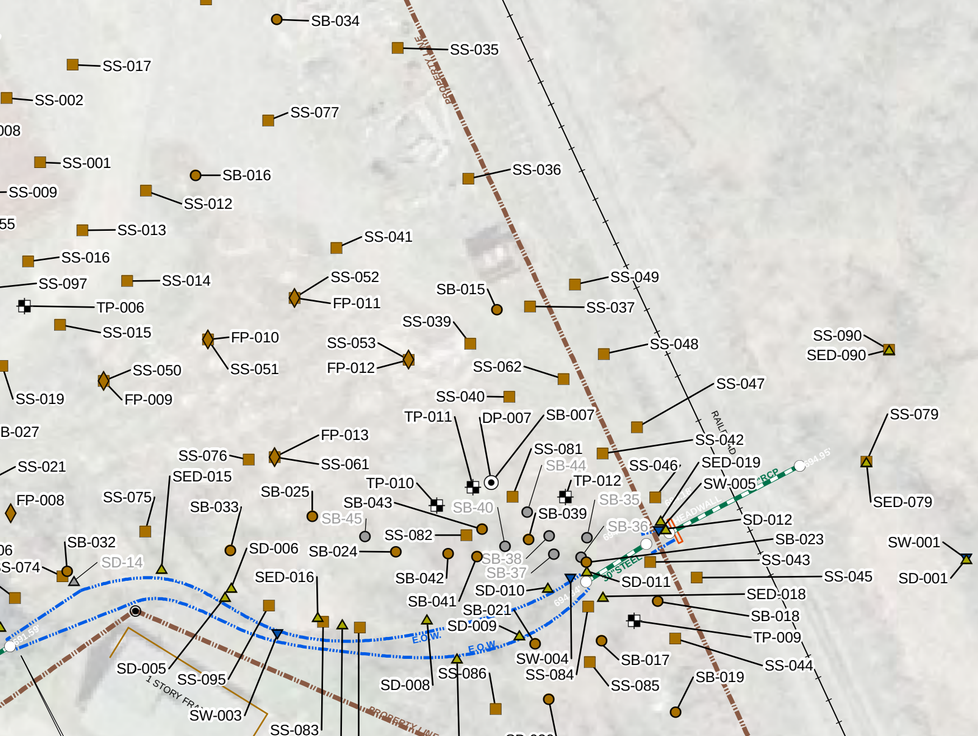

Legend

- Groundwater
- Soil Boring
- Sediment
- Fill Pile
- Surface Soil
- Test Pit
- Surface Water
- Bridge
- Drainage Culvert Pipe
- Ditch
- Sauquoit Creek
- Building
- Fence
- Property Lines
- Railroad
- Utility Pole

Note:
1) Grayed locations are those locations not sampled.
2) Samples taken in August and December 2006.

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N
0 20 40
Feet

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Phase I RI Sampling Locations

Project 3650-07-0089 Figure 4.1

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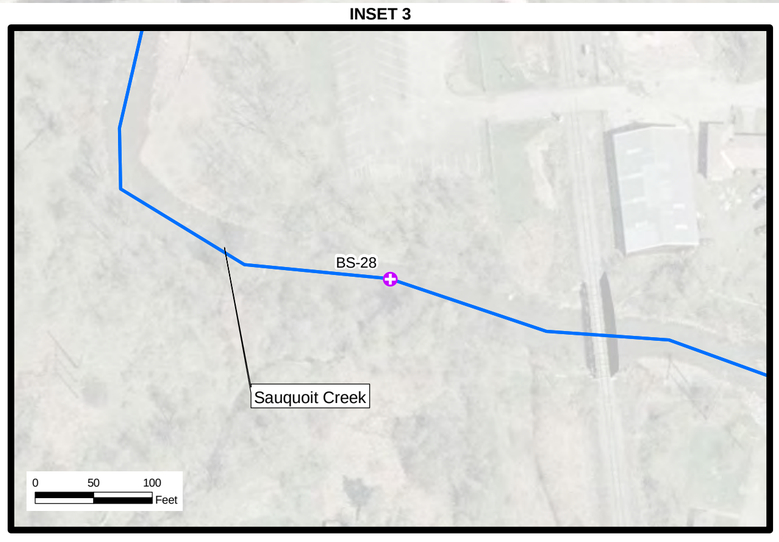
INSET 3



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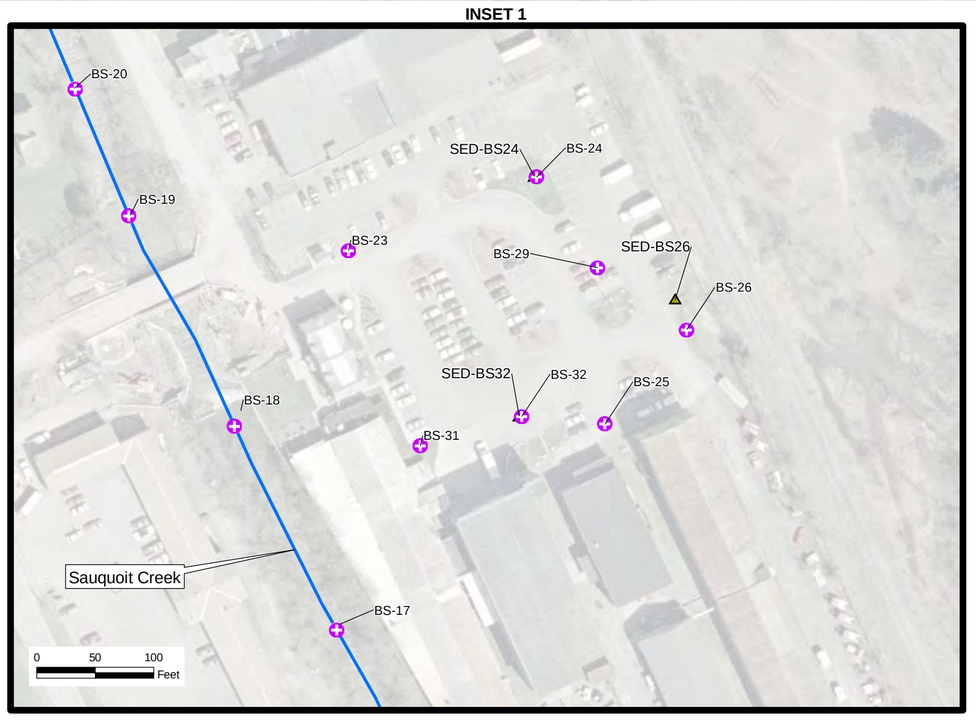

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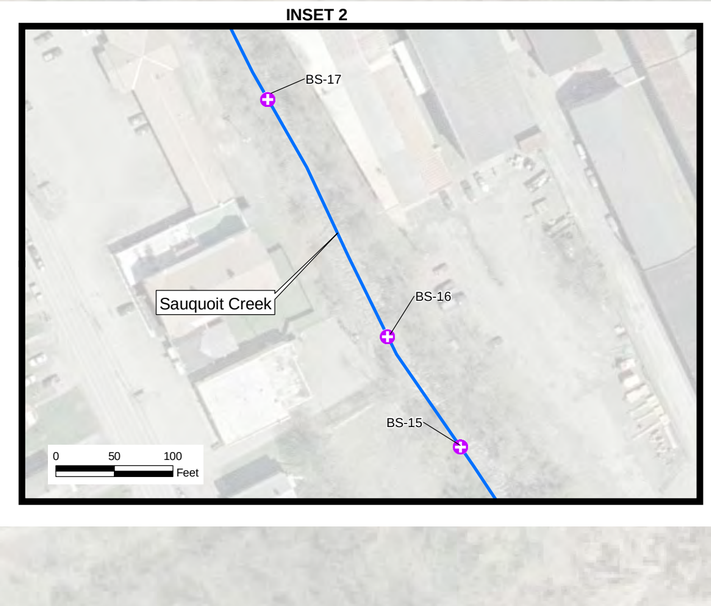

INSET 4

Legend

- Monitoring Well
- Peizometer
- Soil Boring
- Sediment
- Surface Soil
- Bag Sample (PISCES)
- Drainage Invert
- Rebar w/ Cap
- Monitoring Wells
- Bridge
- Drainage Culvert Pipe
- Ditch
- Saquoit Creek
- Building
- Fence
- Property Lines
- Railroad
- Utility Pole

Notes:
1) Samples were taken between October and December 2007.

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N
0 20 40
Feet

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Phase II RI Sampling Locations

Project 3650-07-0089 Figure 4.2

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1 STORY BRICK

DEED DIVISION LINE

INGRESS/EGRESS EASEMENT LINE

RAILROAD

SS-168

SS-170

BRIDGE RAIL

SS-167

SS-169

Sauquoit Creek

L.P.

PROPERTY LINE

691.47'

48"STEEL

690.22'

DITCH

Unnamed Drainage Ditch

DITCH

687.85'

30"STEEL

REBAR W/ CAP

E.O.W.

E.O.W.

SD-046

SD-047

SD-045

Sauquoit Creek

SD-044

SS-165

SD-042

SD-043

691.59'

48"x72" STEEL

691.57'

SD-041

SD-049

SD-040

SS-166

SS-164

SS-163

SS-162

1 STORY FRAME

PROPERTY LINE

JAIME MAUGERI
(REPUTED OWNER)
T.M. UNKNOWN
INST. NO. 2004-011514

Unnamed Tributary

E.O.W.

E.O.W.

SD-039

SD-038

SD-037

SD-036

SD-048

694.29'

694.84'

30"STEEL

694.18'

HEADWALL

36"RCP

694.95'

RAILROAD

Sauquoit Creek

Notes:
1) Samples taken November 2008

Legend

- Sediment
- Surface Soil
- Drainage Invert
- Rebar w/ Cap
- Bridge
- Drainage Culvert Pipe
- Ditch
- Sauquoit Creek
- Building
- Fence
- Property Lines
- Railroad
- Utility Pole
- Fill Piles
- IRM Excavation Area

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N

0 15 30
Feet

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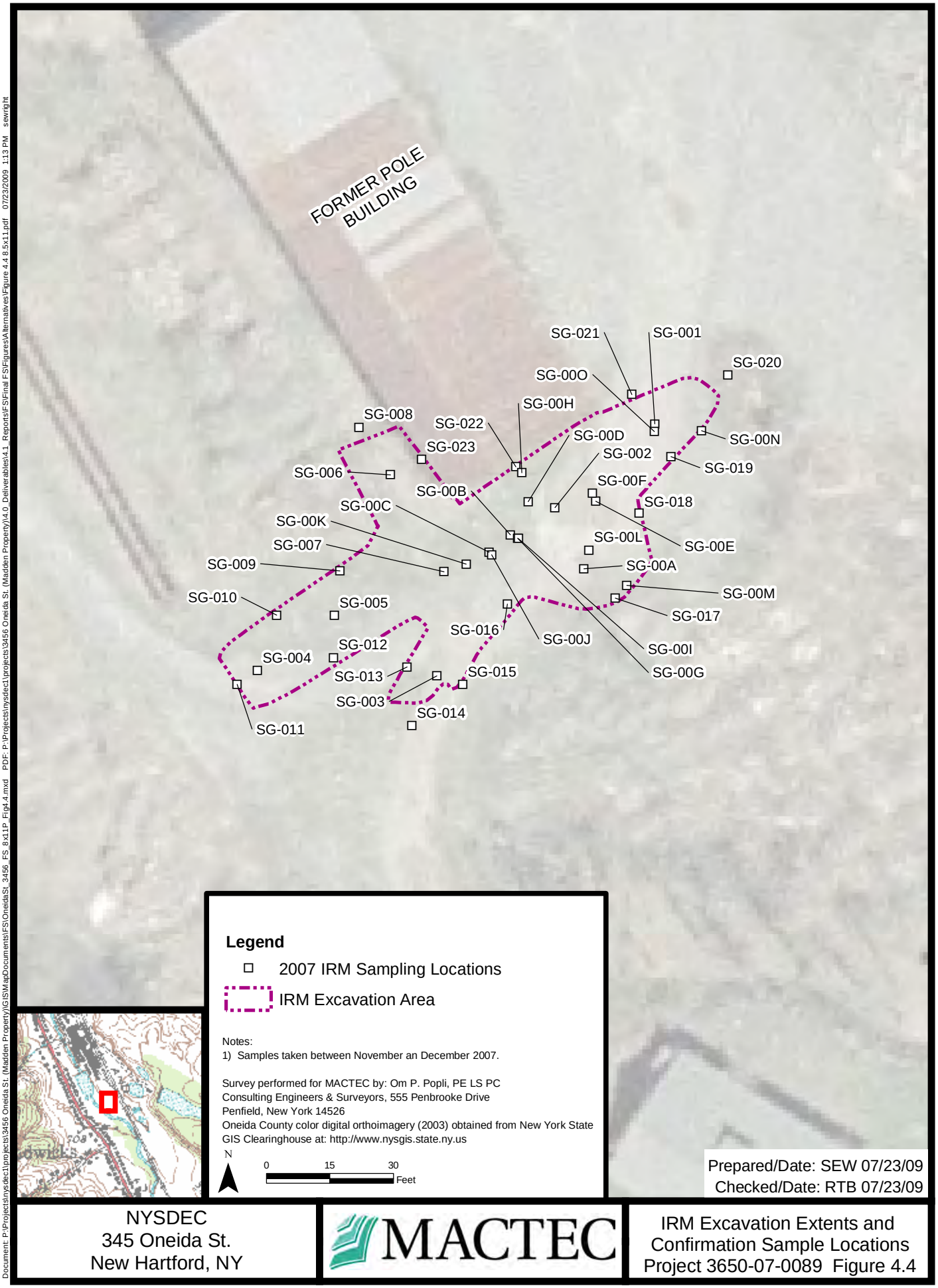
Supplemental Investigation Sample Locations

Project 3650-07-0089 Figure 4.3



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Notes:
1) Results shown for soil samples greater than 2 feet below ground surface.
2) Results shown on this figure have been compared to the Unrestricted Use (0.1 mg/Kg), Residential Use (1 mg/Kg) and Commercial Restricted Use (1 mg/Kg) Soil Cleanup Objectives.
3) Samples collected during August & December 2006, October & December 2007, and November 2008.

Legend

PCBs >= 10 mg/Kg
- Off-Site Sample
- On-Site Sample

PCBs >=1.0 mg/Kg < 10 mg/Kg
- Off-Site Sample
- On-Site Sample

PCBs >= 0.1 mg/Kg < 1.0 mg/Kg
- Off-Site Sample

PCBs < 0.1 mg/Kg and Non Detect
- Off-Site Sample
- On-Site Sample

Excavation Areas < 1 ft bgs ppm Range
- >= 10
- >= 1.0 <10
- >= 0.1 <1.0
- IRM Excavation Area

- Drainage Invert
- Rebar w/ Cap
- Bridge
- Drainage Culvert Pipe
- Ditch
- Sauquoit Creek
- Building
- Fence
- Property Lines
- Railroad
- Utility Pole

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N

0 15 30 Feet

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PCB Concentration in Soil Samples Collected between 0 and 1 Feet below Ground Surface
Project 3650-07-0089 Figure 4.5

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SB-071
1 STORY BRICK
SB-011
RAILROAD
SB-010
DEED DIVISION LINE
SB-002
44
43
BRIDGE RAIL
BRIDGE RAIL
SB-013
SB-012
SB-003
TP-002
Sauquoit Creek
27
SS-004
SS-005
SS-011
SS-003
SS-006
40
13
Unnamed Drainage Ditch
SS-010
SS-007
SS-057
SS-002
11
12
SS-008
SS-001
SB-016
41
SS-056
SS-009
FP-011
SB-015
47
SS-015
SS-051
38
SS-053
REBAR W/ CAP
42
FP-009
SS-020
SS-023
14
15
39
SS-061
36
3
SB-025
35
SD-036
33
SD-042
31
SB-032
32
SD-037
SD-038
SS-045
SD-043
SD-041
1
24
30
SB-021
SD-040
SD-039
SB-031
45
1 STORY FRAME
25
34
5
48
23
22
46
TP-007
Unnamed Tributary
Sauquoit Creek

Notes:
1) Results shown for soil samples between 1 and 2 feet below ground surface.
2) Results shown on this figure have been compared to the Unrestricted Use (0.1 mg/Kg), Residential Use (1 mg/Kg) and Commercial Restricted Use (1 mg/Kg) Soil Cleanup Objectives.
3) Samples collected during August & December 2006, October & December 2007, and November 2008.

Legend

PCBs >= 10 mg/Kg
- Off-Site Sample
- On-Site Sample

PCBs >=1.0 mg/Kg < 10 mg/Kg
- Off-Site Sample
- On-Site Sample

PCBs >= 0.1 mg/Kg < 1.0 mg/Kg
- Off-Site Sample

PCBs < 0.1 mg/Kg and Non-Detect
- Off-Site Sample
- On-Site Sample

Excavation Areas >= 1 ft < 2 ft bgs
ppm Range
- >= 10
- >= 1.0 <10
- >= 0.1 <1.0
- IRM Excavation Area

- Drainage Invert
- Rebar w/ Cap
- Bridge
- Drainage Culvert Pipe
- Ditch
- Sauquoit Creek
- Building
- Fence
- Property Lines
- Railroad
- Utility Pole

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N
0 15 30
Feet

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PCB Concentration in Soil Samples Collected between 1 and 2 Feet below Ground Surface
Project 3650-07-0089 Figure 4.6

Notes:
1) Results shown for soil samples greater than 2 feet below ground surface.
2) Results shown on this figure have been compared to the Unrestricted Use (0.1 mg/Kg), Residential Use (1 mg/Kg) and Commercial Restricted Use (1 mg/Kg) Soil Cleanup Objectives.
3) Samples collected during August & December 2006, October & December 2007, and November 2008.

Legend

PCBs >= 10 mg/Kg
- Off-Site Sample
- On-Site Sample

PCBs >=1.0 mg/Kg < 10 mg/Kg
- Off-Site Sample
- On-Site Sample

PCBs >= 0.1 mg/Kg < 1.0 mg/Kg
- Off-Site Sample

PCBs < 0.1 mg/Kg and Non-Detect
- Off-Site Sample
- On-Site Sample

Excavation Areas >= 2 ft bgs ppm Range
- >= 10
- >= 1.0 <10
- >= 0.1 <1.0
- IRM Excavation Area

- Drainage Invert
- Rebar w/ Cap
- Bridge
- Drainage Culvert Pipe
- Ditch
- Sauquoit Creek
- Building
- Fence
- Property Lines
- Railroad
- Utility Pole

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N

0 15 30 Feet

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PCB Concentration in Soil Samples Collected Deeper than 2 Feet below Ground Surface
Project 3650-07-0089 Figure 4.7

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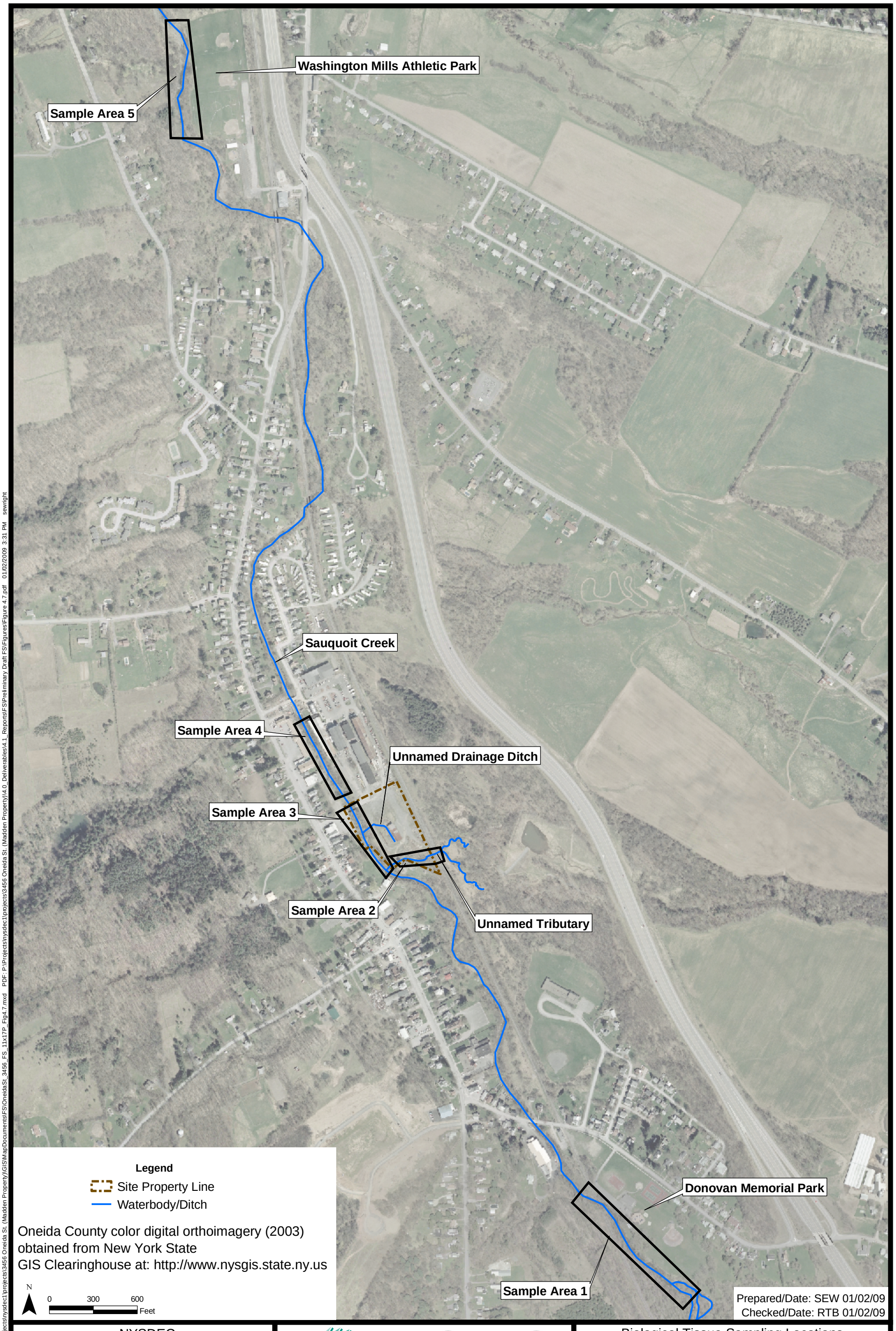

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Biological Tissue Sampling Locations

Project 3650-07-0089

Figure 4.8

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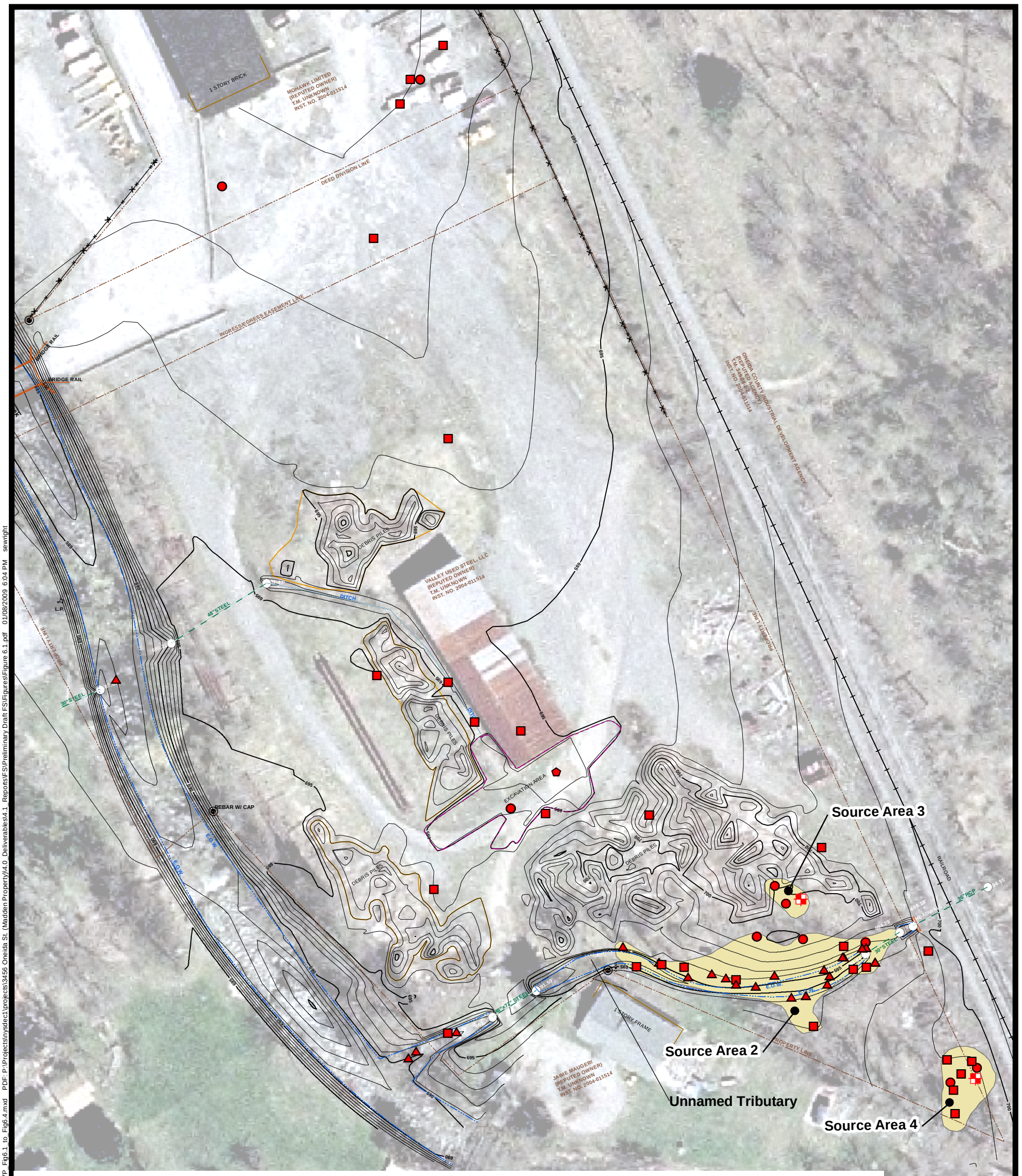

Legend

PCBs >= 10 mg/Kg
- Soil Boring
- Sediment
- IRM Confirmation Sample
- Surface Soil
- Test Pit

- Bridge
- Drainage Culvert Pipe
- Ditch
- Edge of Water (E.O.W.)
- Building
- Fence
- Property Lines
- Railroad
- Utility Pole
- Drainage Invert
- Rebar w/ Cap

- IRM Excavation Area
- Major Contours
- Minor Contours
- Estimated Extent of PCB Source Area
- Fill Piles

N

0 30 60 Feet

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Consulting Engineers & Surveyors, 555 Penbrooke Drive
Penfield, New York 14526

Oneida County color digital orthoimagery (2003)
obtained from New York State GIS Clearinghouse
at: http://www.nysgis.state.ny.us

Notes:
1) PCB results are shown for offsite analysis and onsite results >= 10 mg/Kg.

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Interpreted PCB Source Areas

Project 3650-07-0089 Figure 4.9

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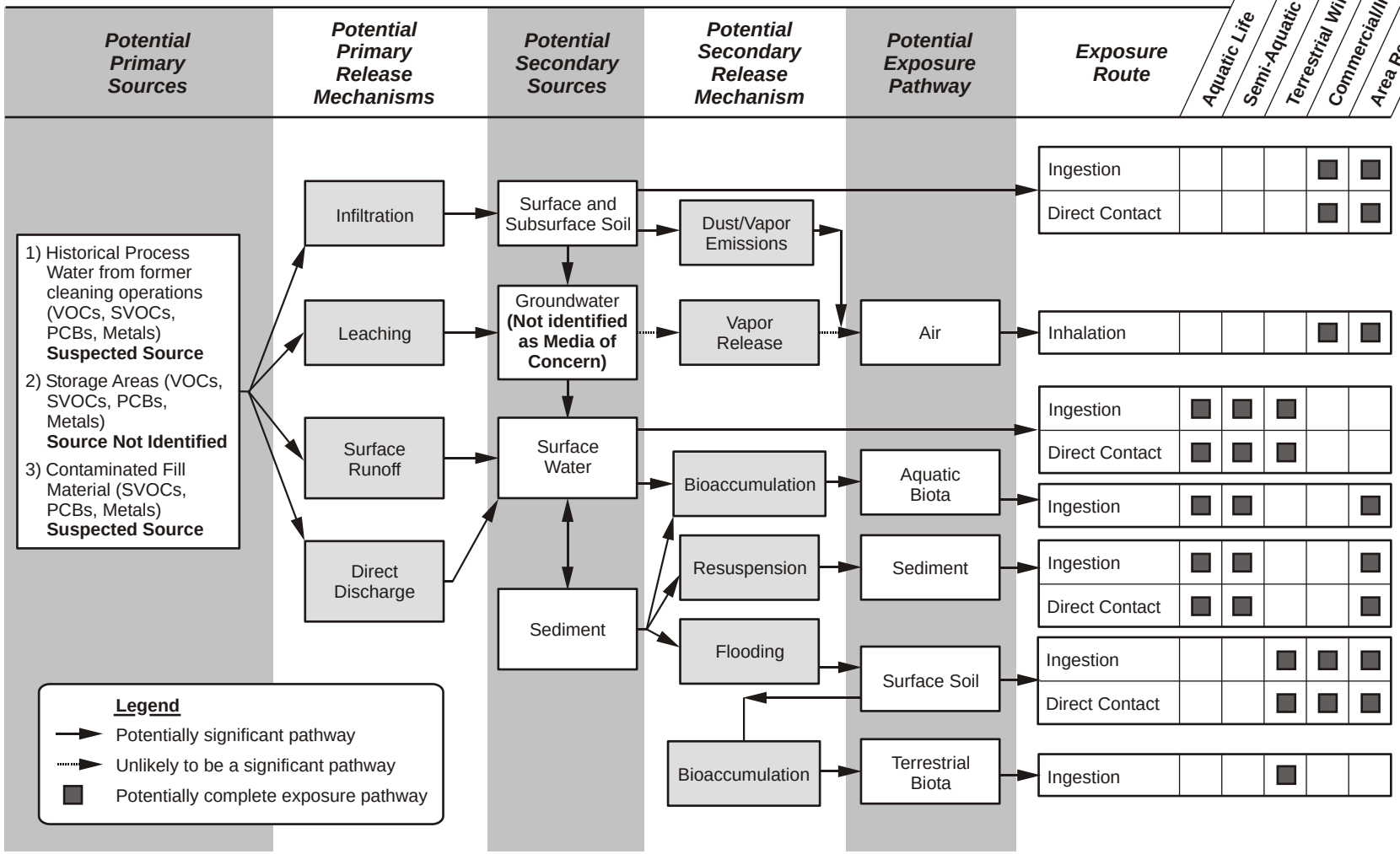
PORT2008023a.cdr



Prepared/Date: JPH 5/5/08
Checked/Date: RTB 5/5/08

Remedial Investigation Report
3456 Oneida Street - New Hartford
Work Assignment No. D004434-23

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Conceptual Site Model

Project 3650070089

Figure 4.10

Notes:
1) Excavation and consolidation areas are indicated for Alternative 2. Please see Figures 4.5 through 4.7 for excavation areas by PCB concentration and depth interval. Please see Appendix B detailed calculations of excavation and on-site consolidation and/or off-site disposal volumes.
2) Soil excavation and consolidation areas for this alternative are based upon contamination for depths ranging from 0 to 1 feet with the exception of source areas. Source areas are removed to depth of contamination. Refer to the text and Appendix B for details of vertical extent of sediment and excavation.
3) Extents of excavation and on-site consolidation are based upon PCB concentrations with the exception of Item 27 which is based upon the the prescence of PAHs greater than Commercial SCOs.

Legend

Alternative 2
- Extent of Source Areas to be Disposed of Off-Site
- Extent of CD Debris to be Consolidated On-Site
- Extent of On-site Soil 0 to 1 feet bgs to be Consolidated On-Site
- Extent of Residential Soil 0 to 2 feet bgs to be Consolidated On-Site
- Extent of Sediment to be Disposed of Off-Site
- Consolidation Area Alternative 2

- IRM Excavation Area
- Bridge
- Drainage Culvert Pipe
- Ditch
- Sauquoit Creek
- Building
- Fence
- Property Lines
- Railroad
- Utility Pole

Survey performed for MACTEC by: Om P. Popli, PE LS PC
Consulting Engineers & Surveyors
555 Penbrooke Drive, Penfield, New York 14526
Oneida County color digital orthoimagery (2003) obtained from New York State
GIS Clearinghouse at: http://www.nysgis.state.ny.us

N
0 15 30
Feet

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Alternative 2: Extent of Excavation for On-Site Consolidation and/or Off-Site Disposal
Project 3650-07-0089 Figure 9.1

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Notes:
1) Excavation and consolidation areas are indicated for Alternative 3. Please see Figures 4.5 through 4.7 for excavation areas by PCB concentration and depth interval. Please see Appendix B detailed calculations of excavation and on-site consolidation and/or off-site disposal volumes.
2) Soil excavation and consolidation areas for this alternative are based upon contamination for depths ranging from 0 to 1 feet with the exception of source areas. Source areas are removed to depth of contamination. Refer to the text and Appendix B for details of vertical extent of sediment and excavation.
3) Extents of excavation and on-site consolidation are based upon PCB concentrations with the exception of Item 27 which is based upon the the prescence of PAHs greater than Commercial SCOs.
4) C&D Debris and garbage to be consolidated on-site consists of bulk items and discrete areas not depicted on this Figure.

Legend

Alternative 3

- Extent of Source Areas to be Disposed of Off-Site
- Extent of CD Debris to be Disposed of Off-Site
- Extent of On-site Soil 0 to 1 feet bgs to be Disposed of Off-Site
- Extent of Residential Soil 0 to 2 feet bgs to be Disposed of Off-Site
- Extent of Sediment to be Disposed of Off-Site
- Consolidation Area Alternative 3

- IRM Excavation Area
- Bridge
- Drainage Culvert Pipe
- Ditch
- Sauquoit Creek
- Building
- Fence
- Property Lines
- Railroad
- Utility Pole

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N

0 15 30
Feet

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Alternative 3: Extent of Excavation for On-Site Consolidation and/or Off-Site Disposal
Project 3650-07-0089 Figure 9.2

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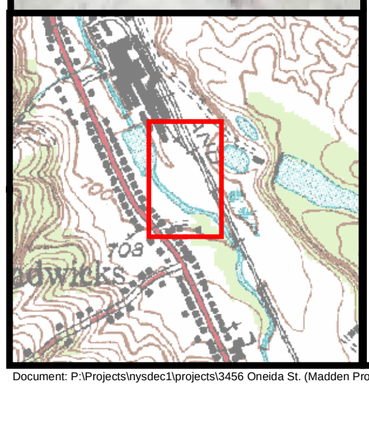
Notes:
1) Excavation areas are indicated for Alternative 4. Please see Figures 4.5 through 4.7 for excavation areas by PCB concentration and depth interval. Please see Appendix B detailed calculations of excavation and off-site disposal volumes.
2) Soil excavation and consolidation areas for this alternative are based upon contamination for depths ranging from 0 to 2 feet with the exception of source areas. Source areas are removed to depth of contamination. Refer to the text and Appendix B for details of vertical extent of sediment and excavation.
3) Extents of excavation are based upon PCB concentrations with the exception of Item 27 which is based upon the the prescence of PAHs greater than Commercial SCOs.

Legend

Alternative 4

- Extent of Source Areas to be Disposed of Off-Site
- Extent of CD Debris to be Disposed of Off-Site
- Extent of On-site Soil 0 to 1 feet bgs to be Disposed of Off-Site
- Extent of Off-Site Commercial Soil 0 to 1 feet bgs to be Disposed of Off-Site
- Extent of Residential Soil 0 to 2 feet bgs to be Disposed of Off-Site
- Extent of Sediment to be Disposed of Off-Site

- IRM Excavation Area
- Bridge
- Drainage Culvert Pipe
- Ditch
- Sauquoit Creek
- Building
- Fence
- Property Lines
- Railroad
- Utility Pole



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Oneida County color digital orthoimagery (2003) obtained from New York State
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N

0 15 30
Feet

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Alternative 4: Extent of Excavation for Off-Site Disposal
Project 3650-07-0089 Figure 9.3

Notes:
1) Excavation areas are indicated for Alternative 5. Please see Figures 4.5 through 4.7 for excavation areas by PCB concentration and depth interval. Please see Appendix B detailed calculations of excavation and off-site disposal volumes.
2) Soil excavation and consolidation areas for this alternative are based upon contamination for depths ranging from 0 to 2 feet with the exception of source areas. Source areas are removed to depth of contamination. Refer to the text and Appendix B for details of vertical extent of sediment and excavation.
3) Extents of excavation are based upon PCB concentrations with the exception of Item 27 which is based upon the the prescence of PAHs greater than Commercial SCOs.

Legend

For Legend - Alternative 5
Alternative 5

- Extent of Source Areas to be Disposed of Off-Site
- Extent of CD Debris to be Disposed of Off-Site
- Extent of On-site Soil 0 to 1 feet bgs to be Disposed of Off-Site
- Extent of On-Site Soil 0 to 2 feet bgs to be Disposed of Off-Site
- Extent of Off-Site Commercial Soil 0 to 1 feet bgs to be Disposed of Off-Site
- Extent of Residential Soil 0 to 2 feet bgs to be Disposed of Off-Site
- Extent of Sediment to be Disposed of Off-Site
- IRM Excavation Area
- Bridge
- Drainage Culvert Pipe
- Ditch
- Sauquoit Creek
- Building
- Fence
- Property Lines
- Railroad
- Utility Pole

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N
0 15 30
Feet

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Alternative 5: Extent of Excavation for Off-Site Disposal
Project 3650-07-0089 Figure 9.4

Notes:
1) Excavation areas are indicated for Alternative 6. Please see Figures 4.5 through 4.7 for excavation areas by PCB concentration and depth interval. Please see Appendix B detailed calculations of excavation and off-site disposal volumes.
2) Soil excavation and consolidation areas for this alternative are based upon contamination for depths greater than 2 feet with the exception of source areas. Source areas are removed to depth of contamination. Refer to the text and Appendix B for details of vertical extent of sediment and excavation.
3) Extents of excavation are based upon PCB concentrations with the exception of Item 27 which is based upon the the prescence of PAHs greater than Commercial SCOs.

Legend

For Legend - Alternative 6

Alternative 6

- Extent of Source Areas to be Disposed of Off-Site
- Extent of CD Debris to be Disposed of Off-Site
- Extent of On-site Soil 0 to 1 feet bgs to be Disposed of Off-Site
- Extent of On-Site Soil 0 to 2 feet bgs to be Disposed of Off-Site
- Extent of Off-Site Commercial Soil 0 to 2 feet bgs to be Disposed of Off-Site
- Extent of Residential Soil 0 to 2 feet bgs to be Disposed of Off-Site
- Extent of Sediment to be Disposed of Off-Site
- IRM Excavation Area
- Bridge
- Drainage Culvert Pipe
- Ditch
- Sauquoit Creek
- Building
- Fence
- Property Lines
- Railroad
- Utility Pole

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Oneida County color digital orthoimagery (2003) obtained from New York State GIS Clearinghouse at: http://www.nysgis.state.ny.us

N

0 15 30 Feet

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Alternative 6: Extent of Excavation for Off-Site Disposal
Project 3650-07-0089 Figure 9.5

Notes:
1) Excavation areas are indicated for Alternative 7. Please see Figures 4.5 through 4.7 for excavation areas by PCB concentration and depth interval. Please see Appendix B detailed calculations of excavation and off-site disposal volumes.
2) Soil excavation and consolidation areas for this alternative are based upon contamination for depths greater than 2 feet with the exception of source areas. Source areas are removed to depth of contamination. Refer to the text and Appendix B for details of vertical extent of sediment and excavation.
3) Extents of excavation are based upon PCB concentrations with the exception of Item 27 which is based upon the the prescence of PAHs greater than Commercial SCOs.

