REGION 5 RAC2

REMEDIAL ACTION CONTRACT FOR

Remedial, Enforcement Oversight, and
Non-Time Critical Removal Activities at Sites of Release
or Threatened Release of Hazardous Substances in Region 5

REMEDIAL INVESTIGATION REPORT

Eighteenmile Creek Area of Concern
Niagara County, New York
Remedial Investigation

WA No. 139-RICO-1527/Contract No. EP-S5-06-01

March 2015

PREPARED FOR

U.S. Environmental Protection Agency

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REMEDIAL INVESTIGATION REPORT

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Acronyms and Abbreviations

AOC	Area of Concern
AVS/SEM	acid volatile sulfides/simultaneously extracted metals
BASF	biota sediment accumulation factor
BGS	below ground surface
BUI	beneficial use impairment
cfs	cubic feet per second
cm	centimeter
cm/s	centimeters per second
COPC	contaminant of potential concern
CSO	combined sewer overflow
DER	Department of Environmental Remediation
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichloroethane
E & E	Ecology and Environment, Inc.
EEEPC	Ecology and Environment Engineering, P.C.
FS	feasibility study
FSP	field sampling plan
GIS	geographic information system
GLLA	Great Lakes Legacy Act
GLNPO	Great Lakes National Program Office
GLSED	Great Lakes Sediment Database
GPS	Global Positioning System
IJC	International Joint Commission
LaMP	Lakewide Management Plan
LEL	lowest effect level
LIDAR	Light Detection and Ranging

µg/kg	micrograms per kilogram
µmol/goc	micromoles per gram organic carbon
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
mm	millimeter
NCHD	Niagara County Health Department
NCSWCD	Niagara County Soil and Water Conservation District
NRCS	Natural Resource Conservation Service
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOS	New York State Department of State
OU	Operable Unit
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PISCES	Passive In Situ Chemical Extraction Sampler
QA/QC	quality assurance/quality control
QAPP	quality assurance project plan
RAC	Remedial Action Committee
RAP	Remedial Action Plan
RI	remedial investigation
ROD	record of decision
SEL	Severe Effect Level
SOW	Scope of Work
SPDES	State Pollutant Discharge Elimination System
SRI	Supplemental Remedial Investigation
SWAT	Soil Water Assessment Tool
TAL	target analyte list
TCDD	2,3,7,8-tetrachlorodibenzo-p-dioxin

TCL	Target Compound List
TCLP	toxicity characteristic leaching procedure
TEQ	toxic equivalent
TOC	total organic carbon
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey

Executive Summary

This remedial investigation (RI) report summarizes the sediment data collected under the Great Lakes Legacy (GLLA) program site characterization of the Eighteenmile Creek Area of Concern (AOC) in Niagara County, in western New York State. The GLLA site characterization was performed between November 2009 and November 2010. In addition, the results from sediment investigations performed by other federal and state agencies between May 1994 and October 2010 have also been included in this report. The investigation area includes Olcott Harbor (mouth of the creek) and extends upstream through the city of Lockport to the Erie Canal (a component of the New York State Canal system) (see Figure 1). This report was prepared for the United States Environmental Protection Agency's (USEPA's) Great Lakes National Program Office (GLNPO) under Work Assignment No. 139-RICO-1527, Contract No. EP-S5-06-01. Supporting data were provided by the Eighteenmile Creek GLLA Project Coordination Team, which includes the GLNPO, the Niagara County Soil and Water Conservation District (NCSWCD), the New York State Department of Environmental Conservation (NYSDEC), the United States Army Corps of Engineers (USACE), and USEPA Region 2.

This RI report presents an evaluation of the nature and extent of contamination in sediments throughout the investigation area. Site information and existing analytical data from past studies were evaluated to determine whether additional data were needed to develop a complete conceptual model for creek sediments. The additional data needed to fill the gaps were collected as part of the GLLA-funded site characterization. The RI data collection activities performed for the GLNPO are summarized in Section 3, and supporting reports for these GLNPO-led sediment assessments are provided in Appendices A and B. The other studies and reports used in this RI report are included in Appendix C.

The report establishes a baseline of contaminant levels in sediment to evaluate and select remedial alternatives to reduce potential risks to human health and the environment posed by exposure to contaminants in the creek sediments. Current and historical data were used to develop a conceptual model of the existing physical and chemical conditions of the sediment.

Site Background

Eighteenmile Creek originates in the city of Lockport in central Niagara County and flows generally north, discharging into Lake Ontario at Olcott Harbor, in Olcott, New York. Olcott Harbor is located approximately 18 miles east of the mouth of the Niagara River. Eighteenmile Creek was designated as an AOC in 1985 by the International Joint Commission (IJC) and includes Olcott Harbor and extends upstream to the farthest point at which backwater conditions exist during Lake Ontario's highest monthly average lake level (see Figure 1). This point is located just downstream of Burt Dam, approximately 2 miles

south of Olcott Harbor at the end of Fisherman's Park, a major public fishing destination in Lake Ontario (see Figure 2). The Eighteenmile Creek AOC Remedial Action Committee (RAC) was established in 1993, with NYSDEC as the coordinator. The Eighteenmile Creek Remedial Action Plan (RAP), completed in 1997, defined the original AOC as the impact area and the upper watershed boundaries as the source area (see Figure 1) (NYSDEC 1997).

A majority of previous environmental studies and investigations of the AOC focused on the northern portion of the drainage basin and the creek's confluence at Lake Ontario. Early investigations completed in the 1980s and 1990s were led by NYSDEC as part of their watershed research program and AOC RAP implementation, and by USACE as a part of their authority to dredge the navigation channel. The results of these investigations showed that the sediments of Eighteenmile Creek within the AOC are contaminated with metals and polychlorinated biphenyls (PCBs).

The Corridor Site is defined as the Creek channel from the New York State Canal to Harwood Street and the adjacent properties (see Figure 2, inset). Based on results of a few samples collected in the Corridor Site as part of AOC RAP implementation studies, NYSDEC conducted more extensive investigations within the Corridor Site. NYSDEC divided the Corridor Site into operable units based on property boundaries. NYSDEC completed an RI/Feasibility Study (FS) and record of decision (ROD) for the former Flintkote Plant (NYSDEC 2000 and 2006b; see Appendix C). NYSDEC completed a separate RI/FS and ROD for the remainder of the Creek Corridor (NYSDEC 2006a and 2010b; see Appendix C).

In 2008, the NCSWCD entered into a cost-shared Project Agreement with the GLNPO to implement a GLLA project in the Eighteenmile Creek AOC focusing on the sediments in the sections of the creek between the Corridor Site and Burt Dam. The project leveraged RI activities conducted by NYSDEC in the Corridor Site.

Summary of Results

Based on the physical characteristics of the creek, Eighteenmile Creek was divided into 10 reaches (see Figure 2) with Reach 1 covering the area below Burt Dam; Reaches 2 and 3 covering the reservoir behind Burt Dam; Reach 5 covering the impoundment behind Newfane Dam, and Reach 10 covering the Corridor Site in the upstream source area investigated by NYSDEC. The other reaches include portions of the main channel between the dams and Corridor Site. Results from recent studies conducted within the Eighteenmile Creek reaches (see Section 5) were evaluated to assess the usability of the sediment chemistry and supporting data for this RI. PCBs and metals (particularly lead) were identified as the primary contaminants of potential concern (COPCs) based on historical studies. Mercury, polycyclic aromatic hydrocarbons (PAHs), dichlorodiphenyltrichloroethane (DDT) metabolites, and dioxins and furans (i.e., tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans) also were considered as

COPCs. Site-specific screening criteria were determined based on NYSDEC's Technical Guidance for Screening Contaminated Sediments (NYSDEC 1999) [1]

Sediment concentrations for the COPCs were summarized by reach to determine the number of detections, average and maximum concentrations, and number of results that exceed screening criteria. COPCs were detected in sediments of Eighteenmile Creek through the entire length from the Erie Canal to Lake Ontario. PCBs, PAHs, and metals were the most frequently detected COPCs.

Metals were detected in all of the sediment samples and the concentrations of the COPC metals, such as lead, copper and zinc, exceed lowest and severe effect screening levels in most samples. COPC metals show the similar average and maximum concentration trends by reach (see Figure 8). The average concentrations are relatively low starting at the Erie Canal and increase significantly in Reach 10 at the Corridor Site. The average concentrations of COPCs metals are lower immediately downstream of the Corridor Site and increase to Reach 5 in the depositional area behind Newfane Dam. The average concentrations for all COPC metals except copper are the highest in Reaches 2 and 3 behind Burt Dam until decreasing to background levels in Reach 1 below Burt Dam. The maximum concentrations by reach follow the same general trend but are the highest in Reach 10 in the Corridor Site. The high concentrations of lead and other COPC metals in the subsurface sediments in Reaches 2 and 3 result in higher average concentrations behind the dam and indicate a significant historical source prior in the early-1950s to the mid-1960s.

Total lead concentrations in many of the sediment samples were high enough (i.e., greater than 1,000 milligrams per kilogram [mg/kg]) to potentially exceed the characteristic hazardous waste level (6 NYCRR 371). In order to evaluate the potential of having characteristic hazardous wastes, 40 sediment samples were analyzed for lead using the toxicity characteristic leaching procedure (TCLP). A total of six of the 40 samples exceed the TCLP hazardous waste criteria of 5 milligrams per liter (mg/L).

Thirty-nine sediment samples from Reach 4 through Reach 7 were analyzed for acid volatile sulfides/simultaneously extracted metals (AVS/SEM) and organic carbon to assess the bioavailability of divalent metals including cadmium, copper, lead, nickel, zinc, and monovalent silver. The results indicate that the metals in Eighteenmile Creek sediments are unlikely to be bioavailable or toxic.

PCB concentrations are the highest in Reach 10 at the Corridor Site, relatively high immediately downstream of the Corridor Site, and then decrease to levels below 1 mg/kg in Reach 1 below Burt Dam. PCB concentrations do not increase in the Reach 5 depositional area behind Newfane Dam but increase slightly where the creek meets the reservoir waters behind Burt Dam in Reach 3. The PCB concentration profiles with depth indicate a significant amount of mixing in this area. In the deeper sediments of Reach 2 closer to Burt Dam, there is a much more distinct change in PCB concentration with and maximum concentrations at depth indicating a historical source coinciding with deposition in the early 1960s. PCBs were detected in 80 percent of the sediment samples and half of the concentrations exceed the 1 mg/kg low screening criteria (i.e., 40 percent overall). In

[1] The RI data evaluation is based on the NYSDEC 1999 sediment guidelines and not the new guidelines, "*Screening and Assessment of Contaminated Sediment,*" issued by NYSDEC June 24, 2014.

addition, PCB concentrations in 17 samples in Reach 10 and immediately downstream exceed hazardous waste criteria. Off-site transport of PCBs in the water column is up to 40 times higher in Eighteenmile Creek than other tributaries in the Lake Ontario basin.

PAH concentrations are also relatively higher in Reach 10 at the Corridor Site and show a general decreasing trend toward Lake Ontario. However, PAH concentrations increase in Reaches 4 and 7 downstream of populated areas, which may be attributed to urban runoff (see Figure 8). PAHs were detected in most sediment samples, but concentrations exceed the low screening levels in less than 20 percent of the samples and the high screening criteria in less than 2 percent of samples. The findings suggest that PAH contamination is ubiquitous throughout the watershed and related to common anthropogenic sources.

Low concentrations and more uniform distribution of the other COPCs also indicate anthropogenic sources not directly related to the Corridor Site.

The most significant source of contamination is the historical industrial properties in the Corridor Site and the surrounding fill areas. Lead contamination in the fill areas on the banks of Eighteenmile Creek has been found at hazardous waste levels and erosion from these fill areas is likely a continuing source of contamination to the downstream sediments. High concentrations of PCBs in sediment in the Corridor Site indicate that a source of contamination also originates in the historical industrial properties, but a specific source area has not been identified. Historical records indicate PCB-contaminated waste oil may have been emptied into the creek at the former Flintkote plant in the 1970s. Findings also indicate the sediments from Erie Canal may contribute to the PCB contamination downstream, but is not the primary source.

A formal ecological and human health risk assessment has not been completed, but the New York State Department of Health (NYSDOH) has documented human risks to the residents on Water Street from exposure to contaminated sediment and to anglers from ingestion of PCB-contaminated fish tissue. NYSDOH has included Eighteenmile Creek under its most stringent "Do Not Eat" fish advisory on the basis of PCB contamination (NYSDOH 2011). Ecological risks have been documented by USACE studies on bioaccumulation above and below Burt Dam.

Conclusions

The results of the RI indicate that chemical contamination of the sediment in all reaches of Eighteenmile Creek exceed screening criteria protective of ecological and human health and that hazardous levels of PCBs and lead contamination are present in the Corridor Site and immediately downstream. Investigations by NYSDEC in the Corridor Site suggest that the Erie Canal is not the primary source of PCBs to the creek and that PCB and lead contamination to the sediment are likely historical industries in the Corridor Site, including the former Flintkote Plant Site. Higher concentrations of PCBs and lead in deeper sediments behind Burt Dam and Newfane Dam indicate that the major contributions of PCBs and lead were from historical sources. Persistent higher concentrations of both PCBs and lead in shallow sediments throughout the Creek indicate that the contamination is being transported and deposited downstream by sediment re-suspension and resettling or other mechanisms that are not fully understood. The ongoing transport of PCBs and lead from the Corridor Site has been documented by recent investigations of surface sediments,

surface water and biological tissue. PCB concentrations in the water discharging into Lake Ontario indicate that PCBs are being mobilized in the water column throughout Eighteenmile Creek.

PAH concentrations are lower and more uniformly distributed in the sediments throughout the creek indicating the historical properties in the Corridor Site are not the primary source. Higher concentrations of PAHs in the sediments near urban and industrial areas in Reaches 4, 7, and 10 suggest surface run-off and anthropogenic as the main sources of PAH contamination to Eighteenmile Creek sediments.

Concentrations of COPCs in the sediment indicate potential human health exposure risk and ecological risk based on comparison to sediment screening criteria. Metals contamination in sediments is at levels that may exert chronic toxicity throughout the Eighteenmile Creek particularly for lead and zinc based on comparison to screening criteria. However, the results for AVS/SEM analysis indicate that the metals in Eighteenmile Creek sediments are unlikely to be bioavailable or toxic. In addition, the results of TCLP analysis indicate that some fill material contains hazardous waste levels of lead. PCB contamination presents a significant bioaccumulation risk that is well documented with multiple sediment and fish tissue studies. Bioaccumulation modeling performed by the USACE for the portion of Eighteenmile Creek below Burt Dam and between Burt Dam and Newfane Dam suggests that PCB contamination may pose a potential risk to some species of fish and fish-eating wildlife. Concentrations of PAHs in sediment did not exceed screening criteria in most of the sediment samples (greater than 85 percent) indicating little potential for the PAHs to exert chronic toxicity.

The RI characterized the nature and extent of sediment contamination between Burt Dam and the Erie Canal and provided an evaluation of the physical conditions of the creek. Limited data collected on soil concentrations in the wetlands and historic creek channels suggest that migration of the contaminated sediments to the soils during flooding was not significant downstream of the Corridor site. Potential sources of contamination to the creek downstream of the Corridor Site were assessed based on concentrations of COPCs in a limited number of sediment samples collected from the tributaries. The Gulf Creek was identified as a potential source of metals and PAHs.

The RI data indicate that elevated levels of the COPCs will need to be remediated to address mitigation of risks and the high PCB loading into Lake Ontario from Eighteenmile Creek. The development of potential remedial alternatives will need to address the following:

- Hazardous waste level contamination in the sediment and fill areas;
- Current sources of PCB contamination in the Corridor Site including the drainage system and buildings of the former Flintkote Plant Site;
- Potential sources downstream of the Corridor Site, including Gulf Creek;
- Hydrologic and hydraulic model of the creek and sediment transport;
- PCB bioavailability in contaminated sediments and potential treatment methods to reduce bioavailablity; and

- Baseline ecological structure and function of the creek to assess toxicology impacts from sediment contamination and provide data in order to determine post-remediation restoration needs.

SECTION 1

1 Introduction

This remedial investigation (RI) report summarizes the sediment data collected under the Great Lakes Legacy (GLLA) program site characterization of the Eighteenmile Creek Area of Concern (AOC) in Niagara County, in western New York State. The GLLA site characterization was performed between November 2009 and November 2010. In addition, the results from sediment investigations performed by other federal and state agencies between May 1994 and October 2010 have also been included in this report. The investigation area includes Olcott Harbor (mouth of the creek) and extends upstream through the city of Lockport to the Erie Canal (a component of the New York State Canal system) (see Figure 1). This report was prepared for the United States Environmental Protection Agency's (USEPA's) Great Lakes National Program Office (GLNPO) under Work Assignment No. 139-RICO-1527, Contract No. EP-S5-06-01. Supporting data were provided by the Eighteenmile Creek GLLA Project Coordination Team, which includes the GLNPO, the Niagara County Soil and Water Conservation District (NCSWCD), the New York State Department of Environmental Conservation (NYSDEC), the United States Army Corps of Engineers (USACE), and USEPA Region 2.

1.1 Purpose of the Report

This RI report presents an evaluation of the nature and extent of contamination in sediments throughout the investigation area. The report establishes a baseline of contaminant levels in sediment to evaluate and select remedial alternatives to reduce potential risks to human health and the environment posed by exposure to contaminants in the creek sediments. Site information and existing analytical data from past studies were evaluated to determine whether additional data were needed to develop a complete conceptual model for creek sediments. Additional data needed to fill the gaps were collected as part of the GLLA-funded site characterization. The RI data collection activities performed for the GLNPO are summarized in Section 3, and supporting reports for these GLNPO-led sediment assessments are provided in Appendices A and B. The other studies and reports used in this RI report are included in Appendix C.

Current and historical sediment data were compiled to meet the following objectives:

- Characterize the nature and extent of sediment contamination;
- Evaluate the physical conditions between Burt Dam and the Erie Canal, including sediment thickness and water depth;
- Evaluate the contamination in bank soils adjacent to the creek and sediments in major tributaries to identify other potential contamination sources and establish background conditions;
- Evaluate the potential for historic contamination to have migrated to wetlands or historic creek channels during past flooding events;

- Provide the data necessary to assess whether conditions in the creek pose an actual or potential human health exposure risk;
- Provide the data necessary to assess the bioavailability of site contaminants and whether conditions in the creek pose a potential ecological risk; and
- Provide the data needed to identify and evaluate potential remedial alternatives to address contamination that poses threats to public health and/or the environment.

1.2 Report Organization

This introductory section includes the report purpose and site background (Section 1.0). The remaining sections of this report are organized as follows:

Section 2

Section 2 presents a summary of investigations and studies conducted by other project team members either previous or concurrent to this RI. The supporting reports discussed in Section 2 are provided in Appendix C.

Section 3

Section 3 presents a summary of the site characterization activities performed for the GLNPO. The section summarizes work originally presented in the *Phase I Site Reconnaissance Report* (see Appendix A) and the *Data Summary Report for the Site Characterization Investigation* (see Appendix B). Section 3 also includes a discussion of the sediment thickness model.

Section 4

Section 4 presents the physical characteristics of the Eighteenmile Creek AOC, including features and challenges unique to the project, demographics and land use, surface water, geology, soils, and hydrogeology, as well as a discussion of threatened and endangered species that have been identified in the area.

Section 5

Section 5 presents the nature and extent of sediment contamination in Eighteenmile Creek from Olcott Harbor upstream to the Erie Canal. This section also includes a discussion of the COPCs; data usability evaluation of the current and historical data; and development of site-specific evaluation criteria. Where relevant, other media (i.e., surface water, groundwater, and tissue) are also discussed.

Section 6

Section 6 presents a discussion of contaminant fate and transport, contaminant sources, the conceptual site model, and contaminant persistence and migration.

Section 7

Section 7 presents a summary of the nature and extent of contamination, contaminant sources, and fate and transport. It also discusses data limitations, the need for future work, and recommendations from the project team.

Section 8

Section 8 presents the references to materials used to prepare this report.

1.3 Site Background

1.3.1 General Site Description

Eighteenmile Creek originates in the city of Lockport in central Niagara County and flows generally north, discharging into Lake Ontario at Olcott Harbor, in Olcott, New York. Olcott Harbor is located approximately 18 miles east of the mouth of the Niagara River. The USACE maintains a federal navigation channel between the breakwalls at the entrance to the harbor. Eighteenmile Creek was designated as an AOC in 1985 by the International Joint Commission (IJC) because of water quality and bottom sediment contamination associated with past industrial and municipal discharge practices, the disposal of waste, and the use of pesticides by local farmers.

The Eighteenmile Creek AOC, as originally designated by the IJC, includes Olcott Harbor and extends upstream to the farthest point at which backwater conditions exist during Lake Ontario's highest monthly average lake level (see Figure 1). This point is located just downstream of Burt Dam, approximately 2 miles south of Olcott Harbor at the end of Fisherman's Park, a major public fishing destination in Lake Ontario (see Figure 2). The Eighteenmile Creek AOC Remedial Action Committee (RAC) was established in 1993, with NYSDEC as the coordinator. The Eighteenmile Creek Remedial Action Plan (RAP), completed in 1997 defined the original AOC as the impact area and the upper watershed boundaries as the source area (see Figure 1) (NYSDEC 1997). Additional information regarding the characteristics of the Eighteenmile Creek AOC and watershed are available in the *Eighteenmile Creek State of the Basin Report* (E & E 2007a; see Appendix C) and in publications and factsheets available from the Eighteenmile Creek RAP website (http://www.eighteenmilerap.com/).

The main branch of Eighteenmile Creek begins at the Erie Canal in Lockport, New York. The headwaters of the creek originate southeast of Lockport, in the Niagara County Park and Golf Course, and flow aboveground to the northwest for 1 mile until the flow enters an underground pipe on the east side of Lockport. The pipe extends for three-quarters of a mile and empties into a sluice on the Erie Canal, southwest of the Mill Street Bridge. Water from the Erie Canal also flows into this sluice through a spillway in the Canal's south wall. The combined water flows through a culvert under the Canal and exits on the north side of the Canal, forming the Headwater East Branch of Eighteenmile Creek (see Figure 2 inset). (This Headwater East Branch of Eighteenmile Creek should not be confused with the stream known as the "East Branch of Eighteenmile Creek," which is a tributary that flows into Eighteenmile Creek just south of Newfane, New York, approximately 4 miles downstream of the headwaters.)

The Headwater West Branch of Eighteenmile Creek originates in Upson Park at the dry dock on the north side of the Erie Canal and also receives water from two underground flows from the south and southwest. The Headwater West Branch flows north toward Clinton Street. The Headwater East and West Branches converge on the south side of Clinton Street and flow under Clinton Street to the Mill Pond on the north side of Mill Street. The creek flows north through a short length that is bordered on the west by

residential backyards on Waters Street and on the east by industrial properties. This portion of the creek is designated as the Eighteenmile Creek Corridor Site by NYSDEC and has been investigated as part of their RI activities (see Section 2.1 and Figure 2 inset).

Downstream of the Eighteenmile Creek Corridor Site, the creek drops down the Niagara Escarpment and winds through approximately 12 miles of rural Niagara County to Burt Dam. This portion of Eighteenmile Creek passes through the towns of Lockport and Newfane. Newfane is a rural community located on the shores of Lake Ontario and is comprised of six hamlets: Newfane, Olcott, Wright's Corners, Appleton, Ridgewood, and Burt. The land use within this portion of Eighteenmile Creek watershed consists primarily of cropland and orchards, with residential, commercial, and small industrial areas located closer to the city of Lockport and around the hamlet of Newfane on the east bank of Eighteenmile Creek (see Figure 2). This portion of the creek was investigated by GLNPO as part of the site characterization project described in Section 3.

Two major tributaries flow into the main channel of Eighteenmile Creek: the stream that drains the northwestern part of Lockport and flows through a ravine known as "The Gulf" (hereinafter referred to as Gulf Creek) and the East Branch of Eighteenmile Creek (see Figure 2). Gulf Creek enters the main channel just north of the Lockport Wastewater Treatment Plant. The East Branch of Eighteenmile Creek enters the main channel just north of Ridge Road.

1.3.2 Site History

Eighteenmile Creek has a long history of industrial use dating back to the 19th century. The *State of the Basin Report* (E & E 2007a; see Appendix C) provides an overview of the creek's history, which is summarized briefly here. The original Erie Canal was constructed in New York State between 1817 and 1825. Lockport was founded where the canal traversed a 60-foot rise in the Niagara Escarpment with a set of five locks. During the 1800s, numerous millraces and millponds provided power for a variety of industries located along the banks of Eighteenmile Creek. The millraces were constructed to take advantage of water from the canal traveling down the escarpment. Early industrial facilities included the pulp mills, gristmills, tanneries, and sawmills. The remnants of this industrial era include three former industrial sites (i.e., the Flintkote Plant, the United Paperboard Company site, and the White Transportation property) and an industrial fill area (i.e., Upson Park), which are located adjacent to the creek along the Eighteenmile Creek Corridor Site (see Figure 2 inset).

Two dams are located on the creek within the Corridor Site (NYSDEC 2006a; see Appendix C). The first dam, located at Clinton Street, forms Mill Pond. Water from Mill Pond leaks around the west side of the dam and flows adjacent to or over the top (during high flow conditions) of the abandoned transformer pad on the south side. Sediments are trapped behind the Clinton Street Dam. Approximately 1,000 feet farther downstream, the creek is diverted westward from its apparent natural course for approximately 300 feet along William Street by a dam approximately 10 feet high. William Street traverses the top of this dam. The creek then continues northward through cross-culverts beneath William Street to return to its original natural channel farther downstream. A pair of sluice gates located at the east end of the dam formerly allowed water from Eighteenmile Creek to enter a millrace. These sluice gates have been closed for at least 30 years. Both dams are dilapidated and unpermitted (see Figure 2 inset).

Several other industrial facilities and inactive hazardous waste sites are located along or in the vicinity of Eighteenmile Creek, including the City of Lockport Wastewater Treatment Plant, VanDemark Chemical, Inc., and the Old Upper Mountain Road Landfill site on Gulf Creek.

Several dams were also constructed to provide power in the more level areas near Newfane, two of which remain today. Newfane Dam was built in the 1830s near the end of McKee Street and Ewings Road to provide power for the Newfane mill district. Burt Dam was built farther north of Newfane in 1924, creating a 95-acre reservoir within the creek gorge; the reservoir extends approximately 2 miles upstream of the dam. The original dam generated power until the 1950s; it was restored in 1988 and still operates.

SECTION 2

2 Summary of Existing Data

2.1 Investigations in the AOC

A majority of previous environmental studies and investigations of the AOC focused on the northern portion of the drainage basin and the creek's confluence at Lake Ontario. Early investigations completed in the 1980s and 1990s were led by NYSDEC as part of their watershed research program and AOC RAP implementation, and by USACE as a part of their authority to dredge the navigation channel. The results of these investigations showed that the sediments of Eighteenmile Creek within the AOC are contaminated with metals and polychlorinated biphenyls (PCBs).

2.1.1 Sediments

NYSDEC conducted a systematic investigation of the sediments in 1994 in support of development of the RAP (NYSDEC 1998; see Appendix C). The results of the investigation confirmed the presence of high levels of metals and PCBs and identified DDT metabolites, dioxins and furans, and polycyclic aromatic hydrocarbons (PAHs) as additional contaminants of potential concern (COPCs). The investigation detected high concentrations of contaminants immediately upstream of the Burt and Newfane dams and in upstream sediments close to the Erie Canal. An additional sediment study was conducted in 1998 as a follow-up to the 1994 investigation (NYSDEC 2001a; see Appendix C).

Three sediment cores were collected in 1998 and radiometrically dated to establish a chronology of contamination in the Erie Canal and the depositional pools immediately upstream of the Burt and Newfane dams. This 1998 study, which confirmed the results of the 1994 investigation, found that the highest concentrations of contaminants were in subsurface sediments dating from the early-1950s to mid-1960s (NYSDEC 2001a; see Appendix C). Both studies identified upstream areas and the Erie Canal as potential sources of contamination. As part of the RAP implementation, additional studies were conducted to investigate the sources of the PCBs; evaluate PCB concentrations in the surface sediments and water column; and determine potential risks to humans, aquatic organisms, and terrestrial wildlife.

A PCB trackdown study was performed in 2006 to evaluate whether PCBs and metals were continuing to migrate from upstream source areas and to identify other potential sources of contamination (E & E 2007b; see Appendix C). Grab samples were collected for PCB screening at 80 locations from the end of the Corridor Site (i.e., at Harwood Street) to Stone Road (8,000 feet of the creek). Approximately 2,000 feet of creek within this area were not investigated because the gradient of the creek cascading down the Niagara Escarpment was too steep to ensure the safety of the sampling crews. In addition, the amount of sediment in this area available for sampling is minimal due to high flow velocities and a steep gradient.

The results of the trackdown study indicate that most of the sediment in Eighteenmile Creek is contaminated with PCBs, and only the native material in the creek bed is free of PCB

contamination. Most of the positive PCB results show a relatively uniform concentration of PCBs at a level that exceeds the screening criteria based on NYSDEC's Soil Cleanup Guidance (NYSDEC 2010a). Two "hot spots" were found close to the Flintkote property and in the area near the intersection of Old Niagara Road and Plank Road. The surface samples from 12 cores were also analyzed for select metals, including mercury, arsenic, chromium, copper, lead, and zinc. The metals concentrations were relatively uniform and exceeded soil cleanup objectives. The results indicate that metals continue to be a source of concern in the creek and need to be evaluated relative to background concentrations in other areas (E & E 2007b; see Appendix C).

Surficial sediment samples also were collected by the USACE from below Burt Dam to support bioaccumulation studies described in Section 2.1.2 (USACE 2004a, 2004b, 2008; E Risk Sciences 2012; see Appendix C). In 2003, USACE collected a total of 20 surface sediments and analyzed them for PCBs, pesticides, and metals. In 2010, USACE collected a total of 16 surface samples that were analyzed for just PCBs and total organic carbon (TOC). PCBs concentrations were less than 2 mg/kg. The USEPA also collected three surface sediment samples in this area, but the results did not confirm the levels of PCBs previously found by the USACE (USEPA 2008a, see Appendix C).

In 2005, the Buffalo State Great Lakes Center conducted sediment modeling for the Eighteenmile Creek Watershed (BSGLC 2005; see Appendix C). The Soil Water Assessment Tool (SWAT) model was used to determine sediment yields at the watershed outlet and identify sub-basins and stream reaches that contributed high sediment yields.

2.1.2 Biological Sampling

The RAP (NYSDEC 1997) describes historical studies of fish tissue, the results of which indicated high levels of PCBs. The New York State Department of Health (NYSDOH) has included Eighteenmile Creek under its most stringent "Do Not Eat" fish advisory on the basis of PCB contamination (NYSDOH 2011). Lake Ontario is subject to other less stringent, species-specific advisories related to the presence of PCBs, Mirex, and dioxins. In 2003, the USACE Buffalo District conducted an evaluation of the toxicity and bioaccumulation of persistent organic compounds in surface sediment samples collected from below Burt Dam (USACE 2004a, 2004b, 2008; see Appendix C). This study indicated that metals and dichlorodiphenyldichloroethylene (DDE) presented a potential chronic toxicity risk relative to selected freshwater toxicity threshold values and DDE was bioaccumulating at higher than anticipated levels (USACE 2008; see Appendix C). PCBs were found to be highly bioavailable and predicted to cause wildlife bioaccumulation risks. Dioxins and furans were detected in sediment samples and predicted to cause potential wildlife bioaccumulation risks based on the equilibrium partitioning approach used by New York State.

A Beneficial Use Impairment (BUI) investigation was conducted in 2007 (E & E 2009; see Appendix C) in the reach of the creek below Burt Dam to determine whether Eighteenmile Creek is impaired with regard to the existence of fish tumors and other deformities; the status of fish and wildlife populations; and the status of bird or mammal deformities or reproductive impairment. A wide range of data were collected from Eighteenmile Creek and a similar background stream (Oak Orchard Creek), and compared. The data collected from the BUI investigation suggest that bird and amphibian populations at Eighteenmile

Creek are not impaired, but that fish and mammal populations likely are. The possible impairment of fish and mammal populations results from high levels of PCBs in fish. Whole-body concentrations of Aroclors 1248, 1254, and 1260, and total PCBs were an order of magnitude greater in brown bullheads from Eighteenmile Creek than in brown bullheads from Oak Orchard Creek (E & E 2009; see Appendix C). Whole-body concentrations of dioxins and furans (expressed as the 2,3,7,8-tetrachlorodibenzo-p-dioxin [TCDD] toxic equivalent [TEQ]) in bullheads from Eighteenmile Creek were approximately five times greater than in bullheads from Oak Orchard Creek.

In 2011, the USACE Engineer Research and Development Center completed a Trophic Trace Food Web model for Eighteenmile Creek (E Risk Sciences 2012; see Appendix C). The objective of the project was to evaluate organic contaminant bioaccumulation, trophic transfer, and consequent risks in creek sections above and below Burt Dam. The project included collection of surface sediments from below Burt Dam in Reach 1 and fish tissue from creek sections below Burt Dam in Reach 1 and above Burt Dam in Reaches 2 and 3. The report and supporting data are provided in Appendix C.

2.1.3 Surface Water

Surface water has not been extensively sampled in previous investigations. As part of regional studies, the USEPA has conducted semiannual monitoring of surface water discharge from Eighteenmile Creek and several other tributaries (USEPA 2008b, 2011, see Appendix C). The current analytical program includes PCBs (grab sample), mercury (total and dissolved), and total suspended solids. Earlier monitoring events included DDT metabolites (2002 to 2006) and dioxins and furans (2002 to 2003). NYSDEC evaluated the monitoring data from 2002 to 2008 to provide estimates of loading of synthetic chemicals into Lake Ontario from several New York tributaries with special emphasis on dioxins and furans (NYSDEC 2009a, see Appendix C). The data indicate that since 2002, Eighteenmile Creek had the highest PCB concentrations in surface water relative to other major tributaries to Lake Ontario. These findings support the high bioaccumulation potential found for PCBs in the lower reach of Eighteenmile Creek.

2.2 Investigations in the Corridor Site

The Corridor Site is defined as the Creek channel from the New York State Canal to Harwood Street and the adjacent properties (see Figure 2, inset). Based on the results of a few samples collected in Corridor Site as part of AOC RAP implementation studies, NYSDEC conducted more extensive investigations within the Corridor Site. NYSDEC divided the Corridor Site into operable units based on property boundaries. NYSDEC completed an RI/feasibility study (FS) and record of decision (ROD) for the former Flintkote Plant (NYSDEC 2000, 2006b; see Appendix C). NYSDEC completed a separate RI/FS and ROD for the remainder of the Creek Corridor (NYSDEC 2006a, 2010b; see Appendix C).

2.2.1 Sediments

Between 1987 and 1998, NYSDEC collected 10 sediment samples from Eighteenmile Creek between Remick Parkway south of the Erie Canal and the former Flintkote Plant site in the city of Lockport (see Figure 2). In 1996, NYSDEC's Division of Environmental Remediation collected six additional sediment samples from the area between Clinton Street and the former Flintkote Plant site. PCBs were detected in all samples, and concentrations in 11

samples exceeded NYSDEC's sediment criterion for chronic toxicity to benthic aquatic life (0.606 mg/kg) and NYSDEC's surface soil cleanup objective (1.0 mg/kg). Lead concentrations exceeded the sediment criterion for the severe effect level (110 mg/kg) in 10 samples, and lead concentrations exceeded the NYSDEC soil cleanup objective (400 mg/kg) in five samples. The most contaminated sediment sample was collected in the mill race near the former Flintkote Plant site. Inorganic contaminants detected in Eighteenmile Creek sediment at concentrations exceeding sediment criteria included arsenic, cadmium, chromium, and iron (one sample each); nickel (two samples); mercury (three samples); silver (four samples); copper (nine samples); and zinc (10 samples) (NYSDEC 2006a; see Appendix C).

Additional sediment samples were collected in 2002 by NYSDEC in conjunction with NYSDOH. One sediment sample from Eighteenmile Creek was collected in July 2002 and three sediment samples were collected in November 2002 near the Clinton Street dam from an area identified as a potential source of PCBs to Eighteenmile Creek. The results are summarized in the 2004 Scope of Work (SOW) for the Corridor Site (NYSDEC 2004; Appendix C).

In the fall of 2005, NYSDEC completed an RI of the Eighteenmile Creek Corridor Site in order to (1) better define the nature and extent of sediment contamination in the creek and the millrace, (2) further evaluate the impact of creek flooding on residential properties along Water Street, and (3) evaluate potential sources of contaminants to the creek (NYSDEC 2006a; see Appendix C). During the RI, elevated concentrations of PCBs and metals (i.e., arsenic, chromium, copper, lead, and zinc) were detected in sediment samples from the creek and the millrace adjacent to the former Flintkote Plant site. In addition, contaminated sediment was found in the Erie Canal upstream of Eighteenmile Creek. PCBs, arsenic, chromium, copper, lead, and zinc were detected in fill material at Upson Park and the former White Transportation property, United Paperboard Company property, and Flintkote Plant site at levels that could adversely impact Eighteenmile Creek.

In 2007, NYSDEC performed a Supplemental Remedial Investigation (SRI) at the Eighteenmile Creek Corridor Site (EEEPC 2009a; see Appendix C). The primary purpose of this investigation was to further evaluate sediment contamination in the section of Eighteenmile Creek between the Erie Canal and Harwood Street in the city of Lockport and to determine the lateral and vertical extent of contamination in the properties adjacent to the creek. The results of the investigation were also used to assess whether site conditions pose a potential threat to human health or the environment. During the SRI, coring transects were established perpendicular to the creek at approximately 200-foot intervals, and hundreds of sediment, surface soil, and subsurface soil samples were collected along these transects.

PCBs and lead were detected in the creek and canal sediments at concentrations above the screening levels. The distribution of chromium and other metals closely followed the distribution of copper in the sediment samples. PAHs were also prevalent in the sediment samples collected across the site.

An additional field investigation was performed at the Corridor Site in late 2008/early 2009 to facilitate the FS (EEEPC 2009b; see Appendix C). The purpose of the study was to provide data to evaluate the Erie Canal as a source of contaminated sediments and survey

sediment thickness to estimate the sediment volumes. The additional investigation included flow measurements and sampling in the Erie Canal, as well as delineation of the creek width and sediment thickness along the corridor. Based on the results of this additional investigation, it was concluded that, in general, the likelihood of re-contamination from the Erie Canal after creek sediments have been remediated is small, but that further evaluation of the sediment transport mechanisms at the site would be required to investigate the impacts of one-time events and significant discharges from combined sewer overflows that were not studied. The FS for the Corridor Site was completed in September 2009 (EEEPC 2009c), and NYSDEC issued a ROD for the site in 2010 (NYSDEC 2010b; see Appendix C).

2.2.2 Soil

In late 1999 the NYSDEC conducted an investigation of the former Flintkote Plant site with the results of that investigation presented in the report "*Site Investigation Report, Former Flintkote Plant Site*" (NYSDEC 2000; see Appendix C). NYSDEC determined that the Flintkote property had received various wastes, refuse, and debris over the years, with much of the waste being exposed at the surface and along the Eighteenmile Creek embankments and millrace. In 2003, an investigation was conducted by Niagara County under NYSDEC's Brownfield program to fill in data gaps in NYSDEC's 1999 investigation (TVGA 2005a). Ten surface grab samples and 19 subsurface samples were collected and analyzed across the property and on the "Island" area between the mill race and creek (see Figure 2, inset). The samples were categorized as either fill or native soil and analyzed for PCBs and semi-volatile organic compounds. Subsurface samples also were analyzed for volatile organic compounds. The results of the Niagara County site investigation were consistent with NYSDEC's investigation results. Fill materials vary in thickness from less than one foot thick to 24.9 feet thick. The fill materials were generally encountered directly at the ground surface or just below the thin topsoil layer. The thickness of the native soils, when encountered, ranged from 0.1 feet to 9.8 feet. Evaluation of remedial alternatives and a final Remedial Alternatives Report was completed for the Former Flintkote Plant site for the Niagara County Department of Planning, Development and Tourism in cooperation with NYSDEC in 2005 (TVGA, 2005b). A ROD for the former Flintkote Plant site was issued in March 2006 (NYSDEC 2006b; see Appendix C).

In April 2002, the owner of the 143 Water Street property submitted a request to the Niagara County Health Department (NCHD) for sample collection and evaluation of soils from their property. In response to this request, the NCHD and NYSDEC conducted an inspection of the property. Discussions with the property owners revealed that: 1) a family case of cancer inspired research into available environmental data regarding the creek; 2) due to debris or ice blocking the cross-culverts under William Street, Eighteenmile Creek occasionally floods the yard of 143 Water Street (severe flooding once every two years and lesser flooding several times per year); and 3) a small strip of wooded property (about 20 feet wide) between Eighteenmile Creek and the 143 Water Street property also frequently floods. The property owners raised concerns over potential contaminant migration from Eighteenmile Creek (especially elevated levels of PCBs) and over the poor maintenance of the creek by the City of Lockport, which contributes to the flooding issues. During the site visit, the NCHD identified a portion of the 143 Water Street yard that would flood during high water events, and a small vegetable garden was observed within the reported flood area. At the NCHD's request, NYSDEC collected four samples (SS-1 through SS-4) from the property. Based on

the results of this sampling event, additional soil samples from properties along Water Street were collected in July 2002 and November 2002. The results are summarized in the 2004 SOW for the Corridor Site (NYSDEC 2004; Appendix C).

As part of the NYSDEC SRI at the Eighteenmile Creek Corridor Site (EEEPC 2009a; see Appendix C), soil borings were also conducted and sampled at the three upland properties, and several monitoring wells were installed, developed, and sampled. PCBs and lead were detected in the surface soil samples collected across the site, often at concentrations above the screening levels. The distribution of chromium and other metals closely followed the distribution of lead in the surface soil samples. PAHs were also prevalent in the surface soil samples collected across the site. PCBs, lead, and other related metals were found in the subsurface soils at concentrations exceeding the screening levels. Select samples were analyzed for lead by Toxicity Characteristic Leaching Procedures (TCLP) and data compared to the total lead concentrations showed inconsistent correlation, suggesting that the leachability of the lead varies with the type of source material. High levels of lead contamination were detected in all fill areas, but PCB contamination was found only in some of the fill areas. The transport of fill material via erosion and runoff was suspected to be the primary mechanism for the movement of PCBs and lead contamination farther downstream.

2.2.3 Surface Water and Groundwater

Surface water has not been extensively sampled as part of previous investigations in the Corridor Site because of the high flow rates in the creek and lack of standing water. In 2009, NYSDEC conducted a study to evaluate whether the PCBs present in the Canal sediments were being discharged into Eighteenmile Creek (NYSDEC 2010c; see Appendix C). NYSDEC analyzed both the suspended sediment and the water containing that sediment and determined that PCBs were present only in the water column downstream of the former Flintkote Plant site.

Fifteen groundwater monitoring wells were installed at the Corridor site in 2007 and 2009 as part of the SRI conducted for the NYSDEC (EEEPC 2009a; see Appendix C). All nine wells on the east side of the Creek and two on the west side of the Creek were installed as overburden wells, and the remaining four on the west side of the Creek were installed as bedrock wells. Bedrock was encountered at depths ranging from 9 feet below ground surface (BGS) to 26 feet BGS, and in some cases, bedrock was not encountered to depths of 26 feet BGS on the north side of the New York State Canal Upson Park and 30 feet BGS on the east side of the Creek in the northern parcel of the United Paperboard Company property.

Groundwater was investigated as part of the Flintkote Site Investigation Report for the Niagara County Department of Planning, Development and Tourism (TVGA 2005a), but the wells were not sampled at the Flintkote Site during the NYSDEC RI or SRI of Eighteenmile Creek Corridor site. Six of the Flintkote wells are overburden wells and seven are bedrock wells (TVGA 2005a). The depth to bedrock varies across the property, with the shallowest occurrences along Mill Street, Eighteenmile Creek, and the northern portion of the "Island," which generally correspond to areas with limited fill materials.

2.3 Additional Analytical Parameters

Most samples collected as part of previous investigations were analyzed for metals and PCBs. For metals, most samples were analyzed for lead or select metals, including mercury, arsenic, chromium, copper, lead, and zinc for evaluating the nature and extent of known contamination. For the NYSDEC SRI the samples collected from the creek banks were analyzed for the full list of Target Analyte List (TAL) metals.

PCBs were analyzed as PCB Aroclors and PCB congeners for some of the sediment samples. PCB Aroclor data were historically collected for evaluating the nature and extent of contamination and more recent studies continue to analyze for PCBs Aroclors to maintain comparability of the data. PCB congener data were collected for some of the NYSDEC Lake Ontario and tributary monitoring studies because Aroclor patterns are expected to be weathered in low-level water analysis. PCB congener data were collected for the bioaccumulation modeling performed by USACE in 2008 and 2010 (USACE 2008; ERS and USACE 2012) because Aroclor patterns degrade over time due to environmental factors and chemical processes, such as dechlorination.

Dioxins and furans were analyzed in select samples from previous studies because these contaminants are identified as critical in the Lakewide Management Plan (LaMP) for Lake Ontario and were included in the Eighteenmmile Creek AOC RAP. Select sediment samples from several early NYSDEC RAP implementation investigations were analyzed for dioxins and furans or 2,3,7,8-TCDD only. Dioxins and furans were detected in the sediment samples in the early studies at concentrations that exceed site-specific Technical Guidance for Screening Contaminated Sediments (NYSDEC 1999). NYSDEC performed a specific investigation in 1994 to identify dioxins and furans in the sediments of Eighteenmile Creek (NYSDEC 1994; see Appendix C). No specific sources of dioxins and furans in the Eighteenmile Creek were identified, but the Flintkote property and Erie Canal were identified as potential sources. The levels in the sediments were considered potentially significant. As part of an additional NYSDEC "*Trackdown of Chemical Contaminants to Lake Ontario from New York State Tributaries,*" two ash/soil samples were collected at the former Flintkote property and concentrations of dioxins and furans exceeded the sediment criteria (NYSDEC 1996).

An additional eight ash samples collected during the NYSDEC site investigation of the former Flintkote Plant site were also analyzed for dioxins and furans but none were detected (NYSDEC 2000; see Appendix C). However, all samples (except one) that were submitted for dioxins and furans analysis were collected from depths ranging from 4 to 24 feet. Based on these results, dioxins and furans were not analyzed as part of the NYSDEC RI for the Corridor Site because the former Flintkote Plant site had been eliminated as a potential source of dioxins and furans.

As part of the 1997 - 1998 NYS Canal Corp investigation of sediment quality in the Erie Canal, elevated levels of dioxins and furans contamination were encountered within the sediments under the Prospect Street Bridge in Lockport and were detected in the sediments all the way to the Genesee River in Rochester (Canal Corp 1999). In some locations the 2,3,7,8-TCDD TEQ levels exceed the NYSDEC Class C Sediment criteria of 50 parts per trillion. In no case did the level of 2,3,7,8-TCDD TEQ detected in the sediment exceed the

USEPA residential soil action limit at the time of 1 parts per billion or the NYSDEC Technical and Administrative Guidance Memorandum allowable soil concentration of 6 parts per billion. The study concluded that historical upstream sources near Tonawanda could potentially contribute dioxins and furans to canal sediment.

SECTION 3

3 Characterization Investigation Approach

3.1 Site Characterization

In 2008, the NCSWCD entered into a cost-shared Project Agreement with the GLNPO to implement a GLLA project in the Eighteenmile Creek AOC focusing on evaluating the sediments in the sections of the creek between the Corridor Site and Burt Dam. The project leveraged RI activities implemented by NYSDEC in the Corridor Site (see Section 2.2). A reconnaissance survey was completed in winter 2008 and spring 2009 to investigate site access, identify areas of sediment deposition, measure sediment thickness, and map sensitive habitats and other areas of potential ecological concern (CH2M HILL and EEEPC 2009a; see Appendix A). The Eighteenmile Creek Field Sampling Plan (FSP) and the Quality Assurance Project Plan (QAPP) defined the overall scope for the reconnaissance activities and evaluation of COPCs in sediments (CH2M HILL and EEEPC 2009b). The investigation approach was revised to address data gaps and included additional data collection in 2010 under a GLLA site characterization. The results of this investigation are described below and presented in the Data Summary Report (CH2M HILL and EEEPC 2011; Appendix B).

Site reconnaissance and characterization activities were conducted by GLNPO at the Eighteenmile Creek AOC from November 2008 through November 2010. The investigation area included the impoundment at Burt Dam and extended upstream to the just below the Niagara Escarpment (see Figures 1 and 2). The purpose of the investigation was to collect data to evaluate the nature and extent of contamination in the sediments, focusing on the unevaluated area between the city of Lockport and Burt Dam. The data collected during this effort were used to develop a conceptual model of the existing physical and chemical conditions, which will provide the basis in the identification of potential remedial alternatives for the creek sediment.

Sediment samples were collected from almost the entire length of the creek from Burt Dam to just downstream of the Corridor Site. Samples were not collected in the Corridor Site or downstream of Burt Dam to the mouth of the creek at Lake Ontario because these areas were previously investigated.

The creek was divided into the following 10 reaches during the planning phases based on physical characteristics of the creek (see also Section 3.2.1 and Figure 2). The reach designations were refined during the reconnaissance.

- Reach 1 – Mouth of the creek to Burt Dam
- Reach 2 – The Burt Dam impoundment
- Reach 3 – The confluence of Eighteenmile Creek with the upstream extent of the Burt Dam impoundment
- Reach 4 – The bedrock/gravel channel downstream of Newfane Dam

- Reach 5 – The Newfane Dam impoundment
- Reach 6 – The gravel channel upstream of the Newfane Dam impoundment
- Reach 7 – The meandering reach with large woody debris downstream of the Niagara Escarpment
- Reach 8 – The high-gradient run down the Escarpment
- Reach 9 – The short run downstream of the Corridor Site
- Reach 10 – The Eighteenmile Creek Corridor Site

Data collection and reported activities were conducted in phases and included the following:

Phase 1	Phase 2
Mobilization and planning activities in November 2008	An additional two-day reconnaissance survey (Reaches 6 and 7) and Phase 2 planning activities in October 2009
Site reconnaissance survey (Reaches 3 to 7) in December 2008 and April/May 2009	An initial hand-coring sampling effort (Reaches 4, 6, and 7) in November and December 2009
Bathymetric survey performed by Aqua Survey, Inc., in June 2008 in the impoundment behind Burt Dam (Reaches 2 and 3)	Vibracore sampling and Ponar grab sampling (Reaches 2, 3, and 5) in May 2010
	A data gap investigation, including hand coring and Ponar grab sampling (Reaches 4, 6, and 7) in June and July 2010
	A sediment thickness and bankfull survey (Reaches 4 to 7) in November 2010
The *Phase 1 Site Reconnaissance Report* was completed July 2009 and is included in Appendix A.	The *Data Summary Report for the Site Characterization Investigation* was completed in March 2011 and is provided in Appendix B.

3.1.1 Project Objective and Technical Approach

The data collected during the site characterization were used to:

- Evaluate the horizontal and vertical extent of sediment contamination of selected COPCs (PCBs and metals) within and adjacent to the creek;

- Correlate PCB concentrations to percent organic carbon;
- Evaluate concentrations of COPCs in upstream locations in major tributaries of the creek to identify other potential sources and establish background conditions;
- Evaluate ecologically significant chemicals (e.g., PCB congeners and metals) in the surface sediment to determine the bioavailability of COPCs;
- Evaluate the potential for historic contamination to have been transported to wetlands or relict creek channels during past flooding events;
- Evaluate the potential sources of additional chemicals previously detected in the sediment (e.g., pesticides and PAHs) and establish the correlation of these chemicals with the COPCs; and
- Evaluate the geotechnical characteristics of the sediment.

The sampling design and collection procedures are described in Section 2.2 of the Data Summary Report (see Appendix B). The sampling analytical program is described in Section 2.4 of the Data Summary Report (see Appendix B).

3.1.2 Site Reconnaissance and Bathymetric Surveys

The reconnaissance survey focused on the area from Burt Dam south to Lockport, an area for which there is little historical data regarding depositional areas or sediment characteristics and quality. The first phase of the reconnaissance survey was conducted in a 9.4-mile-long stretch of the creek just north of Ide Road upstream of Stone Road. This stretch of the creek is relatively isolated, and little information has been developed regarding habitats, stream channel conditions, or sediment characteristics. In June 2008, a bathymetric and sediment thickness survey was performed by Aqua Survey, Inc., in the 1.5-mile-long impoundment from Burt Dam upstream to just north of Ide Road (CH2M HILL and EEEPC, 2009a; see Appendix A). This portion of the creek is relatively wide and deep, and there was little information on water depth and sediment thickness. In October 2009, a supplemental reconnaissance survey was performed in areas not previously visited; the results are integrated into the Data Summary Report.

3.1.3 Sediment Sampling and Analysis

The sediment sampling was conducted in November and December 2009 and May 2010, and a data gap investigation was conducted in June and July 2010.

In November and December 2009, 83 hand core sediment samples were collected in Reaches 4, 6, and 7 from the main creek channel and tributaries and 21 surface soil samples were collected from historic channels and wetlands along Reaches 3, 4, 5, 6, and 7. All of the cores, but one, were collected by advancing a clear polyvinyl chloride sleeve into the sediment by hand using a pushing and twisting motion. At each coring location within the main creek channel, one composite sample was collected from the top of the sediment to refusal, representing the entire sediment column. As described in the FSP, when refusal was reached, the remaining empty portion of the acetate sleeve was topped with water and the sleeve was capped. The sleeve was then slowly removed from the sediment, resulting in

the collected core. The water was then decanted and the sediment was extracted, logged, and composited for sampling.

In May 2010, a total of 298 samples were collected from 39 locations, including 241 vibracore samples, 45 Ponar dredge samples, and 13 duplicate samples. These samples were collected from deeper areas behind Burt Dam and Newfane Dam. Vibracore sampling was conducted at all locations with two exceptions. Due to shallow water that prohibited vibracore vessel access, two sample locations (R3-019-V and R5-039-V) were accessed by jon boat and cored by hand following procedures similar to those used in November and December 2009. Surface and subsurface samples were collected from the sediment cores. At each coring location, initial probing was performed to measure water depth. Following water depth measurement, a grab sediment sample was collected from the top 0 to approximately 0.5 feet depth using a petite Ponar dredge. After surface sediment sample collection was completed, a Rossfelder P-3 electrical vibracore collection system mounted to a winch was used to collect cores. The operator lowered the core barrel loaded with dedicated 4-inch-wide clear polycarbonate liners to the top of the sediment, started the vibracoring system, and cored into the sediment to refusal.

The sediment and soil samples collected in November and December 2009 and May 2010, were analyzed for Target Compound List (TCL) PAHs, total organic carbon (TOC), and grain size, in addition to PCBs and TAL metals. Representative portions of samples were also analyzed for semi-volatile organic compounds and pesticides, PCB congeners, and acid volatile sulfides/simultaneously extracted metals (AVS/SEM). Sediment samples collected within the tributaries were analyzed for the full suite of COPCs (including PCBs as Aroclor mixtures, TAL metals, TOC, grain size, PAHs, and pesticides).

In June and July 2010, a data gap investigation in Reaches 4, 6, and 7 was performed, which included collection and analysis of 126 samples, including seven duplicates. Of the 126 samples collected, 12 samples were collected from nine locations in Reach 4, 50 samples were collected from 28 locations in Reach 6, and 64 samples were collected from 34 locations Reach 7. During the data gap investigation, sample locations were added in areas with large distances between sample locations (i.e., greater than 500 feet) to provide better coverage.

The data gap sediment sampling included the collection of surface sediment samples (representing the top 0.5 foot of sediment) and composite core samples (from surface to refusal using a hand coring device) to evaluate contamination within the thicker sediment deposits. Specifically, at coring locations where the top sediment layer was clearly distinguished, surface samples were collected from the top 0.5 foot portion of the core and the remaining core material was composited for the subsurface sample (0.5 foot to refusal). At coring locations where sediment layering was not clearly observed (e.g., in areas where the sediment was too soft to preserve layering within the core), the surface sample was collected using a petite Ponar or AMS Ekman dredge, and the entire core was composited (surface to refusal) for the subsurface sample. At locations where total sediment thickness was less than 1 foot, a single sample was collected from the entire core.

Data gap sediment samples collected in June and July 2010 were analyzed for PAHs, TOC, and grain size, in addition to PCBs and TAL metals. Approximately 30 percent of the data

gap sediment samples were also analyzed for the expanded list of PAHs (34 PAHs), instead of the standard 16 PAHs included in the TCL analysis.

3.1.4 Sediment Thickness Survey

A sediment thickness survey was conducted in November 2010. The survey was conducted for Reaches 3 through 7 and included taking measurements of bank-to-bank (bankfull) width (i.e., the width that water begins to leave the channel and discharge onto the floodplain), water depths, and sediment thickness. The bankfull measurements were obtained using the same methodology as used in the SRI for the Corridor Site in 2008.

3.2 Results Summary

3.2.1 Site Reconnaissance Report

The Eighteenmile Creek AOC was divided into smaller investigation areas, or reaches, based on the physical characteristics of the creek observed during the Phase 1 reconnaissance planning effort (see Figure 2). The creek length was determined by digitizing a center line based on review of aerial photographs. The center line was used to establish distance markers along the length of the creek, with zero starting at the headwaters of the creek at the Erie Canal (using the Headwaters West Branch) and ending at the mouth of the creek at Lake Ontario.

- Reach 1 consists of the AOC as originally defined by the IJC and includes the area from Burt Dam to the discharge point of the creek into Lake Ontario. This reach was not included in the GLNPO investigation, but historical results are presented in Section 5.

- Reach 2 consists of the impoundment immediately upstream of Burt Dam. The bathymetric survey conducted during Phase 1 reported shorelines with steep to near vertical slopes and water depths ranging up to about 37 feet. The historic creek channel is still evident throughout most of the survey area. Measurements along transects at the upstream end of the impoundment found sediment thicknesses averaging about 13 feet. Similar to other deep lake environments, exposure to PCBs in the surficial sediments is the main exposure route, and the concentrations of PCBs in this biologically active layer are the critical data needed for evaluating potential remedial alternatives. Based on the hydrology of the impoundment, the potential for the subsurface sediments to be exposed by scour or high-flow events in this reach is low. However, there is potential for Burt Dam to be removed at some point in the future. Subsurface sediment samples were collected to evaluate the contaminated sediment mass behind the dam and the depth of contamination. Historical studies indicate that PCBs are present at depth (28 to 56 centimeters [cm], or approximately 1 to 2 feet) in the center of the impoundment (NYSDEC 2001a; see Appendix C). None of the historical sampling included locations on the sides of the impoundment.

- Reach 3 is characterized by the historic stream channel that was flooded after installation of the dam. The delineation between Reaches 2 and 3 was an estimated boundary marking the separation of the deeper water from the portion of the creek where the impounded water meets the upstream creek flow. Large sediment deposition areas have formed where the swiftly moving upstream creek flows into

the impoundment area and the flow velocities drop quickly. Because surface and subsurface sediments in this reach could be subject to erosion and transport, contaminant concentrations in the surface and at depth were investigated. PCB-contaminated sediments also may have been deposited in surrounding marsh and forested wetland areas during historic flooding events. Therefore, a representative number of surface soil samples from these features were also collected.

- Reach 4 is relatively swift moving and includes comparatively few sediment depositional areas of shallower depths. Limited sediment sampling, consisting of surface grabs, was conducted in this reach. Sampling locations include areas where sediment was deposited due to obstructions or decrease in flow velocities, near the marshes and old floodplains, and near outfalls. These areas were sampled because contaminated sediment may have been deposited in the forested wetland areas and marshes near Ide Road during historic flooding events.

- Reach 5 consists of the impoundment area behind Newfane Dam and includes deep water and thick sediment. Because of the potential for the dam to be removed in the future, the investigation of this impoundment area included surface and subsurface sediment characterization. The thick sediment layer indicated a higher potential for contamination to be present throughout the sediment profile. In addition, contamination may have been deposited in sediments in a number of historic creek channels, marsh areas, and wetlands during historic overbank flooding. A representative number of surface sediment/soil samples were collected from these features.

- Reach 6 is characterized by limited access, relatively shallow sediment deposition areas, and higher flow velocities. There are two historic creek channels and one forested wetland where contaminated sediment may have been deposited during historic overbank flooding. Several outfalls from the Newfane area and agricultural drainage areas may have also contributed contaminants other than PCBs to the creek. Sample locations were selected in areas where sediment was observed, or near obstructions or upstream and downstream of tributaries.

- Reach 7 is characterized by limited access and large stretches of slowly moving water and high sediment deposition. The depth of the sediment in the depositional areas and potential scour suggest that remedial options might target removal of sediment to native material. Samples were collected from the areas of deep sediments near obstructions and outfalls. A 1-mile-long stretch of the creek sampled during the PCB trackdown study (E & E 2007b; see Appendix C) required less sampling than the other areas of the creek. Soil and sediment samples were collected from floodplains and near drainage areas not previously sampled. One hot spot near Plank Road that was identified during the trackdown study was re-sampled.

- Reach 8 is an approximately 2,000-foot-long section of the creek cascading down the steep gradient of the Niagara Escarpment. This area was not sampled because the amount of sediment in this area available for sampling is minimal due to the water velocity, and because doing so would jeopardize the safety of the field sampling crews.

- Reach 9 is a short run of the creek between the Niagara Escarpment and what has historically been defined as the downstream end of the Eighteenmile Creek Corridor Site, (i.e., parallel to the end of Harwood Street). The sediment in this reach is shallower than in the Corridor Site (6 to 15 inches) and tends to have a coarser grain size. The area was investigated during the PCB trackdown study and was not sampled during this investigation.
- Reach 10 is defined as the Eighteenmile Creek Corridor Site, which was investigated by NYSDEC. Reach 10 is considered the upstream source area.

In addition to the reach designations, other physical features of Eighteenmile Creek were identified during Phase 1.

- Wetland Areas identified adjacent to the creek could potentially be impacted by contaminated sediments due to flooding. Wetland areas that were directly on the banks of the main channel were identified. Representative areas in each wetland were sampled by collecting surface grabs in depositional areas.
- Historic Creek Channels and 35 drainage areas that were directly connected to the main channel of the creek were identified during the Phase 1 reconnaissance. The historic creek channels represent areas that may have been influenced by historic creek flows. Sampling locations were selected based on review of historic aerials and drainage locations. Samples were collected from locations based on observations of where sediment had accumulated on the surface. If multiple sediment areas are present in a wetland, the sediment was composited to characterize a larger area.
- Tributaries of Eighteenmile Creek were identified during the Phase 1 reconnaissance and verified on aerial photographs. A total of seven samples were collected from sediment deposits located about 50 feet upstream from the mouth of each tributary. The selected sampling location in each tributary was from an area that is not influenced by the main stem of the Eighteenmile Creek and represents background conditions. One surface sample (0 to 6 inches below top of sediment) and a composite of the remaining sediment column were collected at each sampling location.

3.2.2 Data Summary Report

A Data Summary Report was prepared that includes a summary of the sample results and a discussion of analytical results and usability of the data. The Data Summary Report is included as Appendix B. The results of the investigation are presented in Section 5.

3.2.2.1 Physical Results

Physical observations were made during Phase 1 reconnaissance and the sampling phases. Observations and field notes were recorded in the handheld Trimble global positioning system (GPS) unit, which also automatically recorded location information. Photographs were taken and noted in the GPS unit as photo points, and photo logs are provided as appendices to the reports. GPS locations and field notes were imported into an ArcGIS geodatabase. Detailed physical observations are listed in Section 2.6 of the Data Summary

Report (see Appendix B). During the three sampling efforts, 464 samples were collected for TOC analysis and 461 samples were collected for grain size analysis.

3.2.2.2 Analytical Results

The analytical results for the investigation are presented by reach in Section 4 of the Data Summary Report (see Appendix B). PCB totals were determined by summing positive results for all PCB Aroclors detected. For PCB Aroclors that were not detected in the samples, a value of 0 was used. For a percentage of the samples, PCB congener analysis was performed, and the total PCB congeners were determined by summing the positive results. PAH analysis consisted of analyzing samples for 16 individual PAHs, not including 2-methyl naphthalene. Total PAH concentrations in each sample were calculated by summing the concentrations of the 16 individual PAHs. If an individual PAH was not detected in the sample, then a value of 0 was used in the sum. In addition, an extended list of PAHs was analyzed for a percentage of the samples.

3.2.2.3 QA/QC Summary

Data were reviewed according to applicable procedures outlined in the FSP and QAPP. Overall, the data quality was acceptable and the laboratory analysis and reporting procedures were representative of the appropriate methodologies for sediment and soil samples. The objectives for completeness were above 99 percent for all samples. Results that were qualified as estimated are considered usable for the purposes of this project, while results qualified with an R (rejected), or a UR (not detected and rejected), are not usable. Detailed information on the site characterization analytical results is included in Section 3 of the Data Summary Report (see Appendix B).

3.2.3 Data Management

Data management consisted of verifying collection and storage of field sample data using Forms II Lite® software and transcription of geological logs into spreadsheet tables. Analytical data were managed with the Equis® data management program. Both the field and analytical data were translated into the USEPA Region 5 format in a Microsoft Access database. This Microsoft Access database was the basis for the development of a project-specific database for the RI that integrated GLLA site characterization data, data generated from the geographic information system (GIS) geodatabase, and electronic data from other investigations. This database, subsequently referred to as the RI database, was used for data evaluation as described in Section 5 and is included in Appendix D.

In addition, GLNPO developed a sediment confirmation database used to maintain and archive GLLA project sediment contamination data from various projects. This database is referred to as the Great Lakes Sediment Database (GLSED) and contains sediment confirmation data for project COPCs and their respective location. The USEPA GLLA site characterization data was uploaded to the GLSED using the USEPA Region 5 format.

3.2.4 Sediment Thickness Model

The creek boundaries and sediment thickness “bottom” layer and “top” layer information were used to model the volume of sediment present. The creek boundaries were determined based on the sediment survey and aerial photography. The right bank and left bank GPS survey points captured by the field crew at 500-foot intervals served as a starting

point for shoreline delineation in a GIS geodatabase. Bank points, which were recorded using a Trimble GPS unit on the ground, are used in GIS as a guide for digitization of the linear shoreline features. A GIS layer of the shoreline of Eighteenmile Creek first began with the left and right bank points; then, the shoreline was fleshed out into a line feature manually through photo-interpretation of high-resolution (1-foot and 2-foot pixel resolution) digital orthophotography (NYS GIS Clearinghouse 2008). The shoreline is an important input to the sediment thickness model and can be conceptually thought of as a "container" for running the calculation. The digitized shoreline is shown on Figure 4. It should be noted that the centerline is the same center that was established during Phase 1. The centerline was not updated based on the new shoreline in order to maintain a consistent measurement of the creek length and sample locations along the creek. The centerline does not impact the sediment thickness calculation.

ArcGIS extension "spatial analyst" was used in GIS to perform a spatial interpolation of thickness points. The method of interpolation used was inverse-distance weighted. Inverse-distance weighted is an interpolation method based on the assumption that an unknown value is most alike to its nearer neighbors, rather than to points farther away. In this way, known points (field data) are treated as nearest neighbors and are the predictors of the unknown (interpolated) points. A sediment thickness model was predicted on a 5-foot grid spacing throughout the creek. The model output is provided electronically in Appendix D on Table D-6.

The delineation of the edge of the bankfull and the sediment thickness measurements were conducted concurrently. A total of 136 transects were surveyed in Reaches 4, 6, and 7 and shallow areas of Reaches 3 and 5. A slight variation of "systematic point sampling" was implemented in the field to collect the additional sediment thickness data. Systematic point sampling uses a regular sampling interval and results in an unbiased and proportionally representative dataset of evenly spaced measurements across the study area. The sediment thickness was measured by probing at an average of five locations along each transect, including the edges of both banks, at the thalweg or midpoint, and at two points between the thalweg and left and right banks. Summary statistics on sediment thickness, water depth, and creek width measured during the sediment delineation effort are presented in Table 2-4 of the Data Summary Report (see Appendix B).

The sediment thickness, water depth, and creek width were modeled for Reaches 2 through 7 and volume was estimated based on the model. The creek was divided into 500-foot intervals (because that length was the basis for the sampling design), and the average sediment thickness and water depth was determined. The volume was calculated for each interval based on the area of the 500-foot interval and average sediment thickness. The intervals were adjusted based on creek features and sampling locations. The 500-foot intervals are identified on Figure 4. The average sediment thickness and water depth, areas and estimated sediment volumes are presented in Table D-6. The average sediment thickness in the depositional areas behind the dams is 11.6, 6.5, and 3.0 feet in Reaches 2, 3, and 5, respectively. The average sediment thickness in rest of the main channel is 0.6, 0.8, and 1.4 feet in Reaches 4, 6, and 7, respectively. The average water depth behind the dams is 14.3, 2.5, and 3.5 feet in Reaches 2, 3, and 5, respectively. The average water depth in the rest of the main channel is 1.3, 1.8, and 2.3 feet in Reaches 4, 6, and 7, respectively.

Although elevation measurements were not collected or included as inputs to the sediment thickness model, the elevation is used as a way to characterize the creek from its headwaters near the Erie Canal to its mouth at Lake Ontario. The elevation was estimated in GIS using the most precise elevation data available: 2008 Light Detection and Ranging (LIDAR) data that was originally developed by the Federal Emergency Management Agency for floodplain delineation and is now in the public domain. The elevations contours from the LIDAR for the entire Niagara County are shown on Figure 3 and the elevations along the creek are shown in Figure 4. The sediment model grid spacing and points used to determine the sediment thickness also are shown on Figure 4. The elevations at each 5-foot grid spacing were estimated based on the LIDAR data, and then the average of values in each 500-foot interval were determined to establish the elevation change over the length of creek. In areas were the sediment thickness model did not apply, the elevation was estimated based on the elevation of the center line at 500-foot intervals. These results are shown on Figure 5.

SECTION 4

4 Physical Characteristics of the Study Area

4.1 Features and Challenges Unique to the Project

The Great Lakes represent approximately 21 percent of the fresh water supply on the planet and 84 percent of the fresh surface water of the North America, and they are the largest single source of fresh surface water in the Western Hemisphere (http://www.eighteenmilerap.com/index.html). Each of the five lakes supports world-class cold- and warm-water fisheries, a diverse agricultural sector, and tourism and recreational industries. The Eighteenmile Creek watershed is part of the larger Southwestern Lake Ontario Basin, an area encompassing over 2 million acres of land in western and central New York that drains into Lake Ontario (NYSDEC 2005).

The most prominent topographic feature in the Eighteenmile Creek watershed is the Niagara Escarpment (see Figure 3). The watershed is located within both the Ontario and Huron Plains, two relatively flat plains that are separated by the escarpment, which runs generally east-west along the northern portion of the city of Lockport. Within the Ontario Plain (from Lake Ontario to the Niagara Escarpment), elevations range from 245 feet above mean sea level at the shoreline to approximately 400 feet above mean sea level at the toe of the escarpment. At the escarpment, the main channel of Eighteenmile Creek rises over 100 feet to the Erie Canal (see Figure 5). This greater than 250-foot elevation change is a unique feature of the creek and has a significant impact on surface water hydrology. Figure 5 provides a cross section of the elevation change.

The Eighteenmile Creek AOC is also uniquely influenced by man-made structures on the creek, including the Erie Canal and four dams. The Erie Canal is located at the most upstream portion of the Corridor Site. Most of the water in the western portion of the canal comes from Tonawanda Creek via the Lockport locks. During normal operating and drawdown periods, water is discharged from the canal into Eighteenmile Creek, resulting in an increase in natural flow volumes. Drawdown primarily occurs in November after the canal is closed for the winter and the canal is drained into the creek. During dry periods, the canal contributes the majority of the flow for the portion of Eighteenmile Creek in the city of Lockport (NYSDEC 1997). The increased flow to Eighteenmile Creek contributed by the early Erie Canal led to the construction of mills and dams on the creek. The significance of the Erie Canal and the historic features along the creek will need to be addressed as cultural resources during the development of future remedial alternatives.

Burt Dam is a 600-kilowatt hydro-generating facility currently owned by the Algonquin Power and Utilities Corporation. This run-of-river facility consists of a dam with an integrated intake structure, powerhouse, and tailrace. The facility was reconstructed in 1987 from an old hydroelectric generating plant at the site of an existing dam. Under terms of an agreement with the Federal Energy Regulatory Commission, the New York State Department of Transportation issued a permit in which they agreed to provide a diversion of excess water from the Erie Canal to augment the natural flow of Eighteenmile Creek to

maintain a flow of 400 cubic feet per second (cfs) at the dam. The maintenance of this flow to the dam will need to be considered during the development of any remedial alternative. The top of Burt Dam is at an elevation of 304.5 feet and the spillway is at a crest elevation of 297 feet (United States Geological Survey [USGS] Datum) (Burt Dam Associates 1983). The height of the dam at the crest elevation is 49 feet, which raises the water elevation up to 49 feet above the natural elevation of the creek. The bathymetric survey behind the dam indicates the current water depth is 30 to 35 feet.

Newfane Dam and two smaller dams in the Corridor Site are not operational, but they do restrict flow and retain water and sediment behind them. The NYSDEC ROD for the Corridor Site calls for the removal of the two smaller dams and identifies the need to address contaminated sediment behind the dams (NYSDEC 2010a; see Appendix C). The removal of the Newfane Dam has not been discussed.

Eighteenmile Creek also provides important fish and wildlife habitat along Lake Ontario. A portion of Eighteenmile Creek 1.5 miles downstream of Burt Dam is designated by the New York State Department of State (NYSDOS) as a Significant Coastal Fish and Wildlife Habitat, and the creek's estimated 65 acres of emergent and submergent aquatic vegetation comprise one of the largest coastal wetlands along the southwestern shore of Lake Ontario (NYSDOS 1987; see Appendix C). The portion of Eighteenmile Creek downstream of Burt Dam is considered a significant recreational resource due to the large numbers of coho and chinook salmon and brown trout that migrate into the creek from Lake Ontario each fall, when the salmonids ascend the stream to spawn. Because of the fish habitat, Eighteenmile Creek is the second most visited fishing destination in the Lake Ontario basin, attracting up to 15,000 anglers annually (NYSDEC 2007a ; see Appendix C). The creek habitat in most of the upstream reaches has not been characterized, and the potential impacts of remediation on habitat have not been addressed.

Sediment contaminated with PCBs, PAHs, and metals has been identified along the entire 15-mile length of the main branch of Eighteenmile Creek. The bioaccumulation of PCBs in fish and the potential impacts of the contaminated sediment on wildlife have been well documented (ERS and USACE 2012; E & E 2007b; see Appendix C). The BUIs at Eighteenmile Creek AOC are a direct result of the large inventory of PCBs in sediment upstream of Burt Dam and subsequent bioaccumulation of PCBs in fish. The remediation of source areas in Lockport and in-stream sediments between Lockport and the mouth of the creek at Lake Ontario have been identified as the primary actions needed to delist the AOC (E & E 2011; see Appendix C).

The 15-mile length of Eighteenmile Creek and the limited public access to many of its reaches, including the two major impoundments behind Burt Dam and Newfane Dam, present unique challenges to developing alternatives for remediating contaminated sediment in the creek. In addition, in most of the upper reaches of the creek, large amounts of woody debris and strainers, cover a portion or the entire creek channel. The debris inhibits navigation of creek and acts as temporary sediment traps.

4.2 Demographics and Land Use

The Eighteenmile Creek watershed encompasses portions of the towns of Cambria, Lockport (including a portion of the city of Lockport), Royalton, Hartland, Newfane, and

Wilson, all of which are located in Niagara County. Land use in the watershed consists primarily of cropland and orchards, with residential, commercial, and industrial areas located in and around Lockport, Newfane, and Olcott Harbor. The city of Lockport is the most densely populated area within the watershed.

The investigation area is located primarily in a rural/residential area. The major sources of sediment contaminants are believed to be the Erie Canal, historically industrialized areas of Lockport, and the Lockport wastewater treatment plant. The Burt and Newfane dams are areas where contaminated sediments accumulate in the creek. The *Eighteenmile Creek State of the Basin Report* (E & E 2007a; see Appendix C) provides a more detailed description of the demographics of the watershed.

4.3 Surface Water

There are approximately 230 miles of streams within the Eighteenmile Creek watershed, with the largest being Eighteenmile Creek, the East Branch of Eighteenmile Creek, Gulf Creek, and the Erie Canal.

U.S. Fish and Wildlife Service National Wetland Inventory maps and NYSDEC freshwater wetland maps were evaluated as part of the *Eighteenmile Creek State of the Basin Report* (see E & E 2007a, Section 7.2, in Appendix C). More than 4,300 acres of wetlands at 698 locations have been mapped within the watershed. The largest groups of freshwater ponds are located approximately 0.5 to 1 mile west of Eighteenmile Creek on both sides of Ewings Road, south of Chestnut Road. Several other smaller lakes/ponds are located within 1,000 feet of Eighteenmile Creek.

USGS stream flow gage data are not available for the Eighteenmile Creek watershed. The flow in the main channel is relatively stable because of the diversion of excess water from Erie Canal to maintain a flow of 400 cfs at Burt Dam. The artificially controlled flow presents unique challenges to modeling the hydrology within the Eighteenmile Creek watershed. However, a preliminary model of hydrology and sediment transport within the watershed was developed for the USACE in 2005 using the SWAT model (BSGLC 2005). The SWAT model was developed to determine the annual sediment yields and critical resource areas of erosion in the watershed.

Calibration of the SWAT model is typically performed by comparing simulated streamflow discharges against measured values, such as those recorded by USGS gages. Since the Eighteenmile Creek watershed did not have any active USGS gages to record discharge, two stage loggers were installed in the watershed in 2005. However, the stage loggers did not provide data reliable enough to be used for model comparisons.

Considering that no measured discharge data were available, a stochastic approach was used to calibrate the hydrologic component of the model for the Eighteenmile Creek watershed over the period 1993 to 2004. For this approach, the runoff ratio was used as the calibration parameter. The approach was to compare the pattern of monthly runoff ratios (discharge divided by precipitation amounts) simulated for the Eighteenmmile Creek against those measured for two Cayuga and Tonawanda Creek watersheds, adjacent watersheds with data on daily discharge.

Once calibrated, the model estimated the annual total surface water runoff to the creek from precipitation over the watershed to be 412 millimeters (mm), while the annual runoff ratio (i.e., total surface water runoff divided by precipitation amounts) was 0.45. The sub-basins with the largest proportion of urban development produced the greatest amounts of runoff. Across all sub-basins, the annual average runoff ranged from 369 to 461 mm (BSGLC 2005).

The *Eighteenmile Creek State of the Basin Report* (E & E 2007a; see Appendix C) provides a more detailed description of the creek's surface water hydrology.

4.4 Regional Geology

The Eighteenmile Creek AOC falls within the Ontario Lowlands physiographic province. The advance and retreat of glaciers during past ice ages have largely defined regional topography, geology, and soils. The surficial geology of the watershed consists mostly of glacial deposits formed about 10,000 to 15,000 years ago during the Pleistocene, when glaciers covered the area. These glacial deposits are generally less than 50 feet thick in the watershed area (La Sala 1968). The most common deposits found in the watershed area are glacial tills and lacustrine silts and clays. The glacial tills have a variable texture and consist of non-sorted clay, silt, sand, and gravel. The lacustrine silt and clay deposits generally consist of laminated silt and clay and are usually calcareous with low permeability (New York State Museum 2004; La Sala 1968). The bedrock in the watershed consists of Ordovician and Silurian rocks that dip gently southward at 20 to 60 feet per mile (La Sala 1968). The bedrock found in the watershed from north to south (and also from oldest to youngest) includes the Queenston Formation, the Medina Group (including the Grimsby sandstone and shale and the Thorold Sandstone), the Clinton Group (including the Irondequoit Limestone, and the Decew Dolostone), and the Guelph Dolostone member of the Lockport group.

The Supplemental Remedial Investigation for the Eighteenmile Creek Corridor Site Report (EEEPC 2009a; see Appendix C) provides a detailed description of the regional geology.

4.5 Soils

The Niagara County area soils, including the Eighteenmile Creek watershed soils, have been mapped by soil type by the United States Department of Agriculture, Natural Resource Conservation Service [NRCS] (formerly the Soil Conservation Service). Sensitive soil types include hydric soils, prime farmland, farmland of statewide importance, and soils with high erosion potential. The soil survey identifies 94 soil types within the Eighteenmile Creek watershed (NRCS 1972).

Approximately 57 percent of the land within the Eighteenmile Creek watershed is classified as prime farmland. The United States Department of Agriculture defines prime farmland as areas containing soils that have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. A majority of the prime farmland is found adjacent to Eighteenmile Creek and its major tributaries. Seventeen soil types within the watershed are designated as farmland of statewide importance. These 17 soil types comprise approximately 24 percent of the land area within the watershed, half of which is adjacent to Eighteenmile Creek and its major tributaries.

The Niagara County Soil Survey indicates that there are three soil types (Dunkirk, Arkport, and Ontario) in areas adjacent to Eighteenmile Creek, the East Branch of Eighteenmile Creek, and Gulf Creek that are considered to have high erosion potential. Dunkirk and Arkport soils (12 to 20 percent slope, eroded) and Ontario loam (15 to 30 percent slope, eroded) have potential for erosion due to their locations in steeply sloped areas and evidence of past and continuing erosion. Although Dunkirk silt loam (6 to 12 percent slope, eroded) is not necessarily located in areas with steep slopes, this soil type displays historic and continuing erosion.

Approximately 14 percent of the land within the Eighteenmile Creek watershed is classified as hydric soil. The NRCS defines hydric soil as "a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (NRCS 2004). An additional 20 percent of the land contains soils with the potential for hydric inclusions, meaning that small areas of a hydric soil may be present within the larger mapped unit.

The *Eighteenmile Creek State of the Basin Report* (E & E 2007a; see Appendix C) provides a detailed description of the creek's soils.

4.6 Sediment

Numerous sediment samples from along Eighteenmile Creek have been collected and described during previous investigations. Reach 1 sediment surface grab samples were collected by the USACE Buffalo District in October 2010 as part of the bioaccumulation modeling sampling activities (ERS and USACE 2012; see Appendix C). Sediments in Reaches 2 through 7 were investigated from October 2009 through November 2010 under the GLLA site characterization. Details of the sediment investigation are included in the Data Summary Report included in Appendix B. Reach 10 sediments were sampled during the NYSDEC SRI at the Eighteenmile Creek Corridor Site (EEEPC 2009a; see Appendix C). The physical description of the Eighteenmile Creek sediments presented in these investigations is summarized below by Reach.

Reach 1 sediments are described as brown silty clay with some sand. Cores retrieved from the sediments within this reach contained variable amounts of organic material (higher organic content in the southern part of the reach). Black silty sediments were encountered in the middle part of the reach, and gravel was encountered near Burt Dam.

Sediment in Reaches 2, 3, and 5 consisted of varying amounts of decayed organic material (mostly rootlets, leaves, wood, and other vegetative matter), grading into varying proportions of fine sand, silt, and clay, with occasional fine gravel (less than 10 percent). Sediment color usually ranged from gray to brown or black. Particle size analysis of Reach 2 sediments identified the presence of primarily silty/clayey sediments with approximately 20 percent of sandy mixes of silt and/or clay. Particle size distribution of the sediments in Reaches 3 and 5 is similar to that in Reach 2, with predominantly silty/clayey sediments and some sandy mixtures. Gravel (over 10 percent) was found at more locations in these reaches. Sediment thickness was found to be the greatest in Reach 2, followed by Reaches 3 and 5. The maximum sediment depths observed were: 15 feet in Reach 2; 12 feet in Reach 3; and 9 feet in Reach 5.

Sediment in Reaches 4, 6, and 7 consisted of varying amounts of decayed organic material (mostly rootlets, leaves, wood, and other vegetative matter), grading into varying proportions of fine sand, silt, and clay, with occasional fine gravel. Sediment color usually ranged from gray to brown. In most cases, stratification was not observed. At some locations, sand or fine gravel was found without sufficient fine-grained sediment to yield an adequate sample. Reach 4 is characterized predominantly by silt or clay sediments (more than 90 percent fines present in the sample). Some sandy sediment mixed with varying amounts of gravel and silt-size material was also present in Reaches 4, 6, and 7. Sediment containing more than 10 percent gravel was very rare in Reach 4 but was found at some locations along Reaches 6 and 7. The maximum sediment depths observed were: 1.8 feet in Reach 4; 5.6 feet in Reach 6; and 4.5 feet in Reach 7.

The sediment in Reach 9 was thinner than in the Corridor Site (6 to 15 inches) and tended to have a coarser grain size than the sediments in Reaches 2 through 7.

Reach 10 sediments are described as gray silt underlain by native black clays or bedrock (encountered at less than 1 foot in some areas), with varying amounts of sand and gravel along the former White Transportation property and Upson Park. Brown and orange clay was found along the former United Paperboard property and the former Flintkote Plant site. Fill, black slag, and shell fragments were also present in the Reach 10 sediment. Consistent with the observations in the other reaches, organic matter (wood, rootlets, aquatic plants) was mixed in the sediments in Reach 10. Sediment thickness in this reach ranged from less than 0.5 feet to approximately 4 feet.

Figure 5 presents an estimate of the sediment thickness and water depth based on the sediment thickness model described in Section 3.1.4 and field measurements. The sediment thickness and water depths have been increased by a factor of 5 in order to visualize the differences on the scale of the entire creek. Figure 5 shows the increase in sediment behind the dams as well as higher depositional areas in the slower moving reaches.

4.7 Regional Hydrogeology

Water-bearing zones in the Lockport area include unconsolidated glacial deposits and bedrock. Most of the unconsolidated deposits in the area consist of fine-grained glacial deposits with hydraulic conductivities of roughly 10^{-7} centimeters per second (cm/s) or less (Earth Dimensions 1980). These deposits, however, often contain horizontal laminations and sand lenses that can produce perched water table conditions, or if areally extensive, can be utilized as sources of water (La Sala 1968). Because the unconsolidated deposits in the vicinity of the former Flintkote Plant site are relatively thin and horizontal laminations and sand lenses are uncommon, groundwater yields from these deposits would be too low for domestic or industrial purposes. Overburden groundwater flow near Eighteenmile Creek, therefore, is expected to be highly localized and sporadic, with an overall flow toward Eighteenmile Creek (NYSDEC 2000; see Appendix C).

Groundwater occurs primarily within the bedrock in the following types of openings: (1) weathered surface fractures, (2) bedding joints, (3) vertical joints, and (4) small cavities and vugs. The principal controls on bedrock groundwater flow, however, are the vertical and horizontal bedding plane fractures. The latter are expected to be the primary groundwater flow pathways in the Grimsby Formation, especially in the upper unit, which is extensively

fractured. Some horizontal groundwater flow, however, could also occur through small cavities and vugs. Vertical movement of groundwater also occurs, especially in the upper 10 to 25 feet of rock, where vertical fractures, created by stress relief from tectonic events and glacial rebound (Gross and Engelder 1991) have been enlarged by dissolution and/or glacial scour. The extent of the vertical groundwater movement within the Grimsby Formation is unknown. The groundwater in the Upper Grimsby Formation likely flows toward Eighteenmile Creek (NYSDEC 2000; see Appendix C).

4.8 Threatened and Endangered Species

In January 2012, NYSDEC's Division of Fish, Wildlife and Marine Resources was contacted for information on species listed as endangered, threatened, or of special concern in Niagara County that may occur in the site vicinity. NYSDEC indicated that the New York Natural Heritage Program database identified one threatened reptile, the Blandings Turtle (*Emydoidea blandingii*), as being documented within 0.6 miles of the creek. The Blandings Turtle can move 0.6 miles or more from the documented locations. It is listed as threatened (New York legal status) in Niagara County in the town of Newfane (NYSDEC 2012; see Appendix C).

The U.S. Fish and Wildlife Service's Environmental Conservation Online System was reviewed in January 2012 for the presence of threatened or endangered species. None of the plant and animal species were listed as known to occur or believed to occur in Niagara County.

SECTION 5

5 Nature and Extent of Contamination

This section summarizes the analytical results for sediment samples collected in the Eighteenmile Creek AOC from 1994 to 2010 and evaluates the nature and extent of contamination. The section is organized as follows:

- Overview of the COPCs;
- Overview of the quality of applicable sediment data for the purposes of the RI;
- Description of the standards and criteria (i.e., screening criteria) used to evaluate the sampling results;
- Summary of analytical results by reach; and
- Summary of supporting data (i.e., other media).

5.1 Contaminants of Potential Concern

The LaMP for Lake Ontario identifies six critical contaminants that contribute to impairments based on their toxicity and persistence in the environment: PCBs, dioxins and furans, DDT and metabolites, dieldrin, Mirex, and mercury (Environment Canada et al. 2011). In the 1997 RAP, NYSDEC and the RAC identified the following contaminants as impacting sediments based on the results of previous investigations: pesticides, specifically DDT and metabolites; dieldrin; PCBs; dioxins and furans; and metals (NYSDEC 1997). Based on investigations in the upstream source areas, PAHs were added as COPCs as part of the RI for the Corridor Site (NYSDEC 2006s; see Appendix C). Historically, contaminants were identified as COPCs based on comparison to NYSDEC sediment screening values and evaluation of ecological impacts on fish and wildlife. Section 5.3 provides a discussion of NYSDEC's sediment screening values.

The following contaminants were evaluated as COPCs in this RI report:

- PCBs are a primary COPC because they were detected in sediments from all reaches of Eighteenmile Creek at concentrations exceeding screening criteria; some samples even exceeding the hazardous waste criterion (50 mg/kg). PCBs were also detected in tissue from fish collected from above and below Burt Dam.
- Metals are a primary COPC because select metals were detected in sediments from all reaches of Eighteenmile Creek at concentrations exceeding screening criteria. The primary metal COPCs identified by NYSDEC as part of the RI for the Corridor Site included lead, arsenic, chromium, copper, and zinc. The USEPA GLLA site characterization analyzed all sediment samples from Reach 2 to Reach 7 for TAL metals.
- PAHs are a primary COPC because they were frequently detected in select sediments samples analyzed from the Corridor Site under the NYSDEC RI at

concentrations exceeding screening criteria. The USEPA GLLA site characterization analyzed all sediment samples from Reach 2 to Reach 7 for PAHs.

- Mercury is a COPC because this contaminant is identified as critical in the LaMP for Lake Ontario. Mercury was included in the Eighteenmile Creek AOC RAP, and select sediment samples from several studies were analyzed for mercury. Mercury was not analyzed as part of the NYSDEC RI for the Corridor Site. The USEPA GLLA site characterization analyzed all sediment samples from Reach 2 to Reach 7 for mercury as part of the TAL metals analysis.
- The pesticides DDT (and metabolites) and dieldrin are COPCs because these contaminants are identified as critical in the LaMP for Lake Ontario. These pesticides were included in the Eighteenmile Creek AOC RAP, and select sediment samples from several studies, including the USEPA GLLA project and NYSDEC RI for the Corridor Site, were analyzed for pesticides.

Dioxins and furans were not analyzed as part of the NYSDEC RI for the Corridor Site because they were not detected in the ash waste samples collected during the site investigation at the former Flintkote Plant site, as described in Section 2.3 (NYSDEC 2000; see Appendix C). Therefore, the USEPA GLLA site characterization did not evaluate dioxins and furans as COPCs because the investigation focused on determining the extent of primary COPCs identified in the Corridor Site throughout the remainder of the creek.

5.2 Data Quality Evaluation

Recent studies conducted within the Eighteenmile Creek AOC (see Section 2) were evaluated to assess the usability of the sediment chemistry data for this RI. The sediment data were considered usable if the following criteria were met.

- Sampling locations were within the Eighteenmile Creek AOC and the coordinates of the locations were provided or mapped with sufficient detail so that the locations could be digitally recorded in the GIS geodatabase;
- The depths from which the samples were collected were provided or could be easily inferred based on the sampling technique (e.g., samples collected with a Ponar were assumed to be from a depth of 0 to 0.5 feet);
- Analytical data were reported for the COPCs and analytical methods and reporting limits were comparable to those used during the USEPA GLLA site characterization efforts;
- Analytical data were available in electronic format, or on tables that could be easily translated to electronic format, and could be imported to the existing RI database;
- Samples were collected under an approved sampling plan and samples were analyzed by a government laboratory or certified commercial laboratory; and
- The report indicated a data quality review process was completed.

A summary of the reports reviewed and data quality assessment is presented in Table 1. The data were imported into the RI database as described in Section 3.2.3 and checked for

transcription errors. Although historical data sets may have contained results from other media or contaminants, only sediment data for the primary COPCs for this RI were imported or entered. Some of the available electronic data contain samples collected prior to 1994, but these results were excluded because evaluation criteria could not be easily verified. Table 2 summarizes the total number of samples for each analytical method from the various studies that are included for use in this RI. Table 2a summarizes the total number of samples by reach. The totals do not include the field duplicate samples. The locations of the samples associated with each study are presented on Figure 4. The number of samples with detected COPCs are included in Tables 6 to 12 and discussed in Section 5.4. Electronic copies of the reports are provided in Appendix C.

In addition to the analytical results, data related to the sediment location and depth were also included. The sediment locations were established based on GPS coordinates provided in the individual reports, and the locations were verified on the GIS-derived Eighteenmile Creek base map developed as part of the sediment thickness survey and bathymetric studies. Each sample location was coded by reach or whether the location was in the Erie Canal or upstream. The distance of the sample location relative to the start of Eighteenmile Creek's main channel at the Erie Canal also was determined. Figure 4 shows the location of samples, color coded by study and type, along the entire length of the creek from Olcott Harbor to the start of the main channel at the Erie Canal. The figure also includes a channel center line that shows the distance, in feet, from the start for reference. Individual sample locations included in the figure are summarized on Table D-2 in Appendix D.

For each sample collected at a location, the sample start and end depths were added in units of feet, and the sample was coded as to whether the depth was surface or subsurface. Surface samples were samples collected with a start depth of less than 0.5 feet. Subsurface samples were samples collected with a start depth greater than 0.5 feet or samples that were collected at depths greater than the surface sample. The sample also was coded to indicate the type of sample collected (i.e., creek, canal, tributary, historical creek channel, or wetland). An electronic version of the RI database is provided in Appendix D. The sample results for COPCs are summarized on Table D-1.

5.2.1 PCB Total Data Usability

PCBs were analyzed as PCB Aroclors and PCB congeners. The Aroclor and congener data were both included in the RI database. Table 2 includes the number of samples from each study and reach analyzed for PCB Aroclor and PCB congeners. PCB congener samples were analyzed as part of the NYSDEC Eighteenmile Creek and Olcott Harbor Sediment Study in 1998 and Eighteenmile Creek Sediment Study in 2001 (NYSDEC 1998 and 2001a; see Appendix C). PCB congeners also were analyzed as part of USACE investigations for bioaccumulation studies in 2004 and 2010 (USACE 2004a, 2004b, 2008 and 2010; see Appendix C). Select samples for USEPA GLLA site characterization also were analyzed for PCB congeners. The analysis of the data from the 97 samples that were analyzed for both Aroclors and congeners indicate that total PCBs calculated using Aroclors did not correlate with the total PCBs estimated using the congener data. A comparison of the data showed over half of the samples had relative percent differences of over 50 percent with the total PCBs based on congener data being generally higher than the Aroclor total.

PCB Aroclor data were used for evaluating the nature and extent of contamination because the majority of the sediment samples were analyzed for Aroclors. PCB congener data were used for the bioaccumulation modeling performed by USACE as described in Section 2.3. The PCB data for total Aroclors and total congeners are presented separately on tables in this RI report and PCBs as total Aroclors are used on the figures.

5.2.2 PCB and PAH Total Concentrations

Total PCB (Aroclors) concentrations were calculated assuming a value of zero for Aroclors that were not detected in the sample. Total PCB congeners were calculated assuming a value of zero for the congeners that were not detected in the sample. The detected values were summed for each individual sample and reported as the total concentration with two significant figures to maintain laboratory accuracy.

Total PAHs were calculated by summing the detected concentrations or half the value of the reporting limit for non-detected compounds for the 16 TCL PAHs. The values were summed per individual sample and reported as the total concentration with two significant figures to maintain laboratory accuracy.

5.3 Evaluation Criteria/Sediment Guidelines

Sediment concentrations were evaluated using the NYSDEC's *Technical Guidance for Screening Contaminated Sediments* (NYSDEC 1999) as was done in previous studies. This guidance document provides sediment quality criteria for several levels of protection for non-polar organic compounds, including: (1) human health bioaccumulation, (2) wildlife bioaccumulation, (3) acute toxicity to benthic aquatic life, and (4) chronic toxicity to benthic aquatic life. These sediment quality criteria are derived using water quality criteria and equilibrium partitioning methodology calculated as a function of the organic content of the sediment. For metals, two levels of risk have been established based on aquatic toxicity: the Lowest Effect Level (LEL) and the Severe Effect Level (SEL). Sediment is considered contaminated if only the LEL is exceeded; if the SEL is exceeded, the sediment is considered severely impacted. Numerical sediment quality guidelines developed by other government agencies were evaluated by MacDonald (et al.) to establish consensus-based sediment quality standards (MacDonald et al. 2000) were also considered. These consensus-based sediment quality guidelines reflect concentrations below which harmful effects are unlikely to be observed (i.e., threshold effect concentrations).. Numerical standards related to determination of hazardous waste or soil remediation were used to evaluate high concentrations of COPCs in sediment.

The sediment quality criteria for the non-polar organic COPCs are summarized in Table 3, and the evaluation criteria for the metals are summarized in Table 4. For PCBs, PAHs, and pesticide compounds, NYSDEC screening values are normalized to organic carbon content. In order to compare screening values to sediment concentrations, the screening values were converted to units of mg/kg. The TOC results from sediments collected within the creek were averaged and the lower confidence limit of the average (i.e., 54,600 mg/kg) was used to calculate site-specific criteria (see Table 3). Preliminary screening values for the primary COPCs were derived as follows:

- PCBs have very low screening values based on human health or wildlife bioaccumulation because of their high potential to accumulate in fish. A detected PCB result would exceed these screening criteria because the detection limits were higher than the screening criteria. Therefore, the bioaccumulation values are not effective screening criteria for a nature-and-extent evaluation. PCB screening values based on aquatic toxicity are higher than the bioaccumulation values. The site-specific PCB criterion for evaluating toxicity to benthic aquatic life determined from average TOC concentrations in sediment is 1 mg/kg for chronic toxicity and 151 mg/kg for acute toxicity (see Table 3). A criterion of 1 mg/kg for PCBs is comparable to the sediment criteria used by NYSDEC in the RI for the Corridor Site (NYSDEC 2006b). NYSDEC used a sediment criterion of 0.606 mg/kg, which is based on chronic benthic toxicity, and a second screening value of 1 mg/kg based on NYSDEC's Soil Cleanup guidelines (NYSDEC 2010a). Although the soil cleanup objectives are not intended for use with sediments, NYSDEC determined they are appropriate because the deposition of contaminated sediment onto residential properties during flooding events could potentially result in direct human contact exposures. Therefore, a low site-specific screening value of 1 mg/kg and a high site-specific screening value of 151 mg/kg were selected for the nature-and-extent evaluation of PCB contamination in sediments (see Table 5).

- PCB concentrations in several samples exceed the hazardous waste criterion for PCBs of 50 mg/kg. The potential for sediment to be designated as hazardous waste is important for the evaluation of remedial alternatives. Therefore, an additional screening criterion of 50 mg/kg was chosen for the evaluation of high concentrations of PCB contamination in sediments (see Table 5).

- For the metal COPCs, including mercury, NYSDEC criteria for evaluation of aquatic toxicity are available for both the LEL and SEL (see Table 4). NYSDEC used the LEL and SEL to evaluate metals concentrations in sediments for the Corridor Site RI. Therefore, site-specific screening values of the NYSDEC LEL and SEL sediment criteria were chosen for the nature-and-extent evaluation of metals contamination in sediments (see Table 5).

- Total lead concentrations in many of the sediment samples were high enough (i.e., greater than 1,000 mg/kg) to potentially exceed a characteristic hazardous waste level (6 NYCRR 371). However, hazardous waste levels for metals are determined based on the TCLP method that involves extracting the sample with an aqueous extraction fluid to assess the leaching potential. Total concentrations do not always predict hazardous waste levels because the leaching potential of sediment is variable. Therefore, select samples with high concentrations of lead were analyzed by the TCLP method, and the results were compared to hazardous waste levels (6 NYCRR 371; see Table 5).

- NYSDEC has not established a sediment screening criterion for total PAHs in sediment. NYSDEC has criteria for evaluating acute and chronic benthic toxicity for individual PAHs. Site-specific criteria for individual PAHs were determined based on an average TOC concentration in sediments (see Table 3). To determine a site-specific criterion for total PAHs, the average of the individual PAH values was

calculated (see Table 3). NYSDEC has established a soil cleanup criterion of 500 mg/kg for total PAHs in subsurface soils (NYSDEC 2010a). This criterion was not selected because most of the PAH sediment concentrations were lower than this value. Therefore, a low site-specific criterion of 15 mg/kg was chosen for chronic benthic toxicity as the average of the values determined for individual PAHs. A high site-specific criterion of 100 mg/kg was chosen for acute benthic toxicity as the average of the values determined for individual PAHs (rounded to two significant figures). These site-specific criteria were selected for the nature-and-extent evaluation of PAH contamination in sediments for this RI (see Table 5).

- For pesticide COPCs in sediment, NYSDEC has established criteria for evaluating acute and chronic benthic toxicity for total DDT and metabolites and benthic toxicity for dieldrin. As with the other non-polar organics, NYSDEC has very low screening values for these contaminants based on human health or wildlife bioaccumulation, which are below typical detection limits. Therefore, site-specific criteria for the pesticides were determined for benthic toxicity based an average TOC concentration in sediments (see Table 5).

5.4 Sediment Results by Reach

Sediment results included in the RI database described in Section 5.2 are summarized by reach and type for each COPC and TOC in Tables 6 through 12. The number of samples and frequency of detected COPCs are included along with statistical average, minimum, and maximum values. The statistical analysis was conducted only using the detected results because using a value of zero for non-detect results would bias the results low. Some statistical analysis use values of half the detection limit to represent concentrations for non-detect results. However, the approach was not taken for this RI database because the values used for the statistical analysis were compiled for multiple studies and there was insufficient information to determine whether the detection limit values were comparable. In addition, most of the organic results statistics were performed on the total sum of individual concentrations and a detection limit for this total concentration was not reported.

The sediment results were also compared to the low and high site-specific sediment criteria presented on Table 5. In addition, the PCB and lead sediment results also were compared to hazardous waste criteria that are included on Table 5. If a criterion was established, the number and percentage of results exceeding the criterion were also calculated and are summarized in Table 12.

Sediment results for the primary COPCs (total PCBs, lead, and total PAHs) are presented by depth on Figures 6 and 7. PCBs, lead, and PAHs were mapped because these contaminants were most frequently analyzed for and detected. For metals, the results for copper, chromium (total), and zinc tend to correlate with the concentrations of lead with an R-square value of greater than 0.75 for a simple linear regression. Arsenic and mercury are present at much lower concentrations and the results do not correlate well. The concentrations at depth are color coded based on a range of concentrations determined by the distribution of the results and sediment screening criteria. Figure 6 presents location and color-coded concentration for the cores collected in Reaches 2 and 3 during the USEPA GLLA site characterization. Figure 7 presents all the results in the RI database for Reaches 4

to 10, with the length of the sample on the vertical axis (assuming the top of sediment is zero) and the location of the sample on the horizontal axis as distance in feet from the start of the main channel of creek at the Erie Canal.

5.4.1 Reach 1

Reach 1 is located from Burt Dam downstream to Lake Ontario and its length encompasses the original AOC as designated by the IJC. The first comprehensive study of Reach 1 was conducted by NYSDEC in 1994 and included collection of both surface and subsurface sediments samples. The investigation found that the subsurface sediments contained higher concentrations of metals, but PCBs were only detected in the surface sediments. Subsequent studies by USACE focused only on surface sediments and included analysis of PCB congeners to assess the bioaccumulation potential of the surface sediments. The study indicated that metals and DDE presented a potential chronic toxicity risk relative to selected freshwater toxicity threshold values and that DDE was bioaccumulating at higher than anticipated levels (USACE 2008; see Appendix C). PCBs were found to be highly bioavailable and predicted to cause wildlife bioaccumulation risks.

Sediment concentrations in Reach 1 have the lowest average concentrations for PCBs and metals. PCBs (total Aroclors) were detected in 56 percent of the samples and all of the concentrations were below the screening criteria (see Tables 6a and 12). Total PCB congeners were detected at slightly higher concentrations than PCB Aroclors and sediment concentrations in two samples were just above the low screening criteria (see Table 6b). The maximum concentrations for PCBs in Reach 1 are over 20 times lower than the reaches upstream of Burt Dam.

Metals were detected in most of Reach 1 sediment samples with average and maximum concentrations 10 to 15 times lower than the reaches upstream of Burt Dam (see Table 7a to 7e). Concentrations of lead, copper, and zinc exceeded the LEL screening criteria in 60 to 70 percent of samples and the SEL screening criteria in 30 to 50 percent of the samples. Chromium concentrations in most of the Reach 1 sediments exceeded the LEL screening criteria but less than 20 percent exceeded the SEL screening criteria. Eight samples contained arsenic concentrations exceeding the LEL screening criteria and none exceeded the higher SEL screening criteria. The numbers of samples that exceeded screening criteria for metals in Reach 1 are about 30 percent less than the reaches above Burt Dam (see Table 7a to 7e and 12).

Samples from Reach 1 were not analyzed for PAHs (see Tables 2 and 2a).

The concentrations of mercury and DDT metabolites in sediments are lower in Reach 1, but on the same order of magnitude as concentrations found in the upstream sediments (see Table 9 and 10a).

5.4.2 Reaches 2 and 3

Reaches 2 and 3 comprise the impoundment area behind Burt Dam. Sediments in the reservoir were sampled by NYSDEC in 1994 and 1998. In 1994, one sediment core was collected in Reach 2. The results indicated that PCBs and metals concentrations were higher in the subsurface sediments. In 1998, sediment cores were collected at multiple locations within the impoundment and the cores were subsampled at smaller intervals and analyzed

for all COPCs. Sediment from one core was also dated using radiochemical methods. Radiochemistry dating of one core (6C) indicated that sediment at 2 feet (64 to 68 cm) in depth was deposited in 1963-64 based on peak concentration of Cesium 137 activity, and sediment below 2.5 feet (78 cm) was deposited before 1954 based on the lowest detected concentration of Cesium 137. The deposition rate between 1954 and 1997 was calculated to be about 1.8 cm/year (0.7 inches per year) and the deposition rate from 1963 to 1997 was calculated to be about 1.9 cm/year (NYSDEC 2001a; see Appendix C). The maximum concentrations of PCBs were detected in subsurface sediments between 1 and 2 feet deep (i.e., 40 to 56 cm) coinciding with deposition in the late 1960s to the mid-1970s. The maximum concentration of lead is deeper than PCBs in many locations (for example core 6C lead was at a maximum concentration between 70 and 80 cm) coinciding with deposition in the early 1950s to the mid-1960s.

The next significant sampling in the Burt Dam impoundment was conducted for the USEPA GLLA site characterization in 2010 (see Table 2 and 2a). The sediment cores collected for the USEPA GLLA site characterization are shown on Figure 6. Maximum concentration profiles for PCBs, PAHs and lead at approximately 1-foot depth intervals are presented for each sediment core. PCB concentrations profiles of the sediment from the 2010 cores are consistent with the 1998 study. The maximum concentrations of PCBs were for samples between 2 and 4 feet and the concentrations in the deeper sediments dropped to below 1 mg/kg. The surface sediments in Reach 2 contained PCB concentrations of less than 1 mg/kg. The surface sediments in Reach 3 had higher concentrations than Reach 2 and one sample exceeded screening criteria. In Reach 3, the higher PCB concentrations were detected in shallower core samples. These findings are consistent with the 1998 study and suggest a greater mixing of sediment upstream from the dam.

Lead concentration profiles in the cores collected as part of USEPA GLLA site characterization are similar to the PCB profiles and comparable to the 1998 results. In Reach 2, lead concentrations exceeded 1,000 mg/kg in 40 samples from the subsurface intervals at depths ranging from 2 to 10 feet. As with PCBs in Reach 3, elevated lead concentrations were detected in the shallow samples near the surface with one sample exceeding the hazardous criterion of 1,000 mg/kg. However, high lead concentrations were also found at greater sediment depths than the PCBs with lead concentrations exceeding 1,000 mg/kg in 17 samples from the subsurface intervals at depths ranging from the 0.5 to 8 feet. Nine samples from Reaches 2 and 3 with high lead concentrations were submitted for TCLP metals analysis and all concentrations were below the 5 mg/L hazardous waste level as defined by the Environmental Conservation, Division of Solid and Hazardous Materials, Identification and Listing of Hazardous Wastes (6 NYCRR 371).

PAH concentrations showed less variability with depth than the PCBs and lead concentration profiles. Concentrations of PAHs in sediment in these reaches are less than 40 mg/kg. These results are comparable to the 1998 findings.

A total of 127 samples were collected in Reach 2 and 80 samples were collected in Reach 3 (see Table 2a). PCBs (total Aroclors) were detected in 90 percent of the samples in Reach 2 and 79 percent of the samples in Reach 3, and PCB concentrations exceeded the screening criteria of 1 mg/kg in 29 and 43 percent of the samples in Reach 2 and Reach 3, respectively (see Tables 6a and 12). Maximum concentrations of PCBs were similar for both reaches and none of the concentrations exceeded the higher screening criteria of either 50 or 151 mg/kg.

Metals were detected in all of the sediment samples with average and maximum concentrations similar in both reaches (see Table 7a to 7e). Concentrations of lead, copper, and zinc exceeded both LEL and SEL screening criteria in over 90 percent of samples. The numbers of samples with concentrations that exceeded screening criteria are slightly less in Reach 3. Chromium concentrations exceeded LEL screening criteria for over 90 percent of the samples but only 70 percent exceeded the SEL screening criteria. Arsenic concentrations exceeded LEL screening criteria in 75 percent of the samples but do not exceed higher SEL screening criteria. The numbers of samples that exceeded screening criteria for metals in Reaches 2 and 3 are comparable to other reaches above Burt Dam (see Table 7a to 7e and 12). Of the nine samples submitted for TCLP metals analysis, lead was detected in the extract but concentrations were below hazardous waste levels (6 NYCRR 371). TCLP results are included in Appendix D in Table D-7.

PAHs were detected in over 95 percent of sediment samples collected from Reaches 2 and 3 and the average and maximum concentrations are lower than Reaches 4 and 7 that are downstream of more populated areas (e.g., Newfane and Lockport). Concentrations of PAHs exceed the low chronic screening criteria in only seven samples and did not exceed the higher acute screening criteria (see Table 8).

The concentrations of mercury and DDT metabolites in sediments in Reaches 2 and 3 are similar to concentrations found in the sediments in Reaches 4 to 6 (see Table 9 and 10a). Mercury concentrations exceeded LEL screening criteria in most sediment samples from Reaches 2 and 3 and 50 to 60 percent of the samples also exceeded higher SEL screening criteria. Concentrations of DDT metabolites in sediment samples from Reaches 2 and 3 exceed low concentration screening criteria of 0.055 mg/kg in four subsurface samples collected by NYSDEC in 1994.

5.4.3 Reach 4

Reach 4 includes the bedrock/gravel channel immediately downstream of Newfane Dam and extends to approximately 0.3 miles north of Ide Road. Compared to the other reaches, Reach 4 has a relatively steep change in elevation and is shallower with less sediment (see Figure 5). Reach 4 was sampled as part of the USEPA GLLA site characterization in 2010.

Figure 7 shows concentration range and depth for PCBs, PAHs, and lead at sampling locations in Reaches 4 to 10. Reach 4 compares most directly with Reach 6 in terms of physical characteristics. Figure 7 shows that compared to Reach 6, Reach 4 has similar PCB distributions, but higher PAH and lead concentrations.

PCBs (total Aroclors) were detected in 19 of the 22 samples collected in Reach 4, but PCBs exceeded the screening criteria of 1 mg/kg in only five samples. The maximum concentration of PCBs in Reach 4 is similar to Reaches 2 through 6 and no concentrations exceeded the higher screening criteria of either 50 or 151 mg/kg.

Metals were detected in all of the Reach 4 sediment samples with the average and maximum concentrations slightly lower than the other reaches upstream of Burt Dam (see Table 7a to 7e). Concentrations of lead, copper, and zinc exceeded both LEL and SEL screening criteria in over 90 percent of samples. Chromium concentrations in 90 percent of the samples exceeded the LEL screening criteria, but exceeded the SEL screening criteria in only 27 percent of the samples. Arsenic concentrations exceeded the LEL screening criteria in less

than 20 percent of the samples, but did not exceed higher SEL screening criteria. The percentage of samples that exceeded the respective metals screening criteria is slightly lower than for the other reaches upstream of Burt Dam (see Table 7a to 7e and 12). Lead concentrations in three samples exceeded the hazardous waste criteria of 1,000 mg/kg. One sample with high concentration lead was analyzed for TCLP metals and the results did not exceed hazardous waste criteria of 5 mg/L (see Table D-7).

PAHs were detected in all Reach 4 sediment samples with the average and maximum concentrations higher than other upstream reaches. The higher PAH concentrations may be because Reach 4 is downstream of the more populated areas of Newfane. Concentrations of PAHs exceeded the lower chronic screening criteria in only six samples and one sample containing 250 mg/kg of PAHs exceeds the higher acute screening criteria (see Table 8). The sample was collected at the downstream end of the multi-use industrial facility (Forrest Creek Business Park and Storage Center) located south of Ide Road in Newfane (see Appendix B).

The concentrations of mercury and DDT metabolites in Reach 4 sediments are similar to concentrations found in the other reaches upstream of Burt Dam (see Tables 9 and 10a). Mercury concentrations exceeded LEL screening criteria in most Reach 4 sediment samples but did not exceed the higher SEL screening criteria. Concentrations of DDT metabolites did not exceed screening criteria.

5.4.4 Reach 5

Reach 5 consists of the impoundment immediately upstream of Newfane Dam. Sediments in the reservoir were sampled by NYSDEC in 1998. Sediment cores were collected at three locations and the cores were subsampled at multiple intervals and analyzed for all COPCs. Sediment from one core was also dated using radiochemical methods.

Radiochemistry dating of one core (7C) indicated that sediment at 0.75 feet (20 to 24 cm) in depth was deposited in 1963-64 based on peak concentration of Cesium 137 activity and sediment below 1 foot (328 cm) was deposited before 1954 based on the lowest detected concentration of Cesium 137. Both of these time indicators are consistent with a net sediment accumulation rate of about 0.65 cm/year (NYSDEC 2001a; see Appendix C). The highest concentrations of PCBs and metals were found in the surface interval and relatively low concentrations were found in the deeper sediments.

The next significant sampling event behind Newfane Dam was conducted during the USEPA GLLA site characterization in 2010 (see Table 2 and 2a).

Figure 7 shows concentration range and depth for PCBs, PAHs, and lead at sampling locations in Reaches 4 to 10. Reach 5 compares most directly with Reaches 2 and 3 as shown on Figure 6. Figure 7 shows that PCB concentrations in the sediment accumulated behind Newfane Dam are lower than concentrations in sediment accumulated behind Burt Dam. PCBs were detected less frequently in the Reach 5 subsurface sediment and concentrations were typically below 1 mg/kg. Similar to Reach 3, higher PCB and lead concentrations were detected in shallower core samples and PAH concentrations showed less variability with depth than the PCBs and lead concentration profiles. The sample core results collected under the USEPA GLLA site characterization in 2010 are comparable to the findings of the 1998 NYSDEC study.

A total of 82 samples have been collected in Reach 5 (see Table 2a). PCBs (total Aroclors) were detected in about 50 percent samples, but less than 20 percent of the samples contained concentrations that exceeded the screening criteria of 1 mg/kg and none exceed the higher screening criteria of either 50 or 151 mg/kg. The maximum concentration of PCBs is lower than detected in other reaches upstream of Burt Dam.

Metals were detected in all Reach 5 sediment samples with the average and maximum concentrations slightly higher than the other reaches upstream of Burt Dam (see Table 7a to 7e). Concentrations of lead, copper, and zinc exceeded LEL screening criteria in over 85 percent of samples and exceeded the SEL screening criteria in 75 percent of samples. Chromium concentrations exceeded LEL screening criteria for over 85 percent of samples but less than 50 percent exceeded the SEL screening criteria. Arsenic concentrations exceeded LEL screening criteria in 70 percent of the samples and only one sample concentration exceeds the higher SEL screening criteria. The numbers of samples that exceed screening criteria for metals in Reach 5 is higher for arsenic but slightly lower for the other metals compared to other reaches upstream of Burt Dam (see Table 7a to 7e and 12). Lead concentrations in 11 samples exceeded the hazardous waste criteria of 1,000 mg/kg. Ten samples with high lead concentrations were analyzed for TCLP metals and the results did not exceed hazardous waste criteria (see Table D-7).

PAHs were detected in 80 of the 81 sediment samples analyzed from Reach 5. The average and maximum concentrations of PAH are lower than reaches upstream of Reach 5. Concentrations of PAH exceed the low chronic screening criteria in three samples and did not exceed the higher acute screening criteria (see Table 8).

The concentrations of mercury and DDT metabolites in Reach 5 are similar to concentrations found in the sediments from the other reaches upstream of Burt Dam (see Table 9 and 10a). The maximum mercury concentration is slightly higher in Reach 5 compared to other reaches. Mercury concentrations exceed the LEL screening criteria in most sediment samples and 60 percent exceed the higher SEL screening criteria. Concentrations of DDT metabolites did not exceed screening criteria.

5.4.5 Reach 6

Reach 6 includes the gravel channel upstream of the Newfane Dam impoundment. Reach 6 is split into two sections (i.e., 6.1 and 6.2) based on the Jaques Road crossing (see Figure 2). The delineation between Reaches 6 and 7 was originally determined based on the physical characteristics of the creek bottom (see Appendix A). Based on data collected during the USEPA GLLA site characterization in 2010, it appears the difference between Reaches 6 and 7 is due to the influence of the East Branch of Eighteenmile Creek, that enters the main branch at about 5.3 miles (see Figure 5). Compared to Reach 7, Reach 6 is shallower with less sediment depositional areas.

Figure 7 shows that compared to Reach 7, the sediment concentrations of PCBs, PAHs, and lead are generally lower in Reach 6. Higher concentrations of PAHs and lead are only evident downstream of the East Branch, which may indicate that the surface runoff from the eastern watershed may be a contributing source of these contaminants.

PCBs (total Aroclors) were detected in over 75 percent samples collected in Reach 6, but PCB concentrations exceed the screening criteria of 1 mg/kg in less than 20 percent of the

samples. None of the concentrations exceeded the higher screening criteria of either 50 or 151 mg/kg. The maximum concentration of PCBs in sediment is similar to Reaches 2 to 5.

Metals were detected in all of the Reach 6 samples with the average and maximum concentrations slightly lower than the other reaches upstream of Burt Dam (see Table 7a to 7e). Concentrations of lead, copper, and zinc exceeded LEL screening criteria in over 93 percent of samples and exceeded the SEL screening criteria in over 75 percent of samples. Chromium concentrations exceeded LEL screening criteria in over 90 percent of samples but only 29 percent of the concentrations exceeded the SEL screening criteria. Arsenic concentrations exceeded LEL screening criteria in 23 percent of samples but do not exceed higher SEL screening criteria. The numbers of samples that exceed screening criteria for metals in Reach 6 are similar to other reaches upstream of Burt Dam (see Table 7a to 7e and 12). Lead concentrations in nine samples exceeded the hazardous waste criteria of 1,000 mg/kg. One sample with high lead concentrations collected almost to Reach 5 was analyzed for TCLP metals and the results exceeded hazardous waste criteria (see Table D-7). This was only location below the Corridor Site that contained concentrations that exceeded the hazardous level for lead, hazardous waste level (6 NYCRR 371) of 5 mg/L.

PAHs were detected in all sediment samples from Reach 6 and show a relatively uniform distribution along the length of the reach (see Figure 7). The average and maximum concentrations of PAHs are slightly higher than other upstream reaches. Concentrations of PAHs in sediment exceeded the chronic screening criteria in only two samples and exceeded the higher acute screening criteria in one sample (see Table 8).

The concentrations of mercury and DDT metabolites in Reach 6 sediments are similar to concentrations found in the sediments in other reaches upstream of Burt Dam (see Table 9 and 10a). The maximum concentration of mercury in sediments is slightly lower in Reach 6 compared other reaches. Mercury concentrations exceed LEL screening criteria in most sediment samples and exceed the higher SEL screening criteria in 11 samples. Concentrations of DDT metabolites did not exceed screening criteria.

5.4.6 Reach 7

Reach 7 includes the meandering section downstream of the Niagara Escarpment. Reach 7 is split into three sections (i.e., 7.1, 7.2, and 7.3) based on Ewings and Stone Road crossings. Reach 7 is closest to the Corridor Site and is influenced by State Pollutant Discharge Elimination System (SPDES) discharges from the Lockport Wastewater Treatment Plant and VanDemark Chemical, Inc., located on the opposite bank from the treatment plant. Gulf Creek drains into the main channel of Eighteenmile Creek in Reach 7 just downstream of the Lockport Wastewater Treatment Plant (see Figure 2).

Reach 7 is deeper and has more depositional areas than Reach 6. Reach 7 was sampled as part of the NCSWCD PCB trackdown investigation in 2006 (Reach Section 7.3 only) and by during the USEPA GLLA site characterization in 2010 (see Table 2).

Figure 7 shows that compared to Reaches 4 to 6, the concentrations of PCBs, PAHs and lead are higher in Reach 7 sediments and several high concentration areas (i.e., "hot spots") were found. Because SPDES and Gulf Creek outfalls are located so close to the escarpment, it is difficult to separate potential specific contaminant contributions from these sources.

PCBs (total Aroclors) were detected in 105 of the 121 samples (87 percent) collected in Reach 7. The maximum concentration of PCBs that was detected in the creek downstream of the Corridor Site was collected from Reach 7. PCB concentrations exceed the screening criteria of 1 mg/kg in 70 percent of the samples and the hazardous waste screening criteria of 50 mg/kg in six samples. No PCB sample concentrations exceeded the higher screening criteria of 151 mg/kg. The 2006 and 2009 locations were re-sampled in 2010 to confirm the high concentration of PCBs. Although the PCBs concentrations at the confirmation locations were lower, higher PCB concentrations were identified at new locations. The results indicate the high variability of the PCB concentrations in the Reach 7 sediment.

Metals were detected in all Reach 7 sediment samples with the average and maximum concentrations at similar levels to the other upstream reaches (see Table 7a to 7e). Concentrations of lead, copper, and zinc exceeded LEL and SEL screening criteria in almost all of the samples. Chromium concentrations exceed LEL screening criteria in almost all of the samples but exceed the SEL screening criteria in only 60 percent of samples. Arsenic concentrations exceed LEL screening criteria in 54 percent of samples but did not exceed higher SEL screening criteria. The number of samples with concentrations exceeding screening criteria for metals in Reach 7 is similar to other reaches above Burt Dam (see Table 7a to 7e and 12). Lead concentrations in 15 samples exceeded the hazardous waste criteria of 1,000 mg/kg. Two samples with high concentrations of lead were analyzed for TCLP metals and the results did not exceed hazardous waste criteria of 5 mg/L.

PAHs were detected in all sediment samples from Reach 7. The average and maximum concentrations are higher than other upstream reaches and similar to Reaches 4 and 10. The higher concentrations of PAH in these reaches may be because the reaches are downstream of the more populated areas. The highest concentration of PAHs was detected in the sample downstream of the Corridor Site. The elevated PAH concentrations in this reach also may be related to the SPDES outfalls or Gulf Creek. Concentrations of PAHs exceed the chronic screening criteria in 39 of the 66 samples and exceed the higher acute screening criteria in three samples (see Table 8).

The concentrations of mercury and DDT metabolites in the Reach 7 sediments are higher than concentrations found in Reaches 2 to 6 (see Table 9 and 10a). Mercury concentrations exceed LEL screening criteria in most sediment samples and exceed the higher SEL screening criteria in 33 percent of the samples. Concentrations of DDT metabolites did not exceed screening criteria. The highest concentration of DDT metabolites was reported in the sediment with the highest concentration of PCBs. The elevated DDT concentrations may be an artifact from interference with the high concentration of PCBs during analysis.

5.4.7 Reaches 9 and 10

Reaches 9 and 10 are upstream of the Niagara Escarpment and downstream of the Erie Canal. Reach 9 was designated separately from Reach 10 at Harwood Street because NYSDEC used this point to denote the downstream extent of the Corridor Site (see Figure 2). This portion of the Eighteenmile Creek is considered the upstream source area and sediment samples were collected in these reaches during several historical studies (see Table 2). These reaches were not sampled during the USEPA GLLA site characterization project; however, the historical data were compiled for this RI (see Section 5.2).

Table 2a summarizes the total number of samples collected in Reaches 9 and 10. Samples collected in Reach 10 in the Headwater East Branch are designated as "10 E" or Creek E in the tables and figures. Most of the samples were only analyzed for PCBs and lead (i.e., 25 samples in Reach 9, 125 samples in Reach 10, and 13 samples in the Headwater East Branch; see Table 2a). Of these samples, 60 percent were analyzed for the other COPC metals; 25 percent were analyzed for PAHs and pesticides and 8 percent were analyzed for mercury (see Tables 2a, and 7b to 7c).

Figure 7 depicts the high density of samples collected in Reaches 9 and 10 compared to the reaches below the Niagara Escarpment. Sediments collected upstream of Clinton Street closer to the Erie Canal have lower concentrations of PCBs and lead than the sediments below Clinton Street dam. PCB and lead concentrations generally increase downstream of the Clinton Street Dam and former United Paperboard property with the highest concentration of PCBs detected just below the Clinton Street dam. High concentrations of PCBs also were found in the mill race adjacent to the former Flintkote Plant property (see Figure 2 inset). These samples results are shown on Figure 7 between 2,500 and 3,500 feet downstream of the Erie Canal.

PCBs (total Aroclors) were detected in 85 percent of the samples collected in Reaches 9 and 10. The highest concentrations of PCBs in Eighteenmile Creek were detected in Reaches 9 and 10. PCB concentrations exceeded the screening criteria of 1 mg/kg in 40 percent of the samples and also exceeded the higher screening criteria of 151 mg/kg in five samples. PCB concentrations exceeded the hazardous waste criteria of 50 mg/kg in 11 of the samples. The concentrations range from 50 to 1,400 mg/kg with the highest concentration in sediments just below Clinton Street Dam and in the mill race. The elevated levels of PCBs found below the Clinton Street Dam indicate a potential source present downstream of the dam or in the vicinity of the dam.

Lead was detected in all sediment samples in Reaches 9 and 10 with the higher concentrations in Reach 10. Concentrations of lead, copper, and zinc exceeded LEL and SEL screening criteria in most of the samples. Concentrations of chromium and arsenic in sediments exceeded LEL screening criteria in about 60 percent of the samples but exceeded the SEL screening criteria in less than 10 samples (see Table 7a to 7e and 12). Lead concentrations in 28 samples exceeded the hazardous waste criteria of 1,000 mg/kg. Select samples with concentrations of lead greater than 1,000 mg/kg were analyzed for TCLP methods to determine if the sample could be classified as hazardous waste. Seven samples in Reach 10 contained concentrations that exceeded the hazardous level for lead, hazardous waste level of 5 mg/L.

PAHs were detected in all 40 sediment samples from Reaches 9 and 10. The average and maximum concentrations are higher than other upstream reaches and similar to Reaches 4 and 7. The higher concentrations of PAHs in these reaches may be because they are downstream of the more populated areas. Reach 10 had the highest concentration of PAHs in a sediment sample in Eighteenmile Creek. The sample was collected in a mill race adjacent to the former Flintkote Plant site property. Concentrations of PAHs in sediment exceeded the chronic screening criteria in 32 percent of the samples and exceeded the higher acute screening criteria in 5 percent of the samples (see Table 8).

The concentrations of mercury and DDT metabolites in Reaches 9 and 10 are similar to concentrations found in the sediments in other reaches upstream of Burt Dam (see Table 9 and 10a). Mercury concentrations exceeded LEL screening criteria in most sediment samples and exceeded the higher SEL screening criteria in 30 percent of the samples. Concentrations of DDT metabolites did exceed the low screening criteria of 0.055 mg/kg in the six samples collected as part of NYSDEC SRI in 2007 and the two samples collected by NYSDEC in the early sediment investigations. All samples were at the surface except for one sample collected at 1 to 1.5 feet.

5.4.8 Erie Canal and Upstream

The Erie Canal and creek sediments upstream of the Erie Canal have been investigated as potential source areas during several historical studies (see Table 2). These reaches were not sampled during the USEPA GLLA site characterization project; however, the historical data were compiled for this RI (see Section 5.2). Historical data for the Erie Canal and upstream samples were included only if the samples were part of another investigation of Eighteenmile Creek. Other data from investigations related to the canal were not included in the report.

PCBs (total Aroclors) were detected in 94 percent of the samples collected from the Erie Canal and were not detected in the upstream sediments. The highest upstream concentration of PCBs (310 mg/kg) was detected in a sediment sample collected near the locks in April 2005. A total of nine samples were collected as part of the RI of the New York State Electric and Gas Substation at South Transit Street and State Road in the city of Lockport, Niagara County, New York. PCB concentrations exceeded the screening criteria of 1 mg/kg in about 50 percent of the samples and exceeded the hazardous waste screening criteria of 50 mg/kg in three samples. PCB concentrations in only one sample exceeded the higher screening criteria of 151 mg/kg.

Metals were also detected in the sediment from the Erie Canal and upstream locations. Concentrations of lead, copper, and zinc exceeded LEL screening criteria in most of the samples and the SEL screening criteria in about 50 percent of the samples. Concentrations of chromium and arsenic in sediments exceeded LEL screening criteria in about 50 percent of the samples but did not exceed the SEL screening criteria (see Tables 7a to 7e and 12). Lead concentrations did not exceed the hazardous waste criteria of 1,000 mg/kg.

PAHs were detected in all 15 sediment samples from the Erie Canal and upstream locations. The average and maximum concentrations are lower than many of the downstream reaches and similar to Reaches 2 and 5. Concentrations of PAHs in sediment exceeded the chronic screening criteria in four samples and did not exceed the higher acute screening criteria (see Table 8).

The concentrations of mercury and DDT metabolites in the Erie Canal and upstream locations are similar to sediment concentrations in downstream reaches (see Table 9 and 10a). Mercury concentrations exceeded LEL screening criteria in most sediment samples in the canal but did not exceed the higher SEL screening criteria. Concentrations of DDT metabolites in sediment samples from the Erie Canal and upstream did not exceed screening criteria.

5.4.9 Sediment – Tributaries

The East Branch of Eighteenmile Creek, Gulf Creek, and several small unnamed tributaries were sampled as part of the NYSDEC 1998 and the USEPA GLLA 2010 investigations to determine if major tributaries could be a potential source of contamination to the main channel (see Table 2). Additional sediments farther upstream of Gulf Creek were collected by NYSDEC as part their investigation of the Old Upper Mountain Road site, but additional investigations of the Gulf Creek sediment are ongoing (EA Engineering 2011).

Low levels (less than 1 mg/kg) of PCBs were detected in two sediment samples; one sample from a small unnamed tributary in Reach 7 and one sample from the upstream portion of Gulf Creek. PCBs were not detected in any of the East Branch samples. Higher concentrations of lead and PAHs were also found in the Gulf Creek samples, but levels were comparable to sediments collected from Reach 7.

Concentrations of the other COPCs in the tributary sediment samples are comparable to or lower than sediments in the main channel (see Tables 7 to 10).

5.5 Other Media

5.5.1 Soils

Soil samples from bank areas have been sampled extensively during several investigations. Soil samples collected in residential backyards of Water Street were analyzed by NYSDEC as part of Corridor Site RI (NYSDEC 2006a; see Appendix C). The results are summarized in Table 13. PCBs and lead were detected at levels exceeding the screening criteria and confirmed that contaminated sediment could be deposited on the banks during flooding events. Lead concentrations in 11 samples exceeded the hazardous waste criteria of 1,000 mg/kg.

To assess this potential downstream of the Corridor Site, soils from historical creek channels and wetlands were sampled during the USEPA GLLA site characterization in Reaches 4 to 7 (see Table 2). PCBs were detected in 81 percent of the soil samples collected as part of the USEPA GLLA site characterization but only three locations had PCB concentrations just greater than the 1 mg/kg screening criteria (see Table 6a).

Concentrations of the COPCs in the soil samples collected during the USEPA GLLA site characterization are comparable to or lower than sediments in the main channel (see Tables 7 to 10). The soil results for the other COPCs indicate that bank soils have not been impacted because the maximum concentrations in the soils were much lower than the sediments concentrations and higher screening criteria were not exceeded in any of the samples for organic COPCs, such as PAHs and pesticides. For metals, the sediment concentrations exceeded the higher screening in much less than half the samples.

Extensive surface and subsurface soil sampling of the properties adjacent to the Corridor Site was completed as part of the NYSDEC RI and SRI (NYSDEC 2006a and EEEPC 2009a; see Appendix C). The results are summarized in the reports provided in Appendix C and will not be discussed in this section.

5.5.2 Surface Water

Additional studies have examined the suspended solids in surface water in the canal to determine if the canal is a potential source of PCBs to Eighteenmile Creek (NYSDEC 2010b; see Appendix C). PCBs were not detected in water from the Barge Canal but were detected in the Eighteenmile Creek water column downstream of areas of known sediment contamination below the Clinton Street dam and the Corridor Site. The findings related to whether the PCBs were dissolved or associated with suspended solids was inconclusive.

As part of the LaMP for Lake Ontario, the USEPA has conducted semiannual monitoring of surface water discharge from Eighteenmile Creek and several other tributaries (USEPA 2011). The current analytical program includes PCBs, mercury, and total suspended solids. Earlier monitoring events included DDT metabolites (2002 to 2006) and dioxins and furans (2002 to 2003). NYSDEC evaluated the monitoring data from 2002 to 2008 to provide estimates of loading of synthetic chemicals into Lake Ontario from several New York tributaries with special emphasis on dioxins and furans (NYSDEC 2009a; see Appendix C). The data indicate that since 2002, the Eighteenmile Creek had the highest PCB concentrations in surface water relative to other major tributaries to Lake Ontario.

5.5.3 Groundwater

A groundwater investigation in the Corridor Site was completed as part of the NYSDEC RI and SRI (NYSDEC 2006a and EEEPC 2009a; see Appendix C). The results are summarized in the reports provided in Appendix C and will not be discussed in this section. Concentrations of contaminants found in the groundwater likely represent background concentrations in this area of Lockport. Groundwater is not identified as a source because no site-related groundwater contamination of significant concern was identified during the RI/SRI (NYSDEC 2010a). No other groundwater investigations were identified relative to the Eighteenmile Creek AOC.

5.5.4 Tissue

A bioaccumulation and ecological risk model, developed using the *Trophic Trace* food web bioaccumulation model, is presented in the *Bioaccumulation Modeling and Ecological Risk Assessment Report* (ERS and USACE 2012; see Appendix C). The report also summarizes the available fish tissue data. Tissue concentrations in fish collected from upstream and downstream of Burt Dam have shown elevated concentrations of PCBs in all historical studies completed since the 1990s.

SECTION 6

6 Contaminant Fate and Transport

6.1 Contaminant Sources and Release Pathways

The Eighteenmile Creek has been affected by numerous potential sources of contamination including industrial and municipal wastewater discharge, inactive hazardous waste sites, combined sewer overflows (CSOs), and the Erie Canal. The Eighteenmile Creek AOC RAP (NYSDEC 1997, Chapter 5) provides an overview of potential contamination sources to the creek. The RAP identifies upstream sediments as a source of contamination to sediments in the AOC below Burt Dam. Subsequent upstream source investigations focused on the historical industrial operations in the Eighteenmile Creek Corridor Site and the Erie Canal. The potential sources and the release pathways for PCBs, metals (particularly lead) and PAHs are discussed in the following sections.

6.1.1 Historical Industrial Waste Sites

Land use of properties within the Eighteenmile Creek investigation area included manufacturing operations (e.g., paper mill, box factory, boat building, and pulp mill) starting as early as the mid-1880s. The findings from source investigations of four of these properties in the Corridor Site (i.e., the former Flintkote Plant site, United Paperboard, White Transportation, and Upson Park) are presented below for the primary COPCs (i.e., PCBs, metals, and PAHs) (see Figure 2, inset). No upstream sources were identified for mercury or DDT metabolites.

Fill Areas

Extensive areas of fill have been identified in the Corridor Site and adjacent properties. The fill material consists primarily of various colored ash and cinder material containing glass, coal, coke, slag, buttons, metal, ceramic, rubber, and brick (commonly called "cinder fill" in reports). Where encountered, the thickness of the fill material ranged from 0.9 to 24.9 feet (NYSDEC 2010a; see Appendix C). A dark gray to black, unconsolidated slag material was also encountered at all properties (commonly called "slag fill" in the reports).

The former Flinkote Plant Site contains more than 46,500 cubic yards of ash fill including up to 10 feet of ash fill along the banks of Eighteenmile Creek. Ash fill was also found on the "Island," area between the mill race and creek, and the western (Water Street side) creek bank (see Figure 2, inset). Portions of the fill including the "Island" and western creek bank are characterized as hazardous waste based on lead concentrations that exceed the TCLP criteria (NYSDEC 2010a; see Appendix C).

Ash fill was also observed throughout the former United Paperboard Company property on both sides of the creek. Elevated lead concentrations were found in a ridge of red-brown cinder fill on the creek bank south of the Clinton Street dam. The highest PCB concentration (630 mg/kg) was detected in the near surface sample collected from a layer of ash fill from the southeast corner of the property near Clinton Street.

Extensive slag fill and red-brown cinder fill were observed in Upson Park and former White Transportation property. The reddish-brown ash-like fill was observed in the embankment along Headwaters West Branch and fragments of slag fill were found in sediments in Headwaters East Branch. Elevated lead concentrations were detected in the ash fill samples from both sites but not at hazardous levels. PCBs were found in the subsurface fill areas in Upson Park at concentrations that exceed screening criteria.

Based on the extent of the elevated lead concentrations, particularly the red-brown cinder fill, the fill is a potential source of lead to the Eighteenmile Creek sediments. The historic use of fill in the Corridor Site may be a primary source of historical lead contamination in the lower reaches and the ongoing erosion and surface runoff may provide an ongoing source of lead to the creek. High concentrations of PCBs were detected in isolated samples from several fill areas. However, the high PCB concentrations in the fill did not correlate with high lead concentrations. There is no evidence of how the fill was contaminated with PCBs or the extent of PCB contamination in the fill. The results from the RI/SRI at Corridor Site indicate that the fill areas are not the primary source of PCB contamination to Eighteenmile Creek sediments, but the potential for PCB-contaminated fill to be a secondary source cannot be determined.

PAHs were detected in samples from the soil and fill areas throughout the adjacent properties, but there was no clear correlation between PAHs and lead contamination. The findings from the RI/SRI at Corridor provide evidence that the fill areas are not the primary source of PAH contamination to Eighteenmile Creek sediments. High PAH concentrations in surface soils suggest that urban surface runoff is the likely source of PAHs to Eighteenmile Creek.

Former Flintkote Plant

The mill race in Eighteenmile Creek received discharges from the former Flintkote Plant building through an outfall pipe. Any other drains from the plant are no longer visible. Although the understanding of the site's drainage system is limited, contaminated sediment collected from the outfall pipe indicate that the historic discharges from sumps and drains in the Flintkote buildings could have been a potential source for sediment contamination in Eighteenmile Creek. The sediment remaining in the outfall pipe is slated for removal and the outfall will be closed as part of the NYSDEC ROD (NYSDEC 2006b; see Appendix C). The sediment from the pipe and three samples from sediments in the basement were sampled in 2003 by the Niagara County Department of Planning, Development, and Tourism as part of a brownfield investigation (TVGA 2005a). One waste sample of a felt/tar-like material from within an on-site building also was sampled. The sediment samples were collected from lower portions of the buildings where contaminants originating from most areas of the building would likely be deposited (e.g., deep basements and sumps). PCBs, metals, and PAH concentrations in these basement sediments and waste exceed screening criteria and NYSDEC soil cleanup guidelines (NYSDEC 2010a, b). The PCB concentration of 108 mg/kg in one sample exceeded hazardous waste screening criteria of 50 mg/kg. PAHs and metals were detected in the sediment sample from the outfall at similar levels. PCBs results from the sediment in the outfall were reported as non-detected, but the reporting limit of 6 mg/kg exceeded screening criteria.

The historical records for the site indicate storage of waste drums in the basement of the former Flintkote buildings at different times. An inspection report from 1979 indicates Aroclor 1254 was found in the two drums of oil at 2.4 to 2.5 percent. Seven drums removed from the site and analyzed in 1983 had less than 2 parts per million of PCBs. Based on the historical records, direct discharges of PCB-contaminated waste oils from the former Flintkote buildings is a source of PCBs to the Eighteenmile Creek downstream sediments. However, the high concentrations of PCBs in creek sediment upstream of the former Flintkote Plant Site suggest that there are other sources of PCBs to the creek (NYSDEC 2007b; see Appendix C).

Other Potential Sources

As part of the Corridor Site RI, NYSDEC collected samples around a fenced-in containment structure immediately downstream of the Clinton Street dam. This structure may have housed transformers and/or capacitors, which historically contained PCB oil and, therefore, this area was identified as a potential source of PCBs to Eighteenmile Creek. Although PCBs were detected in surface and subsurface samples, the concentrations were relatively low (< 1.2 mg/kg), providing evidence that this area is not currently a significant source of PCBs to Eighteenmile Creek.

6.1.2 Erie Canal

As described in Section 1.3, the Erie Canal provides a constant flow to Eighteenmile Creek. In addition, the canal is drained directly to the Headwaters East Branch through a spillway on the southern side of the canal, just west of Mill Street. According to NYS Canal Corporation personnel, if maintenance is needed in the canal, the water level in the canal is lowered by removing a "plug" located in the middle of the canal bottom. The plug drains into the tunnel that connects the headwaters of the Headwaters East Branch with the junction of the spillway and the upstream waters of Eighteenmile Creek. Maintenance is performed as needed; therefore, the plug is not removed every year. Removing the plug provides a direct conduit of sediment transport from the Erie Canal to the Headwaters East Branch (EEEPC 2009b; see Appendix C).

NYSDEC has conducted additional investigations since the RI/SRI for the Corridor Site was completed to evaluate whether the Erie Canal is a significant ongoing source of contamination to Eighteenmile Creek (EEEPC 2009b; NYSDEC 2010c; see Appendix C). The investigations focused on flow measurements and analysis of PCBs in water (dissolved and total) and suspended solids. Dissolved PCBs were determined with a Passive In Situ Chemical Extraction Sampler (PISCES) and total PCBs were determined with unfiltered grab samples. The NYSDEC investigation did not detect PCBs in the Erie Canal waters in the dissolved or total phase. PCBs could not be analyzed on suspended sediment because suspended sediments are not being conveyed into Eighteenmile Creek under normal operational flow conditions in measurable amounts. PCBs were detected within the Eighteenmile Creek water column downstream of areas of known sediment contamination in the unfiltered grab samples. This detection of contaminants continued beyond the boundaries of the Corridor Site indicating significant transport of contaminants occurring downstream of the corridor (NYSDEC 2010c; see Appendix C). The findings indicate that water from the Erie Canal is not a source of PCBs during normal operation.

The distribution of PCBs in the sediment in the Corridor Site show that PCB concentrations increase downstream of the Clinton Street dam and generally remain elevated throughout the remainder of the Eighteenmile Creek Corridor Site, although significant fluctuations occur (NYSDEC 2006a; see Appendix C). The lower concentrations of PCBs in sediment between the Clinton Street dam and Erie Canal provide additional evidence that the canal is not an ongoing source of PCBs.

6.1.3 Outfalls and Drainage Areas

City of Lockport CSOs

The City of Lockport combined sewer system periodically discharges untreated stormwater overflow into Eighteenmile Creek during periods of significant precipitation. As noted in the 2011 Eighteenmile Creek RAP update, in the past 15 years, 20 of the city's original 31 CSOs have been separated by installing new sewer line for either the sanitary or storm flow system (NCSWD 2011). Five of the remaining 11 CSOs have the potential to discharge to Eighteenmile Creek. The remaining six CSOs have the potential to discharge into the Erie Canal based on the results of NYSDEC study on the City of Lockport's sewer system using PISCES samplers (NYSDEC 2001b; see Appendix C). The purpose of the study was to track down potential sources of PCBs and the study concluded that the CSOs are possible active source of PCBs. In 2006, the City of Lockport began monitoring activities and in 2011, two additional CSOs were closed by the City of Lockport including one that discharged to the Erie Barge Canal and one that discharged to Eighteenmile Creek. The availability of current monitoring data to assess CSOs as a possible source of PCBs to Eighteenmile Creek is unknown.

SPDES Outfalls

There are three industrial and two municipal facilities currently permitted to discharge to Eighteenmile Creek. The RAP Update indicates that the SPDES permit holders are in compliance with their permits but that metals may be released into the water as part of the permit (NCSWD 2011).

Other Outfalls

In support of the additional investigations since the RI/SRI for the Corridor Site, NYSDEC and EEEPC conducted a site visit and interviews in September 2008 with NYS Canal Corporation personnel (EEEPC 2009b; see Appendix C). The Town of Lockport Historian and the Niagara County Historical Museum were also contacted regarding information on additional tunnels or conveyances that may discharge or have discharged in the past to the Eighteenmile Creek Corridor. The historians were not aware of any additional conveyances other than those currently present. No additional outfalls were noted.

As part of the Phase 1 reconnaissance conducted for the USEPA GLLA, 36 drainage areas and eight outfalls were identified and mapped along Reaches 3 to 7 (see Appendix B, Table B-5 and B-6 and Figure 2-6B). The potential for these outfalls as sources of contamination were investigated by locating sampling points downstream of the outfalls. Sediment samples from the following areas contained elevated concentrations of PCBs, lead or PAHs downstream of a potential source (greater than 10, 1,000, or 50 mg/kg, respectively). These areas are coded orange or red on Figure 7.

- An outfall, culvert and debris were found in Reach 4 behind a multi-use industrial facility (Forrest Creek Business Park and Storage Center) located south of Ide Road in Newfane (between 55,600 to 57,500 feet from the Erie Canal). Sediment samples collected near this location had elevated lead and PAH concentrations.
- A drainage area, outfall, and debris were found at the beginning of Reach 6.1 in a stretch of the creek behind several properties on Transit Road (between 48,200 to 49,000 feet from the Erie Canal). Sediment samples collected near this location had consistently elevated lead and PAH concentrations.
- A drainage area and mudflat were identified in Reach 6 north of Jacques Road and a stretch of the creek behind several properties on Transit Road (between 40,350 to 40,100 feet from the Erie Canal). Sediment samples collected near this location had consistently elevated PCB and lead concentrations.
- Several drainage areas were identified in an isolated stretch at the beginning of Reach 7.1 (between 30,500 to 31,325 feet from Erie Canal). The area receives drainage from a large wetland complex between Ewings Road and the creek and is downstream of the East Branch confluence. Sediment samples collected near this location had consistently elevated PCB, lead and PAH concentrations.
- A drainage area and small tributary were identified just east of where Ewings Road crosses the creek in Reach 7.1 (between 25,450 to 32,425 feet from the Erie Canal). The tributary drains several businesses and properties on the north side of Ridge Road. Sediment samples collected near this location had consistently elevated PCB, lead and PAH concentrations. PCB concentrations exceeded 50 mg/kg in one sample collected from 0.5 to 1.1 feet.
- Several drainage areas were identified in an isolated stretch at the south of Ridge Road in Reach 7.2 (between 18,450 to 19,450 feet from the Erie Canal). The area only receives drainage from a large agricultural area west of Purdy Road. Sediment samples collected near this location had consistently elevated PCB, lead, and PAH concentrations. PCB concentrations exceeded 50 mg/kg in three samples collected as composites of the entire sediment thickness.
- Observations were not collected in Reach 7.3 because that reach was sampled by NCSCWD in 2005 as part of the trackdown study, but additional sediment samples were collected. Elevated PCB, lead and PAH concentrations were found in sediments north of Plank Road to just north of Old Niagara Road crossing (9,000 to 12,000 feet from the Erie Canal). PCB concentrations exceeded 50 mg/kg in two samples collected as composites of the entire sediment thickness.

6.1.4 Tributaries and Upstream Sources

Upstream of the Erie Canal

The historical investigations concluded that there are no sources of contamination to Eighteenmile Creek upstream of the Erie Canal.

East Branch of Eighteenmile Creek

Sediment samples were collected from four locations in the East Branch as shown on Figure 4. Sediment samples had lower lead and PAH concentrations than the main channel and PCBs were not detected. The results indicate the East Branch sediments are not a potential source of contamination to Eighteenmile Creek.

Gulf Creek

Sediment samples were collected from five locations in the Gulf Creek as shown on Figure 4. Sediment samples had average lead, other COPC metals, and PAH concentrations that were equivalent to average concentrations in Reach 7 sediments and PCBs were detected at less than 1 mg/kg in one sample. The results indicate the Gulf Creek sediments could be a potential source of contamination to Eighteenmile Creek. Elevated concentrations of lead, zinc, and PAHs were found in sediments farther upstream of Gulf Creek as part the NYSDEC investigation of the Old Upper Mountain Road site and additional investigations of the Gulf Creek sediment are ongoing (EA Engineering 2011).

6.2 Extent of Contaminated Media

The COPCs were detected in sediments of Eighteenmile Creek through the entire length from the Erie Canal to Lake Ontario. Tables 6 to 12 provide summary statistics for COPCs including the average and maximum detected results by reach. PCBs, PAHs, and metals were the most frequently detected COPCs. The average and maximum concentrations for these compounds are plotted by reach on Figures 8a and 8b.