Legend

Alternative 7

- Extent of Source Areas to be Disposed of Off-Site
- Extent of CD Debris to be Disposed of Off-Site
- Extent of On-site Soil 0 to 1 feet bgs to be Disposed of Off-Site
- Extent of On-Site Soil 0 to 2 feet bgs to be Disposed of Off-Site
- Extent of Off-Site Commercial Soil 0 to 2 feet bgs to be Disposed of Off-Site
- Extent of Residential Soil 0 to 2 feet bgs to be Disposed of Off-Site
- Extent of Sediment to be Disposed of Off-Site
- Extent of Sauquoit Creek Sediment to be Disposed of Off-Site

- IRM Excavation Area
- Bridge
- Drainage Culvert Pipe
- Ditch
- Sauquoit Creek
- Building
- Fence
- Property Lines
- Railroad
- Utility Pole

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N

0 15 30 Feet

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Alternative 7: Extent of Excavation for Off-Site Disposal
Project 3650-07-0089 Figure 9.6

TABLES

Table 4.1: Summary of RI and Supplemental Investigation Samples

Sample Type	Location	Sample ID	Sample Date	Top Depth	Bottom Depth	Media	Qc Code	VOCs	SVOCs	PCBs	Metals	TOC	Lipids
ON-SITE SAMPLES													
PHASE I - FILL PILE SAMPLES													
On Site	FP-009	MPFP00900201XX	8/16/2006	1.5	2	SOIL	FS			X			
On Site	FP-010	MPFP01000201XX	8/16/2006	1.5	2	SOIL	FS			X			
On Site	FP-011	MPFP01100201XX	8/16/2006	1.5	2	SOIL	FS			X			
On Site	FP-012	MPFP01200301XD	8/16/2006	2.5	3	SOIL	FD			X			
On Site	FP-012	MPFP01200301XX	8/16/2006	2.5	3	SOIL	FS			X			
On Site	FP-013	MPFP01300301XX	8/17/2006	2.5	3	SOIL	FS			X			
PHASE I - SOIL BORING SAMPLES													
On Site	SB-001	MPSB00100401XX	8/22/2006	3.1	4	SOIL	FS			X			
On Site	SB-002	MPSB00200301XX	8/22/2006	1	2.5	SOIL	FS			X			
On Site	SB-003	MPSB00300401XX	8/22/2006	1.5	4	SOIL	FS			X			
On Site	SB-004	MPSB00400401XX	8/22/2006	2.8	4	SOIL	FS			X			
On Site	SB-005	MPSB00500201XX	8/22/2006	0.2	2	SOIL	FS			X			
On Site	SB-006	MPSB00600301XX	8/22/2006	2	3.2	SOIL	FS			X			
On Site	SB-007	MPSB00700701XX	8/22/2006	2.6	4	SOIL	FS			X			
On Site	SB-009	MPSB00900001XX	8/23/2006	0	0.8	SOIL	FS			X			
On Site	SB-009	MPSB00900201XX	8/23/2006	0.8	2	SOIL	FS			X			
On Site	SB-009	MPSB00900301XD	8/23/2006	2	3	SOIL	FD			X			
On Site	SB-009	MPSB00900301XX	8/23/2006	2	3	SOIL	FS			X			
On Site	SB-009	MPSB00900401XX	8/23/2006	3	4	SOIL	FS			X			
On Site	SB-010	MPSB01000001XX	8/23/2006	0	0.5	SOIL	FS			X			
On Site	SB-010	MPSB01000101XX	8/23/2006	0.5	1	SOIL	FS			X			
On Site	SB-010	MPSB01000201XX	8/23/2006	1.2	2.5	SOIL	FS			X			
On Site	SB-010	MPSB01000401XX	8/23/2006	2.5	4	SOIL	FS			X			
On Site	SB-011	MPSB01100001XX	8/23/2006	0	0.5	SOIL	FS			X			
On Site	SB-011	MPSB01100101XD	8/23/2006	0.5	1.5	SOIL	FD			X			
On Site	SB-011	MPSB01100101XX	8/23/2006	0.5	1.5	SOIL	FS			X			
On Site	SB-011	MPSB01100301XX	8/23/2006	1.5	3	SOIL	FS			X			
On Site	SB-011	MPSB01100401XX	8/23/2006	3	4	SOIL	FS			X			
On Site	SB-012	MPSB01200001XX	8/23/2006	0	1	SOIL	FS			X			
On Site	SB-012	MPSB01200201XX	8/23/2006	1	2	SOIL	FS			X			
On Site	SB-012	MPSB01200301XX	8/23/2006	2	3.5	SOIL	FS			X			
On Site	SB-012	MPSB01200401XX	8/23/2006	3.5	4	SOIL	FS			X			
On Site	SB-013	MPSB01300001XX	8/23/2006	0	1	SOIL	FS			X			
On Site	SB-013	MPSB01300201XX	8/23/2006	1	2	SOIL	FS			X			
On Site	SB-013	MPSB01300301XX	8/23/2006	2	3	SOIL	FS			X			
On Site	SB-013	MPSB01300401XX	8/23/2006	3	4	SOIL	FS			X			
On Site	SB-014	MPSB01400001XX	8/23/2006	0	0.5	SOIL	FS			X			
On Site	SB-014	MPSB01400201XX	8/23/2006	0.5	2	SOIL	FS			X			
On Site	SB-014	MPSB01400401XX	8/23/2006	2	4	SOIL	FS			X			
On Site	SB-015	MPSB01500001XX	8/23/2006	0	1.5	SOIL	FS			X			
On Site	SB-015	MPSB01500201XX	8/23/2006	1.5	2.5	SOIL	FS			X			
On Site	SB-015	MPSB01500301XX	8/23/2006	2.5	4	SOIL	FS			X			
On Site	SB-016	MPSB01600001XX	8/23/2006	0	1	SOIL	FS			X			
On Site	SB-016	MPSB01600301XX	8/23/2006	1	3	SOIL	FS			X			
On Site	SB-016	MPSB01600401XX	8/23/2006	3	4	SOIL	FS			X			
On Site	SB-016	MPSB01600701XX	8/23/2006	4	7	SOIL	FS			X			
On Site	SB-017	MPSB01700401XX	8/23/2006	0	4	SOIL	FS			X			
On Site	SB-017	MPSB01700501XX	8/23/2006	4	5.5	SOIL	FS			X			
On Site	SB-017	MPSB01700901XX	8/23/2006	8	9	SOIL	FS			X			
On Site	SB-018	MPSB01800201XX	8/23/2006	2	3	SOIL	FS			X			
On Site	SB-018	MPSB01800401XX	8/23/2006	4	5	SOIL	FS			X			
On Site	SB-018	MPSB01800701XX	8/23/2006	7	8	SOIL	FS			X			
On Site	SB-019	MPSB01900101XX	8/23/2006	0	1	SOIL	FS			X			
On Site	SB-019	MPSB01900301XX	8/23/2006	1	3	SOIL	FS			X			
On Site	SB-019	MPSB01900801XX	8/23/2006	5.8	7.8	SOIL	FS			X			
On Site	SB-020	MPSB02000401XX	8/23/2006	4	6	SOIL	FS			X			
On Site	SB-020	MPSB02000701XX	8/23/2006	7	8	SOIL	FS			X			
On Site	SB-021	MPSB02100101XX	8/23/2006	1	2	SOIL	FS			X			
On Site	SB-021	MPSB02100301XX	8/23/2006	3	4	SOIL	FS			X			
On Site	SB-021	MPSB02100401XX	8/23/2006	4	5	SOIL	FS			X			
On Site	SB-022	MPSB02200201XX	8/23/2006	2	3	SOIL	FS			X			
On Site	SB-022	MPSB02200701XX	8/23/2006	7	8	SOIL	FS			X			
On Site	SB-023	MPSB02300401XX	8/23/2006	0	4	SOIL	FS			X			
On Site	SB-023	MPSB02300601XX	8/23/2006	4	6	SOIL	FS			X			
On Site	SB-023	MPSB02300801XX	8/23/2006	6	7.5	SOIL	FS			X			
On Site	SB-024	MPSB02400401XD	8/23/2006	2	4	SOIL	FD			X			
On Site	SB-024	MPSB02400401XX	8/23/2006	2	4	SOIL	FS			X			
On Site	SB-024	MPSB02400701XX	8/23/2006	4.5	6.8	SOIL	FS			X			
On Site	SB-024	MPSB02401001XX	8/23/2006	8	10.4	SOIL	FS			X			
On Site	SB-025	MPSB02401201XX	8/23/2006	12	12.5	SOIL	FS			X			

Prepared by: BJS 1/12/2009
Checked by: RTB 1/12/2009
Revised by: RTB 6/1/2009

Table 4.1: Summary of RI and Supplemental Investigation Samples

Sample Type	Location	Sample ID	Sample Date	Top Depth	Bottom Depth	Media	Qc Code	VOCs	SVOCs	PCBs	Metals	TOC	Lipids
On Site	SB-025	MPSB02500401XX	8/23/2006	1.4	4	SOIL	FS			X			
On Site	SB-025	MPSB02501001XX	8/23/2006	9.2	10.4	SOIL	FS			X			
On Site	SB-025	MPSB02501201XX	8/23/2006	12	12.5	SOIL	FS			X			
On Site	SB-026	MPSB02600301XX	8/23/2006	3	4	SOIL	FS			X			
On Site	SB-026	MPSB02600601XX	8/23/2006	6	7	SOIL	FS			X			
On Site	SB-027	MPSB02700101XX	8/23/2006	0	1	SOIL	FS			X			
On Site	SB-027	MPSB02700201XX	8/23/2006	1	2	SOIL	FS			X			
On Site	SB-027	MPSB02700301XX	8/23/2006	2	3	SOIL	FS			X			
On Site	SB-027	MPSB02700401XX	8/23/2006	3	4	SOIL	FS			X			
On Site	SB-027	MPSB02700501XX	8/23/2006	4	5	SOIL	FS			X			
On Site	SB-027	MPSB02700601XX	8/23/2006	5	6	SOIL	FS			X			
On Site	SB-027	MPSB02700901XX	8/23/2006	8	9	SOIL	FS			X			
On Site	SB-028	MPSB02800201XX	8/24/2006	2	4	SOIL	FS			X			
On Site	SB-028	MPSB02800501XX	8/24/2006	5	7	SOIL	FS			X			
On Site	SB-031	MPSB03100101XX	8/24/2006	1	2	SOIL	FS			X			
On Site	SB-032	MPSB03200101XX	8/24/2006	1	3	SOIL	FS			X			
On Site	SB-032	MPSB03200901XX	8/24/2006	9	10	SOIL	FS			X			
On Site	SB-033	MPSB03300701XX	8/24/2006	7	8	SOIL	FS			X			
On Site	SB-033	MPSB03301001XX	8/24/2006	10	11	SOIL	FS			X			
On Site	SB-034	MPSB03400301XX	8/24/2006	3	4	SOIL	FS			X			
On Site	SB-034	MPSB03400601XX	8/24/2006	6	7	SOIL	FS			X			
On Site	SB-039	MPSB03900901XX	8/24/2006	9	10	SOIL	FS			X			
On Site	SB-041	MPSB04100901XX	8/24/2006	9	11	SOIL	FS			X			
On Site	SB-042	MPSB04200901XX	8/24/2006	9	11	SOIL	FS			X			
On Site	SB-043	MPSB04300901XX	8/24/2006	6	8	SOIL	FS			X			
PHASE I - SEDIMENT SAMPLES													
On Site	SED-000	RESERVOIR SED	8/17/2006	0	0.5	SED	FD			X			
On Site	SED-001	MPSD00100001XX	8/22/2006	0	0.5	SED	FS			X			
On Site	SED-002	MPSD00200001XX	8/23/2006	0	0.5	SED	FS			X			
On Site	SED-003	MPSD00300001XX	8/23/2006	0	0.5	SED	FS			X			
On Site	SED-004	MPSD00400001XX	8/23/2006	0	0.5	SED	FS			X			
On Site	SED-005	MPSD00500001XX	8/23/2006	0	0.5	SED	FS			X			
On Site	SED-006	MPSD00600001XX	8/23/2006	0	0.5	SED	FS			X			
On Site	SED-007	MPSD00700001XX	8/23/2006	0	0.5	SED	FS			X			
On Site	SED-008	MPSD00800001XX	8/23/2006	0	0.5	SED	FS			X			
On Site	SED-009	MPSD00900001XX	8/23/2006	0	0.5	SED	FS			X			
On Site	SED-010	MPSD01000001XX	8/23/2006	0	0.5	SED	FS			X			
On Site	SED-011	MPSD01100001XX	8/23/2006	0	0.5	SED	FS			X			
On Site	SED-012	MPSD01200001XX	8/23/2006	0	0.25	SED	FS			X			
On Site	SED-013	MPSD01300001XX	8/23/2006	0	0.5	SED	FS			X			
On Site	SED-014	MPSD01400001XX	8/23/2006	0	0.5	SED	FS			X			
On Site	SED-015	MPSD01500001XX	8/23/2006	0	0.5	SED	FS			X			
On Site	SED-016	MPSD01600001XX	8/23/2006	0	0.5	SED	FS			X			
On Site	SED-017	MPSD01700001XX	8/23/2006	0	0.5	SED	FS			X			
On Site	SED-018	MPSD01800001XD	8/23/2006	0	0.5	SED	FD			X			
On Site	SED-018	MPSD01800001XX	8/23/2006	0	0.25	SED	FS			X			
On Site	SED-019	MPSD01900001XX	8/23/2006	0	0.5	SED	FS			X			
On Site	SED-079	MPSD07900001XX	8/22/2006	0	0.5	SED	FS			X			
On Site	SED-090	MPSD09000001XX	8/22/2006	0	0.5	SED	FS			X			
IRM - SURFACE SOIL SAMPLES													
On Site	SG-001	MPSG00100101XX	11/28/2007	1	1.2	Soil	FS			X			
On Site	SG-002	MPSG00200201XD	11/28/2007	2	2.2	Soil	FD			X			
On Site	SG-002	MPSG00200201XX	11/28/2007	2	2.2	SOIL	FS			X			
On Site	SG-002	MPSG00200301XX	11/29/2007	3	3.2	Soil	FS			X			
On Site	SG-002	MPSG00200401XX	11/29/2007	4	4.2	Soil	FS			X			
On Site	SG-003	MPSG00300101XX	11/26/2007	1	1.2	Soil	FS			X			
On Site	SG-004	MPSG00400201XX	11/26/2007	2	2.2	SOIL	FS			X			
On Site	SG-005	MPSG00500201XX	11/26/2007	2	2.2	Soil	FS			X			
On Site	SG-006	MPSG00600201XX	11/27/2007	2	2.2	Soil	FS			X			
On Site	SG-007	MPSG00700201XD	11/27/2007	2	2.2	Soil	FD			X			
On Site	SG-007	MPSG00700201XX	11/27/2007	2	2.2	SOIL	FS			X			
On Site	SG-008	MPSG00800001XX	11/27/2007	0.5	0.5	SOIL	FS			X			
On Site	SG-009	MPSG00900001XX	11/26/2007	0.5	0.5	Soil	FS			X			
On Site	SG-00A	MPSG00A00201XX	11/29/2007	2	2.2	Soil	FS			X			
On Site	SG-00C	MPSG00C00201XX	11/29/2007	2	2.2	Soil	FS			X			
On Site	SG-00F	MPSG00F00301XX	11/29/2007	3	3.2	Soil	FS			X			
On Site	SG-00G	MPSG00G00301XX	11/29/2007	3	3.2	Soil	FS			X			
On Site	SG-00H	MPSG00H00201XX	11/29/2007	2	2	Soil	FS			X			
On Site	SG-00I	MPSG00I00301XX	12/6/2007	3.5	3.7	Soil	FS			X			
On Site	SG-00J	MPSG00J00301XX	12/6/2007	3	3.2	SOIL	FS			X			
On Site	SG-00K	MPSG00K00201XX	12/6/2007	2.5	2.5	Soil	FS			X			
On Site	SG-00L	MPSG00L00301XX	12/6/2007	3	3.2	Soil	FS			X			

Prepared by: BJS 1/12/2009
Checked by: RTB 1/12/2009
Revised by: RTB 6/1/2009

Table 4.1: Summary of RI and Supplemental Investigation Samples

Sample Type	Location	Sample ID	Sample Date	Top Depth	Bottom Depth	Media	Qc Code	VOCs	SVOCs	PCBs	Metals	TOC	Lipids
On Site	SG-00M	MPSG00M00301XX	12/6/2007	3	3	Soil	FS			X			
On Site	SG-00N	MPSG00N00201XX	12/6/2007	2	2	Soil	FS			X			
On Site	SG-00O	MPSG00O00301XX	12/6/2007	3	3.2	Soil	FS			X			
On Site	SG-010	MPSG01000001XD	11/26/2007	0.5	0.5	Soil	FD			X			
On Site	SG-010	MPSG01000001XX	11/26/2007	0.5	0.5	Soil	FS			X			
On Site	SG-011	MPSG01100001XX	11/26/2007	0.5	0.5	SOIL	FS			X			
On Site	SG-012	MPSG01200001XX	11/26/2007	0.5	0.5	Soil	FS			X			
On Site	SG-013	MPSG01300001XX	11/26/2007	0.5	0.5	Soil	FS			X			
On Site	SG-014	MPSG01400001XX	11/26/2007	0.5	0.5	Soil	FS			X			
On Site	SG-015	MPSG01500001XX	11/26/2007	0.5	0.5	Soil	FS			X			
On Site	SG-016	MPSG01600001XX	11/27/2007	0.5	0.5	Soil	FS			X			
On Site	SG-017	MPSG01700001XX	11/27/2007	0.5	0.5	SOIL	FS			X			
On Site	SG-018	MPSG01800001XX	11/28/2007	0.5	0.5	Soil	FS			X			
On Site	SG-019	MPSG01900001XX	11/28/2007	0.5	0.5	Soil	FS			X			
On Site	SG-020	MPSG02000001XX	11/28/2007	0.5	0.5	Soil	FS			X			
On Site	SG-021	MPSG02100001XD	11/28/2007	0.5	0.5	Soil	FD			X			
On Site	SG-021	MPSG02100001XX	11/28/2007	0.5	0.5	Soil	FS			X			
On Site	SG-022	MPSG02200001XX	11/28/2007	0.5	0.5	Soil	FS			X			
On Site	SG-023	MPSG02300001XX	11/27/2007	0.5	0.5	SOIL	FS			X			
PHASE I - SURFACE SOIL SAMPLES													
On Site	SS-001	MPSS00100001XX	8/8/2006	0	0.5	SOIL	FS			X			
On Site	SS-001	MPSS00100101XX	8/8/2006	0.5	1	SOIL	FS			X			
On Site	SS-001	MPSS00100201XX	8/8/2006	1	1.5	SOIL	FS			X			
On Site	SS-002	MPSS00200001XX	8/8/2006	0	0.5	SOIL	FS			X			
On Site	SS-002	MPSS00200101XX	8/8/2006	0.5	1	SOIL	FS			X			
On Site	SS-002	MPSS00200201XX	8/8/2006	1	1.5	SOIL	FS			X			
On Site	SS-003	MPSS00300001XX	8/8/2006	0	0.5	SOIL	FS			X			
On Site	SS-003	MPSS00300101XX	8/8/2006	0.5	1	SOIL	FS			X			
On Site	SS-003	MPSS00300201XX	8/8/2006	1	1.5	SOIL	FS			X			
On Site	SS-004	MPSS00400001XX	8/8/2006	0	0.5	SOIL	FS			X			
On Site	SS-004	MPSS00400101XX	8/8/2006	0.5	1	SOIL	FS			X			
On Site	SS-004	MPSS00400201XX	8/8/2006	1	1.5	SOIL	FS			X			
On Site	SS-004	MPSS00400301XX	8/8/2006	1.5	2	SOIL	FS			X			
On Site	SS-005	MPSS00500001XX	8/9/2006	0	0.5	SOIL	FS			X			
On Site	SS-005	MPSS00500101XD	8/9/2006	0.5	1	SOIL	FD			X			
On Site	SS-005	MPSS00500101XX	8/9/2006	0.5	1	SOIL	FS			X			
On Site	SS-005	MPSS00500201XX	8/9/2006	1	1.5	SOIL	FS			X			
On Site	SS-005	MPSS00500301XX	8/9/2006	1.5	2	SOIL	FS			X			
On Site	SS-006	MPSS00600001XX	8/9/2006	0	0.5	SOIL	FS			X			
On Site	SS-006	MPSS00600101XX	8/9/2006	0.5	1	SOIL	FS			X			
On Site	SS-006	MPSS00600201XX	8/9/2006	1	1.5	SOIL	FS			X			
On Site	SS-006	MPSS00600301XX	8/9/2006	1.5	2	SOIL	FS			X			
On Site	SS-007	MPSS00700001XX	8/9/2006	0	0.5	SOIL	FS			X			
On Site	SS-007	MPSS00700101XX	8/9/2006	0.5	1	SOIL	FS			X			
On Site	SS-007	MPSS00700201XX	8/9/2006	1	1.5	SOIL	FS			X			
On Site	SS-007	MPSS00700301XX	8/9/2006	1.5	2	SOIL	FS			X			
On Site	SS-008	MPSS00800001XX	8/9/2006	0	0.5	SOIL	FS			X			
On Site	SS-008	MPSS00800101XX	8/9/2006	0.5	1	SOIL	FS			X			
On Site	SS-008	MPSS00800201XX	8/9/2006	1	1.5	SOIL	FS			X			
On Site	SS-008	MPSS00800301XX	8/9/2006	1.5	2	SOIL	FS			X			
On Site	SS-009	MPSS00900001XX	8/9/2006	0	0.5	SOIL	FS			X			
On Site	SS-009	MPSS00900101XX	8/9/2006	0.5	1	SOIL	FS			X			
On Site	SS-009	MPSS00900201XX	8/9/2006	1	1.5	SOIL	FS			X			
On Site	SS-009	MPSS00900301XX	8/9/2006	1.5	2	SOIL	FS			X			
On Site	SS-010	MPSS01000001XX	8/9/2006	0	0.5	SOIL	FS			X			
On Site	SS-010	MPSS01000101XX	8/9/2006	0.5	1	SOIL	FS			X			
On Site	SS-010	MPSS01000201XX	8/9/2006	1	1.5	SOIL	FS			X			
On Site	SS-011	MPSS01100001XX	8/9/2006	0	0.5	SOIL	FS			X			
On Site	SS-011	MPSS01100101XX	8/9/2006	0.5	1	SOIL	FS			X			
On Site	SS-011	MPSS01100201XX	8/9/2006	1	1.5	SOIL	FS			X			
On Site	SS-012	MPSS01200001XD	8/10/2006	0	0.5	SOIL	FD			X			
On Site	SS-012	MPSS01200001XX	8/10/2006	0	0.5	SOIL	FS			X			
On Site	SS-012	MPSS01200101XX	8/11/2006	0.5	1	SOIL	FS			X			
On Site	SS-012	MPSS01200201XX	8/11/2006	1	1.5	SOIL	FS			X			
On Site	SS-012	MPSS01200301XX	8/11/2006	1.3	1.6	SOIL	FS			X			
On Site	SS-013	MPSS01300001XX	8/10/2006	0	0.5	SOIL	FS			X			
On Site	SS-014	MPSS01400001XX	8/10/2006	0	0.5	SOIL	FS			X			
On Site	SS-015	MPSS01500001XX	8/10/2006	0	0.5	SOIL	FS			X			
On Site	SS-015	MPSS01500101XD	8/11/2006	0	0.5	SOIL	FD			X			
On Site	SS-015	MPSS01500101XX	8/11/2006	0.5	1	SOIL	FS			X			
On Site	SS-015	MPSS01500201XX	8/11/2006	1	1.5	SOIL	FS			X			
On Site	SS-016	MPSS01600001XX	8/10/2006	0	0.5	SOIL	FS			X			

Table 4.1: Summary of RI and Supplemental Investigation Samples

Sample Type	Location	Sample ID	Sample Date	Top Depth	Bottom Depth	Media	Qc Code	VOCs	SVOCs	PCBs	Metals	TOC	Lipids
On Site	SS-016	MPSS01600101XX	8/11/2006	0.5	1	SOIL	FS			X			
On Site	SS-016	MPSS01600201XX	8/11/2006	1	1.5	SOIL	FS			X			
On Site	SS-016	MPSS01600301XX	8/11/2006	1.5	2	SOIL	FS			X			
On Site	SS-017	MPSS01700001XD	8/10/2006	0	0.5	SOIL	FD			X			
On Site	SS-017	MPSS01700001XX	8/10/2006	0	0.5	SOIL	FS			X			
On Site	SS-018	MPSS01800001XX	8/10/2006	0	0.5	SOIL	FS			X			
On Site	SS-019	MPSS01900001XX	8/10/2006	0	0.5	SOIL	FS			X			
On Site	SS-020	MPSS02000001XX	8/10/2006	0	0.5	SOIL	FS			X			
On Site	SS-020	MPSS02000101XX	8/11/2006	0.5	1	SOIL	FS			X			
On Site	SS-020	MPSS02000201XX	8/11/2006	1	1.5	SOIL	FS			X			
On Site	SS-020	MPSS02000301XX	8/11/2006	1.5	2	SOIL	FS			X			
On Site	SS-021	MPSS02100001XX	8/10/2006	0	0.5	SOIL	FS			X			
On Site	SS-022	MPSS02200001XX	8/10/2006	0	0.5	SOIL	FS			X			
On Site	SS-023	MPSS02300001XX	8/10/2006	0	0.5	SOIL	FS			X			
On Site	SS-023	MPSS02300101XD	8/17/2006	0.5	1	SOIL	FD			X			
On Site	SS-023	MPSS02300101XX	8/17/2006	0.5	1	SOIL	FS			X			
On Site	SS-023	MPSS02300201XX	8/17/2006	1	1.5	SOIL	FS			X			
On Site	SS-023	MPSS02300301XX	8/17/2006	1.5	2	SOIL	FS			X			
On Site	SS-024	MPSS02400001XX	8/10/2006	0	0.5	SOIL	FS			X			
On Site	SS-024	MPSS02400101XX	8/17/2006	0.5	1	SOIL	FS			X			
On Site	SS-024	MPSS02400201XX	8/17/2006	1	1.5	SOIL	FS			X			
On Site	SS-024	MPSS02400301XX	8/17/2006	1.5	2	SOIL	FS			X			
On Site	SS-025	MPSS02500001XX	8/10/2006	0	0.5	SOIL	FS			X			
On Site	SS-025	MPSS02500101XX	8/16/2006	0.5	1	SOIL	FS			X			
On Site	SS-025	MPSS02500201XX	8/16/2006	1	1.5	SOIL	FS			X			
On Site	SS-025	MPSS02500301XX	8/16/2006	1.5	2	SOIL	FS			X			
On Site	SS-026	MPSS02600001XX	8/10/2006	0	0.5	SOIL	FS			X			
On Site	SS-027	MPSS02700001XX	8/10/2006	0	0.5	SOIL	FS			X			
On Site	SS-028	MPSS02800001XX	8/10/2006	0	0.5	SOIL	FS			X			
On Site	SS-029	MPSS02900001XX	8/11/2006	0	0.5	SOIL	FS			X			
On Site	SS-030	MPSS03000001XX	8/11/2006	0	0.5	SOIL	FS			X			
On Site	SS-031	MPSS03100001XX	8/11/2006	0	0.5	SOIL	FS			X			
On Site	SS-032	MPSS03200001XX	8/11/2006	0	0.5	SOIL	FS			X			
On Site	SS-033	MPSS03300001XX	8/11/2006	0	0.5	SOIL	FS			X			
On Site	SS-034	MPSS03400001XD	8/11/2006	0	0.5	SOIL	FD			X			
On Site	SS-034	MPSS03400001XX	8/11/2006	0	0.5	SOIL	FS			X			
On Site	SS-035	MPSS03500001XD	8/16/2006	0	0.5	SOIL	FD			X			
On Site	SS-035	MPSS03500001XX	8/16/2006	0	0.5	SOIL	FS			X			
On Site	SS-036	MPSS03600001XX	8/16/2006	0	0.5	SOIL	FS			X			
On Site	SS-037	MPSS03700001XX	8/16/2006	0	0.5	SOIL	FS			X			
On Site	SS-038	MPSS03800001XX	8/16/2006	0	0.5	SOIL	FS			X			
On Site	SS-039	MPSS03900001XX	8/16/2006	0	0.5	SOIL	FS			X			
On Site	SS-040	MPSS04000001XX	8/16/2006	0	0.5	SOIL	FS			X			
On Site	SS-041	MPSS04100001XX	8/16/2006	0	0.5	SOIL	FS			X			
On Site	SS-042	MPSS04200001XX	8/16/2006	0	0.5	SOIL	FS			X			
On Site	SS-043	MPSS04300001XX	8/16/2006	0	0.5	SOIL	FS			X			
On Site	SS-044	MPSS04400001XX	8/16/2006	0	0.5	SOIL	FS			X			
On Site	SS-045	MPSS04500001XX	8/16/2006	0	0.5	SOIL	FS			X			
On Site	SS-045	MPSS04500101XX	8/21/2006	0.5	1	SOIL	FS			X			
On Site	SS-045	MPSS04500201XX	8/21/2006	1	1.5	SOIL	FS			X			
On Site	SS-045	MPSS04500301XX	8/21/2006	1.5	2	SOIL	FS			X			
On Site	SS-046	MPSS04600001XX	8/16/2006	0	0.5	SOIL	FS			X			
On Site	SS-047	MPSS04700001XX	8/16/2006	0	0.5	SOIL	FS			X			
On Site	SS-048	MPSS04800001XX	8/16/2006	0	0.5	SOIL	FS			X			
On Site	SS-049	MPSS04900001XX	8/16/2006	0	0.5	SOIL	FS			X			
On Site	SS-050	MPSS05000001XX	8/16/2006	0	0.5	SOIL	FS			X			
On Site	SS-050	MPSS05000101XX	8/16/2006	0.5	1	SOIL	FS			X			
On Site	SS-050	MPSS05000201XX	8/16/2006	1	1.5	SOIL	FS			X			
On Site	SS-050	MPSS05000301XX	8/16/2006	1.5	2	SOIL	FS			X			
On Site	SS-051	MPSS05100001XX	8/16/2006	0	0	SOIL	FS			X			
On Site	SS-051	MPSS05100101XX	8/16/2006	0.5	1	SOIL	FS			X			
On Site	SS-051	MPSS05100201XX	8/16/2006	1	1.5	SOIL	FS			X			
On Site	SS-051	MPSS05100301XX	8/16/2006	1.5	2	SOIL	FS			X			
On Site	SS-052	MPSS05200001XX	8/16/2006	0	0.5	SOIL	FS			X			
On Site	SS-052	MPSS05200101XX	8/16/2006	0.5	1	SOIL	FS			X			
On Site	SS-052	MPSS05200201XX	8/16/2006	1	1.5	SOIL	FS			X			
On Site	SS-052	MPSS05200301XX	8/16/2006	1.5	2	SOIL	FS			X			
On Site	SS-053	MPSS05300001XX	8/16/2006	0	0.5	SOIL	FS			X			
On Site	SS-053	MPSS05300101XX	8/16/2006	0	0.5	SOIL	FS			X			
On Site	SS-053	MPSS05300201XX	8/16/2006	0.5	1	SOIL	FS			X			
On Site	SS-053	MPSS05300301XX	8/16/2006	1	1.5	SOIL	FS			X			
On Site	SS-054	MPSS05400001XX	8/17/2006	0	0.5	SOIL	FS			X			

Table 4.1: Summary of RI and Supplemental Investigation Samples

Sample Type	Location	Sample ID	Sample Date	Top Depth	Bottom Depth	Media	Qc Code	VOCs	SVOCs	PCBs	Metals	TOC	Lipids
On Site	SS-054	MPSS05400101XX	8/17/2006	0.5	1	SOIL	FS			X			
On Site	SS-054	MPSS05400201XX	8/17/2006	1	1.5	SOIL	FS			X			
On Site	SS-054	MPSS05400301XX	8/17/2006	1.5	2	SOIL	FS			X			
On Site	SS-055	MPSS05500001XX	8/17/2006	0	0.5	SOIL	FS			X			
On Site	SS-055	MPSS05500101XX	8/17/2006	0.5	1	SOIL	FS			X			
On Site	SS-055	MPSS05500201XX	8/17/2006	1	1.5	SOIL	FS			X			
On Site	SS-055	MPSS05500301XX	8/17/2006	1.5	2	SOIL	FS			X			
On Site	SS-056	MPSS05600001XX	8/17/2006	0	0.5	SOIL	FS			X			
On Site	SS-056	MPSS05600101XX	8/17/2006	0.5	1	SOIL	FS			X			
On Site	SS-056	MPSS05600201XX	8/17/2006	1	1.5	SOIL	FS			X			
On Site	SS-056	MPSS05600301XX	8/17/2006	1.5	2	SOIL	FS			X			
On Site	SS-057	MPSS05700001XX	8/17/2006	0	0.5	SOIL	FS			X			
On Site	SS-057	MPSS05700101XX	8/17/2006	0.5	1	SOIL	FS			X			
On Site	SS-057	MPSS05700201XX	8/17/2006	1	1.5	SOIL	FS			X			
On Site	SS-057	MPSS05700301XX	8/17/2006	1.5	2	SOIL	FS			X			
On Site	SS-058	MPSS05800001XD	8/17/2006	0	0.5	SOIL	FD			X			
On Site	SS-058	MPSS05800001XX	8/17/2006	0	0.5	SOIL	FS			X			
On Site	SS-059	MPSS05900001XX	8/17/2006	0	0.5	SOIL	FS			X			
On Site	SS-060	MPSS06000001XD	8/17/2006	0	0.5	SOIL	FD			X			
On Site	SS-060	MPSS06000001XX	8/17/2006	0	0.5	SOIL	FS			X			
On Site	SS-060	MPSS06000101XX	8/17/2006	0.5	1	SOIL	FS			X			
On Site	SS-061	MPSS06100001XX	8/17/2006	0	0.5	SOIL	FS			X			
On Site	SS-061	MPSS06100101XX	8/17/2006	0.5	1	SOIL	FS			X			
On Site	SS-061	MPSS06100201XX	8/17/2006	1	1.5	SOIL	FS			X			
On Site	SS-061	MPSS06100301XX	8/17/2006	1.5	2	SOIL	FS			X			
On Site	SS-062	MPSS06200001XX	8/21/2006	0	0.5	SOIL	FS			X			
On Site	SS-063	MPSS06300001XX	8/21/2006	0	0.5	SOIL	FS			X			
On Site	SS-064	MPSS06400001XX	8/21/2006	0	0.5	SOIL	FS			X			
On Site	SS-065	MPSS06500001XX	8/21/2006	0	0.5	SOIL	FS			X			
On Site	SS-066	MPSS06600001XX	8/21/2006	0.5	1	SOIL	FS			X			
On Site	SS-067	MPSS06700001XD	8/21/2006	0	0.5	SOIL	FD			X			
On Site	SS-067	MPSS06700001XX	8/21/2006	0	0.5	SOIL	FS			X			
On Site	SS-068	MPSS06800001XX	8/21/2006	0	0.5	SOIL	FS			X			
On Site	SS-069	MPSS06900001XX	8/21/2006	0	0.5	SOIL	FS			X			
On Site	SS-070	MPSS07000001XX	8/21/2006	0	0.5	SOIL	FS			X			
On Site	SS-071	MPSS07100001XX	8/21/2006	0	0.5	SOIL	FS			X			
On Site	SS-072	MPSS07200001XX	8/21/2006	0	0.5	SOIL	FS			X			
On Site	SS-074	MPSS07400001XX	8/22/2006	0	0.5	SOIL	FS			X			
On Site	SS-075	MPSS07500001XX	8/22/2006	0	0.5	SOIL	FS			X			
On Site	SS-076	MPSS07600001XX	8/22/2006	0	0.5	SOIL	FS			X			
On Site	SS-077	MPSS07700001XX	8/22/2006	0	0.5	SOIL	FS			X			
On Site	SS-078	MPSS07800001XX	8/22/2006	0	0.5	SOIL	FS			X			
On Site	SS-079	MPSS07900001XX	8/22/2006	0	0.5	SOIL	FS			X			
On Site	SS-080	MPSS08000001XX	8/21/2006	0	0.5	SOIL	FS			X			
On Site	SS-081	MPSS08100001XD	8/22/2006	0	0.5	SOIL	FD			X			
On Site	SS-081	MPSS08100001XX	8/22/2006	0	0.5	SOIL	FS			X			
On Site	SS-082	MPSS08200001XX	8/22/2006	0	0.5	SOIL	FS			X			
On Site	SS-083	MPSS08300001XX	8/22/2006	0	0.5	SOIL	FS			X			
On Site	SS-084	MPSS08400001XX	8/22/2006	0	0.5	SOIL	FS			X			
On Site	SS-085	MPSS08500001XX	8/22/2006	0	0.5	SOIL	FS			X			
On Site	SS-086	MPSS08600001XX	8/22/2006	0	0.5	SOIL	FS			X			
On Site	SS-087	MPSS08700001XX	8/22/2006	0	0.5	SOIL	FS			X			
On Site	SS-088	MPSS08800001XX	8/22/2006	0	0.5	SOIL	FS			X			
On Site	SS-089	MPSS08900001XX	8/21/2006	0	0.5	SOIL	FS			X			
On Site	SS-090	MPSS09000001XX	8/22/2006	0	0.5	SOIL	FS			X			
On Site	SS-091	MPSS09100001XX	8/22/2006	0	0.5	SOIL	FS			X			
On Site	SS-092	MPSS09200001XX	8/22/2006	0	0.5	SOIL	FS			X			
On Site	SS-093	MPSS09300001XX	8/22/2006	0	0.5	SOIL	FS			X			
PHASE I - TEST PIT SAMPLES													
On Site	TP-011	MPTP01100201XX	8/15/2006	4	4.5	SOIL	FS			X			
On Site	TP-012	MPTP01200301XX	8/15/2006	3	3.5	SOIL	FS			X			
PHASE I - WASTE CHARACTERIZATION SAMPLES													
On Site	WC-001	WC01	8/9/2006			SOIL	FS			X			
On Site	WC-002	WC02	8/9/2006			SOIL	FS			X			
OFF-SITE SAMPLES													
PHASE II - PISCES SAMPLING													
Off Site	BS-01	MPBSXX1XXX07X1	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-01	MPBSXX1XXX07X2	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-02	MPBSXX2XXX07X1	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-02	MPBSXX2XXX07X2	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-03	MPBSXX3XXX07X1	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-03	MPBSXX3XXX07X2	11/6/2007	0.5	1.5	P	FS			X			

Prepared by: BJS 1/12/2009
Checked by: RTB 1/12/2009
Revised by: RTB 6/1/2009

Table 4.1: Summary of RI and Supplemental Investigation Samples

Sample Type	Location	Sample ID	Sample Date	Top Depth	Bottom Depth	Media	Qc Code	VOCs	SVOCs	PCBs	Metals	TOC	Lipids
Off Site	BS-04	MPBSXX4XXX07X1	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-04	MPBSXX4XXX07X2	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-05	MPBSXX5XXX07X1	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-05	MPBSXX5XXX07X2	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-06	MPBSXX6XXX07X1	11/5/2007	0.5	1.5	P	FS			X			
Off Site	BS-06	MPBSXX6XXX07X2	11/5/2007	0.5	1.5	P	FS			X			
Off Site	BS-07	MPBSXX7XXX07X1	11/5/2007	0.5	1.5	P	FS			X			
Off Site	BS-07	MPBSXX7XXX07X2	11/5/2007	0.5	1.5	P	FS			X			
Off Site	BS-08	MPBSXX8XXX07X1	11/5/2007	0.5	1.5	P	FS			X			
Off Site	BS-08	MPBSXX8XXX07X2	11/5/2007	0.5	1.5	P	FS			X			
Off Site	BS-09	MPBSXX9XXX07X1	11/5/2007	0.5	1.5	P	FS			X			
Off Site	BS-09	MPBSXX9XXX07X2	11/5/2007	0.5	1.5	P	FS			X			
Off Site	BS-10	MPBSX10XXX07X1	11/5/2007	0.5	1.5	P	FS			X			
Off Site	BS-10	MPBSX10XXX07X2	11/5/2007	0.5	1.5	P	FS			X			
Off Site	BS-11	MPBSX11XXX07X1	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-11	MPBSX11XXX07X2	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-12	MPBSX12XXX07X1	11/5/2007	0.5	1.5	P	FS			X			
Off Site	BS-12	MPBSX12XXX07X2	11/5/2007	0.5	1.5	P	FS			X			
Off Site	BS-13	MPBSX13XXX07X1	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-13	MPBSX13XXX07X2	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-14	MPBSX14XXX07X1	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-14	MPBSX14XXX07X2	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-15	MPBSX15XXX07X1	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-15	MPBSX15XXX07X2	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-16	MPBSX16XXX07X2	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-17	MPBSX17XXX07X1	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-17	MPBSX17XXX07X2	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-18	MPBSX18XXX07X1	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-18	MPBSX18XXX07X2	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-19	MPBSX19XXX07X1	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-20	MPBSX20XXX07X1	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-20	MPBSX20XXX07X2	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-21	MPBSX21XXX07X1	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-21	MPBSX21XXX07X2	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-22	MPBSX22XXX07X1	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-22	MPBSX22XXX07X2	11/6/2007	0.5	1.5	P	FS			X			
Off Site	BS-23	MPBSX23XXX07X1	11/7/2007	0.5	1.5	P	FS			X			
Off Site	BS-23	MPBSX23XXX07X2	11/7/2007	0.5	1.5	P	FS			X			
Off Site	BS-24	MPBSX24XXX07X1	11/7/2007	0.5	1.5	P	FS			X			
Off Site	BS-24	MPBSX24XXX07X2	11/7/2007	0.5	1.5	P	FS			X			
Off Site	BS-25	MPBSX25XXX07X1	11/7/2007	0.5	1.5	P	FS			X			
Off Site	BS-25	MPBSX25XXX07X2	11/7/2007	0.5	1.5	P	FS			X			
Off Site	BS-26	MPBSX26XXX07X1	11/7/2007	0.5	1.5	P	FS			X			
Off Site	BS-26	MPBSX26XXX07X2	11/7/2007	0.5	1.5	P	FS			X			
Off Site	BS-28	MPBSX28XXX071	11/7/2007	0.5	1.5	P	FS			X			
Off Site	BS-28	MPBSX28XXX072	11/7/2007	0.5	1.5	P	FS			X			
Off Site	BS-29	MPBSX29XXX07X1	11/7/2007	0.5	1.5	P	FS			X			
Off Site	BS-29	MPBSX29XXX07X2	11/7/2007	0.5	1.5	P	FS			X			
Off Site	BS-31	MPBSX31XXX07X1	11/7/2007	0.5	1.5	P	FS			X			
Off Site	BS-31	MPBSX31XXX07X2	11/7/2007	0.5	1.5	P	FS			X			
Off Site	BS-32	MPBSX32XXX07X1	11/7/2007	0.5	1.5	P	FS			X			
Off Site	BS-32	MPBSX32XXX07X2	11/7/2007	0.5	1.5	P	FS			X			
PHASE II - BACKFILL SOIL CHARACTERIZATION SAMPLES													
Off Site	BURROW SAMPLE 1	BURROW SAMPLE 1	11/26/2007			SOIL	FS	X	X	X	X		
Off Site	BURROW SAMPLE 2	BURROW SAMPLE 2	11/26/2007			SOIL	FS	X	X	X	X		
PHASE I - PIEZOMETER GROUNDWATER SAMPLES													
Off Site	DP-001	MPDP00100801XX	8/24/2006	0	8	GW	FS	X	X	X			
Off Site	DP-002	MPDP00201001XX	8/24/2006	0	10	GW	FS	X	X	X			
Off Site	DP-003	MPDP00300601XX	8/24/2006	0	6	GW	FS	X	X	X			
Off Site	DP-004	MPDP00400901XX	8/24/2006	0	9	GW	FS	X					
Off Site	DP-005	MPDP00500701XD	8/24/2006	0	7	GW	FD	X	X	X			
Off Site	DP-005	MPDP00500701XX	8/24/2006	0	7	GW	FS	X	X	X			
Off Site	DP-006	MPDP00600601XX	8/24/2006	0	6	GW	FS	X	X	X			
Off Site	DP-007	MPDP00700801XX	8/24/2006	0	8	GW	FS	X	X	X			
Off Site	DP-008	MPDP00800801XX	8/25/2006	0	8	GW	FS	X	X	X			
PHASE II - PIEZOMETER GROUNDWATER SAMPLES													
Off Site	DP-001	MPPZXX1XXX07XX	11/5/2007	8	8	GW	FS				X		
Off Site	DP-004	MPPZXX4XXX07XX	11/6/2007	10	10	GW	FS				X		
Off Site	DP-005	MPPZXX5XXX07XX	11/6/2007	7	7	GW	FS				X		
PHASE I - FILL PILE SOIL SAMPLES													
Off Site	FP-001	MPFP00100301XD	8/15/2006	2.5	3	SOIL	FD	X	X	X	X		
Off Site	FP-001	MPFP00100301XX	8/15/2006	2.5	3	SOIL	FS	X	X	X	X		

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Revised by: RTB 6/1/2009

Table 4.1: Summary of RI and Supplemental Investigation Samples

Sample Type	Location	Sample ID	Sample Date	Top Depth	Bottom Depth	Media	Qc Code	VOCs	SVOCs	PCBs	Metals	TOC	Lipids
Off Site	FP-002	MPFP00200301XX	8/15/2006	2.5	3	SOIL	FS		X	X	X		
Off Site	FP-003	MPFP00300301XX	8/15/2006	2.5	3	SOIL	FS		X	X	X		
Off Site	FP-004	MPFP00400301XX	8/15/2006	2.5	3	SOIL	FS		X	X	X		
Off Site	FP-005	MPFP00500301XX	8/16/2006	2.5	3	SOIL	FS		X	X	X		
Off Site	FP-006	MPFP00600301XX	8/16/2006	2.5	3	SOIL	FS		X	X	X		
Off Site	FP-007	MPFP00700301XX	8/16/2006	2.5	3	SOIL	FS	X	X	X	X		
Off Site	FP-008	MPFP00800301XX	8/16/2006	3	3.5	SOIL	FS		X	X	X		
Off Site	FP-009	MPFP00900301XX	8/16/2006	1.5	2	SOIL	FS		X	X	X		
Off Site	FP-010	MPFP01000201XX	8/16/2006	1.5	2	SOIL	FS		X	X	X		
Off Site	FP-011	MPFP01100201XX	8/16/2006	1.5	2	SOIL	FS	X	X	X	X		
Off Site	FP-012	MPFP01200301XD	8/16/2006	2.5	3	SOIL	FD		X	X	X		
Off Site	FP-012	MPFP01200301XX	8/16/2006	2.5	3	SOIL	FS		X	X	X		
Off Site	FP-013	MPFP01300201XX	8/17/2006	1.5	2	SOIL	FS	X	X	X	X		
PHASE I - TISSUE SAMPLES													
Off Site	Loc_1	MDFF-1-1-BT	10/26/2006			TIS	FS			X			X
Off Site	Loc_1	MDFF-1-2-BT	10/26/2006			TIS	FS			X			X
Off Site	Loc_1	MDFF-1-3-BT	10/26/2006			TIS	FS			X			X
Off Site	Loc_1	MDFF-1-4-BT	11/7/2006			TIS	FS			X			X
Off Site	Loc_1	MDFF-1-5-BT	11/7/2006			TIS	FS			X			X
Off Site	Loc_1	MDWF-1-1-SC	10/26/2006			TIS	FS			X			X
Off Site	Loc_1	MDWF-1-2-BT	11/7/2006			TIS	FS			X			X
Off Site	Loc_1	MDWF-1-3-BT	11/7/2006			TIS	FS			X			X
Off Site	Loc_1	MDWF-1-4-SC	11/7/2006			TIS	FS			X			X
Off Site	Loc_1	MDWF-1-5-SC	11/7/2006			TIS	FS			X			X
Off Site	Loc_1	MDWF-1-6-SC	11/7/2006			TIS	FS			X			X
Off Site	Loc_1	MDWF-1-7-SC	11/7/2006			TIS	FS			X			X
Off Site	Loc_2	MDCF-2-1-CF	10/26/2006			TIS	FS			X			X
Off Site	Loc_2	MDWF-2-1-WS	10/26/2006			TIS	FS			X			X
Off Site	Loc_2	MDWF-2-2-WS	10/26/2006			TIS	FS			X			X
Off Site	Loc_2	MDWF-2-3-BD	10/26/2006			TIS	FS			X			X
Off Site	Loc_2	MDWF-2-4-BD	10/26/2006			TIS	FS			X			X
Off Site	Loc_2	MDWF-2-5-BD	10/26/2006			TIS	FS			X			X
Off Site	Loc_2	MDWF-2-6-BT	10/26/2006			TIS	FS			X			X
Off Site	Loc_2A	MDWF-2A-1-BT	11/7/2006			TIS	FS			X			X
Off Site	Loc_3	MDCF-3-1-CF	10/27/2006			TIS	FS			X			X
Off Site	Loc_3	MDCF-3-2-CF	11/6/2006			TIS	FS			X			X
Off Site	Loc_3	MDCF-3-3-CF	11/6/2006			TIS	FS			X			X
Off Site	Loc_3	MDFF-3-1-BT	10/27/2006			TIS	FS			X			X
Off Site	Loc_3	MDFF-3-2-BT	10/27/2006			TIS	FS			X			X
Off Site	Loc_3	MDFF-3-3-BT	10/27/2006			TIS	FS			X			X
Off Site	Loc_3	MDFF-3-4-BT	11/6/2006			TIS	FS			X			X
Off Site	Loc_3	MDFF-3-5-BT	11/6/2006			TIS	FS			X			X
Off Site	Loc_3	MDWF-3-1-BT	10/27/2006			TIS	FS			X			X
Off Site	Loc_3	MDWF-3-2-SC	11/6/2006			TIS	FS			X			X
Off Site	Loc_3	MDWF-3-3-SC	11/6/2006			TIS	FS			X			X
Off Site	Loc_3	MDWF-3-4-SC	11/6/2006			TIS	FS			X			X
Off Site	Loc_3	MDWF-3-5-BT	11/6/2006			TIS	FS			X			X
Off Site	Loc_4	MDCF-4-1-CF	10/27/2006			TIS	FS			X			X
Off Site	Loc_4	MDCF-4-2-CF	11/7/2006			TIS	FS			X			X
Off Site	Loc_4	MDCF-4-3-CF	11/7/2006			TIS	FS			X			X
Off Site	Loc_4	MDFF-4-1-BT	10/27/2006			TIS	FS			X			X
Off Site	Loc_4	MDFF-4-2-BT	10/27/2006			TIS	FS			X			X
Off Site	Loc_4	MDFF-4-3-BT	10/27/2006			TIS	FS			X			X
Off Site	Loc_4	MDFF-4-4-BT	10/27/2006			TIS	FS			X			X
Off Site	Loc_4	MDFF-4-5-BT	10/27/2006			TIS	FS			X			X
Off Site	Loc_4	MDWF-4-10-SC	11/7/2006			TIS	FS			X			X
Off Site	Loc_4	MDWF-4-5-BT	10/27/2006			TIS	FS			X			X
Off Site	Loc_4	MDWF-4-6-BT	11/7/2006			TIS	FS			X			X
Off Site	Loc_4	MDWF-4-7-SC	11/7/2006			TIS	FS			X			X
Off Site	Loc_4	MDWF-4-8-SC	11/7/2006			TIS	FS			X			X
Off Site	Loc_4	MDWF-4-9-SC	11/7/2006			TIS	FS			X			X
Off Site	Loc_5	MDCF-5-1-CF	10/27/2006			TIS	FS			X			X
Off Site	Loc_5	MDCF-5-2-CF	11/7/2006			TIS	FS			X			X
Off Site	Loc_5	MDCF-5-3-CF	11/7/2006			TIS	FS			X			X
Off Site	Loc_5	MDCF-5-4-CF	11/7/2006			TIS	FS			X			X
Off Site	Loc_5	MDFF-5-1-BT	10/27/2006			TIS	FS			X			X
Off Site	Loc_5	MDFF-5-2-BT	10/27/2006			TIS	FS			X			X
Off Site	Loc_5	MDFF-5-3-BT	10/27/2006			TIS	FS			X			X
Off Site	Loc_5	MDFF-5-4-BT	10/27/2006			TIS	FS			X			X
Off Site	Loc_5	MDFF-5-5-BT	10/27/2006			TIS	FS			X			X
Off Site	Loc_5	MDWF-5-1-SC	10/27/2006			TIS	FS			X			X
Off Site	Loc_5	MDWF-5-2-SC	10/27/2006			TIS	FS			X			X