All COPC metals show the similar average and maximum concentration trends by reach. The average concentrations are relatively low starting at the Erie Canal and increase significantly in Reach 10 at the Corridor Site. The average concentrations of COPCs metals are lower immediately below the Corridor Site and increase to Reach 5 in the depositional area behind Newfane Dam. The average concentrations for all COPC metals except copper are the highest in Reaches 2 and 3 behind Burt Dam until decreasing to background levels in Reach 1 below Burt Dam. The maximum concentrations follow the same general trend but are highest in Reach 10 in the Corridor Site. The high concentrations of lead and other COPC metals in the subsurface sediments in Reaches 2 and 3 result in higher average concentrations behind the dam and indicate a significant historical source in the early 1950s to the mid-1960s. The average and maximum concentrations also show an increase in Reach 5 behind Newfane Dam, but subsurface concentrations of metals in these cores are lower than Reaches 2 and 3.

Lead, copper, and zinc were detected in sediment samples at concentrations that exceeded LEL screening levels in most samples and SEL screening levels in about 90 percent of samples. In addition, six of the 40 sediment samples analyzed for TCLP for lead exceeded hazardous waste criteria (one in Reach 6 and five in Reach 10). Arsenic and chromium were detected in almost all sediments but at concentrations lower than the other COPC metals. Arsenic concentrations exceeded LEL screening levels in 50 percent of samples and SEL screening levels in less than 1 percent of samples. Chromium concentrations exceeded LEL screening levels in 85 percent of samples and SEL screening levels in less than 50 percent of samples. The similar data trends for lead, copper, and zinc and lower concentrations of

arsenic and chromium suggest that lead could be an appropriate indicator of metals contamination for future investigations.

PCBs and PAHs show similar average and maximum concentration trends by reach. For PCBs, average concentrations are higher starting at the Erie Canal and decrease in the area where the canal drains to Eighteenmile Creek. The decreased concentration in this area may be due to high flow velocities and scour of sediments downstream. PCB concentrations are the highest in Reach 10 at the Corridor Site. PCB average and maximum concentrations are relatively higher in reaches immediately downstream of the Corridor Site and then decrease to levels below 1 mg/kg in Reach 1. PCB concentrations do not increase in the Reach 5 depositional area behind Newfane Dam. PCB average and maximum concentrations increase slightly in Reach 3. The data suggest that where the creek meets the reservoir waters behind Burt Dam there is a significant area of sediment deposition likely caused by the decreased flow rates. The PCB concentration profiles with depth indicate a significant amount of mixing in this area. In the deeper sediments of Reach 2 closer to Burt Dam, there is a much more distinct change in PCB concentration with depth and maximum concentrations at depth indicate a historical source coinciding with deposition in the late 1960s to the mid-1970s.

PCBs were detected in 80 percent of the sediment samples and half of the concentrations exceeded the 1 mg/kg low screening criteria (i.e., 40 percent overall). In addition, PCB concentrations in 17 samples in Reaches 7, 9, and 10 exceed hazardous waste criteria.

PAH concentrations are relatively lower in the Erie Canal, increase in Reach 10 at the Corridor Site, and then show a general decreasing trend toward Lake Ontario. However, PAH average and maximum concentrations increase in Reaches 4 and 7 located in more populated areas, which may be attributed to urban runoff.

PAHs were detected in most sediment samples, but concentrations exceeded the low screening levels in less than 20 percent of the samples and the high screening criteria in less than 2 percent of samples. The findings suggest that PAH contamination is ubiquitous throughout the watershed and related to common anthropogenic sources. PAHs do not appear to be an appropriate indicator of contamination from specific sources in the Corridor Site.

Lower concentrations and more uniform distribution of the mercury and DDT metabolites also indicate anthropogenic sources not directly related to the Corridor Site.

6.3 Conceptual Site Model

A conceptual site model was developed as part of the July 2009 SRI report for the Eighteenmile Creek Corridor Site (E & E 2009; see Appendix C). The conceptual site model for the Corridor Site also would be applicable to the entire Eighteenmile Creek AOC. The pathways for exposure to contaminants in sediment and surface water discussed in the conceptual site model are similar for anglers and other visitors beyond the Corridor Site. The residences on Water Street are the only areas identified as a pathway for potential contact with contaminated soils deposited by flood events. Contaminated soils were not identified in other areas along Eighteenmile Creek.

The Eighteenmile Creek Corridor conceptual site model included potential pathways of human exposure to contaminants. An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements: (1) a contaminant source; (2) contaminant release and transport mechanisms; (3) a point of exposure; (4) a route of exposure; and (5) a receptor population. An exposure pathway is considered complete when all five elements are present; a potential exposure pathway is considered incomplete when any one or more of the five elements comprising an exposure pathway is not present or does not exist. Three groups of receptors potentially impacted by contaminated sediments, each with a distinctly different exposure potential, were identified, as summarized below:

- Residents of the homes along Water Street with backyards abutting the creek. Eighteenmile Creek floods periodically and has deposited contaminated sediment in the backyards of some of these residences. Residents of these homes could be exposed to site-related contaminants as a result of direct contact (via dermal contact and/or incidental ingestion) with contaminated soils in their yards, sediments along stream banks, and creek water and through consumption of fish caught from the creek.

- Visitors to the Eighteenmile Creek. This group of receptors includes recreational users of Upson Park and visitors to the banks of the creek and the active and inactive industrial parcels along the creek. These receptors are assumed to visit these areas but not fish in the creek or consume fish from the creek. Exposure of these receptors to site-related contaminants could occur as a result of direct contact with soils, sediment, and creek water.

- Eighteenmile Creek Anglers. This group of receptors is similar to site visitors, but members are assumed to fish in the creek and eat their catch in addition to coming in contact with site soils, sediment, and creek water. Since PCBs are an important COPC in the Eighteenmile Creek, and because they tend to accumulate and concentrate in fish and other biota, consumption of fish from the creek could pose substantially greater health risks than simply contacting contaminated environmental media in the area.

The SRI completed the requirements of a qualitative Human Health Risk Evaluation as described in Appendix 3B of NYSDEC's Draft DER 10: Technical Guidance for Site Investigation and Remediation. Since a number of chemicals exceeded human health screening levels in each of the environmental media investigated, the SRI concluded that contaminants at the Eighteenmile Creek Corridor Site could pose potentially significant risks to human health (EEEPC 2009a; see Appendix C). A qualitative human health risk assessment was not conducted as part of the SRI because NYSDOH had documented public health risks to residents living on Water Street (NYSDEC 2006a) and fish advisories have been established for the creek.

The conclusions of the SRI Human Health Risk Evaluation can be extended to the remainder of the Eighteenmile Creek AOC because the exposure pathways for Eighteenmile Creek visitors and anglers are the same.

6.4 Trophic Trace Food Web Model

A Trophic Trace food web model was developed to evaluate PCB bioaccumulation, trophic transfer, and consequent ecological risks in creek sections above and below Burt Dam (ERS and USACE 2012, see Appendix C). The following points regarding this effort are noteworthy:

- Two sections of Eighteenmile Creek were modeled: (1) Olcott Harbor to Burt Dam; and (2) Burt Dam to Newfane Dam.
- The modeling effort focused on PCBs for a variety of reasons, including: (1) PCBs are thought to be the primary risk driver in the Eighteenmile Creek system; (2) PCBs have the most robust, recent dataset; (3) chlorinated pesticides and dioxins and furans are not particularly elevated or prevalent in sediment in the Eighteenmile Creek system; and (4) focusing on a single contaminant permitted a more intensive sampling effort to support the modeling effort compared to the amount that would need to be conducted if multiple contaminant classes were modeled.
- The modeling effort included an evaluation and compilation of historical data (USACE 2010; see Appendix C) and development of a conceptual site model (USACE 2011; see Appendix C). In addition, new data for PCB congeners in fish tissue and sediments from Reach 1 were collected by USACE in 2010 (ERS and USACE 2012; see Appendix C).
- The model evaluated total PCBs based on a sum of congeners, but also collected data for PCBs as Aroclors, DDT and metabolites, and dioxins and furans.
- The model focused on evaluating risks to fish and fish-eating wildlife from PCBs in the portion of the creek between Newfane Dam and Olcott Harbor. It does not address potential risks to other groups of ecological receptors or human receptors.
- The Trophic Trace model can be used to develop remedial goals for sediment based on the potential risk to receptors and evaluate impact on fish tissue concentrations at various sediment concentrations.

The final modeling report indicated that PCBs may pose a potential risk to some fish species (largemouth bass, bullhead, and pumpkinseed) and fish-eating wildlife species (kingfisher and mink); however, the potential for risk to these receptors was considered to be low (ERS and USACE 2012; see Appendix C).

6.5 Contaminant Persistence and Migration

The NYSDEC SRI report discusses potential routes of migration for the COPCs within the Corridor Site. Natural and other man-made mechanisms can result in the migration of contaminants from their source areas that include: surface water flow, infiltration, groundwater flow, subsurface utilities, volatilization, excavation, grading, and vehicular traffic (EEEPC 2009a; see Appendix C). Because PCBs and lead are not readily volatilized, only surface water flow, infiltration, groundwater flow, subsurface utilities, and man-made mechanisms were discussed. The NYSDEC SRI determined that infiltration and groundwater flow are not migration pathways for PCBs and lead.

Migration of the PCBs and lead contamination from the Corridor Site downstream to Lake Ontario is well documented. The highest lead contamination in sediments downstream from the Corridor Site is detected at depths of 2 to 8 feet in the reservoir behind Burt Dam. Radiochemical dating of the sediment cores indicate the sediment at this depth was deposited in the early 1950s to the mid-1960s. The highest PCB contamination in sediments is shallower and the sediment was deposited in the mid-1960s. Persistent higher concentrations of both PCBs and lead in surface sediments indicate continued migration of contamination downstream of the Corridor Site.

USEPA's semiannual monitoring of Lake Ontario tributaries indicates that since 2002 the highest PCB concentrations in surface water were observed in Eighteenmile Creek. In 2008, PCB concentrations in Eighteenmile Creek were more than 40 times greater than observed in any tributary, and two to three orders of magnitude higher than observed in any other tributary (i.e., 43,000 to 93,000 picograms per liter) in 2009 to 2010 (USEPA 2011). Both the USEPA and NYSDEC estimated loadings for Eighteenmile Creek based on estimated flow rates because the creek is not gauged by the USGS. The USEPA estimated the PCB loadings to be 10 to 20 grams per day. NYSDEC concluded the PCB loading rates were particularly high on Eighteenmile Creek (NYSDEC 2009a, see Appendix C). The NYSDEC report also included the potential migration from the Lake Erie and Tonawanda Creek to Lake Ontario via the Erie Canal and Eighteenmile Creek.

6.6 Contaminant Fate and Transport

The NYSDEC SRI report includes a discussion of the persistence and behavioral characteristics for the COPCs within the Corridor Site that also would apply to the rest of Eighteenmile Creek (EEEPC 2009a; see Appendix C). PCBs strongly adsorb to sediment particles, have low water solubility, are persistent in the environment (do not readily break down), and thus do not typically show much migration in a given environment. The adsorption of PCBs onto solids is greatest in solids containing high organic matter and clay, similar to the sediment encountered in portions of Eighteenmile Creek. PCBs do not metabolize easily and readily accumulate in fatty tissue. Several fish tissue studies document high levels of PCBs in fish from Eighteenmile Creek relative to other sites (E & E 2011; see Appendix C). The results of the bioaccumulation testing (USACE 2008; see Appendix C) indicate that PCB levels in surficial sediments throughout Reach 1 present a bioaccumulation risk. In some portions of Reach 1, PCBs are highly bioavailable in the surficial sediments and are accumulating in benthic organisms, and are likely to bioaccumulate in predator fish and high trophic levels. The site-specific biota sediment accumulation factors (BASF) of two areas in Reach 1 were higher than what be expected and the overall mean BASF is comparatively high indicating that PCBs are quite bioavailable in surficial sediments.

Presence of elevated lead concentrations throughout the Eighteenmile Creek is consistent with the behavior of lead. Comparison of TCLP data to their respective total lead concentrations were inconsistent indicating that the leachability of the lead may vary with the type of source material.

Thirty-nine sediment samples were analyzed from Reach 4 through Reach 7 for AVS/SEM and organic carbon to assess the bioavailability of divalent metals including cadmium,

copper, lead, nickel, zinc, and monovalent silver (see Table D-3). The SEM molar concentration is equal to the sum of the molar concentrations of the divalent metals and one half of the molar concentration of silver, based on their stoichiometric relationships to AVS. AVS exceeded the SEM molar concentration in 27 of the 39 samples. However, if the molar concentration of AVS in a particular sediment sample exceeds the summed SEM molar concentration, the metals are not necessarily available, since the equilibrium of the metals in pore water and interstitial waters is dictated by their solubility and the TOC of the sediment. When the ∑SEM-AVS is normalized, or divided by, the fraction organic carbon, the contamination is 90 percent certain to be non-toxic at a concentration of 130 µmol per gram organic carbon (goc), and 90 percent certain to be toxic at a concentration of 3,000 micromoles per gram organic carbon (µmol/goc) (USEPA 2005). The normalized ∑SEM-AVS values were less than 130 µmol/goc for 33 of the 39 samples, while the remaining samples are slightly greater ranging from 142 to 438 µmol/goc. All normalized ∑SEM-AVS were less than 3,000 µmol/goc. The results indicate that the metals in Eighteenmile Creek sediments are unlikely to be bioavailable or toxic.

SECTION 7

7 Summary and Conclusions

This section summarizes the results of investigations performed at the Eighteenmile Creek AOC. The historical sediment data were supplemented with data from the recent investigations conducted by the GLNPO to meet the following objectives:

- Characterize the nature and extent of sediment contamination;
- Evaluate the physical conditions between Burt Dam and the Erie Canal, including sediment thickness and water depth;
- Evaluate the contamination in bank soils adjacent to the creek and sediments in major tributaries to identify other potential contamination sources and establish background conditions;
- Evaluate the potential for historic contamination to have migrated to wetlands or historic creek channels during past flooding events;
- Provide the data necessary to assess whether conditions in the creek pose an actual or potential human health exposure risk;
- Provide the data necessary to assess the bioavailability of site contaminants and whether conditions in the creek pose a potential ecological risk; and
- Provide the data needed to identify and evaluate potential remedial alternatives to address contamination that poses threats to public health and/or the environment.

The primary findings related to these objectives are summarized below.

7.1 Summary

Results from recent studies conducted within the Eighteenmile Creek AOC (see Section 5) were evaluated to assess the usability of the sediment chemistry and supporting data for this RI. Electronic copies of the reports and supporting data are provided in Appendices A through C. Sediment chemistry and physical data that were determined to be usable for evaluation of nature and extent were compiled into the RI database or spreadsheets and are included in Appendix D. The compiled data were evaluated and the findings are summarized below.

7.1.1 Physical Conditions

The physical characteristics of the Eighteenmile Creek AOC are summarized in Section 4. The creek flows generally north through central Niagara County for 15 miles discharging into Lake Ontario via Olcott Harbor. The Eighteenmile Creek AOC was divided into smaller investigation areas, or reaches, based on the physical characteristics of the creek (see Figure 2). The significant physical characteristics of Eighteenmile Creek include the following:

- The Erie Canal contributes a significant water flow to the creek and the input increases during annual winter draining and periodic maintenance periods. A constant flow of up to 400 cfs must be maintained at all times for operation of Burt Dam. The Erie Canal also provides a potential connection to Lake Erie and Tonawanda Creek through the Lockport locks. The creek is not gauged by the USGS and limited surface water data are available.
- Natural creek flow is interrupted by four dams. The largest, Burt Dam is an operating hydro-generating facility two miles from Lake Ontario. The dam in Newfane and the two smaller dams in Lockport are abandoned and not operational. All four dams retain water and contaminated sediment. The removal of the two smaller dams is included as part of the NYSDEC ROD for the Corridor Site.
- Natural creek flow has also been altered in the city of Lockport by extensive areas of fill. The fill contains various types of slag and ash that altered the native geology of the creek banks between the Erie Canal and the escarpment.
- Several residential backyards on Water Street in the city of Lockport adjacent to the creek are prone to periodic flooding.
- The elevation of the creek drops over 250 feet from the Erie Canal to Lake Ontario through the Niagara Escarpment (see Figure 5).
- The average sediment thickness and water depths in the depositional areas behind the dams increase from upstream to downstream. Sediment thickness behind the dams range from 3 feet in Reach 5 to 11.6 feet in Reach 2 and the water depths range from 3.5 feet in Reach 5 to 14.3 feet in Reach 2. The average sediment thickness and water depths in the rest of the main channel decrease from upstream to downstream. Average sediment thickness ranges from 1.4 feet in Reach 7 to 0.6 feet in Reach 4 and the water depths range from 2.3 feet in Reach 7 to 1.3 feet in Reach 4 (see Table D-6).
- Current bathymetry of the reservoir behind Burt Dam shows a significant sediment deposition area where main channel creek flow discharges into the impoundment.
- Access to the creek is limited from the escarpment to Burt Dam and long stretches of the creek meander behind large agricultural fields. Significant woody debris obstruct the water flow throughout these portions.
- Two major tributaries, East Branch of Eighteenmile Creek and Gulf Creek, contribute significant flow to the main channel. Many smaller tributaries and drainage areas throughout the flat agricultural portion of the creek from the escarpment to Newfane have been documented to contribute intermittent flow to the main channel.
- The reach of the creek below Burt Dam is an active recreational and fishing area as well as a significant coastal habitat. Based on the *Lake Ontario Tributary Creel Survey* from 2005 to 2007, Eighteenmile Creek logged the second highest number of angler hours, behind the Salmon River (NYSDEC 2007a, see Appendix C). The survey also identifies Eighteenmile Creek as one of the of four "high use" tributaries.

Additional data have been collected to evaluate the physical characteristics of the sediment within Eighteenmile Creek. The Eighteenmile Creek water depth, bankfull width, and

sediment thickness have been measured from the Erie Canal to Burt Dam and results are included in Table D-6. Most sediment samples collected as part of the USEPA GLLA site characterization from the escarpment to Burt Dam were analyzed for particle size (see Table D-5) and TOC (see Table 11 and D-1). A limited number of sediment samples in the Erie Canal and Corridor Site were analyzed for particle size (EEEPC 2009b; see Appendix C).

7.1.2 Nature and Extent of Contamination

The nature and extent of contamination within the Eighteenmile Creek AOC have been defined to establish a baseline of contaminant levels in sediment that can be used to develop and evaluate remedial alternatives to reduce potential risks to human health and the environment posed by exposure to contaminants in the creek. The horizontal and vertical distribution and extent of contamination in sediment in the Eighteenmile Creek was characterized on the basis of field observations and analysis of sediment samples as follows:

- Over 750 samples have been analyzed to evaluate the nature and extent of PCB and metals contamination in sediments from the Erie Canal to Lake Ontario. Over 500 of these samples were also analyzed for PAHs and mercury and over 160 samples have been analyzed for pesticides and PCBs as congeners.
- Concentrations of all the COPCs in sediments exceed preliminary screening criteria. PCB and lead concentrations in sediment at several isolated locations (i.e., "hot spots") exceed hazardous waste levels.
- The horizontal extent of contamination in sediment has been delineated for PCBs and metals in all reaches. The current dataset was not sufficient to define the extent of contamination of the other COPCs in all reaches (e.g., sediments from Reach 1 below Burt Dam were not analyzed for PAHs; only a 8 percent of sediments from the Corridor Site were analyzed for mercury and only a 20 percent of the samples from the reaches were analyzed for pesticides).
- The extents of the isolated PCB and lead "hot spots" have not been delineated and the results from subsequent confirmatory samples have shown inconsistent results. The findings suggest that the distribution of PCB and lead contamination in sediments varies significantly and conditions change over time.
- Elevated PCB and metals concentrations have been delineated in the deeper sediments in Reaches 2, 3 and 5 (see Figures 6 and 7). Behind Burt Dam, the maximum PCB and lead concentrations were detected in subsurface sediments between 2 and 6 feet and concentrations decreased significantly with increasing depth. The PCB and lead concentrations were higher in the subsurface sediments in Reaches 3 and 5, but did not exhibit consistent trends related to depth. PAH concentrations showed less variability with depth than the PCBs and lead concentration profiles.
- The vertical extent of PCB and metals contamination was evaluated using data from the thinner sediment deposits in Reaches 4, 6, 7, 9 and 10. PCB and lead concentrations in the surface sediments were generally lower than the subsurface sediments. The highest concentrations of PCBs and lead in these sections were found in the subsurface sediments.

- Lead concentrations are an appropriate indicator of the extent of contamination for the other COPC metals in the sediment based on the correlation of average and maximum concentrations by reach and the number of samples with concentrations exceeding screening levels.
- Sediments from major tributaries and upstream of the Erie Canal have been collected to establish background conditions and assess potential for other sources. Concentrations of COPCs in sediment upstream of the Erie Canal and the East Branch of Eighteenmile Creek are significantly lower than in the main channel. Sediments from Gulf Creek show elevated lead and PAH concentrations that may be attributable to the Old Upper Mountain Road site.

7.1.3 Contaminant Sources

Historical and ongoing sources of contamination to Eighteenmile Creek are discussed in Section 6. Major findings regarding the assessment of sources of the primary COPCs are summarized below.

Lead and Other COPC Metals

The most significant source of lead and metals contamination is the historical industrial sites in the Corridor Site and the surrounding fill areas. Radiochemistry dating of sediment cores behind Burt Dam indicates very high concentrations of lead were deposited in the subsurface sediments in the early 1950s to the mid-1960s. The Flintkote plant was closed in the 1970s and no significant industrial activity occurred in the Corridor Site after that decade. Metals contamination in the fill areas and on banks of Eighteenmile Creek has been documented and erosion from the fill areas is likely a continuing source of contamination to the downstream sediments. Lead is present in the fill areas at hazardous waste levels. Higher concentrations of lead and other COPC metals in the sediments near more urban areas suggest surface run-off and anthropogenic sources typical of urban and industrial areas also contribute to metals contamination of Eighteenmile Creek sediments.

PAHs

PAHs were found at low levels in over 98 percent of the Eighteenmile Creek sediments and no significant source of contamination was identified. Only 15 percent of the sediment samples had concentrations of PAHs that exceeded the low screening criteria of 15 mg/kg and only 2 percent of the sediment samples had concentrations of PAHs that exceeded the higher screening criteria of 100 mg/kg. Higher concentrations of PAHs in the sediments near urban and industrial areas in Reaches 4, 7, and 10 suggest surface run-off and anthropogenic as the main sources of PAH contamination to Eighteenmile Creek sediments.

PCBs

Historically, the Erie Canal has been suspected as a major source of PCBs to the creek. Potential transport mechanisms of PCB contaminated sediment from the canal to creek are clearly documented. However, recent investigations analyzing canal water and suspended sediment for PCBs during various flow conditions suggest that the Erie Canal is not the primary source of PCBs to the creek. The high concentrations of PCBs in the sediments of the Corridor Site suggest the source contamination is downstream of the Erie Canal and the Clinton Street dam.

Several investigations to track down PCB sources from CSOs, tributaries, a potential former transformer pad and fill areas have not identified a significant source of PCBs. The source of PCBs in the downstream reaches appears to be associated with the historical industrial properties in the Corridor Site. Historical records indicate PCB contaminated waste oil may have been emptied into the creek at the former Flintkote plant in the 1970s. This is consistent with the radiochemistry dating of sediment cores behind Burt Dam, which indicates very high concentrations of PCBs were deposited in the subsurface sediments in the late-1960s to the mid-1970s. High concentrations of PCBs in the dissolved phase in surface water and high bioaccumulation rates suggest there is an ongoing source of PCBs to the creek. However, investigations completed to date have not identified a significant source area of high PCB contamination on the properties in the Corridor Site. The source of high concentrations of PCBs in the sediments upstream of the former Flintkote Plant site has not been identified.

7.1.4 Ecological and Human Risks

A human health or ecological risk assessment has not been completed for the entire Eighteenmile Creek although the potential risks have been evaluated for specific site or portions of the creek. NYSDOH has documented human risks to the residents on Water Street from exposure to contaminated sediment and to anglers from ingestion of PCB-contaminated fish tissue. NYSDOH has included Eighteenmile Creek under its most stringent "Do Not Eat" fish advisory on the basis of PCB contamination (NYSDOH 2011).

Environmental risks to fish and wildlife have been documented as part of the USACE evaluation of the toxicity and bioaccumulation of persistent organic compounds in surface sediment samples collected from below Burt Dam (USACE 2004a, 2004b; see Appendix C) and the BUI assessment on impacts to fish and wildlife populations (E & E 2009). Both studies focused on the area below Burt Dam. Data from these studies were incorporated in the development of a Trophic Trace Food Web model for Eighteenmile Creek (ERS and USACE 2012; see Appendix C). The final modeling report indicated that PCBs may pose a low potential risk to some fish species (largemouth bass, bullhead, and pumpkinseed) and fish-eating wildlife species (kingfisher and mink) (ERS and USACE 2012, see Appendix C).

Additional data have been collected to assess the bioavailability of COPCs in contaminated sediments. A large portion of the samples have been analyzed for TOC and results show high organic carbon content in most sediments (see Table 11). The 95 percent lower confidence limit on the average TOC concentration in the sediments is a conservative estimate of the mean and was used to derive a single value of TOC for screening calculations of 54,600 mg/kg. A total of 161 sediment samples have been analyzed for PCB congeners (see Table 6b). The results for total PCB as congeners do not correlate well with total PCB as Aroclors, but congener data were used for evaluating bioaccumulation. Select samples from the escarpment to Burt Dam have been analyzed for AVS/SEM to evaluate the bioavailability of metals (see Table D-3) and the results indicate that the metals in Eighteenmile Creek sediments are unlikely to be bioavailable or toxic.

7.1.5 Fate and Transport

Contaminant fate and transport mechanisms for the primary COPCs are well documented and the nature and extent of the contamination in Eighteenmile Creek sediments is

generally consistent with the behavioral characteristics of the COPCs, except for PCB contamination in the downstream reaches.

The transport mechanisms for the PCB contamination downstream are not fully understood. PCBs strongly adsorb to sediment particles, have low water solubility, are persistent in the environment (do not readily break down), and thus do not typically show much migration in a given environment. The adsorption of PCBs onto solids is greatest in solids containing high organic matter and clay, similar to the sediment encountered in portions of Eighteenmile Creek. The adsorbed PCBs will be transported downstream with the sediments they are sorbed to. The PCB concentrations in the water discharging into Lake Ontario indicate that PCBs are being mobilized in the water column throughout Eighteenmile Creek. PCB concentrations in the surface sediments below Burt Dam are relatively low but site-specific bioaccumulation testing indicates PCBs in surface sediments are highly bioavailable. High concentrations of PCBs in fish collected below Burt Dam support this conclusion. If the PCB contamination transport mechanism was primarily on sediment particles, then higher concentrations of PCBs would be expected in sediment depositional areas. Higher PCB concentrations were found in sediment deposits in Reaches 2, 3, 6, and 7, but PCB concentrations in subsurface sediments deposited behind Newfane Dam in Reach 5 are relatively low. The findings indicate that additional evaluation of the downstream sediment and surface water for PCBs may be warranted.

7.1.6 Evaluation of Remedial Alternatives

Migration of the PCBs and lead contamination from the Corridor Site downstream to Lake Ontario is well documented. Radiochemical dating of the sediment cores behind Burt Dam indicate the contaminated sediment at depth was deposited prior to the 1970s, and the recent deposits contain lower concentrations. Persistent higher concentrations of both PCBs and lead in shallow sediments throughout the Creek indicate continued migration of contamination downstream of the Corridor Site. Therefore, understanding sediment transport is of primary concern for identifying potential remedial alternatives. The source of contaminated sediment is believed to be primarily located in the Corridor Site and that the contamination is being transported and deposited downstream, re-suspended by scour and resettling; however, these processes have not been modeled.

The sediment thickness, water depth, and creek width were modeled for the creek and sediment volumes were estimated based on the model. Although the data for Reach 1 were limited, the model can be used to evaluate volumes of contaminated sediment for the purposes of evaluating remedial alternatives.

Current bathymetry of the reservoir behind Burt Dam shows a significant sediment deposition area where main channel Creek flow discharges into the impoundment. As the water depth increases closer to the dam, the sediment scour appears to decrease. Sediment capping in this area is a potential remedial alternative but the hydraulic conditions would need to be evaluated. Sediment deposition is also present behind Newfane Dam, but the decreasing concentrations of COPCs with depth in the sediment cores indicate the potential for sediment re-suspension and scour that may limit the potential for sediment capping.

Sediment depositional areas were identified in shallower areas of the Creek with higher concentrations of PCBs and lead at the bottom of the cores. However, the extents of the isolated PCB and lead “hot spots” have not been delineated and the results from subsequent

confirmatory samples have shown inconsistent results. The findings suggest that the distribution of PCB and lead contamination in sediments varies significantly and conditions change over time. Deposition in the shallow areas is also caused by the significant amount of woody debris obstructing the water flow throughout these portions of the Creek.

Sediment transport off the Creek bank due to flooding is not well documented, but limited sampling of the historical Creek channels and wetlands indicate minimal impacts based on the low COPC concentrations. Evaluation of remedial alternatives for floodplains may not be warranted.

Two major tributaries, East Branch of Eighteenmile Creek and Gulf Creek, contribute significant flow to the main channel. Many smaller tributaries and drainage areas throughout the flat agricultural portion of the Creek from the escarpment to Newfane have been documented to contribute intermittent flow to the main channel. The impact of the tributaries on sediment transport has not been established. A preliminary model of hydrology and sediment transport within the watershed was developed for the USACE in 2005. However, the model is limited because USGS stream flow gage data are not available and the artificially-controlled flow from the Canal presents unique challenges to modeling the hydrology within Eighteenmile Creek watershed.

USEPA semiannual monitoring of Lake Ontario tributaries indicates that since 2002, the highest PCB concentrations in surface water were observed in Eighteenmile Creek. In 2008, PCB concentrations in the surface water of Eighteenmile Creek were more than 40 times greater than observed in any tributary and two to three orders of magnitude higher than observed in any other tributary in 2009 to 2010. Both the USEPA and NYSDEC estimated loadings for Eighteenmile Creek based on estimated flow rates because the Creek is not gauged by the USGS. The USEPA estimated the PCB loadings to be 10 to 20 grams per day. Limited NYSDEC surface water sampling for dissolved PCBs in the Corridor Site indicate the highest concentration of dissolved PCBs are present downstream of the Flintkote property. The relationship between the sediment and the dissolved PCB concentrations in the surface water will need to be better understood to develop remedial alternatives to address the high PCB loading into Lake Ontario from Eighteenmile Creek.

7.2 Conclusions

The results of the RI indicate that chemical contamination of the sediment in all reaches of Eighteenmile Creek exceed screening criteria protective of ecological and human health and that hazardous levels of PCBs and lead contamination are present in the Corridor Site and immediately downstream. Investigations by NYSDEC in the Corridor Site suggest that the Erie Canal is not the primary source of PCBs to the creek and that PCB and lead contamination to the sediment are likely historical industries in the Corridor Site, including the former Flintkote Plant Site. Higher concentrations of PCBs and lead in deeper sediments behind Burt Dam and Newfane Dam indicate that the major contributions of PCBs and lead were from historical sources. Persistent higher concentrations of both PCBs and lead in shallow sediments throughout the Creek indicate that the contamination is being transported and deposited downstream by sediment re-suspension and resettling or other mechanisms that are not fully understood. The ongoing transport of PCBs and lead from the Corridor Site has been documented by recent investigations of surface sediments,

surface water and biological tissue. PCB concentrations in the water discharging into Lake Ontario indicate that PCBs are being mobilized in the water column throughout Eighteenmile Creek.

PAH concentrations are lower and more uniformly distributed in the sediments throughout the creek indicating the historical properties in the Corridor Site are not the primary source. Higher concentrations of PAHs in the sediments near urban and industrial areas in Reaches 4, 7, and 10 suggest surface run-off and anthropogenic as the main sources of PAH contamination to Eighteenmile Creek sediments.

Concentrations of COPCs in the sediment indicate potential human health exposure risk and ecological risk based on comparison to sediment screening criteria. Metals contamination in sediments is at levels that may exert chronic toxicity throughout the Eighteenmile Creek particularly for lead and zinc based on comparison to screening criteria. However, the results for AVS/SEM analysis indicate that the metals in Eighteenmile Creek sediments are unlikely to be bioavailable or toxic. In addition, the results of TCLP analysis indicate that some fill material contains hazardous waste levels of lead. PCB contamination presents a significant bioaccumulation risk that is well documented with multiple sediment and fish tissue studies. Bioaccumulation modeling performed by the USACE for the portion of Eighteenmile Creek below Burt Dam and between Burt Dam and Newfane Dam suggests that PCB contamination may pose a potential risk to some species of fish and fish-eating wildlife. Concentrations of PAHs in sediment did not exceed screening criteria in most of the sediment samples (greater than 85 percent) indicating little potential for the PAHs to exert chronic toxicity.

The RI characterized the nature and extent of sediment contamination between Burt Dam and the Erie Canal and provided an evaluation of the physical conditions of the creek. Limited data collected on soil concentrations in the wetlands and historic creek channels suggest that migration of the contaminated sediments to the soils during flooding was not significant downstream of the Corridor site. Potential sources of contamination to the creek downstream of the Corridor Site were assessed based on concentrations of COPCs in a limited number of sediment samples collected from the tributaries. The Gulf Creek was identified as a potential source of metals and PAHs.

The RI data indicate that elevated levels of the COPCs will need to be remediated to address mitigation of risks and the high PCB loading into Lake Ontario from Eighteenmile Creek. The development of potential remedial alternatives will need to address the following:

- Hazardous waste level contamination in the sediment and fill areas;
- Current sources of PCB contamination in the Corridor Site including the drainage system and buildings of the former Flintkote Plant Site;
- Potential sources downstream of the Corridor Site, including Gulf Creek;
- Hydrologic and hydraulic model of the creek and sediment transport;
- PCB bioavailability in contaminated sediments and potential treatment methods to reduce bioavailablity; and

- Baseline ecological structure and function of the creek to assess toxicology impacts from sediment contamination and provide data in order to determine post-remediation restoration needs.

SECTION 8

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Table 1
Summary of Historical Data Evaluation
Eighteenmile Creek Area of Concern

Appendix C Report	RI Database Study Key	Data Summary	Data Evaluation and Use
Previous Investigations in the AOC			
USACE. 2004a. Volume I, Project Report Overview, Sediment Sampling, Biological Analyses, and Chemical Analyses for Eighteenmile Creek AOC	USACE 2004	Sediment and tissue testing for Reach 1 sediments including PCB congener, dioxin, TOC, PCB Aroclors, Metals, Mercury and pesticide analysis.	Data are considered usable for nature and extent of contamination and will be included in the RI database.
USACE. 2004b. Volume II, Laboratory Reports, Sediment Sampling, Biological Analyses, and Chemical Analyses for Eighteenmile Creek AOC	USACE 2004	Laboratory reports of sediment and tissue analysis in Reach 1 Sediments.	Data are considered usable for nature and extent of contamination and will be included in the RI database.
Buffalo State Great Lakes Center. 2005. Sediment Modeling for the Eighteenmile Creek Watershed. Prepared for USACE Buffalo District.		Water flow and sediment yield model for Eighteenmile Creek Watershed is presented.	No chemical sediment data presented in this model. The model may have future uses for evaluating sediment transport and creek flow.
E & E 2009. Eighteenmile Creek Beneficial Use Impairment Assessment. Niagara County, New York. Prepared for NCSWCD.		Fish and wildlife surveys for Eighteenmile Creek and PCB and Dioxin/furan results for fish tissue from brown bullheads in Reach 1 are included. Tissue results are available electronically and included in the Trophic Trace model database.	No sediment data presented in this report. Tissue results are considered usable for bioaccumulation modeling but the tissue data was not imported into the RI database.
Ecology and Environment, Inc. 2007. Final Report for the Eighteenmile Creek PCB Source Trackdown Project. Prepared for NCSWCD.	NCSWCD 2007	Presents sediment data from Reach 7 and tributaries. PCB and metals results from sediment cores and PCB screening results from sediment grab samples are available electronically.	Sediment data are included in the RI database for both metals and PCBs. Sediment data from the cores are considered usable for the RI nature and extent evaluation.
USEPA 2008a. Field Data Report, Eighteenmile Creek Sediment.	USEPA 2008	Three-sample sediments collected downstream of Burt Dam program and analyzed for PCBs, Metals, Mercury, Pesticides, and TOC.	Only Metals and TOC data are available electronically. PCBs are non-detected in the samples, which is not consistent with other data sets. PCB results will not be included.

Table 1
Summary of Historical Data Evaluation
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Appendix C Report	RI Database Study Key	Data Summary	Data Evaluation and Use
USEPA 2008b. Field Data Report, Lake Ontario Tributaries 2005-2006. USEPA Monitoring and Assessment Branch		Beginning in April 2002, ambient water samples were collected two to three times annually from stations located in the downstream portions of five tributaries to Lake Ontario including Eighteenmile Creek.	The water column data may be useful for evaluation of sediment impacts in future risk analysis.
USEPA. 2011. Field Data Report, Lake Ontario Tributaries 2009-2010. USEPA Monitoring and Assessment Branch.		Update of the annual ambient water sampling.	The water column data may be useful for evaluation of sediment impacts in future risk analysis.
NYSDEC. 2009. Toxic Chemicals in NYS Tributaries to Lake Ontario: A Report on Sampling Undertaken in 2007 and 2008 with Special Emphasis on the Polychlorinated Dibenzodioxins and Furans.		Water column sampling was conducted using a modification of the Trace Organics Platform Sampler (TOPS) from known locations within Eighteenmile Creek for dioxins, furans, PCBs, pesticides, and mercury. No sediment data are included in this report.	The water column data may be useful for evaluation of sediment impacts in future risk analysis. Report provides comparability to other tributaries in Lake Ontario.
CH2MHILL and EEEPC 2011. Data Summary Report, Site Characterization, Eighteenmile Creek AOC. Prepared for USEPA GLNPO.	USEPA GLNPO	Sediment data from Reaches 2 through 7 in the AOC, include PCB Aroclor, Metals, PAHs, PCB Congener, and Pesticide data.	Data are considered usable for the nature and extent of contamination and will be included in the RI database.
Ecology and Environment, Inc., 2011. Interim Eighteenmile Creek AOC Strategic Plan for Beneficial Use Impairment (BUI) Delisting, Prepared for USACE Buffalo District.		Presents a summary of BUIs and a strategy for BUI delisting for Eighteenmile Creek. No new sediment results are presented.	Report presents data needs for delisting of BUIs that may be considered for future projects.
Previous Investigations in the Corridor Site			
NYSDEC. 1994. An Investigation of the Dioxin/Furan Concentrations in the Sediments of Eighteenmile Creek and the Erie Canal near Lockport, NY.		Summarizes dioxin and furan data from sediment and other samples collected by NYSDEC since 1998. Includes results for sediments collected in the Erie Canal.	Sediment data are not consisted usable for nature and extent of contamination.

Table 1
Summary of Historical Data Evaluation
Eighteenmile Creek Area of Concern

Appendix C Report	RI Database Study Key	Data Summary	Data Evaluation and Use
NYSDEC 1998. Eighteenmile Creek and Olcott Harbor Sediment Study.	NYSDEC 1998	Sediment sampling at 8 sites on Eighteenmile Creek, tributaries, and Barge Canal. Sampling was completed in 1994.	A partial data set is available electronically for PCBs, Dioxin and Furan and PCB Congener data from Trophic Trace Model. The available data were imported and considered usable for the RI report. Additional data was entered from the original report for missing COPCs. Only total concentrations were entered for PCBs, PAHs, and DDT metabolites.
NYSDEC. 2000. Site Investigation Report, Former Flintkote Plant Site.		Report includes site characterization data for Flintkote Plant site. No sediment samples collected during investigation.	A partial data set is available electronically for PCBs, Dioxin and Furan and PCB Congener data from Trophic Trace Model. The available data were imported and considered usable for the RI report. Additional data was entered from the original report for missing COPCs. Only total concentrations were entered for PCBs, PAHs, and DDT metabolites.
NYSDEC. 2001a. Final Report, Eighteenmile Creek Sediment Study, Summary of August 17-20 and November 3, 1998 Results.	NYSDEC 2001	Sediment sampling at 12 sites on Eighteenmile Creek, tributaries, and Barge Canal, water column sampling to evaluate sediment transport from Barge Canal to Eighteenmile Creek. Sampling was completed in 1998. Some of the sampling sites were the same location as the NYSDEC 1998. Provides a detailed description of dioxin and furan data.	A partial data set is available electronically for PCBs and metals as well as Dioxin/Furan and PCB Congener data from Trophic Trace Model. The available data were imported and considered usable for the RI report. Additional data was entered from the original report for missing COPCs. Only total concentrations were entered for PCBs, PAHs, and DDT metabolites.

Table 1
Summary of Historical Data Evaluation
Eighteenmile Creek Area of Concern

Appendix C Report	RI Database Study Key	Data Summary	Data Evaluation and Use
NYSDEC. 2004. Site Investigation Scope of Work. Eighteenmile Creek Corridor: New York State Barge Canal to North Transit Road.	NYSDEC 2004	The scope of work summarizes initial data collection for Eighteenmile Creek Corridor Site and Water Street residential sampling. Data from historical investigations are compiled for PCBs and lead from select samples from NYSDEC 1998 and NYSDEC 2001.	Sediment data are considered useable for nature and extent of contamination. Sediment results for PCBs and lead were available electronically were imported into the RI database. Additional data was entered from the original report for missing COPCs.
NYSDEC. 2006a. Remedial Investigation Report, Eighteenmile Creek Corridor, Lockport.	NYSDEC RI	Sediment and soil sampling in corridor site between NYS Barge Canal and the Flintkote Plant is presented. Sediment results include PCBs and select metals.	Sediment data are considered useable for nature and extent of contamination. Sediment results for PCBs and lead were available electronically were imported into the RI database. Additional data was entered from the original report for missing COPCs.
EEEPC.2009a. Final Supplemental Remedial Investigation Report for the Eighteenmile Creek Corridor. Prepared for the NYSDEC.	NYSDEC SRI	Sediment, soil, waste, and groundwater samples from Upstream, Barge Canal, Upson Park, White Trans. Property, United Paperboard, Flintkote Plant, and downstream of Flintkote Plant are presented. PCB, TOC, Pesticides, PAH, and metals data are available for the sediments.	Sediment data are included in the RI database, soils and water data can be included in the future. All data available electronically. SE matrix code indicates sediments from creek.
EEEPC. 2009b. Final Additional Investigation Addendum to the Supplemental Remedial Investigation Report for the Eighteenmile Creek Corridor. Prepared for the NYSDEC.	NYSDEC SRI-A	Report presents additional activities to support SRI, including groundwater, PISCES, and sediment samples from the Erie Canal were collected and analyzed for PCB, metals and TOC.	Sediment data from the Erie Canal will be included in the RI database and are considered usable for RI purposes.

Table 1
Summary of Historical Data Evaluation
Eighteenmile Creek Area of Concern

Appendix C Report	RI Database Study Key	Data Summary	Data Evaluation and Use
NYSDEC 2010c. Results From The Sampling Of Erie Canal Suspended Sediments And Creek Waters For PCBs. Eighteenmile Creek Corridor Site.		Additional suspended sediment and water column above sediment sampling for PCB Aroclors in Erie Canal, creek, millrace, and offsite locations.	Data could be usable for PCB comparison in the water column. Suspended sediment sampling was unsuccessful. Filter media used for sediment collection were cut submitted for PCB analysis (extracted, analyzed and reported similar to a “wipe” type samples). There were no positive detections found in these samples. Data were not available electronically and not directly related to nature and extent.

Table 2

Summary of Sediment Chemistry Samples for Remedial Investigation by Study

Eighteenmile Creek Area of Concern

Sample Location	Reach	Study	Sample Date Range		Number of Samples							
					PCB Aroclors	PCB Congeners	Metals	Mercury	PAH	Pesticides	Dioxins/ Furans	Total Organic Carbon
Creek	01	NYSDEC 1998	5/25/94	10/12/94	16	--	24	24	--	10	12	--
Creek	01	USACE 2004	8/26/03	8/27/03	--	20	20	20	--	40	30	40
Creek	01	USACE 2010	10/26/10	10/26/10	16	16	--	--	--	--	--	16
Creek	01	USEPA 2008	8/1/08	8/1/08	--	--	3	3	--	--	--	3
Creek	02	NYSDEC 1998	10/11/94	10/11/94	3	--	3	3	--	3	2	--
Creek	02	NYSDEC 2001	8/18/98	8/18/98	11	11	11	11	11	11	11	--
Creek	02	USEPA GLNPO	5/18/10	5/25/10	113	23	113	113	113	--	--	105
Creek	03	NYSDEC 2001	8/18/98	8/18/98	9	9	9	9	9	7	9	--
Creek	03	USEPA GLNPO	5/25/10	5/27/10	71	19	71	71	71	--	--	59
Creek	04	USEPA GLNPO	11/16/09	6/23/10	25	3	22	22	15	4	--	22
Creek	05	NYSDEC 1998	10/12/94	10/12/94	2	--	2	2	--	2	2	--
Creek	05	NYSDEC 2001	8/19/98	8/19/98	10	11	11	10	11	11	11	--
Creek	05	USEPA GLNPO	5/20/10	7/2/10	70	4	70	70	70	--	--	59
Creek	06	USEPA GLNPO	11/17/09	7/2/10	62	6	62	62	51	6	--	62
Creek	07	NCSWCD 2007	8/23/06	9/8/06	30	--	10	10	--	--	--	10
Creek	07	USEPA GLNPO	11/23/09	7/1/10	91	19	91	91	67	15	--	91
Creek	09	NCSWCD 2007	8/24/06	8/24/06	6	--	2	2	--	--	--	2
Creek	09	NYSDEC 2004	8/7/96	12/30/99	2	--	1	1	1	--	--	--
Creek	09	NYSDEC RI	9/1/05	9/1/05	6	--	6	--	--	--	--	--
Creek	09	NYSDEC SRI	4/24/07	4/25/07	11	--	11	--	4	4	--	4
Creek	10	NYSDEC 1998	10/12/94	10/12/94	2	2	2	2	--	2	1	--
Creek	10	NYSDEC 2001	8/17/98	8/17/98	--	2	2	1	2	2	2	--
Creek	10	NYSDEC 2004	1/1/94	11/26/02	13	--	11	5	6	--	--	--
Creek	10	NYSDEC RI	7/23/02	9/1/05	47	--	47	--	--	--	--	--
Creek	10	NYSDEC SRI	4/18/07	4/24/07	63	--	63	--	21	21	--	22
Creek_E	10	NYSDEC RI	9/1/05	9/1/05	2	--	2	--	--	--	--	--
Creek_E	10	NYSDEC SRI	4/20/07	4/25/07	11	--	11	2	6	6	--	4
Canal	Erie Canal	NYSDEC 2001	8/20/98	8/20/98	1	10	10	10	10	3	10	--
Canal	Erie Canal	NYSDEC RI	9/1/05	9/1/05	11	--	11	--	--	--	--	--
Canal	Erie Canal	NYSDEC SRI	6/13/07	6/15/07	6	--	6	--	2	1	--	2
Canal	Erie Canal	NYSDEC SRI-A	12/5/08	12/6/08	18	--	18	--	--	--	--	18
Upstream	Upstream	NYSDEC 2001	8/17/98	8/17/98	--	1	1	--	1	1	1	--
Upstream	Upstream	NYSDEC SRI	4/25/07	4/25/07	2	--	2	--	2	2	--	2
Tributary	04	USEPA GLNPO	11/17/09	11/17/09	1	--	1	1	1	1	--	1
Tributary	07	NYSDEC 2001	8/17/98	8/18/98	--	2	2	2	2	--	2	--
Tributary	07	USEPA GLNPO	11/23/09	6/29/10	19	--	19	19	19	10	--	19
Historic Creek	04	USEPA GLNPO	11/16/09	11/16/09	1	--	1	1	--	--	--	1

Table 2

Summary of Sediment Chemistry Samples for Remedial Investigation by Study

Eighteenmile Creek Area of Concern

Sample Location	Reach	Study	Sample Date Range		Number of Samples							
					PCB Aroclors	PCB Congeners	Metals	Mercury	PAH	Pesticides	Dioxins/ Furans	Total Organic Carbon
Historic Creek	05	USEPA GLNPO	11/18/09	11/18/09	1	--	1	1	1	1	--	1
Historic Creek	06	USEPA GLNPO	12/2/09	12/2/09	2	--	2	2	1	1	--	2
Historic Creek	07	USEPA GLNPO	11/23/09	11/30/09	5	1	5	5	1	1	--	5
Wetland	03	USEPA GLNPO	11/16/09	11/16/09	4	1	4	4	1	1	--	4
Wetland	04	USEPA GLNPO	11/16/09	11/18/09	2	--	2	2	1	1	--	2
Wetland	05	USEPA GLNPO	11/18/09	11/19/09	4	1	4	4	1	1	--	4
Wetland	06	USEPA GLNPO	12/2/09	12/2/09	1	--	1	1	--	--	--	1
Wetland	07	USEPA GLNPO	11/30/09	11/30/09	1	--	1	1	1	1	--	1

Notes:

-- = No detections/samples in Reach

Creek_E = Headwater East Branch

Table 2 (a)

Summary of Sediment Chemistry Samples for Remedial Investigation Totals by Reach

Eighteenmile Creek Area of Concern

					Number of Samples							
Sample Location	**Reach**	**Number of Studies**	**Sample Date Range**		**PCB Aroclors**	**PCB Congeners**	**Metals**	**Mercury**	**PAH**	**Pesticides**	**Dioxins/ Furans**	**Total Organic Carbon**
Creek	01	4	5/25/94	10/26/10	32	36	47	47	--	50	42	59
Creek	02	3	10/11/94	5/25/10	127	34	127	127	124	14	13	105
Creek	03	2	8/18/98	5/27/10	80	28	80	80	80	7	9	59
Creek	04	1	11/16/09	6/23/10	25	3	22	22	15	4	--	22
Creek	05	3	10/12/94	7/2/10	82	15	83	82	81	13	13	59
Creek	06	1	11/17/09	7/2/10	62	6	62	62	51	6	--	62
Creek	07	2	8/23/06	7/1/10	121	19	101	101	67	15	--	101
Creek	09	4	8/7/96	4/25/07	25	--	20	3	5	4	--	6
Creek	10	5	1/1/94	4/24/07	125	4	125	8	29	25	3	22
Creek_E	10	2	9/1/05	4/25/07	13	--	13	2	6	6	--	4
Creek	**Subtotals**				**692**	**145**	**680**	**534**	**458**	**144**	**80**	**499**
Canal	Erie Canal	4	8/20/98	12/6/08	36	10	45	10	12	4	10	20
Upstream	Upstream	1	8/17/98	4/25/07	2	1	3	--	3	3	1	2
Tributary	04, 07	2	8/17/98	6/29/10	20	2	22	22	22	11	2	20
Historic Creek	04 - 07	1	11/16/09	12/2/09	9	1	9	9	3	3	--	9
Wetland	03 - 07	1	11/16/09	12/2/09	12	2	12	12	4	4	--	12
Totals					**771**	**161**	**771**	**587**	**502**	**169**	**93**	**562**

Notes:

-- = No detections/samples in Reach

Creek_E = Headwater East Branch

Table 3
Sediment Screening Criteria for Non-polar Organic COPCs
Eighteenmile Creek Area of Concern

			Human Bioaccumulation			Benthic Aquatic Life Acute Toxicity			Benthic Aquatic Life Chronic Toxicity			Wildlife Bioaccumulation		
Compound	**Logk_{ow}**	**TOC gOC/kg**	**Water Criteria (µg/l)**	**Sediment Criteria (µg/gOC)**	**Site-specific Sediment Criteria (mg /kg)**	**Water Criteria (µg/l)**	**Sediment Criteria (µg/gOC)**	**Site-specific Sediment Criteria (mg /kg)**	**Water Criteria (µg/l)**	**Sediment Criteria (µg/gOC)**	**Site-specific Sediment Criteria (mg /kg)**	**Water Criteria (µg/l)**	**Sediment Criteria (µg/gOC)**	**Site-specific Sediment Criteria (mg /kg)**
PCBs (total)	6.14	54.86	0.0000006	0.0008	0.00005	2	2761	151	0.014	19.3	1.0	0.001	1.4	0.077
2-Methylnaphthalene	3.86	54.86				42	304	17	4.7	34	1.9			
Acenapthene		54.86								140	7.7		140	7.681
Anthracene	4.45	54.86				35	986	54	3.8	107	5.9			
Benzo(a)Anthracene	5.61	54.86	0.0012	1.3	0.072	0.23	94	5.2	0.3	12	0.66			
Benzo(a)Pyrene	6.04	54.86	0.0012	1.3	0.072									
Benzo(b)Fluoranthene	6.04	54.86	0.0012	1.3	0.072									
Benzo(k)Fluoranthene	6.04	54.86	0.0012	1.3	0.072									
Chrysene	6.04	54.86	0.0012	1.3	0.072									
Dibenz(a,h)Anthracene		54.86												
Fluoranthene	5.19	54.86								1020	56.0			
Fluorene	4.18	54.86				4.8	73	4	0.54	8	0.44			
Ideno(1,2,3-cd)pyrene	6.04	54.86	0.0012	1.3	0.072									
Naphthalene	3.37	54.86				110	258	14	13	30	1.65			
Phenanthrene	4.45	54.86								120	6.58			
Pyrene	5.32	54.86				42	8775	481	4.6	961	52.7			
PAHs (total)								96			15.0			
DDT and metabolites	6.00	54.86	0.00001	0.01	0.001	1.1	1100	60	0.001	1	0.055	0.001	1	0.055
Dieldrin	5.00	54.86	0.001	0.1	0.01				9	17	0.933	0.0077	0.77	0.043
2,3,7,8-TCDD	7.00	54.859	0.000001	0.01	0.01							2E-08	0.0002	0.001

Notes:

-- = No detections/samples in Reach

Creek_E = Headwater East Branch

µg/l = micrograms per liter

µg/gOC = micrograms per gram of organic carbon

mg/kg = milligrams per kilogram

Table 4
Sediment Criteria for Metals
Eighteenmile Creek Area of Concern

Metal	Lowest Effect Level mg/kg	Severe Effect Level mg/kg	Concensus Standards mg/kg
Antimony	2 (L)	25 (L)	
Arsenic	6 (P)	33 (P)	9.79
Cadmium	0.6 (P)	9 (L)	0.99
Chromium	26 (P)	110 (P)	43.4
Copper	16 (P)	110 (P)	31.6
Iron (%)	0.02 (P)	0.04 (P)	
Lead	31 (P)	110 (L)	35.8
Manganese	460 (P)	1100 (L)	
Mercury	0.15 (L)	1.3 (L)	0.18
Nickel	16 (P)	50 (L)	22.7
Silver	1 (L)	2.2 (L)	
Zinc	120 (P/L)	270 (L)	121

Notes:
"L" criterion taken from Long and Morgan (1990)
"P" criterion taken from Persaud et al. (1992)
Consensus standards taken from MacDonald et al. (2000)
mg/kg = milligrams per kilogram

Table 5

Site-specific Sediment Screening Criteria Primary COPCs

Eighteenmile Creek Area of Concern

COPC	Site-specific Criteria Low Value (mg/kg)	Site-specific Criteria High Value (mg/kg)	Hazardous Waste Criteria (mg/kg)
PCBs (total)	1	151	50
PAHs (total)	15	100	
ARSENIC	6	33	
CHROMIUM, TOTAL	26	110	
COPPER	16	110	
LEAD	31	110	1000
ZINC	120	270	
MERCURY	0.15	1.3	
Sum of DDT+DDE+DDD	0.055	60	
DIELDRIN*	0.933		

Notes:

* There is no acute toxicity criteria for dieldrin

mg/kg = milligrams per kilogram

Table 6a

Statistical Summary of PCBs in Sediment Samples for Remedial Investigation

Eighteenmile Creek Area of Concern

		PCB (Total Aroclors in mg/kg)					Exceeds Criteria[(b)]		
							Low	High	Haz
Sample Location	**Reach**	**Number Detected**	**Number of Samples**	**Average[(a)]**	**Minimum Detected**	**Maximum Detected**	**1 mg/kg**	**151 mg/kg**	**50 mg/kg**
Creek	01	19	32	0.41	0.001	0.9	--	--	--
Creek	02	114	127	1.7	0.009	23.0	33	--	--
Creek	03	63	80	2.3	0.0	25.9	27	--	--
Creek	04	19	22	2.2	0.067	27.0	5	--	--
Creek	05	39	82	1.1	0.001	18.4	6	--	--
Creek	06	48	62	1.1	0.018	25.0	9	--	--
Creek	07	105	121	8.7	0.016	97.0	74	--	6
Creek	09	22	25	9.4	0.012	50.0	14	--	1
Creek	10	104	125	32.4	0.006	1400	51	5	10
Creek_E	10	13	13	0.4	0.012	3.8	1	--	--
Creek	**Totals**	**546**	**689**				**220**	**5**	**17**
Canal	Erie Canal	34	36	20.1	0.007	310	18	1	3
Upstream	Upstream	--	2	--	--	--	--	--	--
Tributary	04	--	1	--	--	--	--	--	--
Tributary	07	2	19	0.3	0.110	0.4	--	--	--
Historic Creek	04	1	1	0.2	0.150	0.2	--	--	--
Historic Creek	05	--	1	--	--	--	--	--	--
Historic Creek	06	1	2	0.5	0.480	0.5	--	--	--
Historic Creek	07	4	5	1.2	0.035	3.3	2	--	--
Wetland	03	4	4	0.3	0.200	0.5	--	--	--
Wetland	04	1	2	0.2	0.150	0.2	--	--	--
Wetland	05	4	4	0.5	0.130	1.2	1	--	--
Wetland	06	1	1	0.1	0.072	0.1	--	--	--
Wetland	07	1	1	0.2	0.190	0.2	--	--	--
Other	**Totals**	**19**	**41**				**3**	**0**	**0**

Notes:

-- = No detections/samples in Reach

[(a)] Average is for samples with positive results only

[(b)] Shows the number of detected results that exceed screening criteria are listed on Table 5

Table 6b

Statistical Summary of PCBs in Sediment Samples for Remedial Investigation

Eighteenmile Creek Area of Concern

		PCB (Total Congeners in mg/kg)					Exceeds Criteria[(b)]		
							Low	High	Haz
Sample Location	**Reach**	**Number Detected**	**Number of Samples**	**Average[(a)]**	**Minimum Detected**	**Maximum Detected**	**1 mg/kg**	**150 mg/kg**	**50 mg/kg**
Creek	01	36	36	0.37	0.021	2.0	2	--	--
Creek	02	34	34	3.7	0.116	24.1	29	--	--
Creek	03	28	28	6.4	0.0	35.9	20	--	--
Creek	04	3	3	1.4	0.290	2.8	1	--	--
Creek	05	13	15	3.3	0.001	29.1	3	--	--
Creek	06	6	6	4.6	1.000	12.0	6	--	--
Creek	07	19	19	23.7	4.900	86.0	19	--	2
Creek	09	--	--	--	--	--	--	--	--
Creek	10	4	4	9.9	1.672	25	4	--	--
Creek_E	10	--	--	--	--	--	--	--	--
Creek	**Totals**	**143**	**145**				**84**	**0**	**2**
Canal	Erie Canal	10	10	1.5	0.120	5	4	--	--
Upstream	Upstream	1	1	0.02	0.020	0.02	--	--	--
Tributary	04	--	--	--	--	--	--	--	--
Tributary	07	2	2	0.1	0.000	0.2	--	--	--
Historic Creek	04	--	--	--	--	--	--	--	--
Historic Creek	05	--	--	--	--	--	--	--	--
Historic Creek	06	--	--	--	--	--	--	--	--
Historic Creek	07	1	1	15.0	15	15	1	--	--
Wetland	03	1	1	0.7	0.720	0.7	--	--	--
Wetland	04	--	--	--	--	--	--	--	--
Wetland	05	1	1	0.2	0.180	0.2	--	--	--
Wetland	06	--	--	--	--	--	--	--	--
Wetland	07	--	--	--	--	--	--	--	--
Other	**Totals**	**5**	**5**				**1**	**0**	**0**

Notes:

-- = No detections/samples in Reach

[(a)] Average is for samples with positive results only

[(b)] Shows the number of detected results that exceed screening criteria are listed on Table 5

Creek_E = Headwater East Branch

mg/kg = milligrams per kilogram

Table 7a

Statistical Summary of Metals in Sediment Samples for Remedial Investigation

Eighteenmile Creek Area of Concern

		Lead (mg/kg)					Exceeds Criteria[(b)]		
							Low	High	Haz
Sample Location	**Reach**	**Number Detected**	**Number of Samples**	**Average[(a)]**	**Minimum Detected**	**Maximum Detected**	**31 mg/kg**	**110 mg/kg**	**1000 mg/kg**
Creek	01	47	47	118	4	419	32	22	--
Creek	02	127	127	1525	6	6760	121	120	45
Creek	03	80	80	1574	4.5	5790	71	70	31
Creek	04	22	22	449	47	2320	22	22	3
Creek	05	83	83	784	6	7850	74	63	11
Creek	06	62	62	593	76	4380	62	60	9
Creek	07	101	101	635	11	2940	100	99	15
Creek	09	20	20	425	33	2040	20	17	2
Creek	10	125	125	969	11	25000	121	103	26
Creek_E	10	13	13	235	63	807	13	12	--
Creek	**Totals**	**680**	**680**				**636**	**588**	**142**
Canal	Erie Canal	45	45	135	33	483	45	21	--
Upstream	Upstream	3	3	49	9	103	2	--	--
Tributary	04	1	1	20	20	20	--	--	--
Tributary	07	21	21	251	5	823	12	8	--
Historic Creek	04	1	1	193	193	193	1	1	--
Historic Creek	05	1	1	31	31	31	1	--	--
Historic Creek	06	2	2	396	359	433	2	2	--
Historic Creek	07	5	5	236	57	400	5	4	--
Wetland	03	4	4	380	310	533	4	4	--
Wetland	04	2	2	148	125	170	2	2	--
Wetland	05	4	4	357	265	473	4	4	--
Wetland	06	1	1	299	299	299	1	1	--
Wetland	07	1	1	339	339	339	1	1	--
Other	**Totals**	**43**	**43**				**21**	**19**	**0**

Notes:

-- = No detections/samples in Reach

[(a)] Average is for samples with positive results only

[(b)] Shows the number of detected results that exceed screening criteria are listed on Table 5

Creek_E = Headwater East Branch

mg/kg = milligrams per kilogram

Table 7b

Statistical Summary of Metals in Sediment Samples for Remedial Investigation

Eighteenmile Creek Area of Concern

		Arsenic (mg/kg)					Exceeds Criteria[(b)]	
							Low	High
Sample Location	**Reach**	**Number Detected**	**Number of Samples**	**Average[(a)]**	**Minimum Detected**	**Maximum Detected**	**6 mg/kg**	**33 mg/kg**
Creek	01	47	47	4.3	1.0	13	8	--
Creek	02	127	127	10.6	1.6	32	95	--
Creek	03	80	80	8.4	2.0	17	50	--
Creek	04	22	22	4.9	2.6	14	4	--
Creek	05	83	83	9.3	1.2	33	59	1
Creek	06	62	62	5.4	2.9	13	14	--
Creek	07	100	101	6.9	2.2	31	54	--
Creek	09	14	14	10.2	2.8	25	10	--
Creek	10	73	73	9.4	2.1	37	43	1
Creek_E	10	11	11	5.5	1.2	11	5	--
Creek	**Totals**	**619**	**620**				**342**	**2**
Canal	Erie Canal	34	34	5.7	1.8	20.0	6	--
Upstream	Upstream	3	3	4.9	3.3	7.7	1	--
Tributary	04	1	1	2.6	2.6	2.6	--	--
Tributary	07	21	21	4.8	1.0	8.0	6	--
Historic Creek	04	1	1	4.1	4.1	4.1	--	--
Historic Creek	05	1	1	3.2	3.2	3.2	--	--
Historic Creek	06	2	2	8.7	5.3	12.0	1	--
Historic Creek	07	5	5	6.3	3.6	11.0	3	--
Wetland	03	4	4	5.1	4.5	5.4	--	--
Wetland	04	2	2	4.0	3.8	4.2	--	--
Wetland	05	4	4	6.2	4.9	8.6	2	--
Wetland	06	1	1	6.8	6.8	6.8	1	--
Wetland	07	1	1	4.3	4.3	4.3	--	--
Other	**Totals**	**43**	**43**				**7**	**0**

Notes:

-- = No detections/samples in Reach

[(a)] Average is for samples with positive results only

[(b)] Shows the number of detected results that exceed screening criteria are listed on Table 5

Creek_E = Headwater East Branch

mg/kg = milligrams per kilogram

Table 7c

Statistical Summary of Metals in Sediment Samples for Remedial Investigation

Eighteenmile Creek Area of Concern

		Chromium (mg/kg)					Exceeds Criteria[(b)]	
							Low	High
Sample Location	**Reach**	**Number Detected**	**Number of Samples**	**Average[(a)]**	**Minimum Detected**	**Maximum Detected**	**26 mg/kg**	**110 mg/kg**
Creek	01	47	47	70	8	867	29	4
Creek	02	127	127	472	14	1950	121	93
Creek	03	80	80	470	12.0	2090	71	57
Creek	04	22	22	153	19	1090	20	6
Creek	05	83	83	237	14	1470	70	39
Creek	06	62	62	159	13	1380	61	18
Creek	07	101	101	156	13	703	100	60
Creek	09	14	14	48	9	196	8	1
Creek	10	73	73	62	5	1200	39	7
Creek_E	10	11	11	16	8	41	1	--
Creek	**Totals**	**620**	**620**				**520**	**285**
Canal	Erie Canal	34	34	32	6	91	21	--
Upstream	Upstream	3	3	13	9	18	--	--
Tributary	04	1	1	13	13	13	--	--
Tributary	07	21	21	61	8	201	10	4
Historic Creek	04	1	1	65	65	65	1	--
Historic Creek	05	1	1	14	14	14	--	--
Historic Creek	06	2	2	147	95	199	2	1
Historic Creek	07	5	5	63	26	109	5	--
Wetland	03	4	4	140	108	216	4	3
Wetland	04	2	2	49	36	62	2	--
Wetland	05	4	4	133	94	172	4	3
Wetland	06	1	1	72	72	72	1	--
Wetland	07	1	1	78	78	78	1	--
Other	**Totals**	**43**	**43**				**20**	**7**

Notes:

-- = No detections/samples in Reach

[(a)] Average is for samples with positive results only

[(b)] Shows the number of detected results that exceed screening criteria are listed on Table 5

Creek_E = Headwater East Branch

mg/kg = milligrams per kilogram

Table 7d

Statistical Summary of Metals in Sediment Samples for Remedial Investigation

Eighteenmile Creek Area of Concern

		Copper (mg/kg)					Exceeds Criteria[(b)]	
							Low	High
Sample Location	**Reach**	**Number Detected**	**Number of Samples**	**Average[(a)]**	**Minimum Detected**	**Maximum Detected**	**16 mg/kg**	**110 mg/kg**
Creek	01	47	47	74	10	245	34	14
Creek	02	127	127	932	9	3790	122	119
Creek	03	80	80	921	5.9	3170	73	70
Creek	04	22	22	260	26	1230	22	16
Creek	05	83	83	395	5	3000	77	64
Creek	06	62	62	351	28	2710	62	51
Creek	07	101	101	551	18	1620	101	99
Creek	09	14	14	622	27	2640	14	10
Creek	10	73	73	1258	16	54900	73	43
Creek_E	10	11	11	107	32	361	11	3
Creek	**Totals**	**620**	**620**				**589**	**489**
Canal	Erie Canal	34	34	44	5	106	29	--
Upstream	Upstream	3	3	18	12	21	2	--
Tributary	04	1	1	10	10	10	--	--
Tributary	07	21	21	98	9	292	18	7
Historic Creek	04	1	1	153	153	153	1	1
Historic Creek	05	1	1	24	24	24	1	--
Historic Creek	06	2	2	256	210	301	2	2
Historic Creek	07	5	5	158	42	272	5	3
Wetland	03	4	4	251	210	347	4	4
Wetland	04	2	2	91	72	110	2	1
Wetland	05	4	4	237	182	301	4	4
Wetland	06	1	1	186	186	186	1	1
Wetland	07	1	1	275	275	275	1	1
Other	**Totals**	**43**	**43**				**21**	**17**

Notes:

-- = No detections/samples in Reach

[(a)] Average is for samples with positive results only

[(b)] Shows the number of detected results that exceed screening criteria are listed on Table 5

Creek_E = Headwater East Branch

mg/kg = milligrams per kilogram

Table 7e

Statistical Summary of Metals in Sediment Samples for Remedial Investigation

Eighteenmile Creek Area of Concern

		Zinc (mg/kg)					Exceeds Criteria[(b)]	
							Low	High
Sample Location	**Reach**	**Number Detected**	**Number of Samples**	**Average[(a)]**	**Minimum Detected**	**Maximum Detected**	**120 mg/kg**	**270 mg/kg**
Creek	01	46	46	347	67	1350	29	24
Creek	02	127	127	3403	57	16500	121	119
Creek	03	80	80	4427	47.0	20000	71	71
Creek	04	22	22	1470	183	8670	22	20
Creek	05	64	83	2068	60	24000	54	51
Creek	06	62	62	1236	82	9760	61	59
Creek	07	101	101	1190	76	5980	100	99
Creek	09	14	14	686	51	2280	11	10
Creek	10	73	73	1314	46	21400	57	43
Creek_E	10	11	11	641	66	5190	7	4
Creek	**Totals**	**600**	**619**				**533**	**500**
Canal	Erie Canal	34	34	243	19	899	26	9
Upstream	Upstream	3	3	107	44	170	1	--
Tributary	04	1	1	63	63	63	--	--
Tributary	07	21	21	536	39	1850	14	9
Historic Creek	04	1	1	892	892	892	1	1
Historic Creek	05	1	1	309	309	309	1	1
Historic Creek	06	2	2	919	557	1280	2	2
Historic Creek	07	5	5	527	159	1030	5	3
Wetland	03	4	4	1146	899	1710	4	4
Wetland	04	2	2	374	304	444	2	2
Wetland	05	4	4	931	709	1310	4	4
Wetland	06	1	1	543	543	543	1	1
Wetland	07	1	1	820	820	820	1	1
Other	**Totals**	**43**	**43**				**21**	**19**

Notes:

-- = No detections/samples in Reach

[(a)] Average is for samples with positive results only

[(b)] Shows the number of detected results that exceed screening criteria are listed on Table 5

Creek_E = Headwater East Branch

mg/kg = milligrams per kilogram

Table 8

Statistical Summary of PAH in Sediment Samples for Remedial Investigation

Eighteenmile Creek Area of Concern

		PAH (Total in mg/kg)					Exceeds Criteria[(b)]	
							Low	High
Sample Location	**Reach**	**Number Detected**	**Number of Samples**	**Average[(a)]**	**Minimum Detected**	**Maximum Detected**	**15 mg/kg**	**100 mg/kg**
Creek	01	--	--	--	--	--	--	--
Creek	02	120	124	4.1	0.048	65	2	--
Creek	03	77	80	5.7	0.004	24.1	5	--
Creek	04	15	15	30.2	0.860	250	6	1
Creek	05	80	81	3.2	0.004	18.2	3	--
Creek	06	51	51	6.3	0.490	130	2	1
Creek	07	66	66	31.3	0.037	380	39	3
Creek	09	5	5	8.9	1.630	17.3	1	--
Creek	10	29	29	35.5	0.049	593	11	2
Creek_E	10	6	6	9.5	1.857	36.6	1	--
Creek	**Totals**	**449**	**457**				**70**	**7**
Canal	Erie Canal	12	12	11.0	1.870	30	3	--
Upstream	Upstream	3	3	13.5	5.632	25.6	1	--
Tributary	04	1	1	0.4	0.400	0.4	--	--
Tributary	07	20	21	8.4	0.046	97	2	--
Historic Creek	04	--	--	--	--	--	--	--
Historic Creek	05	1	1	49.0	49.0	49	1	--
Historic Creek	06	1	1	4.0	4.0	4.0	--	--
Historic Creek	07	1	1	29	29	29	1	--
Wetland	03	1	1	2.1	2.1	2.1	--	--
Wetland	04	1	1	2.0	2.0	2.0	--	--
Wetland	05	1	1	5.3	5.3	5.3	--	--
Wetland	06	--	--	--	--	--	--	--
Wetland	07	1	1	25	25	25	1	--
Other	**Totals**	**28**	**29**				**3**	**0**

Notes:

-- = No detections/samples in Reach

[(a)] Average is for samples with positive results only

[(b)] Shows the number of detected results that exceed screening criteria are listed on Table 5

Creek_E = Headwater East Branch

mg/kg = milligrams per kilogram

Table 9

Statistical Summary of PCBs in Sediment Samples for Remedial Investigation

Eighteenmile Creek Area of Concern

		Mercury (mg/kg)					Exceeds Criteria[(b)]	
							Low	High
Sample Location	**Reach**	**Number Detected**	**Number of Samples**	**Average[(a)]**	**Minimum Detected**	**Maximum Detected**	**0.15 mg/kg**	**1.3 mg/kg**
Creek	01	37	46	0.67	0.022	3.8	26	6
Creek	02	126	127	1.6	0.050	8.6	123	59
Creek	03	73	80	1.9	0.1	4.8	71	44
Creek	04	22	22	0.6	0.130	1.2	21	--
Creek	05	81	82	3.1	0.052	11.0	76	49
Creek	06	62	62	0.8	0.150	3.4	62	11
Creek	07	98	101	1.6	0.210	18.0	98	33
Creek	09	3	3	1.3	0.600	2.5	3	1
Creek	10	7	8	1.7	0.260	5	7	3
Creek_E	10	2	2	0.1	0.113	0.2	1	--
Creek	**Totals**	**511**	**533**				**488**	**206**
Canal	Erie Canal	10	10	0.3	0.118	1	8	--
Upstream	Upstream	--	--	--	--	--	--	--
Tributary	04	1	1	0.1	0.053	0.1	--	--
Tributary	07	13	21	0.1	0.058	0.3	6	--
Historic Creek	04	1	1	0.5	0.500	0.5	1	--
Historic Creek	05	--	1	--	--	--	--	--
Historic Creek	06	2	2	1.3	0.640	1.9	2	1
Historic Creek	07	5	5	0.8	0	2	5	1
Wetland	03	4	4	0.8	0.600	1.0	4	--
Wetland	04	2	2	0.7	0.710	0.8	2	--
Wetland	05	4	4	0.7	0.510	0.8	4	--
Wetland	06	1	1	2.5	2.500	2.5	1	1
Wetland	07	1	1	1.0	0.990	1.0	1	--
Other	**Totals**	**34**	**43**				**20**	**3**

Notes:

-- = No detections/samples in Reach

[(a)] Average is for samples with positive results only

[(b)] Shows the number of detected results that exceed screening criteria are listed on Table 5

Creek_E = Headwater East Branch

mg/kg = milligrams per kilogram

Table 10a

Statistical Summary of Pesticides in Sediment Samples for Remedial Investigation

Eighteenmile Creek Area of Concern

		DDT (Total Metabolites in mg/kg)					Exceeds Criteria[(b)]	
							Low	High
Sample Location	**Reach**	**Number Detected**	**Number of Samples**	**Average[(a)]**	**Minimum Detected**	**Maximum Detected**	**0.055 mg/kg**	**60 mg/kg**
Creek	01	25	31	0.02	0.003	0.1	--	--
Creek	02	13	14	0.04	0.004	0.3	2	--
Creek	03	6	7	0.03	0.0	0.1	2	--
Creek	04	3	4	0.03	0.013	0.1	--	--
Creek	05	9	13	0.02	0.002	0.1	--	--
Creek	06	5	6	0.05	0.014	0.1	--	--
Creek	07	13	15	0.66	0.018	5.7	--	--
Creek	09	1	4	0.00	0.001	0.0	--	--
Creek	10	22	25	0.11	0.001	1	6	--
Creek_E	10	5	6	0.09	0.005	0.2	2	--
Creek	**Totals**	**102**	**125**				**12**	**0**
Canal	Erie Canal	3	4	0.014	0.012	0.016	--	--
Upstream	Upstream	1	3	0.009	0.009	0.01	--	--
Tributary	04	1	1	0.006	0.006	0.006	--	--
Tributary	07	3	10	0.059	0.015	0.132	--	--
Historic Creek	04	--	--	--	--	--	--	--
Historic Creek	05	1	1	0.016	0.016	0.016	--	--
Historic Creek	06	1	1	0.036	0.036	0.036	--	--
Historic Creek	07	--	1	--	--	--	--	--
Wetland	03	--	1	--	--	--	--	--
Wetland	04	1	1	0.015	0.015	0.015	--	--
Wetland	05	1	1	0.039	0.039	0.039	--	--
Wetland	06	--	--	--	--	--	--	--
Wetland	07	--	1	--	--	--	--	--
Other	**Totals**	**8**	**18**				**0**	**0**

Notes:

-- = No detections/samples in Reach

[(a)] Average is for samples with positive results only

[(b)] Shows the number of detected results that exceed screening criteria are listed on Table 5

Creek_E = Headwater East Branch

mg/kg = milligrams per kilogram

Table 10b

Statistical Summary of Pesticides in Sediment Samples for Remedial Investigation

Eighteenmile Creek Area of Concern

		Dieldrin (mg/kg)					Exceeds Criteria[(b)]	
							Low	High
Sample Location	**Reach**	**Number Detected**	**Number of Samples**	**Average[(a)]**	**Minimum Detected**	**Maximum Detected**	**0.933 mg/kg**	*****
Creek	01	--	20	--	--	--	--	--
Creek	02	--	--	--	--	--	--	--
Creek	03	--	--	--	--	--	--	--
Creek	04	3	4	0.012	0.004	0.02	--	--
Creek	05	--	--	--	--	--	--	--
Creek	06	3	6	0.016	0.011	0.02	--	--
Creek	07	13	15	0.099	0.011	0.44	--	--
Creek	09	2	4	0.010	0.004	0.02	--	--
Creek	10	7	21	0.272	0.003	1.80	1	--
Creek_E	10	2	6	0.189	0.008	0.37	--	--
Creek	**Totals**	**30**	**76**				**1**	**0**
Canal	Erie Canal	1	1	0.0	0.006	0	--	--
Upstream	Upstream	1	2	0.02	0.023	0.02	--	--
Tributary	04	--	1	--	--	--	--	--
Tributary	07	2	10	0.026	0.023	0.028	--	--
Historic Creek	04	--	--	--	--	--	--	--
Historic Creek	05	--	1	--	--	--	--	--
Historic Creek	06	1	1	0.015	0.015	0.015	--	--
Historic Creek	07	--	1	--	--	--	--	--
Wetland	03	1	1	0.007	0.007	0.007	--	--
Wetland	04	--	1	--	--	--	--	--
Wetland	05	1	1	0.011	0.011	0.011	--	--
Wetland	06	--	--	--	--	--	--	--
Wetland	07	1	1	0.007	0.007	0.007	--	--
Other	**Totals**	**6**	**18**				**0**	**0**

Notes:

-- = No detections/samples in Reach

* = No high screening criteria applicable

[(a)] Average is for samples with positive results only

[(b)] Shows the number of detected results that exceed screening criteria are listed on Table 5

Creek_E = Headwater East Branch

mg/kg = milligrams per kilogram

Table 11

Statistical Summary of TOC in Sediment Samples for Remedial Investigation

Eighteenmile Creek Area of Concern

		Total Organic Carbon (mg/kg)				
Sample Location	**Reach**	**Number Detected**	**Number of Samples**	**Average[(a)]**	**Minimum Detected**	**Maximum Detected**
Creek	01	59	59	28668	6900	48000
Creek	02	105	105	66616	2470	150000
Creek	03	59	59	70992	1240.0	141000
Creek	04	22	22	59918	16000	147000
Creek	05	58	59	57605	3990	130000
Creek	06	62	62	53555	12000	116000
Creek	07	101	101	68669	8630	159000
Creek	09	6	6	56450	36300	79800
Creek	10	22	22	40645	5390	100000
Creek_E	10	4	4	74225	14000	193000
Creek	**Totals**	**498**	**499**			
Canal	Erie Canal	20	20	33097	4440	67500
Upstream	Upstream	2	2	8575	1650	15500
Tributary	04	1	1	22000	22000	22000
Tributary	07	19	19	41668	11000	112000
Historic Creek	04	1	1	103000	103000	103000
Historic Creek	05	1	1	54000	54000	54000
Historic Creek	06	2	2	28000	23000	33000
Historic Creek	07	5	5	61800	35000	97000
Wetland	03	4	4	66250	44000	80000
Wetland	04	2	2	33000	20000	46000
Wetland	05	4	4	94250	48000	175000
Wetland	06	1	1	26000	26000	26000
Wetland	07	1	1	61000	61000	61000
Other	**Totals**	**41**	**41**			

Notes:

-- = No detections/samples in Reach

[(a)] Average is for samples with positive results only

[(b)] Shows the number of detected results that exceed screening criteria are listed on Table 5

Creek_E = Headwater East Branch

mg/kg = milligrams per kilogram

Table 12

Summary of Percent Detected and Exceeded Criteria in Sediment Samples for Remedial Investigation

Eighteenmile Creek Area of Concern

		PCBs (Total Aroclors)				PAH			Lead			
Sample Location	**Reach**	**% Detect**	**% Exceeds Low[(b)]**	**% Exceeds High[(b)]**	**% Exceeds Haz[(b)]**	**% Detect**	**% Exceeds Low[(b)]**	**% Exceeds High[(b)]**	**% Detect**	**% Exceeds Low[(b)]**	**% Exceeds High[(b)]**	**% Exceeds Haz[(b)]**
Creek	01	59%	--	--	--	--	--	--	100%	68%	47%	--
Creek	02	90%	29%	--	--	97%	2%	--	100%	95%	94%	35%
Creek	03	79%	43%	--	--	96%	6%	--	100%	89%	88%	39%
Creek	04	86%	26%	--	--	100%	40%	7%	100%	100%	100%	14%
Creek	05	48%	15%	--	--	99%	4%	--	100%	89%	76%	13%
Creek	06	77%	19%	--	--	100%	4%	2%	100%	100%	97%	15%
Creek	07	87%	70%	--	6%	100%	59%	5%	100%	99%	98%	15%
Creek	09	88%	64%	--	5%	100%	20%	--	100%	100%	85%	10%
Creek	10	83%	49%	4%	10%	100%	38%	7%	100%	97%	82%	21%
Creek_E	10	100%	8%	--	--	100%	17%	--	100%	100%	92%	--
Creek	**Totals**	79%	40%	1%	3%	98%	16%	2%	100%	94%	86%	21%
Canal	Erie Canal	94%	53%	3%	9%	100%	25%	--	100%	100%	47%	--
Upstream	Upstream	--	--	--	--	100%	33%	--	100%	67%	--	--
Tributary	04	--	--	--	--	100%	--	--	100%	--	--	--
Tributary	07	11%	--	--	--	95%	10%	--	100%	57%	38%	--
Historic Creek	04	100%	--	--	--	--	--	--	100%	100%	100%	--
Historic Creek	05	--	--	--	--	100%	100%	--	100%	100%	--	--
Historic Creek	06	50%	--	--	--	100%	--	--	100%	100%	100%	--
Historic Creek	07	80%	50%	--	--	100%	100%	--	100%	100%	80%	--
Wetland	03	100%	--	--	--	100%	--	--	100%	100%	100%	--
Wetland	04	50%	--	--	--	100%	--	--	100%	100%	100%	--
Wetland	05	100%	25%	--	--	100%	--	--	100%	100%	100%	--
Wetland	06	100%	--	--	--	--	--	--	100%	100%	100%	--
Wetland	07	100%	--	--	--	100%	100%	--	100%	100%	100%	--
Other	**Totals**	46%	16%	--	--	97%	11%	--	100%	49%	44%	--

Notes:

-- = No detections/samples in Reach

[(a)] Average is for samples with positive results only

[(b)] Shows the number of detected results that exceed screening criteria are listed on Table 5

Creek_E = Headwater East Branch

Table 13

Statistical Summary of COPCs for Water Street Residental Soil Samples

Eighteenmile Creek Area of Concern

	COPCs (mg/kg)							
Contaminant	**Number Detected**	**Number of Samples**	**Average[a]**	**Minimum Detected**	**Maximum Detected**	**Exceeds Low Criteria[b]**	**Exceeds High Criteria[b]**	**Exceeds Haz Criteria[b]**
PCBs (total)	22	30	2.90	0.024	27.0	6	0	0
ARSENIC	20	20	16.5	5.30	66.5	18	0	0
CHROMIUM, TOTAL	20	20	26.5	10.7	164	5	1	0
COPPER	20	20	155.8	32.2	1010	20	9	0
LEAD	42	42	760.3	4.500	4630	40	38	11
ZINC	20	20	571.5	146	1660	20	12	0

Notes:

-- = No detections in samples

[a] Average is for samples with positive results only

[b] Shows the number of detected results that exceed screening criteria are listed on Table 5

COPC = Contaminant of potential concern

Creek_E = Headwater East Branch

Figures

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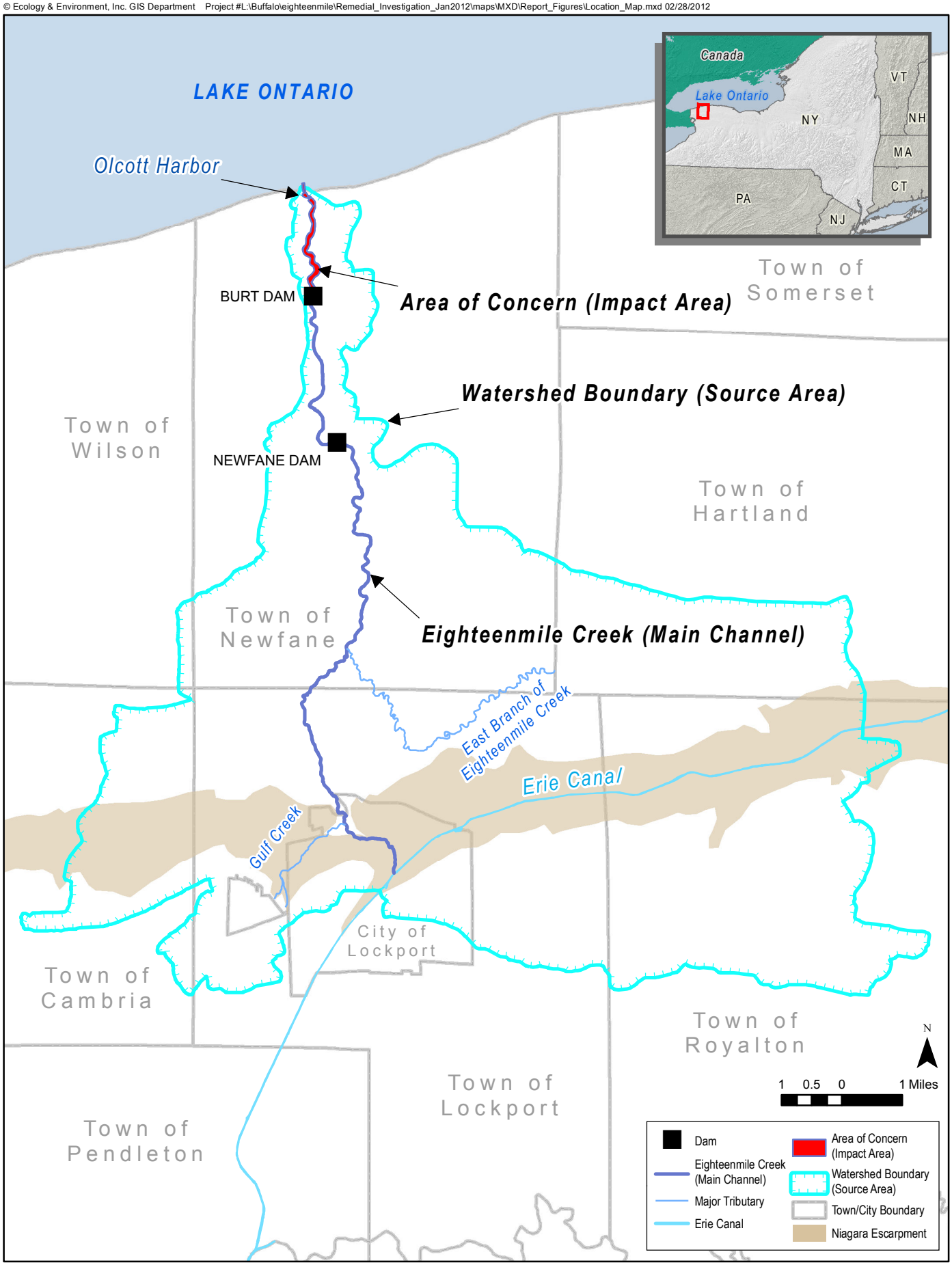


Figure 1 Eighteenmile Creek AOC Project Area and Watershed Boundaries

Lake Ontario

Reach 1
Mouth of Creek to Burt Dam

Burt Dam

Fisherman's Park

Reach 2
Burt Dam Impoundment

Reach 3
Confluence of Eighteenmile Creek with Upstream Extent of Burt Dam Impoundment

Reach 4
Bedrock/Gravel Channel Downstream of Newfane Dam

Hamlet of Newfane

Newfane Dam

Reach 5
Newfane Dam Impoundment

Reach 6
Section 1

Reach 6
Gravel Channel Upstream of Newfane Dam Impoundment

Reach 6
Section 2

Reach 7
Meandering Section with Large Woody Debris Downstream of Niagara Escarpment

Reach 7
Section 1

Reach 7
Section 2

Reach 7
Section 3

Reach 8
Steep Gradient Run of the Escarpment

Reach 9
Short Run Downstream of Corridor Site

Reach 10
Eighteenmile Creek Corridor Site

Lockport
Waste Water
Treatment Plant

Old Upper Mountain
Road Site

Keg Creek

South Branch

East Branch of Eighteenmile Creek

Gulf Creek

Erie Canal

Niagara County
Park and
Golf Course

Eighteenmile Creek Corridor Site

The Island

Mill Race

William Street
Dam

Clinton Street
Dam

Mill Pond

Headwater
East
Branch

Headwater
West
Branch

Canal Corp.
Property

Former Flintkote Plant Site
Former United Paperboard Company Property
Former White Transportation Property
Upson Park

1 0.5 0 Miles

Dam Location
Surface Waterbody
Niagara Escarpment

Reach Section
1
2
3
4
5
6.1
6.2
7.1
7.2
7.3
8
9
10

N

Figure 2 Eighteenmile Creek AOC Project Investigation Areas

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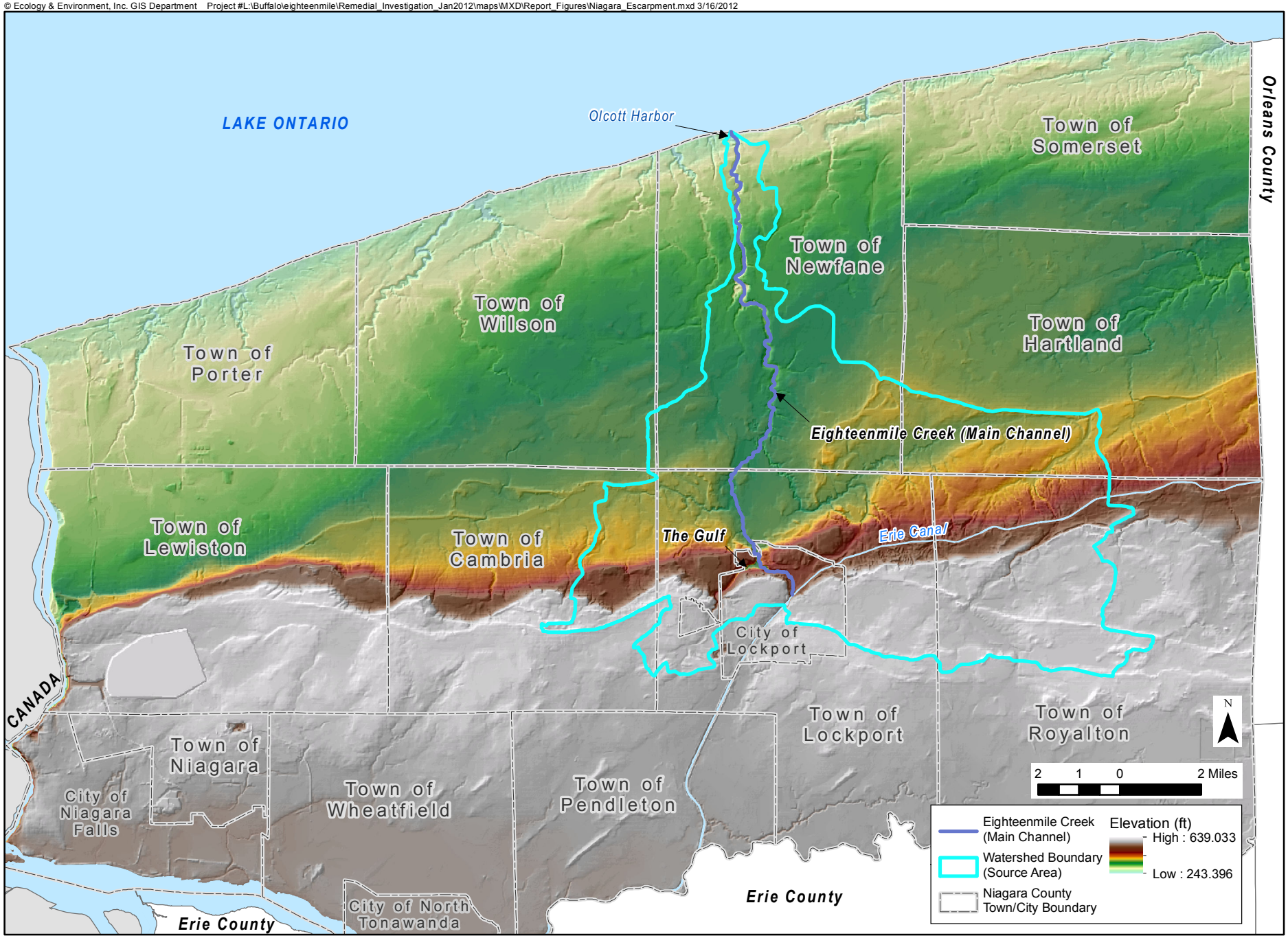


Figure 3 The Niagara Escarpment within Niagara County

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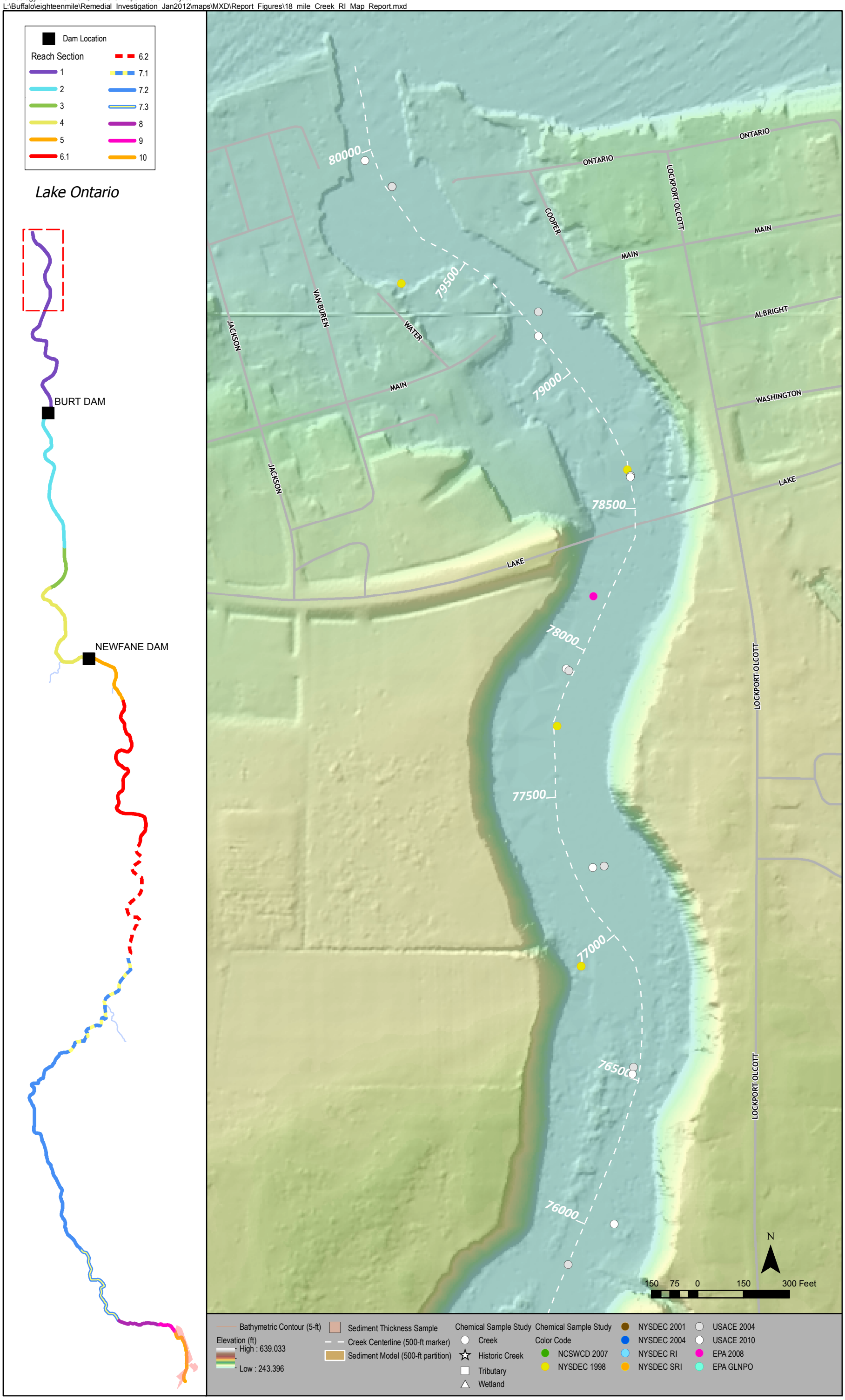


Figure 4 Eighteenmile Creek AOC Project Sediment Characterization and Sampling Locations

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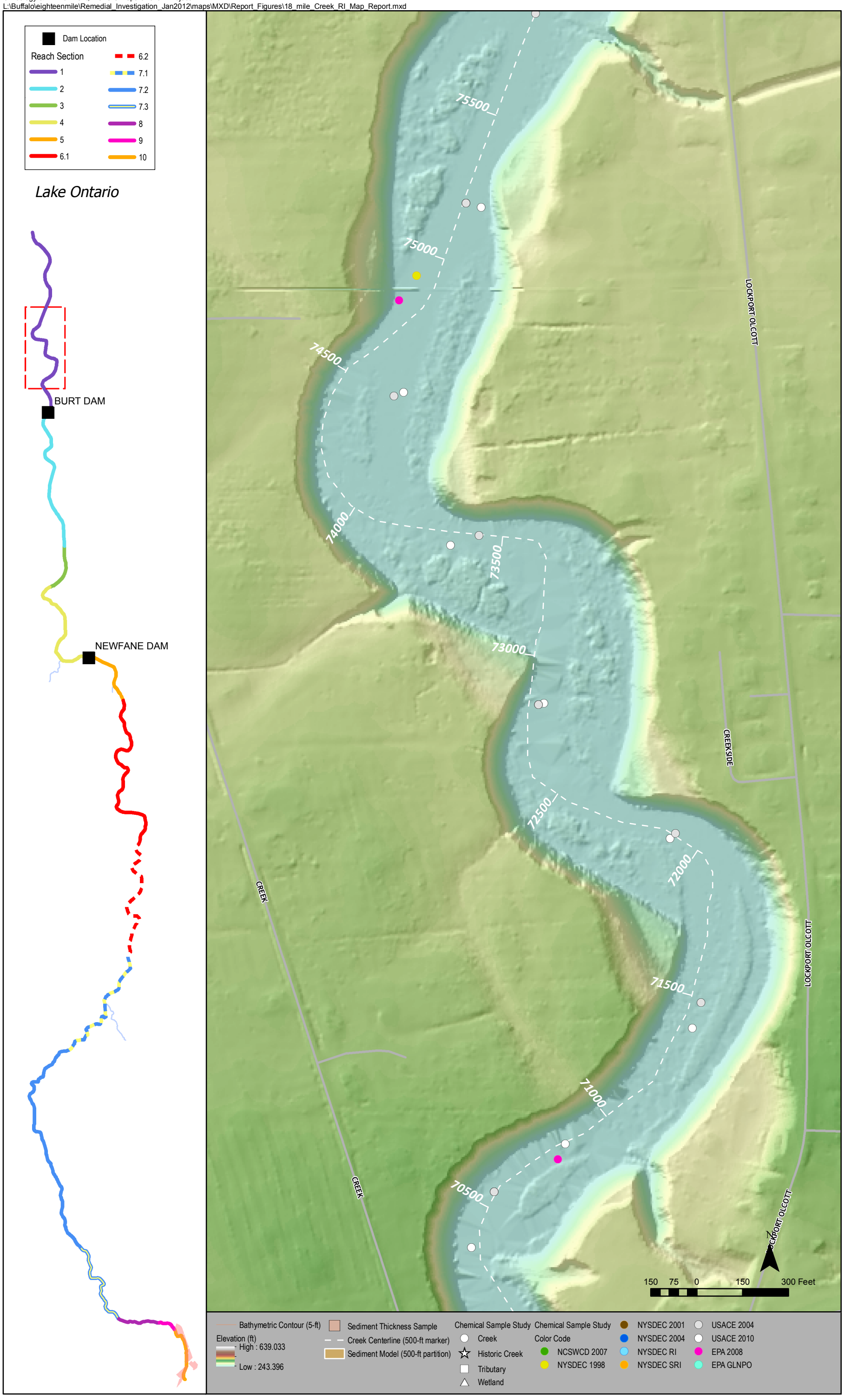


Figure 4 Eighteenmile Creek AOC Project Sediment Characterization and Sampling Locations

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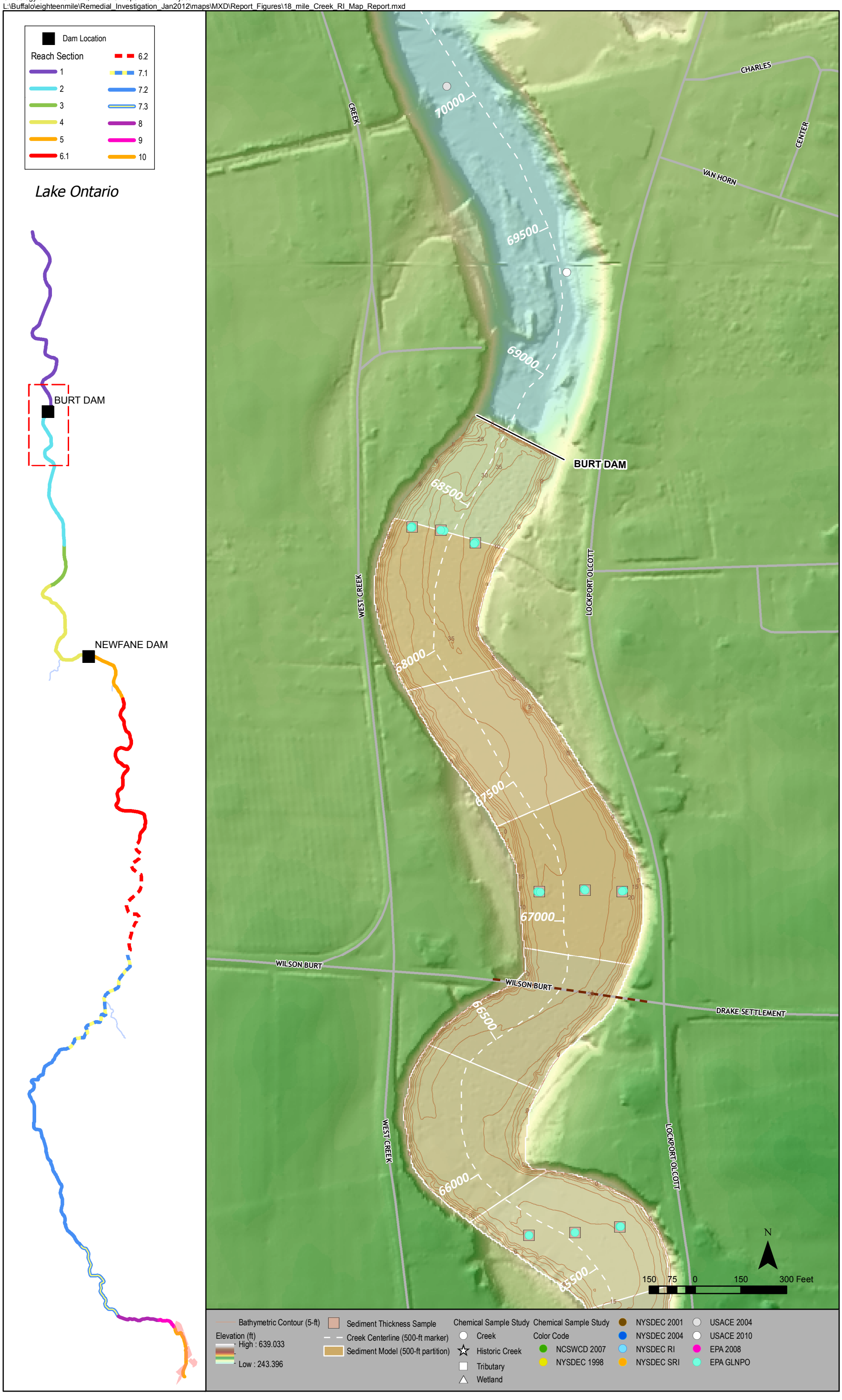


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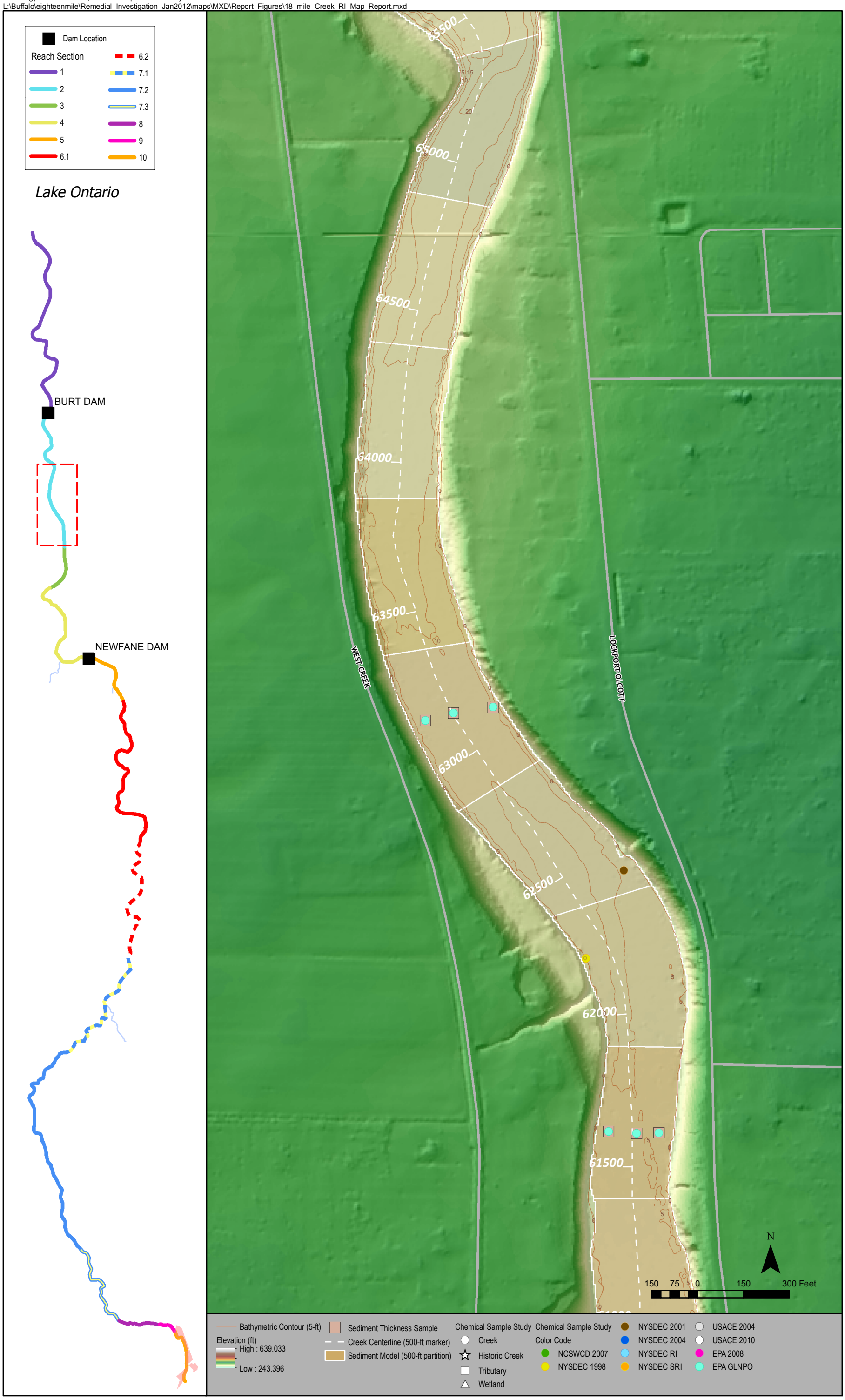


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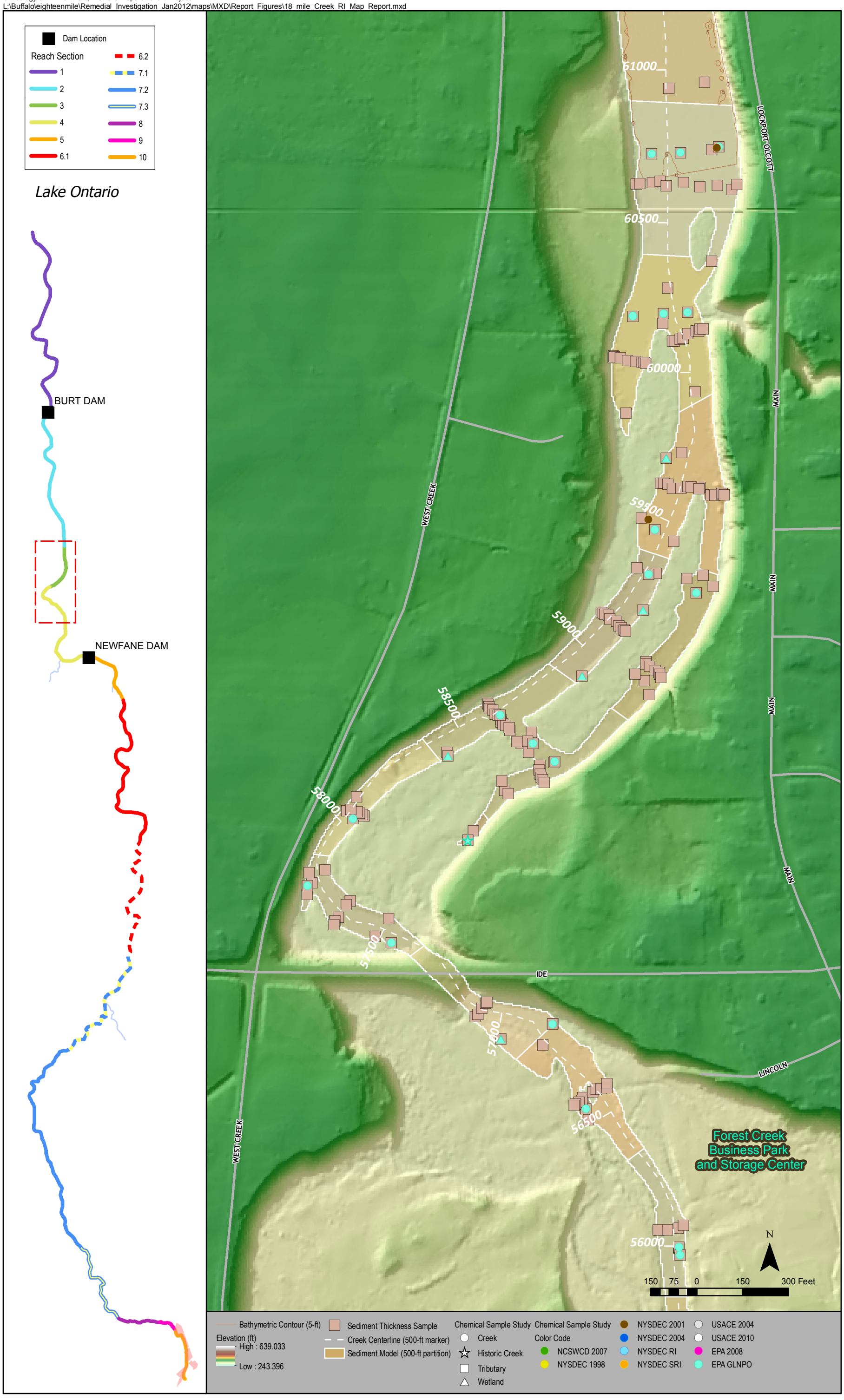


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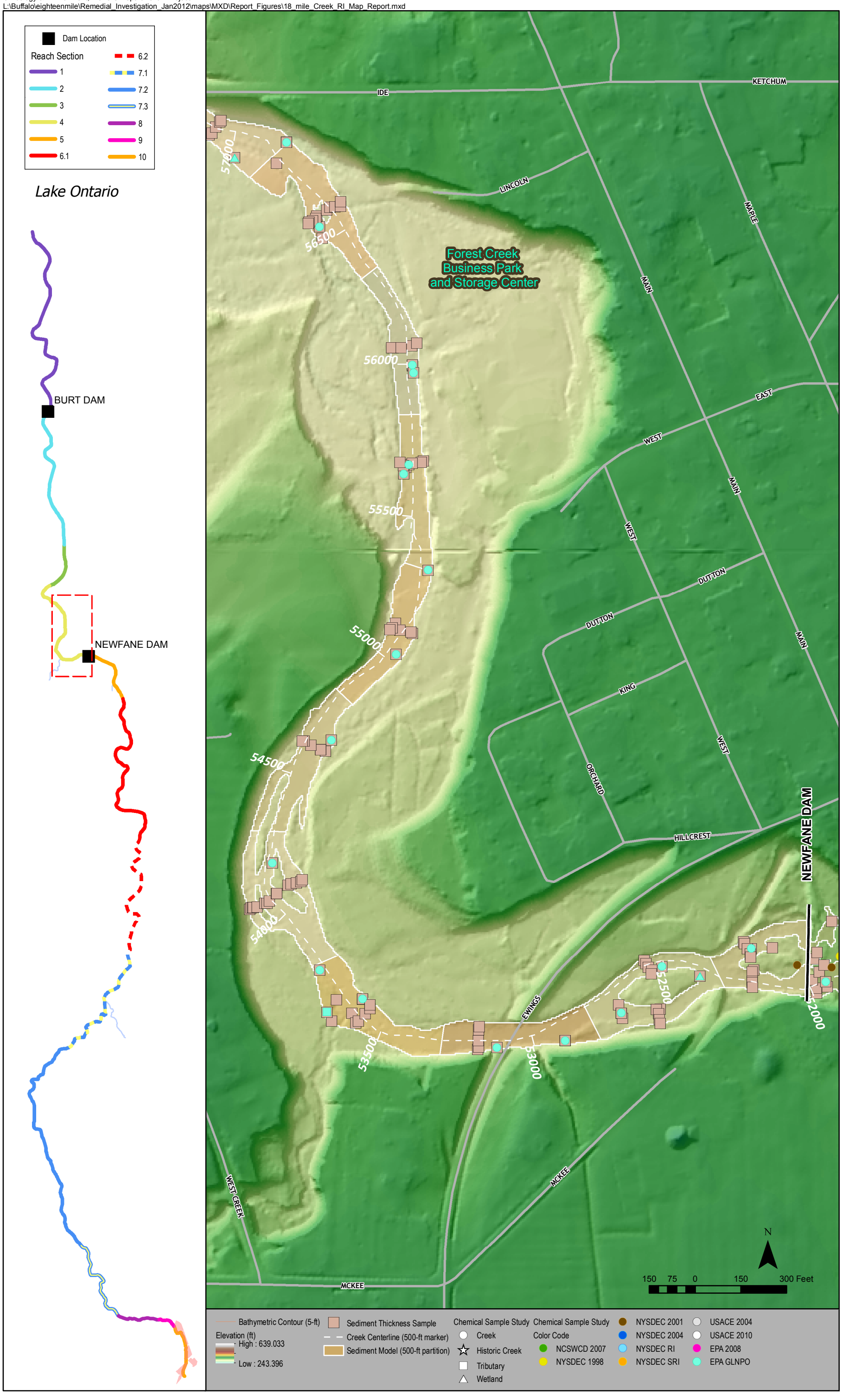


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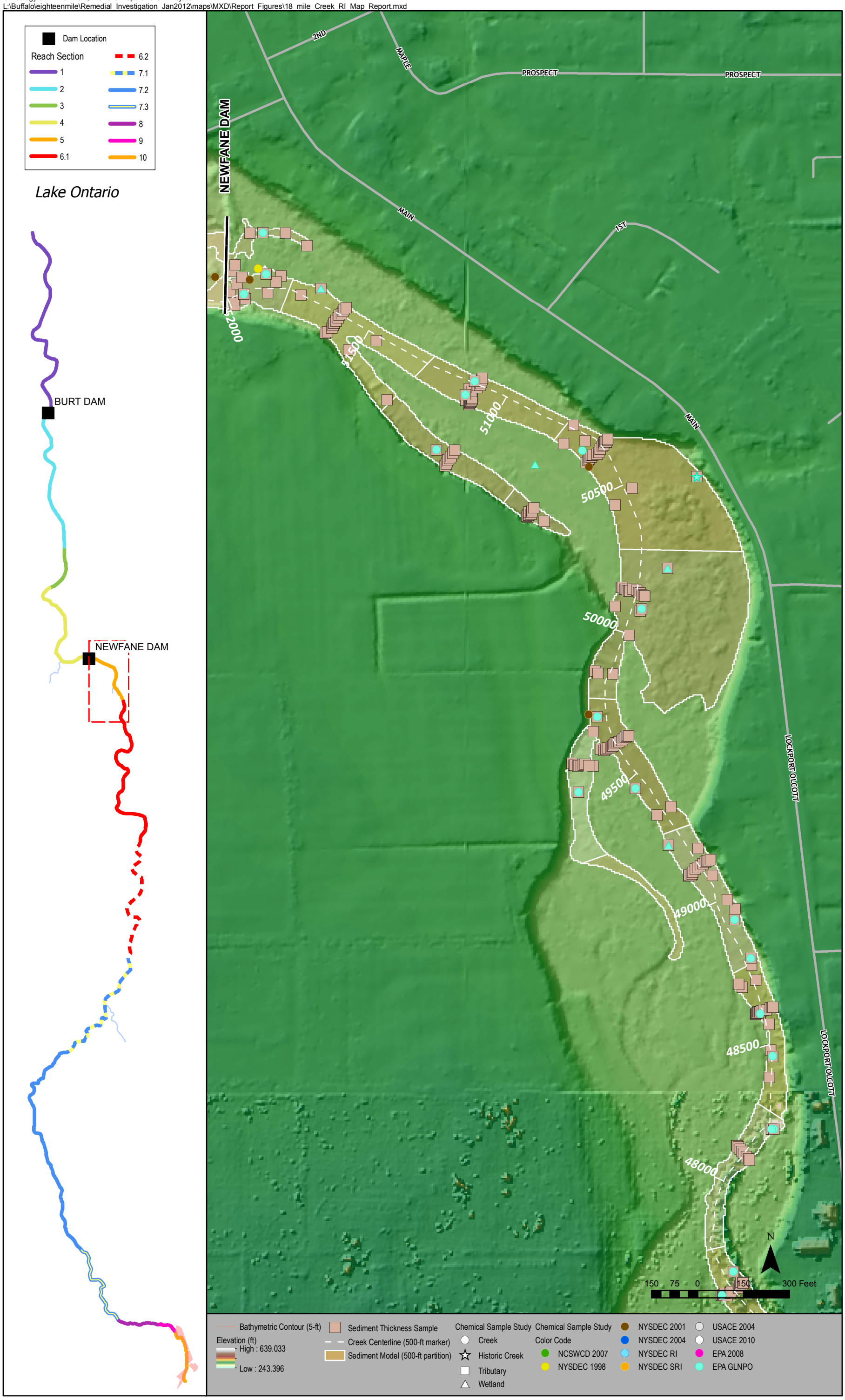


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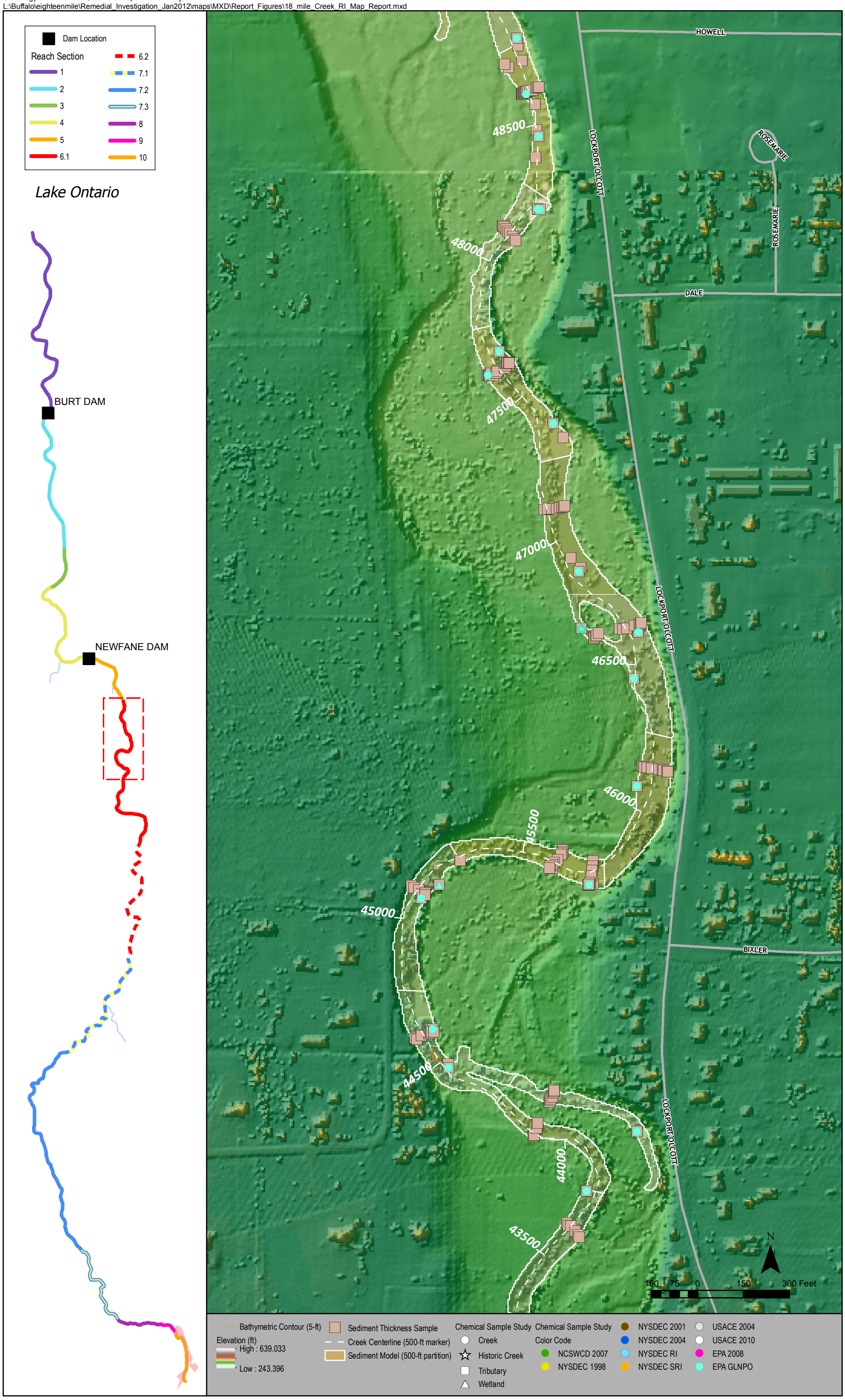


Figure 4 Eighteenmile Creek AOC Project Sediment Characterization and Sampling Locations

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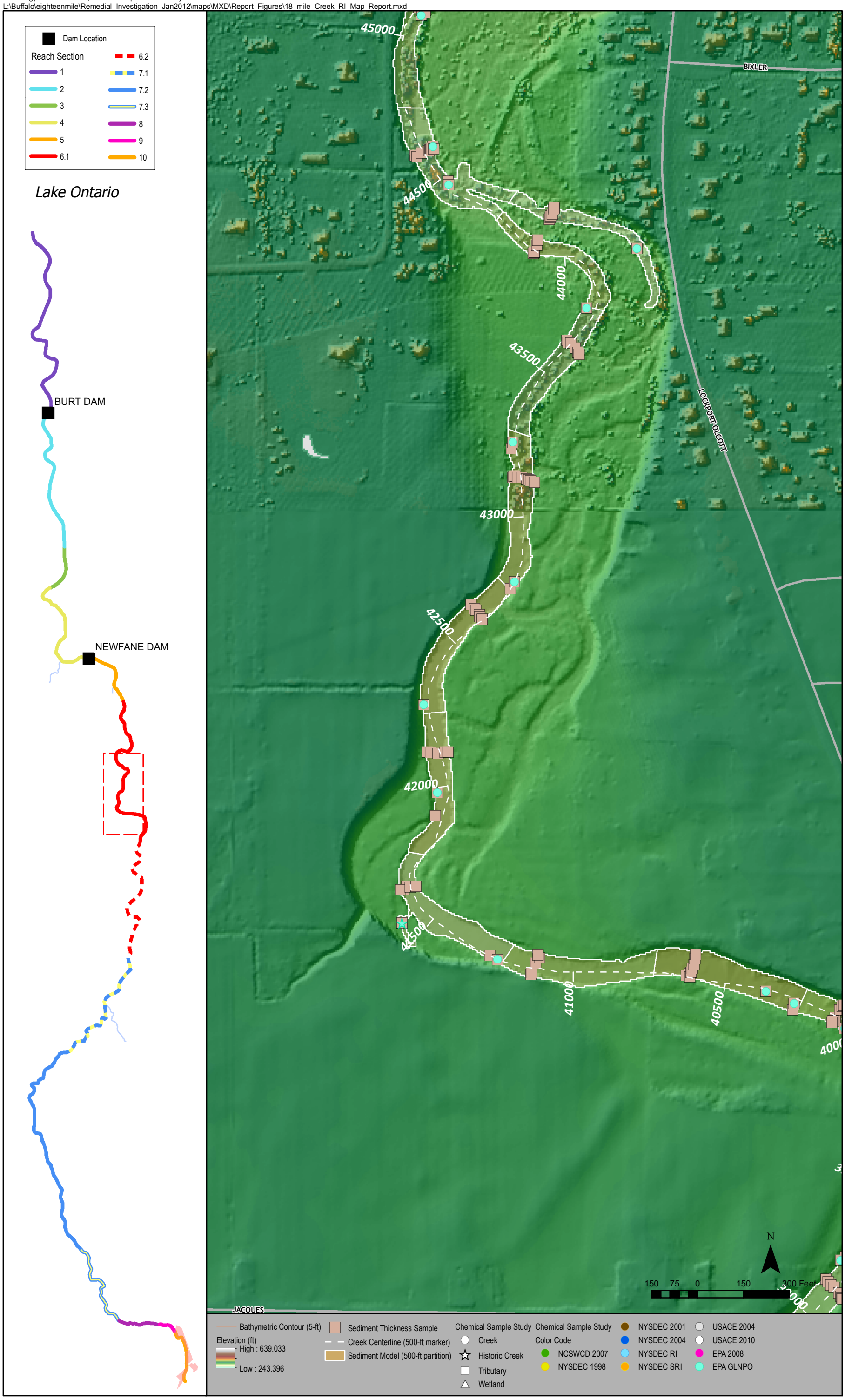


Figure 4 Eighteenmile Creek AOC Project Sediment Characterization and Sampling Locations

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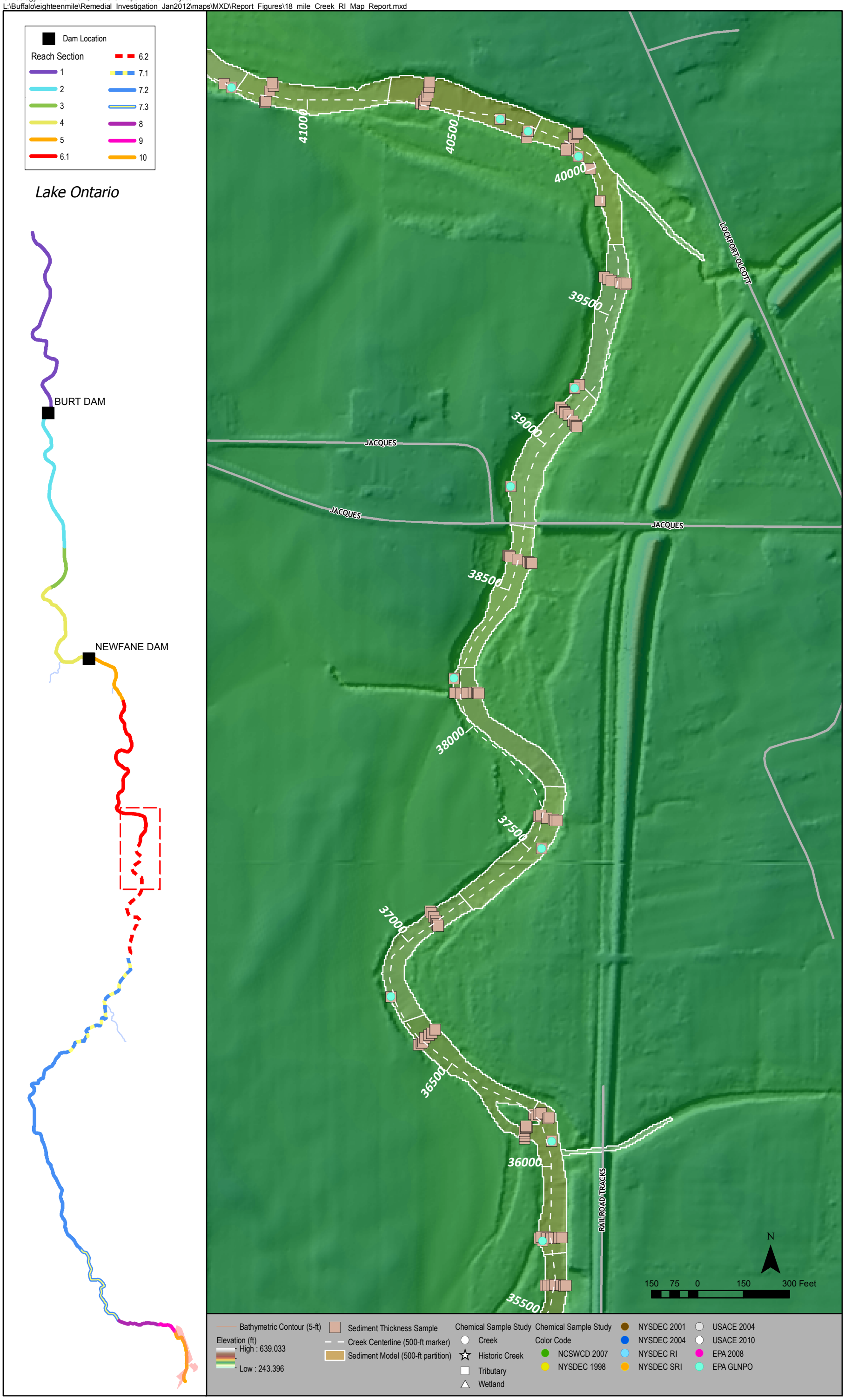


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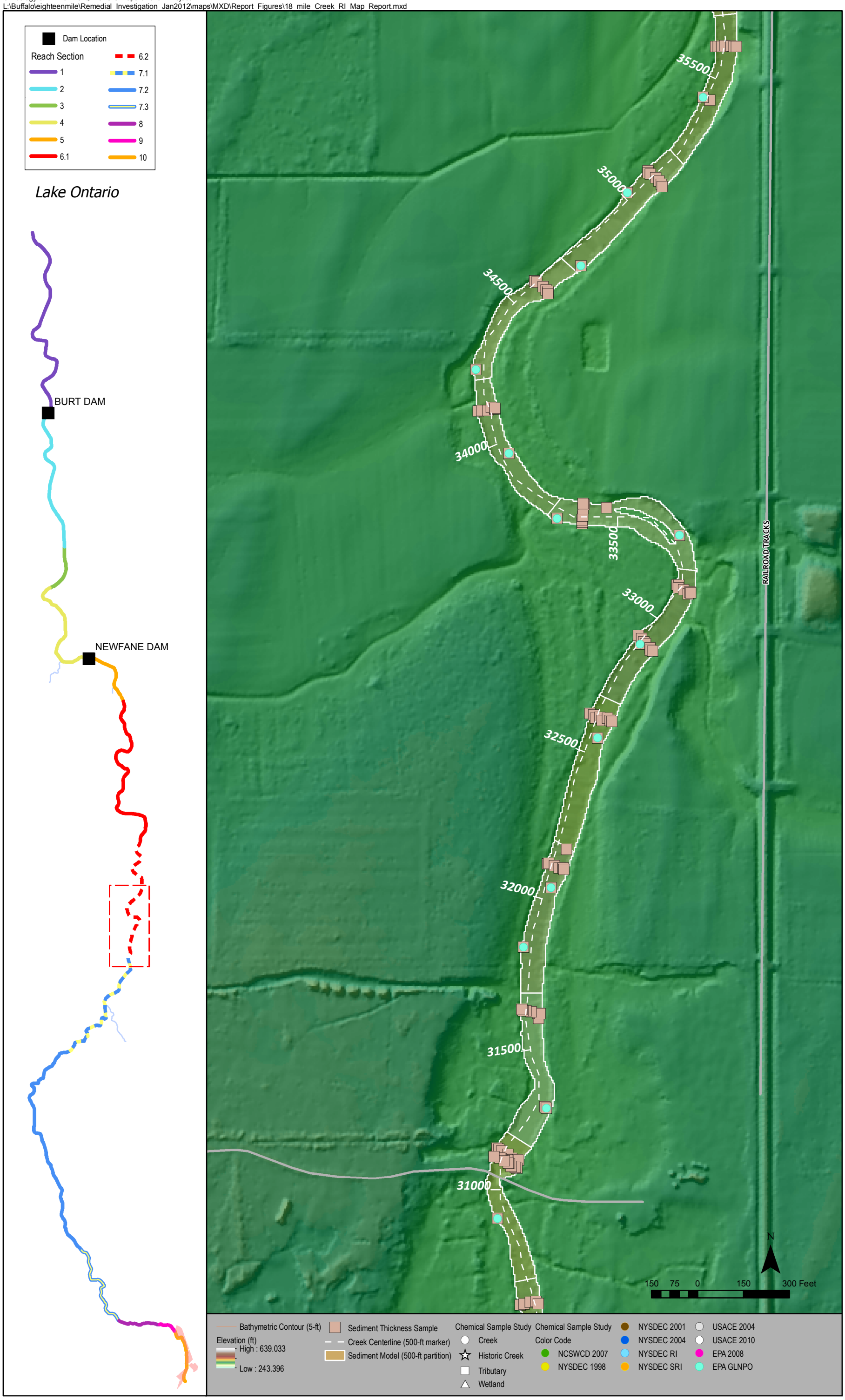


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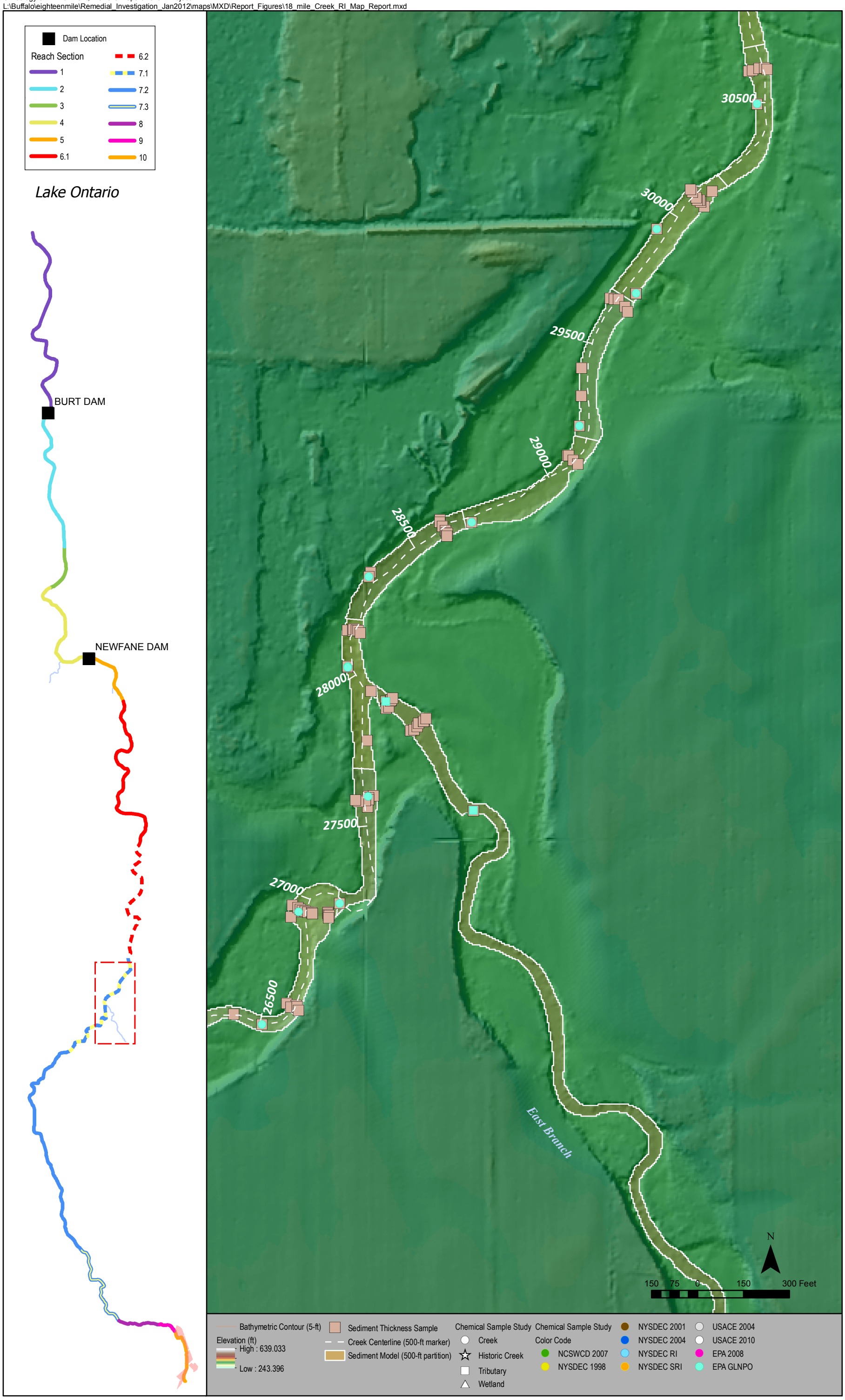


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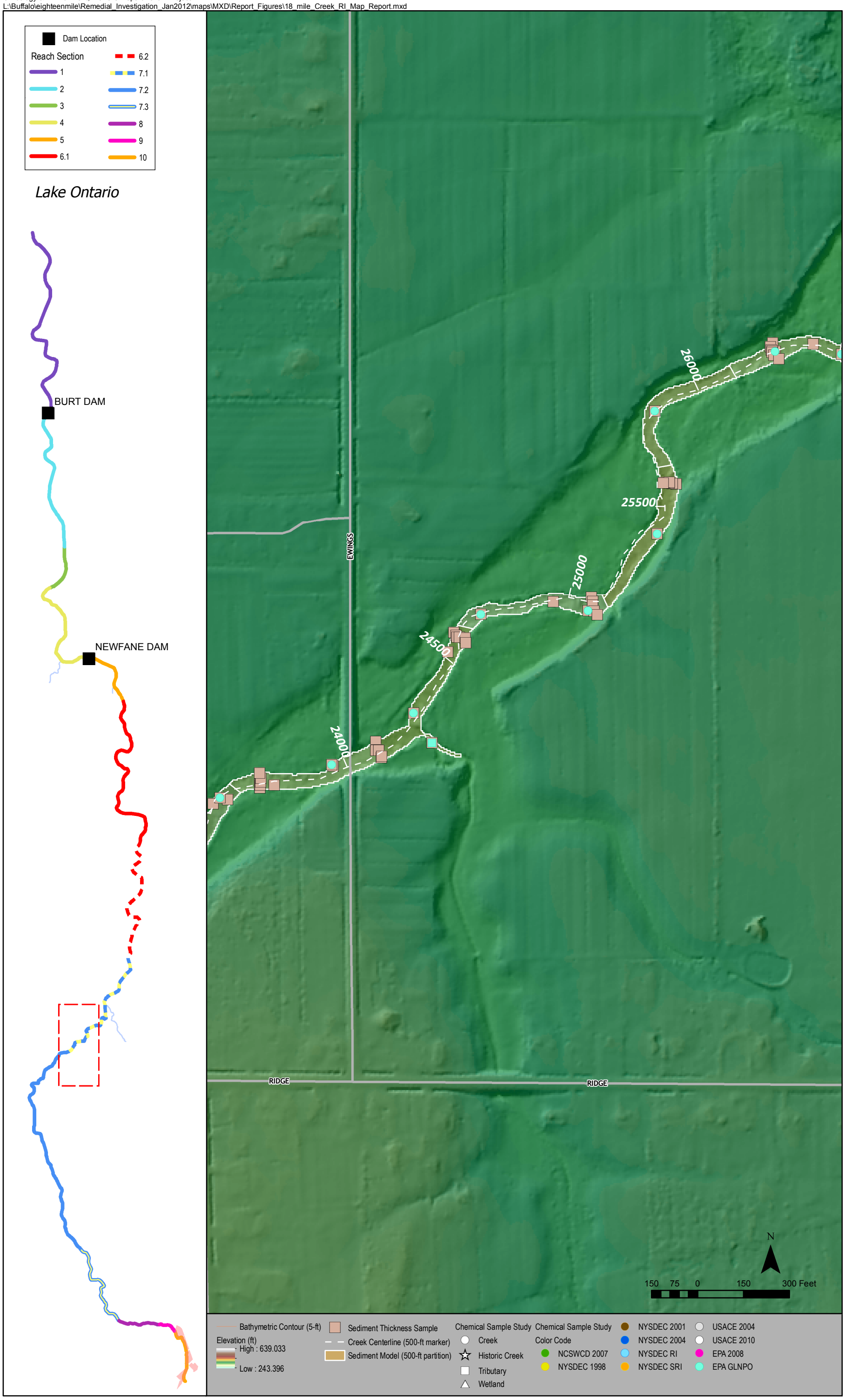


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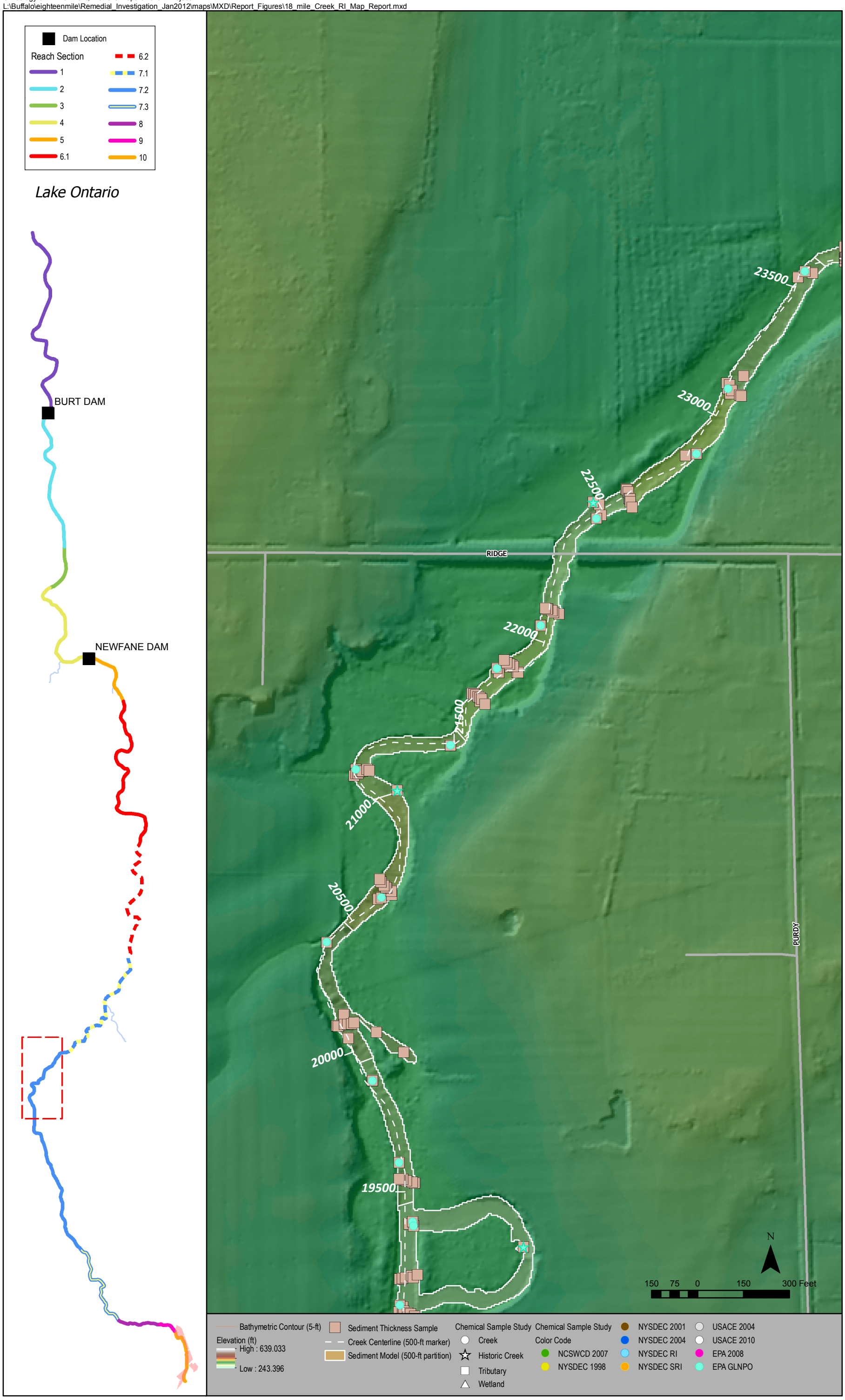


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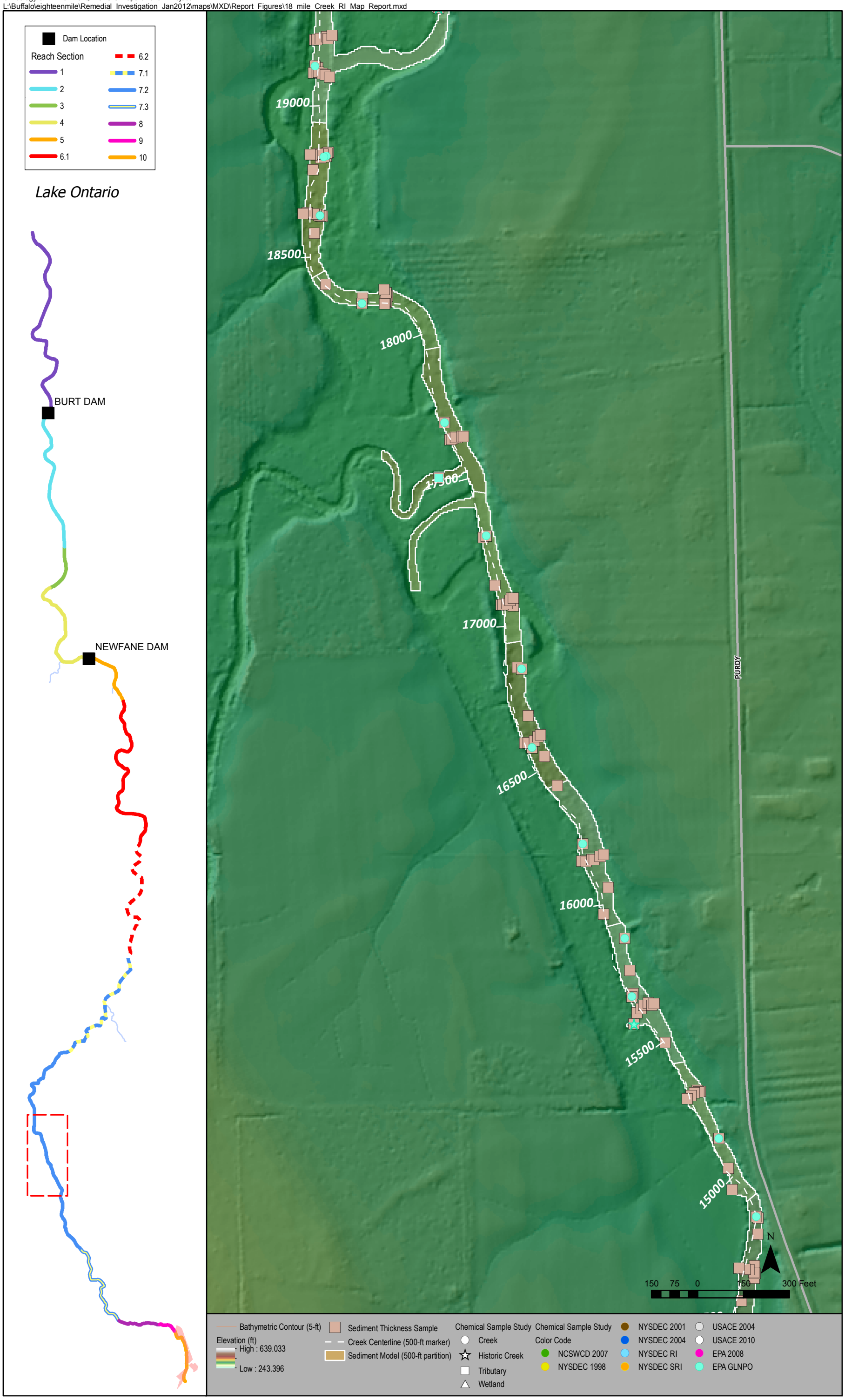