Table 4.1: Summary of RI and Supplemental Investigation Samples

Sample Type	Location	Sample ID	Sample Date	Top Depth	Bottom Depth	Media	Qc Code	VOCs	SVOCs	PCBs	Metals	TOC	Lipids
Off Site	Loc_5	MDWF-5-4-BT	10/27/2006			TIS	FS			X			X
Off Site	Loc_5	MDWF-5-5-WS	10/27/2006			TIS	FS			X			X
Off Site	Loc_5	MDWF-5-6-WS	11/7/2006			TIS	FS			X			X
Off Site	Loc_5	MDWF-5-7-BD	11/7/2006			TIS	FS			X			X
Off Site	Loc_5	MDWF-5-8-SC	11/7/2006			TIS	FS			X			X
Off Site	QC	NY FISH SRM #845	12/26/2006			TIS	PE			X			X
PHASE II - GROUNDWATER MONITORING WELL SAMPLES													
Off Site	MW-001	MPMWXX1XXX07XX	11/6/2007	14	14	GW	FS			X	X		
Off Site	MW-002	MPMWXX2XXX07XX	11/6/2007	9	9	GW	FS			X	X		
Off Site	MW-003	MPMWXX3XXX07XX	11/7/2007	11	11	GW	FS			X	X		
Off Site	MW-004	MPMWXX4XXX07XX	11/7/2007			GW	FS			X			
Off Site	MW-005	MPMWXX5XXX07XD	11/6/2007			GW	FD			X	X		
Off Site	MW-005	MPMWXX5XXX07XX	11/6/2007			GW	FS			X	X		
PHASE I - EQUIPMENT BLANKS													
Off Site	QC	EB01	12/13/2006			BW	EB		X	X			
Off Site	QC	MPFP00100001EB	8/17/2006	0	0	BW	EB	X	X	X	X		
Off Site	QC	MPSS00100002EB	8/17/2006	0	0	BW	EB	X	X	X			
Off Site	QC	MPSS00100003EB	8/25/2006	0	0	BW	EB		X	X			
PHASE II - EQUIPMENT BLANKS													
Off Site	QC	MPFB507	11/9/2007			BW	EB			X			
Off Site	QC	MPFBXX1XXX07XX	10/25/2007			BW	EB			X			
Off Site	QC	MPFBXX2XXX07XX	10/26/2007			BW	EB			X			
Off Site	QC	MPFBXX3XXX07XX	10/26/2007			BW	EB			X			
Off Site	QC	MPFBXX4XXX07XX	11/7/2007			BW	EB			X			
PHASE I - TRIP BLANKS													
Off Site	QC	TB-03	8/16/2006	0	0	BW	TB	X					
Off Site	QC	TB-04	8/25/2006	0	0	BW	TB	X					
Off Site	QC	TRIP BLANK	8/14/2006	0	0	BW	TB	X					
Off Site	QC	TRIP BLANK TB-04	8/17/2006	0	0	BW	TB	X					
Off Site	QC	TRIP BLANK-TB02	8/15/2006	0	0	BW	TB	X					
PHASE II - TRIP BLANKS													
Off Site	QC	MPTBXX1XXX07XX	10/26/2007			NA-S	TB	X					
PHASE I - SOIL BORING SAMPLES													
Off Site	MW-002	MPMW002XX407XX	10/25/2007	4	4.5	SOIL	FS			X			
Off Site	SB-002	MPSB00200301XX	8/22/2006	1	2.5	SOIL	FS			X			
Off Site	SB-004	MPSB00400401XX	8/22/2006	2.8	4	SOIL	FS			X			
Off Site	SB-007	MPSB00700701XX	8/22/2006	2.6	4	SOIL	FS			X			
Off Site	SB-010	MPSB01000001XX	8/23/2006	0	0.5	SOIL	FS		X	X			
Off Site	SB-011	MPSB01100001XX	8/23/2006	0	0.5	SOIL	FS		X	X			
Off Site	SB-011	MPSB01100101XX	8/23/2006	0.5	1.5	SOIL	FS			X			
Off Site	SB-014	MPSB01400001XX	8/23/2006	0	0.5	SOIL	FS		X	X			
Off Site	SB-014	MPSB01400401XX	8/23/2006	2	4	SOIL	FS		X	X			
Off Site	SB-018	MPSB01800201XX	8/23/2006	2	3	SOIL	FS			X			
Off Site	SB-019	MPSB01900101XX	8/23/2006	0	1	SOIL	FS			X			
Off Site	SB-019	MPSB01900301XX	8/23/2006	1	3	SOIL	FS			X			
Off Site	SB-021	MPSB02100101XX	8/23/2006	1	2	SOIL	FS		X	X			
Off Site	SB-022	MPSB02200701XX	8/23/2006	7	8	SOIL	FS			X			
Off Site	SB-023	MPSB02300401XX	8/23/2006	0	4	SOIL	FS			X			
Off Site	SB-023	MPSB02300601XX	8/23/2006	4	6	SOIL	FS		X	X			
Off Site	SB-024	MPSB02400201XX	8/23/2006	2	4	SOIL	FS		X	X			
Off Site	SB-024	MPSB02400701XX	8/23/2006	4.5	6.8	SOIL	FS		X	X			
Off Site	SB-025	MPSB02501001XX	8/23/2006	9.2	10.4	SOIL	FS			X			
Off Site	SB-026	MPSB02600301XX	8/23/2006	3	4	SOIL	FS		X	X			
Off Site	SB-027	MPSB02700101XX	8/23/2006	0	1	SOIL	FS		X	X			
Off Site	SB-027	MPSB02700901XX	8/23/2006	8	9	SOIL	FS		X	X			
Off Site	SB-029	MPSB02900101XX	8/24/2006	1	3	SOIL	FS			X			
Off Site	SB-032	MPSB03200101XX	8/24/2006	1	3	SOIL	FS			X			
Off Site	SB-033	MPSB03301001XX	8/24/2006	10	11	SOIL	FS			X			
Off Site	SB-034	MPSB03400301XX	8/24/2006	3	4	SOIL	FS		X	X			
Off Site	SB-041	MPSB04100901XX	8/24/2006	9	11	SOIL	FS		X	X			
PHASE II - SOIL BORING SAMPLES													
Off Site	SB-045	MPSB045X1007XX	10/26/2007	10	10.5	SOIL	FS			X			
Off Site	SB-046	MPSB046XX607XX	10/25/2007	6	6.5	SOIL	FS			X			
Off Site	SB-047	MPSB047XX507XX	10/26/2007	5	5.5	SOIL	FS			X			
Off Site	SB-048	MPSB048XX507XX	10/25/2007	5	5.5	SOIL	FS			X			
Off Site	SB-049	MPSB049XX807XX	10/25/2007	8	8.5	SOIL	FS			X			
Off Site	SB-050	MPSB050XX407XX	10/25/2007	4	4.5	SOIL	FS			X			
Off Site	SB-051	MPSB051XX507XX	10/25/2007	5	5.5	SOIL	FS			X			
Off Site	SB-051B	MPSB51BXX707XX	10/25/2007	7	7.5	SOIL	FS	X	X	X			
Off Site	SB-052	MPSB052X1207XX	10/22/2007	12	12.5	SOIL	FS			X			
Off Site	SB-053	MPSB053XX507XX	10/26/2007	5	5.5	SOIL	FS			X			
Off Site	SB-054	MPSB054XX507XX	10/26/2007	5	5.5	SOIL	FS			X			

Prepared by: BJS 1/12/2009
Checked by: RTB 1/12/2009
Revised by: RTB 6/1/2009

Table 4.1: Summary of RI and Supplemental Investigation Samples

Sample Type	Location	Sample ID	Sample Date	Top Depth	Bottom Depth	Media	Qc Code	VOCs	SVOCs	PCBs	Metals	TOC	Lipids
Off Site	SB-055	MPSB055XX307XX	10/26/2007	3	3.5	SOIL	FS			X			
Off Site	SB-056	MPSB056XX307XX	10/25/2007	3	3.5	SOIL	FS			X			
Off Site	SB-057	MPSB057XX307XX	10/25/2007	3	3.5	SOIL	FS			X			
Off Site	SB-058	MPSB058XX207XX	10/23/2007	2	2.5	SOIL	FS			X			
Off Site	SB-058	MPSB058XX607XX	10/26/2007	6	6.5	SOIL	FS			X			
Off Site	SB-059	MPSB059XX607XX	10/22/2007	6	6.5	SOIL	FS			X			
Off Site	SB-060	MPSB060XX407XX	10/22/2007	4	4.5	SOIL	FS			X			
Off Site	SB-061	MPSB061XX507XX	10/22/2007	5	5.5	SOIL	FS			X			
Off Site	SB-062	MPSB062XX307XX	10/22/2007	3	3.5	SOIL	FS			X			
Off Site	SB-063	MPSB063X1007XX	10/26/2007	10	10.5	SOIL	FS			X			
Off Site	SB-063	MPSB063XX507XX	10/26/2007	5	5.5	SOIL	FS			X			
Off Site	SB-064	MPSB064X1007XX	10/26/2007	10	10.5	SOIL	FS			X			
Off Site	SB-064	MPSB064XX707XX	10/26/2007	7	7.5	SOIL	FS			X			
Off Site	SB-065	MPSB065X1007XX	10/26/2007	10	10.5	SOIL	FS			X			
Off Site	SB-065	MPSB065XX307XD	10/26/2007	3	3.5	SOIL	FD			X			
Off Site	SB-065	MPSB065XX307XX	10/26/2007	3	3.5	SOIL	FS			X			
Off Site	SB-068	MPSB068XX207XX	11/15/2007	2	2.5	SOIL	FS			X			
Off Site	SB-070	MPSB070XXX07XX	11/15/2007	0	0.5	SOIL	FS			X			
Off Site	SB-071	MPSB071XX107XX	11/15/2007	1.5	2	SOIL	FS			X			
PHASE I - SEDIMENT SAMPLES													
Off Site	SD-001	MPSD00100001XX	12/12/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-002	MPSD00200001XX	12/12/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-003	MPSD00300001XX	12/12/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-004	MPSD00400001XX	12/12/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-005	MPSD00500001XX	12/12/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-006	MPSD00600001XX	12/12/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-007	MPSD00700001XX	12/12/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-008	MPSD00800001XX	12/12/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-009	MPSD00900001XX	12/12/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-010	MPSD01000001XX	12/12/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-011	MPSD01100001XD	12/12/2006	0	0.5	SED	FD		X	X		X	
Off Site	SD-011	MPSD01100001XX	12/12/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-012	MPSD01200001XX	12/12/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-013	MPSD01300001XX	12/12/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-014	MPSD01400001XX	12/12/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-014	MPSD01400101XX	12/12/2006	0.5	1	SED	FS		X	X		X	
Off Site	SD-015	MPSD01500001XX	12/12/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-016	MPSD01600001XX	12/12/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-017	MPSD01700001XX	12/12/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-018	MPSD01800001XX	12/12/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-019	MPSD01900001XX	12/12/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-020	MPSD02000001XX	12/12/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-021	MPSD02100001XX	12/12/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-022	MPSD02200001XX	12/13/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-023	MPSD02300001XX	12/13/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-024	MPSD02400001XX	12/13/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-025	MPSD02500001XX	12/13/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-026	MPSD02600001XX	12/13/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-027	MPSD02700001XX	12/13/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-028	MPSD02800001XX	12/13/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-028	MPSD02800101XX	12/13/2006	0.5	1	SED	FS		X	X		X	
Off Site	SD-029	MPSD02900001XX	12/13/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-030	MPSD03000001XX	12/13/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-031	MPSD03100001XX	12/13/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-032	MPSD03200001XX	12/13/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-033	MPSD03300001XX	12/13/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-034	MPSD03400001XD	12/13/2006	0	0.5	SED	FD		X	X		X	
Off Site	SD-034	MPSD03400001XX	12/13/2006	0	0.5	SED	FS		X	X		X	
Off Site	SD-035	MPSD03500001XX	12/13/2006	0	0.5	SED	FS		X	X		X	
Off Site	SED-008	MPSD00800001XX	8/23/2006	0	0.5	SED	FS			X			
Off Site	SED-012	MPSD01200001XX	8/23/2006	0	0.25	SED	FS			X			
Off Site	SED-018	MPSD01800001XX	8/23/2006	0	0.25	SED	FS			X			
PHASE II - SEDIMENT SAMPLES													
Off Site	SED-BS11	MPSEDX1XXX07XX	11/7/2007	0	0.2	SED	FS			X			
Off Site	SED-BS24	MPSEDX3XXX07XX	11/7/2007	0	0.1	SED	FS			X			
Off Site	SED-BS26	MPSEDX2XXX07XD	11/7/2007	0	0.2	SED	FD			X			
Off Site	SED-BS26	MPSEDX2XXX07XX	11/7/2007	0	0.2	SED	FS			X			
Off Site	SED-BS32	MPSEDX4XXX07XX	11/7/2007	0	0.2	SED	FS			X			
IRM - SURFACE SOIL SAMPLES													
Off Site	SG-002	MPSG00200201XX	11/28/2007	2	2.2	SOIL	FS			X			
Off Site	SG-004	MPSG00400201XX	11/26/2007	2	2.2	SOIL	FS			X			
Off Site	SG-007	MPSG00700201XX	11/27/2007	2	2.2	SOIL	FS			X			

Table 4.1: Summary of RI and Supplemental Investigation Samples

Sample Type	Location	Sample ID	Sample Date	Top Depth	Bottom Depth	Media	Qc Code	VOCs	SVOCs	PCBs	Metals	TOC	Lipids
Off Site	SG-008	MPSG00800001XX	11/27/2007	0.5	0.5	SOIL	FS			X			
Off Site	SG-00J	MPSG00J00301XX	12/6/2007	3	3.2	SOIL	FS			X			
Off Site	SG-00J	MPSG00J00301XX DUP	12/6/2007	3	3.2	SOIL	FD			X			
Off Site	SG-011	MPSG01100001XX	11/26/2007	0.5	0.5	SOIL	FS			X			
Off Site	SG-017	MPSG01700001XX	11/27/2007	0.5	0.5	SOIL	FS			X			
Off Site	SG-023	MPSG02300001XX	11/27/2007	0.5	0.5	SOIL	FS			X			
PHASE I - SURFACE SOIL SAMPLES													
Off Site	SS-001	MPSS00100001XX	8/8/2006	0	0.5	SOIL	FS		X	X			
Off Site	SS-001	MPSS00100101XX	8/8/2006	0.5	1	SOIL	FS			X			
Off Site	SS-006	MPSS00600001XX	8/9/2006	0	0.5	SOIL	FS			X			
Off Site	SS-006	MPSS00600301XX	8/9/2006	1.5	2	SOIL	FS			X			
Off Site	SS-009	MPSS00900001XX	8/9/2006	0	0.5	SOIL	FS			X			
Off Site	SS-009	MPSS00900101XX	8/9/2006	0.5	1	SOIL	FS			X			
Off Site	SS-010	MPSS01000101XX	8/9/2006	0.5	1	SOIL	FS		X	X			
Off Site	SS-012	MPSS01200001XX	8/10/2006	0	0.5	SOIL	FS			X			
Off Site	SS-013	MPSS01300001XX	8/10/2006	0	0.5	SOIL	FS		X	X			
Off Site	SS-015	MPSS01500001XX	8/10/2006	0	0.5	SOIL	FS			X			
Off Site	SS-015	MPSS01500101XD	8/11/2006	0	0.5	SOIL	FD		X	X			
Off Site	SS-015	MPSS01500101XX	8/11/2006	0.5	1	SOIL	FS		X	X			
Off Site	SS-016	MPSS01600001XX	8/10/2006	0	0.5	SOIL	FS		X	X			
Off Site	SS-016	MPSS01600301XX	8/11/2006	1.5	2	SOIL	FS			X			
Off Site	SS-020	MPSS02000101XX	8/11/2006	0.5	1	SOIL	FS			X			
Off Site	SS-022	MPSS02200001XX	8/10/2006	0	0.5	SOIL	FS			X			
Off Site	SS-023	MPSS02300101XD	8/17/2006	0.5	1	SOIL	FD			X			
Off Site	SS-023	MPSS02300101XX	8/17/2006	0.5	1	SOIL	FS			X			
Off Site	SS-024	MPSS02400001XX	8/10/2006	0	0.5	SOIL	FS		X	X			
Off Site	SS-024	MPSS02400301XX	8/17/2006	1.5	2	SOIL	FS			X			
Off Site	SS-025	MPSS02500001XX	8/10/2006	0	0.5	SOIL	FS			X			
Off Site	SS-025	MPSS02500101XX	8/16/2006	0.5	1	SOIL	FS			X			
Off Site	SS-025	MPSS02500201XX	8/16/2006	1	1.5	SOIL	FS		X	X			
Off Site	SS-029	MPSS02900001XX	8/11/2006	0	0.5	SOIL	FS			X			
Off Site	SS-040	MPSS04000001XX	8/16/2006	0	0.5	SOIL	FS			X			
Off Site	SS-045	MPSS04500001XX	8/16/2006	0	0.5	SOIL	FS		X	X			
Off Site	SS-051	MPSS05100001XX	8/16/2006	0	0	SOIL	FS			X			
Off Site	SS-051	MPSS05100201XX	8/16/2006	1	1.5	SOIL	FS		X	X			
Off Site	SS-053	MPSS05300001XX	8/16/2006	0	0.5	SOIL	FS			X			
Off Site	SS-054	MPSS05400001XX	8/17/2006	0	0.5	SOIL	FS			X			
Off Site	SS-055	MPSS05500001XX	8/17/2006	0	0.5	SOIL	FS		X	X			
Off Site	SS-055	MPSS05500201XX	8/17/2006	1	1.5	SOIL	FS			X			
Off Site	SS-057	MPSS05700001XX	8/17/2006	0	0.5	SOIL	FS			X			
Off Site	SS-060	MPSS06000001XD	8/17/2006	0	0.5	SOIL	FD			X			
Off Site	SS-060	MPSS06000001XX	8/17/2006	0	0.5	SOIL	FS			X			
Off Site	SS-065	MPSS06500001XX	8/21/2006	0	0.5	SOIL	FS		X	X			
Off Site	SS-072	MPSS07200001XX	8/21/2006	0	0.5	SOIL	FS			X			
Off Site	SS-076	MPSS07600001XX	8/22/2006	0	0.5	SOIL	FS		X	X			
Off Site	SS-080	MPSS08000001XX	8/21/2006	0	0.5	SOIL	FS			X			
Off Site	SS-081	MPSS08100001XD	8/22/2006	0	0.5	SOIL	FD		X	X			
Off Site	SS-081	MPSS08100001XX	8/22/2006	0	0.5	SOIL	FS		X	X			
Off Site	SS-083	MPSS08300001XX	8/22/2006	0	0.5	SOIL	FS		X	X			
Off Site	SS-084	MPSS08400001XX	8/22/2006	0	0.5	SOIL	FS			X			
Off Site	SS-085	MPSS08500001XX	8/22/2006	0	0.5	SOIL	FS		X	X			
Off Site	SS-086	MPSS08600001XX	8/22/2006	0	0.5	SOIL	FS		X	X			
Off Site	SS-088	MPSS08800001XX	8/22/2006	0	0.5	SOIL	FS		X	X			
Off Site	SS-091	MPSS09100001XX	8/22/2006	0	0.5	SOIL	FS			X			
Off Site	SS-092	MPSS09200001XX	8/22/2006	0	0.5	SOIL	FS		X	X			
Off Site	SS-094	MPSS09400001XD	8/25/2006	0	0.2	SOIL	FD		X	X			
Off Site	SS-094	MPSS09400001XX	8/25/2006	0	0.2	SOIL	FS		X	X			
Off Site	SS-095	MPSS09500001XX	8/25/2006	0	0.2	SOIL	FS		X	X			
Off Site	SS-096	MPSS09600001XX	8/25/2006	0	0.2	SOIL	FS		X	X			
Off Site	SS-097	MPSS09700001XX	8/25/2006	0	0.2	SOIL	FS		X	X			
PHASE II - SURFACE SOIL SAMPLES													
Off Site	SS-098	MPSS098XXX07XX	10/26/2007	0	0.2	SOIL	FS			X			
Off Site	SS-099	MPSS099XXX07XX	10/26/2007	0	0.2	SOIL	FS			X			
Off Site	SS-100	MPSS100XXX07XX	10/26/2007	0	0.2	SOIL	FS			X			
Off Site	SS-101	MPSS101XXX07XX	10/26/2007	0	0.2	SOIL	FS			X			
Off Site	SS-102	MPSS102XXX07XX	10/26/2007	0	0.2	SOIL	FS			X			
Off Site	SS-103	MPSS103XXX07XX	10/26/2007	0	0.2	SOIL	FS			X			
Off Site	SS-104	MPSS104XXX07XX	11/15/2007	0	0.2	SOIL	FS			X			
Off Site	SS-105	MPSS105XXX07XX	10/26/2007	0	0.2	SOIL	FS			X			
Off Site	SS-106	MPSS106XXX07XD	10/26/2007	0	0.2	SOIL	FD			X			
Off Site	SS-106	MPSS106XXX07XX	10/26/2007	0	0.2	SOIL	FS			X			
Off Site	SS-107	MPSS107XXX07XX	10/26/2007	0	0.2	SOIL	FS			X			

Prepared by: BJS 1/12/2009
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Table 4.1: Summary of RI and Supplemental Investigation Samples

Sample Type	Location	Sample ID	Sample Date	Top Depth	Bottom Depth	Media	Qc Code	VOCs	SVOCs	PCBs	Metals	TOC	Lipids
Off Site	SS-108	MPSS108XXX07XX	11/8/2007	0	0.5	SOIL	FS			X			
Off Site	SS-109	MPSS109XXX07XX	11/8/2007	0	0.5	SOIL	FS			X			
Off Site	SS-110	MPSS110XXX07XX	11/8/2007	0	0.5	SOIL	FS			X			
Off Site	SS-111	MPSS111XXX07XX	11/8/2007	0	0.5	SOIL	FS			X			
Off Site	SS-112	MPSS112XXX07XX	11/8/2007	0	0.5	SOIL	FS			X			
Off Site	SS-113	MPSS113XXX07XX	11/8/2007	0	0.5	SOIL	FS			X			
Off Site	SS-114	MPSS114XXX07XX	11/8/2007	0	0.5	SOIL	FS			X			
Off Site	SS-115	MPSS115XXX07XD	11/8/2007	0	0.5	SOIL	FD			X			
Off Site	SS-115	MPSS115XXX07XX	11/8/2007	0	0.5	SOIL	FS			X			
Off Site	SS-116	MPSS116XXX07XX	11/8/2007	0	0.5	SOIL	FS			X			
Off Site	SS-117	MPSS117XXX07XX	11/8/2007	0	0.5	SOIL	FS			X			
Off Site	SS-118	MPSS118XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-119	MPSS119XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-120	MPSS120XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-121	MPSS121XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-122	MPSS122XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-123	MPSS123XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-124	MPSS124XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-125	MPSS125XXX07XD	10/25/2007	0	0.5	SOIL	FD			X			
Off Site	SS-125	MPSS125XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-126	MPSS126XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-127	MPSS127XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-128	MPSS128XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-129	MPSS129XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-130	MPSS130XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-131	MPSS131XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-132	MPSS132XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-133	MPSS133XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-134	MPSS134XXX07XX	10/24/2007	0	0.5	SOIL	FS			X			
Off Site	SS-135	MPSS135XXX07XX	10/24/2007	0	0.5	SOIL	FS			X			
Off Site	SS-136	MPSS136XXX07XX	10/24/2007	0	0.5	SOIL	FS			X			
Off Site	SS-137	MPSS137XXX07XX	10/24/2007	0	0.5	SOIL	FS			X			
Off Site	SS-138	MPSS138XXX07XX	10/24/2007	0	0.5	SOIL	FS			X			
Off Site	SS-139	MPSS139XXX07XX	11/15/2007	0.3	1.4	SOIL	FS			X			
Off Site	SS-140	MPSS140XX507XX	11/15/2007	5	5.5	SOIL	FS	X	X	X			
Off Site	SS-140	MPSS140XXX07XX	11/15/2007	0.3	1.7	SOIL	FS			X			
Off Site	SS-141	MPSS141XXX07XX	11/15/2007	0	0.5	SOIL	FS			X			
Off Site	SS-142	MPSS142XXX07XX	11/15/2007	0.5	1.2	SOIL	FS			X			
Off Site	SS-143	MPSS143XXX07XX	11/15/2007	0	1.2	SOIL	FS			X			
Off Site	SS-144	MPSS144XXX07XX	11/15/2007	0	0.5	SOIL	FS			X			
Off Site	SS-145	MPSS145XXX07XX	11/15/2007	0	0.7	SOIL	FS			X			
Off Site	SS-146	MPSS146XXX07XX	11/15/2007	0	0.5	SOIL	FS			X			
Off Site	SS-147	MPSS147XXX07XD	11/15/2007	0	1.5	SOIL	FD			X			
Off Site	SS-147	MPSS147XXX07XX	11/15/2007	0	1.5	SOIL	FS			X			
Off Site	SS-148	MPSS148XXX07XX	11/15/2007	0	1.1	SOIL	FS			X			
Off Site	SS-149	MPSS149XXX07XX	10/24/2007	0	0.5	SOIL	FS			X			
Off Site	SS-150	MPSS150XXX07XX	10/24/2007	0	0.5	SOIL	FS			X			
Off Site	SS-151	MPSS151XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-152	MPSS152XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-153	MPSS153XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-154	MPSS154XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-155	MPSS155XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-156	MPSS156XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-157	MPSS157XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-158	MPSS158XXX07XX	10/25/2007	0	0.5	SOIL	FS			X			
Off Site	SS-159	MPSS159XXX07XX	11/8/2007	0	0.5	SOIL	FS			X			
Off Site	SS-160	MPSS160XXX07XX	11/8/2007	0	0.5	SOIL	FS			X			
Off Site	SS-161	MPSS161XXX07XX	11/8/2007	0	0.5	SOIL	FS			X			
PHASE I - SURFACE WATER SAMPLES													
Off Site	SW-001	MPSW00100001XX	12/12/2006			SW	FS		X	X			
Off Site	SW-002	MPSW00200001XX	12/12/2006			SW	FS		X	X			
Off Site	SW-003	MPSW00300001XX	12/12/2006			SW	FS		X	X			
Off Site	SW-004	MPSW00400001XD	12/12/2006			SW	FD		X	X			
Off Site	SW-004	MPSW00400001XX	12/12/2006			SW	FS		X	X			
Off Site	SW-005	MPSW00500001XX	12/12/2006			SW	FS		X	X			
Off Site	SW-006	MPSW00600001XX	12/12/2006			SW	FS		X	X			
Off Site	SW-007	MPSW00700001XX	12/12/2006			SW	FS		X	X			
Off Site	SW-008	MPSW00800001XX	12/12/2006			SW	FS		X	X			
Off Site	SW-009	MPSW00900001XX	12/13/2006			SW	FS		X	X			
Off Site	SW-010	MPSW01000001XX	12/13/2006			SW	FS		X	X			
Off Site	SW-011	MPSW01100001XX	12/13/2006			SW	FS		X	X			
Off Site	SW-012	MPSW01200001XX	12/13/2006			SW	FS		X	X			

Table 4.1: Summary of RI and Supplemental Investigation Samples

Sample Type	Location	Sample ID	Sample Date	Top Depth	Bottom Depth	Media	Qc Code	VOCs	SVOCs	PCBs	Metals	TOC	Lipids
Off Site	SW-013	MPSW01300001XX	12/13/2006			SW	FS		X	X			
Off Site	SW-014	MPSW01400001XX	12/13/2006			SW	FS		X	X			
Off Site	SW-015	MPSW01500001XX	12/13/2006			SW	FS		X	X			
PHASE I - TEST PIT SOIL SAMPLES													
Off Site	TP-001	MPTP00100301XX	8/14/2006	2.5	3	SOIL	FS		X	X	X		
Off Site	TP-002	MPTP00200201XX	8/14/2006	1.5	2	SOIL	FS	X	X	X			
Off Site	TP-003	MPTP00300201XX	8/14/2006	2	2.5	SOIL	FS	X	X	X			
Off Site	TP-003	MPTP00300301XX	8/14/2006	2	2.5	SOIL	FS	X					
Off Site	TP-005	MPTP00500301XX	8/14/2006	2.5	3	SOIL	FS	X	X	X			
Off Site	TP-006	MPTP00600201XX	8/15/2006	1.5	2	SOIL	FS		X	X	X		
Off Site	TP-007	MPTP00700201XX	8/15/2006	1.5	2	SOIL	FS		X	X	X		
Off Site	TP-008	MPTP00800301XX	8/15/2006	2.5	3	SOIL	FS		X	X	X		
Off Site	TP-009	MPTP00900201XX	8/15/2006	2	2.5	SOIL	FS		X	X	X		
Off Site	TP-010	MPTP01000201XX	8/15/2006	3	3.5	SOIL	FS	X	X	X	X		
Off Site	TP-010	MPTP01000301XX	8/15/2006	4.5	5	SOIL	FS		X	X	X		
Off Site	TP-011	MPTP01100201XX	8/15/2006	4	4.5	SOIL	FS		X	X	X		
Off Site	TP-011	MPTP01100301XX	8/15/2006	9.5	10	SOIL	FS		X	X	X		
Off Site	TP-012	MPTP01200301XX	8/15/2006	3	3.5	SOIL	FS		X	X	X		
2008 SUPPLEMENTAL INVESTIGATION SAMPLES													
Off Site	SD-036	MPSD03600108XX	11/11/2008	1	1.5	SED	FS			X		X	
Off Site	SD-036	MPSD03600108XD	11/11/2008	1	1.5	SED	FD			X			
Off Site	SD-037	MPSD03700108XX	11/11/2008	1	1.5	SED	FS			X		X	
Off Site	SD-038	MPSD03800108XX	11/11/2008	1	1.5	SED	FS			X		X	
Off Site	SD-039	MPSD03900108XX	11/11/2008	1	1.5	SED	FS			X		X	
Off Site	SD-040	MPSD04000108XX	11/11/2008	1	1.5	SED	FS			X		X	
Off Site	SD-041	MPSD04100108XX	11/11/2008	1	1.5	SED	FS			X		X	
Off Site	SD-042	MPSD04200108XX	11/11/2008	1	1.5	SED	FS			X		X	
Off Site	SD-043	MPSD04300108XX	11/11/2008	1	1.5	SED	FS			X		X	
Off Site	SD-044	MPSD04400008XX	11/12/2008	0	0.5	SED	FS			X		X	
Off Site	SD-045	MPSD04500008XX	11/12/2008	0	0.5	SED	FS			X		X	
Off Site	SD-046	MPSD04600008XX	11/12/2008	0	0.5	SED	FS			X		X	
Off Site	SD-047	MPSD04700008XX	11/12/2008	0	0.5	SED	FS			X		X	
Off Site	SD-048	MPSD04800008XX	11/12/2008	0	0.5	SED	FS			X		X	
Off Site	SD-049	MPSD04900008XX	11/12/2008	0	0.5	SED	FS			X		X	
Off Site	SS-162	MPSS162XXX08XX	11/11/2008	0	0.2	SOIL	FS			X			
Off Site	SS-162	MPSS162XXX08XD	11/11/2008	0	0.2	SOIL	FD			X			
Off Site	SS-163	MPSS163XXX08XX	11/11/2008	0	0.2	SOIL	FS			X			
Off Site	SS-164	MPSS164XXX08XX	11/11/2008	0	0.2	SOIL	FS			X			
Off Site	SS-165	MPSS165XXX08XX	11/11/2008	0	0.2	SOIL	FS			X			
Off Site	SS-166	MPSS166XXX08XX	11/11/2008	0	0.2	SOIL	FS			X			
Off Site	SS-167	MPSS167XXX08XX	11/11/2008	0	0.5	SOIL	FS			X			
Off Site	SS-168	MPSS168XXX08XX	11/11/2008	0	0.5	SOIL	FS			X			
Off Site	SS-169	MPSS169XXX08XX	11/11/2008	0	0.5	SOIL	FS			X			
Off Site	SS-170	MPSS170XXX08XX	11/11/2008	0	0.5	SOIL	FS			X			

Notes:

FS = Field Sample
FD = Field Duplicate Sample
VOCs = Volatile Organic Compounds
SVOCs = Semivolatile Organic Compounds
PCBs = Polychlorinated Biphenyls
TOC = Total Organic Carbon
X = Analysis Conducted
NA-S = N/A Solid
BS = Bag Sampler
SED = Sediment
GW = Groundwater
TIS = Tissue
BW = Blank Water (Quality Control)
TB = Trip Blank
SW = Surface Water
FP = Fill Pile
SG = Soil Grab
SB = Soil Boring
SS = Surface Soil
TP = Test Pit
WC = Waste Characterization
DP = Direct Push
LOC = Location
QC = Quality Control
SD = Sediment

Table 4.2: Supplementary Investigation PCB Analytical Results

Location Name	Field Sample ID	Top Depth (ft)	Bottom Depth (ft)	Media	QC Code	Parameter	Result (mg/kg)	Final Qualifier
SD-036	MPSD03600108XD	1	1.5	SED	FD	Aroclor-1016	33	U
	MPSD03600108XD	1	1.5	SED	FD	Aroclor-1221	33	U
	MPSD03600108XD	1	1.5	SED	FD	Aroclor-1232	33	U
	MPSD03600108XD	1	1.5	SED	FD	Aroclor-1242	33	U
	MPSD03600108XD	1	1.5	SED	FD	Aroclor-1248	33	U
	MPSD03600108XD	1	1.5	SED	FD	Aroclor-1254	220	
	MPSD03600108XD	1	1.5	SED	FD	Aroclor-1260	33	U
	MPSD03600108XX	1	1.5	SED	FS	Aroclor-1016	33	U
	MPSD03600108XX	1	1.5	SED	FS	Aroclor-1221	33	U
	MPSD03600108XX	1	1.5	SED	FS	Aroclor-1232	33	U
	MPSD03600108XX	1	1.5	SED	FS	Aroclor-1242	33	U
	MPSD03600108XX	1	1.5	SED	FS	Aroclor-1248	33	U
	MPSD03600108XX	1	1.5	SED	FS	Aroclor-1254	250	
	MPSD03600108XX	1	1.5	SED	FS	Aroclor-1260	33	U
SD-037	MPSD03700108XX	1	1.5	SED	FS	Aroclor-1016	1,700	U
	MPSD03700108XX	1	1.5	SED	FS	Aroclor-1221	1,700	U
	MPSD03700108XX	1	1.5	SED	FS	Aroclor-1232	1,700	U
	MPSD03700108XX	1	1.5	SED	FS	Aroclor-1242	1,700	U
	MPSD03700108XX	1	1.5	SED	FS	Aroclor-1248	1,700	U
	MPSD03700108XX	1	1.5	SED	FS	Aroclor-1254	6,200	
	MPSD03700108XX	1	1.5	SED	FS	Aroclor-1260	1,700	U
SD-038	MPSD03800108XX	1	1.5	SED	FS	Aroclor-1016	170	U
	MPSD03800108XX	1	1.5	SED	FS	Aroclor-1221	170	U
	MPSD03800108XX	1	1.5	SED	FS	Aroclor-1232	170	U
	MPSD03800108XX	1	1.5	SED	FS	Aroclor-1242	170	U
	MPSD03800108XX	1	1.5	SED	FS	Aroclor-1248	170	U
	MPSD03800108XX	1	1.5	SED	FS	Aroclor-1254	1,200	
	MPSD03800108XX	1	1.5	SED	FS	Aroclor-1260	170	U
SD-039	MPSD03900108XX	1	1.5	SED	FS	Aroclor-1016	20	U
	MPSD03900108XX	1	1.5	SED	FS	Aroclor-1221	20	U
	MPSD03900108XX	1	1.5	SED	FS	Aroclor-1232	20	U
	MPSD03900108XX	1	1.5	SED	FS	Aroclor-1242	20	U
	MPSD03900108XX	1	1.5	SED	FS	Aroclor-1248	20	U
	MPSD03900108XX	1	1.5	SED	FS	Aroclor-1254	160	
	MPSD03900108XX	1	1.5	SED	FS	Aroclor-1260	20	U
SD-040	MPSD04000108XX	1	1.5	SED	FS	Aroclor-1016	20	U
	MPSD04000108XX	1	1.5	SED	FS	Aroclor-1221	20	U
	MPSD04000108XX	1	1.5	SED	FS	Aroclor-1232	20	U
	MPSD04000108XX	1	1.5	SED	FS	Aroclor-1242	20	U
	MPSD04000108XX	1	1.5	SED	FS	Aroclor-1248	20	U
	MPSD04000108XX	1	1.5	SED	FS	Aroclor-1254	140	
	MPSD04000108XX	1	1.5	SED	FS	Aroclor-1260	20	U
SD-041	MPSD04100108XX	1	1.5	SED	FS	Aroclor-1016	0.99	U
	MPSD04100108XX	1	1.5	SED	FS	Aroclor-1221	0.99	U
	MPSD04100108XX	1	1.5	SED	FS	Aroclor-1232	0.99	U
	MPSD04100108XX	1	1.5	SED	FS	Aroclor-1242	0.99	U
	MPSD04100108XX	1	1.5	SED	FS	Aroclor-1248	0.99	U
	MPSD04100108XX	1	1.5	SED	FS	Aroclor-1254	10	
	MPSD04100108XX	1	1.5	SED	FS	Aroclor-1260	0.99	U
SD-042	MPSD04200108XX	1	1.5	SED	FS	Aroclor-1016	0.33	U

Table 4.2: Supplementary Investigation PCB Analytical Results

Location Name	Field Sample ID	Top Depth (ft)	Bottom Depth (ft)	Media	QC Code	Parameter	Result (mg/kg)	Final Qualifier
	MPSD04200108XX	1	1.5	SED	FS	Aroclor-1221	0.33	U
	MPSD04200108XX	1	1.5	SED	FS	Aroclor-1232	0.33	U
	MPSD04200108XX	1	1.5	SED	FS	Aroclor-1242	0.33	U
	MPSD04200108XX	1	1.5	SED	FS	Aroclor-1248	0.33	U
	MPSD04200108XX	1	1.5	SED	FS	Aroclor-1254	2.1	
	MPSD04200108XX	1	1.5	SED	FS	Aroclor-1260	0.33	U
SD-043	MPSD04300108XX	1	1.5	SED	FS	Aroclor-1016	0.5	U
	MPSD04300108XX	1	1.5	SED	FS	Aroclor-1221	0.5	U
	MPSD04300108XX	1	1.5	SED	FS	Aroclor-1232	0.5	U
	MPSD04300108XX	1	1.5	SED	FS	Aroclor-1242	0.5	U
	MPSD04300108XX	1	1.5	SED	FS	Aroclor-1248	0.5	U
	MPSD04300108XX	1	1.5	SED	FS	Aroclor-1254	3.1	
	MPSD04300108XX	1	1.5	SED	FS	Aroclor-1260	0.5	U
SD-044	MPSD04400008XX	0	0.5	SED	FS	Aroclor-1016	3.3	U
	MPSD04400008XX	0	0.5	SED	FS	Aroclor-1221	3.3	U
	MPSD04400008XX	0	0.5	SED	FS	Aroclor-1232	3.3	U
	MPSD04400008XX	0	0.5	SED	FS	Aroclor-1242	3.3	U
	MPSD04400008XX	0	0.5	SED	FS	Aroclor-1248	3.3	U
	MPSD04400008XX	0	0.5	SED	FS	Aroclor-1254	19	
	MPSD04400008XX	0	0.5	SED	FS	Aroclor-1260	3.3	U
SD-045	MPSD04500008XX	0	0.5	SED	FS	Aroclor-1016	0.0033	UJ
	MPSD04500008XX	0	0.5	SED	FS	Aroclor-1221	0.0033	U
	MPSD04500008XX	0	0.5	SED	FS	Aroclor-1232	0.0033	U
	MPSD04500008XX	0	0.5	SED	FS	Aroclor-1242	0.0033	U
	MPSD04500008XX	0	0.5	SED	FS	Aroclor-1248	0.0033	U
	MPSD04500008XX	0	0.5	SED	FS	Aroclor-1254	2.1	DJ
	MPSD04500008XX	0	0.5	SED	FS	Aroclor-1260	0.0033	UJ
SD-046	MPSD04600008XX	0	0.5	SED	FS	Aroclor-1016	0.0033	UJ
	MPSD04600008XX	0	0.5	SED	FS	Aroclor-1221	0.0033	UJ
	MPSD04600008XX	0	0.5	SED	FS	Aroclor-1232	0.0033	UJ
	MPSD04600008XX	0	0.5	SED	FS	Aroclor-1242	0.0033	UJ
	MPSD04600008XX	0	0.5	SED	FS	Aroclor-1248	0.0033	UJ
	MPSD04600008XX	0	0.5	SED	FS	Aroclor-1254	2.8	DJ
	MPSD04600008XX	0	0.5	SED	FS	Aroclor-1260	0.0033	UJ
SD-047	MPSD04700008XX	0	0.5	SED	FS	Aroclor-1016	0.0033	UJ
	MPSD04700008XX	0	0.5	SED	FS	Aroclor-1221	0.0033	UJ
	MPSD04700008XX	0	0.5	SED	FS	Aroclor-1232	0.0033	UJ
	MPSD04700008XX	0	0.5	SED	FS	Aroclor-1242	0.0033	UJ
	MPSD04700008XX	0	0.5	SED	FS	Aroclor-1248	0.0033	UJ
	MPSD04700008XX	0	0.5	SED	FS	Aroclor-1254	2.8	DJ
	MPSD04700008XX	0	0.5	SED	FS	Aroclor-1260	0.0033	UJ
SD-048	MPSD04800008XX	0	0.5	SED	FS	Aroclor-1016	1.7	U
	MPSD04800008XX	0	0.5	SED	FS	Aroclor-1221	1.7	U
	MPSD04800008XX	0	0.5	SED	FS	Aroclor-1232	1.7	U
	MPSD04800008XX	0	0.5	SED	FS	Aroclor-1242	1.7	U
	MPSD04800008XX	0	0.5	SED	FS	Aroclor-1248	1.7	U
	MPSD04800008XX	0	0.5	SED	FS	Aroclor-1254	740	DJ
	MPSD04800008XX	0	0.5	SED	FS	Aroclor-1260	1.7	U
SD-049	MPSD04900008XX	0	0.5	SED	FS	Aroclor-1016	0.0033	UJ
	MPSD04900008XX	0	0.5	SED	FS	Aroclor-1221	0.0033	U