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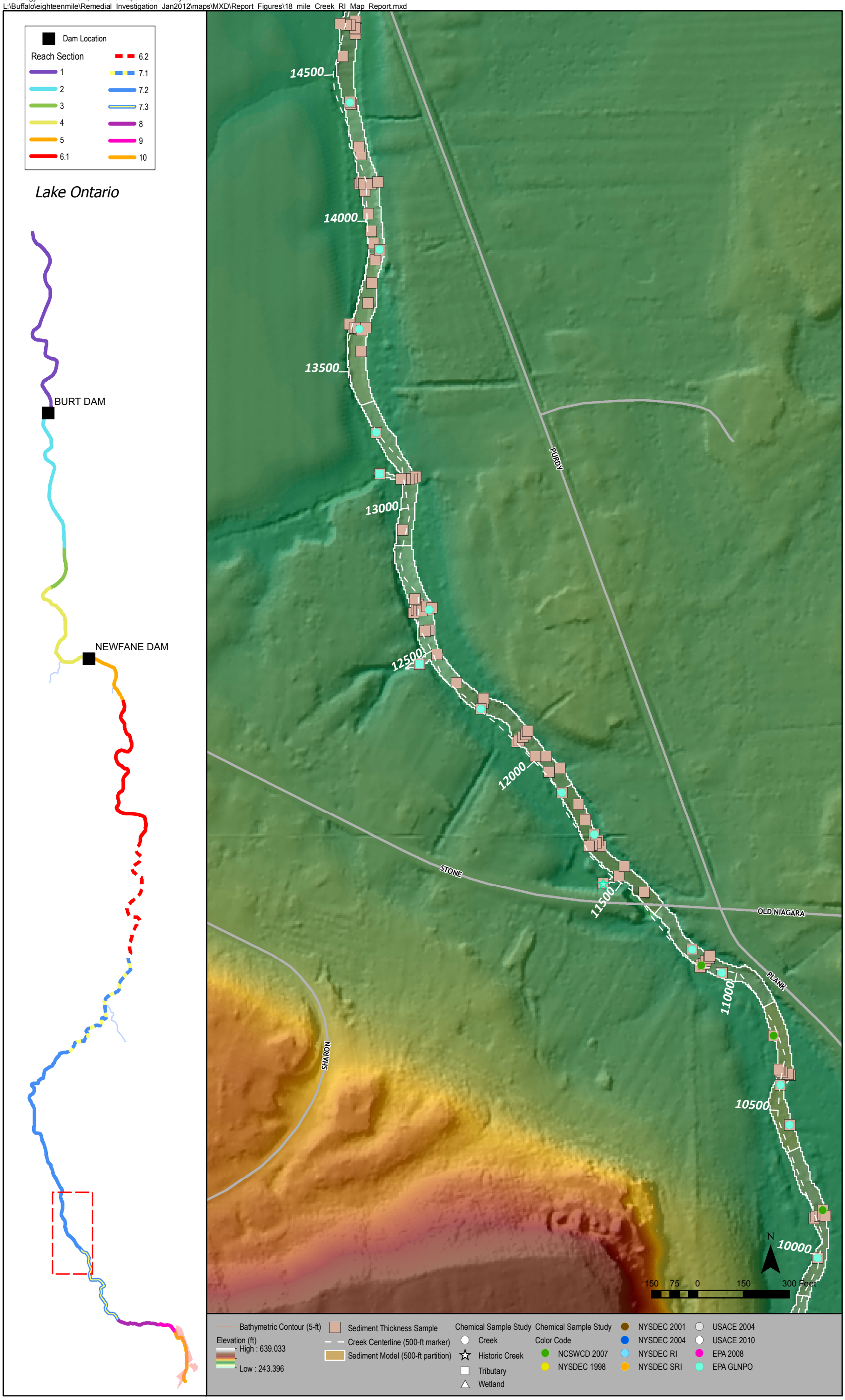


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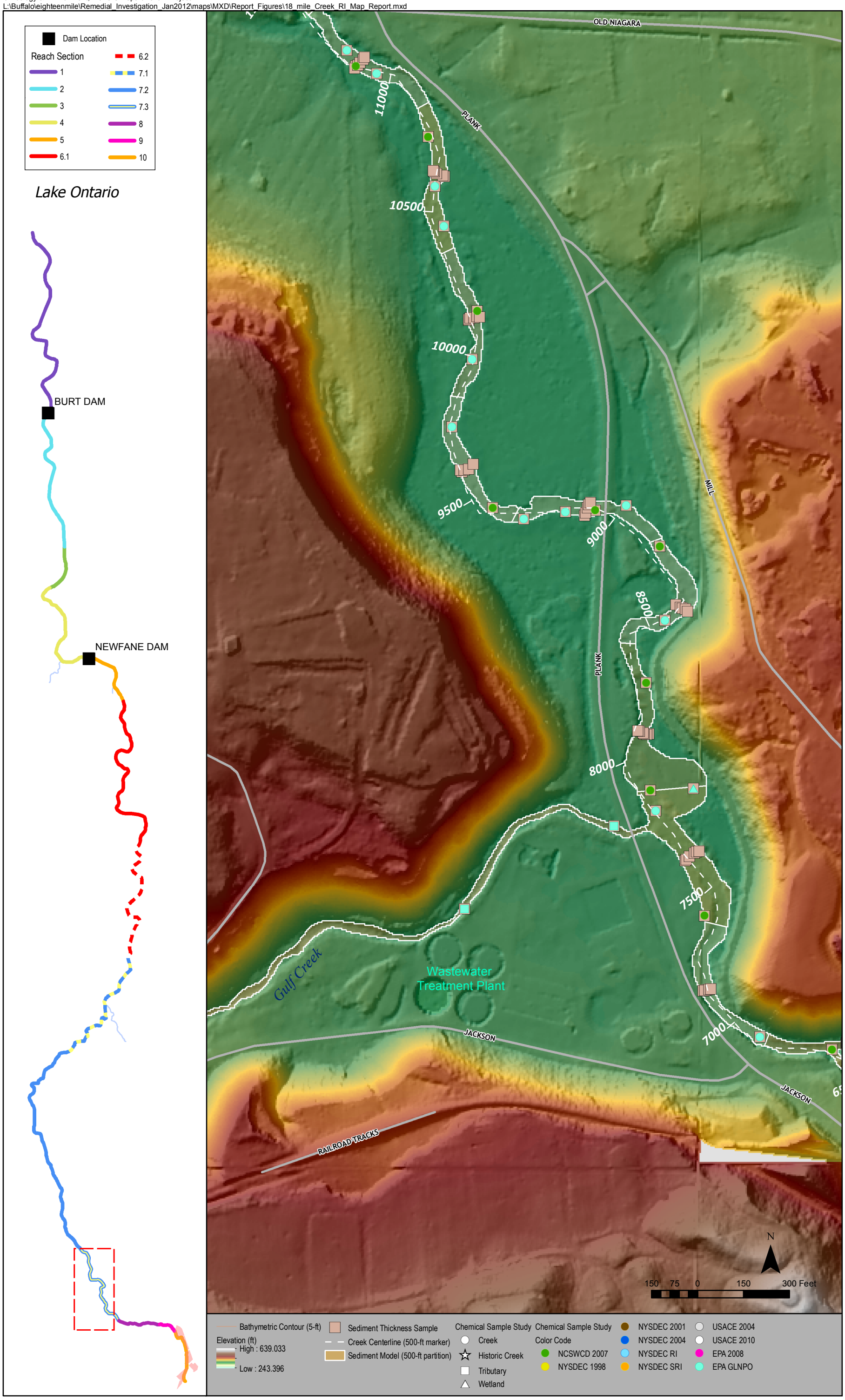


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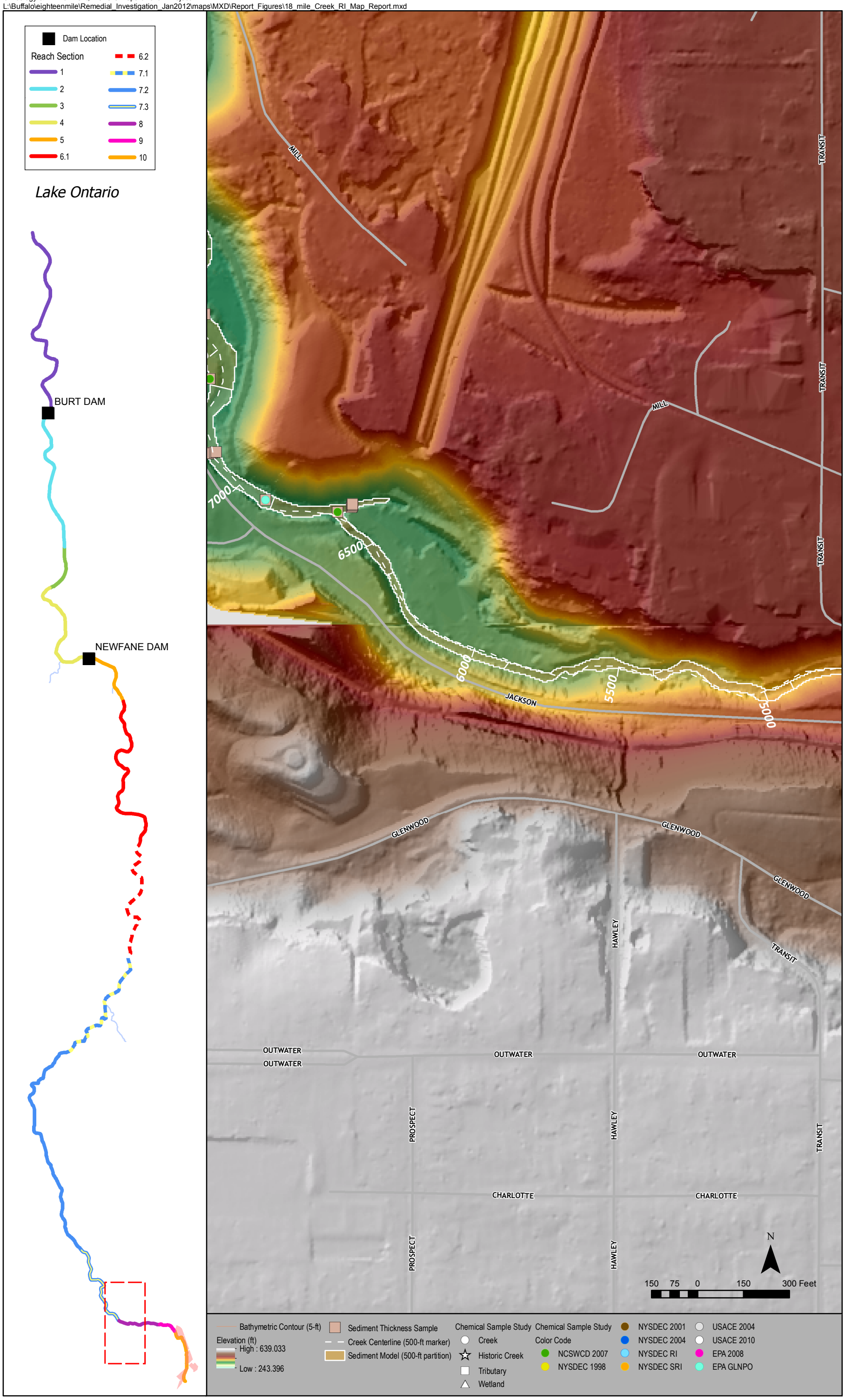


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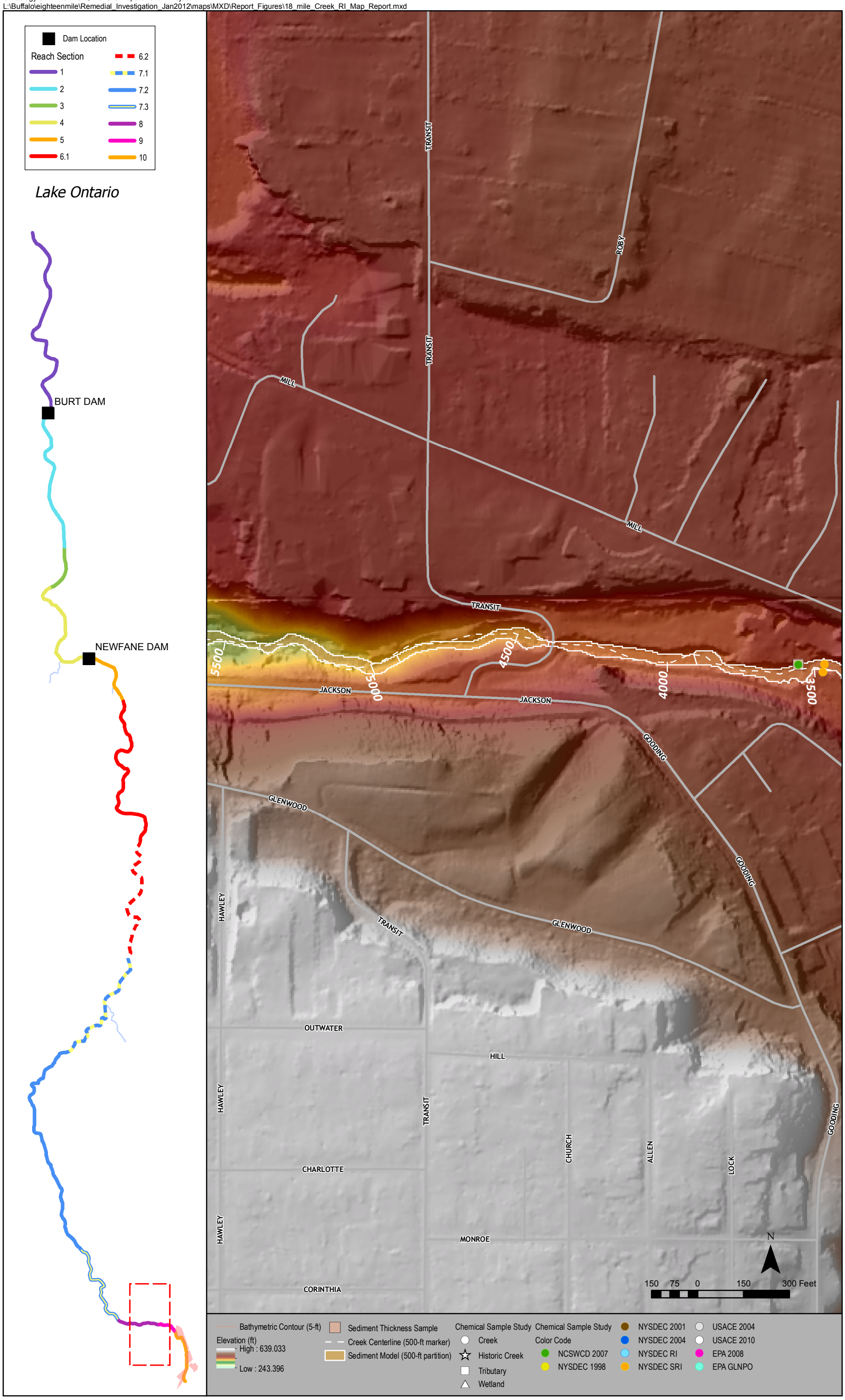


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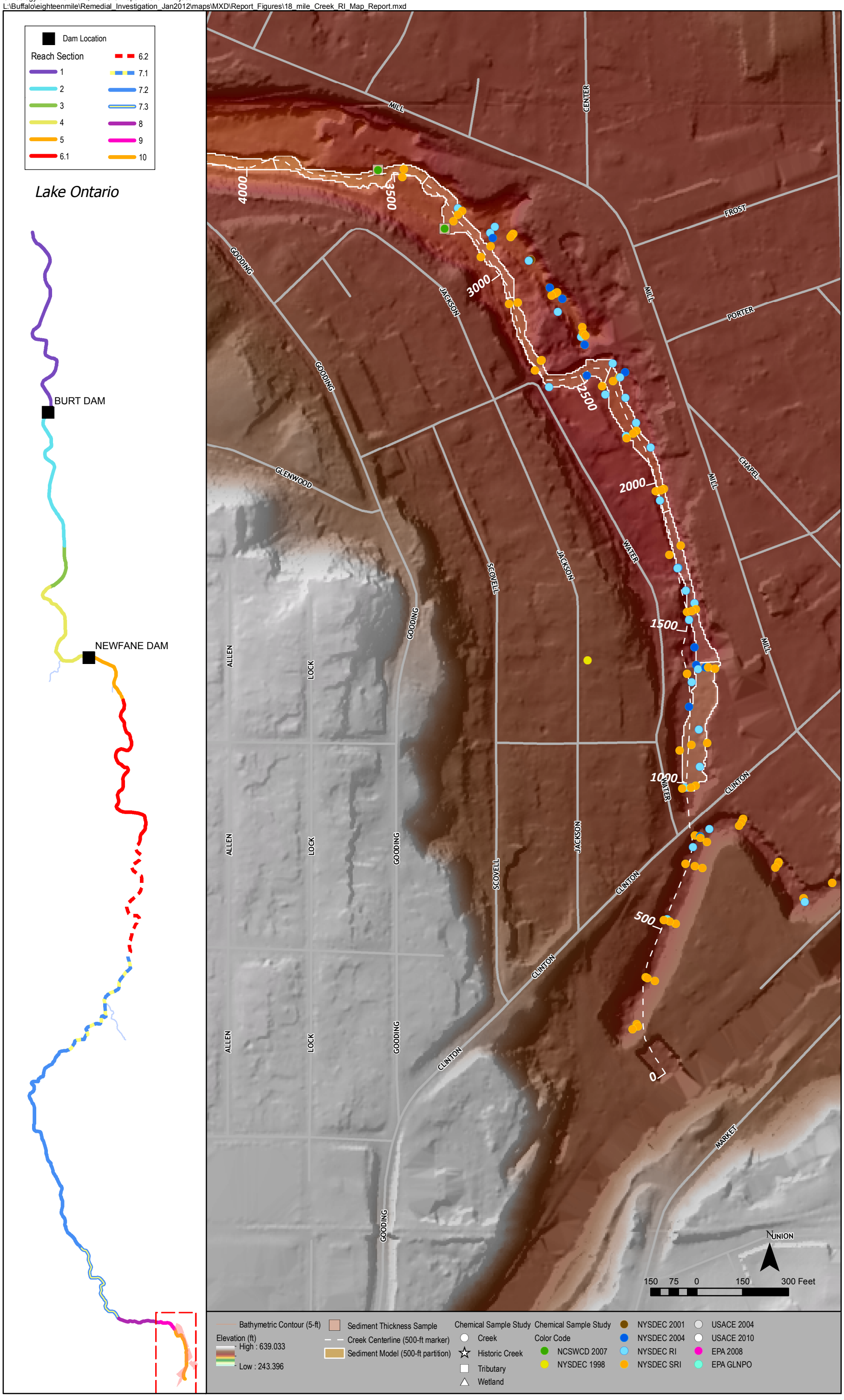


Figure 4 Eighteenmile Creek AOC Project Sediment Characterization and Sampling Locations

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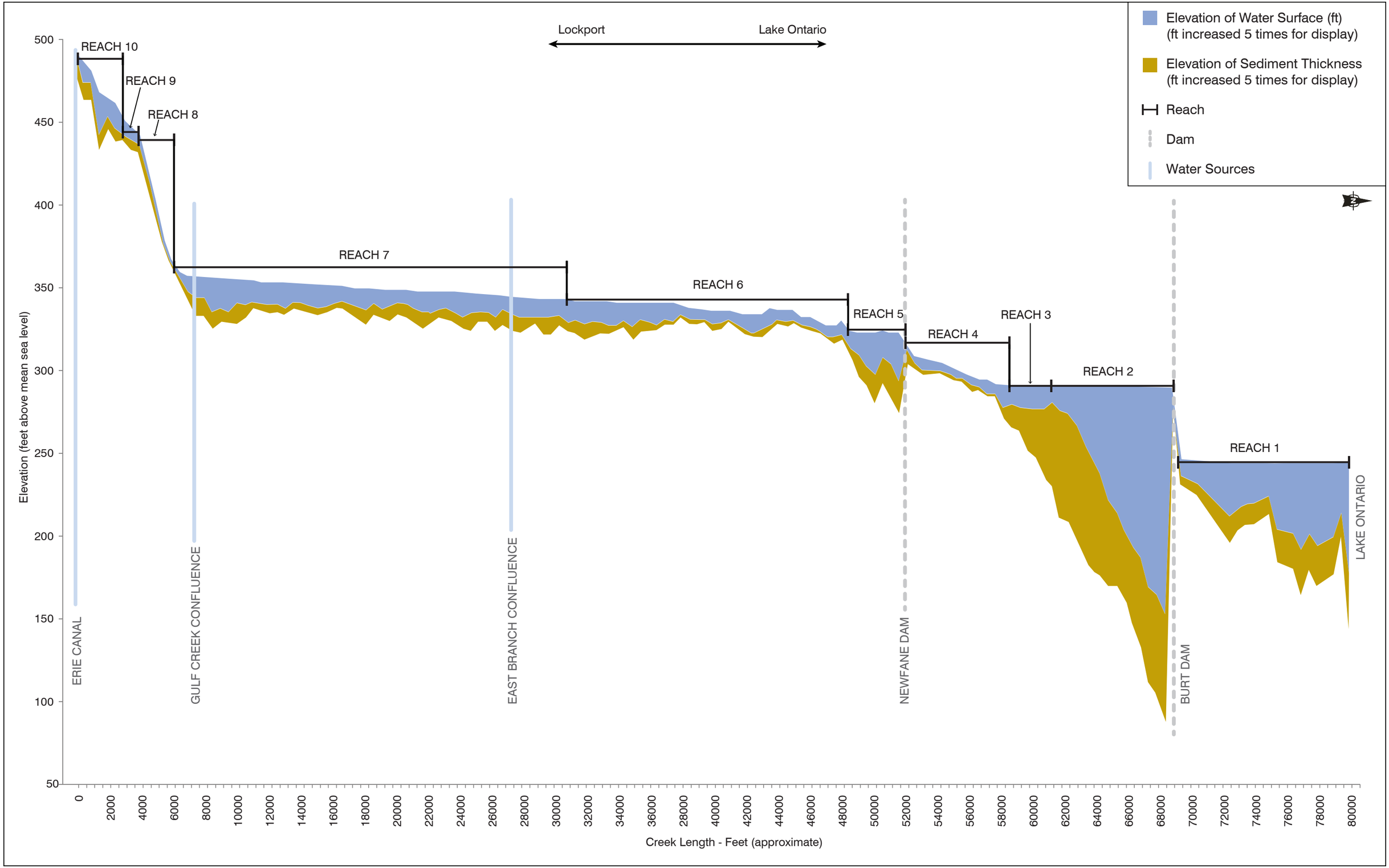
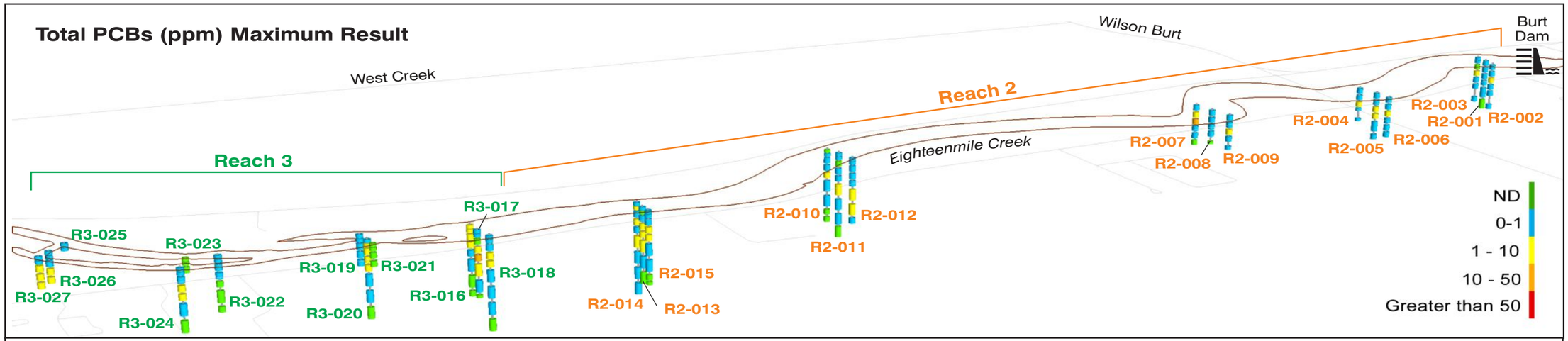
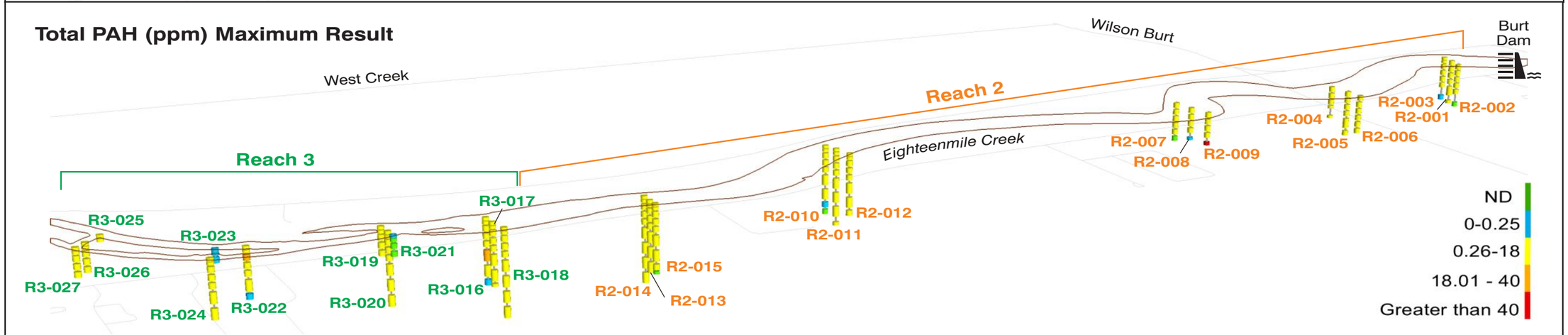
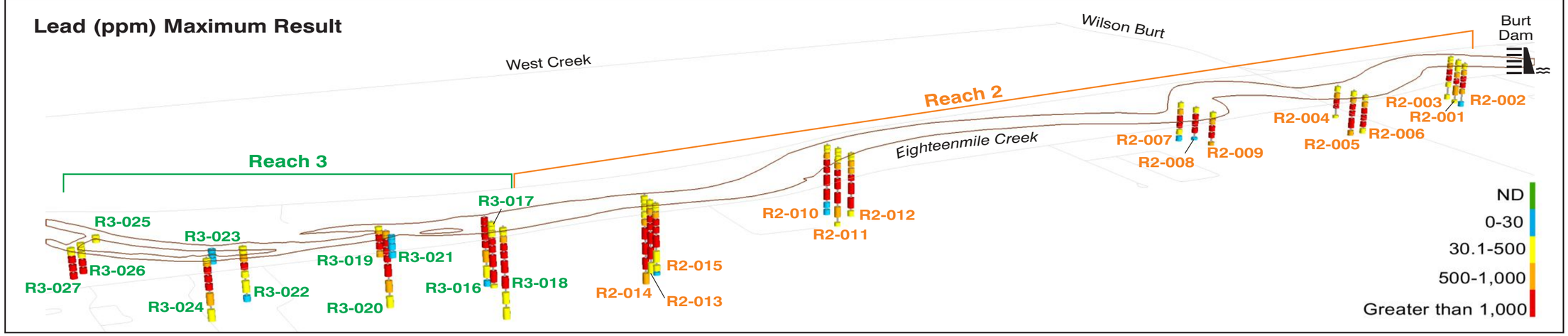


Figure 5 Eighteenmile Creek AOC Sediment Thickness Cross Section







Note: Only cores from the EPA 2011 Data Summary Report are shown.
Core sample segments are not to scale. Each segment represents approximately one foot.

SCALE
0 .25 0.5 Mile

SOURCE: Ecology and Environment, Inc., 2011

© 2011 Ecology and Environment, Inc.

Figure 6 **Eighteenmile Creek AOC Distribution of PCB, PAH and Lead in Sediment Cores for Reaches 2 and 3**

Lockport ← S — N → Lake Ontario

PCBs

SAMPLE DEPTH (FEET)

Total PCBs (ppm)
Maximum Result
- ND
- 0-1
- 1 - 10
- 10 - 50
- 50 - 100
- Greater than 100

Erie Canal | CLINTON | Reach 10 | Reach 9 | TRANSIT | Reach 8 | Gulf Creek Confluence | Reach 7 Section 3 | PLANK | STONE | Reach 7 Section 2 | RIDGE | EVANS | East Branch Confluence | Reach 7 Section 1 | Reach 6 Section 2 | JACQUES | Reach 6 Section 1 | Sample continues to 7-8 depth | Reach 5 | Sample continues to 7.5-8 depth | NEWFANE DAM | EVANS | Reach 4 | IDE

MILE 1 | MILE 2 | MILE 3 | MILE 4 | MILE 5 | MILE 6 | MILE 7 | MILE 8 | MILE 9 | MILE 10 | MILE 11

PAH

SAMPLE DEPTH (FEET)

Total PAH (ppm)
Maximum Result
- ND
- 0-0.25
- 0.26-18
- 18.01 - 40
- Greater than 40

Erie Canal | CLINTON | Reach 10 | Reach 9 | TRANSIT | Reach 8 | Gulf Creek Confluence | Reach 7 Section 3 | PLANK | STONE | Reach 7 Section 2 | RIDGE | EVANS | East Branch Confluence | Reach 7 Section 1 | Reach 6 Section 2 | JACQUES | Reach 6 Section 1 | Sample continues to 7-8 depth | Reach 5 | Sample continues to 7.5-8 depth | NEWFANE DAM | EVANS | Reach 4 | IDE

MILE 1 | MILE 2 | MILE 3 | MILE 4 | MILE 5 | MILE 6 | MILE 7 | MILE 8 | MILE 9 | MILE 10 | MILE 11

Lead

SAMPLE DEPTH (FEET)

Lead (ppm)
Maximum Result
- ND
- 0-30
- 30.1-500
- 500-1,000
- Greater than 1,000

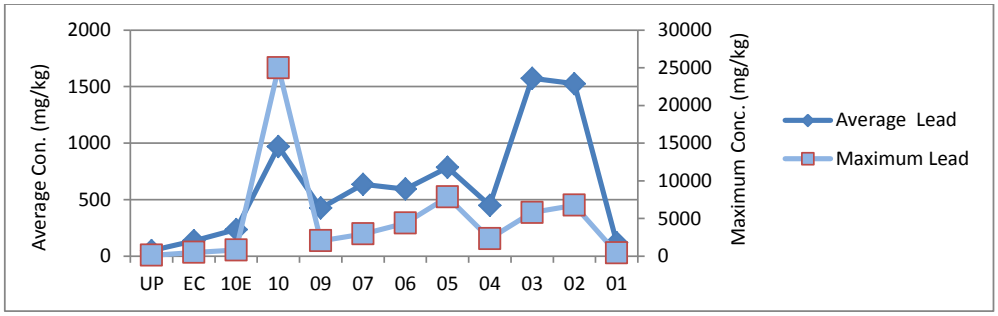
Erie Canal | CLINTON | Reach 10 | Reach 9 | TRANSIT | Reach 8 | Gulf Creek Confluence | Reach 7 Section 3 | PLANK | STONE | Reach 7 Section 2 | RIDGE | EVANS | East Branch Confluence | Reach 7 Section 1 | Reach 6 Section 2 | JACQUES | Reach 6 Section 1 | Sample continues to 7-8 depth | Reach 5 | Sample continues to 7.5-8 depth | NEWFANE DAM | EVANS | Reach 4 | IDE

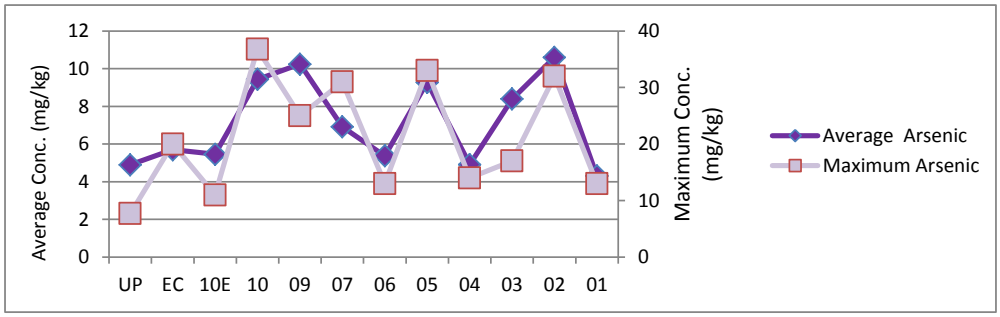
MILE 1 | MILE 2 | MILE 3 | MILE 4 | MILE 5 | MILE 6 | MILE 7 | MILE 8 | MILE 9 | MILE 10 | MILE 11

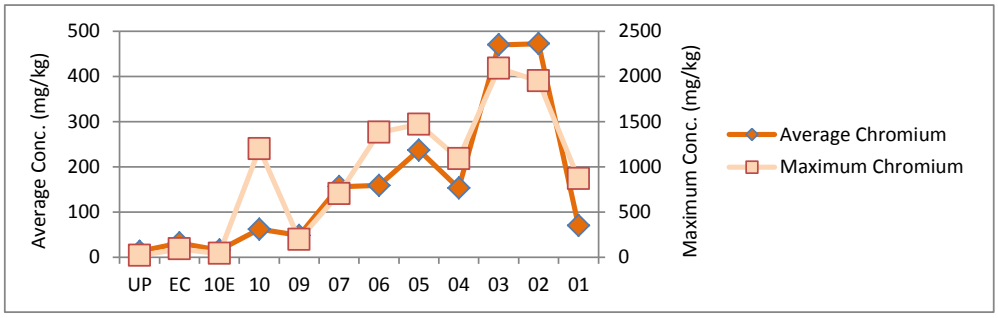
0 — 1 — 2 Miles

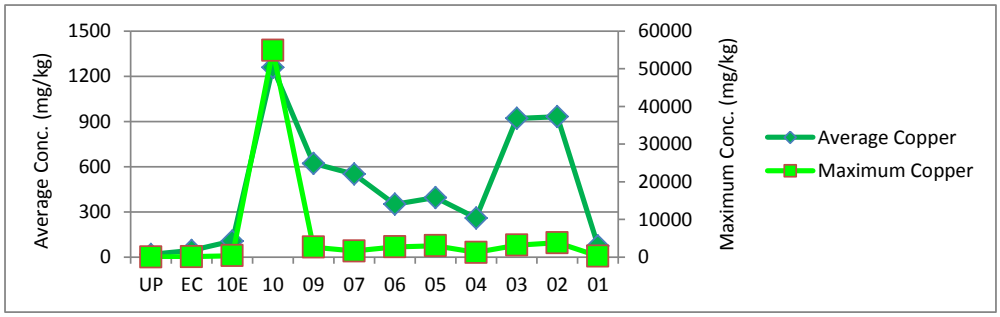
CREEK LENGTH - FEET

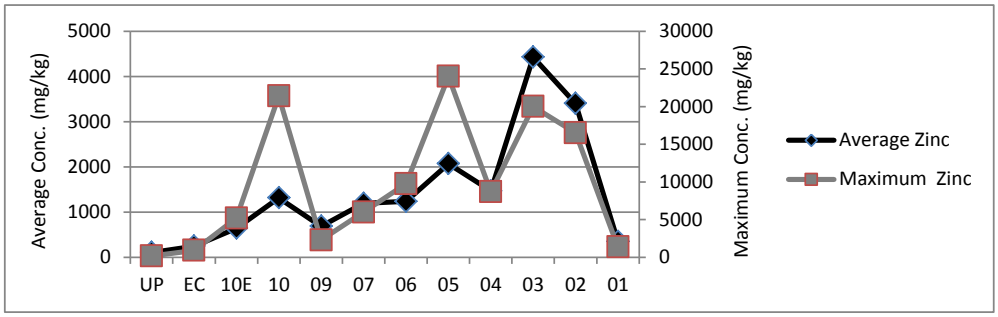
Figure 7 Eighteenmile Creek AOC Distribution of PCBs, PAH and Lead in Sediment Cores for Reaches 4 to 10







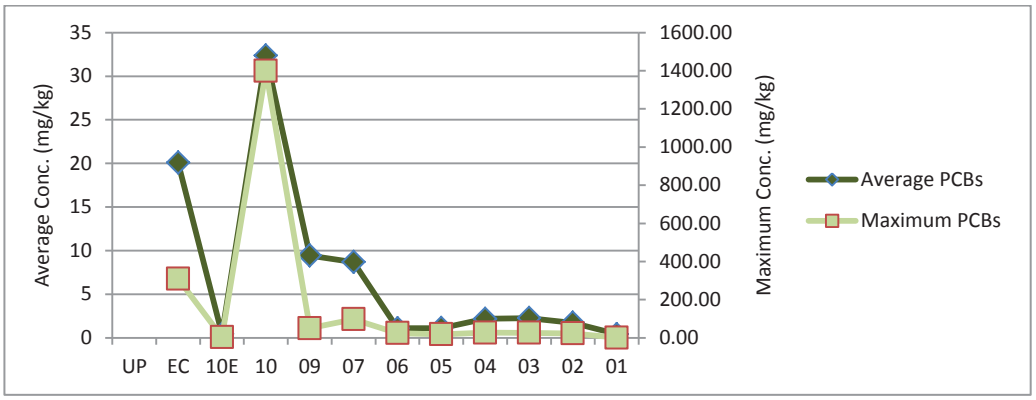


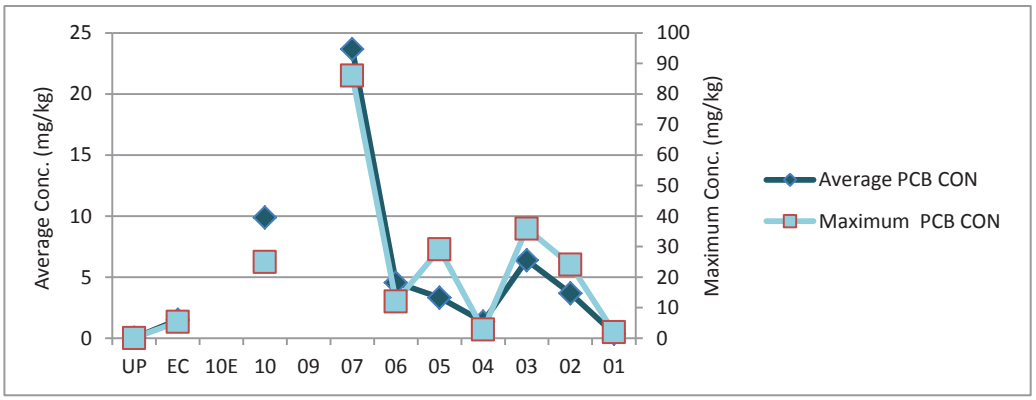


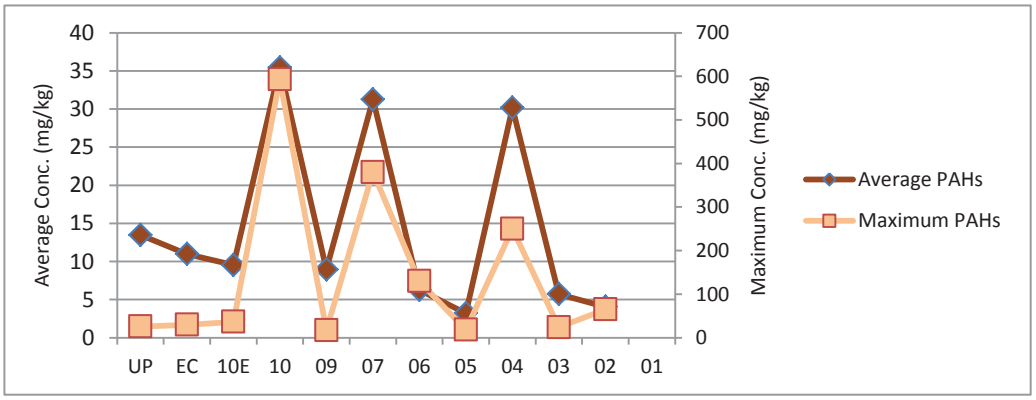
SOURCE: Ecology and Environment, Inc. 2015

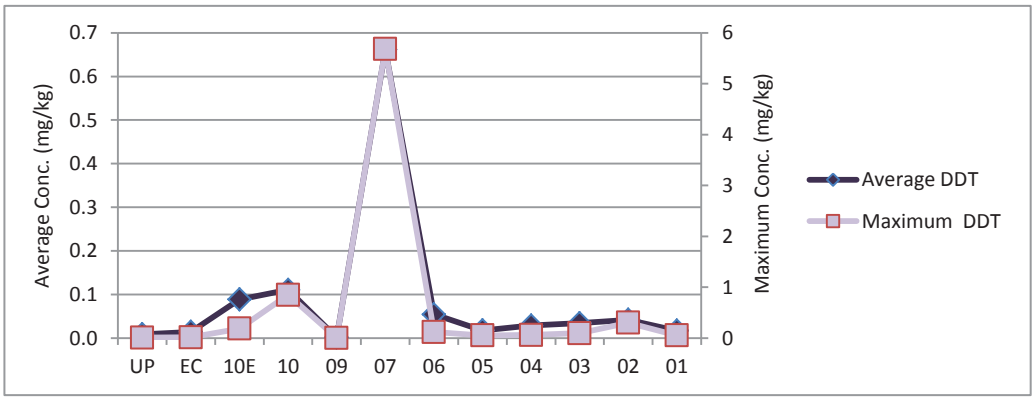
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Figure 8a **Eighteenmile Creek AOC Concentration Trends of Metals COPCs in Sediment by Reach**









SOURCE: Ecology and Environment, Inc. 2015

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Figure 8b **Eighteenmile Creek AOC Concentration Trends of Organic COPCs in Sediment by Reach**

Appendix A
Phase I Reconnaissance Survey

REGION 5 RAC2

REMEDIAL ACTION CONTRACT FOR

Remedial, Enforcement Oversight, and
Non-Time Critical Removal Activities at Sites of Release
or Threatened Release of Hazardous Substances in Region 5

PHASE 1 RECONNAISSANCE SURVEY

Eighteenmile Creek Area of Concern
Niagara County, New York
Remedial Investigation/Feasibility Study
WA No. 051-RICO-1527/Contract No. EP-S5-06-01

July 2009

PREPARED FOR

U.S. Environmental Protection Agency

PREPARED BY

CH2M HILL
Ecology and Environment, Inc.

FOR OFFICIAL USE ONLY

Phase I Reconnaissance Survey
Eighteenmile Creek Area of Concern
Niagara County, New York

Remedial Investigation/Feasibility Study

WA No. 051-RICO-1527
Contract No. EP-S5-06-01

July 2009
Revision 1

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Great Lakes National Program Office
77 West Jackson Boulevard
Chicago, Illinois 60604

Prepared by:

CH2M HILL, Inc.

and

Ecology and Environment Engineering, P.C.
368 Pleasant View Drive
Lancaster, New York 14086

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List of Acronyms

ASM	Assistant site manager
AVS	Acid volatile sulfides
AOC	Area of Concern
BUI	Beneficial use impairment
COC	Contaminants of concern
EEEPC	Ecology and Environment -Engineering, P.C.
EDD	electronic data deliverable
ELAP	Environmental Laboratory Accreditation Program
FS	feasibility study
GIS	Geographic Information System
GLLA	Great Lakes Legacy Act
GLNPO	Great Lakes National Program Office
GPS	Geographic Positioning System
IJC	International Joint Commission
LDB	Left descending bank
LWD	Large woody debris
µg/kg	Micrograms per kilogram
mg/kg	milligrams per kilogram
NCSWCD	Niagara County Soil and Water Conservation District
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCBs	Polychlorinated Biphenyls
PAH	Polycyclic aromatic hydrocarbons
PCDD/F	Polychlorinated dibenzodioxins and furans
PCT	Project Coordination Team
QAPP	Quality Assurance Project Plan
QA/QC	quality assurance/quality control
RAC	Remedial Action Committee

List of Abbreviations and Acronyms (cont.)

RAP	Remedial Action Plan
RDB	Right descending bank
RI	Remedial investigation
RI/FS	Remedial investigation/feasibility study
SEM	simultaneously extracted metals
SM	Site manager
SPDES	State Pollutant Discharge Elimination System
TAGM	Technical and Administrative Guidance Memorandum
TCDD	2,3,7,8-tetrachlorodibenzo-p-dioxin
TCL	Target compound list
TEQ	Toxic equivalent
TOC	Total organic carbon
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
WA	Work Assignment
WAM	Work Assignment Manager

Distribution List

Party	Affiliation and Title	Revision	Date Sent
Eighteenmile Creek Phase 1 Survey Report - Draft			
Jewelle Keiser	CH2M HILL Site Manager (SM)	1	July 2009
Kris Erickson	EEEPC Assistant Site Manager (ASM)	1	July 2009
Diana Mally	USEPA Work Assignment Manager (WAM)	1	July 2009
Victor DiGiacomo	NCSWCD Project Manager	1	July 2009
Gregg Sutton	NYSDEC Region 9 Engineer	1	July 2009

1 Introduction

This site reconnaissance report has been prepared pursuant to Work Assignment (WA) No. 051-RICO-1527 issued to CH2M HILL under United States Environmental Protection Agency (USEPA) Remedial Action Contract 2 No. EP-S5-06-01. This report summarizes the results of the Phase1 site reconnaissance survey performed by CH2M HILL's team subcontractor, Ecology and Environment Engineering, P.C. (EEEPC), as part of the remedial investigation/feasibility study (RI/FS) at the Eighteenmile Creek Area of Concern (AOC), in Niagara County, New York.

The purpose of the remedial investigation (RI) is to evaluate the nature and extent of contamination in the sediments throughout the AOC, with the primary focus on the unevaluated area between Lockport and the Burt Dam. The investigation is currently planned to be conducted in two phases. The first phase consists of a reconnaissance survey to identify the physical characteristics of the creek and potential sediment depositional areas. The first phase activities were performed in accordance with the approved Quality Assurance Project Plan (QAPP; CH2M/EEEPC, December 2008). The Phase 1 field activities and modifications from the planned implementation are described in Section 2 of the report. The observations and results of the Phase 1 investigation are presented in Section 3 of the report. The findings will be used to develop the objectives and approach for sediment sampling and the analytical program to be implemented during the second phase of the investigation. Recommendations for future sampling are included in Section 4 of the report.

The Eighteenmile Creek Great Lakes Legacy Act (GLLA) Project Coordination Team (PCT) includes the USEPA Great Lakes National Program Office (GLNPO), Niagara County Soil and Water Conservation District (NCSWCD), the New York State Department of Environmental Conservation (NYSDEC), United States Army Corps of Engineers (USACE), and USEPA

Region 2. The PCT will use the site reconnaissance survey data to review and approve the sampling and analytical program for the next investigation phase.

1.1 Background

The Eighteenmile Creek Remedial Action Plan (RAP) was prepared by NYSDEC and the Eighteenmile Creek Remedial Action Committee (RAC) in 1997. The RAP was prepared in response to a recommendation by the Water Quality Board of the International Joint Commission (IJC) that RAPs be prepared for the 43 AOCs identified within the Great Lakes basin, including the Eighteenmile Creek AOC. The NCSWCD is the Eighteenmile Creek RAP Coordinator, having assumed management of the RAP in 2005 with funding support from the USEPA's GLNPO. The NCSWCD has been involved in investigative and remedial activities and public education/outreach activities within communities affected by the Eighteenmile Creek AOC.

Eighteenmile Creek, located in the heart of Niagara County, is surrounded by six residential townships. Many citizens own creek-front property from its headwaters in the town of Lockport to its discharge to Lake Ontario in Olcott, New York. The creek within the AOC is used extensively for fishing, boating, and recreation. The investigation area is primarily in a rural/residential area. Sediment contamination in the area upstream of the AOC (in the Lockport area) has impacted residential properties adjacent to the creek.

Investigations completed in the 1980s and 1990s indicated that the sediments of Eighteenmile Creek within the AOC and in the Lockport area are contaminated with polychlorinated biphenyls (PCBs). PCBs are factors in restrictions on fish and wildlife consumption, bird and animal deformities, or reproductive problems and degradation of benthos. A surface sediment sample collected in 1994 from Olcott Harbor contained PCBs at a concentration greater than the NYSDEC guidance for screening of contaminated sediments. Ten of 15 fish flesh samples from the creek contained PCBs at levels above the U.S. Food and Drug Administration action level of 2.0 milligrams per kilogram (mg/kg). Sediment samples collected during NYSDEC investigations in the upstream portion of the creek (Flintkote Site) contained PCBs at 49 mg/kg (NYSDEC 1997).

Beneficial use impairment (BUI) investigation was conducted in 2007 to determine whether Eighteenmile Creek is impaired in regard to existence of fish tumors and other deformities; status of fish and wildlife populations; and status of bird or mammal deformities or reproductive impairment. A wide range of data was collected from Eighteenmile Creek and a similar background stream, Oak Orchard Creek, and the data from the two creeks were compared. The data collected for this investigation suggest that bird and amphibian populations at Eighteenmile Creek are not impaired, but that fish and mammal populations likely are. The possible impairment of fish and mammal populations results from high levels of PCBs in fish. Whole-body concentrations of Aroclors 1248, 1254, and 1260 and total PCBs were an order of magnitude greater in brown bullheads from Eighteenmile Creek compared with the levels in brown bullheads from Oak Orchard Creek (EEEPC 2009). Whole-body concentrations of dioxins/furans (expressed as the 2,3,7,8-tetrachlorodibenzo-p-dioxin [TCDD] toxic equivalent [TEQ]) in bullheads from Eighteenmile Creek were approximately five times greater than in bullheads from Oak Orchard Creek. .

Sources and potential sources of PCBs to Eighteenmile Creek have been identified as industrial and municipal wastewater discharges, combined sewer overflows, inactive hazardous waste sites, the New York Barge Canal discharge, contaminated sediments already present in the creek, and an unknown source between Olcott Street and North Transit Road. Extensive progress has been made by monitoring discharges and updating State Pollutant Discharge Elimination System (SPDES) permits for industrial and municipal wastewater dischargers and de-listing inactive hazardous waste sites. NYSDEC conducted a sediment study in the area of the unknown source of PCBs located between Olcott Street and North Transit Road in August of 2005 and performed follow-up investigations in 2007 and 2008 (NYSDEC 2006 and EEEPC 2007b and 2008). NYSDEC has divided the site into the Flintkote Site and the Eighteenmile Creek Corridor site. NYSDEC has completed a remedial record of decision (ROD) for the Flintkote site (NYSDEC 2006a) and anticipates a ROD to be issued for the corridor site in 2009.

1. Introduction

Under contract to NCSWD, EEEPC performed a PCB trackdown study (EEEPC 2007). Samples were collected for PCB screening using grab samples at 80 locations from Harwood Street to Stone Road (8,000 feet), including east of the confluence between Gulf Creek and Eighteenmile Creek and an unmapped drainage on the west side of Eighteenmile Creek. Approximately 2,000 feet of creek within this area was not investigated because the gradient of the creek cascading down the Niagara Escarpment is too steep to ensure the safety of the field sampling crews. In addition, the amount of sediment in this area available for sampling is minimal due to high flow velocities and steep gradient. A total of 80 samples and three duplicates were collected and analyzed for PCBs using a screening method. Total PCB concentrations ranged from 59 micrograms per kilogram (µg/kg) to 4,300 µg/kg and 29 samples did not contain detectable levels of PCBs. A total of 12 cores were collected in areas to confirm PCB screening levels. Three samples were collected at various depths. The concentrations in the core samples confirmed the screening results and ranged from 12 µg/kg to 69,000 µg/kg and only 6 samples were non-detect. A comparison of PCB screening results to PCB confirmation samples indicates the screening results need to be increased by 40% to be comparable to the confirmation results.

The results indicate that PCBs are present in areas of Eighteenmile Creek outside of the AOC and downstream of the potential source area near Lockport. The core sample results show a general decrease in concentration with depth. The results indicate that the entire sediment column is impacted with PCBs and only the native material in the creek bed is free of PCB contamination. Most of the positive PCB results exceeded PCB screening criteria. The results show a relatively uniform concentration of PCBs except at areas close to the Flintkote property and in the area near the intersection of Old Niagara and Plank Road. The results indicate the potential for an additional source of PCBs in an area north of Gulf Creek but before Plank Road.

The surface samples from all 12 cores were also analyzed for select list of metals. The metals results were compared to NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 standards. All metal concentrations were near or exceeded TAGM criteria. The metals concentrations in the sediment cores were relatively uniform throughout the PCB trackdown study area.

The overall objective of the RI activities is to determine the nature and extent of contamination throughout the Eighteenmile Creek area. Numerous sediment investigations have been conducted in the vicinity of the canal, throughout Lockport, and downstream of Burt Dam, additional data are needed to develop a conceptual model of the existing physical and chemical conditions in Eighteenmile Creek between Burt Dam and Lockport. The Phase 1 of this investigation was designed to collect data on the physical conditions of the creek upstream from Burt Dam to Lockport. The results of the Phase 1 activities will be used to develop a strategy to implement a sampling and analytical program (Phase 2) for evaluating the nature and extent of contamination in the AOC.

1.2 Project Description

CH2M HILL and EEEPC implemented the Phase 1 activities for Eighteenmile Creek in a manner consistent with NYSDEC and USEPA requirements, protocols, and guidance. This portion of the project focused on the area from Burt Dam south to Lockport, an area for which there is little historical data regarding sediment characteristics and quality, and depositional areas. The Phase 1 reconnaissance activities included using a small boat to survey Eighteenmile Creek focusing on the approximate 9.4-mile segment between Stone Road and the area just north of Ide Road. The survey identified and mapped areas of sediment deposition, point discharges, ecologically significant areas (e.g., wetlands, floodplains, cattail marshes), and other features that may affect future Phase 2 RI sediment collection activities. Data collected included during Phase 1 field activities included the following:

- Global Positioning System (GPS) coordinates of the location and extent of depositional areas and ecologically significant habitats;
- Water depth, sediment thickness, and width of the creek at selected locations; and
- Locations of point discharges, utility crossings, bridges, logjams, and other features that may affect future actions.

Details of the field methodology are provided in Section 2 and the results of the survey are provided in Section 3. A bathymetric and sediment thickness survey of the Burt Dam

impoundment was also conducted and the results will be submitted in a separate report.

Section 4 of this report provides preliminary recommendations for Phase 2 investigations.

2 Methodologies

Section 2 provides a brief overview of the investigation areas and field methods used for the Phase 1 reconnaissance survey. The details of the areas and methods are provided in the QAPP (CH2M/EEEPC, December 2008). Adjustments to the planned field activities and the rationale for the modifications are described below.

2.1 Investigation Areas

Digital information from the 2005 aerial image of the creek and historic sampling areas were loaded into the Geographic Information System (GIS) to divide Eighteenmile Creek into smaller investigation areas based on the geography of the creek and the existing data. As noted in the QAPP, the creek was divided into five segments that require different levels of investigation (CH2M/EEEPC, December 2008 Figure 2-1). The Phase 1 reconnaissance survey was conducted in a 9.4-mile stretch of the creek just north of Ide Road upstream to Stone Road (see Segment 3 as noted in the QAPP). This stretch of the creek is relatively isolated and little information has been developed on habitats, stream channel conditions, or sediment characteristics. A bathymetric survey will be performed over the 1.5 miles of the impoundment area from behind Burt Dam upstream to the area just north of Ide Road (see Segment 2 as defined in the QAPP). This portion of the creek is relatively wide and deep and there was little information on water depth and sediment thickness.

The results of the Phase 1 survey were used to define reaches of the creek based on the overall physical and channel substrate characteristics. These reaches are shown in Figure 2-1 and summarized on Table 2-1.

Table 2-1 Summary of Reaches, Eighteenmile Creek, Niagara County, New York

Reach	Reach Description	Section	Section Description	Starting Mile Marker	Ending Mile Marker	Total Length (miles)
Reach 1	Mouth of Creek to Burt Dam	NA		13.0	15.2	2.2
Reach 2	Burt Dam Impoundment	NA		11.5	13.0	1.5
Reach 3	Reach 3 – Confluence of Eighteenmile Creek with Upstream Extent of Burt Dam Impoundment	NA		11.0	11.5	0.5
Reach 4	Bedrock/Gravel Channel Downstream of Newfane Dam	NA		10.0	11.0	1.0
Reach 5	Newfane Dam Impoundment	NA		9.2	10.0	0.8
Reach 6	Gravel Channel Upstream of Newfane Dam Impoundment	1	Characterized During Recon	7.3	9.2	1.9
		2	Observations from December 2008; not Fully Characterized	5.9	7.3	1.4
					Total Reach Length	**3.3**
Reach 7	Meandering Section with Large Woody Debris (LWD) Downstream of Niagara Escarpment	1	Observations from December 2008; not Fully Characterized	4.6	5.9	1.3
		2	Characterized During Recon	2.2	4.6	2.4
		3	PCB Trackdown Area*	1.2	2.2	1.0
					Total Reach Length	**4.7**
Reach 8	Steep Gradient Run of the Escarpment	NA		0.8	1.2	0.4
Reach 9	Short Run Downstream of Corridor Site	NA		0.6	0.8	0.2
Reach 10	Eighteenmile Creek Corridor Site	NA		0.0	0.6	0.6

* Eighteenmile Creek RAP and EEEPC conducted sediment sampling in 2006 for the purposes of PCB source trackdown.

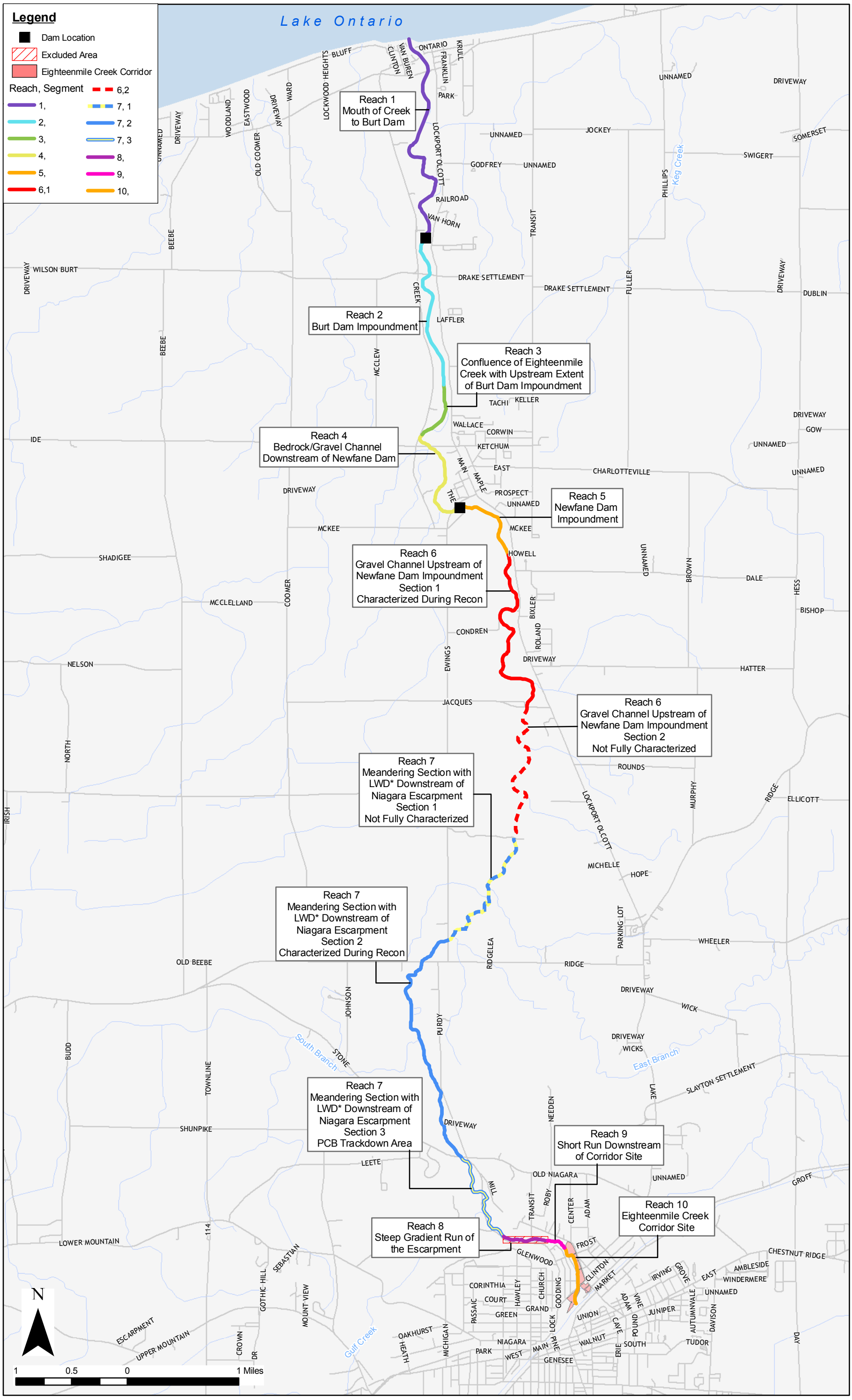


Figure 2-1 Eighteenmile Creek AOC and Investigation Areas

*Large Woody Debris (LWD)

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The detailed findings from for each of the different sections of the creek are presented in Section 3 of this report. Appendix A includes detailed figures of the reconnaissance survey area presenting: (1) data collection points recorded during the survey (Figure A-1-1 to 16); (2) locations where photos were taken (Figure A-2-1 to 16); and (3) sediment deposition areas and thicknesses (Figure A-3-1 to 16).

2.2 Field Activities

The Phase 1 investigation consisted of a detailed reconnaissance survey to investigate site access, identify areas of sediment deposition and measure sediment thickness, and map sensitive habitats and other areas of potential ecological concern encountered during the field activities. Phase 1 field efforts were initiated in winter of 2008 and later completed during the spring of 2009. The Phase 1 investigation was initiated with two days of field work in December 2008, but the extreme cold weather, snow, and ice prevented further activities. The remaining field work was conducted re-activated and completed in April and May 2009.

In December, the creek between Ewings Rd and Jacques Rd was initially surveyed to assess obstacles and site conditions, but limited field observation points were collected. This portion of the stream was characterized by numerous tree falls that limited the ability to navigate the creek. Given that other reaches of the creek had similar physical conditions there was no additional field data collection on along this stretch (Reach 7, Section 1 and Reach 6, Section 2) of the creek in the spring. All other areas of the creek were investigated as planned.

Site reconnaissance field teams consisted of two to three members from EEEPC. Upon arrival at the site each day a safety meeting was held along with a discussion of the day's objectives. The field team entered the creek at the various access points (See Figure A-1-1, -4, -7, -8, -10, -12, -13, -15, and -16). A canoe was used for hauling sampling equipment and was also utilized in those stretches where logjams were separated enough that sampling could be accomplished from the boat. Field crew members used chest waders and walked long portions of the reaches where water depths allowed. In most areas two members of the sampling team waded along the left and right descending banks of the creek channel probing for sediment deposition areas and becoming

familiar with the various sediment types and transitions (e.g., rock-cobble-boulder, hard pan clay, thin sediments with silts and organics, deeper sediments with silts, detrital matter and organics). The third sampling team member maintained the field logbook, took photographs, and GPS points. At each point of interest, the following information was collected:

- GPS coordinates at data collection points;
- Water depth (in inches) using an adjustable length, graduated pole, yard stick or similar device;
- Sediment depth (in inches);
- Creek widths were measured when changes in channel widths occurred or in the absence of changes at undirected intervals; GPS coordinates were collected on opposite banks (toe of slope), with mid-channel information collected for all channel cross-sections; and
- GPS coordinates for wetlands, cattail marshes, areas of surface discharges to the creek, and utility crossings.

A combination of tools was utilized to record field data including the GPS unit, log books, and photographs. The GPS was coded to input water depth, sediment depth, creek width, and field notations. GPS data and digital photographs were electronically copied and archived. Field personnel ensured that the GPS was functioning properly before collecting data, including meeting the following requirements:

1. A minimum of four satellites are available
2. Position Dilution of Precision <= 6
3. Satellite elevation >= 15° above the horizon
4. Acceptable Signal-to-Noise Ratio Mask

Field personnel checked that the GPS was functioning properly before collecting data at the beginning of each field collection day. The receiver would also provide warnings if the above conditions were not being met throughout the field collection day. When this happened, data collection stopped until the receiver could be reset. Data collection was on horizontal

coordinates only, with attributes documented in the field through a customized script developed specifically for this project. At the beginning and end of each day, the nearest known, fixed structure was surveyed as a reference location (e.g., bridge, road crossing). Data were collected in NAD 83 UTM Zone 18 North (units are meters). Data were transferred and differentially corrected using the GPS software upon returning to the office and assessed for accuracy.

Point data collected included X- and Y- coordinates of sediment probes, outfalls, tributaries, water depths, drainage points, and obstructions. A database was constructed for containing the information associated with each location/point including type of point, soil depth, water depth, and the time/date collected. Other physical conditions are summarized in database based on photo interpretation and field reconnaissance, including: cattail marsh, wetlands, bank widths, and the creek centerline (interpreted from aerial photography).

Data collected using GPS underwent GPS correction and quality control by the GIS analyst. Attribute and photo-interpreted data were checked by both the GIS analyst and a field crew member for accuracy. These data were then mapped over the 2008 aerial photography. The final GIS database includes a data dictionary (i.e., a list of all GIS layers and their sources and metadata prepared using the USEPA, Geospatial Metadata Technical Specification v. 1.0, November 2007).

3 Results

Section 3 presents the results of the Phase 1 reconnaissance survey for each of the reaches listed on Table 2-1 for which field work was implemented. All of the results are incorporated into a GIS database for use in Phase 2. The details of the results are presented on figures, tables, and photo logs in appendices to this report. The actual GIS shape files are not included.

3.1 Field Reconnaissance Survey Results

Field survey results are provided on detailed figures in Appendix A. The figures start at the beginning of the reconnaissance survey area near the upstream extent of the Burt Dam impoundment and proceed upstream to Stone Road. Figures A-1-1 through A-1-16 provide locations of bank points, sediment probes, tributaries, water depth points, drainage points, obstructions, outfall, and other notable locations including access points. Details on the findings for each of these locations are provided in the tables in Appendix B. Figures A-1-1 through A-1-16 also identify habitats such as forested wetlands and cattail marshes. The center line of the creek is color coded to represent the predominant creek channel substrate encountered during the survey including bedrock channel with organic sediment deposits, clay bottom, deep water, silty bottom with thick sediment, and gravelly bottom.

Photographs were collected throughout the field reconnaissance process; photo logs are provided in Appendix C and Figures A-2-1 through A-2-16 in Appendix A-2 show the locations of the photo points. Sediment thickness and water depths were collected at a total of 218 locations. The measurements are provided on Figures A-3-1 through A-3-16 in Appendix A-3 for the entire survey area. The figures in Appendix A-3 also show areas of sediment deposition. The linear feet of sediment deposition along or near creek banks were measured with the GPS if the length was greater than 10 feet, obtaining an upstream and downstream point for the extent of the

depositional area. Otherwise the sediment locations were treated as separate points. The summary of these measurements are show on Table 3-2.

As provided earlier, the study area was divided into reaches, largely depending on substrate characteristics. The reaches are shown on Figure 2-1 and summarized in Table 2-1. Reach 1 extends from the mouth of the creek to Burt Dam. While Reach 1 is part of the AOC, it is not part of the study area for this RI/FS. Reach 2 is the Burt Dam impoundment and is part of the study area but the results of the bathymetric survey and sediment thickness mapping will be provided as a separate report. Reaches 8, 9 and 10 extend from the escarpment to the New York State Barge Canal. Reaches 8, 9, and 10 were not included in the reconnaissance survey because the areas were previously investigated as part of the investigations conducted by the NYSDEC. In summary the Phase 1 field activities concentrated on collecting information from Reaches 3, 4, 5, 6, and 7 (see Figure 2-1). The results for these reaches are discussed below. The sediment and water depths for these reaches are summarized on Table 3-1. The sediment depositional areas for these reaches are summarized on Table 3-2.

3.1.1 Reach 3 – Confluence of Eighteenmile Creek with Upstream Extent of Burt Dam Impoundment

Figure 3-1 and a portion of Figure 3-2 summarize the reconnaissance survey results for Reach 3. This reach is representative of a flooded stream bed with the meander of the original stream bed channel evident among islands of forested wetland and cattail marsh. The stretch is approximately 0.5 miles upstream of the deeper water of the Burt Dam impoundment (see Reach 2 on Figure 2-1). The sediment reconnaissance survey was completed on May 2, 2009. Two sediment thickness points also were probed in areas that fall within Reach 2 as shown on Table 3-1. The sediment probes indicate the deeper water in this reach is characterized by average sediment thickness of about 9 feet and relatively shallow water (less than 2 feet). Reach 2 area will also be characterized as part of the bathymetric survey.

Table 3-1 Summary of Sediment Thickness and Water Depth Points, Eighteenmile Creek, Niagara County, New York

Reach	Section	Number of Sediment Sampling Points	Number of Points with Sediment Deposition	Average Depth (feet)[1]	Min. Sediment Depth (feet)	Max. Sediment Depth (feet)	Number of Water Points	Average Depth (feet)	Min. Water Depth (feet)	Max. Water Depth (feet)
Reach 2	NA	2	2	9.2	8.9	9.5	2	1.5	1.1	2.0
Reach 3	NA	31	30	4.6	0.1	9.8	31	2.1	0.4	7.5
Reach 4	NA	22	13	0.5	0.2	1.8	32	1.0	0.2	3.5
Reach 5	NA	52	42	3.0	0.1	7.2	52	3.7	0.3	10.4
Reach 6	1	30	23	0.9	0.2	2.0	30	0.9	0.0	2.8
Reach 6	2[2]	0					2	2.5	1.5	3.5
Reach 7	1[2]	1					3	2.5	1.5	4.0
Reach 7	2	81	80	1.4	0.2	4.3	81	1.1	0.0	3.0

[1] Averaging includes only those locations where sediment was present.
[2] Segment was not fully characterized during Phase 1 activities.

Table 3-2 Sediment Depositional Areas, Eighteenmile Creek, Niagara County, New York

Reach	Section	Length (miles)	Number of Points with Sediment Deposition	Number of Areas Containing Sediment Areas of Lengths Greater than 10 Feet	Total Linear Feet of Depositional (feet)	Total Depositional Area (acres)
Reach 2	NA	1.48	2			1.3
Reach 3	NA	0.55	30			9.8
Reach 4	NA	1.01	13			
Reach 5	NA	0.76	42	1	244	5.4
Reach 6	1	1.89	23	17	1567	
Reach 6	2[(1)]	1.46			*1207*[(1)]	
Reach 7	1[(1)]	1.32			*1333*[(1)]	
Reach 7	2	2.40	80	47	2428	
Reach 7	3[(1)]	0.99			*997*[(1)]	
Totals			190	65	*6778*[(1)]	16.5

[(1)] Linear feet of deposition was estimated based on sections that were fully characterized during the survey.

The upstream portion of Reach 3 is characterized by a gravel bottom with swift flow and few sediment deposition areas. From SED 181 (Figure A-3-2) to the ending point of the reconnaissance survey at a point just south of the Burt Impoundment, the creek is characterized by large, deep sediment deposits due to the entrance of slack water. This lower portion has forested wetlands and cattail marsh along both banks with a mix of steep sloped sides and low floodplains. Sediment is primarily comprised of silt with fine sand, and some clay, with sediment depths generally greater than 3 feet and water depths less than 3 feet. A total of 31 sediment thickness and water depth points were collected in this area (see Table 3-1). Table 3-2 shows that total sediment depositional area was estimated at 9.75 acres with an additional 1.3 acres identified in what is Reach 2. There are several areas which are notable within this section of the creek:

- Two drainage locations were identified on either side of the creek near Ide Road.
- An inlet with some flow into the creek near SED 176 and SED 177 has sediment deposition with depths up to almost 2 feet (Figure A-3-2).
- From SED 181 to the survey end, sediment is deep throughout the entire creek. Sediment depths range from 1 foot to up to 10 feet. Additional deposition occurs along the entire length of the cattail marshes (Figures A-3-1, -2).
- A secondary (slough-like) channel along the east side of the creek valley is connected to the main stem of the creek by a small channel that runs between cattail marsh and wetland areas. This secondary channel also contains sediment, with depths from above 3 feet to almost 5 feet. Sediment depths within the connection channel range from just above 2 feet to over 5 feet (Figure A-3-2).

3.1.2 Reach 4 – Bedrock/Gravel Channel Downstream of Newfane Dam

Figure 3-2 summarizes the Reach 4 reconnaissance survey results for the portion of stream downstream of Newfane Dam to Ide Road. This reach is about 1 mile long and is influenced by the flow from Newfane Dam. It appears there are at least two locations along this stretch that had historic water withdrawal structures that influenced the channel and left obstructions in the creek. The survey reconnaissance effort was completed between the point immediately downstream of Newfane Dam to Ide Road on December 4 (see Figures A-1-2 to -4 and A-3-2 to -4). EEEPC encountered David Eaton, who owns the property next to Newfane Dam. He was

unaware of the field activities, but did not have any issue with EEEPC's presence in the area. Mr. Eaton gave the name of another land owner, Eugene Collins, whose property along Ewings Road in the Town of Newfane has a small lot for parking. Permission was granted from the landowners to NCSWCD for use both of these areas for access. These access points are shown on Figure A-1-4.

Reach 4 is characterized by relatively swift stream flows and fewer, shallower sediment depositional areas. Of the 22 sediment measurement points recorded, 13 exhibited sediment accumulations with an average sediment depth of 0.5 feet. The water was shallow with a depth of (generally less than 3.5 feet at all locations) with an average depth of 1 foot. Two channels depart from the dam (Photos P30 to P32); outflow from an old pump house structure along right side (Photo P56), and spillway overflow from left side. These conditions created an island over time of approximately 600 feet in length with a small, high water overflow channel reconnecting the two channels. Stream banks are 1 to 4 feet high with slopes of varying steepness that rise onto a floodplain bench. Stormwater enters the creek at the bridge at Ewings Road which contains roadside drainage pipes, and from non-point run-off along rip rapped stream banks.

Between Ewings Road North and Ide Road, areas of sediment deposits were shallow. This portion of the creek contains bedrock substrate within the main channel and was stripped of any sediment with the exception of the immediate vicinity of the banks. In these locations, less than 0.5 feet of sand, gravel, and organic material had accumulated, but it is likely that this material would be prone to washing out during higher flow events. Water depth between Ewings Road North and Ide Road (Figures A-3-2 and 3-3) was variable (0.25 feet to greater than 3.5 feet) and the flow was swift. Two small island features with right and left channels can be found along this stretch, the first is located approximately 600 feet downstream from the Ewings Road bridge. This island creates a small rapid adjacent to it that is choked with fallen trees and branches and not navigable by canoe (see P65A). Giant Hogweed was observed on this island. The second island is located 300 feet upstream from the Ide Road bridge and is defined by a giant willow that is split which has created a pond area that flushes during high water flow. A concrete structure along the west bank is situated upstream from the only tributary observed entering the

creek in this section (Photo P43A). The structure is approximately 20 feet by 10 feet size with no apparent connections and extends approximately 5 feet into the stream. Stream banks are 1- to 4-foot slopes of varying steepness that rise onto a flood plain bench. In some locations the embankment ascends 20 feet to 50 feet above departing from the streambed.

Approximately halfway through this section an impoundment/weir/water-intake culvert bisects the stream (Photos P50A to P55A as noted on Figure A-2-2). This is a safety hazard at all water levels. The structure is at a 45 degree angle departing the left descending bank (LDB) which forces water to flow behind the water-intake structure upstream approximately 30 feet away. The upstream intake leads to the right descending bank (RDB) via a culvert and creates a spillway along the RDB. There are trees and debris piled up at the intake structure at river center, creating further hazards (Figure A-1-3).

Other features observed along this section include a 1000-gallon tank rusted out along the LDB (Photo P62A), an irrigation system (disconnected) leading into agriculture fields along the LDB (Photo P61A), a concrete retaining wall along the RDB near creek side industry (Photo P63), and several broken concrete culverts that have been washed downstream. A large wetland complex is located south and west of Ide Road (Photo P68).

3.1.3 Reach 5 – Newfane Dam Impoundment

Figure 3-3 summarizes the Reach 5 reconnaissance survey results for the area immediately upstream of Newfane Dam. The dam creates an impoundment/slack water section that extends approximately 4000 feet upstream (see Table 2-1). Reach 5 is characterized by deeper water and large sediment deposition areas. A total of 52 locations were probed in this reach of which 42 locations contained had sediment deposits averaging 3 feet. The water depths in this reach were on average greater than 3 feet and up to 10 feet deep in areas immediately behind the dam. The area shows the presence of wetlands, cattail marshes, and increased sediment deposition along creek banks and bottom. The use of a canoe was necessary in this portion of the creek as the water depth is greater than five feet. Sediments in this stretch are primarily comprised of silt with some fine sands and some clay, with a gravelly mid-channel between SED 133 to SED 152

(Figures A-3-4, -5). The relatively long stretch of creek (approximately 244 linear feet) is influenced by the presence of the dam and almost entirely depositional, and was estimated to be 5.4 acres (see Table 3-2).

Data points were collected on April 27 and 30, 2009. There are several areas which are notable within this section of the creek:

- Two outfalls on the east side appear to drain residential areas from Newfane and three drainage locations on the west side of the creek (see Figure A-1-5 and 6).
- At SED 113 there is a mid-channel island (Photo P70) with sediment deposition at the downstream end. Sediment depth are less 0.5 feet. At the end of the depositional area the sediment become much coarser.
- Downstream of SED 127 there is a large woody debris complex (start point: OBS-042, end point: OBS-043) (see Photo P77), that has influenced depositional characteristics along both banks; sediment depths range from 1.5 feet to greater than 4 feet.
- Cattail marshes begin just downstream of OBS-043 (Figure A-1-5) and continue to Newfane Dam. Sediment deposition occurs along the entire length of the cattail marsh edges (Photo P129).
- In the area just upstream and in front of the Newfane Dam, thick sediment covers the entire creek channel (Figure 4-4).
- A tributary along the west side of the creek contains large sediment deposits ranging from about 1.5 feet to 4 feet thick (SED 154 to SED 157) (see Photo P78). The area appears to drain land that is primarily agricultural.
- A tributary along the east side of the creek near the dam (Photos P82, P85), parallel to Route 78, had sediment depths greater than 4 feet thick (SED 170 to SED 172) (Figure A-3-4). Sediment composition in this tributary was silt and cattail marshes are located along both banks.

3.1.4 Reach 6 – Gravel Channel Upstream of Newfane Dam Impoundment

Reach 6 is upstream of the Newfane Dam impoundment and is characterized by a gravel channel with scattered and shallow sediment deposition. The reach was divided into two sections based on the survey efforts. Section 1 was fully characterized during the Phase 1 survey and the results are summarized on Figure 3-4. Section 2 was part of the area from Ewings Road South to

Jacques Road that was not fully characterized due to limited access and the large number of log jams and woody debris across the creek.

Reconnaissance efforts were performed between Jacques Road and Condren Road on April 25 and between Condren Road and Newfane Dam impoundment on April 27. The area south of Jacques was surveyed on December 1, 2008, but characterization efforts were limited. Figures A-1-6 to A-1-10 present the entire reach area in detail. The entire reach length is estimated to be 3.3 miles of which a little over half was fully characterized. Of the 30 locations probed, only 23 locations had sediment present. The average sediment and water depths were about 0.9 feet (see Table 3-1). A total of 17 areas of sediment deposition greater than 10 feet were identified (see Figures A-3-6 to -8) for an estimated total of 1,567 linear feet of deposition. If this estimate was expanded to the entire reach, approximately 2,800 linear feet of sediment deposition can be assumed (see Table 3-2).

During reconnaissance efforts, the field crew spoke with Darcy O'Brien at Zehr Farms along Jacques Road in regards to creek access. She mentioned that many people enter the creek from the access road that runs parallel with the creek on the east side of the farm. This segment of the creek is characterized by a wide, shallow channel, with a hard substrate, primarily gravel and cobble. It appears that there are few locations that accumulate sediments. Riffles were noted where the water depths are too shallow for canoe passage and there are larger stones and faster stream flow velocities. Throughout this section of creek the LDB and RDB varied in height and slope. Often those areas consisting of high banks (greater than 20 feet) characterized by much bank erosion, unstable stream banks, and fallen trees. Typically, the area adjacent to the stream bank opposite the high bank contained floodplain. Deposition within this stretch of creek was primarily gravel bars, but where sediment deposition occurred, depths ranged from 0.8 to1.3 feet. The notable findings within this reach of the creek are as follows:

- There are several outfalls and drainage on the creek where it runs parallel and close to Condren Road on the west and Lockport-Olcott Road on the east (see Figure A-1-6).

- As the ending point at Condren Road is approached, the creek splits, creating a secondary channel adjacent to Route 78 (Photo P66 on Figure A-2-7). This secondary channel has flowing water and a extensive piles of large woody debris. Two roadside drainage areas exist for Route 78 along here. Sediment depths within this channel range from less than 0.5 feet to greater than 3 feet. Sediment is generally fine sand, silt, and some clay which is consistent with other deposition areas within this segment of creek.

- Where the creek rejoins itself downstream there is a small in-channel island with deposition on the downstream end (Photo P120 on Figure A-2-7).

- The remaining area of the reach is characterized by obstructions and overland drainage areas.

- An additional access area was identified on an unnamed road at Malley Topsoil (see Figure A-1-10).

3.1.5 Reach 7 – Meandering Section with Large Woody Debris Downstream of Niagara Escarpment

Reach 7 begins at the bottom of the Niagara escarpment and continues upstream for almost 5 miles. The reach was divided into three sections based on the survey efforts. Section 1 (1.3 miles) was part of the area from Ewings Road South to Jacques Road that was not fully characterized due to limited access and a large number of log jams and woody debris. Section 2 (2.4 miles) was fully characterized during the Phase 1 survey and the results are summarized on Figure 3-5. Section 3 (1 mile) was characterized during the PCB trackdown study performed by EEEPC under contract to NCSWD (EEEPC 2007).

A reconnaissance effort was performed between Stone and Ridge Roads on April 23 and 24, 2009 (Figures A-1-13 to -16, A-3-13 to -16). This portion of the creek is characterized by a narrow channel compared to stretches located further downstream, with water depths ranging from 0 to 3 feet. The creek substrate contains hard clay overlain by primarily coarse sand with some pockets of silt and clay due to large amounts of fallen trees along the bottom of the creek which function as sediment "cribs." Over time the trunks and numerous branches of these fallen trees have trapped sediment creating depositional areas and sediment "bars," sometimes extending into the middle of the channel. The sediment is generally dark grey to dark brown in color, with little-to-no gravel, a substantial component containing detrital and organic material, and often has a relatively strong odor of decomposing organic material. As the creek approaches

Ridge Road, sediment becomes more of sandy silt with increased clay content within sediment pockets. Additionally, an increased frequency of cobble and some boulder were observed. In the lower portions of this sampling reach a number of forested wetlands were observed within floodplain. Visual observation indicates that overbank flooding occurs in many of these areas. It is also likely that drainage from agricultural fields beyond the riparian corridor also flows into the floodplains and wetlands. Points of discharge where overland drainages meet the creek were noted and mapped.

A reconnaissance effort was performed between Ridge Road and Ewings Road South on April 24 and 25, 2009 (Figures A-1-12 and -13 and A-3-12 and -13). This stretch of the creek is very similar in substrate and bank characteristics as the stretch between Stone Road and Ridge Road. However, this portion of the creek has soft sediment deposition on top of hard clay creek bottom less 0.5 feet in depth. Sediment is primarily composed of silt with fine sand and some clay content and is highly organic; ranging in depth from 0.5 feet to over 4 feet. Abundant areas of large woody debris are present and many sections of the LDB are sloughing into the creek.

The area north of Ewings Road South to Jacques was surveyed on December 1, 2008, but characterization efforts were limited. Figures A-1-10 to A-1-12 show this entire reach area in detail. One large gooseneck in the creek (Photos P03, P04) had a large amount of downed trees. This area is indicated on Figure A-1-11 and denoted with the text “sediment deposition area.” The field crew portaged in this area and sank approximately 1 to 1.5 feet into saturated organic sediment. A few drainages entered the east side of the creek, some were substantial in size and are denoted as tributaries, others were small drainages from agricultural fields.

This reach of the creek is difficult to maneuver due to fallen trees within the creek (Photo P08). Most of the tree falls are significant in size, ranging from approximately 0.5 feet up to 3.5 feet or more in diameter and are submerged or over-hang the entire creek width. A chainsaw will be needed to effectively navigate the creek in the future. Seasonal and storm-event related changes in water levels will likely cover some obstacles but will also expose new ones. Three old farm bridges (Figure A-1-11), were located in this section of the creek (Photos P06, P21 to P27).

The average sediment depth in Reach 7 segment 2 was 1.4 feet. The water depth was less than 3 feet and averaged just over 1 foot (see Table 3-1). A total of 47 areas of sediment deposition greater than 10 feet were identified (see Figures A-3-12 to -16) for a total linear feet of deposition estimated at 2,428 feet. If this estimate was expanded to the entire reach, approximately 4,800 linear feet of sediment deposition can be assumed (see Table 3-2). There also were several areas that are notable within this section of the creek as follows:

- At SED 24 along the LDB a sheen was noticed on the sediment (see Figure A-2-16, Photo P29, P30); the origin of the sheen was not determined.
- At SED 34 there is an area of thick mud. It is composed of grey silty sand, with a minor component of clay. It is approximately three feet thick near the bank and becomes more of a silt bar as it angles toward the center of the creek channel. Sediment depths on the silt bar range from about 1.25 to 2.5 feet (Figure A-3-16).
- Downstream of SED 46 and nearby large woody debris is a mid-channel silt bar. Sediment depths range from 0.75 to 2 feet (Figure A-3-16).
- SED 77 along the LDB has two inputs form a wetland (see Photo P65). Sediment depths are up to 1.6 feet. Deposition at this point extends over 100 feet downstream and has varying widths, often reaching mid-channel (Figure A-3-14).
- SED 89 along the LDB is the last sediment point taken before Ridge Road. At this point deposition extends over 125 feet in length with sediment depths up to 3 feet. There is drainage from a wetland (see Photo P109) and potential for roadside drainage to be directed to this area (Figure A-3-13).
- Immediately downstream of Ridge Road there are two sections of large woody debris (Photo P110); sloughing banks combined with the large woody debris is causing a buildup of soft sediment along the RDB. Sediment depth ranges from 0.5 to 1.6 feet and deposition is 65 feet in length (SED 90, SED 91) (Figure A-3-13).
- At SED 93 there is an exposed bar along the RDB that is due to high water events or a sunken bank. Deposition is 40 feet long with depths ranging from 1.25 to 2.3 feet (Figure A-3-12).
- SED 97 along the LDB is directly downstream from an open pasture area that has had the creek bank stabilized by the use of a large log and rocks (see Photo P113). This has caused that section of bank to erode and deposition to occur downstream. Sediment depths are up to 2.6 feet and deposition extends 50 feet downstream (Figure A-3-12).

- The stretch between SED 97 and SED 98 has little deposition. At SED 98, just upstream of Ewings Road South along the LDB, sediment depths are approximately 1 foot. Deposition extends 30 feet upstream from Ewings Road South (Figure A-3-12)

3.2 Summary

The Phase 1 RI activities conducted along Eighteenmile Creek involved the planning, mobilization, and reconnaissance survey to characterize the physical conditions of the creek channel. The investigation began in December 2008 and was completed in April/May 2008 on the 9.4-mile segment between Stone Road and just south of Burt Impoundment. This investigation phase focused on collecting data describing sediment deposition areas within the channel, identifying the locations of wetlands, floodplains, cattail marshes, point discharges, and other features that could affect future sediment sampling in the next investigation phase. In summary the following data points were collected (Figures A-1-1 to -16):

- 201 sediment depth points,
- 88 bank points
- 19 cattail marsh points,
- 36 drainage points,
- 24 obstruction points,
- 8 outfall points,
- 7 tributary points,
- 25 water depth points,
- 7 wetland points, and
- 7 other points (bridges, etc.).

The data presented here will be used to develop a sampling and analytical plan (Phase 2) within Eighteenmile Creek from Burt Dam to Lockport to characterize the nature and extent of contamination outside the AOC. General recommendations for future sampling are presented in Section 4.

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RECON END POINT

WEST CREEK RD

DRIVEWAY

FORESTED WETLAND

N

0 400 Feet

Sediment Thickness
- < 1 ft
- 1 ft - 3 ft
- > 3 ft

Water Depth
- < 1 ft
- 1 ft - 3 ft
- > 3 ft

- Tributary
- Drainage
- Obstruction
- Outfall
- Other
- Bank Point
- Cattail
- Sediment Deposition Area
- Forested Wetland
- Cattail Marsh
- Tributary
- Bedrock Channel with Organic Sediment Deposits
- Clay Bottom
- Deep Water, Silty Bottom with Thick Sediment
- Gravelly Bottom

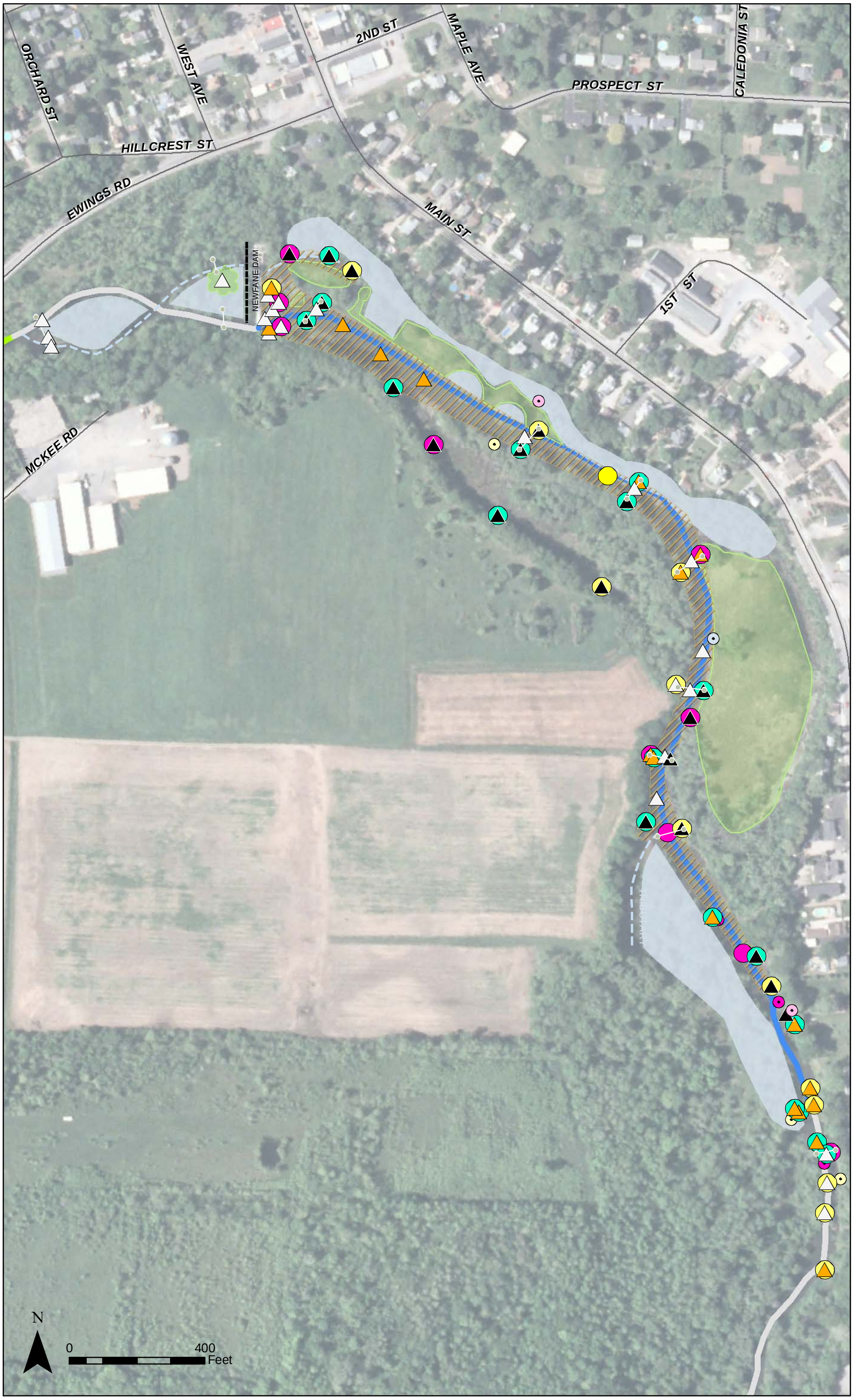
Figure 3-1 Reach 3
Eighteenmile Creek Field Reconnaissance,
Fall 2008 and Spring 2009, Niagara County, New York

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Figure 3-2 Reach 4
Eighteenmile Creek Field Reconnaissance,
Fall 2008 and Spring 2009, Niagara County, New York

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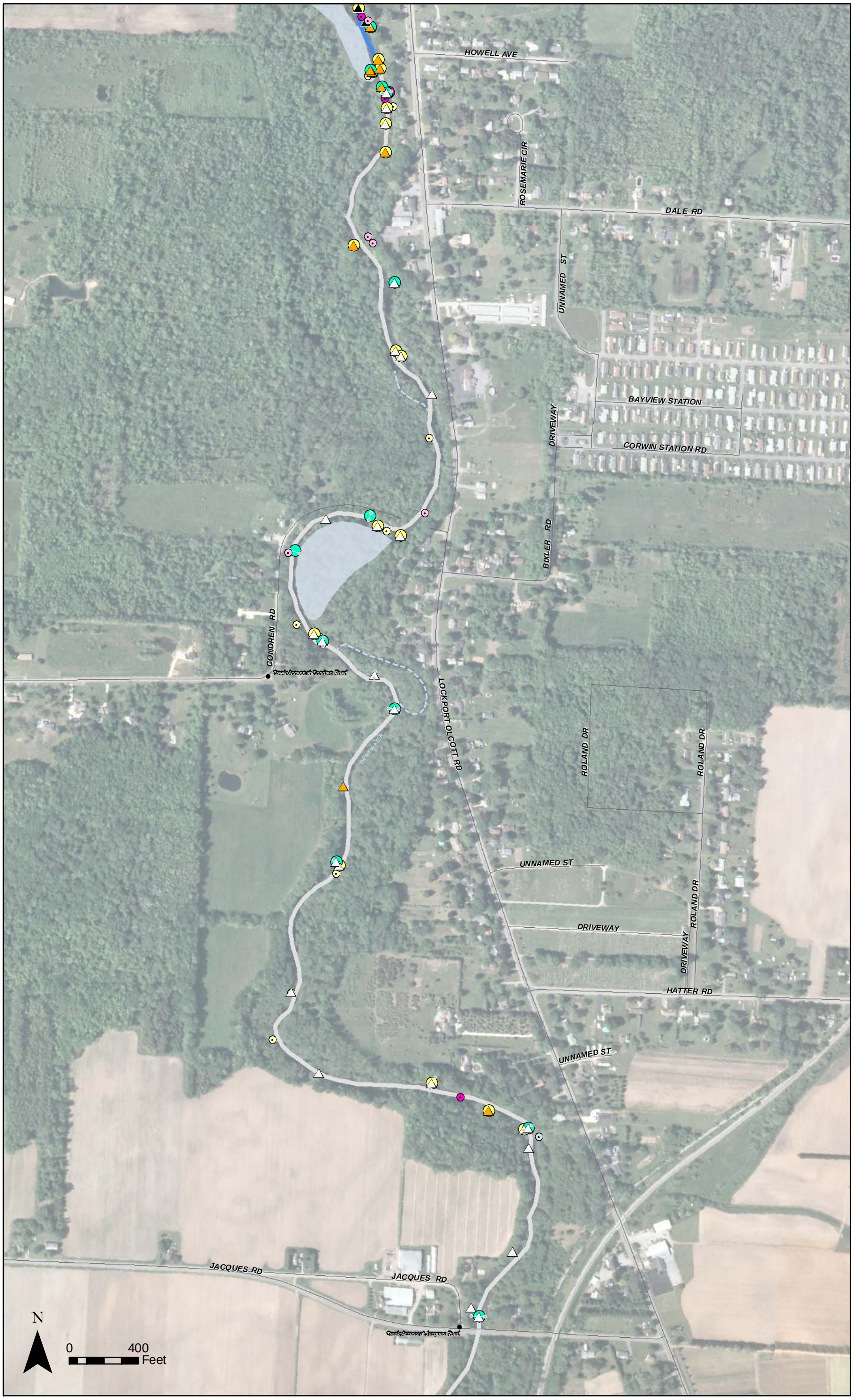
Sediment Thickness
- < 1 ft
- 1 ft - 3 ft
- > 3 ft

Water Depth
- < 1 ft
- 1 ft - 3 ft
- > 3 ft

- Tributary
- Drainage
- Obstruction
- Outfall
- Other
- Bank Point
- Cattail
- Sediment Deposition Area
- Forested Wetland
- Cattail Marsh
- Tributary
- Bedrock Channel with Organic Sediment Deposits
- Clay Bottom
- Deep Water, Silty Bottom with Thick Sediment
- Gravelly Bottom

Figure 3-3 Reach 5
Eighteenmile Creek Field Reconnaissance,
Fall 2008 and Spring 2009, Niagara County, New York

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Sediment Thickness
- < 1 ft
- 1 ft - 3 ft
- > 3 ft

Water Depth
- < 1 ft
- 1 ft - 3 ft
- > 3 ft

- Tributary
- Drainage
- Obstruction
- Outfall
- Other
- Bank Point
- Cattail
- Sediment Deposition Area
- Forested Wetland
- Cattail Marsh
- Tributary
- Bedrock Channel with Organic Sediment Deposits
- Clay Bottom
- Deep Water, Silty Bottom with Thick Sediment
- Gravelly Bottom

Figure 3-4 Reach 6, Segment 1
Eighteenmile Creek Field Reconnaissance,
Fall 2008 and Spring 2009, Niagara County, New York

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RIDGE RD
UNNAMED ST
EWINGS RD
RIDGELEA DR
DRIVEWAY
DRIVEWAY
PURDY RD
DRIVEWAY
STONE RD
LEETE RD
SHARON DR
SHARON DR
OLD NIAGARA RD
PLANK RD
UNNAMED ST
CANDLEWOOD DR
UNNAMED ST
N
0
2,000
Feet

Sediment Thickness
- < 1 ft
- 1 ft - 3 ft
- > 3 ft

Water Depth
- < 1 ft
- 1 ft - 3 ft
- > 3 ft

- Tributary
- Drainage
- Obstruction
- Outfall
- Other
- Bank Point
- Cattail
- Sediment Deposition Area
- Forested Wetland
- Cattail Marsh
- Tributary
- Bedrock Channel with Organic Sediment Deposits
- Clay Bottom
- Deep Water, Silty Bottom with Thick Sediment
- Gravelly Bottom

Figure 3-5 Reach 7, Segment 2
Eighteenmile Creek Field Reconnaissance,
Fall 2008 and Spring 2009, Niagara County, New York

4 Recommendations

Section 4 summarizes implications of the Phase 1 reconnaissance survey results for Phase 2 sampling and analysis activities. To support the planning process, a preliminary conceptual site model is presented for each reach of the creek. Section 4 lists considerations for the planning sampling and analysis activities. Some of these considerations were discussed in the PCT team planning meeting held on May 21, 2009.

4.1 Conceptual Site Model

The reconnaissance survey results were used to divide Eighteenmile Creek into a series of reaches representing Eighteenmile Creek which are based upon the groupings of areas characterized by similar physical (e.g., substrate) conditions (see Figure 2-1 and Table 2-1). A number of considerations and recommendations are provided for each reach. These vary from reach to reach based upon reach characteristics such as number of depositional areas identified, sediment depths, access, water depths, etc. A brief description of these considerations for each reach is provided below:

- **Reach 1** is downstream of Burt Dam and is not considered in this RI/FS. Remedial actions upstream of the dam will act to reduce the PCB load to this area.

- **Reach 2** is the Burt Dam impoundment. This area was not included in this field reconnaissance effort but the bathymetric survey was completed in early June by Aqua Survey. The results of that activity will be provided in a separate report. This area will be treated similar to a lake. The surficial sediment concentrations will likely be the most critical data points. The basic assumption is that high concentrations of PCBs in the surface sediments are biologically available and will be critical to future remedial efforts. It also is assumed that subsurface sediments in the deeper water would not be exposed during scour or other normal water flow events in this reach. The data needs for an evaluation of the concentrations in subsurface sediments will be discussed after the results of the bathymetric survey are reviewed.

- **Reach 3** is characterized by the historic stream channel that was flooded after the installation of the dam. Large sediment deposition areas have formed where the swift moving upstream creek flows into the impoundment area and the flow velocities drop quickly. Both surface and subsurface sediments could be subject to movement and therefore concentrations of contaminants need to be investigated at all depths. Marsh and forested wetland features may have been exposed to PCB contaminated sediments in the creek during historic flooding events. As a result, surface sediment concentrations in these areas may need to be considered. Access for sediment sampling may be difficult due to shallow water.

- **Reach 4** is relatively swift moving with minimal sediment depositional areas. Limited sampling in this area is expected and will likely be focused on surface grabs. Forested wetland areas and marshes near Ide Road could have been exposed to historic flooding and surface sediment concentrations in these areas may need to be considered. One tributary and one relict stream channel near Newfane Dam should also be investigated due to the potential of past and current sediment deposition from high flow events. Obstructions to creek flow and a steel tank may have contributed to accumulation sediment behind the structures that should be sampled. These obstructions need to be considered for safety concerns.

- **Reach 5** is the impoundment area behind Newfane Dam with deep sediment and water. Surface and subsurface sediment characterization will be relevant in this portion of the creek because of the sediment depths discovered and therefore the probability of the area containing legacy constituents somewhere in the sediment profile. There is also the potential consideration of the future removal of the dam and the need for characterization of the material behind the dam prior to its dismantling. Several outfalls from the Newfane area may contribute contaminants to the creek other than PCBs and locations downstream from these features should be sampled. Sampling with more than a hand coring device will likely be required to characterize the sediment at depth. Access to this location with proper equipment may be problematic. A number of relict creek channels, marsh areas, and wetlands are likely to have been exposed to historic flooding from overbank flooding. Surface sediments will need to be considered in these areas.

- **Reach 6** is characterized by limited access, relatively shallow sediment deposition areas, and higher water velocities. There are two historic creek channels and one forested wetland that could have been exposed to historic overbank flooding and consequently surface sediment concentrations in these areas need to be considered. Several outfalls from the Newfane area and agricultural drainage areas may contribute contaminants to the creek other than PCBs. A 1.5-mile stretch was not fully characterized and has access issues due to large woody debris. Additional field observations are required during sampling activities. Clearing of the area may be required.

- **Reach 7** is characterized by limited access and large stretches of slow moving water and high sediment deposition. Surface sediment concentrations should be considered, but the depth of the sediment in the depositional areas and potential scour suggest that remedial options might target removal of sediment to native material. Characterization of subsurface sediment concentrations would be limited to composite samples. Several agricultural drainage areas

may need to be sampled for potential pesticide contamination. A 1.3-mile stretch was not fully characterized and has access issues due to large woody debris. Additional field observations are required during sampling activities. Clearing of the area may be required. A 1-mile stretch of the area sampled during the PCB trackdown study (EEEPC 2007) may require less sampling than the other areas of the creek. A "hot spot" sampled and analyzed during the trackdown study near Plank Road will require additional investigation.

- **Reach 8** is characterized by swift moving water, steep channel slope (as the creek descends the escarpment) and bolder-cobble-gravel substrates with little-to-no opportunities for sediment deposition. No sediment is expected in this area and sampling or remedial actions are considered unlikely.

- **Reach 9** is outside the Eighteenmile Creek Corridor site but was characterized by NYSDEC during the PCB trackdown investigations. No additional sampling is anticipated as part of the RI.

- **Reach 10** is the Eighteenmile Creek Corridor site that was characterized during NYSDEC investigations. No additional sampling is anticipated as part of this RI.

Contaminants of Concern

A list of contaminants of concern (COCs) is provided in the USACE Sampling Plan included in the Eighteenmile Creek State of the Basin report (EEEPC 2007a) as follows:

- **PCBs** – primary COC due to high levels of bioaccumulation in downstream areas of the creek.

- **Metals** – including chromium, copper, lead, mercury, nickel and zinc, manganese and cyanide were listed as potential sources unknown.

- **Chlorinated Pesticides** – assume pesticides are likely inputs from agricultural sources.

- **Polychlorinated dibenzodioxins and furans (PCDD/F)** from New York State Barge Canals and possibly Flintkote site.

The NYSDEC record of decision for the Flintkote site also listed PCBs and metals as COCs for sediment and water quality, but added the following COCs.

- **Polycyclic aromatic hydrocarbons (PAHs)** - potential coal tar source or urban runoff.

- Metals listed above and also antimony, arsenic, barium and silver.

Previous studies by NYSDEC and NCSWCD targeted PCBs, lead and other select metals (i.e., arsenic, copper, chromium, zinc, and mercury) as key indicator compounds for contamination in the Eighteenmile Creek sediments.

Surface sediment samples from the historical investigations show relatively uniform PCB concentrations except for hotspot just downstream of Plank Road. The hot spot requires further investigation and may be due to a culvert that was built with PCB oil-coated fill or NYSEG substation in the vicinity. The high slit sediments mean higher deposition, less transport out of this area and these sediments require more sampling for PCBs. These sediments were identified in Reaches 4, 5 and 7. Metals concentrations are historically found in all samples at consistent levels and samples will collected at a representative portion for these contaminants. PAHs appear to be related to normal urban runoff except for a potential coal tar seeping to creek near the Van DeMark site that is under investigation.

Stakeholders

An estimated 15 stream owners may be potentially be impacted by cleanup efforts. The Town of Newfane is a primary stakeholder and public meetings are anticipated at key decision points to keep the stakeholder informed of the project status and potential remedies.

4.2 Sampling and Analysis Recommendations

The recommendations are based on findings from the Phase 1 survey and discussions held during the PCT team planning meeting on May 21, 2009.

Analysis

PCBs are the primary COC. Analysis of PCBs as Aroclors is necessary to be consistent with historical data. However, PCB congener data are needed for toxicology data assessments and a statistical significant set of samples will need to be analyzed for congeners to provide a potential correlation to the Aroclor data. Total organic carbon (TOC) data are needed for PAH equilibrium partitioning model and to determine if PCBs are bioavailable in the sediment. TOC corrected concentrations are important for determination of clean-up levels. The collection of

acid volatile sulfides/simultaneously extracted metals (AVS/SEM) data should also be considered as measure of bioavailability of the metals. Concentrations of PCBs are not considered to be high enough for hazardous material shipping. Metals previous used as indicator COCs should be considered for future analysis. For PAHs, PCT indicates all 16 target compound list (TCL) PAHs should be used for analysis.

Sampling Issues

Sampling Locations, Depths, and Numbers.

- Wetlands/historic creek channels and forested wetlands
  - Low relative cost so representative samples should be collected
  - Use historical photos to identify areas that may have been impacted since introduction of PCBs
  - Sample and analyze top 0.5 feet of core, then composite the remaining core to get an average concentration of the subsurface materials
  - A few representative areas - at least three areas.

- Tributaries
  - 50 feet up the tributary
  - full suite of pesticides
  - confirm not sources of other contaminants
  - serve as a background

- Flood plain model may be used to determine statistical representative number of samples in these areas.

- Sediment deposition areas assume about 10 samples per acre.

- Sediment deposition lines assume about 1 core every 50 linear feet.

- Impoundments Areas
  - Do full scan on cores behind dams
  - Sample intervals: 0 to 6 inches and 6 to 12 inches and every 2 feet below.

Sampling Logistics

- **Debris and Obstructions** – There are large amounts of woody debris, strainers, etc. that cover parts or all the way across the creek. Removal of the debris will allow easier movement on the creek, but may result in loss of trapped sediment. It is anticipated that removal of the obstructions would be conducted downstream to upstream so they can be floated downstream, unless debris was hauled away.

- **Water and sediment depths** – There are areas where the water is above chest wader height and/or sediment is many feet thick. A work platform will be needed in these areas because the sampling will require the operator(s) to stand over the sample point (for safety reasons work cannot be performed over the side of a boat). The platform will need to be of sufficient size to accommodate equipment, opening of the cores, and decontamination of equipment.

- **Sampling teams** – Because of the obstacles and the transport of the equipment to the sampling locations, this will be a physically demanding effort. The number of teams, number of samples, sampling equipment and the affects of weather (e.g., heat exhaustion) will need to be factored into the sampling approach. Each sample team would require at least three personnel: two on water and one on bank. In addition, an extra person may be required for sample processing, packing and management.

- **Safety considerations** – Sampling within the Newfane impoundment will pose safety issues that may require a subcontractor to provide a sampling platform. Additionally there are some areas of outtakes, pump houses, which present additional safety concerns.

- **Time considerations** – The field survey indicated the length of the field day relative to distance to access points will need to be considered when developing the sampling approach. In addition, recovery of sediment core at some locations may be a challenge so composites are recommended. Depending on volume required for analyses per sample, it is likely that each sample will require advancing the sampler at least 2 times or more for QA samples.

- **Creek access** – Potential access locations were identified during the survey, but additional access points may be necessary to reduce the distance that sampling equipment will need to be transported to the creek and to provide access for support vehicles.

5 References

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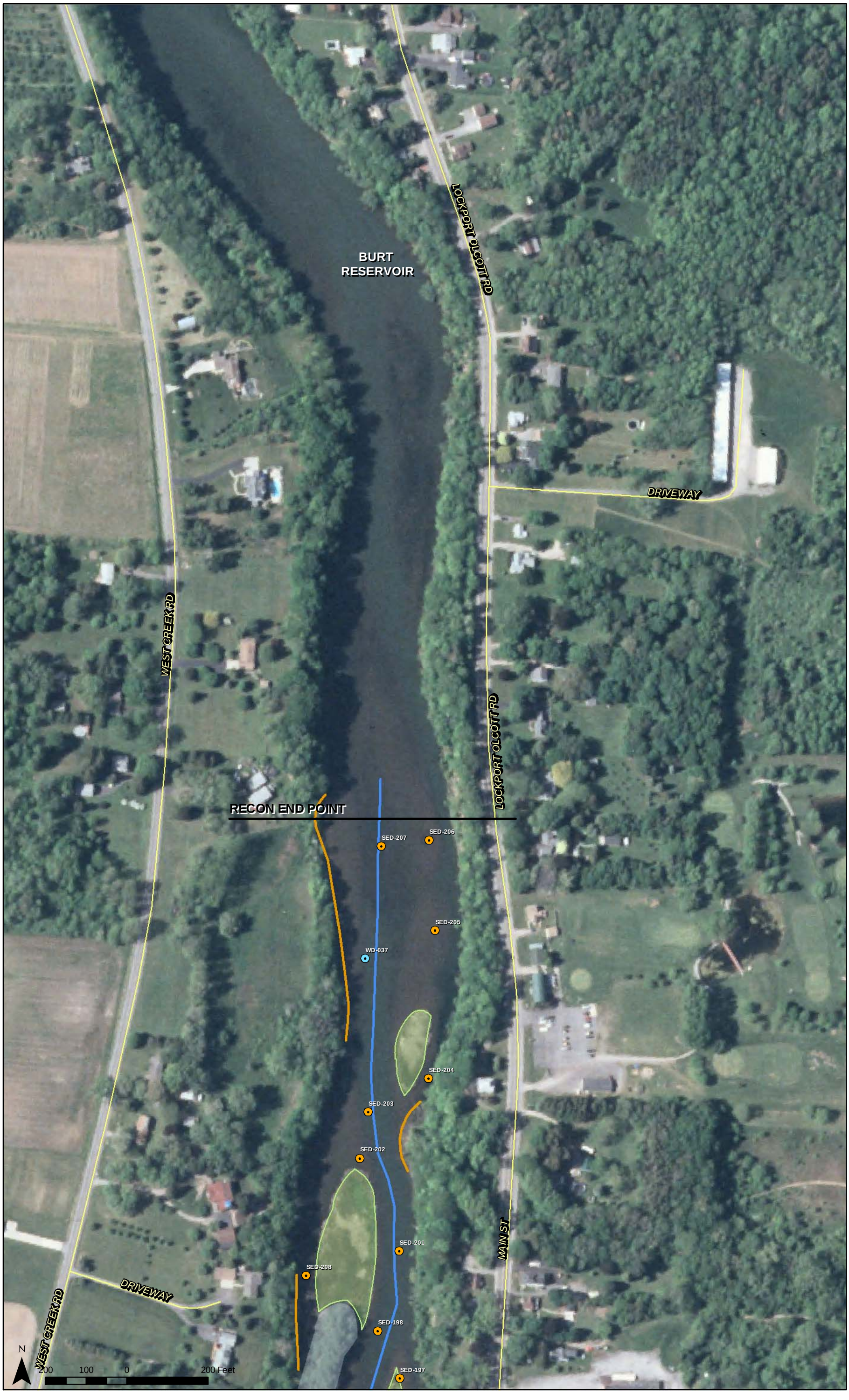
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A Survey Figures

The following figures provided detailed locations of the points identified during the Phase 1 reconnaissance survey.

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Bank Point
Sediment Probe
Tributary
Water Depth
Drainage
Obstruction
Outfall
Other
Forested Wetland
Cattail Marsh
Cattail
Tributary
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-1-1

Eighteenmile Creek
Field Reconnaissance,
Fall 2008 and Spring 2009
Niagara County, New York

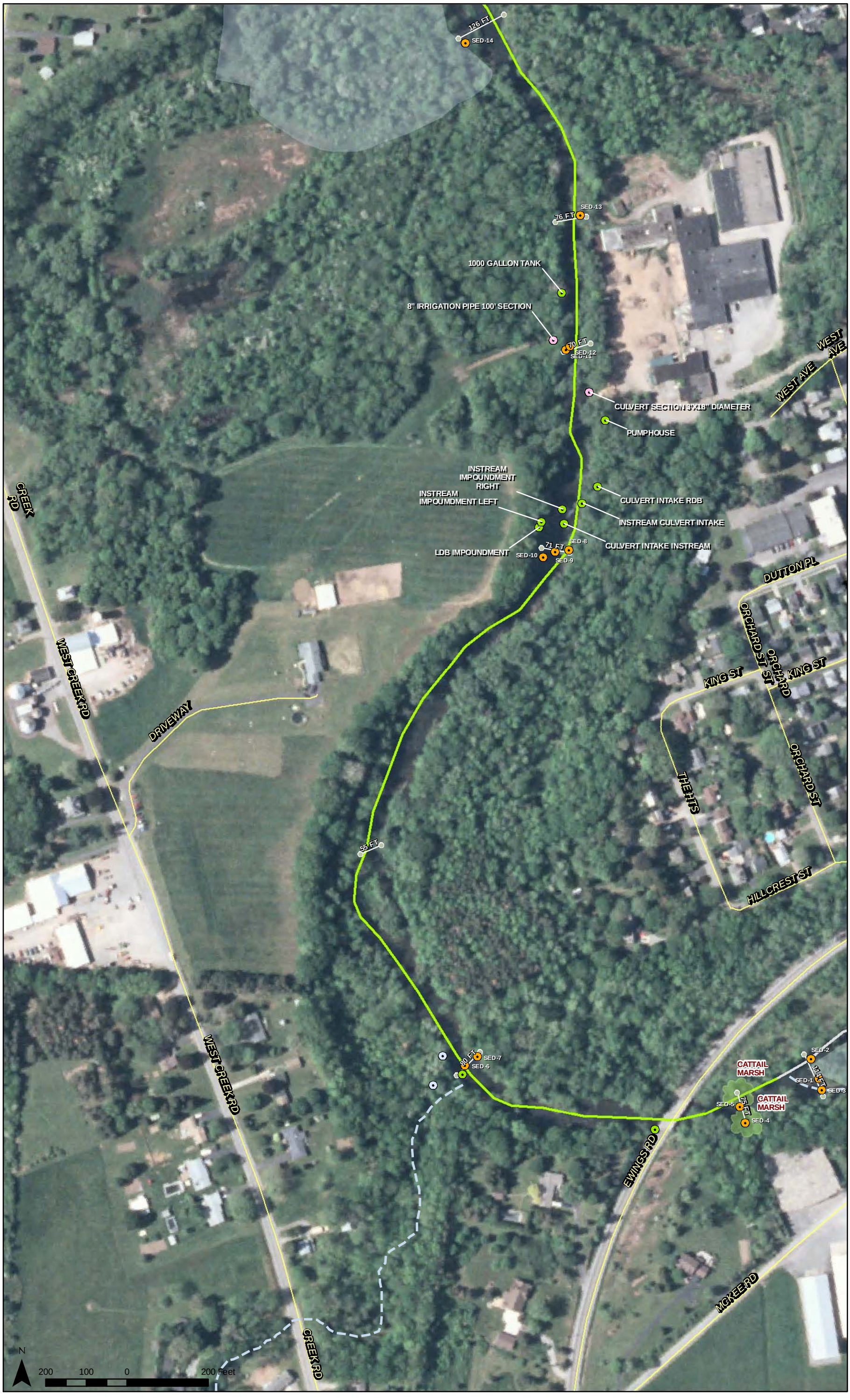
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Bank Point
Sediment Probe
Tributary
Water Depth
Drainage
Obstruction
Outfall
Other
Forested Wetland
Cattail Marsh
Cattail
Tributary
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-1-2 Eighteenmile Creek
Field Reconnaissance,
Fall 2008 and Spring 2009
Niagara County, New York

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Bank Point
Sediment Probe
Tributary
Water Depth
Drainage
Obstruction
Outfall
Other
Forested Wetland
Cattail Marsh
Cattail
Tributary
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-1-3

Eighteenmile Creek
Field Reconnaissance,
Fall 2008 and Spring 2009
Niagara County, New York

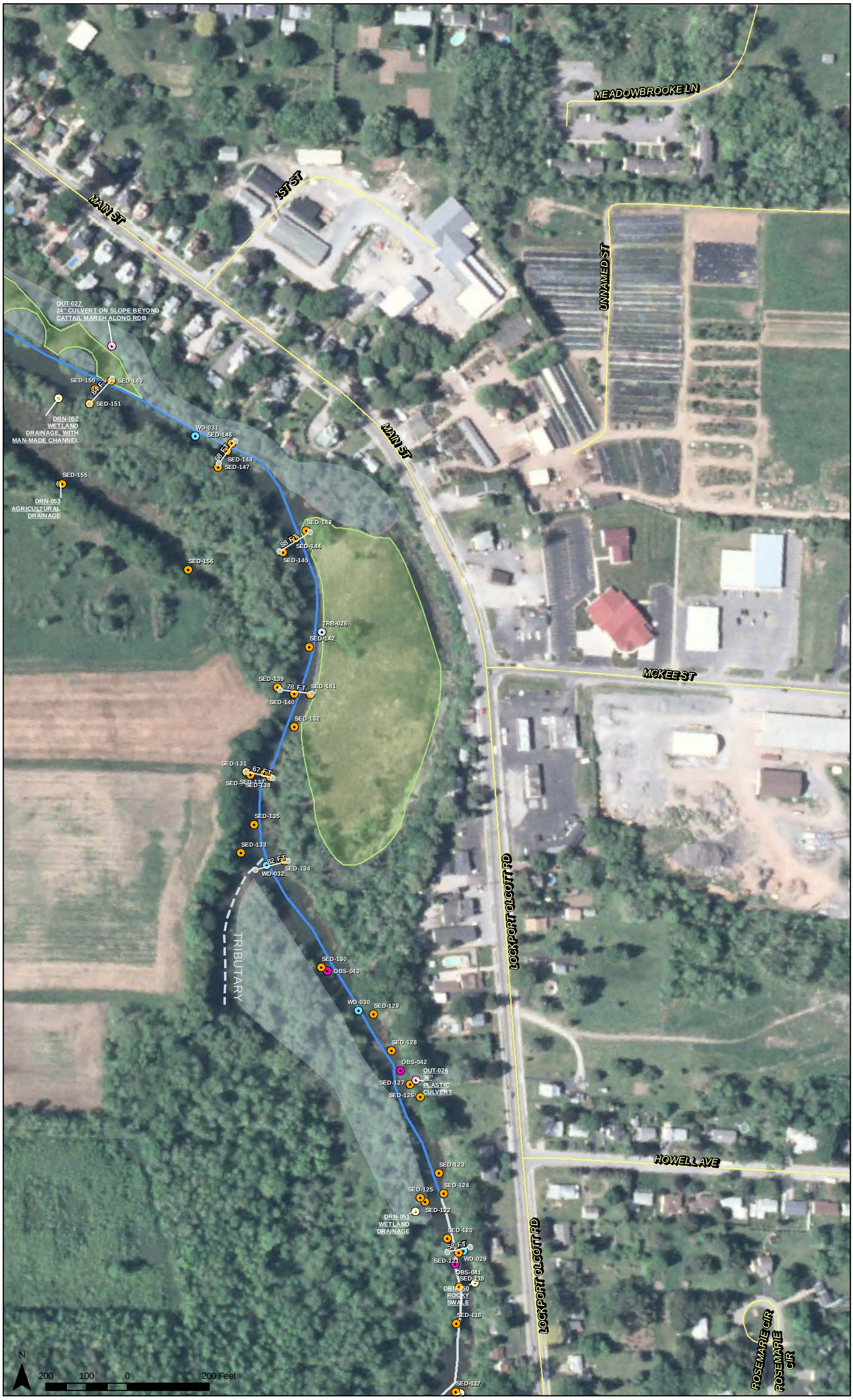
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A-1-4

Eighteenmile Creek
Field Reconnaissance,
Fall 2008 and Spring 2009
Niagara County, New York

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A-1-5 Eighteenmile Creek
Field Reconnaissance,
Fall 2008 and Spring 2009
Niagara County, New York

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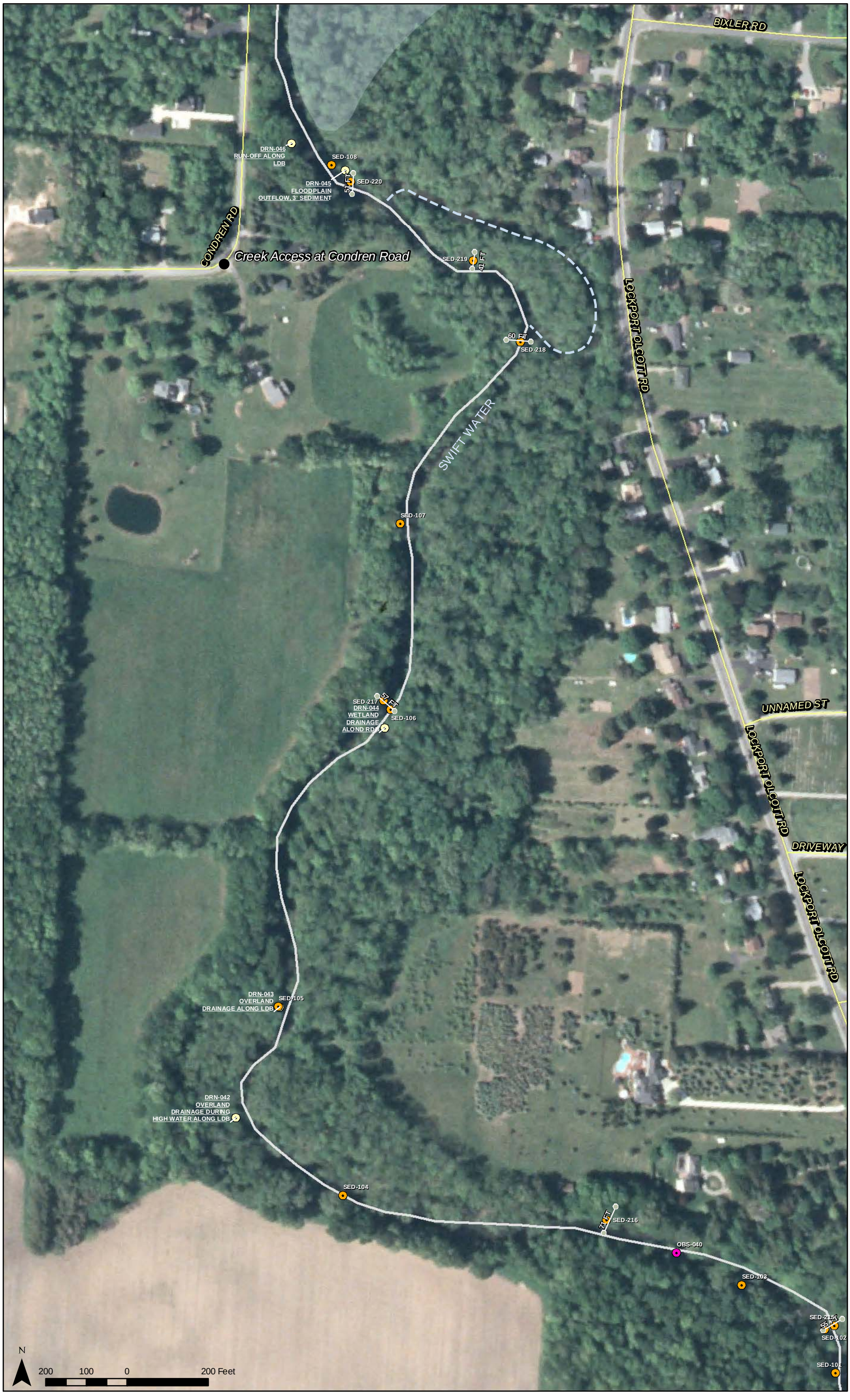
SED-125
SED-124
SED-122
DRN-051
WETLAND
DRAINAGE
SED-120
58 FT
WD-029
OBS-041
SED-121
SED-119
DRN-050
ROCKY
SWALE
SED-118
SED-117
DRN-049
WETLAND
DRAINAGE
LOCKPORT OLCOTT RD
ROSEMARIE CIR
ROSEMARIE CIR
DALE RD
DALE RD
OUT-025
36"
PLASTIC
CULVERT PIPE
SED-116
OUT-024
18"
CORRUGATED
PIPE
SED-115
SED-113
SED-114
SED-112
LOCKPORT OLCOTT RD
DRN-048
FLOODPLAIN
OUTFLOW
CONDREN RD
SED-109
45 FT
WD-028
SED-110
OUT-023
24" CULVERT
DRN-047
WETLAND/FLOODPLAIN
DRAINAGE
SED-111
63 FT
WD-027
OUT-022
18" CORRUGATED PIPE ALONG
LDB FROM CONDREN RD.
BIXLER RD
LOCKPORT OLCOTT RD
DRN-046
RUN-OFF ALONG
LDB
SED-108
SED-220
57 FT
DRN-045
FLOODPLAIN
OUTFLOW, 3' SEDIMENT
N
200 100 0 200 Feet

Bank Point
Sediment Probe
Tributary
Water Depth
Drainage
Obstruction
Outfall
Other
Forested Wetland
Cattail Marsh
Cattail
Tributary
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-1-6

Eighteenmile Creek
Field Reconnaissance,
Fall 2008 and Spring 2009
Niagara County, New York

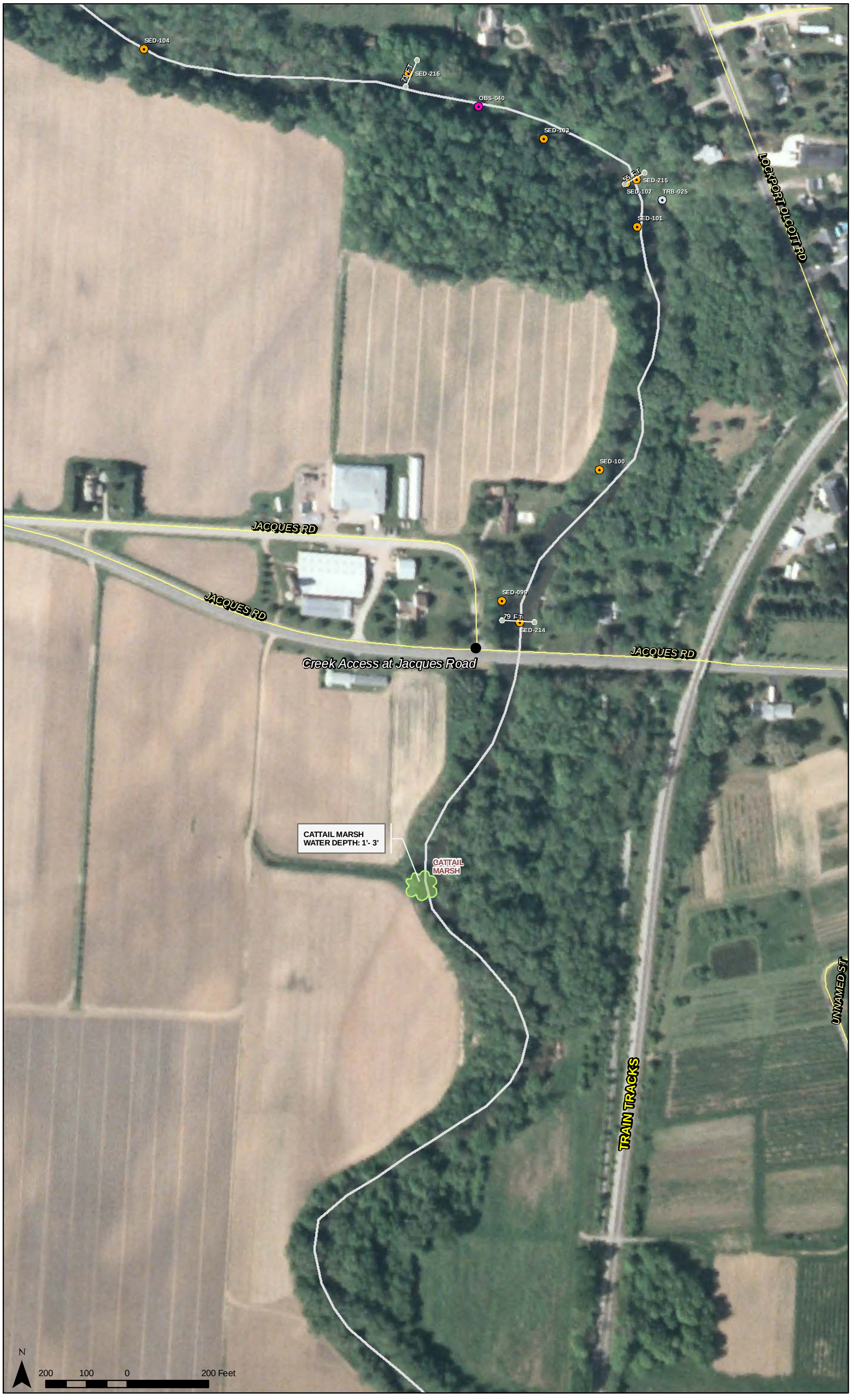
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A-1-7

Eighteenmile Creek
Field Reconnaissance,
Fall 2008 and Spring 2009
Niagara County, New York

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Bank Point
Sediment Probe
Tributary
Water Depth
Drainage
Obstruction
Outfall
Other
Forested Wetland
Cattail Marsh
Cattail
Tributary
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-1-8

Eighteenmile Creek
Field Reconnaissance,
Fall 2008 and Spring 2009
Niagara County, New York

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Bank Point
Sediment Probe
Tributary
Water Depth
Drainage
Obstruction
Outfall
Other
Forested Wetland
Cattail Marsh
Cattail
Tributary
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-1-9

Eighteenmile Creek
Field Reconnaissance,
Fall 2008 and Spring 2009
Niagara County, New York

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Bank Point
Sediment Probe
Tributary
Water Depth
Drainage
Obstruction
Outfall
Other
Forested Wetland
Cattail Marsh
Cattail
Tributary
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-1-10 Eighteenmile Creek
Field Reconnaissance,
Fall 2008 and Spring 2009
Niagara County, New York

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Bank Point
Sediment Probe
Tributary
Water Depth
Drainage
Obstruction
Outfall
Other
Forested Wetland
Cattail Marsh
Cattail
Tributary
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-1-11 Eighteenmile Creek
Field Reconnaissance,
Fall 2008 and Spring 2009
Niagara County, New York

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Bank Point
Sediment Probe
Tributary
Water Depth
Drainage
Obstruction
Outfall
Other
Forested Wetland
Cattail Marsh
Cattail
Tributary
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-1-12 Eighteenmile Creek
Field Reconnaissance,
Fall 2008 and Spring 2009
Niagara County, New York

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UNNAMED ST
WD-044
39 FT
SED-097
SED-093
37 FT
SED-212
SED-092
SED-096
DRN-040 WETLAND DRAINAGE ALONG LDB
SED-091
OBS-037
DRN-041 DRY TRIBUTARY AND OVERLAND DRAINAGE
SED-095
OBS-036
SED-090
RIDGE RD
Creek Access at Ridge Road
RIDGE RD
RIDGE RD
DRN-039 WETLAND DRAINAGE AND ROADSIDE DRAINAGE ALONG LDB
UNNAMED ST
SED-089
DRN-038 WETLAND DRAINAGE ALONG LDB
SED-087
SED-088
DRN-037 WETLAND DRAINAGE ALONG LDB
38 FT
WD-043
SED-086
DRN-036 WETLAND AND AGRICULTURAL FIELD ALONG LDB
SED-085
DRN-035 WETLAND DRAINAGE ALONG RDB
PURDY RD
33 FT
WD-042
SED-084
DRN-034 AGRICULTURAL RUN-OFF ALONG LDB
N
200 100 0 200 Feet

Bank Point
Sediment Probe
Tributary
Water Depth
Drainage
Obstruction
Outfall
Other
Forested Wetland
Cattail Marsh
Cattail
Tributary
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-1-13 Eighteenmile Creek
Field Reconnaissance,
Fall 2008 and Spring 2009
Niagara County, New York

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Bank Point
Sediment Probe
Tributary
Water Depth
Drainage
Obstruction
Outfall
Other
Forested Wetland
Cattail Marsh
Cattail
Tributary
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-1-14 Eighteenmile Creek
Field Reconnaissance,
Fall 2008 and Spring 2009
Niagara County, New York

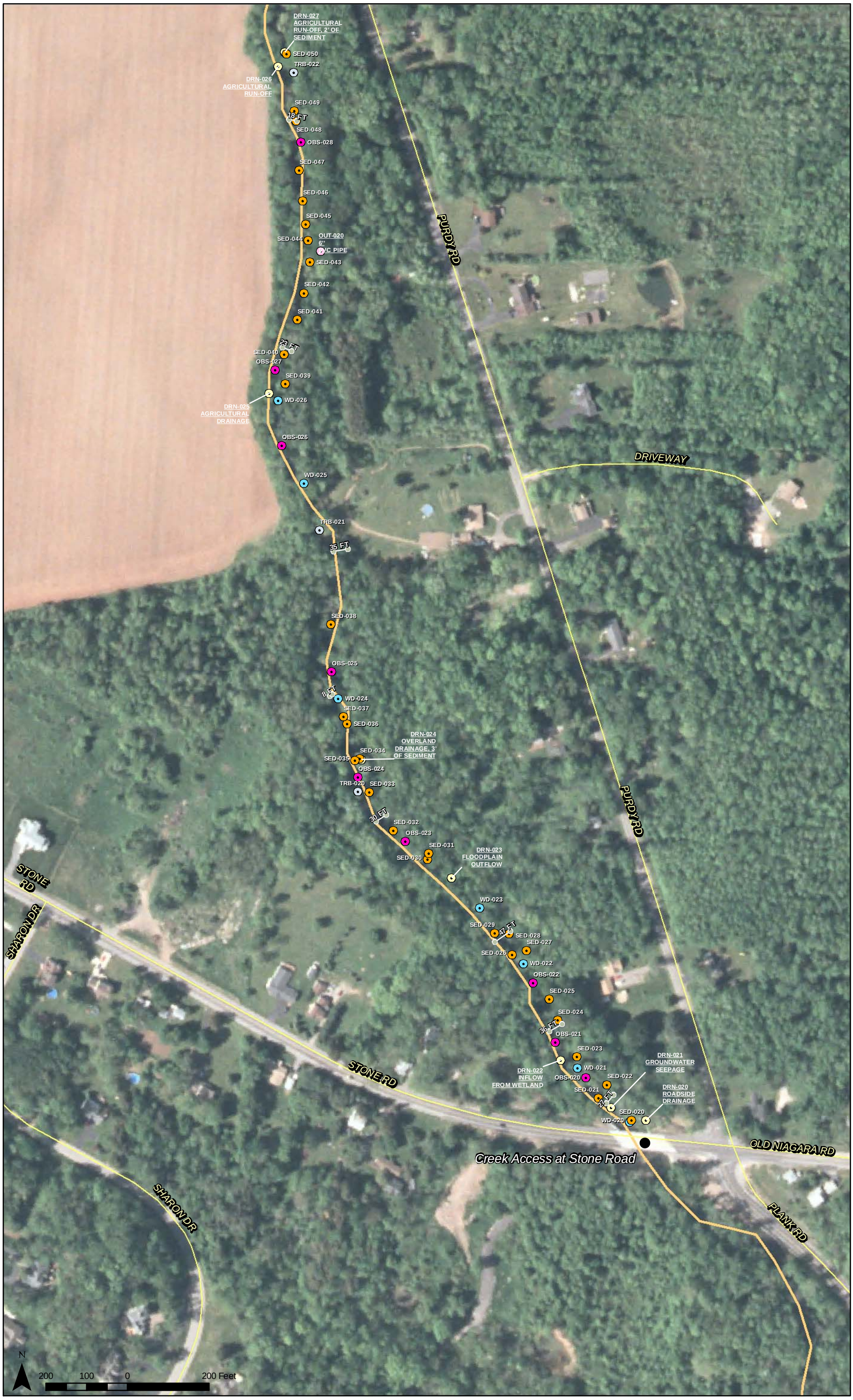
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Bank Point
Sediment Probe
Tributary
Water Depth
Drainage
Obstruction
Outfall
Other
Forested Wetland
Cattail Marsh
Cattail
Tributary
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-1-15 Eighteenmile Creek
Field Reconnaissance,
Fall 2008 and Spring 2009
Niagara County, New York

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Bank Point
Sediment Probe
Tributary
Water Depth
Drainage
Obstruction
Outfall
Other
Forested Wetland
Cattail Marsh
Cattail
Tributary
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-1-16 Eighteenmile Creek
Field Reconnaissance,
Fall 2008 and Spring 2009
Niagara County, New York

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Photo Location
Tributary
Forested Wetland
Cattail Marsh
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-2-1

Eighteenmile Creek
Field Reconnaissance,
Photo Locations
Fall 2008 and Spring 2009
Niagara County, New York

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A-2-2

Eighteenmile Creek
Field Reconnaissance,
Photo Locations
Fall 2008 and Spring 2009
Niagara County, New York

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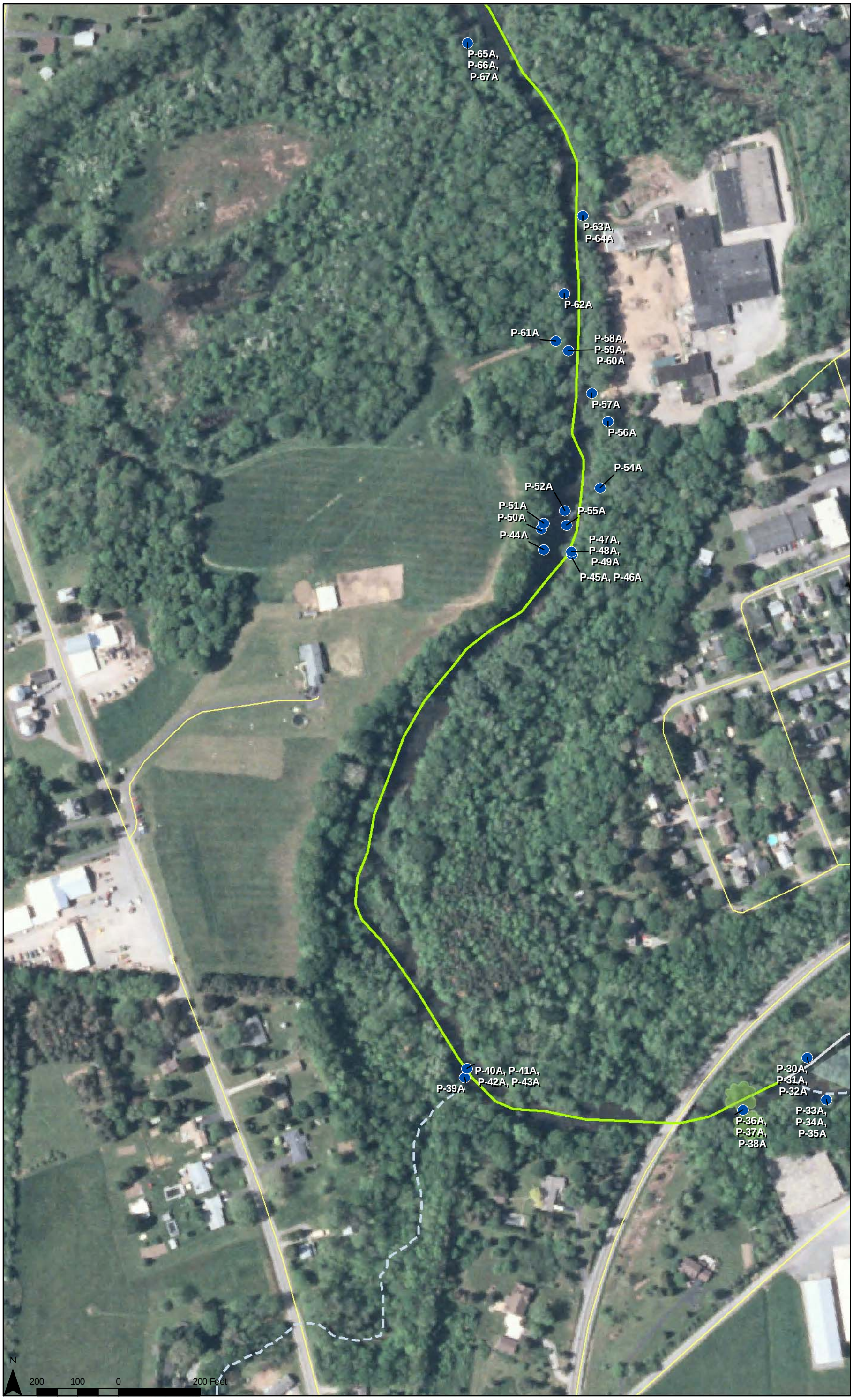


Photo Location
Tributary
Forested Wetland
Cattail Marsh
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-2-3

Eighteenmile Creek
Field Reconnaissance,
Photo Locations
Fall 2008 and Spring 2009
Niagara County, New York

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A-2-4

Eighteenmile Creek
Field Reconnaissance,
Photo Locations
Fall 2008 and Spring 2009
Niagara County, New York

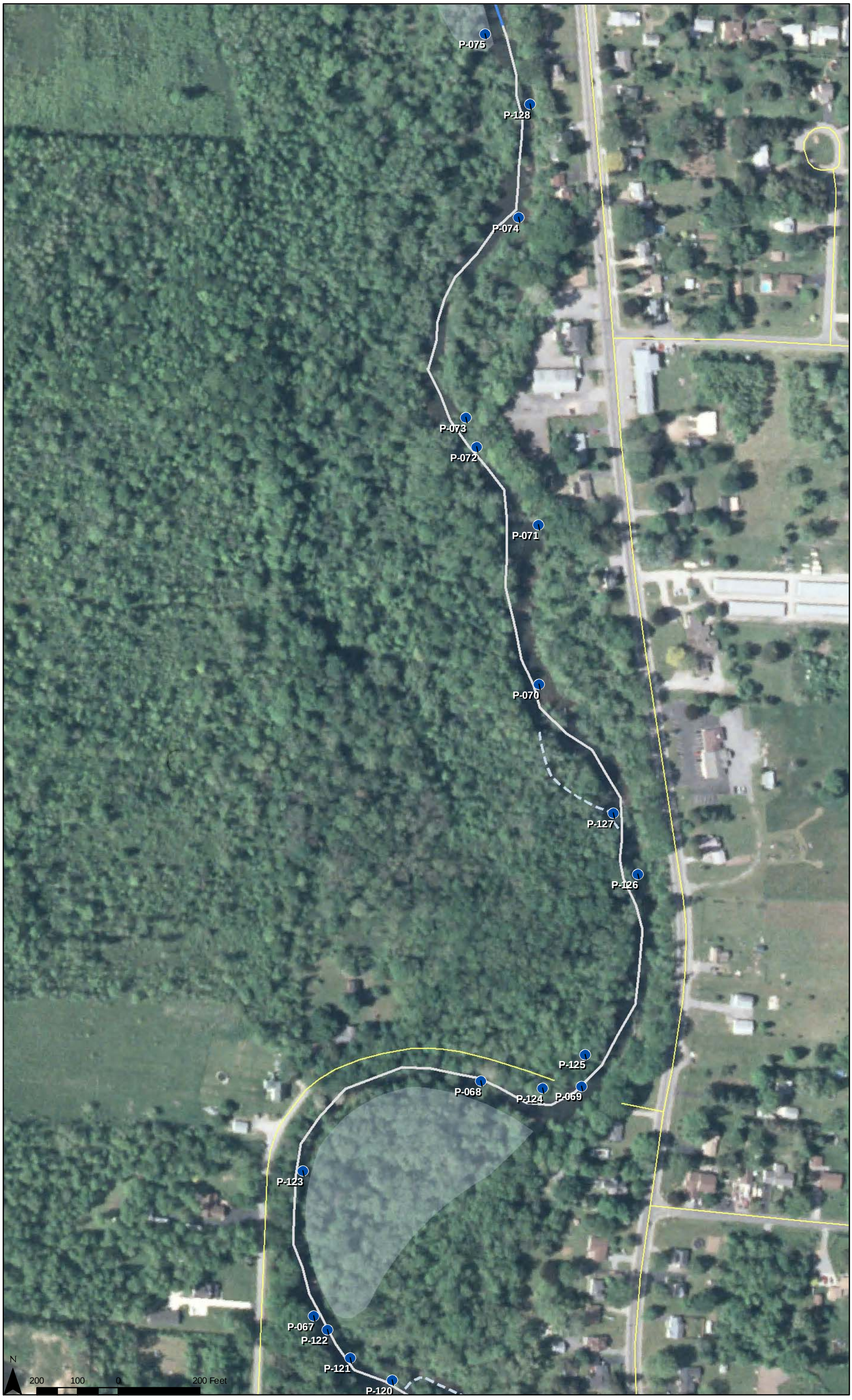
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A-2-5

Eighteenmile Creek
Field Reconnaissance,
Photo Locations
Fall 2008 and Spring 2009
Niagara County, New York

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A-2-6

Eighteenmile Creek
Field Reconnaissance,
Photo Locations
Fall 2008 and Spring 2009
Niagara County, New York

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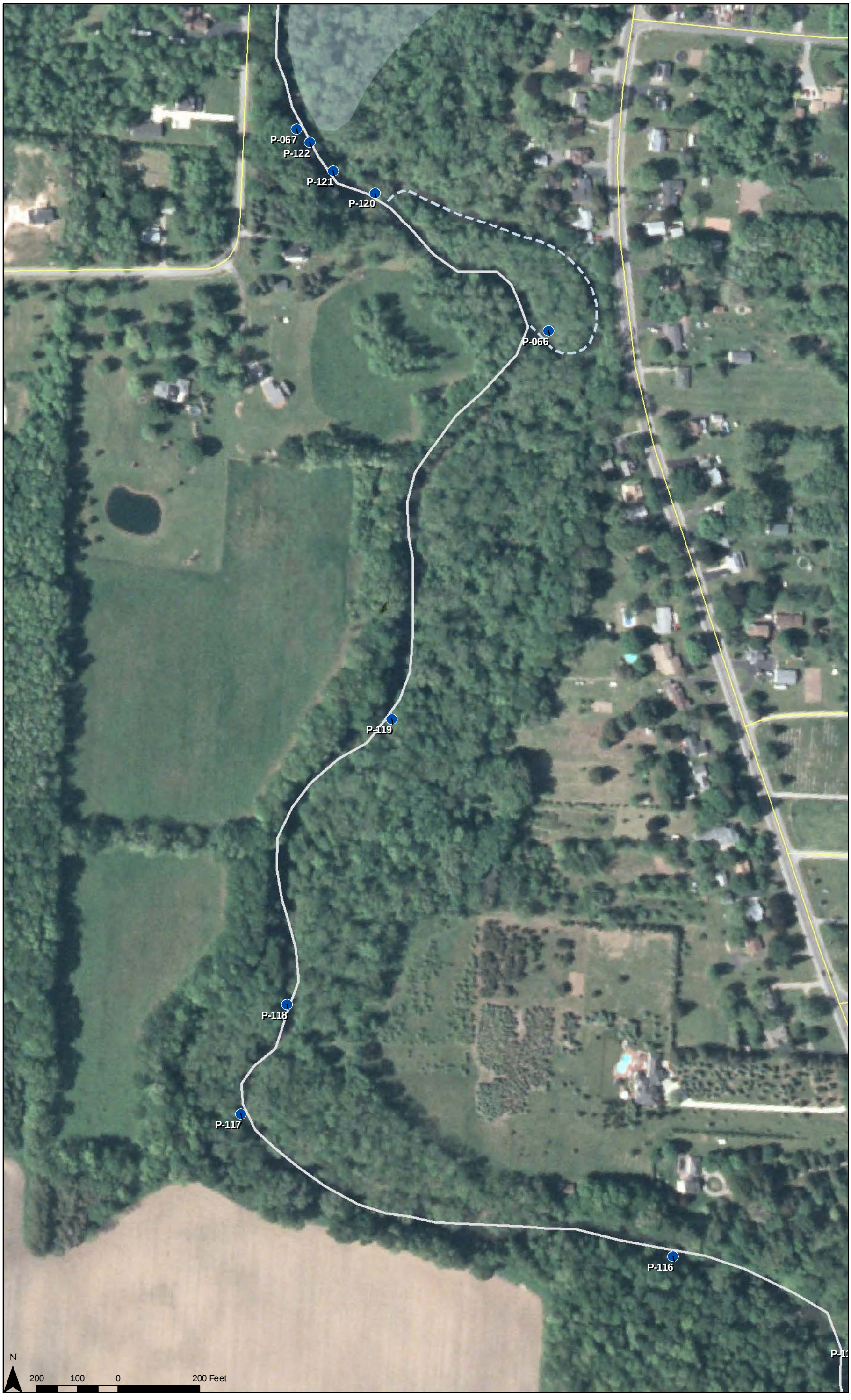