Table 4.2: Supplementary Investigation PCB Analytical Results

Location Name	Field Sample ID	Top Depth (ft)	Bottom Depth (ft)	Media	QC Code	Parameter	Result (mg/kg)	Final Qualifier
	MPSD04900008XX	0	0.5	SED	FS	Aroclor-1232	0.0033	U
	MPSD04900008XX	0	0.5	SED	FS	Aroclor-1242	0.0033	U
	MPSD04900008XX	0	0.5	SED	FS	Aroclor-1248	0.0033	U
	MPSD04900008XX	0	0.5	SED	FS	Aroclor-1254	100	DJ
	MPSD04900008XX	0	0.5	SED	FS	Aroclor-1260	0.0033	UJ
SS-162	MPSS162XXX08XD	0	0.2	SOIL	FD	Aroclor-1016	0.033	U
	MPSS162XXX08XD	0	0.2	SOIL	FD	Aroclor-1221	0.033	U
	MPSS162XXX08XD	0	0.2	SOIL	FD	Aroclor-1232	0.033	U
	MPSS162XXX08XD	0	0.2	SOIL	FD	Aroclor-1242	0.033	U
	MPSS162XXX08XD	0	0.2	SOIL	FD	Aroclor-1248	0.033	U
	MPSS162XXX08XD	0	0.2	SOIL	FD	Aroclor-1254	0.12	J
	MPSS162XXX08XD	0	0.2	SOIL	FD	Aroclor-1260	0.037	J
	MPSS162XXX08XX	0	0.2	SOIL	FS	Aroclor-1016	0.017	U
	MPSS162XXX08XX	0	0.2	SOIL	FS	Aroclor-1221	0.017	U
	MPSS162XXX08XX	0	0.2	SOIL	FS	Aroclor-1232	0.017	U
	MPSS162XXX08XX	0	0.2	SOIL	FS	Aroclor-1242	0.017	U
	MPSS162XXX08XX	0	0.2	SOIL	FS	Aroclor-1248	0.017	U
	MPSS162XXX08XX	0	0.2	SOIL	FS	Aroclor-1254	0.072	J
	MPSS162XXX08XX	0	0.2	SOIL	FS	Aroclor-1260	0.033	J
SS-163	MPSS163XXX08XX	0	0.2	SOIL	FS	Aroclor-1016	0.0033	UJ
	MPSS163XXX08XX	0	0.2	SOIL	FS	Aroclor-1221	0.0033	UJ
	MPSS163XXX08XX	0	0.2	SOIL	FS	Aroclor-1232	0.0033	UJ
	MPSS163XXX08XX	0	0.2	SOIL	FS	Aroclor-1242	0.0033	UJ
	MPSS163XXX08XX	0	0.2	SOIL	FS	Aroclor-1248	0.0033	UJ
	MPSS163XXX08XX	0	0.2	SOIL	FS	Aroclor-1254	0.043	J
	MPSS163XXX08XX	0	0.2	SOIL	FS	Aroclor-1260	0.022	J
SS-164	MPSS164XXX08XX	0	0.2	SOIL	FS	Aroclor-1016	0.0033	UJ
	MPSS164XXX08XX	0	0.2	SOIL	FS	Aroclor-1221	0.0033	UJ
	MPSS164XXX08XX	0	0.2	SOIL	FS	Aroclor-1232	0.0033	UJ
	MPSS164XXX08XX	0	0.2	SOIL	FS	Aroclor-1242	0.0033	UJ
	MPSS164XXX08XX	0	0.2	SOIL	FS	Aroclor-1248	0.0033	UJ
	MPSS164XXX08XX	0	0.2	SOIL	FS	Aroclor-1254	0.049	J
	MPSS164XXX08XX	0	0.2	SOIL	FS	Aroclor-1260	0.05	J
SS-165	MPSS165XXX08XX	0	0.2	SOIL	FS	Aroclor-1016	0.033	U
	MPSS165XXX08XX	0	0.2	SOIL	FS	Aroclor-1221	0.033	U
	MPSS165XXX08XX	0	0.2	SOIL	FS	Aroclor-1232	0.033	U
	MPSS165XXX08XX	0	0.2	SOIL	FS	Aroclor-1242	0.033	U
	MPSS165XXX08XX	0	0.2	SOIL	FS	Aroclor-1248	0.033	U
	MPSS165XXX08XX	0	0.2	SOIL	FS	Aroclor-1254	0.082	J
	MPSS165XXX08XX	0	0.2	SOIL	FS	Aroclor-1260	0.033	U
SS-166	MPSS166XXX08XX	0	0.2	SOIL	FS	Aroclor-1016	0.0033	UJ
	MPSS166XXX08XX	0	0.2	SOIL	FS	Aroclor-1221	0.0033	UJ
	MPSS166XXX08XX	0	0.2	SOIL	FS	Aroclor-1232	0.0033	UJ
	MPSS166XXX08XX	0	0.2	SOIL	FS	Aroclor-1242	0.0033	UJ
	MPSS166XXX08XX	0	0.2	SOIL	FS	Aroclor-1248	0.0033	UJ
	MPSS166XXX08XX	0	0.2	SOIL	FS	Aroclor-1254	0.039	J
	MPSS166XXX08XX	0	0.2	SOIL	FS	Aroclor-1260	0.015	J
SS-167	MPSS167XXX08XX	0	0.5	SOIL	FS	Aroclor-1016	0.017	U
	MPSS167XXX08XX	0	0.5	SOIL	FS	Aroclor-1221	0.017	U
	MPSS167XXX08XX	0	0.5	SOIL	FS	Aroclor-1232	0.017	U

Table 4.2: Supplementary Investigation PCB Analytical Results

Location Name	Field Sample ID	Top Depth (ft)	Bottom Depth (ft)	Media	QC Code	Parameter	Result (mg/kg)	Final Qualifier
	MPSS167XXX08XX	0	0.5	SOIL	FS	Aroclor-1242	0.017	U
	MPSS167XXX08XX	0	0.5	SOIL	FS	Aroclor-1248	0.017	U
	MPSS167XXX08XX	0	0.5	SOIL	FS	Aroclor-1254	0.047	
	MPSS167XXX08XX	0	0.5	SOIL	FS	Aroclor-1260	0.017	U
SS-168	MPSS168XXX08XX	0	0.5	SOIL	FS	Aroclor-1016	0.1	U
	MPSS168XXX08XX	0	0.5	SOIL	FS	Aroclor-1221	0.1	U
	MPSS168XXX08XX	0	0.5	SOIL	FS	Aroclor-1232	0.1	U
	MPSS168XXX08XX	0	0.5	SOIL	FS	Aroclor-1242	0.1	U
	MPSS168XXX08XX	0	0.5	SOIL	FS	Aroclor-1248	0.1	U
	MPSS168XXX08XX	0	0.5	SOIL	FS	Aroclor-1254	0.34	J
	MPSS168XXX08XX	0	0.5	SOIL	FS	Aroclor-1260	0.1	U
SS-169	MPSS169XXX08XX	0	0.5	SOIL	FS	Aroclor-1016	0.049	U
	MPSS169XXX08XX	0	0.5	SOIL	FS	Aroclor-1221	0.049	U
	MPSS169XXX08XX	0	0.5	SOIL	FS	Aroclor-1232	0.049	U
	MPSS169XXX08XX	0	0.5	SOIL	FS	Aroclor-1242	0.049	U
	MPSS169XXX08XX	0	0.5	SOIL	FS	Aroclor-1248	0.049	U
	MPSS169XXX08XX	0	0.5	SOIL	FS	Aroclor-1254	0.24	J
	MPSS169XXX08XX	0	0.5	SOIL	FS	Aroclor-1260	0.049	U
SS-170	MPSS170XXX08XX	0	0.5	SOIL	FS	Aroclor-1016	0.0033	UJ
	MPSS170XXX08XX	0	0.5	SOIL	FS	Aroclor-1221	0.0033	UJ
	MPSS170XXX08XX	0	0.5	SOIL	FS	Aroclor-1232	0.0033	UJ
	MPSS170XXX08XX	0	0.5	SOIL	FS	Aroclor-1242	0.0033	UJ
	MPSS170XXX08XX	0	0.5	SOIL	FS	Aroclor-1248	0.0033	UJ
	MPSS170XXX08XX	0	0.5	SOIL	FS	Aroclor-1254	0.046	J
	MPSS170XXX08XX	0	0.5	SOIL	FS	Aroclor-1260	0.0033	UJ

Notes:

Results shown are for individual PCB Aroclors (e.g., Aroclor-1260)
All results shown in milligrams per kilogram (mg/kg)
Off-site Laboraty Analysis by method 8082
SED = Sediment Sample
SS = Surface Soil
QC Code:
FS = Field Sample
FD = Field Duplicate Sample
Qualifiers:
U = Not detected at a concentration greater than the Reporting Limit
J = Estimated Value
D = Result was reported from a diluted analytical run

Prepared by: BJS 1/12/2009
Checked by: RTB 1/12/2009
Revised: RTB 6/1/2009

Table 7.1: Identification and Screening of Potential Remedial Technologies and Process Options

Environmental Media	General Response Action	Remedial Technology	Process Option	Applicability to		Screening Status	Comments
				Site-Limiting Characteristics	Waste-Limiting Characteristics		
Soils	No Action			Not Applicable	Not Applicable	Retained.	Retained to be carried through detailed analysis of alternatives.
	Access Restrictions	Land Use Restrictions		None.	Would not reduce toxicity, mobility, or volume of contaminants.	Retained.	Viable as a component of remedial actions which do not involve remediation of all contamination above RGs.
		Fencing		None.	Would not provide reliable human or ecological exposure control. Would not reduce toxicity, mobility, or volume of contaminants.	Eliminated.	
	Containment	Capping	Soil Cover	None.	Would not prevent leaching of soil contaminants to groundwater; however, groundwater contamination has not been identified at or in the vicinity of the Site.	Retained.	
			Low Permeability Cover System	None.	None.	Retained.	
		Vertical Barriers	Slurry wall, sheet piling	Contamination is generally limited to vadose zone soils and no benefit would be derived from vertical barriers.	None.	Eliminated.	
		Surface Controls	Diversion/collection, grading, soil stabilization	None.	Surface controls alone would not prevent leaching of soil contaminants to groundwater or migration of contaminants sorbed to surface soils.	Retained.	Viable as a component of other remedial actions.
	In-Situ Treatment	Biological Treatment	Enhanced Biodegradation	Would not allow for re-use of the Site in the short-term due to the time required for biodegradation of PCBs to occur.	Biological treatment of PCBs is considered an emerging technology. Available case studies indicate varied effectiveness in destroying PCBs.	Eliminated.	
		Physical Treatment	Solidification/ Stabilization	PCB contamination at the Site is widespread and would therefore require solidification/stabilization of large areas.	Solidification/stabilization of PCBs is considered an emerging technology.	Eliminated.	
		Thermal Treatment	Vitrification	PCB contamination at the Site is widespread and would therefore require vitrification of large areas. This technology would require the capture and treatment of generated vapors and may not be compatible due to close proximity of residential property.	None.	Eliminated.	
	Removal	Excavation	Solids Excavation	None.	None.	Retained.	
		Disposal On-site	Not Applicable	On-site disposal of contaminated soils would need to take into consideration that the Site is within a floodplain.	On-site disposal of contaminated soils would need to be in compliance with TSCA requirements for handling and disposal of PCBs.	Retained.	Viable for remedial actions that include institutional or environmental controls to minimize exposure to PCBs in compliance with TSCA regulations.
		Disposal Off-site	Not Applicable	None.	None.	Retained.	
	Ex-situ Treatment	Thermal Treatment	Incineration	The Site is considered inappropriate for on-site ex-situ treatment resulting in vapors or concentrated liquid waste due to proximity to residential areas.	None.	Eliminated.	Viable as off-site soil treatment option prior to disposal.

Table 7.1: Identification and Screening of Potential Remedial Technologies and Process Options

Environmental Media	General Response Action	Remedial Technology	Process Option	Applicability to		Screening Status	Comments
				Site-Limiting Characteristics	Waste-Limiting Characteristics		
Soils Continued			Thermal Desorption	The Site is considered inappropriate for on-site ex-situ treatment resulting in vapors or concentrated liquid waste due to proximity to residential areas.	Removes PCBs and other contaminants from the soil, but relies upon other technologies to destroy them.	Eliminated.	Viable as off-site soil treatment option prior to disposal.
			Vitrification	The Site is considered inappropriate for on-site ex-situ treatment resulting in vapors or concentrated liquid waste due to proximity to residential areas.	None.	Eliminated.	Viable as off-site soil treatment option prior to disposal.
		Chemical Treatment	Chemical Dehalogenation	The Site is considered inappropriate for on-site ex-situ treatment resulting in vapors or concentrated liquid waste due to proximity to residential areas.	None.	Eliminated.	Viable as off-site soil treatment option prior to disposal.
			Solvent Extraction	The Site is considered inappropriate for on-site ex-situ treatment resulting in vapors or concentrated liquid waste due to proximity to residential areas.	Removes PCBs and other contaminants from the soil, but relies upon other technologies to destroy them.	Eliminated.	Viable as off-site soil treatment option prior to disposal.
		Physical Treatment	Soil Washing	The Site is considered inappropriate for on-site ex-situ treatment resulting in vapors or concentrated liquid waste due to proximity to residential areas.	Removes PCBs and other contaminants from the soil, but relies upon other technologies to destroy them.	Eliminated.	Viable as off-site soil treatment option prior to disposal.
Sediment	No Action			Not Applicable	Not Applicable	Retained.	Retained to be carried through detailed analysis of alternatives.
	Access Restrictions	Land Use Restrictions		None.	Would not reduce toxicity, mobility, or volume of contaminants.	Retained.	Viable as a component of remedial actions which do not involve remediation of all contamination above RGs.
		Fencing		None.	Would not provide reliable human or ecological exposure control. Would not reduce toxicity, mobility, or volume of contaminants.	Eliminated.	
	Containment	Capping	Soil Cover	Capping could not result in a net filling of the Unnamed Tributary of Sauqouit Creek.	This would not prevent leaching of sediment contaminants to groundwater; however, groundwater contamination has not been identified at or in the vicinity of the Site.	Retained.	
			Low Permeability Cover System	None.	None.	Eliminated.	Would not be more effective than a soil cover system, as groundwater contamination has not been identified at or in the vicinity of the Site.
		Vertical Barriers	Slurry wall, sheet piling	None.	None.	Eliminated.	
		Surface Controls	Diversion/collection, grading, soil stabilization	None.	None.	Retained.	Viable as part of the restoration component of remedial actions for PCB contaminated sediments.
	In-Situ Treatment	Biological Treatment	Enhanced Biodegradation	Would require diversion of stormwater runoff or cover system to prevent erosion during the time required for biodegradation of PCBs to occur.	Biological treatment of PCBs is considered an emerging technology. Available case studies indicate varied effectiveness in destroying PCBs.	Eliminated.	

Table 7.1: Identification and Screening of Potential Remedial Technologies and Process Options

Environmental Media	General Response Action	Remedial Technology	Process Option	Applicability to		Screening Status	Comments
				Site-Limiting Characteristics	Waste-Limiting Characteristics		
Sediment Continued		Physical Treatment	Solidification/ Stabilization	Site sediments are seasonally submerged and generally saturated; this technology is adversely impacted by high moisture content. Would require dewatering/drying of sediments prior to treatment.	Solidification/stabilization of PCBs is considered an emerging technology.	Eliminated.	
		Thermal Treatment	Vitrification	Site sediments are seasonally submerged and generally saturated; this technology is adversely impacted by high moisture content. Would require dewatering/drying of sediments prior to treatment.	None.	Eliminated.	
	Removal	Excavation	Solids Excavation	None.	None.	Retained.	
		Disposal On-site	Not Applicable	On-site disposal of contaminated sediments would need to take into consideration that the Site is within a floodplain.	On-site disposal of contaminated sediments would need to be in compliance with TSCA requirements for handling and disposal of PCBs.	Retained.	Viable for remedial actions that include institutional or environmental controls to minimize exposure to PCBs in compliance with TSCA regulations.
		Disposal Off-site	Not Applicable	None.	None.	Retained.	
	Ex-situ Treatment	Thermal Treatment	Incineration	Site sediments are seasonally submerged and generally saturated; this technology is adversely impacted by high moisture content. Would require dewatering/drying of sediments prior to treatment. The Site is considered inappropriate for on-site ex-situ treatment resulting in vapors or concentrated liquid waste due to proximity to residential areas.	None.	Eliminated.	Viable as off-site sediment treatment option prior to disposal.
			Thermal Desorption	Site sediments are seasonally submerged and generally saturated; this technology is adversely impacted by high moisture content. Would require dewatering/drying of sediments prior to treatment. The Site is considered inappropriate for on-site ex-situ treatment resulting in vapors or concentrated liquid waste due to proximity to residential areas.	Removes PCBs and other contaminants from the sediment but relies upon other technologies to destroy them.	Eliminated.	Viable as off-site sediment treatment option prior to disposal.
			Vitrification	Site sediments are seasonally submerged and generally saturated; this technology is adversely impacted by high moisture content. Would require dewatering/drying of sediments prior to treatment. The Site is considered inappropriate for on-site ex-situ treatment resulting in vapors or concentrated liquid waste due to proximity to residential areas.	None.	Eliminated.	Viable as off-site sediment treatment option prior to disposal.

Table 7.1: Identification and Screening of Potential Remedial Technologies and Process Options

Environmental Media	General Response Action	Remedial Technology	Process Option	Applicability to		Screening Status	Comments
				Site-Limiting Characteristics	Waste-Limiting Characteristics		
Sediment Continued		Chemical Treatment	Chemical Dehalogenation	Site sediments are seasonally submerged and generally saturated; this technology is adversely impacted by high moisture content. Would require dewatering/drying of sediments prior to treatment. The Site is considered inappropriate for on-site ex-situ treatment resulting in vapors or concentrated liquid waste due to proximity to residential areas.	None.	Eliminated.	Viable as off-site sediment treatment option prior to disposal.
			Solvent Extraction	The Site is considered inappropriate for on-site ex-situ treatment resulting in vapors or concentrated liquid waste due to proximity to residential areas.	Removes PCBs and other contaminants from the sediment but relies upon other technologies to destroy them.	Eliminated.	Viable as off-site sediment treatment option prior to disposal.
		Physical Treatment	Soil Washing	The Site is considered inappropriate for on-site ex-situ treatment resulting in vapors or concentrated liquid waste due to proximity to residential areas.	Removes PCBs and other contaminants from the sediment but relies upon other technologies to destroy them.	Eliminated.	Viable as off-site sediment treatment option prior to disposal.

Table 8.1: Screening of Remedial Alternatives

Remedial Alternative	Effectiveness	Implementability	Relative Cost	Comments
Alternative 1: No Action	This alternative would not be effective at reducing contamination concentrations or addressing the identified exposure pathways.	There would not be any technical issues with implementing this alternative; however, it is unlikely that the NYSDEC will approve of this alternative.	No cost associated with this alternative.	Retained as base-line for comparison of other alternatives.
Alternative 2: Source Removal, On-Site Consolidation and Capping of Surface Soil and C&D Debris, and Limited Sediment Excavation	This alternative would address identified exposure pathways at the Site, on adjacent residential property, and in the Unnamed Tributary and Sauquoit Creek through a combination of excavation, on-site consolidation, off-site transportation and disposal, engineering controls, and institutional controls allowing for Commercial Use of the Site.	There would be limited technical issues with implementing this alternative, associated primarily with excavation and restoration of the Unnamed Tributary. State and Federal regulations for construction of a cover system within a flood plain may complicate implementation of this alternative.	Costs for this alternative would be medium-high. The primary costs items would include excavation and restoration of the Unnamed Tributary and off-site disposal of PCB-contaminated soil, C&D debris, and sediment.	Retained.
Alternative 3: Source Removal, Partial Removal of Surface Soil and C&D Debris, and Limited Sediment Excavation	This alternative would address identified exposure pathways at the Site, on adjacent residential property, and in the Unnamed Tributary and Sauquoit Creek through a combination of excavation, on-site consolidation, off-site transportation and disposal, engineering controls, and institutional controls allowing for Commercial Use of the Site.	There would be limited technical issues with implementing this alternative, associated primarily with excavation and restoration of the Unnamed Tributary. State and Federal regulations for construction of a cover system within a flood plain may complicate implementation of this alternative.	Costs for this alternative would be medium-high. The primary costs items would include excavation and restoration of the Unnamed Tributary and off-site disposal of PCB-contaminated soil, C&D debris, and sediment.	Retained.
Alternative 4: Source Removal, Removal of Surface Soil and C&D Debris to Restricted-Commercial SCOs, and Sediment Excavation	This alternative would address identified exposure pathways at the Site, on adjacent residential property, and in the Unnamed Tributary and Sauquoit Creek through a combination of excavation, off-site transportation and disposal, and institutional controls allowing for Commercial Use of the Site.	There would be technical issues with implementing this alternative, associated primarily with excavation to 0.1 mg/kg and restoration of the Unnamed Tributary. State and Federal regulations for construction within a flood plain may complicate implementation of this alternative.	Costs for this alternative would be medium-high. The primary costs items would include excavation and restoration of the Unnamed Tributary and off-site disposal of PCB-contaminated soil, C&D debris, and sediment.	Retained.
Alternative 5: Source Removal, Removal of Surface Soil and C&D Debris to Restricted-Residential SCOs, and Sediment Excavation	This alternative would address identified exposure pathways at the Site, on adjacent residential property, and in the Unnamed Tributary and Sauquoit Creek through a combination of excavation, off-site transportation and disposal, and institutional controls allowing for Restricted-Residential Use of the Site.	There would be technical issues with implementing this alternative, associated primarily with excavation to 0.1 mg/kg and restoration of the Unnamed Tributary. NYSDEC acceptance of this alternative would likely be high.	Costs for this alternative would be medium-high. The primary costs items would include excavation and restoration of the Unnamed Tributary and off-site disposal of PCB-contaminated soil, C&D debris, and sediment.	Retained.
Alternative 6: Source Removal, Removal of Surface Soil and C&D Debris to Residential SCOs, and Sediment Excavation	This alternative would address identified exposure pathways at the Site, on adjacent residential property, and in the Unnamed Tributary and Sauquoit Creek through a combination of excavation and off-site transportation and disposal allowing for Residential Use of the Site.	There would be technical issues with implementing this alternative, associated primarily with excavation to 0.1 mg/kg and restoration of the Unnamed Tributary. NYSDEC acceptance of this alternative would likely be high.	Costs for this alternative would be medium-high. The primary costs items would include excavation and restoration of the Unnamed Tributary and off-site disposal of PCB-contaminated soil, C&D debris, and sediment.	Retained
Alternative 7: Restoration to Pre-Disposal Conditions	This alternative would address identified exposure pathways at the Site, on adjacent residential property, and in the Unnamed Tributary and Sauquoit Creek through excavation and off-site transportation and disposal allowing for Unrestricted Use of the Site.	There would be significant technical issues with implementing this alternative, associated primarily with excavation of sediments from the Sauquoit Creek. State and Federal regulations for construction within a flood plain may complicate implementation of this alternative.	Costs for this alternative would be high. The primary costs items would include excavation and restoration of the Unnamed Tributary and off-site disposal of PCB-contaminated soil, C&D debris, and sediment that would allow for future unrestricted use of the Site and adjacent residential property.	Retained in accordance with the requirements of NYCRR Part 375.

Table 9.1: Applicable Location- and Action-Specific Standards, Criteria, and Guidance

Requirement	Consideration in the Remedial Response Process
29 CFR Part 1910.120 - Hazardous Waste Operations and Emergency Response	Applicable to implementation of Health and Safety implementation, enforcement, and emergency response.
6 NYCRR Part 175 - Special Licenses and Permits--Definitions and Uniform Procedures	Applicable to implementation of biota sampling as part of long-term monitoring of the remedy
6 NYCRR Part 371 - Identification and Listing of Hazardous Wastes (November 1998)	Applicable to the characterization, handling, transportation, and treatment/disposal of soils, sediments, and C&D debris to be removed from the Site.
6 NYCRR Part 372 - Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities (November 1998)	Applicable to the handling, transportation, and treatment/disposal of soils, sediments, and C&D debris to be removed from the Site.
6 NYCRR Part 375 - Environmental Remediation Programs (as amended December 2006)	Applicable to the development and implementation of remedial programs.
6 NYCRR Part 376 - Land Disposal Restrictions	Applicable to disposal of hazardous wastes. Identifies those wastes that are restricted from land disposal.
19 NYCRR Part 600 - Waterfront Revitalization and Coastal Resources	Not Applicable
6 NYCRR Part 608 - Use and Protection of Waters	Applicable to the remediation of the Unnamed Tributary and Sauquoit Creek
6 NYCRR Part 662 - Freshwater Wetlands - Interim Permits	Potentially Applicable to remediation of the Unnamed Tributary
6 NYCRR Part 663 - Freshwater Wetlands - Permit Requirements	Potentially Applicable to remediation of the Unnamed Tributary
6 NYCRR Parts 700-706 - Water Quality Standards (June 1998)	Applicable to construction in and adjacent to water bodies, temporary diversion of the Unnamed Tributary, and discharge of treated wastewater.
6 NYCRR Part 750 through 758 - Implementation of NPDES Program in NYS (“SPDES Regulations”)	Applicable to construction in and adjacent to water bodies, temporary diversion of the Unnamed Tributary, and discharge of treated wastewater.
DRAFT DER-10 Technical Guidance for Site Investigation and Remediation	Applicable to the development and implementation of remedial programs.
Citizen Participation in New York’s Hazardous Waste Site Remediation Program: A Guidebook (June 1998)	Applicable to the development and implementation of remedial programs.
TOGS 1.1.1 - Ambient Water Quality Standards & Guidance Values and Groundwater Effluent Limitations	Applicable to construction in and adjacent to water bodies, temporary diversion of the Unnamed Tributary, and discharge of treated wastewater.
Solidification/Stabilization and its Application to Waste Materials	Applicable to disposal of wastes generated during implementation of remedial program.

Table 9.2: Cost Summary for Alternative 2

ITEM	COST
DIRECT CAPITAL COSTS	
- Pre-Design Investigations	$ 26,000
- Mobilization and Temporary Facilities and Controls	$ 325,000
- Excavation and off-site disposal of soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill	$ 1,147,000
- Excavation and on-site consolidation and capping of remaining on-site soil 0 to 1 feet bgs and C&D debris (all depths) with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill	$ 255,000
- Excavation and on-site consolidation and capping of remaining C&D debris and garbage	$ 11,000
- Excavation and on-site consolidation and capping of remaining off-site residential soil 0 to 2 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill	$ 2,000
- Excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 3 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg and 3 to 5 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement ofclean backfill and a two-foot restoration to original grade	$ 81,000
- Restoration of Unnamed Tributary	$ 59,000
- Excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade	$ 60,000
- Construction of a one-foot thick soil cover over soil with PCB concentrations greater than 1 but less than 10 mg/kg and consolidated soil and C&D debris	$ 45,000
- Institutional Controls	$ 10,000
- Direct Cost Subtotal	$ 2,021,000
INDIRECT CAPITAL COSTS	
- Project Management (@ 5 Percent)	$ 101,000
- Remedial Design (@ 8 Percent)	$ 162,000
- Construction Management (@ 6 Percent)	$ 121,000
- Contingency (@ 25 Percent)	$ 505,000
- Indirect Cost Subtotal	$ 889,000
TOTAL CAPITAL COSTS	**$ 2,910,000**
ANNUAL OPERATION AND MAINTENANCE COSTS*	
- Annual Institutional Control and Cover Inspections and Reporting	$ 4,000
- Long-Term Monitoring (Years 1 through 5)	$ 48,000
PERIODIC COSTS*	
- Periodic Cover Maintenance (every 5 years)	$ 6,000
PRESENT WORTH OF ANNUAL AND PERIODIC COSTS (30 yrs)	**$ 318,000**
TOTAL PRESENT WORTH OF ALTERNATIVE 2 (30 yrs)	**$ 3,228,000**
TOTAL NON-DISCOUNTED COST OF ALTERNATIVE 2 (30 yrs)	**$ 3,306,000**

NOTES:
Costs have been rounded to the nearest thousand.
* - Costs include additional 10 percent for technical support and 25 percent contingency for unforeseen project complexities, including insurance, taxes, and licensing costs.

Prepared by: RTB 1-12-09
Checked by: SEW 1-12-09

Table 9.3: Cost Summary for Alternative 3

ITEM	COST
DIRECT CAPITAL COSTS	
- Pre-Design Investigations	$ 26,000
- Mobilization and Temporary Facilities and Controls	$ 325,000
- Excavation and off-site disposal of soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill	$ 1,147,000
- Excavation and off-site disposal of remaining on-site soil 0 to 1 feet bgs and C&D debris (all depths) with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill	$ 1,288,000
- Excavation and on-site consolidation and capping of remaining C&D debris and garbage	$ 11,000
- Excavation and off-site disposal of remaining off-site residential soil 0 to 2 feet bgs containing PCBs greater than 1 mg/kg but less than 10 mg/kg, followed by placement of clean backfill	$ 5,000
- Excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 3 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg and 3 to 5 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement ofclean backfill and a two-foot restoration to original grade	$ 81,000
- Restoration of Unnamed Tributary	$ 59,000
- Excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade	$ 60,000
- Construction of Soil Cover	$ 9,000
- Institutional Controls	$ 10,000
- Direct Cost Subtotal	$ 3,021,000
INDIRECT CAPITAL COSTS	
- Project Management (@ 5 Percent)	$ 151,000
- Remedial Design (@ 8 Percent)	$ 242,000
- Construction Management (@ 6 Percent)	$ 181,000
- Contingency (@ 25 Percent)	$ 755,000
- Indirect Cost Subtotal	$ 1,329,000
TOTAL CAPITAL COSTS	**$ 4,350,000**
ANNUAL OPERATION AND MAINTENANCE COSTS*	
- Annual Institutional Control and Cover Inspections and Reporting	$ 4,000
- Long-Term Monitoring (Years 1 through 5)	$ 48,000
PERIODIC COSTS*	
- Periodic Cover Maintenance (every 5 years)	$ 1,000
PRESENT WORTH OF ANNUAL AND PERIODIC COSTS (30 yrs)	**$ 300,000**
TOTAL PRESENT WORTH OF ALTERNATIVE 3 (30 yrs)	**$ 4,650,000**
TOTAL NON-DISCOUNTED COST OF ALTERNATIVE 3 (30 yrs)	**$ 4,716,000**

NOTES:
Costs have been rounded to the nearest thousand.
* - Costs include additional 10 percent for technical support and 25 percent contingency for unforeseen project complexities, including insurance, taxes, and licensing costs.

Prepared by: RTB 1-12-09
Checked by: SEW 1-12-09

Table 9.4: Cost Summary for Alternative 4

ITEM	COST
DIRECT CAPITAL COSTS	
- Pre-Design Investigations	$ 26,000
- Mobilization and Temporary Facilities and Controls	$ 352,000
- Excavation and off-site disposal of soil, C&D debris, and sediments with PCB concentrations greater than 10 mg/kg	$ 1,147,000
- Excavation and off-site disposal of remaining on-site soil 0 to 1 feet bgs and C&D debris (all depths) with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill	$ 1,288,000
- Excavation and off-site disposal of remaining C&D debris and garbage	$ 48,000
- Excavation and off-site disposal of remaining off-site residential soil 0 to 2 feet bgs containing PCBs greater than 1 mg/kg but less than 10 mg/kg, followed by placement of clean backfill	$ 5,000
- Excavation and off-site disposal of remaining off-site commercial soil 0 to 1 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill	$ 33,000
- Excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 5 feet bgs with PCB concentrations greater than 0.1 mg/kg but less than 10 mg/kg	$ 104,000
- Restoration of Unnamed Tributary	$ 62,000
- Excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade	$ 60,000
- Institutional Controls	$ 10,000
- Direct Cost Subtotal	$ 3,135,000
INDIRECT CAPITAL COSTS	
- Project Management (@ 5 Percent)	$ 157,000
- Remedial Design (@ 8 Percent)	$ 251,000
- Construction Management (@ 6 Percent)	$ 188,000
- Contingency (@ 25 Percent)	$ 784,000
- Indirect Cost Subtotal	$ 1,380,000
TOTAL CAPITAL COSTS	**$ 4,515,000**
ANNUAL OPERATION AND MAINTENANCE COSTS*	
- Annual Institutional Control and Cover Inspections and Reporting	$ 4,000
- Long-Term Monitoring (Years 1 through 5)	$ 48,000
PERIODIC COSTS*	
- None	
PRESENT WORTH OF ANNUAL AND PERIODIC COSTS (30 yrs)	**$ 297,000**
TOTAL PRESENT WORTH OF ALTERNATIVE 4 (30 yrs)	**$ 4,812,000**
TOTAL NON-DISCOUNTED COST OF ALTERNATIVE 4 (30 yrs)	**$ 4,875,000**

NOTES:
Costs have been rounded to the nearest thousand.
* - Costs include additional 10 percent for technical support and 25 percent contingency for unforeseen project complexities, including insurance, taxes, and licensing costs.

Prepared by: RTB 1-12-09
Checked by: SEW 1-12-09

Table 9.5: Cost Summary for Alternative 5

ITEM	COST
DIRECT CAPITAL COSTS	
- Pre-Design Investigations	$ 26,000
- Mobilization and Temporary Facilities and Controls	$ 352,000
- Excavation and off-site disposal of soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill	$ 1,147,000
- Excavation and off-site disposal of remaining on-site soil 0 to 2 feet bgs and C&D debris (all depths)with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill	$ 1,355,000
- Excavation and off-site disposal of remaining C&D debris and garbage	$ 48,000
- Excavation and off-site disposal of remaining off-site residential soil 0 to 2 feet bgs containing PCBs greater than 1 mg/kg but less than 10 mg/kg, followed by placement of clean backfill	$ 5,000
- Excavation and off-site disposal of remaining off-site commercial soil 0 to 1 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill	$ 33,000
- Excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 5 feet bgs with PCB concentrations greater than 0.1 mg/kg but less than 10 mg/kg	$ 104,000
- Restoration of Unnamed Tributary	$ 62,000
- Excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade	$ 60,000
- Excavation and off-site disposal of sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg within off-site commercial property storm drains	$ 5,000
- Institutional Controls	$ 10,000
- Direct Cost Subtotal	$ 3,207,000
INDIRECT CAPITAL COSTS	
- Project Management (@ 5 Percent)	$ 160,000
- Remedial Design (@ 8 Percent)	$ 257,000
- Construction Management (@ 6 Percent)	$ 192,000
- Contingency (@ 25 Percent)	$ 802,000
- Indirect Cost Subtotal	$ 1,411,000
TOTAL CAPITAL COSTS	**$ 4,618,000**
ANNUAL OPERATION AND MAINTENANCE COSTS*	
- Annual Institutional Control and Cover Inspections and Reporting	$ 4,000
- Long-Term Monitoring (Years 1 through 5)	$ 48,000
PERIODIC COSTS*	
- None	
PRESENT WORTH OF ANNUAL AND PERIODIC COSTS (30 yrs)	**$ 297,000**
TOTAL PRESENT WORTH OF ALTERNATIVE 5 (30 yrs)	**$ 4,915,000**
TOTAL NON-DISCOUNTED COST OF ALTERNATIVE 5 (30 yrs)	**$ 4,978,000**

NOTES:
Costs have been rounded to the nearest thousand.
* - Costs include additional 10 percent for technical support and 25 percent contingency for unforeseen project complexities, including insurance, taxes, and licensing costs.

Prepared by: RTB 1-12-09
Checked by: SEW 1-12-09

Table 9.6: Cost Summary for Alternative 6

ITEM	COST
DIRECT CAPITAL COSTS	
- Pre-Design Investigations	$ 26,000
- Mobilization and Temporary Facilities and Controls	$ 358,000
- Excavation and off-site disposal of soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill	$ 1,147,000
- Excavation and off-site disposal of remaining on-site soil and C&D debris (all depths) with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill	$ 1,355,000
- Excavation and off-site disposal of remaining C&D debris and garbage	$ 48,000
- Excavation and off-site disposal of remaining off-site residential soil (all depths) containing PCBs greater than 1 mg/kg but less than 10 mg/kg, followed by placement of clean backfill	$ 8,000
- Excavation and off-site disposal of remaining off-site commercial soil (all depths) with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill	$ 37,000
- Excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 5 feet bgs with PCB concentrations greater than 0.1 mg/kg but less than 10 mg/kg	$ 104,000
- Restoration of Unnamed Tributary	$ 62,000
- Excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade	$ 60,000
- Excavation and off-site disposal of sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg within off-site commercial property storm drains	$ 5,000
- Institutional Controls	$ 10,000
- Direct Cost Subtotal	$ 3,220,000
INDIRECT CAPITAL COSTS	
- Project Management (@ 5 Percent)	$ 161,000
- Remedial Design (@ 8 Percent)	$ 258,000
- Construction Management (@ 6 Percent)	$ 193,000
- Contingency (@ 25 Percent)	$ 805,000
- Indirect Cost Subtotal	$ 1,417,000
TOTAL CAPITAL COSTS	**$ 4,637,000**
ANNUAL OPERATION AND MAINTENANCE COSTS*	
- Annual Institutional Control and Cover Inspections and Reporting	$ 4,000
- Long-Term Monitoring (Years 1 through 5)	$ 48,000
PERIODIC COSTS*	
- None	
PRESENT WORTH OF ANNUAL AND PERIODIC COSTS (30 yrs)	**$ 297,000**
TOTAL PRESENT WORTH OF ALTERNATIVE 6 (30 yrs)	**$ 4,934,000**
TOTAL NON-DISCOUNTED COST OF ALTERNATIVE 6 (30 yrs)	**$ 4,997,000**

NOTES:
Costs have been rounded to the nearest thousand.
* - Costs include additional 10 percent for technical support and 25 percent contingency for unforeseen project complexities, including insurance, taxes, and licensing costs.

Prepared by: RTB 1-12-09
Checked by: SEW 1-12-09

Table 9.7: Cost Summary for Alternative 7

ITEM	COST
DIRECT CAPITAL COSTS	
- Pre-Design Investigations	$ 26,000
- Mobilization and Temporary Facilities and Controls	$ 377,000
- Excavation and off-site disposal of soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill	$ 1,147,000
- Excavation and off-site disposal of remaining on-site soil and C&D debris (all depths) with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill	$ 3,975,000
- Excavation and off-site disposal of remaining C&D debris and garbage	$ 48,000
- Excavation and off-site disposal of remaining off-site residential soil (all depths) containing PCBs greater than 0.1 mg/kg but less than 10 mg/kg, followed by placement of clean backfill	$ 60,000
- Excavation and off-site disposal of remaining off-site commercial soil (all depths) with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill	$ 130,000
- Excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 5 feet bgs with PCB concentrations greater than 0.1 mg/kg but less than 10 mg/kg	$ 104,000
- Restoration of Unnamed Tributary	$ 62,000
- Excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade	$ 60,000
- Excavation and off-site disposal of all remaining Sauquoit Creek sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill and two-foot restoration to original grade	$ 46,000
- Excavation and off-site disposal of sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg within off-site commercial property storm drains	$ 5,000
- Institutional Controls	$ 10,000
- Direct Cost Subtotal	$ 6,050,000
INDIRECT CAPITAL COSTS	
- Project Management (@ 5 Percent)	$ 303,000
- Remedial Design (@ 8 Percent)	$ 484,000
- Construction Management (@ 6 Percent)	$ 363,000
- Contingency (@ 25 Percent)	$ 1,513,000
- Indirect Cost Subtotal	$ 2,663,000
TOTAL CAPITAL COSTS	**$ 8,713,000**
ANNUAL OPERATION AND MAINTENANCE COSTS*	
- Annual Institutional Control and Cover Inspections and Reporting	$ 4,000
- Long-Term Monitoring (Years 1 through 5)	$ 48,000
PERIODIC COSTS*	
- None	
PRESENT WORTH OF ANNUAL AND PERIODIC COSTS (30 yrs)	**$ 297,000**
TOTAL PRESENT WORTH OF ALTERNATIVE 7 (30 yrs)	**$ 9,010,000**
TOTAL NON-DISCOUNTED COST OF ALTERNATIVE 7 (30 yrs)	**$ 9,073,000**

Prepared by: RTB 1-12-09
Checked by: SEW 1-12-09

NOTES:
Costs have been rounded to the nearest thousand.
* - Costs include additional 10 percent for technical support and 25 percent contingency for unforeseen project complexities, including insurance, taxes, and licensing costs.

Table 10.1: Summary of Remedial Alternative Costs

Item	Description	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7
1	Capital Costs	$ -	$ 2,910,000	$ 4,350,000	$ 4,515,000	$ 4,618,000	$ 4,637,000	$ 8,713,000
2	Present Worth of Annual and Periodic Costs	$ -	$ 318,000	$ 300,000	$ 297,000	$ 297,000	$ 297,000	$ 297,000
3	Total Present Worth (Item 1 plus 2)	$ -	$ 3,228,000	$ 4,650,000	$ 4,812,000	$ 4,915,000	$ 4,934,000	$ 9,010,000
4	Total Nondiscounted Cost	$ -	$ 3,306,000	$ 4,716,000	$ 4,875,000	$ 4,978,000	$ 4,997,000	$ 9,073,000

Notes:
Alternative 1 - No Action
Alternative 2 - Source Removal, On-Site Consolidation and Capping of Surface Soil and C&D Debris, and Limited Sediment Excavation
Alternative 3 - Source Removal, Partial Removal of Surface Soil and C&D Debris, and Limited Sediment Excavation
Alternative 4 - Source Removal, Removal of Surface Soil and C&D Debris to Restricted-Commercial SCOs, and Sediment Excavation
Alternative 5 - Source Removal, Removal of Surface Soil and C&D Debris to Restricted-Residential SCOs, and Sediment Excavation
Alternative 6 - Source Removal, Removal of Surface Soil and C&D Debris to Residential SCOs, and Sediment Excavation
Alternative 7 - Restoration to Pre-Disposal Conditions

Prepared by: RTB 7-8-09
Checked by: SEW 7-8-09

APPENDIX A

DATA USABILITY SUMMARY REPORT

DATA USABILITY SUMMARY REPORT
2008 SUPPLEMENTAL SOIL AND SEDIMENT SAMPLING EVENT
3456 ONEIDA STREET
NEW HARTFORD, NEW YORK

1.0 Introduction

Soil and sediment samples were collected at 3456 Oneida Street in November 2008 and submitted for off-site laboratory analysis. Samples were analyzed by Mitkem located in Warwick, RI. Results were reported in sample delivery groups (SDGs): G2126 and G2127. A listing of samples included in this report is presented in Table 1. A summary of the analytical results is presented in Table 2. Samples were analyzed for one or more of the following parameters:

- Polychlorinated biphenyls (PCBs) by EPA Method SW846 8082
- Total organic carbon by Lloyd Kahn.

Deliverables for the off-site laboratory analyses included a Category B deliverable as defined in the New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocols (NYSDEC, 2005).

A project chemist review was completed based on NYSDEC Division of Environmental Remediation guidance for Data Usability Summary Reports (NYSDEC, 2002). Laboratory QC limits were used during the data evaluation unless noted otherwise. The project chemist review included evaluations of sample collection, data package completeness, holding times, QC data (blanks, instrument calibrations, duplicates, surrogate recovery, and spike recovery), data transcription, electronic data reporting, calculations, and data qualification. With the exception of the items discussed below, results are interpreted to be usable as reported by the laboratory. The following laboratory or data validation qualifiers are used in the final data presentation.

U = target analyte is not detected at the reported detection limit
J = concentration is estimated
UJ = target analyte is not detected at the reported detection limit and is estimated
D = result reported from a dilution analysis

Results are interpreted to be usable as reported by the laboratory unless discussed in the following sections.

2.0 Sediment and Soil Samples

2.1 PCBs

Surrogates

SDG G2126

Surrogate recoveries were evaluated based on laboratory limits (DCB 60-125% and TCX 27-120%). Surrogate percent recoveries were below the lower control limit in the following samples:

MPSS163XXX08XX (DCB = 49)

MPSS164XXX08XX (DCB = 35, TCX = 22)
MPSS166XXX08XX (DCB = 47)
MPSS170XXX08XX (DCB = 35).

Aroclor results were qualified estimated (J/UJ) in these samples and results are potentially low biased.

SDG G2127

Surrogate percent recoveries were below the lower control limit in samples MPSD04700008XX (DCB = 59) and MPSD04600008XX (DCB = 49). Aroclors were qualified estimated (J/UJ) in these samples and results are potentially biased low.

Continuing Calibration

SDG G2127

The percent difference control limit between the initial calibration and continuing calibration area counts for aroclors is ± 15 percent. The aroclor 1254 continuing calibration analyzed on 12/3/08 at 15:40 had percent differences of 18 and 25 for 2 of the 3 quantitation peaks on the primary column. Detections for aroclor 1245 were qualified estimated (J) in the associated samples MPSD04700008XX, MPSD04500008XX, and MPSD04600008XX.

The aroclor 1254 continuing calibration analyzed on 12/4/08 at 16:54 had percent differences of 18, 21, and 24 for the 3 quantitation peaks on the primary column. Detections for aroclor 1245 were qualified estimated (J) in the associated samples MPSD04800008XX and MPSD04900008XX.

The aroclor 1016 and aroclor 1260 continuing calibration analyzed on 11/30/08 at 22:06 had percent differences greater than 15 (ranging from -16 to -25) for all quantitation peaks on the primary column. There were no detections reported for aroclor 1016 or aroclor 1260 and non-detects were qualified estimated (UJ) at the reporting limit in samples MPSD04700008XX, MPSD04500008XX, MPSD04600008XX, and MPSD04900008XX.

Matrix Spike/Matrix Spike Duplicate

SDG G2126

The matrix spike and matrix spike duplicate associated with sample MPSS162XXX08XX had percent recoveries for aroclor 1260 (MS = 12 and MSD = -38) that were less than the laboratory lower control limit of 60. Aroclor 1260 was qualified estimated (J) in field sample MPSS162XXX08XX and field duplicate sample MPSS162XXX08XD and results are potentially biased low.

Percent Difference Between Columns

SDG G2126

Aroclor concentrations were reported on two chromatographic columns. The percent differences between the reported concentrations of Aroclor-1254 were above the control limit of 25 in the following samples. Aroclor 1254 was estimated (J) in these samples.

Aroclor 1254		
SDG	Sample ID	Percent Difference Between Columns
SDG G2126	MPSS170XXX08XX	59.6
SDG G2126	MPSS169XXX08XX	31.9
SDG G2126	MPSS168XXX08XX	27.5
SDG G2126	MPSS162XXX08XX	33.2
SDG G2126	MPSS163XXX08XX	58.5
SDG G2126	MPSS164XXX08XX	133
SDG G2126	MPSS165XXX08XX	63
SDG G2126	MPSS166XXX08XX	47.6
SDG G2126	MPSS162XXX08XD	38.8

The percent differences between the reported concentrations of Aroclor-1260 were above the control limit of 25 in the following samples. Aroclor 1260 was estimated (J) in these samples.

Aroclor 1260		
SDG	Sample ID	Percent Difference Between Columns
SDG G2126	MPSS162XXX08XX	280
SDG G2126	MPSS163XXX08XX	76.9
SDG G2126	MPSS164XXX08XX	33.8
SDG G2126	MPSS166XXX08XX	60.1
SDG G2126	MPSS162XXX08XD	256

2.2 Total Organic Carbon

Sample Reporting

The following results for total organic carbon were above the instrument calibration range and were qualified (E) by the laboratory. Samples were not re-analyzed at a dilution by the lab due to the small sample size used for the original analysis. Results in the final data set were qualified estimated (J).

field_sample_id	SDG	lab_sample_id	param_name	final_result	final_qualifier	lab_qualifier
MPSD04000108XX	G2126	G2126-13A	Total Organic Carbon	14000	J	E
MPSD03700108XX	G2126	G2126-16A	Total Organic Carbon	18000	J	E
MPSD04400008XX	G2126	G2126-19A	Total Organic Carbon	18000	J	E
MPSD04500008XX	G2127	G2127-02A	Total Organic Carbon	10000	J	E
MPSD04600008XX	G2127	G2127-03A	Total Organic Carbon	13000	J	E

TABLE 1
SUMMARY OF SAMPLES

SDG	Field Sample ID	Type	Date Collected	Method	Parameter
G2126	MPSS169XXX08XX	FS	11/11/2008	8082	PCB
G2126	MPSS170XXX08XX	FS	11/11/2008	8082	PCB
G2126	MPSS167XXX08XX	FS	11/11/2008	8082	PCB
G2126	MPSS168XXX08XX	FS	11/11/2008	8082	PCB
G2126	MPSS162XXX08XX	FS	11/11/2008	8082	PCB
G2126	MPSS163XXX08XX	FS	11/11/2008	8082	PCB
G2126	MPSS164XXX08XX	FS	11/11/2008	8082	PCB
G2126	MPSS165XXX08XX	FS	11/11/2008	8082	PCB
G2126	MPSS166XXX08XX	FS	11/11/2008	8082	PCB
G2126	MPSD04300108XX	FS	11/11/2008	8082, Lloyd Kahn	PCB and TOC
G2126	MPSD04200108XX	FS	11/11/2008	8082, Lloyd Kahn	PCB and TOC
G2126	MPSD04100108XX	FS	11/11/2008	8082, Lloyd Kahn	PCB and TOC
G2126	MPSD04000108XX	FS	11/11/2008	8082, Lloyd Kahn	PCB and TOC
G2126	MPSD03900108XX	FS	11/11/2008	8082, Lloyd Kahn	PCB and TOC
G2126	MPSD03800108XX	FS	11/11/2008	8082, Lloyd Kahn	PCB and TOC
G2126	MPSD03700108XX	FS	11/11/2008	8082, Lloyd Kahn	PCB and TOC
G2126	MPSD03600108XX	FS	11/11/2008	8082, Lloyd Kahn	PCB and TOC
G2126	MPSD03600108XD	FD	11/11/2008	8082	PCB
G2126	MPSD04400008XX	FS	11/12/2008	8082, Lloyd Kahn	PCB and TOC
G2126	MPSS162XXX08XD	FD	11/11/2008	8082	PCB
G2127	MPSD04700008XX	FS	11/12/2008	8082, Lloyd Kahn	PCB and TOC
G2127	MPSD04500008XX	FS	11/12/2008	8082, Lloyd Kahn	PCB and TOC
G2127	MPSD04600008XX	FS	11/12/2008	8082, Lloyd Kahn	PCB and TOC
G2127	MPSD04800008XX	FS	11/12/2008	8082, Lloyd Kahn	PCB and TOC
G2127	MPSD04900008XX	FS	11/12/2008	8082, Lloyd Kahn	PCB and TOC

Reference:

New York State Department of Environmental Conservation (NYSDEC), 2005. "Analytical Services Protocols"; July 2005.

New York State Department of Environmental Conservation (NYSDEC), 2002. "Technical Guidance for Site Investigation and Remediation-Appendix 2B"; Draft DER-10; Division of Environmental Remediation; December 2002.

Data Validator: Tige Cunningham

Signature Date January 6, 2009

Quality Assurance Officer: Chris Ricardi, NRCC-EAC

Signature **Date:** January 8, 2009

TABLE 2
RESULTS SUMMARY - PCBs
2008 SUPPLEMENTAL SOIL AND SEDIMENT SAMPLING EVENT

		Lab Sample Delivery Group	G2126		G2126		G2126		G2126		G2126		G2126	
		Loc Name	SD-036		SD-036		SD-037		SD-038		SD-039		SD-040	
		Field Sample Date	11/11/2008		11/11/2008		11/11/2008		11/11/2008		11/11/2008		11/11/2008	
		Media	SED		SED		SED		SED		SED		SED	
		Qc Code	FD		FS		FS		FS		FS		FS	
Analysis Method	**Param Name**	**Ppm Uom**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
SW8082	Aroclor-1016	MG/KG	33	U	33	U	1700	U	170	U	20	U	20	U
SW8082	Aroclor-1221	MG/KG	33	U	33	U	1700	U	170	U	20	U	20	U
SW8082	Aroclor-1232	MG/KG	33	U	33	U	1700	U	170	U	20	U	20	U
SW8082	Aroclor-1242	MG/KG	33	U	33	U	1700	U	170	U	20	U	20	U
SW8082	Aroclor-1248	MG/KG	33	U	33	U	1700	U	170	U	20	U	20	U
SW8082	Aroclor-1254	MG/KG	220		250		6200		1200		160		140	
SW8082	Aroclor-1260	MG/KG	33	U	33	U	1700	U	170	U	20	U	20	U
LK_TOC	Total Organic Carbon	MG/KG			13000		18000	J	7600		8100		14000	J

Notes:
Media: Sed = sediment
Qc Code: FS = field sample, FD = field duplicate
MG/KG = milligram per kilogram
Qualifiers: U = not detected at the reporting limit
J = estimated value
D = result from a diluted analysis

TABLE 2
RESULTS SUMMARY - PCBs
2008 SUPPLEMENTAL SOIL AND SEDIMENT SAMPLING EVENT

		Lab Sample Delivery Group	G2126		G2126		G2126		G2126		G2126		G2126	
		Loc Name	SD-041		SD-042		SD-043		SD-044		SS-162		SS-162	
		Field Sample Date	11/11/2008		11/11/2008		11/11/2008		11/12/2008		11/11/2008		11/11/2008	
		Media	SED		SED		SED		SED		SOIL		SOIL	
		Qc Code	FS		FS		FS		FS		FD		FS	
Analysis Method	**Param Name**	**Ppm Uom**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
SW8082	Aroclor-1016	MG/KG	0.99	U	0.33	U	0.5	U	3.3	U	0.033	U	0.017	U
SW8082	Aroclor-1221	MG/KG	0.99	U	0.33	U	0.5	U	3.3	U	0.033	U	0.017	U
SW8082	Aroclor-1232	MG/KG	0.99	U	0.33	U	0.5	U	3.3	U	0.033	U	0.017	U
SW8082	Aroclor-1242	MG/KG	0.99	U	0.33	U	0.5	U	3.3	U	0.033	U	0.017	U
SW8082	Aroclor-1248	MG/KG	0.99	U	0.33	U	0.5	U	3.3	U	0.033	U	0.017	U
SW8082	Aroclor-1254	MG/KG	10		2.1		3.1		19		0.12	J	0.072	J
SW8082	Aroclor-1260	MG/KG	0.99	U	0.33	U	0.5	U	3.3	U	0.037	J	0.033	J
LK_TOC	Total Organic Carbon	MG/KG	9200		6100		1700		18000	J				

Notes:
Media: Sed = sediment
Qc Code: FS = field sample, FD = field duplicate
MG/KG = milligram per kilogram
Qualifiers: U = not detected at the reporting limit
J = estimated value
D = result from a diluted analysis

TABLE 2
RESULTS SUMMARY - PCBs
2008 SUPPLEMENTAL SOIL AND SEDIMENT SAMPLING EVENT

		Lab Sample Delivery Group	G2126		G2126		G2126		G2126		G2126		G2126	
		Loc Name	SS-163		SS-164		SS-165		SS-166		SS-167		SS-168	
		Field Sample Date	11/11/2008		11/11/2008		11/11/2008		11/11/2008		11/11/2008		11/11/2008	
		Media	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
		Qc Code	FS		FS		FS		FS		FS		FS	
Analysis Method	**Param Name**	**Ppm Uom**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
SW8082	Aroclor-1016	MG/KG	0.0033	UJ	0.0033	UJ	0.033	U	0.0033	UJ	0.017	U	0.1	U
SW8082	Aroclor-1221	MG/KG	0.0033	UJ	0.0033	UJ	0.033	U	0.0033	UJ	0.017	U	0.1	U
SW8082	Aroclor-1232	MG/KG	0.0033	UJ	0.0033	UJ	0.033	U	0.0033	UJ	0.017	U	0.1	U
SW8082	Aroclor-1242	MG/KG	0.0033	UJ	0.0033	UJ	0.033	U	0.0033	UJ	0.017	U	0.1	U
SW8082	Aroclor-1248	MG/KG	0.0033	UJ	0.0033	UJ	0.033	U	0.0033	UJ	0.017	U	0.1	U
SW8082	Aroclor-1254	MG/KG	0.043	J	0.049	J	0.082	J	0.039	J	0.047		0.34	J
SW8082	Aroclor-1260	MG/KG	0.022	J	0.05	J	0.033	U	0.015	J	0.017	U	0.1	U
LK_TOC	Total Organic Carbon	MG/KG												

Notes:
Media: Sed = sediment
Qc Code: FS = field sample, FD = field duplicate
MG/KG = milligram per kilogram
Qualifiers: U = not detected at the reporting limit
J = estimated value
D = result from a diluted analysis

TABLE 2
RESULTS SUMMARY - PCBs
2008 SUPPLEMENTAL SOIL AND SEDIMENT SAMPLING EVENT

		Lab Sample Delivery Group	G2126		G2126		G2127		G2127		G2127		G2127	
		Loc Name	SS-169		SS-170		SD-045		SD-046		SD-047		SD-048	
		Field Sample Date	11/11/2008		11/11/2008		11/12/2008		11/12/2008		11/12/2008		11/12/2008	
		Media	SOIL		SOIL		SED		SED		SED		SED	
		Qc Code	FS		FS		FS		FS		FS		FS	
Analysis Method	**Param Name**	**Ppm Uom**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
SW8082	Aroclor-1016	MG/KG	0.049	U	0.0033	UJ	0.0033	UJ	0.0033	UJ	0.0033	UJ	1.7	U
SW8082	Aroclor-1221	MG/KG	0.049	U	0.0033	UJ	0.0033	U	0.0033	UJ	0.0033	UJ	1.7	U
SW8082	Aroclor-1232	MG/KG	0.049	U	0.0033	UJ	0.0033	U	0.0033	UJ	0.0033	UJ	1.7	U
SW8082	Aroclor-1242	MG/KG	0.049	U	0.0033	UJ	0.0033	U	0.0033	UJ	0.0033	UJ	1.7	U
SW8082	Aroclor-1248	MG/KG	0.049	U	0.0033	UJ	0.0033	U	0.0033	UJ	0.0033	UJ	1.7	U
SW8082	Aroclor-1254	MG/KG	0.24	J	0.046	J	2.1	DJ	2.8	DJ	2.8	DJ	740	DJ
SW8082	Aroclor-1260	MG/KG	0.049	U	0.0033	UJ	0.0033	UJ	0.0033	UJ	0.0033	UJ	1.7	U
LK_TOC	Total Organic Carbon	MG/KG					10000	J	13000	J	2800		6900	

Notes:
Media: Sed = sediment
Qc Code: FS = field sample, FD = field duplicate
MG/KG = milligram per kilogram
Qualifiers: U = not detected at the reporting limit
J = estimated value
D = result from a diluted analysis

TABLE 2
RESULTS SUMMARY - PCBs
2008 SUPPLEMENTAL SOIL AND SEDIMENT SAMPLING EVENT

		Lab Sample Delivery Group	G2127	
		Loc Name	SD-049	
		Field Sample Date	11/12/2008	
		Media	SED	
		Qc Code	FS	
Analysis Method	**Param Name**	**Ppm Uom**	Result	Qualifier
SW8082	Aroclor-1016	MG/KG	0.0033	UJ
SW8082	Aroclor-1221	MG/KG	0.0033	U
SW8082	Aroclor-1232	MG/KG	0.0033	U
SW8082	Aroclor-1242	MG/KG	0.0033	U
SW8082	Aroclor-1248	MG/KG	0.0033	U
SW8082	Aroclor-1254	MG/KG	100	DJ
SW8082	Aroclor-1260	MG/KG	0.0033	UJ
LK_TOC	Total Organic Carbon	MG/KG	7700	

Notes:
Media: Sed = sediment
Qc Code: FS = field sample, FD = field duplicate
MG/KG = milligram per kilogram
Qualifiers: U = not detected at the reporting limit
J = estimated value
D = result from a diluted analysis

APPENDIX B

QUANTITY CALCULATIONS

TABLE B.1: Soil, Sediment, and C&D Debris Excavation/Consolidation Volume and Confirmation Sample Quantity Calculation

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	No. Confirm. Samples
PCBs (>= 10 ppm) Source Areas Soil		910	910	910	910	910	910	84
PCBs (>= 10 ppm) Source Areas Sediment		489	489	489	489	489	489	19
PCBs (>= 10 ppm) Source Areas C&D Debris		1300	1300	1300	1300	1300	1300	21
On-Site PCBs (1 - 10 ppm) in Soil 0 to 1 feet bgs		1770	1770	1770	1770	1770	1770	192
On-Site PCBs (1 - 10 ppm) in Soil 1 to 2 feet bgs					270	270	270	45
On-Site PCBs (0.1 - 1 ppm) in Soil 0 to 1 feet bgs							2326	247
On-Site PCBs (0.1 - 1 ppm) in Soil 1 to 2 feet bgs							3418	230
On-Site PCBs (0.1 - 10 ppm) in Soil > 2 feet bgs							4205	207
On-Site PCBs (1 - 10 ppm) in C&D Debris all depths		3938	3938	3938	3938	3938	3938	90
On-Site PCBs (0.1 - 1 ppm) in C&D Debris all depths (see Note 3)							985	23
On-Site non-PCB C&D Debris and Garbage (see Note 4)		262	262	262	262	262	262	7
Off-Site PCBs Res. Surface Soil (>= 1 ppm) 0 to 2 feet bgs		16	16	16	16	16	16	4
Off-Site PCBs Res. Surface Soil (>= 1 ppm) > 2 feet bgs (see Note 5)						8	8	2
Off-Site PCBs Res. Surface Soil (>=0. 1 ppm) 0 to 2 feet bgs							99	21
Off-Site PCBs Res. Surface Soil (>=0. 1 ppm) > 2 feet bgs (see Note 5)							50	11
Off-Site PCBs Comm. Surface Soil (>= 1 ppm) 0 to 1 feet bgs				132	132	132	132	19
Off-Site PCBs Comm. Surface Soil (>= 0.1 ppm) 0 to 1 feet bgs							391	51
PCBs in Unnamed Trib Sed (0.1 - 10 ppm) 0 to 3 feet bgs		283	283	283	283	283	283	22
PCBs in Unnamed Trib Sed (1 - 10 ppm) 3 to 5 feet bgs		88	88	88	88	88	88	6
PCBs in Unnamed Trib Sed (0.1 - 1 ppm) 3 to 5 feet bgs				101	101	101	101	9
PCBs in Sauq. Cr. Ea. Bank Sed (0.1 - 10 ppm) 0 to 2 feet bgs		135	135	135	135	135	135	29
PCBs in Sauquoit Creek Sediment							113	13
Unnamed Tributary Restoration, 0 to 2 feet bgs		280	280	280	280	280	280	
Unnamed Tributary Backfill > 2 feet bgs		579	579	681	681	681	681	
Consolidated C&D Debris and/or Soil		5986	262					
Total Source Soil, Sed, and C&D Debris >=10 ppm		2699	2699	2699	2699	2699	2699	
Total Soil >=0.1, <10 ppm		1786	1786	1918	2188	2196	12685	
Total Sediment >=0.1, <10 ppm		506	506	607	607	607	720	
Total C&D Debris <10 ppm		4200	4200	4200	4200	4200	5185	
Total Soil, Sediment, and C&D Debris >=0.1 ppm		9191	9191	9424	9694	9702	21289	

Notes:
1. Volume calculations are presented in Table B.2, except as noted below
2. Shading indicates material to be consolidated on site
3. Assumes addditional 25% of C&D debris above 0.1 mg/kg
4. Assumes additional 5% of C&D debris consists of bulk non-contaminated items

Prepared by/Date: RTB/ 071609
Checked by/Date: SEW/071609

TABLE B.2 - Soil, Sediment, and C&D Debris Volume Backup Calculations

Top Depth (ft)	Bottom Depth (ft)	Area Type	Conc. Range (mg/kg)	Item	Area Perimeter (ft)	No. of Con. Samples	Subtotal Con. Samples by Area Type	Area (sf)	Volume (cy)	Subtotal Vol by Area Type (cy)	Notes
0	1	Off-Site Residential Soil	>= 0.1 <1.0	5	223	9	21	1335	49	99	
0	1	Off-Site Residential Soil	>= 0.1 <1.0	22	300	12		1374	50		
0	1	Off-Site Soil	>= 0.1 <1.0	7	1167	51	51	10666	391	391	
0	1	On-Site Soil	>= 0.1 <1.0	19	935	38	247	5801	213	2326	
0	1	On-Site Soil	>= 0.1 <1.0	26	3553	178		53132	1948		
0	1	On-Site Soil	>= 0.1 <1.0	34	210	8		780	29		
0	1	On-Site Soil	>= 0.1 <1.0	42	545	23		3713	136		
0	1	Sediment East Bank	>= 0.1 <1.0	3	512	19	19	1562	57	57	
0	1	Sediment Sauquoit Creek	>= 0.1 <1.0	4	277	13	13	3073	113	113	
0	5	Unnamed Tributary	>= 0.1 <1.0	1	597	22	22	1366	253	253	
1	2	On-Site Soil	>= 0.1 <1.0	34	210	8	230	780	29	3418	
1	2	On-Site Soil	>= 0.1 <1.0	44	2736	188		87106	3194		
1	2	On-Site Soil	>= 0.1 <1.0	48	838	34		5319	195		
2	3	On-Site Soil	>= 0.1 <1.0	52	1518	118	152	59785	2214	2692	
2	5	On-Site Soil	>= 0.1 <1.0	56	862	34		4302	478		
0	NA	CD Debris	>= 1.0 <10	39	879	42	90	11427	3422	3938	see Note 1 below
0	NA	CD Debris - Pile 1	>= 1.0 <10	27	298	14		3562	241		Volume calculated using Auto CAD
0	NA	CD Debris - Pile 2	>= 1.0 <10	36	470	20		3801	138		Volume calculated using Auto CAD
0	NA	CD Debris - Pile 3	>= 1.0 <10	41	303	14		2867	137		Volume calculated using Auto CAD
0	1	Off-Site Residential Soil	>= 1.0 <10	23	91	4	4	426	16	16	
0	1	Off-Site Soil	>= 1.0 <10	6	446	19	19	3601	132	132	
0	1	On-Site Soil	>= 1.0 <10	14	174	7	192	505	19	1770	
0	1	On-Site Soil	>= 1.0 <10	18	946	44		10888	399		
0	1	On-Site Soil	>= 1.0 <10	20	555	24		4465	164		
0	1	On-Site Soil	>= 1.0 <10	28	1145	65		23815	873		
0	1	On-Site Soil	>= 1.0 <10	32	180	7		625	23		
0	1	On-Site Soil	>= 1.0 <10	33	299	11		870	32		
0	1	On-Site Soil	>= 1.0 <10	40	780	34		7098	260		
0	1	Sediment East Bank	>= 1.0 <10	2	217	10	10	2123	78	78	
0	5	Unnamed Tributary	>= 1.0 <10	24	353	14	14	1181	219	219	
1	2	On-Site Soil	>= 1.0 <10	32	180	7	45	625	23	270	
1	2	On-Site Soil	>= 1.0 <10	33	299	11		870	32		
1	2	On-Site Soil	>= 1.0 <10	43	179	9		1920	70		
1	2	On-Site Soil	>= 1.0 <10	45	391	18		3939	144		
2	4	On-Site Soil	>= 1.0 <10	32	180	7	55	625	46	1513	
2	3	On-Site Soil	>= 1.0 <10	33	299	11		870	32		
2	9	On-Site Soil	>= 1.0 <10	50	51	2		172	45		
2	3	On-Site Soil	>= 1.0 <10	51	161	7		1391	52		
2	4	On-Site Soil	>= 1.0 <10	53	179	9		1920	142		
2	8	On-Site Soil	>= 1.0 <10	54	380	19		5382	1196		
0	NA	CD Debris	>= 10	35	235	12	21	3021	905	1300	see Note 1 below
0	NA	CD Debris	>= 10	38	206	9		1318	395		see Note 1 below
0	1	Off-Site Soil	>= 10	8	145	7	9	1166	43	48	
0	1	Off-Site Soil	>= 10	9	48	2		132	5		
0	1	On-Site Soil	>= 10	10	144	7	75	1176	43	863	
0	2	On-Site Soil	>= 10	11	31	2		53	4		
0	2	On-Site Soil	>= 10	12	115	5		289	21		
0	2	On-Site Soil	>= 10	13	31	2		59	4		
0	2	On-Site Soil	>= 10	15	50	2		138	10		
0	1	On-Site Soil	>= 10	16	41	2		106	4		
0	1	On-Site Soil	>= 10	17	69	3		265	10		
0	1	On-Site Soil	>= 10	21	79	4		388	14		
0	1	On-Site Soil	>= 10	29	139	6		1208	44		
0	5	On-Site Soil	>= 10	31	544	20		1518	281		

TABLE B.2 - Soil, Sediment, and C&D Debris Volume Backup Calculations

Top Depth (ft)	Bottom Depth (ft)	Area Type	Conc. Range (mg/kg)	Item	Area Perimeter (ft)	No. of Con. Samples	Subtotal Con. Samples by Area Type	Area (sf)	Volume (cy)	Subtotal Vol by Area Type (cy)	Notes
0	1	On-Site Soil	>= 10	37	65	3		190	7		
0	5	Unnamed Tributary	>= 10	25	102	4	19	259	48	489	
0	5	Unnamed Tributary	>= 10	30	342	15		2383	441		
1	2	On-Site Soil	>= 10	46	108	5		804	29		
1	2	On-Site Soil	>= 10	47	53	2		183	7		
2	9	On-Site Soil	>= 10	49	209	9		1155	299		
2	8	On-Site Soil	>= 10	55	73	3		377	84		
				Total		1308	1308	Total (cy)	19985	19985	

Notes:
1. Area Type CD Debris - Total Volume from Auto CAD is 3148 cubic yards. Volumes for Items 35, 38, 39, have been apportioned based upon the ratio of the "item"surface areas. Additionally, it has been assumed that an additional 50 percent, by volume, of the C&D debris in this pile is located below grade.

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Checked by/Date: SEW/ 071609

APPENDIX C

DETAILED COST ESTIMATE BACKUP

Alternative 2

Task	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Comments/ Assumptions
Subtask								
Assembly (1)								
ALTERNATIVE CAPITAL COSTS								
Pre-Design Investigations								
Survey								
99241201	Surveying - 2-man Crew	2	DAY	$ -	$ 617.50	$ 204.77	$ 1,644.54	RSMeans 2004 ECHOS
MACTEC	Stream habitat inventory	2	DAY	$ -	$ 1,000.00	$ 25.00	$ 2,050.00	
MACTEC	Upgradient Stream Inspection	2	DAY	$ -	$ 1,000.00	$ 25.00	$ 2,050.00	
MACTEC	Pre-design Report	1	LS	$ -	$ 20,000.00	$ -	$ 20,000.00	
	Task Subtotal						$ 25,744.54	
Mobilization and Temporary Facilities and Controls								
Temporary Utilities								
99040101	Temporary Office 20' x 8'	3.00	MO	$ 206.42	$ -	$ -	$ 619.26	RSMeans 2004 ECHOS
99140201	Temporary Storage Trailer 16' x 8'	3.00	MO	$ 80.72	$ -	$ -	$ 242.16	RSMeans 2004 ECHOS
99040501	Portable Toilets	3.00	MO	$ 82.65	$ -	$ -	$ 247.95	RSMeans 2004 ECHOS
01510.050.0040	Temporary Power Service, overhead feed, 3 use, 200 amp	1.00	EA	$ 745.00	$ 335.00	$ -	$ 1,080.00	RSMeans Site Work & Landscape Cost Data 2006
01520.550.0140	Telephone utility fee	3.00	MO	$ 210.00	$ -	$ -	$ 630.00	RSMeans Site Work & Landscape Cost Data 2006
MACTEC	Electrical utility fee	3.00	MO	$ 200.00	$ -	$ -	$ 600.00	
01520.550.0100	Field office expenses, office equipment rental, average	3.00	MO	$ 145.00	$ -	$ -	$ 435.00	RSMeans Site Work & Landscape Cost Data 2006
01560.250.0200	Rented chain link, 6' high, to 1,000'	1000	LF	$ 3.03	$ 1.10	$ -	$ 4,130.00	RSMeans Site Work & Landscape Cost Data 2006
02220.350.0725	Dumpster, weekly rental, 1 dump/week , 20 cy capacity (8 tons)	12	WK	$ 420.00	$ -	$ -	$ 5,040.00	RSMeans Site Work & Landscape Cost Data 2006
Decon Wastewater Handling								
19040406	21,000 Gallon Steel Wastewater Holding Tank, Rental	3	MO	$ 1,200.00	$ -	$ -	$ 3,600.00	RSMeans 2004 ECHOS, for decontamination water containment
Water Diversion System								
Stabilized Berms (assume 2)								
02060.150.0100	Borrow, spread with 200 HP dozer, no compaction, 2 mile round trip haul, bank run gravel.	2000	CY	$ 18.15	$ 1.43	$ 3.12	$ 45,400.00	RSMeans Site Work & Landscape Cost Data 2006, 25 ft long, 10 ft wide, 4 ft tall
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	1800	ECY		$ 1.10	$ 0.13	$ 2,214.00	RSMeans Site Work & Landscape Cost Data 2006
33080534	16 oz/sy nonwoven geotextile	22	SY	$ 2.39	$ -		$ 53.11	RSMeans 2004 ECHOS
01540.800.0700	Tarpaulins, 8.5 mils, black	200	SF	$ 0.24	$ -	$ -	$ 48.00	RSMeans Site Work & Landscape Cost Data 2006
MACTEC	sand bag cover anchor/ballast system	6	EA		$ 2,000.00	$ -	$ 12,000.00	
Culvert Piping								
10", 20 ft lengths, Tubing Corrugated and snap-on ABS	Polyethylene Flexible Drainage drainage tubing, plain or perforated fittings. Installed in an open trench.	400	LF	$ 6.37	$ 0.78	$ -	$ 2,860.00	http://www.get-a-quote.net
MACTEC	sand bag cover anchor/ballast system	6	EA	$ 2,000.00	$ -	$ -	$ 12,000.00	
Water Diversion Operation								
02240.500.1000	Pumping 8 hr., attended 2 hrs. per day, including 20 LF of suction hose and 100 LF of discharge hose, w/ 4"	10	DAY	$ -	$ 1,215.00	$ 249.00	$ 14,640.00	RSMeans Site Work & Landscape Cost Data 2006, rates tripled for 24 hr/day operation

	diaphragm pump used 8 hrs.									
Stockpile Containment Areas										
Source Area >10 mg/kg materials										
01540.800.0700	Tarpaulins, 8.5 mils, black	10000	SF	$ 0.24	$ -	$ -	$ 2,400.00	RSMeans Site Work & Landscape Cost Data 2006		
02240.500.0600	Pumping 8 hr., attended 2 hrs. per day, including 20 LF of suction hose and 100 LF of discharge hose, w/ 2" diaphragm pumped used 8 hrs.	30	DAY	$ -	$ 101.00	$ 14.50	$ 3,465.00	RSMeans Site Work & Landscape Cost Data 2006, assume 1 month		
Non Source Area <10 mg/kg materials										
01540.800.0700	Tarpaulins, 8.5 mils, black	10000	SF	$ 0.24	$ -	$ -	$ 2,400.00	RSMeans Site Work & Landscape Cost Data 2006		
02240.500.0600	Pumping 8 hr., attended 2 hrs. per day, including 20 LF of suction hose and 100 LF of discharge hose, w/ 2" diaphragm pumped used 8 hrs.	30	DAY	$ -	$ 101.00	$ 14.50	$ 3,465.00	RSMeans Site Work & Landscape Cost Data 2006, assume 1 month		
Decontamination Facility										
33290401	25 gpm, 1-1/2" discharge, cast iron sump pur	1	EA	$ -	$ -	$ 2,317.00	$ 2,317.00	RSMeans 2004 ECHOS		
33290704	50' Flexible, Product Discharge Hose	1	EA	$ -	$ -	$ 175.00	$ 175.00	RSMeans 2004 ECHOS		
02060.150.0300	3/4" crushed stone borrow, spread w/ 200 HP dozer, no compaction, 2 mi rt haul	56	CY	$ 27.50	$ 1.43	$ 3.12	$ 1,780.56	RSMeans Site Work & Landscape Cost Data 2006, assume 30 ft by 50 ft by one foot thick		
02315.310.5100	Compaction, General, riding vibrating roller, 12" lifts, 4 passes	56	ECY	$ -	$ 0.16	$ 0.16	$ 17.78	RSMeans Site Work & Landscape Cost Data 2006		
3308544	60-mil Polymeric Liner, Very Low Density F	167	SF	$ 1.97	$ -		$ 328.33	RSMeans 2004 ECHOS, assume 30 ft by 50 ft		
33080534	16 oz/sy nonwoven geotextile	167	SY	$ 2.39	$ -		$ 398.33	RSMeans 2004 ECHOS		
33170814	1,800 psi pressure washer, 6HP, 4.8 gpm	1	EA	$ -	$ -	$ 1,635.00	$ 1,635.00	RSMeans 2004 ECHOS		
19040605	2,000 gal steel sump, aboveground w/ supports and fittings	1	EA	$ 2,233.00	$ 853.69	$ 123.26	$ 3,209.95	RSMeans 2004 ECHOS		
33170823	Operation of pressure washer, including water, soap, electricity, and labor	240	HR	$ -	$ -	$ 41.69	$ 10,005.60	RSMeans 2004 ECHOS, Assume 6 min (0.10 hrs) /truck, assume 30 days/8 hrs/day		
33410101	Pump and motor maintenance/repair	1	EA	$ -	$ -	$ 431.15	$ 431.15	RSMeans 2004 ECHOS		
Erosion and Sediment Control Measures										
18050206	Filter Barrier, Silt Fences, Vinyl, 3' High with 7.5' Posts	2000	LF	$ 0.70	$ 1.41	$ -	$ 4,220.00	RSMeans 2004 ECHOS, along tribu both sides, top of bank Sauqouit, work areas		
02370 700 1350	Haybales, staked	500	LF	$ 2.25	$ 0.26	$ 0.05	$ 1,280.00	RSMeans Site Work & Landscape Cost Data 2006		
	Air/Dust Monitoring									
MACTEC	Siltation Curtains	300	SF	$ 4.42	$ -	$ -	$ 1,326.00	Assume 6 50-ft units utilized		
Wastewater Treatment System										
Vendor	100 gpm Dewatering Treatment Facility	1	LS	$ -	$ -	#########	$ 125,000.00	Contractor Bid to MACTEC 2008, includes 20,000 gal FRAC EQ Tank, OWS, bag filter, GAC filters		
02240.500.1000	Pumping 8 hr., attended 2 hrs. per day, including 20 LF of suction hose and 100 LF of discharge hose, w/ 4" diaphragm pumped used 8 hrs.	30	DAY	$ -	$ 405.00	$ 83.00	$ 14,640.00	RSMeans Site Work & Landscape Cost Data 2006, assume two weeks		
Sludge Handling and Disposal								Assumes 100 gpm, 30 days, 50% solids influent		
MACTEC	Materials	12	Drums	$ 45.00	$ -	$ -	$ 540.00	Based upon drummed sludge disposal costs for Buffalo NY to Illinois 2008		
	Transportation	12	Drums	$ 50.00	$ -	$ -	$ 600.00	Based upon drummed sludge disposal costs for Buffalo NY to Illinois 2009		
	Disposal	12	Drums	$ 325.00	$ -	$ -	$ 3,900.00	Based upon drummed sludge disposal costs for Buffalo NY to Illinois 2010		
	Fees and Charges	25	%				$ 1,260.00	Estimated		
Temporary Discharge Monitoring										
MACTEC	Aqueous Sampling, PCBs	30	EA	$ 140.00			$ 4,200.00	24-hr turn around expedited at additional 100% of cost		
	Aqueous Sampling, Metals	30	EA	$ 130.00			$ 3,900.00	24-hr turn around expedited at additional 100% of cost		
	Aqueous Sampling, VOCs	30	EA	$ 140.00			$ 4,200.00	24-hr turn around expedited at additional 100% of cost		
	Aqueous Sampling, SVOCs	30	EA	$ 360.00			$ 10,800.00	24-hr turn around expedited at additional 100% of cost		

Clearing and Grubbing									
17010107	Medium Brush, Medium Trees, Clear, Grub, Haul	1.5 ACRE	$ -	$ 3,327.00	$ 2,852.00	$ 9,268.50	RSMeans 2004 ECHOS		
Survey of Work/Stockpile Areas									
99241201	Surveying - 2-man Crew	2 DAY	$ -	$ 617.50	$ 204.77	$ 1,644.54	RSMeans 2004 ECHOS		
	Task Subtotal					$ 324,647.22			
Excavation and off-site disposal of soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill									
Source Soil									
MACTEC	Excavation, soil, loading for stockpile	910 BCY	$ 5.53	$ -	$ -	$ 5,032.36	Refer to Excavation Rate Calculations		
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	1001 LCY	$ -	$ 0.79	$ 1.66	$ 2,453.23	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell		
MACTEC	Confirmation Sampling, PCBs	84 EA	$ 80.00	$ -	$ -	$ 6,720.00	MACTEC standby quote, qty consistent with NYSDEC DER-10		
Backfill excavation									
02315.210.4060	Borrow, Loading, commmon earth, 1-1/2 CY bucket	910 BCY	$ 8.25	$ 0.42	$ 0.25	$ 8,119.78	RSMeans Site Work & Landscape Cost Data 2006		
02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	1001 LCY	$ -	$ 5.80	$ 12.20	$ 18,023.73	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff		
02315.120.3220	Backfill, Structural, dozer or FE Loader, from existing stockpile, no compaction, 105 HP, 150' haul, common earth	1001 LCY	$ -	$ 0.66	$ 0.76	$ 1,421.87	RSMeans Site Work & Landscape Cost Data 2006		
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	910 ECY	$ -	$ 1.10	$ 0.13	$ 1,119.66	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation		
Source C&D									
MACTEC	Excavation, C&D loading for stockpile	1,300 BCY	$ 5.95	$ -	$ -	$ 7,732.58	Refer to Excavation Rate Calculations		
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	1430 LCY	$ -	$ 0.79	$ 1.66	$ 3,502.52	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell		
MACTEC	Confirmation Sampling, PCBs	21 EA	$ 80.00	$ -	$ -	$ 1,680.00	MACTEC standby quote, qty consistent with NYSDEC DER-10		
Backfill excavation									
02315.210.4060	Borrow, Loading, commmon earth, 1-1/2 CY bucket	1,300 BCY	$ 8.25	$ 0.42	$ 0.25	$ 11,592.77	RSMeans Site Work & Landscape Cost Data 2006		
02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	1430 LCY	$ -	$ 5.80	$ 12.20	$ 25,732.83	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff		
02315.120.3220	Backfill, Structural, dozer or FE Loader, from existing stockpile, no compaction, 105 HP, 150' haul, common earth	1430 LCY	$ -	$ 0.66	$ 0.76	$ 2,030.03	RSMeans Site Work & Landscape Cost Data 2006		
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	1300 ECY	$ -	$ 1.10	$ 0.13	$ 1,598.55	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation		
Source Sed Excavation									
MACTEC	Excavation, sed, loading for stockpile	489 BCY	$ 10.47	$ -	$ -	$ 5,123.49	Refer to Excavation Rate Calculations		
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	538 LCY		$ 0.79	$ 1.66	$ 1,318.50	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell		
MACTEC	Confirmation Sampling, PCBs	19 EA	$ 80.00	$ -	$ -	$ 1,520.00	MACTEC standby quote, qty consistent with NYSDEC DER-10		
Transportation and Disposal									
Vendor	Transportation and Disposal, hazardous soils and sediment	2239 TON	$ 141.54	$ -	$ -	$ 316,938.68	Refer to Disposal Cost Calculations		
Vendor	Transportation and Disposal, hazardous C&D debris	2079 TON	$ 349.01	$ -	$ -	$ 725,733.87	Refer to Disposal Cost Calculations		
	Task Subtotal					$1,147,394.45			

Excavation and on-site consolidation and capping of remaining on-site soil 0 to 1 feet bgs and C&D debris (all depths) with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill

MACTEC	Excavation, soil, loading for stockpile	1,770	BCY	$ 2.84	$ -	$ -	$ 5,032.36	Refer to Excavation Rate Calculations
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	1947	LCY	$ -	$ 0.79	$ 1.66	$ 4,770.97	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell
MACTEC	Confirmation Sampling, PCBs	192	EA	$ 80.00	$ -	$ -	$ 15,360.00	MACTEC standby quote, qty consistent with NYSDEC DER-10
02315.490.1600	Grading at dump, or embankment if required, by dozer	1947	LCY	$ -	$ 0.40	$ 0.92	$ 2,570.48	RSMeans Site Work & Landscape Cost Data 2006
Backfill excavation								
02315.210.4060	Borrow, Loading, commmon earth, 1-1/2 CY bucket	1,770	BCY	$ 8.25	$ 0.42	$ 0.25	$ 15,791.12	RSMeans Site Work & Landscape Cost Data 2006
02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	1947.335	LCY	$ -	$ 5.80	$ 12.20	$ 35,052.03	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff
02315.120.3220	Backfill, Structural, dozer or FE Loader, from existing stockpile, no compaction, 105 HP, 150' haul, common earth	1947.335	LCY	$ -	$ 0.66	$ 0.76	$ 2,765.22	RSMeans Site Work & Landscape Cost Data 2006
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	1770.3	ECY	$ -	$ 1.10	$ 0.13	$ 2,177.47	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation
MACTEC	Excavation, C&D loading for stockpile	3,938	BCY	$ 5.95	$ -	$ -	$ 23,432.46	Refer to Excavation Rate Calculations
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	4332	LCY	$ -	$ 0.79	$ 1.66	$ 10,613.89	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell
MACTEC	Confirmation Sampling, PCBs	90	EA	$ 80.00	$ -	$ -	$ 7,200.00	MACTEC standby quote, qty consistent with NYSDEC DER-10
02315.490.1600	Grading at dump, or embankment if required, by dozer	4332	LCY	$ -	$ 0.40	$ 0.92	$ 5,718.50	RSMeans Site Work & Landscape Cost Data 2006
Backfill excavation								
02315.210.4060	Borrow, Loading, commmon earth, 1-1/2 CY bucket	3,938	BCY	$ 8.25	$ 0.42	$ 0.25	$ 35,130.19	RSMeans Site Work & Landscape Cost Data 2006
02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	4332	LCY	$ -	$ 5.80	$ 12.20	$ 77,979.57	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff
02315.120.3220	Backfill, Structural, dozer or FE Loader, from existing stockpile, no compaction, 105 HP, 150' haul, common earth	4332	LCY	$ -	$ 0.66	$ 0.76	$ 6,151.72	RSMeans Site Work & Landscape Cost Data 2006
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	3938	ECY	$ -	$ 1.10	$ 0.13	$ 4,844.19	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation
	Task Subtotal						$ 254,590.17	

Excavation and on-site consolidation and capping of remaining C&D debris and garbage