Photo Location
Tributary
Forested Wetland
Cattail Marsh
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-2-7

Eighteenmile Creek
Field Reconnaissance,
Photo Locations
Fall 2008 and Spring 2009
Niagara County, New York

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Photo Location
Tributary
Forested Wetland
Cattail Marsh
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-2-8

Eighteenmile Creek
Field Reconnaissance,
Photo Locations
Fall 2008 and Spring 2009
Niagara County, New York

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Photo Location
Tributary
Forested Wetland
Cattail Marsh
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-2-9

Eighteenmile Creek
Field Reconnaissance,
Photo Locations
Fall 2008 and Spring 2009
Niagara County, New York

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Photo Location
Tributary
Forested Wetland
Cattail Marsh
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-2-10

Eighteenmile Creek
Field Reconnaissance,
Photo Locations
Fall 2008 and Spring 2009
Niagara County, New York

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Photo Location
Tributary
Forested Wetland
Cattail Marsh
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-2-11

Eighteenmile Creek
Field Reconnaissance,
Photo Locations
Fall 2008 and Spring 2009
Niagara County, New York

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Photo Location
Tributary
Forested Wetland
Cattail Marsh
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-2-12

Eighteenmile Creek
Field Reconnaissance,
Photo Locations
Fall 2008 and Spring 2009
Niagara County, New York

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Photo Location
Tributary
Forested Wetland
Cattail Marsh
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-2-13

Eighteenmile Creek
Field Reconnaissance,
Photo Locations
Fall 2008 and Spring 2009
Niagara County, New York

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Photo Location
Tributary
Forested Wetland
Cattail Marsh
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-2-14

Eighteenmile Creek
Field Reconnaissance,
Photo Locations
Fall 2008 and Spring 2009
Niagara County, New York

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Photo Location
Tributary
Forested Wetland
Cattail Marsh
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-2-15

Eighteenmile Creek
Field Reconnaissance,
Photo Locations
Fall 2008 and Spring 2009
Niagara County, New York

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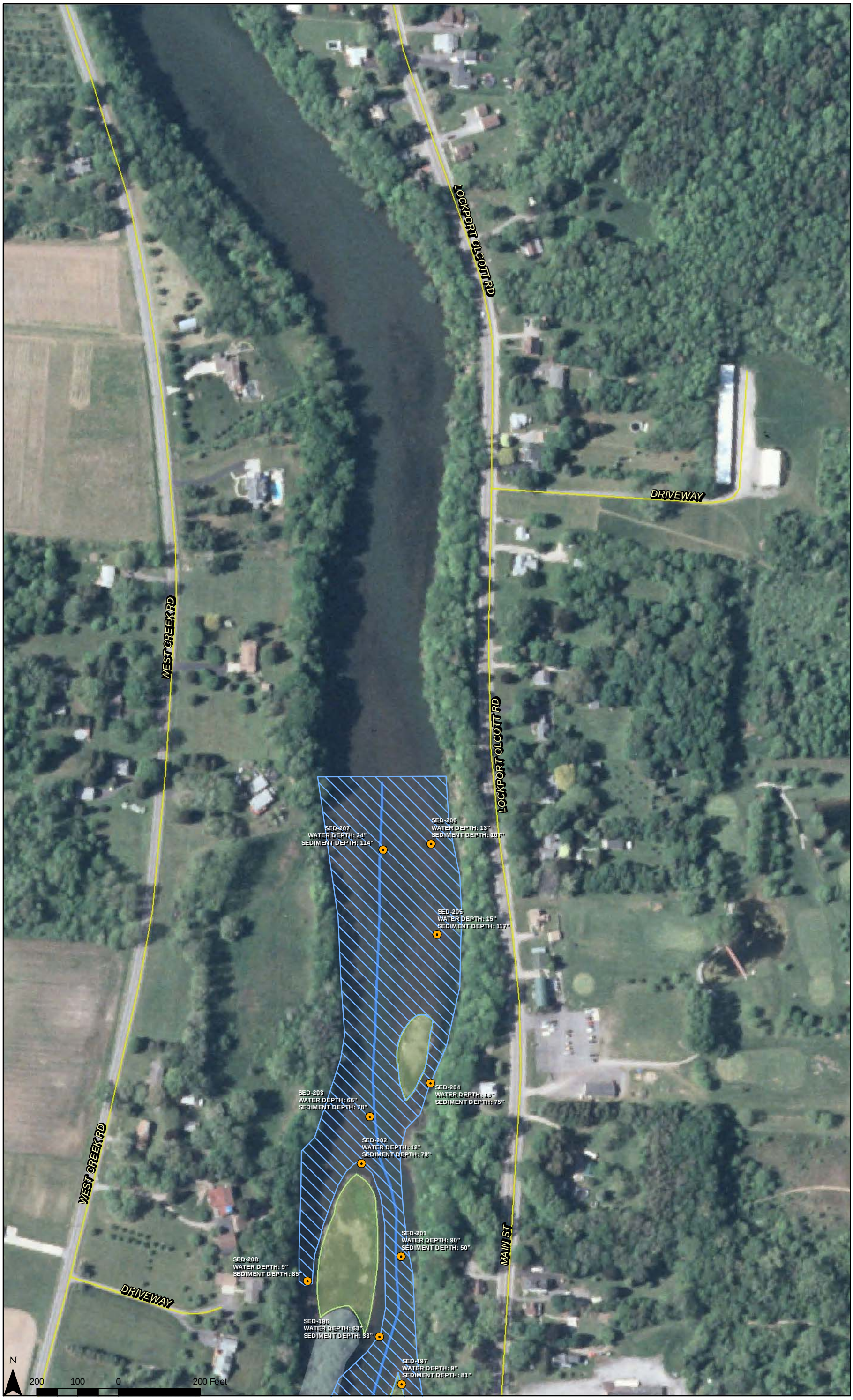


Photo Location
Tributary
Forested Wetland
Cattail Marsh
Bedrock Channel with Organic Sediment Deposits
Clay Bottom
Deep Water, Silty Bottom with Thick Sediment
Gravelly Bottom

A-2-16

Eighteenmile Creek
Field Reconnaissance,
Photo Locations
Fall 2008 and Spring 2009
Niagara County, New York

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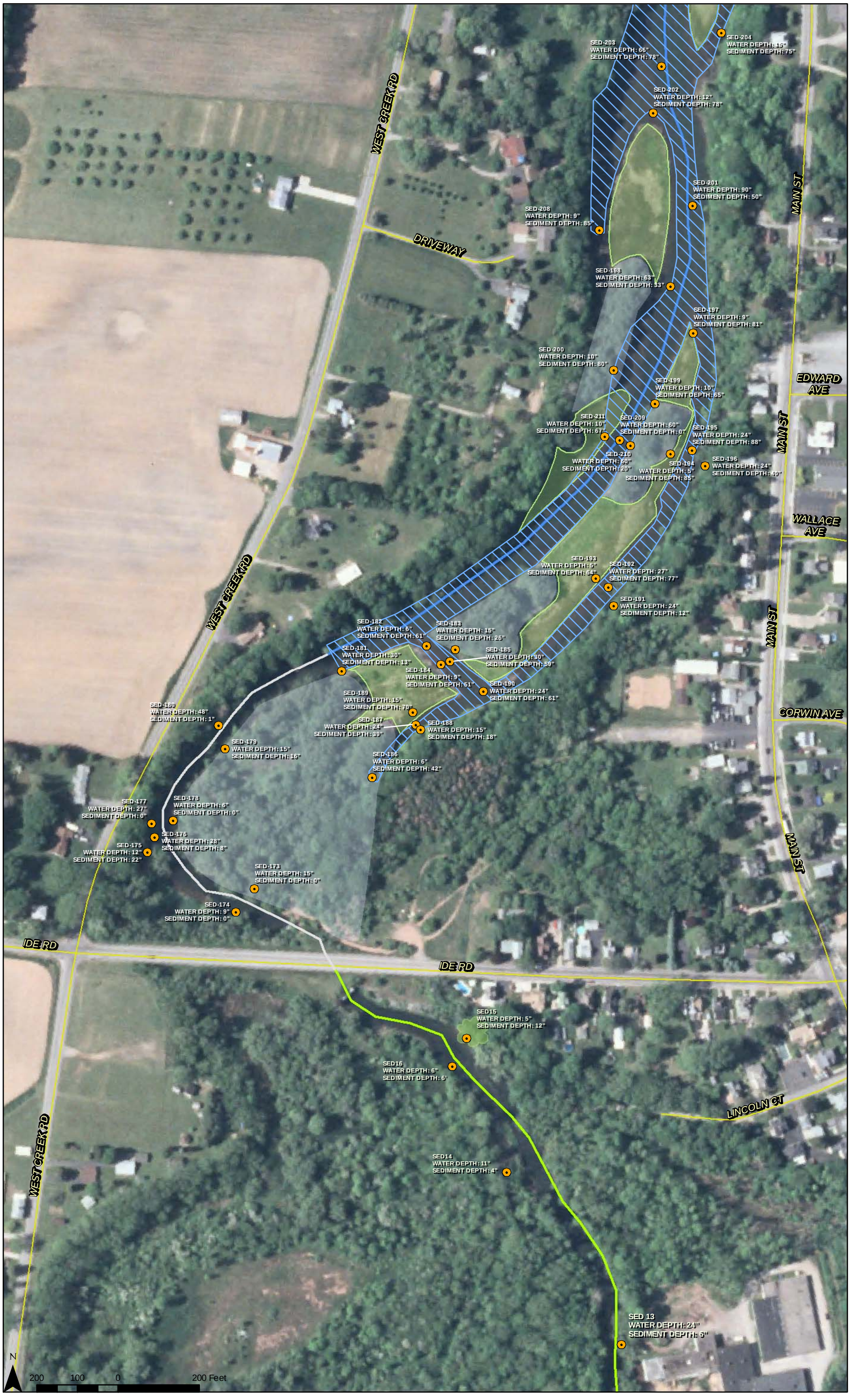


Sediment Sample
Sediment Deposition Area
Sediment Deposition Line
Cattail Marsh
Tributary
Forested Wetland
Clay Bottom
Gravelly Bottom
Deep Water, Silty Bottom with Thick Sediment
Bedrock Channel with Organic Sediment Deposits

A-3-1

Eighteenmile Creek
Field Reconnaissance,
Sediment Probe Locations
Fall 2008 and Spring 2009
Niagara County, New York

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Sediment Sample
Sediment Deposition Area
Sediment Deposition Line
Cattail Marsh
Tributary
Forested Wetland
Clay Bottom
Gravelly Bottom
Deep Water, Silty Bottom with Thick Sediment
Bedrock Channel with Organic Sediment Deposits

A-3-2 Eighteenmile Creek
Field Reconnaissance,
Sediment Probe Locations
Fall 2008 and Spring 2009
Niagara County, New York

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SED14
WATER DEPTH: 11"
SEDIMENT DEPTH: 4"

SED 13
WATER DEPTH: 24"
SEDIMENT DEPTH: 5"

SED 11
WATER DEPTH: 10"
SEDIMENT DEPTH: 5"

SED 12
WATER DEPTH: 18"
SEDIMENT DEPTH: 0"

SED 10
WATER DEPTH: 24"
SEDIMENT DEPTH: 2"

SED 8
WATER DEPTH: 20"

SED 9
WATER DEPTH: 3.5'
SEDIMENT DEPTH: 0"

SED 7
WATER DEPTH: 11"
SEDIMENT DEPTH: 4"

SED 6
WATER DEPTH: 8"
SEDIMENT DEPTH: 0"

SEWER
WATER DEPTH: 10'
SEDIMENT DEPTH: 1"

SED 2
WATER DEPTH: 6"
SEDIMENT DEPTH: 0"

SED 1
WATER DEPTH: 1'3"
SEDIMENT DEPTH: 4"

SED 5
WATER DEPTH: 10"
SEDIMENT DEPTH: 10"

SED 4
WATER DEPTH: 21"
SEDIMENT DEPTH: 3"

SED 3
WATE
SEDIM

WEST AVE
DUTTON PL
ORCHARD ST
KING ST
KING ST
ORCHARD ST
THE HTS
HILLCREST ST
EWINGS RD
WEST CREEK RD
DRIVEWAY
WEST CREEK RD
EWINGS RD
MCKEE RD

N
200 100 0 200 Feet

Sediment Sample
Sediment Deposition Area
Sediment Deposition Line
Cattail Marsh
Tributary
Forested Wetland
Clay Bottom
Gravelly Bottom
Deep Water, Silty Bottom with Thick Sediment
Bedrock Channel with Organic Sediment Deposits

A-3-3 Eighteenmile Creek
Field Reconnaissance,
Sediment Probe Locations
Fall 2008 and Spring 2009
Niagara County, New York

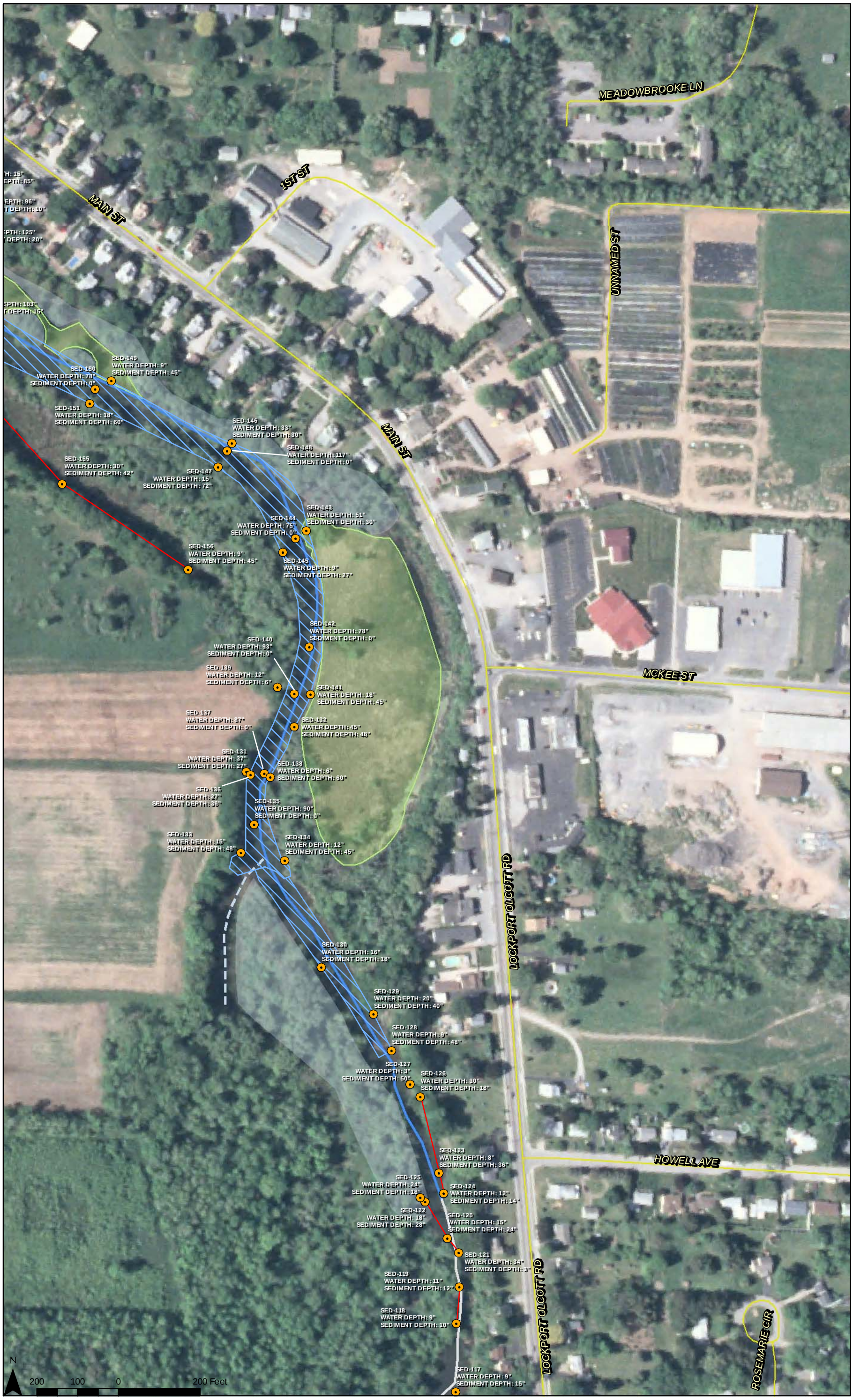
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Sediment Sample
Sediment Deposition Area
Sediment Deposition Line
Cattail Marsh
Tributary
Forested Wetland
Clay Bottom
Gravelly Bottom
Deep Water, Silty Bottom with Thick Sediment
Bedrock Channel with Organic Sediment Deposits

A-3-4 Eighteenmile Creek
Field Reconnaissance,
Sediment Probe Locations
Fall 2008 and Spring 2009
Niagara County, New York

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Sediment Sample
Sediment Deposition Area
Sediment Deposition Line
Cattail Marsh
Tributary
Forested Wetland
Clay Bottom
Gravelly Bottom
Deep Water, Silty Bottom with Thick Sediment
Bedrock Channel with Organic Sediment Deposits

A-3-5 Eighteenmile Creek
Field Reconnaissance,
Sediment Probe Locations
Fall 2008 and Spring 2009
Niagara County, New York

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SED-123
WATER DEPTH: 24"
SEDIMENT DEPTH: 18"

SED-124
WATER DEPTH: 12"
SEDIMENT DEPTH: 14"

SED-122
WATER DEPTH: 18"
SEDIMENT DEPTH: 28"

SED-120
WATER DEPTH: 15"
SEDIMENT DEPTH: 24"

SED-121
WATER DEPTH: 34"
SEDIMENT DEPTH: 3"

SED-119
WATER DEPTH: 11"
SEDIMENT DEPTH: 12"

SED-118
WATER DEPTH: 9"
SEDIMENT DEPTH: 10"

SED-117
WATER DEPTH: 9"
SEDIMENT DEPTH: 15"

LOCKPORT OLCOTT RD

ROSEMARIE CIR

ROSEMARIE CIR

DALE RD

SED-116
WATER DEPTH: 10"
SEDIMENT DEPTH: 14"

SED-115
WATER DEPTH: 15"
SEDIMENT DEPTH: 12"

SED-113
WATER DEPTH: 9"
SEDIMENT DEPTH: 5"

SED-114
WATER DEPTH: 9"
SEDIMENT DEPTH: 6"

SED-112
WATER DEPTH: 6"
SEDIMENT DEPTH: 9"

LOCKPORT OLCOTT RD

SED-109
WATER DEPTH: 2"
SEDIMENT DEPTH: 2"

SED-110
WATER DEPTH: 9"
SEDIMENT DEPTH: 6"

SED-111
WATER DEPTH: 9"
SEDIMENT DEPTH: 6"

CONDREN RD

BIXLER RD

SED-108
WATER DEPTH: 9"
SEDIMENT DEPTH: 8"

SED-220
WATER DEPTH: 20"
SEDIMENT DEPTH: 0"

N

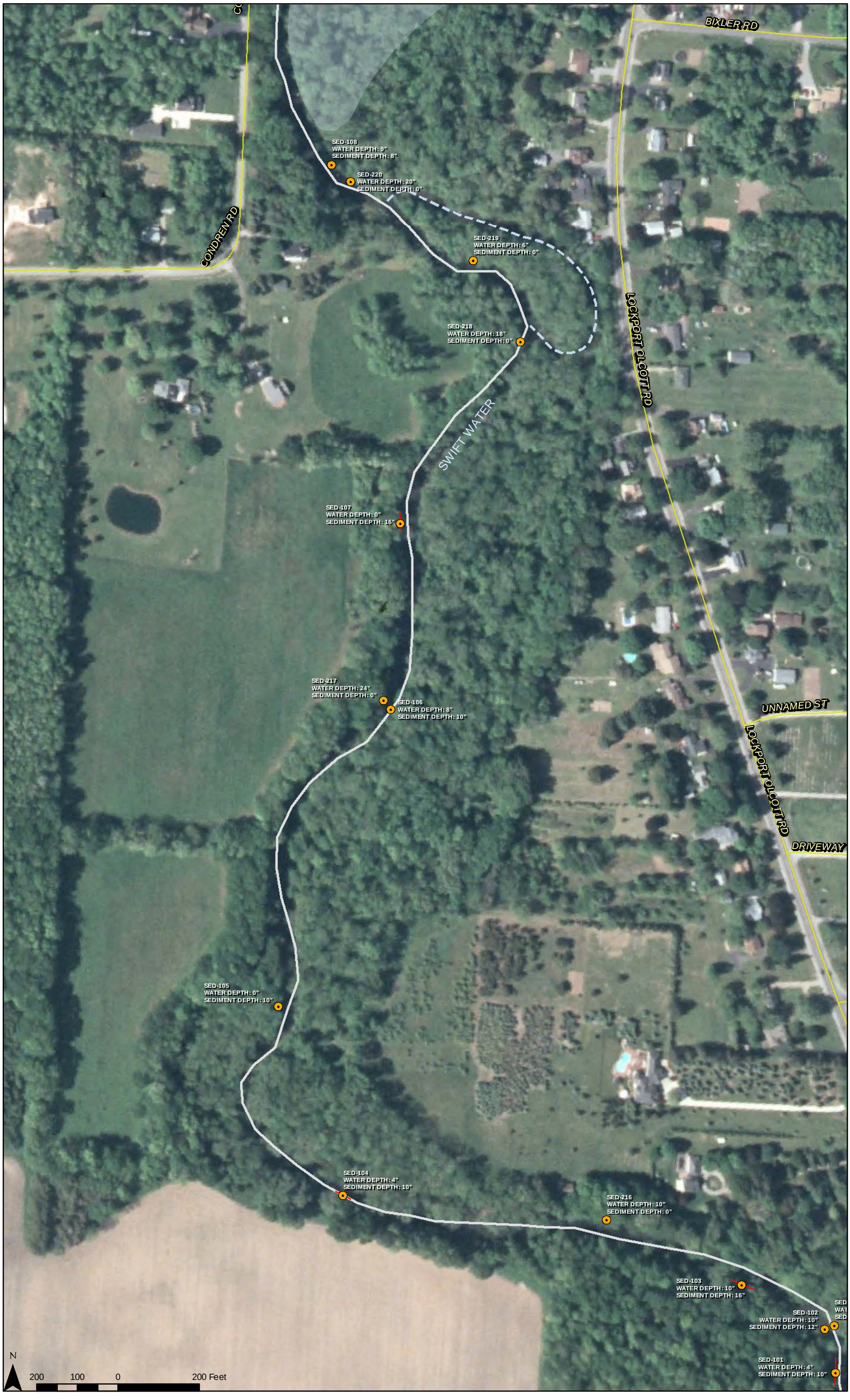
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Sediment Sample
Sediment Deposition Area
Sediment Deposition Line
Cattail Marsh
Tributary
Forested Wetland
Clay Bottom
Gravelly Bottom
Deep Water, Silty Bottom with Thick Sediment
Bedrock Channel with Organic Sediment Deposits

A-3-6

Eighteenmile Creek
Field Reconnaissance,
Sediment Probe Locations
Fall 2008 and Spring 2009
Niagara County, New York

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Sediment Sample
Sediment Deposition Area
Sediment Deposition Line
Cattail Marsh
Tributary
Forested Wetland
Clay Bottom
Gravelly Bottom
Deep Water, Silty Bottom with Thick Sediment
Bedrock Channel with Organic Sediment Deposits

A-3-7 Eighteenmile Creek
Field Reconnaissance,
Sediment Probe Locations
Fall 2008 and Spring 2009
Niagara County, New York

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Sediment Sample
Sediment Deposition Area
Sediment Deposition Line
Cattail Marsh
Tributary
Forested Wetland
Clay Bottom
Gravelly Bottom
Deep Water, Silty Bottom with Thick Sediment
Bedrock Channel with Organic Sediment Deposits

A-3-8

Eighteenmile Creek
Field Reconnaissance,
Sediment Probe Locations
Fall 2008 and Spring 2009
Niagara County, New York

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Sediment Sample
Sediment Deposition Area
Sediment Deposition Line
Cattail Marsh
Tributary
Forested Wetland
Clay Bottom
Gravelly Bottom
Deep Water, Silty Bottom with Thick Sediment
Bedrock Channel with Organic Sediment Deposits

A-3-9

Eighteenmile Creek
Field Reconnaissance,
Sediment Probe Locations
Fall 2008 and Spring 2009
Niagara County, New York

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Sediment Sample
Sediment Deposition Area
Sediment Deposition Line
Cattail Marsh
Tributary
Forested Wetland
Clay Bottom
Gravelly Bottom
Deep Water, Silty Bottom with Thick Sediment
Bedrock Channel with Organic Sediment Deposits

A-3-10 Eighteenmile Creek
Field Reconnaissance,
Sediment Probe Locations
Fall 2008 and Spring 2009
Niagara County, New York

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Sediment Sample
Sediment Deposition Area
Sediment Deposition Line
Cattail Marsh
Tributary
Forested Wetland
Clay Bottom
Gravelly Bottom
Deep Water, Silty Bottom with Thick Sediment
Bedrock Channel with Organic Sediment Deposits

A-3-11 Eighteenmile Creek
Field Reconnaissance,
Sediment Probe Locations
Fall 2008 and Spring 2009
Niagara County, New York

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Sediment Sample
Sediment Deposition Area
Sediment Deposition Line
Cattail Marsh
Tributary
Forested Wetland
Clay Bottom
Gravelly Bottom
Deep Water, Silty Bottom with Thick Sediment
Bedrock Channel with Organic Sediment Deposits

A-3-12 Eighteenmile Creek
Field Reconnaissance,
Sediment Probe Locations
Fall 2008 and Spring 2009
Niagara County, New York

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SED-097
WATER DEPTH: 0"
SEDIMENT DEPTH: 32"

SED-212
WATER D
SEDIMEN

SED-096
WATER DEPTH: 0"
SEDIMENT DEPTH: 29"

SED-092
WATER DEPTH: 21"
SEDIMENT DEPTH: 14"

SED-091
WATER DEPTH: 9"
SEDIMENT DEPTH: 14"

SED-095
WATER DEPTH: 36"
SEDIMENT DEPTH: 0"

SED-090
WATER DEPTH: 14"
SEDIMENT DEPTH: 20"

SED-089
WATER DEPTH: 9"
SEDIMENT DEPTH: 36"

SED-088
WATER DEPTH: 15"
SEDIMENT DEPTH: 39"

SED-087
WATER DEPTH: 18"
SEDIMENT DEPTH: 12"

SED-086
WATER DEPTH: 9"
SEDIMENT DEPTH: 33"

SED-085
WATER DEPTH: 30"
SEDIMENT DEPTH: 33"

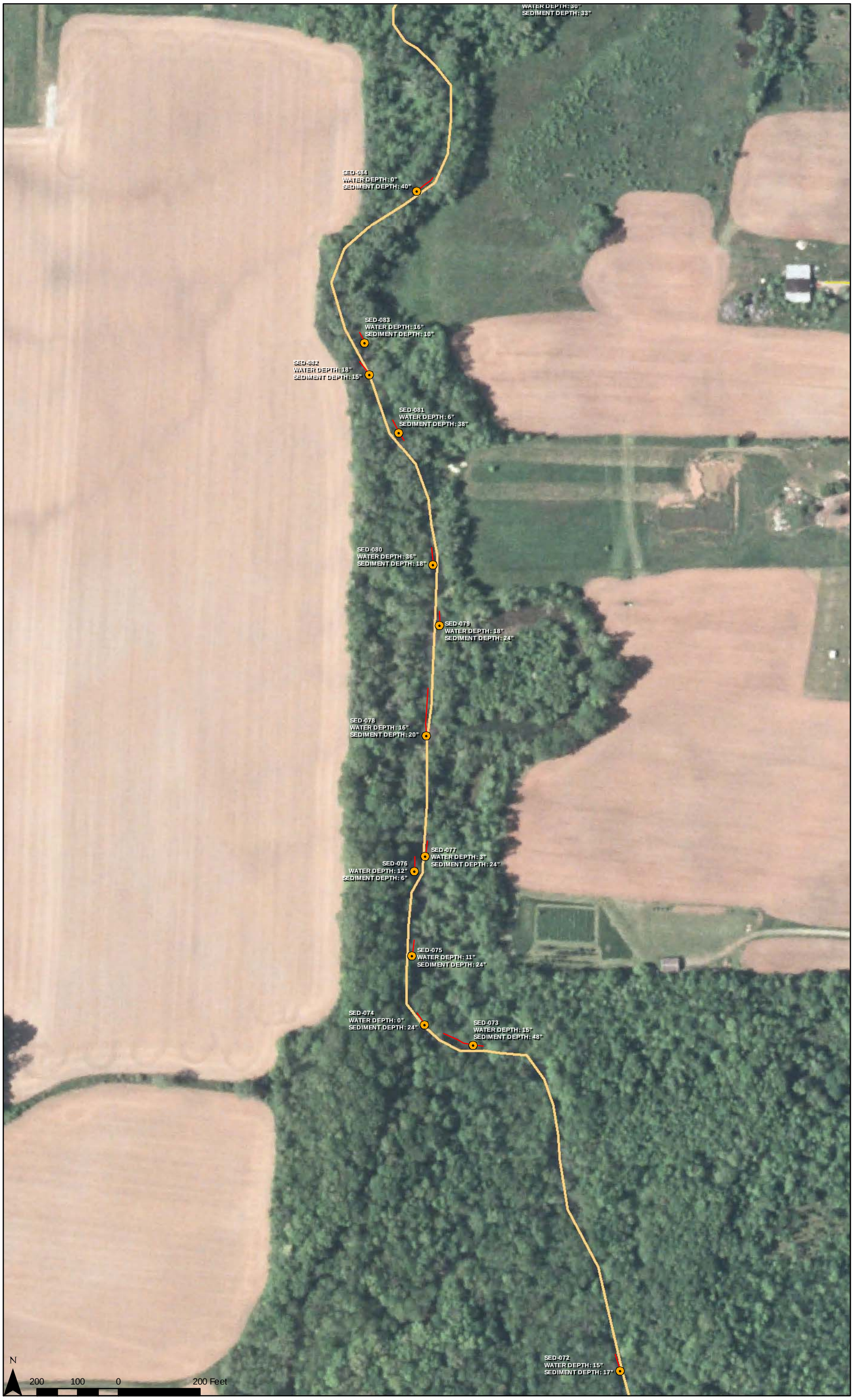
SED-084
WATER DEPTH: 0"
SEDIMENT DEPTH: 40"

N
200 100 0 200 Feet

Sediment Sample
Sediment Deposition Area
Sediment Deposition Line
Cattail Marsh
Tributary
Forested Wetland
Clay Bottom
Gravelly Bottom
Deep Water, Silty Bottom with Thick Sediment
Bedrock Channel with Organic Sediment Deposits

A-3-13 Eighteenmile Creek
Field Reconnaissance,
Sediment Probe Locations
Fall 2008 and Spring 2009
Niagara County, New York

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Sediment Sample
Sediment Deposition Area
Sediment Deposition Line
Cattail Marsh
Tributary
Forested Wetland
Clay Bottom
Gravelly Bottom
Deep Water, Silty Bottom with Thick Sediment
Bedrock Channel with Organic Sediment Deposits

A-3-14 Eighteenmile Creek
Field Reconnaissance,
Sediment Probe Locations
Fall 2008 and Spring 2009
Niagara County, New York

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SED-072
WATER DEPTH: 15"
SEDIMENT DEPTH: 17"

SED-071
WATER DEPTH: 15"
SEDIMENT DEPTH: 6"

SED-070
WATER DEPTH: 10"
SEDIMENT DEPTH: 11"

SED-069
WATER DEPTH: 6"
SEDIMENT DEPTH: 20"

SED-068
WATER DEPTH: 9"
SEDIMENT DEPTH: 5"

SED-067
WATER DEPTH: 10"
SEDIMENT DEPTH: 15"

SED-066
WATER DEPTH: 3"
SEDIMENT DEPTH: 13"

SED-065
WATER DEPTH: 8"
SEDIMENT DEPTH: 10"

SED-064
WATER DEPTH: 12"
SEDIMENT DEPTH: 11"

SED-063
WATER DEPTH: 17"
SEDIMENT DEPTH: 9"

SED-062
WATER DEPTH: 10"
SEDIMENT DEPTH: 12"

SED-061
WATER DEPTH: 12"
SEDIMENT DEPTH: 12"

SED-060
WATER DEPTH: 17"
SEDIMENT DEPTH: 8"

SED-059
WATER DEPTH: 21"
SEDIMENT DEPTH: 13"

SED-058
WATER DEPTH: 21"
SEDIMENT DEPTH: 11"

SED-057
WATER DEPTH: 21"
SEDIMENT DEPTH: 6"

SED-056
WATER DEPTH: 13"
SEDIMENT DEPTH: 14"

SED-055
WATER DEPTH: 12"
SEDIMENT DEPTH: 14"

SED-054
WATER DEPTH: 9"
SEDIMENT DEPTH: 23"

SED-053
WATER DEPTH: 18"
SEDIMENT DEPTH: 3"

SED-052
WATER DEPTH: 15"
SEDIMENT DEPTH: 12"

SED-051
WATER DEPTH: 6"
SEDIMENT DEPTH: 12"

SED-050
WATER DEPTH: 3"
SEDIMENT DEPTH: 18"

SED-049
WATER DEPTH: 21"
SEDIMENT DEPTH: 9"

SED-048
WATER DEPTH: 10"
SEDIMENT DEPTH: 24"

SED-047
WATER DEPTH: 24"
SEDIMENT DEPTH: 6"

SED-046
WATER DEPTH: 12"
SEDIMENT DEPTH: 15"

N
200 100 0 200 Feet

Sediment Sample
Sediment Deposition Area
Sediment Deposition Line
Cattail Marsh
Tributary
Forested Wetland
Clay Bottom
Gravelly Bottom
Deep Water, Silty Bottom with Thick Sediment
Bedrock Channel with Organic Sediment Deposits

A-3-15 Eighteenmile Creek
Field Reconnaissance,
Sediment Probe Locations
Fall 2008 and Spring 2009
Niagara County, New York

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SED-050
WATER DEPTH: 3"
SEDIMENT DEPTH: 18"

SED-049
WATER DEPTH: 21"
SEDIMENT DEPTH: 9"

SED-048
WATER DEPTH: 10"
SEDIMENT DEPTH: 24"

SED-047
WATER DEPTH: 24"
SEDIMENT DEPTH: 6"

SED-046
WATER DEPTH: 12"
SEDIMENT DEPTH: 15"

SED-045
WATER DEPTH: 21"
SEDIMENT DEPTH: 6"

SED-044
WATER DEPTH: 20"
SEDIMENT DEPTH: 8"

SED-043
WATER DEPTH: 10"
SEDIMENT DEPTH: 14"

SED-042
WATER DEPTH: 24"
SEDIMENT DEPTH: 7"

SED-041
WATER DEPTH: 24"
SEDIMENT DEPTH: 5"

SED-040
WATER DEPTH: 14"
SEDIMENT DEPTH: 18"

SED-039
WATER DEPTH: 18"
SEDIMENT DEPTH: 10"

SED-038
WATER DEPTH: 11"
SEDIMENT DEPTH: 13"

SED-037
WATER DEPTH: 22"
SEDIMENT DEPTH: 6"

SED-036
WATER DEPTH: 13"
SEDIMENT DEPTH: 15"

SED-035
WATER DEPTH: 3"
SEDIMENT DEPTH: 32"

SED-034
WATER DEPTH: 18"
SEDIMENT DEPTH: 16"

SED-033
WATER DEPTH: 24"
SEDIMENT DEPTH: 6"

SED-032
WATER DEPTH: 15"
SEDIMENT DEPTH: 30"

SED-031
WATER DEPTH: 33"
SEDIMENT DEPTH: 12"

SED-030
WATER DEPTH: 3"
SEDIMENT DEPTH: 22"

SED-029
WATER DEPTH: 6"
SEDIMENT DEPTH: 18"

SED-028
WATER DEPTH: 9"
SEDIMENT DEPTH: 2"

SED-027
WATER DEPTH: 6"
SEDIMENT DEPTH: 14"

SED-026
WATER DEPTH: 6"
SEDIMENT DEPTH: 24"

SED-025
WATER DEPTH: 4"
SEDIMENT DEPTH: 16"

SED-024
WATER DEPTH: 11"
SEDIMENT DEPTH: 14"

SED-023
WATER DEPTH: 16"
SEDIMENT DEPTH: 12"

SED-022
WATER DEPTH: 3"
SEDIMENT DEPTH: 8"

SED-021
WATER DEPTH: 3"
SEDIMENT DEPTH: 24"

SED-020
WATER DEPTH: 15"
SEDIMENT DEPTH: 15"

N
200 100 0 200 Feet

Sediment Sample
Sediment Deposition Area
Sediment Deposition Line
Cattail Marsh
Tributary
Forested Wetland
Clay Bottom
Gravelly Bottom
Deep Water, Silty Bottom with Thick Sediment
Bedrock Channel with Organic Sediment Deposits

A-3-16 Eighteenmile Creek
Field Reconnaissance,
Sediment Probe Locations
Fall 2008 and Spring 2009
Niagara County, New York

B Survey Data Tables

The following tables are included that present the locations surveyed during Phase 1 activities.

Table B-1 Sediment Thickness Points, Eighteenmile Creek, Niagara County, New York

Sediment Point ID	Reach	Section	Thickness (inches)	Water Depth (inches)	Length (feet)	Sediment Description	Comments
SED 206	2	0	107	13			Hitting hard bottom
SED 207	2	0	114	24			Mid-channel
SED 179	3	0	16	15		Gravel	2' from RDB
SED 180	3	0	1	48		Gravel	6' from LDB
SED 181	3	0	13	30		Fine sand with some silt and clay	19' from RDB
SED 182	3	0	61	6		Silt, fine sand, little clay	Adjacent to cattail marsh
SED 183	3	0	26	15			6' from LDB of connection channel
SED 184	3	0	51	9			6' from RDB, Adjacent to floodplain with black willow and cattail marsh
SED 185	3	0	59	30			Mid-channel, adjacent to cattail marsh (CM-026)
SED 186	3	0	42	6		Silty clay	Start of RDB side channel
SED 187	3	0	39	24			Mid-channel
SED 188	3	0	18	15			5' from RDB, adjacent to cattail marsh
SED 189	3	0	70	15			5' from cattail marsh edge
SED 190	3	0	61	24			At confluence of side channel and connection
SED 191	3	0	12	24			6' from RDB
SED 192	3	0	77	27			Mid-channel
SED 193	3	0	64	5			8' from LDB
SED 194	3	0	85	5			8' from shore, adjacent to cattail marsh
SED 195	3	0	88	24			Mid-channel, adjacent to cattail marsh
SED 196	3	0	40	24			

Table B-1 Sediment Thickness Points, Eighteenmile Creek, Niagara County, New York

Sediment Point ID	Reach	Section	Thickness (inches)	Water Depth (inches)	Length (feet)	Sediment Description	Comments
SED 197	3	0	81	9		Black silt, little sand and clay, organic	
SED 198	3	0	33	63			Mid-channel
SED 199	3	0	65	10			6' from RDB
SED 200	3	0	80	10			10' from LDB, adjacent to floodplain
SED 201	3	0	50	90			Mid-channel
SED 202	3	0	78	12			Located off tip of cattail marsh
SED 203	3	0	78	66			
SED 204	3	0	75	15			Mid-channel in side channel, adjacent to cattail marsh (CM-035)
SED 205	3	0	117	15			
SED 208	3	0	85	9			
SED 209	3	0	0	60		Clay	
SED 210	3	0	20	60			6' from LDB, adjacent to cattail marsh
SED 211	3	0	67	10			6' from LDB, adjacent to cattail marsh
SED 01	4	0	4	15			
SED 02	4	0	0	6			
SED 03	4	0	8	5			
SED 04	4	0	3	21			
SED 05	4	0	0	10			
SED 06	4	0	0	8			
SED 07	4	0	4	11			
SED 08	4	0	2	20			
SED 09	4	0	0	42			
SED 10	4	0	2	24			
SED 11	4	0	5	10			
SED 12	4	0	0	18			
SED 13	4	0	6	24			
SED 14	4	0	4	11			
SED 15	4	0	12	5			
SED 16	4	0	4	6			

Table B-1 Sediment Thickness Points, Eighteenmile Creek, Niagara County, New York

Sediment Point ID	Reach	Section	Thickness (inches)	Water Depth (inches)	Length (feet)	Sediment Description	Comments
SED 173	4	0	0	15		Gravel	3' from RDB
SED 174	4	0	0	9		Gravel	3' from LDB
SED 175	4	0	22	12		Dark brown, silt, fine sand, organic	Inlet on LDB, adjacent to DRN-054
SED 176	4	0	8	28			
SED 177	4	0	0	27		Gravel and cobble	3' from LDB
SED 178	4	0	0	6		Gravel	4' from RDB
SED 122	5	0	28	18		Highly organic	Along LDB, adjacent to wetland (DRN-051), sheen and odor present
SED 123	5	0	36	8		Highly organic	Along RDB, heavy sediment
SED 124	5	0	14	12			Begins at black willow snag
SED 125	5	0	18	24			End of sediment along LDB (including points SED120, 121, and 122)
SED 126	5	0	18	30			End of sediment along RDB (SED-123)
SED 127	5	0	50	3		Highly organic	Very deep sediment along RDB, odor present
SED 128	5	0	48	9			Located between obstruction complex (OBS-042 to OBS-043)
SED 129	5	0	40	20			Along RDB below OBS-043
SED 130	5	0	18	16			Odor present
SED 131	5	0	27	37			Along LDB
SED 132	5	0	48	45			Upsteam point along cattail marsh edge

Table B-1 Sediment Thickness Points, Eighteenmile Creek, Niagara County, New York

Sediment Point ID	Reach	Section	Thickness (inches)	Water Depth (inches)	Length (feet)	Sediment Description	Comments
SED 133	5	0	48	15		Fine to coarse sand with some silt, organic	Mouth of mapped tributary
SED 134	5	0	45	12		Silt and sand in deeper deposits	Along RDB
SED 135	5	0	0	90			Mid-channel, refusal due to bedrock
SED 136	5	0	36	27		Very silty with sand	Located just off LDB
SED 137	5	0	0	87			Mid-channel
SED 138	5	0	60	6		Silt	
SED 139	5	0	6	12			Located just off LDB
SED 140	5	0	0	93		Gravel	
SED 141	5	0	45	18			
SED 142	5	0	0	78		Gravel	
SED 143	5	0	30	51			4' from RDB
SED 144	5	0	0	75		Gravel	
SED 145	5	0	27	9		Silt	4' from LDB
SED 146	5	0	30	33			3' from LDB
SED 147	5	0	72	15			
SED 148	5	0	0	117		Gravel	
SED 149	5	0	45	9			3' from RDB, within cattail marsh
SED 150	5	0	0	78			Refusal due to clay
SED 151	5	0	60	18			Cattail marsh
SED 152	5	0	15	103		Silty clay and gravel	
SED 153	5	0	86	36		Silt	Located in side channel
SED 154	5	0	37	42		Silt	Tributary off main channel
SED 155	5	0	42	30		Silt	Adjacent to DRN-053
SED 156	5	0	45	9			Terminal end of tributary
SED 157	5	0	20	102		Silt	Banks are cattail marsh

Table B-1 Sediment Thickness Points, Eighteenmile Creek, Niagara County, New York

Sediment Point ID	Reach	Section	Thickness (inches)	Water Depth (inches)	Length (feet)	Sediment Description	Comments
SED 158	5	0	20	125		Silt	
SED 159	5	0	85	15			Banks have woody debris
SED 160	5	0	10	96			Refusal
SED 161	5	0	76	20			Bank is elevated cattail marsh
SED 162	5	0	0	60		Gravel	Directly in front of dam
SED 163	5	0	12	81		Black silt	Corner of dam, slight odor present
SED 164	5	0	22	96		Silt with gravel	Left side of dam
SED 165	5	0	1	70		Gravel	Left side of dam
SED 166	5	0	2	86		Gravel	Center of dam
SED 167	5	0	0	120			Right side of dam, refusal
SED 168	5	0	36	12			Within thalweg
SED 169	5	0	0	54		Gravel and cobble	Mid-dam near wooden breaker
SED 17	5	0	4	8			Wet Muck
SED 170	5	0	78	12		Silt	End of tributary parallel to Rt. 78, surrounded by cattail marsh
SED 171	5	0	48	21		Silt	Tributary
SED 172	5	0	45	51			At confluence of main channel and tributary near outfall structure on right side of dam
SED 100	6	1	12	0	30	Fine sediments and gravel	Along LDB, sediment depositional area is connected to a gravel bar
SED 101	6	1	10	4	70	Fine sediments and gravel	Along LDB, gravel bar at upstream end

Table B-1 Sediment Thickness Points, Eighteenmile Creek, Niagara County, New York

Sediment Point ID	Reach	Section	Thickness (inches)	Water Depth (inches)	Length (feet)	Sediment Description	Comments
SED 102	6	1	12	10		Dark brown, silt, little fine sand, little clay, organic, thin gravel layer on top	Along LDB, broad high water depositional area
SED 103	6	1	16	10	50	Dark grey silt and clay, no sand, organic	Partially exposed mudflat along LDB, strong odor
SED 104	6	1	10	4	25	Brown, fine sand, silt, clay, organic	Along LDB, two riffle patterns nearby, one upstream, one downstream
SED 105	6	1	10	0		Brown silty fine sand, clay with gravel	Adjacent to drainage point (DRN-043), along LDB
SED 106	6	1	10	8		Brown silt over highly organic mat with leaves	Adjacent to wetland with drainage (WET-026 and DRN-044), along RDB
SED 107	6	1	16	0	35	Dark brown fine sand with silt and little clay, organic	Along LDB, immediately downstream of fallen trees
SED 108	6	1	8	9		Silt	Along RDB
SED 109	6	1	2	2			Along RDB after rapids and fallen trees, well developed floodplain
SED 110	6	1	6	9	25		Along RDB after rapids
SED 111	6	1	6	9			Along RDB, downstream of wetland/floodplain
SED 112	6	1	9	6	30		Downstream of black willow

Table B-1 Sediment Thickness Points, Eighteenmile Creek, Niagara County, New York

Sediment Point ID	Reach	Section	Thickness (inches)	Water Depth (inches)	Length (feet)	Sediment Description	Comments
SED 113	6	1	5	9		Sediments become coarser as move downstream across deposit	Tip of bar behind island
SED 114	6	1	6	9		Silt	Located between two fallen tree areas and adjacent to wetland with possible drainage
SED 115	6	1	12	15			Along RDB
SED 116	6	1	14	10	50		Along LDB
SED 117	6	1	15	9			Back cut area along RDB, adjacent to wetland/floodplain with drainage (DRN-049), sheen and odor present
SED 118	6	1	10	9			Upstream extent, begins at boxelder
SED 119	6	1	12	11			Downstream extent of sediment bank
SED 120	6	1	24	15	100		Along LDB, extends to mid-channel
SED 121	6	1	3	34			Upstream point of LDB sediment
SED 99	6	1	12	0	60	Dark brown, fine sand, silt with up to 50% clay, organic	Along LDB
SED-214	6	1	0	18			
SED-215	6	1	0	31			
SED-216	6	1	0	10		Gravel and cobble	
SED-217	6	1	0	24		Gravel and cobble	
SED-218	6	1	0	18			
SED-219	6	1	0	6			

Table B-1 Sediment Thickness Points, Eighteenmile Creek, Niagara County, New York

Sediment Point ID	Reach	Section	Thickness (inches)	Water Depth (inches)	Length (feet)	Sediment Description	Comments
SED-220	6	1	0	20		Gravel and cobble	
SED 20	7	2	15	15			Along LDB
SED 21	7	2	24	3		Dark brown silt, little to no sand, no gravel, organic	Along LDB
SED 22	7	2	8	3		Dark grey silty clay, organic	Along RDB
SED 23	7	2	12	16		Dark grey silty clay, organic	Upstream of obstruction OBS-020
SED 24	7	2	14	11		Dark brown silt, little fine sand, organic, metallic odor and sheen	
SED 25	7	2	16	4		Dark grey, silt with fine sand, organic	
SED 26	7	2	24	6		Dark black, heavy odor	Dark black, heavy odor
SED 27	7	2	14	6			
SED 28	7	2	2	9			
SED 29	7	2	18	6		Dark brown silt, little fine sand, organic, lots of leaves	
SED 30	7	2	22	3		Dark brown silt, little sand, organic, lots of leaves	
SED 31	7	2	12	33		Sandy silt, little clay, organic	
SED 32	7	2	30	15		Grey silty sand, little clay	
SED 33	7	2	6	24		Increasing clay	End of stretch

Table B-1 Sediment Thickness Points, Eighteenmile Creek, Niagara County, New York

Sediment Point ID	Reach	Section	Thickness (inches)	Water Depth (inches)	Length (feet)	Sediment Description	Comments
SED 34	7	2	16	18		Grey sandy silt with clay, very thick near bank	As approach mid-channel, develops into silt bar
SED 35	7	2	32	3			Sediment bar behind obstruction OBS-024
SED 36	7	2	15	13			
SED 37	7	2	6	22			
SED 38	7	2	13	11			
SED 39	7	2	10	18		Fine to coarse sand with some silt, organic	Upstream of obstruction OBS-026
SED 40	7	2	18	14		Gray silt with little sand, little clay, organic	Along trees paralleling channel
SED 41	7	2	5	24		Grey silt with sand, little clay, organic	
SED 42	7	2	7	24		Dark grey silt, with some sand and clay, organic	Adjacent to outfall
SED 43	7	2	14	10		Very "soupy", Dark grey sandy silt, some clay, organic	Near abandoned house with cars
SED 44	7	2	8	20		Dark grey, sand, with less silt	Upstream extent of bar
SED 45	7	2	6	21		Dark grey, sand, with less silt	Downstream extent of bar
SED 46	7	2	15	12		Gray silty sand, some clay, organic	Upstream extent of bar
SED 47	7	2	6	24		Gray silty sand, some clay, organic	Downstream extent of bar

Table B-1 Sediment Thickness Points, Eighteenmile Creek, Niagara County, New York

Sediment Point ID	Reach	Section	Thickness (inches)	Water Depth (inches)	Length (feet)	Sediment Description	Comments
SED 48	7	2	24	10		Dark grey, silty sand, organic	Mid-channel, upstream extent of bar
SED 49	7	2	9	21		Dark grey, silty sand, organic	Downstream extent of bar
SED 50	7	2	18	3		Very "soupy", Dark grey silty sand, organic	Adjacent to RDB
SED 51	7	2	12	6		Sandy silt with some red tones	Downstream extent of bar, upstream extent was agricultural run-off (DRN-027)
SED 52	7	2	12	15			Upstream extent of RDB sediment
SED 53	7	2	3	18			Downstream extent of RDB sediment
SED 54	7	2	23	9			Partially exposed bar on RDB
SED 55	7	2	14	12			Downstream extent of partially exposed bar on RDB
SED 56	7	2	14	13			Upstream extent of LDB sediment
SED 57	7	2	6	21			Downstream extent of LDB sediment
SED 58	7	2	11	21		Very "soupy", dark grey sandy silt, organic	Upstream of old bridge (OBS-029)
SED 59	7	2	18	21			Adjacent to RDB
SED 60	7	2	8	17			
SED 61	7	2	12	12	30		Lots of dogwood
SED 62	7	2	12	10		Dark brown, sandy silty clay, organic	Downstream extent
SED 63	7	2	9	17	30	Sandy silt with some clay	Upstream extent, LDB sloughing
SED 64	7	2	11	12	28	Silt and fine sand, organic	Upstream extent of bar along RDB

Table B-1 Sediment Thickness Points, Eighteenmile Creek, Niagara County, New York

Sediment Point ID	Reach	Section	Thickness (inches)	Water Depth (inches)	Length (feet)	Sediment Description	Comments
SED 65	7	2	10	8	45	Dark black to dark grey, silty, sandy clay	Upstream extent, along RDB
SED 66	7	2	13	8	35	Silty sand with clay	Upstream extent
SED 67	7	2	15	10	50	Fine silt and sand, organic	Partially exposed high water depositional area
SED 68	7	2	6	9	55	Silt, fine to coarse sand, little clay, organic	Upstream extent, along RDB
SED 69	7	2	20	6	30	Silty fine sand, some clay, organic	Upstream extent, along RDB, floodplain
SED 70	7	2	11	10	24		Adjacent to RDB and WET-020
SED 71	7	2	6	15	35	Sandy silt, organic	Upstream extent, along LDB
SED 72	7	2	17	15	65	Sandy silt, increased coarse sand, organic	Upstream extent, sunken bank along LDB
SED 73	7	2	48	15	100	Silt with fine sand, increased clay as move toward downstream end	Adjacent to LDB
SED 74	7	2	24	0	80	Silt, fine sand, some clay, organic	Mudflat along RDB, located between two tree falls
SED 75	7	2	24	11	25		Along LDB, bordered by small linear wetland
SED 76	7	2	6	12	35	Silt, fine sand, organic	Along RDB

Table B-1 Sediment Thickness Points, Eighteenmile Creek, Niagara County, New York

Sediment Point ID	Reach	Section	Thickness (inches)	Water Depth (inches)	Length (feet)	Sediment Description	Comments
SED 77	7	2	24	3	125	Silt with fine sand, organic	Upstream extent along LDB, two wetland drainage inputs
SED 78	7	2	20	16		Silt with fine sand, organic	Downstream extent along LDB
SED 79	7	2	24	18	35		Starts along RDB, extends to mid-channel, and across creek, adjacent to wetland drainage (DRN-033)
SED 80	7	2	18	36	45	Fine sand, organic	Along LDB, adjacent to wetland
SED 81	7	2	38	6	55	Fine sand and silt, some clay, organic	Adjacent to wetland discharge
SED 82	7	2	15	18	35		Along LDB
SED 83	7	2	10	16	25		Along RDB
SED 84	7	2	40	0	60	Grey sand, silt, organic	Along LDB
SED 85	7	2	33	30		Very silty sand, little clay, organic	Along RDB
SED 86	7	2	33	9	75	Silts with fine sand	Along RDB
SED 87	7	2	12	18	20		Along LDB
SED 88	7	2	39	15	60	Very black silt, fine sand, organic	Along RDB, adjacent to wetland/floodplain, soft sediment also near mid-channel
SED 89	7	2	36	9	150		Along LDB, wetland drainage at end of deposition
SED 90	7	2	20	14	50	Very little silt, some sand, clay, organic	Exposed mudflat along RDB, extends downstream to LWD

Table B-1 Sediment Thickness Points, Eighteenmile Creek, Niagara County, New York

Sediment Point ID	Reach	Section	Thickness (inches)	Water Depth (inches)	Length (feet)	Sediment Description	Comments
SED 91	7	2	14	9	55		Along RDB, sediments have accumulated around and in a fallen tree crib, soft channel bottom
SED 92	7	2	14	21	125		Along RDB, soft channel bottom
SED 93	7	2	28	0	40		Exposed mudflat along RDB, soft channel bottom
SED 94	7	2	51	1	40		Along RDB
SED 95	7	2	0	36		Hard clay bottom	Along LDB
SED 96	7	2	29	0		Silt, fine sand, some clay, organic	Along LDB, sheen noticed
SED 97	7	2	32	0	50		Along LDB, downstream of a bank stabilization area
SED 98	7	2	12	0	30	Dark brown, trace fine sand, some clay, organic	Along LDB, upstream of Ewings Rd.
SED-212	7	2	6	36			
SED-213	7	2	2	12			

Key:

LDB = left descending bank
RDB = right descending bank
LWD = large woody debris

Table B-2 Water Depth Points, Eighteenmile Creek, Niagara County, New York

Water Depth Point ID	Reach	Section	Water Depth (inches)
WD-037	3	0	63
WD-033	4	0	27
WD-034	4	0	18
WD-035	4	0	45
WD-036	4	0	36
WD-030	5	0	55
WD-031	5	0	8
WD-032	5	0	63
WD-027	6	1	18
WD-028	6	1	23
WD-029	6	1	38
WD-020	7	2	15
WD-021	7	2	27
WD-022	7	2	22
WD-023	7	2	30
WD-024	7	2	27
WD-025	7	2	18
WD-026	7	2	24
WD-038	7	2	28
WD-039	7	2	14
WD-040	7	2	24
WD-041	7	2	26
WD-042	7	2	29
WD-043	7	2	31
WD-044	7	2	36

Table B-3 Other Points, Eighteenmile Creek, Niagara County, New York

Other Point ID	Reach	Section	Description	Water Depth (inches)
bank5a	4	0		10
bank5b	4	0		2
bank4b	4	0		12
sewer	4	0		10
OTH-043	5	0	Tip of depositional area	
OTH-042	6	1	Side channel start point	
OTH-040	6	1	Downstream junction where creek rejoins from split, adjacent to Rt. 78	
OTH-037	6	1	Upstream junction of creek split along RDB, adjacent to Rt. 78	
p9,10, gravelly bottom	6	2		42
p8,9	6	2		18
rocky bottom	7	1		48
p5-7	7	1		24
farm bridge xing	7	1		18
OTH-024	7	2	Old bridge abuttment	
OTH-022	7	2	Old bridge	
OTH-020	7	2	End of sediment along banks	

Table B-4 Drainage Points, Eighteenmile Creek, Niagara County, New York

Drainage Point ID	Reach	Section	Description
DRN-055	3	0	Groundwater seepage
DRN-054	4	0	Roadside drainage
DRN-052	5	0	Drainage from wetland, man-made channel
DRN-053	5	0	Agricultural run-off
DRN-042	6	1	Overland drainage from high water deposition area
DRN-043	6	1	Overland flow
DRN-044	6	1	Drainage from wetland
DRN-045	6	1	Drainage from floodplain
DRN-046	6	1	Surface run-off
DRN-047	6	1	Drainage from wetland/floodplain
DRN-048	6	1	Drainage from floodplain
DRN-049	6	1	Drainage from wetland
DRN-050	6	1	Rocky swale
DRN-051	6	1	Drainage from wetland
DRN-020	7	2	Roadside drainage
DRN-021	7	2	Groundwater seepage
DRN-022	7	2	Drainage from wetland
DRN-023	7	2	Drainage from floodplain
DRN-024	7	2	Overland flow
DRN-025	7	2	Agricultural run-off
DRN-026	7	2	Agricultural run-off
DRN-027	7	2	Agricultural run-off
DRN-028	7	2	Agricultural run-off
DRN-029	7	2	Overland drainage from agricultural field
DRN-030	7	2	Surface run-off
DRN-031	7	2	Overland flow
DRN-032	7	2	Overland flow
DRN-033	7	2	Drainage from wetland
DRN-034	7	2	Agricultural run-off
DRN-035	7	2	Drainage from wetland
DRN-036	7	2	Drainage from wetland and agricultural field
DRN-037	7	2	Drainage from wetland
DRN-038	7	2	Drainage from wetland
DRN-039	7	2	Drainage from wetland and roadside
DRN-040	7	2	Drainage from wetland
DRN-041	7	2	Dry tributary and overland flow

Table B-5 Obstruction Points, Eighteenmile Creek, Niagara County, New York

Obstruction Point ID	Reach	Section	Description
OBS-042	5	0	Upstream point of LWD complex
OBS-043	5	0	Downstream point of LWD complex
OBS-040	6	1	LWD, does not stretch across full channel width
OBS-041	6	1	Half-channel Boxelder strainer
OBS-020	7	2	Black Willows
OBS-021	7	2	Fallen Black Willows
OBS-022	7	2	Twin Alder
OBS-023	7	2	LWD tangle
OBS-024	7	2	LWD tangle
OBS-025	7	2	LWD
OBS-026	7	2	LWD
OBS-027	7	2	Large Sugar Maple
OBS-028	7	2	LWD
OBS-029	7	2	LWD and old bridge abutment
OBS-030	7	2	LWD
OBS-031	7	2	LWD
OBS-032	7	2	LWD
OBS-033	7	2	LWD
OBS-034	7	2	LWD
OBS-035	7	2	LWD
OBS-036	7	2	LWD
OBS-037	7	2	LWD
OBS-038	7	2	LWD

Key:
LWD = large woody debris

Table B-6 Outfall Points, Eighteenmile Creek, Niagara County, New York

Outfall Point ID	Reach	Section	Description
OUT-026	5	0	36" Plastic culvert pipe
OUT-027	5	0	24" Culvert pipe on slope beyond cattail marsh on RDB
OUT-022	6	1	18" Corrugated pipe entering from Condren Rd.
OUT-023	6	1	24" Culvert
OUT-024	6	1	18" Corrugated pipe
OUT-025	6	1	36" Plastic culvert pipe
OUT-020	7	2	6" PVC pipe
OUT-021	7	2	10" Corrugated steel drain along LDB

Key:

PVC = polyvinyl chloride

LDB = left descending bank

RDB = right descending bank

C Photo Logs

Reach 3:
Confluence of Eighteenmile Creek with Upstream Extent of Burt Dam Impoundment



Photo: P86
Direction of view: S
Description: Surface water input to creek from cattail area (DRN-054).



Photo: P87
Direction of view: W
Description: Downstream portion of cattail marsh from connection channel.



Photo: P88
Direction of view: W
Description: Downstream portion of cattail marsh from connection channel.



Photo: P89
Direction: SW
Description: Beginning of side channel on RDB.



Photo: P90
Direction of view: SE
Description: Groundwater seepage.



Photo: P91
Direction of view: NE
Description: Cattail marsh on island.



Photo: P92
Direction of view: N
Description: Cattail marshes along creek.



Photo: P93
Direction of view: NE
Description: Cattail marsh along LDB.



Photo: P94
Direction of view:
Description: Cattail marsh and slough like channel to east of creek main stem.



Photo: P95
Direction of view: N
Description: Extent of cattail marshes.

Reach 4:
Downstream of Newfane Dam to Ide Road



Photo: P30A
Direction of view: S
Description: Left channel, upstream view.



Photo: P31A
Direction of view: N
Description: Left channel, downstream view.



Photo: P32A
Direction of view: E
Description: View from LDB to RDB, along left channel.



Photo: P33A
Direction of view: S
Description: Right channel, upstream view.



Photo: P34A
Direction of view: N
Description: Right channel, downstream view.



Photo: P35A
Direction of view: W
Description: View from LDB to RDB, along right channel.



Photo: P36A
Direction of view: S
Description: At SED 5 upstream view.



Photo: P37A
Direction of view: N
Description: At SED 5 downstream view.



Photo: P38A
Direction of view: E
Description: At SED 5, view of LDB.



Photo: P39A
Direction: SW
Description: Storm sewer along LDB.



Photo: P40A
Direction of view: S
Description: At SED 6, upstream view.



Photo: P41A
Direction of view: N
Description: At SED 6, downstream view.

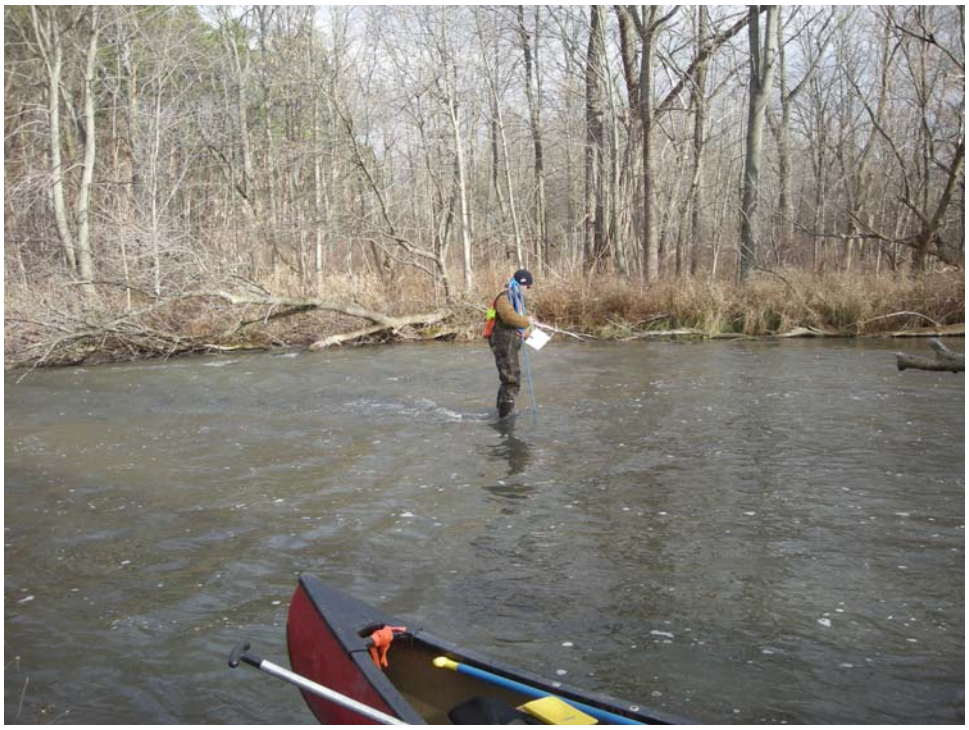


Photo: P42A
Direction of view: E
Description: At SED 6, view from LDB to RDB across creek.



Photo: P43A
Direction of view: W
Description: Tributary along LDB.



Photo: P44A
Direction of view: E
Description: View from LDB to RDB across creek at BNK 5.



Photo: P45A
Direction of view: S
Description: Upstream view at BNK 5.



Photo: P46A
Direction of view: N
Description: Downstream view at BNK 5.



Photo: P47A
Direction of view: S
Description: At SED 8, upstream view.



Photo: P48A
Direction of view: N
Description: At SED 8, downstream view.



Photo: P49A
Direction of view: S
Description: At SED 8 view from LDB to RDB across creek.



Photo: P50A
Direction of view: NE
Description: View of impoundment along LDB.



Photo: P51A
Direction of view: SW
Description: Impoundment along LDB in creek.



Photo: P52A
Direction of view: NE
Description: Impoundment mid-channel of RDB.



Photo: P53A
Direction of view: S
Description: Intake culvert in mid-channel.



Photo: P54A
Direction of view: SW
Description: Intake culvert along RDB.



Photo: P55A
Direction of view: SW
Description: Intake culvert in mid-channel.



Photo: P56A
Direction of view: N
Description: Pump house on RDB.



Photo: P57A
Direction of view: E
Description: Section of concrete culvert on RDB.



Photo: P58A
Direction of view: E
Description: At SED 11, view from LDB to RDB across channel.



Photo: P59A
Direction of view: S
Description: At SED 11, upstream view.



Photo: P60A
Direction of view: N
Description: At SED 11, downstream view.



Photo: P61A
Direction of view: W
Description: Irrigation section along LDB.



Photo: P62A
Direction of view: NW
Description: Empty tank along LDB.



Photo: P63A
Direction of view: SE
Description: At SED 13, inundated wetland along retaining wall on RDB.



Photo: P64A
Direction of view: E
Description: At SED 13, view from LDB to RDB across creek.



Photo: P65A
Direction of view: E
Description: At SED 14, view from LDB to RDB across creek.



Photo: P66A
Direction of view: S
Description: At SED 15, upstream view.



Photo: P67A
Direction of view: N
Description: At SED 14, downstream view.



Photo: P68A
Direction of view: E
Description: At SED 15, wetland along RDB.



Photo: P69A
Direction of view: E
Description: At SED 15, view from LDB to RDB across creek.



Photo: P70A
Direction of view: S
Description: At SED 15, upstream view.



Photo: P71A
Direction of view: S
Description: At SED 15, downstream view.



Photo: P72A
Direction of view: N
Description: Entering the culverts at Ide Road.



Photo: P73A
Direction of view: N
Description: View of Ide Road crossing and culverts.



Photo: P74A
Direction of view: SW
Description: Newfane Dam spillway.



Photo: P75A
Direction of view: S
Description: View of Newfane Dam spillway from LDB of right channel.



Photo: P76A
Direction of view: E
Description: View from LDB to RDB across left channel.



Photo: P77A
Direction of view: E
Description: View from LDB to RDB across right channel.

Reach 6 (Segment 1):
Jacques Road to Condren Road

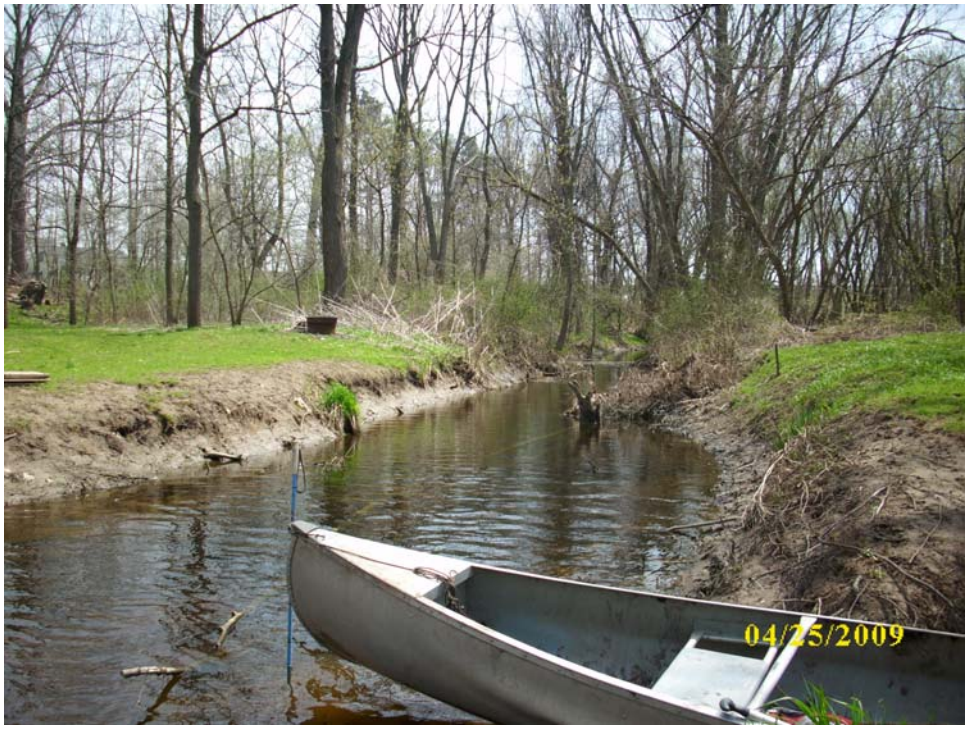


Photo: P115
Direction of view: SE
Description: Tributary along RDB, wide at confluence (TRB-025).



Photo: P116
Direction of view: NE
Description: LWD obstruction that extends across half the creek (OBS-040).



Photo: P117
Direction of view: SW
Description: Overland drainage along LDB (DRN-042).



Photo: P118
Direction of view: SW
Description: Overland drainage with flow along LDB (DRN-043).



Photo: P119
Direction of view: S
Description: Wetland along RDB with drainage to the creek (WET-026).



Photo: P66
Direction: SE
Description: Where creek splits, forming secondary channel along Route 78 (OTH-037).



Photo: P120
Direction of view: E
Description: At downstream end of split where creek rejoins itself (OTH-040).

Reach 6 (Segment 1) and Reach 5: Condren Road to Newfane Dam



Photo: P121
Direction of view: E
Description: Small ponded area along RDB with drainage to creek (DRN-045).



Photo: P122
Direction of view: W
Description: Run-off along LDB with flow (DRN-046).



Photo: P67
Direction of view: SE
Description: Wetland along RDB with possible drainage.



Photo: P123
Direction of view: NW
Description: Drainage pipe along LDB (OUT-022).



Photo: P68
Direction of view: SW
Description: Wetland along RDB, flow during high water events (WD-028).



Photo: P124
Direction of view: SW
Description: Floodplain/wetland with drainage to creek (DRN-047).



Photo: P69
Direction of view: SW
Description: Dilapidated structure along RDB.



Photo: P125
Direction of view: SE
Description: Drainage pipe along RDB, old abutment (OUT-023).



Photo: P126
Direction of view: SW
Description: Floodplain with drainage to creek (DRN-048).



Photo: P127
Direction of view: NW
Description: Start of side channel along LDB (OTH-042).



Photo: P70
Direction of view: SE
Description: Standing at SED113, view of upstream at channel split.



Photo: P71
Direction of view: SE
Description: Wetland area behind fallen trees with possible drainage to creek.



Photo: P72
Direction of view: NE
Description: Drainage pipe along RDB (OUT-024).



Photo: P73
Direction of view: NE
Description: Culvert with run-off flowing to creek (OUT-025).



Photo: P74
Direction of view:
Description: At SED 117, exposed mudflat and wetland with drainage to creek (DRN-049).



Photo: P128
Direction of view: SE
Description: Rocky swale along RDB (DRN-050).



Photo: P75
Direction of view: SW
Description: Wetland with drainage along LDB (DRN-051).



Photo: P76
Direction of view:
Description: Culvert with flow along RDB (OUT-026).



Photo: P77
Direction of view: NE
Description: Downstream view of LWD obstructions across creek (OBS-042).



Photo: P129
Direction of view: NE
Description: Cattails along RDB.



Photo: P78
Direction of view: SW
Description: Mapped tributary (OTH-043).



Photo: P130
Direction of view: S
Description: Drainage to creek at upstream side of cattail marsh.



Photo: P131
Direction of view: SE
Description: Tributary in cattails along RDB, possible roadside drainage also (TRB-026).



Photo: P79
Direction of view: SE
Description: Overland drainage from cattail marsh along RDB.



Photo: P132
Direction of view: NE
Description: End of cattail marsh with flow into creek along RDB.



Photo: P133
Direction of view: N
Description: Start point of cattail marsh, small inlet area.



Photo: P134
Direction of view: SW
Description: Maintained drainage to creek along LDB (DRN-052).

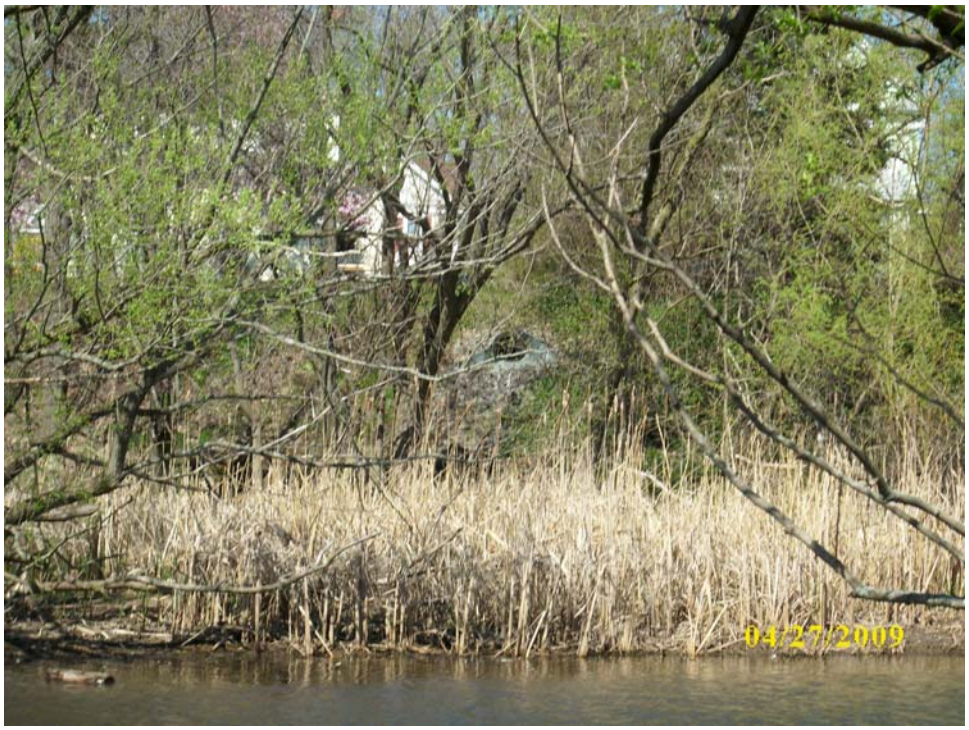


Photo: P135
Direction of view: NE
Description: View of culvert upslope from creek channel along RDB (OUT-027).



Photo: P80a
Direction of view: NW
Description: View of areas upstream of Newfane Dam.



Photo: P80b
Direction of view: SW
Description: View immediately upstream of Newfane Dam.



Photo: P81
Direction of view: SW
Description: Incised drainage from up-gradient area (DRN-053).



Photo: P82
Direction of view: SE
Description: Terminus of tributary to main channel.



Photo: P83
Direction of view: W
Description: Wooden breaker structure at upstream end of Newfane Dam.



Photo: P84
Direction of view: N
Description: Wooden breaker structure immediately upstream of Newfane Dam.



Photo: P85
Direction of view: SE
Description: Terminus of tributary.

Reach 7 (Segment 1) and Reach 6 (Segment 2): Ewings Road South to Jacques Road



Photo: P01
Description: View of downstream, general creek view.



Photo: P02
Description: Few fallen trees along RDB.



Photo: P03
Description: Gooseneck.



Photo: P04
Description: Gooseneck.



Photo: P05
Description: Downstream of farm bridge.



Photo: P06
Description: Farm bridge #3.



Photo: P07
Description: Farther downstream from farm bridge.



Photo: P08
Description: LWD obstruction across creek.

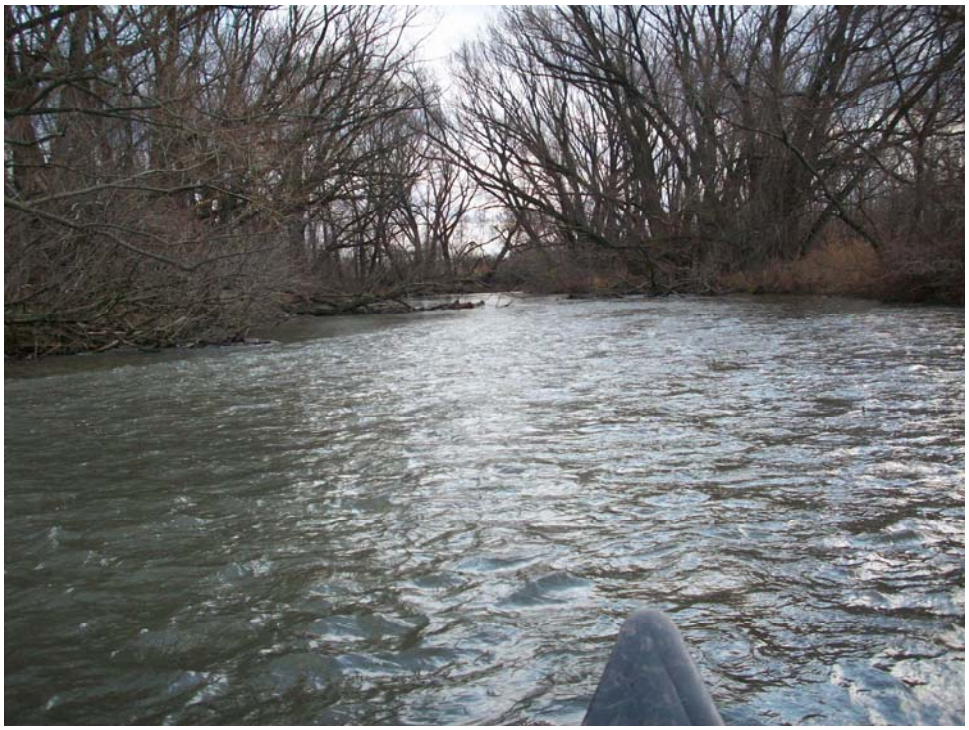


Photo: P09
Description: LWD obstruction across creek.



Photo: P21A
Direction of view: SW
Description: Farm bridge #1 from LDB.



Photo: P22A
Direction of view: SE
Description: Farm bridge #1 from RDB.



Photo: P23A
Direction of view: S
Description: Farm bridge #1 from mid-channel.



Photo: P24A
Direction of view: SE
Description: Farm bridge #2 from RDB.



Photo: P25A
Direction of view: SW
Description: Farm bridge #2 from LDB.



Photo: P26A
Direction of view: S
Description: Farm bridge #2 from mid-channel.



Photo: P27A
Direction of view: S
Description: Farm bridge #3 from mid-channel.

Reach 7 (Segment 2):
Stone Road to Ewings Road



Photo: P20
Direction of view: E
Description: Roadside drainage along RDB (DRN-020).



Photo: P21
Direction of view: NW
Description: Downstream view from Stone Road Bridge.



Photo: P22
Direction of view: SW
Description: Seepage along LDB (DRN-021).



Photo: P23
Direction of view: SW
Description: Sediment deposit along LDB.



Photo: P24
Direction of view: NE
Description: Sediment deposit along RDB.



Photo: P25
Direction of view: NE
Description: LWD obstruction across creek and terrace along RDB (OBS-020).



Photo: P26
Direction of view: NW
Description: LWD obstruction across creek (OBS-021).



Photo: P27
Direction of view: SW
Description: Wetland along RDB with drainage to creek (DRN-022).



Photo: P28
Direction of View: N
Description: LWD obstruction across creek (OBS-022).



Photo: P29
Direction of View: N/A
Description: Sheen seen on sediment along LDB (SED-026).



Photo: P30
Direction of view: N/A
Description: Sheen seen on sediment along LDB (SED-026).



Photo: P31
Direction of view: SW
Description: Floodplain along LDB with drainage to creek (DRN-023).



Photo: P32
Direction of view: NW
Description: LWD obstruction across creek (OBS-023).



Photo: P33
Direction of view: W
Description: Tributary along LDB (TRB-020).



Photo: P34
Direction of view: N
Description: LWD obstruction across creek (OBS-024).



Photo: P35
Direction of view: E
Description: Overland flow along RDB just downstream of P34 (DRN-024).



Photo: P36
Direction of view: N
Description: LWD obstruction across creek (OBS-025).



Photo: P37
Direction of view: NE
Description: LWD obstruction across creek.



Photo: P38
Direction of view: SW
Description: Tributary along LDB (TRB-021).



Photo: P39
Direction of view: N
Description: LWD obstruction across creek (OBS-026).



Photo: P40
Direction of view: W
Description: Agricultural drainage along LDB (DRN-025).



Photo: P41
Direction of view: N
Description: LWD obstruction across creek (OBS-027).



Photo: P42
Direction of view: SE
Description: Overland drainage along RDB.

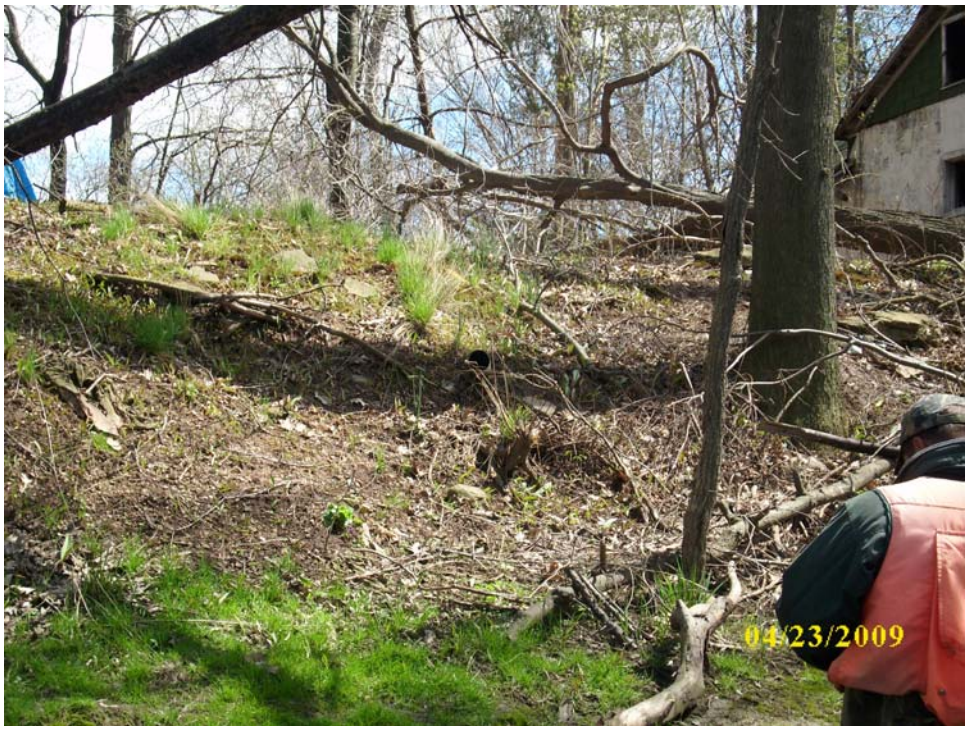


Photo: P43
Direction of view: SE
Description: PVC pipe outfall along RDB (OUT-020).



Photo: P44
Direction of view: N
Description: LWD obstruction across creek (OBS-028).



Photo: P45
Direction of view: E
Description: Tributary along RDB (TRB-022).



Photo: P46
Direction of view: W
Description: Agricultural run-off from LDB and depositional area (DRN-026).



Photo: P47
Direction of view: W
Description: Agricultural run-off along LDB and depositional area (DRN-027).



Photo: P48
Direction of view: SE
Description: Tributary along RDB, runs through culvert at road (TRB-023).



Photo: P49
Direction of view: SE
Description: Exposed area of sediment bar along RDB.



Photo: P50
Direction of view: W
Description: Agricultural run-off along LDB (DRN-028).



Photo: P51
Direction of view: N
Description: LWD obstruction and bridge across creek (OBS-029).



Photo: P52
Direction of view: W
Description: Surface drainage from agricultural fields along LDB (DRN-029).



Photo: P53
Direction of view: NW
Description: Tributary along LDB (DRN-030).

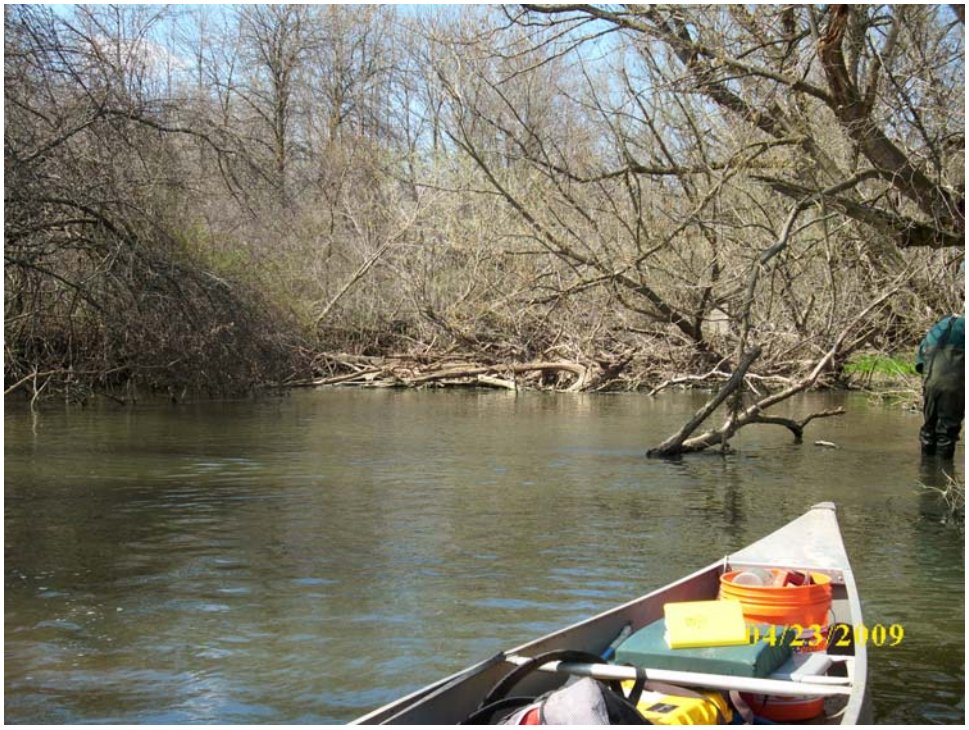


Photo: P54
Direction of view: N
Description: LWD obstruction across creed, downstream of SED 61 (OBS-034).



Photo: P55
Direction of view: W
Description: Overland drainage to creek along LDB.



Photo: P56
Direction of view: NE
Description: LWD obstruction covering most of creek (OBS-032).



Photo: P57
Direction of view: E
Description: Floodplain with wetland along RDB with seepage.



Photo: P58
Direction of view: N
Description: LWD obstruction across creek.



Photo: P59
Direction of view: NE
Description: Tar-like material found on LDB.



Photo: P60
Direction of view: SW
Description: Wetland along LDB.



Photo: P61
Direction of view: NW
Description: Exposed sediment bar across from P60 along RDB.



Photo: P62
Direction of view: W
Description: Overland drainage along LDB (DRN-032).



Photo: P63
Direction of view: NE
Description: Extensive wetland along RDB.



Photo: P64
Direction of view: NW
Description: LWD obstruction across creek (OBS-034).



Photo: P65
Direction of view: NW
Description: Large forested wetland within floodplain along LDB.



Photo: P96
Direction of view: W
Description: Large forested wetland along LDB.



Photo: P97
Direction of view: SW
Description: Discharge from large forested wetland (WET-021)



Photo: P98
Direction of view: SW
Description: Tributary along LDB with riffle at confluence (TRB-024).



Photo: P99
Direction of view: E
Description: Wetland drainage along RDB (DRN-033).



Photo: P100
Direction of view: N
Description: LWD obstruction across creek (OBS-035).



Photo: P101
Direction of view: S
Description: Wetland discharge along LDB (SED-081).



Photo: P102
Direction of view: W
Description: Pipe outfall along LDB with flow.



Photo: P103
Direction of view: NW
Description: Surface run-off from agricultural fields along LDB (DRN-034).



Photo: P104
Direction of view: NW
Description: Taking a mid-channel water depth (WD-043).



Photo: P105
Direction of view: NE
Description: Wetland drainage along RDB (DRN-035).



Photo: P106
Direction of view: NW
Description: Surface drainage from wetland and agricultural fields along LDB (DRN-036).



Photo: P107
Direction of view: NW
Description: Wetland discharge along LDB (DRN-037).



Photo: P108
Direction of view: NW
Description: Wetland from P107 second discharge point (DRN-038).



Photo: P109
Direction of view: SW
Description: Wetland with drainage along LDB, upstream of Ridge Road (DRN-039).



Photo: P110
Direction of view: NE
Description: LWD obstruction across creek downstream of Ridge Road (OBS-036).



Photo: P111
Direction of view: SW
Description: Wetland discharge along RDB (DRN-040).



Photo: P112
Direction of view: NW
Description: Tributary (drainage) along LDB just downstream of Ridge Rd (DRN-041).



Photo: P113
Direction of view: SW
Description: Open floodplain along LDB with bank stabilization in place (SED-097).



Photo: P114
Direction of view: NE
Description: Taking a mid-channel depth measurement upstream of Ewings Road South (SED-213).

Technical Report
Hydrographic Survey and Sediment Probing, 18 Mile Creek, Burt, New York

SPONSOR

CH2MHill
135 South 84th Street,
Suite 325
Milwaukee, WI 53214

DRAFT

SURVEY COMPANY

Aqua Survey Inc.
469 Point Breeze Rd.
Flemington, NJ 08822

ASI Project Number 29-119

June 26, 2009

Technical Report
Hydrographic Survey and
Sediment Probing,
18 Mile Creek,
Burt, New York

SPONSOR

CH2MHill
135 South 84th Street,
Suite 325
Milwaukee, WI 53214

ASI Project Number 29-119

This report, as well as all records and raw data were audited and found to be an accurate reflection of the study. Copies of raw data will be maintained by Aqua Survey, Inc., 469 Point Breeze Road, Flemington, NJ 08822.

Kenneth Hayes **Date**
President

Mark Padover **Date**
Lead Field Scientist

Draft

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I. EXECUTIVE SUMMARY

A hydrographic and sediment thickness probing survey was conducted covering the area where future sampling activities will potentially be conducted on 18 Mile Creek, in Burt, New York. The area surveyed extended from shoreline to shoreline for more than 8,175 feet upstream from the Burt Hydroelectric Dam along 18 Mile Creek. The primary goal of the survey was to establish bottom elevations and contours within the impoundment and to collect water depth and sediment thickness data to support the development of a sediment sampling plan.

The geophysical survey was conducted on June 4 and June 5, 2009. Technologies and techniques employed included real-time kinematic differential global positioning (RTK-DGPS) or equivalent system, with a horizontal accuracy of better than 1 meter and a vertical accuracy of better than 0.2 feet, fathometer, and sediment probe. Survey lines spaced 25 feet apart were run perpendicular to the shoreline using the fathometer. Five lines with 3 locations per line were probed to determine representative sediment thicknesses from 4,800 feet above the Burt Dam to 8,150 feet above the dam.

The hydrographic and probing surveys were conducted using the positioning system with horizontal accuracy of better than 1 meter and a vertical accuracy of better than 0.2 feet. The RTK-DGPS system consisted of a stationary base station operating over a known control point. Positioning corrections calculated by the base station were transmitted at 10 times per second via radio modem to another GPS receiver on the survey vessel. This allows the positioning accuracy for the survey vessel using RTK-DGPS to be on the order of 3-cm in the horizontal and 2-cm in the vertical planes.

During the survey, the PDOP as well as the status of the RTK-DGPS was monitored. If the PDOP exceeded 5.0 or the RTK-DGPS lost fix, survey activities were suspended or data was not used. The rover antenna was mounted directly over the remote sensing device to eliminate offset errors and insure positions tied directly with the collected data.

Survey lines spaced 25 feet apart were created based on the centerline of the river. A single centerline was drawn. Survey lines were then created perpendicular to the centerline, which resulted in lines that created transects of the river. These survey lines were labeled with their distance from the Burt Dam. For example line 1+00 is 100 feet upstream from the dam and line 77+00 is 7,700 feet upstream from the dam.

An Innerspace Technologies model 455 fathometer was used to conduct the hydrographic survey. Positioning data was collected from the positioning system and electronically paired with the soundings from the fathometer in Hypack Max 2009 survey control software. Prior to the commencement of survey operations, a bar check was conducted to adjust for draft and speed of sound in order to ensure

accurate sounding data. A bar check was also conducted during the day and at the end of each day to be sure the settings continued to be correct. The antenna for the positioning system was mounted directly above the transducer, eliminating any positioning offset errors. In areas where the water was too shallow for the fathometer or areas with dense aquatic vegetation, a lead line was used to take spot measurements. These areas included the waters less than 3 feet deep from transect 61+25 to 81+75. Following the survey, the data was processed, point plotted, and contoured.

The impoundment was found to have water depths ranging from 1.0 foot to 37.4 feet. The shorelines typically have steep to near vertical slopes. The historic creek channel is still readily apparent in the contoured hydrographic data results through most of the survey area.

A sediment probing survey was conducted to determine the thickness of soft sediments. The probe, consisting of a 10 foot piece of steel re-bar welded to the end of sections of marked ¾ inch galvanized pipe, was pushed into the sediment until refusal was encountered. In many cases, the type of material causing refusal could be detected through feedback from the probing device. Five transects, with 3 probes per transect were conducted at lines 48+00, 58+00, 67+00, 77+00, and 81+50. Sediment thickness ranged from a minimum of 6.2 feet to a maximum of 12.8 feet, with an average sediment thickness of 10.7 feet at the locations probed. The most commonly detected material causing refusal was clay, with sand and rock at several of the locations.

II. MATERIALS, METHODS, AND RESULTS

A. Horizontal and Vertical Positioning

All aspects of the remote sensing survey were conducted using a real-time kinematic differential global positioning system (RTK-DGPS), or equivalent system, with a horizontal accuracy of better than 1 meter and a vertical accuracy of better than 0.2 feet. The RTK-DGPS system consisted of a stationary base station operating over a known control point. Positioning corrections calculated by the base station were transmitted at 10 times per second via radio modem to another GPS receiver on the survey vessel. This allows the positioning accuracy for the survey vessel to be on the order of 3-cm in the horizontal and 2-cm in the vertical planes.

The base station, consisting of a Trimble 5700 24-channel dual frequency GPS receiver, Trimble TSCe survey controller, and Trimble Trimmark 3 radio modem, was set up over a known control point, USGS benchmark AH9233. The rover, consisting of a Trimble MS-750 9-channel dual frequency GPS receiver and Teledyne radio modem, was set-up on the survey vessel and supplied positioning data to all the survey instruments during the geophysical remote sensing surveys.

During the survey, the PDOP as well as the status of the RTK-DGPS was monitored. If the PDOP exceeded 5.0 or the RTK-DGPS lost fix, survey activities were suspended or data was not used. Results of the survey were produced in New York West State Plane feet NAD83.

During the survey, a control point was transferred to the bridge on Wilson Burt Rd. over 18 Mile Creek. The control point was established on the southern guard rail over the 8th vertical rail support from the western end of the bridge. Prior to the beginning of the survey, a marked water level staff was installed in the survey to check and monitor surface water elevations during the survey. The water lever staff was checked before survey operations began, in the middle of each day, and at the end of each day to insure vertical accuracy of the survey data.

The vertical datum supplied for USGS benchmark AH9233 was North American Vertical Datum 1988 (NAVD88). As the required vertical datum for the project is the International Great Lakes Datum of 1985 (IGLD85), NOAA's NAVD88/IGLD85 transformation tool was used to convert the datums at the transferred control point on the bridge. The difference between NAVD88 and IGLD85 is on the order of 0.09 feet in the survey area. Water level was found to be constant at an elevation of 291.40 feet NAVD88 which equals 291.31 feet IGLD85.



Figure 1. Survey area on 18 Mile Creek, Burt, NY.

B. Hydrographic Data Collection and Results

A bathymetric survey was conducted along the entire length of the project area. Survey lines spaced 25 feet apart were to ensure high-resolution coverage of the entire survey area. These lines were created based on the centerline of the river. A single centerline was drawn. Survey lines were then created perpendicular to the centerline at 25 foot intervals, which results in lines that create transects of the river. These survey lines were labeled with their distance from the Burt Dam. For example line 1+00 is 100 feet upriver from the dam and line 77+00 is 7,700 feet upriver from the dam. In areas where the river bends, gaps in the survey lines are created on the outside of the bend. In these gaps, additional data was gathered to insure complete coverage of the area to be surveyed.

Horizontal positioning was collected from the positioning system and electronically paired with soundings from an Innerspace Technologies IT-455 single beam fathometer in Hypack Max 2009 survey control software at a rate of 10 points per second. The optional 200khz 3 degree tranducer was used to help insure accurate readings in the impoundment due to the step sides and potential water depth.

Prior to the commencement of survey operations, a bar check was conducted to adjust for draft and speed of sound in order to ensure accurate sounding data. A bar check was also conducted during the day and at the end of each day to be sure the settings continued to be correct. The antenna for the positioning system was mounted directly above the transducer, eliminating any positioning offset errors. In areas where the water was too shallow for the fathometer or areas with dense aquatic vegetation, a lead line was used to take spot measurements. These areas included the waters less than 3 feet deep from transect 61+25 to 81+75.

Post processing involved removing bad sounding points created by propeller turbulence and aquatic vegetation. The lead line data and fathometer data were then combined into a single data set. The data was then sorted to eliminate points closer than 10 feet apart and to reduce the data to an X, Y, Z file. Finally, the sorted data was point plotted and contoured on a geo-referenced AutoCAD drawing.

The impoundment was found to have water depths ranging from 1.0 foot to 37.4 feet. The shorelines typically have steep to near vertical slopes. The historic creek channel is still readily apparent in the contoured hydrographic data results through most of the survey area.

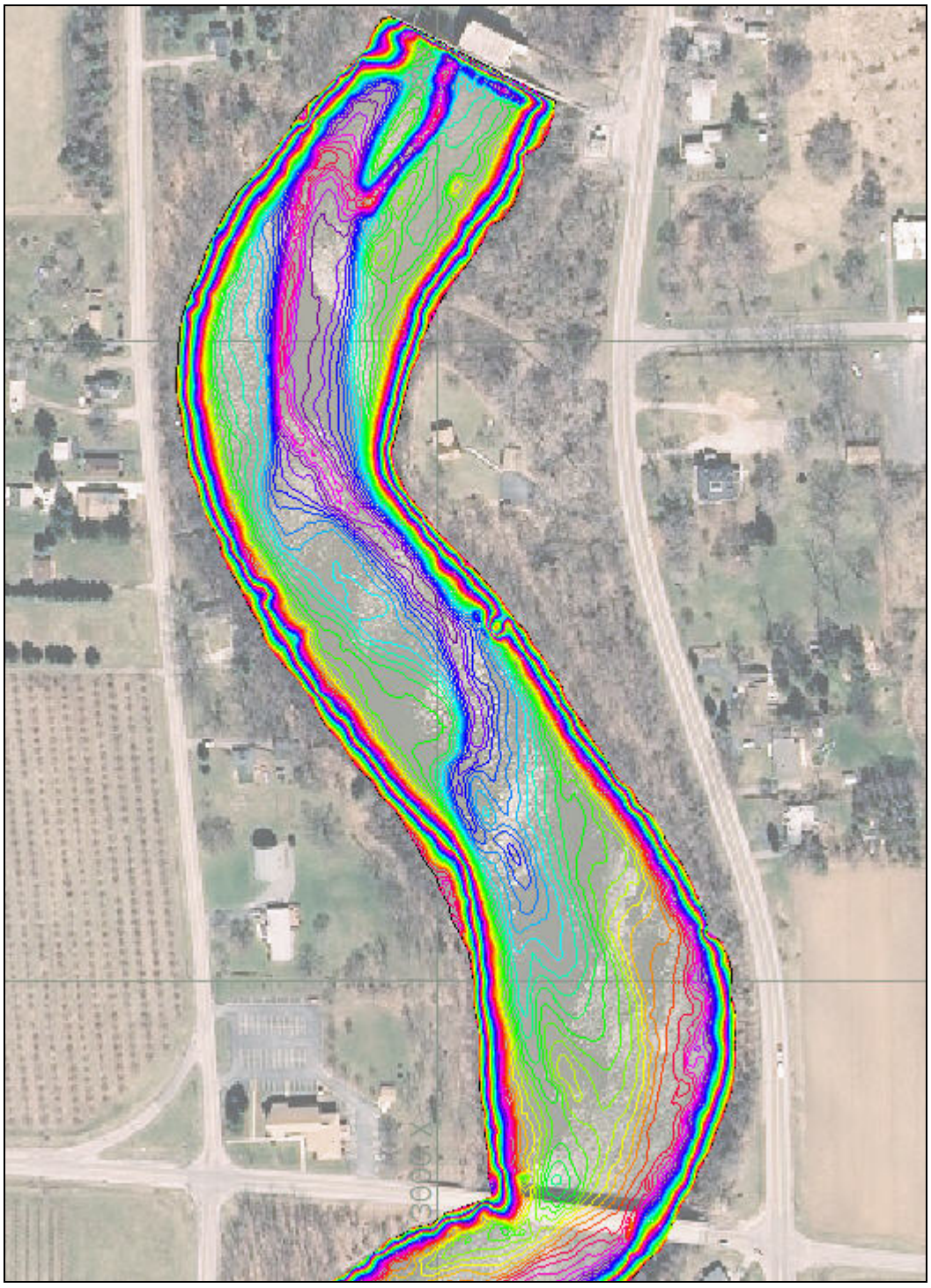


Figure 2. Contours at 0.5 foot intervals from 0+00 to 21+00.

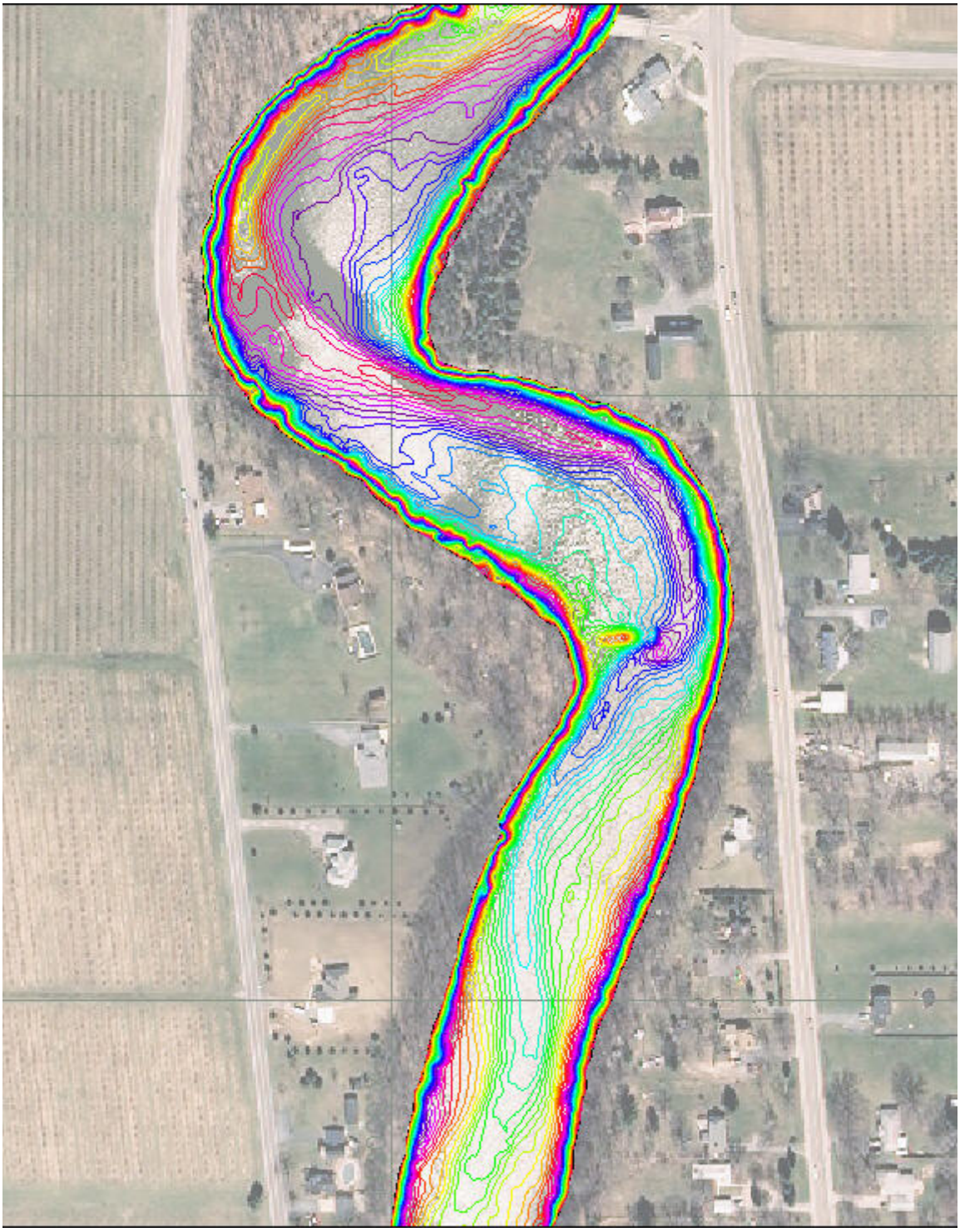


Figure 3. Contours at 0.5 foot intervals from 20+00 to 44+00.

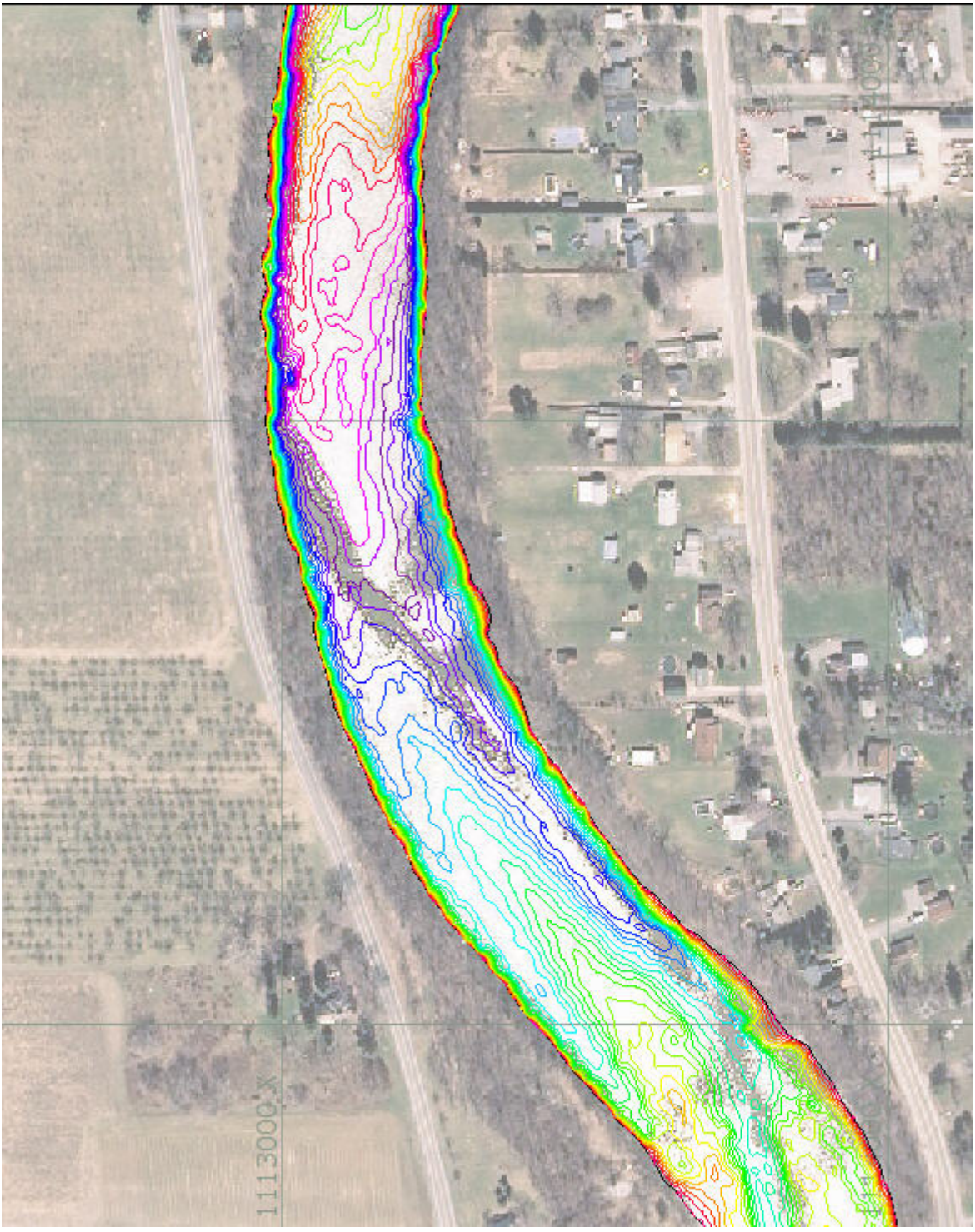


Figure 4. Contours at 0.5 foot intervals from 44+00 to 64+00.

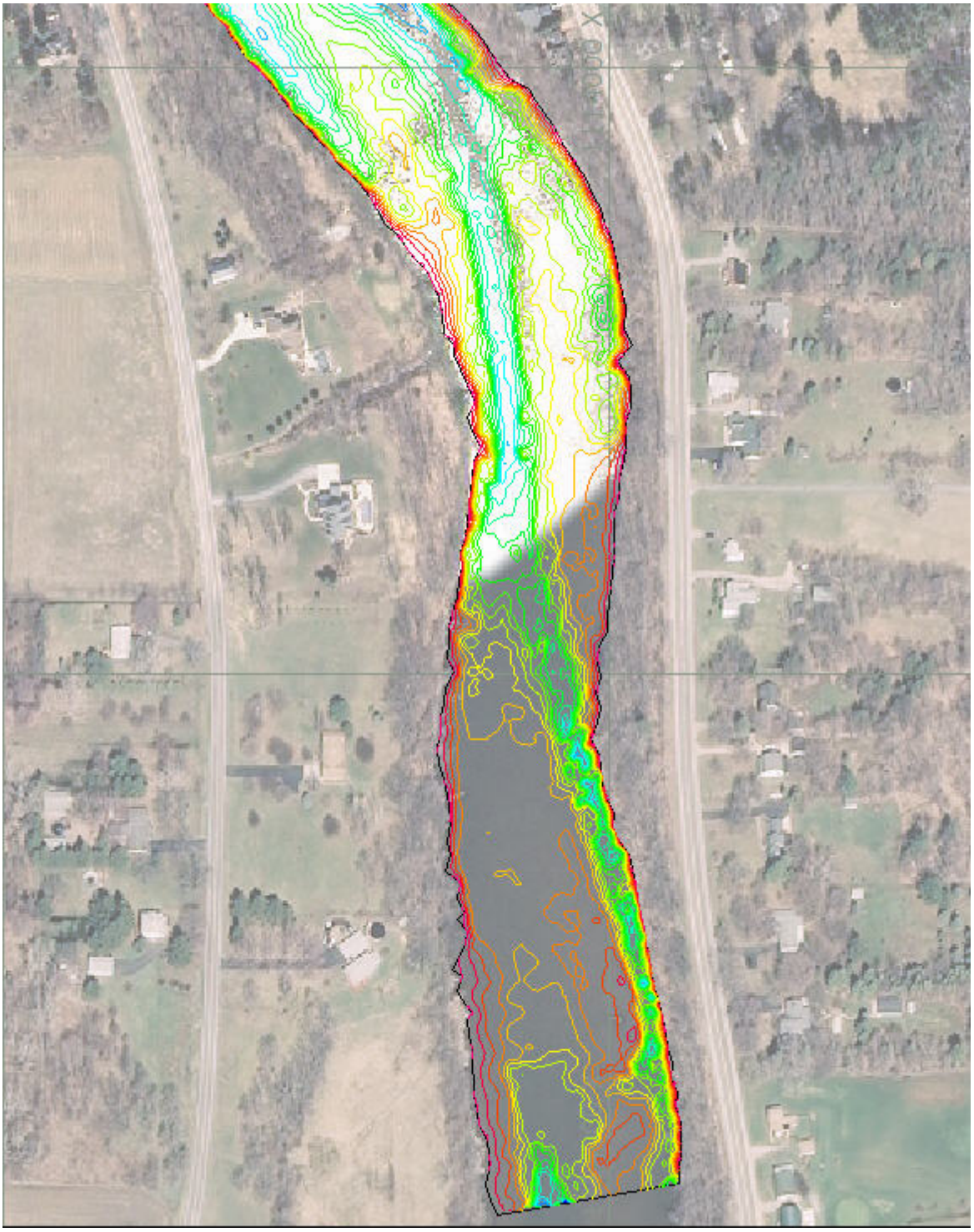


Figure 5. Contours at 0.5 foot intervals from 60+00 to 81+75.

C. Sediment Thickness Probing Data Collection and Results

A sediment probing survey was conducted to determine the thickness of soft sediments to support the development of a sediment sampling plan. The probe, consisting of a 10 foot piece of steel re-bar welded to the end of sections of marked ¾ inch galvanized pipe, was pushed into the sediment until refusal was encountered. In many cases, the type of material causing refusal could be detected through feedback from the probing device. Five transects, with 3 probes per transect were conducted at lines 48+00, 58+00, 67+00, 77+00, and 81+50. Sediment thickness ranged from a minimum of 6.2 feet to a maximum of 12.8 feet, with an average sediment thickness of 10.7 feet at the locations probed. The most commonly detected material causing refusal was clay, with sand and rock at several of the locations.

Transect	Easting NY West SP feet	Northing NY West SP feet	Top of Sediment Depth	Refusal Depth	Refusal material
48+00	1113020.9	1203280.9	12.7	24.4	Sand
48+00	1113082.2	1203281.3	11.6	20.1	Clay
48+00	1113131.3	1203282.5	12.0	20.5	Sand
58+00	1113280.6	1202270.7	7.0	16.8	Rock
58+00	1113334.5	1202308.7	6.0	18.0	Clay
58+00	1113420.7	1202362.0	9.0	18.5	Rock
67+00	1113810.8	1201575.0	6.5	17.9	Clay
67+00	1113917.2	1201604.2	2.2	15.0	Clay
67+00	1113985.0	1201633.5	4.5	17.5	Clay
77+00	1113817.8	1200592.0	1.9	13.6	Clay
77+00	1113904.3	1200603.2	1.4	13.7	Clay
77+00	1114017.2	1200616.1	5.5	16.9	Rock
81+50	1113906.2	1200154.7	5.5	11.7	Clay
81+50	1113998.9	1200169.5	1.4	12.9	Rock
81+50	1114094.0	1200180.2	3.4	14.8	Rock

Table 1. Probing Results.

III. PROJECT CONCLUSIONS

A hydrographic and sediment thickness probing survey was conducted covering the area where future sampling activities will potentially be conducted on 18 Mile Creek, in Burt, New York. The area surveyed extended from shoreline to shoreline for more than 8,175 feet upstream from the Burt Hydroelectric Dam along 18 Mile Creek. The primary goal of the survey was to establish bottom elevations and contours within the impoundment and to collect water depth and sediment thickness data to support the development of a sediment sampling plan.

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The hydrographic and probing surveys were conducted using the positioning system with horizontal accuracy of better than 1 meter and a vertical accuracy of better than 0.2 feet. The RTK-DGPS system consisted of a stationary base station operating over a known control point. Positioning corrections calculated by the base station were transmitted at 10 times per second via radio modem to another GPS receiver on the survey vessel. This allows the positioning accuracy for the survey vessel using RTK-DGPS to be on the order of 3-cm in the horizontal and 2-cm in the vertical planes.

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An Innerspace Technologies model 455 fathometer was used to conduct the hydrographic survey. Positioning data was collected from the positioning system and electronically paired with the soundings from the fathometer in Hypack Max 2009 survey control software. Prior to the commencement of survey operations, a bar check was conducted to adjust for draft and speed of sound in order to ensure accurate sounding data. A bar check was also conducted during the day and at the end of each day to be sure the settings continued to be correct. The antenna for the positioning system was mounted directly above the transducer, eliminating any positioning offset errors. In areas where the water was too shallow for the fathometer or areas with dense aquatic vegetation, a lead line was used to take spot measurements. These areas included the waters less than 3 feet deep from transect 61+25 to 81+75. Following the survey, the data was processed, point plotted, and contoured.

The impoundment was found to have water depths ranging from 1.0 foot to 37.4 feet. The shorelines typically have steep to near vertical slopes. The historic creek channel is still readily apparent in the contoured hydrographic data results through most of the survey area.

A sediment probing survey was conducted to determine the thickness of soft sediments. The probe, consisting of a 10 foot piece of steel re-bar welded to the end of sections of marked ¾ inch galvanized pipe, was pushed into the sediment until refusal was encountered. In many cases, the type of material causing refusal could be detected through feedback from the probing device. Five transects, with 3 probes per transect were conducted at lines 48+00, 58+00, 67+00, 77+00, and 81+50. Sediment thickness ranged from a minimum of 6.2 feet to a maximum of 12.8 feet, with an average sediment thickness of 10.7 feet at the locations probed. The most commonly detected material causing refusal was clay, with sand and rock at several of the locations.

Appendix A

Equipment Specifications

MS750

Dual Frequency RTK Receiver for Precise Dynamic Positioning

Key features and benefits

- **20 Hz position update rate**
- **Less than 20 milliseconds position latency**
- **Centimeter-level position accuracy**
- **Front panel display & keypad for status monitoring and configuration**
- **User-defined local coordinates direct from receiver**
- **Industry standard CAN bus interface**

The MS750™ represents the highest level of accuracy and response available from a dual frequency GPS receiver. The receiver is specifically designed to allow the easy integration of reliable centimeter-level positions to any guidance or control application.

Accuracy and Response Times

Dynamic platforms, require virtually instantaneous position reports multiple times per second. The MS750 delivers positions to guidance or control loop software twenty times per second with a latency of less than 20 milliseconds. This responsiveness is matched with a horizontal accuracy of two centimeters and vertical accuracy of three centimeters. For the most precise applications, the MS750 provides one centimeter accuracy horizontally at a 5 Hz rate with a small increase in latency.

Interfacing and Configuration Ease

The MS750 is designed to plug right into your application with minimal development. An easy to-use application file interface enables the user to completely program receiver operation with a single command. Alternately, the receiver can be configured via the user-friendly built-in display and keyboard interface, or by the included Windows-based Configuration Toolbox software. Multiple configurations can be stored in the receiver as files and activated when desired. Local datum and transformation parameters may be loaded directly into the receiver. Therefore, output grid coordinates are compatible with GPS and traditional survey systems that may be in use on the same site. ASCII or Binary messages may be output through any of the three bi-directional serial ports. The receiver also includes support for the industry standard CAN (Controller Area Network) interface.



Dual Frequency RTK Receiver for Precise Dynamic Positioning

Advanced Technology

The accuracies, update rates and latencies available in the MS750 are made possible through a GPS architecture specifically designed for demanding dynamic positioning applications. Reliable operation in the most adverse environments, such as radio interference experienced at construction or mining sites, is a strict requirement. Custom designed hardware with Supertrak™ multibit GPS signal technology and Everest™ advanced multipath suppression provide superior tracking especially for weaker, low elevation satellites.

Both the RTCM format for differential GPS corrections and Trimble's published Compact Measurement Record (CMR) differential data can be received simultaneously, allowing the receiver to choose the optimum source and provide seamless navigation. Available as an option is the ability to calculate the baseline vector between two moving receivers to centimeter accuracy. The MS750 addresses a vast range of applications in the field of machine positioning, guidance and control.

Trimble

MS750

Dual Frequency RTK Receiver for Precise Dynamic Positioning

STANDARD FEATURES

- Centimeter accuracy, real-time positioning
- 20 Hz position updates
- < 20 ms position latency
- Front panel display & keypad
- User-defined local coordinates direct from receiver
- 3 serial I/O ports
- 2 CAN ports
- 1 PPS Output
- Trimble CMR Input/Output
- RTCM Input/Output
- One year hardware warranty
- Compact, easy mounting design
- Synchronized 5 Hz position updates

OPTIONS AND ACCESSORIES

- Moving Base RTK
- Rugged L1/L2 machine mount antenna
- Micro-Centered Antenna
- 5 m, 7.5 m, 10 m, 24 m & 30 m antenna cables
- Data extension cable
- Extended hardware warranty
- Firmware and Software update service

ORDERING INFORMATION

MS750 **Part Number 36577-00**

Includes MS750 receiver, Configuration Toolbox software, operating manual, power/data cable, data/1 PPS cable

PHYSICAL CHARACTERISTICS

Size	14.5cmW × 5.1cmH × 23.9cmD (5.7²W × 2.0² H × 9.4²D)
Weight	1.0 kg (2.25 lbs)
Power	12VDC/24VDC, 9 Watts

ENVIRONMENTAL CHARACTERISTICS

Operating temp	-20°C to +60°C
Storage temp	-30°C to +80°C
Humidity	MIL 810 E, Meth. 507.3 Proc III, Aggravated, 100% condensing
Vibration	MIL 810 D, Tailored Random 3gRMS Operating Random 6.2gRMS Survival
Mechanical Shock	MIL 810 D ± 40 g Operating ± 75 g Survival
EMC	
Radiated Emissions	CISPR 12
Conducted Emissions	SAE J1113/41
Radiated Immunity	ISO/DIS 13766, 30V/m
ESD	±15KV
Input Voltage Transients	ISO 7637-2

TECHNICAL SPECIFICATIONS

Tracking	9 channels L1 C/A code, L1/L2 full cycle carrier Fully operational during P-code encryption		
Signal processing	Supertrak Multibit Technology Everest Multipath Suppression		
Positioning mode	**Accuracy[1]**	**Latency[2]**	**Max Rate**
Synchronized RTK	1cm + 2ppm Horizontal 2cm + 2 ppm Vertical	300ms[3]	5 Hz Std
Low Latency	2cm + 2ppm Horizontal[4] 3cm + 2 ppm Vertical	< 20ms	20Hz
DGPS	< 1m	< 20ms	20Hz

[1] 1 sigma level
[2] At maximum output rate
[3] Dependent on data link throughput
[4] Assumes 1 second data link delay

Initialization	Automatic OTF (on-the-fly) while moving
Time required	Typically < 1 minute
Range	Up to 20 km from base for RTK
Start-up	< 90 seconds from power on to positioning < 30 seconds with recent ephemeris
Communications	3 × RS-232 ports. Baud rates up to 115,200 2 × CAN/J1939
Configuration	Via front panel display & keypad, Configuration Toolbox Software or user definable application files
Output Formats	NMEA-0183: GGK, GGA, ZDA, VTG, GST, PJT and PJK Trimble Binary Streamed Output

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Trimble 5700 GPS System

One receiver, many configurations, for greater flexibility and choice

The Trimble® 5700 GPS receiver is an advanced, but easy-to-use, surveying instrument that is rugged and versatile enough for any job.

Combine your 5700 with the antenna and radio that best suit your needs, and then add the Trimble controller and software of your choice for a total surveying solution. The powerful 5700 GPS system will provide all the advanced technological power and unparalleled flexibility you need to increase your efficiency and productivity in any surveying environment.

Advanced GPS receiver technology

The 5700 is a 24-channel dual-frequency RTK GPS receiver featuring the advanced Trimble Maxwell™ technology for superior tracking of GPS satellites, increased measuring speed, longer battery life through less power use, and optimal precision in tough environments. WAAS and EGNOS capability lets you perform real-time differential surveys to GIS grade without a base station.

Modular design for versatility

For topographic, boundary, or engineering surveying, clip the receiver to your belt, carry it in a comfortable backpack, or configure it with all components on a lightweight range pole. With the receiver attached to your site vehicle, you can survey a surface as fast as you can drive! For control applications, attach the receiver to a tripod...it's designed to work the way your job requires.

Full metal jacket...and lightweight

The 5700 GPS receiver boasts the toughest mechanical and waterproofing specs in the business. Its magnesium alloy case is stronger than aluminum,



but also 30% lighter—the 5700 weighs just 1.4 kg (3 lb) with batteries. Whether you're collecting control points on a tripod, or scrambling down a scree slope collecting real-time kinematic data, the receiver is light enough and tough enough to carry on performing.

Fast and efficient data storage and communications

Use the receiver's CompactFlash memory to store more than 3,400 hours of continuous L1/L2 data collection at an average of 15-second intervals. Transfer data to a PC at speeds of more than 1 megabit per second through the super-fast USB port. Your choice of UHF radio modem is built in to the receiver to provide RTK communications receiving without the need for cables or extra power!

Your choice of Trimble antenna

Choose the high-accuracy Trimble GPS antenna that best suits your needs: the lightweight and portable Zephyr™ antenna for RTK roving, or the Zephyr Geodetic™ antenna for geodetic surveying.

The Zephyr Geodetic antenna offers submillimeter phase center repeatability and excellent low-elevation tracking, while the innovative design of its Trimble Stealth™ ground plane literally burns up multipath energy using technology similar to that used by stealth aircraft to hide from radar. The Zephyr Geodetic antenna thus provides unsurpassed accuracy from a portable antenna.

Key Benefits

- Industry-leading technology provides superior performance
- Flexible configurations put you in total control
- Rugged, high-performance hardware is built to last
- With the Trimble controller and software of your choice, enjoy seamless integrated surveying

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Trimble 5700 GPS System

General

- Front panel for on/off, one-button-push data logging, CompactFlash card formatting, ephemeris and application file deletion, and restoring default controls
- LED indicators for satellite tracking, radio-link, data logging, and power monitoring
- Tripod clip or integrated base case

Performance specifications

Measurements

- Advanced Trimble Maxwell technology
- High-precision multiple correlator L1 and L2 pseudorange measurements
- Unfiltered, unsmoothed pseudorange measurement data for low noise, low multipath error, low time domain correlation, and high dynamic response
- Very low noise L1 and L2 carrier phase measurements with <1 mm precision in a 1 Hz bandwidth
- L1 and L2 Signal-to-Noise ratios reported in dB-Hz
- Proven Trimble low-elevation tracking technology
- 24 Channels L1 C/A Code, L1/L2 Full Cycle Carrier, WAAS/EGNOS.

Code differential GPS positioning[1]

Horizontal . . . . . ±(0.25 m + 1 ppm) RMS
Vertical . . . . . ±(0.5 m + 1 ppm) RMS
WAAS differential positioning accuracy typically <5 m 3DRMS[2]

Static and FastStatic GPS surveying[1]

Horizontal . . . . . ±5 mm + 0.5 ppm RMS
Vertical . . . . . ±5 mm + 1 ppm (× baseline length) RMS

Kinematic surveying[1]

Real-time and postprocessed kinematic surveys
Horizontal . . . . . ±(10 mm + 1 ppm) (× baseline length) RMS
Vertical . . . . . ±(20 mm + 1 ppm) RMS
Initialization time . . . . . Single/Multi-base minimum 10 sec + 0.5 times baseline length in km, up to 30 km
Scalable GPS infrastructure initialization time . . . . . <30 seconds typical anywhere within coverage area
Initialization reliability[3] . . . . . Typically >99.9%

Hardware

5700 GPS receiver

Physical:
Casing . . . . . Tough, lightweight, fully sealed magnesium alloy
Waterproof . . . . . Tested to IPX7 standards
Shock and vibration . . . . . Tested and meets the following environmental standards:
Shock . . . . . MIL-STD-810F to survive a 1 m (3.28 ft) drop onto concrete
Vibration . . . . . MIL-STD-810-F on each axis
Weight . . . . . With internal batteries, internal radio, internal battery charger, standard UHF antenna: 1.4 kg (3 lb)
As entire RTK rover with batteries for greater than 7 hours, less than 4 kg (8.8 lb)
Dimensions (W×H×L) . . . . . 13.5 cm × 8.5 cm × 24 cm (5.3 in × 3.4 in × 9.5 in)

Electrical:
Power . . . . . DC input 11 to 28 V DC with over voltage protection
Power consumption . . . . . 2.5 W receiver only, 3.75 W including internal radio
Battery . . . . . Greater than 10 hours data logging, or greater than 7 hours of RTK operation on two internal 2.0 Ah lithium-ion batteries
Battery weight . . . . . 0.1 kg (3.5 oz)
Battery charger . . . . . Internal with external AC power adapter; no requirement for external charger
Power output . . . . . 11.5 to 20 V DC (Port 1), 11.5 to 27.5 V DC (Port 3) on external power input
Certification . . . . . Class B Part 15 FCC certification, CE Mark approved, C-Tick approved, Canadian FCC

Environmental:
Operating temperature[4] . . . . . –40 °C to 65 °C (–40 °F to 149 °F)
Storage temperature . . . . . –40 °C to 80 °C (–40 °F to 176 °F)
Humidity . . . . . 100%, condensing

Communications and data storage:

- 2 external power ports, 2 internal battery ports, 3 RS232 serial ports
- Integrated USB for data download speeds in excess of 1 Mb per second
- External GPS antenna connector
- CompactFlash advanced lightweight and compact removable data storage. Options of 64 MB or 128 MB from Trimble
- More than 3,400 hours continuous L1+L2 logging at 15 seconds with 6 satellites typical with 128 MB card
- Fully integrated, fully sealed internal UHF radio modem option
- GSM, cellphone, and CDPD modem support
- Dual event marker input capability
- 1 Hz, 2 Hz, 5 Hz, and 10 Hz positioning and data logging
- 1 pulse per second output capability
- CMRII, CMR+, RTCM 2.*x* and 3.*x* input and output standard
- 14 NMEA outputs

Zephyr antenna

Dimensions . . . . . 16.2 cm (6.38 in) diameter × 6.2 cm (2.44 in) height
Weight . . . . . 0.55 kg (1.20 lb)
Operating temperature . . . . . –40 °C to 70 °C (–40 °F to 158 °F)
Humidity . . . . . 100% humidity proof, fully sealed
Shock and vibration . . . . . Tested and meets the following environmental standards:
Shock . . . . . MIL-STD-810-F to survive a 2 m (6.56 ft) drop onto concrete
Vibration . . . . . MIL-STD-810-F on each axis

- 4-point antenna feed for submillimeter phase center repeatability
- Integral low noise amplifier
- 50 dB antenna gain

Zephyr Geodetic antenna

Dimensions . . . . . 34.3 cm (13.5 in) diameter × 7.6 cm (3 in) height
Weight . . . . . 1.31 kg (2.88 lb)
Operating temperature . . . . . –40 °C to 70 °C (–40 °F to 158 °F)
Humidity . . . . . 100% humidity proof, fully sealed
Shock and vibration . . . . . Tested and meets the following environmental standards:
Shock . . . . . MIL-STD-810-F to survive a 2 m (6.56 ft) drop onto concrete
Vibration . . . . . MIL-STD-810-F on each axis

- 4-point antenna feed for submillimeter phase center repeatability
- Integral low noise amplifier
- 50 dB antenna gain
- Trimble Stealth ground plane for reduced multipath

1 Accuracy may be subject to conditions such as multipath, obstructions, satellite geometry, and atmospheric parameters. Always follow recommended survey practices.
2 Depends on WAAS/EGNOS system performance.
3 May be affected by atmospheric conditions, signal multipath, and satellite geometry. Initialization reliability is continuously monitored to ensure highest quality.
4 Receiver operates normally to –40 °C (–40 °F) but some office-based functions such as USB download or internal battery charging are not recommended at temperatures below freezing.

Specifications subject to change without notice.

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DESCRIPTION

The Innerspace Technology Model 455 Survey Depth Sounder provides analog and digital depth on high resolution LCD display screens. The small, lightweight unit is ideal for use on small boats for hydrographic and GIS surveys, and also has applications on general purpose workboats and Corps of Engineers reconnaissance vessels. The 455 has most of the capabilities of Innerspace's legendary thermal printing depth sounder recorders, except for the thermal chart recording, plus it has many new features. Designed with the operator in mind, the easy-to-use menu is controlled via up / down, left / right arrows; no numerical entries are required and, when power is turned off, all entries are saved for next power on. In the operation mode, operator entries are always in view on the LCD display screen, along with the large numeral, digitized depth. The 455's analog display provides a continuous, high resolution bottom profile with alphanumerical annotation of pertinent information including: Speed-of-Sound, Tide, Draft, Time and Fix Number. For a hard copy, a screen print of the analog data may be sent to a standard computer printer or it can be stored internally on a 24 or 48 mb integrated circuit for later recall.

MODEL 455



SPECIFICATIONS

GRAPHIC DISPLAY

- 640 x 480 Pixel Monochrome Transflective LCD with Backlight and Contrast Control
- 5 ¾ in. x 4 ¾ in. viewing area
- Emulates paper chart recorder

NUMERIC DISPLAY

- 4 lines x 40 characters with large 1 in. high numerics and Backlight

OPERATION

- Menu driven parameter selection on alphanumeric display

PARAMETER SELECTION

- Speed-of-Sound, Tide, Draft, Gate Width, Scale, Backlight, Com Ports and many more

RESOLUTION

- .1 Unit graphic and numeric

DEPTH RANGES

- 0-45, 40-85, 80-125, 120-165, 160-205 Feet or Meters (dm and cm selection)
- Multipliers: 1, 2, 10
- Auto Ranging

ANNOTATION

- LCD graphic display numerically displays Speed-of-Sound, Tide, Draft, Date, Time, Depth, Fix number and GPS Data

TRANSMITTER

- Front panel switch selectable power levels: 250 watts to 10 watts in 4 levels

RECEIVER

- Time varied automatic gain adjustment under microprocessor control 20 or 30 Log
- Front panel manual gain control 20db
- Adjustable Blanking

DIGITIZER

- Range Gated (selectable widths)
- Initial Depth Entry
- 4 Modes of Operation
- Gate Mark on Graphic Display

UTILITIES

- Depth Simulator
- Chart Speed
- Screen capture to memory

INPUTS/OUTPUTS

- RS232 Port A
- RS232 Port B
- RS232 Port C
- Parallel Port
- Keyboard and VGA Port
- GPS Antenna with GPS option
- Floppy Port

TRANSDUCER

- 200kHz 3°

POWER

- 12VDC, 2½ Amp

ENCLOSURE

- Drawn aluminum case
- Aluminum panel painted to resist corrosion.
- Removable handle and soft carry bag included.

OVERALL SIZE

- 13 in. Wide x 9 in. High x 9 in. Deep
- 38.1 cm Wide x 22.86 High x 22.86 Deep

WEIGHT

- 15 lb.
- 6.8 kg

OPTIONS:

- Heave sensor
- Remote VGA display
- Tabletop / overhead mounting bracket
- Custom annotation (1 Line 40 Characters)
- Remote readout (large numeric)
- Continuous analog storage, 48mb
- AC power supply
- Portable transducer mounts
- Floppy Disk Drive in travel case
- Mini keyboard (89 key) and adapter cable
- 125 kHz transceiver and transducer 125kHz 7º
- Laplink software
- Color graphic display

Appendix B

Data Summary Report Site Characterization

REGION 5 RAC2

REMEDIAL ACTION CONTRACT FOR

Remedial, Enforcement Oversight, and
Non-Time Critical Removal Activities at Sites of Release
or Threatened Release of Hazardous Substances in Region 5

DATA SUMMARY REPORT

Site Characterization

Eighteenmile Creek Area of Concern
Niagara County, New York

WA No. 051-RICO-1527/Contract No. EP-S5-06-01

March 2011

PREPARED FOR

U.S. Environmental Protection Agency

PREPARED BY

CH2M HILL
Ecology and Environment, Inc.
Environmental Design International, Inc.
Teska Associates, Inc.

FOR OFFICIAL USE ONLY

DATA SUMMARY REPORT

EIGHTEENMILE CREEK AREA OF CONCERN
Niagara County, New York

Site Characterization

WA No. 051-RICO-1527/Contract No. EP-S5-06-01

March 2011

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Acronyms and Abbreviations

°C	-	degrees Celsius
%D	-	percent difference
AOC	-	Area of Concern
ATL	-	Atlantic Testing Laboratories, Inc.
AVS/SEM	-	acid volatile sulfides/simultaneously extracted metals
bgs	-	below ground surface
Bonner	-	Bonner Analytical Testing
BUI	-	Beneficial use impairment
Cape	-	Cape Fear Analytical
CCB	-	continuing calibration blank
CCV	-	continuing calibration verification
CLP	-	Contract Laboratory Program
COC	-	chain of custody
CROL	-	contract required quantitation limit
DCB	-	decachlorobiphenyl
DUSR	-	data usability summary reports
E & E	-	Ecology and Environment, Inc.
EEEPC	-	Ecology and Environment Engineering, P.C.
EDD	-	electronic deliverable
ESAT	-	Environmental Services Assistance Team
FS	-	feasibility study
FSP	-	field sampling plan
GC/MS	-	gas chromatography/mass spectrometry
GLLA	-	Great Lakes Legacy Act

GLNPO	-	Great Lakes National Program Office
GPS	-	Global Positioning System
GIS	-	Geographical Information System
ICP	-	inductively coupled plasma
ICS	-	interference check sample
IDL	-	instrument detection limit
IJC	-	International Joint Commission
KAP	-	KAP Technologies
LCS	-	laboratory control sample
µg/kg	-	micrograms per kilogram
mg/kg	-	milligrams per kilogram
MDL	-	method detection limit
MS/MSD	-	matrix spike/matrix spike duplicate
NCSWCD	-	Niagara County Soil and Water Conservation District
NYS	-	New York State
NYSDEC	-	New York State Department of Environmental Conservation
PAH	-	polynuclear aromatic hydrocarbon
PCB	-	polychlorinated biphenyl
PCOC	-	potential constituents of concern
PCT	-	Project Coordination Team
PDOP	-	Positional Dilution of Precision
PID	-	photoionization detector
ppm	-	parts per million
PQL	-	practical quantitation limit
PVC	-	polyvinyl chloride
QA/QC	-	quality assurance/quality control
QAPP	-	quality assurance project plan

RAP	-	Remedial Action Plan
RAC	-	Remedial Action Committee
ROD	-	record of decision
RPD	-	relative percent difference
SDG	-	sample delivery group
SMO	-	sample management office
SOW	-	Scope of Work
SPDES	-	State Pollutant Discharge Elimination System
SVOC	-	semivolatile organic compounds
TA	-	TestAmerica, Burlington
TAGM	-	Technical and Administrative Guidance Memorandum
TAL	-	target analyte list
TCDD	-	2,3,7,8-tetrachlorodibenzo-p-dioxin
TCL	-	target compound list
TCLP	-	toxicity characteristic leaching procedure
TEQ	-	toxic equivalent
TOC	-	total organic carbon
USACE	-	United States Army Corps of Engineers
USGS		United States Geological Survey
USEPA	-	United States Environmental Protection Agency
VOC	-	volatile organic compound

Distribution List

All versions of this plan will be distributed to the project coordination team or as noted below.

Report	Description	Revision	Date Sent
Data Summary Report	Presents the data collected for Site Characterization Investigation.	1	March 2011

SECTION 1

Introduction

This data summary report summarizes the site characterization investigation at the Eighteenmile Creek Area of Concern (AOC). Eighteenmile Creek is located in Niagara County in western New York State. The Eighteenmile Creek AOC addressed under this investigation includes Olcott Harbor and extends upstream through the city of Lockport to the New York State (NYS) Barge Canal (see Figure 1-1). The effort was performed for the United States Environmental Protection Agency's (USEPA's) Great Lakes National Program Office (GLNPO) in accordance with the Scope of Work (SOW) for Work Assignment No. 051-RICO-1527 Contract No. EP-S5-06-01. CH2M HILL and their team contractor, Ecology and Environment-Engineering, P.C. (EEEPC) implemented the investigation to collect the data that will be used in the alternatives evaluation process and the development of the feasibility study (FS).

The Eighteenmile Creek Great Lakes Legacy Act (GLLA) Project Coordination Team (PCT) includes GLNPO, the Niagara County Soil and Water Conservation District (NCSWCD), the New York State Department of Environmental Conservation (NYSDEC), the United States Army Corps of Engineers (USACE), and USEPA Region 2.

1.1 Project Location

Eighteenmile Creek flows through central Niagara County, New York, from its headwaters in the city of Lockport to its discharge to Lake Ontario in Olcott, New York. Eighteenmile Creek has two branches (East and West) immediately north of the Barge Canal in Lockport, New York. Waters from the East Branch originate from a culverted section of the creek south of the Barge Canal that is supplemented by water flowing through a spillway in the Barge Canal south wall into an underlying tunnel near the Mill Street Bridge. The waters from the West Branch originate from the dry dock on the north side of the Barge Canal and flow north toward Clinton Street. Waters from the East and West Branch converge on the south side of Clinton Street and flow under Clinton Street to the Mill Pond on the north side of Mill Street. The waters from Eighteenmile Creek eventually discharge to Lake Ontario in Olcott, New York (located approximately 15 miles north of the city of Lockport).

Eighteenmile Creek is surrounded by six residential townships. The land within Eighteenmile Creek watershed consists primarily of croplands and orchards, with residential, commercial, and industrial areas located around Lockport, Newfane, and Olcott Harbor. The investigation area is primarily in a rural/residential area. The creek within the AOC is used extensively for fishing, boating, and recreation.

The potential contaminant sources include the canal, historically industrialized areas of Lockport, and the Lockport wastewater treatment plant. The Burt and Newfane dams may serve as areas where contaminated sediments accumulate in the creek

1.2 Project Background

The Eighteenmile Creek Remedial Action Plan (RAP) was prepared by NYSDEC and the Eighteenmile Creek Remedial Action Committee (RAC) in 1997. The RAP was prepared in response to a recommendation by the Water Quality Board of the International Joint

Commission (IJC) that RAPs be prepared for the 43 AOCs identified within the Great Lakes basin, including the Eighteenmile Creek AOC. The NCSWCD is the Eighteenmile Creek RAP Coordinator, having assumed management of the RAP in 2005 with funding support from the USEPA's GLNPO. The NCSWCD has been involved in investigative and remedial activities and public education/outreach activities within communities affected by the Eighteenmile Creek AOC.

Investigations completed in the 1980s and 1990s indicated that the sediments of Eighteenmile Creek and within the AOC may be contaminated with polychlorinated biphenyls (PCBs). PCBs are factors in restrictions on fish and wildlife consumption, bird and animal deformities, or reproductive problems and degradation of benthos. A surface sediment sample collected in 1994 from Olcott Harbor contained PCBs at a concentration greater than the NYSDEC guidance for screening of contaminated sediments. Ten of 15 fish flesh samples from the creek contained PCBs at levels above the U.S. Food and Drug Administration action level of 2.0 milligrams per kilogram (mg/kg). Sediment samples collected during NYSDEC investigations in the upstream portion of the creek (Flintkote Site) contained PCBs at 49 mg/kg (TVGA 2005).

A beneficial use impairment (BUI) investigation was conducted in 2007 to determine whether Eighteenmile Creek is impaired in regard to existence of fish tumors and other deformities; status of fish and wildlife populations; and status of bird or mammal deformities or reproductive impairment. A wide range of data was collected from Eighteenmile Creek and a similar background stream, Oak Orchard Creek, and the data from the two creeks were compared. The data collected for this investigation suggest that bird and amphibian populations at Eighteenmile Creek are not impaired, but that fish and mammal populations likely are. The possible impairment of fish and mammal populations results from high levels of PCBs in fish. Whole-body concentrations of Aroclors 1248, 1254, and 1260 and total PCBs were an order of magnitude greater in brown bullheads from Eighteenmile Creek compared with the levels in brown bullheads from Oak Orchard Creek (E & E 2009). Whole-body concentrations of dioxins/furans (expressed as the 2,3,7,8-tetrachlorodibenzo-p-dioxin [TCDD] toxic equivalent [TEQ]) in bullheads from Eighteenmile Creek were approximately five times greater than in bullheads from Oak Orchard Creek.

Sources and potential sources of PCBs to Eighteenmile Creek have been identified as industrial and municipal wastewater discharges, combined sewer overflows, inactive hazardous waste sites, the New York Barge Canal discharge, contaminated sediments already present in the creek, and an unknown source between Olcott Street and North Transit Road. Extensive progress to reduce sources to the creek has been made by monitoring discharges and updating State Pollutant Discharge Elimination System (SPDES) permits for industrial and municipal wastewater dischargers and addressing inactive hazardous waste sites. NYSDEC has divided the site into the Flintkote Site and the Eighteenmile Creek Corridor site. NYSDEC has prepared a record of decision (ROD) for the Flintkote site (NYSDEC 2006b). NYSDEC conducted a remedial investigation of the Corridor site in August of 2005 (NYSDEC 2006a) and performed follow-up investigations in 2007 and 2008 (NYSDEC 2006a and EEEPC 2007 and 2009). NYSDEC has prepared a proposed plan for the corridor site and expects a ROD to be issued in 2010.

Under contract to the NCSWD, Ecology and Environment, Inc. (E & E) performed the PCB trackdown study (E & E 2007). PCB screening was conducted on grab samples from 80 locations between Harwood Street and Stone Road (8,000 feet), including east of the confluence between Gulf Creek and Eighteenmile Creek and an unmapped drainage on the west side of Eighteenmile Creek. Approximately 2,000 feet of creek within this section was not investigated because minimal sediment was present and there were safety concerns related to the steep

gradient of the creek and high flow velocities off the Niagara Escarpment. PCBs were detected in 54 of the samples at concentrations ranging from 59 to 4,300 micrograms per kilogram (µg/kg). In addition, three samples at various depths from a total of 12 cores were collected and submitted to an analytical laboratory to confirm PCB screening levels. A comparison of PCB screening to confirmation results indicates the screening results need to be increased by 40 percent to be consistent with the confirmation results. The PCB concentrations in the core samples ranged from 12 to 69,000 µg/kg and were not detected in only six of the samples.

The results indicate that PCBs are present in sediment at concentrations exceeding the screening criteria throughout the Eighteenmile Creek AOC. The core sample results show a general decrease in PCB concentrations with depth and that PCBs were not detected in samples from the native material in the creek bed. The PCB concentrations were relatively consistent except in areas close to the Flintkote property and in the area near the intersection of Old Niagara and Plank Road. The data suggest the potential for an additional source of PCBs in an area north of the wastewater plant.

The surface samples from all 12 cores also were analyzed for select metals. The concentrations of metals were relatively uniform throughout the study area and were similar to or exceeded the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 standards. The results indicate that metals continue to be a source of concern and should be evaluated relative to background concentrations in other areas.

While numerous sediment investigations have been conducted in the vicinity of the canal, throughout Lockport, and downstream of Burt Dam, additional data are needed to develop a conceptual model of the existing physical and chemical conditions throughout the Eighteenmile Creek AOC. Prior to the site characterization presented herein, a reconnaissance survey was completed in winter 2008 and spring 2009 (CH2M HILL, Inc. and EEEPC 2009a) to investigate site access, identify areas of sediment deposition and measure sediment thickness, and map sensitive habitats, other areas of potential ecological significance (e.g., wetlands, floodplains, cattail marshes), point discharges, and other features that could affect future sediment sampling activities. During the planning of the reconnaissance survey, digital information from the 2005 aerial image of the creek and historic sampling areas were loaded into the global positioning system (GPS) and used to divide Eighteenmile Creek into smaller investigation areas based on the geography of the creek and the existing data. The creek was divided into five segments that required different levels of investigation. The reconnaissance survey focused on the area from Burt Dam south to Lockport, an area where there is little historical data. The first phase of the reconnaissance survey was conducted in a 9.4-mile stretch of the creek just north of Ide Road upstream of Stone Road. This stretch of the creek is relatively isolated and little information has been developed on habitats, stream channel conditions, or sediment characteristics. In addition, a bathymetric sediment thickness survey of the Burt Dam impoundment area was performed by Aqua Survey in June 2008 over the 1.5 miles from the dam upstream to north of Ide Road. In the fall 2009, a supplemental reconnaissance survey was performed in areas not previously visited (the southern portion of Reach 6 and northern portion of Reach 7).

The reconnaissance survey findings were used to develop the strategy and approach for the sampling and analysis program for evaluating the nature and extent of contamination in the AOC. In order to facilitate the investigation, the overall physical and channel substrate characteristics of the creek, as observed during the first phase of the reconnaissance survey, were used to divide the creek into reaches (see Figure 1-2). The survey results were used to develop the Site Characterization Field Sampling Plan (FSP) and the Quality Assurance Project Plan (QAPP; Appendix A of the FSP), which defined the overall scope to characterize the nature and extent of potential constituents of concern (PCOC) in the sediments of the Eighteenmile

Creek AOC (see CH2M HILL and EEEPC 2009b). Review of the initial site characterization results led to a revision of the FSP to include additional data collection (see CH2M HILL and EEEPC 2010).

1.3 Project Purpose and Objectives

The purpose of the site characterization was to evaluate the nature and extent of contamination in the sediments throughout the AOC, focusing on the unevaluated area between the city of Lockport and the Burt Dam. This data will be used to develop a conceptual model of the existing physical and chemical conditions to develop remedial alternatives for the creek sediment.

The objectives of this site characterization were to collect data to:

- Evaluate the horizontal and vertical extent of sediment contamination of selected PCOCs (PCBs and metals) within and adjacent to the creek.
- Determine total organic carbon (TOC) of sediment to correlate PCB concentrations to percent organic carbon.
- Evaluate concentrations of PCOCs in upstream locations in major tributaries to the creek to identify other potential sources and establish background conditions.
- Evaluate ecologically significant chemicals (e.g., PCB congeners and acid volatile sulfides/simultaneously extracted metals [AVS/SEM]) in the surface sediment to determine the bioavailability of PCOCs.
- Evaluate the potential for historic contamination to have been transported to wetlands or historic (e.g., relict) creek channels during past flooding events.
- Evaluate the potential sources of additional chemicals previously detected in the sediment (e.g., pesticides and polynuclear aromatic hydrocarbons [PAHs]) and establish the correlation of these other chemicals with the PCOCs.
- Evaluate the geotechnical characteristics of the sediment materials.

Review of the initial site characterization creek core samples indicated that additional data were needed to achieve the project objectives and support project decisions. The field program was modified to include collection of additional data to:

- Evaluate the extent of PCBs and metals in the sediment depositional areas in shallow water reaches of the creek and establish whether the contamination can be attributable to upstream sources in Lockport.
- Evaluate concentrations of PCBs and metals in upstream tributaries to the creek (especially East Branch tributary and Gulf Creek tributary) to identify other potential sources and establish background conditions.
- Evaluate the potential sources of PAHs and establish the extent of contamination.
- Evaluate AVS/SEM in areas where elevated metals concentrations exist to determine the bioavailability of metals.
- Evaluate whether large volumes of highly impacted sediment exist that would require special management during remediation.

- Estimate the volume of contaminated creek sediment upstream from Burt Dam to the New York State Barge Canal

The sampling approach designed to meet these objectives is presented in the FSP and subsequent revisions (CH2M HILL and EEEPC 2009b and 2010). This report provides a summary of the sample results and includes a discussion of analytical results and usability of the data. Section 2 summarizes the field sampling activities; Section 3 summarizes the results of the sample analysis and data validation as well as potential data usability issues; and Section 4 provides detailed tables of validated analytical data. Appendices include the supporting data including Sediment Core Logs (Appendix A); Daily Summary Forms and Field Audit Forms (Appendix B); Photographs (Appendix C); GPS Forms (Appendix D); Data Usability Summary Reports (Appendix E); Electronic Data Files (Appendix F); and Analytical Data Reports (TestAmerica Buffalo and TestAmerica Burlington only; Appendix G).

SECTION 2

Field Investigation

CH2M HILL's team subcontractor, EEEPC, led the field investigation and the data management. The different analyses were conducted by laboratories in USEPA's Contract Laboratory Program (CLP), the USEPA Region 5 Central Regional Laboratory (CRL), and independent laboratories procured by CH2M HILL. Vibracore sampling was conducted by Atlantic Testing Laboratories Inc. (ATL). The field program also utilized two flat-bottomed boats owned by EEEPC. The site characterization activities focused on Reaches 2, 3, 4, 5, 6, and 7 and were conducted during four separate field mobilizations.

The project included six primary activities as described below.

2.1 Planning and Mobilization Activities

A FSP and QAPP were prepared by the CH2M HILL and EEEPC team in November 2009 to implement the field investigation. The FSP/QAPP presented the proposed sampling locations, field methodology, and the analytical program. These documents were revised in June 2010 to include additional field activities identified during review of the sampling results from November and December 2009.

Prior to initiation of each sampling effort, mobilization and planning activities were conducted to facilitate the field investigation. These activities included identification of access locations, potential hazards/obstacles, field support equipment, supplies, and facilities; as well as procurement of required field equipment and supplies. To coordinate access with property owners and to notify the public of the planned field activities, the local non-federal sponsor (RAP Coordinator at the NCSWCD) was notified of the field schedule. Detailed geographic information system (GIS) field maps showing the sampling locations were prepared, the GPS units were configured with field data forms and aerial images showing the planned sampling locations, and the equipment and supplies were mobilized to the field site. Field sample and laboratory information were entered into the Forms II Lite® database.

2.2 Field Sampling Program

The field activities were conducted in phases and included:

- The additional 2-day reconnaissance survey initiated on October 19, 2009
- An initial hand-coring sampling effort in November and December 2009
- Vibracore sampling in May 2010
- A sediment thickness and bankfull survey in November 2010
- A data gap investigation in June and July 2010.

Tables 2-1a through 2-1c list the sample types, quantities, and analyses for the three sampling efforts. Table 2-2 outlines the purpose and location of the data gap samples. Modifications to the locations are summarized in Table 2-3. Table 2-4 summarizes results of the sediment

thickness survey. Sample locations are shown in Figures 2-1 through 2-7. Samples were prioritized to ensure that the higher priority samples were collected first.

The field program consisted of collecting sediment and soil samples to conduct chemical and particle size analyses needed to meet the project's objectives. Analyses were conducted by the laboratories listed in Section 2.4. The 2009 and 2010 hand-coring and the 2010 sediment thickness and bankfull survey program were conducted utilizing two flat-bottom boats, operated by the EEEPC field team. Samples were collected using various methods to provide necessary sample volumes for each analytical suite. The May 2010 deep sediment sampling program was conducted by ATL and consisted of collecting vibracore samples using a self-propelled drilling platform and pontoon boat. Vibracore collection was augmented by surface sediment sample collection using a petite Ponar dredge, to ensure collection of adequate sediment volume for each analytical suite.

During sample collection, the coordinates of each sample location were recorded using a handheld GPS unit. The GPS data and digital photographs were downloaded daily and the field sampling information was entered into Forms II Lite® database at the end of each sampling day. Sediment cores collected for chemical and grain size analyses were classified using the United States Geological Survey's (USGS) Soil Classification System and described on a standardized sediment core log form. At each core location, a continuous lithologic description, sediment depth (to the nearest tenth of a foot) to refusal (bedrock or native material), description of the bottom of core, core recovery, depth intervals sampled, and visual/olfactory observations were recorded. The percent recovery was also estimated and recorded. Creek water depths were also measured either using a graduated steel rod or tape measure. Information was recorded using a combination of the GPS unit, field notebooks, sediment core log forms, and digital photography. The sediment core logs are provided in Appendix A.

The site characterization field effort (November/December 2009 and May 2010) included collection and analysis of a total of 402 samples (a total of 104, including five duplicates, hand-core sediment and surface soil samples in November/December 2009 and a total of 298, including 13 duplicates, vibracore and Ponar dredge samples in May 2010). The June/July 2010 data gap investigation included collection and analysis of a total of 126 field samples including seven field duplicates. Samples were labeled, packaged, and shipped according to procedures outlined in the FSP and associated QAPP. Field activities were performed in accordance with the approved FSP and subsequent revisions (CH2M HILL and EEEPC 2009b and 2010). The detailed methodologies and specific goals of each of the sampling activities are described in Section 3 of the FSP (CH2M HILL and EEEPC 2009b). Deviations from the plans, including total number of samples, sample locations, and sampling procedures, occurred as a result of field conditions and are summarized in Section 2-8 of this report. Daily forms summarizing the day's activities and field changes were completed by the field team leader and distributed the form to the appropriate recipients (see Appendix B). Analytical test results are discussed in Section 4 of this report. Photographs of the activities and sampling locations are included on a compact disk as Appendix C.

2.2.1 2009/2010 Initial Sediment and Surface Soil Sampling

The November/December 2009 field sampling effort consisted of collection of 83 sediment samples (main creek channel and tributaries from Reaches 4, 6, and 7), and 21 soil samples from historic channels and wetlands along Reaches 3, 4, 5, 6, and 7 (see Table 2-1a). Sampling activities started on November 16, 2009 and were completed on December 2, 2009. Sampling activities were performed Monday through Friday with a few exceptions. Field operations

were suspended on Friday November 20, 2009 due to unsafe, elevated water levels in the creek resulting from continuous rain on November 19 and the draining of the canal. Work resumed on Monday November 23, 2009. Due to the Thanksgiving holiday, sampling was not performed on November 26 and 27, 2009. Field activities were also suspended on December 1, 2009, due to extreme cold conditions and expected snowfall; the activities resumed and were completed on December 2, 2009.

During the November/December 2009 sampling effort, sediment samples were collected via hand-coring. All but one core were collected by advancing a clear polyvinyl chloride (PVC) sleeve into the sediment by hand via a pushing and twisting motion. One core (R4-119-T) was driven using a manual slide hammer to advance a 2.25-inch Geoprobe Macrocore barrel lined with a clear PVC sleeve. At each coring location within the main creek channel, one composite sample was collected from top of sediment to refusal; representing the entire sediment column. As described in the FSP, when refusal was reached, the remaining empty portion of the acetate sleeve was topped with water and the sleeve was capped. The sleeve was then slowly removed from the sediment resulting in the collected core. The water was then decanted and the sediment was extracted logged, and composited for sampling.

The deeper areas behind Burt Dam and Newfane Dam (Reaches 2, 3, and 5) were sampled in May 2010 by ATL using vibracore sampling technology and Ponar samplers (see Table 2-1b). These sampling activities started on May 17, 2010, and were completed on May 27, 2010. Sampling activities were performed Monday through Friday with the exception of vibracore vessel mobilization.

Vibracore sampling was conducted at all locations with two exceptions. Due to shallow water that prohibited vibracore vessel access, two sample locations (R3-019-V and R5-039-V) were accessed by jon boat and cored by hand following procedures similar to the November/December 2009 procedures. Surface and subsurface samples were collected from the sediment cores. At each coring location, initial probing was performed to measure water depth. Following water depth measurement, a grab surface sample was collected from the top 0 to approximately 1 foot using a petite Ponar dredge. After surface sediment sample collection was completed, a Rossfelder P-3 electrical vibracore collection system mounted to a winch was used to collect cores. The operator lowered the core barrel loaded with dedicated 4-inch clear polycarbonate liners to the top of the sediment, started the vibracoring system, and cored into the sediment to refusal. At 28 vibracore locations, surface sediment subsamples -Z1a (0 to 0.5 feet from the top of sediment) and -Z1b (0.5 to 1 feet from the top of sediment) were collected via vibracore in addition to the -Z1 or -Z1P Ponar sample. At eight locations, the top 1 foot of sediment was not readily differentiated, so a single surface sample was collected via vibracore (-Z1 from the 0-to1-foot-interval). At these locations, a Ponar surface sample -Z1P was collected from the same interval. At two locations (R5-039-V and R5-045-V) a single Z1 sample (0-to-1-foot interval) was collected.

Upon reaching refusal, the vibracore head and barrel were retracted from the sediment, the apparatus was placed on the boat, and a cap was secured on the bottom-end of the liner. The barrel was then removed from the head and excess water was decanted, the liner was removed from the core barrel, and a second cap was placed on the other end of the liner. The liner was then cut open, the core was screened with a photo ionization detector (PID), the sediment lithology was logged by the field geologist, and the depth of vibracore penetration and PID readings were recorded in the logbook. The sampling location and/or the core were photographed and the appropriate sample interval was collected for analysis.

These site characterization sample locations were chosen to be representative of the sample deposition zones. Based on the expected areas of sediment deposition and thickness, the

targeted sampling frequency was one sample location per 500 feet of depositional area in Reach 4; one sample location per 200 feet of depositional area in Reach 6; and one sample per 100 feet of depositional area in Reach 7. Sampling in Reaches 3 and 5 was performed at an approximately 600-foot spacing.

The sample locations by reach are briefly described below.

- Reach 2 consists of the Burt Dam impoundment and the historic stream channel that was flooded after installation of the dam. A total of 15 coring locations were sampled in Reach 2 via vibracore in May 2010 (see Figure 2-1).
- Reach 3 is also characterized by the historic stream channel that was flooded after the installation of the dam. Large sediment deposits have formed where the swift moving upstream creek flows into the upper portion of the impoundment area and the flow velocities drop quickly. Surface soil samples were collected from Reach 3 during the initial November/December 2009 hand-coring effort. Sediment samples from a total of 12 coring locations were also collected during the May 2010 vibracoring effort. Additionally, four surface soil sample locations (0 to 6 inches below ground surface [bgs]) were sampled in November 2009 from the surrounding marsh and forested wetland areas (see Figure 2-2).
- Reach 4 is relatively swift moving and includes comparatively fewer sediment depositional areas, with shallower thicknesses. Samples were collected from Reach 4 during the initial November/December 2009 hand-coring effort. Eleven coring locations were sampled in the main creek channel in areas where sediment were deposited due to obstructions or decrease in flow velocities and one in a tributary to the main creek channel. Three surface soil samples (0 to 6 inches bgs) were also collected from a relict creek channel (one sample) and the forested wetland areas and marshes near Ide Road (two samples; see Figure 2-3).
- Reach 5 consists of the impoundment area behind Newfane Dam and includes deep water and thick sediment. The investigation for this impoundment area was based on the existence of outfalls that may have contributed contaminants in addition to PCBs as well as the potential for the dam to be removed in the future and included surface and subsurface sediment characterization. Samples were collected from a total of 12 locations during the May 2010 vibracoring effort. Five surface soil locations were also sampled in November 2009, including one location in a relict creek channel and four in marsh areas and wetlands adjacent to the creek (see Figure 2-4).
- Reach 6 is characterized by limited access, relatively shallow sediment deposition areas, and higher flow velocities. Two historic creek channels and one forested wetland where sediment might have been deposited during historic overbank flooding are found in Reach 6. Samples were collected from Reach 6 during the initial November/December 2009 hand-coring effort. A total of 19 coring locations were sampled in main channel areas where sediment was observed or near obstructions or upstream and downstream of tributaries (see Figures 2-5a and 2-5b). Additionally, a total of three surface soil samples (0 to 6 inches bgs) were collected, including two samples from historic creek channels and one sample from a wetland adjacent to this reach.
- Reach 7 is characterized by limited access and large stretches of slowly moving water and high sediment deposition. The 1-mile stretch investigated as part of the PCB trackdown study (E & E 2007a) required less sampling than the other areas of the creek, but included sampling from floodplains and near drainage areas not previously

sampled and a "hot spot" sample near Plank Road. Samples collected from Reach 7 included hand-coring at 39 main channel locations including areas of deep sediments near obstructions and outfalls and near the "hot spot" (one in the area where the hot spot was observed and one in the downstream side of Stone Road; see Figures 2-6a through 2-6d). Six tributaries were also sampled during this investigation. Additionally, six surface soil samples (0 to 6 inches bgs) were collected from historic creek channels (five samples) and a wetland adjacent to this reach (one sample).

2.2.2 2010 Data Gap Sampling Locations

An additional hand-core sampling effort was conducted to address data gaps in Reaches 4, 6, and 7 (see Table 2-1c). This effort took place Monday through Friday between June 21 and July 2, 2010.

The findings of the November and December 2009 and May 2010 sampling indicated that since depositional zones are present throughout the creek bed in Reaches 6 and 7, targeting specific depositional zones may not yield a representative sample population. The average distance between the 2009 sample points was 556 feet for Reach 4; 1,041 feet for Reach 6; and 505 feet for Reach 7. Sample locations were added in areas with large distances between sample locations (i.e., greater than 500 feet) to provide better coverage. The new locations reduced the variability in the distances between samples and decreased the distance between samples to below 500 feet for these reaches. The final average distance between points is summarized below:

Reach	Average Distance Between Samples (feet)
2	511
3	149
4	256
5	186
6	372
7	286

A total of 9 Reach 4, 28 Reach 6, and 34 Reach 7 new locations were sampled to better define the extent of contamination, confirm previously detected high concentrations of PCOCs, and identify additional potential contaminant sources. In addition to sample locations in the main creek channel, sampling locations were added upstream in the East Branch and Gulf Creek to establish background conditions as well as evaluate potential sources. Data gap sample collection locations are also shown on Figures 2-2 through 2-7. Table 2-2 presents a detailed list of the additional locations and their purpose.

Sample locations were chosen near previous samples exhibiting higher PAH (R6-055-C) and metal (R6-052-C) concentrations as well as near potential sources not related to upstream areas in Lockport (i.e., multi-use industrial facility south of Ide Road in Reach 4). Additionally, wherever possible, new extent sample locations were selected to be downstream of near outfalls or drainage areas.

Confirmation samples were selected to be located near samples with significant levels of PCBs and lead. Location selection also took into account difference between concentrations in adjacent samples where elevated concentrations were observed (i.e., samples near R6-052-C, R6-055-C, R7-73-C, R7-89-C, R7-88-C, and near Stone Road).

Upon arriving at the general coring location, field teams evaluated at least 100 feet upstream and downstream to determine the area with highest sediment deposition. Unlike previous

investigations, cores were also taken above the current water elevation if the area was clearly a depositional zone. If any planned locations were modified in the field, the rationale for these changes was recorded in the logbook.

The data gap sediment sampling included collection of surface sediment samples (representing the top 0.5 feet of sediment) as well as core composite samples from surface to refusal, to evaluate contamination within the thicker sediment deposits. Specifically, at coring locations where the top sediment layer was clearly distinguished, the surface sample were collected from the top 0.5 foot portion of the core and the remaining core material was composited for the subsurface sample (0.5 feet to refusal). At coring locations where sediment layering was not clearly observed (e.g., in areas where the sediment was too soft to preserve layering within the core), the surface sample was collected using a petite Ponar or AMS Ekman Dredge and the entire core was composited (surface to refusal) for the subsurface sample. At locations where total sediment thickness was less than 1 foot, a single sample was collected from the entire core.

2.2.3 2010 Sediment Thickness Survey and Bankfull Delineation

The presence of PCB in the 2009/2010 sediment samples in Reaches 4, 6, and 7 will need to be addressed in a feasibility study (FS). Additional physical data will be needed to estimate the volume of the contaminated sediments including bankfull width that can be used as the boundary between sediments and upland soils (assumed limits of remediation). These additional data provided by delineating bankfull width and sediment thickness measurements will be used for the following:

- Verification of the shoreline established using the GIS. The field data will be used as a quality control check of the GIS interpretation of the bankfull width that is based on the 2008 1-foot ground pixel resolution orthophotography.
- Creation of a systematic dataset of sediment thickness. The historic and the Phase 2 data investigations mainly focused on the collecting sediment chemistry data to identify potential sources and define the nature and extent of contamination. A systematic approach to collecting thickness data is needed to estimate the sediment volume that will need to be addressed in the FS.
- Determination of a sediment thickness "bottom" layer and "top" layer. The creek boundary and sediment thickness information will be used to model the volume of sediment present. ArcGIS extension "spatial analyst" will be used in GIS to perform a spatial interpolation of thickness points. The method of interpolation will be "Simple Kriging"—a geostatistical method, which will allow the user to define an acceptable confidence interval.

The delineation of the edge of the bankfull and the sediment thickness measurements was conducted concurrently. A total of 136 transects were surveyed in Reaches 4, 6, and 7 and shallow areas of Reaches 3 and 5. A slight variation of "systematic point sampling" was implemented in the field to collect the additional sediment thickness data. Systematic point sampling uses a regular sampling interval and results in an unbiased and proportionally representative dataset of evenly spaced measurements across the study area. The sediment thickness was measured by probing at an average five locations along each transect including the edges of both banks, at the thalweg or midpoint, at two points between the thalweg and left and right banks. Statistics on sediment thickness, water depth, and creek width by reach as measured during the sediment delineation effort are summarized in Table 2-4.

2.3 Supporting Data Collection and Data Correction

During hand-core sampling and sediment thickness surveying, hand-held GPS units were used to navigate to the planned sample and thickness locations. During vibracoring, navigation to sample locations was conducted using a GPS unit mounted on the vibracore vessel. Upon arrival, the GPS was used to record the actual field sample location. If field conditions mandated a modification of the sample location, the field adjustment was recorded and the new location was surveyed using the GPS. Handheld GPS data were imported by EEEPC's GIS group, checked for accuracy, converted to appropriate units, and then exported to the Equis® database. Vibracore GPS data were reduced by ATL and then exported to the Equis® database. The handheld GPS data collection is described below. As defined in the FSP, a locational data checklist and metadata recording form was filled out for each hand-held GPS unit used for this project (see Appendix D). Additionally, a GPS Daily Check Form was completed each day of GPS data collection (see Appendix D). Throughout the field collection day, when those conditions were not met, the GPS receiver provided warnings and sample collection stopped until the receiver was reset. Data collection included horizontal coordinates only, with attributes documented in the field through a customized script developed specifically for this project. In general, three times each day, the nearest known, fixed structure was surveyed as a reference location (e.g., bridge, road crossing). Occasionally, when the crew remained in the creek for the entire field day and did not encounter fixed structures that would be appropriate for use as reference locations, only two reference points were surveyed.

During collection and mapping GPS points, certain anomalies can occur that may affect the resulting final data. Although weather (atmospheric disturbances) may be the most common cause of GPS data discrepancies, there are other factors that can have an effect as well. For this project, most likely causes of inaccurate readings (Signal Reflection) were tree canopy cover and the geometry and morphology of the creek channel. These factors include areas where the height of the banks is 25 to 30 feet (potentially hindering communication between the GPS unit and satellites) and areas of drastic elevation change such as bridges (since the GPS unit assumes the user is on flat, solid ground, the immediately adjacent elevation changes associated with a feature like a bridge do not allow the GPS unit to perform with its optimum accuracy).

Field personnel utilized Trimble GeoXH Handheld GPS devices to capture highly accurate GIS data. Data were transferred and differentially corrected using the GPS software upon returning to the office and assessed for accuracy. GPS data underwent GPS correction and quality control by a GIS analyst. With the use of GPSCorrect Extension for ArcPad, the GeoXH is capable of providing real-time subfoot (less than 30 centimeters [cm]) accuracy after post-processing. Additionally, ArcPad 8.0 GPS preference settings allow the user to specify data capture rules for the GPS receiver. Each GPS Receiver was set to average 10 points per location, taking only readings with a maximum Positional Dilution of Precision (PDOP) of 6.5, and with a minimum elevation of 13°.

Most data points taken during the Eighteenmile Creek surveys had an accuracy of 3- to-50 cm or better. Approximately 1% of the data had accuracy in the 2- to 5-meter range. Of this 1%, the decrease in accuracy can be explained by a sudden spike in PDOP (not to exceed 6.5%), and/or temporary signal deflection. This can occur when taking readings near large object (i.e., building), within dense canopy cover or rough terrain.

Attribute and photo-interpreted data were also checked in the office by field crew personnel for accuracy. This quality check included cross checks between logbook entries and GPS notes and review of the mapped locations using photo-interpreted data. These data then were used to revise the sampling location maps. For this project, four sample points were adjusted to

represent actual sampling locations. These sample points were: R6-058-C, R7-089-C, R7-090-C, and R7-093-C. The original and adjusted coordinates of these points are presented in Table 2-3.

2.4 Analytical Program

Previous investigations indicated that the chemicals detected in Eighteenmile Creek sediment include PCBs, Target Analyte List (TAL) metals, dioxins, pesticides, and PAHs. A hierarchical approach was assigned to the bulk chemical sampling locations. Prior to each of the sampling efforts, the analytical suite for the samples underwent evaluation before consensus on the analyses listed in Tables 2-1a , 2-1b, and 2-1c was reached. Because historical data indicate that PCBs and metals are the primary PCOCs, all the sediment and soil samples were analyzed, at a minimum, for PCBs as Aroclor mixtures and TAL metals. TOC and grain size analysis were also performed on the majority of the samples.

2.4.1 2009/2010 Initial Sediment and Surface Soil Sampling

All November/December 2009 sediment and soil samples were analyzed for target compound list (TCL) semivolatile organic compounds (SVOCs) PAH only, TOC, and grain size analysis, in addition to PCB and TAL metal analysis. Representative portion of samples (43 percent) were also analyzed for SVOCs and pesticides. Additional sample volume was collected from each sample location for temporarily storage for future PCB congener, AVS/SEM, and dioxin analysis. The AVS/SEM analysis gives an indication of the acute toxicity to wildlife that is located in the river. If the molar ratio of AVS to SEM is less than one, there is a lower toxic effect on the biota. If this ratio is greater than one, there is a higher probability of it being toxic to biota. Approximately 28 percent of the samples were analyzed for AVS/SEM to access the bioavailability of the metals. Approximately 31 percent of the samples were analyzed for PCB congeners to allow correlation between Aroclor and PCB congeners for the determination of total PCBs. Four of the 99 samples were also submitted for TCLP metals analysis. For purposes of this phase of the investigation, with the exception of the tributary samples, the whole core composite samples (i.e., the entire core sediment was homogenized and then sub-sampled for the required analyses) were considered equivalent to a single (grab) sediment sample. All the samples collected from the sediments within the tributaries were analyzed for the full suite of PCOCs (that includes PCBs as Aroclor mixtures, TAL metals, TOC, grain size, PAH, and pesticides) because the results of these samples will also serve to define background conditions. Sample selection for full suite analysis was based on proximity to outfalls or drainage areas that could have additional contamination sources or locations where anomalies were observed during site reconnaissance.

The following laboratories performed the required chemical and geotechnical analyses of the 2009 sediment and soil samples:

- A4 Scientific (USEPA CLP Laboratory): Organic chemical analyses.
- Chemtech Consulting Group (Chemtech) (USEPA CLP Laboratory): Inorganic chemical analyses.
- SGS (USEPA CLP Laboratory): 2009 PCB congener analysis.
- TestAmerica (TA), Burlington (TA Burlington) (under subcontract to CH2M HILL): AVS/SEM analysis.
- Region 5 CRL**:** TOC, grain size, and TCLP.

- TA, Buffalo (TA Buffalo) (under contract to CH2M HILL): Sample archive.

At each vibracore location, multiple distinct depth samples were collected. In cores that the top two half-foot intervals were easily distinguished, two samples were collected from the vibracore from the 0-to-1-foot interval (Z1a and Z1b) for PCBs, TAL metals, and PAHs. In these cases, additional volume was collected from the surface via Ponar (Z1 or Z1P) for TOC, and grain size analysis. At one location (R2-001-V), the Ponar sample was analyzed for PCBs, TAL metals, and PAHs in addition to the grain size and TOC. In cases where the top 1 foot of the core could not be separated into two distinct half-foot layers, a single Z1 sample was collected from the vibracore and an additional Ponar sample was collected from the same location. Both the vibracore and the Ponar samples from the top 1-foot, were analyzed for PCBs, TAL metals, PAHs, grain size, and TOC. All Reach 2 and 3 surface Ponar samples were also analyzed for PCB congeners. In certain Reach 2 and 3 locations, where a surface PCB congener sample was not planned, a second Ponar was collected for the PCB congeners (Z1P2). The remainder of the core was sampled in 1 or 2-foot intervals (as per the FSP) and all subsurface samples were analyzed for PCBs, TAL metals, PAHs, grain size, and TOC. Additional sample volume was collected from each sample for temporary storage for future PCB congener, AVS/SEM (surface samples only), and TCLP metals analysis. Approximately 27 percent of the samples were analyzed for the extended list of PAHS (34 PAHs) instead of the standard list of 16 PAHs. Eight surface samples (approximately 20 percent of the surface sediment samples) were analyzed for AVS/SEM to assess the bioavailability of the metals. In addition to PCB congeners analyses run on the Reach 2 and 3 surface samples, one entire core from each Reach was analyzed for PCB congeners (three locations/17 samples) as well as one Z4 sample (3- to 4-foot interval) from Reach 2 and one from Reach 3. Based on the results of the 2009 sampling, it was determined that pesticide analysis was not necessary for the vibracore samples. Upon review of the metals results, 19 samples (approximately 7.5 %) were identified for TCLP metals analysis. The following laboratories performed the required chemical and geotechnical analyses of the sediment samples:

- KAP Technologies (KAP) (USEPA CLP Laboratory): Organic chemical analysis.
- Bonner Analytical Testing (Bonner) (USEPA CLP Laboratory): Inorganic chemical analysis.
- Cape Fear Analytical (Cape)(USEPA CLP Laboratory): PCB congener analyses.
- Region 5 CRL: 2010 TCLP analysis.
- TA Burlington (under contract to CH2M HILL): 2010 TOC, grain size, and AVS/SEM, analyses.
- TA Buffalo (under contract to CH2M HILL): 2010 sample archive.

2.4.2 Data Gap (June/July 2010) Sediment Sampling

All data gap 2010 sediment samples were analyzed for PAHs, TOC, and grain size analysis, in addition to PCBs and TAL metals. Approximately 30 percent of the data gap sediment samples were submitted for the expanded list of PAHs (34 PAHs) instead of the standard 16 PAHs included in the TCL analysis. Pesticide, AVS/SEM, PCB congener, and TCLP metals analysis was not part of the scope for this phase of the investigation. The required chemical and geotechnical analyses of the data gap sediment samples were performed by the same laboratories that performed the vibracore sample analysis.

The specific media, numbers of samples, and the method requirements for the analyses are discussed in Section 3. The chemical analytical methods, laboratory procedures, and quality

assurance/quality control (QA/QC) procedures are documented in the project QAPP (CH2M HILL and EEEPC 2009b).

2.5 Data Management

The data management task consisted of verifying collection and storage of field sample data, developing custody forms, tracking sample analysis, and managing the analytical results. Each day, the data manager was stationed near the reach sampled and was responsible for maintaining a field log. Upon collection of a successful core/sample, the geologists recorded the core information and gave it to the data manager for recording in Forms II Lite®. All field data were managed using Forms II Lite® software as described in the QAPP. The computer record and geological logs are considered the permanent record. Additionally, the data manager entered sample number data and printed sample jar labels and custody forms. Analytical data were managed with the Equis® data management program and finalized in USEPA Region 5 format.

Sample containers were initially labeled using a permanent marker to indicate the sample number, and then placed in coolers with ice. At the end of each day, sample jars were wiped clean and labeled using labels generated by USEPA Forms II Lite database system. All sample handling, transport, and custody procedures were performed as described in the FSP (CH2M HILL and EEEPC 2009b). Core logs and chain-of-custody (COCs) forms were used to document sample collection times, locations, dates, and sampling personnel.

2.6 Field Observations

Field activities were recorded in logbooks and core logs and summarized on daily field reports. Copies of the core logs and daily field reports are provided in Appendices A and B.

The following general observations were made during the field investigation (see also photographs provided in Appendix C):

1. At most hand-coring locations in Reaches 4, 6, and 7, sediment consisted of varying amounts of decayed organic material (mostly rootlets, leaves, wood and other vegetative mater) grading into varying proportions of fine sand, silt and clay with occasional fine gravel. Sediment color usually ranged from gray to brown. In most cases stratification was not observed. At some locations, sand or fine gravel were found without sufficient fine-grained sediment to yield an adequate sample. In such cases the surrounding area was surveyed to find a more suitable location for sample collection and the new coordinates were surveyed by GPS and the sample was collected.

2. At most vibracore locations in Reaches 2, 3 and 5, sediment consisted of varying amounts of decayed organic material (mostly rootlets, leaves, wood and other vegetative mater) grading into varying proportions of fine sand, silt and clay with occasional fine gravel. Sediment color usually ranged between gray, brown, and black. At some locations in Reach 5, sediment was not found at the target location, so additional probing was performed to locate sediment in the nearby area, and the coring location was moved to where sediment was found to be deepest. The new coordinates were then surveyed by GPS and the sample was collected.

3. Generally, sediment thickness was found to be the greatest in Reach 2, followed by Reaches 3 and 5. Observations made during sampling are summarized below.

Sediment depth measurements collected during all the field efforts are summarized on Table 2-5.

a. Reach 2: 5 to 12 feet of sediment recovered at each location with 15 feet of maximum sediment depth observed. Most locations yielded samples that were observed to have an organic odor or sheen.

b. Reach 3: 0.9 to 11.5 feet of sediment recovered at each location with 12 feet of maximum sediment thickness measured with a probe. Most locations yielded samples that were observed to have an organic odor.

c. Reach 4: 0.2 to 1.55 feet of sediment recovered at each location with 1.8 feet of maximum sediment thickness. Reach 4 is relatively swift moving and includes comparatively fewer sediment depositional areas, with shallower depths.

d. Reach 5: 1.9 to 7.5 feet of sediment recovered at each location with a maximum sediment depth of 9 feet.

e. Reach 6: 0.5 to 4 feet of sediment recovered at each location with a maximum sediment depth of 5.6 feet measured with a probe. Reach 6 is characterized by limited access, relatively shallow sediment deposition areas, and higher flow velocities.

f. Reach 7: 0.3 to 4 feet of sediment recovered at each location with a maximum sediment depth of 4.5 feet measured with a probe.

4. At most Reach 4, 6, and 7 locations, bedrock or clay was observed to be the predominant material underlying sediment. In some cases, varying amounts of cobles, gravel and sand were observed. Where the hard reddish brown clay was observed underneath the sediment, the boundary was well defined visually and it was also "felt" during sediment thickness measurement.

5. Bedrock was encountered at nearly all Reach 2, 3, and 5 vibracore locations, as indicated by probing rod, vibracore, or both. Native clay or silt was encountered at 18 locations. At locations R3-019-V and R5-039-V, where ATL performed hand-coring due to inaccessibility by vibracore vessel, refusal type (i.e., bedrock or native clay) could not be determined. Where the hard reddish brown native clay was observed underneath the sediment, the boundary was well defined visually and it was also "felt" during sediment thickness measurement and vibracoring.

6. Several hand-core samples collected throughout the creek contained a strong organic decay odor. Numerous zones of leaves and other vegetative matter existed along the creek. At some vibracore locations odor described as that of hydrocarbon was detected in the sediment. Disturbance of sediment at several locations, especially in Reach 2, readily produced a sheen (dark blue or rainbow in color) on the surface of the creek, in the core, or in the stainless steel bowl.

7. During the Spring/Summer 2010 sampling, water depth averaged 17.6 feet in Reach 2, 2.4 feet in Reach 3, 0.8 feet in Reach 4, 3.2 feet in Reach 5, 0.8 feet in Reach 6, and 1.3 feet in Reach 7. Water depth measured during the various field efforts is summarized in Table 2.5.

The following specific observations were made during the initial sediment sample collection via hand-coring (see also photographs provided in Appendix C).

8. Odor described as that of petroleum, hydrocarbon, sulphur, or smoke was detected in the sediment at several locations. Wetland sample R3-110-W, had a potential fuel related odor. Extra material was collected at this location for full suite analysis. Disturbance of sediment at several locations readily produced a sheen (dark blue or rainbow in color) on the surface of the creek. The most pronounced sheen was observed at R6-052-C. This location also produced a strong petroleum-like odor. The source of the material at this location was not readily apparent.

9. Core sample, R7-088-C, was almost black in color and exhibited a strong fuel odor. Additionally as the acetate sleeve was extracted from the sediment, a sheen appeared on the water surface and an oily substance remained on surface of the sleeve.

10. Solid waste including old machinery and appliances were observed on the left descending bank at location R7-077-C.

11. An old 55-gallon open drum was observed in the middle of the creek, an estimated 100 yards upstream from location R7-076-C. No labels or markings were observed, nor could contents be determined.

12. An irrigation pipe that appeared to be used to remove water from the creek was observed approximately 50 feet downstream from point R4-031-C, along the left descending bank.

13. Core sample, R7-089-C, appeared to have metal filings or a similar material in the collected sample. A rainbow sheen also appeared on the sample.

14. At location R6-062-C sediment thickness was greater than what was achievable with the hand-coring method. Total depth to refusal using the probe was at 5.6 feet below the top of the sediment. The sample depth was 3.7 feet of sediment.

The following specific observations were made during the initial sediment sample collection via vibracoring (see also photographs provided in Appendix C).

15. The greatest volume of sediment (greater than 10 feet at some locations) was observed in Reach 2, where deep, slow moving water behind Burt Dam has allowed accumulation of dark gray to black silty sediment.

16. Of 15 cores collected in Reach 2, at least 10 produced sediment with an odor described as organic or that of petroleum or hydrocarbon. Several cores also produced sheen either in the sampled material or on the outside of the core and water surface upon core extraction.

17. Native material was not observed at eight locations in Reach 2.

18. At some locations odor described as that of hydrocarbon was detected in the sediment. Disturbance of sediment at several locations, especially in Reach 2, readily produced a sheen (dark blue or rainbow in color) on the surface of the creek, in the core, or in the stainless-steel bowl.

19. A cable spanning the width of the creek was encountered an estimated 100 feet upstream of Burt Dam, in Reach 2. The cable is in place to warn and prevent boats from approaching too close to the dam.

20. Creek access is very limited in some areas of Reach 2, with bank heights of 25 to 30 feet.
21. Shallow water in Reach 3 at times slowed navigation between sample locations. The Jon boat and drilling platform were launched at Ide Road, in the south end of Reach 3 for all work in Reaches 2 and 3.

The following observations were made during the data gap sediment sample collection (see also photographs provided in Appendix C).

22. General conditions encountered during the June/July 2010 hand-coring effort were similar to those encountered during the initial November/December 2009 hand-coring effort.
23. Strong odor from subsurface sample collected at R6-144-C and R6-146-C caused gagging and coughing.
24. At some locations odor described as that of organic, sweet, pungent, petroleum, hydrocarbon, rancid or fuel-like was detected in the sediment. Disturbance of sediment at several locations readily produced a sheen (gray, blue or rainbow colored) on the surface of the creek.
25. Numerous locations throughout the study area yielded bubbles of suspected swamp gas from the creek bed when walking in the area, advancing or removing the core from the sediment.
26. Possible metal shards or paint chips as well as fragments of shredded rubber were observed in core R7-183-C.
27. A poly 55-gallon drum, was observed in the creek near location R7-198-C. The drum was caught in a tree snag and mostly submerged. Contents could not be determined and the drum was not observed during the initial November/December 2009 hand-coring.
28. A rusty steel drum was observed near location R7-190-C. Contents could not be determined and the drum was not observed during the initial November/December 2009 hand-coring.
29. Dead fish were observed near locations R7-189-C and R7-191-C. The fish were up to a foot long and partially decayed.
30. Trash including bricks and other material and a small, old submerged boat were observed near location R7-193-C.
31. Three plastic drainage pipes were noted extending from the left descending bank, draining into the East Branch near location R7-202-T. The pipes were not flowing upon observation.

The following specific observations were made during the sediment thickness and bankfull delineation (see also photographs provided in Appendix C).

32. A fire-pit was observed immediately adjacent to Transect 27.
33. An oil jug was observed along with garbage on the right descending bank between transects 24 and 25.
34. A 55-gallon drum was observed on the right descending bank between transects 23 and 24.

35. A cattail marsh was observed adjacent to transect 22.
36. A 55-gallon drum was found buried in sediment within transect 5.
37. A split channel due to huge wooden snag at transect T50a was present.
38. A large sediment bank was encountered just downstream of the drainage ditch near transect 51a.
39. An area of high sediment mid-stream at transect 77 was encountered resulting in a co-thalweg.
40. Many wood debris snags and fallen trees on the shoreline throughout the project area.
41. Transects 16-18 were located in riffle areas with bedrock stream bottom.
42. Multiple areas with braided streams and mid channel islands exist.
43. A riparian wetland (old oxbow) with thick sediment deposits was observed on right descending bank adjacent to Transect 82.
44. Reach 4 was mostly riffles and fast moving water.
45. Major in-channel islands were observed at transects T2-T5, T9, T14, T17, T57a, and T68.
46. A low/slow-flow tributary with thick soft sediment was observed between transects 66 and 67.

2.7 Variances from the FSP

During the course of the field program, a few deviations from the FSP were made based upon field conditions encountered. All deviations were approved by GLNPO.

2.7.1 2009 Initial Sediment and Surface Soil Sampling

1. Due to the non-cohesive nature of the sediment, the lithologic descriptions of the cores in some cases, the core lithologic information was recorded after the sediment was transferred to a stainless-steel bowl and as such, the lithologic information is not stratified but represents the entire core length.
2. Soil sample collection was completed using a hand auger or shovel depending on sample location conditions.
3. At multiple sediment sample locations, the preferred 50 to 60 percent recovery was not achievable due to lack of cohesion of the sediment or due to compression of the soft sediment during core advancement. Additionally, in some cases, leaf litter present at the top of the sediment prevented sediment from entering the sleeve. In such instances, a co-located core was used to provide the required volume. The slam bar technique was also attempted at some of these locations with the same results.
4. At tributary locations R4-119-T, R7-121-T, and R7-124-T, the deeper composite sample (Z2) planned was not collected. Only the surface sample was collected at these locations due to shallow hand-coring refusal (bedrock or native clay or cobbles present throughout the tributary) at 0.5 feet or less.

5. At several locations, large amount of small debris (e.g., rocks, organics, twigs) was observed in the core. In these cases, although care was taken to remove as much as possible before collecting the sample, some debris remained in the sample.

6. Soil sample locations were recorded using a GPS unit during sampling. Therefore, a wooden stake or pin flag were not required to mark the location center point for future surveying.

2.7.2 2010 Vibracoring/Ponar Sampling

1. The first transect in Reach 2 was planned to be located approximately 200 feet upstream of the dam in order to avoid the geotextile that, according to Niagara County, extends 80 feet upstream of the dam. However, these sampling locations (R2-001-V, R2-002-V, and R2-003-V) were moved approximately 20 feet south to avoid a safety cable that spanned the width of the creek and anchored to the banks to prevent boats from moving close to the dam.

2. Four coring locations in Reach 3 (R3-016-V, R3-020-V, R3-022-V, and R3-024-V) were moved between five and fifteen feet east or northeast due to shallow (less than 1-foot) water that prevented the drilling platform from accessing the target location.

3. At some locations in Reach 5, sediment was not found at the target location, so additional probing was performed to locate sediment in the nearby area, and the coring location was moved to where sediment was found to be deepest. The new coordinates were then surveyed by GPS and the sample was collected.

4. Coring location R5-039-V was situated adjacent to the west bank, between the main portion of Newfane Dam and a wooden structure situated across the main channel, approximately 100 feet upstream of the main dam. The wooden structure prevented the pontoon boat from accessing the target location, and the initial intent was to use an excavator to suspend the vibracore head and core barrel over the target location and lower the vibracore into the sediment. Probing the area revealed that sediment did not exist in the range of the excavator boom, so ATL probed the area from a flat bottom boat to find a suitable location for core collection. The core was collected 32 feet northeast of the target location. A polycarbonate sleeve was then advanced into the creek bed by hand, to refusal to collect the core.

5. Sample location R5-041-V was situated adjacent to the east bank. Shallow water and a large volume of floating tree limbs and other debris prevented the pontoon boat from moving to the target location, so a mini excavator was used to access the area from the east bank. Soft ground made it necessary to collect the core 86 feet west of the target location. The vibracore head and core barrel were suspended from the excavator boom over the creek channel and were lowered into the sediment to refusal to collect the core.

6. When stratification was observed in the top 1-foot of sediment, the interval was subdivided into 0- to 0.5-foot and 0.5-to 1-foot. These samples were assigned suffix –Z1a and –Z1b respectively. In cores where stratification was not observed in the top 1-foot interval, a sample was collected from both the 0- to 1-foot interval from the core (assigned the suffix -Z1), and a separate sample was collected from a Ponar dredge (assigned the suffix –Z1P).

7. Tree limbs and other debris at coring location R5-040-V made relocation necessary and the core was collected eight feet east of the target location.

8. Original target coordinates for four coring locations in Reach 5 (R5-045-V, R5-046-V, R5-049-V and R5-050-V) were found to be absent of sediment. Probing revealed bedrock and the coring locations were moved between 19 and 34 feet to locate adequate sediment.

2.7.3 Data Gap (June/July 2010) Sediment Sampling

1. Most coring locations were moved to locate maximum sediment thickness including. Nine coring locations were sampled in Reach 4, and all locations were relocated to find maximum sediment thickness. Locations were moved in Reach 4 between 9.6 and 80 feet, for an average of 43.4 feet of relocation in Reach 4 to locate maximum sediment.
2. Twenty-eight coring locations were sampled in Reach 6, and 26 locations were relocated to find maximum sediment thickness. Locations were moved in Reach 6 between 15 and 160 feet, for an average of 54.1 feet of relocation in Reach 6 to locate maximum sediment.
3. Thirty-four coring locations were sampled in Reach 7, and 33 locations were relocated to find maximum sediment thickness. Locations were moved in Reach 7 between 15 and 200 feet, for an average of 44.7 feet of relocation in Reach 7.
4. To work as safely as possible and to conserve energy, following completion of coring in Reach 4, sampling teams moved from upstream to downstream.

2.7.4 Sediment Thickness and Bankfull Delineation

1. Several transects were added due to the presence of abundant sediment, or braided stream channels, or split stream channels.
2. Several additional points were surveyed along the planned transects either due to large, stream width, or drastic change in streambed topography, or abundance of sediment, or elevated sediment mid-channel dividing thalweg.
3. Locations of 55-gallon drum on bank, 55-gallon drum buried in sediment, firepot, and oil jug were also added to the survey

SECTION 3

Quality Assurance/Quality Control

All samples were received and analyzed by the laboratory as planned. Table 3-1 provides a summary of the actual samples analyzed for chemistry parameters. Sample results were reviewed and reported as described in the QAPP (CH2M HILL and EEEPC 2009a). For the samples collected in 2009, data validation was performed by the USEPA Region 5 ESAT contractor with the exception of the AVS/SEM data, which were validated by an EEEPC chemist. For the samples collected in 2010, all data validation was performed by EEEPC chemists. The data validation tasks completed for this project include:

Completeness. A completeness check was performed on all electronic data deliverables (EDDs) using EarthSoft Equis® 5 Professional software and the data were compared to the hard copy deliverable to verify the data were reported consistently. EEEPC performed a completeness check on all hard copy deliverables to verify that all forms were present and complete.

Compliance. The processed EDDs and hardcopy laboratory report were used to verify the data reported were compliant with the QAPP requirements. EEEPC checked the hard copy reports and case narratives, and reviewed sample receipt, chain-of-custody and traffic report records; holding times; percent moisture; field and laboratory QC sample frequencies; initial and continuing instrument calibration and performance check information; case narratives and QC summaries; field and laboratory QC sample results; detection and reporting limits; dilutions; other method-specific criteria, and target compounds. Summaries of the automated data comparison against the CLP National Functional Guidelines criteria were also reviewed, when available. Data usability summary reports (DUSR) were prepared for each sample delivery group (SDG).

- **Reporting.** The validator assigned data qualifiers and flagged all reportable data. For data that was validated by the ESAT contractor, EEEPC used the data qualifiers and flagged electronic deliverable provided by ESAT and generated summary tables of final qualified data.

- **Data Management.** A project-specific database was developed with all validated data stored in Equis® format. The database format allows for upload to the GLNPO Great Lakes Legacy Act database. Data in electronic formats are provided in Appendix F.

The DUSRs document the results of the data review process for all samples and were posted for data users on the project website. The DUSRs are provided electronically in Appendix E. This section provides a summary of the completeness and quality of the data collected and identifies any major issues that may impact data usability. Section 4 presents the results of the analytical program. Appendix G is provided electronically and includes all laboratory reports.

3.1 Sampling and Analysis Performed

Tables 2-1a, 2-1b, and 2-1c provide a summary of the samples analyzed for the site characterization and data gap sampling events. A total of 21 surface soil and 507 sediment samples were reviewed and reported. Samples were collected as described in Section 2. Field QC samples were collected including field duplicates, and extra volume for project-specific

matrix spike and matrix spike duplicates (MS/MSDs) were collected at a rate of 5 percent except for 34 PAHs, PCB congeners and TCLP analyses due to limited sample quantities. A summary of the samples collected and the analyses is listed on Table 3-1. QC sample percentages of actual samples are listed on Table 3-2. Samples were divided into SDGs and reported as summarized on Table 3-3. Samples were selected for TCLP metals analysis based on total metals results. The analytical methods reviewed are also summarized in Tables 2-1a through 2-1c.

The samples were sent to one of the laboratories listed in Section 2.4. Sample collection was documented in Forms II Lite and COCs and labels were printed. Samples were analyzed as specified on the COC. Samples were packaged, shipped, and received by the laboratories in good condition at the appropriate temperatures as documented on the Cooler Receipt Forms.

The samples were grouped by the laboratories into SDGs of twenty (or fewer) samples. The SDGs are listed on Table 3-3. Sample identifications were reviewed against the field sampling logs by project personnel. The field sample information was imported into the database and linked to the laboratory data. Table 3-4 correlates the sample IDs shown on the data summary tables to the laboratory raw data.

3.2 Laboratory Data Review

The data quality was evaluated based on sample integrity; holding times; percent moisture; initial and continuing instrument calibration and performance checks; laboratory QC sample frequencies and results (method blanks, internal standards, surrogates, matrix spikes and matrix spike duplicates, laboratory control samples, and duplicates); detection and reporting limits; dilutions; and other method-specific criteria. A copy of the summary data package including the case narrative and COC is provided in Appendix G for the data from the subcontracted laboratory. Data summary packages were not provided in electronically for the other data. Electronic files from the Sample Management Office (SMO) and Environmental Services Assistance Team (ESAT) contractors and USEPA Region 5 laboratory are not provided in Appendix G for the other data were processed and incorporated into the database. The data usability summary reports (DUSRs) are provided in Appendix E. The following section summarizes the major findings of the data validation for all data.

3.2.1 Sample Integrity

Sample integrity is maintained after collection and prior to analysis by the use of specific handling and custody procedures, such as the use of correct bottle types, secondary containment, preservation**,** and holding times.

Review Results

All of the samples for organic and inorganic analyses were received with acceptable integrity, e.g., intact appropriate containers, custody seals intact, and temperatures within criteria.

3.2.2 Holding Times

Holding times are established and monitored to ensure analytical results accurately represent analyte concentrations in a sample at the time of collection. Exceeding the holding time for a sample generally results in a loss of the analyte due to a variety of mechanisms, such as deposition on the sample container walls, precipitation, evaporation, or chemical degradation. Holding times are specific to the analytical method and sample type.

Review Results

All samples submitted for organic and inorganic analyses were extracted and analyzed within the holding times specified by the SOW with the following exceptions:

- For the PAH analyses, several samples in SDG B00L4 were outside primary extraction holding times. Sample results are qualified as estimated and are considered usable for the project.
- For SDG B00Z6 sample B0138RX was reanalyzed for PAH outside primary analysis holding time criteria. Sample results are qualified as estimated and are considered usable for the project.
- The 2010 vibracore samples were analyzed for AVS outside of analytical holding time at the request of the client. Sample results are not qualified and are considered usable for the project.

3.2.3 Percent Moisture

Percent moisture for the sediment samples was required to be less than 90% by GLNPO for organic analyses and less than 50 percent according to the USEPA Region 2 CLP validation procedures to report analytical results obtained using soil-and-sediment specific procedures without qualification. The percent moisture (or percent solids) value was also used by the laboratories to calculate and report the analytical results on a dry weight basis.

Review Results

Most of the samples submitted for organic and inorganic analyses did not require qualification of results based on percent moisture. Several samples analyzed for PCB congeners contained 70 to 90 percent moisture and were qualified by the laboratory with HM (high moisture). All of the samples submitted for organic analyses contained less than 90 percent moisture, and no results were qualified on this basis. The 370 samples that were analyzed for inorganic parameters contained greater than 50 percent moisture, therefore the results for those samples are qualified as estimated. For the 2009 samples submitted for metals analyses, the laboratory repeatedly rounded the % solids values incorrectly; however, the reported sample results were corrected before being loaded into the project database and are considered usable for the project.

3.2.4 Instrument Calibration and Performance Checks

Instrument calibration and performance checks are performed using certified and traceable standards to confirm that the instrument is operating correctly. Calibration compounds, concentrations, sequences, and frequencies are method-specific, documented by the laboratory, and the data are provided with the data report. Calibrations are performed and verified prior to analysis of each batch of samples (initial) and periodically during analysis (continuing).

Review Results

For the PCB congeners analyses a few minor calibration issues related to instrument ion ratios were noted that did not affect quantitation; sample results are not qualified and are considered usable for the project.

For the Aroclors analyses the initial and continuing calibration results were acceptable. For the Aroclors and Pesticides analyses each sample is analyzed on two GC columns and if the percent difference (%D) for the results from both columns exceeds 25 percent, the results are qualified as estimated. In addition, the chromatograms are reviewed to determine whether there are

matrix interferences contributing to the difference and the results are qualified according to the CLP SOW. For the Aroclors analyses for several samples the %D for Aroclors 1248 and 1260 was outside criteria and the samples were qualified as estimated or not detected at the adjusted contract required quantitation limit (CRQL). Sample results are considered usable for the project.

For the PAH analyses the initial and continuing calibration results were acceptable with the following exceptions:

- For SDGs B00L4, B01A0, B01C6, B01D0, B01F2, B01J4, B0167, E0002, E0023, E0042 and E0089 the initial calibration was outside criteria for one or more compounds. Sample results are qualified as estimated and are considered usable for the project.
- For several SDGs the continuing calibration verification was outside criteria for one or more compounds. Sample results are qualified as estimated and are considered usable for the project.

For the pesticides analyses the instrument calibrations and performance checks were within acceptance limits and sample results were not qualified based upon calibration issues with the following exceptions:

- For SDG E0089 the initial calibration was outside criteria for one or more compounds. Sample results are qualified as estimated and are considered usable for the project.
- For SDG E0042 the continuing calibration was outside criteria for one or more compounds. Sample results are qualified as estimated and are considered usable for the project.

Calibrations and performance checks for the inorganic analyses were within acceptance limits and inorganic sample results were not qualified based upon calibration issues.

3.2.5 Blanks

Laboratory blank samples were analyzed and evaluated to determine the existence and magnitude of possible contamination during the sampling and analysis process. Analyte concentrations in the blanks are generally below the practical quantitation limit (PQL). If the analyte is present in the sample at similar trace levels, then the analyte is likely a common background contaminant from some phase of the sampling, extraction, or analytical procedure, and associated low-level sample concentrations are not considered to be site related. If the analyte concentration is above the PQL, then there is a potential contamination problem and sample results may be biased high or the data determined unusable. The analytes found in the method blanks and associated qualified results are presented in a table included in the DUSR (if applicable).

Review Results

All blank sample analyses were performed at the required frequency. For most of the organic sample analyses no compounds were detected in the blanks. When compounds were detected in the method blanks at a level significant to the samples within the analytical batch, the associated sample results were qualified "U" as non-detect at the reporting limit. The level of method blank contamination for these analyses has no impact on data usability.

Inorganic parameters were detected in several of the blank samples at levels that resulted in no qualification of sample results, qualification of detected sample results as estimated, or qualification of non-detects at the reporting limits. Sodium and potassium were frequently

detected in the blanks associated with several SDGs and various other metals were detected sporadically. For the TCLP metals analyses low levels of silver and lead in the blanks had no impact on the data; no qualifiers were added on this basis.

3.2.6 Surrogate Compounds, Internal Standards, and Interference Check Standards Recoveries

Laboratory performance for individual samples analyzed for organic compounds is established by the addition of known quantities of surrogate compounds prior to preparation and analysis. In addition to surrogates, gas chromatography/mass spectrometry (GC/MS) methods (i.e., PAHs) use internal standards for calibration. Surrogate and internal standard recovery criteria are compound-specific and method-specific for organic methods. Recoveries outside of criteria may indicate deficiencies in the analytical system or the existence of sample matrix effects that could indicate low or high sample results for target compounds. Matrix effects are typically confirmed by sample re-analysis. The surrogate and internal standard results that were outside QC limits are included in the DUSR (if applicable).

The inorganic analytical methods used for this work did not include the addition of surrogates or internal standards; however, interference check samples (ICS) are analyzed to verify background and inter-element correction factors. Samples results are sometimes qualified based on the ICS recoveries.

Review Results

For the PCB congeners analyses several of the samples required dilutions up to 50X. Because the surrogate compounds were diluted, several of the surrogate recoveries were outside of the QC limits specified in the SOW. Sample results are not qualified or qualified as estimated and are considered usable for the project.

For Aroclors analyses, many of the samples had surrogate recoveries (decachlorobiphenyl [DCB] and tetrachloro-m-xylene [TCX]) outside of QC limits due to matrix effects which were substantiated for most of the samples through re-extraction and/or re-analysis. Sample results are qualified as estimated and are considered usable for the project.

For most of the PAH analyses the recoveries for surrogates and internal standards were acceptable. For most of those that were outside criteria the associated results were either not qualified or qualified as estimated. For samples with internal standards that were outside criteria causing results to be qualified as rejected, results for dilutions that were performed with acceptable recoveries were flagged as reportable for the affected samples whenever possible. Most of the internal standard recoveries for the PAH analyses were acceptable, but a few of the PAH results were qualified as estimated based on internal standard recoveries. The samples were affected by matrix interferences that were confirmed with sample re-analysis, dilution, field duplicate results, or MS/MSD results. When reanalyzed, the best analytical results were reported. The process set forth in the CLP National Functional Guidelines was used to determine the best analytical result when multiple analyses were performed. The specific data used in the evaluation included magnitude and direction of internal standard area count shift, magnitude and direction of internal standard retention time shift, holding times, target compounds reported, and other quality control information (e.g., calibration, method blanks). Sample results are qualified as estimated and are considered usable for the project.

For most of the pesticides analyses the surrogate recoveries were acceptable, and for those that were outside criteria the associated results were either not qualified or qualified as estimated and are considered usable for the project.

For the 2009 inorganic analyses, 6 sample results for silver from two SDGs and one result for antimony were rejected due to negative results with absolute value greater than the quantitation limit. Several sample results for arsenic, beryllium, cadmium, sodium, and silver were qualified as estimated, as well as sporadic instances of other metals, due to ICS recoveries and are considered usable for the project.

3.2.7 Matrix Spike/Matrix Spike Duplicate and Laboratory Duplicate Analysis

The MS/MSD analyses are intended to provide information about the effects that the sample matrix exerts on the digestion/extraction and measurement methodology. MS recovery values that do not meet laboratory QC criteria may indicate that sample analyte results are being attenuated in the analysis procedure. The potential sample bias may be estimated by noting the degree to which the MS concentration was elevated or lowered in the spike analysis. However, this bias should serve only as approximations; sample-specific problems may be the cause of the discrepancy, particularly in soil samples. Recoveries of a post-digestion spike or a laboratory control sample (LCS) are used to verify that the analytical methodology is acceptable and that MS recoveries are due to matrix effects. An MSD analysis is performed to evaluate the precision of the sample results. Precision is measured as the relative percent difference (RPD) between analytical results for duplicate samples. The laboratory's failure to produce similar results for MSD samples may indicate that the samples were non-homogeneous (particularly in soil samples), or that method defects may exist in the laboratory's techniques. The MS results outside QC limits are presented in a table included in the DUSR (if applicable).

Review Results

The MS/MSD sample analyses were performed at the required frequency except for Pesticides (due to limited sample quantities) as indicated on Table 3-2. There were no MS/MSD analyses for the TCLP Metals.

For the PCB congener analyses, the samples that were spiked contained high levels of analytes and matrix interferences, therefore the samples were diluted for analysis and the spike recoveries were outside of the QC limits specified in the SOW. Sample results are qualified as estimated or not qualified and are considered usable for the project.

For the Aroclors analyses most of the MS/MSD results were acceptable. For the PAH analyses several of the MS/MSD recoveries or RPDs were outside criteria due to high target compound concentrations in the samples or sample matrix effects. For the pesticides analyses most of the MS/MSD results were acceptable. For most of the MS/MSDs that were outside of QC acceptance criteria, detected compounds in the parent sample only were qualified as estimated and are considered usable for the project. For the 2009 samples, two sample results (pentachlorophenol in SDG E0066 and endrin in SDG E0089) were qualified as not detected and rejected (UR) due to MS/MSD recoveries below expanded criteria, and are not usable for the project.

For the inorganic analyses, most of the MS/MSD recoveries and precision were acceptable. For SDGs where spike recovery was outside the QC criteria, most associated sample results were qualified as estimated and are considered usable for the project. In general, the MS/MSD recoveries were greater than 30% and did not indicate a significant problem. For the 2009 samples, lead, manganese, and silver results were frequently qualified as estimated (as well as sporadic instances of other metals) due to MS/MSDs. For the 2010 vibracore samples, antimony results were frequently qualified as estimated and results for other metals were qualified as estimated sporadically for MS/MSD recoveries outside criteria. For the project overall, 64 sample results (antimony, selenium, silver, and thallium) in several SDGs were qualified as not

detected and rejected (UR) due to MS/MSD recoveries below expanded criteria, and are not usable for the project.

For most of the inorganic analyses, precision for the laboratory duplicate analyses was acceptable. Precision for a few laboratory duplicate analyses was outside acceptance criteria and the associated sample results were qualified as estimated and are considered usable for the project. Twenty sample results for zinc in SDG MB00M5 were rejected due to a high laboratory duplicate sample RPD, and are not usable for the project.

3.2.8 Laboratory Control Sample Analysis

The LCS is analyzed to monitor the efficiency of the digestion/extraction procedure and analytical instrument operation. The ability of the laboratory to successfully analyze an LCS demonstrates that there are no analytical problems related to the digestion/sample preparation procedures and/or instrument operations. The LCS results outside QC limits are presented in a table included in the DUSR (if applicable). Sporadic and marginal QC failures for multiple component methods do not indicate an analytical concern. If recoveries are high and the compounds are not detected in the samples, then no data qualification is required. All recoveries should be above 10 percent or the non-detect results flagged "UR" as rejected.

Review Results

All LCS analyses were performed at the required frequency and within control limits except for sporadic failures. The sample results associated with sporadic failures are flagged as estimated with appropriate bias and are considered usable for the project.

3.2.9 Field Duplicate Samples

Field duplicate analysis is performed to evaluate the overall precision of the sampling and analysis program. Precision is measured as the RPD between analytical results for field duplicate samples. The lack of similar results for field duplicate samples may indicate that the samples were non-homogeneous, sample collection procedures were not representative, or that method defects may exist in the laboratory's techniques. The field duplicate results for positive results are presented in Table 7 of the DUSR. Sample results with RPDs less than 70 percent for soil or sediment samples are flagged as "Good." Sample results with RPDs higher than 70 percent are flagged as "Poor." If sample results are below the reporting limit then the precision criteria are considered valid. In some cases, low results at or below the reporting limit may be present in one duplicate sample, but not the other sample. The precision cannot be evaluated, but if the result is low, the finding is acceptable.

Review Result

For field duplicate samples, required QC sample percentages were achieved except for PCB congeners and TCLP metals analyses that were impacted by limited sample volume. For the organic and inorganic analyses most of the field duplicate sample pairs showed acceptable precision, indicating the sampling and analysis techniques were reproducible. For those organic and inorganic field duplicate results with RPDs above criteria, the lack of precision is likely due primarily to matrix effects or sample non-homogeneity and not sampling or analytical variability. Sample results for the field duplicate sample pair are qualified as estimated and are considered usable for the project.

3.2.10 Dilutions

Dilutions may be performed as a normal requirement of the analytical method (e.g., serial dilutions for metals analysis) or because the concentration of the target analyte in the sample exceeds the calibrated range for the analysis and an accurate result cannot be obtained.

Review Results

For the PCB congener analyses, a few sample results were assigned laboratory qualifiers due to saturation and significant concentrations of matrix interferences in the samples, for which the laboratory was unable to perform further dilutions and reanalyses. Sample results are qualified as estimated and are considered usable for the project.

For the organic analyses numerous sample dilutions were performed because the concentration of one or more compounds exceeded the calibrated range. In many cases multiple dilutions of one sample were required in order to get all of the detected compounds into the calibrated range for both types of instrumental analyses, LS and SIM. Preliminary reportable results were chosen initially by flagging the SIM data as reportable and the LS data as not reportable. Any SIM results exceeding the calibration range were flagged not reportable, and results from an appropriate sample dilution were flagged reportable for those compounds. Potentially rejected results were evaluated individually. The process set forth in the CLP National Functional Guidelines was used to determine the best analytical result when multiple analyses were performed. The specific data used in the evaluation included dilution, holding times, laboratory qualifiers, and other quality control information (e.g., calibration, method blanks).

For PAH analyses, for samples B00B8 and B00H0 (SDG B00B8) and sample B00P8 (SDG B00L4) the only result reported by the laboratory for a few compounds exceeded the calibration range. The laboratory was unable to provide results that were within the calibration range for those samples and parameters therefore the results that were designated reportable and exceeded the calibration range were qualified with JY as estimated and are considered usable for the project.

For the inorganic analysis, several samples required dilution due to high concentrations of target parameters. These samples were analyzed and reported at an elevated detection limit. For samples where dilutions were performed, the hard copy data was checked and the sample concentration conversions were performed to check the accuracy of the reported results. For the metals analyses, several sample results for sodium were qualified as estimated, as well as sporadic instances of other metals, due to serial dilutions where %D were outside of acceptance limits. For SDG ME081 (2009 samples) most of the metals results were qualified as estimated due to high %D for serial dilutions. For the 2009 samples, 25 samples were re-digested, reanalyzed, and reported under a new SDG because of questions about the inductively coupled plasma (ICP) analyses.

3.3 Data Quality Evaluation

Overall, the data quality was acceptable and the laboratory analysis and reporting procedures representative of appropriate methodology for sediment and soil samples. The objectives for completeness were above 99% for all samples as summarized in Table 3-5.

The qualifiers were added to the data in both electronic database and the final report tables. The qualifiers are defined as follows:

J – The J qualifier indicates an estimated value because the associated QC data indicated a potential laboratory or matrix problem or interference. In addition, J flags assigned by

the laboratory indicate the results are below the PQL, but above the instrument detection limit (IDL) or method detection limit (MDL).

NJ – The NJ qualifier indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. This qualifier was only applied Aroclors results.

U – The result is considered non-detect at the reported value. The laboratory assigned this flag to analytes not present at detectable concentrations (above the IDL or MDL). The data validator assigned this flag when an analyte was considered non-detect due to blank contamination. If the result is above the PQL, the PQL is considered elevated.

UJ – The reported value for the PQL is estimated.

R – The result is rejected and not usable for environmental data assessment.

UR – The result is considered non-detect, but the reported value is rejected and not usable for environmental data assessment.

Additional qualifiers were applied to PCB congeners results. The qualifiers are defined as follows:

C – The congener co-eluted with another congener.

CU – The congener co-eluted with another congener and was not detected.

HM – The sample contained high moisture, >70%.

UH – The sample contained high moisture, >70%, and the congener was not detected.

Data Usability Concerns

Three significant concerns were noted with the laboratory data that impacted data usability.

1. For the project overall, 64 sample results (antimony, selenium, silver, and thallium) in several SDGs were qualified as not detected and rejected (UR) due to MS/MSD recoveries below expanded criteria, and are not usable for the project.
2. For the 2010 vibracore samples, 20 sample results for zinc in SDG MB00M5 were rejected due to a high laboratory duplicate sample RPD, and are not usable for the project.
3. For the 2009 samples, two sample results (pentachlorophenol in SDG E0066 and endrin in SDG E0089) were qualified as not detected and rejected (UR) due to MS/MSD recoveries below expanded criteria, and are not usable for the project.

Results of the particle size samples collected during sediment sampling will be discussed with the geotechnical analysis in Section 3.6.

3.4 Geotechnical Analysis

There were 464 samples taken for TOC and 461 for grain size analysis for the three sampling efforts. All geotechnical data reports are presented in Appendix G.

Samples were submitted to Region 5 Central CRL for analysis of TOC and grain size for the 2009 sampling campaign and to TestAmerica Burlington for the 2010 sampling campaigns. Sample results were reviewed and reported as described in the QAPP (CH2M HILL and EEEPC 2009a). EEEPC performed a completeness check to verify that all samples were received and analyzed by the laboratory as planned. Standard analytical protocols were followed in the

analysis of these samples and for the majority of analyses no problems were encountered or anomalies observed.

Laboratory quality control samples were within established control limits with the following exceptions pertaining to the TOC analyses.

- The continuing calibration verification (CCV) for SDG 911007 (2009 samples) marginally exceeded control criteria. Associated sample results are considered usable for the project.
- The TOC concentration in a continuing calibration blank (CCB) in SDG 138007 (2010 hand-core samples) exceeded the method reporting limit. The associated samples were reanalyzed one day outside the analytical holding time, and the CCB met method acceptance criteria. The reanalysis results were reported and the original results were provided in the data package as supportive documentation. Associated sample results are considered usable for the project.
- The MS/MSD percent recoveries and RPD in SDG 138006 (2010 hand-core samples) and SDG 137391 (2010 vibracore samples) exceeded the established control criteria due to the sample matrix. Associated sample results are considered usable for the project.
- The TOC analysis Lloyd Kahn Method requires that each sample is analyzed in duplicate and the RPD for the duplicate analyses must be less than 40 percent. Several samples from several SDGs yielded a relative percent difference greater than 40 percent between the two determined TOC values. In these instances, the laboratory performed at least two additional TOC analyses then applied the "Dixon" statistical outlier test to the total population of determinations for each sample and, if necessary, removed any outliers or performed another pair of analyses until the results for that sample passed the Dixon test. The results of that assessment are provided in the laboratory submittals. The laboratory reported the average of the two original results, not the average of the results that passed the Dixon test. Associated sample results are considered usable for the project.

SECTION 4

Analytical Results

This report does not include the evaluation and/or interpretation of the analytical results. As such, only a brief review of the sampling results is provided in this document. All chemical data are contained in the project analytical database provided in Appendix F.

Analytical data of sediment samples collected from sediment cores and from surface soil samples that were submitted for chemical and particle size analyses are reported by river reach. Tables 4-1 through 4-7 list the analytical data by Reach and matrix. PCB totals were determined by summing positive results for any PCB Aroclor detected. For PCB Aroclors that were not detected in the samples, a value of 0 was used. For a percentage of the samples, PCB congener analysis was performed (see Table 4-8a). The comparison of the congener data versus the Aroclor analysis data is presented in Table 4-8b. PAH analysis consisted of analyzing samples for 16 individual PAHs not including 2-methyl naphthalene. Total PAH concentrations were calculated by summing up the concentrations for 16 of the individual PAHs in each sample. If an individual PAH compound was not detected in the sample, then a value of 0 was used in the sum. Additionally, an extended list of PAHs was analyzed for a percentage of the samples (see Table 4-9). The AVS/SEM results are presented on Table 4-10. TCLP metals analysis results are presented on Table 4-11, and particle size analysis data are presented in Tables 4-12a and 4-12b (two separate tables were necessary due to differences in the reporting of the data from the laboratories- the 2009 samples were analyzed by Region 5 CRL and the 2010 samples were analyzed by TA Burlington).

These results are summarized in the sections below by reach.

4.1 Reach 2

4.1.1 PCB Analysis

One hundred twenty sediment samples (including duplicate samples) were collected from various depths throughout the reach and submitted for PCB analysis with PCBs detected in 104 samples. Thirteen samples did not contain any PCB in either the original or duplicate sample. The only Aroclors detected in the sediment samples from Reach 2 were Aroclor 1248 and Aroclor 1260. Although Aroclor 1260 was detected in all but one (R2-009-V) of the cored locations, it was only found in 47 of the 120 samples. Both Aroclors were detected in 33 samples and in 31 of these samples Aroclor 1248 was found at a higher (often an order or two of magnitude) concentration than the Aroclor 1260. Also, in several locations, Aroclor 1260 was the only Aroclor found in the deeper sample. Aroclor 1260 was absent from all surface samples except at three locations (samples: R2-003-V-Z1P, R2-010-V-Z1b, and R2-013-V-Z1b), and at two of these locations (R2-003-V and R2-013-V) it was detected in almost every depth interval. Total PCB concentrations in this reach ranged between 0 and 23,000 µg/kg (23 parts per million [ppm]). The highest concentrations of PCBs in Reach 2 (1to 23 ppm) were detected in between 2 and 4 feet below the top of the sediment (-Z3 and -Z4 samples).

4.1.2 PCB Congener Analysis

Twenty-three sediment samples were collected from throughout the reach and submitted for PCB congener analysis including one surface sample from each location as well as every depth

sampled from one location (R2-011-V). PCB congeners were found in every sample at concentrations ranging 0.11 and 24 ppm (R2-011-V-Z5). Total PCB congener concentrations were at least an order of magnitude higher than the total PCB concentrations in the associated sample.

4.1.3 SVOC Analysis

One hundred twenty sediment samples collected from various depths throughout the reach were submitted for PAH analysis including 32 samples submitted for the extended list of PAHs. PAHs were detected in all but four samples (R2-003-V-Z6, R2-007-V-Z5B, R2-010-V-Z7B, and R2-015-V-Z7B). Total PAH concentrations ranged between 0.048 (R2-001-V-Z6) and 65 ppm (R2-009-V-Z5) with most of the samples in the 1 to 10 ppm range. For the most part the additional 18 PAHs were found at concentrations similar to the standard list PAHs. Exceptions include C3-napthalenes in the R2-011–V and R2-014–V samples found at concentrations similar to the total PAH (list of 16) concentration.

4.1.4 Metals Analysis

One hundred twenty sediment samples collected from various depths throughout the reach were submitted for metals and mercury analysis. Lead was detected in every sample. As in the case of PCBs in Reach 2, the highest lead concentrations (exceeding 1,000 ppm) were found in the subsurface sediment. All the surface samples had lead concentrations less than 500 ppm. In all but three locations (R2-005-V, R2-09-V, and R2-013-V), the bottom sample had lead at a concentration below 350 ppm and a lot of them were below 100 ppm. The bottom sample at R2-009-V (-Z5: 698 ppm) and R2-013-V (-Z8: 723 ppm) was a sediment sample and not a sample of the native. At R2-005-V, the bottom sample (-Z6: 548 ppm) was collected from what was suspected to be native material underlying the layer with the highest lead concentration in Reach 2 (6760 ppm at R2-005-V and R2-002-V). The Ponar surface samples contained lead at similar, but always slightly lower, concentrations when compared to the associated core samples (where available).

Six samples (R2-002-V-Z4, R2-005-V-Z3, R2-005-V-Z4, R2-008-V-Z3, R2-014-V-Z4, and R2-014-V-Z6) were submitted for TCLP metals analysis based on the levels of lead found in them during metals analysis. Barium was found in all of them and lead was found in three samples, all at concentrations below the hazardous waste level as defined by the Environmental Conservation, Division of Solid and Hazardous Materials, Identification and Listing of Hazardous Wastes (6 NYCRR 371).

4.1.5 AVS/SEM Analysis

Two surface sediment samples (R2-002-V-Z1P and R2-005-V-Z1P) were collected from various depths throughout the reach and submitted for AVS/SEM analysis. AVS/SEM ratio was 14.56 in R2-002-V-Z1P and 1.87 in R2-005-V-Z1P. These samples were similar in nature and had similar concentrations of metals.

4.1.6 TOC Analysis

One hundred twelve sediment samples were collected from various depths throughout the reach and submitted for TOC analysis. TOC in the reach ranged from 2,470 to 150,000 mg/kg with an average of 67,500 mg/kg.

4.1.7 Particle-size Analysis

One hundred twelve sediment samples were collected from various depths and submitted for particle size analysis. Consistent with the field classifications, these analyses showed that most of the samples (79 percent) were comprised by 90 percent of fines (silt and/or clay). Approximately 20 percent of the samples were sandy mixes of silt and/or clay. One sample (R2-007-V-Z5A) contained approximately 10 percent gravel as well.

4.2 Reach 3

4.2.1 PCB and Pesticide Analysis

Seventy four sediment samples (including duplicates) were collected from various depths throughout the reach and submitted for PCB analysis, with PCBs detected in 57 samples. PCBs were detected in all but two (R3-021-V and R3-023-V) of the Reach 3 vibracoring locations. Both locations that PCBs were not found were locations that refusal was encountered at 3 feet or less and no sediment was found. The samples at these locations were collected from what appeared to be native clay material. The only Aroclors detected in the sediment samples from Reach 3 were Aroclor 1248 and Aroclor 1260. Aroclor 1260 was detected in 33 of the 57 samples where PCBs were found. Thirty samples contained both Aroclors, and in every case Aroclor 1248 was found at a higher concentration (often at least double) than the Aroclor 1260 concentration. Aroclor 1260 was absent from all surface samples except at five locations, and at four of these locations it was detected in almost every depth interval. Total PCB concentrations in this reach ranged between 0 and 11 ppm. The highest concentration of PCBs in Reach 3 (11 ppm) was detected in sample R3-017-V-Z4 collected from the 3-to 4-foot depth interval from a dark silt with clay and fine sand layer (88.7 percent fines) that exhibited a fuel-like odor. Near surface sample R3-016-Z1b (0-to 0.5-foot interval) contained the second highest concentration of PCBs (10 ppm) in the Reach 3 sediments. With the exception of locations R3-016-V and R3-020-V, the subsurface sediments from the 2-to 4-foot interval (-Z3 and -Z4 samples) exhibited the highest concentration (above 1ppm) at each location.

Four soil samples were also collected from wetlands within the Reach 3 area for PCB analysis. All of these samples contained Aroclor 1254 at concentrations ranging between 0.2 to 0.53 ppm. There were no other Aroclors detected in the wetland samples.

One of these samples was also analyzed for pesticides and three pesticides were found in the sample (dieldrin, delta BHC, and gamma chlordane).

4.2.2 PCB Congener Analysis

Nineteen sediment samples were collected from throughout the reach and submitted for PCB congener analysis including one surface sample from each vibracoring location as well as every depth sampled from location R3-020-V and the bottom sample at R3-026-V (-Z4). Surface soil sample R3-107-W was also submitted for PCB congener analysis. PCB congeners were found in every sample at concentrations ranging between less than 1 ppb and above 35 ppm (R3-020-V-Z2 and R3-020-V-Z3 at 35.9 and 35.2 ppm, respectively). With some exceptions, total PCB congener concentrations were at least an order of magnitude higher than the total PCB concentrations measured as Aroclor in the associated sample.

4.2.3 SVOC Analysis

Seventy four sediment samples collected from various depths throughout the reach were submitted for PAH analysis including 16 samples analyzed for the extended list of PAHs.

PAHs were detected in all locations; and in all but three samples (R3-021-V-Z1B, R3-021-V-Z2, and R3-021-V-Z3). At location R3-021-V, PAHs were only present in the top sample (R3-021-V-Z1A) at a very low concentration. Total PAH concentrations ranged between 0.0041 (R3-021-V-Z1A) and 20 ppm (R3-016-V-Z5) with most of the samples in the 0.1 to 10 ppm range. The locations with lowest concentrations coincide with the locations where PCBs were not found (native clay material present throughout the core). In general, individual concentrations of the additional 18 PAHs were similar to individual concentrations of the 16 standard list PAHs. Exceptions include C4-and C3-napthalenes in the R3-020–V samples found at concentrations similar to the total PAH (list of 16) concentration.

One soil sample from wetland location R3-107-W was also analyzed for SVOCs. All 16 standard list PAHs were found in the sample, with a total PAH concentration of 2.1 ppm.

4.2.4 Metals Analysis

Seventy four sediment samples collected from various depths throughout the reach were submitted for metals and mercury analysis. Lead was detected in every sample. Similar to the PCBs and PAHs, the samples from the two locations where native material was present throughout the core, presented the lowest concentrations of lead and other metals. With one exception (location R3-016-V), lead concentrations exceeding 1,000 ppm were found below at least 1 foot of sediment. Similarly, the bottom sediments did not contain lead at concentrations above 1,000 ppm with two exceptions (R3-026 and R3-027). At R3-026-V native material was not present in the bottom sample.

Four soil samples were also collected from wetlands within the Reach 3 area for metals analysis. Lead was found in all of them at concentrations ranging between 310 to 533 ppm.

Three samples (R3-017-V-Z4, R3-017-V-Z6, and R3-026-V-Z3) were analyzed for TCLP metals based on the levels of lead found during metals analysis. Barium and lead were found in all three samples, at concentrations below the characteristic hazardous waste level (6 NYCRR 371). However, lead in sample R3-017-V-Z6 was found at a concentration of 4.61 milligrams per liter (mg/L) that is close to the characteristic hazardous waste level of 5 mg/L.

4.2.5 AVS/SEM Analysis

Four surface sediment samples (R2-002-V-Z1P and R2-005-V-Z1P) were collected from various depths throughout the reach and submitted for AVS/SEM analysis. AVS/SEM ratio ranged between 1.78 in R3-018-V-Z1 and 12.02 in R3-027-V-Z1.

4.2.6 TOC Analysis

Sixty two sediment samples were collected from various depths throughout the reach and submitted for TOC analysis. TOC in the reach ranged from 1,240 to 141,000 mg/kg with an average of 71,300 mg/kg.

The average TOC for the four wetland soil samples was 66,000 mg/kg.

4.2.7 Particle-size Analysis

Sixty one sediment samples were collected from various depths and submitted for particle size analysis. These analyses showed that over half of the samples were silt or clay sediments (more than 90 percent fines present in the sample). Approximately 20 percent of the samples were sandy mixes of silt and/or clay. Four samples contained significant (15 percent or more) amounts of gravel as well. The four wetland soil samples also contained at least 50 percent clay/silt-size material. The results of these analyses are consistent with the field classifications.

4.3 Reach 4

4.3.1 PCB and Pesticide Analysis

Twenty-four sediment samples (including duplicate samples and a tributary sample) were collected from various depths (most of sediment retrieved was less than 1 foot thick) throughout the reach and submitted for PCB analysis with PCBs detected in 20 samples. The only locations without any PCBs were location R4-142-C (2.5 inches of sand and gravel on top of bedrock) and the tributary location (R4-119-T). Aroclors 1248 (six samples), 1254 (15 samples), and 1260 (three samples) were detected in the sediment samples from Reach 4. Total PCB concentrations detected in this reach ranged between 0.067 and 27 ppm. The highest concentrations of PCBs in Reach 4 were found at location R4-135-C (27 ppm in the composite sample and 5.3 ppm in the Z1a sample). Other samples with PCB concentrations above 1ppm include Z1a samples at locations R4-136-C, R4-139-C, and R4-143-C.

Three soil samples were also collected from wetlands within the Reach 4 area for PCB analysis. Only R4-112-W and R4-126-H contained PCBs (Aroclor 1254) at concentrations less than 1ppm.

Six of these samples (including the tributary and one wetland soil sample) were also analyzed for pesticides. Eleven pesticides were found in the samples at low levels.

4.3.2 PCB Congener Analysis

Three sediment samples were submitted for PCB congener analysis. PCB congeners were found in every sample at concentrations ranging between 0.29 ppb and 2.8 ppm.

4.3.3 SVOC Analysis

Seventeen sediment samples (16 main channel and one tributary) were collected from various depths throughout the reach and submitted for SVOC analysis including samples submitted for the extended list of PAHs. PAHs were found in all samples. Total PAH concentrations in the main channel ranged between 0.86 (R4-142-C-Z1A) and 250 ppm (R4-138-C-Comp) with an average concentration of 26 ppm. Sample R4-138-C-Comp collected at the downstream end of the multi-use industrial facility (Forrest Creek Business Park and Storage Center) located south of Ide Road contained not only the highest concentration in this reach, but the second highest in the entire study area. Sample R4-030-C collected during the 2009 effort from a nearby location with deeper sediment contained 40 ppm of total PAHs. There was another sample collected behind this facility (R4-139-C-Z1a) between two outfalls in the area that contained total PAHs at a concentration of 20 ppm closer to the average for the reach. Total PAH concentration in the samples collected downstream of R4-138-C-Comp drops to 40 and 26 ppm (R4-030-C and R4-137-C-Comp, respectively). In general, individual concentrations of the additional 18 PAHs were similar to individual concentrations of the 16 standard list PAHs. Exceptions include samples R4-135-C-Z1a and R4-138-C-Comp where several of the additional PAHs exhibited concentrations much higher than the standard list PAHs.

Total PAH concentration in the tributary sediment and the wetland soil sample was 0.4 and 2 ppm, respectively.

4.3.4 Metals Analysis

One tributary and 23 main creek sediment samples were collected from various depths throughout the reach and submitted for metals and mercury analysis. Metals concentrations are lower than in the upstream creek sediments and close to background levels for most of the metals. Sample R4-136-C-Z1A collected immediately downstream of Ide Road contained the

highest concentration of lead an most of the other metals. Elevated concentrations of most metals are also detected in the samples collected near the outfall in the upstream end of the industrial park. These concentrations decrease (often by an order of magnitude) in the samples collected in the downstream end of the park.

The three surface soil samples submitted for metals analysis contained most metals at concentrations lower than the average concentration in the creek samples. Metals concentrations in the tributary sample were lower than those in the historical channel and wetland samples.

Sample R4-031-C was submitted for TCLP metals analysis based on the levels of lead found during metals analysis. Barium and lead were found in the sample at concentrations below the characteristic hazardous waste level (6 NYCRR 371).

4.3.5 AVS/SEM Analysis

Five sediment samples were submitted for AVS/SEM analysis. Similar to the total metals results, concentrations in the tributary sample were lower than those in the creek samples. Concentrations of most AVS/SEM analytes were higher in the R4-031-C sample collected near the outfall behind the industrial park.

4.3.6 TOC Analysis

Twenty four sediment samples were submitted for TOC analysis. TOC in the reach ranged from 16,000 to 147,000 mg/kg with an average of 57,000 mg/kg. The average TOC for the three soil samples was 56,000 mg/kg.

4.3.7 Particle-size Analysis

Twenty four sediment samples were collected from various depths and submitted for particle size analysis. These analyses showed that over half of the samples were predominantly silt or clay sediments (more than 90 percent fines present in the sample). Eight consisted of sandy sediments mixed with varying amounts of gravel and silt-size material, four consisted of mixtures of approximately equal amounts of silt-size and sand material with some gravel, 12 were predominantly (more than 50 percent silt-size sediments mixed with sand and very little gravel, and one gravelly, silty sand sample. The surface soil samples were also silty sands. The results of these analyses are consistent with the field classifications.

4.4 Reach 5

4.4.1 PCB and Pesticide Analysis

Seventy one sediment samples (including duplicates) were collected from various depths throughout the reach and submitted for PCB analysis, with PCBs detected in 28 samples. With the exception of location R5-040-V, PCBs were detected in at least one sample at each location. R5-040-V is one of the three sampling locations (the other two are R5-039-V and R5-041-V) along a transect established directly upstream of Newfane Dam. PCBs were detected in the bottom sample (Z2) of R5-039-V and the top sample (Z1A) of R5-041-V. The only Aroclors detected in the sediment samples from Reach 5 were Aroclors 1248 and 1260. Aroclor 1248 was detected in 20 of the 28 samples where PCBs were found and Aroclor 1260 was detected in 14 samples. Total PCB concentrations in this reach ranged between 0 and 1.2 ppm (R5-044-V-Z1B). Total PCB concentrations at or above 1 ppm were only found in four samples (R5-044-V-Z1b, R5-050-V-Z2, R5-049-V-Z3, R5-045-V-Z1). There were no total PCB concentrations above 1 ppm found

at depths below 3 feet. In five of the 12 locations the bottom sample (three collected from what appeared to be native material and two where no native was observed) contained PCBs and in three of these samples sample (R5-039-V-Z2, R5-042-V-Z5A, and R5-048-V-Z3) these were the only PCB found at the location. Only two locations had PCBs above 0.1 ppm in the bottom sample (R5-039-V-Z2 and R5-050-V-Z5A), both locations where native material was not encountered.

Five soil samples were also collected from the wetlands and a historical channel within the Reach 5 area for PCB analysis. The four wetland samples contained Aroclor 1254 at concentrations ranging between 0.13 to 1.2 ppm. The historical channel sample did not contain any PCBs.

Two of these samples were also submitted for pesticides and six pesticides were found.

4.4.2 PCB Congener Analysis

Four sediment samples were collected from various depths at sample location R5-049-V and were submitted for PCB congener analysis. In every case the PCB congener analysis yielded PCB concentrations at least one order of magnitude higher than the standard Aroclor analysis in for the same sample or for the same depth interval. PCB congeners were found in every sample at concentrations ranging between 0.2 (-Z4) ppm and 29.1 (-Z3) ppm.

One surface soil sample was also submitted for PCB congener analysis. In this case, the standard Aroclor analysis detected higher concentrations of total PCBs than the congener analysis.

4.4.3 SVOC Analysis

Seventy one sediment samples collected from various depths throughout the reach were submitted for PAH analysis including 24 samples analyzed for the extended list of PAHs. PAHs were detected in all samples. Total PAH concentrations in the surface sediments ranged between 0.21 and 17 ppm (R5-039-V-Z1) with an average of 3.6 ppm. Total PAH concentrations in the subsurface sediments ranged between 0.0039 (R3-021-V-Z1A) and 12 ppm (R5-041-V-Z2) with an average of 1.9 ppm. With the exception of location R5-041-V, the highest concentrations (above 10 ppm) of total PAHS were found at location R5-041-V between 0 and 2 feet below the top of the sediment. Total PAH concentrations remained above 1ppm in the bottom sample (R5-047-V-Z4, R5-049-V-Z5A, and R5-050-V-Z5A) at three locations. In general, individual concentrations of the additional 18 PAHs were similar to individual concentrations of the 16 standard list PAHs. Exceptions include several samples at location R5-050-V-Z2where the additional PAHs exhibited higher concentrations than those in the standard 16 list.

Two soil samples from were also analyzed for SVOCs. All 16 standard list PAHs were found in the samples. Total PAH concentration was 5.3 ppm in sample R5-116-W and 49 ppm in sample R5-127-H.

4.4.4 Metals Analysis

Seventy one sediment samples collected from various depths throughout the reach were submitted for metals and mercury analysis. Lead was detected in every sample. Lead concentrations exceeding 1,000 ppm were found in nine samples and mostly in the 1-to-2-foot interval (sample Z2). Exceptions included samples: R5-044-V-Z1b (0.5-to–1-foot interval), R5-049-V-Z3 (2-to–3-foot interval), R5-050-V-Z3 (2-to–3-foot interval), and R5-050-V-Z4 (3-to–4-foot interval). Location R5-050-V contained the highest concentrations of lead and several metals.

R5-050-V-Z3 exhibited the third highest lead concentration in the study area. Bottom sediments did not contain lead at concentrations above 1,000 ppm.

Five soil samples were also collected from the wetlands and a historical channel within the Reach 5 area for and were submitted for metals analysis. Lead concentrations in the wetland samples ranged between 265 and 47 ppm. Lead concentration in the historical channel sample was much lower at 30.9 ppm.

Ten samples were submitted for TCLP metals analysis based on the levels of lead found during metals analysis. Barium was found in all the samples and lead was found in eight samples. Barium and lead concentrations were below the characteristic hazardous waste level (6 NYCRR 371) in all the samples.

4.4.5 AVS/SEM Analysis

One surface soil and two sediment samples were submitted for AVS/SEM analysis. Similar to the total metals results, concentrations in the wetland soil sample were lower than those in the creek samples. AVS/SEM ratio in the two creek samples was 5.13 in R5-044-V-Z1 and 0.91 in R5-050-V-Z1.

4.4.6 TOC Analysis

Sixty sediment samples were collected from various depths throughout the reach and submitted for TOC analysis. TOC in the reach ranged from 1,170 to 130,000 mg/kg with an average of 57,000 mg/kg.

The average TOC for the soil samples was 86,000 mg/kg. The sample from wetland location R5-115-W had a TOC concentration of 175,000 mg/kg, greater than any TOC concentration found in the creek.

4.4.7 Particle-size Analysis

Fifty eight sediment samples were collected from various depths and submitted for particle size analysis. These analyses showed that the majority of the samples were predominantly silt or clay-size sediment mixed with sand. The rest of the samples are sandy mixes with some fines. Nine samples also contained significant amounts of gravel (10 percent or more) and one sample R5-050-V-Z5 is characterized by equal amounts of silt-sized material and gravel mixed with some sand. The surface soil samples were also silt/clay sand mixes. The results of these analyses are consistent with the field classifications.

4.5 Reach 6

4.5.1 PCB and Pesticide Analysis

Sixty-nine sediment samples (including duplicate samples) were collected from various depths (most of sediment retrieved was less than 2 feet thick with a maximum thickness of 4 feet) throughout the reach and submitted for PCB analysis with PCBs detected in 53 samples. The only locations without any PCB were location R4-142-C (2.5 inches of sand and gravel on top of bedrock) and the tributary location (R4-119-T). Aroclors 1248 (23 samples-all from 2010), 1254 (47 samples), and 1260 (26 samples-all from 2010) were detected in the sediment samples from Reach 6. Also Aroclor 1016 was detected in one sample (R6-056-CR-duplicate of sample R6-056-CR) at a concentration of 2.3 ppm. This is the only sample of this investigation that contained Aroclor 1016. Total PCB concentrations detected in this reach ranged between 0.018 and 16ppm. Ten samples contained total PCB concentrations at or above 1 ppm.

Three soil samples were also collected from a wetland and historical channel within the Reach 4 area for PCB analysis. Aroclor 1254 concentrations (the only PCB found) were 0.072 ppm in the wetland sample R6-117-W and 0.48 in the historical channel sample (R6-128-H).

Eight of these samples (including one historical channel soil sample) were also analyzed for pesticides. Fourteen pesticides were found in the sample s at low levels.

4.5.2 PCB Congener Analysis

Seven sediment samples were collected from various depths throughout the reach and submitted for PCB congener analysis. Total PCBs concentrations as identified by congener analysis were higher (often at least an order of magnitude) than the total PCBs as identified by Aroclor analysis.

4.5.3 SVOC Analysis

Fifty seven sediment samples were collected from various depths throughout the reach and submitted for SVOC analysis including 14 samples submitted for the extended list of PAHs. PAHS were found in all the samples, with total PAH concentrations ranging between 0.49 and 13 ppm with an average concentration of 5.9 ppm. The highest PAH concentration of 130 ppm was found in sample R6-055-C. Total PAHs in the samples immediately upstream and downstream from this sample are two orders of magnitude lower. In general, individual concentrations of the additional 18 PAHs were similar to individual concentrations of the 16 standard list PAHs. Exceptions include sample R6-146-C-Z1a where several of the additional PAHs exhibited concentrations much higher than the standard list PAHs.

Total PAH concentration in the historical channel sample soil sample (R6-128-H) was 4 ppm.

4.5.4 Metals Analysis

Sixty nine sediment samples were collected from various depths throughout the reach and analyzed for metals and mercury. Location R6-160-C- exhibited the highest and/or the second highest concentration of several metals in the reach including lead, chromium, ,copper, cadmium, nickel, zinc, and arsenic. Locations R6-146-C- and R6-052-C also contained elevated levels of several metals. These samples are in areas that could be impacted by "urbanized runoff" from the Town of Newfane.

The three surface soil samples submitted for metals analysis contained most metals at concentrations lower than the average concentration in the creek samples.

Sample R6-052-C was also analyzed submitted for TCLP metals based on the levels of lead found during metals analysis. This was the only sample that contained lead at a concentration above the characteristic hazardous waste level (6 NYCRR 371). Barium was also present in the sample, but at a concentration below the characteristic hazardous waste level.

4.5.5 AVS/SEM Analysis

Four sediment samples were submitted for AVS/SEM analysis. Similar to the total metals results, most metals concentrations in the R6-052-C sample were higher than those in the rest of the samples.

4.5.6 TOC Analysis

Seventy two sediment samples were submitted for TOC analysis. TOC in the reach ranged from 12,000 to 116,000 mg/kg with an average of 52,000 mg/kg. The average TOC for the three soil samples was 27,000 mg/kg.

4.5.7 Particle-size Analysis

Seventy two sediment samples were submitted for particle size analysis. Similar to the other reaches these analyses showed that the majority of the samples were predominantly silt or clay-size sediment mixed with sand. The rest of the samples are sandy mixes with some fines. A couple samples contained gravel above 10 percent. The results of these analyses are consistent with the field classifications.

4.6 Reach 7

4.6.1 PCB and Pesticide Analysis

Ninety seven sediment samples were collected from various depths throughout the reach and submitted for PCB analysis. Eighty six samples contained PCBs. Similar to the other reaches Aroclors 1248 (all 42 2010 samples-no 2009 samples), 1254 (all samples), and 1260 (32 samples - all from 2010), were the only Aroclors detected. Reach 7 had the highest concentrations of PCBs in the study area. Maximum total PCB concentrations (exceeding 50 ppm the Toxic Substance Control Act [TSCA] criteria) were found in samples R7-089-C, R7-178-C-Z1, R7-187-C-COMP, and R7-088-C. Sample R7-187-C-COMP was collected near but upstream of R7-089-C and R7-088-C; sample R7-178-C-Z1 was collected from a totally different section of the reach further downstream of these samples. Core sample, R7-088-C, was almost black in color and exhibited a strong fuel odor and a sheen appeared on the water surface and an oily substance remained on surface of the sleeve as the sleeve was retrieved. Core sample, R7-089-C, appeared to have metal filings or a similar material in the collected sample and a sheen appeared on the sample. Sample R7-186-C that was collected in 2010 in the same location as R7-089-C did not confirm the elevated PCB concentrations (total PCBs at this location were below 1 ppm). Similarly, R7-184-C that was collected in 2010 in the same location as R7-088-C contained total PCBs at a concentration of 6.9 ppm, which well below the concentrations detected in 2009. The odor and the staining were observed in both sample pairs during both sampling events and sample descriptions and particle size distributions are similar.

Ten tributary locations were sampled for PCBs (19 samples), including three from the East Branch and four from Gulf Creek, and three from smaller tributaries. PCBs were only detected in R7-121-T (0.39 ppm) and R7-205-T (0.11 ppm) collected from a smaller tributary directly upstream of sample R7-178-C-Z1 and from the upstream portion of Gulf Creek, respectively.

Six surface soil samples were collected for PCB from five historical channel locations and one wetland. All but one of these samples (R7-130-H) contained PCBs. Samples R7-134-H and R7-131-H contained total PCBs in excess of 1 ppm.

Twenty of these samples (including three tributary sediment samples and one wetland soil sample) were also analyzed for pesticides. Seventeen pesticides were found in the samples.

4.6.2 PCB Congener Analysis

22 samples were submitted for PCB congener analysis. High concentrations of PCB congeners were found at locations R7-089-C and R7-068-C.

4.6.3 SVOC Analysis

72 sediment samples were collected from various depths throughout the reach and submitted for SVOC analysis including 13 samples submitted for the extended list of PAHs. PAHS were found in all the samples, with total PAH concentrations ranging between 0.037 and 380 ppm with an average concentration of 30 ppm. The highest PAH concentration of 380 ppm was found in sample R7-073-C collected just downstream of East Branch of the creek and it was the highest total PAH concentrations found in the study area. Confirmatory sample R7-174-C-COMP contained a much lower concentration of 13 ppm and extent samples collected nearby R7-173-C and R7-175-C contained PAHs at a total concentration of less than 10 ppm.

Elevated PAHs (total PAH concentrations at or exceeding 10 ppm) were found in tributary samples R7-203-T (97 ppm) and R7-125-T (10 ppm) both collected in Gulf Creek near the Waste Water Treatment Plant. Historical channel surface soil sample R7-133-H and wetland sample R7-118-W contained total PAHs at concentrations of 29 and 25 ppm, respectively.

In general, individual concentrations of the additional 18 PAHs were similar to individual concentrations of the 16 standard list PAHs.

4.6.4 Metals Analysis

97 sediment samples were collected from various depths throughout the reach and submitted for metals and mercury analysis. Highest lead concentrations (exceeding 2,000ppm) are at R7-103-C and R7-101-C. Samples R7-068-C and R7-178-C contained the highest concentrations of several metals. Samples R7-203-T and R7-125-T collected in Gulf Creek near the Waste Water Treatment Plant contained the highest levels of most metals in tributary samples but similar to the average of the creek sample concentrations. Surface soil samples R7-134-H and R7-118-H contained the highest concentrations of most metals in the Reach 7 surface soil.

Similar to what was observed in the other reaches, TCLP metals analysis showed the presence of barium and lead in the samples at concentrations below the characteristic hazardous waste level.

4.6.5 AVS/SEM Analysis

Eighteen sediment samples were submitted for AVS/SEM analysis. Similar to the total metals results, most metals concentrations from location R7-068-C were higher than those in the rest of the samples.

4.6.6 TOC Analysis

71 sediment samples were submitted for TOC analysis. TOC in the reach ranged from 16,000 to 159,000 mg/kg with an average of 97,000 mg/kg. The average TOC for the tributary samples was 42,000 mg/kg and for the soil samples was 62,000 mg/kg.

4.6.7 Particle-size Analysis

122 samples were collected submitted for particle size analysis. Consistent with the field classifications, these analyses showed most matrices were classified as either silt or clay-sized material mixed with sand. Six samples (including some two tributary samples) also contained more than 10 percent gravel.

SECTION 5

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Tables

Table 2-1a
Summary of Samples Collected During the 2009 Sediment Hand-coring and Surface Soil Sampling Effort

Location	Sample ID	Sample Date	Sample Depth (feet)	Number of Analyses	Metals/ Mercury	Aroclors	SVOC	TOC	Grain Size	Pesticides	AVS/ SEM	TCLP Metals	PCB Congeners	% Moisture
Reach 3 Locations: 4		**Creek Sediment Samples: 0**			**Tributary Sediment Samples: 0**				**Historical Channel Soil Samples: 0**				**Wetland Soil Samples: 4**	
R3-107-W	R3-107-W	11/16/09	0 - 0.5	5	1	1		1	1				1	
R3-108-W	R3-108-W	11/16/09	0 - 0.5	4	1	1		1	1					
R3-109-W	R3-109-W	11/16/09	0 - 0.5	4	1	1		1	1					
R3-110-W	R3-110-W	11/16/09	0 - 0.5	6	1	1	1	1	1	1				
Totals	**4**	**-**	**-**	**-**	**4**	**4**	**1**	**4**	**4**	**1**	**0**	**0**	**1**	**0**
Reach 4 Locations: 15		**Creek Sediment Samples: 11**			**Tributary Sediment Samples: 1**				**Historical Channel Soil Samples: 1**				**Wetland Soil Samples: 2**	
R4-028-C	R4-028-C	11/17/09	0 - 1.55	7	1	1	1	1	1	1	1			1
R4-029-C	R4-029-C	11/16/09	0 - 1.2	4	1	1		1	1					
R4-030-C	R4-030-C	11/16/09	0 - 1.1	8	1	1	1	1	1	1	1		1	1
R4-031-C	R4-031-C	11/16/09	0 - 0.8	8	1	1	1	1	1	1	1	1		1
R4-032-C	R4-032-C	11/16/09	0 - 0.7	4	1	1		1	1					
R4-033-C	R4-033-C	11/17/09	0 - 0.4	4	1	1		1	1					
R4-034-C	R4-034-C	11/17/09	0 - 0.4	7	1	1	1	1	1	1	1			1
R4-035-C	R4-035-C	11/17/09	0 - 0.8	5	1	1		1	1				1	
R4-036-C	R4-036-C	11/17/09	0 - 0.9	4	1	1		1	1					
R4-037-C	R4-037-C	11/17/09	0 - 0.6	5	1	1		1	1				1	
R4-038-C	R4-038-C	11/18/09	0 - 0.4	4	1	1		1	1					
R4-111-W	R4-111-W	11/16/09	0 - 0.5	4	1	1		1	1					
R4-112-W	R4-112-W	11/18/09	0 - 0.5	6	1	1	1	1	1	1				
R4-119-T	R4-119-T	11/17/09	0 - 0.5	7	1	1	1	1	1	1	1			1
R4-126-H	R4-126-H	11/16/09	0 - 0.5	4	1	1		1	1					
Totals	**15**	**-**	**-**	**-**	**15**	**15**	**6**	**15**	**15**	**6**	**5**	**1**	**3**	**5**
Reach 5 Locations: 5		**Creek Sediment Samples: 0**			**Tributary Sediment Samples: 0**				**Historical Channel Soil Samples: 1**				**Wetland Soil Samples: 4**	
R5-113-W	R5-113-W	11/18/09	0 - 0.5	4	1	1		1	1					
R5-114-W	R5-114-W	11/18/09	0 - 0.5	4	1	1		1	1					
R5-115-W	R5-115-W	11/18/09	0 - 0.5	5	1	1		1	1				1	
R5-116-W	R5-116-W	11/19/09	0 - 0.5	7	1	1	1	1	1	1	1			1
R5-127-H	R5-127-H	11/18/09	0 - 0.5	6	1	1	1	1	1	1				
Totals	**5**	**-**	**-**	**-**	**5**	**5**	**2**	**5**	**5**	**2**	**1**	**0**	**1**	**1**

Table 2-1a
Summary of Samples Collected During the 2009 Sediment Hand-coring and Surface Soil Sampling Effort

Location	Sample ID	Sample Date	Sample Depth (feet)	Number of Analyses	Metals/ Mercury	Aroclors	SVOC	TOC	Grain Size	Pesticides	AVS/ SEM	TCLP Metals	PCB Congeners	% Moisture
Reach 6 Locations: 22		**Creek Sediment Samples: 19**			**Tributary Sediment Samples: 0**				**Historical Channel Soil Samples: 2**				**Wetland Soil Samples: 1**	
R6-051-C	R6-051-C	11/19/09	0 - 1.2	7	1	1	1	1	1	1	1			1
R6-051-C	R6-051-CR	11/19/09	0 - 1.2	7	1	1	1	1	1	1	1			1
R6-052-C	R6-052-C	11/19/09	0 - 1.3	8	1	1	1	1	1	1	1	1		1
R6-053-C	R6-053-C	11/19/09	0 - 1.2	8	1	1	1	1	1	1	1		1	1
R6-054-C	R6-054-C	12/02/09	0 - 0.5	4	1	1		1	1					
R6-055-C	R6-055-C	11/17/09	0 - 1.1	7	1	1	1	1	1	1	1			1
R6-056-C	R6-056-C	11/17/09	0 - 1.2	5	1	1		1	1				1	
R6-056-C	R6-056-CR	11/17/09	0 - 1.2	5	1	1		1	1				1	
R6-057-C	R6-057-C	11/17/09	0 - 1.4	4	1	1		1	1					
R6-058-C	R6-058-C	11/18/09	0 - 2.2	8	1	1	1	1	1	1	1		1	1
R6-059-C	R6-059-C	11/18/09	0 - 1.3	4	1	1		1	1					
R6-060-C	R6-060-C	11/18/09	0 - 0.8	4	1	1		1	1					
R6-061-C	R6-061-C	11/18/09	0 - 4	7	1	1	1	1	1	1	1			1
R6-062-C	R6-062-C	11/19/09	0 - 3.7	5	1	1		1	1				1	
R6-063-C	R6-063-C	11/19/09	0 - 1.1	4	1	1		1	1					
R6-064-C	R6-064-C	11/19/09	0 - 1.4	4	1	1		1	1					
R6-065-C	R6-065-C	11/19/09	0 - 2.4	4	1	1		1	1					
R6-066-C	R6-066-C	11/25/09	0 - 1.9	5	1	1		1	1				1	
R6-067-C	R6-067-C	11/25/09	0 - 2.1	5	1	1		1	1				1	
R6-117-W	R6-117-W	12/02/09	0 - 0.5	4	1	1		1	1					
R6-128-H	R6-128-H	12/02/09	0 - 0.5	6	1	1	1	1	1	1				
R6-129-H	R6-129-H	12/02/09	0 - 0.5	4	1	1		1	1					
Totals	**22**	**-**	**-**	**-**	**22**	**22**	**8**	**22**	**22**	**8**	**7**	**1**	**7**	**7**
Reach 7 Locations: 51		**Creek Sediment Samples: 42**			**Tributary Sediment Samples: 10**				**Historical Channel Soil Samples: 5**				**Wetland Soil Samples: 1**	
R7-068-C	R7-068-C	11/25/09	0 - 2.1	8	1	1	1	1	1	1	1		1	1
	R7-068-CR	11/25/09	0 - 2.1	8	1	1	1	1	1	1	1		1	1
R7-069-C	R7-069-C	11/25/09	0 - 2.4	5	1	1		1	1			1		
R7-070-C	R7-070-C	11/25/09	0 - 2.4	4	1	1		1	1					
R7-071-C	R7-071-C	11/25/09	0 - 1.5	5	1	1		1	1				1	
R7-072-C	R7-072-C	11/24/09	0 - 0.8	4	1	1		1	1					
R7-073-C	R7-073-C	11/24/09	0 - 2.4	7	1	1	1	1	1	1	1			1

Table 2-1a
Summary of Samples Collected During the 2009 Sediment Hand-coring and Surface Soil Sampling Effort

Location	Sample ID	Sample Date	Sample Depth (feet)	Number of Analyses	Metals/ Mercury	Aroclors	SVOC	TOC	Grain Size	Pesticides	AVS/ SEM	TCLP Metals	PCB Congeners	% Moisture
R7-074-C	R7-074-C	11/24/09	0 - 2.3	5	1	1		1	1				1	
R7-075-C	R7-075-C	11/24/09	0 - 2.1	8	1	1	1	1	1	1	1		1	1
R7-076-C	R7-076-C	11/24/09	0 - 2	4	1	1		1	1					
R7-077-C	R7-077-C	11/24/09	0 - 1.2	4	1	1		1	1					
R7-078-C	R7-078-C	12/02/09	0 - 4	4	1	1		1	1					
R7-079-C	R7-079-C	12/02/09	0 - 2.4	4	1	1		1	1					
R7-080-C	R7-080-C	12/02/09	0 - 1.7	5	1	1		1	1				1	
R7-081-C	R7-081-C	12/02/09	0 - 1.7	5	1	1		1	1				1	
R7-082-C	R7-082-C	11/30/09	0 - 1.6	4	1	1		1	1					
	R7-082-CR	11/30/09	0 - 1.6	5	1	1		1	1				1	
R7-083-C	R7-083-C	11/30/09	0 - 3.3	7	1	1	1	1	1	1	1			1
R7-084-C	R7-084-C	11/30/09	0 - 3.3	5	1	1		1	1				1	
R7-085-C	R7-085-C	11/30/09	0 - 1.6	7	1	1	1	1	1	1	1			1
R7-086-C	R7-086-C	11/30/09	0 - 3.2	5	1	1		1	1				1	
R7-087-C	R7-087-C	11/30/09	0 - 2.1	8	1	1	1	1	1	1	1		1	1
R7-088-C	R7-088-C	11/25/09	0 - 1	5	1	1		1	1				1	
R7-089-C	R7-089-C	11/25/09	0 - 2.9	8	1	1	1	1	1	1	1		1	1
R7-090-C	R7-090-C	11/25/09	0 - 3.5	4	1	1		1	1					
R7-091-C	R7-091-C	11/24/09	0 - 1.4	5	1	1		1	1				1	
R7-092-C	R7-092-C	11/24/09	0 - 1	4	1	1		1	1					
R7-093-C	R7-093-C	11/24/09	0 - 0.9	7	1	1	1	1	1	1	1			1
R7-094-C	R7-094-C	11/23/09	0 - 1	8	1	1	1	1	1	1	1		1	1
R7-095-C	R7-095-C	11/23/09	0 - 1.3	7	1	1	1	1	1	1	1			1
	R7-095-CR	11/23/09	0 - 1.3	7	1	1	1	1	1	1	1			1
R7-096-C	R7-096-C	11/23/09	0 - 1.3	4	1	1		1	1					
R7-097-C	R7-097-C	11/23/09	0 - 0.9	4	1	1		1	1					
R7-098-C	R7-098-C	11/23/09	0 - 1.9	4	1	1		1	1					
R7-099-C	R7-099-C	11/23/09	0 - 1.3	8	1	1	1	1	1	1	1		1	1
R7-100-C	R7-100-C	11/23/09	0 - 1.2	8	1	1	1	1	1	1	1		1	1
R7-101-C	R7-101-C	11/30/09	0 - 0.5	5	1	1		1	1				1	
R7-102-C	R7-102-C	11/30/09	0 - 1.5	4	1	1		1	1					
R7-103-C	R7-103-C	11/30/09	0 - 2.3	5	1	1		1	1				1	

Table 2-1a
Summary of Samples Collected During the 2009 Sediment Hand-coring and Surface Soil Sampling Effort

Location	Sample ID	Sample Date	Sample Depth (feet)	Number of Analyses	Metals/ Mercury	Aroclors	SVOC	TOC	Grain Size	Pesticides	AVS/ SEM	TCLP Metals	PCB Congeners	% Moisture
R7-104-C	R7-104-C	12/02/09	0 - 1	8	1	1	1	1	1	1	1		1	1
R7-105-C	R7-105-C	11/30/09	0 - 1.4	8	1	1	1	1	1	1	1	1		1
R7-106-C	R7-106-C	11/30/09	0 - 0.5	8	1	1	1	1	1	1	1		1	1
R7-118-W	R7-118-W	11/30/09	0 - 0.5	6	1	1	1	1	1	1				
R7-120-T	R7-120-T-Z1	11/24/09	0 - 0.5	7	1	1	1	1	1	1	1			1
	R7-120-T-Z2	11/24/09	0.5 - 2.1	6	1	1	1	1	1	1				
R7-121-T	R7-121-T-Z1	12/02/09	0 - 0.5	6	1	1	1	1	1	1				
R7-122-T	R7-122-T-Z1	11/25/09	0 - 0.5	6	1	1	1	1	1	1				
	R7-122-T-Z2	11/25/09	0.5 - 1	6	1	1	1	1	1	1				
R7-123-T	R7-123-T-Z1	11/23/09	0 - 0.5	6	1	1	1	1	1	1				
	R7-123-T-Z2	11/23/09	0.5 - 1	6	1	1	1	1	1	1				
R7-124-T	R7-124-T-Z1	11/23/09	0 - 0.4	6	1	1	1	1	1	1				
R7-125-T	R7-125-T-Z1	11/30/09	0 - 0.5	6	1	1	1	1	1	1				
	R7-125-T-Z2	11/30/09	0.5 - 0.8	6	1	1	1	1	1	1				
R7-130-H	R7-130-H	11/30/09	0 - 0.5	4	1	1		1	1					
R7-131-H	R7-131-H	11/30/09	0 - 0.5	5	1	1		1	1				1	
R7-132-H	R7-132-H	11/25/09	0 - 0.5	4	1	1		1	1					
R7-133-H	R7-133-H	11/24/09	0 - 0.5	6	1	1	1	1	1	1				
R7-134-H	R7-134-H	11/23/09	0 - 0.5	4	1	1		1	1					
Totals	**58**	**-**	**-**	**-**	**58**	**58**	**29**	**58**	**58**	**29**	**18**	**2**	**22**	**18**
	2009 Sediment and Surface Soil Original Samples:				**99**	**99**	**43**	**99**	**99**	**43**	**28**	**4**	**31**	**28**
	2009 Sediment and Surface Soil Duplicate Samples:				**5**	**5**	**3**	**5**	**5**	**3**	**3**	**0**	**3**	**3**
	Total 2009 Sediment and Surface Soil Samples:				**104**	**104**	**46**	**104**	**104**	**46**	**31**	**4**	**34**	**31**

Key:

AVS = Acid Volatile Sulfides.
-C = Hand-core creek location/sample.
-CR = Duplicate hand-core sample.
-H = Historical channel location/sample.
PCB = Polychlorinated biphenyl.
SEM = Simultaneously extracted metals.
SVOC = Semivolatile organic compound.
-T = Tributary location/sample.
TCLP = Toxicity characteristic leaching procedure.
TOC = Total organic carbon.
-W = Wetland location/sample.
-Z = Sample depth interval consecutively numbered.
% = Percent.

Table 2-1b
Summary of Samples Collected During the 2010 Vibracore Sampling Effort

Location	Sample ID	Sample Date	Sample Depth (feet)	Number of Analyses	Metals/ Mercury	Aroclors	16 PAHs	34 PAHs	TOC	Grain Size	AVS/ SEM	PCB Congeners	TCLP Metals	% Moisture
Reach 2 Locations: 15			**Total Number of Samples: 132**							**Ponar Samples: 21**		**Vibracore Samples: 111**		
R2-001-V	R2-001-V-Z1P	5/18/10	0 - 1	7	1	1	1		1	1				1
	R2-001-V-Z1P2	5/24/10	0 - 1	1								1		
	R2-001-V-Z1a	5/18/10	0 - 0.5	4	1	1	1							
	R2-001-V-Z1b	5/18/10	0.5 - 1	4	1	1	1							
	R2-001-V-Z2	5/18/10	1 - 2	7	1	1	1		1	1				1
	R2-001-V-Z3	5/18/10	2 - 3	7	1	1	1		1	1				1
	R2-001-V-Z4	5/18/10	3 - 4	7	1	1	1		1	1				1
	R2-001-V-Z5	5/18/10	4 - 5	7	1	1	1		1	1				1
	R2-001-V-Z6	5/18/10	6 - 7	7	1	1	1		1	1				1
R2-002-V	R2-002-V-Z1P	5/18/10	0 - 1	10	1	1		1	1	1	1	1		1
	R2-002-V-Z1	5/18/10	0 - 1	7	1	1		1	1	1				1
	R2-002-V-Z2	5/18/10	1 - 2	7	1	1		1	1	1				1
	R2-002-V-Z3	5/18/10	2 - 3	7	1	1		1	1	1				1
	R2-002-V-Z4	5/18/10	3 - 4	8	1	1		1	1	1			1	1
	R2-002-V-Z5	5/18/10	4 - 6	7	1	1		1	1	1				1
	R2-002-VR	5/18/10	4 - 6	7	1	1		1	1	1				1
	R2-002-V-Z6	5/18/10	6 - 7.5	7	1	1		1	1	1				1
R2-003-V	R2-003-V-Z1P	5/18/10	0 - 1	7	1	1	1		1	1				1
	R2-003-V-Z1P2	5/24/10	0 - 1	1								1		
	R2-003-V-Z1	5/18/10	0 - 1	7	1	1	1		1	1				1
	R2-003-V-Z2	5/18/10	1 - 2	7	1	1	1		1	1				1
	R2-003-V-Z3	5/18/10	2 - 3	7	1	1	1		1	1				1
	R2-003-V-Z4	5/18/10	3 - 4	7	1	1	1		1	1				1
	R2-003-V-Z5	5/18/10	4 - 5	7	1	1	1		1	1				1
	R2-003-V-Z6	5/18/10	6 - 7	7	1	1	1		1	1				1

Table 2-1b
Summary of Samples Collected During the 2010 Vibracore Sampling Effort

Location	Sample ID	Sample Date	Sample Depth (feet)	Number of Analyses	Metals/ Mercury	Aroclors	16 PAHs	34 PAHs	TOC	Grain Size	AVS/ SEM	PCB Congeners	TCLP Metals	% Moisture
R2-004-V	R2-004-V-Z1P	5/18/10	0 - 1	7	1	1	1		1	1				1
	R2-004-V-Z1P2	5/24/10	0 - 1	1								1		
	R2-004-V-Z1	5/18/10	0 - 1	7	1	1	1		1	1				1
	R2-004-V-Z2	5/18/10	1 - 2	7	1	1	1		1	1				1
	R2-004-VR	5/18/10	1 - 2	7	1	1	1		1	1				1
	R2-004-V-Z3	5/18/10	2 - 3	7	1	1	1		1	1				1
	R2-004-V-Z4	5/18/10	3 - 3.5	7	1	1	1		1	1				1
	R2-004-V-Z5	5/18/10	4.5 - 5	7	1	1	1		1	1				1
R2-005-V	R2-005-V-Z1P	5/19/10	0 - 1	10	1	1	1		1	1	1	1		1
	R2-005-V-Z1	5/19/10	0 - 1	7	1	1	1		1	1				1
	R2-005-V-Z2	5/19/10	1 - 2	7	1	1	1		1	1				1
	R2-005-V-Z3	5/19/10	2 - 3	8	1	1	1		1	1			1	1
	R2-005-V-Z4	5/19/10	3 - 4	8	1	1	1		1	1		1	1	1
	R2-005-V-Z5	5/19/10	4 - 6	7	1	1	1		1	1				1
	R2-005-V-Z6	5/19/10	6 - 7	7	1	1	1		1	1				1
R2-006-V	R2-006-V-Z1P	5/19/10	0 - 1	7	1	1	1		1	1				1
	R2-006-V-Z1P2	5/24/10	0 - 1	1								1		
	R2-006-V-Z1	5/19/10	0 - 1	7	1	1	1		1	1				1
	R2-006-V-Z2	5/19/10	1 - 2	7	1	1	1		1	1				1
	R2-006-V-Z3	5/19/10	2 - 3	7	1	1	1		1	1				1
	R2-006-VR	5/19/10	2 - 3	7	1	1	1		1	1				1
	R2-006-V-Z4	5/19/10	3 - 4	7	1	1	1		1	1				1
	R2-006-V-Z5a	5/19/10	4 - 5	7	1	1	1		1	1				1
	R2-006-V-Z5b	5/19/10	5 - 6	7	1	1	1		1	1				1

Table 2-1b
Summary of Samples Collected During the 2010 Vibracore Sampling Effort

Location	Sample ID	Sample Date	Sample Depth (feet)	Number of Analyses	Metals/ Mercury	Aroclors	16 PAHs	34 PAHs	TOC	Grain Size	AVS/ SEM	PCB Congeners	TCLP Metals	% Moisture
R2-007-V	R2-007-V-Z1P	5/19/10	0 - 1	7	1	1	1		1	1				1
	R2-007-V-Z1P2	5/25/10	0 - 1	1								1		
	R2-007-V-Z1	5/19/10	0 - 1	7	1	1	1		1	1				1
	R2-007-V-Z2	5/19/10	1 - 2	7	1	1	1		1	1				1
	R2-007-V-Z3	5/19/10	2 - 3	7	1	1	1		1	1				1
	R2-007-V-Z4	5/19/10	3 - 4	7	1	1	1		1	1				1
	R2-007-V-Z5a	5/19/10	4 - 5	7	1	1	1		1	1				1
	R2-007-V-Z5b	5/19/10	5 - 6	7	1	1	1		1	1				1
R2-008-V	R2-008-V-Z1P	5/19/10	0 - 1	8	1	1		1	1	1		1		1
	R2-008-V-Z1	5/19/10	0 - 1	7	1	1		1	1	1				1
	R2-008-V-Z2	5/19/10	1 - 2	7	1	1		1	1	1				1
	R2-008-V-Z3	5/19/10	2 - 3	8	1	1		1	1	1			1	1
	R2-008-V-Z4	5/19/10	3 - 4	7	1	1		1	1	1				1
	R2-008-V-Z5	5/19/10	4.5 - 5	7	1	1		1	1	1				1
R2-009-V	R2-009-V-Z1P	5/19/10	0 - 1	7	1	1	1		1	1				1
	R2-009-V-Z1P2	5/25/10	0 - 1	1								1		
	R2-009-V-Z1	5/19/10	0 - 1	7	1	1	1		1	1				1
	R2-009-V-Z2	5/19/10	1 - 2	7	1	1	1		1	1				1
	R2-009-V-Z3	5/19/10	2 - 3	7	1	1	1		1	1				1
	R2-009-V-Z4	5/19/10	3 - 4	7	1	1	1		1	1				1
	R2-009-VR	5/19/10	3 - 4	7	1	1	1		1	1				1
	R2-009-V-Z5	5/19/10	4 - 5.5	7	1	1	1		1	1				1

Table 2-1b
Summary of Samples Collected During the 2010 Vibracore Sampling Effort

Location	Sample ID	Sample Date	Sample Depth (feet)	Number of Analyses	Metals/ Mercury	Aroclors	16 PAHs	34 PAHs	TOC	Grain Size	AVS/ SEM	PCB Congeners	TCLP Metals	% Moisture
R2-010-V	R2-010-V-Z1	5/25/10	0 - 1	4					1	1		1		1
	R2-010-V-Z1a	5/25/10	0 - 0.5	4	1	1	1							
	R2-010-V-Z1b	5/25/10	0.5 - 1	4	1	1	1							
	R2-010-V-Z2	5/25/10	1 - 2	7	1	1	1		1	1				1
	R2-010-V-Z3	5/25/10	2 - 3	7	1	1	1		1	1				1
	R2-010-V-Z4	5/25/10	3 - 4	7	1	1	1		1	1				1
	R2-010-V-Z5	5/25/10	4 - 6	7	1	1	1		1	1				1
	R2-010-V-Z6	5/25/10	6 - 8	7	1	1	1		1	1				1
	R2-010-VR	5/25/10	6 - 8	7	1	1	1		1	1				1
	R2-010-V-Z7a	5/25/10	8 - 9	7	1	1	1		1	1				1
	R2-010-V-Z7b	5/25/10	9 - 10	7	1	1	1		1	1				1
R2-011-V	R2-011-V-Z1	5/25/10	0 - 1	4					1	1		1		1
	R2-011-V-Z1a	5/25/10	0 - 0.5	4	1	1		1						
	R2-011-V-Z1b	5/25/10	0.5 - 1	4	1	1		1						
	R2-011-V-Z2	5/25/10	1 - 2	7	1	1		1	1	1		1		1
	R2-011-V-Z3	5/25/10	2 - 3	7	1	1		1	1	1		1		1
	R2-011-V-Z4	5/25/10	3 - 4	7	1	1		1	1	1		1		1
	R2-011-V-Z5	5/25/10	4 - 6	7	1	1		1	1	1		1		1
	R2-011-V-Z6	5/25/10	6 - 8	7	1	1		1	1	1		1		1
	R2-011-V-Z7	5/25/10	8 - 10	7	1	1		1	1	1		1		1
	R2-011-V-Z8	5/25/10	10 - 11.5	7	1	1		1	1	1		1		1
R2-012-V	R2-012-V-Z1	5/25/10	0 - 1	4					1	1		1		1
	R2-012-V-Z1a	5/25/10	0 - 0.5	4	1	1	1							
	R2-012-V-Z1b	5/25/10	0.5 - 1	4	1	1	1							
	R2-012-V-Z2	5/25/10	1 - 2	7	1	1	1		1	1				1
	R2-012-V-Z3	5/25/10	2 - 3	7	1	1	1		1	1				1
	R2-012-V-Z4	5/25/10	3 - 4	7	1	1	1		1	1				1
	R2-012-VR	5/25/10	3 - 4	7	1	1	1		1	1				1
	R2-012-V-Z5	5/25/10	4 - 6	7	1	1	1		1	1				1
	R2-012-V-Z6	5/25/10	6 - 8	7	1	1	1		1	1				1
	R2-012-V-Z7	5/25/10	8 - 9	7	1	1	1		1	1				1

Table 2-1b
Summary of Samples Collected During the 2010 Vibracore Sampling Effort

Location	Sample ID	Sample Date	Sample Depth (feet)	Number of Analyses	Metals/ Mercury	Aroclors	16 PAHs	34 PAHs	TOC	Grain Size	AVS/ SEM	PCB Congeners	TCLP Metals	% Moisture
R2-013-V	R2-013-V-Z1	5/25/10	0 - 1	4					1	1		1		1
	R2-013-V-Z1a	5/25/10	0 - 0.5	4	1	1	1							
	R2-013-V-Z1b	5/25/10	0.5 - 1	4	1	1	1							
	R2-013-V-Z2	5/25/10	1 - 2	7	1	1	1		1	1				1
	R2-013-V-Z3	5/25/10	2 - 3	7	1	1	1		1	1				1
	R2-013-V-Z4	5/25/10	3 - 4	7	1	1	1		1	1				1
	R2-013-V-Z5	5/25/10	4 - 6	7	1	1	1		1	1				1
	R2-013-V-Z6	5/25/10	6 - 8	7	1	1	1		1	1				1
	R2-013-V-Z7	5/25/10	8 - 10	7	1	1	1		1	1				1
	R2-013-V-Z8	5/25/10	10 - 12	7	1	1	1		1	1				1
R2-014-V	R2-014-V-Z1	5/25/10	0 - 1	4					1	1		1		1
	R2-014-V-Z1a	5/25/10	0 - 0.5	4	1	1		1						
	R2-014-V-Z1b	5/25/10	0.5 - 1	4	1	1		1						
	R2-014-V-Z2	5/25/10	1 - 2	7	1	1		1	1	1				1
	R2-014-V-Z3	5/25/10	2 - 3	7	1	1		1	1	1				1
	R2-014-V-Z4	5/25/10	3 - 4	8	1	1		1	1	1			1	1
	R2-014-V-Z5	5/25/10	4 - 6	7	1	1		1	1	1				1
	R2-014-VR	5/25/10	4 - 6	7	1	1		1	1	1				1
	R2-014-V-Z6	5/25/10	6 - 8	8	1	1		1	1	1			1	1
	R2-014-V-Z7	5/25/10	8 - 10	7	1	1		1	1	1				1
R2-015-V	R2-015-V-Z1	5/25/10	0 - 1	4					1	1		1		1
	R2-015-V-Z1a	5/25/10	0 - 0.5	4	1	1	1							
	R2-015-V-Z1b	5/25/10	0.5 - 1	4	1	1	1							
	R2-015-V-Z2	5/25/10	1 - 2	7	1	1	1		1	1				1
	R2-015-V-Z3	5/25/10	2 - 3	7	1	1	1		1	1				1
	R2-015-V-Z4	5/25/10	3 - 4	7	1	1	1		1	1				1
	R2-015-V-Z5	5/25/10	4 - 6	7	1	1	1		1	1				1
	R2-015-V-Z6	5/25/10	6 - 8	7	1	1	1		1	1				1
	R2-015-V-Z7a	5/25/10	8 - 9	7	1	1	1		1	1				1
	R2-015-V-Z7b	5/25/10	9 - 9.5	7	1	1	1		1	1				1
Reach 2	**132**				**120**	**120**	**88**	**32**	**112**	**112**	**2**	**23**	**6**	**112**

Table 2-1b
Summary of Samples Collected During the 2010 Vibracore Sampling Effort

Location	Sample ID	Sample Date	Sample Depth (feet)	Number of Analyses	Metals/ Mercury	Aroclors	16 PAHs	34 PAHs	TOC	Grain Size	AVS/ SEM	PCB Congeners	TCLP Metals	% Moisture
Reach 3 Locations: 12			**Total Number of Samples: 86**						**Ponar Samples: 12**			**Vibracore Samples: 74**		
R3-016-V	R3-016-V-Z1	5/26/10	0 - 1	5					1	1	1	1		
	R3-016-V-Z1a	5/26/10	0 - 0.5	4	1	1	1							
	R3-016-V-Z1b	5/26/10	0.5 - 1	4	1	1	1							
	R3-016-V-Z2	5/26/10	1 - 2	7	1	1	1		1	1				1
	R3-016-V-Z3	5/26/10	2 - 3	7	1	1	1		1	1				1
	R3-016-V-Z4	5/26/10	3 - 4	7	1	1	1		1	1				1
	R3-016-VR	5/26/10	3 - 4	7	1	1	1		1	1				1
	R3-016-V-Z5	5/26/10	4 - 6	7	1	1	1		1	1				1
	R3-016-V-Z6	5/26/10	6 - 8	7	1	1	1		1	1				1
	R3-016-V-Z7	5/26/10	8 - 9	7	1	1	1		1	1				1
R3-017-V	R3-017-V-Z1	5/26/10	0 - 1	4					1	1		1		1
	R3-017-V-Z1a	5/26/10	0 - 0.5	4	1	1	1							
	R3-017-V-Z1b	5/26/10	0.5 - 1	4	1	1	1							
	R3-017-V-Z2	5/26/10	1 - 2	7	1	1	1		1	1				1
	R3-017-V-Z3	5/26/10	2 - 3	7	1	1	1		1	1				1
	R3-017-V-Z4	5/26/10	3 - 4	8	1	1	1		1	1			1	1
	R3-017-V-Z5	5/26/10	4 - 6	7	1	1	1		1	1				1
	R3-017-VR	5/26/10	4 - 6	7	1	1	1		1	1				1
	R3-017-V-Z6	5/26/10	6 - 8	8	1	1	1		1	1			1	1
	R3-017-V-Z7	5/26/10	8 - 8.5	7	1	1	1		1	1				1
R3-018-V	R3-018-V-Z1	5/25/10	0 - 1	5					1	1	1	1		
	R3-018-V-Z1a	5/25/10	0 - 0.5	4	1	1	1							
	R3-018-V-Z1b	5/25/10	0.5 - 1	4	1	1	1							
	R3-018-V-Z2	5/25/10	1 - 2	7	1	1	1		1	1				1
	R3-018-V-Z3	5/25/10	2 - 3	7	1	1	1		1	1				1
	R3-018-V-Z4	5/25/10	3 - 4	7	1	1	1		1	1				1
	R3-018-V-Z5	5/25/10	4 - 6	7	1	1	1		1	1				1
	R3-018-V-Z6	5/25/10	6 - 8	7	1	1	1		1	1				1
	R3-018-V-Z7	5/25/10	8 - 10	7	1	1	1		1	1				1
	R3-018-V-Z8	5/25/10	10 - 12	7	1	1	1		1	1				1

Table 2-1b
Summary of Samples Collected During the 2010 Vibracore Sampling Effort

Location	Sample ID	Sample Date	Sample Depth (feet)	Number of Analyses	Metals/ Mercury	Aroclors	16 PAHs	34 PAHs	TOC	Grain Size	AVS/ SEM	PCB Congeners	TCLP Metals	% Moisture
R3-019-V	R3-019-V-Z1	5/26/10	0 - 1	4					1	1		1		1
	R3-019-V-Z1a	5/26/10	0 - 0.5	4	1	1	1							
	R3-019-V-Z1b	5/26/10	0.5 - 1	4	1	1	1							
	R3-019-V-Z2	5/26/10	1 - 2	7	1	1	1		1	1				1
	R3-019-V-Z3	5/26/10	2 - 3	7	1	1	1		1	1				1
	R3-019-V-Z4	5/26/10	3 - 4	7	1	1	1		1	1				1
R3-020-V	R3-020-V-Z1	5/26/10	0 - 1	5					1	1	1	1		
	R3-020-V-Z1a	5/26/10	0 - 0.5	4	1	1		1						
	R3-020-V-Z1b	5/26/10	0.5 - 1	4	1	1		1						
	R3-020-V-Z2	5/26/10	1 - 2	7	1	1		1	1	1		1		1
	R3-020-V-Z3	5/26/10	2 - 3	7	1	1		1	1	1		1		1
	R3-020-V-Z4	5/26/10	3 - 4	7	1	1		1	1	1		1		1
	R3-020-V-Z5	5/26/10	4 - 6	7	1	1		1	1	1		1		1
	R3-020-V-Z6	5/26/10	6 - 8	7	1	1		1	1	1		1		1
	R3-020-V-Z7	5/26/10	8 - 10	7	1	1		1	1	1		1		1
R3-021-V	R3-021-V-Z1	5/26/10	0 - 1	4					1	1		1		1
	R3-021-V-Z1a	5/26/10	0 - 0.5	4	1	1	1							
	R3-021-V-Z1b	5/26/10	0.5 - 1	4	1	1	1							
	R3-021-V-Z2	5/26/10	1 - 2	7	1	1	1		1	1				1
	R3-021-V-Z3	5/26/10	2 - 3	7	1	1	1		1	1				1
R3-022-V	R3-022-V-Z1	5/26/10	0 - 1	4					1	1		1		1
	R3-022-V-Z1a	5/26/10	0 - 0.5	4	1	1	1							
	R3-022-V-Z1b	5/26/10	0.5 - 1	4	1	1	1							
	R3-022-V-Z2	5/26/10	1 - 2	7	1	1	1		1	1				1
	R3-022-VR	5/26/10	1 - 2	6	1	1	1		1					1
	R3-022-V-Z3	5/26/10	2 - 3	7	1	1	1		1	1				1
	R3-022-V-Z4	5/26/10	3 - 4	7	1	1	1		1	1				1
	R3-022-V-Z5	5/26/10	4 - 6	7	1	1	1		1	1				1
	R3-022-V-Z6	5/26/10	6 - 6.8	7	1	1	1		1	1				1

Table 2-1b
Summary of Samples Collected During the 2010 Vibracore Sampling Effort

Location	Sample ID	Sample Date	Sample Depth (feet)	Number of Analyses	Metals/ Mercury	Aroclors	16 PAHs	34 PAHs	TOC	Grain Size	AVS/ SEM	PCB Congeners	TCLP Metals	% Moisture
R3-023-V	R3-023-V-Z1	5/26/10	0 - 1	4					1	1		1		1
	R3-023-V-Z1a	5/26/10	0 - 0.5	4	1	1		1						
	R3-023-V-Z1b	5/26/10	0.5 - 0.9	4	1	1		1						
	R3-023-V-Z2	5/26/10	1 - 2	7	1	1		1	1	1				1
R3-024-V	R3-024-V-Z1	5/26/10	0 - 1	4					1	1		1		1
	R3-024-V-Z1a	5/26/10	0 - 0.5	4	1	1	1							
	R3-024-V-Z1b	5/26/10	0.5 - 1	4	1	1	1							
	R3-024-V-Z2	5/26/10	1 - 2	7	1	1	1		1	1				1
	R3-024-V-Z3	5/26/10	2 - 3	7	1	1	1		1	1				1
	R3-024-V-Z4	5/26/10	3 - 4	7	1	1	1		1	1				1
	R3-024-V-Z5	5/26/10	4 - 6	7	1	1	1		1	1				1
	R3-024-V-Z6	5/26/10	6 - 8	7	1	1	1		1	1				1
R3-025-V	R3-025-V-Z1	5/26/10	0 - 1	4					1	1		1		1
	R3-025-V-Z1a	5/26/10	0 - 0.5	4	1	1	1							
	R3-025-V-Z1b	5/26/10	0.5 - 1	4	1	1	1							
R3-026-V	R3-026-V-Z1	5/27/10	0 - 1	4					1	1		1		1
	R3-026-V-Z1a	5/27/10	0 - 0.5	4	1	1		1						
	R3-026-V-Z1b	5/27/10	0.5 - 1	4	1	1		1						
	R3-026-V-Z2	5/27/10	1 - 2	7	1	1		1	1	1				1
	R3-026-V-Z3	5/27/10	2 - 3	8	1	1		1	1	1			1	1
	R3-026-V-Z4	5/27/10	3 - 4	7	1	1		1	1	1		1		1
R3-027-V	R3-027-V-Z1	5/27/10	0 - 1	6					1	1	1	1		1
	R3-027-V-Z1a	5/27/10	0 - 0.5	4	1	1	1							
	R3-027-V-Z1b	5/27/10	0.5 - 1	4	1	1	1							
	R3-027-V-Z2	5/27/10	1 - 2	7	1	1	1		1	1				1
	R3-027-V-Z3	5/27/10	2 - 3	7	1	1	1		1	1				1
	R3-027-V-Z4	5/27/10	3 - 4	7	1	1	1		1	1				1
Reach 3	**86**				**74**	**74**	**58**	**16**	**62**	**61**	**4**	**19**	**3**	**59**
Reach 5 Locations: 12				**Total Number of Samples: 80**							**Ponar Samples: 11**		**Vibracore Samples: 69**	
R5-039-V	R5-039-V-Z1	5/21/10	0 - 1	7	1	1	1		1	1				1
	R5-039-V-Z2	5/21/10	1 - 1.9	4	1	1	1							

Table 2-1b
Summary of Samples Collected During the 2010 Vibracore Sampling Effort

Location	Sample ID	Sample Date	Sample Depth (feet)	Number of Analyses	Metals/ Mercury	Aroclors	16 PAHs	34 PAHs	TOC	Grain Size	AVS/ SEM	PCB Congeners	TCLP Metals	% Moisture
R5-040-V	R5-040-V-Z1	5/20/10	0 - 1	3					1	1				1
	R5-040-V-Z1a	5/20/10	0 - 0.5	4	1	1		1						
	R5-040-V-Z1b	5/20/10	0.5 - 1	5	1	1		1					1	
	R5-040-V-Z2	5/20/10	1 - 2	7	1	1		1	1	1				1
	R5-040-V-Z3	5/20/10	2 - 3	7	1	1		1	1	1				1
	R5-040-V-Z4	5/20/10	3 - 4	7	1	1		1	1	1				1
	R5-040-V-Z5a	5/20/10	4.5 - 5	7	1	1		1	1	1				1
R5-041-V	R5-041-V-Z1	5/24/10	0 - 1	3					1	1				1
	R5-041-V-Z1a	5/24/10	0 - 0.5	4	1	1	1							
	R5-041-V-Z1b	5/24/10	0.5 - 1	4	1	1	1							
	R5-041-V-Z2	5/24/10	1 - 2	7	1	1	1		1	1				1
	R5-041-V-Z3	5/24/10	2 - 3	7	1	1	1		1	1				1
	R5-041-V-Z4	5/24/10	3 - 4	7	1	1	1		1	1				1
	R5-041-V-Z5a	5/24/10	4 - 5	7	1	1	1		1	1				1
	R5-041-V-Z5b	5/24/10	5 - 6	7	1	1	1		1	1				1
	R5-041-V-Z6a	5/24/10	6 - 7	7	1	1	1		1	1				1
	R5-041-V-Z6b	5/24/10	7 - 7.5	7	1	1	1		1	1				1
R5-042-V	R5-042-V-Z1	5/20/10	0 - 1	3					1	1				1
	R5-042-V-Z1a	5/20/10	0 - 0.5	4	1	1	1							
	R5-042-V-Z1b	5/20/10	0.5 - 1	4	1	1	1							
	R5-042-V-Z2	5/20/10	1 - 2	7	1	1	1		1	1				1
	R5-042-V-Z3	5/20/10	2 - 3	7	1	1	1		1	1				1
	R5-042-V-Z4	5/20/10	3 - 4	7	1	1	1		1	1				1
	R5-042-V-Z5a	5/20/10	4.5 - 5	7	1	1	1		1	1				1
R5-043-V	R5-043-V-Z1P	5/20/10	0 - 1	8	1	1	1		1	1			1	1
	R5-043-V-Z1	5/20/10	0 - 1	7	1	1	1		1	1				1
	R5-043-V-Z2	5/20/10	1 - 2	7	1	1	1		1	1				1
	R5-043-V-Z3	5/20/10	2 - 3	7	1	1	1		1	1				1
	R5-043-V-Z4	5/20/10	3 - 4	8	1	1	1		1	1			1	1
	R5-043-V-Z5a	5/20/10	4 - 4.5	7	1	1	1		1	1				1
	R5-043-V-Z5b	5/20/10	4.5 - 5	7	1	1	1		1	1				1

Table 2-1b
Summary of Samples Collected During the 2010 Vibracore Sampling Effort

Location	Sample ID	Sample Date	Sample Depth (feet)	Number of Analyses	Metals/ Mercury	Aroclors	16 PAHs	34 PAHs	TOC	Grain Size	AVS/ SEM	PCB Congeners	TCLP Metals	% Moisture
R5-044-V	R5-044-V-Z1	5/20/10	0 - 1	4					1		1			1
	R5-044-V-Z1a	5/20/10	0 - 0.5	4	1	1	1							
	R5-044-V-Z1b	5/20/10	0.5 - 1	4	1	1	1							
	R5-044-V-Z2	5/20/10	1 - 2	7	1	1	1		1	1				1
	R5-044-VR	5/20/10	1 - 2	7	1	1	1		1	1				1
	R5-044-V-Z3	5/20/10	2 - 3	7	1	1	1		1	1				1
R5-045-V	R5-045-V-Z1	5/20/10	0 - 1	4	1	1		1						
	R5-045-V-Z2	5/20/10	1 - 2	8	1	1		1	1	1			1	1
	R5-045-V-Z3	5/20/10	2 - 3	7	1	1		1	1	1				1
	R5-045-V-Z4	5/20/10	3 - 4	7	1	1		1	1	1				1
	R5-045-VR	5/20/10	3 - 4	6	1	1		1	1					1
	R5-045-V-Z5a	5/20/10	4.5 - 5	7	1	1		1	1	1				1
R5-046-V	R5-046-V-Z1	5/20/10	0 - 1	3					1	1				1
	R5-046-V-Z1a	5/20/10	0 - 0.5	4	1	1	1							
	R5-046-V-Z1b	5/20/10	0.5 - 1	4	1	1	1							
	R5-046-V-Z2	5/20/10	1 - 2	7	1	1	1		1	1				1
	R5-046-V-Z3	5/20/10	2 - 3	7	1	1	1		1	1				1
	R5-046-V-Z4	5/20/10	3 - 4	7	1	1	1		1	1				1
	R5-046-V-Z5a	5/20/10	4 - 5	7	1	1	1		1	1				1
	R5-046-V-Z5b	5/20/10	5 - 6	8	1	1	1		1	1			1	1
	R5-046-V-Z6a	5/20/10	6 - 7	7	1	1	1		1	1				1
R5-047-V	R5-047-V-Z1	5/20/10	0 - 1	3					1	1				1
	R5-047-V-Z1a	5/20/10	0 - 0.5	4	1	1		1						
	R5-047-V-Z1b	5/20/10	0.5 - 1	4	1	1		1						
	R5-047-V-Z2	5/20/10	1 - 2	8	1	1		1	1	1			1	1
	R5-047-V-Z3	5/20/10	2 - 3	7	1	1		1	1	1				1
	R5-047-V-Z4	5/20/10	3 - 4	7	1	1		1	1	1				1

Table 2-1b
Summary of Samples Collected During the 2010 Vibracore Sampling Effort

Location	Sample ID	Sample Date	Sample Depth (feet)	Number of Analyses	Metals/ Mercury	Aroclors	16 PAHs	34 PAHs	TOC	Grain Size	AVS/ SEM	PCB Congeners	TCLP Metals	% Moisture
R5-048-V	R5-048-V-Z1	5/21/10	0 - 1	3					1	1				1
	R5-048-V-Z1a	5/21/10	0 - 0.5	4	1	1	1							
	R5-048-V-Z1b	5/21/10	0.5 - 1	4	1	1	1							
	R5-048-V-Z2	5/21/10	1 - 2	7	1	1	1		1	1				1
	R5-048-V-Z3	5/21/10	2 - 3	7	1	1	1		1	1				1
R5-049-V	R5-049-V-Z1	5/21/10	0 - 1	4					1	1		1		1
	R5-049-V-Z1a	5/21/10	0 - 0.5	4	1	1	1							
	R5-049-V-Z1b	5/21/10	0.5 - 1	4	1	1	1							
	R5-049-V-Z2	5/21/10	1 - 2	8	1	1	1		1	1		1	1	1
	R5-049-V-Z3	5/21/10	2 - 3	8	1	1	1		1	1		1	1	1
	R5-049-V-Z4	5/21/10	3 - 4	7	1	1	1		1	1		1		1
	R5-049-V-Z5a	5/21/10	4 - 4.5	7	1	1	1		1	1				1
R5-050-V	R5-050-V-Z1	5/21/10	0 - 1	5					1	1	1			1
	R5-050-V-Z1a	5/21/10	0 - 0.5	4	1	1		1						
	R5-050-V-Z1b	5/21/10	0.5 - 1	4	1	1		1						
	R5-050-V-Z2	5/21/10	1 - 2	8	1	1		1	1	1			1	1
	R5-050-VR	5/21/10	1 - 2	7	1	1		1	1	1				1
	R5-050-V-Z3	5/21/10	2 - 3	7	1	1		1	1	1				1
	R5-050-V-Z4	5/21/10	3 - 4	8	1	1		1	1	1			1	1
	R5-050-V-Z5a	5/21/10	4 - 4.5	7	1	1		1	1	1				1
Reach 5	**80**				**71**	**71**	**47**	**24**	**60**	**58**	**2**	**4**	**10**	**60**
			2010 Vibracore and Ponar Original Samples:		**252**	**252**	**184**	**68**	**221**	**220**	**8**	**46**	**19**	**218**
			2010 Vibracore and Ponar Duplicate Samples:		**13**	**13**	**9**	**4**	**13**	**11**	**0**	**0**	**0**	**13**
			Total 2010 Vibracore and Ponar Samples:		**265**	**265**	**193**	**72**	**234**	**231**	**8**	**46**	**19**	**231**

Total 2010 Vibracoring and Ponar Locations: 39 **Total 2010 Vibracore Samples: 254** **Total 2010 Ponar Samples: 44**

Key:

AVS = Acid Volatile Sulfides.
PCB = Polychlorinated biphenyl.
SEM = Simultaneously extracted metals.
SVOC = Semivolatile organic compound.
TCLP = Toxicity characteristic leaching procedure.
TOC = Total organic carbon.
-V= Vibracore location/sample.
-VR = Duplicate vibracore sample.
-Z = Sample depth interval consecutively numbered.
% = Percent.