MACTEC	Excavation, C&D loading for stockpile	262	BCY	$ 5.95	$ -	$ -	$ 1,558.25	Refer to Excavation Rate Calculations
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	288	LCY	$ -	$ 0.79	$ 1.66	$ 705.82	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell
MACTEC	Confirmation Sampling, PCBs	7	EA	$ 80.00	$ -	$ -	$ 534.00	MACTEC standby quote, qty consistent with NYSDEC DER-10
02315.490.1600	Grading at dump, or embankment if required, by dozer	288	LCY	$ -	$ 0.40	$ 0.92	$ 380.28	RSMeans Site Work & Landscape Cost Data 2006
Backfill excavation								
02315.210.4060	Borrow, Loading, commmon earth, 1-1/2 CY bucket	262	BCY	$ 8.25	$ 0.42	$ 0.25	$ 2,336.15	RSMeans Site Work & Landscape Cost Data 2006
02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	288	LCY	$ -	$ 5.80	$ 12.20	$ 5,185.62	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff
02315.120.3220	Backfill, Structural, dozer or FE Loader, from existing stockpile, no compaction, 105 HP, 150' haul, common earth	288	LCY	$ -	$ 0.66	$ 0.76	$ 409.09	RSMeans Site Work & Landscape Cost Data 2006
02315.310.7000	Compaction, Walk behind, vibrating plate	262	ECY	$ -	$ 1.10	$ 0.13	$ 322.14	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation

	18" wide, 6" lifts, 2 passes								
	Task Subtotal						$	11,431.34	
Excavation and on-site consolidation and capping of remaining off-site residential soil 0 to 2 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill									
MACTEC	Excavation, soil, loading for stockpile	16 BCY	$ 93.19	$ -	$ -	$	1,454.45	Refer to Excavation Rate Calculations	
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	17 LCY	$ -	$ 0.79	$ 1.66	$	42.06	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell	
MACTEC	Confirmation Sampling, PCBs	4 EA	$ 80.00	$ -	$ -	$	320.00	MACTEC standby quote, qty consistent with NYSDEC DER-10	
02315.490.1600	Grading at dump, or embankment if required, by dozer	17 LCY	$ -	$ 0.40	$ 0.92	$	22.66	RSMeans Site Work & Landscape Cost Data 2006	
Backfill excavation									
02315.210.4060	Borrow, Loading, commmon earth, 1-1/2 CY bucket	16 BCY	$ 8.25	$ 0.42	$ 0.25	$	139.22	RSMeans Site Work & Landscape Cost Data 2006, average 6 inches deep	
02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	17 LCY	$ -	$ 5.80	$ 12.20	$	309.02	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff	
02315.120.3220	Backfill, Structural, dozer or FE Loader, from existing stockpile, no compaction, 105 HP, 150' haul, common earth	17 LCY	$ -	$ 0.66	$ 0.76	$	24.38	RSMeans Site Work & Landscape Cost Data 2006	
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	16 ECY	$ -	$ 1.10	$ 0.13	$	19.20	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation	
	Task Subtotal					$	2,330.99		
Excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 3 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg and 3 to 5 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement ofclean backfill and a two-foot restoration to original grade									
MACTEC	Excavation, sed, loading for stockpile	371 BCY	$ 10.47	$ -	$ -	$	3,881.20	Refer to Excavation Rate Calculations	
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	408 LCY		$ 0.79	$ 1.66	$	998.81	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell	
MACTEC	Confirmation Sampling, PCBs	27 EA	$ 80.00	$ -	$ -	$	2,176.00	MACTEC standby quote, qty consistent with NYSDEC DER-10	
Vendor	Transportation and Disposal, non-hazardous soils and sediment	593 TON	$ 125.44	$ -	$ -	$	74,385.60	Refer to Disposal Cost Calculations	
	Task Subtotal					$	81,441.61		
Restoration of Unnamed Tributary									
Backfill excavation									
02315.210.4060	Borrow, Loading, commmon earth, 1-1/2 CY bucket	579 BCY	$ 8.25	$ 0.42	$ 0.25	$	5,168.03	RSMeans Site Work & Landscape Cost Data 2006	
02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	637 LCY	$ -	$ 5.80	$ 12.20	$	11,471.65	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff	
02315.120.3220	Backfill, Structural, dozer or FE Loader, from existing stockpile, no compaction, 105 HP, 150' haul, common earth	637 LCY	$ -	$ 0.66	$ 0.76	$	904.99	RSMeans Site Work & Landscape Cost Data 2006	
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	579 ECY	$ -	$ 1.10	$ 0.13	$	712.63	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation	
Stream Restoration									
Bank Run Cobbles									
02370.450.0100	Riprap and Rock Lining, broken stone, machine placed for slope protection	449 TON	$ 51.00	$ 8.45	$ 9.15	$	30,785.22	RSMeans Site Work & Landscape Cost Data 2006 - assumes to average 2 ft, 1.6 tons/cy	
Plantings									
Vendor Quote	Live Staking	200 EA	$ 5.00	$ -	$ -	$	1,000.00	Certified Erosion Control of New Hampshire	
Vendor Quote	Trees	1 LS	$ 280.00	$ -		$	280.00	New England Wetland Plants, Inc. Amherst, MA	

Vendor Quote	Shrubs	1	LS	$ 417.50	$ -	$ -	$ 417.50	New England Wetland Plants, Inc. Amherst, MA
MACTEC	Planting, Labor	5	DAY	$ -	$ 1,000.00	$ -	$ 5,000.00	
02910.710.0300	Lawn bed preparation, screened loam, york rake and finish, ideal conditions	6	MSF	$ -	$ 30.00	$ 6.40	$ 218.40	RSMeans Site Work & Landscape Cost Data 2006, 300 ft, 10 ft wide, both sides
02920.320.0200	Seeding, hydro w/ mulch and fertilizer	6	MSF	$ 24.50	$ 9.25	$ 5.05	$ 232.80	RSMeans Site Work & Landscape Cost Data 2006
Vendor Quote	Compost Blanket	6000	SF	$ 0.50	$ -	$ -	$ 3,000.00	Certified Erosion Control of New Hampshire
	Task Subtotal						$ 59,191.22	

Excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade

Vendor Data	Water-inflated berms 4 ft tall, 9.5 ft long	150	FT	$ 39.00			$ 5,850.00	AquaDam® Price Guide 1/1/2008
Vendor Data	Water-inflated berm attachment collars	16	EA	$ 80.00			$ 1,280.00	AquaDam® Price Guide 1/1/2008
MACTEC	Siltation Curtains	30	SF	$ 4.42	$ -	$ -	$ 132.60	
MACTEC	Excavation, sed, loading for stockpile	135	BCY	$ 37.24	$ -	$ -	$ 5,032.36	Refer to Excavation Rate Calculations
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	149	LCY		$ 0.79	$ 1.66	$ 364.21	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell
MACTEC	Confirmation Sampling, PCBs	29	EA	$ 80.00	$ -	$ -	$ 2,320.00	MACTEC standby quote, qty consistent with NYSDEC DER-10
Vendor	Transportation and Disposal, non-hazardous soils and sediment	216	TON	$ 125.44	$ -	$ -	$ 27,124.20	Refer to Disposal Cost Calculations
Backfill excavation								
02315.210.4060	Borrow, Loading, commmon earth, 1-1/2 CY bucket	0	BCY	$ 8.25	$ 0.42	$ 0.25	$ -	RSMeans Site Work & Landscape Cost Data 2006, average 2 feet deep
02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	0	LCY	$ -	$ 5.80	$ 12.20	$ -	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff
02315.120.3220	Backfill, Structural, dozer or FE Loader, from existing stockpile, no compaction, 105 HP, 150' haul, common earth	0	LCY	$ -	$ 0.66	$ 0.76	$ -	RSMeans Site Work & Landscape Cost Data 2006
Stream Restoration								
Bank Run Cobbles								
02370.450.0100	Riprap and Rock Lining, broken stone, machine placed for slope protection	216	TON	$ 51.00	$ 8.45	$ 9.15	$ 14,833.18	RSMeans Site Work & Landscape Cost Data 2006 - assumes to average 1 ft, 1.6 tons/cy
Plantings								
Vendor Quote	Live Staking	50	EA	$ 5.00	$ -	$ -	$ 250.00	Certified Erosion Control of New Hampshire
Vendor Quote	Trees	1	LS	$ 280.00	$ -		$ 280.00	New England Wetland Plants, Inc. Amherst, MA
Vendor Quote	Shrubs	1	LS	$ 417.50	$ -	$ -	$ 417.50	New England Wetland Plants, Inc. Amherst, MA
MACTEC	Planting, Labor	2	DAY	$ -	$ 1,000.00	$ -	$ 2,000.00	
02910.710.0300	Lawn bed preparation, screened loam, york rake and finish, ideal conditions	1	MSF	$ -	$ 30.00	$ 6.40	$ 36.40	RSMeans Site Work & Landscape Cost Data 2006, 300 ft, 10 ft wide, both sides
02920.320.0200	Seeding, hydro w/ mulch and fertilizer	1	MSF	$ 24.50	$ 9.25	$ 5.05	$ 38.80	RSMeans Site Work & Landscape Cost Data 2006
Vendor Quote	Compost Blanket	1000	SF	$ 0.50	$ -	$ -	$ 500.00	Certified Erosion Control of New Hampshire
	Task Subtotal						$ 60,459.25	

Construction of a one-foot thick soil cover over soil with PCB concentrations greater than 1 but less than 10 mg/kg and consolidated soil and C&D debris

17030423	Unclassified Fill, 6" Lifts, Off-site, Includes Delivery, Spreading, and Compaction	998	CY	$ 8.95	$ -	$ -	$ 8,929.38	RSMeans 2004 ECHOS, Level D, includes 25% fluff to account for C&D debris voids
18050301	Topsoil, 6" Lifts, Off-site	998	CY	$ 27.84	$ -	$ -	$ 27,775.85	RSMeans 2004 ECHOS, Level D
18050402	Seeding, Vegetative Cover	1.2	ACRE	$ 3,625.00	$ -	$ -	$ 4,483.45	RSMeans 2004 ECHOS, Level D, assume on avg of consolidated material 3 ft thick
18050409	Fertilize, 800 Lbs/Acre, Push Rotary	1.2	ACRE	$ 88.93	$ -	$ -	$ 109.99	RSMeans 2004 ECHOS
18050413	Watering with 3,000-gallon Tank Truck, per Pass	1.2	ACRE	$ 60.19	$ -	$ -	$ 74.44	RSMeans 2004 ECHOS
33050802	Grass Ditching, 3' Bottom, 3' Deep, 2:1 Side Slopes	100	LF	$ 12.33	$ -	$ -	$ 1,233.00	RSMeans 2004 ECHOS
33050804	Riprap Ditching, 3' Bottom, 3' Deep, 2:1 Side Slopes	100	LF	$ 19.22	$ -	$ -	$ 1,922.00	RSMeans 2004 ECHOS

33080532	8 oz/sy Erosion Control/Drainage Filter Fabric (80 Mil)	167	SY	$	1.18	$ -	$ -	$	196.67	RSMeans 2004 ECHOS
	Task Subtotal							$	44,724.77	
Institutional Controls										
33022037	Overnight Delivery, 8 oz Letter	4	EA	$	14.43	$ -	$ -	$	57.72	RSMeans 2004 ECHOS
33220102	Project Manager	16	HR	$	-	$ 51.77	$ -	$	828.32	RACER 2007
33220105	Project Engineer	20	HR	$	-	$ 50.20	$ -	$	1,004.00	RACER 2007
33220106	Staff Engineer	40	HR	$	-	$ 43.93	$ -	$	1,757.20	RACER 2007
33220110	QA/QC Officer	16	HR	$	-	$ 42.34	$ -	$	677.44	RACER 2007
33220114	Word Processing/Clerical	40	HR	$	-	$ 22.35	$ -	$	894.00	RACER 2007
33220115	Draftsman/CADD	40	HR	$	-	$ 29.22	$ -	$	1,168.80	RACER 2007
33220120	Computer Data Entry	40	HR	$	-	$ 20.08	$ -	$	803.20	RACER 2007
33220505	Attorney, Senior Associate, Real Estate	4	HR	$	-	$ 175.00	$ -	$	700.00	RACER 2007
33220509	Paralegal, Real Estate	4	HR	$	-	$ 100.00	$ -	$	400.00	RACER 2007
33240101	Other Direct Costs	1	LS	$	751.16	$ -	$ -	$	751.16	RACER 2007
99041205	Portable GPS Set with Mapping, 5 cm Accuracy	1	MO	$	689.22	$ -	$ -	$	689.22	RACER 2007
								$	-	RACER 2007
99130602	Local Fees	1	LS	$	200.00	$ -	$ -	$	200.00	RACER 2007
	Task Subtotal							$	9,931.06	
ALTERNATIVE ANNUAL AND PERIODIC COSTS										
Annual Institutional Control and Cover Inspections and Reporting										
MACTEC	Inspection	4	HR			$ 90.00	$ 25.00	$	460.00	RACER 2006
MACTEC	Report	1	LS	$	-	$ 2,500.00	$ -	$	2,500.00	RACER 2006
	Task Subtotal							$	2,960.00	
Long-Term Monitoring (Years 1 through 5)										
MACTEC	Stream Restoration Inspection	1	DAY	$	-	$ 1,000.00	$ 25.00	$	1,025.00	
MACTEC	Environmental Sampling	5	DAY	$	-	$ 1,000.00	$ 500.00	$	7,500.00	
MACTEC	Sediment Sampling, PCBs	12	EA	$	80.00	$ -	$ -	$	960.00	
MACTEC	Surface Water Sampling, PCBs	12	EA	$	80.00	$ -	$ -	$	960.00	
MACTEC	PCB Fillet	12	EA	$	150.00	$ -	0	$	1,800.00	
MACTEC	PCB Whole Fish	12	EA	$	150.00	$ -	0	$	1,800.00	
MACTEC	PCB Crayfish	12	EA	$	150.00	$ -	0	$	1,800.00	
MACTEC	Lipids	12	EA	$	5.00	$ -	0	$	60.00	
MACTEC	Report	1	LS			$ 20,000.00		$	20,000.00	
	Task Subtotal							$	35,905.00	
Periodic Cover Maintenance (every 5 years)										
MACTEC		1	LS					$	4,472.48	10% of Capital Cost

PRESENT VALUE OF ANNUAL AND PERIODIC COSTS FOR ALTERNATIVE 2

Year	Cost*	Number of Annual Periods	Annual Discount Rate	Number of 5-Year Periods	5-Year Discount Rate	Number of 10-Year Periods	10-Year Discount Rate	Total Non-Discounted Cost	Present Value Cost
Capital (Year 0)	$ 2,910,000	1	0	NA	NA	NA	NA	$ 2,910,000.00	$ 2,910,000.00
Annual Inspections and Reporting (Years 1-30)	$ 4,000	30	0.031	NA	NA	NA	NA	$ 120,000.00	$ 77,397.95
Long-Term Monitoring (Years 1 through 5)	$ 48,000	5	0.031	NA	NA	NA	NA	$ 240,000.00	$ 219,199.69
Periodic (Every 5 Years)	$ 6,000	NA	NA	6	0.165			$ 36,000.00	$ 21,823.72
Totals								**$ 3,306,000.00**	**$ 3,228,421.36**

*Annual and periodic costs include 10% for technical support and 25% contingency for unforeseen project complexities, including insurance, taxes, and licensing costs.
Capital costs include 25% contingency, as well as and project management, remedial design, and construction management costs per DER-10 guidance.

Discount rate of 3.1 Percent based on OMB Circular No. A-94 App. C (Revised Jan. 2008)

Alternative 3

Task / Subtask / Assembly (1)	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Comments/ Assumptions
ALTERNATIVE CAPITAL COSTS								
Pre-Design Investigations								
(refer to Alternative 2 Detailed Costs)								
	Task Subtotal						$ 25,744.54	
Mobilization and Temporary Facilities and Controls								
Temporary Utilities								
99040101	Temporary Office 20' x 8'	3.00	MO	$ 206.42	$ -	$ -	$ 619.26	RSMeans 2004 ECHOS
99140201	Temporary Storage Trailer 16' x 8'	3.00	MO	$ 80.72	$ -	$ -	$ 242.16	RSMeans 2004 ECHOS
99040501	Portable Toilets	3.00	MO	$ 82.65	$ -	$ -	$ 247.95	RSMeans 2004 ECHOS
01510.050.0040	Temporary Power Service, overhead feed, 3 use, 200 amp	1.00	EA	$ 745.00	$ 335.00	$ -	$ 1,080.00	RSMeans Site Work & Landscape Cost Data 2006
01520.550.0140	Telephone utility fee	3.00	MO	$ 210.00	$ -	$ -	$ 630.00	RSMeans Site Work & Landscape Cost Data 2006
MACTEC	Electrical utility fee	3.00	MO	$ 200.00	$ -	$ -	$ 600.00	
01520.550.0100	Field office expenses, office equipment rental, average	3.00	MO	$ 145.00	$ -	$ -	$ 435.00	RSMeans Site Work & Landscape Cost Data 2006
01560.250.0200	Rented chain link, 6' high, to 1,000'	1000	LF	$ 3.03	$ 1.10	$ -	$ 4,130.00	RSMeans Site Work & Landscape Cost Data 2006
02220.350.0725	Dumpster, weekly rental, 1 dump/week , 20 cy capacity (8 tons)	12	WK	$ 420.00	$ -	$ -	$ 5,040.00	RSMeans Site Work & Landscape Cost Data 2006
Decon Wastewater Handling								
19040406	21,000 Gallon Steel Wastewater Holding Tank, Rental	3	MO	$ 1,200.00	$ -	$ -	$ 3,600.00	RSMeans 2004 ECHOS, for decontamination water containment
Water Diversion System								
Stabilized Berms (assume 2)								
02060.150.0100	Borrow, spread with 200 HP dozer, no compaction, 2 mile round trip haul, bank run gravel.	2000	CY	$ 18.15	$ 1.43	$ 3.12	$ 45,400.00	RSMeans Site Work & Landscape Cost Data 2006, 25 ft long, 10 ft wide, 4 ft tall
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	1800	ECY		$ 1.10	$ 0.13	$ 2,214.00	RSMeans Site Work & Landscape Cost Data 2006
33080534	16 oz/sy nonwoven geotextile	22	SY	$ 2.39	$ -		$ 53.11	RSMeans 2004 ECHOS
01540.800.0700	Tarpaulins, 8.5 mils, black	200	SF	$ 0.24	$ -	$ -	$ 48.00	RSMeans Site Work & Landscape Cost Data 2006
MACTEC	sand bag cover anchor/ballast system	6	EA		$ 2,000.00	$ -	$ 12,000.00	
Culvert Piping								
10", 20 ft lengths, Tubing Corrugated and snap-on ABS	Polyethylene Flexible Drainage drainage tubing, plain or perforated fittings. Installed in an open trench.	400	LF	$ 6.37	$ 0.78	$ -	$ 2,860.00	http://www.get-a-quote.net
MACTEC	sand bag cover anchor/ballast system	6	EA	$ 2,000.00	$ -	$ -	$ 12,000.00	
Water Diversion Operation								
02240.500.1000	Pumping 8 hr., attended 2 hrs. per day, including 20 LF of suction hose and 100 LF of discharge hose, w/ 4" diaphragm pump used 8 hrs.	10	DAY	$ -	$ 1,215.00	$ 249.00	$ 14,640.00	RSMeans Site Work & Landscape Cost Data 2006, rates tripled for 24 hr/day operation
Stockpile Containment Areas								
Source Area >10 mg/kg materials								
01540.800.0700	Tarpaulins, 8.5 mils, black	10000	SF	$ 0.24	$ -	$ -	$ 2,400.00	RSMeans Site Work & Landscape Cost Data 2006
02240.500.0600	Pumping 8 hr., attended 2 hrs. per day, including 20 LF of suction hose and 100 LF of discharge hose, w/ 2" diaphragm pumped used 8 hrs.	30	DAY	$ -	$ 101.00	$ 14.50	$ 3,465.00	RSMeans Site Work & Landscape Cost Data 2006, assume 1 month
Non Source Area <10 mg/kg materials								
01540.800.0700	Tarpaulins, 8.5 mils, black	10000	SF	$ 0.24	$ -	$ -	$ 2,400.00	RSMeans Site Work & Landscape Cost Data 2006
02240.500.0600	Pumping 8 hr., attended 2 hrs. per day,	30	DAY	$ -	$ 101.00	$ 14.50	$ 3,465.00	RSMeans Site Work & Landscape Cost Data 2006, assume 1 month

	including 20 LF of suction hose and 100 LF of discharge hose, w/ 2" diaphragm pumped used 8 hrs.								
Decontamination Facility									
33290401	25 gpm, 1-1/2" discharge, cast iron sump pun	1	EA	$ -	$ -	$ 2,317.00	$ 2,317.00	RSMeans 2004 ECHOS	
33290704	50' Flexible, Product Discharge Hose	1	EA	$ -	$ -	$ 175.00	$ 175.00	RSMeans 2004 ECHOS	
02060.150.0300	3/4" crushed stone borrow, spread w/ 200 HP dozer, no compaction, 2 mi rt haul	56	CY	$ 27.50	$ 1.43	$ 3.12	$ 1,780.56	RSMeans Site Work & Landscape Cost Data 2006, assume 30 ft by 50 ft by one foot thick	
02315.310.5100	Compaction, General, riding vibrating roller, 12" lifts, 4 passes	56	ECY	$ -	$ 0.16	$ 0.16	$ 17.78	RSMeans Site Work & Landscape Cost Data 2006	
3308544	60-mil Polymeric Liner, Very Low Density P	167	SF	$ 1.97	$ -		$ 328.33	RSMeans 2004 ECHOS, assume 30 ft by 50 ft	
33080534	16 oz/sy nonwoven geotextile	167	SY	$ 2.39	$ -		$ 398.33	RSMeans 2004 ECHOS	
33170814	1,800 psi pressure washer, 6HP, 4.8 gpm	1	EA	$ -	$ -	$ 1,635.00	$ 1,635.00	RSMeans 2004 ECHOS	
19040605	2,000 gal steel sump, aboveground w/ supports and fittings	1	EA	$ 2,233.00	$ 853.69	$ 123.26	$ 3,209.95	RSMeans 2004 ECHOS	
33170823	Operation of pressure washer, including water, soap, electricity, and labor	240	HR	$ -	$ -	$ 41.69	$ 10,005.60	RSMeans 2004 ECHOS, Assume 6 min (0.10 hrs) /truck, assume 30 days/8 hrs/day	
33410101	Pump and motor maintenance/repair	1	EA	$ -	$ -	$ 431.15	$ 431.15	RSMeans 2004 ECHOS	
Erosion and Sediment Control Measures									
18050206	Filter Barrier, Silt Fences, Vinyl, 3' High with 7.5' Posts	2000	LF	$ 0.70	$ 1.41	$ -	$ 4,220.00	RSMeans 2004 ECHOS, along tribu both sides, top of bank Sauquoit, work areas	
02370 700 1350	Haybales, staked	500	LF	$ 2.25	$ 0.26	$ 0.05	$ 1,280.00	RSMeans Site Work & Landscape Cost Data 2006	
	Air/Dust Monitoring								
MACTEC	Siltation Curtains	300	SF	$ 4.42	$ -	$ -	$ 1,326.00	Assume 6 50-ft units utilized	
Wastewater Treatment System									
Vendor	100 gpm Dewatering Treatment Facility	1	LS	$ -	$ -	#########	$ 125,000.00	Contractor Bid to MACTEC 2008, includes 20,000 gal FRAC EQ Tank, OWS, bag filter, GAC filters	
02240.500.1000	Pumping 8 hr., attended 2 hrs. per day, including 20 LF of suction hose and 100 LF of discharge hose, w/ 4" diaphragm pumped used 8 hrs.	30	DAY	$ -	$ 405.00	$ 83.00	$ 14,640.00	RSMeans Site Work & Landscape Cost Data 2006, assume two weeks	
Sludge Handling and Disposal								Assumes 100 gpm, 30 days, 50% solids influent	
MACTEC	Materials	12	Drums	$ 45.00	$ -	$ -	$ 540.00	Based upon drummed sludge disposal costs for Buffalo NY to Illinois 2008	
	Transportation	12	Drums	$ 50.00	$ -	$ -	$ 600.00	Based upon drummed sludge disposal costs for Buffalo NY to Illinois 2009	
	Disposal	12	Drums	$ 325.00	$ -	$ -	$ 3,900.00	Based upon drummed sludge disposal costs for Buffalo NY to Illinois 2010	
	Fees and Charges	25	%				$ 1,260.00	Estimated	
Temporary Discharge Monitoring									
MACTEC	Aqueous Sampling, PCBs	30	EA	$ 140.00			$ 4,200.00	24-hr turn around expedited at additional 100% of cost	
	Aqueous Sampling, Metals	30	EA	$ 130.00			$ 3,900.00	24-hr turn around expedited at additional 100% of cost	
	Aqueous Sampling, VOCs	30	EA	$ 140.00			$ 4,200.00	24-hr turn around expedited at additional 100% of cost	
	Aqueous Sampling, SVOCs	30	EA	$ 360.00			$ 10,800.00	24-hr turn around expedited at additional 100% of cost	
Clearing and Grubbing									
17010107	Medium Brush, Medium Trees, Clear, Grub, Haul	1.5	ACRE	$ -	$ 3,327.00	$ 2,852.00	$ 9,268.50	RSMeans 2004 ECHOS	
Survey of Work/Stockpile Areas									
99241201	Surveying - 2-man Crew	2	DAY	$ -	$ 617.50	$ 204.77	$ 1,644.54	RSMeans 2004 ECHOS	
	Task Subtotal						$ 324,647.22		

Excavation and off-site disposal of soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill
(refer to Alternative 2 Detailed Costs)

	Task Subtotal						$1,147,394.45		

Excavation and off-site disposal of remaining on-site soil 0 to 1 feet bgs and C&D debris (all depths) with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill

MACTEC	Excavation, soil, loading for stockpile	1,770	BCY	$ 2.84	$ -	$ -	$ 5,032.36	See Excavation Rates, Soil	
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	1947	LCY	$ -	$ 0.79	$ 1.66	$ 4,770.97	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell	
MACTEC	Confirmation Sampling, PCBs	192	EA	$ 80.00	$ -	$ -	$ 15,360.00	MACTEC standby quote, qty consistent with NYSDEC DER-10	
Vendor	Transportation and Disposal, non-hazardous soils and sediment	2832	TON	$ 125.44	$ -	$ -	$ 355,316.06	Refer to Disposal Cost Calculations	

Backfill excavation									
02315.210.4060	Borrow, Loading, commmon earth, 1-1/2 CY bucket	1,770	BCY	$ 8.25	$ 0.42	$ 0.25	$ 15,791.12	RSMeans Site Work & Landscape Cost Data 2006, average 6 inches deep
02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	1947	LCY	$ -	$ 5.80	$ 12.20	$ 35,052.03	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff
02315.120.3220	Backfill, Structural, dozer or FE Loader, from existing stockpile, no compaction, 105 HP, 150' haul, common earth	1947	LCY	$ -	$ 0.66	$ 0.76	$ 2,765.22	RSMeans Site Work & Landscape Cost Data 2006
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	1770	ECY	$ -	$ 1.10	$ 0.13	$ 2,177.47	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation
MACTEC	Excavation, C&D loading for stockpile	3,938	BCY	$ 5.95	$ -	$ -	$ 23,432.46	Refer to Excavation Rate Calculations
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	4332	LCY	$ -	$ 0.79	$ 1.66	$ 10,613.89	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell
MACTEC	Confirmation Sampling, PCBs	90	EA	$ 80.00	$ -	$ -	$ 7,200.00	MACTEC standby quote, qty consistent with NYSDEC DER-10
Vendor	Transportation and Disposal, C&D	6301	TON	$ 108.98	$ -	$ -	$ 686,748.38	Refer to Disposal Cost Calculations
Backfill excavation								
02315.210.4060	Borrow, Loading, commmon earth, 1-1/2 CY bucket	3,938	BCY	$ 8.25	$ 0.42	$ 0.25	$ 35,130.19	RSMeans Site Work & Landscape Cost Data 2006
02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	4332	LCY	$ -	$ 5.80	$ 12.20	$ 77,979.57	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff
02315.120.3220	Backfill, Structural, dozer or FE Loader, from existing stockpile, no compaction, 105 HP, 150' haul, common earth	4332	LCY	$ -	$ 0.66	$ 0.76	$ 6,151.72	RSMeans Site Work & Landscape Cost Data 2006
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	3938	ECY	$ -	$ 1.10	$ 0.13	$ 4,844.19	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation
			Task Subtotal				$1,288,365.63	

Excavation and on-site consolidation and capping of remaining C&D debris and garbage
(refer to Alternative 2 Detailed Costs)

			Task Subtotal				$ 11,431.34	

Excavation and off-site disposal of remaining off-site residential soil 0 to 2 feet bgs containing PCBs greater than 1 mg/kg but less than 10 mg/kg, followed by placement of clean backfill

MACTEC	Excavation, soil, loading for stockpile	16	BCY	$ 93.19	$ -	$ -	$ 1,454.45	See Excavation Rates, Soil
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	17	LCY	$ -	$ 0.79	$ 1.66	$ 42.06	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell
MACTEC	Confirmation Sampling, PCBs	4	EA	$ 80.00	$ -	$ -	$ 320.00	MACTEC standby quote, qty consistent with NYSDEC DER-10
Vendor	Transportation and Disposal, non-hazardous soils and sediment	25	TON	$ 125.44	$ -	$ -	$ 3,132.48	Refer to Disposal Cost Calculations
Backfill excavation								
02315.210.4060	Borrow, Loading, commmon earth, 1-1/2 CY bucket	16	BCY	$ 8.25	$ 0.42	$ 0.25	$ 139.22	RSMeans Site Work & Landscape Cost Data 2006, average 6 inches deep
02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	17	LCY	$ -	$ 5.80	$ 12.20	$ 309.02	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff
02315.120.3220	Backfill, Structural, dozer or FE Loader, from existing stockpile, no compaction, 105 HP, 150' haul, common earth	17	LCY	$ -	$ 0.66	$ 0.76	$ 24.38	RSMeans Site Work & Landscape Cost Data 2006
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	16	ECY	$ -	$ 1.10	$ 0.13	$ 19.20	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation
			Task Subtotal				$ 5,440.81	

Excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 3 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg and 3 to 5 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement ofclean backfill and a two-foot restoration to origi
(refer to Alternative 2 Detailed Costs)

			Task Subtotal				$ 81,441.61	

Restoration of Unnamed Tributary
(refer to Alternative 2 Detailed Costs)

		Task Subtotal						$ 59,191.22	

Excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade
(refer to Alternative 2 Detailed Costs)

		Task Subtotal						$ 60,459.25	

Construction of Soil Cover

17030423	Unclassified Fill, 6" Lifts, Off-site, Includes Delivery, Spreading, and Compaction	131	CY	$ 8.95	$ -	$ -	$ 1,172.00	RSMeans 2004 ECHOS, Level D, includes 25% fluff to account for C&D debris voids
18050301	Topsoil, 6" Lifts, Off-site	131	CY	$ 27.84	$ -	$ -	$ 3,645.65	RSMeans 2004 ECHOS, Level D
18050402	Seeding, Vegetative Cover	0.16	ACRE	$ 3,625.00	$ -	$ -	$ 588.46	RSMeans 2004 ECHOS, Level D, assumes placed in avg one-foot lift
18050409	Fertilize, 800 Lbs/Acre, Push Rotary	0.16	ACRE	$ 88.93	$ -	$ -	$ 14.44	RSMeans 2004 ECHOS
18050413	Watering with 3,000-gallon Tank Truck, per Pass	0.16	ACRE	$ 60.19	$ -	$ -	$ 9.77	RSMeans 2004 ECHOS
33050802	Grass Ditching, 3' Bottom, 3' Deep, 2:1 Side Slopes	100	LF	$ 12.33	$ -	$ -	$ 1,233.00	RSMeans 2004 ECHOS
33050804	Riprap Ditching, 3' Bottom, 3' Deep, 2:1 Side Slopes	100	LF	$ 19.22	$ -	$ -	$ 1,922.00	RSMeans 2004 ECHOS
33080532	8 oz/sy Erosion Control/Drainage Filter Fabric (80 Mil)	167	SY	$ 1.18	$ -	$ -	$ 196.67	RSMeans 2004 ECHOS
		Task Subtotal					$ 8,781.99	

Institutional Controls
(refer to Alternative 2 Detailed Costs)

		Task Subtotal						$ 9,931.06	

ALTERNATIVE ANNUAL AND PERIODIC COSTS

Annual Institutional Control and Cover Inspections and Reporting
(refer to Alternative 2 Detailed Costs)

		Task Subtotal						$ 2,960.00	

Long-Term Monitoring (Years 1 through 5)
(refer to Alternative 2 Detailed Costs)

		Task Subtotal						$ 35,905.00	

Periodic Cover Maintenance (every 5 years)

	MACTEC	1	LS					$ 878.20	10% of Capital Cost

PRESENT VALUE OF ANNUAL AND PERIODIC COSTS FOR ALTERNATIVE 3

Year	Cost*	Number of Annual Periods	Annual Discount Rate	Number of 5-Year Periods	5-Year Discount Rate	Number of 10-Year Periods	10-Year Discount Rate	Total Non-Discounted Cost	Present Value Cost
Capital (Year 0)	$ 4,350,000	1	0	NA	NA	NA	NA	$ 4,350,000.00	$ 4,350,000.00
Annual Inspections and Reporting (Years 1-30)	$ 4,000	30	0.031	NA	NA	NA	NA	$ 120,000.00	$ 77,397.95
Long-Term Monitoring (Years 1 through 5)	$ 48,000	5	0.031	NA	NA	NA	NA	$ 240,000.00	$ 219,199.69
Periodic (Every 5 Years)	$ 1,000	NA	NA	6	0.165			$ 6,000.00	$ 3,637.29
Totals								**$ 4,716,000.00**	**$ 4,650,234.93**

*Annual and periodic costs include 10% for technical support and 25% contingency for unforeseen project complexities, including insurance, taxes, and licensing costs.
Capital costs include 25% contingency, as well as and project management, remedial design, and construction management costs per DER-10 guidance.

Discount rate of 3.1 Percent based on OMB Circular No. A-94 App. C (Revised Jan. 2008)

Alternative 4

Task / Subtask / Assembly (1)	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Comments/ Assumptions
ALTERNATIVE CAPITAL COSTS								
Pre-Design Investigations								
(refer to Alternative 2 Detailed Costs)								
		Task Subtotal					$ 25,744.54	
Mobilization and Temporary Facilities and Controls								
Temporary Utilities								
99040101	Temporary Office 20' x 8'	4.00	MO	$ 206.42	$ -	$ -	$ 825.68	RSMeans 2004 ECHOS
99140201	Temporary Storage Trailer 16' x 8'	4.00	MO	$ 80.72	$ -	$ -	$ 322.88	RSMeans 2004 ECHOS
99040501	Portable Toilets	4.00	MO	$ 82.65	$ -	$ -	$ 330.60	RSMeans 2004 ECHOS
01510.050.0040	Temporary Power Service, overhead feed, 3 use, 200 amp	1.00	EA	$ 745.00	$ 335.00	$ -	$ 1,080.00	RSMeans Site Work & Landscape Cost Data 2006
01520.550.0140	Telephone utility fee	4.00	MO	$ 210.00	$ -	$ -	$ 840.00	RSMeans Site Work & Landscape Cost Data 2006
MACTEC	Electrical utility fee	4.00	MO	$ 200.00	$ -	$ -	$ 800.00	
01520.550.0100	Field office expenses, office equipment rental, average	4.00	MO	$ 145.00	$ -	$ -	$ 580.00	RSMeans Site Work & Landscape Cost Data 2006
01560.250.0200	Rented chain link, 6' high, to 1,000'	1000	LF	$ 3.03	$ 1.10	$ -	$ 4,130.00	RSMeans Site Work & Landscape Cost Data 2006
02220.350.0725	Dumpster, weekly rental, 1 dump/week , 20 cy capacity (8 tons)	16.00	WK	$ 420.00	$ -	$ -	$ 6,720.00	RSMeans Site Work & Landscape Cost Data 2006
Decon Wastewater Handling								
19040406	21,000 Gallon Steel Wastewater Holding Tank, Rental	4	MO	$ 1,200.00	$ -	$ -	$ 4,800.00	RSMeans 2004 ECHOS, for decontamination water containment
Water Diversion System								
Stabilized Berms (assume 2)								
02060.150.0100	Borrow, spread with 200 HP dozer, no compaction, 2 mile round trip haul, bank run gravel.	2000	CY	$ 18.15	$ 1.43	$ 3.12	$ 45,400.00	RSMeans Site Work & Landscape Cost Data 2006, 25 ft long, 10 ft wide, 4 ft tall
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	1800	ECY		$ 1.10	$ 0.13	$ 2,214.00	RSMeans Site Work & Landscape Cost Data 2006
33080534	16 oz/sy nonwoven geotextile	22	SY	$ 2.39	$ -		$ 53.11	RSMeans 2004 ECHOS
01540.800.0700	Tarpaulins, 8.5 mils, black	200	SF	$ 0.24	$ -	$ -	$ 48.00	RSMeans Site Work & Landscape Cost Data 2006
MACTEC	sand bag cover anchor/ballast system	6	EA		$ 2,000.00	$ -	$ 12,000.00	
Culvert Piping								
10", 20 ft lengths, Tubing Corrugated and snap-on ABS	Polyethylene Flexible Drainage drainage tubing, plain or perforated fittings. Installed in an open trench.	400	LF	$ 6.37	$ 0.78	$ -	$ 2,860.00	http://www.get-a-quote.net
MACTEC	sand bag cover anchor/ballast system	6	EA	$ 2,000.00	$ -	$ -	$ 12,000.00	
Water Diversion Operation								
02240.500.1000	Pumping 8 hr., attended 2 hrs. per day, including 20 LF of suction hose and 100 LF of discharge hose, w/ 4" diaphragm pump used 8 hrs.	10	DAY	$ -	$ 1,215.00	$ 249.00	$ 14,640.00	RSMeans Site Work & Landscape Cost Data 2006, rates tripled for 24 hr/day operation
Stockpile Containment Areas								
Source Area >10 mg/kg materials								
01540.800.0700	Tarpaulins, 8.5 mils, black	10000	SF	$ 0.24	$ -	$ -	$ 2,400.00	RSMeans Site Work & Landscape Cost Data 2006
02240.500.0600	Pumping 8 hr., attended 2 hrs. per day, including 20 LF of suction hose and 100 LF of discharge hose, w/ 2" diaphragm pumped used 8 hrs.	30	DAY	$ -	$ 101.00	$ 14.50	$ 3,465.00	RSMeans Site Work & Landscape Cost Data 2006, assume 1 month
Non Source Area <10 mg/kg materials								
01540.800.0700	Tarpaulins, 8.5 mils, black	10000	SF	$ 0.24	$ -	$ -	$ 2,400.00	RSMeans Site Work & Landscape Cost Data 2006
02240.500.0600	Pumping 8 hr., attended 2 hrs. per day, including 20 LF of suction hose and	30	DAY	$ -	$ 101.00	$ 14.50	$ 3,465.00	RSMeans Site Work & Landscape Cost Data 2006, assume 1 month

	100 LF of discharge hose, w/ 2" diaphragm pumped used 8 hrs.									
Decontamination Facility										
33290401	25 gpm, 1-1/2" discharge, cast iron sump pun	1	EA	$ -	$ -	$ 2,317.00	$ 2,317.00	RSMeans 2004 ECHOS		
33290704	50' Flexible, Product Discharge Hose	1	EA	$ -	$ -	$ 175.00	$ 175.00	RSMeans 2004 ECHOS		
02060.150.0300	3/4" crushed stone borrow, spread w/ 200 HP dozer, no compaction, 2 mi rt haul	56	CY	$ 27.50	$ 1.43	$ 3.12	$ 1,780.56	RSMeans Site Work & Landscape Cost Data 2006, assume 30 ft by 50 ft by one foot thick		
02315.310.5100	Compaction, General, riding vibrating roller, 12" lifts, 4 passes	56	ECY	$ -	$ 0.16	$ 0.16	$ 17.78	RSMeans Site Work & Landscape Cost Data 2006		
3308544	60-mil Polymeric Liner, Very Low Density P	167	SF	$ 1.97	$ -		$ 328.33	RSMeans 2004 ECHOS, assume 30 ft by 50 ft		
33080534	16 oz/sy nonwoven geotextile	167	SY	$ 2.39	$ -		$ 398.33	RSMeans 2004 ECHOS		
33170814	1,800 psi pressure washer, 6HP, 4.8 gpm	1	EA	$ -	$ -	$ 1,635.00	$ 1,635.00	RSMeans 2004 ECHOS		
19040605	2,000 gal steel sump, aboveground w/ supports and fittings	1	EA	$ 2,233.00	$ 853.69	$ 123.26	$ 3,209.95	RSMeans 2004 ECHOS		
33170823	Operation of pressure washer, including water, soap, electricity, and labor	360	HR	$ -	$ -	$ 41.69	$ 15,008.40	RSMeans 2004 ECHOS, Assume 6 min (0.10 hrs) /truck, assume 30 days/8 hrs/day		
33410101	Pump and motor maintenance/repair	1	EA	$ -	$ -	$ 431.15	$ 431.15	RSMeans 2004 ECHOS		
Erosion and Sediment Control Measures										
18050206	Filter Barrier, Silt Fences, Vinyl, 3' High with 7.5' Posts	2000	LF	$ 0.70	$ 1.41	$ -	$ 4,220.00	RSMeans 2004 ECHOS, along tribu both sides, top of bank Sauqouit, work areas		
02370 700 1350	Haybales, staked	500	LF	$ 2.25	$ 0.26	$ 0.05	$ 1,280.00	RSMeans Site Work & Landscape Cost Data 2006		
	Air/Dust Monitoring									
MACTEC	Siltation Curtains	300	SF	$ 4.42	$ -	$ -	$ 1,326.00	Assume 6 50-ft units utilized		
Wastewater Treatment System										
Vendor	100 gpm Dewatering Treatment Facility	1	LS	$ -	$ -	#########	$ 125,000.00	Contractor Bid to MACTEC 2008, includes 20,000 gal FRAC EQ Tank, OWS, bag filter, GAC filters		
02240.500.1000	Pumping 8 hr., attended 2 hrs. per day, including 20 LF of suction hose and 100 LF of discharge hose, w/ 4" diaphragm pumped used 8 hrs.	45	DAY	$ -	$ 405.00	$ 83.00	$ 21,960.00	RSMeans Site Work & Landscape Cost Data 2006, assume two weeks		
Sludge Handling and Disposal								Assumes 100 gpm, 30 days, 50% solids influent		
MACTEC	Materials	12	Drums	$ 45.00	$ -	$ -	$ 540.00	Based upon drummed sludge disposal costs for Buffalo NY to Illinois 2008		
	Transportation	12	Drums	$ 50.00	$ -	$ -	$ 600.00	Based upon drummed sludge disposal costs for Buffalo NY to Illinois 2009		
	Disposal	12	Drums	$ 325.00	$ -	$ -	$ 3,900.00	Based upon drummed sludge disposal costs for Buffalo NY to Illinois 2010		
	Fees and Charges	25	%				$ 1,260.00	Estimated		
Temporary Discharge Monitoring										
MACTEC	Aqueous Sampling, PCBs	45	EA	$ 140.00			$ 6,300.00	24-hr turn around expedited at additional 100% of cost		
	Aqueous Sampling, Metals	45	EA	$ 130.00			$ 5,850.00	24-hr turn around expedited at additional 100% of cost		
	Aqueous Sampling, VOCs	45	EA	$ 140.00			$ 6,300.00	24-hr turn around expedited at additional 100% of cost		
	Aqueous Sampling, SVOCs	45	EA	$ 360.00			$ 16,200.00	24-hr turn around expedited at additional 100% of cost		
Clearing and Grubbing										
17010107	Medium Brush, Medium Trees, Clear, Grub, Haul	1.5	ACRE	$ -	$ 3,327.00	$ 2,852.00	$ 9,268.50	RSMeans 2004 ECHOS		
Survey of Work/Stockpile Areas										
99241201	Surveying - 2-man Crew	2	DAY	$ -	$ 617.50	$ 204.77	$ 1,644.54	RSMeans 2004 ECHOS		
			Task Subtotal				$ 352,324.81			

Excavation and off-site disposal of soil, C&D debris, and sediments with PCB concentrations greater than 10 mg/kg
(refer to Alternative 2 Detailed Costs)

			Task Subtotal				$1,147,394.45			

Excavation and off-site disposal of remaining on-site soil 0 to 1 feet bgs and C&D debris (all depths) with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill
(refer to Alternative 3 Detailed Costs)

			Task Subtotal				$1,288,365.63			
Excavation and off-site disposal of remaining C&D debris and garbage										
MACTEC	Excavation, C&D loading for stockpile	262	BCY	$ 5.95	$ -	$ -	$ 1,558.25	See Excavation Rates, C&D Piles		
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	288	LCY	$ -	$ 0.79	$ 1.66	$ 705.82	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell		
MACTEC	Confirmation Sampling, PCBs	7	EA	$ 80.00	$ -	$ -	$ 534.00	MACTEC standby quote, qty consistent with NYSDEC DER-10		
MACTEC	Transportation and Disposal, C&D	419	TON	$ 108.98	$ -	$ -	$ 45,668.58	Refer to Disposal Cost Calculations		

Backfill excavation									
02315.210.4060	Borrow, Loading, commmon earth, 1-1/2 CY bucket	262	BCY	$ 8.25	$ 0.42	$ 0.25	$ 2,336.15	RSMeans Site Work & Landscape Cost Data 2006	
02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	288	LCY	$ -	$ 5.80	$ 12.20	$ 5,185.62	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff	
02315.120.3220	Backfill, Structural, dozer or FE Loader, from existing stockpile, no compaction, 105 HP, 150' haul, common earth	288	LCY	$ -	$ 0.66	$ 0.76	$ 409.09	RSMeans Site Work & Landscape Cost Data 2006	
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	262	ECY	$ -	$ 1.10	$ 0.13	$ 322.14	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation	
	Task Subtotal						$ 48,466.65		

Excavation and off-site disposal of remaining off-site residential soil 0 to 2 feet bgs containing PCBs greater than 1 mg/kg but less than 10 mg/kg, followed by placement of clean backfill
(refer to Alternative 3 Detailed Costs)

	Task Subtotal						$ 5,440.81		

Excavation and off-site disposal of remaining off-site commercial soil 0 to 1 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill

MACTEC	Excavation, soil, loading for stockpile	132	BCY	$ 2.84	$ -	$ -	$ 375.31	See Excavation Rates, Soil	
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	145	LCY	$ -	$ 0.79	$ 1.66	$ 355.82	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell	
MACTEC	Confirmation Sampling, PCBs	19	EA	$ 80.00	$ -	$ -	$ 1,520.00	MACTEC standby quote, qty consistent with NYSDEC DER-10	
Vendor	Transportation and Disposal, non-hazardous soils and sediment	211	TON	$ 125.44	$ -	$ -	$ 26,499.36	Refer to Disposal Cost Calculations	
Backfill excavation									
02315.210.4060	Borrow, Loading, commmon earth, 1-1/2 CY bucket	132	BCY	$ 8.25	$ 0.42	$ 0.25	$ 1,177.70	RSMeans Site Work & Landscape Cost Data 2006, average 6 inches deep	
02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	145	LCY	$ -	$ 5.80	$ 12.20	$ 2,614.17	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff	
02315.120.3220	Backfill, Structural, dozer or FE Loader, from existing stockpile, no compaction, 105 HP, 150' haul, common earth	145	LCY	$ -	$ 0.66	$ 0.76	$ 206.23	RSMeans Site Work & Landscape Cost Data 2006	
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	132	ECY	$ -	$ 1.10	$ 0.13	$ 162.40	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation	
	Task Subtotal						$ 32,910.98		

Excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 5 feet bgs with PCB concentrations greater than 0.1 mg/kg but less than 10 mg/kg

MACTEC	Excavation, sed, loading for stockpile	472	BCY	$ 10.47	$ -	$ -	$ 4,941.23	See Excavation Rates, Sed	
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	519	LCY		$ 0.79	$ 1.66	$ 1,271.60	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell	
MACTEC	Confirmation Sampling, PCBs	36	EA	$ 80.00	$ -	$ -	$ 2,880.00	MACTEC standby quote, qty consistent with NYSDEC DER-10	
Vendor	Transportation and Disposal, non-hazardous soils and sediment	755	TON	$ 125.44	$ -	$ -	$ 94,701.65	Refer to Disposal Cost Calculations	
	Task Subtotal						$ 103,794.47		

Restoration of Unnamed Tributary

Backfill excavation									
02315.210.4060	Borrow, Loading, commmon earth, 1-1/2 CY bucket	681	BCY	$ 8.25	$ 0.42	$ 0.25	$ 6,070.93	RSMeans Site Work & Landscape Cost Data 2006, average 4 feet deep	
02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	749	LCY	$ -	$ 5.80	$ 12.20	$ 13,475.83	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff	
02315.120.3220	Backfill, Structural, dozer or FE Loader, from existing stockpile, no compaction, 105 HP, 150' haul, common earth	749	LCY	$ -	$ 0.66	$ 0.76	$ 1,063.09	RSMeans Site Work & Landscape Cost Data 2006	
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	681	ECY	$ -	$ 1.10	$ 0.13	$ 837.13	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation	

Stream Restoration

Bank Run Cobbles									
02370.450.0100	Riprap and Rock Lining, broken stone, machine placed for slope protection	449	TON	$ 51.00	$ 8.45	$ 9.15	$ 30,785.22	RSMeans Site Work & Landscape Cost Data 2006 - assumes to average 1 ft, 1.6 tons/cy
Plantings								
Vendor Quote	Live Staking	200	EA	$ 5.00	$ -	$ -	$ 1,000.00	Certified Erosion Control of New Hampshire
Vendor Quote	Trees	1	LS	$ 280.00	$ -		$ 280.00	New England Wetland Plants, Inc. Amherst, MA
Vendor Quote	Shrubs	1	LS	$ 417.50	$ -	$ -	$ 417.50	New England Wetland Plants, Inc. Amherst, MA
MACTEC	Planting, Labor	5	DAY	$ -	$ 1,000.00	$ -	$ 5,000.00	
02910.710.0300	Lawn bed preparation, screened loam, york rake and finish, ideal conditions	6	MSF	$ -	$ 30.00	$ 6.40	$ 218.40	RSMeans Site Work & Landscape Cost Data 2006, 300 ft, 10 ft wide, both sides
02920.320.0200	Seeding, hydro w/ mulch and fertilizer	6	MSF	$ 24.50	$ 9.25	$ 5.05	$ 232.80	RSMeans Site Work & Landscape Cost Data 2006
Vendor Quote	Compost Blanket	6000	SF	$ 0.50	$ -	$ -	$ 3,000.00	Certified Erosion Control of New Hampshire
		Task Subtotal					$ 62,380.91	

Excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade
(refer to Alternative 2 Detailed Costs)

		Task Subtotal					$ 60,459.25	

Excavation and off-site disposal of sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg within off-site commercial property storm drains

MACTEC	Vacuum Truck	20	HOUR			$ 125.00	$ 2,500.00	Assumes 2 days
Vendor	Transportation and Disposal, non-hazardous soils and sediment	16	TON	$ 125.44	$ -	$ -	$ 2,007.09	Refer to Disposal Cost Calculations
		Task Subtotal					$ 4,507.09	

Institutional Controls
(refer to Alternative 2 Detailed Costs)

		Task Subtotal					$ 9,931.06	

ALTERNATIVE ANNUAL AND PERIODIC COSTS

Annual Institutional Control and Cover Inspections and Reporting
(refer to Alternative 2 Detailed Costs)

		Task Subtotal					$ 2,960.00	

Long-Term Monitoring (Years 1 through 5)
(refer to Alternative 2 Detailed Costs)

		Task Subtotal					$ 35,905.00	

PRESENT VALUE OF ANNUAL AND PERIODIC COSTS FOR ALTERNATIVE 4

Year	Cost*	Number of Annual Periods	Annual Discount Rate	Number of 5-Year Periods	5-Year Discount Rate	Number of 10-Year Periods	10-Year Discount Rate	Total Non-Discounted Cost	Present Value Cost
Capital (Year 0)	$ 4,515,000	1	0	NA	NA	NA	NA	$ 4,515,000.00	$ 4,515,000.00
Annual Inspections and Reporting (Years 1-30)	$ 4,000	30	0.031	NA	NA	NA	NA	$ 120,000.00	$ 77,397.95
Long-Term Monitoring (Years 1 through 5)	$ 48,000	5	0.031	NA	NA	NA	NA	$ 240,000.00	$ 219,199.69
Periodic (Every 5 Years)	$ -	NA	NA	6	0.165			$ -	$ -
Totals								**$ 4,875,000.00**	**$ 4,811,597.65**

*Annual and periodic costs include 10% for technical support and 25% contingency for unforeseen project complexities, including insurance, taxes, and licensing costs.
Capital costs include 25% contingency, as well as and project management, remedial design, and construction management costs per DER-10 guidance.

Discount rate of 3.1 Percent based on OMB Circular No. A-94 App. C (Revised Jan. 2008)

Alternative 5

Task	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Comments/ Assumptions
Subtask								
Assembly (1)								
ALTERNATIVE CAPITAL COSTS								
Pre-Design Investigations								
(refer to Alternative 2 Detailed Costs)								
	Task Subtotal						$ 25,744.54	
Mobilization and Temporary Facilities and Controls								
Temporary Utilities								
99040101	Temporary Office 20' x 8'	4.00	MO	$ 206.42	$ -	$ -	$ 825.68	RSMeans 2004 ECHOS
99140201	Temporary Storage Trailer 16' x 8'	4.00	MO	$ 80.72	$ -	$ -	$ 322.88	RSMeans 2004 ECHOS
99040501	Portable Toilets	4.00	MO	$ 82.65	$ -	$ -	$ 330.60	RSMeans 2004 ECHOS
01510.050.0040	Temporary Power Service, overhead feed 3 use, 200 amp	1.00	EA	$ 745.00	$ 335.00	$ -	$ 1,080.00	RSMeans Site Work & Landscape Cost Data 2006
01520.550.0140	Telephone utility fee	4.00	MO	$ 210.00	$ -	$ -	$ 840.00	RSMeans Site Work & Landscape Cost Data 2006
MACTEC	Electrical utility fee	4.00	MO	$ 200.00	$ -	$ -	$ 800.00	
01520.550.0100	Field office expenses, office equipmen rental, average	4.00	MO	$ 145.00	$ -	$ -	$ 580.00	RSMeans Site Work & Landscape Cost Data 2006
01560.250.0200	Rented chain link, 6' high, to 1,000	1000	LF	$ 3.03	$ 1.10	$ -	$ 4,130.00	RSMeans Site Work & Landscape Cost Data 2006
02220.350.0725	Dumpster, weekly rental, 1 dump/weel , 20 cy capacity (8 tons)	16.00	WK	$ 420.00	$ -	$ -	$ 6,720.00	RSMeans Site Work & Landscape Cost Data 2006
Decon Wastewater Handling								
19040406	21,000 Gallon Steel Wastewater Holding Tank, Rental	4	MO	$ 1,200.00	$ -	$ -	$ 4,800.00	RSMeans 2004 ECHOS, for decontamination water containmen
Water Diversion System								
Stabilized Berms (assume 2)								
02060.150.0100	Borrow, spread with 200 HP dozer, no compaction, 2 mile round trip haul bank run gravel.	2000	CY	$ 18.15	$ 1.43	$ 3.12	$ 45,400.00	RSMeans Site Work & Landscape Cost Data 2006, 25 ft long, 10 ft wide, 4 ft tall
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	1800	ECY		$ 1.10	$ 0.13	$ 2,214.00	RSMeans Site Work & Landscape Cost Data 2006
33080534	16 oz/sy nonwoven geotextile	22	SY	$ 2.39	$ -		$ 53.11	RSMeans 2004 ECHOS
01540.800.0700	Tarpaulins, 8.5 mils, black	200	SF	$ 0.24	$ -	$ -	$ 48.00	RSMeans Site Work & Landscape Cost Data 2006
MACTEC	sand bag cover anchor/ballast system	6	EA		$ 2,000.00	$ -	$ 12,000.00	
Culvert Piping								
10", 20 ft lengths, Tubing Corrugated and snap-on ABS	Polyethylene Flexible Drainage drainage tubing, plain or perforated fittings. Installed in an open trench	400	LF	$ 6.37	$ 0.78	$ -	$ 2,860.00	http://www.get-a-quote.net
MACTEC	sand bag cover anchor/ballast system	6	EA	$ 2,000.00	$ -	$ -	$ 12,000.00	
Water Diversion Operation								
02240.500.1000	Pumping 8 hr., attended 2 hrs. per day, including 20 LF of suction hose and 100 LF of discharge hose, w/ 4" diaphragm pump used 8 hrs.	10	DAY	$ -	$ 1,215.00	$ 249.00	$ 14,640.00	RSMeans Site Work & Landscape Cost Data 2006, rates tripled for 24 hr/day operation
Stockpile Containment Areas								
Source Area >10 mg/kg materials								
01540.800.0700	Tarpaulins, 8.5 mils, black	10000	SF	$ 0.24	$ -	$ -	$ 2,400.00	RSMeans Site Work & Landscape Cost Data 2006
02240.500.0600	Pumping 8 hr., attended 2 hrs. per day, including 20 LF of suction hose and 100 LF of discharge hose, w/ 2" diaphragm pumped used 8 hrs.	30	DAY	$ -	$ 101.00	$ 14.50	$ 3,465.00	RSMeans Site Work & Landscape Cost Data 2006, assume 1 month
Non Source Area <10 mg/kg materials								
01540.800.0700	Tarpaulins, 8.5 mils, black	10000	SF	$ 0.24	$ -	$ -	$ 2,400.00	RSMeans Site Work & Landscape Cost Data 2006
02240.500.0600	Pumping 8 hr., attended 2 hrs. per day, including 20 LF of suction hose and 100 LF of discharge hose, w/ 2" diaphragm pumped used 8 hrs.	30	DAY	$ -	$ 101.00	$ 14.50	$ 3,465.00	RSMeans Site Work & Landscape Cost Data 2006, assume 1 month

Decontamination Facility										
33290401	25 gpm, 1-1/2" discharge, cast iron sump pum	1	EA	$ -	$ -	$ 2,317.00	$	2,317.00	RSMeans 2004 ECHOS	
33290704	50' Flexible, Product Discharge Hose	1	EA	$ -	$ -	$ 175.00	$	175.00	RSMeans 2004 ECHOS	
02060.150.0300	3/4" crushed stone borrow, spread w/ 200 HP dozer, no compaction, 2 mi rt haul	56	CY	$ 27.50	$ 1.43	$ 3.12	$	1,780.56	RSMeans Site Work & Landscape Cost Data 2006, assume 30 ft by 50 ft by one foot thick	
02315.310.5100	Compaction, General, riding vibrating roller, 12" lifts, 4 passes	56	ECY	$ -	$ 0.16	$ 0.16	$	17.78	RSMeans Site Work & Landscape Cost Data 2006	
3308544	60-mil Polymeric Liner, Very Low Density P	167	SF	$ 1.97	$ -		$	328.33	RSMeans 2004 ECHOS, assume 30 ft by 50 ft	
33080534	16 oz/sy nonwoven geotextile	167	SY	$ 2.39	$ -		$	398.33	RSMeans 2004 ECHOS	
33170814	1,800 psi pressure washer, 6HP, 4.8 gpm	1	EA	$ -	$ -	$ 1,635.00	$	1,635.00	RSMeans 2004 ECHOS	
19040605	2,000 gal steel sump, aboveground w/ supports and fittings	1	EA	$ 2,233.00	$ 853.69	$ 123.26	$	3,209.95	RSMeans 2004 ECHOS	
33170823	Operation of pressure washer, including water, soap, electricity, and labor	360	HR	$ -	$ -	$ 41.69	$	15,008.40	RSMeans 2004 ECHOS, Assume 6 min (0.10 hrs) /truck, assume 30 days/8 hrs/day	
33410101	Pump and motor maintenance/repair	1	EA	$ -	$ -	$ 431.15	$	431.15	RSMeans 2004 ECHOS	
Erosion and Sediment Control Measures										
18050206	Filter Barrier, Silt Fences, Vinyl, 3' High with 7.5' Posts	2000	LF	$ 0.70	$ 1.41	$ -	$	4,220.00	RSMeans 2004 ECHOS, along tribu both sides, top of bank Sauquoit, work areas	
02370 700 1350	Haybales, staked	500	LF	$ 2.25	$ 0.26	$ 0.05	$	1,280.00	RSMeans Site Work & Landscape Cost Data 2006	
	Air/Dust Monitoring									
MACTEC	Siltation Curtains	300	SF	$ 4.42	$ -	$ -	$	1,326.00	Assume 6 50-ft units utilized	
Wastewater Treatment System										
Vendor	100 gpm Dewatering Treatment Facility	1	LS	$ -	$ -	########	$	125,000.00	Contractor Bid to MACTEC 2008, includes 20,000 gal FRAC EQ Tank, OWS, bag filter, GAC filters	
02240.500.1000	Pumping 8 hr., attended 2 hrs. per day, including 20 LF of suction hose and 100 LF of discharge hose, w/ 4" diaphragm pumped used 8 hrs.	45	DAY	$ -	$ 405.00	$ 83.00	$	21,960.00	RSMeans Site Work & Landscape Cost Data 2006, assume two weeks	
Sludge Handling and Disposal									Assumes 100 gpm, 30 days, 50% solids influent	
MACTEC	Materials	12	Drums	$ 45.00	$ -	$ -	$	540.00	Based upon drummed sludge disposal costs for Buffalo NY to Illinois 2008	
	Transportation	12	Drums	$ 50.00	$ -	$ -	$	600.00	Based upon drummed sludge disposal costs for Buffalo NY to Illinois 2009	
	Disposal	12	Drums	$ 325.00	$ -	$ -	$	3,900.00	Based upon drummed sludge disposal costs for Buffalo NY to Illinois 2010	
	Fees and Charges	25	%				$	1,260.00	Estimated	
Temporary Discharge Monitoring										
MACTEC	Aqueous Sampling, PCBs	45	EA	$ 140.00			$	6,300.00	24-hr turn around expedited at additional 100% of cost	
	Aqueous Sampling, Metals	45	EA	$ 130.00			$	5,850.00	24-hr turn around expedited at additional 100% of cost	
	Aqueous Sampling, VOCs	45	EA	$ 140.00			$	6,300.00	24-hr turn around expedited at additional 100% of cost	
	Aqueous Sampling, SVOCs	45	EA	$ 360.00			$	16,200.00	24-hr turn around expedited at additional 100% of cost	
Clearing and Grubbing										
17010107	Medium Brush, Medium Trees Clear, Grub, Haul	1.5	ACRE	$ -	$ 3,327.00	$ 2,852.00	$	9,268.50	RSMeans 2004 ECHOS	
Survey of Work/Stockpile Areas										
99241201	Surveying - 2-man Crew	2	DAY	$ -	$ 617.50	$ 204.77	$	1,644.54	RSMeans 2004 ECHOS	
			Task Subtotal				$	352,324.81		

Excavation and off-site disposal of soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfi
(refer to Alternative 2 Detailed Costs)

			Task Subtotal				$	1,147,394.45		

Excavation and off-site disposal of remaining on-site soil 0 to 2 feet bgs and C&D debris (all depths)with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfi

MACTEC	Excavation, soil, loading for stockpile	2,040	BCY	$ 2.47	$ -	$ -	$	5,032.36	Refer to Excavation Rate Calculations	
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	2245	LCY	$ -	$ 0.79	$ 1.66	$	5,499.03	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell	
MACTEC	Confirmation Sampling, PCBs	237	EA	$ 80.00	$ -	$ -	$	18,960.00	MACTEC standby quote, qty consistent with NYSDEC DER-10	
MACTEC	Transportation and Disposal, hazardous soils and sediment	3265	TON	$ 125.44	$ -	$ -	$	409,537.98	Refer to Disposal Cost Calculations	
Backfill excavation										
02315.210.4060	Borrow, Loading, commmon earth	2,040	BCY	$ 8.25	$ 0.42	$ 0.25	$	18,200.87	RSMeans Site Work & Landscape Cost Data 2006, average 6 inches deep	

	1-1/2 CY bucket								
02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	2245	LCY	$ -	$ 5.80	$ 12.20	$ 40,401.04	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff	
02315.120.3220	Backfill, Structural, dozer or FE Loader from existing stockpile, no compaction, 105 HP, 150' haul, common earth	2245	LCY	$ -	$ 0.66	$ 0.76	$ 3,187.19	RSMeans Site Work & Landscape Cost Data 2006	
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	2040	ECY	$ -	$ 1.10	$ 0.13	$ 2,509.76	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation	
MACTEC	Excavation, C&D loading for stockpile	3,938	BCY	$ 5.95	$ -	$ -	$ 23,432.46	Refer to Excavation Rate Calculations	
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	4332	LCY	$ -	$ 0.79	$ 1.66	$ 10,613.89	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell	
MACTEC	Confirmation Sampling, PCBs	90	EA	$ 80.00	$ -	$ -	$ 7,200.00	MACTEC standby quote, qty consistent with NYSDEC DER-10	
Vendor	Transportation and Disposal, C&D	6301	TON	$ 108.98	$ -	$ -	$ 686,748.38	Refer to Disposal Cost Calculations	
Backfill excavation									
02315.210.4060	Borrow, Loading, commmon earth 1-1/2 CY bucket	3,938	BCY	$ 8.25	$ 0.42	$ 0.25	$ 35,130.19	RSMeans Site Work & Landscape Cost Data 2006	
02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	4332	LCY	$ -	$ 5.80	$ 12.20	$ 77,979.57	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff	
02315.120.3220	Backfill, Structural, dozer or FE Loader from existing stockpile, no compaction, 105 HP, 150' haul, common earth	4332	LCY	$ -	$ 0.66	$ 0.76	$ 6,151.72	RSMeans Site Work & Landscape Cost Data 2006	
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	3938	ECY	$ -	$ 1.10	$ 0.13	$ 4,844.19	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation	
			Task Subtotal				$ 1,355,428.63		

Excavation and off-site disposal of remaining C&D debris and garbage
(refer to Alternative 4 Detailed Costs)

Task Subtotal $ 48,466.65

Excavation and off-site disposal of remaining off-site residential soil 0 to 2 feet bgs containing PCBs greater than 1 mg/kg but less than 10 mg/kg, followed by placement of clean backfi
(refer to Alternative 3 Detailed Costs)

Task Subtotal $ 5,440.81

Excavation and off-site disposal of remaining off-site commercial soil 0 to 1 feet bgs with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfi
(refer to Alternative 4 Detailed Costs

Task Subtotal $ 32,910.98

Excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 5 feet bgs with PCB concentrations greater than 0.1 mg/kg but less than 10 mg/k
(refer to Alternative 4 Detailed Costs)

Task Subtotal $ 103,794.47

Restoration of Unnamed Tributary
(refer to Alternative 4 Detailed Costs)

Task Subtotal $ 62,380.91

Excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grad
(refer to Alternative 2 Detailed Costs)

Task Subtotal $ 60,459.25

Excavation and off-site disposal of sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg within off-site commercial property storm drain
(refer to Alternative 4 Detailed Costs)

Task Subtotal $ 4,507.09

Institutional Controls
(refer to Alternative 2 Detailed Costs)

Task Subtotal $ 9,931.06

ALTERNATIVE ANNUAL AND PERIODIC COSTS

Annual Institutional Control and Cover Inspections and Reporting
(refer to Alternative 2 Detailed Costs)

Task Subtotal $ 2,960.00

Long-Term Monitoring (Years 1 through 5)
(refer to Alternative 2 Detailed Costs)

Task Subtotal $ 35,905.00

PRESENT VALUE OF ANNUAL AND PERIODIC COSTS FOR ALTERNATIVE 5

Year	Cost*	Number of Annual Periods	Annual Discount Rate	Number of 5-Year Periods	5-Year Discount Rate	Number of 10-Year Periods	10-Year Discount Rate	Total Non-Discounted Cost	Present Value Cost
Capital (Year 0)	$ 4,618,000	1	0	NA	NA	NA	NA	$ 4,618,000.00	$ 4,618,000.00
Annual Inspections and Reporting (Years 1-30)	$ 4,000	30	0.031	NA	NA	NA	NA	$ 120,000.00	$ 77,397.95
Long-Term Monitoring (Years 1 through 5)	$ 48,000	5	0.031	NA	NA	NA	NA	$ 240,000.00	$ 219,199.69
Periodic (Every 5 Years)	$ -	NA	NA	6	0.165			$ -	$ -
Totals								**$ 4,978,000.00**	**$ 4,914,597.65**

*Annual and periodic costs include 10% for technical support and 25% contingency for unforeseen project complexities, including insurance, taxes, and licensing costs.
Capital costs include 25% contingency, as well as and project management, remedial design, and construction management costs per DER-10 guidance.

Discount rate of 3.1 Percent based on OMB Circular No. A-94 App. C (Revised Jan. 2008)

Alternative 6

Task / Subtask / Assembly (1)	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Comments/ Assumptions
ALTERNATIVE CAPITAL COSTS								
Pre-Design Investigations								
(refer to Alternative 2 Detailed Costs)								
	Task Subtotal						$ 25,744.54	
Mobilization and Temporary Facilities and Controls								
Temporary Utilities								
99040101	Temporary Office 20' x 8'	5.00	MO	$ 206.42	$ -	$ -	$ 1,032.10	RSMeans 2004 ECHOS
99140201	Temporary Storage Trailer 16' x 8'	5.00	MO	$ 80.72	$ -	$ -	$ 403.60	RSMeans 2004 ECHOS
99040501	Portable Toilets	5.00	MO	$ 82.65	$ -	$ -	$ 413.25	RSMeans 2004 ECHOS
01510.050.0040	Temporary Power Service, overhead feed, 3 use, 200 amp	1.00	EA	$ 745.00	$ 335.00	$ -	$ 1,080.00	RSMeans Site Work & Landscape Cost Data 2006
01520.550.0140	Telephone utility fee	5.00	MO	$ 210.00	$ -	$ -	$ 1,050.00	RSMeans Site Work & Landscape Cost Data 2006
MACTEC	Electrical utility fee	5.00	MO	$ 200.00	$ -	$ -	$ 1,000.00	
01520.550.0100	Field office expenses, office equipment rental, average	5.00	MO	$ 145.00	$ -	$ -	$ 725.00	RSMeans Site Work & Landscape Cost Data 2006
01560.250.0200	Rented chain link, 6' high, to 1,000'	1000	LF	$ 3.03	$ 1.10	$ -	$ 4,130.00	RSMeans Site Work & Landscape Cost Data 2006
02220.350.0725	Dumpster, weekly rental, 1 dump/week , 20 cy capacity (8 tons)	20.00	WK	$ 420.00	$ -	$ -	$ 8,400.00	RSMeans Site Work & Landscape Cost Data 2006
Decon Wastewater Handling								
19040406	21,000 Gallon Steel Wastewater Holding Tank, Rental	5	MO	$ 1,200.00	$ -	$ -	$ 6,000.00	RSMeans 2004 ECHOS, for decontamination water containment
Water Diversion System								
Stabilized Berms (assume 2)								
02060.150.0100	Borrow, spread with 200 HP dozer, no compaction, 2 mile round trip haul, bank run gravel.	2000	CY	$ 18.15	$ 1.43	$ 3.12	$ 45,400.00	RSMeans Site Work & Landscape Cost Data 2006, 25 ft long, 10 ft wide, 4 ft tall
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	1800	ECY		$ 1.10	$ 0.13	$ 2,214.00	RSMeans Site Work & Landscape Cost Data 2006
33080534	16 oz/sy nonwoven geotextile	22	SY	$ 2.39	$ -		$ 53.11	RSMeans 2004 ECHOS
01540.800.0700	Tarpaulins, 8.5 mils, black	200	SF	$ 0.24	$ -	$ -	$ 48.00	RSMeans Site Work & Landscape Cost Data 2006
MACTEC	sand bag cover anchor/ballast system	6	EA		$ 2,000.00	$ -	$ 12,000.00	
Culvert Piping								
10", 20 ft lengths, Tubing Corrugated and snap-on ABS	Polyethylene Flexible Drainage drainage tubing, plain or perforated fittings. Installed in an open trench.	400	LF	$ 6.37	$ 0.78	$ -	$ 2,860.00	http://www.get-a-quote.net
MACTEC	sand bag cover anchor/ballast system	6	EA	$ 2,000.00	$ -	$ -	$ 12,000.00	
Water Diversion Operation								
02240.500.1000	Pumping 8 hr., attended 2 hrs. per day, including 20 LF of suction hose and 100 LF of discharge hose, w/ 4" diaphragm pump used 8 hrs.	10	DAY	$ -	$ 1,215.00	$ 249.00	$ 14,640.00	RSMeans Site Work & Landscape Cost Data 2006, rates tripled for 24 hr/day operation
Stockpile Containment Areas								
Source Area >10 mg/kg materials								
01540.800.0700	Tarpaulins, 8.5 mils, black	10000	SF	$ 0.24	$ -	$ -	$ 2,400.00	RSMeans Site Work & Landscape Cost Data 2006
02240.500.0600	Pumping 8 hr., attended 2 hrs. per day, including 20 LF of suction hose and 100 LF of discharge hose, w/ 2" diaphragm pumped used 8 hrs.	30	DAY	$ -	$ 101.00	$ 14.50	$ 3,465.00	RSMeans Site Work & Landscape Cost Data 2006, assume 1 month
Non Source Area <10 mg/kg materials								
01540.800.0700	Tarpaulins, 8.5 mils, black	10000	SF	$ 0.24	$ -	$ -	$ 2,400.00	RSMeans Site Work & Landscape Cost Data 2006
02240.500.0600	Pumping 8 hr., attended 2 hrs. per day,	45	DAY	$ -	$ 101.00	$ 14.50	$ 5,197.50	RSMeans Site Work & Landscape Cost Data 2006, assume 1 month

	including 20 LF of suction hose and 100 LF of discharge hose, w/ 2" diaphragm pumped used 8 hrs.								
Decontamination Facility									
33290401	25 gpm, 1-1/2" discharge, cast iron sump pun	1	EA	$ -	$ -	$ 2,317.00	$ 2,317.00	RSMeans 2004 ECHOS	
33290704	50' Flexible, Product Discharge Hose	1	EA	$ -	$ -	$ 175.00	$ 175.00	RSMeans 2004 ECHOS	
02060.150.0300	3/4" crushed stone borrow, spread w/ 200 HP dozer, no compaction, 2 mi rt haul	56	CY	$ 27.50	$ 1.43	$ 3.12	$ 1,780.56	RSMeans Site Work & Landscape Cost Data 2006, assume 30 ft by 50 ft by one foot thick	
02315.310.5100	Compaction, General, riding vibrating roller, 12" lifts, 4 passes	56	ECY	$ -	$ 0.16	$ 0.16	$ 17.78	RSMeans Site Work & Landscape Cost Data 2006	
3308544	60-mil Polymeric Liner, Very Low Density P	167	SF	$ 1.97	$ -		$ 328.33	RSMeans 2004 ECHOS, assume 30 ft by 50 ft	
33080534	16 oz/sy nonwoven geotextile	167	SY	$ 2.39	$ -		$ 398.33	RSMeans 2004 ECHOS	
33170814	1,800 psi pressure washer, 6HP, 4.8 gpm	1	EA	$ -	$ -	$ 1,635.00	$ 1,635.00	RSMeans 2004 ECHOS	
19040605	2,000 gal steel sump, aboveground w/ supports and fittings	1	EA	$ 2,233.00	$ 853.69	$ 123.26	$ 3,209.95	RSMeans 2004 ECHOS	
33170823	Operation of pressure washer, including water, soap, electricity, and labor	360	HR	$ -	$ -	$ 41.69	$ 15,008.40	RSMeans 2004 ECHOS, Assume 6 min (0.10 hrs) /truck, assume 30 days/8 hrs/day	
33410101	Pump and motor maintenance/repair	1	EA	$ -	$ -	$ 431.15	$ 431.15	RSMeans 2004 ECHOS	
Erosion and Sediment Control Measures									
18050206	Filter Barrier, Silt Fences, Vinyl, 3' High with 7.5' Posts	2000	LF	$ 0.70	$ 1.41	$ -	$ 4,220.00	RSMeans 2004 ECHOS, along tribu both sides, top of bank Sauquoit, work areas	
02370 700 1350	Haybales, staked	500	LF	$ 2.25	$ 0.26	$ 0.05	$ 1,280.00	RSMeans Site Work & Landscape Cost Data 2006	
	Air/Dust Monitoring								
MACTEC	Siltation Curtains	300	SF	$ 4.42	$ -	$ -	$ 1,326.00	Assume 6 50-ft units utilized	
Wastewater Treatment System									
Vendor	100 gpm Dewatering Treatment Facility	1	LS	$ -	$ -	#########	$ 125,000.00	Contractor Bid to MACTEC 2008, includes 20,000 gal FRAC EQ Tank, OWS, bag filter, GAC filters	
02240.500.1000	Pumping 8 hr., attended 2 hrs. per day, including 20 LF of suction hose and 100 LF of discharge hose, w/ 4" diaphragm pumped used 8 hrs.	45	DAY	$ -	$ 405.00	$ 83.00	$ 21,960.00	RSMeans Site Work & Landscape Cost Data 2006, assume two weeks	
Sludge Handling and Disposal								Assumes 100 gpm, 30 days, 50% solids influent	
MACTEC	Materials	12	Drums	$ 45.00	$ -	$ -	$ 540.00	Based upon drummed sludge disposal costs for Buffalo NY to Illinois 2008	
	Transportation	12	Drums	$ 50.00	$ -	$ -	$ 600.00	Based upon drummed sludge disposal costs for Buffalo NY to Illinois 2009	
	Disposal	12	Drums	$ 325.00	$ -	$ -	$ 3,900.00	Based upon drummed sludge disposal costs for Buffalo NY to Illinois 2010	
	Fees and Charges	25	%				$ 1,260.00	Estimated	
Temporary Discharge Monitoring									
MACTEC	Aqueous Sampling, PCBs	45	EA	$ 140.00			$ 6,300.00	24-hr turn around expedited at additional 100% of cost	
	Aqueous Sampling, Metals	45	EA	$ 130.00			$ 5,850.00	24-hr turn around expedited at additional 100% of cost	
	Aqueous Sampling, VOCs	45	EA	$ 140.00			$ 6,300.00	24-hr turn around expedited at additional 100% of cost	
	Aqueous Sampling, SVOCs	45	EA	$ 360.00			$ 16,200.00	24-hr turn around expedited at additional 100% of cost	
Clearing and Grubbing									
17010107	Medium Brush, Medium Trees, Clear, Grub, Haul	1.5	ACRE	$ -	$ 3,327.00	$ 2,852.00	$ 9,268.50	RSMeans 2004 ECHOS	
Survey of Work/Stockpile Areas									
99241201	Surveying - 2-man Crew	2	DAY	$ -	$ 617.50	$ 204.77	$ 1,644.54	RSMeans 2004 ECHOS	
		Task Subtotal					$ 357,862.10		

Excavation and off-site disposal of soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill
(refer to Alternative 2 Detailed Costs)

		Task Subtotal					$1,147,394.45		

Excavation and off-site disposal of remaining on-site soil and C&D debris (all depths) with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill

MACTEC	Excavation, soil, loading for stockpile	2,040	BCY	$ 2.47	$ -	$ -	$ 5,032.36	See Excavation Rates, Soil	
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	2245	LCY	$ -	$ 0.79	$ 1.66	$ 5,499.03	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell	
MACTEC	Confirmation Sampling, PCBs	237	EA	$ 80.00	$ -	$ -	$ 18,960.00	MACTEC standby quote, qty consistent with NYSDEC DER-10	
MACTEC	Transportation and Disposal, hazardous soils and sediment	3265	TON	$ 125.44	$ -	$ -	$ 409,537.98	Refer to Disposal Cost Calculations	

Backfill excavation									
02315.210.4060	Borrow, Loading, commmon earth, 1-1/2 CY bucket	2,040	BCY	$ 8.25	$ 0.42	$ 0.25	$ 18,200.87	RSMeans Site Work & Landscape Cost Data 2006, average 6 inches deep
02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	2245	LCY	$ -	$ 5.80	$ 12.20	$ 40,401.04	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff
02315.120.3220	Backfill, Structural, dozer or FE Loader, from existing stockpile, no compaction, 105 HP, 150' haul, common earth	2245	LCY	$ -	$ 0.66	$ 0.76	$ 3,187.19	RSMeans Site Work & Landscape Cost Data 2006
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	2040	ECY	$ -	$ 1.10	$ 0.13	$ 2,509.76	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation
MACTEC	Excavation, C&D loading for stockpile	3,938	BCY	$ 5.95	$ -	$ -	$ 23,432.46	Refer to Excavation Rate Calculations
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	4332	LCY	$ -	$ 0.79	$ 1.66	$ 10,613.89	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell
MACTEC	Confirmation Sampling, PCBs	90	EA	$ 80.00	$ -	$ -	$ 7,200.00	MACTEC standby quote, qty consistent with NYSDEC DER-10
Vendor	Transportation and Disposal, C&D	6301	TON	$ 108.98	$ -	$ -	$ 686,748.38	Refer to Disposal Cost Calculations
Backfill excavation								
02315.210.4060	Borrow, Loading, commmon earth, 1-1/2 CY bucket	3,938	BCY	$ 8.25	$ 0.42	$ 0.25	$ 35,130.19	RSMeans Site Work & Landscape Cost Data 2006
02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	4332	LCY	$ -	$ 5.80	$ 12.20	$ 77,979.57	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff
02315.120.3220	Backfill, Structural, dozer or FE Loader, from existing stockpile, no compaction, 105 HP, 150' haul, common earth	4332	LCY	$ -	$ 0.66	$ 0.76	$ 6,151.72	RSMeans Site Work & Landscape Cost Data 2006
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	3938	ECY	$ -	$ 1.10	$ 0.13	$ 4,844.19	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation
			Task Subtotal				$1,355,428.63	

Excavation and off-site disposal of remaining C&D debris and garbage
(refer to Alternative 4 Detailed Costs)

			Task Subtotal				$ 48,466.65	

Excavation and off-site disposal of remaining off-site residential soil (all depths) containing PCBs greater than 1 mg/kg but less than 10 mg/kg, followed by placement of clean backfill

MACTEC	Excavation, soil, loading for stockpile	23	BCY	$ 93.19	$ -	$ -	$ 2,181.68	See Excavation Rates, Soil
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	26	LCY	$ -	$ 0.79	$ 1.66	$ 63.09	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell
MACTEC	Confirmation Sampling, PCBs	6	EA	$ 80.00	$ -	$ -	$ 480.00	MACTEC standby quote, qty consistent with NYSDEC DER-10
Vendor	Transportation and Disposal, non-hazardous soils and sediment	37	TON	$ 125.44	$ -	$ -	$ 4,698.73	Refer to Disposal Cost Calculations
Backfill excavation								
02315.210.4060	Borrow, Loading, commmon earth, 1-1/2 CY bucket	23	BCY	$ 8.25	$ 0.42	$ 0.25	$ 208.82	RSMeans Site Work & Landscape Cost Data 2006, average 6 inches deep
02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	26	LCY	$ -	$ 5.80	$ 12.20	$ 463.53	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff
02315.120.3220	Backfill, Structural, dozer or FE Loader, from existing stockpile, no compaction, 105 HP, 150' haul, common earth	26	LCY	$ -	$ 0.66	$ 0.76	$ 36.57	RSMeans Site Work & Landscape Cost Data 2006
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	23	ECY	$ -	$ 1.10	$ 0.13	$ 28.80	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation
			Task Subtotal				$ 8,161.22	

Excavation and off-site disposal of remaining off-site commercial soil (all depths) with PCB concentrations greater than 1 but less than 10 mg/kg, followed by placement of clean backfill

MACTEC	Excavation, soil, loading for stockpile	132	BCY	$ 2.84	$ -	$ -	$ 375.31	See Excavation Rates, Soil
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	145	LCY	$ -	$ 0.79	$ 1.66	$ 355.82	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell
MACTEC	Confirmation Sampling, PCBs	70	EA	$ 80.00	$ -	$ -	$ 5,600.00	MACTEC standby quote, qty consistent with NYSDEC DER-10
Vendor	Transportation and Disposal, non-hazardous soils and sediment	211	TON	$ 125.44	$ -	$ -	$ 26,499.36	Refer to Disposal Cost Calculations
Backfill excavation								
02315.210.4060	Borrow, Loading, commmon earth, 1-1/2 CY bucket	132	BCY	$ 8.25	$ 0.42	$ 0.25	$ 1,177.70	RSMeans Site Work & Landscape Cost Data 2006, average 6 inches deep

02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	145 LCY	$ -	$ 5.80	$ 12.20	$ 2,614.17	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff
02315.120.3220	Backfill, Structural, dozer or FE Loader, from existing stockpile, no compaction, 105 HP, 150' haul, common earth	145 LCY	$ -	$ 0.66	$ 0.76	$ 206.23	RSMeans Site Work & Landscape Cost Data 2006
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	132 ECY	$ -	$ 1.10	$ 0.13	$ 162.40	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation

Task Subtotal $ 36,990.98

Excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 5 feet bgs with PCB concentrations greater than 0.1 mg/kg but less than 10 mg/kg
(refer to Alternative 4 Detailed Costs)

Task Subtotal $ 103,794.47

Restoration of Unnamed Tributary
(refer to Alternative 4 Detailed Costs)

Task Subtotal $ 62,380.91

Excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade
(refer to Alternative 2 Detailed Costs)

Task Subtotal $ 60,459.25

Excavation and off-site disposal of sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg within off-site commercial property storm drains
(refer to Alternative 4 Detailed Costs)

Task Subtotal $ 4,507.09

Institutional Controls
(refer to Alternative 2 Detailed Costs)

Task Subtotal $ 9,931.06

ALTERNATIVE ANNUAL AND PERIODIC COSTS

Annual Institutional Control and Cover Inspections and Reporting
(refer to Alternative 2 Detailed Costs)

Task Subtotal $ 2,960.00

Long-Term Monitoring (Years 1 through 5)
(refer to Alternative 2 Detailed Costs)

Task Subtotal $ 35,905.00

PRESENT VALUE OF ANNUAL AND PERIODIC COSTS FOR ALTERNATIVE 6

Year	Cost*	Number of Annual Periods	Annual Discount Rate	Number of 5-Year Periods	5-Year Discount Rate	Number of 10-Year Periods	10-Year Discount Rate	Total Non-Discounted Cost	Present Value Cost
Capital (Year 0)	$ 4,637,000	1	0	NA	NA	NA	NA	$ 4,637,000.00	$ 4,637,000.00
Annual Inspections and Reporting (Years 1-30)	$ 4,000	30	0.031	NA	NA	NA	NA	$ 120,000.00	$ 77,397.95
Long-Term Monitoring (Years 1 through 5)	$ 48,000	5	0.031	NA	NA	NA	NA	$ 240,000.00	$ 219,199.69
Periodic (Every 5 Years)	$ -	NA	NA	6	0.165			$ -	$ -
Totals								**$ 4,997,000.00**	**$ 4,933,597.65**

*Annual and periodic costs include 10% for technical support and 25% contingency for unforeseen project complexities, including insurance, taxes, and licensing costs.
Capital costs include 25% contingency, as well as and project management, remedial design, and construction management costs per DER-10 guidance.