Table 2-1c
Summary of Samples Collected During the 2010 Data Gap Sediment Hand-coring Effort

Location	Sample ID	Sample Date	Sample Depth (feet)	Number of Analyses	Metals/ Mercury	Aroclors	16 PAHs	34 PAHs	TOC	Grain Size	% Moisture
Reach 4 Locations: 9		**Grab Creek Samples: 8**				**Composite Creek Samples: 4**				**Tributary Samples: 0**	
R4-135-C	R4-135-C-Comp	6/21/10	0 - 0.8	7	1	1			1	1	1
	R4-135-C-Z1a	6/21/10	0 - 0.5	7	1	1		1	1	1	1
R4-136-C	R4-136-C-Z1a	6/21/10	0 - 0.4	7	1	1	1		1	1	1
R4-137-C	R4-137-C-Comp	6/21/10	0 - 0.7	7	1	1	1	1	1	1	1
R4-138-C	R4-138-C-Comp	6/21/10	0 - 0.4	7	1	1		1	1	1	1
R4-139-C	R4-139-C-Z1a	6/22/10	0 - 0.3	7	1	1		1	1	1	1
R4-140-C	R4-140-C-Z1a	6/23/10	0 - 0.3	7	1	1	1		1	1	1
R4-141-C	R4-141-C-Comp	6/23/10	0 - 0.8	7	1	1	1		1	1	1
	R4-141-C-Z1a	6/23/10	0 - 0.5	7	1	1		1	1	1	1
	R4-141-CR	6/23/10	0 - 0.5	7	1	1		1	1	1	1
R4-142-C	R4-142-C-Z1a	6/23/10	0 - 0.2	7	1	1	1		1	1	1
R4-143-C	R4-143-C-Z1a	6/23/10	0 - 0.3	7	1	1	1		1	1	1
Reach 4 Samples	**12**				**12**	**12**	**6**	**6**	**12**	**12**	**12**
Reach 6 Locations: 28		**Grab Creek Samples: 24**				**Composite Creek Samples: 26**				**Tributary Samples: 0**	
R6-144-C	R6-144-C-Comp	7/2/10	0 - 1.3	7	1	1	1		1	1	1
	R6-144-C-Z1a	7/2/10	0 - 0.5	7	1	1		1	1	1	1
R6-145-C	R6-145-C-Comp	7/2/10	0 - 0.7	7	1	1	1		1	1	1
	R6-145-C-Z1a	7/2/10	0 - 0.5	7	1	1	1		1	1	1
R6-146-C	R6-146-C-Comp	7/2/10	0 - 1.1	7	1	1	1		1	1	1
	R6-146-C-Z1a	7/2/10	0 - 0.5	7	1	1	1		1	1	1
R6-147-C	R6-147-C-Comp	7/1/10	0 - 0.8	7	1	1	1		1	1	1
	R6-147-C-Z1a	7/1/10	0 - 0.5	7	1	1	1		1	1	1
R6-148-C	R6-148-C-Comp	7/1/10	0 - 0.9	7	1	1	1		1	1	1
	R6-148-CR	7/1/10	0 - 0.9	7	1	1	1		1	1	1
R6-149-C	R6-149-C-Comp	7/1/10	0 - 0.9	7	1	1		1	1	1	1
R6-150-C	R6-150-C-Comp	7/1/10	0 - 0.9	7	1	1	1		1	1	1
R6-151-C	R6-151-C-Comp	7/2/10	0 - 0.7	7	1	1		1	1	1	1
R6-152-C	R6-152-C-Comp	7/2/10	0 - 0.7	7	1	1	1		1	1	1
	R6-152-CR	7/2/10	0 - 0.7	7	1	1	1		1	1	1

Table 2-1c
Summary of Samples Collected During the 2010 Data Gap Sediment Hand-coring Effort

Location	Sample ID	Sample Date	Sample Depth (feet)	Number of Analyses	Metals/ Mercury	Aroclors	16 PAHs	34 PAHs	TOC	Grain Size	% Moisture
R6-153-C	R6-153-C-Comp	7/2/10	0 - 0.5	7	1	1		1	1	1	1
R6-154-C	R6-154-C-Comp	7/1/10	0 - 1.1	7	1	1	1		1	1	1
	R6-154-C-Z1a	7/1/10	0 - 0.5	7	1	1		1	1	1	1
R6-155-C	R6-155-C-Comp	7/1/10	0 - 0.7	7	1	1	1		1	1	1
R6-156-C	R6-156-C-Comp	7/1/10	0 - 0.7	7	1	1		1	1	1	1
R6-157-C	R6-157-C-Comp	7/1/10	0 - 1.2	7	1	1	1		1	1	1
	R6-157-C-Z1a	7/1/10	0 - 0.5	7	1	1	1		1	1	1
R6-158-C	R6-158-C-Comp	7/1/10	0 - 1.4	7	1	1	1		1	1	1
	R6-158-C-Z1a	7/1/10	0 - 0.5	7	1	1		1	1	1	1
	R6-158-CR	7/1/10	0 - 0.5	7	1	1		1	1	1	1
R6-159-C	R6-159-C-Comp	7/1/10	0 - 1.3	7	1	1	1		1	1	1
	R6-159-C-Z1a	7/1/10	0 - 0.5	7	1	1	1		1	1	1
R6-160-C	R6-160-C-Comp	7/1/10	0 - 1.7	7	1	1	1		1	1	1
	R6-160-C-Z1a	7/1/10	0 - 0.5	7	1	1	1		1	1	1
R6-161-C	R6-161-C-Z1	7/1/10	0.5 - 1.5	7	1	1	1		1	1	1
	R6-161-C-Z1a	7/1/10	0 - 0.5	7	1	1		1	1	1	1
R6-162-C	R6-162-C-Comp	6/30/10	0 - 0.8	7	1	1	1		1	1	1
R6-163-C	R6-163-C-Z1	6/30/10	0.5 - 1.4	7	1	1	1		1	1	1
	R6-163-C-Z1a	6/30/10	0 - 0.5	7	1	1		1	1	1	1
R6-164-C	R6-164-C-Comp	6/30/10	0 - 1.4	7	1	1	1		1	1	1
	R6-164-C-Z1a	6/30/10	0 - 0.5	7	1	1	1		1	1	1
R6-165-C	R6-165-C-Comp	6/30/10	0 - 1.6	7	1	1	1		1	1	1
	R6-165-C-Z1a	6/30/10	0 - 0.5	7	1	1		1	1	1	1
R6-166-C	R6-166-C-Comp	6/30/10	0 - 2.1	7	1	1	1		1	1	1
	R6-166-C-Z1a	6/30/10	0 - 0.5	7	1	1	1		1	1	1
R6-167-C	R6-167-C-Comp	6/30/10	0 - 1.3	7	1	1	1		1	1	1
	R6-167-C-Z1a	6/30/10	0 - 0.5	7	1	1	1		1	1	1
R6-168-C	R6-168-C-Comp	6/30/10	0 - 1.3	7	1	1	1		1	1	1
	R6-168-C-Z1a	6/30/10	0 - 0.5	7	1	1		1	1	1	1

Table 2-1c
Summary of Samples Collected During the 2010 Data Gap Sediment Hand-coring Effort

Location	Sample ID	Sample Date	Sample Depth (feet)	Number of Analyses	Metals/ Mercury	Aroclors	16 PAHs	34 PAHs	TOC	Grain Size	% Moisture
R6-169-C	R6-169-C-Comp	6/28/10	0 - 1.4	7	1	1	1		1	1	1
	R6-169-C-Z1a	6/28/10	0 - 0.5	7	1	1	1		1	1	1
R6-170-C	R6-170-C-Comp	6/25/10	0 - 1.5	7	1	1	1		1	1	1
	R6-170-C-Z1a	6/25/10	0 - 0.5	7	1	1		1	1	1	1
R6-171-C	R6-171-C-Comp	6/25/10	0 - 1.2	7	1	1	1		1	1	1
	R6-171-C-Z1a	6/25/10	0 - 0.5	7	1	1		1	1	1	1
Reach 6 Samples	**50**				**50**	**50**	**36**	**14**	**50**	**50**	**50**
Reach 7 locations: 34		**Grab Creek Samples: 31**				**Composite Creek Samples: 24**				**Tributary Samples: 9**	
R7-172-C	R7-172-C-Comp	6/25/10	0 - 0.9	7	1	1	1		1	1	1
	R7-172-C-Z1a	6/25/10	0 - 0.5	7	1	1		1	1	1	1
R7-173-C	R7-173-C-Comp	6/25/10	0 - 1.1	7	1	1	1		1	1	1
	R7-173-C-Z1a	6/25/10	0 - 0.5	7	1	1	1		1	1	1
R7-174-C	R7-174-C-Comp	6/25/10	0 - 1.2	7	1	1	1		1	1	1
	R7-174-C-Z1a	6/25/10	0 - 0.5	7	1	1		1	1	1	1
R7-175-C	R7-175-C-Z1	6/24/10	0.5 - 1.4	7	1	1	1		1	1	1
	R7-175-C-Z1a	6/24/10	0 - 0.5	7	1	1	1		1	1	1
R7-176-C	R7-176-C-Comp	6/24/10	0 - 0.9	7	1	1	1		1	1	1
	R7-176-C-Z1a	6/24/10	0 - 0.5	7	1	1		1	1	1	1
R7-177-C	R7-177-CR	6/24/10	0.5 - 1.1	7	1	1	1		1	1	1
	R7-177-C-Z1	6/24/10	0.5 - 1.1	7	1	1	1		1	1	1
	R7-177-C-Z1a	6/24/10	0 - 0.5	7	1	1	1		1	1	1
R7-178-C	R7-178-C-Z1	6/24/10	0.5 - 1.2	7	1	1	1		1	1	1
	R7-178-C-Z1a	6/24/10	0 - 0.5	7	1	1		1	1	1	1
R7-179-C	R7-179-C-Comp	6/23/10	0 - 0.7	7	1	1	1		1	1	1
	R7-179-C-Z1a	6/23/10	0 - 0.5	7	1	1	1		1	1	1
R7-180-C	R7-180-C-Comp	6/23/10	0 - 1.1	7	1	1	1		1	1	1
	R7-180-C-Z1a	6/23/10	0 - 0.5	7	1	1		1	1	1	1
R7-181-C	R7-181-C-Comp	7/1/10	0 - 1.3	7	1	1	1		1	1	1
	R7-181-C-Z1a	7/1/10	0 - 0.5	7	1	1	1		1	1	1
R7-182-C	R7-182-C-COMP	7/1/10	0 - 0.8	7	1	1		1	1	1	1

Table 2-1c
Summary of Samples Collected During the 2010 Data Gap Sediment Hand-coring Effort

Location	Sample ID	Sample Date	Sample Depth (feet)	Number of Analyses	Metals/ Mercury	Aroclors	16 PAHs	34 PAHs	TOC	Grain Size	% Moisture
R7-183-C	R7-183-C-Comp	7/1/10	0 - 1.3	7	1	1	1		1	1	1
	R7-183-C-Z1a	7/1/10	0 - 0.5	7	1	1	1		1	1	1
R7-184-C	R7-184-C-Comp	6/30/10	0 - 0.75	7	1	1		1	1	1	1
R7-185-C	R7-185-C-Comp	6/30/10	0 - 0.7	7	1	1	1		1	1	1
	R7-185-C-Z1a	6/30/10	0 - 0.5	7	1	1	1		1	1	1
R7-186-C	R7-186-C-Comp	6/30/10	0 - 0.7	7	1	1	1		1	1	1
	R7-186-C-Z1a	6/30/10	0 - 0.5	7	1	1		1	1	1	1
R7-187-C	R7-187-C-Comp	6/30/10	0 - 0.95	7	1	1	1		1	1	1
	R7-187-C-Z1a	6/30/10	0 - 0.5	7	1	1	1		1	1	1
R7-188-C	R7-188-C-Z1	6/30/10	0.4 - 1.1	7	1	1	1		1	1	1
	R7-188-C-Z1a	6/30/10	0 - 0.5	7	1	1	1		1	1	1
R7-189-C	R7-189-C-Comp	6/30/10	0 - 1.2	7	1	1	1		1	1	1
	R7-189-CR	6/30/10	0 - 1.2	7	1	1	1		1	1	1
	R7-189-C-Z1a	6/30/10	0 - 0.5	7	1	1	1		1	1	1
R7-190-C	R7-190-C-Comp	6/30/10	0 - 0.7	7	1	1		1	1	1	1
R7-191-C	R7-191-C-Comp	6/29/10	0 - 0.9	7	1	1	1		1	1	1
	R7-191-C-Z1a	6/29/10	0 - 0.5	7	1	1		1	1	1	1
R7-192-C	R7-192-C-Z1a	6/29/10	0 - 0.3	7	1	1	1		1	1	1
R7-193-C	R7-193-C-Comp	6/29/10	0 - 0.8	7	1	1	1		1	1	1
	R7-193-C-Z1a	6/29/10	0 - 0.5	7	1	1		1	1	1	1
R7-194-C	R7-194-C-Comp	6/29/10	0 - 0.6	7	1	1		1	1	1	1
R7-195-C	R7-195-C-Comp	6/29/10	0 - 0.6	7	1	1	1		1	1	1
R7-196-C	R7-196-C-Comp	6/29/10	0 - 1.3	7	1	1	1		1	1	1
	R7-196-C-Z1a	6/29/10	0 - 0.5	7	1	1	1		1	1	1
R7-197-C	R7-197-C-Comp	6/28/10	0 - 1.2	7	1	1	1		1	1	1
	R7-197-CR	6/28/10	0 - 1.2	7	1	1	1		1	1	1
	R7-197-C-Z1a	6/28/10	0 - 0.5	7	1	1	1		1	1	1
R7-198-C	R7-198-C-Comp	6/28/10	0 - 0.9	7	1	1	1		1	1	1
	R7-198-C-Z1a	6/28/10	0 - 0.5	7	1	1	1		1	1	1

Table 2-1c
Summary of Samples Collected During the 2010 Data Gap Sediment Hand-coring Effort

Location	Sample ID	Sample Date	Sample Depth (feet)	Number of Analyses	Metals/ Mercury	Aroclors	16 PAHs	34 PAHs	TOC	Grain Size	% Moisture
R7-199-C	R7-199-C-Comp	6/28/10	0 - 1.5	7	1	1	1		1	1	1
	R7-199-C-Z1a	6/28/10	0 - 0.5	7	1	1	1		1	1	1
R7-200-C	R7-200-C-Comp	6/28/10	0 - 3	7	1	1	1		1	1	1
	R7-200-C-Z1a	6/28/10	0 - 0.5	7	1	1		1	1	1	1
R7-201-T	R7-201-T-Comp	6/25/10	0 - 1.1	7	1	1		1	1	1	1
R7-201-T	R7-201-T-Z1a	6/25/10	0 - 0.5	7	1	1	1		1	1	1
R7-202-T	R7-202-T-Comp	6/29/10	0 - 0.9	7	1	1	1		1	1	1
R7-202-T	R7-202-T-Z1a	6/29/10	0 - 0.5	7	1	1		1	1	1	1
R7-203-T	R7-203-T-Comp	6/29/10	0 - 0.7	7	1	1	1		1	1	1
	R7-203-T-Z1a	6/29/10	0 - 0.5	7	1	1		1	1	1	1
R7-204-T	R7-204-T-Z1a	6/29/10	0 - 0.3	7	1	1	1		1	1	1
R7-205-T	R7-205-T-Comp	6/29/10	0 - 0.8	7	1	1	1		1	1	1
	R7-205-T-Z1a	6/29/10	0 - 0.5	7	1	1		1	1	1	1
Reach 7 Samples	**64**				**64**	**64**	**47**	**17**	**64**	**64**	**64**
			2010 Hand-core Original Samples:		**119**	**119**	**84**	**35**	**119**	**119**	**119**
			2010 Hand-core Duplicate Samples:		**7**	**7**	**5**	**2**	**7**	**7**	**7**
Total 2010 Hand-core Locations: 71			**Total 2010 Hand-core Samples:**		**126**	**126**	**89**	**37**	**126**	**126**	**126**

Key:

-C = Hand-core creek location/sample.
-CR = Duplicate hand-core sample.
-comp = Composite sample from entire hand-core.
PAH = Polynuclear aromatic hydrocarbon.
PCB = Polychlorinated biphenyl.
-T = Tributary location/sample.
TOC = Total organic carbon.
-Z1a = Sample collected from the 0-to-0.5-foot depth interval.
Z1 = Sample collected from the 0.5 to refusal depth interval.
% = Percent.

Table 2-2
Data Gap Hand-core Sample Locations and Purpose

Reach	Location Number	Sample ID	Purpose	Location Description
R4	135	R4-135-C	Extent	Downstream of R4-028-C, near SED-179 where sediment was recorded.
	136	R4-136-C	Extent	Between R4-028-C and R4-029-C at the exit of the culvert.
	137	R4-137-C	Extent	Between R4-029-C and R4-030-C in area with sediment >1 foot (SED 14).
	138	R4-138-C	Source	Multi-use industrial park between R4-030-C and R4-031-C.
	139	R4-139-C	Source	Multi-use industrial park between R4-031-C and R4-032-C downstream of outfall.
	140	R4-140-C	Extent	Upstream of multi-use industrial park between R4-031-C and R4-032-C.
	141	R4-141-C	Extent	Between R4-032-C and R4-033-C in depositional area.
	142	R4-142-C	Source	Between R4-033-C and R4-034-C downstream of tributary.
	143	R4-143-C	Source	Between R4-034-C and R4-035-C downstream of bridge.
			Total for Reach 4:	**9**
R6	144	R6-144-C	Source	Downstream of R6-051-C in depositional area on RDB.
	145	R6-145-C	Source	Downstream of R6-052-C in depositional area on LDB behind obstruction.
	146	R6-146-C	Confirmation	Near R6-052-C for confirmation.
	147	R6-147-C	Source	Between R6-052-C and R6-053-C downstream of outfalls (on RDB).
	148	R6-148-C	Extent	Between R6-053-C and R6-054-C (SED-115).
	149	R6-149-C	Extent	Between R6-053-C and R6-054-C downstream of side channel.
	150	R6-150-C	Extent	Between R6-054-C and R6-055-C downstream of drainage.
	151	R6-151-C	Source	Between R6-054-C and R6-055-C downstream of outfall.
	152	R6-152-C	Extent	Between R6-054-C and R6-055-C in depositional area by drainage point.
	153	R6-153-C	Extent	Between R6-055-C and R6-054-C downstream of outfall.
	154	R6-154-C	Confirmation	Between R6-055-C and R6-056-C downstream of side channel for confirmation of R6-055-C PAH results.
	155	R6-155-C	Extent	Between R6-056-C and R6-057-C upstream of side channel.
	156	R6-156-C	Extent	Between R6-057-C and R6-058-C downstream of first drainage area.
	157	R6-157-C	Extent	Between R6-057-C and R6-058-C (probe for sediment).
	158	R6-158-C	Extent	Between R6-057-C and R6-058-C downstream of second drainage area.
	159	R6-159-C	Extent	Between R6-057-C and R6-058-C in depositional area.
	160	R6-160-C	Extent	Between R6-057-C and R6-058-C upstream of obstruction near R6-058-C.
	161	R6-161-C	Extent	Between R6-058-C and R6-059-C in depositional area.
	162	R6-162-C	Extent	Between R6-058-C and R6-059-C in depositional area.
	163	R6-163-C	Extent	Between R6-059-C and R6-060-C downstream of outfall.
	164	R6-164-C	Extent	Between R6-060-C and R6-061-C downstream of outfall.
	165	R6-165-C	Extent	Between R6-060-C and R6-061-C downstream of outfall.
	166	R6-166-C	Extent	Between R6-061-C and R6-062-C in area of thicker sediment (point 337).
	167	R6-167-C	Extent	Between R6-061-C and R6-062-C (probe in the field to find sediment deposits).
	168	R6-168-C	Source	Between R6-062-C and R6-063-C in area of thicker sediment, downstream of outfall.
	169	R6-169-C	Source	Between R6-063-C and R6-064-C in area of thicker sediment, downstream of outfall (SED-334).
	170	R6-170-C	Source	Between R6-067-C and R7-068-C downstream of outfalls.
	171	R6-171-C	Source	Between R6-067-C and R7-068-C upstream of outfalls.
			Total for Reach 6:	**28**
R7	172	R7-172-C	Source	Between R7-068-C and R7-069-C in area of thicker sediment, downstream of outfalls.
	173	R7-173-C	Extent	Between R7-072-C and R7-073-C in area of thicker sediment (SED-318).
	174	R7-174-C	Confirmation	Near R7-073-C as confirmation sample.
	175	R7-175-C	Extent	Between R7-073-C and R7-074-C - directly downstream of outfall.

Table 2-2
Data Gap Hand-core Sample Locations and Purpose

Reach	Location Number	Sample ID	Purpose	Location Description
R7	176	R7-176-C	Extent	Between R7-076-C and R7-077-C in area of thicker sediment (SED-307).
	177	R7-177-C	Extent	Between R7-077-C and R7-078-C in area of thicker sediment.
	178	R7-178-C	Extent	Between R7-079-C and R7-080-C downstream of tributary and outfall in area with thick sediment.
	179	R7-179-C	Extent	Between R7-080-C and R7-081-C in area of thicker sediment (SED-97).
	180	R7-180-C	Extent	Between R7-082-C and R7-083-C in area of thicker sediment downstream of road (SED-90 20-inhes thick).
	181	R7-181-C	Extent	Between R7-085-C and R7-086-C downstream of the two drainage areas downstream of R7-131-H).
	182	R7-182-C	Extent	Between R7-086-C and R7-087-C near outfall and drainage.
	183	R7-183-C	Extent	Between R7-087-C and R7-088-C upstream of obstruction.
	184	R7-184-C	Confirmation	Near R7-088-C as confirmation sample.
	185	R7-185-C	Extent	Between R7-088-C and R7-089-C in depositional area (SED-78).
	186	R7-186-C	Confirmation	Near R7-089-C as confirmation sample.
	187	R7-187-C	Extent	Between R7-089-C and R7-090-C downstream of drainage.
	188	R7-188-C	Extent	Between R7-090-C and R7-091-C downstream of tributary.
	189	R7-189-C	Extent	Between R7-090-C and R7-091-C upstream of obstruction.
	190	R7-190-C	Extent	Between R7-092-C and R7-093-C downstream of drainage and upstream of obstruction.
	191	R7-191-C	Extent	Between R7-093-C and R7-094-C downstream of drainage and upstream of obstruction.
	192	R7-192-C	Extent	Between R7-096-C and R7-097-C in depositional area downstream of outfall.
	193	R7-193-C	Extent	Between R7-097-C and R7-098-C downstream of tributary.
	194	R7-194-C	Extent	Between R7-100-C and R7-101-C downstream of road, across from R7-134-H.
	195	R7-195-C	Extent	Between R7-101-C and R7-102-C near the road on RDB.
	196	R7-196-C	Extent	Between R7-102-C and EMC-C-11-SD-C.
	197	R7-197-C	Extent	Between R7-103-C and EMC-C-08-SD-C.
	198	R7-198-C	Confirmation	Between R7-103-C and EMC-C-08-SD-C.
	199	R7-199-C	Confirmation	Between R7-103-C and EMC-C-08-SD-C.
	200	R7-200-C	Source	Between EMC-C-04-SD-C and R7-106-C-downstream of confluence of Gulf Creek.
Total for Reach 7 main channel:				**29**
R7	201	R7-201-T	Source	East Branch, upstream of confluence near bend where depositional area was expected.
	202	R7-202-T	Background	East Branch, upstream in background location (as far upstream as possible where sediment is present).
	203	R7-203-T	Extent	Gulf Creek.
	204	R7-204-T	Extent	Gulf Creek.
	205	R7-205-T	Background	Upstream of Gulf Creek.
Total for Reach 7 Tributary:				**5**

Key:

-C = Hand-core creek location/sample.
PAH = Polynuclear aromatic hydrocarbon.
RDB = Right descending bank.
-T = Tributary location.

Table 2-3
Summary of Sample Locations Corrected During Review

Sample ID	Surveyed		Corrected	
	POINT X	POINT Y	POINT X	POINT Y
R6-058-C	-78.6976495	43.25593587	-78.69763336	43.25599528
R7-089-C	-78.71819676	43.21176577	-78.71812735	43.21178279
R7-090-C	-78.71767936	43.21051001	-78.71768772	43.21046285
R7-093-C	-78.71434196	43.20401624	-78.71445658	43.20478082

Table 2-4
Summary of Sediment Thickness and Bankfull delineation Survey (Fall 2010)

Reach	Length (miles) [1]	Bank to Bank Width			Water Depth Measurements (feet)			Sediment Thickness Measurements (feet)		
		Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum
Reach 1	2.19	--	--	--	--	--	--	--	--	--
Reach 2	1.48	--	--	--	--	--	--	--	--	--
Reach 3	0.48	157.7	346.7	60.0	2.5	7.8	0.5	5.2	12.0	0.3
Reach 4	1.21	65.4	96.0	26.8	1.1	4.5	0.1	0.6	3.3	0.0
Reach 5	0.63	92.1	115.4	56.8	3.5	11.6	0.2	4.0	12.8	0.0
Reach 6.1	1.89	70.3	98.3	23.4	1.4	4.5	0.0	0.4	2.9	0.0
Reach 6.2	1.46	70.5	87.7	44.5	2.2	5.0	0.0	1.1	4.4	0.0
Reach 6	3.35	70.4	98.3	23.4	1.8	5.0	0.0	0.7	4.4	0.0
Reach 7.1	1.32	59.0	78.1	20.7	2.1	5.0	0.5	1.4	4.5	0.0
Reach 7.2	2.40	61.4	90.4	36.8	2.2	4.5	0.1	1.2	4.5	0.0
Reach 7.3	0.99	43.8	56.5	11.0	2.8	6.0	0.4	2.2	8.0	0.1
Reach 7	4.71	57.5	90.4	11.0	2.3	6.0	0.1	1.4	8.0	0.0
Reach 8	0.42	--	--	--	--	--	--	--	--	--
Reach 9	0.18	--	--	--	--	--	--	--	--	--
Reach 10	0.57	--	--	--	--	--	--	--	--	--

Note:

[1] The lengths presented here were calculated based on digitized information from a 2008 aerial photo.

Key:

-- = Not measured (this reach was not part of the investigation).

Table 2-5
Summary of Water Depth and Sediment Thickness Measurements in Eighteenmile Creek by Reach

Reach	Average			Maximum			Minimum		
	Fall 2009	Spring/Summer 2010 (1)	Fall 2010	Fall 2009	Spring/Summer 2010 (1)	Fall 2010	Fall 2009	Spring/Summer 2010 (1)	Fall 2010
Water Depth Measurements (feet)									
Reach 2	--	*17.6*	--	--	*34.0*	--	--	*1.7*	0.5
Reach 3	--	*2.6*	2.5	--	*6.1*	0.5	--	*1.0*	0.1
Reach 4	0.8	*0.8*	1.1	1.3	*1.8*	0.1	0.5	*0.2*	0.2
Reach 5	--	*3.2*	3.5	--	*11.1*	0.2	--	*0.5*	0.0
Reach 6	1.1	*0.8*	1.8	2.4	*1.8*	0.0	0.3	*0.0*	0.0
Reach 7	1.4	*1.3*	2.3	3.3	*2.8*	0.1	0.1	*0.2*	0.1
Sediment Thickness Measurements (feet)									
Reach 2	--	*12.1*	--	--	*15.0*	--	--	*7.0*	--
Reach 3	--	*7.0*	5.22	--	*12.0*	12.0	--	*1.3*	0.3
Reach 4	0.8	*0.7*	0.56	1.6	*1.8*	3.25	0.4	*0.2*	0.0
Reach 5	--	*6.3*	3.97	--	*9.0*	12.8	--	*3.5*	0.0
Reach 6	1.8	*1.4*	0.73	5.6	*2.8*	4.4	0.5	*0.6*	0.0
Reach 7	1.8	*1.8*	1.43	4.5	*4.2*	8.0	0.5	*0.3*	0.0

Note:

The Spring/Summer 2010 values for each statistic are italicized for presentation purposes, since all Reaches were visited during that period.

Key:

-- = Not measured.

Table 3-1
Summary of Samples Collected

Method	Samples Collected			2009 Samples			2010 Vibracore and Ponar Samples			2010 Data Gap Samples		
	Total	Original	Duplicate	Total	Original	Duplicate	Total	Original	Duplicate	Total	Original	Duplicate
Metals/Mercury	495	470	25	104	99	5	265	252	13	126	119	7
Aroclors	495	470	25	104	99	5	265	252	13	126	119	7
16 PAHs	328	311	17	46	43	3	193	184	9	89	84	5
34 PAHs	109	103	6	0	0	0	72	68	4	37	35	2
TOC	464	439	25	104	99	5	234	221	13	126	119	7
Grain Size	461	438	23	104	99	5	231	220	11	126	119	7
Pesticides	46	43	3	46	43	3	0	0	0	0	0	0
AVS/SEM	39	36	3	31	28	3	8	8	0	0	0	0
TCLP Metals	23	23	0	4	4	0	19	19	0	0	0	0
PCB Congeners	80	77	3	34	31	3	46	46	0	0	0	0
% Moisture	388	365	23	31	28	3	231	218	13	126	119	7

Key:

AVS = Acid Volatile Sulfides.
PAH = Polynuclear aromatic hydrocarbon.
PCB = Polychlorinated biphenyl.
SEM = Simultaneously extracted metals.
TCLP = Toxicity characteristic leaching procedure.
TOC = Total organic carbon.

Table 3-2
Summary of Quality Control Sample Percentages

Method	Number of Samples Collected				QC Sample Percentages	
	Total	Original	Duplicate	MS/MSD	Field Duplicate	MS/MSD
Metals/Mercury	495	470	25	25	5.1%	5.1%
Aroclors	495	470	25	25	5.1%	5.1%
16 PAHs	328	311	17	19	5.2%	5.8%
34 PAHs	109	103	6	5	5.5%	4.6%
TOC	464	439	25	26	5.4%	5.6%
Grain Size	461	438	23	NR	5.0%	NR
Pesticides	46	43	3	4	6.5%	8.7%
AVS/SEM	39	36	3	3	7.7%	7.7%
TCLP Metals	23	23	0	0	0.0%	0.0%
PCB Congeners	80	59	3	5	3.8%	6.3%
% Moisture	388	365	23	NR	5.9%	NR

Key:

AVS = Acid Volatile Sulfides.
MS/MSD = Matrix spike/matrix spike duplicate.
NR = Not required.
PAH = Polynuclear aromatic hydrocarbon.
PCB = Polychlorinated biphenyl.
QC = Quality control.
SEM = Simultaneously extracted metals.
TCLP = Toxicity characteristic leaching procedure.
TOC = Total organic carbon.
% = Percent.

Table 3-3
Summary of Sample Delivery Groups

Round	Lab	SDG
2009 Hand-core	A4 Scientific	E0002
2009 Hand-core	A4 Scientific	E0023
2009 Hand-core	A4 Scientific	E0042
2009 Hand-core	A4 Scientific	E0054
2009 Hand-core	A4 Scientific	E0066
2009 Hand-core	A4 Scientific	E0089
2009 Hand-core	Chemtech Consulting Group	ME0002
2009 Hand-core	Chemtech Consulting Group	ME0023
2009 Hand-core	Chemtech Consulting Group	ME0042
2009 Hand-core	Chemtech Consulting Group	ME0055
2009 Hand-core	Chemtech Consulting Group	ME00A0
2009 Hand-core	Chemtech Consulting Group	ME0081
2009 Hand-core	TestAmerica Burlington	134767
2009 Hand-core	TestAmerica Burlington	134879
2009 Hand-core	TestAmerica Burlington	134965
2009 Hand-core	Region 5 EPA Central Regional Laboratory	0911007
2009 Hand-core	Region 5 EPA Central Regional Laboratory	0911010
2009 Hand-core	Region 5 EPA Central Regional Laboratory	0912001
2009 Hand-core	Region 5 EPA Central Regional Laboratory	0912005
2009 Hand-core	SGSW	G638-10
2009 Hand-core	SGSW	G638-11
2010 Vibracore	Bonner Analytical Testing	MB00B0
2010 Vibracore	Bonner Analytical Testing	MB00D1
2010 Vibracore	Bonner Analytical Testing	MB00F2
2010 Vibracore	Bonner Analytical Testing	MB00H4
2010 Vibracore	Bonner Analytical Testing	MB00K5
2010 Vibracore	Bonner Analytical Testing	MB00M5
2010 Vibracore	Bonner Analytical Testing	MB00P7
2010 Vibracore	Bonner Analytical Testing	MB00R7
2010 Vibracore	Bonner Analytical Testing	MB00S9
2010 Vibracore	Bonner Analytical Testing	MB00W0
2010 Vibracore	Bonner Analytical Testing	MB0100
2010 Vibracore	Bonner Analytical Testing	MB0108
2010 Vibracore	Bonner Analytical Testing	MB0117
2010 Vibracore	Bonner Analytical Testing	MB0155
2010 Vibracore	KAP Technologies	B00B0
2010 Vibracore	KAP Technologies	B00B8
2010 Vibracore	KAP Technologies	B00D9
2010 Vibracore	KAP Technologies	B00E2
2010 Vibracore	KAP Technologies	B00G4
2010 Vibracore	KAP Technologies	B00K1
2010 Vibracore	KAP Technologies	B00L4
2010 Vibracore	KAP Technologies	B00M8
2010 Vibracore	KAP Technologies	B00N4
2010 Vibracore	KAP Technologies	B00Q4
2010 Vibracore	KAP Technologies	B00S4
2010 Vibracore	KAP Technologies	B00Z6
2010 Vibracore	KAP Technologies	B00Z8
2010 Vibracore	KAP Technologies	B0126
2010 Vibracore	Cape Fear Analytical	1506
2010 Vibracore	Cape Fear Analytical	1508
2010 Vibracore	Region 5 EPA Central Regional Laboratory	1009034
2010 Vibracore	TestAmerica Burlington	NY137386
2010 Vibracore	TestAmerica Burlington	NY137391
2010 Vibracore	TestAmerica Burlington	NY137403
2010 Vibracore	TestAmerica Burlington	NY137407
2010 Vibracore	TestAmerica Burlington	NY137416
2010 Vibracore	TestAmerica Burlington	NY137436
2010 Vibracore	TestAmerica Burlington	NY137472
2010 Vibracore	TestAmerica Burlington	NY137474
2010 Vibracore	TestAmerica Burlington	NY137476
2010 Vibracore	TestAmerica Burlington	NY137491
2010 Vibracore	TestAmerica Burlington	NY137494
2010 Vibracore	TestAmerica Burlington	NY137498

Table 3-3
Summary of Sample Delivery Groups

Round	Lab	SDG
2010 Hand-core	Bonner Analytical Testing	MB0166
2010 Hand-core	Bonner Analytical Testing	MB0188
2010 Hand-core	Bonner Analytical Testing	MB01A8
2010 Hand-core	Bonner Analytical Testing	MB01C8
2010 Hand-core	Bonner Analytical Testing	MB01E8
2010 Hand-core	Bonner Analytical Testing	MB01H0
2010 Hand-core	Bonner Analytical Testing	MB01K0
2010 Hand-core	KAP Technologies	B0166
2010 Hand-core	KAP Technologies	B0167
2010 Hand-core	KAP Technologies	B01A0
2010 Hand-core	KAP Technologies	B01C6
2010 Hand-core	KAP Technologies	B01D0
2010 Hand-core	KAP Technologies	B01F2
2010 Hand-core	KAP Technologies	B01J4
2010 Hand-core	TestAmerica Burlington	NY137867
2010 Hand-core	TestAmerica Burlington	NY137917
2010 Hand-core	TestAmerica Burlington	NY137961
2010 Hand-core	TestAmerica Burlington	NY137977
2010 Hand-core	TestAmerica Burlington	NY137995
2010 Hand-core	TestAmerica Burlington	NY137997
2010 Hand-core	TestAmerica Burlington	NY138006
2010 Hand-core	TestAmerica Burlington	NY138007
2010 Hand-core	TestAmerica Burlington	NY138015

Key:
EPA = Environmental Protection Agency.
SDG = Sample delivery group.

Table 3-4
Sample Name Adjustments

Original Sample Name	Sample Name Adjusted
R4-137-C-Z1	R4-137-C-Comp
R4-138-C-Z1	R4-138-C-Comp
R4-139-C-Z1	R4-139-C-Z1a
R7-175-C-Z2	R7-175-C-Z1
R7-177-C-Z2	R7-177-C-Z1
R7-178-C-Z2	R7-178-C-Z1

Table 3-5
Summary of Qualified Sample Results

		Qualifier											
Method	**No qualifier**	**C**	**CU**	**HM**	**J**	**J-**	**J+**	**NJ**	**R**	**U**	**UH**	**UJ**	**UR**
AVS	39												
C200.7	2,126				6,753	89	142		20	730		966	64
CV	144				307		23			17		4	
D2216	388												
E200.7	43									118			
GRAIN SIZE	7,637												
HRGC/HRMS	5,817	2,098	152	2,735	1,319	3	69			2,574	787	24	
MC ARO	251				600			74		3,837		188	
MC PEST	52				215					691		7	1
MC SVOA	5,887				3,099					1,215		92	1
SW6010	108				99					35			
TOC	463									1			
Total Qualified	44.06%	4.03%	0.29%	5.25%	23.78%	0.18%	0.45%	0.14%	0.04%	17.69%	1.51%	2.46%	0.13%

Key:

J = The J qualifier indicates an estimated value because the associated QC data indicated a potential laboratory or matrix problem or interference. In addition, J flags assigned by the laboratory indicate the results are below the practical quantitation limit (PQL), but above the instrument detection limit (IDL) or method detection limit (MDL).

NJ = The NJ qualifier indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. This qualifier was only applied Aroclors results.

U = The result is considered non-detect at the reported value. The laboratory assigned this flag to analytes not present at detectable concentrations (above the IDL or MDL). The data validator assigned this flag when an analyte was considered non-detect due to blank contamination. If the result is above the PQL, the PQL is considered elevated.

UJ = The reported value for the PQL is estimated.

R = The result is rejected and not usable for environmental data assessment.

UR = The result is considered non-detect, but the reported value is rejected and not usable for environmental data assessment.

The following qualifiers were applied to PCB congeners results only.

C = The congener co-eluted with another congener.

CU = The congener co-eluted with another congener and was not detected.

HM = The sample contained high moisture, >70%.

UH = The sample contained high moisture, >70%, and the congener was not detected.

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-001-V-Z1P	R2-001-V-Z1a	R2-001-V-Z1b	R2-001-V-Z2	R2-001-V-Z3	R2-001-V-Z4	R2-001-V-Z5	R2-001-V-Z6	R2-002-V-Z1P
Sample Date	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010
Sample Depth Range (ft BGS)	0-1	0-0.5	0.5-1	1-2	2-3	3-4	4-5	6-7	0-1
Analyte									
Metals by C200.7 (mg/kg)									
ALUMINUM	26300 J	24100 J	23000 J	22800 J	22400 J	23700 J	22100	13100	23000 J
ANTIMONY	1.3 UR	1.5 UR	1.3 UR	1.2 UR	1.4 UR	1.2 UR	0.78 UJ	0.52 UR	1.4 UR
ARSENIC	8.1 J	8 J	8.1 J	10.4 J	27.4 J	21.5 J	17.1 J	4.5	7.9 J
BARIUM	248 J	229 J	244 J	281 J	406 J	353 J	343	183 J	231 J
BERYLLIUM	0.72 J	0.83 J	0.51 J	0.66 J	0.61 J	0.57 J	0.58 J	0.5 J	0.45 J
CADMIUM	1.3 J	1.5 J	2 J	4.7 J	13.5 J	5.6 J	1.6 J	0.24 J	1.3 J
CALCIUM	18300 J	18200 J	25200 J	29100 J	17600 J	18300 J	11300	3790	16900 J
CHROMIUM	73 J	89.3 J	119 J	202 J	1680 J	489 J	96.6	28.5	74.3 J
COBALT	14.7 J	14.6 J	15.1 J	19.2 J	23.4 J	20 J	15.5 J	12.4	14.2 J
COPPER	157 J	184 J	209 J	370 J	2230 J	1830 J	258	35.8	159 J
IRON	34000 J	31800 J	31100 J	33300 J	44800 J	36200 J	30700	19600	31900 J
LEAD	210 J	256 J	322 J	615 J	5500 J	3140 J	367	88.2	213 J
MAGNESIUM	8730 J	8480 J	8060 J	7890 J	6630 J	7250 J	7500	5970	8130 J
MANGANESE	871 J	743 J	716 J	691 J	518 J	574 J	544	381	835 J
NICKEL	47 J	51.5 J	60.1 J	156 J	453 J	213 J	68.4	26.5	46.3 J
POTASSIUM	3420 J	3260 J	3030 J	2880 J	2550 J	2730 J	2400	1620	3090 J
SELENIUM	1.2 UJ	1.3 UJ	1.1 UJ	1.1 U	1.2 UJ	1 U	0.68 U	0.46 U	1.2 UJ
SILVER	1.4 UJ	1.5 UJ	1.4 UJ	1.3 U	3.8 J	5 J	0.82 U	0.55 U	1.5 UJ
SODIUM	411 J	370 J	317 J	295 J	328 J	329 J	652 J	201 J	406 J
THALLIUM	1 UJ	1.1 UJ	1 UJ	0.94 U	1.1 UJ	0.91 U	0.6 U	0.4 U	1.1 UJ
VANADIUM	33.7 J	34.6 J	35.9 J	36.9 J	87.9 J	49.4 J	35.4	18.5	34.3 J
ZINC	630 J	741 J	915 J	1830 J	11000 J	2460 J	1030	127	630 J
Mercury by CV (mg/kg)									
MERCURY	0.3 J+	0.3 J+	0.5 J+	0.55 J+	1.9 J+	2.5 J+	2.9	1.8 J+	0.36 J+
PCBS by MC ARO (mg/kg)									
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	0.39	0.48	0.41 J	0.011 U	2.5	0.022 J	0.011 U	0.011 UJ	0.28 J
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.042 J	0.0099 J	0.012 J	0.011 U
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	0.39	0.48	0.41 J	0.011 U	2.5	0.064 J	0.0099 J	0.012 J	0.28 J

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-001-V-Z1P	R2-001-V-Z1a	R2-001-V-Z1b	R2-001-V-Z2	R2-001-V-Z3	R2-001-V-Z4	R2-001-V-Z5	R2-001-V-Z6	R2-002-V-Z1P
Sample Date	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010
Sample Depth Range (ft BGS)	0-1	0-0.5	0.5-1	1-2	2-3	3-4	4-5	6-7	0-1
Analyte									
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
2-METHYLNAPHTHALENE	0.0017 U	0.0017 U	0.011	0.0017 U	0.085	0.045	0.0017 U	0.0017 U	0.0059 U
ACENAPHTHENE	0.0017 U	0.0017 U	0.013	0.011	0.033	0.049	0.0017 U	0.0017 U	0.0059 U
ACENAPHTHYLENE	0.013	0.017	0.023	0.014	0.04	0.079	0.0066	0.0017 U	0.047
ANTHRACENE	0.026	0.025	0.035	0.024	0.029	0.081	0.0076	0.0017 U	0.012
BENZO(A)ANTHRACENE	0.15	0.14	0.17	0.11	0.26	0.34	0.034	0.0047	0.072
BENZO(A)PYRENE	0.16	0.15	0.19	0.094	0.33	0.33	0.039	0.006	0.077
BENZO(B)FLUORANTHENE	0.21	0.19	0.22	0.1	0.26	0.37	0.034	0.0046	0.039
BENZO(K)FLUORANTHENE	0.12	0.12	0.14	0.081	0.13	0.21	0.024	0.0051	0.063
CHRYSENE	0.22	0.21	0.25	0.14	0.43	0.49	0.043	0.0055	0.13
DIBENZ(A,H)ANTHRACENE	0.058	0.061	0.07	0.037	0.1	0.11	0.012	0.0017 U	0.017
FLUORANTHENE	0.32	0.27	0.34	0.19	0.28	0.67	0.04	0.0058	0.19
FLUORENE	0.012	0.014	0.017	0.015	0.07	0.086	0.0017 U	0.0017 U	0.0059 U
INDENO(1,2,3-C,D)PYRENE	0.14	0.12	0.14	0.087	0.15	0.19	0.026	0.0017 U	0.041
NAPHTHALENE	0.0017 U	0.0017 U	0.011	0.0017 U	0.016	0.028	0.0017 U	0.0017 U	0.0059 U
PHENANTHRENE	0.11	0.093	0.14	0.081	0.29	0.46	0.018	0.0048	0.067
PYRENE	0.27	0.25	0.29	0.17	0.36	0.63	0.048	0.0068	0.21
PAHs (total)	2	1.8	2.2	1.2	3.2	4.4	0.38	0.048	1 J

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-002-V-Z1	R2-002-V-Z2	R2-002-V-Z3	R2-002-V-Z4	R2-002-V-Z5	R2-002-VR	R2-002-V-Z6	R2-003-V-Z1P	R2-003-V
Sample Date	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/20
Sample Depth Range (ft BGS)	0-1	1-2	2-3	3-4	4-6	4-6	6-7.5	0-1	0-1
Analyte									
Metals by C200.7 (mg/kg)									
ALUMINUM	23100 J	23400 J	21900 J	24600 J	15900 J	15600 J	20200 J	23200 J	22800
ANTIMONY	1.4 UR	1.2 UR	1.2 UR	1.3 UR	0.83 UR	0.83 UR	0.82 UR	1.3 UR	1.3
ARSENIC	8.1 J	9.2 J	12.9 J	29.3 J	15.1 J	14.7 J	15.1 J	7.1 J	7
BARIUM	227 J	251 J	284 J	378 J	303 J	294 J	392 J	222 J	226
BERYLLIUM	0.54 J	0.57 J	0.73 J	0.13 UJ	0.39 J	0.4 J	0.57 J	0.6 J	0.51
CADMIUM	1.6 J	2.2 J	6.6 J	8.9 J	3.1 J	2.9 J	1.8 J	1.3 J	1.7
CALCIUM	17500 J	26400 J	22600 J	19100 J	13300 J	12900 J	14900 J	18300 J	21300
CHROMIUM	88.6 J	124 J	333 J	1200 J	290 J	277 J	81.6 J	70.8 J	94
COBALT	14.6 J	15.1 J	22.5 J	22.8 J	13.7 J	13.6 J	12.7 J	14.3 J	14.5
COPPER	185 J	215 J	541 J	3030 J	639 J	673 J	227 J	154 J	188
IRON	31300 J	31900 J	35200 J	41600 J	25700 J	24800 J	28000 J	30200 J	30300
LEAD	256 J	329 J	878 J	6760 J	873 J	789 J	325 J	210 J	270
MAGNESIUM	8310 J	8070 J	7700 J	6850 J	6110 J	6040 J	6770 J	8480 J	8190
MANGANESE	801 J	862 J	621 J	514 J	406 J	405 J	427 J	709 J	638
NICKEL	51.8 J	61.3 J	245 J	372 J	88.3 J	92.9 J	42.1 J	46.7 J	54
POTASSIUM	3090 J	2990 J	2790 J	2660 J	1980 J	1920 J	2270 J	3060 J	3080
SELENIUM	1.2 UJ	1.1 U	1 U	1.1 UJ	0.72 U	0.72 U	0.72 U	1.1 U	1.2
SILVER	1.4 UJ	1.3 U	1.5 J	4.3 J	1.8 J	2.3 J	0.86 U	1.3 U	1.4
SODIUM	344 J	295 J	256 J	258 J	128 J	132 J	131 J	361 J	327
THALLIUM	1 UJ	0.96 U	0.92 U	1 UJ	0.64 U	0.64 U	0.63 U	0.98 U	1
VANADIUM	33.7 J	35.1 J	49.1 J	82.6 J	28.9 J	28.3 J	32.1 J	32 J	32.3
ZINC	736 J	926 J	2650 J	6830 J	1290 J	1250 J	852 J	642 J	792
Mercury by CV (mg/kg)									
MERCURY	0.33 J+	0.53 J+	0.59 J+	2.6 J+	2.1 J+	1.5 J+	1.9 J+	0.36 J+	0.56
PCBS by MC ARO (mg/kg)									
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011
PCB-1248 (AROCLOR 1248)	0.42	0.38 J	0.71	1	0.011 U	0.1 J	0.011 U	0.066 J	0.13
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011
PCB-1260 (AROCLOR 1260)	0.011 U	0.011 U	0.011 U	0.011 U	0.012 J	0.078 J	0.011 U	0.034 J	0.011
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011
PCBs (total)	0.42	0.38 J	0.71	1	0.012 J	0.18 J	0.011 U	0.1 J	0.13

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-002-V-Z1	R2-002-V-Z2	R2-002-V-Z3	R2-002-V-Z4	R2-002-V-Z5	R2-002-VR	R2-002-V-Z6	R2-003-V-Z1P	R2-003-V
Sample Date	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/20
Sample Depth Range (ft BGS)	0-1	1-2	2-3	3-4	4-6	4-6	6-7.5	0-1	0-1
Analyte									
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
2-METHYLNAPHTHALENE	0.0058 U	0.0051 U	0.022	0.049	0.16 U	0.1 J	0.019	0.0017 U	0.0017
ACENAPHTHENE	0.0058 U	0.0051 U	0.0051 U	0.072	0.53 J	0.15 J	0.016	0.0017 U	0.0017
ACENAPHTHYLENE	0.036	0.027	0.033	0.041	0.019	0.027 J	0.018	0.011 J	0.0017
ANTHRACENE	0.02	0.0051 U	0.016	0.019	0.93 J	0.25 J	0.034	0.1	0.012
BENZO(A)ANTHRACENE	0.11	0.044	0.069	0.12	0.43 J	0.43 J	0.11	0.11	0.066
BENZO(A)PYRENE	0.16	0.051	0.066	0.15	0.4 J	0.14 J	0.13	0.12	0.078
BENZO(B)FLUORANTHENE	0.062	0.027	0.055	0.048	0.16 U	0.031 J	0.11 J	0.15	0.1
BENZO(K)FLUORANTHENE	0.17	0.039	0.051	0.056	0.16 U	0.11 J	0.085	0.12	0.064
CHRYSENE	0.18	0.066	0.13	0.21	0.51 J	0.45 J	0.16	0.17	0.093
DIBENZ(A,H)ANTHRACENE	0.026	0.0051 U	0.0051 U	0.011	0.054 J	0.015 J	0.014	0.064	0.034
FLUORANTHENE	0.31	0.097	0.14	0.21	1.6 J	0.71 J	0.21	0.26	0.12
FLUORENE	0.017	0.0051 U	0.015	0.045	0.43 J	0.17 J	0.022	0.0017 U	0.0017
INDENO(1,2,3-C,D)PYRENE	0.076	0.026	0.023	0.028	0.16 UJ	0.052 J	0.039	0.097	0.069
NAPHTHALENE	0.0058 U	0.0051 U	0.0051 U	0.01 J	0.16 U	0.041 J	0.011	0.0017 U	0.0017
PHENANTHRENE	0.1	0.037	0.071	0.15	2.3 J	0.79 J	0.12	0.098	0.042
PYRENE	0.31	0.079	0.17	0.27	1.2 J	0.89 J	0.26	0.21	0.12
PAHs (total)	1.7 J	0.52 J	0.87 J	1.5 J	8.4 J	4.3 J	1.4 J	1.6 J	0.9

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	-Z1	R2-003-V-Z2	R2-003-V-Z3	R2-003-V-Z4	R2-003-V-Z5	R2-003-V-Z6	R2-004-V-Z1P	R2-004-V-Z1	R2-004-V-Z2
Sample Date	10	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010
Sample Depth Range (ft BGS)		1-2	2-3	3-4	4-5	6-7	0-1	0-1	1-2
Analyte									
Metals by C200.7 (mg/kg)									
ALUMINUM	J	23200 J	24500 J	22400 J	22400 J	9350	23800 J	21800 J	21000 J
ANTIMONY	UR	1.3 UR	1.3 UR	1.2 UR	0.86 UJ	0.69 UJ	1.3 UR	1.2 UJ	1.2 UJ
ARSENIC	J	10.9 J	27.6 J	24.6 J	18.8 J	3.9 J	7.6 J	7.3 J	9 J
BARIUM	J	286 J	403 J	404 J	395 J	80.9	231 J	219 J	257 J
BERYLLIUM	J	0.73 J	0.48 J	0.64 J	0.6 J	0.36 J	0.41 J	0.42 J	0.46 J
CADMIUM	J	5.3 J	12.8 J	6.2 J	3 J	0.035 U	0.069 UJ	2 J	4.3 J
CALCIUM	J	29000 J	18700 J	17500 J	12300 J	4040	15600 J	18500 J	26700 J
CHROMIUM	J	228 J	1480 J	684 J	261 J	13.8	72.6 J	108 J	173 J
COBALT	J	20.3 J	25.2 J	19.9 J	16.3 J	9.9 J	0.15 UJ	0.14 UJ	16.6 J
COPPER	J	452 J	2330 J	1950 J	467 J	16.7	158 J	223 J	328 J
IRON	J	34200 J	44200 J	38300 J	31300 J	15500	32200 J	30900 J	30500 J
LEAD	J	715 J	5370 J	3240 J	552 J	11.8	211 J	306 J	526 J
MAGNESIUM	J	8080 J	7190 J	6640 J	6720 J	4030	8340 J	8240 J	7660 J
MANGANESE	J	702 J	601 J	572 J	459 J	297	951 J	803 J	717 J
NICKEL	J	192 J	408 J	249 J	71.2 J	20.1	47.5 J	58.7 J	97.3 J
POTASSIUM	J	3010 J	2850 J	2660 J	2370 J	1450	3090 J	2780 J	2590 J
SELENIUM	UJ	1.1 U	1.2 UJ	1.1 U	0.75 UJ	0.6 U	1.2 UJ	1.1 UJ	1 UJ
SILVER	UJ	1.3 U	4 J	5.4 J	1.2 J	0.72 U	1.4 UJ	1.3 UJ	1.2 UJ
SODIUM	J	288 J	303 J	264 J	590 J	5.1 U	967 J	820 J	759 J
THALLIUM	UJ	0.96 U	1 UJ	0.95 U	0.66 UJ	0.53 U	1 UJ	0.95 UJ	0.9 UJ
VANADIUM	J	41.4 J	88.8 J	49.2 J	37.4 J	18.4	33.9 J	32.1 J	37.3 J
ZINC	J	2060 J	8900 J	2390 J	1690 J	57.3	649 J	904 J	1560 J
Mercury by CV (mg/kg)									
MERCURY	J+	0.68 J+	1.8 J+	4.2 J+	2 J	0.07 U	0.47 J	0.51 J	0.55 J
PCBS by MC ARO (mg/kg)									
PCB-1016 (AROCLOR 1016)	U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	J	0.51	4.1	0.68	0.15	0.011 U	0.4 J	0.67 J	0.47 J
PCB-1254 (AROCLOR 1254)	U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	U	0.011 U	0.23 J	0.17 J	0.042 J	0.012 J	0.011 U	0.011 U	0.011 U
PCB-1262 (AROCHLOR 1262)	U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	J	0.51	4.3 J	0.85 J	0.19 J	0.012 J	0.4 J	0.67 J	0.47 J

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID		R2-003-V-Z2	R2-003-V-Z3	R2-003-V-Z4	R2-003-V-Z5	R2-003-V-Z6	R2-004-V-Z1P	R2-004-V-Z1	R2-004-V-Z2
Sample Date		5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010
Sample Depth Range (ft BGS)		1-2	2-3	3-4	4-5	6-7	0-1	0-1	1-2
Analyte									
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
2-METHYLNAPHTHALENE	U	0.011	0.0017 U	0.065	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
ACENAPHTHENE	U	0.016	0.0017 U	0.1	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
ACENAPHTHYLENE	U	0.023	0.0017 U	0.18	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0098 J
ANTHRACENE	J	0.044	0.12 J	0.18	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
BENZO(A)ANTHRACENE		0.16	0.41	0.69	0.2	0.0017 U	0.069	0.078	0.072
BENZO(A)PYRENE		0.17	0.4	0.58	0.21	0.0017 U	0.059	0.08	0.073
BENZO(B)FLUORANTHENE		0.2	0.37	0.73	0.2	0.0017 U	0.071	0.088	0.081
BENZO(K)FLUORANTHENE		0.12	0.2	0.45	0.14	0.0017 U	0.041	0.061	0.054
CHRYSENE		0.23	0.64	0.96	0.29	0.0017 U	0.1	0.11	0.1
DIBENZ(A,H)ANTHRACENE		0.086	0.12 J	0.18	0.067	0.0017 U	0.0017 U	0.0017 U	0.0017 U
FLUORANTHENE		0.31	0.63	1.6 J	0.37	0.0017 U	0.14	0.15	0.13
FLUORENE	U	0.022	0.13	0.22	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
INDENO(1,2,3-C,D)PYRENE		0.13	0.2	0.4	0.15	0.0017 U	0.049	0.057	0.05
NAPHTHALENE	U	0.0017 U	0.0017 U	0.043	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
PHENANTHRENE		0.15	0.52	1.2	0.26	0.0017 U	0.055	0.058	0.059
PYRENE		0.28	0.71	1.5	0.36	0.0017 U	0.13	0.13	0.12
PAHs (total)	J	2.1	4.9 J	9.5 J	2.5	0.0017 U	0.78	0.89	0.82 J

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-004-VR		R2-004-V-Z3	R2-004-V-Z4	R2-004-V-Z5	R2-005-V-Z1P	R2-005-V-Z1	R2-005-V-Z2	R2-005-V-Z3	R2-005-V-Z4
Sample Date	5/18/2010		5/18/2010	5/18/2010	5/18/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010
Sample Depth Range (ft BGS)	1-2		2-3	3-3.5	40638-5	0-1	0-1	1-2	2-3	3-4
Analyte										
Metals by C200.7 (mg/kg)										
ALUMINUM	21100	J	21600 J	21700 J	12600	20900 J	19500 J	19900 J	19100 J	22300 J
ANTIMONY	1.2	UJ	1.3 UR	1.1 UJ	0.55 UJ	1.2 UJ	1.2 UJ	1.1 UJ	1.2 UJ	1.2 UJ
ARSENIC	9.2	J	26.1 J	22.1 J	6.2 J	7.3 J	6.9 J	9.3 J	25 J	32.2 J
BARIUM	255	J	385 J	341 J	314	213 J	206 J	256 J	368 J	394 J
BERYLLIUM	0.43	J	0.25 J	0.2 J	0.35 J	0.53 J	0.41 J	0.54 J	0.37 J	0.12 UJ
CADMIUM	4.2	J	15.9 J	5.6 J	0.028 U	0.063 UJ	2 J	5.3 J	17.5 J	9.9 J
CALCIUM	26200	J	17800 J	15600 J	11300	16300 J	18500 J	27600 J	16700 J	18500 J
CHROMIUM	178	J	1680 J	602 J	50.2	81 J	95.3 J	204 J	1780 J	969 J
COBALT	17.5	J	23.6 J	20.1 J	12 J	0.13 UJ	0.13 UJ	17.9 J	22 J	24.4 J
COPPER	338	J	2120 J	2180 J	72.4	183 J	208 J	383 J	1890 J	3240 J
IRON	31100	J	41000 J	35000 J	19600	29900 J	28100 J	30100 J	38000 J	37200 J
LEAD	519	J	4810 J	4250 J	192	234 J	278 J	576 J	3970 J	6760 J
MAGNESIUM	7670	J	6760 J	6520 J	6830	7930 J	7800 J	7600 J	6530 J	7160 J
MANGANESE	722	J	515 J	549 J	431	859 J	728 J	660 J	444 J	541 J
NICKEL	113	J	441 J	218 J	26.6	49.1 J	53.6 J	121 J	428 J	320 J
POTASSIUM	2620	J	2330 J	2280 J	1690	2650 J	2500 J	2370 J	2050 J	2290 J
SELENIUM	1.1	UJ	1.2 UJ	0.96 UJ	0.48 U	1.1 UJ	1 UJ	0.98 UJ	1.2 J	1 UJ
SILVER	1.3	UJ	3.7 J	3.7 J	0.57 U	1.3 UJ	1.2 UJ	1.4 J	3.8 J	5.7 J
SODIUM	774	J	821 J	656 J	4.1 U	834 J	758 J	709 J	732 J	727 J
THALLIUM	0.93	UJ	1 UJ	0.85 UJ	0.42 U	0.94 UJ	0.89 UJ	0.86 UJ	0.92 UJ	0.91 UJ
VANADIUM	37.3	J	88.6 J	56.3 J	20.5	31.7 J	28.6 J	33.4 J	95.4 J	71.7 J
ZINC	1580	J	10900 J	3200 J	229	710 J	839 J	1770 J	9430 J	6050 J
Mercury by CV (mg/kg)										
MERCURY	0.63	J	2 J	2.2 J	3.1	0.53 J	0.75 J	0.64 J	1.7 J	2.8 J
PCBS by MC ARO (mg/kg)										
PCB-1016 (AROCLOR 1016)	0.011	U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011	U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011	U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011	U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	0.011	U	2.7	0.7	0.011 U	0.26 J	0.35 J	0.47	7	2.8
PCB-1254 (AROCLOR 1254)	0.011	U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.011	U	0.15 J	0.097 J	0.009 J	0.011 U	0.011 U	0.011 U	0.25 J	0.21 J
PCB-1262 (AROCHLOR 1262)	0.011	U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011	U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	0.011	U	2.9 J	0.8 J	0.009 J	0.26 J	0.35 J	0.47	7.3 J	3 J

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-004-VR	R2-004-V-Z3	R2-004-V-Z4	R2-004-V-Z5	R2-005-V-Z1P	R2-005-V-Z1	R2-005-V-Z2	R2-005-V-Z3	R2-005-V-Z4
Sample Date	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010
Sample Depth Range (ft BGS)	1-2	2-3	3-3.5	40638-5	0-1	0-1	1-2	2-3	3-4
Analyte									
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
2-METHYLNAPHTHALENE	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.012	0.27	0.0017 U
ACENAPHTHENE	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.017	0.068	0.07
ACENAPHTHYLENE	0.0099 J	0.0017 U	0.045 J	0.0017 U	0.016	0.0017 U	0.03	0.067	0.11
ANTHRACENE	0.014	0.0017 U	0.055	0.0052	0.03	0.024	0.037	0.049	0.1
BENZO(A)ANTHRACENE	0.071	0.52	0.16	0.026	0.13	0.1	0.18	0.9	0.57
BENZO(A)PYRENE	0.086	0.48	0.14	0.034	0.15	0.067	0.19	0.9	0.58
BENZO(B)FLUORANTHENE	0.091	0.32	0.1	0.025	0.19	0.064	0.23	0.58	0.54
BENZO(K)FLUORANTHENE	0.073	0.14	0.078	0.025	0.082	0.044	0.13	0.25	0.32
CHRYSENE	0.097	0.86	0.25	0.03	0.19	0.13	0.25	1.7	0.88
DIBENZ(A,H)ANTHRACENE	0.035	0.12 J	0.042 J	0.0081	0.043	0.023	0.077	0.24	0.17
FLUORANTHENE	0.0017 U	0.4	0.28	0.032	0.26	0.15	0.33	0.66	0.93
FLUORENE	0.0096 J	0.12 J	0.055	0.0017 U	0.012	0.0017 U	0.03	0.18	0.18
INDENO(1,2,3-C,D)PYRENE	0.075	0.16	0.082	0.018	0.1	0.044	0.14	0.31	0.32
NAPHTHALENE	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0094 J	0.03	0.045
PHENANTHRENE	0.056	0.44	0.22	0.018	0.1	0.07	0.16	0.68	0.75
PYRENE	0.11	0.65	0.29	0.037	0.24	0.17	0.31	1	0.94
PAHs (total)	0.8 J	4.6 J	1.9 J	0.28	1.7	0.94	2.3 J	8.4	7.1

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-005-V-Z5	R2-005-V-Z6	R2-006-V-Z1P	R2-006-V-Z1	R2-006-V-Z2	R2-006-V-Z3	R2-006-VR	R2-006-V-Z4	R2-006-V-Z5a
Sample Date	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010
Sample Depth Range (ft BGS)	4-6	6-7	0-1	0-1	1-2	2-3	2-3	3-4	4-5
Analyte									
Metals by C200.7 (mg/kg)									
ALUMINUM	17400 J	22000 J	19500 J	15600 J	19000 J	17600 J	17200 J	16800 J	20300 J
ANTIMONY	0.98 UJ	0.98 UJ	1.1 UJ	0.91 UJ	1.1 UJ	1.1 UJ	0.98 UJ	0.98 UJ	1 UJ
ARSENIC	16.6 J	22.7 J	6.6 J	5.3 J	9.1 J	23.1 J	21.2 J	16.5 J	22.5 J
BARIUM	370 J	376 J	190 J	162 J	254 J	344 J	320 J	364 J	401 J
BERYLLIUM	0.44 J	0.67 J	0.46 J	0.37 J	0.58 J	0.62 J	0.23 J	0.35 J	0.7 J
CADMIUM	8.1 J	5.3 J	0.059 UJ	1.3 J	5.4 J	14.9 J	12.9 J	8.2 J	7.3 J
CALCIUM	13200 J	12800 J	18400 J	23600 J	29300 J	23900 J	22800 J	12300 J	17000 J
CHROMIUM	505 J	565 J	70.1 J	70.3 J	200 J	1570 J	1320 J	532 J	602 J
COBALT	17.6 J	18.5 J	0.13 UJ	12 J	17.4 J	19.3 J	19.4 J	16.8 J	19.6 J
COPPER	1600 J	888 J	151 J	145 J	379 J	1770 J	1720 J	1740 J	1480 J
IRON	27700 J	31900 J	27200 J	22800 J	28800 J	33300 J	30300 J	26700 J	34600 J
LEAD	2140 J	548 J	188 J	203 J	603 J	3750 J	3790 J	2110 J	1820 J
MAGNESIUM	7010 J	6960 J	7680 J	7150 J	7570 J	6730 J	6460 J	6850 J	7060 J
MANGANESE	424 J	553 J	687 J	593 J	650 J	505 J	461 J	353 J	532 J
NICKEL	186 J	107 J	42.3 J	43.3 J	130 J	363 J	333 J	178 J	202 J
POTASSIUM	2040 J	2320 J	2480 J	2000 J	2260 J	1880 J	1920 J	1870 J	2190 J
SELENIUM	0.85 UJ	0.85 UJ	1 UJ	0.79 UJ	0.92 UJ	1.1 J	0.85 UJ	0.86 UJ	0.91 UJ
SILVER	5.3 J	3.3 J	1.2 UJ	0.96 UJ	1.4 J	3.4 J	3 J	5.4 J	5.5 J
SODIUM	591 J	592 J	762 J	572 J	646 J	634 J	622 J	567 J	685 J
THALLIUM	0.75 UJ	0.75 UJ	0.88 UJ	0.7 UJ	0.81 UJ	0.82 UJ	0.75 UJ	0.76 UJ	0.81 UJ
VANADIUM	32.3 J	36.2 J	25.1 J	23.5 J	34.8 J	79.4 J	69.6 J	35.2 J	42.7 J
ZINC	2660 J	2680 J	579 J	599 J	1820 J	9070 J	8650 J	2690 J	2460 J
Mercury by CV (mg/kg)									
MERCURY	3.3 J	1.6 J	0.43 J	0.32 J	0.62 J	1.6 J	1.9 J	3.1 J	2.7 J
PCBS by MC ARO (mg/kg)									
PCB-1016 (AROCLOR 1016)	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	0.095 J	0.011 U	0.13 J	0.15 J	0.23 J	6.1 J	2.9 J	0.39 J	0.22 J
PCB-1254 (AROCLOR 1254)	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.011 UJ	0.062 J	0.011 U	0.011 U	0.011 U	0.19 J	0.16 J	0.14 J	0.1 J
PCB-1262 (AROCHLOR 1262)	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	0.095 J	0.062 J	0.13 J	0.15 J	0.23 J	6.3 J	3.1 J	0.53 J	0.32 J

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-005-V-Z5	R2-005-V-Z6	R2-006-V-Z1P	R2-006-V-Z1	R2-006-V-Z2	R2-006-V-Z3	R2-006-VR	R2-006-V-Z4	R2-006-V-Z5a
Sample Date	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010
Sample Depth Range (ft BGS)	4-6	6-7	0-1	0-1	1-2	2-3	2-3	3-4	4-5
Analyte									
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
2-METHYLNAPHTHALENE	0.094	0.17	0.013	0.0089	0.011	0.035 J	0.1 J	0.014	0.034
ACENAPHTHENE	0.11	0.069	0.0094 J	0.0017 U	0.0017 U	0.019 J	0.049 J	0.022	0.033
ACENAPHTHYLENE	0.22	0.13	0.02	0.015	0.0096 J	0.021 J	0.07 J	0.047	0.074
ANTHRACENE	0.24	0.18	0.035	0.02	0.013	0.015 J	0.053 J	0.066	0.07
BENZO(A)ANTHRACENE	1.1	0.59	0.17	0.1	0.064	0.25 J	0.72 J	0.18 J	0.27
BENZO(A)PYRENE	0.76	0.51	0.19	0.11	0.046	0.23 J	0.74 J	0.13 J	0.24
BENZO(B)FLUORANTHENE	0.86	0.59	0.25	0.14	0.053	0.15 J	0.56 J	0.15 J	0.29
BENZO(K)FLUORANTHENE	0.61	0.41	0.16	0.064	0.027	0.074 J	0.26 J	0.069	0.18
CHRYSENE	1.5	0.77	0.26	0.15	0.088	0.41 J	1.4 J	0.22 J	0.36
DIBENZ(A,H)ANTHRACENE	0.22	0.17	0.052	0.033	0.016	0.064 J	0.19 J	0.034	0.081
FLUORANTHENE	2.8	1.8	0.36	0.2	0.11	0.18 J	0.68 J	0.34 J	0.61
FLUORENE	0.26	0.2	0.016	0.011	0.016	0.047 J	0.15 J	0.049	0.077
INDENO(1,2,3-C,D)PYRENE	0.47	0.36	0.17	0.094	0.035	0.088 J	0.3 J	0.074	0.16
NAPHTHALENE	0.086	0.056	0.017	0.01	0.0017 U	0.0093 J	0.034 J	0.013	0.02
PHENANTHRENE	1.9	0.88	0.13	0.071	0.071	0.19 J	0.59 J	0.23	0.39
PYRENE	2.4	1.6	0.33	0.18	0.1	0.3 J	0.95 J	0.3 J	0.51
PAHs (total)	14	8.7	2.4 J	1.3	0.7 J	2.3 J	7.5 J	2 J	3.6

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-006-V-Z5b	R2-007-V-Z1	R2-007-V-Z1P	R2-007-V-Z2	R2-007-V-Z3	R2-007-V-Z4	R2-007-V-Z5a	R2-007-V-Z5b	R2-008-V-Z1
Sample Date	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010
Sample Depth Range (ft BGS)	5-6	0-1	0-1	1-2	2-3	3-4	4-5	5-6	0-1
Analyte									
Metals by C200.7 (mg/kg)									
ALUMINUM	17300	19800 J	19100 J	18600 J	20200 J	19700 J	14000	10300	17500 J
ANTIMONY	0.66 UJ	1.1 UJ	1.2 UJ	1.1 UJ	1.3 UJ	1.1 UJ	0.6 UJ	0.48 UJ	1.2 UJ
ARSENIC	8.7	6.7 J	6.5 J	11.1 J	25.8 J	19 J	7.8	1.9	7.4 J
BARIUM	301 J	225 J	199 J	282 J	389 J	374 J	235 J	127 J	238 J
BERYLLIUM	0.58 J	0.68 J	0.53 J	0.53 J	0.44 J	0.66 J	0.5 J	0.52 J	0.59 J
CADMIUM	1.2 J	2.6 J	1.7 J	9.7 J	15.8 J	7.9 J	1.2 J	0.059 J	4.4 J
CALCIUM	10900	19700 J	14600 J	21300 J	17400 J	15100 J	5800	2050	21100 J
CHROMIUM	55.8	131 J	83.7 J	381 J	1600 J	622 J	98.7	15.3	162 J
COBALT	13.5	0.13 UJ	0.13 UJ	23 J	22.9 J	19.3 J	13.2	11.6	15 J
COPPER	173	261 J	189 J	687 J	2430 J	1820 J	192	9.7	325 J
IRON	25200	28900 J	28200 J	30200 J	35500 J	32000 J	21000	16800	26900 J
LEAD	272 J	347 J	244 J	958 J	5240 J	2370 J	173 J	8.2 J	475 J
MAGNESIUM	7250	8320 J	8070 J	7440 J	6650 J	7110 J	5890	4680	7460 J
MANGANESE	447 J	600 J	644 J	568 J	483 J	619 J	557 J	868 J	520 J
NICKEL	45.8	61.7 J	48.7 J	288 J	393 J	211 J	40.9	22.7	78 J
POTASSIUM	1870	2400 J	2360 J	2070 J	1990 J	2140 J	1800 J	967	2080 J
SELENIUM	0.57 U	0.99 UJ	1.1 UJ	0.96 UJ	1.2 J	0.93 UJ	0.53 U	0.42 U	1 UJ
SILVER	0.69 U	1.2 UJ	1.3 UJ	2.4 J	4.5 J	5.7 J	0.64 U	0.5 U	1.5 J
SODIUM	543 J	724 J	811 J	656 J	759 J	619 J	4.5 U	3.6 U	707 J
THALLIUM	0.5 U	0.87 UJ	0.94 UJ	0.85 UJ	0.97 UJ	0.82 UJ	0.47 U	0.37 U	0.89 UJ
VANADIUM	26.8	30.4 J	29.6 J	46.4 J	87.2 J	41.4 J	24.5 J	15.8	28.4 J
ZINC	755	1050 J	727 J	3230 J	10500 J	2620 J	633	60.2	1480 J
Mercury by CV (mg/kg)									
MERCURY	1.7	0.6 J	0.59 J	0.72 J	2.1 J	2.6 J	0.58	0.05 J	0.81 J
PCBS by MC ARO (mg/kg)									
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	0.06 J	0.64 J	0.38 J	2.1	22	0.48 J	0.011 U	0.011 U	0.35 J
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.011 U	0.011 U	0.011 U	0.15 J	0.84 J	0.21 J	0.023 J	0.011 U	0.011 U
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	0.06 J	0.64 J	0.38 J	2.3 J	23 J	0.69 J	0.023 J	0.011 U	0.35 J

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-006-V-Z5b	R2-007-V-Z1	R2-007-V-Z1P	R2-007-V-Z2	R2-007-V-Z3	R2-007-V-Z4	R2-007-V-Z5a	R2-007-V-Z5b	R2-008-V-Z1
Sample Date	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010
Sample Depth Range (ft BGS)	5-6	0-1	0-1	1-2	2-3	3-4	4-5	5-6	0-1
Analyte									
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
2-METHYLNAPHTHALENE	0.0017 U	0.0017 U	0.0017 U	0.011	0.047	0.022	0.0044 J	0.0017 U	0.01 J
ACENAPHTHENE	0.0017 U	0.0017 U	0.0017 U	0.013	0.051	0.032	0.0048	0.0017 U	0.005 U
ACENAPHTHYLENE	0.011	0.011	0.012	0.025	0.072	0.081	0.0092	0.0017 U	0.028
ANTHRACENE	0.0099	0.014	0.02	0.022	0.059	0.079	0.01	0.0017 U	0.021
BENZO(A)ANTHRACENE	0.052	0.093	0.11	0.11	0.58	0.21	0.037	0.0017 U	0.14
BENZO(A)PYRENE	0.057	0.059	0.085	0.097	0.58	0.19	0.049	0.0017 U	0.17
BENZO(B)FLUORANTHENE	0.053	0.067	0.11	0.14	0.4	0.22	0.044	0.0017 U	0.088 J
BENZO(K)FLUORANTHENE	0.036	0.039	0.062	0.06	0.17	0.14	0.03	0.0017 U	0.2
CHRYSENE	0.066	0.088	0.12	0.16	0.96	0.28	0.051	0.0017 U	0.2
DIBENZ(A,H)ANTHRACENE	0.019	0.019	0.028	0.032	0.14	0.068	0.017	0.0017 U	0.021
FLUORANTHENE	0.056	0.11	0.17	0.2	0.46	0.45	0.057	0.0017 U	0.33
FLUORENE	0.0017 U	0.0017 U	0.0017 U	0.025	0.12	0.072	0.011	0.0017 U	0.015
INDENO(1,2,3-C,D)PYRENE	0.04	0.042	0.067	0.066	0.2	0.12	0.033	0.0017 U	0.059
NAPHTHALENE	0.0055 J	0.0017 U	0.0017 U	0.0017 U	0.025	0.019	0.0017 U	0.0017 U	0.0091 J
PHENANTHRENE	0.02	0.051	0.067	0.1	0.46	0.27	0.047	0.0017 U	0.093
PYRENE	0.078	0.12	0.16	0.19	0.72	0.41	0.07	0.0017 U	0.35
PAHs (total)	0.55 J	0.77	1.1	1.4	5.5	2.8	0.54 J	0.0017 U	1.8 J

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-008-V-Z1P	R2-008-V-Z2	R2-008-V-Z3	R2-008-V-Z4	R2-008-V-Z5	R2-009-V-Z1	R2-009-V-Z1P	R2-009-V-Z2	R2-009-V-Z3
Sample Date	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010
Sample Depth Range (ft BGS)	0-1	1-2	2-3	3-4	40638-5	0-1	0-1	1-2	2-3
Analyte									
Metals by C200.7 (mg/kg)									
ALUMINUM	17700 J	17800 J	19800 J	17900 J	9770	18100 J	18600 J	19100 J	18600 J
ANTIMONY	1.2 UJ	1.1 UJ	1.2 UJ	1 UJ	0.5 UJ	1.2 UJ	1.2 UJ	1.1 UJ	1.1 UJ
ARSENIC	6.6 J	12.1 J	22.8 J	17.8 J	2.8	6.8 J	6.9 J	9.1 J	23.5 J
BARIUM	198 J	291 J	372 J	370 J	148 J	217 J	201 J	276 J	355 J
BERYLLIUM	0.51 J	0.64 J	0.31 J	0.51 J	0.5 J	0.63 J	0.6 J	0.6 J	0.57 J
CADMIUM	1.8 J	11.2 J	12.9 J	8.3 J	0.079 J	2.7 J	2.9 J	8.5 J	18.9 J
CALCIUM	14500 J	19200 J	16800 J	14600 J	7270	17300 J	14400 J	21000 J	16900 J
CHROMIUM	89.4 J	605 J	1100 J	520 J	14.9	128 J	91.6 J	244 J	1530 J
COBALT	0.14 UJ	23.6 J	23.7 J	19.4 J	11	0.13 UJ	0.13 UJ	18 J	20.5 J
COPPER	204 J	833 J	2620 J	1730 J	12.6	274 J	218 J	507 J	1850 J
IRON	26900 J	29500 J	33200 J	29700 J	16000	27000 J	26500 J	28500 J	31700 J
LEAD	258 J	1220 J	5060 J	2430 J	13.1 J	355 J	270 J	712 J	3670 J
MAGNESIUM	7780 J	7430 J	6840 J	6760 J	5150	8060 J	7890 J	7600 J	6820 J
MANGANESE	608 J	512 J	443 J	395 J	733 J	535 J	636 J	596 J	403 J
NICKEL	49.6 J	323 J	335 J	217 J	22.9	61.7 J	52.1 J	144 J	393 J
POTASSIUM	2260 J	1920 J	1980 J	1920 J	1190	2260 J	2280 J	2160 J	1940 J
SELENIUM	1.1 UJ	0.94 UJ	1 UJ	0.91 UJ	0.43 U	1.1 UJ	3.5 J	4.2 J	6.4 J
SILVER	1.3 UJ	2.9 J	5 J	5.1 J	0.52 U	1.3 UJ	1.5 J	3.6 J	5.2 J
SODIUM	812 J	638 J	689 J	594 J	3.7 U	768 J	749 J	665 J	666 J
THALLIUM	0.96 UJ	0.83 UJ	0.91 UJ	0.8 UJ	0.38 U	0.93 U	0.91 U	0.84 U	0.87 U
VANADIUM	27.8 J	58.3 J	66.7 J	36.8 J	14.8	25.6 J	28.2 J	37.1 J	92 J
ZINC	769 J	4040 J	7850 J	2810 J	62.8	1090 J	848 J	2440 J	9600 J
Mercury by CV (mg/kg)									
MERCURY	0.58 J	0.97 J	2.4 J	2.8 J	0.26	0.73 J	0.61 J	0.86 J	1.7 J
PCBS by MC ARO (mg/kg)									
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	0.13 J	0.87	1 J	0.19	0.011 U	0.44 J	0.34 J	0.59	4.6
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	0.13 J	0.87	1 J	0.19	0.011 U	0.44 J	0.34 J	0.59	4.6

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-008-V-Z1P	R2-008-V-Z2	R2-008-V-Z3	R2-008-V-Z4	R2-008-V-Z5	R2-009-V-Z1	R2-009-V-Z1P	R2-009-V-Z2	R2-009-V-Z3
Sample Date	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010
Sample Depth Range (ft BGS)	0-1	1-2	2-3	3-4	40638-5	0-1	0-1	1-2	2-3
Analyte									
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
2-METHYLNAPHTHALENE	0.011	0.0091	0.021	0.027	0.0021 U	0.0017 U	0.0017 U	0.058	0.015
ACENAPHTHENE	0.0053 U	0.0044 U	0.021	0.027	0.0021 U	0.0017 U	0.0017 U	0.04	0.017
ACENAPHTHYLENE	0.032	0.024	0.034	0.032	0.011	0.013	0.014	0.051	0.036
ANTHRACENE	0.022	0.011	0.049 U	0.074	0.0021 U	0.019	0.086	0.084	0.04
BENZO(A)ANTHRACENE	0.17	0.078	0.21	0.3 J	0.0059	0.084	0.13	0.63	0.18
BENZO(A)PYRENE	0.23	0.074	0.26	0.33 J	0.0052	0.12	0.24	0.89	0.22
BENZO(B)FLUORANTHENE	0.33 J	0.051	0.07	0.13 J	0.0021 U	0.1	0.21	0.41 J	0.23
BENZO(K)FLUORANTHENE	0.26	0.057	0.093	0.39 J	0.0045	0.084	0.14	0.32 J	0.15
CHRYSENE	0.25	0.11	0.4	0.45 J	0.0075	0.11	0.18	1.1	0.26
DIBENZ(A,H)ANTHRACENE	0.028	0.0094	0.023	0.068	0.0021 U	0.039	0.064	0.26 J	0.074
FLUORANTHENE	0.36	0.16	0.37	0.69 J	0.011	0.13	0.25	0.76	0.33
FLUORENE	0.014	0.019	0.059	0.076	0.0021 U	0.0017 U	0.01 J	0.068 U	0.032
INDENO(1,2,3-C,D)PYRENE	0.089	0.028	0.046	0.17 J	0.0021 U	0.087	0.14	0.33 J	0.14
NAPHTHALENE	0.011	0.0044 U	0.012	0.021	0.0021 U	0.0017 U	0.0017 U	0.025	0.013
PHENANTHRENE	0.11	0.063	0.25	0.42 J	0.0051	0.059	0.082	0.68	0.15
PYRENE	0.43	0.16	0.44	0.88 J	0.012	0.0017 U	0.0017 U	0.76	0.31
PAHs (total)	2.4 J	0.89 J	2.4 J	4.2 J	0.062 J	0.93	1.7 J	7.1 J	2.4

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-009-V-Z4	R2-009-VR	R2-009-V-Z5	R2-010-V-Z1a	R2-010-V-Z1b	R2-010-V-Z2	R2-010-V-Z3	R2-010-V-Z4	R2-010-V-Z5
Sample Date	5/19/2010	5/19/2010	5/19/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft BGS)	3-4	3-4	4-5.5	0-0.5	0.5-1	1-2	2-3	3-4	4-6
Analyte									
Metals by C200.7 (mg/kg)									
ALUMINUM	16800 J	17700 J	12700 J	18900 J	19200 J	18200 J	19800 J	19100 J	18800 J
ANTIMONY	0.99 UJ	1.1 UJ	0.8 UJ	0.46 UJ	0.45 UJ	0.43 UJ	0.4 UJ	0.47 UJ	0.42 UJ
ARSENIC	17.3 J	8.8 J	12.8 J	4.3 J	4.6 J	5.3 J	7.2 J	11.3 J	12.1 J
BARIUM	354 J	263 J	303 J	205 J	212 J	268 J	312 J	344 J	365 J
BERYLLIUM	0.37 J	0.61 J	0.49 J	0.037 UJ	0.036 UJ	0.034 UJ	0.032 UJ	0.037 UJ	0.034 UJ
CADMIUM	8.8 J	7.4 J	5.7 J	2.3 J	2.7 J	7.5 J	12.6 J	18.5 J	11.7 J
CALCIUM	12800 J	20600 J	10700 J	14800 J	16500 J	20300 J	18600 J	15600 J	13000 J
CHROMIUM	554 J	245 J	301 J	113 J	135 J	250 J	634 J	1950 J	911 J
COBALT	18.9 J	18 J	15.2 J	0.092 UJ	0.089 UJ	19.1 J	27.9 J	19.5 J	19.8 J
COPPER	1740 J	493 J	799 J	267 J	302 J	513 J	930 J	2030 J	2650 J
IRON	25400 J	28100 J	19600 J	26300 J	26900 J	26900 J	30000 J	27200 J	27400 J
LEAD	2650 J	705 J	698 J	329 J	395 J	764 J	1190 J	3530 J	4580 J
MAGNESIUM	6640 J	7370 J	5460 J	8050 J	8210 J	7530 J	8520 J	6800 J	6670 J
MANGANESE	340 J	583 J	279 J	452 J	427 J	550 J	453 J	321 J	319 J
NICKEL	205 J	153 J	125 J	58.5 J	68.9 J	153 J	473 J	393 J	318 J
POTASSIUM	1810 J	1990 J	1480 J	2610 J	2490 J	2290 J	2350 J	2130 J	2090 J
SELENIUM	4.1 J	0.95 UJ	2.9 J	1.2 UJ	1.5 J	1.2 J	2.9 J	4.2 J	2.9 J
SILVER	5.7 J	2.2 J	3.7 J	1.1 J	1.4 J	3.1 J	3.7 J	4.7 J	6.3 J
SODIUM	566 J	650 J	6 U	10.8 UJ	10.4 UJ	10.1 UJ	9.3 UJ	10.9 UJ	9.9 UJ
THALLIUM	0.76 U	0.84 UJ	0.62 U	0.4 UJ	0.39 UJ	0.37 UJ	0.34 U	0.41 U	0.37 U
VANADIUM	42.2 J	35.5 J	25 J	28.8 J	29.4 J	34 J	61.6 J	100 J	62.1 J
ZINC	3950 J	2360 J	2060 J	1030 J	1220 J	2780 J	4970 J	11500 J	8160 J
Mercury by CV (mg/kg)									
MERCURY	2.4 J	0.84 J	2.2 J	0.7 J	0.83 J	0.78 J	1.1 J	1.8 J	3 J
PCBS by MC ARO (mg/kg)									
PCB-1016 (AROCLOR 1016)	0.011 UJ	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 UJ	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 UJ	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 UJ	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	0.25 J	0.5	0.011 UJ	0.011 U	0.13 J	0.17 J	0.43 J	1.2 J	0.49 J
PCB-1254 (AROCLOR 1254)	0.011 UJ	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.011 UJ	0.011 U	0.018 J	0.011 U	0.033 J	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1262 (AROCHLOR 1262)	0.011 UJ	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 UJ	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	0.25 J	0.5	0.018 J	0.011 U	0.16 J	0.17 J	0.43 J	1.2 J	0.49 J

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-009-V-Z4	R2-009-VR	R2-009-V-Z5	R2-010-V-Z1a	R2-010-V-Z1b	R2-010-V-Z2	R2-010-V-Z3	R2-010-V-Z4	R2-010-V-Z5
Sample Date	5/19/2010	5/19/2010	5/19/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft BGS)	3-4	3-4	4-5.5	0-0.5	0.5-1	1-2	2-3	3-4	4-6
Analyte									
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
2-METHYLNAPHTHALENE	0.056 J	0.0017 U	0.85 J	0.015	0.013	0.019	0.037	0.44	0.07
ACENAPHTHENE	0.071 J	0.0017 U	2.1 J	0.014	0.013	0.022	0.027	0.064	0.08
ACENAPHTHYLENE	0.0017 U	0.013 J	0.2	0.048	0.046	0.057	0.066	0.07	0.18
ANTHRACENE	0.37 J	0.016 J	4 J	0.053	0.05	0.081	0.059	0.25	0.29
BENZO(A)ANTHRACENE	0.41 J	0.094 J	6.2 J	0.26	0.24	0.3	0.31	1.1	0.83
BENZO(A)PYRENE	0.47 J	0.078 J	4.6 J	0.25	0.25	0.4	0.32	1.9	0.72
BENZO(B)FLUORANTHENE	0.51 J	0.028 J	3.1 J	0.28	0.29	0.41	0.24	0.79	0.7
BENZO(K)FLUORANTHENE	0.31 J	0.083 J	2 J	0.21	0.2	0.32	0.22	0.43	0.46
CHRYSENE	0.59 J	0.11 J	6.3 J	0.38	0.35	0.44	0.47	1.8	1.3
DIBENZ(A,H)ANTHRACENE	0.17 J	0.039 J	1.4 J	0.1 J	0.0017 U	0.16	0.11	0.4	0.31
FLUORANTHENE	0.77 J	0.13 J	7.7 J	0.61	0.53	0.62	0.68	1	1.8
FLUORENE	0.0017 U	0.012 J	1.6 J	0.029	0.027	0.05	0.063	0.27	0.26
INDENO(1,2,3-C,D)PYRENE	0.32 J	0.08 J	2.1 J	0.18	0.18	0.25	0.18	0.42	0.46
NAPHTHALENE	0.042 J	0.0017 U	0.63	0.012	0.01	0.014	0.017	0.042	0.036
PHENANTHRENE	0.34 J	0.07 J	11 J	0.2	0.18	0.26	0.36	1.1	1.1
PYRENE	0.71 J	0.12 J	9.7 J	0.52	0.44	0.53	0.59	1.3	1.4
PAHs (total)	5.5 J	0.93 J	65 J	3.4 J	3	4.3	4	12	11

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-010-V-Z6	R2-010-VR	R2-010-V-Z7a	R2-010-V-Z7b	R2-011-V-Z1a	R2-011-V-Z1b	R2-011-V-Z2	R2-011-V-Z3	R2-011-V-Z4
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft BGS)	6-8	6-8	8-9	9-10	0-0.5	0.5-1	1-2	2-3	3-4
Analyte									
Metals by C200.7 (mg/kg)									
ALUMINUM	16900 J	16300 J	12000	11200	14700 J	13900 J	16200 J	16400 J	17100 J
ANTIMONY	2.3 J	0.31 UJ	0.19 UJ	0.19 UJ	0.53 J	0.44 UJ	0.4 UJ	0.4 UJ	0.38 UJ
ARSENIC	10.9 J	9.2 J	1.7	2.2	4.2 J	3.5 J	5.1 J	5.3 J	7 J
BARIUM	345 J	299 J	136	190	167 J	171 J	203 J	261 J	268 J
BERYLLIUM	0.027 UJ	0.024 UJ	0.015 UJ	0.015 UJ	0.037 UJ	0.035 UJ	0.62 J	0.032 UJ	0.031 UJ
CADMIUM	7.1 J	5.3 J	0.0072 UJ	0.0071 UJ	1.9 J	2.2 J	3 J	8.1 J	12.2 J
CALCIUM	10400 J	9000 J	2030	3160	14400 J	13700 J	17000 J	18100 J	16900 J
CHROMIUM	449 J	318 J	16.9	17.2	103 J	112 J	155 J	306 J	709 J
COBALT	14.9 J	14.6 J	11.2	10.6	11.8 J	11.3 J	13.1 J	19.4 J	29.7 J
COPPER	1210 J	831 J	9.1	8.7	231 J	255 J	312 J	606 J	926 J
IRON	24600 J	24000 J	17300	18500	22200 J	20900 J	23700 J	24600 J	27500 J
LEAD	1190 J	844 J	12.2	6.8	291 J	313 J	416 J	802 J	1230 J
MAGNESIUM	6780 J	6580 J	4980	4640	7110 J	6820 J	7500 J	7010 J	7870 J
MANGANESE	426 J	441 J	437	1910	481 J	403 J	481 J	539 J	447 J
NICKEL	152 J	117 J	22.9	24.6	52.8 J	55.6 J	71.5 J	218 J	493 J
POTASSIUM	1980 J	2000 J	1280	1100	2130 J	1940 J	2200 J	1990 J	2120 J
SELENIUM	1.7 J	1.3 J	0.74 J	0.47 U	1.8 J	1.5 J	1.5 J	1.7 J	2.3 J
SILVER	4.6 J	3.1 J	0.043 U	0.042 U	0.11 UJ	0.099 UJ	1.6 J	3.3 J	3.7 J
SODIUM	7.8 UJ	7.1 UJ	4.4 UJ	4.4 UJ	10.9 UJ	10.2 UJ	189 J	9.3 UJ	9 UJ
THALLIUM	0.29 U	0.27 UJ	0.16 U	0.16 U	0.41 U	0.38 U	0.34 U	0.34 U	0.33 U
VANADIUM	31.1 J	28.3 J	19.3	19.6	24 J	22.9 J	26.7 J	34.1 J	69.9 J
ZINC	2420 J	1940 J	65.6	60.8	906 J	1020 J	1340 J	3060 J	4890 J
Mercury by CV (mg/kg)									
MERCURY	2.3 J	1.9 J	0.09 J+	0.32 J+	0.67 J	0.77 J	1.1 J	1.3 J	1.4 J
PCBS by MC ARO (mg/kg)									
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	0.011 U	0.011 U	0.011 U	0.011 U	0.38	0.14 J	0.011 U	0.53 J	0.46 J
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.045 J	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	0.045 J	0.011 U	0.011 U	0.011 U	0.38	0.14 J	0.011 U	0.53 J	0.46 J

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-010-V-Z6	R2-010-VR	R2-010-V-Z7a	R2-010-V-Z7b	R2-011-V-Z1a	R2-011-V-Z1b	R2-011-V-Z2	R2-011-V-Z3	R2-011-V-Z4
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft BGS)	6-8	6-8	8-9	9-10	0-0.5	0.5-1	1-2	2-3	3-4
Analyte									
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
2-METHYLNAPHTHALENE	0.1	0.067	0.0017 U	0.0017 U	0.023 U	0.0085 J	0.0044 U	0.0041 U	0.028
ACENAPHTHENE	0.13	0.11	0.0017 U	0.0017 U	0.023 U	0.0054 J	0.0044 U	0.01	0.015
ACENAPHTHYLENE	0.36	0.26	0.0017 U	0.0017 U	0.023 U	0.013	0.0044 U	0.027	0.026
ANTHRACENE	0.51	0.34	0.0017 U	0.0017 U	0.012	0.028	0.021	0.043	0.037
BENZO(A)ANTHRACENE	1.4	0.84	0.0066	0.0017 U	0.13	0.18	0.19 J	0.2	0.24
BENZO(A)PYRENE	1.2	0.76	0.0017 U	0.0017 U	0.1	0.17	0.073	0.2	0.2
BENZO(B)FLUORANTHENE	1.2	0.76	0.0055	0.0017 U	0.11	0.14	0.2 J	0.13	0.24
BENZO(K)FLUORANTHENE	0.99	0.61	0.0044	0.0017 U	0.077	0.13	0.058	0.15	0.18
CHRYSENE	1.7	1.2	0.0078	0.0017 U	0.15	0.2	0.21 J	0.25	0.32
DIBENZ(A,H)ANTHRACENE	0.35	0.26	0.0017 U	0.0017 U	0.039 J	0.017	0.045 J	0.012	0.021
FLUORANTHENE	3	2.3	0.009	0.0017 U	0.25	0.34	0.34 J	0.45	0.52
FLUORENE	0.39	0.28	0.0017 U	0.0017 U	0.023 U	0.0093	0.01	0.021	0.022
INDENO(1,2,3-C,D)PYRENE	0.72	0.46	0.0017 U	0.0017 U	0.045 J	0.031	0.043 J	0.023	0.035
NAPHTHALENE	0.07	0.042	0.0017 U	0.0017 U	0.023 U	0.0062	0.0044 U	0.01	0.012
PHENANTHRENE	1.5	1.2	0.0059	0.0017 U	0.069	0.088 J	0.071	0.12	0.17
PYRENE	2.7	1.9	0.01	0.0017 U	0.14	0.16	0.19 J	0.19	0.27
PAHs (total)	17	12	0.054	0.0017 U	1.2 J	1.5 J	1.5 J	1.9 J	2.3 J

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-011-V-Z5	R2-011-V-Z6	R2-011-V-Z7	R2-011-V-Z8	R2-012-V-Z1a	R2-012-V-Z1b	R2-012-V-Z2	R2-012-V-Z3	R2-012-V-Z4
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft BGS)	4-6	6-8	8-10	10-11.5	0-0.5	0.5-1	1-2	2-3	3-4
Analyte									
Metals by C200.7 (mg/kg)									
ALUMINUM	18400 J	16300 J	15600 J	17900	19200 J	18600 J	17400 J	16800 J	17200 J
ANTIMONY	0.45 UJ	0.39 UJ	0.34 UJ	0.28 UJ	0.45 UJ	0.44 UJ	0.41 UJ	0.38 UJ	0.41 UJ
ARSENIC	10.1 J	12.5 J	12.7 J	9.7	5.5 J	5.1 J	5.6 J	6.3 J	9 J
BARIUM	348 J	334 J	337 J	286 J	202 J	200 J	237 J	251 J	313 J
BERYLLIUM	0.036 UJ	0.57 J	0.61 J	0.69 J	0.75 J	0.71 J	0.64 J	0.63 J	0.64 J
CADMIUM	16.8 J	11.1 J	7 J	1.7 J	1.9 J	2.2 J	5.1 J	9.6 J	16.6 J
CALCIUM	15400 J	11600 J	10100 J	15200	16800 J	17400 J	19000 J	19500 J	16900 J
CHROMIUM	1590 J	737 J	501 J	64.9	94.6 J	110 J	183 J	351 J	961 J
COBALT	21.2 J	17.9 J	16.4 J	12.1 J	13.2 J	13.5 J	14.4 J	24.1 J	32.6 J
COPPER	1740 J	2120 J	1110 J	224	215 J	256 J	381 J	737 J	1110 J
IRON	28400 J	24700 J	23000 J	25200	26400 J	26400 J	26600 J	24700 J	29300 J
LEAD	2750 J	3620 J	589 J	280 J	271 J	325 J	540 J	957 J	1540 J
MAGNESIUM	7220 J	6500 J	6670 J	7210	7930 J	8160 J	7680 J	7420 J	7860 J
MANGANESE	343 J	313 J	324 J	397	497 J	481 J	549 J	530 J	406 J
NICKEL	402 J	249 J	118 J	39.1	54.2 J	59 J	82.4 J	367 J	619 J
POTASSIUM	2150 J	1910 J	1890 J	2030	2630 J	2520 J	2250 J	2130 J	2130 J
SELENIUM	4.2 J	2.3 J	2 J	1.3 J	1.6 J	1.8 J	1.2 J	1.5 J	3.5 J
SILVER	4.8 J	5.9 J	4.6 J	0.9 J	0.1 UJ	0.1 UJ	0.093 UJ	3.4 J	4.1 J
SODIUM	10.5 UJ	121 J	101 J	94.3 J	256 J	213 J	182 J	160 J	165 J
THALLIUM	0.39 U	0.34 U	1.5 J	0.25 U	0.39 U	0.38 U	0.36 U	0.33 U	0.35 U
VANADIUM	102 J	45.8 J	27.5 J	27.7	29.8 J	29.1 J	29.1 J	36.3 J	92.4 J
ZINC	9170 J	6780 J	3630 J	864	873 J	1020 J	1810 J	3960 J	5420 J
Mercury by CV (mg/kg)									
MERCURY	2.1 J	5 J	3 J	3 J	1.5 J	1.1 J	1.1 J	1.2 J	1.4 J
PCBS by MC ARO (mg/kg)									
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	4.6 J	0.81 J	0.011 U	0.011 U	0.22 J	0.6 J	0.37 J	0.62 J	0.48 J
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.32 J	0.17 J	0.05 J	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	4.9 J	0.98 J	0.05 J	0.011 U	0.22 J	0.6 J	0.37 J	0.62 J	0.48 J

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-011-V-Z5	R2-011-V-Z6	R2-011-V-Z7	R2-011-V-Z8	R2-012-V-Z1a	R2-012-V-Z1b	R2-012-V-Z2	R2-012-V-Z3	R2-012-V-Z4
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft BGS)	4-6	6-8	8-10	10-11.5	0-0.5	0.5-1	1-2	2-3	3-4
Analyte									
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
2-METHYLNAPHTHALENE	0.1 J	0.058	0.083 J	0.081 J	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.016
ACENAPHTHENE	0.024	0.042	0.035	0.023	0.0017 U	0.0017 U	0.0017 U	0.0086	0.011
ACENAPHTHYLENE	0.032	0.086 U	0.054	0.045	0.013	0.012	0.011	0.023	0.02
ANTHRACENE	0.059 J	0.2	0.11 J	0.1 J	0.017	0.02	0.015	0.023	0.022
BENZO(A)ANTHRACENE	0.36	0.55	0.31	0.31	0.062	0.094	0.081	0.14	0.1
BENZO(A)PYRENE	0.39	0.43	0.29	0.3	0.088	0.13	0.051	0.11	0.09
BENZO(B)FLUORANTHENE	0.25	0.54	0.17	0.26	0.077 J	0.13 J	0.055	0.072 J	0.098 J
BENZO(K)FLUORANTHENE	0.17	0.31	0.25	0.18	0.063	0.076	0.035	0.077	0.074
CHRYSENE	0.57	0.66	0.4	0.49	0.092	0.17	0.14	0.22	0.16
DIBENZ(A,H)ANTHRACENE	0.025	0.012	0.012	0.018	0.031	0.038	0.019	0.041	0.032
FLUORANTHENE	0.39	1.2	0.67	0.68	0.18	0.25 J	0.21 J	0.31	0.3
FLUORENE	0.06	0.085	0.071	0.057	0.0017 U	0.0017 U	0.0017 U	0.017	0.024
INDENO(1,2,3-C,D)PYRENE	0.045	0.053	0.04	0.043	0.052	0.077	0.034	0.054	0.066
NAPHTHALENE	0.023	0.032	0.022	0.025	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
PHENANTHRENE	0.21	0.47 J	0.34	0.35	0.051	0.06	0.048	0.078	0.16 J
PYRENE	0.27	0.54	0.38	0.34	0.14	0.06 U	0.18	0.25	0.21
PAHs (total)	3 J	5.2 J	3.2 J	3.3 J	0.94 J	1.2 J	0.92 J	1.5 J	1.5 J

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-012-VR	R2-012-V-Z5	R2-012-V-Z6	R2-012-V-Z7	R2-013-V-Z1a	R2-013-V-Z1b	R2-013-V-Z2	R2-013-V-Z3	R2-013-V-Z4
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft BGS)	3-4	4-6	6-8	8-9	0-0.5	0.5-1	1-2	2-3	3-4
Analyte									
Metals by C200.7 (mg/kg)									
ALUMINUM	16700 J	17000 J	17000 J	14800	20200 J	17600 J	16600 J	17000 J	15900 J
ANTIMONY	0.4 UJ	0.39 UJ	0.93 J	0.2 UJ	0.55 UJ	0.56 UJ	0.4 UJ	0.4 UJ	0.36 UJ
ARSENIC	8.5 J	10.8 J	12.4 J	6.1	5.4 J	4.5 J	4.8 J	4.8 J	6.3 J
BARIUM	304 J	326 J	369 J	155 J	219 J	192 J	198 J	205 J	233 J
BERYLLIUM	0.63 J	0.6 J	0.64 J	0.78 J	0.77 J	0.65 J	0.65 J	0.64 J	0.58 J
CADMIUM	16.8 J	14.2 J	7.8 J	1.7 J	2.6 J	2.4 J	2.8 J	3.5 J	9.9 J
CALCIUM	16400 J	18200 J	14200 J	26400 J	19300 J	15800 J	17100 J	17100 J	17200 J
CHROMIUM	948 J	1470 J	459 J	153 J	135 J	120 J	140 J	167 J	394 J
COBALT	32.2 J	19.1 J	19.1 J	15.7 J	15.5 J	13 J	13.7 J	13.7 J	25.3 J
COPPER	1110 J	1410 J	1600 J	246 J	285 J	254 J	299 J	331 J	693 J
IRON	28200 J	25500 J	24400 J	21400 J	27300 J	23200 J	23100 J	23300 J	22900 J
LEAD	1520 J	2520 J	2110 J	124 J	388 J	338 J	394 J	441 J	930 J
MAGNESIUM	7560 J	6880 J	7190 J	8210 J	9060 J	7660 J	7840 J	7490 J	7300 J
MANGANESE	397 J	362 J	365 J	539 J	757 J	567 J	468 J	478 J	437 J
NICKEL	620 J	355 J	222 J	58.2 J	69.4 J	60.4 J	70.2 J	79.9 J	378 J
POTASSIUM	2070 J	2090 J	2210 J	2190	2950 J	2560 J	2300 J	2480 J	1970 J
SELENIUM	3.5 J	3.6 J	1.6 J	0.5 U	1.4 UJ	1.5 J	1.1 J	1 U	1.5 J
SILVER	4 J	3.8 J	4.6 J	0.9 J	1 J	0.93 J	1.3 J	1.7 J	2.9 J
SODIUM	162 J	166 J	167 J	125 J	312 J	238 J	184 J	187 J	141 J
THALLIUM	0.35 U	0.34 U	0.52 J	0.36 J	0.48 UJ	0.49 UJ	0.35 U	0.34 U	0.31 U
VANADIUM	91.7 J	102 J	39 J	25.5 J	31.6 J	27.1 J	27.1 J	28.8 J	41.9 J
ZINC	5360 J	8590 J	3570 J	849 J	1240 J	1090 J	1300 J	1490 J	3930 J
Mercury by CV (mg/kg)									
MERCURY	1.4 J	0.25 J	2.5 J	0.64 J	0.79 J	0.95 J	0.97 J	0.97 J	1 J
PCBS by MC ARO (mg/kg)									
PCB-1016 (AROCLOR 1016)	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	0.011 UJ	6.7 J	0.99 J	0.011 U	0.59	1.9	0.61 J	2.2 J	0.7 J
PCB-1254 (AROCLOR 1254)	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.011 UJ	0.43 J	0.16 J	0.026 J	0.011 U	0.33 J	0.011 U	0.28 J	0.094 J
PCB-1262 (AROCHLOR 1262)	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	0.011 U	7.1 J	1.2 J	0.026 J	0.59	2.2 J	0.61 J	2.5 J	0.79 J

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-012-VR	R2-012-V-Z5	R2-012-V-Z6	R2-012-V-Z7	R2-013-V-Z1a	R2-013-V-Z1b	R2-013-V-Z2	R2-013-V-Z3	R2-013-V-Z4
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft BGS)	3-4	4-6	6-8	8-9	0-0.5	0.5-1	1-2	2-3	3-4
Analyte									
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
2-METHYLNAPHTHALENE	0.017	0.37	0.014	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.022	0.0017 U
ACENAPHTHENE	0.012	0.047	0.017	0.0045	0.0017 U	0.0017 U	0.0017 U	0.017	0.0017 U
ACENAPHTHYLENE	0.022	0.053	0.045	0.011	0.018	0.049	0.014	0.048	0.012
ANTHRACENE	0.029	0.056	0.05	0.014	0.025	0.074	0.021	0.068	0.013
BENZO(A)ANTHRACENE	0.12	0.92	0.26	0.059	0.14	0.38	0.12	0.25	0.071
BENZO(A)PYRENE	0.066	0.91	0.2	0.023	0.14	0.32	0.1	0.28	0.079
BENZO(B)FLUORANTHENE	0.077	0.49 J	0.17 J	0.026	0.12 J	0.24 J	0.077 J	0.24	0.058 J
BENZO(K)FLUORANTHENE	0.046	0.26	0.13	0.016	0.11	0.3	0.091	0.24	0.051
CHRYSENE	0.19	1.3	0.38	0.086	0.23	0.59	0.18	0.38	0.11
DIBENZ(A,H)ANTHRACENE	0.02	0.18	0.042	0.0077	0.051	0.13	0.043	0.081 J	0.026
FLUORANTHENE	0.29	1	0.64	0.14	0.38	1	0.3	0.59	0.17
FLUORENE	0.026	0.27	0.04	0.011	0.011	0.031	0.0095	0.035	0.009
INDENO(1,2,3-C,D)PYRENE	0.039	0.23	0.093	0.014	0.11	0.29	0.087	0.17	0.049
NAPHTHALENE	0.0017 U	0.025	0.011	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.016	0.0017 U
PHENANTHRENE	0.16 J	0.99 J	0.31 J	0.076 J	0.081	0.22	0.069	0.22	0.048
PYRENE	0.25	1.1	0.49	0.11	0.28	0.73	0.22	0.46	0.12
PAHs (total)	1.4 J	8.4 J	3 J	0.62 J	1.8 J	4.6 J	1.4 J	3.3 J	0.88 J

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-013-V-Z5	R2-013-V-Z6	R2-013-V-Z7	R2-013-V-Z8	R2-014-V-Z1a	R2-014-V-Z1b	R2-014-V-Z2	R2-014-V-Z3	R2-014-V-Z4
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft BGS)	4-6	6-8	8-10	10-12	0-0.5	0.5-1	1-2	2-3	3-4
Analyte									
Metals by C200.7 (mg/kg)									
ALUMINUM	17800 J	18700 J	17700 J	16000 J	16000 J	13500 J	12500 J	17000 J	18100 J
ANTIMONY	0.47 UJ	0.43 UJ	6.2 J	4.6 J	0.59 UJ	0.4 UJ	0.39 UJ	0.45 UJ	0.51 UJ
ARSENIC	12.8 J	13.7 J	14.7 J	14.4 J	4.7 J	4.6 J	4.4 J	10.9 J	12.7 J
BARIUM	339 J	337 J	403 J	420 J	193 J	168 J	167 J	297 J	337 J
BERYLLIUM	0.55 J	0.22 J	0.71 J	0.62 J	0.62 J	0.54 J	0.47 J	0.57 J	0.58 J
CADMIUM	20.1 J	14 J	11.4 J	8.1 J	2.9 J	3.2 J	5.4 J	17.9 J	17.9 J
CALCIUM	16000 J	12300 J	11100 J	9430 J	17200 J	15100 J	15500 J	15500 J	17300 J
CHROMIUM	1580 J	909 J	875 J	557 J	149 J	161 J	240 J	1620 J	1670 J
COBALT	22.5 J	21.6 J	19 J	18 J	14.4 J	13.6 J	19.6 J	22.4 J	14.6 J
COPPER	2100 J	3610 J	1350 J	1400 J	320 J	308 J	470 J	1920 J	2550 J
IRON	27100 J	25200 J	26800 J	22700 J	24900 J	21600 J	19900 J	25900 J	24800 J
LEAD	4350 J	5980 J	2140 J	723 J	440 J	457 J	680 J	3310 J	5490 J
MAGNESIUM	6820 J	6690 J	6980 J	6440 J	7790 J	6430 J	6190 J	6550 J	6400 J
MANGANESE	317 J	304 J	375 J	302 J	684 J	570 J	520 J	356 J	315 J
NICKEL	460 J	385 J	225 J	198 J	78.7 J	82 J	245 J	436 J	295 J
POTASSIUM	2120 J	2100 J	2230 J	2010 J	2480 J	1970 J	1730 J	2040 J	2200 J
SELENIUM	4.4 J	2.5 J	2.5 J	1.6 J	2 J	1.3 J	1.5 J	3 J	4.1 J
SILVER	4.6 J	8.1 J	6.5 J	6.7 J	1.3 J	1.2 J	1.7 J	4.3 J	5.7 J
SODIUM	170 J	134 J	125 J	102 J	260 J	167 J	140 J	163 J	180 J
THALLIUM	0.41 U	0.37 U	0.76 J	1.7 J	0.51 UJ	0.35 U	0.33 U	0.39 U	0.44 UJ
VANADIUM	94.7 J	60.9 J	34.7 J	29.1 J	28.7 J	24.4 J	27.5 J	77.7 J	83.6 J
ZINC	11900 J	9630 J	3210 J	3790 J	1400 J	1560 J	2900 J	11400 J	11400 J
Mercury by CV (mg/kg)									
MERCURY	2.1 J	3.2 J	4.2 J	3 J	1.2 J	1.3 J	0.87 J	1.9 J	2.8 J
PCBS by MC ARO (mg/kg)									
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	2.9 J	0.4 NJ	0.12 NJ	0.011 U	0.53 J	0.011 U	0.62 J	5.6 J	7 J
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.22 J	0.095 J	0.011 U	0.077	0.011 U	0.011 U	0.011 U	0.46 J	0.37 J
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	3.1 J	0.5 J	0.12 J	0.077	0.53 J	0.011 U	0.62 J	6.1 J	7.4 J

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-013-V-Z5	R2-013-V-Z6	R2-013-V-Z7	R2-013-V-Z8	R2-014-V-Z1a	R2-014-V-Z1b	R2-014-V-Z2	R2-014-V-Z3	R2-014-V-Z4
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft BGS)	4-6	6-8	8-10	10-12	0-0.5	0.5-1	1-2	2-3	3-4
Analyte									
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
2-METHYLNAPHTHALENE	0.075	0.091	0.12	0.19	0.023	0.019 J	0.019	0.063	0.36 J
ACENAPHTHENE	0.018	0.046	0.049	0.071	0.021	0.013	0.01	0.016	0.041
ACENAPHTHYLENE	0.022	0.086	0.11	0.086	0.026	0.027	0.025	0.033	0.066
ANTHRACENE	0.031	0.07	0.18	0.22	0.091	0.08	0.041	0.046	0.059 J
BENZO(A)ANTHRACENE	0.22	0.3	0.47	0.51	0.39	0.42	0.26	0.47	0.84
BENZO(A)PYRENE	0.16	0.27	0.36	0.39	0.31	0.3	0.27	0.57	0.8
BENZO(B)FLUORANTHENE	0.065 J	0.13 J	0.34	0.36	0.21	0.18	0.2	0.18	0.52
BENZO(K)FLUORANTHENE	0.068	0.16	0.3	0.29	0.2	0.18	0.17	0.28	0.29
CHRYSENE	0.37	0.5	0.64	0.65	0.3	0.42	0.31	0.64	1.2
DIBENZ(A,H)ANTHRACENE	0.055	0.084 J	0.1	0.11	0.017	0.019	0.01	0.022	0.027
FLUORANTHENE	0.31	0.66	1	1.1	0.72	0.48	0.43	0.016	0.81
FLUORENE	0.041	0.17	0.15	0.17	0.034	0.027	0.022	0.03	0.1
INDENO(1,2,3-C,D)PYRENE	0.077	0.11	0.21	0.21	0.042	0.04	0.029	0.035	0.055
NAPHTHALENE	0.013	0.026	0.035	0.047	0.016	0.013	0.01	0.018	0.061 J
PHENANTHRENE	0.26	0.49	0.76	0.73	0.23	0.12	0.11	0.081 J	0.46
PYRENE	0.31	0.54	0.76	0.84	0.38	0.21	0.22	0.42	0.61
PAHs (total)	2.1 J	3.9 J	5.7	6.1	3 J	2.6 J	2.1 J	2.9 J	6 J

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-014-V-Z5	R2-014-VR	R2-014-V-Z6	R2-014-V-Z7	R2-015-V-Z1a	R2-015-V-Z1b	R2-015-V-Z2	R2-015-V-Z3	R2-015-V-Z4
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft BGS)	4-6	4-6	6-8	8-10	0-0.5	0.5-1	1-2	2-3	3-4
Analyte									
Metals by C200.7 (mg/kg)									
ALUMINUM	17300 J	17400 J	16600 J	16700 J	14500 J	15600 J	15400 J	17700 J	17400 J
ANTIMONY	0.46 UJ	0.46 UJ	0.4 UJ	0.79 J	0.46 UJ	0.42 UJ	0.37 UJ	0.52 UJ	0.5 UJ
ARSENIC	12.9 J	14.6 J	10.3 J	10.8 J	3.8 J	4.8 J	4.9 J	11.2 J	12.6 J
BARIUM	329 J	326 J	321 J	338 J	182 J	198 J	212 J	378 J	356 J
BERYLLIUM	0.47 J	0.47 J	0.032 UJ	0.69 J	0.56 J	0.59 J	0.58 J	0.53 J	0.5 J
CADMIUM	12.2 J	13.3 J	8.6 J	2.2 J	2.1 J	2.5 J	4.7 J	22.7 J	15.5 J
CALCIUM	12400 J	11600 J	10300 J	12800 J	15800 J	17200 J	21200 J	17200 J	12700 J
CHROMIUM	982 J	1040 J	547 J	78.1 J	104 J	125 J	224 J	1830 J	1170 J
COBALT	22 J	21.2 J	16 J	11.1 J	12.3 J	13.6 J	18.2 J	23.5 J	22.3 J
COPPER	2740 J	2880 J	3790 J	273 J	229 J	275 J	393 J	2240 J	2640 J
IRON	24200 J	23900 J	23400 J	22400 J	21500 J	23500 J	24200 J	27700 J	25500 J
LEAD	5100 J	5760 J	4500 J	340 J	306 J	375 J	590 J	4190 J	5420 J
MAGNESIUM	6150 J	6080 J	6320 J	6560 J	6960 J	7540 J	7210 J	6800 J	6420 J
MANGANESE	314 J	316 J	318 J	327 J	454 J	480 J	514 J	323 J	299 J
NICKEL	376 J	358 J	276 J	36.4 J	58.6 J	69.8 J	152 J	522 J	391 J
POTASSIUM	2000 J	2000 J	1990 J	2120 J	2080 J	2140 J	2000 J	2060 J	1950 J
SELENIUM	2.8 J	2.4 J	1.1 J	0.85 J	1.3 J	1.7 J	2.2 J	4 J	2.9 J
SILVER	6.1 J	6.3 J	10 J	1.2 J	0.1 UJ	0.096 UJ	0.085 UJ	5 J	6 J
SODIUM	145 J	143 J	109 J	89.2 J	233 J	207 J	166 J	194 J	166 J
THALLIUM	0.4 U	0.4 U	0.34 U	0.27 U	0.4 U	0.37 U	0.32 U	0.45 UJ	0.43 U
VANADIUM	63 J	60.7 J	54.6 J	26.8 J	23.6 J	26 J	30 J	81.3 J	62.8 J
ZINC	10400 J	12100 J	2630 J	943 J	1000 J	1190 J	2270 J	14400 J	15100 J
Mercury by CV (mg/kg)									
MERCURY	8.6 J	2.5 J	3.7 J	3.1 J	1.2 J	1.3 J	1.2 J	2.7 J	3.4 J
PCBS by MC ARO (mg/kg)									
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	4 J	2.4 J	0.5 J	0.011 U	0.29 J	0.24	0.36 J	6.5	3.7 J
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.47 J	0.27 J	0.12 J	0.011 U	0.011 U	0.011 U	0.011 U	0.29 J	0.011 U
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	4.5 J	2.7 J	0.62 J	0.011 U	0.29 J	0.24	0.36 J	6.8 J	3.7 J

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-014-V-Z5	R2-014-VR	R2-014-V-Z6	R2-014-V-Z7	R2-015-V-Z1a	R2-015-V-Z1b	R2-015-V-Z2	R2-015-V-Z3	R2-015-V-Z4
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft BGS)	4-6	4-6	6-8	8-10	0-0.5	0.5-1	1-2	2-3	3-4
Analyte									
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
2-METHYLNAPHTHALENE	0.17 J	0.022 J	0.087 U	0.065 J	0.0017 U	0.0084 J	0.0077 J	0.053	0.03
ACENAPHTHENE	0.055 J	0.0058 U	0.036	0.053	0.0017 U	0.013	0.012	0.052	0.036
ACENAPHTHYLENE	0.081 J	0.024 J	0.082	0.043	0.021	0.031	0.027	0.055	0.058
ANTHRACENE	0.19 J	0.032 J	0.17 J	0.3	0.03	0.05	0.044	0.06	0.053
BENZO(A)ANTHRACENE	0.66 J	0.12 J	0.39	0.74	0.15	0.24	0.31	0.81	0.38
BENZO(A)PYRENE	0.6 J	0.11 J	0.31	0.7	0.13	0.22	0.27	0.74	0.4
BENZO(B)FLUORANTHENE	0.58 J	0.068 J	0.23	0.33	0.15	0.22	0.23	0.39	0.31
BENZO(K)FLUORANTHENE	0.29 J	0.064 J	0.25	0.41	0.1	0.12	0.17	0.21	0.13
CHRYSENE	0.9 J	0.12 J	0.48	0.85	0.21	0.32	0.39	1.1	0.62
DIBENZ(A,H)ANTHRACENE	0.029 J	0.0058 U	0.025	0.045	0.047	0.077	0.08	0.2	0.12
FLUORANTHENE	1.2 J	0.15 J	0.95	1.3	0.32	0.47	0.48	0.73	0.58
FLUORENE	0.15 J	0.012 J	0.078	0.068 U	0.013	0.02	0.021	0.2	0.079
INDENO(1,2,3-C,D)PYRENE	0.067 J	0.023 J	0.051	0.068 U	0.1	0.14	0.15	0.25	0.17
NAPHTHALENE	0.044 J	0.015 J	0.023	0.033	0.0017 U	0.0017 U	0.0017 U	0.026	0.019
PHENANTHRENE	0.62 J	0.056 J	0.4 J	0.62 J	0.12	0.2	0.22	0.71	0.49
PYRENE	0.62 J	0.083 J	0.41	0.7	0.28	0.42	0.5	1	0.67
PAHs (total)	6.2 J	0.92 J	3.9 J	6.3 J	1.8	2.7 J	3.1 J	7.2	4.5

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-015-V-Z5	R2-015-V-Z6	R2-015-V-Z7a	R2-015-V-Z7b
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft BGS)	4-6	6-8	8 - 9	9-9.5
Analyte				
Metals by C200.7 (mg/kg)				
ALUMINUM	15700 J	14700 J	13200	13400
ANTIMONY	2.4 J	0.32 UJ	0.24 UJ	0.18 UJ
ARSENIC	12.1 J	10.2 J	5.7	1.6
BARIUM	358 J	311 J	206 J	150 J
BERYLLIUM	0.45 J	0.58 J	0.58 J	0.67 J
CADMIUM	9 J	4 J	1 J	0.0068 UJ
CALCIUM	10800 J	9350 J	7640	1680
CHROMIUM	469 J	270 J	37.7	16.6
COBALT	16.4 J	12.9 J	11 J	12.4 J
COPPER	2010 J	676 J	157	11.3
IRON	24100 J	21600 J	20100	19600
LEAD	2520 J	469 J	135 J	5.5 J
MAGNESIUM	6650 J	6590 J	6790	5180
MANGANESE	299 J	347 J	449	819
NICKEL	220 J	70.2 J	31.6	23.6
POTASSIUM	1890 J	1790 J	1620	1040
SELENIUM	2.1 J	1.4 J	0.9 J	0.45 U
SILVER	7.1 J	2.8 J	0.054 UJ	0.041 UJ
SODIUM	114 J	85.6 J	64.5 J	37.6 J
THALLIUM	0.42 J	0.64 J	0.21 U	0.16 U
VANADIUM	36.2 J	25.3 J	21.5	20.1
ZINC	3140 J	2230 J	515	61.7
Mercury by CV (mg/kg)				
MERCURY	4 J	2.8 J	2 J	0.13 J
PCBS by MC ARO (mg/kg)				
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	0.36	0.011 U	0.011 U	0.011 U
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.096 J	0.031 J	0.011 U	0.011 U
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	0.46 J	0.031 J	0.011 U	0.011 U

Key at the end of Table

Table 4-1
Summary of Results for Reach 2 Sediment Samples

Sample ID	R2-015-V-Z5	R2-015-V-Z6	R2-015-V-Z7a	R2-015-V-Z7b
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft BGS)	4-6	6-8	8 - 9	9-9.5
Analyte				
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)				
2-METHYLNAPHTHALENE	0.1	0.082	0.018	0.0017 U
ACENAPHTHENE	0.084 J	0.056	0.015	0.0017 U
ACENAPHTHYLENE	0.13	0.091	0.04	0.0017 U
ANTHRACENE	0.22	0.2	0.1	0.0017 U
BENZO(A)ANTHRACENE	0.54	0.38	0.22	0.0017 U
BENZO(A)PYRENE	0.42	0.32	0.13	0.0017 U
BENZO(B)FLUORANTHENE	0.48	0.24	0.098	0.0017 U
BENZO(K)FLUORANTHENE	0.36	0.25	0.042 J	0.0017 U
CHRYSENE	0.72	0.49	0.25	0.0017 U
DIBENZ(A,H)ANTHRACENE	0.14	0.11	0.017 J	0.0017 U
FLUORANTHENE	1.5	0.67	0.33	0.0017 U
FLUORENE	0.21	0.17	0.028	0.0017 U
INDENO(1,2,3-C,D)PYRENE	0.24	0.19	0.04 J	0.0017 U
NAPHTHALENE	0.041	0.026	0.011	0.0017 U
PHENANTHRENE	0.88	0.57	0.22	0.0017 U
PYRENE	1.1	0.59	0.38	0.0017 U
PAHs (total)	7.4 J	4.6	2 J	0.0017 U

Key:

BGS = Below ground surface (in this case below top of sediment surface).
ft = Feet.
J = Estimated at the concentration listed.
mg/Kg = Milligrams per kilogram.
-P = Ponar creek location/sample.
PCB = Polychlorinated biphenyl.
SVOA = Semivoloatile organic compounds analysis.
U = Non-detect.
UJ = Non-detect/estimated.
UR = Non-detect/rejected.
-V = Vibracore creek location/sample.
-VR = Vibracore creek duplicate sample.
-Z = Sample depth interval consecutively numbered.

Key at the end of Table

Table 4-2a
Summary of Results for Reach 3 Sediment Samples

Sample ID	R3-016-V-Z1a	R3-016-V-Z1b	R3-016-V-Z2	R3-016-V-Z3	R3-016-V-Z4	R3-016-VR	R3-016-V-Z5	R3-016-V-Z6	R3-016-
Sample Date	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/20
Sample Depth Range (ft BGS)	0-0.5	0.5-1	1-2	2-3	3-4	3-4	4-6	6-8	8-9
Analyte									
Metals by C200.7 (mg/kg)									
ALUMINUM	16300 J	16900 J	16900 J	15200 J	15700 J	16300 J	15900 J	15200 J	12600
ANTIMONY	1.4 UR	1.3 UJ	1.2 UJ	1.1 UJ	1 UJ	3.1 J	0.99 UJ	0.78 UJ	0.48
ARSENIC	14.5 J	17.1 J	14.7 J	11.4 J	13.7 J	11.1 J	14.1 J	9.6 J	2.1
BARIUM	276 J-	338 J-	336 J-	314 J-	349 J-	346 J	366 J-	294 J-	125
BERYLLIUM	0.35 J	0.35 J	0.31 J	0.11 UJ	0.48 J	0.031 UJ	0.41 J	0.48 J	0.49
CADMIUM	13.6 J	23.7 J	14.5 J	8.9 J	9.5 J	8.4 J	5.2 J	1.9 J	0.025
CALCIUM	14100 J	16500 J	12400 J	10300 J	10500 J	10400 J	10500 J	13300 J	1840
CHROMIUM	1290 J	1940 J	1040 J	441 J	512 J	549 J	379 J	66.4 J	16.5
COBALT	24.2 J	16.3 J	21.4 J	16.5 J	15.6 J	14.7 J	13.3 J	11.8 J	11.9
COPPER	1290 J	2320 J	2160 J	2470 J	1310 J	1330 J	1020 J	288 J	10.1
IRON	24200 J	22500 J	23800 J	22400 J	23100 J	24200 J	21900 J	22200 J	18200
LEAD	2270 J	4650 J	4430 J	3880 J	1600 J	1600 J	619 J	304 J	7.1
MAGNESIUM	6450 J	6310 J	6230 J	6360 J	6620 J	6730 J	6470 J	8210 J	5020
MANGANESE	358 J	305 J	306 J	249 J	295 J	305 J	298 J	393 J	1070
NICKEL	486 J	329 J	347 J	240 J	173 J	176 J	79.2 J	42.7 J	24
POTASSIUM	2040 J	1950 J	1960 J	1870 J	2090 J	2220 J	2080 J	2030 J	1450
SELENIUM	1.2 UR	1.8 J	1.1 UJ	0.94 UJ	0.89 UJ	2.5 J	0.87 UJ	0.68 UJ	0.42
SILVER	2.3 J	4.3 J	4 J	5.9 J	4.7 J	5.5 J	1.8 J	0.82 U	0.51
SODIUM	10.4 UJ	9.6 UJ	9.1 UJ	8 UJ	7.6 UJ	132 J	7.4 UJ	5.8 UJ	3.6
THALLIUM	1.1 UR	0.99 U	0.95 U	0.83 U	0.78 U	0.74 J	0.76 U	0.6 U	0.37
VANADIUM	72.9 J	73.4 J	58.6 J	39 J	30.8 J	33.7 J	25.6 J	23.2 J	19.3
ZINC	9350 J	16700 J	12500 J	3000 J	3050 J	2960 J	3240 J	976 J	69
Mercury by CV (mg/kg)									
MERCURY	1.5 J	2 J	2.1 J	3.1 J	3.4 J	3.3 J	0.1 U	0.08 U	0.049
PCBS by MC ARO (mg/kg)									
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011
PCB-1248 (AROCLOR 1248)	6.7 J	9.5 J	5.8 J	2.5	0.24 J	0.19 J	0.011 UJ	0.011 U	0.011
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011
PCB-1260 (AROCLOR 1260)	0.011 U	0.5 J	0.011 U	0.011 U	0.12 J	0.16 J	0.065 J	0.011 U	0.011
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011
PCBs (total)	6.7 J	10 J	5.8 J	2.5	0.36 J	0.35 J	0.065 J	0.011 U	0.011

Key at the end of Table

Table 4-2a
Summary of Results for Reach 3 Sediment Samples

Sample ID	R3-016-V-Z1a	R3-016-V-Z1b	R3-016-V-Z2	R3-016-V-Z3	R3-016-V-Z4	R3-016-VR	R3-016-V-Z5	R3-016-V-Z6	R3-016-
Sample Date	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/20
Sample Depth Range (ft BGS)	0-0.5	0.5-1	1-2	2-3	3-4	3-4	4-6	6-8	8-9
Analyte									
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
2-METHYLNAPHTHALENE	0.055	0.0017 U	0.085	0.08	0.11	0.09	0.31	0.06	0.0017
ACENAPHTHENE	0.041	0.067	0.058	0.077	0.11	0.075	0.22	0.094	0.0017
ACENAPHTHYLENE	0.068	0.086	0.0017 U	0.29	0.2	0.17	0.36	0.078	0.0017
ANTHRACENE	0.11	0.21	0.19	0.34	0.37	0.32	0.82	0.34	0.0017
BENZO(A)ANTHRACENE	0.67	1.5	0.45	0.77	1.1 J	0.67	1.1	0.59 J	0.0017
BENZO(A)PYRENE	0.78	0.052 U	0.56	0.6	0.75	0.55	1.7 J	0.48	0.0017
BENZO(B)FLUORANTHENE	0.4	0.79	0.35	0.67	0.6	0.49	0.74	0.22	0.0017
BENZO(K)FLUORANTHENE	0.31	0.47	0.27	0.34	0.46	0.49	0.74	0.3	0.0017
CHRYSENE	1.1	2.7	0.71	1.5	1.3	1.3	2.5	1 J	0.0051
DIBENZ(A,H)ANTHRACENE	0.24	0.37	0.2	0.19	0.25	0.2	0.35	0.14	0.0017
FLUORANTHENE	0.81	1	0.94 J	0.74 J	1.7 J	1.3 J	1.6 J	3.7 J	0.0017
FLUORENE	0.23	0.36	0.21	0.31	0.33	0.29	0.61	0.13	0.0017
INDENO(1,2,3-C,D)PYRENE	0.26	0.42	0.22	0.32	0.39	0.31	0.51	0.19	0.0017
NAPHTHALENE	0.03	0.045	0.039	0.045	0.067	0.061	0.082	0.034	0.0017
PHENANTHRENE	0.54	0.88	0.73	1.5 J	1.8 J	1.6 J	3.8 J	1 J	0.0017
PYRENE	0.87	2.4	0.65	2	3.1	2.6	3.8	3.6 J	0.0051
PAHs (total)	7.1	12	6.1 J	10 J	13 J	11 J	20 J	12 J	0.01

Key at the end of Table

Table 4-2a
Summary of Results for Reach 3 Sediment Samples

Sample ID /-Z7		R3-017-V-Z1a	R3-017-V-Z1b	R3-017-V-Z2	R3-017-V-Z3	R3-017-V-Z4	R3-017-V-Z5	R3-017-VR	R3-017-V-Z6
Sample Date I10		5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010
Sample Depth Range (ft BGS)		0-0.5	0.5-1	1-2	2-3	3-4	4-6	4-6	6-8
Analyte									
Metals by C200.7 (mg/kg)									
ALUMINUM		12000 J	14400 J	10900 J	13100 J	16900 J	16200 J	16300 J	14800 J
ANTIMONY	UJ	0.37 UJ	0.37 UJ	1.1 J	10 J	23.5 J	8.1 J	8.2 J	1.5 J
ARSENIC		4.3 J	5.2 J	4.4 J	7.8 J	14.9 J	15.3 J	15.6 J	10.9 J
BARIUM	J-	130 J	159 J	126 J	240 J	313 J	324 J	319 J	283 J
BERYLLIUM	J	0.46 J	0.57 J	0.44 J	0.46 J	0.5 J	0.44 J	0.47 J	0.2 J
CADMIUM	U	2.5 J	2.9 J	2.9 J	9.7 J	27.9 J	13.5 J	15.1 J	6 J
CALCIUM		29300 J	16400 J	12800 J	12400 J	17200 J	11700 J	11800 J	11100 J
CHROMIUM		85.9 J	92 J	110 J	693 J	2090 J	1000 J	1100 J	224 J
COBALT	J	12.2 J	13.4 J	13.1 J	24.3 J	16.9 J	22.3 J	19.9 J	14 J
COPPER		172 J	212 J	214 J	777 J	2470 J	2480 J	2540 J	1540 J
IRON		18100 J	21400 J	17700 J	22700 J	25000 J	24800 J	23500 J	23200 J
LEAD	J	260 J	299 J	340 J	1390 J	5500 J	5230 J	5280 J	1820 J
MAGNESIUM		6200 J	6790 J	5900 J	5800 J	6160 J	5640 J	5860 J	7660 J
MANGANESE	J	563 J	666 J	595 J	367 J	290 J	297 J	278 J	304 J
NICKEL		59.1 J	61.1 J	73.4 J	431 J	322 J	365 J	304 J	137 J
POTASSIUM		1650 J	1940 J	1550 J	1700 J	1890 J	1720 J	1780 J	1810 J
SELENIUM	UJ	0.93 U	0.94 U	0.87 U	1.1 J	2.1 J	1.7 J	2.4 J	0.88 U
SILVER	U	0.084 UJ	0.084 UJ	0.078 UJ	0.088 UJ	5.5 J	5.7 J	5.7 J	4.9 J
SODIUM	UJ	8.6 UJ	8.7 UJ	8 UJ	9.1 UJ	11.7 UJ	10.4 UJ	11 UJ	8.1 UJ
THALLIUM	U	0.32 U	0.32 U	0.3 U	0.34 U	0.43 UR	0.39 U	0.41 U	0.3 U
VANADIUM		19 J	22.4 J	18.7 J	46.7 J	75.3 J	59.5 J	67.9 J	33.8 J
ZINC		821 J	984 J	1130 J	6170 J	15900 J	9330 J	11500 J	1620 J
Mercury by CV (mg/kg)									
MERCURY	U	1.2 J	1.5 J	0.87 J	1.1 J	2.4 J	2.5 J	2.7 J	2.7 J
PCBS by MC ARO (mg/kg)									
PCB-1016 (AROCLOR 1016)	U	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	U	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	U	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	U	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	U	0.11 J	0.33 J	0.011 UJ	4.7 J	10 J	1.5 J	1.2 J	0.059 J
PCB-1254 (AROCLOR 1254)	U	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	U	0.011 U	0.011 U	0.011 UJ	0.31 J	0.54 J	0.34 J	0.26 J	0.027 J
PCB-1262 (AROCHLOR 1262)	U	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	U	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	U	0.11 J	0.33 J	0.011 U	5 J	11 J	1.8 J	1.5 J	0.086 J

Key at the end of Table

Table 4-2a
Summary of Results for Reach 3 Sediment Samples

Sample ID /-Z7		R3-017-V-Z1a	R3-017-V-Z1b	R3-017-V-Z2	R3-017-V-Z3	R3-017-V-Z4	R3-017-V-Z5	R3-017-VR	R3-017-V-Z6
Sample Date I10		5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010
Sample Depth Range (ft BGS)		0-0.5	0.5-1	1-2	2-3	3-4	4-6	4-6	6-8
Analyte									
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
2-METHYLNAPHTHALENE	U	0.01	0.0017 U	0.018	0.034	0.61	0.13	0.097	0.057
ACENAPHTHENE	U	0.012	0.0017 U	0.073	0.18	0.08	0.051	0.033	0.041
ACENAPHTHYLENE	U	0.02	0.008 J	0.036	0.092	0.074	0.087	0.069	0.081
ANTHRACENE	U	0.033	0.019	0.28	0.36	0.28	0.21	0.12	0.22
BENZO(A)ANTHRACENE	UJ	0.11	0.067	0.41	0.76	1.1	0.46	0.26	0.43
BENZO(A)PYRENE	U	0.11	0.058	0.29	0.58	0.96	0.41	0.24	0.3
BENZO(B)FLUORANTHENE	U	0.091 J	0.066	0.17 J	0.45 J	0.41 J	0.33 J	0.23 J	0.18 J
BENZO(K)FLUORANTHENE	U	0.091	0.039	0.18	0.37	0.32	0.21	0.18	0.19
CHRYSENE		0.18	0.072 J	0.51	0.99	2	0.78	0.44	0.53
DIBENZ(A,H)ANTHRACENE	U	0.044	0.025	0.08	0.16	0.2	0.1	0.0017 U	0.071
FLUORANTHENE	U	0.34	0.12 J	0.72	1.4	0.9	0.77	0.62	0.65
FLUORENE	U	0.017	0.0093	0.063	0.21	0.46	0.22	0.14	0.11
INDENO(1,2,3-C,D)PYRENE	U	0.061	0.047	0.12	0.23	0.23	0.14	0.089 J	0.11
NAPHTHALENE	U	0.01	0.0017 U	0.011	0.021	0.0017 U	0.036	0.02	0.026
PHENANTHRENE	UJ	0.14 J	0.067	0.58 J	0.98 J	1.3	0.75 J	0.46 J	0.47 J
PYRENE		0.24	0.094 J	0.81	1.3	1.2	0.79	0.48	0.76
PAHs (total)		1.6 J	0.76 J	4.5 J	8.5 J	10 J	5.6 J	3.6 J	4.3 J

Key at the end of Table

Table 4-2a
Summary of Results for Reach 3 Sediment Samples

Sample ID	R3-017-V-Z7	R3-018-V-Z1a	R3-018-V-Z1b	R3-018-V-Z2	R3-018-V-Z3	R3-018-V-Z4	R3-018-V-Z5	R3-018-V-Z6
Sample Date	5/26/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft BGS)	8-8.5	0-0.5	0.5-1	1-2	2-3	3-4	4-6	6-8
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	14700 J	13700 J	13800 J	13700 J	17000 J	17200 J	16000 J	14400 J
ANTIMONY	0.98 J	0.47 UJ	0.44 UJ	0.53 J	0.52 UJ	0.51 UJ	0.45 UJ	0.38 UJ
ARSENIC	10.4 J	4 J	4.6 J	4.9 J	10.3 J	10.9 J	11.4 J	11.1 J
BARIUM	326 J	158 J	174 J	205 J	349 J	359 J	338 J	396 J
BERYLLIUM	0.63 J	0.038 UJ	0.035 UJ	0.034 UJ	0.042 UJ	0.04 UJ	0.036 UJ	0.031 UJ
CADMIUM	3.1 J	2 J	2.7 J	6.8 J	14 J	22.2 J	9.9 J	8.3 J
CALCIUM	14400 J	15800 J	15700 J	17000 J	14700 J	16100 J	10100 J	9330 J
CHROMIUM	63.9 J	105 J	141 J	324 J	1630 J	1750 J	703 J	554 J
COBALT	11.5 J	12.7 J	13.6 J	20 J	23 J	16.1 J	17.3 J	15.9 J
COPPER	354 J	224 J	273 J	532 J	1610 J	2560 J	3170 J	1540 J
IRON	23400 J	21500 J	21500 J	22900 J	26900 J	25300 J	23200 J	21900 J
LEAD	290 J	301 J	386 J	742 J	2540 J	5790 J	5080 J	1400 J
MAGNESIUM	10000 J	6590 J	6490 J	6530 J	6800 J	6270 J	5970 J	6090 J
MANGANESE	367 J	563 J	459 J	489 J	321 J	303 J	278 J	276 J
NICKEL	44.2 J	54 J	69.8 J	294 J	476 J	315 J	294 J	186 J
POTASSIUM	1940 J	2070 J	1970 J	1830 J	1940 J	2000 J	1820 J	1820 J
SELENIUM	0.77 U	1.8 J	1.3 J	2 J	4.6 J	3.4 J	2.7 J	2.6 J
SILVER	0.069 UJ	0.11 UJ	0.1 UJ	0.096 UJ	4.8 J	5.6 J	7.9 J	5.7 J
SODIUM	7.1 UJ	11 UJ	10.3 UJ	9.9 UJ	12.1 UJ	11.8 UJ	10.6 UJ	8.9 UJ
THALLIUM	0.26 U	0.41 U	0.38 U	0.37 U	0.45 UJ	0.44 UJ	0.39 U	0.33 U
VANADIUM	24 J	23.2 J	24.4 J	38.4 J	97.4 J	75.5 J	52.9 J	29.4 J
ZINC	1160 J	999 J	1380 J	2830 J	9390 J	17300 J	5470 J	2850 J
Mercury by CV (mg/kg)								
MERCURY	3.4 J	0.87 J	1 J	1.3 J	2.5 J	3.8 J	4.6 J	4 J
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U
PCB-1248 (AROCLOR 1248)	0.011 U	0.07 J	0.4 J	0.65 J	2.9 J	3 J	0.76 J	0.12 NJ
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U
PCB-1260 (AROCLOR 1260)	0.011 U	0.011 U	0.16	0.12 NJ	0.38 J	0.23 J	0.011 UJ	0.011 U
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U
PCBs (total)	0.011 U	0.07 J	0.56 J	0.77 J	3.3 J	3.2 J	0.76 J	0.12 J

Key at the end of Table

Table 4-2a
Summary of Results for Reach 3 Sediment Samples

Sample ID	R3-017-V-Z7	R3-018-V-Z1a	R3-018-V-Z1b	R3-018-V-Z2	R3-018-V-Z3	R3-018-V-Z4	R3-018-V-Z5	R3-018-V-Z6
Sample Date	5/26/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft BGS)	8-8.5	0-0.5	0.5-1	1-2	2-3	3-4	4-6	6-8
Analyte								
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.13	0.0043	0.011	0.016	0.043	0.51	0.074	0.046
ACENAPHTHENE	0.056	0.0056	0.015	0.017	0.04	0.066	0.068	0.084
ACENAPHTHYLENE	0.084	0.012	0.037	0.045	0.041	0.087	0.14	0.052
ANTHRACENE	0.35	0.021	0.053	0.038	0.05	0.1	0.23	0.28
BENZO(A)ANTHRACENE	0.52	0.1	0.27	0.24	0.51	1.1	0.71	0.54
BENZO(A)PYRENE	0.32	0.13	0.25	0.23	0.52	0.88	0.61	0.36
BENZO(B)FLUORANTHENE	0.21 J	0.14	0.25	0.24	0.29	0.33	0.47	0.23
BENZO(K)FLUORANTHENE	0.24	0.11	0.18	0.13	0.15	0.25	0.31	0.24
CHRYSENE	0.63	0.15	0.36	0.35	0.84	1.3	0.75	0.66
DIBENZ(A,H)ANTHRACENE	0.086	0.054	0.089	0.064	0.098	0.2	0.18	0.081 J
FLUORANTHENE	0.64	0.23	0.58	0.48	0.56	1.1	1.1	0.76
FLUORENE	0.12	0.01	0.03	0.035	0.092	0.3	0.27	0.14
INDENO(1,2,3-C,D)PYRENE	0.12	0.095	0.16	0.14	0.18	0.3	0.26	0.16
NAPHTHALENE	0.036	0.0039 J	0.0089 J	0.011	0.017	0.053	0.04	0.013
PHENANTHRENE	0.65 J	0.093	0.28	0.25	0.57	0.88	0.78	0.68
PYRENE	0.76	0.2	0.48	0.46	0.67	1.2	0.93	0.77
PAHs (total)	5 J	1.5 J	3.3 J	2.9	5.1	8.9	7.4	5.3 J

Key at the end of Table

Table 4-2a
Summary of Results for Reach 3 Sediment Samples

Sample ID	R3-018-V-Z7	R3-018-V-Z8	R3-019-V-Z1a	R3-019-V-Z1b	R3-019-V-Z2	R3-019-V-Z3	R3-019-V-Z4	R3-020-V-Z1a
Sample Date	5/25/2010	5/25/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010
Sample Depth Range (ft BGS)	8-10	10-12	0-0.5	0.5-1	1-2	2-3	3-4	0-0.5
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	15500 J	15000	20400 J	20700 J	18400 J	18500 J	18100 J	10900 J
ANTIMONY	0.32 UJ	0.28 UJ	0.65 UJ	0.62 UJ	0.51 UJ	0.47 UJ	1.1 J	2.6 J
ARSENIC	10.7 J	9.2	4.5 J	4.8 J	8.5 J	10.3 J	11.7 J	5.1 J
BARIUM	346 J	269	214 J	252 J	311 J	359 J	345 J	166 J
BERYLLIUM	0.026 UJ	0.022 UJ	0.052 UJ	0.05 UJ	0.041 UJ	0.037 UJ	0.031 UJ	0.45 J
CADMIUM	3.6 J	2	3.5 J	5.3 J	14.1 J	10.9 J	7.8 J	5.5 J
CALCIUM	8340 J	11800	20000 J	21900 J	16700 J	10500 J	10100 J	13100 J
CHROMIUM	193 J	59.6	184 J	266 J	923 J	741 J	554 J	232 J
COBALT	11.9 J	12.7	14.1 J	16.3 J	23.6 J	18.2 J	15.9 J	19.1 J
COPPER	458 J	255	332 J	453 J	1320 J	2110 J	1240 J	355 J
IRON	21500 J	23400	27600 J	28000 J	26200 J	25600 J	25200 J	18300 J
LEAD	443 J	288	447 J	613 J	2470 J	3480 J	942 J	571 J
MAGNESIUM	6250 J	8440	7920 J	7880 J	7030 J	6740 J	7100 J	5500 J
MANGANESE	304 J	371	383 J	363 J	355 J	275 J	292 J	309 J
NICKEL	52 J	55.7	82.4 J	125 J	456 J	284 J	146 J	228 J
POTASSIUM	1950 J	1950	3240 J	3140 J	2530 J	2420 J	2450 J	1460 J
SELENIUM	1.3 J	0.89 J	2.4 J	2.2 J	3.3 J	2.9 J	2 J	1.1 J
SILVER	0.073 UJ	0.063 UJ	1.1 J	1.7 J	3.3 J	4.9 J	5.3 J	0.095 UJ
SODIUM	7.5 UJ	6.4 UJ	356 J	313 J	223 J	187 J	147 J	9.7 UJ
THALLIUM	0.28 U	0.24 U	0.56 UJ	0.54 UJ	0.45 UJ	0.41 UJ	1.5 J	0.36 U
VANADIUM	24.8 J	24.8	31.5 J	36 J	63.8 J	46.5 J	32.2 J	28.5 J
ZINC	1670 J	1000	1650 J	2410 J	9750 J	6860 J	3350 J	2040 J
Mercury by CV (mg/kg)								
MERCURY	3.2 J	2.7 J+	0.34 J	0.53 J	4.8 J	2.8 J	2.3 J	0.35 J
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	0.011 U	0.011 U	0.76 J	0.44 J	0.62 J	0.61	0.011 U	0.48 J
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.015 J	0.011 U	0.011 U	0.011 U	0.011 U	0.11 J	0.04 J	0.011 U
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	0.015 J	0.011 U	0.76 J	0.44 J	0.62 J	0.72 J	0.04 J	0.48 J

Key at the end of Table

Table 4-2a
Summary of Results for Reach 3 Sediment Samples

Sample ID	R3-018-V-Z7	R3-018-V-Z8	R3-019-V-Z1a	R3-019-V-Z1b	R3-019-V-Z2	R3-019-V-Z3	R3-019-V-Z4	R3-020-V-Z1a
Sample Date	5/25/2010	5/25/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010
Sample Depth Range (ft BGS)	8-10	10-12	0-0.5	0.5-1	1-2	2-3	3-4	0-0.5
Analyte								
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.043	0.015	0.0017 U	0.0017 U	0.037	0.052	0.09	0.009
ACENAPHTHENE	0.022	0.013	0.0017 U	0.0017 U	0.031	0.07	0.083	0.019
ACENAPHTHYLENE	0.014	0.041	0.0017 U	0.0017 U	0.052	0.14	0.15	0.017
ANTHRACENE	0.033	0.051	0.019	0.013 J	0.065	0.19	0.25	0.064
BENZO(A)ANTHRACENE	0.14	0.19	0.062	0.05	0.47	0.51	0.58	0.32
BENZO(A)PYRENE	0.084 J	0.14	0.077	0.056	0.29 J	0.28 J	0.3 J	0.25
BENZO(B)FLUORANTHENE	0.063	0.094	0.083	0.046	0.21	0.48	0.33	0.17
BENZO(K)FLUORANTHENE	0.078	0.083	0.057	0.025	0.23	0.36	0.37	0.14
CHRYSENE	0.18	0.24	0.089	0.072	0.82	0.78	0.81	0.33
DIBENZ(A,H)ANTHRACENE	0.015	0.044	0.024	0.022	0.058	0.053	0.059	0.0086
FLUORANTHENE	0.2	0.27	0.12	0.098	0.52	1.6	0.62 J	0.37
FLUORENE	0.022	0.016	0.0017 U	0.0017 U	0.07	0.14	0.21	0.018
INDENO(1,2,3-C,D)PYRENE	0.039	0.066	0.05	0.035	0.12 J	0.14 J	0.15 J	0.024
NAPHTHALENE	0.14	0.01	0.0017 U	0.0017 U	0.035	0.044	0.052	0.0039 U
PHENANTHRENE	0.13	0.15	0.048	0.039	0.35	0.74	0.9	0.15 J
PYRENE	0.21	0.32	0.12	0.087	0.65	1.2	1.4 J	0.28
PAHs (total)	1.4 J	1.8	0.82	0.59 J	4.2 J	6.9 J	6.4 J	2.2 J