Discount rate of 3.1 Percent based on OMB Circular No. A-94 App. C (Revised Jan. 2008)

Alternative 7

Task / Subtask / Assembly (1)	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Comments/ Assumptions
ALTERNATIVE CAPITAL COSTS								
Pre-Design Investigations								
(refer to Alternative 2 Detailed Costs)								
	Task Subtotal						$ 25,744.54	
Mobilization and Temporary Facilities and Controls								
Temporary Utilities								
99040101	Temporary Office 20' x 8'	6.00	MO	$ 206.42	$ -	$ -	$ 1,238.52	RSMeans 2004 ECHOS
99140201	Temporary Storage Trailer 16' x 8'	6.00	MO	$ 80.72	$ -	$ -	$ 484.32	RSMeans 2004 ECHOS
99040501	Portable Toilets	6.00	MO	$ 82.65	$ -	$ -	$ 495.90	RSMeans 2004 ECHOS
01510.050.0040	Temporary Power Service, overhead feed, 3 use, 200 amp	1.00	EA	$ 745.00	$ 335.00	$ -	$ 1,080.00	RSMeans Site Work & Landscape Cost Data 2006
01520.550.0140	Telephone utility fee	6.00	MO	$ 210.00	$ -	$ -	$ 1,260.00	RSMeans Site Work & Landscape Cost Data 2006
MACTEC	Electrical utility fee	6.00	MO	$ 200.00	$ -	$ -	$ 1,200.00	
01520.550.0100	Field office expenses, office equipment rental, average	6.00	MO	$ 145.00	$ -	$ -	$ 870.00	RSMeans Site Work & Landscape Cost Data 2006
01560.250.0200	Rented chain link, 6' high, to 1,000'	1000	LF	$ 3.03	$ 1.10	$ -	$ 4,130.00	RSMeans Site Work & Landscape Cost Data 2006
02220.350.0725	Dumpster, weekly rental, 1 dump/week , 20 cy capacity (8 tons)	24	WK	$ 420.00	$ -	$ -	$ 10,080.00	RSMeans Site Work & Landscape Cost Data 2006
Decon Wastewater Handling								
19040406	21,000 Gallon Steel Wastewater Holding Tank, Rental	6	MO	$ 1,200.00	$ -	$ -	$ 7,200.00	RSMeans 2004 ECHOS, for decontamination water containment
Water Diversion System								
Stabilized Berms (assume 2)								
02060.150.0100	Borrow, spread with 200 HP dozer, no compaction, 2 mile round trip haul, bank run gravel.	2000	CY	$ 18.15	$ 1.43	$ 3.12	$ 45,400.00	RSMeans Site Work & Landscape Cost Data 2006, 25 ft long, 10 ft wide, 4 ft tall
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	1800	ECY		$ 1.10	$ 0.13	$ 2,214.00	RSMeans Site Work & Landscape Cost Data 2006
33080534	16 oz/sy nonwoven geotextile	22	SY	$ 2.39	$ -		$ 53.11	RSMeans 2004 ECHOS
01540.800.0700	Tarpaulins, 8.5 mils, black	200	SF	$ 0.24	$ -	$ -	$ 48.00	RSMeans Site Work & Landscape Cost Data 2006
MACTEC	sand bag cover anchor/ballast system	6	EA		$ 2,000.00	$ -	$ 12,000.00	
Culvert Piping								
10", 20 ft lengths, Tubing Corrugated and snap-on ABS	Polyethylene Flexible Drainage drainage tubing, plain or perforated fittings. Installed in an open trench.	400	LF	$ 6.37	$ 0.78	$ -	$ 2,860.00	http://www.get-a-quote.net
MACTEC	sand bag cover anchor/ballast system	6	EA	$ 2,000.00	$ -	$ -	$ 12,000.00	
Water Diversion Operation								
02240.500.1000	Pumping 8 hr., attended 2 hrs. per day, including 20 LF of suction hose and 100 LF of discharge hose, w/ 4" diaphragm pump used 8 hrs.	10	DAY	$ -	$ 1,215.00	$ 249.00	$ 14,640.00	RSMeans Site Work & Landscape Cost Data 2006, rates tripled for 24 hr/day operation
Stockpile Containment Areas								
Source Area >10 mg/kg materials								
01540.800.0700	Tarpaulins, 8.5 mils, black	10000	SF	$ 0.24	$ -	$ -	$ 2,400.00	RSMeans Site Work & Landscape Cost Data 2006
02240.500.0600	Pumping 8 hr., attended 2 hrs. per day, including 20 LF of suction hose and 100 LF of discharge hose, w/ 2" diaphragm pumped used 8 hrs.	30	DAY	$ -	$ 101.00	$ 14.50	$ 3,465.00	RSMeans Site Work & Landscape Cost Data 2006, assume 1 month
Non Source Area <10 mg/kg materials								
01540.800.0700	Tarpaulins, 8.5 mils, black	10000	SF	$ 0.24	$ -	$ -	$ 2,400.00	RSMeans Site Work & Landscape Cost Data 2006
02240.500.0600	Pumping 8 hr., attended 2 hrs. per day,	60	DAY	$ -	$ 101.00	$ 14.50	$ 6,930.00	RSMeans Site Work & Landscape Cost Data 2006, assume 1 month

	including 20 LF of suction hose and 100 LF of discharge hose, w/ 2" diaphragm pumped used 8 hrs.								
Decontamination Facility									
33290401	25 gpm, 1-1/2" discharge, cast iron sump pun	1	EA	$ -	$ -	$ 2,317.00	$ 2,317.00	RSMeans 2004 ECHOS	
33290704	50' Flexible, Product Discharge Hose	1	EA	$ -	$ -	$ 175.00	$ 175.00	RSMeans 2004 ECHOS	
02060.150.0300	3/4" crushed stone borrow, spread w/ 200 HP dozer, no compaction, 2 mi rt haul	56	CY	$ 27.50	$ 1.43	$ 3.12	$ 1,780.56	RSMeans Site Work & Landscape Cost Data 2006, assume 30 ft by 50 ft by one foot thick	
02315.310.5100	Compaction, General, riding vibrating roller, 12" lifts, 4 passes	56	ECY	$ -	$ 0.16	$ 0.16	$ 17.78	RSMeans Site Work & Landscape Cost Data 2006	
3308544	60-mil Polymeric Liner, Very Low Density P	167	SF	$ 1.97	$ -		$ 328.33	RSMeans 2004 ECHOS, assume 30 ft by 50 ft	
33080534	16 oz/sy nonwoven geotextile	167	SY	$ 2.39	$ -		$ 398.33	RSMeans 2004 ECHOS	
33170814	1,800 psi pressure washer, 6HP, 4.8 gpm	1	EA	$ -	$ -	$ 1,635.00	$ 1,635.00	RSMeans 2004 ECHOS	
19040605	2,000 gal steel sump, aboveground w/ supports and fittings	1	EA	$ 2,233.00	$ 853.69	$ 123.26	$ 3,209.95	RSMeans 2004 ECHOS	
33170823	Operation of pressure washer, including water, soap, electricity, and labor	240	HR	$ -	$ -	$ 41.69	$ 10,005.60	RSMeans 2004 ECHOS, Assume 6 min (0.10 hrs) /truck, assume 30 days/8 hrs/day	
33410101	Pump and motor maintenance/repair	1	EA	$ -	$ -	$ 431.15	$ 431.15	RSMeans 2004 ECHOS	
Erosion and Sediment Control Measures									
18050206	Filter Barrier, Silt Fences, Vinyl, 3' High with 7.5' Posts	2000	LF	$ 0.70	$ 1.41	$ -	$ 4,220.00	RSMeans 2004 ECHOS, along tribu both sides, top of bank Sauquoit, work areas	
02370 700 1350	Haybales, staked	500	LF	$ 2.25	$ 0.26	$ 0.05	$ 1,280.00	RSMeans Site Work & Landscape Cost Data 2006	
	Air/Dust Monitoring								
MACTEC	Siltation Curtains	300	SF	$ 4.42	$ -	$ -	$ 1,326.00	Assume 6 50-ft units utilized	
Wastewater Treatment System									
Vendor	100 gpm Dewatering Treatment Facility	1	LS	$ -	$ -	#########	$ 125,000.00	Contractor Bid to MACTEC 2008, includes 20,000 gal FRAC EQ Tank, OWS, bag filter, GAC filters	
02240.500.1000	Pumping 8 hr., attended 2 hrs. per day, including 20 LF of suction hose and 100 LF of discharge hose, w/ 4" diaphragm pumped used 8 hrs.	60	DAY	$ -	$ 405.00	$ 83.00	$ 29,280.00	RSMeans Site Work & Landscape Cost Data 2006, assume two weeks	
Sludge Handling and Disposal								Assumes 100 gpm, 30 days, 50% solids influent	
MACTEC	Materials	12	Drums	$ 45.00	$ -	$ -	$ 540.00	Based upon drummed sludge disposal costs for Buffalo NY to Illinois 2008	
	Transportation	12	Drums	$ 50.00	$ -	$ -	$ 600.00	Based upon drummed sludge disposal costs for Buffalo NY to Illinois 2009	
	Disposal	12	Drums	$ 325.00	$ -	$ -	$ 3,900.00	Based upon drummed sludge disposal costs for Buffalo NY to Illinois 2010	
	Fees and Charges	25	%				$ 1,260.00	Estimated	
Temporary Discharge Monitoring									
MACTEC	Aqueous Sampling, PCBs	60	EA	$ 140.00			$ 8,400.00	24-hr turn around expedited at additional 100% of cost	
	Aqueous Sampling, Metals	60	EA	$ 130.00			$ 7,800.00	24-hr turn around expedited at additional 100% of cost	
	Aqueous Sampling, VOCs	60	EA	$ 140.00			$ 8,400.00	24-hr turn around expedited at additional 100% of cost	
	Aqueous Sampling, SVOCs	60	EA	$ 360.00			$ 21,600.00	24-hr turn around expedited at additional 100% of cost	
Clearing and Grubbing									
17010107	Medium Brush, Medium Trees, Clear, Grub, Haul	1.5	ACRE	$ -	$ 3,327.00	$ 2,852.00	$ 9,268.50	RSMeans 2004 ECHOS	
Survey of Work/Stockpile Areas									
99241201	Surveying - 2-man Crew	2	DAY	$ -	$ 617.50	$ 204.77	$ 1,644.54	RSMeans 2004 ECHOS	
	Task Subtotal						$ 377,266.59		

Excavation and off-site disposal of soil, C&D debris, and sediment with PCB concentrations greater than or equal to 10 mg/kg, followed by placement of clean backfill
(refer to Alternative 2 Detailed Costs)

	Task Subtotal						$1,147,394.45		

Excavation and off-site disposal of remaining on-site soil and C&D debris (all depths) with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill

MACTEC	Excavation, soil, loading for stockpile	11,989	BCY	$ 1.68	$ -	$ -	$ 20,129.43	See Excavation Rates, Soil	
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	13188	LCY	$ -	$ 0.79	$ 1.66	$ 32,311.36	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell	
MACTEC	Confirmation Sampling, PCBs	921	EA	$ 80.00	$ -	$ -	$ 73,680.00	MACTEC standby quote, qty consistent with NYSDEC DER-10	
MACTEC	Transportation and Disposal, hazardous soils and sediment	19183	TON	$ 125.44	$ -	$ -	$2,406,374.81	Refer to Disposal Cost Calculations	

Backfill excavation									
02315.210.4060	Borrow, Loading, commmon earth, 1-1/2 CY bucket	11,989	BCY	$ 8.25	$ 0.42	$ 0.25	$ 106,945.20	RSMeans Site Work & Landscape Cost Data 2006, average 6 inches deep
02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	13188	LCY	$ -	$ 5.80	$ 12.20	$ 237,389.56	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff
02315.120.3220	Backfill, Structural, dozer or FE Loader, from existing stockpile, no compaction, 105 HP, 150' haul, common earth	13188	LCY	$ -	$ 0.66	$ 0.76	$ 18,727.40	RSMeans Site Work & Landscape Cost Data 2006
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	11989	ECY	$ -	$ 1.10	$ 0.13	$ 14,746.93	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation
MACTEC	Excavation, C&D loading for stockpile	4,923	BCY	$ 5.95	$ -	$ -	$ 29,290.57	Refer to Excavation Rate Calculations
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	5415	LCY	$ -	$ 0.79	$ 1.66	$ 13,267.36	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell
MACTEC	Confirmation Sampling, PCBs	113	EA	$ 80.00	$ -	$ -	$ 9,000.00	MACTEC standby quote, qty consistent with NYSDEC DER-10
Vendor	Transportation and Disposal, C&D	7877	TON	$ 108.98	$ -	$ -	$ 858,435.48	Refer to Disposal Cost Calculations
Backfill excavation								
02315.210.4060	Borrow, Loading, commmon earth, 1-1/2 CY bucket	4,923	BCY	$ 8.25	$ 0.42	$ 0.25	$ 43,912.74	RSMeans Site Work & Landscape Cost Data 2006
02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	5415	LCY	$ -	$ 5.80	$ 12.20	$ 97,474.47	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff
02315.120.3220	Backfill, Structural, dozer or FE Loader, from existing stockpile, no compaction, 105 HP, 150' haul, common earth	5415	LCY	$ -	$ 0.66	$ 0.76	$ 7,689.65	RSMeans Site Work & Landscape Cost Data 2006
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	4923	ECY	$ -	$ 1.10	$ 0.13	$ 6,055.23	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation
			Task Subtotal				$3,975,430.18	

Excavation and off-site disposal of remaining C&D debris and garbage
(refer to Alternative 4 Detailed Costs)

			Task Subtotal				$ 48,466.65	

Excavation and off-site disposal of remaining off-site residential soil (all depths) containing PCBs greater than 0.1 mg/kg but less than 10 mg/kg, followed by placement of clean backfill

MACTEC	Excavation, soil, loading for stockpile	172	BCY	$ 93.19	$ -	$ -	$ 16,068.66	See Excavation Rates, Soil
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	190	LCY	$ -	$ 0.79	$ 1.66	$ 464.69	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell
MACTEC	Confirmation Sampling, PCBs	38	EA	$ 80.00	$ -	$ -	$ 3,000.00	MACTEC standby quote, qty consistent with NYSDEC DER-10
Vendor	Transportation and Disposal, non-hazardous soils and sediment	276	TON	$ 125.44	$ -	$ -	$ 34,607.38	Refer to Disposal Cost Calculations
Backfill excavation								
02315.210.4060	Borrow, Loading, commmon earth, 1-1/2 CY bucket	172	BCY	$ 8.25	$ 0.42	$ 0.25	$ 1,538.04	RSMeans Site Work & Landscape Cost Data 2006, average 6 inches deep
02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	190	LCY	$ -	$ 5.80	$ 12.20	$ 3,414.03	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff
02315.120.3220	Backfill, Structural, dozer or FE Loader, from existing stockpile, no compaction, 105 HP, 150' haul, common earth	190	LCY	$ -	$ 0.66	$ 0.76	$ 269.33	RSMeans Site Work & Landscape Cost Data 2006
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	172	ECY	$ -	$ 1.10	$ 0.13	$ 212.08	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation
			Task Subtotal				$ 59,574.21	

Excavation and off-site disposal of remaining off-site commercial soil (all depths) with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill

MACTEC	Excavation, soil, loading for stockpile	523	BCY	$ 2.84	$ -	$ -	$ 1,486.99	See Excavation Rates, Soil
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	575	LCY	$ -	$ 0.79	$ 1.66	$ 1,409.75	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell
MACTEC	Confirmation Sampling, PCBs	70	EA	$ 80.00	$ -	$ -	$ 5,600.00	MACTEC standby quote, qty consistent with NYSDEC DER-10
Vendor	Transportation and Disposal, non-hazardous soils and sediment	837	TON	$ 125.44	$ -	$ -	$ 104,990.65	Refer to Disposal Cost Calculations
Backfill excavation								
02315.210.4060	Borrow, Loading, commmon earth, 1-1/2 CY bucket	523	BCY	$ 8.25	$ 0.42	$ 0.25	$ 4,666.04	RSMeans Site Work & Landscape Cost Data 2006, average 6 inches deep

02315.490.0560	Hauling, excavated or borrow, loose CY, 12 CY dump truck, 20 mile round trip, 0.4 loads per hour	575	LCY	$ -	$ 5.80	$ 12.20	$ 10,357.36	RSMeans Site Work & Landscape Cost Data 2006, assume 10% fluff
02315.120.3220	Backfill, Structural, dozer or FE Loader, from existing stockpile, no compaction, 105 HP, 150' haul, common earth	575	LCY	$ -	$ 0.66	$ 0.76	$ 817.08	RSMeans Site Work & Landscape Cost Data 2006
02315.310.7000	Compaction, Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	523	ECY	$ -	$ 1.10	$ 0.13	$ 643.41	RSMeans Site Work & Landscape Cost Data 2006, assume 10% consolidation
	Task Subtotal						$ 129,971.27	

Excavation and off-site disposal of remaining Unnamed Tributary sediment 0 to 5 feet bgs with PCB concentrations greater than 0.1 mg/kg but less than 10 mg/kg
(refer to Alternative 4 Detailed Costs)

	Task Subtotal						$ 103,794.47	

Restoration of Unnamed Tributary
(refer to Alternative 4 Detailed Costs)

	Task Subtotal						$ 62,380.91	

Excavation and off-site disposal of remaining Sauquoit Creek east bank sediment 0 to 2 feet bgs with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of two-foot restoration to original grade
(refer to Alternative 2 Detailed Costs)

	Task Subtotal						$ 60,459.25	

Excavation and off-site disposal of all remaining Sauquoit Creek sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg, followed by placement of clean backfill and two-foot restoration to original grade

Vendor Data	Water-inflated berms 4 ft tall, 9.5 ft long	100	FT	$ 39.00			$ 3,900.00	AquaDam® Price Guide 1/1/2008
Vendor Data	Water-inflated berm attachment collars	11	EA	$ 80.00			$ 880.00	AquaDam® Price Guide 1/1/2008
MACTEC	Siltation Curtains	150	SF	$ 4.42	$ -	$ -	$ 663.00	
MACTEC	Excavation, sed, loading for stockpile	113	BCY	$ 37.24	$ -	$ -	$ 4,196.12	Refer to Excavation Rate Calculations
02315.490.0310	Hauling, excavated material, 12 CY dump truck, 1/4 mile RT	124	LCY		$ 0.79	$ 1.66	$ 303.69	RSMeans Site Work & Landscape Cost Data 2006, assume 10% swell
MACTEC	Confirmation Sampling, PCBs	13	EA	$ 80.00	$ -	$ -	$ 1,040.00	MACTEC standby quote, qty consistent with NYSDEC DER-10
Vendor	Transportation and Disposal, non-hazardous soils and sediment	180	TON	$ 125.44	$ -	$ -	$ 22,616.92	Refer to Disposal Cost Calculations
Stream Restoration								
Bank Run Cobbles								
02370.450.0100	Riprap and Rock Lining, broken stone, machine placed for slope protection	180	TON	$ 51.00	$ 8.45	$ 9.15	$ 12,368.32	RSMeans Site Work & Landscape Cost Data 2006 - assumes to average 1 ft, 1.6 tons/cy
	Task Subtotal						$ 45,968.04	

Excavation and off-site disposal of sediment with PCB concentrations greater than 0.1 but less than 10 mg/kg within off-site commercial property storm drains
(refer to Alternative 4 Detailed Costs)

	Task Subtotal						$ 4,507.09	

Institutional Controls
(refer to Alternative 2 Detailed Costs)

	Task Subtotal						$ 9,931.06	

ALTERNATIVE ANNUAL AND PERIODIC COSTS

Annual Institutional Control and Cover Inspections and Reporting
(refer to Alternative 2 Detailed Costs)

	Task Subtotal						$ 2,960.00	

Long-Term Monitoring (Years 1 through 5)
(refer to Alternative 2 Detailed Costs)

	Task Subtotal						$ 35,905.00	

PRESENT VALUE OF ANNUAL AND PERIODIC COSTS FOR ALTERNATIVE 7

Year	Cost*	Number of Annual Periods	Annual Discount Rate	Number of 5-Year Periods	5-Year Discount Rate	Number of 10-Year Periods	10-Year Discount Rate	Total Non-Discounted Cost	Present Value Cost
Capital (Year 0)	$ 8,713,000	1	0	NA	NA	NA	NA	$ 8,713,000.00	$ 8,713,000.00
Annual Inspections and Reporting (Years 1-30)	$ 4,000	30	0.031	NA	NA	NA	NA	$ 120,000.00	$ 77,397.95
Long-Term Monitoring (Years 1 through 5)	$ 48,000	5	0.031	NA	NA	NA	NA	$ 240,000.00	$ 219,199.69
Periodic (Every 5 Years)	$ -	NA	NA	6	0.165			$ -	$ -
Totals								**$ 9,073,000.00**	**$ 9,009,597.65**

*Annual and periodic costs include 10% for technical support and 25% contingency for unforeseen project complexities, including insurance, taxes, and licensing costs.
Capital costs include 25% contingency, as well as and project management, remedial design, and construction management costs per DER-10 guidance.

Discount rate of 3.1 Percent based on OMB Circular No. A-94 App. C (Revised Jan. 2008)

MACTEC

Project:	**3456 Oneida Street**
Job No:	3650070089.00
Created by:	R. Belcher
Date:	12/4/2008
Checked by:	S. Wright
Date:	1/12/2009

Table C.1: Excavation Unit Cost Calculation Based on Crew and Equipment Production Rates, C&D

Production				
1. Excavated volume of soil	**6,484**	bcy		
2. Excavator	CAT 330			
3. Bucket Size	**2**	cy		
4. Bucket Fill Factor	**50%**		Note 1	
5. CY/bucket	1.0	cy		
6. Operator/Site Efficiency	**25%**		Note 2	
7. Cycles/minute	3.5		Note 3	
8. Actual cycles/minute	0.875	cycles/min		
9. LCY/minute	0.9	lcy/min		
10. Productive minutes/hour	**49**	min/hr	Note 4	
11. LCY/hour	42.9			
12. Hours/day	8	hrs/day		
13. LCY/day	343	lcy/day		
14. BCY/day	309	bcy/day	Note 5	
15. Days to complete	22.0		Note 6	
16. Crew Hours	184.0		Note 7	

Labor and Equipment Costs				
Unit	Quantity	Rate	Hours	Cost
1. Laborer	1	$20.00	184.0	$3,680.00
2. Operator	1	$25.00	184.0	$4,600.00
3. Excavator	1	$130.00	184.0	$23,920.00

Diesel (Note 8)				
Machine	HP	$/gallon	Gallons/hr	Cost
CAT 330	222	$2.74	12.68	$6,381.41

Bucket Fill Factors	
Moist Loam Sandy Soil	100-110%
Sand & Gravel	95-110%
Hard Tough Clay	80-90%
Rock - Well Blasted	60-75%
Rock - Poorly Blasted	40-50%

Total Excavation Costs (Note 9)	
Lump Sum	$38,581.41
Cost/BCY	$5.95

Notes:

1. See "Bucket Fill Factors Table". Material is classified generally as C&D debris, therefore 50% was selected.
2. All inefficiencies are carried in the "Operator/Site Efficiency" line item.
3. "Cycles/minute" line item assumes 100% efficiency.
4. "Productive minutes/hour" accounts for time lost to:safety talk, nonproductive time before/after breaks, early breakdown.

calculation:	8	hr work day
	15	minute safety talk
	15	minutes post talk prior to productive work
	10	minutes nonproductive time before and after coffee break (20 min total)
	10	minutes nonproductive time before and after lunch break (20 min total)
	15	minutes nonproductive time at end of day
	85	nonproductive minutes/day
	11	nonproductive minutes/hour
	49	productive minutes/hour

5. Assume 10% shrink/swell conversion between bank cubic yards (bcy) and loose cubic yards (lcy).
6. Assumes 1 day of lost work due to inclement weather
7. Assume hours are rounded up to the nearest whole day.
8. Diesel unit price based on data reported by Energy Information Administration (EIA), Official Energy Statistics of the U.S. government, reported for 12/01/08, <http://tonto.eia.doe.gov/oog/info/gdu/gasdiesel.asp>
9. Total excavation cost estimate does not include mobilization/demobilization or transportation.

MACTEC

Project:	**3456 Oneida Street**
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Date:	1/12/2009

Table C.2: Excavation Unit Cost Calculation Based on Crew and Equipment Production Rates, Source Soils

Production			
1. Excavated volume of soil	**910**	bcy	
2. Excavator	CAT 330		
3. Bucket Size	**2**	cy	
4. Bucket Fill Factor	**75%**		Note 1
5. CY/bucket	1.5	cy	
6. Operator/Site Efficiency	**25%**		Note 2
7. Cycles/minute	3.5		Note 3
8. Actual cycles/minute	0.875	cycles/min	
9. LCY/minute	1.3	lcy/min	
10. Productive minutes/hour	**49**	min/hr	Note 4
11. LCY/hour	64.3		
12. Hours/day	8	hrs/day	
13. LCY/day	514.5	lcy/day	
14. BCY/day	463	bcy/day	Note 5
15. Days to complete	3.0		Note 6
16. Crew Hours	24.0		Note 7

Bucket Fill Factors	
Moist Loam Sandy Soil	100-110%
Sand & Gravel	95-110%
Hard Tough Clay	80-90%
Rock - Well Blasted	60-75%
Rock - Poorly Blasted	40-50%

Labor and Equipment Costs

Unit	Quantity	Rate	Hours	Cost
1. Laborer	1	$20.00	24.0	$480.00
2. Operator	1	$25.00	24.0	$600.00
3. Excavator	1	$130.00	24.0	$3,120.00

Diesel (Note 8)

Machine	HP	$/gallon	Gallons/hr	Cost
CAT 330	222	$2.74	12.68	$832.36

Total Excavation Costs (Note 9)	
Lump Sum	$5,032.36
Cost/BCY	$5.53

Notes:

1. See "Bucket Fill Factors Table". Material is classified generally as hard packed fill and some C&D debris, therefore 75% was selected.
2. All inefficiencies are carried in the "Operator/Site Efficiency" line item.
3. "Cycles/minute" line item assumes 100% efficiency.
4. "Productive minutes/hour" accounts for time lost to:safety talk, nonproductive time before/after breaks, early breakdown.

calculation:		
	8	hr work day
	15	minute safety talk
	15	minutes post talk prior to productive work
	10	minutes nonproductive time before and after coffee break (20 min total)
	10	minutes nonproductive time before and after lunch break (20 min total)
	15	minutes nonproductive time at end of day
	85	nonproductive minutes/day
	11	nonproductive minutes/hour
	49	productive minutes/hour

5. Assume 10% shrink/swell conversion between bank cubic yards (bcy) and loose cubic yards (lcy).
6. Assumes 1 day of lost work due to inclement weather
7. Assume hours are rounded up to the nearest whole day.
8. Diesel unit price based on data reported by Energy Information Administration (EIA), Official Energy Statistics of the U.S. government, reported for 12/01/08, <http://tonto.eia.doe.gov/oog/info/gdu/gasdiesel.asp>
9. Total excavation cost estimate does not include mobilization/demobilization or transportation.

MACTEC

Project:	**3456 Oneida Street**
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Date:	1/12/2009

Table C.3: Excavation Unit Cost Calculation Based on Crew and Equipment Production Rates, Tributary Sediment

Production			
1. Excavated volume of sed	**961**	bcy	
2. Excavator	CAT 330		
3. Bucket Size	**2**	cy	
4. Bucket Fill Factor	**90%**		Note 1
5. CY/bucket	1.8	cy	
6. Operator/Site Efficiency	**10%**		Note 2
7. Cycles/minute	3.5		Note 3
8. Actual cycles/minute	0.35	cycles/min	
9. LCY/minute	0.6	lcy/min	
10. Productive minutes/hour	**49**	min/hr	Note 4
11. LCY/hour	30.9		
12. Hours/day	8	hrs/day	
13. LCY/day	246.96	lcy/day	
14. BCY/day	222	bcy/day	Note 5
15. Days to complete	5.3		Note 6
16. Crew Hours	48.0		Note 7

Bucket Fill Factors	
Moist Loam Sandy Soil	100-110%
Sand & Gravel	95-110%
Hard Tough Clay	80-90%
Rock - Well Blasted	60-75%
Rock - Poorly Blasted	40-50%

Labor and Equipment Costs

Unit	Quantity	Rate	Hours	Cost
1. Laborer	1	$20.00	48.0	$960.00
2. Operator	1	$25.00	48.0	$1,200.00
3. Excavator	1	$130.00	48.0	$6,240.00

Diesel (Note 8)

Machine	HP	$/gallon	Gallons/hr	Cost
CAT 330	222	$2.74	12.68	$1,664.71

Total Excavation Costs (Note 9)	
Lump Sum	$10,064.71
Cost/BCY	$10.47

Notes:

1. See "Bucket Fill Factors Table". Material is classified generally as sand & gravel, some debris, therefore 90% was selected.
2. All inefficiencies are carried in the "Operator/Site Efficiency" line item.
3. "Cycles/minute" line item assumes 100% efficiency.
4. "Productive minutes/hour" accounts for time lost to:safety talk, nonproductive time before/after breaks, early breakdown.

calculation:		
	8	hr work day
	15	minute safety talk
	15	minutes post talk prior to productive work
	10	minutes nonproductive time before and after coffee break (20 min total)
	10	minutes nonproductive time before and after lunch break (20 min total)
	15	minutes nonproductive time at end of day
	85	nonproductive minutes/day
	11	nonproductive minutes/hour
	49	productive minutes/hour

5. Assume 10% shrink/swell conversion between bank cubic yards (bcy) and loose cubic yards (lcy).
6. Assumes 1 day of lost work due to inclement weather
7. Assume hours are rounded up to the nearest whole day.
8. Diesel unit price based on data reported by Energy Information Administration (EIA), Official Energy Statistics of the U.S. government, reported for 12/01/08, <http://tonto.eia.doe.gov/oog/info/gdu/gasdiesel.asp>
9. Total excavation cost estimate does not include mobilization/demobilization or transportation.

MACTEC

Project:	**3456 Oneida Street**
Job No:	3650070089.00
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Date:	1/12/2009

Table C.4: Excavation Unit Cost Calculation Based on Crew and Equipment Production Rates, East Bank Sediment

Production			
1. Excavated volume of sed	**135**	bcy	
2. Excavator	CAT 330		
3. Bucket Size	**2**	cy	
4. Bucket Fill Factor	**50%**		Note 1
5. CY/bucket	1.0	cy	
6. Operator/Site Efficiency	**10%**		Note 2
7. Cycles/minute	3.5		Note 3
8. Actual cycles/minute	0.35	cycles/min	
9. LCY/minute	0.4	lcy/min	
10. Productive minutes/hour	**49**	min/hr	Note 4
11. LCY/hour	17.2		
12. Hours/day	8	hrs/day	
13. LCY/day	137.2	lcy/day	
14. BCY/day	123	bcy/day	Note 5
15. Days to complete	2.1		Note 6
16. Crew Hours	24.0		Note 7

Bucket Fill Factors	
Moist Loam Sandy Soil	100-110%
Sand & Gravel	95-110%
Hard Tough Clay	80-90%
Rock - Well Blasted	60-75%
Rock - Poorly Blasted	40-50%

Labor and Equipment Costs

	Unit	Quantity	Rate	Hours	Cost
1.	Laborer	1	$20.00	24.0	$480.00
2.	Operator	1	$25.00	24.0	$600.00
3.	Excavator	1	$130.00	24.0	$3,120.00

Diesel (Note 8)

Machine	HP	$/gallon	Gallons/hr	Cost
CAT 330	222	$2.74	12.68	$832.36

Total Excavation Costs (Note 9)	
Lump Sum	$5,032.36
Cost/BCY	$37.24

Notes:

1. See "Bucket Fill Factors Table". Material is classified generally as sand & gravel, some debris, therefore 90% was selected.
2. All inefficiencies are carried in the "Operator/Site Efficiency" line item.
3. "Cycles/minute" line item assumes 100% efficiency.
4. "Productive minutes/hour" accounts for time lost to:safety talk, nonproductive time before/after breaks, early breakdown.

calculation:	8	hr work day
	15	minute safety talk
	15	minutes post talk prior to productive work
	10	minutes nonproductive time before and after coffee break (20 min total)
	10	minutes nonproductive time before and after lunch break (20 min total)
	15	minutes nonproductive time at end of day
	85	nonproductive minutes/day
	11	nonproductive minutes/hour
	49	productive minutes/hour

5. Assume 10% shrink/swell conversion between bank cubic yards (bcy) and loose cubic yards (lcy).
6. Assumes 1 day of lost work due to inclement weather
7. Assume hours are rounded up to the nearest whole day.
8. Diesel unit price based on data reported by Energy Information Administration (EIA), Official Energy Statistics of the U.S. government, reported for 12/01/08, <http://tonto.eia.doe.gov/oog/info/gdu/gasdiesel.asp>
9. Total excavation cost estimate does not include mobilization/demobilization or transportation.

MACTEC

Project:	**3456 Oneida Street**
Job No:	3650070089.00
Created by:	R. Belcher
Date:	12/4/2008
Checked by:	S. Wright
Date:	1/12/2009

Table C.5: Excavation Unit Cost Calculation Based on Crew and Equipment Production Rates, Soils to 1 ft bgs

Production			
1. Excavated volume of soil	**1,770**	bcy	
2. Excavator	CAT 330		
3. Bucket Size	**2**	cy	
4. Bucket Fill Factor	**90%**		Note 1
5. CY/bucket	1.8	cy	
6. Operator/Site Efficiency	**50%**		Note 2
7. Cycles/minute	3.5		Note 3
8. Actual cycles/minute	1.75	cycles/min	
9. LCY/minute	3.2	lcy/min	
10. Productive minutes/hour	**49**	min/hr	Note 4
11. LCY/hour	154.4		
12. Hours/day	8	hrs/day	
13. LCY/day	1234.8	lcy/day	
14. BCY/day	1111	bcy/day	Note 5
15. Days to complete	2.6		Note 6
16. Crew Hours	24.0		Note 7

Bucket Fill Factors	
Moist Loam Sandy Soil	100-110%
Sand & Gravel	95-110%
Hard Tough Clay	80-90%
Rock - Well Blasted	60-75%
Rock - Poorly Blasted	40-50%

Labor and Equipment Costs

Unit	Quantity	Rate	Hours	Cost
1. Laborer	1	$20.00	24.0	$480.00
2. Operator	1	$25.00	24.0	$600.00
3. Excavator	1	$130.00	24.0	$3,120.00

Diesel (Note 8)

Machine	HP	$/gallon	Gallons/hr	Cost
CAT 330	222	$2.74	12.68	$832.36

Total Excavation Costs (Note 9)	
Lump Sum	$5,032.36
Cost/BCY	$2.84

Notes:

1. See "Bucket Fill Factors Table". Material is classified generally as hard packed fill and some C&D debris, therefore 75% was selected.
2. All inefficiencies are carried in the "Operator/Site Efficiency" line item.
3. "Cycles/minute" line item assumes 100% efficiency.
4. "Productive minutes/hour" accounts for time lost to:safety talk, nonproductive time before/after breaks, early breakdown.

calculation:		
	8	hr work day
	15	minute safety talk
	15	minutes post talk prior to productive work
	10	minutes nonproductive time before and after coffee break (20 min total)
	10	minutes nonproductive time before and after lunch break (20 min total)
	15	minutes nonproductive time at end of day
	85	nonproductive minutes/day
	11	nonproductive minutes/hour
	49	productive minutes/hour

5. Assume 10% shrink/swell conversion between bank cubic yards (bcy) and loose cubic yards (lcy).
6. Assumes 1 day of lost work due to inclement weather
7. Assume hours are rounded up to the nearest whole day.
8. Diesel unit price based on data reported by Energy Information Administration (EIA), Official Energy Statistics of the U.S. government, reported for 12/01/08, <http://tonto.eia.doe.gov/oog/info/gdu/gasdiesel.asp>
9. Total excavation cost estimate does not include mobilization/demobilization or transportation.

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Table C.6: Excavation Unit Cost Calculation Based on Crew and Equipment Production Rates, Soils to 2 ft bgs

Production			
1. Excavated volume of soil	**2,040**	bcy	
2. Excavator	CAT 330		
3. Bucket Size	**2**	cy	
4. Bucket Fill Factor	**90%**		Note 1
5. CY/bucket	1.8	cy	
6. Operator/Site Efficiency	**50%**		Note 2
7. Cycles/minute	3.5		Note 3
8. Actual cycles/minute	1.75	cycles/min	
9. LCY/minute	3.2	lcy/min	
10. Productive minutes/hour	**49**	min/hr	Note 4
11. LCY/hour	154.4		
12. Hours/day	8	hrs/day	
13. LCY/day	1234.8	lcy/day	
14. BCY/day	1111	bcy/day	Note 5
15. Days to complete	2.8		Note 6
16. Crew Hours	24.0		Note 7

Bucket Fill Factors	
Moist Loam Sandy Soil	100-110%
Sand & Gravel	95-110%
Hard Tough Clay	80-90%
Rock - Well Blasted	60-75%
Rock - Poorly Blasted	40-50%

Labor and Equipment Costs

Unit	Quantity	Rate	Hours	Cost
1. Laborer	1	$20.00	24.0	$480.00
2. Operator	1	$25.00	24.0	$600.00
3. Excavator	1	$130.00	24.0	$3,120.00

Diesel (Note 8)

Machine	HP	$/gallon	Gallons/hr	Cost
CAT 330	222	$2.74	12.68	$832.36

Total Excavation Costs (Note 9)	
Lump Sum	$5,032.36
Cost/BCY	$2.47

Notes:

1. See "Bucket Fill Factors Table". Material is classified generally as hard packed fill and some C&D debris, therefore 75% was selected.
2. All inefficiencies are carried in the "Operator/Site Efficiency" line item.
3. "Cycles/minute" line item assumes 100% efficiency.
4. "Productive minutes/hour" accounts for time lost to:safety talk, nonproductive time before/after breaks, early breakdown.

calculation:		
	8	hr work day
	15	minute safety talk
	15	minutes post talk prior to productive work
	10	minutes nonproductive time before and after coffee break (20 min total)
	10	minutes nonproductive time before and after lunch break (20 min total)
	15	minutes nonproductive time at end of day
	85	nonproductive minutes/day
	11	nonproductive minutes/hour
	49	productive minutes/hour

5. Assume 10% shrink/swell conversion between bank cubic yards (bcy) and loose cubic yards (lcy).
6. Assumes 1 day of lost work due to inclement weather
7. Assume hours are rounded up to the nearest whole day.
8. Diesel unit price based on data reported by Energy Information Administration (EIA), Official Energy Statistics of the U.S. government, reported for 12/01/08, <http://tonto.eia.doe.gov/oog/info/gdu/gasdiesel.asp>
9. Total excavation cost estimate does not include mobilization/demobilization or transportation.

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Table C.7: Excavation Unit Cost Calculation Based on Crew and Equipment Production Rates, Soils (Residential Property)

Production			
1. Excavated volume of soil	**36**	bcy	
2. Excavator	CAT 330		
3. Bucket Size	**2**	cy	
4. Bucket Fill Factor	**90%**		Note 1
5. CY/bucket	1.8	cy	
6. Operator/Site Efficiency	**10%**		Note 2
7. Cycles/minute	3.5		Note 3
8. Actual cycles/minute	0.35	cycles/min	
9. LCY/minute	0.6	lcy/min	
10. Productive minutes/hour	**49**	min/hr	Note 4
11. LCY/hour	30.9		
12. Hours/day	8	hrs/day	
13. LCY/day	246.96	lcy/day	
14. BCY/day	222	bcy/day	Note 5
15. Days to complete	1.2		Note 6
16. Crew Hours	16.0		Note 7

Bucket Fill Factors	
Moist Loam Sandy Soil	100-110%
Sand & Gravel	95-110%
Hard Tough Clay	80-90%
Rock - Well Blasted	60-75%
Rock - Poorly Blasted	40-50%

Labor and Equipment Costs

	Unit	Quantity	Rate	Hours	Cost
1.	Laborer	1	$20.00	16.0	$320.00
2.	Operator	1	$25.00	16.0	$400.00
3.	Excavator	1	$130.00	16.0	$2,080.00

Diesel (Note 8)

Machine	HP	$/gallon	Gallons/hr	Cost
CAT 330	222	$2.74	12.68	$554.90

Total Excavation Costs (Note 9)	
Lump Sum	$3,354.90
Cost/BCY	$93.19

Notes:

1. See "Bucket Fill Factors Table". Material is classified generally as hard packed fill and some C&D debris, therefore 75% was selected.
2. All inefficiencies are carried in the "Operator/Site Efficiency" line item.
3. "Cycles/minute" line item assumes 100% efficiency.
4. "Productive minutes/hour" accounts for time lost to:safety talk, nonproductive time before/after breaks, early breakdown.

calculation:	8	hr work day
	15	minute safety talk
	15	minutes post talk prior to productive work
	10	minutes nonproductive time before and after coffee break (20 min total)
	10	minutes nonproductive time before and after lunch break (20 min total)
	15	minutes nonproductive time at end of day
	85	nonproductive minutes/day
	11	nonproductive minutes/hour
	49	productive minutes/hour

5. Assume 10% shrink/swell conversion between bank cubic yards (bcy) and loose cubic yards (lcy).
6. Assumes 1 day of lost work due to inclement weather
7. Assume hours are rounded up to the nearest whole day.
8. Diesel unit price based on data reported by Energy Information Administration (EIA), Official Energy Statistics of the U.S. government, reported for 12/01/08, <http://tonto.eia.doe.gov/oog/info/gdu/gasdiesel.asp>
9. Total excavation cost estimate does not include mobilization/demobilization or transportation.

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Table C.8: Excavation Unit Cost Calculation Based on Crew and Equipment Production Rates, Soils to Unrestricted

Production			
1. Excavated volume of soil	**11,989**	bcy	
2. Excavator	CAT 330		
3. Bucket Size	**2**	cy	
4. Bucket Fill Factor	**90%**		Note 1
5. CY/bucket	1.8	cy	
6. Operator/Site Efficiency	**50%**		Note 2
7. Cycles/minute	3.5		Note 3
8. Actual cycles/minute	1.75	cycles/min	
9. LCY/minute	3.2	lcy/min	
10. Productive minutes/hour	**49**	min/hr	Note 4
11. LCY/hour	154.4		
12. Hours/day	8	hrs/day	
13. LCY/day	1234.8	lcy/day	
14. BCY/day	1111	bcy/day	Note 5
15. Days to complete	11.8		Note 6
16. Crew Hours	96.0		Note 7

Bucket Fill Factors	
Moist Loam Sandy Soil	100-110%
Sand & Gravel	95-110%
Hard Tough Clay	80-90%
Rock - Well Blasted	60-75%
Rock - Poorly Blasted	40-50%

Labor and Equipment Costs

Unit	Quantity	Rate	Hours	Cost
1. Laborer	1	$20.00	96.0	$1,920.00
2. Operator	1	$25.00	96.0	$2,400.00
3. Excavator	1	$130.00	96.0	$12,480.00

Diesel (Note 8)

Machine	HP	$/gallon	Gallons/hr	Cost
CAT 330	222	$2.74	12.68	$3,329.43

Total Excavation Costs (Note 9)	
Lump Sum	$20,129.43
Cost/BCY	$1.68

Notes:

1. See "Bucket Fill Factors Table". Material is classified generally as hard packed fill and some C&D debris, therefore 75% was selected.
2. All inefficiencies are carried in the "Operator/Site Efficiency" line item.
3. "Cycles/minute" line item assumes 100% efficiency.
4. "Productive minutes/hour" accounts for time lost to:safety talk, nonproductive time before/after breaks, early breakdown.

calculation:		
	8	hr work day
	15	minute safety talk
	15	minutes post talk prior to productive work
	10	minutes nonproductive time before and after coffee break (20 min total)
	10	minutes nonproductive time before and after lunch break (20 min total)
	15	minutes nonproductive time at end of day
	85	nonproductive minutes/day
	11	nonproductive minutes/hour
	49	productive minutes/hour

5. Assume 10% shrink/swell conversion between bank cubic yards (bcy) and loose cubic yards (lcy).
6. Assumes 1 day of lost work due to inclement weather
7. Assume hours are rounded up to the nearest whole day.
8. Diesel unit price based on data reported by Energy Information Administration (EIA), Official Energy Statistics of the U.S. government, reported for 12/01/08, <http://tonto.eia.doe.gov/oog/info/gdu/gasdiesel.asp>
9. Total excavation cost estimate does not include mobilization/demobilization or transportation.

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Table C.9: Wastewater Treatment Sludge Calculations

Assume:	50	percent solids
	100	gallons per minute
	30	days operation
	2	tons per cubic yard

Calculate number of drums of sludge

630.6	gallons
11.5	55-gal drums

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Created by:	R. Belcher
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Table C.10: Transporation and Disposal Unit Rates Backup Calculations

Waste type/description	**Hazardous C&D**	**Non-Haz C&D**	**Haz Soils/Sed**	**Non-Haz Soil/Sed**	**Notes**
Disposal Facility Location	Emelle, AL	Fairport, NY	Model City, NY	Model City, NY	
Transportation ($/ton)	$ 202.73	$ 45.50	$ 40.00	$ 40.00	
Disposal ($/ton)	$ 72.00	$ 50.00	$ 75.00	$ 65.00	
State Tax ($/ton)	$ 31.00	$ -	$ -	$ -	applies to total
State Tax (%)	0%	8.75%	8.75%	8.75%	applies to total
Local Tax (%)			6.00%	0.00%	applies to disposal
Transportation Fuel Surcharge (%)	18%		21%	21%	applies to transportation
Disposal Fuel Surcharge (%)	3.43%	3%	0%	0%	applies to disposal
Environmental Fees (%)	6%	6%	3%	3%	applies to disposal

Total	$ 349.01	$ 108.98	$ 141.54	$ 125.44	