Key at the end of Table

Table 4-2a
Summary of Results for Reach 3 Sediment Samples

Sample ID	R3-020-V-Z1b	R3-020-V-Z2	R3-020-V-Z3	R3-020-V-Z4	R3-020-V-Z5	R3-020-V-Z6	R3-020-V-Z7	R3-021-V-Z1a
Sample Date	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010
Sample Depth Range (ft BGS)	0.5-1	1-2	2-3	3-4	4-6	6-8	8-10	0-0.5
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	10800 J	17500 J	14400 J	16800 J	14800 J	15000 J	14200	9940
ANTIMONY	4.2 J	13.5 J	6.3 J	5.7 J	7.5 J	2.8 J	0.61 J	0.51 UJ
ARSENIC	5.6 J	13.1 J	11.8 J	14.9 J	11.8 J	12.4 J	9.5	2.4
BARIUM	155 J	306 J	319 J	377 J	342 J	387 J	294	178 J-
BERYLLIUM	0.43 J	0.58 J	0.49 J	0.42 J	0.46 J	0.59 J	0.62 J	0.28 J
CADMIUM	7 J	20.7 J	15.9 J	12.5 J	8.7 J	4.5 J	3.8	0.026 U
CALCIUM	11800 J	14700 J	11200 J	11000 J	9610 J	8130 J	12300	3920
CHROMIUM	360 J	1770 J	1100 J	973 J	514 J	172 J	59.7	11.8
COBALT	19.5 J	18.6 J	18.1 J	26.5 J	15.2 J	11.9 J	10.9	8.2 J
COPPER	486 J	2210 J	2430 J	2830 J	1710 J	537 J	322	10
IRON	17600 J	23200 J	24100 J	31400 J	22000 J	21000 J	22200	13600
LEAD	753 J	4390 J	4850 J	5490 J	2350 J	508 J	325	5.4 J
MAGNESIUM	5270 J	6500 J	5350 J	5690 J	6090 J	6110 J	8810	3700
MANGANESE	292 J	292 J	289 J	425 J	292 J	307 J	325	777 J
NICKEL	275 J	378 J	342 J	447 J	204 J	57.9 J	51.4	15.1
POTASSIUM	1390 J	1980 J	1650 J	1740 J	1750 J	1800 J	1850	1180
SELENIUM	1.3 J	3.3 J	2.3 J	2.5 J	1.6 J	1.3 J	0.82 J	0.45 UJ
SILVER	0.093 UJ	4.8 J	6.8 J	6.4 J	5.7 J	1.8 J	1.5 J	0.54 U
SODIUM	9.6 UJ	12.3 UJ	12.2 UJ	11.6 UJ	9.2 UJ	8.2 UJ	6.9 UJ	3.8 UJ
THALLIUM	0.36 U	0.46 UR	0.45 UR	0.43 U	0.34 U	0.31 U	0.26 U	0.39 U
VANADIUM	35.2 J	80.2 J	60.9 J	59.6 J	35.9 J	23.5 J	22.7	16.8
ZINC	2670 J	13000 J	20000 J	8750 J	3050 J	1910 J	1100 J	46.7
Mercury by CV (mg/kg)								
MERCURY	0.78 J	2.5 J	2.4 J	3.5 J	2.9 J	3.2 J	3.6	0.052 U
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	2.5 J	3.6 J	4 J	1.6 J	0.21 J	0.011 UJ	0.011 U	0.011 U
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.31 J	0.29 J	0.57 J	0.26 J	0.011 UJ	0.042 J	0.011 U	0.011 U
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U	0.011 U
PCBs (total)	2.8 J	3.9 J	4.6 J	1.9 J	0.21 J	0.042 J	0.011 U	0.011 U

Key at the end of Table

Table 4-2a
Summary of Results for Reach 3 Sediment Samples

Sample ID	R3-020-V-Z1b	R3-020-V-Z2	R3-020-V-Z3	R3-020-V-Z4	R3-020-V-Z5	R3-020-V-Z6	R3-020-V-Z7	R3-021-V-Z1a
Sample Date	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010
Sample Depth Range (ft BGS)	0.5-1	1-2	2-3	3-4	4-6	6-8	8-10	0-0.5
Analyte								
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.0094	0.019	0.025	0.083	0.1 U	0.096 U	0.034 U	0.0017 U
ACENAPHTHENE	0.0097	0.014	0.013 J	0.13 U	0.06	0.056	0.12	0.0017 U
ACENAPHTHYLENE	0.012	0.02	0.025	0.13 U	0.1 U	0.096 U	0.034 U	0.0017 U
ANTHRACENE	0.025	0.036	0.029	0.13 U	0.1 U	0.096 U	0.042 J	0.0017 U
BENZO(A)ANTHRACENE	0.11	0.25	0.26	0.73	0.58	0.48	0.44	0.0017 UJ
BENZO(A)PYRENE	0.09	0.24	0.21	0.75	0.62	0.46	0.33	0.0017 U
BENZO(B)FLUORANTHENE	0.082	0.13	0.11	1.1 J	1 J	0.67 J	0.4 J	0.0017 U
BENZO(K)FLUORANTHENE	0.066	0.081	0.1	0.58	0.51	0.34	0.23	0.0017 U
CHRYSENE	0.13	0.42	0.42	0.86	0.61	0.48	0.37	0.0017 U
DIBENZ(A,H)ANTHRACENE	0.0047 U	0.0055 U	0.014	0.075	0.058	0.059	0.076	0.0017 U
FLUORANTHENE	0.22	0.28	0.34	0.83	0.91	0.58	0.47	0.0017 U
FLUORENE	0.016	0.031	0.03	0.13 UJ	0.1 UJ	0.096 UJ	0.034 UJ	0.0041 J
INDENO(1,2,3-C,D)PYRENE	0.012	0.016	0.021	0.32	0.26	0.19 J	0.09	0.0017 U
NAPHTHALENE	0.0047 U	0.0055 U	0.016	0.056	0.051	0.049	0.052	0.0017 U
PHENANTHRENE	0.068 J	0.082 J	0.091 J	0.86	0.61	0.49	0.47	0.0017 UJ
PYRENE	0.093	0.22	0.26	1.1	0.96	0.78	0.68	0.0017 U
PAHs (total)	0.95 J	1.8 J	2 J	7.7 J	6.5 J	4.9 J	3.9 J	0.0041 J

Key at the end of Table

Table 4-2a
Summary of Results for Reach 3 Sediment Samples

Sample ID	R3-021-V-Z1b	R3-021-V-Z2	R3-021-V-Z3	R3-022-V-Z1a	R3-022-V-Z1b	R3-022-V-Z2	R3-022-VR	R3-022-V-Z3
Sample Date	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010
Sample Depth Range (ft BGS)	0.5-1	1-2	2-3	0-0.5	0.5-1	1-2	1-2	2-3
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	14400	15600	12600	16500 J	15600 J	11000 J	10800 J	12800 J
ANTIMONY	0.51 UJ	0.49 UJ	0.48 UJ	0.45 UJ	0.47 UJ	0.35 UJ	0.35 UJ	0.35 UJ
ARSENIC	2	3.4	2	4.9 J	4.6 J	4 J	3.9 J	6.6 J
BARIUM	169 J-	146 J-	111 J-	181 J	165 J	162 J	136 J	187 J
BERYLLIUM	0.46 J	0.57 J	0.33 J	0.036 UJ	0.037 UJ	0.028 UJ	0.028 UJ	0.028 UJ
CADMIUM	0.026 U	0.025 U	0.025 U	2.3 J	2.9 J	3.4 J	2.9 J	6.8 J
CALCIUM	2160	1760	1810	15400 J	20400 J	14400 J	15700 J	14800 J
CHROMIUM	15.8	18.5	15.4	131 J	145 J	186 J	167 J	442 J
COBALT	11.9 J	12.8 J	9.8 J	14.6 J	16.8 J	30.8 J	38.5 J	45.2 J
COPPER	8	8.6	5.9	237 J	264 J	375 J	287 J	635 J
IRON	17600	22300	18100	23500 J	23600 J	18600 J	18100 J	22800 J
LEAD	5.3 J	5.7 J	4.5 J	343 J	402 J	591 J	509 J	1180 J
MAGNESIUM	4290	4670	4700	7150 J	6850 J	5700 J	5600 J	6190 J
MANGANESE	650 J	748 J	362 J	665 J	613 J	496 J	504 J	602 J
NICKEL	18	22.1	19.8	84.5 J	121 J	368 J	430 J	446 J
POTASSIUM	1110	1310	1300	2660 J	2580 J	1880 J	1830 J	1990 J
SELENIUM	0.44 UJ	0.43 UJ	0.42 UJ	1.4 J	1.6 J	1.3 J	1.5 J	2.1 J
SILVER	0.53 U	0.52 U	0.5 U	1.1 J	1.1 J	4.8 J	0.7 J	1.8 J
SODIUM	3.8 UJ	3.6 UJ	3.6 UJ	235 J	221 J	145 J	145 J	150 J
THALLIUM	0.39 U	0.38 U	0.37 U	0.39 UJ	0.4 UJ	0.3 UJ	0.31 UJ	0.3 UJ
VANADIUM	24	28.9	19.2	27.4 J	28.2 J	24.9 J	25.6 J	40.1 J
ZINC	86.2	114	84.2	1120 J	1390 J	2380 J	2280 J	5500 J
Mercury by CV (mg/kg)								
MERCURY	0.052 U	0.13	0.14	0.73 J	0.8 J	0.67 J	0.56 J	0.88 J
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	0.011 U	0.011 U	0.011 U	0.18 J	0.33 J	0.18 J	0.74 J	0.82 J
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.011 U	0.011 U	0.011 U	0.074 J	0.011 U	0.011 U	0.048 J	0.076 J
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	0.011 U	0.011 U	0.011 U	0.25 J	0.33 J	0.18 J	0.79 J	0.9 J

Key at the end of Table

Table 4-2a
Summary of Results for Reach 3 Sediment Samples

Sample ID	R3-021-V-Z1b	R3-021-V-Z2	R3-021-V-Z3	R3-022-V-Z1a	R3-022-V-Z1b	R3-022-V-Z2	R3-022-VR	R3-022-V-Z3
Sample Date	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010
Sample Depth Range (ft BGS)	0.5-1	1-2	2-3	0-0.5	0.5-1	1-2	1-2	2-3
Analyte								
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.0017 U	0.0017 U	0.0017 U	0.014	0.034	0.038 J	0.02 J	0.02
ACENAPHTHENE	0.0017 U	0.0017 U	0.0017 U	0.026	0.14	0.18 J	0.06 J	0.047
ACENAPHTHYLENE	0.0017 U	0.0017 U	0.0017 U	0.03	0.036	0.047 J	0.021 J	0.041
ANTHRACENE	0.0017 U	0.0017 U	0.0017 U	0.061	0.29	0.8 J	0.15 J	0.052
BENZO(A)ANTHRACENE	0.0017 UJ	0.0017 UJ	0.0017 UJ	0.24	0.61	1.1 J	0.41 J	0.31
BENZO(A)PYRENE	0.0017 U	0.0017 U	0.0017 U	0.15 J	0.32 J	1.5 J	0.2 J	0.17 J
BENZO(B)FLUORANTHENE	0.0017 U	0.0017 U	0.0017 U	0.17	0.32	0.86 J	0.17 J	0.16
BENZO(K)FLUORANTHENE	0.0017 U	0.0017 U	0.0017 U	0.18	0.3	0.83 J	0.17 J	0.15
CHRYSENE	0.0017 U	0.0017 U	0.0017 U	0.34	0.77	3.8 J	0.51 J	0.46
DIBENZ(A,H)ANTHRACENE	0.0017 U	0.0017 U	0.0017 U	0.031	0.053	0.23 J	0.036 J	0.019
FLUORANTHENE	0.0017 U	0.0017 U	0.0017 U	0.49	0.87 J	3.6 J	0.55 J	0.36
FLUORENE	0.0017 U	0.0017 U	0.0017 U	0.03	0.097	0.17 J	0.064 J	0.06
INDENO(1,2,3-C,D)PYRENE	0.0017 U	0.0017 U	0.0017 U	0.076	0.14 J	0.44 J	0.078 J	0.039
NAPHTHALENE	0.0017 U	0.0017 U	0.0017 U	0.02	0.063	0.077 J	0.02 J	0.022
PHENANTHRENE	0.0017 UJ	0.0017 UJ	0.0017 UJ	0.21	0.81	0.85 J	0.43 J	0.21
PYRENE	0.0017 U	0.0017 U	0.0017 U	0.45	1 J	4.4 J	0.7 J	0.43
PAHs (total)	0.0017 U	0.0017 U	0.0017 U	2.6 J	6 J	19 J	3.7 J	2.7 J

Key at the end of Table

Table 4-2a
Summary of Results for Reach 3 Sediment Samples

Sample ID	R3-022-V-Z4	R3-022-V-Z5	R3-022-V-Z6	R3-023-V-Z1a	R3-023-V-Z1b	R3-023-V-Z2	R3-024-V-Z1a	R3-024-V-Z1b
Sample Date	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010
Sample Depth Range (ft BGS)	3-4	4-6	6-6.8	0-0.5	0.5-0.9	1-2	0-0.5	0.5-1
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	15800 J	13600	12100	12100	12500	11900	14500 J	14900 J
ANTIMONY	0.84 J	0.3 J	0.19 UJ	0.51 UJ	0.5 UJ	0.52 UJ	1.8 J	2.5 J
ARSENIC	9 J	8.4	2.7	2.9	2.7	2	6.1 J	6.1 J
BARIUM	263 J	291 J	114 J	123 J-	123 J-	139 J-	186 J	230 J
BERYLLIUM	0.024 UJ	0.021 UJ	0.015 UJ	0.46 J	0.47 J	0.52 J	0.57 J	0.57 J
CADMIUM	1.4 J	1.2 J	0.0071 UJ	0.026 U	0.026 U	0.026 U	4.4 J	7 J
CALCIUM	7370 J	8610	2410	2360	2410	1940	23800 J	24100 J
CHROMIUM	66.2 J	52.2	19.2	18.1	17.3	15.2	166 J	241 J
COBALT	11.1 J	10.4 J	12.8 J	11.1 J	11.1 J	11.3 J	0.1 UJ	16 J
COPPER	265 J	196	15.6	17.4	13.5	8.7	300 J	442 J
IRON	22800 J	21500	19900	16700	17200	17800	22700 J	23000 J
LEAD	417 J	235	25.1	27.4 J	17.3 J	6.7 J	431 J	708 J
MAGNESIUM	6600 J	7360	5750	4790	4990	5000	6680 J	6580 J
MANGANESE	342 J	432	388	321 J	337 J	298 J	504 J	495 J
NICKEL	37.7 J	34.4	25.4	22.8	23.1	22.1	83.9 J	126 J
POTASSIUM	2260 J	2000	1730	1520	1600	1430	2010 J	1930 J
SELENIUM	1.2 J	0.88 J	0.55 J	0.44 UJ	0.44 UJ	0.45 UJ	1.5 J	1.3 J
SILVER	1.5 J	0.83 J	0.043 U	0.53 U	0.53 U	0.54 U	1.6 J	2.6 J
SODIUM	136 J	120 J	68.7 J	3.8 UJ	3.7 UJ	3.8 UJ	11.9 UJ	10.7 UJ
THALLIUM	0.26 UJ	0.34 J	0.16 U	0.39 U	0.39 U	0.4 U	0.44 UR	0.4 U
VANADIUM	25.5 J	23.2	21.1	18.2	19	18.3	27.5 J	29.1 J
ZINC	931 J	669	73.8	82	75.5	60	1540 J	2470 J
Mercury by CV (mg/kg)								
MERCURY	2.6 J	2.4	0.24	0.052 U	1.4	1.7	0.6 J	0.64 J
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.65 J	0.75 J
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.65 J	0.75 J

Key at the end of Table

Table 4-2a
Summary of Results for Reach 3 Sediment Samples

Sample ID	R3-022-V-Z4	R3-022-V-Z5	R3-022-V-Z6	R3-023-V-Z1a	R3-023-V-Z1b	R3-023-V-Z2	R3-024-V-Z1a	R3-024-V-Z1b
Sample Date	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010
Sample Depth Range (ft BGS)	3-4	4-6	6-6.8	0-0.5	0.5-0.9	1-2	0-0.5	0.5-1
Analyte								
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.033	0.023	0.0017 U	0.0021 U	0.0021 U	0.0023 U	0.017	0.013
ACENAPHTHENE	0.12	0.023	0.0017 U	0.0021 U	0.0021 U	0.0023 U	0.019	0.015
ACENAPHTHYLENE	0.018	0.027	0.0017 U	0.0021 U	0.0021 U	0.0023 U	0.049	0.033
ANTHRACENE	0.3	0.1	0.0017 U	0.0021 U	0.0021 U	0.0023 U	0.077	0.05
BENZO(A)ANTHRACENE	0.45	0.23	0.011	0.0021 U	0.0021 U	0.0023 U	0.2	0.18
BENZO(A)PYRENE	0.21 J	0.13 J	0.0017 U	0.0021 U	0.0021 U	0.0023 U	0.12 J	0.15
BENZO(B)FLUORANTHENE	0.2	0.12	0.0017 U	0.0021 U	0.0021 U	0.0023 U	0.13 J	0.12 J
BENZO(K)FLUORANTHENE	0.21	0.14	0.0044 J	0.0021 U	0.0021 U	0.0023 U	0.093 J	0.14
CHRYSENE	0.54	0.28	0.012	0.0021 U	0.0021 U	0.0023 U	0.29	0.3
DIBENZ(A,H)ANTHRACENE	0.048	0.019	0.0017 U	0.0021 U	0.0021 U	0.0023 U	0.052 J	0.085
FLUORANTHENE	0.97	0.34	0.014	0.0048	0.0046	0.0053	0.46	0.43
FLUORENE	0.1	0.037	0.0017 U	0.0021 U	0.0021 U	0.0023 U	0.048	0.033
INDENO(1,2,3-C,D)PYRENE	0.079	0.045	0.0017 U	0.0021 U	0.0021 U	0.0023 U	0.073 J	0.076
NAPHTHALENE	0.02	0.021	0.0017 U	0.0021 U	0.0021 U	0.0023 U	0.013 J	0.011
PHENANTHRENE	1	0.23	0.0062	0.0021 U	0.0021 U	0.0043 J	0.26 J	0.17 J
PYRENE	1.2	0.35	0.014	0.0063	0.0044	0.0052	0.37	0.34
PAHs (total)	5.6 J	2.1 J	0.062 J	0.011	0.009	0.015 J	2.4 J	2.3 J

Key at the end of Table

Table 4-2a
Summary of Results for Reach 3 Sediment Samples

Sample ID	R3-024-V-Z2	R3-024-V-Z3	R3-024-V-Z4	R3-024-V-Z5	R3-024-V-Z6	R3-025-V-Z1a	R3-025-V-Z1b	R3-026-V-Z1a
Sample Date	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/27/2010
Sample Depth Range (ft BGS)	1-2	2-3	3-4	4-6	6-8	0-0.5	0.5-1	0-0.5
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	16100 J	17800 J	18300 J	16300 J	13000	9740	9390	12800 J
ANTIMONY	13.2 J	0.53 UJ	0.49 UJ	0.32 UJ	0.64 J	0.18 UJ	0.2 UJ	1 UJ
ARSENIC	11 J	13.5 J	13.9 J	10.7 J	8.2	2.7	3.7	5.5 J
BARIUM	319 J	351 J	328 J	310 J	318 J	71.6 J	106 J	126 J
BERYLLIUM	0.55 J	0.042 UJ	0.039 UJ	0.025 UJ	0.021 UJ	0.015 UJ	0.016 UJ	0.54 J
CADMIUM	17.4 J	14.5 J	8.8 J	2.7 J	1.2 J	0.67 J	1.7 J	1.6 J
CALCIUM	15400 J	12300 J	10200 J	10500 J	10100	14100	17600	12700 J
CHROMIUM	1510 J	1170 J	732 J	110 J	57.2	37.7	117	124 J
COBALT	22.2 J	21.8 J	21.2 J	11.9 J	9.3 J	12.7 J	29.1 J	11.1 J
COPPER	1750 J	2370 J	2970 J	478 J	252	40.1	113	233 J
IRON	24500 J	25400 J	25300 J	24000 J	20600	17300	17400	18600 J
LEAD	3220 J	4810 J	5260 J	563 J	240	92.3	381	284 J
MAGNESIUM	6320 J	6200 J	5790 J	8320 J	8420	6130	6900	5690 J
MANGANESE	312 J	278 J	298 J	315 J	253	371	529	590 J
NICKEL	450 J	371 J	356 J	67.8 J	36	68.6	188	55.4 J
POTASSIUM	1910 J	2230 J	2220 J	2320 J	2020	1660	1590	2340 J
SELENIUM	2.6 J	3.9 J	2.8 J	1.6 J	1.3 J	0.46 U	0.63 J	3.1 J
SILVER	4 J	5.5 J	6.3 J	1.8 J	0.99 J	0.041 U	0.29 J	1.1 U
SODIUM	12.4 UJ	285 J	294 J	242 J	234 J	250 J	481 J	7.6 UJ
THALLIUM	0.46 UR	0.46 UJ	0.42 UJ	0.28 UJ	0.23 U	0.16 U	0.17 U	0.79 U
VANADIUM	73.3 J	66.9 J	61.7 J	27.7 J	22.1	16.7	19.4	27.4 J
ZINC	11600 J	12700 J	5760 J	1320 J	741	538	1230	859 J
Mercury by CV (mg/kg)								
MERCURY	1.7 J	2.6 J	2.7 J	3.1 J	2.1	0.049 U	0.16	0.6 J
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	0.39 J	4.5 J	1.1 J	0.04 J	0.011 U	0.1	0.071 J	0.38 J
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.046 J	0.32 J	0.28 J	0.019 J	0.011 U	0.018 J	0.011 U	0.011 U
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	0.44 J	4.8 J	1.4 J	0.059 J	0.011 U	0.12 J	0.071 J	0.38 J

Key at the end of Table

Table 4-2a
Summary of Results for Reach 3 Sediment Samples

Sample ID	R3-024-V-Z2	R3-024-V-Z3	R3-024-V-Z4	R3-024-V-Z5	R3-024-V-Z6	R3-025-V-Z1a	R3-025-V-Z1b	R3-026-V-Z1a
Sample Date	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/27/2010
Sample Depth Range (ft BGS)	1-2	2-3	3-4	4-6	6-8	0-0.5	0.5-1	0-0.5
Analyte								
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.056	0.039	0.055	0.035	0.018	0.0017 U	0.0093	0.026
ACENAPHTHENE	0.044	0.03	0.05	0.047	0.042	0.0037 J	0.018	0.039 J
ACENAPHTHYLENE	0.074	0.0017 U	0.13	0.043	0.0017 U	0.0017 U	0.007	0.019
ANTHRACENE	0.18	0.073	0.28	0.16	0.17	0.013	0.021	0.2
BENZO(A)ANTHRACENE	0.8	0.35	0.48	0.3	0.28	0.025	0.047	0.61
BENZO(A)PYRENE	0.73	0.32	0.42	0.19	0.2	0.0095 J	0.028 J	0.46
BENZO(B)FLUORANTHENE	0.39 J	0.13 J	0.31 J	0.11 J	0.14 J	0.0079	0.025	0.75 J
BENZO(K)FLUORANTHENE	0.25	0.18	0.35	0.13	0.11	0.013 J	0.023 J	0.36
CHRYSENE	1.6	0.63	0.75	0.39	0.34	0.034	0.063	0.58
DIBENZ(A,H)ANTHRACENE	0.16	0.074	0.089	0.064	0.055 J	0.0017 U	0.0053	0.079
FLUORANTHENE	0.86	0.65	1.2	0.51	0.48	0.081	0.075	0.61
FLUORENE	0.18	0.097	0.29	0.051	0.038	0.0017 U	0.0066	0.081
INDENO(1,2,3-C,D)PYRENE	0.19	0.11 J	0.18	0.081	0.074	0.005	0.011	0.18
NAPHTHALENE	0.029	0.018	0.028	0.015	0.007	0.0041	0.01	0.024
PHENANTHRENE	0.65 J	0.48 J	0.93 J	0.33 J	0.35 J	0.038	0.036	0.39
PYRENE	0.98	0.59	0.97	0.53	0.5	0.067	0.084	0.92
PAHs (total)	7.6 J	4 J	6.7 J	3.1 J	2.9 J	0.31 J	0.48 J	5.5 J

Key at the end of Table

Table 4-2a
Summary of Results for Reach 3 Sediment Samples

Sample ID	R3-026-V-Z1b	R3-026-V-Z2	R3-026-V-Z3	R3-026-V-Z4	R3-027-V-Z1a	R3-027-V-Z1b	R3-027-V-Z2	R3-027-V-Z3	R3-027-V-Z4
Sample Date	5/27/2010	5/27/2010	5/27/2010	5/27/2010	5/27/2010	5/27/2010	5/27/2010	5/27/2010	5/27/2010
Sample Depth Range (ft BGS)	0.5-1	1-2	2-3	3-4	0-0.5	0.5-1	1-2	2-3	3-4
Analyte									
Metals by C200.7 (mg/kg)									
ALUMINUM	10100 J	13400 J	15500 J	17000 J	14100 J	13400 J	12600 J	18600 J	15600 J
ANTIMONY	0.78 UJ	1 UJ	1.2 UJ	1.4 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.3 UJ	1.1 UJ
ARSENIC	3.8 J	6.2 J	14.8 J	15.4 J	6 J	6.2 J	9.2 J	16.6 J	13.4 J
BARIUM	107 J	142 J	274 J	293 J	152 J	152 J	170 J	351 J	256 J
BERYLLIUM	0.36 J	0.48 J	0.36 J	0.14 UJ	0.31 J	0.34 J	0.33 J	0.44 J	0.28 J
CADMIUM	2.1 J	3.7 J	12 J	8.4 J	2.3 J	2.9 J	8.1 J	17.2 J	7.7 J
CALCIUM	11200 J	16700 J	11900 J	12200 J	14500 J	13400 J	12500 J	15600 J	9450 J
CHROMIUM	132 J	172 J	926 J	692 J	103 J	189 J	701 J	1500 J	674 J
COBALT	12.7 J	17.2 J	22.8 J	24.8 J	0.14 UJ	0.14 UJ	15.9 J	17.1 J	18.2 J
COPPER	215 J	298 J	2020 J	2040 J	196 J	266 J	877 J	2440 J	1640 J
IRON	16900 J	20800 J	23800 J	27000 J	20900 J	20600 J	20400 J	25800 J	22200 J
LEAD	337 J	493 J	3980 J	3480 J	273 J	417 J	1610 J	4880 J	3200 J
MAGNESIUM	5490 J	6760 J	5750 J	6280 J	6130 J	5960 J	5410 J	6690 J	5750 J
MANGANESE	332 J	480 J	314 J	282 J	552 J	502 J	354 J	324 J	250 J
NICKEL	89.8 J	129 J	490 J	391 J	59.4 J	83.5 J	236 J	287 J	264 J
POTASSIUM	1850 J	2390 J	2220 J	2470 J	2440 J	2330 J	2140 J	2580 J	2170 J
SELENIUM	2.2 J	2.6 J	5 J	4.9 J	3.2 J	2.9 J	4 J	5.7 J	4.1 J
SILVER	0.82 U	1.1 U	4.2 J	4 J	1.3 U	1.3 U	2.9 J	4.5 J	3.4 J
SODIUM	5.8 UJ	7.5 UJ	2210 J	3650 J	9.2 UJ	9.3 UJ	8.7 UJ	9.5 UJ	8.3 UJ
THALLIUM	0.6 U	0.78 U	0.96 U	1 UJ	0.95 U	0.96 U	0.9 U	0.98 U	0.86 U
VANADIUM	19.2 J	26.8 J	55.4 J	52.7 J	23.7 J	23.4 J	35.4 J	71.4 J	46.6 J
ZINC	1240 J	2030 J	14300 J	6480 J	953 J	1670 J	7510 J	17900 J	6320 J
Mercury by CV (mg/kg)									
MERCURY	0.44 J	0.69 J	2 J	2.2 J	0.53 J	0.7 J	1.2 J	2.8 J	2.5 J
PCBS by MC ARO (mg/kg)									
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	0.7 J	0.54 J	1.1 J	3.3 J	0.32 J	0.38 J	2.1 J	2.6 J	1.8 J
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.099 J	0.011 U	0.16 J	0.32 J	0.011 U	0.011 U	0.011 U	0.2 J	0.011 UJ
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	0.8 J	0.54 J	1.3 J	3.6 J	0.32 J	0.38 J	2.1 J	2.8 J	1.8 J

Key at the end of Table

Table 4-2a
Summary of Results for Reach 3 Sediment Samples

Sample ID	R3-026-V-Z1b	R3-026-V-Z2	R3-026-V-Z3	R3-026-V-Z4	R3-027-V-Z1a	R3-027-V-Z1b	R3-027-V-Z2	R3-027-V-Z3	R3-027-V-Z4
Sample Date	5/27/2010	5/27/2010	5/27/2010	5/27/2010	5/27/2010	5/27/2010	5/27/2010	5/27/2010	5/27/2010
Sample Depth Range (ft BGS)	0.5-1	1-2	2-3	3-4	0-0.5	0.5-1	1-2	2-3	3-4
Analyte									
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
2-METHYLNAPHTHALENE	0.037	0.014	0.046	0.05 U	0.049	0.037	0.054	0.13	0.0017 U
ACENAPHTHENE	0.2	0.012 J	0.048	0.05 U	0.038	0.048	0.1	0.085	0.0017 U
ACENAPHTHYLENE	0.024	0.064	0.09	0.05 U	0.036	0.029	0.057	0.092	0.09 J
ANTHRACENE	0.3	0.038	0.053 J	0.17	0.087	0.15	0.25	0.17	0.21
BENZO(A)ANTHRACENE	0.85	0.54	0.56	0.43	0.31	0.53	0.83	0.71	0.61
BENZO(A)PYRENE	0.53	0.45	0.49	0.27	0.19 J	0.29 J	0.44 J	0.42 J	0.33 J
BENZO(B)FLUORANTHENE	0.86 J	0.68 J	0.5 J	0.32 J	0.26	0.29	0.4	0.34	0.4
BENZO(K)FLUORANTHENE	0.45	0.35	0.29	0.2	0.19	0.29	0.32	0.29	0.29
CHRYSENE	0.79	0.57	0.72	0.44	0.39	0.65	1.7	1.9 J	0.91
DIBENZ(A,H)ANTHRACENE	0.086 U	0.026	0.096	0.05 U	0.034	0.05	0.079 J	0.091 J	0.07 J
FLUORANTHENE	0.96	0.56	0.5	0.45	0.62	0.68	0.83	0.85	0.7 J
FLUORENE	0.086 UJ	0.04	0.055 UJ	0.05 UJ	0.033	0.041	0.12	0.18	0.16
INDENO(1,2,3-C,D)PYRENE	0.19	0.05	0.12	0.05 U	0.084	0.11	0.14	0.13	0.13
NAPHTHALENE	0.03	0.015	0.062	0.05 U	0.19	0.11 J	0.071	0.062	0.082
PHENANTHRENE	1	0.28	0.52	0.41	0.29	0.38	0.64	0.76	0.81
PYRENE	1.2	0.67	0.87	0.7	0.53	0.76	2.2	1	1.7
PAHs (total)	7.6 J	4.4 J	5.1 J	3.5 J	3.4 J	4.6 J	8.4 J	7.3 J	6.7 J

Key:

BGS = Below ground surface (in this case below top of sediment surface).
ft = Feet.
J = Estimated at the concentration listed.
mg/Kg = Milligrams per kilogram.
-P = Ponar creek location/sample.
PCB = Polychlorinated biphenyl.
SVOA = Semivoloatile organic compounds analysis.
U = Non-detect.
UJ = Non-detect/estimated.
UR = Non-detect/rejected.
-V = Vibracore creek location/sample.
-VR = Vibracore creek duplicate sample.
-Z = Sample depth interval consecutively numbered.

Key at the end of Table

Table 4-2b
Summary of Results for Reach 3 Soil Samples

Sample ID	R3-107-W	R3-108-W	R3-109-W	R3-110-W
Sample Date	11/16/2009	11/16/2009	11/16/2009	11/16/09
Sample Depth Range (ft BGS)	0-0.5	0-0.5	0-0.5	0-0.5
Analyte				
Metals by C200.7 (mg/kg)				
ALUMINUM	11100	10500	10700	12100
ANTIMONY	1.8 U	1.1 U	1.2 U	1.2 U
ARSENIC	4.5 J+	5 J+	5.4 J+	5.4 J+
BARIUM	175	162	171	209
BERYLLIUM	0.67 J+	0.63 J+	0.64 J+	0.72 J+
CADMIUM	2	2.2	2.7	4.2
CALCIUM	8340	10100	10400	10700
CHROMIUM	108	111	126	216
COBALT	10.9 J	11.9	12.5	16.9
COPPER	210	211	234	347
IRON	22800	22000	22900	25200
LEAD	334	310	342	533
MAGNESIUM	5420	5490	5580	5960
MANGANESE	585	805	884	533
NICKEL	60.4	65.2	75.7	146
POTASSIUM	1190	1090	1090	1070
SELENIUM	1.3 J	0.67 U	0.73 U	0.99 J
SILVER	0.2 UJ	0.12 UJ	0.14 U	0.14 UJ
SODIUM	4.7 UJ	2.9 UJ	3.1 UJ	3.2 UJ
THALLIUM	0.71 U	0.44 U	0.48 U	0.49 U
VANADIUM	23.2	22.2	23.5	31.4
ZINC	926	899	1050	1710
Mercury by CV (mg/kg)				
MERCURY	0.6	0.69	1	0.72
PCBS by MC ARO (mg/kg)				
PCB-1016 (AROCLOR 1016)	0.022 U	0.011 U	0.011 UJ	0.015 U
PCB-1221 (AROCLOR 1221)	0.041 U	0.021 U	0.021 U	0.029 U
PCB-1232 (AROCLOR 1232)	0.015 U	0.0077 U	0.0078 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.0095 U	0.0049 U	0.0049 U	0.0066 U
PCB-1248 (AROCLOR 1248)	0.016 U	0.0081 U	0.0081 U	0.011 U
PCB-1254 (AROCLOR 1254)	0.53 J	0.3	0.27	0.2
PCB-1260 (AROCLOR 1260)	0.018 U	0.0095 U	0.0095 UJ	0.013 U
PCB-1262 (AROCHLOR 1262)	0.018 U	0.009 U	0.0091 U	0.012 U
PCB-1268 (AROCLOR 1268)	0.024 U	0.013 U	0.013 U	0.017 U
PCBs (total)	0.53	0.3	0.27	0.2
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)				
2-METHYLNAPHTHALENE	--	--	--	0.025
ACENAPHTHENE	--	--	--	0.0092
ACENAPHTHYLENE	--	--	--	0.017 J
ANTHRACENE	--	--	--	0.023
BENZO(A)ANTHRACENE	--	--	--	0.21
BENZO(A)PYRENE	--	--	--	0.16
BENZO(B)FLUORANTHENE	--	--	--	0.18
BENZO(K)FLUORANTHENE	--	--	--	0.12
CHRYSENE	--	--	--	0.22 J
DIBENZ(A,H)ANTHRACENE	--	--	--	0.033
FLUORANTHENE	--	--	--	0.36
FLUORENE	--	--	--	0.013
INDENO(1,2,3-C,D)PYRENE	--	--	--	0.16
NAPHTHALENE	--	--	--	0.025 J
PENTACHLOROPHENOL	--	--	--	0.0086
PHENANTHRENE	--	--	--	0.15
PYRENE	--	--	--	0.36
PAHs (total)	--	--	--	2.1

Table 4-2b
Summary of Results for Reach 3 Soil Samples

Sample ID	R3-107-W	R3-108-W	R3-109-W	R3-110-W
Sample Date	11/16/2009	11/16/2009	11/16/2009	11/16/09
Sample Depth Range (ft BGS)	0-0.5	0-0.5	0-0.5	0-0.5
Analyte				
Pesticides by MC PEST (mg/kg)				
ALDRIN	--	--	--	0.00054 U
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	--	--	0.00084 U
ALPHA-CHLORDANE	--	--	--	0.00042 U
ALPHA ENDOSULFAN	--	--	--	0.001 U
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	--	--	0.0011 U
BETA ENDOSULFAN	--	--	--	0.0029 U
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	--	--	0.0065 J
DIELDRIN	--	--	--	0.007 J
ENDOSULFAN SULFATE	--	--	--	0.00099 U
ENDRIN	--	--	--	0.00099 U
ENDRIN ALDEHYDE	--	--	--	0.0031 U
ENDRIN KETONE	--	--	--	0.0038 U
GAMMA BHC (LINDANE)	--	--	--	0.0008 U
GAMMA-CHLORDANE	--	--	--	0.0089 J
HEPTACHLOR	--	--	--	0.001 U
HEPTACHLOR EPOXIDE	--	--	--	0.00071 U
METHOXYCHLOR	--	--	--	0.0031 U
P,P'-DDD	--	--	--	0.0022 U
P,P'-DDE	--	--	--	0.0013 U
P,P'-DDT	--	--	--	0.0037 U
TOXAPHENE	--	--	--	0.16 U

Key:

BGS = Below ground surface.
ft = Feet.
J = Estimated at the concentration listed.
mg/Kg = Milligrams per kilogram.
PCB = Polychlorinated biphenyl.
SVOA = Semivoloatile organic compounds analysis.
U = Non-detect.
UJ = Non-detect/estimated.
-W = Wetland location/sample.
-- = Not submitted for this parameter.

Table 4-3a
Summary of Results for Reach 4 Sediment Samples

Sample ID	R4-028-C	R4-029-C	R4-030-C	R4-031-C	R4-032-C	R4-033-C	R4-034-C	R4-035-C
Sample Date	11/17/2009	11/16/2009	11/16/2009	11/16/2009	11/16/2009	11/17/2009	11/17/2009	11/17/2009
Sample Depth Range (ft BGS)	0-1.55	0-1.2	0-1.1	0-0.8	0-0.7	0-0.4	0-0.4	0-0.8
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	9030	9950	6560	7990	9510	7070	5930	6560
ANTIMONY	1.4 U	1.6 U	0.97 U	1.4 U	2.3 J	0.8 U	1.1 U	1.2 U
ARSENIC	5.5 J+	4.2 J+	2.9 J+	6.4 J+	5.2 J+	3	3.3	2.6
BARIUM	135	149	70.1	162	135	64.8	68.2	100
BERYLLIUM	0.58 J+	0.6 J+	0.47 J+	0.48 J+	0.53 J+	0.48 J	0.43 J	0.4 J
CADMIUM	4	2.3	0.63	7.2	1.8	0.51	0.49 J	1.2
CALCIUM	15900	18700	11800	9900	7770	7360	6750	8350
CHROMIUM	211	90	36.2	451	133	19.3	19.8	97.9
COBALT	20.8	11.1	9	12.4	11.9	9.4	9.9	6.7 J
COPPER	304	191	50.5	725	238	26.4	26.9	160
IRON	23400	21900	17800	18900	20700	20900	18700	14900
LEAD	450	264	103	1460	392	46.7	62.3	307
MAGNESIUM	5780	5730	4750	4340	5060	4670	3940	3450
MANGANESE	466	476	397	342	382	703	725	248
NICKEL	235	54.9	38.1	211	91.6	27.3	34.1	40.7
POTASSIUM	1120	1050	771	848 J	1000	453 J+	399 J+	564 J
SELENIUM	0.87 J	1.1 J	0.59 U	1.5 J	0.96 U	0.49 U	0.65 U	0.75 U
SILVER	0.16 UJ	0.18 UJ	0.11 UR	0.31 J-	0.18 UJ	0.09 U	0.12 U	0.14 U
SODIUM	3.7 UJ	4.2 UJ	2.5 UJ	3.7 UJ	4.1 UJ	2.1 UJ	2.8 UJ	3.2 UJ
THALLIUM	0.56 U	0.63 U	0.39 U	0.57 U	0.63 U	0.32 U	0.42 U	0.49 U
VANADIUM	30	20.8	13.9	29.1	22	16.7	16.8	13.9
ZINC	1750	829	345	6510	1200	183	224	688
Mercury by CV (mg/kg)								
MERCURY	0.42	0.72	0.19	1	0.63	0.16	0.31	1.2
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.015 U	0.022 U	0.015 U	0.019 U	0.015 U	0.01 U	0.011 U	0.016 U
PCB-1221 (AROCLOR 1221)	0.028 U	0.041 U	0.027 U	0.035 U	0.029 U	0.02 U	0.021 U	0.03 U
PCB-1232 (AROCLOR 1232)	0.01 U	0.015 U	0.01 U	0.013 U	0.011 U	0.0072 U	0.0076 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.0065 U	0.0094 U	0.0063 U	0.0081 U	0.0067 U	0.0045 U	0.0048 U	0.007 U
PCB-1248 (AROCLOR 1248)	0.011 U	0.016 U	0.01 U	0.013 U	0.011 U	0.0075 U	0.0079 U	0.012 U
PCB-1254 (AROCLOR 1254)	0.37	0.072 J	0.7 J	0.17 J	0.3	0.067	0.1	0.81
PCB-1260 (AROCLOR 1260)	0.013 U	0.018 U	0.012 U	0.016 U	0.013 U	0.0088 U	0.0093 U	0.014 U
PCB-1262 (AROCHLOR 1262)	0.012 U	0.017 U	0.012 U	0.015 U	0.012 U	0.0084 U	0.0089 U	0.013 U
PCB-1268 (AROCLOR 1268)	0.017 U	0.024 U	0.016 U	0.021 U	0.017 U	0.012 U	0.012 U	0.018 U
PCBs (total)	0.37	0.072	0.7	0.17	0.3	0.067	0.1	0.81
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.033 J	--	0.12 J	0.072 J	--	--	0.34 J	--
ACENAPHTHENE	0.023 J	--	0.54 U	0.07 J	--	--	0.13	--

Key at the end of Table

Table 4-3a
Summary of Results for Reach 4 Sediment Samples

Sample ID	R4-028-C	R4-029-C	R4-030-C	R4-031-C	R4-032-C	R4-033-C	R4-034-C	R4-035-C
Sample Date	11/17/2009	11/16/2009	11/16/2009	11/16/2009	11/16/2009	11/17/2009	11/17/2009	11/17/2009
Sample Depth Range (ft BGS)	0-1.55	0-1.2	0-1.1	0-0.8	0-0.7	0-0.4	0-0.4	0-0.8
Analyte								
ACENAPHTHYLENE	0.03 J	--	0.055	0.047	--	--	0.013 J	--
ANTHRACENE	0.058 --	--	1.8	0.28 J	--	--	0.23	--
BENZO(A)ANTHRACENE	0.29	--	4	1.4 J	--	--	0.43 J	--
BENZO(A)PYRENE	0.24	--	3.1	1	--	--	0.45 J	--
BENZO(B)FLUORANTHENE	0.25	--	2.7	0.8	--	--	0.43 J	--
BENZO(K)FLUORANTHENE	0.18	--	2.4	0.65 J	--	--	0.32	--
CHRYSENE	0.34	--	3.7	1.5	--	--	0.49 J	--
DIBENZ(A,H)ANTHRACENE	0.032 --	--	0.45	0.17 J	--	--	0.094	--
FLUORANTHENE	0.42	--	7	1.5	--	--	0.55 J	--
FLUORENE	0.021 J	--	0.39	0.092	--	--	0.12 J	--
INDENO(1,2,3-C,D)PYRENE	0.19 J	--	2.2 J	0.57 J	--	--	0.3	--
NAPHTHALENE	0.039 J	--	0.15 UJ	0.062 J	--	--	0.27 J	--
PENTACHLOROPHENOL	0.038 --	--	0.095	0.059 J	--	--	0.0032	--
PHENANTHRENE	0.16	--	5.1	0.82 J	--	--	0.71	--
PYRENE	0.52	--	6.4	2.3	--	--	0.79	--
PAHs (total)	2.9	--	40	11	--	--	5.4	--
Pesticides by MC PEST (mg/kg)								
ALDRIN	0.00052 U	--	0.00051 U	0.00066 U	--	--	0.00039 U	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	0.00082 U	--	0.0008 U	0.001 U	--	--	0.00061 U	--
ALPHA-CHLORDANE	0.00041 U	--	0.0004 U	0.00051 U	--	--	0.0003 U	--
ALPHA ENDOSULFAN	0.001 U	--	0.0098 J	0.0013 U	--	--	0.00036 U	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	0.0011 U	--	0.0011 U	0.0014 U	--	--	0.0008 U	--
BETA ENDOSULFAN	0.008 J	--	0.014 J	0.0035 U	--	--	0.0021 U	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	0.03 J	--	0.063 J	0.013 J	--	--	0.01 J	--
DIELDRIN	0.013	--	0.019 J	0.0012 U	--	--	0.0037 J	--
ENDOSULFAN SULFATE	0.00097 U	--	0.013 J	0.0012 U	--	--	0.00072 U	--
ENDRIN	0.00097 U	--	0.00095 U	0.0012 U	--	--	0.0099 J	--
ENDRIN ALDEHYDE	0.003 U	--	0.003 U	0.0038 U	--	--	0.0023 U	--
ENDRIN KETONE	0.0037 U	--	0.0037 U	0.0047 U	--	--	0.0028 U	--
GAMMA BHC (LINDANE)	0.0053 J	--	0.01	0.0036 J	--	--	0.00058 U	--
GAMMA-CHLORDANE	0.018 J	--	0.045	0.011	--	--	0.00046 U	--
HEPTACHLOR	0.001 U	--	0.00097 U	0.0013 U	--	--	0.00074 U	--
HEPTACHLOR EPOXIDE	0.00069 U	--	0.00068 U	0.00087 U	--	--	0.00051 U	--
METHOXYCHLOR	0.003 U	--	0.003 U	0.0038 U	--	--	0.0022 U	--
P,P'-DDD	0.0051 J	--	0.0069	0.0027	--	--	0.0016 U	--
P,P'-DDE	0.0074 J	--	0.028 J	0.011 U	--	--	0.00096 U	--
P,P'-DDT	0.0036 U	--	0.025 U	0.0045 U	--	--	0.0027 U	--
TOXAPHENE	0.15 U	--	0.15 U	0.19 U	--	--	0.11 U	--

Key at the end of Table

Table 4-3a
Summary of Results for Reach 4 Sediment Samples

Sample ID	R4-036-C	R4-037-C	R4-038-C	R4-119-T	R4-135-C-Z1a	R4-135-C-Comp	R4-136-C-Z1a	R4-137-C-Comp
Sample Date	11/17/2009	11/17/2009	11/18/2009	11/17/2009	6/21/2010	6/21/2010	6/21/2010	6/21/2010
Sample Depth Range (ft BGS)	0-0.9	0-0.6	0-0.4	0-0.5	0-0.5	0-0.8	0-0.4	0-0.7
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	7420	6540	7530	7410	13500 J	12800 J	14100 J	9220 J
ANTIMONY	1.7 U	1.2 U	1.2 U	1.1 U	1.4 UJ	1.2 UJ	1.1 UJ	0.87 UJ
ARSENIC	3.4	3.1	2.9	2.6	5.7 J	4.7 J	14.3 J	4.6 J
BARIUM	135	80	96.8	81.4	192 J	123 J	210 J	315 J
BERYLLIUM	0.5 J	0.38 J	0.48 J+	0.51 J	0.44 J	0.5 J	0.45 J	0.36 J
CADMIUM	1.3	0.99	0.18 J-	0.38 J	2.3 J	2 J	10.6 J	1.6 J
CALCIUM	10500	7080	8100	5710	18900 J	25100 J	15700 J	25100 J
CHROMIUM	60.1	68.6	101 J	13.1	109 J	72.7 J	1090 J	75.7 J
COBALT	7.9 J	8.1	7.8	9.5	12.2 J	14.4 J	23.7 J	9.2 J
COPPER	128	249	136	9.5	232 J	109 J	1230 J	99.4 J
IRON	16800	15500	15800	19700	22000 J	22500 J	27100 J	16200 J
LEAD	200	176	238 J	20.3	385 J	200 J	2320 J	256 J
MAGNESIUM	3990	3600	3840	4550	5710 J	7660 J	5580 J	10500 J
MANGANESE	349	360	380	382	645 J	805 J	572 J	488 J
NICKEL	36.4	41	43.8 J	20.5	70.9 J	73.2 J	484 J	41.6 J
POTASSIUM	961 J	766	891	524 J+	2150 J	2160 J	1920 J	1600 J
SELENIUM	1.5 J	0.88 J	1.4 J	0.66 U	3.5 J	3.3 J	4.6 J	2.5 J
SILVER	0.19 U	0.14 U	0.14 UJ	0.12 U	1.5 UJ	1.3 U	2.8 J	0.92 U
SODIUM	4.4 UJ	3.2 UJ	404 J	2.8 UJ	355 J	285 J	266 J	196 J
THALLIUM	0.66 U	0.48 U	0.5 U	0.43 U	1.1 UJ	0.95 U	0.83 U	0.67 U
VANADIUM	15	13.6	15.9	19.5	23.1 J	22.1 J	48.6 J	16.8 J
ZINC	507	575	574 J	63	909 J	624 J	8670 J	536 J
Mercury by CV (mg/kg)								
MERCURY	0.56	0.47	0.28	0.053 J	0.71 J	0.13 J	1.2 J	0.39 J
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.019 U	0.015 U	0.016 U	0.011 U	0.099 U	0.08 U	0.091 U	0.091 U
PCB-1221 (AROCLOR 1221)	0.035 U	0.027 U	0.03 U	0.021 U	0.099 U	0.08 U	0.091 U	0.091 U
PCB-1232 (AROCLOR 1232)	0.013 U	0.01 U	0.011 U	0.0077 U	0.099 U	0.08 U	0.091 U	0.091 U
PCB-1242 (AROCLOR 1242)	0.0082 U	0.0064 U	0.007 U	0.0049 U	0.099 U	0.08 U	0.091 U	0.091 U
PCB-1248 (AROCLOR 1248)	0.014 U	0.011 U	0.012 U	0.0081 U	0.099 U	0.08 U	0.99 NJ	0.32 J
PCB-1254 (AROCLOR 1254)	0.57	0.56	0.29 J	0.0065 U	5.3	19	0.091 U	0.091 U
PCB-1260 (AROCLOR 1260)	0.016 U	0.012 U	0.014 U	0.0095 U	0.099 U	8.3 J	0.13 NJ	0.091 U
PCB-1262 (AROCHLOR 1262)	0.015 U	0.012 U	0.013 U	0.009 U	0.099 U	0.08 U	0.091 U	0.091 U
PCB-1268 (AROCLOR 1268)	0.021 U	0.016 U	0.018 U	0.013 U	0.099 U	0.08 U	0.091 U	0.091 U
PCBs (total)	0.57	0.56	0.29	0.011 U	5.3	27 J	1.1 NJ	0.32 J
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	--	--	--	0.013 J	0.25 J	0.27	0.012	0.2
ACENAPHTHENE	--	--	--	0.0028 J	1.2	1.1	0.034	0.46

Key at the end of Table

Table 4-3a
Summary of Results for Reach 4 Sediment Samples

Sample ID	R4-036-C	R4-037-C	R4-038-C	R4-119-T	R4-135-C-Z1a	R4-135-C-Comp	R4-136-C-Z1a	R4-137-C-Comp
Sample Date	11/17/2009	11/17/2009	11/18/2009	11/17/2009	6/21/2010	6/21/2010	6/21/2010	6/21/2010
Sample Depth Range (ft BGS)	0-0.9	0-0.6	0-0.4	0-0.5	0-0.5	0-0.8	0-0.4	0-0.7
Analyte								
ACENAPHTHYLENE	--	--	--	0.0025 J	0.067	0.055	0.023	0.15
ANTHRACENE	--	--	--	0.0043	2.2	2.3	0.049	1.2
BENZO(A)ANTHRACENE	--	--	--	0.028	1.8	5.1	0.66	2.6
BENZO(A)PYRENE	--	--	--	0.04 J	2.6	3.8	0.75	1.6
BENZO(B)FLUORANTHENE	--	--	--	0.054	1.6	2.4	0.4	1.3
BENZO(K)FLUORANTHENE	--	--	--	0.039	1.7	1.7	0.27	1.4
CHRYSENE	--	--	--	0.036	2.8	5.4	0.9	3.7
DIBENZ(A,H)ANTHRACENE	--	--	--	0.0081	0.52	0.93 J	0.14	0.63
FLUORANTHENE	--	--	--	0.046 J	3	4	0.42	4
FLUORENE	--	--	--	0.004	0.91	0.82	0.036	0.56
INDENO(1,2,3-C,D)PYRENE	--	--	--	0.034	0.63	1.7	0.24	1.2
NAPHTHALENE	--	--	--	0.0097 J	0.13	0.11	0.0096	0.19
PENTACHLOROPHENOL	--	--	--	0.01	--	--	--	--
PHENANTHRENE	--	--	--	0.032	3.3	6 J	0.23	1.9
PYRENE	--	--	--	0.047	4.2 J	6.6 J	0.74	3.8 J
PAHs (total)	--	--	--	0.4	29	44	5.5	26
Pesticides by MC PEST (mg/kg)								
ALDRIN	--	--	--	0.00039 U	--	--	--	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	--	--	0.00062 U	--	--	--	--
ALPHA-CHLORDANE	--	--	--	0.00031 U	--	--	--	--
ALPHA ENDOSULFAN	--	--	--	0.00036 U	--	--	--	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	--	--	0.00082 U	--	--	--	--
BETA ENDOSULFAN	--	--	--	0.0021 U	--	--	--	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	--	--	0.00073 U	--	--	--	--
DIELDRIN	--	--	--	0.00073 U	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	0.00073 U	--	--	--	--
ENDRIN	--	--	--	0.00073 U	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	0.0023 U	--	--	--	--
ENDRIN KETONE	--	--	--	0.0028 U	--	--	--	--
GAMMA BHC (LINDANE)	--	--	--	0.00059 U	--	--	--	--
GAMMA-CHLORDANE	--	--	--	0.00046 U	--	--	--	--
HEPTACHLOR	--	--	--	0.00075 U	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	0.00052 U	--	--	--	--
METHOXYCHLOR	--	--	--	0.0023 U	--	--	--	--
P,P'-DDD	--	--	--	0.0016 J	--	--	--	--
P,P'-DDE	--	--	--	0.0064 U	--	--	--	--
P,P'-DDT	--	--	--	0.0027 U	--	--	--	--
TOXAPHENE	--	--	--	0.12 U	--	--	--	--

Key at the end of Table

Table 4-3a
Summary of Results for Reach 4 Sediment Samples

Sample ID	R4-138-C-Comp	R4-139-C-Z1a	R4-140-C-Z1a	R4-141-C-Z1a	R4-141-CR	R4-141-C-Comp	R4-142-C-Z1a	R4-143-C-Z1a
Sample Date	6/21/2010	6/22/2010	6/23/2010	6/23/2010	6/23/2010	6/23/2010	6/23/2010	6/23/2010
Sample Depth Range (ft BGS)	0-0.4	0-0.3	0-0.3	0-0.5	0-0.5	0-0.8	0-0.2	0-0.3
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	9000	12000 J	11100	10400	11800 J	12400	10300	9750 J
ANTIMONY	0.72 UJ	1.1 UJ	0.58 UJ	0.73 UJ	0.86 UJ	0.77 UJ	0.61 UJ	1.3 UJ
ARSENIC	3.5 J	6.4 J	5.9 J	4.5 J	4.9 J	6.9 J	4.1 J	5.3 J
BARIUM	85.1 J	163 J	217 J	143 J	198 J	192 J	101 J	133 J
BERYLLIUM	0.35 J	0.37 J	0.59 J	0.34 J	0.36 J	0.29 J	0.43 J	0.32 J
CADMIUM	1 J	4.4 J	1.4 J	2.5 J	2.9 J	2.7 J	2.2 J	1.9 J
CALCIUM	11200	11500 J	17700	9630	10400 J	22100	7520	16100 J
CHROMIUM	39.3	261 J	34.8	101	121 J	139	66.8	81.7 J
COBALT	10.2	13.4 J	13.2	11.8	12.5 J	14.2	13.6	10.5 J
COPPER	69.5	427 J	244	251	332 J	537	128	153 J
IRON	16600	19300 J	22100	17300	19600 J	23200	18700	17100 J
LEAD	107	810 J	103	408	491 J	888	456	244 J
MAGNESIUM	5030	5450 J	8230	5060	5860 J	6460	5790	5820 J
MANGANESE	418	504 J	1290	362	402 J	426	650	623 J
NICKEL	46.7	143 J	65.2	79.1	88.2 J	107	67	49.4 J
POTASSIUM	1430	1830 J	1400	1570	1800 J	1890	1630	1690 J
SELENIUM	2.3 J	3.7 J	1.9 J	2.4 J	2.7 J	2.9 J	2.1 J	2.5 J
SILVER	0.76 U	1.5 J	0.84 J	1.3 J	1.6 J	2.4	0.84 J	1.3 U
SODIUM	125 J	202 J	130 J	168 J	182 J	213 J	121 J	346 J
THALLIUM	0.55 U	0.83 U	0.45 U	0.56 U	0.66 U	0.59 U	0.47 U	0.98 U
VANADIUM	15.5	27 J	18.1	18.8	22.4 J	26.8	17.4	17.6 J
ZINC	411	3510 J	611	1230	1500 J	1150	623	672 J
Mercury by CV (mg/kg)								
MERCURY	0.38	0.8 J	0.17	0.6	0.64 J	1.1	0.24	0.79 J
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.082 U	0.096 U	0.046 U	0.075 U	0.079 U	0.069 U	0.046 U	0.091 U
PCB-1221 (AROCLOR 1221)	0.082 U	0.096 U	0.046 U	0.075 U	0.079 U	0.069 U	0.046 U	0.091 U
PCB-1232 (AROCLOR 1232)	0.082 U	0.096 U	0.046 U	0.075 U	0.079 U	0.069 U	0.046 U	0.091 U
PCB-1242 (AROCLOR 1242)	0.082 U	0.096 U	0.046 U	0.075 U	0.079 U	0.069 U	0.046 U	0.091 U
PCB-1248 (AROCLOR 1248)	0.33 J	1.1 NJ	0.046 U	0.45	0.37 J	0.069 U	0.046 U	0.091 U
PCB-1254 (AROCLOR 1254)	0.082 U	0.42	0.046 U	0.075 U	0.079 U	0.069 U	0.046 U	1.1
PCB-1260 (AROCLOR 1260)	0.082 U	0.096 U	0.046 U	0.26 J	0.079 U	0.069 U	0.046 U	0.091 U
PCB-1262 (AROCHLOR 1262)	0.082 U	0.096 U	0.046 U	0.075 U	0.079 U	0.069 U	0.046 U	0.091 U
PCB-1268 (AROCLOR 1268)	0.082 U	0.096 U	0.046 U	0.075 U	0.079 U	0.069 U	0.046 U	0.091 U
PCBs (total)	0.33 J	1.5 NJ	0.046 U	0.71 J	0.37 J	0.069 U	0.046 U	1.1
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	7.5 J	0.036	0.0057	0.007	0.007	0.079	0.0061 U	0.028
ACENAPHTHENE	13	0.28	0.015 U	0.023	0.031	0.18	0.004	0.016

Key at the end of Table

Table 4-3a
Summary of Results for Reach 4 Sediment Samples

Sample ID	R4-138-C-Comp	R4-139-C-Z1a	R4-140-C-Z1a	R4-141-C-Z1a	R4-141-CR	R4-141-C-Comp	R4-142-C-Z1a	R4-143-C-Z1a
Sample Date	6/21/2010	6/22/2010	6/23/2010	6/23/2010	6/23/2010	6/23/2010	6/23/2010	6/23/2010
Sample Depth Range (ft BGS)	0-0.4	0-0.3	0-0.3	0-0.5	0-0.5	0-0.8	0-0.2	0-0.3
Analyte								
ACENAPHTHYLENE	0.65	0.073	0.004	0.046 J	0.06 J	0.056 J	0.0063	0.028
ANTHRACENE	5.2	1.8	0.035	0.053 J	0.13 J	0.32	0.013	0.065
BENZO(A)ANTHRACENE	7.5	1.7	0.11	0.21 J	0.5 J	1	0.072	0.36
BENZO(A)PYRENE	6.8	0.66	0.11	0.11 J	0.26 J	0.97	0.11	0.32
BENZO(B)FLUORANTHENE	5.2	0.38	0.065	0.067 J	0.25 J	0.72	0.08	0.32
BENZO(K)FLUORANTHENE	5.2	0.82	0.035	0.095 J	0.24 J	0.59	0.041	0.23
CHRYSENE	11 J	2.2	0.15	0.29	0.65	1.1 J	0.11	0.49
DIBENZ(A,H)ANTHRACENE	2.7 J	0.088	0.017	0.019	0.028	0.21	0.017	0.094
FLUORANTHENE	51 J	4.7	0.19 U	0.24	0.49	1.6	0.12	0.8
FLUORENE	11 J	0.32	0.046	0.035	0.024	0.12	0.0048	0.019
INDENO(1,2,3-C,D)PYRENE	4 J	0.44	0.039	0.032	0.056	0.53	0.046	0.22
NAPHTHALENE	5.1	0.013	0.0047	0.008	0.0087	0.055	0.0056	0.028
PENTACHLOROPHENOL	-- J	--	--	-- J	-- J	--	--	--
PHENANTHRENE	73 J	2.8	0.12	0.076 J	0.25 J	1.1	0.028	0.22
PYRENE	44 J	3.2 J	0.18	0.16 J	0.57 J	2 J	0.12	0.69
PAHs (total)	250	20	1.1	1.5	3.7	11	0.86	4.2
Pesticides by MC PEST (mg/kg)								
ALDRIN	--	--	--	--	--	--	--	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
ALPHA-CHLORDANE	--	--	--	--	--	--	--	--
ALPHA ENDOSULFAN	--	--	--	--	--	--	--	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
BETA ENDOSULFAN	--	--	--	--	--	--	--	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--
GAMMA BHC (LINDANE)	--	--	--	--	--	--	--	--
GAMMA-CHLORDANE	--	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--	--
P,P'-DDD	--	--	--	--	--	--	--	--
P,P'-DDE	--	--	--	--	--	--	--	--
P,P'-DDT	--	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--	--

Key at the end of Table

Table 4-3a
Summary of Results for Reach 4 Sediment Samples

Key:

BGS =	Below ground surface (in this case below top of sediment surface).
-C =	Hand-core creek location/sample.
-Comp =	Hand-core creek composite sample.
-CR=	Hand-core creek duplicate sample.
ft =	Feet.
J =	Estimated at the concentration listed.
mg/Kg =	Milligrams per kilogram.
PCB =	Polychlorinated biphenyl.
SVOA =	Semivoloatile organic compounds analysis.
-T =	Tributary location/sample.
U =	Non-detect.
UJ =	Non-detect/estimated.
-Z =	Sample depth interval consecutively numbered.
-- =	Not submitted for this parameter.

Table 4-3b
Summary of Results of Reach 4 Soil Samples

Sample ID	R4-111-W	R4-112-W	R4-126-H
Sample Date	11/16/2009	11/18/2009	11/16/2009
Sample Depth Range (ft BGS)	0-0.5	0-0.5	0-0.5
Analyte			
Metals by C200.7 (mg/kg)			
ALUMINUM	8420	9360	8100
ANTIMONY	1.2 J	0.88 U	2.5 U
ARSENIC	3.8 J+	4.2	4.1
BARIUM	109	115	141
BERYLLIUM	0.56 J+	0.62 J+	0.49 J
CADMIUM	0.78	0.055 UJ	3.2
CALCIUM	10600	5910	12200
CHROMIUM	35.6	62 J	65.4
COBALT	10.3	10.7	9.9 J
COPPER	72.3	110	153
IRON	20100	20700	19800
LEAD	125	170 J	193
MAGNESIUM	7360	5030	4350
MANGANESE	546	627	266
NICKEL	33.6	41 J	54.8
POTASSIUM	1210	1030	1150 J
SELENIUM	0.64 U	1.5 J	2.8 J
SILVER	0.12 UJ	0.099 UJ	0.28 U
SODIUM	2.7 UJ	129 J-	6.6 UJ
THALLIUM	0.42 U	0.35 U	1 U
VANADIUM	18.5	19.9	18.9
ZINC	304	444 J	892
Mercury by CV (mg/kg)			
MERCURY	0.76	0.71	0.5
PCBS by MC ARO (mg/kg)			
PCB-1016 (AROCLOR 1016)	0.013 U	0.01 U	0.024 U
PCB-1221 (AROCLOR 1221)	0.024 U	0.019 U	0.046 U
PCB-1232 (AROCLOR 1232)	0.0088 U	0.0071 U	0.017 U
PCB-1242 (AROCLOR 1242)	0.0056 U	0.0045 U	0.011 U
PCB-1248 (AROCLOR 1248)	0.0092 U	0.0074 U	0.018 U
PCB-1254 (AROCLOR 1254)	0.0074 U	0.15	0.15 J
PCB-1260 (AROCLOR 1260)	0.011 U	0.0087 U	0.021 U
PCB-1262 (AROCHLOR 1262)	0.01 U	0.0083 U	0.02 U
PCB-1268 (AROCLOR 1268)	0.014 U	0.012 U	0.027 U
PCBs (total)	0.011 U	0.15	0.15
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)			
2-METHYLNAPHTHALENE	--	0.011	--
ACENAPHTHENE	--	0.0082	--
ACENAPHTHYLENE	--	0.014	--
ANTHRACENE	--	0.03	--
BENZO(A)ANTHRACENE	--	0.26	--
BENZO(A)PYRENE	--	0.15	--
BENZO(B)FLUORANTHENE	--	0.19	--
BENZO(K)FLUORANTHENE	--	0.15	--
CHRYSENE	--	0.25 J	--
DIBENZ(A,H)ANTHRACENE	--	0.036 J	--
FLUORANTHENE	--	0.27	--
FLUORENE	--	0.012	--

Key at the end of Table

Table 4-3b
Summary of Results of Reach 4 Soil Samples

Sample ID	R4-111-W	R4-112-W	R4-126-H
Sample Date	11/16/2009	11/18/2009	11/16/2009
Sample Depth Range (ft BGS)	0-0.5	0-0.5	0-0.5
Analyte			
INDENO(1,2,3-C,D)PYRENE	--	0.15	--
NAPHTHALENE	--	0.011	--
PHENANTHRENE	--	0.16 J	--
PYRENE	--	0.29	--
PAHs (total)	--	2	--
Pesticides by MC PEST (mg/kg)			
ALDRIN	--	0.00036 U	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	0.00057 U	--
ALPHA-CHLORDANE	--	0.00028 U	--
ALPHA ENDOSULFAN	--	0.00034 U	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	0.00075 U	--
BETA ENDOSULFAN	--	0.0053 J	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	0.00067 U	--
DIELDRIN	--	0.00067 U	--
ENDOSULFAN SULFATE	--	0.0046 J	--
ENDRIN	--	0.00067 U	--
ENDRIN ALDEHYDE	--	0.0021 U	--
ENDRIN KETONE	--	0.0026 U	--
GAMMA BHC (LINDANE)	--	0.00054 U	--
GAMMA-CHLORDANE	--	0.0065 J	--
HEPTACHLOR	--	0.00069 U	--
HEPTACHLOR EPOXIDE	--	0.00048 U	--
METHOXYCHLOR	--	0.0021 U	--
P,P'-DDD	--	0.0015	--
P,P'-DDE	--	0.0071 J	--
P,P'-DDT	--	0.0077 U	--
TOXAPHENE	--	0.11 U	--

Key:

BGS = Below ground surface.
ft = Feet.
J = Estimated at the concentration listed.
-H = Historical channel location/sample.
mg/Kg = Milligrams per kilogram.
PCB = Polychlorinated biphenyl.
SVOA = Semivoloatile organic compounds analysis.
U = Non-detect.
UJ = Non-detect/estimated.
-W = Wetland location/sample.
-- = Not submitted for this parameter.

Table 4-4a
Summary of Results of Reach 5 Sediment Samples

Location ID	R5-039-V	R5-039-V	R5-040-V	R5-040-V	R5-040-V	R5-040-V	R5-040-V
Sample ID	R5-039-V-Z1	R5-039-V-Z2	R5-040-V-Z1a	R5-040-V-Z1b	R5-040-V-Z2	R5-040-V-Z3	R5-040-V-Z4
Sample Date	5/21/2010	5/21/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010
Sample Depth Range (ft BGS)	0-1	1-1.9	0-0.5	0.5-1	1-2	2-3	3-4
Analyte							
Metals by C200.7 (mg/kg)							
ALUMINUM	8310	7980 J	14300 J	14800 J	13100 J	13600 J	12600 J
ANTIMONY	0.25 UJ	0.31 UJ	0.97 UJ	0.93 UJ	0.82 UJ	0.77 UJ	0.74 UJ
ARSENIC	1.8 J	2 J	20.4 J	18.4 J	10.9 J	11.2 J	10.7 J
BARIUM	64.7 J	72.8 J	496 J	602 J	474 J	667 J	971 J
BERYLLIUM	0.02 UJ	0.025 UJ	0.52 J	0.57 J	0.51 J	0.54 J	0.5 J
CADMIUM	0.0095 UJ	0.012 UJ	1.7 J	1.9 J	1.7 J	1.8 J	1.4 J
CALCIUM	6450	8200 J	10400 J	10100 J	10300 J	10600 J	11400 J
CHROMIUM	33.9	57.1 J	89.1 J	143 J	161 J	191 J	128 J
COBALT	9.2 J	0.063 UJ	0.11 UJ	12 J	11.1 J	11.4 J	10.7 J
COPPER	55.9	86.4 J	206 J	248 J	208 J	238 J	161 J
IRON	14100	13900 J	23400 J	23900 J	20700 J	21200 J	19700 J
LEAD	188 J	167 J	430 J	543 J	545 J	566 J	419 J
MAGNESIUM	3910	4500 J	8480 J	8190 J	6670 J	6980 J	6920 J
MANGANESE	249	409 J	295 J	277 J	298 J	304 J	294 J
NICKEL	40.4	39.5 J	30.4 J	30 J	25.6 J	26.5 J	23.5 J
POTASSIUM	1070	1190 J	2170 J	2010 J	1570 J	1630 J	1540 J
SELENIUM	0.63 U	0.89 J	2.9 J	3.4 J	2.8 J	3.1 J	2.7 J
SILVER	0.057 U	0.19 J	2.1 J	2.6 J	2 J	2.6	2.1
SODIUM	5.8 UJ	7.3 UJ	619 J	564 J	6.1 U	5.8 U	5.5 U
THALLIUM	0.22 U	0.27 UJ	0.74 U	0.71 U	0.63 U	0.6 U	0.57 U
VANADIUM	12.1 J	13.3 J	23.2 J	23.7 J	21 J	22.2 J	20 J
ZINC	319 J	412 J	606 J	594 J	445 J	467 J	355 J
Mercury by CV (mg/kg)							
MERCURY	0.24	0.8 J	4.2 J	7.8 J	10.5 J	11.1	9.2
PCBS by MC ARO (mg/kg)							
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	0.011 U	0.48 J	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	0.011 U	0.48 J	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U

Key at the end of Table

Table 4-4a
Summary of Results of Reach 5 Sediment Samples

Location ID	R5-039-V	R5-039-V	R5-040-V	R5-040-V	R5-040-V	R5-040-V	R5-040-V
Sample ID	R5-039-V-Z1	R5-039-V-Z2	R5-040-V-Z1a	R5-040-V-Z1b	R5-040-V-Z2	R5-040-V-Z3	R5-040-V-Z4
Sample Date	5/21/2010	5/21/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010
Sample Depth Range (ft BGS)	0-1	1-1.9	0-0.5	0.5-1	1-2	2-3	3-4
Analyte							
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)							
2-METHYLNAPHTHALENE	0.0017 U	0.017	0.021	0.0091	0.0034 U	0.003 U	0.0031 U
ACENAPHTHENE	0.0017 U	0.033	0.033	0.01	0.0034 U	0.003 U	0.0031 U
ACENAPHTHYLENE	0.0017 U	0.014	0.021	0.019	0.017	0.015	0.017
ANTHRACENE	0.18	0.031	0.047	0.016	0.013	0.0078	0.017
BENZO(A)ANTHRACENE	2.4	0.039 J	0.11	0.058	0.051	0.038	0.061
BENZO(A)PYRENE	1.7	0.03 J	0.084	0.034	0.033	0.027	0.045
BENZO(B)FLUORANTHENE	0.93	0.021 J	0.086 J	0.018	0.0071 J	0.028 J	0.044 J
BENZO(K)FLUORANTHENE	1.4	0.067	0.081	0.029	0.032	0.027	0.043
CHRYSENE	2.6	0.052 J	0.14	0.08	0.056	0.055	0.084
DIBENZ(A,H)ANTHRACENE	0.41	0.046	0.013 J	0.004 U	0.0034 U	0.003 U	0.0031 U
FLUORANTHENE	2.2	0.073 J	0.22	0.11	0.095	0.06	0.13
FLUORENE	0.0017 U	0.024	0.04	0.018	0.0063 J	0.003 U	0.0076
INDENO(1,2,3-C,D)PYRENE	0.45	0.066	0.034 J	0.014	0.012	0.0098	0.016
NAPHTHALENE	0.0017 U	0.011	0.017	0.011	0.0093	0.0066	0.0031 U
PHENANTHRENE	0.28	0.053 J	0.16	0.069	0.036	0.025	0.047
PYRENE	3.7	0.068 J	0.25	0.11	0.11	0.057	0.13
PAHs (total)	17	0.65 J	1.4 J	0.61 J	0.49 J	0.37 J	0.66 J

Key at the end of Table

Table 4-4a
Summary of Results of Reach 5 Sediment Samples

Location ID	R5-040-V	R5-041-V	R5-041-V	R5-041-V	R5-041-V	R5-041-V	R5-041-V	R5-041-V
Sample ID	R5-040-V-Z5a	R5-041-V-Z1a	R5-041-V-Z1b	R5-041-V-Z2	R5-041-V-Z3	R5-041-V-Z4	R5-041-V-Z5a	R5-041-V-Z5b
Sample Date	5/20/2010	5/24/2010	5/24/2010	5/24/2010	5/24/2010	5/24/2010	5/24/2010	5/24/2010
Sample Depth Range (ft BGS)	4.5-5	0-0.5	0.5-1	1-2	2-3	3-4	4-5	5-6
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	12200 J	18900 J	17800 J	17800 J	17800 J	16700 J	14700 J	13300
ANTIMONY	0.46 UJ	0.47 U	0.4 UJ	0.36 UJ	0.35 UJ	0.34 UJ	0.3 UJ	0.27 UJ
ARSENIC	2.5 J	9.8 J	10.5 J	12.2 J	16 J	13.8 J	8.7 J	8 J
BARIUM	46.3 J	330 J	344 J	379 J	607 J	631 J	818 J	305 J
BERYLLIUM	0.57 J	0.037 UJ	0.032 UJ	0.029 UJ	0.028 UJ	0.027 UJ	0.024 UJ	0.021 UJ
CADMIUM	0.67 J	2.1 J	1.9 J	2 J	1.3 J	1.4 J	0.012 UJ	0.01 UJ
CALCIUM	2650 J	10200 J	12200 J	10500 J	10400 J	10900 J	10600 J	11400
CHROMIUM	17.7 J	79.9 J	76.8 J	78.5 J	117 J	165 J	182 J	41.8
COBALT	15.6 J	0.093 UJ	0.079 UJ	12.1 J	12.5 J	11.6 J	10.8 J	11.1 J
COPPER	8.7 J	305 J	306 J	224 J	211 J	247 J	197 J	56.7
IRON	19300 J	27000 J	26400 J	27000 J	27000 J	25300 J	22600 J	20400
LEAD	8.1 J	389 J	346 J	302 J	473 J	648 J	456 J	136 J
MAGNESIUM	7400 J	8520 J	9360 J	9310 J	8930 J	7520 J	6850 J	7100
MANGANESE	284 J	264 J	260 J	258 J	264 J	236 J	264 J	343
NICKEL	33 J	50.9 J	46.4 J	37 J	32.9 J	30.2 J	26.7 J	25.2
POTASSIUM	1570 J	2480 J	2390 J	2400 J	2520 J	2230 J	1950 J	1760
SELENIUM	1.7 J	1.7 J	1.6 J	0.98 J	0.88 J	1.1 J	0.98 J	0.78 J
SILVER	0.48 U	1.5 J	1.5 J	1.5 J	1.8 J	2 J	1.9 J	0.33 J
SODIUM	3.4 U	10.9 UJ	9.3 UJ	8.5 UJ	8.1 UJ	8 UJ	7.1 UJ	6.3 UJ
THALLIUM	0.35 U	0.4 UJ	0.34 UJ	0.32 UJ	0.3 UJ	0.3 UJ	0.26 UJ	0.23 U
VANADIUM	18.2 J	29.5 J	29.3 J	30 J	27.6 J	24.9 J	23.4 J	20.4 J
ZINC	72.2 J	1220 J	1090 J	913 J	586 J	593 J	394 J	180 J
Mercury by CV (mg/kg)								
MERCURY	0.062 J	3 J	3 J	2.9 J	5.3 J	8.3 J	10.8 J	2
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.011 U	0.011 J	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	0.011 U	0.011 J	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U

Key at the end of Table

Table 4-4a
Summary of Results of Reach 5 Sediment Samples

Location ID	R5-040-V	R5-041-V	R5-041-V	R5-041-V	R5-041-V	R5-041-V	R5-041-V	R5-041-V
Sample ID	R5-040-V-Z5a	R5-041-V-Z1a	R5-041-V-Z1b	R5-041-V-Z2	R5-041-V-Z3	R5-041-V-Z4	R5-041-V-Z5a	R5-041-V-Z5b
Sample Date	5/20/2010	5/24/2010	5/24/2010	5/24/2010	5/24/2010	5/24/2010	5/24/2010	5/24/2010
Sample Depth Range (ft BGS)	4.5-5	0-0.5	0.5-1	1-2	2-3	3-4	4-5	5-6
Analyte								
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.002 U	0.059	0.0017 U	0.1	0.033	0.02	0.013 J	0.007
ACENAPHTHENE	0.002 U	0.065	0.11	0.13	0.033	0.013	0.015	0.011
ACENAPHTHYLENE	0.0089	0.21	0.2	0.19	0.038	0.02	0.018	0.0097
ANTHRACENE	0.002 U	0.31	0.47	0.38	0.096	0.043	0.043	0.028
BENZO(A)ANTHRACENE	0.002 U	0.96	1.2	1.1	0.38	0.21	0.17 J	0.097
BENZO(A)PYRENE	0.002 U	0.86	0.83	0.81	0.22	0.11	0.16	0.065
BENZO(B)FLUORANTHENE	0.002 UJ	0.77	0.6	0.59	0.2	0.11	0.15	0.054
BENZO(K)FLUORANTHENE	0.002 U	0.53	0.85	0.62	0.12	0.075	0.11	0.051
CHRYSENE	0.002 U	1.3	1.4	1.5	0.49	0.27	0.21 J	0.12
DIBENZ(A,H)ANTHRACENE	0.002 U	0.18	0.3	0.3	0.076	0.049	0.046	0.023
FLUORANTHENE	0.0041	1.5	1.8	1.9	0.66	0.36	0.27 J	0.19
FLUORENE	0.002 U	0.16	0.2	0.2	0.057	0.028	0.025	0.022
INDENO(1,2,3-C,D)PYRENE	0.002 U	0.48	0.56	0.42	0.14	0.074	0.1	0.045
NAPHTHALENE	0.002 U	0.05	0.071	0.07	0.054	0.045	0.023	0.0089
PHENANTHRENE	0.002 U	0.72	0.95	0.96	0.37	0.19	0.15 J	0.11
PYRENE	0.0064	1.6	1.9	2	0.61	0.32	0.25 J	0.15
PAHs (total)	0.019	11	12	12	3.7	2	1.9 J	1

Key at the end of Table

Table 4-4a
Summary of Results of Reach 5 Sediment Samples

Location ID	R5-041-V	R5-041-V	R5-042-V	R5-042-V	R5-042-V	R5-042-V	R5-042-V	R5-042-V
Sample ID	R5-041-V-Z6a	R5-041-V-Z6b	R5-042-V-Z1A	R5-042-V-Z1b	R5-042-V-Z2	R5-042-V-Z3	R5-042-V-Z4	R5-042-V-Z5a
Sample Date	5/24/2010	5/24/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010
Sample Depth Range (ft BGS)	6-7	7-7.5	0-0.5	0.5-1	1-2	2-3	3-4	40638-5
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	14200	12800	16200 J	15100 J	13400 J	10600 J	12400 J	13600 J
ANTIMONY	0.25 UJ	0.18 UJ	0.98 UJ	0.95 UJ	0.78 UJ	1.1 UJ	0.93 UJ	0.65 UJ
ARSENIC	4 J	2.2 J	13.4 J	14.1 J	8.3 J	7.2 J	9.3 J	3.7 J
BARIUM	126 J	128 J	479 J	626 J	584 J	145 J	107 J	111 J
BERYLLIUM	0.02 UJ	0.61 J	0.57 J	0.52 J	0.53 J	0.41 J	0.51 J	0.49 J
CADMIUM	0.0096 UJ	0.0067 UJ	1.9 J	1.9 J	1.3 J	0.054 UJ	0.048 UJ	0.93 J
CALCIUM	10200	2140	9700 J	8530 J	10200 J	7800 J	10600 J	10100 J
CHROMIUM	19.9	19.5	84.7 J	122 J	97.9 J	32.2 J	18.3 J	18.2 J
COBALT	11.8 J	14.3 J	0.11 UJ	0.1 UJ	11.6 J	0.12 UJ	12.4 J	11.9 J
COPPER	23.4	4.8	165 J	217 J	131 J	56.2 J	28.8 J	23.6 J
IRON	21500	24800	23800 J	23800 J	19400 J	16300 J	19200 J	19400 J
LEAD	39.7 J	6.1 J	353 J	532 J	335 J	178 J	53.7 J	33.7 J
MAGNESIUM	6890	6170	8090 J	7270 J	7060 J	5600 J	6540 J	6590 J
MANGANESE	475	427	263 J	283 J	269 J	231 J	407 J	497 J
NICKEL	26.6	28.5	31.1 J	27.7 J	26.8 J	21.6 J	26.5 J	25.7 J
POTASSIUM	1790	1720	2150 J	1850 J	1610 J	1510 J	1630 J	1670 J
SELENIUM	0.65 J	0.44 U	3 J	3.2 J	2.5 J	2.9 J	2.3 J	2 J
SILVER	0.057 U	0.04 U	1.9 J	2.2 J	1.5 J	1.1 U	0.97 U	0.68 U
SODIUM	5.9 UJ	4.1 UJ	606 J	592 J	5.8 U	568 J	501 J	4.8 U
THALLIUM	0.22 U	0.15 U	0.75 U	0.73 U	0.6 U	0.81 U	0.71 U	0.5 U
VANADIUM	21.2 J	21.6 J	24.8 J	21.3 J	20.9 J	16.3 J	19.3 J	20.5 J
ZINC	111 J	67.8 J	462 J	509 J	287 J	172 J	126 J	103 J
Mercury by CV (mg/kg)								
MERCURY	0.28	0.047 U	4 J	6.1 J	8.1	4.4 J	0.4 J	0.27
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ
PCB-1248 (AROCLOR 1248)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ
PCB-1260 (AROCLOR 1260)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.0049 J
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ
PCBs (total)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.0049 J

Key at the end of Table

Table 4-4a
Summary of Results of Reach 5 Sediment Samples

Location ID	R5-041-V	R5-041-V	R5-042-V	R5-042-V	R5-042-V	R5-042-V	R5-042-V	R5-042-V
Sample ID	R5-041-V-Z6a	R5-041-V-Z6b	R5-042-V-Z1A	R5-042-V-Z1b	R5-042-V-Z2	R5-042-V-Z3	R5-042-V-Z4	R5-042-V-Z5a
Sample Date	5/24/2010	5/24/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010
Sample Depth Range (ft BGS)	6-7	7-7.5	0-0.5	0.5-1	1-2	2-3	3-4	40638-5
Analyte								
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.0017 U	0.0017 U	0.01	0.009	0.0017 U	0.0017 U	0.0017 U	0.0017 U
ACENAPHTHENE	0.0054 J	0.0017 U	0.0083 J	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
ACENAPHTHYLENE	0.0067	0.0017 U	0.012	0.0088	0.0017 U	0.0017 U	0.0017 U	0.0017 U
ANTHRACENE	0.013	0.0017 U	0.025	0.024	0.01	0.014	0.0017 U	0.0017 U
BENZO(A)ANTHRACENE	0.049	0.0017 U	0.14	0.13	0.056	0.077	0.014	0.016
BENZO(A)PYRENE	0.027	0.0017 U	0.069	0.073	0.041	0.06	0.0017 U	0.014
BENZO(B)FLUORANTHENE	0.032	0.0017 U	0.07	0.066	0.041	0.06	0.0084	0.012
BENZO(K)FLUORANTHENE	0.026	0.0017 U	0.048	0.044	0.03	0.044	0.0017 U	0.011
CHRYSENE	0.048	0.0039 J	0.18	0.16	0.063	0.086	0.014	0.017
DIBENZ(A,H)ANTHRACENE	0.0075	0.0017 U	0.021	0.022	0.014	0.02	0.0017 U	0.0017 U
FLUORANTHENE	0.076	0.0017 U	0.25	0.15	0.058	0.089	0.018	0.024
FLUORENE	0.011	0.0017 U	0.018	0.014	0.0068	0.009 J	0.0017 U	0.0017 U
INDENO(1,2,3-C,D)PYRENE	0.018	0.0017 U	0.043	0.041	0.029	0.041	0.0017 U	0.0087
NAPHTHALENE	0.0017 U	0.0017 U	0.016	0.022	0.0062 J	0.0017 U	0.0017 U	0.0017 U
PHENANTHRENE	0.039	0.0017 U	0.15	0.078	0.037	0.048	0.014	0.012
PYRENE	0.056	0.0017 U	0.23	0.19	0.059	0.13	0.019	0.024
PAHs (total)	0.44 J	0.0039 J	1.3 J	1.1	0.49 J	0.73 J	0.097	0.15

Key at the end of Table

Table 4-4a
Summary of Results of Reach 5 Sediment Samples

Location ID	R5-043-V	R5-043-V	R5-043-V	R5-043-V	R5-043-V	R5-043-V	R5-043-V	R5-044-V
Sample ID	R5-043-V-Z1	R5-043-V-Z1P	R5-043-V-Z2	R5-043-V-Z3	R5-043-V-Z4	R5-043-V-Z5a	R5-043-V-Z5b	R5-044-V-Z1a
Sample Date	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010
Sample Depth Range (ft BGS)	0-1	0-1	1-2	2-3	3-4	4-4.5	40638-5	0-0.5
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	11500 J	15100 J	12100 J	10800 J	14000 J	13200	11800	18200 J
ANTIMONY	0.98 UJ	1.2 UJ	1 UJ	0.8 UJ	0.84 UJ	0.75 UJ	0.45 UJ	1.4 UR
ARSENIC	12.9 J	6.3 J	11.2 J	10.7 J	14.3 J	10.9 J	4.3 J	8.7 J
BARIUM	225 J	177 J	387 J	477 J	611 J	919 J	158 J	217 J
BERYLLIUM	0.41 J	0.5 J	0.45 J	0.37 J	0.54 J	0.51 J	0.43 J	0.56 J
CADMIUM	2.2 J	2.7 J	1.7 J	1.6 J	1.7 J	1.5 J	0.73 J	4.8 J
CALCIUM	9410 J	14500 J	13300 J	6580 J	9150 J	10400 J	6930 J	15900 J
CHROMIUM	107 J	116 J	102 J	123 J	167 J	182	18.2	211 J
COBALT	0.11 UJ	0.13 UJ	0.11 UJ	0.088 UJ	11.6 J	12.4 J	12.3 J	16.2 J
COPPER	237 J	274 J	226 J	219 J	211 J	191 J	18.7 J	339 J
IRON	17700 J	22800 J	21100 J	17900 J	21900 J	21500	20000	26600 J
LEAD	362 J	384 J	419 J	526 J	485 J	429 J	26.9 J	500 J
MAGNESIUM	5710 J	7110 J	6260 J	4950 J	6740 J	6760	6400	7750 J
MANGANESE	388 J	662 J	343 J	204 J	296 J	311 J	398 J	452 J
NICKEL	57.5 J	60.5 J	36.7 J	31.7 J	27.7 J	31.3 J	25.5 J	105 J
POTASSIUM	1540 J	1980 J	1620 J	1480 J	1770 J	1610	989	2250 J
SELENIUM	2.9 J	3.5 J	3 J	0.69 U	0.73 U	0.65 U	0.39 U	5.3 J
SILVER	1.4 J	1.7 J	1.8 J	2.1 J	2 J	2.5	0.51 J	2.2 J
SODIUM	587 J	798 J	617 J	5.9 U	6.2 U	5.6 U	3.4 U	871 J
THALLIUM	0.75 U	0.93 U	0.8 U	0.61 U	0.65 U	0.58 U	0.35 U	1.1 UR
VANADIUM	19.5 J	24 J	21.9 J	17.1 J	22.5 J	21 J	18.5 J	36.4 J
ZINC	881 J	892 J	695 J	471 J	420 J	426 J	74.5 J	1610 J
Mercury by CV (mg/kg)								
MERCURY	2.3 J	0.69 J	6.9 J	7.7 J	8 J	8.3	0.33	0.39 J
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 U
PCB-1248 (AROCLOR 1248)	0.11 J	0.19 J	0.011 U	0.011 U	0.14 J	0.011 U	0.011 UJ	0.011 U
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 U
PCB-1260 (AROCLOR 1260)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.028 J
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 U
PCBs (total)	0.11 J	0.19 J	0.011 U	0.011 U	0.14 J	0.011 U	0.011 U	0.028 J

Key at the end of Table

Table 4-4a
Summary of Results of Reach 5 Sediment Samples

Location ID	R5-043-V	R5-043-V	R5-043-V	R5-043-V	R5-043-V	R5-043-V	R5-043-V	R5-044-V
Sample ID	R5-043-V-Z1	R5-043-V-Z1P	R5-043-V-Z2	R5-043-V-Z3	R5-043-V-Z4	R5-043-V-Z5a	R5-043-V-Z5b	R5-044-V-Z1a
Sample Date	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010
Sample Depth Range (ft BGS)	0-1	0-1	1-2	2-3	3-4	4-4.5	40638-5	0-0.5
Analyte								
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.047	0.0017 U	0.011	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
ACENAPHTHENE	0.2	0.0017 U	0.064	0.0089	0.0017 U	0.0017 U	0.0017 U	0.0017 U
ACENAPHTHYLENE	0.034	0.019	0.03	0.017	0.0017 U	0.0017 U	0.0017 U	0.016
ANTHRACENE	0.29	0.025	0.14	0.025	0.011	0.01	0.0017 U	0.02
BENZO(A)ANTHRACENE	0.29	0.099	0.3	0.09	0.048	0.041	0.0045	0.15
BENZO(A)PYRENE	0.2	0.14	0.17	0.074	0.03	0.028	0.0017 U	0.13
BENZO(B)FLUORANTHENE	0.15	0.15	0.13	0.075	0.031	0.027	0.0038 J	0.11
BENZO(K)FLUORANTHENE	0.14	0.091	0.12	0.054	0.02	0.02	0.0017 U	0.086
CHRYSENE	0.37	0.13	0.32	0.095	0.055	0.044	0.0053	0.21
DIBENZ(A,H)ANTHRACENE	0.062	0.041	0.046	0.024	0.01	0.0097	0.0017 U	0.044
FLUORANTHENE	0.61	0.18	0.61	0.11	0.061	0.056	0.0058	0.34
FLUORENE	0.19	0.0099	0.045	0.012	0.0068 J	0.0017 U	0.0017 U	0.013
INDENO(1,2,3-C,D)PYRENE	0.11	0.094	0.084	0.044	0.021	0.018	0.0017 U	0.085
NAPHTHALENE	0.035	0.0017 U	0.011	0.011	0.0078	0.0017 U	0.0017 U	0.0017 U
PHENANTHRENE	0.91	0.08	0.35 J	0.078	0.041	0.032	0.0042	0.088
PYRENE	0.58	0.18	0.44	0.11	0.068	0.059	0.0072	0.27
PAHs (total)	4.3	1.4	3 J	0.88	0.44 J	0.37	0.031 J	1.7

Key at the end of Table

Table 4-4a
Summary of Results of Reach 5 Sediment Samples

Location ID	R5-044-V	R5-044-V	R5-044-V	R5-044-V	R5-045-V	R5-045-V	R5-045-V	R5-045-V
Sample ID	R5-044-V-Z1b	R5-044-V-Z2	R5-044-VR	R5-044-V-Z3	R5-045-V-Z1	R5-045-V-Z2	R5-045-V-Z3	R5-045-V-Z4
Sample Date	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010
Sample Depth Range (ft BGS)	0.5-1	1-2	1-2	2-3	0-1	1-2	2-3	3-4
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	17800 J	14700 J	15700 J	13100	11400 J	14700 J	9870 J	10400
ANTIMONY	1.4 UR	1.1 UJ	1.1 UJ	0.49 UJ	1.3 UR	1.3 UJ	0.81 UJ	0.74 UJ
ARSENIC	18.4 J	13.9 J	15.2 J	2.5 J	6.6 J	6.2 J	4.6 J	4.1 J
BARIUM	273 J	232 J	258 J	214 J	159 J	165 J	185 J	86.6 J
BERYLLIUM	0.48 J	0.43 J	0.47 J	0.6 J	0.37 J	0.46 J	0.38 J	0.42 J
CADMIUM	15.3 J	12.1 J	13 J	0.71 J	2.7 J	2.7 J	1.7 J	0.038 UJ
CALCIUM	15600 J	13400 J	14600 J	1690 J	12400 J	13500 J	11100 J	8620 J
CHROMIUM	1280 J	1070 J	1130 J	19.4	95.4 J	87.5 J	60.2 J	15.8
COBALT	21.3 J	14.5 J	15.9 J	11.9 J	11.1 J	13.2 J	14.6 J	10.9 J
COPPER	1350 J	1410 J	1500 J	13.9 J	203 J	223 J	140 J	22.2 J
IRON	26400 J	22200 J	24200 J	19500	19500 J	22300 J	17000 J	16600
LEAD	2720 J	3500 J	3730 J	15.4 J	284 J	293 J	188 J	31.5 J
MAGNESIUM	7150 J	6310 J	6780 J	4590	5180 J	7030 J	5000 J	5310
MANGANESE	400 J	426 J	468 J	536 J	501 J	519 J	459 J	389 J
NICKEL	419 J	219 J	238 J	25.1 J	52.5 J	52.9 J	34.9 J	21.8 J
POTASSIUM	2030 J	1710 J	1790 J	912	1690 J	2070 J	1360 J	1450
SELENIUM	5.5 J	4.7 J	5.2 J	0.43 U	1.2 U	3.8 J	0.71 U	0.64 U
SILVER	4.5 J	3.9 J	4.3 J	0.52 U	1.4 UR	1.6 J	0.89 J	0.78 U
SODIUM	861 J	622 J	654 J	3.7 U	830 J	838 J	6 U	5.5 U
THALLIUM	1.1 UR	0.86 U	0.87 U	0.38 U	1 UR	1 U	0.62 U	0.57 U
VANADIUM	74.8 J	55.6 J	60.3 J	20.3 J	21.3 J	23.8 J	17.1 J	16.7 J
ZINC	8890 J	8720 J	9290 J	90.1 J	767 J	791 J	609 J	89.3 J
Mercury by CV (mg/kg)								
MERCURY	1.3 J	2.9 J	2.6 J	0.052 J	0.62 J	0.63 J	1.4 J	0.21
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	1.1 J	0.57 J	0.011 U	0.011 U	0.88	0.47	0.28	0.011 U
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.14 J	0.011 U	0.011 U	0.011 U	0.14 J	0.076 J	0.011 U	0.0087 J
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	1.2 J	0.57 J	0.011 U	0.011 U	1 J	0.55 J	0.28	0.0087 J

Key at the end of Table

Table 4-4a
Summary of Results of Reach 5 Sediment Samples

Location ID	R5-044-V	R5-044-V	R5-044-V	R5-044-V	R5-045-V	R5-045-V	R5-045-V	R5-045-V
Sample ID	R5-044-V-Z1b	R5-044-V-Z2	R5-044-VR	R5-044-V-Z3	R5-045-V-Z1	R5-045-V-Z2	R5-045-V-Z3	R5-045-V-Z4
Sample Date	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010
Sample Depth Range (ft BGS)	0.5-1	1-2	1-2	2-3	0-1	1-2	2-3	3-4
Analyte								
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.032	0.079	0.052	0.0017 U	0.041 J	0.0064 J	0.0074 J	0.0034 U
ACENAPHTHENE	0.036	0.027	0.018	0.0017 U	0.051	0.0082 J	0.01	0.0034 U
ACENAPHTHYLENE	0.041	0.032	0.025	0.0017 U	0.02	0.0097	0.01	0.0034 U
ANTHRACENE	0.062	0.043	0.035	0.0017 U	0.066 U	0.04	0.041	0.0086
BENZO(A)ANTHRACENE	0.47	0.22	0.2	0.0017 U	0.45	0.22	0.22	0.066
BENZO(A)PYRENE	0.43	0.27	0.25	0.0017 U	0.36	0.17	0.19	0.053 J
BENZO(B)FLUORANTHENE	0.28	0.18	0.17	0.0017 U	0.39 J	0.24 J	0.2 J	0.062
BENZO(K)FLUORANTHENE	0.1	0.089	0.071	0.0017 U	0.23	0.12	0.11	0.03 J
CHRYSENE	0.78	0.35	0.31	0.0048	0.43	0.23	0.21	0.044
DIBENZ(A,H)ANTHRACENE	0.081	0.076	0.043	0.0017 U	0.032	0.016	0.017	0.0034 U
FLUORANTHENE	0.55	0.21	0.18	0.0017 U	0.52	0.41	0.24	0.036
FLUORENE	0.096	0.065	0.045	0.0017 U	0.047	0.018	0.013	0.0067
INDENO(1,2,3-C,D)PYRENE	0.15	0.099 J	0.068	0.0017 U	0.07	0.026	0.038	0.011
NAPHTHALENE	0.016	0.016	0.012	0.0017 U	0.019	0.0066 J	0.0036 U	0.0034 U
PHENANTHRENE	0.51	0.23	0.18	0.0017 U	0.38	0.11	0.11	0.026
PYRENE	0.67	0.31	0.28	0.0047	0.57	0.4	0.26	0.029 J
PAHs (total)	4.6	2.5 J	2.1	0.0095	3.6 J	2.1 J	1.7 J	0.39 J

Key at the end of Table

Table 4-4a
Summary of Results of Reach 5 Sediment Samples

Location ID	R5-045-V	R5-045-V	R5-046-V	R5-046-V	R5-046-V	R5-046-V	R5-046-V	R5-046-V
Sample ID	R5-045-VR	R5-045-V-Z5a	R5-046-V-Z1a	R5-046-V-Z1b	R5-046-V-Z2	R5-046-V-Z3	R5-046-V-Z4	R5-046-V-Z5a
Sample Date	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010
Sample Depth Range (ft BGS)	3-4	40638-5	0-0.5	0.5-1	1-2	2-3	3-4	4-5
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	10300	11700	14600 J	16800 J	14200 J	15800 J	14000 J	13700 J
ANTIMONY	0.73 UJ	0.69 UJ	1.3 UJ	1 UJ	0.86 UJ	0.84 UJ	0.82 UJ	0.54 J
ARSENIC	4 J	4.3 J	14.8 J	17.8 J	11.3 J	16.2 J	33.2 J	11.5
BARIUM	86.9 J	128 J	250 J	344 J	321 J	404 J	600 J	505
BERYLLIUM	0.41 J	0.47 J	0.49 J	0.55 J	0.52 J	0.61 J	0.52 J	0.64 J
CADMIUM	0.037 UJ	0.035 UJ	7.9 J	7.9 J	2.7 J	3.2 J	2 J	1.9
CALCIUM	8590 J	9490 J	5570 J	7290 J	11900 J	16800 J	9300 J	8840
CHROMIUM	15.3	16.5	547 J	769 J	66.2 J	82.6 J	104 J	92.9
COBALT	10.2 J	11.2 J	17.4 J	17.3 J	11.7 J	13.9 J	11.2 J	10.4 J
COPPER	22.1 J	21.8 J	1020 J	1110 J	313 J	259 J	245 J	180
IRON	16600	16600	21400 J	23900 J	22200 J	26300 J	21600 J	22300
LEAD	31.7 J	23.8 J	559 J	763 J	369 J	401 J	439 J	413
MAGNESIUM	5180	5560	4880 J	6400 J	8800 J	10200 J	7230 J	6960
MANGANESE	404 J	389 J	179 J	225 J	269 J	335 J	247 J	260
NICKEL	21 J	23.1 J	180 J	144 J	42.5 J	38.7 J	29.2 J	26.9 J
POTASSIUM	1420	1490	1670 J	1910 J	1800 J	2190 J	1980 J	1850 J
SELENIUM	0.64 U	0.6 U	4.5 J	4.1 J	0.75 U	3.6 J	0.72 U	0.96 J
SILVER	0.77 U	0.72 U	6.1 J	4.4 J	2.1 J	2.5 J	2.5 J	0.068 UJ
SODIUM	5.4 U	5.1 U	1160 J	965 J	771 J	703 J	653 J	246 J
THALLIUM	0.56 U	0.53 U	1 U	0.79 U	0.66 U	0.65 U	0.63 U	0.41 J
VANADIUM	16.3 J	17.8 J	28 J	30.1 J	23.4 J	27.3 J	21.4 J	22.4
ZINC	88.2 J	85 J	3190 J	4370 J	1100 J	1210 J	637 J	0.19 R
Mercury by CV (mg/kg)								
MERCURY	0.24	0.18	1.7 J	2.9 J	2.6 J	3.3 J	4.8 J	3.8
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.014 J	0.0077 J	0.011 U	0.021 J	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PCBs (total)	0.014 J	0.0077 J	0.011 U	0.021 J	0.011 U	0.011 U	0.011 U	0.011 U

Key at the end of Table

Table 4-4a
Summary of Results of Reach 5 Sediment Samples

Location ID	R5-045-V	R5-045-V	R5-046-V	R5-046-V	R5-046-V	R5-046-V	R5-046-V	R5-046-V
Sample ID	R5-045-VR	R5-045-V-Z5a	R5-046-V-Z1a	R5-046-V-Z1b	R5-046-V-Z2	R5-046-V-Z3	R5-046-V-Z4	R5-046-V-Z5a
Sample Date	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010
Sample Depth Range (ft BGS)	3-4	40638-5	0-0.5	0.5-1	1-2	2-3	3-4	4-5
Analyte								
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.0036 U	0.0032 U	0.0017 U	0.0017 U	0.014	0.028	0.036	0.0017 U
ACENAPHTHENE	0.0036 UJ	0.0032 U	0.011 J	0.015	0.032	0.04	0.038	0.0017 U
ACENAPHTHYLENE	0.0036 U	0.0032 U	0.028	0.026	0.026	0.058	0.064	0.0017 U
ANTHRACENE	0.013	0.011	0.031	0.04	0.14	0.21	0.22	0.012
BENZO(A)ANTHRACENE	0.054	0.059	0.16	0.14	0.24	0.65	0.35	0.046
BENZO(A)PYRENE	0.049	0.044 J	0.074	0.079	0.19	0.43	0.21	0.019
BENZO(B)FLUORANTHENE	0.066	0.038	0.079	0.078	0.11 J	0.32 J	0.13 J	0.02
BENZO(K)FLUORANTHENE	0.068 J	0.037	0.053	0.053	0.088	0.18	0.13	0.014
CHRYSENE	0.034 J	0.026	0.21	0.18	0.3	0.67	0.41	0.056
DIBENZ(A,H)ANTHRACENE	0.015	0.0032 U	0.023	0.025	0.063	0.12	0.053	0.0067
FLUORANTHENE	0.066	0.058	0.29	0.29	0.42	0.93	0.62	0.059
FLUORENE	0.0074	0.0082	0.02	0.029	0.032	0.038	0.048	0.0067
INDENO(1,2,3-C,D)PYRENE	0.019	0.011	0.048	0.046	0.077	0.18	0.088	0.014
NAPHTHALENE	0.0036 U	0.0032 U	0.0017 U	0.0017 U	0.011	0.019	0.018	0.0095
PHENANTHRENE	0.03	0.053	0.062	0.21	0.29 J	0.48 J	0.54 J	0.038
PYRENE	0.041	0.046 J	0.3	0.27	0.4	0.9	0.63	0.063
PAHs (total)	0.49 J	0.4 J	1.4 J	1.5	2.5 J	5.4 J	3.7 J	0.38

Key at the end of Table

Table 4-4a
Summary of Results of Reach 5 Sediment Samples

Location ID	R5-046-V	R5-046-V	R5-047-V	R5-047-V	R5-047-V	R5-047-V	R5-047-V	R5-048-V
Sample ID	R5-046-V-Z5b	R5-046-V-Z6a	R5-047-V-Z1a	R5-047-V-Z1b	R5-047-V-Z2	R5-047-V-Z3	R5-047-V-Z4	R5-048-V-Z1a
Sample Date	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/21/2010
Sample Depth Range (ft BGS)	5-6	6-7	0-0.5	0.5-1	1-2	2-3	3-4	0-0.5
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	13500 J	12500 J	15900 J	16400 J	15500 J	16900 J	14000 J	15700 J
ANTIMONY	0.35 J	0.23 UJ	0.52 UJ	0.49 UJ	0.45 UJ	0.5 J	0.52 J	0.64 J
ARSENIC	10.8 J	3.9	6.4 J	6 J	5.7 J	11.3 J	10.1 J	12.8 J
BARIUM	610 J	233	174 J	180 J	207 J	441 J	503 J	625 J
BERYLLIUM	0.62 J	0.61 J	0.66 J	0.71 J	0.71 J	0.78 J	0.65 J	0.7 J
CADMIUM	1.7 J	0.99	2.7 J	2.7 J	3.4 J	2.3 J	2 J	2.1 J
CALCIUM	8740 J	15000	15500 J	15400 J	16400 J	16400 J	12200 J	8430 J
CHROMIUM	146 J	38.7	95.9 J	92.5 J	117 J	106 J	93.2 J	163 J
COBALT	10.6 J	12 J	0.1 UJ	0.097 UJ	0.089 UJ	14 J	11.3 J	0.088 UJ
COPPER	194 J	31.8	222 J	226 J	275 J	208 J	185 J	240 J
IRON	21400 J	20600	24400 J	24900 J	25000 J	27500 J	22700 J	24600 J
LEAD	487 J	59.9	317 J	316 J	400 J	395 J	406 J	666 J
MAGNESIUM	6000 J	6090	7770 J	7510 J	7620 J	10200 J	7950 J	7150 J
MANGANESE	289 J	664	616 J	735 J	802 J	491 J	299 J	297 J
NICKEL	24.5 J	26.8 J	53 J	55.9 J	66.6 J	43.1 J	30.8 J	28.9 J
POTASSIUM	1960 J	1740 J	2300 J	2310 J	2140 J	2750 J	1990 J	2160 J
SELENIUM	1.2 J	0.58 U	1.6 J	1.6 J	1.1 UJ	0.97 J	0.78 UJ	1.1 UJ
SILVER	0.07 UJ	0.052 UJ	0.12 UJ	0.11 UJ	0.1 UJ	0.08 UJ	0.07 UJ	0.1 UJ
SODIUM	316 J	203 J	285 J	231 J	198 J	186 J	144 J	263 J
THALLIUM	0.28 J	0.3 J	0.45 UJ	0.42 UJ	0.39 UJ	0.46 J	0.32 J	0.49 J
VANADIUM	21.6 J	19.6	26 J	25.8 J	27.7 J	29 J	23.5 J	24.1 J
ZINC	0.19 R	0.14 R	0.32 R	0.3 R	0.28 R	0.22 R	0.19 R	0.27 R
Mercury by CV (mg/kg)								
MERCURY	6.3 J	1.3	0.51 J	0.61 J	0.74 J	3.3 J	3.2 J	7 J
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	0.011 U	0.011 U	0.39 J	0.21 J	0.011 UJ	0.011 U	0.011 U	0.011 U
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U	0.011 U	0.011 U
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U	0.011 U	0.011 U
PCBs (total)	0.011 U	0.011 U	0.39 J	0.21 J	0.011 U	0.011 U	0.011 U	0.011 U

Key at the end of Table

Table 4-4a
Summary of Results of Reach 5 Sediment Samples

Location ID	R5-046-V	R5-046-V	R5-047-V	R5-047-V	R5-047-V	R5-047-V	R5-047-V	R5-048-V
Sample ID	R5-046-V-Z5b	R5-046-V-Z6a	R5-047-V-Z1a	R5-047-V-Z1b	R5-047-V-Z2	R5-047-V-Z3	R5-047-V-Z4	R5-048-V-Z1a
Sample Date	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/21/2010
Sample Depth Range (ft BGS)	5-6	6-7	0-0.5	0.5-1	1-2	2-3	3-4	0-0.5
Analyte								
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.0075	0.0017 U	0.012 J	0.013	0.015	0.019	0.024	0.013
ACENAPHTHENE	0.0084	0.0017 U	0.0066 U	0.0061 U	0.017	0.0081 J	0.0036 U	0.0017 U
ACENAPHTHYLENE	0.0087	0.0017 U	0.032	0.024	0.03	0.014 J	0.0098	0.013
ANTHRACENE	0.035	0.0017 U	0.06	0.07	0.091	0.043	0.044	0.028
BENZO(A)ANTHRACENE	0.13	0.0048 J	0.37	0.37	0.4	0.19	0.18	0.099
BENZO(A)PYRENE	0.072	0.0017 U	0.35	0.35	0.33	0.16	0.12	0.11
BENZO(B)FLUORANTHENE	0.056	0.0017 U	0.55 J	0.53 J	0.46 J	0.39 J	0.15 J	0.086
BENZO(K)FLUORANTHENE	0.057	0.0017 U	0.26	0.25	0.22	0.11	0.078	0.068
CHRYSENE	0.14	0.0061	0.42	0.42	0.41	0.21	0.21	0.14
DIBENZ(A,H)ANTHRACENE	0.028	0.0017 U	0.05	0.031	0.048	0.026	0.016	0.044
FLUORANTHENE	0.2	0.0058	0.63	0.61	0.57	0.28	0.26	0.19
FLUORENE	0.015	0.0017 U	0.024	0.023	0.036	0.021 J	0.021	0.016
INDENO(1,2,3-C,D)PYRENE	0.057	0.0017 U	0.11	0.08	0.45 J	0.054	0.031	0.07
NAPHTHALENE	0.017	0.0017 U	0.015	0.014	0.015	0.021	0.031	0.036
PHENANTHRENE	0.12 J	0.0017 U	0.21	0.21	0.28	0.1	0.12	0.094
PYRENE	0.18	0.0073	0.51	0.52	0.53	0.25	0.22	0.15
PAHs (total)	1.2 J	0.024 J	3.7 J	3.6 J	4.3 J	1.9 J	1.5 J	1.2

Key at the end of Table

Table 4-4a
Summary of Results of Reach 5 Sediment Samples

Location ID	R5-048-V	R5-048-V	R5-048-V	R5-049-V	R5-049-V	R5-049-V	R5-049-V	R5-049-V
Sample ID	R5-048-V-Z1b	R5-048-V-Z2	R5-048-V-Z3	R5-049-V-Z1a	R5-049-V-Z1b	R5-049-V-Z2	R5-049-V-Z3	R5-049-V-Z4
Sample Date	5/21/2010	5/21/2010	5/21/2010	5/21/2010	5/21/2010	5/21/2010	5/21/2010	5/21/2010
Sample Depth Range (ft BGS)	0.5-1	1-2	2-3	0-0.5	0.5-1	1-2	2-3	3-4
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	14500 J	14500 J	12000 J	13100 J	13900 J	15800 J	16400 J	11800 J
ANTIMONY	0.34 UJ	0.23 UJ	0.18 UJ	0.36 UJ	0.34 UJ	0.36 UJ	0.4 UJ	0.49 J
ARSENIC	4.1 J	1.5 J	1.2	5 J	5.8 J	7 J	10.7 J	10
BARIUM	208 J	209	124	171 J	207 J	234 J	257 J	466
BERYLLIUM	0.67 J	0.66 J	0.44 J	0.57 J	0.59 J	0.62 J	0.63 J	0.54 J
CADMIUM	0.013 UJ	0.0086 UJ	0.68	3.4 J	4.9 J	12.1 J	13.5 J	1.8
CALCIUM	13400 J	3640	2000	30700 J	37300 J	18100 J	15200 J	7470
CHROMIUM	25.8 J	17.7	17	138 J	227 J	434 J	1240 J	120
COBALT	0.067 UJ	0.045 UJ	9.7 J	12.6 J	14.2 J	29.1 J	25.6 J	10.3 J
COPPER	27.5 J	14.4	8.5	243 J	373 J	854 J	1150 J	178
IRON	21700 J	13600	17500	20000 J	21500 J	25500 J	29900 J	20200
LEAD	41.6 J	10.6	6.2	372 J	619 J	1150 J	2180 J	480
MAGNESIUM	5160 J	3830	4860	6090 J	6600 J	6840 J	6750 J	5900
MANGANESE	324 J	205	200	417 J	586 J	617 J	368 J	247
NICKEL	24.7 J	20 J	22.6 J	73.6 J	105 J	444 J	523 J	37.7 J
POTASSIUM	1870 J	1490 J	1100 J	1710 J	1790 J	1870 J	1980 J	1590 J
SELENIUM	0.85 UJ	0.57 U	0.45 U	1.3 J	0.86 UJ	1.8 J	3.7 J	0.73 U
SILVER	0.076 UJ	0.051 U	0.04 U	1.3 J	1.7 J	3.9 J	4 J	1.1 J
SODIUM	242 J	196 J	163 J	234 J	225 J	250 J	481 J	584 J
THALLIUM	0.29 UJ	0.2 U	0.15 U	0.31 UJ	0.34 J	0.43 J	0.35 UJ	0.27 J
VANADIUM	21.5 J	14.5	15.7	25.5 J	30.8 J	41.7 J	110 J	20.2
ZINC	0.21 R	0.14 R	0.11 R	0.22 R	0.21 R	0.22 R	0.25 R	0.18 R
Mercury by CV (mg/kg)								
MERCURY	0.47 J	0.095 J	0.076 J	0.62 J	0.95 J	1 J	1.4 J	5.2
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U
PCB-1248 (AROCLOR 1248)	0.011 U	0.011 U	0.011 U	0.011 U	0.48	0.29 J	1.1 J	0.011 U
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U
PCB-1260 (AROCLOR 1260)	0.011 U	0.011 U	0.0056 J	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U
PCBs (total)	0.011 U	0.011 U	0.0056 J	0.011 U	0.48	0.29 J	1.1 J	0.011 U

Key at the end of Table

Table 4-4a
Summary of Results of Reach 5 Sediment Samples

Location ID	R5-048-V	R5-048-V	R5-048-V	R5-049-V	R5-049-V	R5-049-V	R5-049-V	R5-049-V
Sample ID	R5-048-V-Z1b	R5-048-V-Z2	R5-048-V-Z3	R5-049-V-Z1a	R5-049-V-Z1b	R5-049-V-Z2	R5-049-V-Z3	R5-049-V-Z4
Sample Date	5/21/2010	5/21/2010	5/21/2010	5/21/2010	5/21/2010	5/21/2010	5/21/2010	5/21/2010
Sample Depth Range (ft BGS)	0.5-1	1-2	2-3	0-0.5	0.5-1	1-2	2-3	3-4
Analyte								
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.035	0.0017 U
ACENAPHTHENE	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.015	0.0098	0.0017 U	0.0017 U
ACENAPHTHYLENE	0.0017 U	0.0017 U	0.0017 U	0.013	0.019	0.018	0.02	0.0062 J
ANTHRACENE	0.0017 U	0.0017 U	0.0017 U	0.02	0.042	0.027	0.031	0.012
BENZO(A)ANTHRACENE	0.022	0.0017 U	0.0017 U	0.11	0.17	0.099	0.13	0.05
BENZO(A)PYRENE	0.0017 U	0.0017 U	0.0017 U	0.091	0.14	0.086	0.12	0.034
BENZO(B)FLUORANTHENE	0.015	0.0017 U	0.0017 U	0.089	0.12	0.086	0.1	0.03
BENZO(K)FLUORANTHENE	0.02	0.0017 U	0.0017 U	0.062	0.087	0.059	0.069	0.024
CHRYSENE	0.028	0.0017 U	0.0017 U	0.13	0.2	0.13	0.21	0.06
DIBENZ(A,H)ANTHRACENE	0.0017 U	0.0017 U	0.0017 U	0.054	0.065	0.048	0.044	0.013
FLUORANTHENE	0.034	0.0017 U	0.0017 U	0.15	0.2	0.17	0.15	0.073
FLUORENE	0.0017 U	0.0017 U	0.0017 U	0.01	0.019	0.018	0.037	0.0092
INDENO(1,2,3-C,D)PYRENE	0.014	0.0017 U	0.0017 U	0.063	0.078	0.056	0.078	0.02
NAPHTHALENE	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0072
PHENANTHRENE	0.025	0.0017 U	0.0017 U	0.056	0.13	0.094	0.12	0.051
PYRENE	0.038	0.0017 U	0.0017 U	0.15	0.25	0.18	0.21	0.059
PAHs (total)	0.21	0.0082	0.0076	1.1	1.6	1.2	1.4	0.47 J

Key at the end of Table

Table 4-4a
Summary of Results of Reach 5 Sediment Samples

Location ID	R5-049-V	R5-050-V	R5-050-V	R5-050-V	R5-050-V	R5-050-V	R5-050-V	R5-050-V
Sample ID	R5-049-V-Z5a	R5-050-V-Z1a	R5-050-V-Z1b	R5-050-V-Z2	R5-050-VR	R5-050-V-Z3	R5-050-V-Z4	R5-050-V-Z5a
Sample Date	5/21/2010	5/21/2010	5/21/2010	5/21/2010	5/21/2010	5/21/2010	5/21/2010	5/21/2010
Sample Depth Range (ft BGS)	4-4.5	0-0.5	0.5-1	1-2	1-2	2-3	3-4	4-4.5
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	12800 J	14200 J	13900 J	15100 J	13300 J	17800 J	18300 J	14300
ANTIMONY	0.34 UJ	0.47 UJ	0.46 UJ	0.4 UJ	0.38 UJ	0.44 UJ	0.44 UJ	0.24 U
ARSENIC	10.9 J	5.1 J	3.2 J	7.9 J	8.7 J	12.4 J	13.4 J	5.3 J
BARIUM	924 J	206 J	165 J	252 J	250 J	332 J	300 J	142 J
BERYLLIUM	0.62 J	0.61 J	0.037 UJ	0.032 UJ	0.54 J	0.035 UJ	0.035 UJ	0.019 UJ
CADMIUM	1.6 J	2.5 J	1.8 J	10.8 J	11.9 J	16.6 J	11.6 J	2.5 J
CALCIUM	9820 J	10400 J	12100 J	13700 J	12100 J	14500 J	11700 J	16800
CHROMIUM	174 J	79.5 J	79.4 J	826 J	875 J	1410 J	1070 J	130
COBALT	0.068 UJ	0.094 UJ	0.093 UJ	18.3 J	18.3 J	19.1 J	19.5 J	15.4 J
COPPER	177 J	181 J	159 J	1010 J	1010 J	2500 J	3000 J	594
IRON	19900 J	20500 J	22700 J	22600 J	20400 J	24900 J	23700 J	24500
LEAD	431 J	245 J	239 J	1830 J	1930 J	6190 J	6130 J	708 J
MAGNESIUM	6360 J	6380 J	6720 J	6400 J	5780 J	6380 J	6260 J	8460
MANGANESE	327 J	258 J	252 J	247 J	233 J	266 J	250 J	467
NICKEL	30.3 J	51.4 J	58.4 J	316 J	366 J	360 J	358 J	81
POTASSIUM	1860 J	1990 J	2130 J	1840 J	1590 J	1990 J	1920 J	2180
SELENIUM	0.99 J	1.7 J	1.3 J	2.3 J	2.2 J	3.8 J	2.6 J	0.6 U
SILVER	1.9 J	0.88 J	0.87 J	2.6 J	2.7 J	5.5 J	6.9 J	1.6
SODIUM	1030 J	388 J	10.8 UJ	9.4 UJ	325 J	10.3 UJ	10.2 UJ	5.5 UJ
THALLIUM	0.29 UJ	0.41 UJ	0.4 UJ	0.35 UJ	0.33 UJ	0.38 UJ	0.38 UJ	0.2 U
VANADIUM	22.8 J	25.2 J	23.5 J	55.1 J	60 J	86.9 J	68 J	28.4 J
ZINC	0.21 R	0.29 R	665 J	5980 J	0.24 R	10900 J	8800 J	914 J
Mercury by CV (mg/kg)								
MERCURY	8.6 J	0.55 J	0.48 J	1 J	1.7 J	2.6 J	2.5 J	1.3
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 UJ	0.011 U
PCB-1221 (AROCLOR 1221)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 UJ	0.011 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 UJ	0.011 U
PCB-1242 (AROCLOR 1242)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 UJ	0.011 U
PCB-1248 (AROCLOR 1248)	0.011 U	0.25 J	0.16 J	0.98 J	0.011 UJ	0.2 J	0.78 J	0.43 J
PCB-1254 (AROCLOR 1254)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 UJ	0.011 U
PCB-1260 (AROCLOR 1260)	0.011 U	0.011 U	0.011 U	0.12 J	0.011 UJ	0.011 UJ	0.13 J	0.33 J
PCB-1262 (AROCHLOR 1262)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 UJ	0.011 U
PCB-1268 (AROCLOR 1268)	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 UJ	0.011 U
PCBs (total)	0.011 U	0.25 J	0.16 J	1.1 J	0.011 U	0.2 J	0.91 J	0.76 J

Key at the end of Table

Table 4-4a
Summary of Results of Reach 5 Sediment Samples

Location ID	R5-049-V	R5-050-V	R5-050-V	R5-050-V	R5-050-V	R5-050-V	R5-050-V	R5-050-V
Sample ID	R5-049-V-Z5a	R5-050-V-Z1a	R5-050-V-Z1b	R5-050-V-Z2	R5-050-VR	R5-050-V-Z3	R5-050-V-Z4	R5-050-V-Z5a
Sample Date	5/21/2010	5/21/2010	5/21/2010	5/21/2010	5/21/2010	5/21/2010	5/21/2010	5/21/2010
Sample Depth Range (ft BGS)	4-4.5	0-0.5	0.5-1	1-2	1-2	2-3	3-4	4-4.5
Analyte								
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.0084	0.0053 UJ	0.0053 UJ	0.025 J	0.013 J	0.09 J	0.068 J	0.017 J
ACENAPHTHENE	0.0017 U	0.009 J	0.0053 UJ	0.033 J	0.015 J	0.094 J	0.069 J	0.024 J
ACENAPHTHYLENE	0.013	0.044 J	0.02 J	0.044 J	0.047 J	0.075 J	0.057 J	0.0032 UJ
ANTHRACENE	0.031	0.031 J	0.039 J	0.1 J	0.0042 UJ	0.0048 UJ	0.073 J	0.16 UJ
BENZO(A)ANTHRACENE	0.12	0.21 J	0.2 J	0.45 J	0.63 J	0.81 J	1.5 J	0.41 J
BENZO(A)PYRENE	0.072	0.27 J	0.25 J	0.65 J	0.01 J	0.65 J	1.5 J	0.35 J
BENZO(B)FLUORANTHENE	0.057 J	0.15 J	0.13 J	0.31 J	0.0042 UJ	0.56 J	0.92 J	0.16 UJ
BENZO(K)FLUORANTHENE	0.079	0.22 J	0.21 J	0.35 J	0.014 J	0.52 J	0.93 J	0.33 J
CHRYSENE	0.16	0.27 J	0.25 J	0.62 J	0.92 J	1.3 J	2.3 J	0.63 J
DIBENZ(A,H)ANTHRACENE	0.027	0.029 J	0.024 J	0.034 J	0.0042 UJ	0.24 UJ	0.48 UJ	0.16 UJ
FLUORANTHENE	0.23	0.44 J	0.41 J	0.67 J	0.0042 UJ	2.2 J	0.48 UJ	1 J
FLUORENE	0.021	0.026 J	0.012 J	0.037 J	0.051 J	0.24 UJ	0.48 UJ	0.16 UJ
INDENO(1,2,3-C,D)PYRENE	0.06	0.065 J	0.06 J	0.075 J	0.0042 UJ	0.24 UJ	0.48 UJ	0.16 UJ
NAPHTHALENE	0.017	0.0064 J	0.0077 J	0.016 J	0.016 J	0.035 J	0.038 J	0.016 J
PHENANTHRENE	0.11 J	0.1 J	0.1 J	0.086 J	0.0042 UJ	1.4 J	0.94 J	0.16 UJ
PYRENE	0.16	0.25 J	0.22 J	0.42 J	0.6 J	1.2 J	1.2 J	0.6 J
PAHs (total)	1.2 J	2.2 J	2 J	4 J	2.3 J	8.8 J	9.5 J	3.4 J

Key at the end of Table

Table 4-4a
Summary of Results of Reach 5 Sediment Samples

Key:

BGS =	Below ground surface (in this case below top of sediment surface).
ft =	Feet.
J =	Estimated at the concentration listed.
mg/Kg =	Milligrams per kilogram.
-P =	Ponar creek location/sample.
PCB =	Polychlorinated biphenyl.
SVOA =	Semivoloatile organic compounds analysis.
U =	Non-detect.
UJ =	Non-detect/estimated.
-V =	Vibracore creek location/sample.
-VR =	Vibracore creek duplicate sample.
-Z =	Sample depth interval consecutively numbered.

Table 4-4b
Summary of Results for Reach 5 Soil Samples

Sample ID	R5-113-W	R5-114-W	R5-115-W	R5-116-W	R5-127-H
Sample Date	11/18/09	11/18/09	11/18/09	11/18/09	11/18/09
Sample Depth Range (ft BGS)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Analyte					
Metals by C200.7 (mg/kg)					
ALUMINUM	13900	13400	14800	13400	4870
ANTIMONY	1.2 U	2.1 U	2.4 U	1.3 U	1.2 U
ARSENIC	5.4	4.9	8.6	6 J+	3.2
BARIUM	180	195	262	187	65
BERYLLIUM	0.78 J+	0.73 J	0.84 J	0.75 J+	0.3 J
CADMIUM	1.1 J-	0.7 J	0.15 U	2.2 J-	0.074 U
CALCIUM	8060	8570	10800	8620	32000
CHROMIUM	121 J	94.3 J	146 J	172 J	13.6 J
COBALT	13.6	10.9 J	10.6 J	16.9	4.1 J
COPPER	218	247	182	301	23.6
IRON	25800	24000	26800	25900	11100
LEAD	345 J	265 J	344 J	473 J	30.9 J
MAGNESIUM	5980	5290	4800	5630	14700
MANGANESE	756	423	398	959	332
NICKEL	70.8 J	53.2 J	57.1 J	115 J	9.7 J
POTASSIUM	1360	1670	1610	1180	14.4 U
SELENIUM	2.5 J	3.1 J	3.2 J	2.7 J	0.87 J
SILVER	0.14 UJ	0.23 UJ	0.27 UJ	0.15 UJ	0.13 UJ
SODIUM	232 J	5.5 UJ	6.4 UJ	232 J	3.1 U
THALLIUM	0.49 U	0.83 U	0.97 U	0.52 U	0.47 U
VANADIUM	27.2	26.7	31.3	31	13.5
ZINC	975 J	709 J	728 J	1310 J	309 J
Mercury by CV (mg/kg)					
MERCURY	0.8	0.62	0.51	0.81	0.058 U
PCBS by MC ARO (mg/kg)					
PCB-1016 (AROCLOR 1016)	0.014 U	0.02 U	0.022 U	0.013 UJ	0.012 U
PCB-1221 (AROCLOR 1221)	0.026 U	0.038 U	0.042 U	0.024 U	0.023 U
PCB-1232 (AROCLOR 1232)	0.0095 U	0.014 U	0.015 U	0.0087 U	0.0086 U
PCB-1242 (AROCLOR 1242)	0.006 U	0.0088 U	0.01 U	0.0055 U	0.0054 U
PCB-1248 (AROCLOR 1248)	0.0099 U	0.015 U	0.016 U	0.0091 U	0.009 U
PCB-1254 (AROCLOR 1254)	0.13 J	0.34 J	1.2 J	0.28 J	0.0048 U
PCB-1260 (AROCLOR 1260)	0.012 U	0.017 U	0.019 U	0.011 U	0.011 U
PCB-1262 (AROCHLOR 1262)	0.011 U	0.016 U	0.018 U	0.01 U	0.01 U
PCB-1268 (AROCLOR 1268)	0.015 U	0.023 U	0.025 U	0.014 U	0.014 U
PCBs (total)	0.13	0.34	1.2	0.28	0.011 U
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)					
2-METHYLNAPHTHALENE	--	--	--	0.045 J	0.041 J
ACENAPHTHENE	--	--	--	0.018	0.21
ACENAPHTHYLENE	--	--	--	0.054	0.097 J
ANTHRACENE	--	--	--	0.07	1.8
BENZO(A)ANTHRACENE	--	--	--	0.51	2.9
BENZO(A)PYRENE	--	--	--	0.31	3
BENZO(B)FLUORANTHENE	--	--	--	0.51	3.9
BENZO(K)FLUORANTHENE	--	--	--	0.33	3.8
CHRYSENE	--	--	--	0.58	4.3 J
DIBENZ(A,H)ANTHRACENE	--	--	--	0.12	5.1
FLUORANTHENE	--	--	--	0.94 J	9.7
FLUORENE	--	--	--	0.034	0.36
INDENO(1,2,3-C,D)PYRENE	--	--	--	0.37 J	3.1 J
NAPHTHALENE	--	--	--	0.042 J	0.038
PENTACHLOROPHENOL	--	--	--	0.04	--
PHENANTHRENE	--	--	--	0.37	3.7
PYRENE	--	--	--	0.91	6.4
PAHs (total)	--	--	--	5.3	49

Table 4-4b
Summary of Results for Reach 5 Soil Samples

Sample ID	R5-113-W	R5-114-W	R5-115-W	R5-116-W	R5-127-H
Sample Date	11/18/09	11/18/09	11/18/09	11/18/09	11/18/09
Sample Depth Range (ft BGS)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Analyte					
Pesticides by MC PEST (mg/kg)					
ALDRIN	--	--	--	0.00044 U	0.0004 U
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	--	--	0.0007 U	0.0007 U
ALPHA-CHLORDANE	--	--	--	0.00035 U	0.04 J
ALPHA ENDOSULFAN	--	--	--	0.00041 U	0.0004 U
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	--	--	0.00092 U	0.0009 U
BETA ENDOSULFAN	--	--	--	0.0069 J	0.0024 U
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	--	--	0.00082 U	0.0008 U
DIELDRIN	--	--	--	0.011	0.0008 U
ENDOSULFAN SULFATE	--	--	--	0.00082 U	0.0008 U
ENDRIN	--	--	--	0.00082 U	0.0077 J
ENDRIN ALDEHYDE	--	--	--	0.0026 U	0.0025 U
ENDRIN KETONE	--	--	--	0.0032 U	0.0031 U
GAMMA BHC (LINDANE)	--	--	--	0.00066 U	0.0007 U
GAMMA-CHLORDANE	--	--	--	0.011 J	0.017 J
HEPTACHLOR	--	--	--	0.00084 U	0.0008 U
HEPTACHLOR EPOXIDE	--	--	--	0.00059 U	0.0006 U
METHOXYCHLOR	--	--	--	0.0026 U	0.0025 U
P,P'-DDD	--	--	--	0.0018	0.0076 J
P,P'-DDE	--	--	--	0.023 J	0.0081 U
P,P'-DDT	--	--	--	0.016 U	0.003 U
TOXAPHENE	--	--	--	0.13 U	0.13 U

Key:

BGS = Below ground surface.
ft = Feet.
J = Estimated at the concentration listed.
-H = Historical channel location/sample.
mg/Kg = Milligrams per kilogram.
PCB = Polychlorinated biphenyl.
SVOA = Semivoloatile organic compounds analysis.
U = Non-detect.
UJ = Non-detect/estimated.
-W = Wetland location/sample.
-- = Not submitted for this parameter.

Table 4-5a
Summary of Results for Reach 6 Sediment Samples

Sample ID	R6-051-C	R6-051-CR	R6-052-C	R6-053-C	R6-054-C	R6-055-C	R6-056-C	R6-056-CR
Sample Date	11/19/2009	11/19/2009	11/19/2009	11/19/2009	12/2/2009	11/17/2009	11/17/2009	11/17/2009
Sample Depth Range (ft BGS)	0-1.2	0-1.2	0-1.3	0-1.2	0-0.5	0-1.1	0-1.2	0-1.2
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	10400	8950	13400	11500	8250	10400	8070	6730
ANTIMONY	1.6 U	1.9 U	5 J	1.9 U	1.3 U	1.6 U	1.2 U	0.91 U
ARSENIC	4	3.9	10.7	4	3.6 J+	3.1 J+	3.2	1.9
BARIUM	129	115	308	159	105	132	98.1	78.7
BERYLLIUM	0.61 J+	0.56 J	0.77 J	0.65 J	0.53 J+	0.63 J+	0.46 J	0.45 J
CADMIUM	0.27 J-	1.2	7.1	0.45 J	0.19 J-	1.7	0.87	0.84
CALCIUM	7620	7830	10400	12900	11000	11100	4340	5050
CHROMIUM	78.8 J	64.8 J	539 J	96.7 J	81	109	58.3	50.6
COBALT	9.7 J	8.5 J	15.3	11.1 J	8.9	9.8	10.3	7.8
COPPER	156	153	2710	217	158	208	104	81.9
IRON	19600	17800	26000	22500	18200	20600	19500	16500
LEAD	207 J	193 J	3790 J	277 J	196	359	160	149
MAGNESIUM	4590	4030	6090	6220	4620	5770	4370	4100
MANGANESE	334	330	262	445	479 J	425	284	275
NICKEL	50.3 J	46 J	259 J	53.4 J	44.2	60.8	74	54.5
POTASSIUM	1130	23.3 U	27.2 U	1380	874	786 J	755 J+	392 J+
SELENIUM	1.7 J	2.2 J	3.4 J	1.4 J	2.3 J+	0.95 U	0.76 U	0.56 U
SILVER	0.17 UJ	0.22 UJ	6 J-	0.21 UJ	0.15 UJ	0.18 UJ	0.14 U	0.1 U
SODIUM	451 J	291 J-	663 J	334 J	349 J	4.1 UJ	3.3 UJ	2.4 UJ
THALLIUM	0.62 U	0.77 U	0.9 U	0.76 U	0.53 U	0.62 U	0.5 U	0.37 U
VANADIUM	20.9	19.5	38.5	22.8	17.7	22.3	16.9	14.7
ZINC	543 J	603 J	3640 J	715 J	642	882	772	627
Mercury by CV (mg/kg)								
MERCURY	0.51	0.61	3.4	0.5	0.25	0.89	0.97	0.57
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.019 U	0.021 U	0.023 U	0.021 U	0.02 U	0.02 U	0.013 U	2.3 J
PCB-1221 (AROCLOR 1221)	0.035 U	0.039 U	0.044 U	0.04 U	0.038 U	0.038 U	0.024 U	0.024 U
PCB-1232 (AROCLOR 1232)	0.013 U	0.014 U	0.016 U	0.015 U	0.014 U	0.014 U	0.009 U	0.0088 U
PCB-1242 (AROCLOR 1242)	0.0081 U	0.009 U	0.01 U	0.0093 U	0.0088 U	0.0088 U	0.0057 U	0.0056 U
PCB-1248 (AROCLOR 1248)	0.013 U	0.015 U	0.017 U	0.015 U	0.014 U	0.015 U	0.0094 U	0.0092 U
PCB-1254 (AROCLOR 1254)	0.47	0.47	1.3	0.72	0.47 J	0.32 J	1 J	1
PCB-1260 (AROCLOR 1260)	0.016 U	0.018 U	0.02 U	0.018 U	0.017 U	0.017 U	0.011 U	0.011 U
PCB-1262 (AROCHLOR 1262)	0.015 U	0.017 U	0.019 U	0.017 U	0.016 U	0.016 U	0.01 U	0.01 U
PCB-1268 (AROCLOR 1268)	0.021 U	0.023 U	0.026 U	0.024 U	0.023 U	0.023 U	0.015 U	0.014 U
PCBs (total)	0.47	0.47	1.3	0.72	0.47	0.32	1	3.3
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.04 J	0.096 J	0.16	0.043	--	2.1 J	--	--
ACENAPHTHENE	0.061	0.057	0.13	0.028	--	4.5	--	--

Key at the end of Table

Table 4-5a
Summary of Results for Reach 6 Sediment Samples

Sample ID	R6-051-C	R6-051-CR	R6-052-C	R6-053-C	R6-054-C	R6-055-C	R6-056-C	R6-056-CR
Sample Date	11/19/2009	11/19/2009	11/19/2009	11/19/2009	12/2/2009	11/17/2009	11/17/2009	11/17/2009
Sample Depth Range (ft BGS)	0-1.2	0-1.2	0-1.3	0-1.2	0-0.5	0-1.1	0-1.2	0-1.2
Analyte								
ACENAPHTHYLENE	0.023	0.038 J	0.29	0.032	--	0.09	--	--
ANTHRACENE	0.18	0.19	0.38	0.076	--	8.1	--	--
BENZO(A)ANTHRACENE	0.47	0.59	2.8	0.54	--	11	--	--
BENZO(A)PYRENE	0.5	0.57	2.2	0.44	--	7.6	--	--
BENZO(B)FLUORANTHENE	0.76	0.54	3	0.63	--	6.1	--	--
BENZO(K)FLUORANTHENE	0.39	0.53	0.89	0.31	--	5	--	--
CHRYSENE	0.56	0.66 J	3.4	0.51 J	--	11 J	--	--
DIBENZ(A,H)ANTHRACENE	0.25	0.084 J	0.2	0.054	--	1.9	--	--
FLUORANTHENE	0.76	0.87	5.7	0.66	--	16 J	--	--
FLUORENE	0.075	0.075	0.28	0.046	--	3.3	--	--
INDENO(1,2,3-C,D)PYRENE	0.49	0.56	0.85	0.46	--	5 J	--	--
NAPHTHALENE	0.04	0.076 J	0.16	0.042 J	--	1.4 J	--	--
PENTACHLOROPHENOL	0.012	0.011	0.35	0.015	--	0.028	--	--
PHENANTHRENE	0.49	0.48	0.88	0.39	--	21	--	--
PYRENE	1	1.2	6	0.87	--	22	--	--
PAHs (total)	6.2	6.6	27	5.2	--	130	--	--
Pesticides by MC PEST (mg/kg)								
ALDRIN	0.00065 U	0.00073 U	0.00082 U	0.00075 U	--	0.00071 U	--	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	0.001 U	0.0011 U	0.0013 U	0.0012 U	--	0.0011 U	--	--
ALPHA-CHLORDANE	0.00051 U	0.00057 U	0.00064 U	0.00059 U	--	0.00056 U	--	--
ALPHA ENDOSULFAN	0.0058 J	0.0075 J	0.019 J	0.0007 U	--	0.00066 U	--	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	0.019 J	0.0015 U	0.073 J	0.0016 U	--	0.012 J	--	--
BETA ENDOSULFAN	0.027 J	0.027 J	0.017 J	0.021 J	--	0.011 J	--	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	0.046 J	0.047 J	0.046 J	0.037 J	--	0.019 J	--	--
DIELDRIN	0.014 J	0.015 J	0.0015 U	0.0014 U	--	0.011	--	--
ENDOSULFAN SULFATE	0.0012 U	0.0013 U	0.039 J	0.015 J	--	0.0013 U	--	--
ENDRIN	0.0012 U	0.0013 U	0.038 J	0.0014 U	--	0.0013 U	--	--
ENDRIN ALDEHYDE	0.0038 U	0.0042 U	0.0047 U	0.0044 U	--	0.0041 U	--	--
ENDRIN KETONE	0.0047 U	0.0052 U	0.0058 U	0.0054 U	--	0.0051 U	--	--
GAMMA BHC (LINDANE)	0.032 J	0.035 J	0.0012 U	0.0011 U	--	0.0011 U	--	--
GAMMA-CHLORDANE	0.028	0.027	0.08 J	0.029 J	--	0.019 J	--	--
HEPTACHLOR	0.0012 U	0.0014 U	0.0016 U	0.0014 U	--	0.0014 U	--	--
HEPTACHLOR EPOXIDE	0.00086 U	0.00097 U	0.0011 U	0.001 U	--	0.00094 U	--	--
METHOXYCHLOR	0.0038 U	0.0042 U	0.0047 U	0.0043 U	--	0.0041 U	--	--
P,P'-DDD	0.0027 U	0.015	0.0033 J	0.0031 J	--	0.0029	--	--
P,P'-DDE	0.028	0.03 U	0.064 J	0.022 U	--	0.014 U	--	--
P,P'-DDT	0.0045 U	0.005 U	0.054 U	0.0052 U	--	0.0049 U	--	--
TOXAPHENE	0.19 U	0.21 U	0.24 U	0.22 U	--	0.21 U	--	--

Key at the end of Table

Table 4-5a
Summary of Results for Reach 6 Sediment Samples

Sample ID	R6-057-C	R6-058-C	R6-059-C	R6-060-C	R6-061-C	R6-062-C	R6-063-C	R6-064-C
Sample Date	11/17/2009	11/18/2009	11/18/2009	11/18/2009	11/18/2009	11/19/2009	11/19/2009	11/19/2009
Sample Depth Range (ft BGS)	0-1.4	0-2.2	0-1.3	0-0.8	0-4	0-3.7	0-1.1	0-1.4
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	11100	12100	9580	11900	14200	13100	11000	7850
ANTIMONY	1.8 U	2 U	1.4 U	2.2 U	1.7 U	3.8 J	2.1 U	1.3 U
ARSENIC	4.4	5	5.3	4.7	5.2	6.1	4.4	4
BARIUM	132	237	127	148	202	234	179	80.6
BERYLLIUM	0.63 J	0.77 J	0.61 J+	0.76 J	0.85 J+	0.79 J+	0.74 J	0.53 J+
CADMIUM	1.5	1.8	0.25 J-	0.34 J	0.77 J-	2 J-	1.5	0.083 UJ
CALCIUM	13600	13700	8750	12900	18700	17600	12000	8420
CHROMIUM	68.6	164 J	82.7 J	79.2 J	107 J	176 J	137 J	44.7 J
COBALT	10.5 J	12.2 J	9.2	11 J	12.8	13.3	13.6	9.1
COPPER	184	309	186	247	281	550	293	101
IRON	23100	23200	19300	23800	27700	26600	22600	19800
LEAD	250	452 J	261 J	250 J	337 J	720 J	393 J	129 J
MAGNESIUM	6390	6400	4670	6760	7920	7900	5940	4740
MANGANESE	702	278	452	476	516	340	382	346
NICKEL	41.8	65.5 J	43.5 J	43.2 J	58.9 J	94.3 J	98.7 J	29.7 J
POTASSIUM	878 J+	1430	1060	1470	1720	1570	1370	994
SELENIUM	1.1 U	3.2 J	1.9 J	2.4 J	2.1 J	3.4 J	3.1 J	1.2 J
SILVER	0.21 U	0.71 J-	0.16 UJ	0.25 UJ	0.19 UJ	0.67 J-	0.24 UJ	0.15 UJ
SODIUM	4.8 UJ	564 J	281 J	254 J-	728 J	320 J	326 J	204 J-
THALLIUM	0.74 U	0.81 U	0.55 U	0.89 U	0.69 U	0.79 U	0.84 U	0.53 U
VANADIUM	21.3	25.2	20.6	23.2	27.1	27.1	24.5	16
ZINC	546	929 J	554 J	599 J	834 J	1310 J	1040 J	290 J
Mercury by CV (mg/kg)								
MERCURY	0.49	2.8	0.43	0.52	0.88	1.4	0.65	0.23
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.011 U	0.025 U	0.017 U	0.023 U	0.02 U	0.022 U	0.022 U	0.015 U
PCB-1221 (AROCLOR 1221)	0.021 U	0.047 U	0.032 U	0.043 U	0.038 U	0.041 U	0.041 U	0.028 U
PCB-1232 (AROCLOR 1232)	0.0078 U	0.017 U	0.012 U	0.016 U	0.014 U	0.015 U	0.015 U	0.01 U
PCB-1242 (AROCLOR 1242)	0.0049 U	0.011 U	0.0075 U	0.0099 U	0.0088 U	0.0095 U	0.0094 U	0.0065 U
PCB-1248 (AROCLOR 1248)	0.0082 U	0.018 U	0.012 U	0.016 U	0.015 U	0.016 U	0.016 U	0.011 U
PCB-1254 (AROCLOR 1254)	0.0066 U	0.73 J	0.49 J	0.4 J	0.53	0.66	2 J	0.39
PCB-1260 (AROCLOR 1260)	0.0096 U	0.021 U	0.014 U	0.019 U	0.017 U	0.019 U	0.018 U	0.013 U
PCB-1262 (AROCHLOR 1262)	0.0091 U	0.02 U	0.014 U	0.018 U	0.016 U	0.018 U	0.017 U	0.012 U
PCB-1268 (AROCLOR 1268)	0.013 U	0.028 U	0.019 U	0.025 U	0.023 U	0.025 U	0.024 U	0.017 U
PCBs (total)	0.011 U	0.73	0.49	0.4	0.53	0.66	2	0.39
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	--	0.021	--	--	0.068 J	--	--	--
ACENAPHTHENE	--	0.027	--	--	0.046 J	--	--	--

Key at the end of Table

Table 4-5a
Summary of Results for Reach 6 Sediment Samples

Sample ID	R6-057-C	R6-058-C	R6-059-C	R6-060-C	R6-061-C	R6-062-C	R6-063-C	R6-064-C
Sample Date	11/17/2009	11/18/2009	11/18/2009	11/18/2009	11/18/2009	11/19/2009	11/19/2009	11/19/2009
Sample Depth Range (ft BGS)	0-1.4	0-2.2	0-1.3	0-0.8	0-4	0-3.7	0-1.1	0-1.4
Analyte								
ACENAPHTHYLENE	--	0.014 J	--	--	0.07	--	--	--
ANTHRACENE	--	0.17	--	--	0.16	--	--	--
BENZO(A)ANTHRACENE	--	0.76	--	--	0.85	--	--	--
BENZO(A)PYRENE	--	0.44	--	--	0.69	--	--	--
BENZO(B)FLUORANTHENE	--	0.46	--	--	0.7	--	--	--
BENZO(K)FLUORANTHENE	--	0.3	--	--	0.53	--	--	--
CHRYSENE	--	0.63 J	--	--	0.91 J	--	--	--
DIBENZ(A,H)ANTHRACENE	--	0.077	--	--	0.25	--	--	--
FLUORANTHENE	--	0.55	--	--	1.4 J	--	--	--
FLUORENE	--	0.032 J	--	--	0.077	--	--	--
INDENO(1,2,3-C,D)PYRENE	--	0.45	--	--	0.47 J	--	--	--
NAPHTHALENE	--	0.027	--	--	0.059	--	--	--
PENTACHLOROPHENOL	--	--	--	--	--	--	--	--
PHENANTHRENE	--	0.42	--	--	0.5	--	--	--
PYRENE	--	0.72	--	--	1.3	--	--	--
PAHs (total)	--	5.1	--	--	8.2	--	--	--
Pesticides by MC PEST (mg/kg)								
ALDRIN	--	0.00087 U	--	--	0.00071 U	--	--	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	0.0014 U	--	--	0.0011 U	--	--	--
ALPHA-CHLORDANE	--	0.00068 U	--	--	0.00056 U	--	--	--
ALPHA ENDOSULFAN	--	0.00081 U	--	--	0.0071 J	--	--	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	0.0018 U	--	--	0.0015 U	--	--	--
BETA ENDOSULFAN	--	0.018 J	--	--	0.016 J	--	--	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	0.037 J	--	--	0.019 J	--	--	--
DIELDRIN	--	0.022 J	--	--	0.0013 U	--	--	--
ENDOSULFAN SULFATE	--	0.0016 U	--	--	0.0013 U	--	--	--
ENDRIN	--	0.0016 U	--	--	0.0013 U	--	--	--
ENDRIN ALDEHYDE	--	0.005 U	--	--	0.0041 U	--	--	--
ENDRIN KETONE	--	0.0062 U	--	--	0.0051 U	--	--	--
GAMMA BHC (LINDANE)	--	0.015	--	--	0.0059 J	--	--	--
GAMMA-CHLORDANE	--	0.038 J	--	--	0.025 J	--	--	--
HEPTACHLOR	--	0.0017 U	--	--	0.0014 U	--	--	--
HEPTACHLOR EPOXIDE	--	0.0012 U	--	--	0.00095 U	--	--	--
METHOXYCHLOR	--	0.005 U	--	--	0.0041 U	--	--	--
P,P'-DDD	--	0.02 J	--	--	0.0029 U	--	--	--
P,P'-DDE	--	0.051 J	--	--	0.0018 U	--	--	--
P,P'-DDT	--	0.019 U	--	--	0.0049 U	--	--	--
TOXAPHENE	--	0.25 U	--	--	0.21 U	--	--	--

Key at the end of Table

Table 4-5a
Summary of Results for Reach 6 Sediment Samples

Sample ID	R6-065-C	R6-066-C	R6-067-C	R6-144-C-Z1a	R6-144-C-Comp	R6-145-C-Z1a	R6-145-C-Comp	R6-146-C-Z1a
Sample Date	11/19/2009	11/25/2009	11/25/2009	7/2/2010	7/2/2010	7/2/2010	7/2/2010	7/2/2010
Sample Depth Range (ft BGS)	0-2.4	0-1.9	0-2.1	0-0.5	0-1.3	0-0.5	0-0.7	0-0.5
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	7500	12500	11200	16600 J	17900 J	13000 J	11000 J	14600 J
ANTIMONY	1.9 U	1.6 U	1.9 U	1.3 UJ	1.1 UJ	1 UJ	0.85 UJ	1 UR
ARSENIC	3.3	4.9 J+	4.8	5.6 J	8.2 J	5 J	4.1 J	9.8 J
BARIUM	122	168	150	174 J	232 J	136 J	113 J	316 J
BERYLLIUM	0.52 J	0.65 J+	0.66 J	0.64 J	0.6 J	0.49 J	0.47 J	0.38 J
CADMIUM	0.3 J	1.8 J-	1.6	0.068 UJ	7.9 J	0.053 UJ	0.043 UJ	9.5 J
CALCIUM	11000	13400	11700	16700 J	20400 J	14600 J	10300 J	11400 J
CHROMIUM	61.9 J	99	86.6	81.2 J	796 J	50 J	49.2 J	679 J
COBALT	8.8 J	10.8	10.3 J	0.15 UJ	16.1 J	0.11 UJ	0.093 UJ	19.3 J
COPPER	126	238	216	170 J	827 J	103 J	98 J	1530 J
IRON	18300	22400	20600	23500 J	24000 J	19600 J	17000 J	21600 J
LEAD	170 J	299 J+	235 J+	246 J	1620 J	164 J	153 J	3310 J
MAGNESIUM	4280	6840	6040	7340 J	7190 J	5800 J	4840 J	5710 J
MANGANESE	281	363	276	593 J	458 J	515 J	424 J	298 J
NICKEL	36.4 J	52.2	46.3	49.9 J	204 J	35.3 J	34.7 J	283 J
POTASSIUM	23.6 U	1580	1520	2460 J	2290 J	1950 J	1610 J	1590 J
SELENIUM	2.4 J	1.7 J	2.2 J	1.7 J	2.4 J	1.5 J	1.2 J	1.6 J
SILVER	0.22 UJ	0.18 UJ	0.21 U	1.4 UJ	1.2 J	1.1 U	3.6 J	3.6 J
SODIUM	422 J	372 J	370 J	9.9 UJ	7.8 UJ	7.7 UJ	6.3 UJ	7.7 UJ
THALLIUM	0.78 U	0.65 U	0.75 U	1 UJ	0.81 U	0.8 U	0.65 U	0.8 U
VANADIUM	16.2	24.6	22.3	26 J	60.7 J	21.2 J	17.7 J	47.9 J
ZINC	431 J	703	643	642 J	4570 J	434 J	387 J	6800 J
Mercury by CV (mg/kg)								
MERCURY	0.4	0.53	1.6	0.67 J	0.95 J	0.62 J	0.5 J	1.6 J
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.019 U	0.019 U	0.019 U	0.097 U	0.033 U	0.033 U	0.033 U	0.087 U
PCB-1221 (AROCLOR 1221)	0.035 U	0.036 U	0.035 U	0.097 U	0.033 U	0.033 U	0.033 U	0.087 U
PCB-1232 (AROCLOR 1232)	0.013 U	0.013 U	0.013 U	0.097 U	0.033 U	0.033 U	0.033 U	0.087 U
PCB-1242 (AROCLOR 1242)	0.0081 U	0.0083 U	0.0081 U	0.097 U	0.033 U	0.033 U	0.033 U	0.087 U
PCB-1248 (AROCLOR 1248)	0.013 U	0.014 U	0.013 U	0.097 U	0.05 NJ	0.033 U	0.033 U	0.32 NJ
PCB-1254 (AROCLOR 1254)	1 J	4.5	0.87	0.097 U	0.03 J	0.03 J	0.033 U	0.24 J
PCB-1260 (AROCLOR 1260)	0.016 U	0.016 U	0.016 U	0.097 U	0.033 U	0.019 J	0.033 U	0.086 J
PCB-1262 (AROCHLOR 1262)	0.015 U	0.015 U	0.015 U	0.097 U	0.033 U	0.033 U	0.033 U	0.087 U
PCB-1268 (AROCLOR 1268)	0.021 U	0.021 U	0.021 U	0.097 U	0.033 U	0.033 U	0.033 U	0.087 U
PCBs (total)	1	4.5	0.87	0.097 U	0.08 J	0.049 J	0.033 U	0.65 J
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	--	--	--	0.049 J	0.063	0.006 U	0.005	0.047
ACENAPHTHENE	--	--	--	0.0091	0.027	0.006	0.0085	0.052 J

Key at the end of Table

Table 4-5a
Summary of Results for Reach 6 Sediment Samples

Sample ID	R6-065-C	R6-066-C	R6-067-C	R6-144-C-Z1a	R6-144-C-Comp	R6-145-C-Z1a	R6-145-C-Comp	R6-146-C-Z1a
Sample Date	11/19/2009	11/25/2009	11/25/2009	7/2/2010	7/2/2010	7/2/2010	7/2/2010	7/2/2010
Sample Depth Range (ft BGS)	0-2.4	0-1.9	0-2.1	0-0.5	0-1.3	0-0.5	0-0.7	0-0.5
Analyte								
ACENAPHTHYLENE	--	--	--	0.022	0.037	0.017	0.019	0.079
ANTHRACENE	--	--	--	0.043	0.037	0.025 J	0.024	0.18
BENZO(A)ANTHRACENE	--	--	--	0.12	0.25 J	0.14 J	0.12 J	0.7
BENZO(A)PYRENE	--	--	--	0.081 J	0.19	0.06 J	0.036	0.18
BENZO(B)FLUORANTHENE	--	--	--	0.11	0.29	0.1	0.058	0.15
BENZO(K)FLUORANTHENE	--	--	--	0.053	0.11	0.053 J	0.034	0.15
CHRYSENE	--	--	--	0.21	0.4	0.21	0.16 J	1.1
DIBENZ(A,H)ANTHRACENE	--	--	--	0.026	0.022	0.0099 J	0.0056	0.072
FLUORANTHENE	--	--	--	0.37	0.49	0.14	0.24	0.95
FLUORENE	--	--	--	0.013	0.054	0.0073	0.012	0.068
INDENO(1,2,3-C,D)PYRENE	--	--	--	0.059 U	0.035	0.02 U	0.011 U	0.096
NAPHTHALENE	--	--	--	0.009	0.011	0.006	0.005	0.027
PENTACHLOROPHENOL	--	--	--	--	--	--	--	--
PHENANTHRENE	--	--	--	0.12	0.34	0.14 J	0.095	0.32
PYRENE	--	--	--	0.22 J	0.34 J	0.27 J	0.2 J	1.2 J
PAHs (total)	--	--	--	1.5	2.7	1.2	1	5.5
Pesticides by MC PEST (mg/kg)								
ALDRIN	--	--	--	--	--	--	--	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
ALPHA-CHLORDANE	--	--	--	--	--	--	--	--
ALPHA ENDOSULFAN	--	--	--	--	--	--	--	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
BETA ENDOSULFAN	--	--	--	--	--	--	--	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--
GAMMA BHC (LINDANE)	--	--	--	--	--	--	--	--
GAMMA-CHLORDANE	--	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--	--
P,P'-DDD	--	--	--	--	--	--	--	--
P,P'-DDE	--	--	--	--	--	--	--	--
P,P'-DDT	--	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--	--

Key at the end of Table

Table 4-5a
Summary of Results for Reach 6 Sediment Samples

Sample ID	R6-146-C-Comp	R6-147-C-Z1a	R6-147-C-Comp	R6-148-C-Comp	R6-148-CR	R6-149-C-Comp	R6-150-C-Comp
Sample Date	7/2/2010	7/1/2010	7/1/2010	7/1/2010	7/1/2010	7/1/2010	7/1/2010
Sample Depth Range (ft BGS)	0-1.1	0-0.5	0-0.8	0-0.9	0-0.9	0-0.9	0-0.9
Analyte							
Metals by C200.7 (mg/kg)							
ALUMINUM	12900 J	14400 J	13100 J	10500	10300	8700	12800 J
ANTIMONY	0.86 UR	0.96 UJ	0.91 UJ	0.73 UJ	0.73 UJ	0.71 UJ	0.88 UJ
ARSENIC	9.3 J	4.7 J	5 J	4.3 J	3.6 J	2.9 J	4.5 J
BARIUM	277 J	159 J	163 J	103	101	94.4	150 J
BERYLLIUM	0.21 J	0.53 J	0.44 J	0.4 J	0.36 J	0.33 J	0.44 J
CADMIUM	7.8 J	1.3 J	3.3 J	1.8 J	1.6 J	0.037 UJ	0.045 UJ
CALCIUM	9400 J	15000 J	12100 J	27700 J	12400 J	10300	9280 J
CHROMIUM	450 J	71 J	128 J	60.6	57.1	48.5	69.2 J
COBALT	15.2 J	0.11 UJ	14.5 J	0.081 UJ	0.08 UJ	0.079 UJ	0.098 UJ
COPPER	1530 J	147 J	313 J	134	125	97.8	126 J
IRON	20300 J	20100 J	20300 J	16800	16100	14000	19000 J
LEAD	2780 J	208 J	371 J	199	187	141	211 J
MAGNESIUM	5560 J	6900 J	6030 J	4870	4470	4250	5340 J
MANGANESE	233 J	684 J	321 J	638	395	312	586 J
NICKEL	218 J	44.4 J	121 J	44.4	42.4	41.7	41.6 J
POTASSIUM	1520 J	1960 J	1800 J	1410	1390	1260	1870 J
SELENIUM	1.4 J	1.6 J	1.5 J	1.1 J	0.88 J	0.94 J	1.2 J
SILVER	4.1 J	1 U	0.96 U	0.77 U	0.76 U	0.75 U	0.93 U
SODIUM	6.4 UJ	7.1 UJ	6.8 UJ	5.4 UJ	5.4 UJ	5.3 UJ	6.6 UJ
THALLIUM	0.67 U	0.74 U	0.7 U	0.56 U	0.56 U	0.55 U	0.68 U
VANADIUM	37.2 J	23.3 J	26.2 J	19.3 J	18.7 J	14.9 J	21.2 J
ZINC	4100 J	546 J	1180 J	580	539	425	525 J
Mercury by CV (mg/kg)							
MERCURY	2.3 J	0.52 J	0.52 J	0.67 J	0.24 J	0.29	0.39 J
PCBS by MC ARO (mg/kg)							
PCB-1016 (AROCLOR 1016)	0.033 U	0.076 U	0.075 U	0.061 U	0.061 U	0.06 U	0.075 U
PCB-1221 (AROCLOR 1221)	0.033 U	0.076 U	0.075 U	0.061 U	0.061 U	0.06 U	0.075 U
PCB-1232 (AROCLOR 1232)	0.033 U	0.076 U	0.075 U	0.061 U	0.061 U	0.06 U	0.075 U
PCB-1242 (AROCLOR 1242)	0.033 U	0.076 U	0.075 U	0.061 U	0.061 U	0.06 U	0.075 U
PCB-1248 (AROCLOR 1248)	0.033 U	0.12 NJ	0.4 NJ	0.061 U	0.084 J	0.089 NJ	0.075 U
PCB-1254 (AROCLOR 1254)	0.033 U	0.11 J	0.18 NJ	0.061 U	0.056 J	0.063	0.06 J
PCB-1260 (AROCLOR 1260)	0.033 U	0.059 J	0.064 J	0.061 U	0.061 U	0.06 U	0.075 U
PCB-1262 (AROCHLOR 1262)	0.033 U	0.076 U	0.075 U	0.061 U	0.061 U	0.06 U	0.075 U
PCB-1268 (AROCLOR 1268)	0.033 U	0.076 U	0.075 U	0.061 U	0.061 U	0.06 U	0.075 U
PCBs (total)	0.033 U	0.29 J	0.64 J	0.061 U	0.14 J	0.15 NJ	0.06 J
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)							
2-METHYLNAPHTHALENE	0.02	0.077	0.013	0.006	0.0055	0.007	0.075
ACENAPHTHENE	0.026 J	0.019	0.012	0.0087	0.0064	0.015	0.013

Key at the end of Table

Table 4-5a
Summary of Results for Reach 6 Sediment Samples

Sample ID	R6-146-C-Comp	R6-147-C-Z1a	R6-147-C-Comp	R6-148-C-Comp	R6-148-CR	R6-149-C-Comp	R6-150-C-Comp
Sample Date	7/2/2010	7/1/2010	7/1/2010	7/1/2010	7/1/2010	7/1/2010	7/1/2010
Sample Depth Range (ft BGS)	0-1.1	0-0.5	0-0.8	0-0.9	0-0.9	0-0.9	0-0.9
Analyte							
ACENAPHTHYLENE	0.13	0.035	0.039	0.016	0.016	0.023	0.026
ANTHRACENE	0.044	0.063	0.053	0.028	0.023	0.11	0.048
BENZO(A)ANTHRACENE	0.21 J	0.3 J	0.55 J	0.14 J	0.12 J	0.18	0.2 J
BENZO(A)PYRENE	0.13	0.23 J	0.3	0.12 J	0.11 J	0.061	0.18 J
BENZO(B)FLUORANTHENE	0.3	0.38	0.37	0.18	0.21	0.081	0.37
BENZO(K)FLUORANTHENE	0.11	0.24	0.29	0.11	0.12	0.061	0.16
CHRYSENE	0.34	0.4	0.66	0.19	0.17	0.27	0.29
DIBENZ(A,H)ANTHRACENE	0.021 J	0.026	0.018 J	0.016 J	0.01	0.026	0.02
FLUORANTHENE	0.58	0.47	0.24	0.2	0.27	0.43	0.47
FLUORENE	0.022	0.027	0.022	0.014	0.012	0.017	0.019
INDENO(1,2,3-C,D)PYRENE	0.036 J	0.053	0.039	0.027	0.022	0.043	0.039
NAPHTHALENE	0.013	0.012	0.014	0.0067	0.0065	0.0079	0.0093
PENTACHLOROPHENOL	-- J	--	--	--	--	--	--
PHENANTHRENE	0.14	0.31	0.46 J	0.14	0.11	0.19	0.19
PYRENE	0.37 J	0.49 J	0.21 J	0.24 J	0.18 J	0.3 J	0.34 J
PAHs (total)	2.5	3.1	3.3	1.5	1.4	1.9	2.4
Pesticides by MC PEST (mg/kg)							
ALDRIN	--	--	--	--	--	--	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--
ALPHA-CHLORDANE	--	--	--	--	--	--	--
ALPHA ENDOSULFAN	--	--	--	--	--	--	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--
BETA ENDOSULFAN	--	--	--	--	--	--	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--
GAMMA BHC (LINDANE)	--	--	--	--	--	--	--
GAMMA-CHLORDANE	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--
P,P'-DDD	--	--	--	--	--	--	--
P,P'-DDE	--	--	--	--	--	--	--
P,P'-DDT	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--

Key at the end of Table

Table 4-5a
Summary of Results for Reach 6 Sediment Samples

Sample ID	R6-151-C-Comp	R6-152-C-Comp	R6-152-CR	R6-153-C-Comp	R6-154-C-Z1a	R6-154-C-Comp	R6-155-C-Comp
Sample Date	7/2/2010	7/2/2010	7/2/2010	7/2/2010	7/1/2010	7/1/2010	7/1/2010
Sample Depth Range (ft BGS)	0-0.7	0-0.7	0-0.7	0-0.5	0-0.5	0-1.1	0-0.7
Analyte							
Metals by C200.7 (mg/kg)							
ALUMINUM	12700 J	9680 J	10000 J	10400 J	12100 J	10400 J	12700 J
ANTIMONY	1.1 UR	0.96 UR	1 UR	1 UJ	0.91 UJ	0.91 UJ	1.2 UJ
ARSENIC	4.2 J	3.9 J	3.6 J	3.8 J	4.5 J	4.2 J	5.2 J
BARIUM	147 J	142 J	142 J	123 J	127 J	126 J	144 J
BERYLLIUM	0.36 J	0.24 J	0.27 J	0.3 J	0.093 U	0.093 U	0.13 U
CADMIUM	0.054 UJ	1.4 J	0.052 UJ	0.052 UJ	1.4 J	0.047 UJ	0.063 UJ
CALCIUM	11700 J	9620 J	9700 J	10400 J	14500 J	10300 J	12600 J
CHROMIUM	61.1 J	65.2 J	65.5 J	54.3 J	72.1 J	58 J	65.2 J
COBALT	0.12 UJ	0.11 UJ	0.11 UJ	0.11 UJ	12 J	0.1 UJ	0.13 UJ
COPPER	147 J	135 J	142 J	111 J	146 J	117 J	142 J
IRON	19800 J	16700 J	16500 J	16800 J	20600 J	17500 J	20600 J
LEAD	189 J	188 J	189 J	162 J	233 J	179 J	212 J
MAGNESIUM	5970 J	4800 J	4900 J	4940 J	5640 J	4790 J	5580 J
MANGANESE	404 J	309 J	332 J	610 J	398 J	577 J	749 J
NICKEL	35.8 J	38.8 J	37.7 J	31.8 J	61.5 J	37.6 J	39.7 J
POTASSIUM	1740 J	1360 J	1420 J	1510 J	1710 J	1450 J	1870 J
SELENIUM	1.5 J	1.2 J	0.97 J	0.88 U	0.79 UJ	0.79 UJ	1.1 UJ
SILVER	1.1 U	1 U	1.1 U	1.1 U	0.96 U	0.96 U	1.3 U
SODIUM	7.9 UJ	7.1 UJ	7.6 UJ	7.5 UJ	210 J	191 J	247 J
THALLIUM	0.81 U	0.74 U	0.78 U	0.78 U	0.7 U	0.7 U	0.94 U
VANADIUM	21 J	16.7 J	18.1 J	17 J	19.6 J	17.5 J	20.8 J
ZINC	469 J	519 J	495 J	388 J	650 J	439 J	483 J
Mercury by CV (mg/kg)							
MERCURY	0.5 J	0.54 J	0.49 J	0.43 J	0.7 J	0.43 J	0.64 J
PCBS by MC ARO (mg/kg)							
PCB-1016 (AROCLOR 1016)	0.085 U	0.033 U	0.033 U	0.088 U	0.075 U	0.094 U	0.089 U
PCB-1221 (AROCLOR 1221)	0.085 U	0.033 U	0.033 U	0.088 U	0.075 U	0.094 U	0.089 U
PCB-1232 (AROCLOR 1232)	0.085 U	0.033 U	0.033 U	0.088 U	0.075 U	0.094 U	0.089 U
PCB-1242 (AROCLOR 1242)	0.085 U	0.033 U	0.033 U	0.088 U	0.075 U	0.094 U	0.089 U
PCB-1248 (AROCLOR 1248)	0.085 U	0.033 U	0.045 NJ	0.23 J	0.075 U	0.094 U	0.38 J
PCB-1254 (AROCLOR 1254)	0.085 U	0.033 U	0.034 J	0.19	0.049 J	0.094 U	0.3 NJ
PCB-1260 (AROCLOR 1260)	0.085 U	0.02 J	0.014 J	0.07 J	0.021 J	0.023 J	0.093 NJ
PCB-1262 (AROCHLOR 1262)	0.085 U	0.033 U	0.033 U	0.088 U	0.075 U	0.094 U	0.089 U
PCB-1268 (AROCLOR 1268)	0.085 U	0.033 U	0.033 U	0.088 U	0.075 U	0.094 U	0.089 U
PCBs (total)	0.085 U	0.02 J	0.093 J	0.49 J	0.07 J	0.023 J	0.77 J
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)							
2-METHYLNAPHTHALENE	0.0087 J	0.006	0.0057	0.019	0.0085	0.009	0.011
ACENAPHTHENE	0.013 J	0.0087	0.013	0.033 J	0.014	0.015	0.022

Key at the end of Table

Table 4-5a
Summary of Results for Reach 6 Sediment Samples

Sample ID	R6-151-C-Comp	R6-152-C-Comp	R6-152-CR	R6-153-C-Comp	R6-154-C-Z1a	R6-154-C-Comp	R6-155-C-Comp
Sample Date	7/2/2010	7/2/2010	7/2/2010	7/2/2010	7/1/2010	7/1/2010	7/1/2010
Sample Depth Range (ft BGS)	0-0.7	0-0.7	0-0.7	0-0.5	0-0.5	0-1.1	0-0.7
Analyte							
ACENAPHTHYLENE	0.038 J	0.023	0.017	0.1	0.037	0.043	0.042
ANTHRACENE	0.049	0.046	0.053 J	0.11	0.057	0.05	0.088
BENZO(A)ANTHRACENE	0.2 J	0.17 J	0.15 J	0.38	0.22	0.14 J	0.33 J
BENZO(A)PYRENE	0.055 J	0.062	0.11	0.13	0.077	0.14 J	0.22 J
BENZO(B)FLUORANTHENE	0.059 J	0.085	0.12	0.2	0.1	0.19	0.27 J
BENZO(K)FLUORANTHENE	0.064	0.063	0.099	0.13	0.081	0.16	0.2
CHRYSENE	0.3	0.23	0.25	0.5	0.29	0.2	0.46
DIBENZ(A,H)ANTHRACENE	0.028	0.0096 J	0.017	0.038	0.047	0.018 J	0.019
FLUORANTHENE	0.42 J	0.45	0.43	0.58	0.3	0.31	0.81
FLUORENE	0.025	0.012	0.018	0.048	0.015 J	0.024	0.032
INDENO(1,2,3-C,D)PYRENE	0.059 J	0.017 U	0.034 U	0.076	0.08	0.043 J	0.035
NAPHTHALENE	0.0086	0.006	0.006	0.013	0.0089	0.0088	0.011
PENTACHLOROPHENOL	--	-- J	--	--	--	--	--
PHENANTHRENE	0.17	0.16	0.18	0.33	0.18	0.2	0.39
PYRENE	0.4 J	0.26 J	0.31 J	0.73 J	0.35 J	0.24 J	0.58 J
PAHs (total)	2	1.6	1.8	3.5	1.9	1.8	3.5
Pesticides by MC PEST (mg/kg)							
ALDRIN	--	--	--	--	--	--	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--
ALPHA-CHLORDANE	--	--	--	--	--	--	--
ALPHA ENDOSULFAN	--	--	--	--	--	--	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--
BETA ENDOSULFAN	--	--	--	--	--	--	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--
GAMMA BHC (LINDANE)	--	--	--	--	--	--	--
GAMMA-CHLORDANE	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--
P,P'-DDD	--	--	--	--	--	--	--
P,P'-DDE	--	--	--	--	--	--	--
P,P'-DDT	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--

Key at the end of Table

Table 4-5a
Summary of Results for Reach 6 Sediment Samples

Sample ID	R6-156-C-Comp	R6-157-C-Z1a	R6-157-C-Comp	R6-158-C-Z1a	R6-158-CR	R6-158-C-Comp	R6-159-C-Z1a
Sample Date	7/1/2010	7/1/2010	7/1/2010	7/1/2010	7/1/2010	7/1/2010	7/1/2010
Sample Depth Range (ft BGS)	0-0.7	0-0.5	0-1.2	0-0.5	0-0.5	0-1.4	0-0.5
Analyte							
Metals by C200.7 (mg/kg)							
ALUMINUM	8140 J	8020	12700 J	6090	5980	10900 J	10700 J
ANTIMONY	0.91 UJ	0.74 UJ	0.84 UJ	0.59 UJ	0.63 UJ	0.8 UJ	0.86 UJ
ARSENIC	3.8 J	3.6	5.5 J	3.3	3.2	4.2 J	6.6 J
BARIUM	103 J	138	171 J	101	82.7	143 J	131 J
BERYLLIUM	0.094 U	0.076 U	0.086 U	0.06 U	0.065 U	0.082 U	0.34 J
CADMIUM	0.047 UJ	0.038 UJ	2 J	0.03 UJ	0.032 UJ	1.1 J	0.044 UJ
CALCIUM	7680 J	6770	12200 J	5450	4800	8560 J	11100 J
CHROMIUM	45.6 J	47.9	125 J	27.3	26.5	53.8 J	44.3 J
COBALT	0.1 UJ	0.081 UJ	11.7 J	0.065 UJ	0.07 UJ	0.088 UJ	0.095 UJ
COPPER	83.6 J	88.8	253 J	50.4	52.4	127 J	95.5 J
IRON	15400 J	14300	20800 J	11800	11700	18300 J	16100 J
LEAD	152 J	137	464 J	116	93.9	181 J	152 J
MAGNESIUM	3560 J	3660	5780 J	2550	2600	4720 J	4840 J
MANGANESE	415 J	430	347 J	439	428	357 J	600 J
NICKEL	29.3 J	27.5	59 J	19.5	18	34.5 J	28.7 J
POTASSIUM	12.4 U	1110	1700 J	814 J	8.6 UJ	1450 J	1460 J
SELENIUM	1.4 J	1.5 J	2 J	0.8 J	0.92 J	1.5 J	1.4 J
SILVER	0.96 U	0.78 U	1.1 J	0.62 U	0.66 U	0.84 U	0.91 U
SODIUM	185 J	143 J	130 J	106 J	107 J	145 J	6.4 UJ
THALLIUM	0.7 U	0.57 U	0.65 U	0.45 U	0.49 U	0.62 U	0.66 U
VANADIUM	15 J	14	21.8 J	11	11	17.9 J	17.2 J
ZINC	383 J	315	825 J	202	191	430 J	335 J
Mercury by CV (mg/kg)							
MERCURY	0.41 J	0.41	0.68 J	0.46	0.27	0.6 J	0.34 J
PCBS by MC ARO (mg/kg)							
PCB-1016 (AROCLOR 1016)	0.064 U	0.057 U	0.073 U	0.053 U	0.055 U	0.066 U	0.07 U
PCB-1221 (AROCLOR 1221)	0.064 U	0.057 U	0.073 U	0.053 U	0.055 U	0.066 U	0.07 U
PCB-1232 (AROCLOR 1232)	0.064 U	0.057 U	0.073 U	0.053 U	0.055 U	0.066 U	0.07 U
PCB-1242 (AROCLOR 1242)	0.064 U	0.057 U	0.073 U	0.053 U	0.055 U	0.066 U	0.07 U
PCB-1248 (AROCLOR 1248)	0.064 U	0.24 NJ	0.52 NJ	0.053 U	0.055 U	0.19 NJ	0.07 U
PCB-1254 (AROCLOR 1254)	0.044 J	0.18 NJ	0.5	0.053 U	0.055 U	0.15	0.07 U
PCB-1260 (AROCLOR 1260)	0.03 J	0.061 NJ	0.17 J	0.053 U	0.055 U	0.048 J	0.02 J
PCB-1262 (AROCHLOR 1262)	0.064 U	0.057 U	0.073 U	0.053 U	0.055 U	0.066 U	0.07 U
PCB-1268 (AROCLOR 1268)	0.064 U	0.057 U	0.073 U	0.053 U	0.055 U	0.066 U	0.07 U
PCBs (total)	0.074 J	0.48 NJ	1.2 J	0.053 U	0.055 U	0.39 J	0.02 J
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)							
2-METHYLNAPHTHALENE	0.019	0.0057	0.0077	0.0066 J	0.005 J	0.012	0.011
ACENAPHTHENE	0.063	0.01	0.012	0.018	0.0055	0.016	0.018

Key at the end of Table

Table 4-5a
Summary of Results for Reach 6 Sediment Samples

Sample ID	R6-156-C-Comp	R6-157-C-Z1a	R6-157-C-Comp	R6-158-C-Z1a	R6-158-CR	R6-158-C-Comp	R6-159-C-Z1a
Sample Date	7/1/2010	7/1/2010	7/1/2010	7/1/2010	7/1/2010	7/1/2010	7/1/2010
Sample Depth Range (ft BGS)	0-0.7	0-0.5	0-1.2	0-0.5	0-0.5	0-1.4	0-0.5
Analyte							
ACENAPHTHYLENE	0.05	0.022	0.033	0.02 J	0.012 J	0.031	0.033
ANTHRACENE	0.24	0.051	0.06	0.15 J	0.064 J	0.061	0.061
BENZO(A)ANTHRACENE	0.28	0.17 J	0.17 J	0.19	0.083	0.2 J	0.22 J
BENZO(A)PYRENE	0.12	0.095 J	0.16 J	0.069	0.037	0.16 J	0.19 J
BENZO(B)FLUORANTHENE	0.077	0.13	0.1	0.07	0.034	0.2	0.16
BENZO(K)FLUORANTHENE	0.12	0.09	0.085	0.053 J	0.042 J	0.11	0.13
CHRYSENE	0.4	0.22	0.22	0.29	0.12	0.27	0.3
DIBENZ(A,H)ANTHRACENE	0.062	0.014	0.022	0.031	0.015	0.014	0.021
FLUORANTHENE	0.7	0.35	0.38	0.43 J	0.21 J	0.51	0.55
FLUORENE	0.064	0.017	0.028	0.022	0.0078	0.023	0.025
INDENO(1,2,3-C,D)PYRENE	0.078	0.028	0.039	0.045	0.026 U	0.035	0.043
NAPHTHALENE	0.034	0.0063	0.0076	0.0056	0.005	0.0094	0.0098
PENTACHLOROPHENOL	--	--	--	-- J	-- J	--	--
PHENANTHRENE	0.43	0.17	0.15	0.24 J	0.083 J	0.23	0.25
PYRENE	0.4 J	0.28 J	0.24 J	0.28 J	0.13 J	0.34 J	0.36 J
PAHs (total)	3.2	1.7	1.7	2	0.9	2.2	2.4
Pesticides by MC PEST (mg/kg)							
ALDRIN	--	--	--	--	--	--	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--
ALPHA-CHLORDANE	--	--	--	--	--	--	--
ALPHA ENDOSULFAN	--	--	--	--	--	--	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--
BETA ENDOSULFAN	--	--	--	--	--	--	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--
GAMMA BHC (LINDANE)	--	--	--	--	--	--	--
GAMMA-CHLORDANE	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--
P,P'-DDD	--	--	--	--	--	--	--
P,P'-DDE	--	--	--	--	--	--	--
P,P'-DDT	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--

Key at the end of Table

Table 4-5a
Summary of Results for Reach 6 Sediment Samples

Sample ID	R6-159-C-Comp	R6-160-C-Z1a	R6-160-C-Comp	R6-161-C-Z1a	R6-161-C-Z1	R6-162-C-Comp	R6-163-C-Z1a	R6-163-C-Z1
Sample Date	7/1/2010	7/1/2010	7/1/2010	7/1/2010	7/1/2010	6/30/2010	6/30/2010	6/30/2010
Sample Depth Range (ft BGS)	0-1.3	0-0.5	0-1.7	0-0.5	0.5-1.5	0-0.8	0-0.5	0.5-1.4
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	10500 J	17600 J	18200 J	12900 J	12500 J	10400 J	6020	10700
ANTIMONY	0.81 UJ	1.2 UJ	1 UJ	0.94 UJ	1.1 UJ	0.84 UJ	0.56 UJ	0.69 UJ
ARSENIC	5.8 J	11.1 J	13.3 J	5.7 J	6.4 J	4.7 J	12.8 J	6.5 J
BARIUM	125 J	259 J	271 J	136 J	210 J	118 J	45.2	211
BERYLLIUM	0.084 U	0.53 J	0.53 J	0.51 J	0.46 J	0.38 J	0.16 J	0.38 J
CADMIUM	1.1 J	14.3 J	14.2 J	0.048 UJ	6.3 J	0.043 UJ	0.029 UJ	1.2 J
CALCIUM	10200 J	15300 J	15400 J	10200 J	11000 J	9480 J	2250	9140
CHROMIUM	59.3 J	1380 J	1220 J	59.8 J	325 J	53.3 J	12.5	60.3
COBALT	0.09 UJ	17.2 J	18.4 J	0.1 UJ	14.2 J	0.092 UJ	0.062 UJ	9.4
COPPER	131 J	1530 J	1950 J	115 J	593 J	134 J	27.7	149
IRON	17900 J	22900 J	25400 J	18400 J	18900 J	16800 J	9260	17500
LEAD	212 J	3240 J	4380 J	166 J	1550 J	169 J	76.2	201
MAGNESIUM	4670 J	6900 J	7060 J	4820 J	5080 J	4960 J	1860	4790
MANGANESE	424 J	408 J	278 J	568 J	300 J	349 J	240	387
NICKEL	37.1 J	281 J	302 J	33.2 J	149 J	32.2 J	11	37.3
POTASSIUM	1430 J	2110 J	2110 J	1620 J	1680 J	1380 J	7.7 UJ	1290
SELENIUM	1.5 J	3.2 J	3 J	1.4 J	2.7 J	1.2 J	0.63 J	1.4 J
SILVER	0.86 U	2.3 J	3.5 J	0.99 U	1.1 U	0.88 U	0.59 U	0.73 U
SODIUM	132 J	8.7 UJ	7.7 UJ	7 UJ	8 UJ	209 J	77.7 J	135 J
THALLIUM	0.63 U	0.9 U	0.8 U	0.72 U	0.83 U	0.64 U	0.43 U	0.53 U
VANADIUM	18.1 J	66.6 J	63.5 J	20.2 J	31.5 J	18.1 J	11	19.2
ZINC	462 J	8800 J	9760 J	391 J	3880 J	408 J	81.5	516
Mercury by CV (mg/kg)								
MERCURY	0.47 J	1.4 J	2.1 J	0.33 J	1.1 J	0.46 J	0.15	0.44
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.067 U	0.1 U	0.091 U	0.05 U	0.095 U	0.066 U	0.046 U	0.054 U
PCB-1221 (AROCLOR 1221)	0.067 U	0.1 U	0.091 U	0.05 U	0.095 U	0.066 U	0.046 U	0.054 U
PCB-1232 (AROCLOR 1232)	0.067 U	0.1 U	0.091 U	0.05 U	0.095 U	0.066 U	0.046 U	0.054 U
PCB-1242 (AROCLOR 1242)	0.067 U	0.1 U	0.091 U	0.05 U	0.095 U	0.066 U	0.046 U	0.054 U
PCB-1248 (AROCLOR 1248)	0.18 NJ	0.1 U	0.78 NJ	0.05 U	0.095 U	0.066 U	0.046 U	0.054 U
PCB-1254 (AROCLOR 1254)	0.16 NJ	0.1 U	0.49	0.03 J	16 J	0.066 U	0.046 U	0.054 U
PCB-1260 (AROCLOR 1260)	0.067 J	0.1 U	0.14 J	0.05 U	0.095 U	0.066 U	0.046 U	0.054 U
PCB-1262 (AROCHLOR 1262)	0.067 U	0.1 U	0.091 U	0.05 U	0.095 U	0.066 U	0.046 U	0.054 U
PCB-1268 (AROCLOR 1268)	0.067 U	0.1 U	0.091 U	0.05 U	0.095 U	0.066 U	0.046 U	0.054 U
PCBs (total)	0.41 J	0.1 U	1.4 J	0.03 J	16 J	0.066 U	0.046 U	0.054 U
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.0058	0.058	0.065	0.047	0.017	0.0057	0.0049	0.0047
ACENAPHTHENE	0.024	0.05	0.13	0.11	0.044	0.014	0.007	0.0073

Key at the end of Table

Table 4-5a
Summary of Results for Reach 6 Sediment Samples

Sample ID	R6-159-C-Comp	R6-160-C-Z1a	R6-160-C-Comp	R6-161-C-Z1a	R6-161-C-Z1	R6-162-C-Comp	R6-163-C-Z1a	R6-163-C-Z1
Sample Date	**7/1/2010**	**7/1/2010**	**7/1/2010**	**7/1/2010**	**7/1/2010**	**6/30/2010**	**6/30/2010**	**6/30/2010**
Sample Depth Range (ft BGS)	**0-1.3**	**0-0.5**	**0-1.7**	**0-0.5**	**0.5-1.5**	**0-0.8**	**0-0.5**	**0.5-1.4**
Analyte								
ACENAPHTHYLENE	0.028	0.088	0.18	0.081	0.049	0.024	0.019	0.021
ANTHRACENE	0.19	0.073	0.35	0.32	0.038	0.047	0.025	0.029
BENZO(A)ANTHRACENE	0.31 J	0.65	0.78	0.36	0.36 J	0.21 J	0.057	0.13 J
BENZO(A)PYRENE	0.2 J	0.64 J	0.63 J	0.16	0.29	0.095 J	0.024	0.084 J
BENZO(B)FLUORANTHENE	0.16	0.37	0.4	0.15	0.23	0.14	0.025	0.13
BENZO(K)FLUORANTHENE	0.15	0.29	0.4	0.17	0.18	0.094	0.027	0.084
CHRYSENE	0.39	1	0.99	0.54	0.47 J	0.26	0.078	0.16
DIBENZ(A,H)ANTHRACENE	0.02	0.07	0.048	0.072	0.019	0.017 J	0.01	0.0088 J
FLUORANTHENE	0.38	0.61	0.94	1	0.63	0.22	0.16	0.16
FLUORENE	0.033	0.18	0.2	0.19	0.031 J	0.019	0.0075	0.009
INDENO(1,2,3-C,D)PYRENE	0.047	0.095 J	0.12	0.1	0.035 J	0.027 J	0.017	0.017 J
NAPHTHALENE	0.0074	0.024	0.029	0.051	0.014	0.0055	0.0049	0.005
PENTACHLOROPHENOL	--	-- J	--	--	--	--	--	--
PHENANTHRENE	0.4	0.36	0.72	0.78	0.078	0.2	0.064	0.1
PYRENE	0.49 J	0.86 J	1.1 J	0.57 J	0.56 J	0.31 J	0.075 J	0.21 J
PAHs (total)	2.9	5.6	7.2	4.8	3.1	1.7	0.62	1.2
Pesticides by MC PEST (mg/kg)								
ALDRIN	--	--	--	--	--	--	--	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
ALPHA-CHLORDANE	--	--	--	--	--	--	--	--
ALPHA ENDOSULFAN	--	--	--	--	--	--	--	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
BETA ENDOSULFAN	--	--	--	--	--	--	--	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--
GAMMA BHC (LINDANE)	--	--	--	--	--	--	--	--
GAMMA-CHLORDANE	--	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--	--
P,P'-DDD	--	--	--	--	--	--	--	--
P,P'-DDE	--	--	--	--	--	--	--	--
P,P'-DDT	--	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--	--

Key at the end of Table

Table 4-5a
Summary of Results for Reach 6 Sediment Samples

Sample ID	R6-164-C-Z1a	R6-164-C-Comp	R6-165-C-Z1a	R6-165-C-Comp	R6-166-C-Z1a	R6-166-C-Comp	R6-167-C-Z1a	R6-167-C-Comp
Sample Date	6/30/2010	6/30/2010	6/30/2010	6/30/2010	6/30/2010	6/30/2010	6/30/2010	6/30/2010
Sample Depth Range (ft BGS)	0-0.5	0-1.4	0-0.5	0-1.6	0-0.5	0-2.1	0-0.5	0-1.3
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	8160	12200 J	14100 J	13500 J	12500 J	13600 J	14600 J	11900 J
ANTIMONY	0.74 UJ	0.78 UJ	1.5 UJ	1.1 UJ	1.1 UJ	0.95 UJ	1.2 UJ	1.1 UJ
ARSENIC	3.1	7.8 J	4.5 J	4.8 J	4.5 J	5.4 J	5.3 J	3.6 J
BARIUM	79.8	196 J	176 J	226 J	170 J	179 J	158 J	161 J
BERYLLIUM	0.076 U	0.08 U	0.16 UJ	0.11 U	0.11 U	0.098 U	0.12 U	0.11 U
CADMIUM	0.038 UJ	2.2 J	0.079 UJ	2 J	1.5 J	2.8 J	1.6 J	0.056 UJ
CALCIUM	4820	9430 J	15900 J	13000 J	12300 J	13900 J	16000 J	11400 J
CHROMIUM	29.2	121 J	61.3 J	95.4 J	78.1 J	127 J	77.5 J	64.8 J
COBALT	0.082 UJ	10.5 J	0.17 UJ	0.12 UJ	0.12 UJ	12.8 J	0.13 UJ	0.12 UJ
COPPER	61.8	288 J	152 J	238 J	195 J	295 J	210 J	146 J
IRON	12500	20100 J	23000 J	21500 J	20600 J	21600 J	23900 J	19200 J
LEAD	83.9	326 J	218 J	350 J	252 J	422 J	273 J	203 J
MAGNESIUM	2850	5450 J	6470 J	6180 J	6040 J	6440 J	7260 J	5400 J
MANGANESE	244	271 J	729 J	359 J	436 J	363 J	639 J	323 J
NICKEL	19.2	49.2 J	39.4 J	55.7 J	44.9 J	71 J	47.9 J	42 J
POTASSIUM	982	1620 J	2120 J	1920 J	1800 J	1800 J	2070 J	1750 J
SELENIUM	0.65 UJ	0.68 UJ	1.3 UJ	0.96 UJ	0.97 UJ	0.83 UJ	1 UJ	0.95 UJ
SILVER	0.78 U	1.1 J	1.6 UJ	1.2 U	1.2 U	1.4 J	1.2 U	1.1 U
SODIUM	122 J	118 J	301 J	255 J	248 J	223 J	251 J	146 J
THALLIUM	0.57 U	0.6 U	1.2 UJ	0.85 U	0.85 U	0.73 U	0.91 U	0.84 U
VANADIUM	13.9	21.2 J	22 J	23.2 J	20.2 J	23.8 J	23.3 J	20.8 J
ZINC	199	1050 J	507 J	888 J	575 J	929 J	624 J	498 J
Mercury by CV (mg/kg)								
MERCURY	0.25	1.3 J	0.46 J	0.68 J	1.5 J	0.88 J	0.72 J	0.36 J
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.057 U	0.07 U	0.094 U	0.085 U	0.087 U	0.084 U	0.083 U	0.089 U
PCB-1221 (AROCLOR 1221)	0.057 U	0.07 U	0.094 U	0.085 U	0.087 U	0.084 U	0.083 U	0.089 U
PCB-1232 (AROCLOR 1232)	0.057 U	0.07 U	0.094 U	0.085 U	0.087 U	0.084 U	0.083 U	0.089 U
PCB-1242 (AROCLOR 1242)	0.057 U	0.07 U	0.094 U	0.085 U	0.087 U	0.084 U	0.083 U	0.089 U
PCB-1248 (AROCLOR 1248)	0.057 U	0.07 U	0.15 NJ	0.11 J	0.087 U	0.084 U	0.083 U	0.089 U
PCB-1254 (AROCLOR 1254)	0.057 U	0.07 U	0.13	0.098	0.087 U	0.084 U	0.083 U	0.089 U
PCB-1260 (AROCLOR 1260)	0.057 U	0.07 U	0.051 J	0.027 J	0.05 J	0.018 J	0.026 J	0.089 U
PCB-1262 (AROCHLOR 1262)	0.057 U	0.07 U	0.094 U	0.085 U	0.087 U	0.084 U	0.083 U	0.089 U
PCB-1268 (AROCLOR 1268)	0.057 U	0.07 U	0.094 U	0.085 U	0.087 U	0.084 U	0.083 U	0.089 U
PCBs (total)	0.057 U	0.07 U	0.33 J	0.24 J	0.05 J	0.018 J	0.026 J	0.089 U
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.028	0.024	0.009	0.013	0.02	0.013	0.0087	0.008
ACENAPHTHENE	0.0073	0.059 J	0.014	0.026	0.041	0.035	0.016	0.012

Table 4-5a
Summary of Results for Reach 6 Sediment Samples

Sample ID	R6-164-C-Z1a	R6-164-C-Comp	R6-165-C-Z1a	R6-165-C-Comp	R6-166-C-Z1a	R6-166-C-Comp	R6-167-C-Z1a	R6-167-C-Comp
Sample Date	6/30/2010	6/30/2010	6/30/2010	6/30/2010	6/30/2010	6/30/2010	6/30/2010	6/30/2010
Sample Depth Range (ft BGS)	0-0.5	0-1.4	0-0.5	0-1.6	0-0.5	0-2.1	0-0.5	0-1.3
Analyte								
ACENAPHTHYLENE	0.011	0.22	0.033	0.063	0.051	0.07	0.035	0.036
ANTHRACENE	0.02 J	0.2	0.067	0.084	0.22	0.14	0.061 J	0.04
BENZO(A)ANTHRACENE	0.036 J	0.41	0.21 J	0.4 J	0.45 J	0.41 J	0.32 J	0.17 J
BENZO(A)PYRENE	0.047 J	0.41 J	0.089	0.26 J	0.35 J	0.35 J	0.34 J	0.15 J
BENZO(B)FLUORANTHENE	0.034	0.4	0.12	0.37 J	0.43	0.19	0.32 J	0.23
BENZO(K)FLUORANTHENE	0.027 J	0.26	0.099	0.24	0.22	0.21	0.26	0.14
CHRYSENE	0.051	0.67	0.33	0.53	0.6	0.48	0.43	0.25
DIBENZ(A,H)ANTHRACENE	0.0074 J	0.046	0.062	0.028	0.038	0.053	0.16	0.025 J
FLUORANTHENE	0.099	0.79	0.54	0.81	0.55	0.61	0.49	0.27
FLUORENE	0.0072	0.056	0.017 J	0.038	0.061 U	0.042	0.021	0.021
INDENO(1,2,3-C,D)PYRENE	0.015 J	0.077 J	0.094	0.05	0.086	0.076	0.34	0.047 J
NAPHTHALENE	0.0047	0.021	0.011	0.012	0.035	0.012	0.009	0.0085
PENTACHLOROPHENOL	--	--	--	--	--	--	--	-- J
PHENANTHRENE	0.05 J	0.33	0.18	0.33	0.48	0.27	0.3	0.16
PYRENE	0.061 J	0.76 J	0.32 J	0.66 J	0.53 J	0.54 J	0.46 J	0.31 J
PAHs (total)	0.49	4.8	2.3	4	4.1	3.6	3.9	1.9
Pesticides by MC PEST (mg/kg)								
ALDRIN	--	--	--	--	--	--	--	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
ALPHA-CHLORDANE	--	--	--	--	--	--	--	--
ALPHA ENDOSULFAN	--	--	--	--	--	--	--	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
BETA ENDOSULFAN	--	--	--	--	--	--	--	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--
GAMMA BHC (LINDANE)	--	--	--	--	--	--	--	--
GAMMA-CHLORDANE	--	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--	--
P,P'-DDD	--	--	--	--	--	--	--	--
P,P'-DDE	--	--	--	--	--	--	--	--
P,P'-DDT	--	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--			

Key at the end of Table

Table 4-5a
Summary of Results for Reach 6 Sediment Samples

Sample ID	R6-168-C-Z1a	R6-168-C-Comp	R6-169-C-Z1a	R6-169-C-Comp	R6-170-C-Z1a	R6-170-C-Comp	R6-171-C-Z1a	R6-171-C-Comp
Sample Date	6/30/2010	6/30/2010	6/28/2010	6/28/2010	6/25/2010	6/25/2010	6/25/2010	6/25/2010
Sample Depth Range (ft BGS)	0-0.5	0-1.3	0-0.5	0-1.4	0-0.5	0-1.5	0-0.5	0-1.2
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	13400 J	8990	13700 J	13700 J	13700 J	15400 J	10600 J	13900 J
ANTIMONY	1.1 UJ	0.75 UJ	0.98 UJ	0.92 UJ	0.94 UJ	1 UJ	0.98 UJ	0.86 UJ
ARSENIC	4.7 J	3.7	4.6 J	8 J	5.7 J	6.5 J	3.9 J	7.7 J
BARIUM	146 J	113	189 J	220 J	164 J	197 J	121 J	202 J
BERYLLIUM	0.11 U	0.077 U	0.1 UJ	0.095 UJ	0.096 UJ	0.1 UJ	0.1 UJ	0.088 UJ
CADMIUM	0.056 UJ	2.4 J	1.7 J	5.7 J	2.5 J	3.2 J	0.051 UJ	6.3 J
CALCIUM	14600 J	7750	10500 J	11600 J	10300 J	12200 J	11300 J	11200 J
CHROMIUM	66.3 J	132	86.1 J	391 J	151 J	286 J	59.6 J	444 J
COBALT	0.12 UJ	10.2	10.9 J	14 J	13.4 J	13.6 J	9.1 J	15.5 J
COPPER	207 J	185	206 J	1360 J	260 J	662 J	160 J	661 J
IRON	21600 J	14800	21300 J	21600 J	21600 J	23400 J	16900 J	22200 J
LEAD	251 J	297	280 J	2360 J	407 J	1240 J	178 J	1260 J
MAGNESIUM	6550 J	3450	6600 J	6310 J	6260 J	6960 J	5850 J	6280 J
MANGANESE	454 J	257	436 J	260 J	450 J	365 J	277 J	314 J
NICKEL	43.1 J	92.2	53 J	176 J	82.8 J	117 J	38.7 J	187 J
POTASSIUM	1990 J	1080	1790 J	1710 J	1790 J	1980 J	1550 J	1610 J
SELENIUM	0.95 UJ	0.65 UJ	0.89 J	1.5 J	1.3 J	1.5 J	0.86 U	1.3 J
SILVER	1.1 U	0.79 J	1 U	4.5 J	1.4 J	1.8 J	1 U	2.1 J
SODIUM	237 J	143 J	7.2 UJ	6.9 UJ	7 UJ	7.4 UJ	7.3 UJ	6.4 UJ
THALLIUM	0.84 U	0.58 U	0.75 U	0.71 U	0.72 U	0.77 U	0.76 U	0.66 U
VANADIUM	21.5 J	23.2	22.8 J	34.5 J	28.4 J	34.7 J	17.4 J	40.4 J
ZINC	572 J	735	685 J	2590 J	1080 J	1680 J	446 J	3760 J
Mercury by CV (mg/kg)								
MERCURY	0.44 J	0.37	0.67 J	2.1 J	0.64 J	1.2 J	0.63 J	1.1 J
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.094 U	0.064 U	0.082 U	0.075 U	0.08 U	0.087 U	0.094 U	0.072 U
PCB-1221 (AROCLOR 1221)	0.094 U	0.064 U	0.082 U	0.075 U	0.08 U	0.087 U	0.094 U	0.072 U
PCB-1232 (AROCLOR 1232)	0.094 U	0.064 U	0.082 U	0.075 U	0.08 U	0.087 U	0.094 U	0.072 U
PCB-1242 (AROCLOR 1242)	0.094 U	0.064 U	0.082 U	0.075 U	0.08 U	0.087 U	0.094 U	0.072 U
PCB-1248 (AROCLOR 1248)	0.19 NJ	0.064 U	0.14 J	0.15 J	0.34 J	0.14 NJ	0.88 J	0.37 J
PCB-1254 (AROCLOR 1254)	0.17	0.064 U	0.16 J	0.1	0.25 J	0.1 J	0.49 J	0.27 J
PCB-1260 (AROCLOR 1260)	0.063 J	0.064 U	0.044 J	0.075 U	0.08 U	0.087 U	0.17 NJ	0.09 NJ
PCB-1262 (AROCHLOR 1262)	0.094 U	0.064 U	0.082 U	0.075 U	0.08 U	0.087 U	0.094 U	0.072 U
PCB-1268 (AROCLOR 1268)	0.094 U	0.064 U	0.082 U	0.075 U	0.08 U	0.087 U	0.094 U	0.072 U
PCBs (total)	0.42 J	0.064 U	0.34 J	0.25 J	0.59 J	0.24 J	1.5 J	0.73 J
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.009	0.0067	0.02	0.038	0.0075	0.037	0.012	0.035
ACENAPHTHENE	0.017	0.012	0.034 J	0.054	0.012	0.064	0.028	0.058

Key at the end of Table

Table 4-5a
Summary of Results for Reach 6 Sediment Samples

Sample ID	R6-168-C-Z1a	R6-168-C-Comp	R6-169-C-Z1a	R6-169-C-Comp	R6-170-C-Z1a	R6-170-C-Comp	R6-171-C-Z1a	R6-171-C-Comp
Sample Date	6/30/2010	6/30/2010	6/28/2010	6/28/2010	6/25/2010	6/25/2010	6/25/2010	6/25/2010
Sample Depth Range (ft BGS)	0-0.5	0-1.3	0-0.5	0-1.4	0-0.5	0-1.5	0-0.5	0-1.2
Analyte								
ACENAPHTHYLENE	0.038	0.039	0.081	0.14	0.019	0.084	0.029	0.088
ANTHRACENE	0.047	0.033	0.18	0.18	0.053	0.2	0.092 J	0.16
BENZO(A)ANTHRACENE	0.2 J	0.15 J	0.55	0.56	0.77	0.55	1.2	0.7
BENZO(A)PYRENE	0.089	0.12 J	0.5	0.41	0.51	0.45	0.55	0.55
BENZO(B)FLUORANTHENE	0.14	0.2	0.58	0.75	0.54	0.56	0.3	0.6
BENZO(K)FLUORANTHENE	0.1	0.11	0.39	0.28 J	0.54	0.25	0.53	0.3
CHRYSENE	0.34	0.21	0.68 J	0.56 U	0.47	0.67 J	1.3	0.81
DIBENZ(A,H)ANTHRACENE	0.054	0.014 J	0.076	0.075 J	0.038	0.075	0.062	0.085
FLUORANTHENE	0.73	0.23	0.68	0.86	0.5	0.81	0.77	0.82
FLUORENE	0.019 J	0.023	0.04	0.11	0.022	0.072	0.038	0.096
INDENO(1,2,3-C,D)PYRENE	0.11	0.034	0.11	0.1	0.066 J	0.11	0.21	0.12
NAPHTHALENE	0.011	0.0081	0.022	0.027	0.0079	0.025	0.011	0.027
PENTACHLOROPHENOL	--	--	--	--	--	--	--	--
PHENANTHRENE	0.23	0.15	0.46	0.43 J	0.28	0.62	0.43	0.32
PYRENE	0.32 J	0.24 J	0.83 J	0.74 J	0.47 J	0.79 J	0.74 J	0.85
PAHs (total)	2.6	1.6	5.3	5.3	4.5	5.5	6.5	5.7
Pesticides by MC PEST (mg/kg)								
ALDRIN	--	--	--	--	--	--	--	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
ALPHA-CHLORDANE	--	--	--	--	--	--	--	--
ALPHA ENDOSULFAN	--	--	--	--	--	--	--	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
BETA ENDOSULFAN	--	--	--	--	--	--	--	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--
GAMMA BHC (LINDANE)	--	--	--	--	--	--	--	--
GAMMA-CHLORDANE	--	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--	--
P,P'-DDD	--	--	--	--	--	--	--	--
P,P'-DDE	--	--	--	--	--	--	--	--
P,P'-DDT	--	--	--	--	--	--	--	--
TOXAPHENE								

Key at the end of Table

Table 4-5a
Summary of Results for Reach 6 Sediment Samples

Key:

BGS =	Below ground surface (in this case below top of sediment surface).
-C =	Hand-core creek location/sample.
-Comp =	Hand-core creek composite sample.
-CR=	Hand-core creek duplicate sample.
ft =	Feet.
J =	Estimated at the concentration listed.
mg/Kg =	Milligrams per kilogram.
NJ =	Estimated.
PCB =	Polychlorinated biphenyl.
SVOA =	Semivoloatile organic compounds analysis.
-T =	Tributary location/sample.
U =	Non-detect.
UJ =	Non-detect/estimated.
-Z =	Sample depth interval consecutively numbered.
-- =	Not submitted for this parameter.

Table 4-5b
Summary of Results for Reach 6 Soil Samples

Sample ID	R6-117-W	R6-128-H	R6-129-H
Sample Date	12/2/2009	12/2/2009	12/2/2009
Sample Depth Range (ft BGS)	0-0.5	0-0.5	0-0.5
Analyte			
Metals by C200.7 (mg/kg)			
ALUMINUM	9190	9270	11500
ANTIMONY	1.4 J	1.2 U	1.3 J
ARSENIC	6.8	5.3 J+	12
BARIUM	190	128	284
BERYLLIUM	0.71 J+	0.62 J+	0.77 J+
CADMIUM	0.059 UJ	0.94 J-	0.077 UJ
CALCIUM	3850	5920	4850
CHROMIUM	72	199	95.3
COBALT	10.6	12.3	10.7
COPPER	186	301	210
IRON	20700	20000	23300
LEAD	299	433	359
MAGNESIUM	3820	4070	3990
MANGANESE	567 J	594 J	512 J
NICKEL	41.7	106	37.8
POTASSIUM	832	14 U	883
SELENIUM	2.6 J+	2.6 J+	2.5 J+
SILVER	0.11 UJ	0.13 UJ	0.14 UJ
SODIUM	193 J	256 J	222 J
THALLIUM	0.38 U	0.46 U	0.49 U
VANADIUM	20.7	28.4	24.2
ZINC	543	1280	557
Mercury by CV (mg/kg)			
MERCURY	2.5	0.64	1.9
PCBS by MC ARO (mg/kg)			
PCB-1016 (AROCLOR 1016)	0.011 U	0.012 U	0.012 U
PCB-1221 (AROCLOR 1221)	0.02 U	0.023 U	0.022 U
PCB-1232 (AROCLOR 1232)	0.0072 U	0.0085 U	0.0081 U
PCB-1242 (AROCLOR 1242)	0.0046 U	0.0054 U	0.0051 U
PCB-1248 (AROCLOR 1248)	0.0076 U	0.0089 U	0.0085 U
PCB-1254 (AROCLOR 1254)	0.072 J	0.48	0.0068 U
PCB-1260 (AROCLOR 1260)	0.0089 U	0.01 U	0.01 U
PCB-1262 (AROCHLOR 1262)	0.0085 U	0.01 U	0.0095 U
PCB-1268 (AROCLOR 1268)	0.012 U	0.014 U	0.013 U
PCBs (total)	0.072	0.48	0.011 U
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)			
2-METHYLNAPHTHALENE	--	0.024	--
ACENAPHTHENE	--	0.014	--
ACENAPHTHYLENE	--	0.016	--
ANTHRACENE	--	0.035	--
BENZO(A)ANTHRACENE	--	0.37	--
BENZO(A)PYRENE	--	0.35	--
BENZO(B)FLUORANTHENE	--	0.34	--
BENZO(K)FLUORANTHENE	--	0.32	--
CHRYSENE	--	0.42 J	--
DIBENZ(A,H)ANTHRACENE	--	0.095	--
FLUORANTHENE	--	0.55	--
FLUORENE	--	0.017	--

Table 4-5b
Summary of Results for Reach 6 Soil Samples

Sample ID	R6-117-W	R6-128-H	R6-129-H
Sample Date	12/2/2009	12/2/2009	12/2/2009
Sample Depth Range (ft BGS)	0-0.5	0-0.5	0-0.5
Analyte			
INDENO(1,2,3-C,D)PYRENE	--	0.29	--
NAPHTHALENE	--	0.026 J	--
PENTACHLOROPHENOL	--	0.013	--
PHENANTHRENE	--	0.22	--
PYRENE	--	0.64	--
PAHs (total)	--	4	--
Pesticides by MC PEST (mg/kg)			
ALDRIN	--	0.00044 U	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	0.00069 U	--
ALPHA-CHLORDANE	--	0.00034 U	--
ALPHA ENDOSULFAN	--	0.0045 J	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	0.0009 U	--
BETA ENDOSULFAN	--	0.022 J	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	0.0059 J	--
DIELDRIN	--	0.015 J	--
ENDOSULFAN SULFATE	--	0.00081 U	--
ENDRIN	--	0.00081 U	--
ENDRIN ALDEHYDE	--	0.0066	--
ENDRIN KETONE	--	0.0031 U	--
GAMMA BHC (LINDANE)	--	0.00065 U	--
GAMMA-CHLORDANE	--	0.031	--
HEPTACHLOR	--	0.0041 J	--
HEPTACHLOR EPOXIDE	--	0.00058 U	--
METHOXYCHLOR	--	0.0025 U	--
P,P'-DDD	--	0.0018	--
P,P'-DDE	--	0.027 J	--
P,P'-DDT	--	0.0094 U	--
TOXAPHENE	--	0.13 U	--

Key:

BGS = Below ground surface.
ft = Feet.
J = Estimated at the concentration listed.
-H = Historical channel location/sample.
mg/Kg = Milligrams per kilogram.
PCB = Polychlorinated biphenyl.
SVOA = Semivoloatile organic compounds analysis.
U = Non-detect.
UJ = Non-detect/estimated.
-W = Wetland location/sample.
-- = Not submitted for this parameter.

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-068-C	R7-068-CR	R7-069-C	R7-070-C	R7-071-C	R7-072-C	R7-073-C	R7-074-C
Sample Date	11/25/2009	11/25/2009	11/25/2009	11/25/2009	11/25/2009	11/24/2009	11/24/2009	11/24/2009
Sample Depth Range (ft BGS)	0-2.1	0-2.1	0-2.4	0-2.4	0-1.5	0-0.8	0-2.4	0-2.3
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	16000	13600	13800	10900	12100	9050	10200	9270
ANTIMONY	1.9 U	1.9 U	2 U	1.7 U	4.5 J	4.5 J	1.7 U	2.4 J
ARSENIC	11.9 J+	11.3 J+	7 J+	4.3 J+	4.5 J+	5.7 J+	5.3	6.4
BARIUM	261	205	195	156	180	258	223	207
BERYLLIUM	0.78 J+	0.74 J+	0.78 J+	0.61 J+	0.68 J+	0.58 J+	0.57 J	0.56 J+
CADMIUM	8.3 J-	7.8 J-	4.7	2.5	2.3 J-	3.1	2.6	1.6
CALCIUM	11100	10600	13900	11900	15000	7780	12800	10200
CHROMIUM	703	638	349	109	147	191	186	100
COBALT	19.1	17.9	12.9	10.6 J	11.4 J	9.9	11.3	9.2
COPPER	1000	985	652	257	338	599	471	301
IRON	24400	22800	23800	21200	22800	19900	19000	19200
LEAD	1770 J+	1650 J+	1250 J+	358 J+	399 J+	790 J+	528 J+	382 J+
MAGNESIUM	6210	5760	6750	5760	6950	4620	5980	5440
MANGANESE	269	252	329	311	426	264	240	286
NICKEL	264	245	121	67.7	70.7	97.5	106	61.7
POTASSIUM	1660	1450	1640	1350	1600	996	1150	1040
SELENIUM	2.8 J	2.7 J	1.2 U	1 U	1.1 U	0.72 U	1 U	0.74 U
SILVER	2.7 J-	1.9 J-	1.2 J-	0.49 J-	0.21 UJ	1.6 J-	0.89 J	0.14 UJ
SODIUM	563 J	562 J	480 J	353 J	393 J	282 J	319 J	326 J
THALLIUM	0.75 U	0.75 U	0.79 U	0.68 U	0.75 U	0.47 U	0.66 U	0.48 U
VANADIUM	59.1	53.4	40.8	22.4	24.4	19.4	22.6	19.3
ZINC	5980	5280	2820	960	977	1220	1370	769
Mercury by CV (mg/kg)								
MERCURY	1.1	1.6	1.2	0.45	0.68	1.7	2.3	0.88
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.022 U	0.19 U	0.02 U	0.021 U	0.023 U	0.016 U	0.019 U	0.015 U
PCB-1221 (AROCLOR 1221)	0.041 U	0.35 U	0.038 U	0.039 U	0.044 U	0.03 U	0.036 U	0.029 U
PCB-1232 (AROCLOR 1232)	0.015 U	0.13 U	0.014 U	0.014 U	0.016 U	0.011 U	0.013 U	0.011 U
PCB-1242 (AROCLOR 1242)	0.0095 U	0.082 U	0.0089 U	0.009 U	0.01 U	0.0071 U	0.0083 U	0.0067 U
PCB-1248 (AROCLOR 1248)	0.016 U	0.13 U	0.015 U	0.015 U	0.017 U	0.012 U	0.014 U	0.011 U
PCB-1254 (AROCLOR 1254)	3.6 J	11 J	1.9	0.46	4.2	3.9	4.4	4.3 J
PCB-1260 (AROCLOR 1260)	0.018 U	0.16 U	0.017 U	0.017 U	0.02 U	0.014 U	0.016 U	0.013 U
PCB-1262 (AROCHLOR 1262)	0.018 U	0.15 U	0.016 U	0.017 U	0.019 U	0.013 U	0.015 U	0.012 U
PCB-1268 (AROCLOR 1268)	0.024 U	0.21 U	0.023 U	0.023 U	0.026 U	0.018 U	0.021 U	0.017 U
PCBs (total)	3.6	11	1.9	0.46	4.2	3.9	4.4	4.3
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.18	0.099	--	--	--	--	0.53	--
ACENAPHTHENE	0.21	0.14	--	--	--	--	5.7 J	--
ACENAPHTHYLENE	0.18	0.11	--	--	--	--	4.8	--

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-068-C	R7-068-CR	R7-069-C	R7-070-C	R7-071-C	R7-072-C	R7-073-C	R7-074-C
Sample Date	11/25/2009	11/25/2009	11/25/2009	11/25/2009	11/25/2009	11/24/2009	11/24/2009	11/24/2009
Sample Depth Range (ft BGS)	0-2.1	0-2.1	0-2.4	0-2.4	0-1.5	0-0.8	0-2.4	0-2.3
Analyte								
ANTHRACENE	0.18 J	0.11 J	--	--	--	--	14	--
BENZO(A)ANTHRACENE	2.9 J	1.2 J	--	--	--	--	40	--
BENZO(A)PYRENE	1.8 J	0.73 J	--	--	--	--	22	--
BENZO(B)FLUORANTHENE	1.5 J	0.64	--	--	--	--	25	--
BENZO(K)FLUORANTHENE	1 J	0.67 J	--	--	--	--	16	--
CHRYSENE	2.9 J	1.3 J	--	--	--	--	28	--
DIBENZ(A,H)ANTHRACENE	0.28 J	0.6	--	--	--	--	16	--
FLUORANTHENE	3 --	0.76	--	--	--	--	72 J	--
FLUORENE	0.4	0.22	--	--	--	--	5.2 J	--
INDENO(1,2,3-C,D)PYRENE	0.8	0.78	--	--	--	--	33	--
NAPHTHALENE	0.17	0.13 U	--	--	--	--	1.1 J	--
PENTACHLOROPHENOL	0.1 J	0.12 J	--	--	--	--	0.15	--
PHENANTHRENE	0.58 J	0.34 J	--	--	--	--	37	--
PYRENE	4.2 --	1.9	--	--	--	--	54	--
PAHs (total)	20	10	--	--	--	--	380	--
Pesticides by MC PEST (mg/kg)								
ALDRIN	0.00077 U	0.00066 U	--	--	--	--	0.00066 U	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	0.0012 U	0.001 U	--	--	--	--	0.001 U	--
ALPHA-CHLORDANE	0.0006 U	0.00052 U	--	--	--	--	0.00052 U	--
ALPHA ENDOSULFAN	0.00071 U	0.00061 U	--	--	--	--	0.036 J	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	0.0016 U	0.0014 U	--	--	--	--	0.0014 U	--
BETA ENDOSULFAN	0.0041 U	0.0035 U	--	--	--	--	0.094 J	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	0.0014 U	0.0012 U	--	--	--	--	0.33 J	--
DIELDRIN	0.0014 U	0.0012 U	--	--	--	--	0.078	--
ENDOSULFAN SULFATE	0.0014 U	0.0012 U	--	--	--	--	0.054 J	--
ENDRIN	0.0014 U	0.0012 U	--	--	--	--	0.0012 U	--
ENDRIN ALDEHYDE	0.0044 U	0.0038 U	--	--	--	--	0.0038 U	--
ENDRIN KETONE	0.0055 U	0.0047 U	--	--	--	--	0.0047 U	--
GAMMA BHC (LINDANE)	0.0011 U	0.00098 U	--	--	--	--	0.11 J	--
GAMMA-CHLORDANE	0.0009 U	0.00077 U	--	--	--	--	0.18 J	--
HEPTACHLOR	0.0015 U	0.0013 U	--	--	--	--	0.14	--
HEPTACHLOR EPOXIDE	0.001 U	0.00087 U	--	--	--	--	0.00088 U	--
METHOXYCHLOR	0.0044 U	0.0038 U	--	--	--	--	0.0038 U	--
P,P'-DDD	0.0031 U	0.0027 J	--	--	--	--	0.0027 J	--
P,P'-DDE	0.0019 U	0.006 U	--	--	--	--	0.078 J	--
P,P'-DDT	0.0053 U	0.0046 U	--	--	--	--	0.2 U	--
TOXAPHENE	0.22 U	0.19 U	--	--	--	--	0.19 U	--

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-075-C	R7-076-C	R7-077-C	R7-078-C	R7-079-C	R7-080-C	R7-081-C	R7-082-C
Sample Date	11/24/2009	11/24/2009	11/24/2009	12/2/2009	12/2/2009	12/2/2009	12/2/2009	11/30/2009
Sample Depth Range (ft BGS)	0-2.1	0-2	0-1.2	0-4	0-2.4	0-1.7	0-1.7	0-1.6
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	13700	9010	7760	12000	8530	8150 J	6330 J	8290 J
ANTIMONY	2 U	1.5 U	0.41 U	2 U	1.9 J	2.1 J	1.6 J	2.8 J
ARSENIC	6.4 J+	6	0.51 U	6.8 J+	4.5	6.1 J+	4.9	6 J+
BARIUM	231	191	136	210	219	504 J	181 J	331 J
BERYLLIUM	0.7 J+	0.53 J	0.051 U	0.87 J+	0.59 J	0.48 J+	0.37 J	0.54 J+
CADMIUM	7.1	2.7	0.051 U	1.6 J-	2.2	1.1 J-	1.9	0.88 J-
CALCIUM	17100	12500	15200	20400	14500	7900 J	11900 J	10300 J
CHROMIUM	270	130	89.1	284	192	106 J	119 J	98.1 J
COBALT	19.2	9.2 J	0.076 U	12.3 J	11.8	8.2 J	10.5	8.9
COPPER	623	332	280	516	392	349 J	540 J	347 J
IRON	25000	17800	16900	24600	18800	18300 J	13700 J	18300 J
LEAD	851 J+	351 J+	288 J+	629	481	624 J	308 J	481 J
MAGNESIUM	7240	5890	6250	9120	6000	4760 J	5010 J	6260 J
MANGANESE	312	298	307	480 J	282 J	331 J	226 J	189 J
NICKEL	289	64.8	48.5	92.1	110	53.6	125	50.8
POTASSIUM	1590	1130	719 J	24.5 U	21.1 U	820 J	591 J	846
SELENIUM	1.2 U	0.94 U	1.9 J	3.9 J+	2.2 J	2.4 J	1.9 J	1.9 J
SILVER	4.4 J-	0.39 J	0.13 U	0.23 UJ	0.24 J	0.65 J-	1.8	0.67 J-
SODIUM	472 J	310 J	48.6 U	475 J	726 J	3.9 UJ	3.3 UJ	2.8 UJ
THALLIUM	0.79 U	0.61 U	0.31 U	0.81 U	0.7 U	0.59 U	0.5 U	0.43 U
VANADIUM	36.3	18.4	16.1	37.7	21.1	17.2	13.5	17.4
ZINC	2710	897	741	1370	1220	1730 J	1090 J	858 J
Mercury by CV (mg/kg)								
MERCURY	0.1 U	0.67	0.095 U	1.1	0.4	1.5	0.52	1.8
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.023 UJ	0.018 U	0.023 U	0.018 U	0.22 U	0.014 U	0.014 U	0.015 U
PCB-1221 (AROCLOR 1221)	0.043 U	0.034 U	0.043 U	0.035 U	0.42 U	0.027 U	0.027 U	0.028 U
PCB-1232 (AROCLOR 1232)	0.016 U	0.013 U	0.016 U	0.013 U	0.15 U	0.01 U	0.0097 U	0.01 U
PCB-1242 (AROCLOR 1242)	0.01 U	0.0079 U	0.01 U	0.008 U	0.096 U	0.0063 U	0.0062 U	0.0064 U
PCB-1248 (AROCLOR 1248)	0.017 U	0.013 U	0.017 U	0.013 U	0.16 U	0.01 U	0.01 U	0.011 U
PCB-1254 (AROCLOR 1254)	1.3	6.8 J	1.4	0.45	7.7 J	0.76	0.63	0.32 J
PCB-1260 (AROCLOR 1260)	0.019 UJ	0.015 U	0.02 U	0.016 U	0.19 U	0.012 U	0.012 U	0.012 U
PCB-1262 (AROCHLOR 1262)	0.019 U	0.015 U	0.019 U	0.015 U	0.18 U	0.012 U	0.011 U	0.012 U
PCB-1268 (AROCLOR 1268)	0.026 U	0.02 U	0.026 U	0.021 U	0.25 U	0.016 U	0.016 U	0.017 U
PCBs (total)	1.3	6.8	1.4	0.45	7.7	0.76	0.63	0.32
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.1	--	--	--	--	--	--	--
ACENAPHTHENE	0.11	--	--	--	--	--	--	--
ACENAPHTHYLENE	0.11	--	--	--	--	--	--	--

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-075-C	R7-076-C	R7-077-C	R7-078-C	R7-079-C	R7-080-C	R7-081-C	R7-082-C
Sample Date	11/24/2009	11/24/2009	11/24/2009	12/2/2009	12/2/2009	12/2/2009	12/2/2009	11/30/2009
Sample Depth Range (ft BGS)	0-2.1	0-2	0-1.2	0-4	0-2.4	0-1.7	0-1.7	0-1.6
Analyte								
ANTHRACENE	0.29	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	2.6	--	--	--	--	--	--	--
BENZO(A)PYRENE	0.99	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	1.7	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	0.66	--	--	--	--	--	--	--
CHRYSENE	2.2	--	--	--	--	--	--	--
DIBENZ(A,H)ANTHRACENE	0.39	--	--	--	--	--	--	--
FLUORANTHENE	3.6	--	--	--	--	--	--	--
FLUORENE	0.16	--	--	--	--	--	--	--
INDENO(1,2,3-C,D)PYRENE	0.89	--	--	--	--	--	--	--
NAPHTHALENE	0.11 J	--	--	--	--	--	--	--
PENTACHLOROPHENOL	0.076	--	--	--	--	--	--	--
PHENANTHRENE	0.82 J	--	--	--	--	--	--	--
PYRENE	3.5	--	--	--	--	--	--	--
PAHs (total)	18	--	--	--	--	--	--	--
Pesticides by MC PEST (mg/kg)								
ALDRIN	0.0008 U	--	--	--	--	--	--	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	0.0013 U	--	--	--	--	--	--	--
ALPHA-CHLORDANE	0.00063 U	--	--	--	--	--	--	--
ALPHA ENDOSULFAN	0.00074 U	--	--	--	--	--	--	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	0.0017 U	--	--	--	--	--	--	--
BETA ENDOSULFAN	0.0043 U	--	--	--	--	--	--	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	0.0015 U	--	--	--	--	--	--	--
DIELDRIN	0.0015 U	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	0.0015 U	--	--	--	--	--	--	--
ENDRIN	0.0015 U	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	0.0046 U	--	--	--	--	--	--	--
ENDRIN KETONE	0.0057 U	--	--	--	--	--	--	--
GAMMA BHC (LINDANE)	0.0012 U	--	--	--	--	--	--	--
GAMMA-CHLORDANE	0.00094 U	--	--	--	--	--	--	--
HEPTACHLOR	0.0015 U	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	0.0011 U	--	--	--	--	--	--	--
METHOXYCHLOR	0.0046 U	--	--	--	--	--	--	--
P,P'-DDD	0.0057 J	--	--	--	--	--	--	--
P,P'-DDE	0.012 U	--	--	--	--	--	--	--
P,P'-DDT	0.0055 U	--	--	--	--	--	--	--
TOXAPHENE	0.23 U	--	--	--	--	--	--	--

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-082-CR	R7-083-C	R7-084-C	R7-085-C	R7-086-C	R7-087-C	R7-088-C	R7-089-C
Sample Date	11/30/2009	11/30/2009	11/30/2009	11/30/2009	11/30/2009	11/30/2009	11/25/2009	11/25/2009
Sample Depth Range (ft BGS)	0-1.6	0-3.3	0-3.3	0-1.6	0-3.2	0-2.1	0-1	0-2.9
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	7960 J	8840 J	5910 J	7330 J	8300 J	9300 J	11900	9450
ANTIMONY	2.3 J	1.5 U	1.3 U	7.9 J	2.5 J	1.4 U	13.3	9.8
ARSENIC	6.2 J+	5 J+	6.2	5.4 J+	4.1	5.1 J+	12.8	8.2
BARIUM	256 J	172 J	110 J	233 J	219 J	211 J	357	291
BERYLLIUM	0.53 J+	0.51 J+	0.39 J	0.4 J+	0.52 J	0.52 J+	0.72 J+	0.58 J+
CADMIUM	0.092 UJ	1.7 J-	1.2	2.8 J-	1.3	1.8 J-	6.7 J-	5.3 J-
CALCIUM	9750 J	17100 J	11400 J	13200 J	16000 J	21700 J	12700	9890
CHROMIUM	91.6 J	99.5 J	86 J	195 J	115 J	141 J	335	264
COBALT	8.8 J	10.3	7.3 J	9.3	10.5	11.2	13.3	10.6
COPPER	408 J	321 J	278 J	477 J	420 J	419 J	1400	1100
IRON	17900 J	19300 J	13600 J	16400 J	18300 J	20200 J	24200	19600
LEAD	416 J	345 J	279 J	534 J	351 J	445 J	1830 J+	1500 J+
MAGNESIUM	5840 J	7190 J	4710 J	5920 J	6870 J	8580 J	7100	5500
MANGANESE	186 J	364 J	224 J	302 J	338 J	271 J	243	190
NICKEL	49.3	58.2	47.8	105	81.2	82.6	184	147
POTASSIUM	880 J	960	667 J	653 J	870 J	1030	1270	936
SELENIUM	1.9 J	2.4 J	1.9 J	2.3 J	2.9 J	2.7 J	2.5 J	1.7 J
SILVER	1.6 J-	0.88 J-	0.63 J	2.4 J-	1.3 J	2.5 J-	3.3 J-	2.5 J-
SODIUM	3.9 UJ	4 UJ	3.4 UJ	2.9 UJ	4.2 UJ	3.7 UJ	322 J	257 J
THALLIUM	0.59 U	0.61 U	0.52 U	0.44 U	0.64 U	0.56 U	0.56 U	0.48 U
VANADIUM	16.8	18	14	18.6	17.2	20.3	29.5	22.2
ZINC	839 J	917 J	644 J	1610 J	858 J	1020 J	2130	1680
Mercury by CV (mg/kg)								
MERCURY	1.3	0.59	0.39	0.42	0.48	0.68	3.4	0.42
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.015 U	0.019 U	0.013 U	0.017 U	0.019 U	0.019 U	0.16 U	0.14 U
PCB-1221 (AROCLOR 1221)	0.028 U	0.036 U	0.025 U	0.031 U	0.037 U	0.035 U	0.3 U	0.27 U
PCB-1232 (AROCLOR 1232)	0.01 U	0.013 U	0.0093 U	0.011 U	0.013 U	0.013 U	0.11 U	0.098 U
PCB-1242 (AROCLOR 1242)	0.0066 U	0.0084 U	0.0059 U	0.0073 U	0.0085 U	0.0082 U	0.071 U	0.062 U
PCB-1248 (AROCLOR 1248)	0.011 U	0.014 U	0.0097 U	0.012 U	0.014 U	0.013 U	0.12 U	0.1 U
PCB-1254 (AROCLOR 1254)	1.4	1.5 J	0.96	7.8	4.1	0.82 J	55	97
PCB-1260 (AROCLOR 1260)	0.013 U	0.016 U	0.011 U	0.014 U	0.016 U	0.016 U	0.14 U	0.12 U
PCB-1262 (AROCHLOR 1262)	0.012 U	0.015 U	0.011 U	0.013 U	0.016 U	0.015 U	0.13 U	0.11 U
PCB-1268 (AROCLOR 1268)	0.017 U	0.022 U	0.015 U	0.019 U	0.022 U	0.021 U	0.18 U	0.16 U
PCBs (total)	1.4	1.5	0.96	7.8	4.1	0.82	55	97
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	--	0.0016 J	--	0.00087 J	--	0.11	--	1.1 J
ACENAPHTHENE	--	0.001 J	--	0.00052 J	--	0.11	--	1.1
ACENAPHTHYLENE	--	0.0011 J	--	0.00073 U	--	0.17	--	0.39 J

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-082-CR	R7-083-C	R7-084-C	R7-085-C	R7-086-C	R7-087-C	R7-088-C	R7-089-C
Sample Date	11/30/2009	11/30/2009	11/30/2009	11/30/2009	11/30/2009	11/30/2009	11/25/2009	11/25/2009
Sample Depth Range (ft BGS)	0-1.6	0-3.3	0-3.3	0-1.6	0-3.2	0-2.1	0-1	0-2.9
Analyte								
ANTHRACENE	--	0.0007 J	--	0.0027 J	--	0.38	--	0.56
BENZO(A)ANTHRACENE	--	0.0039 J	--	0.0026 J	--	3.2	--	4.9
BENZO(A)PYRENE	--	0.0036 J	--	0.0024 J	--	1.9	--	3.3
BENZO(B)FLUORANTHENE	--	0.0056 J	--	0.0035 J	--	2 J	--	5.2 J
BENZO(K)FLUORANTHENE	--	0.0041 J	--	0.0027 J	--	1.7	--	4.1
CHRYSENE	--	0.0034	--	0.0018 J	--	2.8	--	5 J
DIBENZ(A,H)ANTHRACENE	--	0.0094 J	--	0.006 J	--	0.4	--	0.42 J
FLUORANTHENE	--	0.0034 J	--	0.0013 J	--	5.3	--	3.1 J
FLUORENE	--	0.00096 J	--	0.00047 J	--	0.15	--	1.4
INDENO(1,2,3-C,D)PYRENE	--	0.012 J	--	0.007 J	--	2.4	--	3.3
NAPHTHALENE	--	0.0029 U	--	0.0019 U	--	0.12 J	--	1.7 J
PENTACHLOROPHENOL	--	0.013 J	--	0.011 U	--	0.045	--	0.053 J
PHENANTHRENE	--	0.002 J	--	0.003 J	--	2.1	--	2.1
PYRENE	--	0.0027	--	0.0013	--	4.6	--	7.8
PAHs (total)	--	0.065	--	0.037	--	28	--	45
Pesticides by MC PEST (mg/kg)								
ALDRIN	--	0.00068 U	--	0.003 U	--	0.00066 U	--	0.005 U
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	0.0011 U	--	0.0047 U	--	0.001 U	--	0.0079 U
ALPHA-CHLORDANE	--	0.00053 U	--	0.0023 U	--	0.00052 U	--	0.0039 U
ALPHA ENDOSULFAN	--	0.021 J	--	0.11 J	--	0.00061 U	--	0.0047 U
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	0.0014 U	--	0.0061 U	--	0.0014 U	--	0.01 U
BETA ENDOSULFAN	--	0.04	--	0.24 J	--	0.0035 U	--	0.62 J
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	0.12 J	--	2.1	--	0.062 J	--	0.49 J
DIELDRIN	--	0.039	--	0.22	--	0.017 J	--	0.44
ENDOSULFAN SULFATE	--	0.031	--	0.28 J	--	0.0012 U	--	0.32 J
ENDRIN	--	0.0013 U	--	0.0055 U	--	0.0012 U	--	0.0093 U
ENDRIN ALDEHYDE	--	0.0039 U	--	0.12 J	--	0.0038 U	--	0.029 U
ENDRIN KETONE	--	0.011 J	--	0.021 U	--	0.0047 U	--	0.036 U
GAMMA BHC (LINDANE)	--	0.035 J	--	0.59 J	--	0.015 J	--	0.15
GAMMA-CHLORDANE	--	0.11	--	0.96	--	0.037	--	3
HEPTACHLOR	--	0.0013 U	--	0.99 J	--	0.0013 U	--	0.19 J
HEPTACHLOR EPOXIDE	--	0.0009 U	--	0.0039 U	--	0.00087 U	--	0.0066 U
METHOXYCHLOR	--	0.0039 U	--	0.017 U	--	0.0038 U	--	0.27 J
P,P'-DDD	--	0.0028 J	--	0.012 J	--	0.0027 U	--	0.021 J
P,P'-DDE	--	0.038 J	--	0.2 J	--	0.0016 U	--	0.38 J
P,P'-DDT	--	0.053 U	--	0.55 U	--	0.0046 U	--	5.3 U
TOXAPHENE	--	0.2 U	--	0.87 U	--	0.19 U	--	1.5 U

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-090-C	R7-091-C	R7-092-C	R7-093-C	R7-094-C	R7-095-C	R7-095-CR	R7-096-C
Sample Date	11/25/2009	11/24/2009	11/24/2009	11/24/2009	11/23/2009	11/23/2009	11/23/2009	11/23/2009
Sample Depth Range (ft BGS)	0-3.5	0-1.4	0-1	0-0.9	0-1	0-1.3	0-1.3	0-1.3
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	10000	6050	11000	9850	10700	9450	9030	8580
ANTIMONY	7.9 J	6.6 J	2 J	6.5 J	2 U	4.3 J	1.5 U	1.7 J
ARSENIC	8.6 J+	3.8	5.9 J+	6.2 J+	6.7	7.4	5	5.1
BARIUM	390	314	261	285	211	230	226	338
BERYLLIUM	0.53 J+	0.47 J	0.61 J+	0.62 J+	0.65 J	0.59 J	0.56 J+	0.59 J+
CADMIUM	6.6 J-	3.9	2.4	2.1	1.9	4	3.6	1.5
CALCIUM	16200	12200	19900	15600	25000	21400	21200	21000
CHROMIUM	237	114	142	141	132	173	167	162
COBALT	15.7	6.6 J	10.9	9.3	11.4 J	11 J	10.6	10.3
COPPER	995	696	511	512	400	631	592	1220
IRON	19500	12800	19800	18300	22600	18900	18200	19400
LEAD	809 J+	402 J+	880 J+	496 J+	463	625	608	548
MAGNESIUM	6100	4330	8260	6820	10800	8750	8460	7910
MANGANESE	272	263	395	253	399	208	202	309
NICKEL	243	67.2	91.5	78.9	78	112	117	87.1
POTASSIUM	1020	659 J	1150	989	1220 J	967 J	863 J	696 J
SELENIUM	2.5 J	0.72 U	0.83 U	0.84 U	1.2 U	1.1 U	0.9 U	0.96 U
SILVER	0.97 J-	2.9	0.83 J-	1.6 J-	0.7 J-	2.2 J-	2.7 J-	1.4 J-
SODIUM	1080 J	322 J	361 J	305 J	663 J	334 J	347 J	206 J
THALLIUM	0.64 U	0.47 U	0.54 U	0.55 U	0.79 U	0.73 U	0.59 U	0.63 U
VANADIUM	25	12.8	21.1	19.2	22.2	22.5	20.8	16.1
ZINC	2910	1680	950	903	996	1090	1050	721
Mercury by CV (mg/kg)								
MERCURY	0.92	12.6	0.98	0.72	0.68	0.86	0.52	1.6
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.019 U	0.023 U	0.019 U	0.016 U	0.022 U	0.019 U	0.02 U	0.015 U
PCB-1221 (AROCLOR 1221)	0.036 U	0.044 U	0.035 U	0.03 U	0.042 U	0.036 U	0.038 U	0.027 U
PCB-1232 (AROCLOR 1232)	0.013 U	0.016 U	0.013 U	0.011 U	0.015 U	0.013 U	0.014 U	0.01 U
PCB-1242 (AROCLOR 1242)	0.0083 U	0.01 U	0.0081 U	0.0069 U	0.0098 U	0.0084 U	0.0087 U	0.0064 U
PCB-1248 (AROCLOR 1248)	0.014 U	0.017 U	0.013 U	0.011 U	0.016 U	0.014 U	0.014 U	0.011 U
PCB-1254 (AROCLOR 1254)	3.4	11	2.5	3.1 J	1.3	1.2 J	3 J	1.8 J
PCB-1260 (AROCLOR 1260)	0.016 U	0.02 U	0.016 U	0.013 U	0.019 U	0.016 U	0.017 U	0.012 U
PCB-1262 (AROCHLOR 1262)	0.015 U	0.019 U	0.015 U	0.013 U	0.018 U	0.015 U	0.016 U	0.012 U
PCB-1268 (AROCLOR 1268)	0.021 U	0.026 U	0.021 U	0.018 U	0.025 U	0.022 U	0.022 U	0.016 U
PCBs (total)	3.4	11	2.5	3.1	1.3	1.2	3	1.8
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	--	--	--	0.81	0.2	0.48	0.27	--
ACENAPHTHENE	--	--	--	1.3	0.17	0.32	0.31	--
ACENAPHTHYLENE	--	--	--	0.94 J	0.2	0.41 J	0.3	--

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-090-C	R7-091-C	R7-092-C	R7-093-C	R7-094-C	R7-095-C	R7-095-CR	R7-096-C
Sample Date	11/25/2009	11/24/2009	11/24/2009	11/24/2009	11/23/2009	11/23/2009	11/23/2009	11/23/2009
Sample Depth Range (ft BGS)	0-3.5	0-1.4	0-1	0-0.9	0-1	0-1.3	0-1.3	0-1.3
Analyte								
ANTHRACENE	--	--	--	4.2	0.48	1.1	1.7	--
BENZO(A)ANTHRACENE	--	--	--	18	3.4	6.5	9.3	--
BENZO(A)PYRENE	--	--	--	11	2.3	4.1	5.6	--
BENZO(B)FLUORANTHENE	--	--	--	13	2.5	4.1	5.3	--
BENZO(K)FLUORANTHENE	--	--	--	9.8	1.7	3	4	--
CHRYSENE	--	--	--	14	3.3 J	6.1 J	8.2 J	--
DIBENZ(A,H)ANTHRACENE	--	--	--	11	0.63	0.36	0.35	--
FLUORANTHENE	--	--	--	24 J	6 J	6.4	6.2	--
FLUORENE	--	--	--	2.2 J	0.28	0.51	0.43	--
INDENO(1,2,3-C,D)PYRENE	--	--	--	17	1.6	2.6	3.6	--
NAPHTHALENE	--	--	--	0.79 J	0.21 J	0.51 J	0.3 J	--
PENTACHLOROPHENOL	--	--	--	0.13	0.11	0.1	0.11	--
PHENANTHRENE	--	--	--	14	2.5	4.3	6.1	--
PYRENE	--	--	--	23	5.2	6.3	6.5	--
PAHs (total)	--	--	--	170	31	47	59	--
Pesticides by MC PEST (mg/kg)								
ALDRIN	--	--	--	0.00055 U	0.00079 U	0.00068 U	0.0007 U	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	--	--	0.00087 U	0.0012 U	0.0011 U	0.0011 U	--
ALPHA-CHLORDANE	--	--	--	0.00043 U	0.00062 U	0.00053 U	0.00055 U	--
ALPHA ENDOSULFAN	--	--	--	0.00051 U	0.01 J	0.012 J	0.024 J	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	--	--	0.0011 U	0.0016 U	0.0014 U	0.0015 U	--
BETA ENDOSULFAN	--	--	--	0.1 J	0.014	0.01 J	0.0038 U	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	--	--	0.4 J	0.067 J	0.05 J	0.046 J	--
DIELDRIN	--	--	--	0.081 J	0.023 J	0.03 J	0.12 J	--
ENDOSULFAN SULFATE	--	--	--	0.053 J	0.0015 U	0.0012 U	0.0013 U	--
ENDRIN	--	--	--	0.001 U	0.015 J	0.026 J	0.05 J	--
ENDRIN ALDEHYDE	--	--	--	0.0032 U	0.01 J	0.013 J	0.0041 U	--
ENDRIN KETONE	--	--	--	0.0039 U	0.0056 U	0.021 J	0.005 U	--
GAMMA BHC (LINDANE)	--	--	--	0.12 J	0.02	0.027 J	0.023	--
GAMMA-CHLORDANE	--	--	--	0.23 J	0.032 J	0.045	0.12	--
HEPTACHLOR	--	--	--	0.25 J	0.012 J	0.016 J	0.013 J	--
HEPTACHLOR EPOXIDE	--	--	--	0.00073 U	0.001 U	0.028 J	0.00093 U	--
METHOXYCHLOR	--	--	--	0.0032 U	0.0045 UJ	0.0039 UJ	0.0041 UJ	--
P,P'-DDD	--	--	--	0.0023 J	0.042 J	0.0028 J	0.23 J	--
P,P'-DDE	--	--	--	0.071 J	0.028 J	0.028 J	0.063	--
P,P'-DDT	--	--	--	0.093 U	0.077 U	0.077 U	0.53 U	--
TOXAPHENE	--	--	--	0.16 U	0.23 U	0.2 U	0.21 U	--

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-097-C	R7-098-C	R7-099-C	R7-100-C	R7-101-C	R7-102-C	R7-103-C	R7-104-C
Sample Date	11/23/2009	11/23/2009	11/23/2009	11/23/2009	11/30/2009	11/30/2009	11/30/2009	12/2/2009
Sample Depth Range (ft BGS)	0-0.9	0-1.9	0-1.3	0-1.2	0-0.5	0-1.5	0-2.3	0-1
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	7210	7450	8800	8550	8260 J	10100 J	9440 J	7540
ANTIMONY	4.1 J	5.2 J	1.9 U	4.3 J	1.4 U	3.2 J	1.3 UR	2 J
ARSENIC	6	5.6	5.5	6.4	7.1 J+	10.4 J+	16.2	7.9
BARIUM	230	264	239	238	281 J	321 J	305 J	180
BERYLLIUM	0.41 J+	0.47 J+	0.59 J	0.64 J+	0.54 J+	0.61 J+	0.5 J+	0.53 J+
CADMIUM	2.3	1.7	2.4	1.5	2.2 J-	2 J-	5.2 J-	0.87 J-
CALCIUM	16200	17500	23000	13500	22700 J	16300 J	19200 J	17300
CHROMIUM	141	130	161	105	265 J	136 J	414 J	136
COBALT	9.2	8.4	10.3 J	9.2 J	10.2	10.3	13.9	9.3
COPPER	567	520	567	385	1620 J	608 J	1560 J	576
IRON	15600	17100	20000	19000	20800 J	22800 J	20200 J	17600
LEAD	590	488	628	486	2070 J	813 J	2940 J	849
MAGNESIUM	6860	7050	9340	6440	9170 J	8730 J	8420 J	6950
MANGANESE	232	307	300	289	389 J	260 J	323 J	298 J
NICKEL	85.5	74.9	82.2	65	97.9	60	164	74.7
POTASSIUM	612 J	651 J	933 J	854 J	840 J	1060	705 J	16.5 U
SELENIUM	0.72 U	0.81 U	1.2 U	0.93 U	2.8 J	2.9 J	4.1 J	1.9 J+
SILVER	3.1 J-	1.5 J-	1.6 J-	0.65 J-	9.2 J-	1.6 J-	6.2 J-	0.91 J-
SODIUM	238 J	217 J	306 J	257 J	3.8 UJ	4 UJ	3.4 UJ	372 J
THALLIUM	0.47 U	0.53 U	0.77 U	0.63 U	0.57 U	0.61 U	0.51 U	0.54 U
VANADIUM	15	14.2	19.3	17	25.8	21.4	45.5	19
ZINC	856	791	1010	763	942 J	1390 J	2220 J	907
Mercury by CV (mg/kg)								
MERCURY	0.56	0.98	0.69	1.8	0.96	3	3.6	0.93
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.012 U	0.016 U	0.019 U	0.014 U	0.036 U	0.2 U	0.17 UJ	0.19 U
PCB-1221 (AROCLOR 1221)	0.023 U	0.031 U	0.036 U	0.026 U	0.068 U	0.37 U	0.32 UJ	0.36 U
PCB-1232 (AROCLOR 1232)	0.0085 U	0.011 U	0.013 U	0.0096 U	0.025 U	0.13 U	0.12 UJ	0.13 U
PCB-1242 (AROCLOR 1242)	0.0054 U	0.0071 U	0.0084 U	0.0061 U	0.016 U	0.085 U	0.074 UJ	0.084 U
PCB-1248 (AROCLOR 1248)	0.0089 U	0.012 U	0.014 U	0.01 U	0.026 U	0.14 U	0.12 UJ	0.14 U
PCB-1254 (AROCLOR 1254)	2.2 J	1.6 J	0.65 J	0.5 J	1.1	1.9 J	1.5 J	9.8 J
PCB-1260 (AROCLOR 1260)	0.01 U	0.014 U	0.016 U	0.012 U	0.031 U	0.17 U	0.14 UJ	0.16 U
PCB-1262 (AROCHLOR 1262)	0.01 U	0.013 U	0.016 U	0.011 U	0.029 U	0.16 U	0.14 UJ	0.15 U
PCB-1268 (AROCLOR 1268)	0.014 U	0.018 U	0.022 U	0.016 U	0.041 U	0.22 U	0.19 UJ	0.22 U
PCBs (total)	2.2	1.6	0.65	0.5	1.1	1.9	1.5	9.8
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	--	--	0.15	0.19	--	--	--	0.48 J
ACENAPHTHENE	--	--	0.25	0.2	--	--	--	0.98 J
ACENAPHTHYLENE	--	--	0.21	0.36 J	--	--	--	1.9 J

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-097-C	R7-098-C	R7-099-C	R7-100-C	R7-101-C	R7-102-C	R7-103-C	R7-104-C
Sample Date	11/23/2009	11/23/2009	11/23/2009	11/23/2009	11/30/2009	11/30/2009	11/30/2009	12/2/2009
Sample Depth Range (ft BGS)	0-0.9	0-1.9	0-1.3	0-1.2	0-0.5	0-1.5	0-2.3	0-1
Analyte								
ANTHRACENE	--	--	0.72	1.6	--	--	--	1.6
BENZO(A)ANTHRACENE	--	--	4.3	6.7 U	--	--	--	7.5
BENZO(A)PYRENE	--	--	2.7	3.7 J	--	--	--	6.7
BENZO(B)FLUORANTHENE	--	--	2.4	4.9 J	--	--	--	6.6
BENZO(K)FLUORANTHENE	--	--	1.7	3.4 J	--	--	--	4.8
CHRYSENE	--	--	3.8 J	6 J	--	--	--	7.7 J
DIBENZ(A,H)ANTHRACENE	--	--	0.44	0.4	--	--	--	2.2
FLUORANTHENE	--	--	6.1 J	4.3	--	--	--	10 J
FLUORENE	--	--	0.35	0.34 J	--	--	--	1.2
INDENO(1,2,3-C,D)PYRENE	--	--	1.9	4.8	--	--	--	5.7 J
NAPHTHALENE	--	--	0.18 J	0.18 J	--	--	--	0.38 J
PENTACHLOROPHENOL	--	--	0.079	0.069 J	--	--	--	0.021
PHENANTHRENE	--	--	2.9	4.7 J	--	--	--	5
PYRENE	--	--	6.1	4.6	--	--	--	12
PAHs (total)	--	--	34	43	--	--	--	79
Pesticides by MC PEST (mg/kg)								
ALDRIN	--	--	0.00068 U	0.00049 U	--	--	--	0.0014 U
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	--	0.0011 U	0.0042 J	--	--	--	0.0021 U
ALPHA-CHLORDANE	--	--	0.00053 U	0.00038 U	--	--	--	0.0011 U
ALPHA ENDOSULFAN	--	--	0.00063 U	0.00046 U	--	--	--	0.0013 U
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	--	0.0014 U	0.001 U	--	--	--	0.0028 U
BETA ENDOSULFAN	--	--	0.0036 U	0.0075	--	--	--	0.28 J
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	--	0.064 J	0.027 J	--	--	--	0.11 J
DIELDRIN	--	--	0.019 J	0.018	--	--	--	0.19 J
ENDOSULFAN SULFATE	--	--	0.0013 U	0.00091 U	--	--	--	0.27 J
ENDRIN	--	--	0.031 J	0.0087	--	--	--	0.0025 U
ENDRIN ALDEHYDE	--	--	0.0039 U	0.0028 U	--	--	--	0.15
ENDRIN KETONE	--	--	0.0092 J	0.015 J	--	--	--	0.15 J
GAMMA BHC (LINDANE)	--	--	0.048	0.018	--	--	--	0.045 J
GAMMA-CHLORDANE	--	--	0.037	0.023	--	--	--	0.39 J
HEPTACHLOR	--	--	0.022 J	0.0079 J	--	--	--	0.072 J
HEPTACHLOR EPOXIDE	--	--	0.0009 U	0.00065 U	--	--	--	0.0018 U
METHOXYCHLOR	--	--	0.071 J	0.0028 UJ	--	--	--	0.0078 U
P,P'-DDD	--	--	0.018 J	0.002 J	--	--	--	0.0055 J
P,P'-DDE	--	--	0.026 J	0.015	--	--	--	0.19 J
P,P'-DDT	--	--	0.048 U	0.046 U	--	--	--	0.82 U
TOXAPHENE	--	--	0.2 U	0.14 U	--	--	--	0.39 U

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-105-C	R7-106-C	R7-120-T-Z1	R7-120-T-Z2	R7-121-T-Z1	R7-122-T-Z1	R7-122-T-Z2	R7-123-T-Z1
Sample Date	11/30/2009	11/30/2009	11/24/2009	11/24/2009	12/2/2009	11/25/2009	11/25/2009	11/23/2009
Sample Depth Range (ft BGS)	0-1.4	0-0.5	0-0.5	0.5-2.1	0-0.5	0-0.5	0.5-1	0-0.5
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	10000 J	8680 J	11700	8270	6950 J	6010	4900	9980
ANTIMONY	1.4 U	3.1 J	1.2 U	0.23 U	1.4 U	1.2 U	1 U	1.5 U
ARSENIC	16.8	5.3 J+	5 J+	5.1 J+	3.6	1.7	2.4	5.4
BARIUM	222 J	114 J	123	118	110 J	66.6	35	147
BERYLLIUM	0.53 J+	1 J+	0.73 J+	0.029 U	0.55 J	0.37 J	0.38 J	0.76 J+
CADMIUM	5.2 J-	0.35 J-	0.45 J-	0.029 U	0.089 U	0.18 J	0.14 J	0.72 J-
CALCIUM	17300 J	20200 J	5790	4600	3650 J	4300	3080	10500
CHROMIUM	443 J	60.9 J	22.6	16.8	31 J	9.9	7.8	39
COBALT	16.1	12.3	9.9	11.1	7.5 J	5 J	5.1 J	10.8
COPPER	966 J	462 J	24.8	16.2	56.5 J	14.3	8.6	68.5
IRON	21100 J	17500 J	21900	18700	16200 J	11100	11600	24000
LEAD	1630 J	311 J	35.7 J+	25.5 J+	63.3 J	15.3 J+	4.6 J+	94.4
MAGNESIUM	8580 J	8170 J	4410	4070	2360 J	2230	1810	4370
MANGANESE	267 J	329 J	274	310	441 J	200	184	588
NICKEL	165	72.2	23.9	21.7	23.6	10.2	8	36.9
POTASSIUM	793 J	539 J	1370	682 J	565 J	640 J	557 J	1190
SELENIUM	3.8 J	1.3 J	0.75 U	1.5 J+	1.5 J	0.75 U	0.64 U	0.93 U
SILVER	4.6 J-	7.5	0.14 UJ	0.073 UR	0.16 U	0.14 U	0.12 U	0.17 UJ
SODIUM	3.6 UJ	2.6 UJ	268 J	27.8 U	3.7 UJ	252 J	269 J	270 J
THALLIUM	0.55 U	0.39 U	0.49 U	0.17 U	0.57 U	0.49 U	0.42 U	0.61 U
VANADIUM	48.5	13.9	23.2	18.2	16.3	12.9	13.5	21.9
ZINC	2460 J	402 J	134	109	176 J	55.7	39.4	317
Mercury by CV (mg/kg)								
MERCURY	1.2	0.67	0.068 U	0.26	0.1 J	0.05 U	0.051 U	0.17 J
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.15 U	0.014 U	0.016 U	0.012 U	0.013 UJ	0.012 U	0.011 U	0.013 U
PCB-1221 (AROCLOR 1221)	0.29 U	0.026 U	0.03 U	0.022 U	0.025 U	0.023 U	0.021 U	0.025 U
PCB-1232 (AROCLOR 1232)	0.11 U	0.0096 U	0.011 U	0.0079 U	0.0092 U	0.0084 U	0.0078 U	0.0092 U
PCB-1242 (AROCLOR 1242)	0.066 U	0.0061 U	0.0069 U	0.005 U	0.0058 U	0.0053 U	0.0049 U	0.0058 U
PCB-1248 (AROCLOR 1248)	0.11 U	0.01 U	0.011 U	0.0083 U	0.0096 U	0.0088 U	0.0081 U	0.0096 U
PCB-1254 (AROCLOR 1254)	4.8 J	0.43 J	0.0092 U	0.0067 U	0.39	0.0071 U	0.0066 U	0.0077 U
PCB-1260 (AROCLOR 1260)	0.13 U	0.012 U	0.013 U	0.0097 U	0.011 UJ	0.01 U	0.0096 U	0.011 U
PCB-1262 (AROCHLOR 1262)	0.12 U	0.011 U	0.013 U	0.0093 U	0.011 U	0.0099 U	0.0091 U	0.011 U
PCB-1268 (AROCLOR 1268)	0.17 U	0.016 U	0.018 U	0.013 U	0.015 U	0.014 U	0.013 U	0.015 U
PCBs (total)	4.8	0.43	0.011 U	0.011 U	0.39	0.011 U	0.011 U	0.011 U
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.11	0.0018 U	0.013 J	0.016 J	0.012 J	0.005 J	0.011 J	0.019
ACENAPHTHENE	0.11	0.0018 J	0.004	0.0048	0.008	0.0019 J	0.0012 J	0.029
ACENAPHTHYLENE	0.14	0.004 J	0.0092	0.0081	0.014	0.0016 J	0.0012 U	0.016

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-105-C	R7-106-C	R7-120-T-Z1	R7-120-T-Z2	R7-121-T-Z1	R7-122-T-Z1	R7-122-T-Z2	R7-123-T-Z1
Sample Date	11/30/2009	11/30/2009	11/24/2009	11/24/2009	12/2/2009	11/25/2009	11/25/2009	11/23/2009
Sample Depth Range (ft BGS)	0-1.4	0-0.5	0-0.5	0.5-2.1	0-0.5	0-0.5	0.5-1	0-0.5
Analyte								
ANTHRACENE	0.28	0.0022 J	0.011	0.017 J	0.023	0.0031	0.0019 J	0.031
BENZO(A)ANTHRACENE	3.4	0.005 U	0.058	0.11 J	0.16	0.018	0.0045 U	0.18
BENZO(A)PYRENE	2.1	0.0036 U	0.047 J	0.071 J	0.13	0.024	0.003 U	0.1
BENZO(B)FLUORANTHENE	2.3 J	0.0051 U	0.084	0.088 J	0.11	0.018	0.0042 U	0.12
BENZO(K)FLUORANTHENE	2.2	0.0041 J	0.046	0.074 J	0.11	0.012	0.0035 J	0.082
CHRYSENE	3.3	0.0039 J	0.051	0.088	0.16	0.019 U	0.0042 U	0.18 J
DIBENZ(A,H)ANTHRACENE	0.55	0.0059	0.022 J	0.035 J	0.029	0.0031	0.0029	0.015
FLUORANTHENE	5.6	0.0065 U	0.13 J	0.16	0.22	0.031 J	0.0057 J	0.35
FLUORENE	0.17	0.002	0.0047 J	0.014 J	0.014	0.0024	0.0015 J	0.067
INDENO(1,2,3-C,D)PYRENE	3.1	0.0092 J	0.096	0.089	0.093	0.012	0.0032	0.079
NAPHTHALENE	0.11 J	0.0022 UJ	0.017 U	0.019 J	0.014 J	0.0062 UR	0.0084 J	0.016
PENTACHLOROPHENOL	0.13	0.0089 J	0.01 J	0.0031	0.0092	0.0079	0.0014	0.012
PHENANTHRENE	2.7	0.0035 J	0.035 J	0.041 J	0.097 J	0.016 J	0.0071	0.25
PYRENE	5.3	0.0056	0.12	0.17	0.25	0.031	0.0087	0.28
PAHs (total)	32	0.054	0.75	1	1.5	0.2	0.046	1.8
Pesticides by MC PEST (mg/kg)								
ALDRIN	0.00054 U	0.00049 U	0.00056 U	0.0004 U	0.00047 U	0.015 J	0.0004 U	0.00047 U
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	0.00084 U	0.00077 U	0.00088 U	0.00064 U	0.00074 U	0.00068 U	0.00063 U	0.00074 U
ALPHA-CHLORDANE	0.00042 U	0.00038 U	0.00044 U	0.00032 U	0.00037 U	0.00034 U	0.00031 U	0.00037 U
ALPHA ENDOSULFAN	0.051 J	0.0032 J	0.00052 U	0.00037 U	0.00043 U	0.0004 U	0.00037 U	0.00043 U
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	0.0011 U	0.001 U	0.0012 U	0.00084 U	0.00097 U	0.00089 U	0.00082 U	0.00097 U
BETA ENDOSULFAN	0.065 J	0.0099 J	0.003 U	0.0022 U	0.04 J	0.0023 U	0.0021 U	0.0025 U
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	0.2 J	0.021 J	0.001 U	0.00075 U	0.011 J	0.0008 U	0.00074 U	0.00087 U
DIELDRIN	0.12	0.011	0.001 U	0.00075 U	0.023 J	0.028 J	0.00074 U	0.00087 U
ENDOSULFAN SULFATE	0.064 J	0.0089 J	0.001 U	0.00075 U	0.02 J	0.0008 U	0.00074 U	0.00087 U
ENDRIN	0.00099 U	0.00091 U	0.001 U	0.00075 U	0.00087 UR	0.033 J	0.00074 U	0.00087 U
ENDRIN ALDEHYDE	0.0031 U	0.0028 U	0.0032 U	0.0023 U	0.012 J	0.0025 U	0.0023 U	0.0027 U
ENDRIN KETONE	0.0038 U	0.0035 U	0.004 U	0.0029 U	0.014 J	0.0031 U	0.0028 U	0.0033 U
GAMMA BHC (LINDANE)	0.029 J	0.007 J	0.00083 U	0.0006 U	0.0007 U	0.014 J	0.00059 U	0.0007 U
GAMMA-CHLORDANE	0.25 J	0.023	0.00066 U	0.00047 U	0.031 J	0.00051 U	0.00047 U	0.00055 U
HEPTACHLOR	0.16 J	0.00093 U	0.0011 U	0.00077 U	0.00089 U	0.018 J	0.00076 U	0.00089 U
HEPTACHLOR EPOXIDE	0.00071 U	0.00065 U	0.00074 U	0.00053 U	0.00062 U	0.00057 U	0.00053 U	0.00062 U
METHOXYCHLOR	0.0031 U	0.0028 U	0.0032 U	0.0023 U	0.0027 U	0.0025 U	0.0023 U	0.0027 UJ
P,P'-DDD	0.036 J	0.002 J	0.004 J	0.0017 U	0.0019 J	0.0018 U	0.0016 U	0.0019 U
P,P'-DDE	0.12 J	0.0085 J	0.011 U	0.001 U	0.034 J	0.0011 J	0.00098 U	0.0024 U
P,P'-DDT	0.1 U	0.017 U	0.0039 U	0.0028 U	0.098 U	0.029 U	0.0027 U	0.0032 U
TOXAPHENE	0.16 U	0.14 U	0.16 U	0.12 U	0.14 U	0.13 U	0.12 U	0.14 U

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-123-T-Z2	R7-124-T-Z1	R7-125-T-Z1	R7-125-T-Z2	R7-172-C-Z1a	R7-172-C-Comp	R7-173-C-Z1a	R7-173-C-Comp
Sample Date	11/23/2009	11/23/2009	11/30/2009	11/30/2009	6/25/2010	6/25/2010	6/25/2010	6/25/2010
Sample Depth Range (ft BGS)	0.5-1	0-0.4	0-0.5	0.5-0.8	0-0.5	0-0.9	0-0.5	0-1.1
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	8580	10200	9760 J	13200 J	7520 J	7340 J	11900 J	13800 J
ANTIMONY	1.2 U	1.2 U	2.2 U	2 U	0.79 UR	0.79 UR	1.1 UR	1 UR
ARSENIC	5.6	6.4	5.2	6.8	6.2 J	6.7 J	6.1 J	6.1 J
BARIUM	130	170	81.2 J	77.7 J	199 J	409 J	173 J	186 J
BERYLLIUM	0.8 J+	0.85 J+	0.53 J	0.54 J	0.13 J	0.16 J	0.38 J	0.46 J
CADMIUM	0.64 J-	0.31 J-	0.73 J	0.88 J	3.9 J	4.9 J	2.5 J	2.5 J
CALCIUM	5660	14700	39000 J	38600 J	6000 J	5340 J	16900 J	15500 J
CHROMIUM	20.9	15.5	136 J	201 J	193 J	179 J	98.7 J	102 J
COBALT	12.2	13	7.2 J	8.5 J	10.2 J	10.8 J	10.8 J	12.5 J
COPPER	37	15.7	239 J	292 J	850 J	862 J	282 J	287 J
IRON	24600	25800	16300 J	17700 J	14300 J	15700 J	20000 J	22000 J
LEAD	42.7	18.3	586 J	790 J	1930 J	1060 J	331 J	377 J
MAGNESIUM	3640	4600	9590 J	10300 J	3600 J	3540 J	7980 J	7810 J
MANGANESE	1070	738	801 J	500 J	177 J	172 J	388 J	372 J
NICKEL	27	22.8	27.4	37	136 J	148 J	53.3 J	61 J
POTASSIUM	927	980	1100 J	1180 J	1040 J	1120 J	1740 J	1850 J
SELENIUM	0.7 U	0.73 U	2.3 J	2.6 J	2.5 J	2.4 J	3.5 J	3.4 J
SILVER	0.13 UR	0.13 UR	0.25 U	0.22 U	3.1 J	3.1 J	2 J	2.3 J
SODIUM	196 J	358 J	5.8 UJ	5.2 UJ	136 J	155 J	233 J	265 J
THALLIUM	0.46 U	0.47 U	0.88 U	0.79 U	0.61 U	0.61 U	0.85 U	0.8 U
VANADIUM	19.7	24.4	15.2	17.1	16.5 J	18.6 J	21.1 J	22.3 J
ZINC	127	133	1420 J	1850 J	1350 J	1670 J	699 J	823 J
Mercury by CV (mg/kg)								
MERCURY	0.12 J	0.052 U	0.14 J	0.2 J	1.5 J	1.4 J	0.69 J	0.67 J
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.011 U	0.012 U	0.021 U	0.02 U	0.071 U	0.069 U	0.095 U	0.087 U
PCB-1221 (AROCLOR 1221)	0.02 U	0.023 U	0.04 U	0.037 U	0.071 U	0.069 U	0.095 U	0.087 U
PCB-1232 (AROCLOR 1232)	0.0072 U	0.0083 U	0.015 U	0.014 U	0.071 U	0.069 U	0.095 U	0.087 U
PCB-1242 (AROCLOR 1242)	0.0046 U	0.0053 U	0.0093 U	0.0086 U	0.071 U	0.069 U	0.095 U	0.087 U
PCB-1248 (AROCLOR 1248)	0.0076 U	0.0087 U	0.015 U	0.014 U	3.8 J	10	0.75 J	0.85 J
PCB-1254 (AROCLOR 1254)	0.0061 U	0.007 U	0.012 U	0.011 U	8.4	12	0.4 J	0.44 J
PCB-1260 (AROCLOR 1260)	0.0089 U	0.01 U	0.018 U	0.017 U	3.1 J	3.7 J	0.12 NJ	0.14 NJ
PCB-1262 (AROCHLOR 1262)	0.0085 U	0.0097 U	0.017 U	0.016 U	0.071 U	0.069 U	0.095 U	0.087 U
PCB-1268 (AROCLOR 1268)	0.012 U	0.014 U	0.024 U	0.022 U	0.071 U	0.069 U	0.095 U	0.087 U
PCBs (total)	0.011 U	0.011 U	0.011 U	0.011 U	15 J	26 J	1.3 J	1.4 J
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.013	0.0047	0.0029 U	0.038	0.064	0.069	0.024	0.025
ACENAPHTHENE	0.007	0.0093 J	0.0028 U	0.053	0.72	0.79 J	0.036	0.034
ACENAPHTHYLENE	0.011	0.0027	0.0035 U	0.024 J	0.2	0.24	0.077	0.086

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-123-T-Z2	R7-124-T-Z1	R7-125-T-Z1	R7-125-T-Z2	R7-172-C-Z1a	R7-172-C-Comp	R7-173-C-Z1a	R7-173-C-Comp
Sample Date	11/23/2009	11/23/2009	11/30/2009	11/30/2009	6/25/2010	6/25/2010	6/25/2010	6/25/2010
Sample Depth Range (ft BGS)	0.5-1	0-0.4	0-0.5	0.5-0.8	0-0.5	0-0.9	0-0.5	0-1.1
Analyte								
ANTHRACENE	0.019	0.019	0.0035 J	0.17	2.9	1.7 J	0.34	0.23
BENZO(A)ANTHRACENE	0.16	0.096	0.0063 U	0.79	3.7	3.8	0.76	0.63
BENZO(A)PYRENE	0.092	0.075	0.0056 U	0.6	3.1	4.7	0.8	0.66
BENZO(B)FLUORANTHENE	0.093	0.093	0.0079 UJ	0.87 J	1	3.5	0.79	0.67
BENZO(K)FLUORANTHENE	0.069	0.061	0.0065 J	0.52	2.5	3	0.64	0.5
CHRYSENE	0.16 J	0.11 J	0.0051 J	0.79 J	5.1	4.9	0.92	0.74
DIBENZ(A,H)ANTHRACENE	0.014	0.0096	0.0067 J	0.39	0.8	0.92 J	0.23	0.13
FLUORANTHENE	0.23 J	0.3	0.0086 U	2.1	7.1	5.9	1.6	1.3
FLUORENE	0.019	0.015	0.0032	0.069	0.41	0.59	0.052	0.041
INDENO(1,2,3-C,D)PYRENE	0.066	0.068	0.011 U	1	1	2.2	0.5 J	0.3 J
NAPHTHALENE	0.014 J	0.0058 J	0.0047 U	0.043 UJ	0.062	0.067	0.024	0.022
PENTACHLOROPHENOL	0.0068	0.0019	0.014 U	0.013	--	--	--	--
PHENANTHRENE	0.1	0.14	0.0038 J	1.1	5.3	4.9 J	0.64	0.46
PYRENE	0.22	0.21	0.0079	1.3	6.9 J	7 J	1.3 J	1.1 J
PAHs (total)	1.3	1.2	0.053	10	42	46	9.2	7.3
Pesticides by MC PEST (mg/kg)								
ALDRIN	0.00037 U	0.00043 U	0.00075 U	0.00069 U	--	--	--	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	0.00058 U	0.00067 U	0.0012 U	0.0011 U	--	--	--	--
ALPHA-CHLORDANE	0.00029 U	0.00033 U	0.00059 U	0.00054 U	--	--	--	--
ALPHA ENDOSULFAN	0.00034 U	0.00039 U	0.0007 U	0.00064 U	--	--	--	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	0.00077 U	0.00088 U	0.0016 U	0.0014 U	--	--	--	--
BETA ENDOSULFAN	0.002 U	0.0023 U	0.004 U	0.0037 U	--	--	--	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	0.00069 U	0.00079 U	0.0014 U	0.0013 U	--	--	--	--
DIELDRIN	0.00068 U	0.00079 U	0.0014 U	0.0013 U	--	--	--	--
ENDOSULFAN SULFATE	0.00068 U	0.00079 U	0.0014 U	0.0013 U	--	--	--	--
ENDRIN	0.00068 U	0.00079 U	0.0014 U	0.0013 U	--	--	--	--
ENDRIN ALDEHYDE	0.0021 U	0.0025 U	0.0044 U	0.004 U	--	--	--	--
ENDRIN KETONE	0.0026 U	0.003 U	0.0054 U	0.005 U	--	--	--	--
GAMMA BHC (LINDANE)	0.00055 U	0.00063 U	0.0011 U	0.001 U	--	--	--	--
GAMMA-CHLORDANE	0.00043 U	0.0005 U	0.00088 U	0.00081 U	--	--	--	--
HEPTACHLOR	0.0007 U	0.00081 U	0.0014 U	0.0013 U	--	--	--	--
HEPTACHLOR EPOXIDE	0.00049 U	0.00056 U	0.001 U	0.00092 U	--	--	--	--
METHOXYCHLOR	0.0021 UJ	0.0025 UJ	0.0043 U	0.004 U	--	--	--	--
P,P'-DDD	0.0015 U	0.0017 U	0.0031 U	0.0028 U	--	--	--	--
P,P'-DDE	0.00091 U	0.0011 U	0.0019 U	0.0017 U	--	--	--	--
P,P'-DDT	0.0026 U	0.0029 U	0.0052 U	0.0048 U	--	--	--	--
TOXAPHENE	0.11 U	0.12 U	0.22 U	0.2 U	--	--	--	--

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-174-C-Z1a	R7-174-C-Comp	R7-175-C-Z1a	R7-175-C-Z1	R7-176-C-Z1a	R7-176-C-Comp	R7-177-C-Z1a	R7-177-C-Z1
Sample Date	6/25/2010	6/25/2010	6/24/2010	6/24/2010	6/24/2010	6/24/2010	6/24/2010	6/24/2010
Sample Depth Range (ft BGS)	0-0.5	0-1.2	0-0.5	0.5-1.4	0-0.5	0-0.9	0-0.5	0.5-1.1
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	13000 J	13400 J	13700 J	13600 J	10600 J	9790 J	12700 J	13000 J
ANTIMONY	1.1 UR	1 UR	1.1 UJ	0.95 UJ	1.4 UJ	0.98 UJ	1.2 UR	1 UR
ARSENIC	5.1 J	7.4 J	5.7 J	7.2 J	6 J	5.2 J	6.4 J	9.2 J
BARIUM	163 J	266 J	177 J	185 J	222 J	173 J	234 J	336 J
BERYLLIUM	0.44 J	0.47 J	0.42 J	0.45 J	0.33 J	0.33 J	0.37 J	0.37 J
CADMIUM	2.3 J	6.1 J	2.6 J	3 J	3.2 J	3.2 J	4.3 J	7.9 J
CALCIUM	14400 J	14900 J	16800 J	18200 J	15600 J	11300 J	19800 J	18800 J
CHROMIUM	95.6 J	272 J	112 J	131 J	140 J	138 J	159 J	340 J
COBALT	10.2 J	18.6 J	11.4 J	12.3 J	12.1 J	11 J	12.1 J	15.5 J
COPPER	270 J	608 J	325 J	361 J	389 J	462 J	391 J	751 J
IRON	19600 J	24500 J	21100 J	20800 J	18700 J	16600 J	22100 J	23100 J
LEAD	318 J	780 J	367 J	428 J	447 J	369 J	476 J	1190 J
MAGNESIUM	7980 J	7560 J	8190 J	8420 J	6830 J	5440 J	8480 J	7740 J
MANGANESE	341 J	354 J	327 J	310 J	393 J	303 J	269 J	265 J
NICKEL	52.2 J	217 J	59.2 J	73.6 J	70.4 J	94.7 J	81 J	203 J
POTASSIUM	1870 J	1840 J	2060 J	1990 J	1720 J	1480 J	1780 J	1570 J
SELENIUM	3.8 J	4 J	3.6 J	3.2 J	4.5 J	2.7 J	3.8 J	3.7 J
SILVER	1.9 J	3.5 J	2.3 J	2.5 J	2 J	1.5 J	3.2 J	4.8 J
SODIUM	249 J	159 J	237 J	233 J	274 J	237 J	187 J	162 J
THALLIUM	0.87 U	0.78 U	0.81 U	0.73 U	1.1 UJ	0.75 U	0.92 U	0.77 U
VANADIUM	21.5 J	35.4 J	23.9 J	25.5 J	19.5 J	17.4 J	23.5 J	33.4 J
ZINC	681 J	2070 J	826 J	955 J	938 J	865 J	1080 J	3150 J
Mercury by CV (mg/kg)								
MERCURY	0.54 J	0.94 J	0.65 J	1.1 J	1.5 J	1 J	0.93 J	3.7 J
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.11 U	0.086 U	0.087 U	0.086 U	0.13 U	0.08 U	0.094 U	0.087 U
PCB-1221 (AROCLOR 1221)	0.11 U	0.086 U	0.087 U	0.086 U	0.13 U	0.08 U	0.094 U	0.087 U
PCB-1232 (AROCLOR 1232)	0.11 U	0.086 U	0.087 U	0.086 U	0.13 U	0.08 U	0.094 U	0.087 U
PCB-1242 (AROCLOR 1242)	0.11 U	0.086 U	0.087 U	0.086 U	0.13 U	0.08 U	0.094 U	0.087 U
PCB-1248 (AROCLOR 1248)	1.8	3.1 NJ	0.59 J	0.25 J	7.5	4.1 J	0.63 NJ	0.52 NJ
PCB-1254 (AROCLOR 1254)	0.65 J	1.3	0.33 J	0.27 J	3.2	3.3	0.34 J	0.22 J
PCB-1260 (AROCLOR 1260)	0.26 NJ	0.43 J	0.098 NJ	0.086 U	0.64 NJ	0.67 NJ	0.1 NJ	0.087 U
PCB-1262 (AROCHLOR 1262)	0.11 U	0.086 U	0.087 U	0.086 U	0.13 U	0.08 U	0.094 U	0.087 U
PCB-1268 (AROCLOR 1268)	0.11 U	0.086 U	0.087 U	0.086 U	0.13 U	0.08 U	0.094 U	0.087 U
PCBs (total)	2.7 J	4.8 J	1 J	0.52 J	11 NJ	8.1 J	1.1 J	0.74 J
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.025	0.027	0.014	0.017	0.047 J	0.018	0.021	0.037
ACENAPHTHENE	0.046 J	0.18	0.032	0.028	0.13	0.067	0.044	0.056
ACENAPHTHYLENE	0.17	0.087	0.11	0.069	0.15	0.08	0.19	0.21 J

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-174-C-Z1a	R7-174-C-Comp	R7-175-C-Z1a	R7-175-C-Z1	R7-176-C-Z1a	R7-176-C-Comp	R7-177-C-Z1a	R7-177-C-Z1
Sample Date	6/25/2010	6/25/2010	6/24/2010	6/24/2010	6/24/2010	6/24/2010	6/24/2010	6/24/2010
Sample Depth Range (ft BGS)	0-0.5	0-1.2	0-0.5	0.5-1.4	0-0.5	0-0.9	0-0.5	0.5-1.1
Analyte								
ANTHRACENE	0.27	0.39	0.23	0.18	0.52	0.44	0.28	0.13
BENZO(A)ANTHRACENE	0.33	1.3	0.8	0.49	2.3	1.4	0.85	1
BENZO(A)PYRENE	0.37	1.1	0.88	0.52	0.91	1.2	0.92	1
BENZO(B)FLUORANTHENE	0.28	0.97	0.87	0.49	0.82	0.84	0.88	0.85
BENZO(K)FLUORANTHENE	0.24	0.8	0.63	0.35	1	0.83	0.83	0.74
CHRYSENE	0.49	1.4	0.98	0.54	3.2	1.4	0.96	1.1 J
DIBENZ(A,H)ANTHRACENE	0.23	0.3	0.21	0.12	0.31	0.63	0.3	0.26
FLUORANTHENE	0.66	1.7 U	1.4	0.88	3.9	1.6	1.7	1.6
FLUORENE	0.059	0.087	0.041	0.035	0.18	0.057	0.051	0.049
INDENO(1,2,3-C,D)PYRENE	0.33	0.58	0.57	0.29	0.54	0.61	0.56	0.63
NAPHTHALENE	0.021	0.021	0.014	0.015	0.044	0.016	0.022	0.029
PENTACHLOROPHENOL	--	--	--	--	--	--	--	--
PHENANTHRENE	0.47 J	0.63	0.5 J	0.36	1.9	0.62	0.55	0.48
PYRENE	0.62 J	2.5	1.3 J	0.79	4.2 J	2	1.4	1.6 J
PAHs (total)	5	13	9.2	5.5	21	12	10	10
Pesticides by MC PEST (mg/kg)								
ALDRIN	--	--	--	--	--	--	--	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
ALPHA-CHLORDANE	--	--	--	--	--	--	--	--
ALPHA ENDOSULFAN	--	--	--	--	--	--	--	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
BETA ENDOSULFAN	--	--	--	--	--	--	--	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--
GAMMA BHC (LINDANE)	--	--	--	--	--	--	--	--
GAMMA-CHLORDANE	--	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--	--
P,P'-DDD	--	--	--	--	--	--	--	--
P,P'-DDE	--	--	--	--	--	--	--	--
P,P'-DDT	--	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--	--

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-177-CR	R7-178-C-Z1a	R7-178-C-Z1	R7-179-C-Z1a	R7-179-C-Comp	R7-180-C-Z1a	R7-180-C-Comp	R7-181-C-Z1a
Sample Date	6/24/2010	6/24/2010	6/24/2010	6/23/2010	6/23/2010	6/23/2010	6/23/2010	7/1/2010
Sample Depth Range (ft BGS)	0.5-1.1	0-0.5	0.5-1.2	0-0.5	0-0.7	0-0.5	0-1.1	0-0.5
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	12900 J	10800 J	14200 J	11200 J	14800 J	13200 J	9250 J	6500
ANTIMONY	0.99 UR	1.6 UR	1.1 UR	1.1 UJ	1.1 UJ	1.2 UJ	0.84 UJ	0.63 UJ
ARSENIC	9.2 J	6.4 J	13.1 J	6.4 J	7.9 J	5.7 J	5.7 J	3.2 J
BARIUM	332 J	170 J	275 J	299 J	184 J	268 J	459 J	146
BERYLLIUM	0.34 J	0.34 J	0.2 J	0.34 J	0.47 J	0.41 J	0.27 J	0.3 J
CADMIUM	8.3 J	4.3 J	50.1 J	2.9 J	2.9 J	3.3 J	14 J	0.032 UJ
CALCIUM	17900 J	18800 J	14100 J	17100 J	20300 J	19800 J	14600 J	7580
CHROMIUM	349 J	101 J	230 J	120 J	117 J	99.7372 J	138 J	33.3
COBALT	15.3 J	11.1 J	18.9 J	10.5 J	12.4 J	12.3 J	10.7 J	0.069 UJ
COPPER	762 J	330 J	972 J	347 J	378 J	338 J	397 J	92.9
IRON	23300 J	20600 J	16100 J	18100 J	22700 J	21500 J	15900 J	12400
LEAD	1170 J	358 J	711 J	363 J	424 J	354 J	475 J	108
MAGNESIUM	7600 J	7340 J	4520 J	7490 J	9170 J	8170 J	5750 J	3630
MANGANESE	260 J	512 J	208 J	325 J	497 J	490 J	323 J	427
NICKEL	209 J	59.7 J	459 J	66.7 J	64.1 J	59.4 J	84.1 J	23.5
POTASSIUM	1550 J	1780 J	981 J	1710 J	2210 J	2100 J	1230 J	968
SELENIUM	4.6 J	4.1 J	7 J	3.1 J	4.2 J	3.8 J	6.3 J	0.72 J
SILVER	4.1 J	1.7 UJ	2.5 J	1.8 J	2.3 J	2 J	2.3 J	0.66 U
SODIUM	160 J	332 J	733 J	244 J	286 J	274 J	353 J	4.7 UJ
THALLIUM	0.76 U	1.2 UJ	0.86 U	0.87 U	0.88 U	0.96 U	0.64 U	0.48 U
VANADIUM	33.4 J	18.4 J	24.4 J	19.5 J	24.5 J	22.3 J	17.8 J	12.7 J
ZINC	3190 J	983 J	3440 J	900 J	934 J	741 J	1070 J	246
Mercury by CV (mg/kg)								
MERCURY	1.3 J	4.5 J	0.57 J	0.86 J	0.96 J	0.98 J	0.59 J	0.21
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.084 U	0.15 U	0.091 U	0.094 U	0.094 U	0.099 U	0.067 U	0.052 U
PCB-1221 (AROCLOR 1221)	0.084 U	0.15 U	0.091 U	0.094 U	0.094 U	0.099 U	0.067 U	0.052 U
PCB-1232 (AROCLOR 1232)	0.084 U	0.15 U	0.091 U	0.094 U	0.094 U	0.099 U	0.067 U	0.052 U
PCB-1242 (AROCLOR 1242)	0.084 U	0.15 U	0.091 U	0.094 U	0.094 U	0.099 U	0.067 U	0.052 U
PCB-1248 (AROCLOR 1248)	0.27 NJ	3 NJ	16 NJ	2.5 J	3.3 J	2.4 J	26	0.052 U
PCB-1254 (AROCLOR 1254)	0.15 NJ	1.2 J	26 J	2.1 J	2.1	1.2	18	0.052 U
PCB-1260 (AROCLOR 1260)	0.084 U	0.3 NJ	42	0.82 J	0.32 NJ	0.42 NJ	6.7 U	0.052 U
PCB-1262 (AROCHLOR 1262)	0.084 U	0.15 U	0.091 U	0.094 U	0.094 U	0.099 U	0.067 U	0.052 U
PCB-1268 (AROCLOR 1268)	0.084 U	0.15 U	0.091 U	0.094 U	0.094 U	0.099 U	0.067 U	0.052 U
PCBs (total)	0.42 NJ	4.5 J	84 J	5.4 J	5.7 J	4 J	44	0.052 U
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.028	0.071 J	0.12	0.12	0.091	0.16	0.37 J	0.013
ACENAPHTHENE	0.053	0.14 J	0.58	0.15	0.078	0.86	0.34 J	0.022
ACENAPHTHYLENE	0.14 J	0.25	0.54	0.2	0.19	0.17	0.15	0.043 J

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-177-CR	R7-178-C-Z1a	R7-178-C-Z1	R7-179-C-Z1a	R7-179-C-Comp	R7-180-C-Z1a	R7-180-C-Comp	R7-181-C-Z1a
Sample Date	6/24/2010	6/24/2010	6/24/2010	6/23/2010	6/23/2010	6/23/2010	6/23/2010	7/1/2010
Sample Depth Range (ft BGS)	0.5-1.1	0-0.5	0.5-1.2	0-0.5	0-0.7	0-0.5	0-1.1	0-0.5
Analyte								
ANTHRACENE	0.19	0.41	1.1	0.53	0.41	2.7	0.79	0.11 J
BENZO(A)ANTHRACENE	1	1.1	3.4	2.1	1.2	3.3	3.1	0.26
BENZO(A)PYRENE	1.1	0.51	2.8	1.9	1.3	1.7 J	2.7	0.28
BENZO(B)FLUORANTHENE	0.87	0.59	2.3	1.7	1.3	1.1	1.8	0.13 J
BENZO(K)FLUORANTHENE	0.71	0.56	1.8	1.4	1.1	1.3	2.1	0.25
CHRYSENE	1.2 J	1.4	3.4	2.3	1.5	4.2	3 J	0.15
DIBENZ(A,H)ANTHRACENE	0.24	0.2	0.56	0.57	0.34	0.51	0.57	0.022 J
FLUORANTHENE	1.5	5.2	4.6	5.3 J	2.2	5.5	4.2 J	0.51
FLUORENE	0.042 J	0.15	0.71	0.26	0.15	0.67	0.43	0.032
INDENO(1,2,3-C,D)PYRENE	0.61	0.33	1.3	1.2	0.98	0.81	1.5 J	0.047
NAPHTHALENE	0.022	0.1	0.065	0.11	0.092	0.093	0.34	0.012
PENTACHLOROPHENOL	--	--	--	--	--	--	--	-- J
PHENANTHRENE	0.47	1.1	3.2	1.9	0.93	5	2.6	0.23 J
PYRENE	1.7 J	4.3 J	6.2	4.4 J	2	6.1 J	7.4 J	0.47 J
PAHs (total)	10	17	34	25	15	36	33	2.6
Pesticides by MC PEST (mg/kg)								
ALDRIN	--	--	--	--	--	--	--	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
ALPHA-CHLORDANE	--	--	--	--	--	--	--	--
ALPHA ENDOSULFAN	--	--	--	--	--	--	--	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
BETA ENDOSULFAN	--	--	--	--	--	--	--	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--
GAMMA BHC (LINDANE)	--	--	--	--	--	--	--	--
GAMMA-CHLORDANE	--	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--	--
P,P'-DDD	--	--	--	--	--	--	--	--
P,P'-DDE	--	--	--	--	--	--	--	--
P,P'-DDT	--	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--	--

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Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-181-C-Comp	R7-182-C-COMP	R7-183-C-Z1a	R7-183-C-Comp	R7-184-C-Comp	R7-185-C-Z1a	R7-185-C-Comp	R7-186-C-Z1a
Sample Date	7/1/2010	7/1/2010	7/1/2010	7/1/2010	6/30/2010	6/30/2010	6/30/2010	6/30/2010
Sample Depth Range (ft BGS)	0-1.3	0-0.8	0-0.5	0-1.3	0-0.75	0-0.5	0-0.7	0-0.5
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	6900	11900	11100 J	10500 J	10200 J	10500 J	9540 J	6760
ANTIMONY	0.55 UJ	0.59 UJ	1.1 UJ	0.9 UJ	0.86 UJ	1.2 UJ	0.92 UJ	0.68 UJ
ARSENIC	4.2 J	12.6 J	4.4 J	4.8 J	10.7 J	4.2 J	4.5 J	3.9 J
BARIUM	141	139	869 J	357 J	453 J	147 J	163 J	391
BERYLLIUM	0.36 J	0.51 J	0.41 J	0.45 J	0.41 J	0.31 J	0.28 J	0.2 J
CADMIUM	1 J	0.03 UJ	1.6 J	5.8 J	21.1 J	2.4 J	1.6 J	1.7 J
CALCIUM	4310	6540	18200 J	15500 J	10000 J	18700 J	14300 J	12900
CHROMIUM	38.8	44.5	91.3 J	116 J	409 J	94.6 J	90.7 J	82.8
COBALT	7.8 J	11 J	0.12 UJ	0.099 UJ	12.7 J	0.14 UJ	0.1 UJ	0.075 UJ
COPPER	128	123	387 J	407 J	1030 J	293 J	257 J	324
IRON	14200	18500	18600 J	17200 J	21200 J	17600 J	17800 J	12500
LEAD	165	209	364 J	682 J	1300 J	324 J	294 J	275
MAGNESIUM	2910	4470	8000 J	6820 J	6050 J	8450 J	6670 J	5550
MANGANESE	466	563	288 J	293 J	192 J	306 J	245 J	255
NICKEL	29.1	36.8	56.3 J	66.3 J	180 J	51.5 J	53 J	43
POTASSIUM	953	1390	1700 J	1410 J	1200 J	16.8 UJ	1330 J	9.3 UJ
SELENIUM	0.81 J	1.1 J	1.8 J	1.9 J	6.3 J	1.8 J	1.6 J	1 J
SILVER	0.57 U	0.62 U	1.2 U	0.94 U	5.6 J	1.5 J	1.6 J	1.1 J
SODIUM	4.1 UJ	4.4 UJ	8.4 UJ	6.7 UJ	198 J	287 J	173 J	153 J
THALLIUM	0.42 U	0.45 U	0.87 U	0.69 U	0.66 U	0.95 U	0.71 U	0.53 U
VANADIUM	15.6 J	22.4 J	17.6 J	18.8 J	23.2 J	18.7 J	20.2 J	11.6
ZINC	311	320	697 J	1190 J	2360 J	721 J	628 J	469
Mercury by CV (mg/kg)								
MERCURY	0.46	0.69	1.1 J	2.4 J	3.6 J	1.1 J	0.55 J	0.78
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.045 U	0.052 U	0.033 U	0.033 U	0.069 U	0.091 U	0.07 U	0.06 U
PCB-1221 (AROCLOR 1221)	0.045 U	0.052 U	0.033 U	0.033 U	0.069 U	0.091 U	0.07 U	0.06 U
PCB-1232 (AROCLOR 1232)	0.045 U	0.052 U	0.033 U	0.033 U	0.069 U	0.091 U	0.07 U	0.06 U
PCB-1242 (AROCLOR 1242)	0.045 U	0.052 U	0.033 U	0.033 U	0.069 U	0.091 U	0.07 U	0.06 U
PCB-1248 (AROCLOR 1248)	0.074 NJ	0.052 U	0.07 NJ	0.033 U	0.069 U	0.091 U	0.43 NJ	0.06 U
PCB-1254 (AROCLOR 1254)	0.037 J	0.052 U	0.059	0.033 U	6.9	0.091 U	0.5	0.06 U
PCB-1260 (AROCLOR 1260)	0.045 U	0.052 U	0.027 J	0.033 U	0.069 U	0.091 U	0.19	0.06 U
PCB-1262 (AROCHLOR 1262)	0.045 U	0.052 U	0.033 U	0.033 U	0.069 U	0.091 U	0.07 U	0.06 U
PCB-1268 (AROCLOR 1268)	0.045 U	0.052 U	0.033 U	0.033 U	0.069 U	0.091 U	0.07 U	0.06 U
PCBs (total)	0.11 J	0.052 U	0.16 J	0.033 U	6.9	0.091 U	1.1 NJ	0.06 U
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.0084	0.012	0.012 J	0.031	0.045	0.037 J	0.026	0.055
ACENAPHTHENE	0.019	0.012	0.025 J	0.12	0.16	0.12 J	0.079	0.21
ACENAPHTHYLENE	0.026	0.031	0.19	0.23 J	0.19	0.18 J	0.2	0.22

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-181-C-Comp	R7-182-C-COMP	R7-183-C-Z1a	R7-183-C-Comp	R7-184-C-Comp	R7-185-C-Z1a	R7-185-C-Comp	R7-186-C-Z1a
Sample Date	7/1/2010	7/1/2010	7/1/2010	7/1/2010	6/30/2010	6/30/2010	6/30/2010	6/30/2010
Sample Depth Range (ft BGS)	0-1.3	0-0.8	0-0.5	0-1.3	0-0.75	0-0.5	0-0.7	0-0.5
Analyte								
ANTHRACENE	0.092	0.032	0.056 J	0.23 J	0.49	0.23 J	0.32	1.4
BENZO(A)ANTHRACENE	0.28 J	0.14	0.52	0.97	2	0.86	0.76	1.9
BENZO(A)PYRENE	0.19 J	0.052 J	0.54	0.97	0.2	0.9	0.81	0.51
BENZO(B)FLUORANTHENE	0.39	0.064 J	0.42	0.61	0.3	0.72	0.6	0.38
BENZO(K)FLUORANTHENE	0.2	0.048	0.52 J	0.95 J	0.21	0.79 J	0.67	0.57
CHRYSENE	0.35	0.21	0.7	1.1	2.9	1.1	0.95	2.6
DIBENZ(A,H)ANTHRACENE	0.021	0.023	0.018 J	0.092 J	0.078	0.079 J	0.053	0.23
FLUORANTHENE	0.33	0.35	1 J	1.7	5.3	1.7 J	1.3	4.3
FLUORENE	0.023	0.017	0.023	0.16	0.14	0.16	0.092	0.23
INDENO(1,2,3-C,D)PYRENE	0.041	0.037	0.033 J	0.15	0.15	0.13	0.094 J	0.31
NAPHTHALENE	0.0084	0.0099	0.012	0.095	0.046	0.042	0.02	0.045
PENTACHLOROPHENOL	--	--	--	--	--	--	--	--
PHENANTHRENE	0.28	0.16 J	0.56 J	0.85 J	2.6	0.9 J	0.62	2.3
PYRENE	0.46 J	0.24 J	1 J	1.7 J	3.4 J	1.5 J	1.3 J	2.6 J
PAHs (total)	2.8	1.5	5.7	10	18	9.6	8	18
Pesticides by MC PEST (mg/kg)								
ALDRIN	--	--	--	--	--	--	--	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
ALPHA-CHLORDANE	--	--	--	--	--	--	--	--
ALPHA ENDOSULFAN	--	--	--	--	--	--	--	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
BETA ENDOSULFAN	--	--	--	--	--	--	--	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--
GAMMA BHC (LINDANE)	--	--	--	--	--	--	--	--
GAMMA-CHLORDANE	--	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--	--
P,P'-DDD	--	--	--	--	--	--	--	--
P,P'-DDE	--	--	--	--	--	--	--	--
P,P'-DDT	--	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--	--

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-186-C-Comp	R7-187-C-Z1a	R7-187-C-Comp	R7-188-C-Z1a	R7-188-C-Z1	R7-189-C-Comp	R7-189-CR
Sample Date	6/30/2010	6/30/2010	6/30/2010	6/30/2010	6/30/2010	6/30/2010	6/30/2010
Sample Depth Range (ft BGS)	0-0.7	0-0.5	0-0.95	0-0.5	0.4-1.1	0-1.2	0-1.2
Analyte							
Metals by C200.7 (mg/kg)							
ALUMINUM	7300	13000 J	9770 J	11000 J	7820	10400 J	10100
ANTIMONY	0.73 UJ	1.3 UJ	1 UJ	1.1 UJ	0.63 UJ	0.8 UJ	0.7 UJ
ARSENIC	3.2 J	4.6 J	4.5 J	3.8 J	2.2 J	9.1 J	6.2 J
BARIUM	322	170 J	214 J	142 J	0.21 UJ	272 J	290
BERYLLIUM	0.22 J	0.44 J	0.31 J	0.41 J	0.32 J	0.32 J	0.33 J
CADMIUM	1.8 J	0.068 UJ	2.8 J	0.057 UJ	0.032 UJ	4.6 J	4 J
CALCIUM	11300	24200 J	16800 J	15600 J	3810	16800 J	16900
CHROMIUM	90.6	66.5 J	95.7 J	44.3 J	12.5	214 J	198
COBALT	0.08 UJ	0.15 UJ	0.11 UJ	0.12 UJ	0.069 U	15.2 J	14
COPPER	434	243 J	288 J	150 J	18.3	656 J	682
IRON	12300	22500 J	18600 J	18800 J	14800	18700 J	17900
LEAD	585	275 J	338 J	179 J	11.4	810 J	714
MAGNESIUM	4880	10200 J	6910 J	6920 J	2930	7340 J	7300
MANGANESE	223	456 J	340 J	389 J	215	318 J	316
NICKEL	53.6	47.2 J	114 J	30.7 J	14.6	206 J	168
POTASSIUM	9.9 UJ	1910 J	1360 J	1510 J	1310	1070 J	1070
SELENIUM	1.2 J	2 J	2 J	1.9 J	1 J	1.7 J	1.5 J
SILVER	8	1.4 UJ	1.4 J	1.2 U	0.66 U	2.2 J	2.9
SODIUM	172 J	316 J	342 J	255 J	1020	187 J	177 J
THALLIUM	0.56 U	1 UJ	0.8 U	0.85 U	0.48 U	0.62 U	0.54 U
VANADIUM	11.9	21.6 J	19.9 J	18.6 J	15.1	25.3 J	23.7
ZINC	535	598 J	902 J	377 J	76.3	2090 J	1850
Mercury by CV (mg/kg)							
MERCURY	0.68	0.81 J	0.84 J	1.3 J	0.064 UJ	1.3 J	1.1
PCBS by MC ARO (mg/kg)							
PCB-1016 (AROCLOR 1016)	0.077 U	0.099 U	0.08 U	0.087 U	0.056 U	0.069 U	0.064 U
PCB-1221 (AROCLOR 1221)	0.077 U	0.099 U	0.08 U	0.087 U	0.056 U	0.069 U	0.064 U
PCB-1232 (AROCLOR 1232)	0.077 U	0.099 U	0.08 U	0.087 U	0.056 U	0.069 U	0.064 U
PCB-1242 (AROCLOR 1242)	0.077 U	0.099 U	0.08 U	0.087 U	0.056 U	0.069 U	0.064 U
PCB-1248 (AROCLOR 1248)	0.41 NJ	0.31	41 J	0.087 U	0.056 U	0.12 NJ	0.097 NJ
PCB-1254 (AROCLOR 1254)	0.33	0.24	23	0.087 U	0.056 U	0.12 J	0.079
PCB-1260 (AROCLOR 1260)	0.11 J	0.12 NJ	0.08 U	0.087 U	0.056 U	0.069 U	0.064 U
PCB-1262 (AROCHLOR 1262)	0.077 U	0.099 U	0.08 U	0.087 U	0.056 U	0.069 U	0.064 U
PCB-1268 (AROCLOR 1268)	0.077 U	0.099 U	0.08 U	0.087 U	0.056 U	0.069 U	0.064 U
PCBs (total)	0.85 J	0.67 NJ	64 J	0.087 U	0.056 U	0.24 J	0.18 NJ
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)							
2-METHYLNAPHTHALENE	0.1	0.012	0.02	0.0083	0.005 U	0.062	0.065
ACENAPHTHENE	0.35	0.024	0.067	0.016	0.005 U	0.12	0.22
ACENAPHTHYLENE	0.45	0.074	0.093	0.043	0.005	0.19	0.21

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-186-C-Comp	R7-187-C-Z1a	R7-187-C-Comp	R7-188-C-Z1a	R7-188-C-Z1	R7-189-C-Comp	R7-189-CR
Sample Date	6/30/2010	6/30/2010	6/30/2010	6/30/2010	6/30/2010	6/30/2010	6/30/2010
Sample Depth Range (ft BGS)	0-0.7	0-0.5	0-0.95	0-0.5	0.4-1.1	0-1.2	0-1.2
Analyte							
ANTHRACENE	0.41 J	0.13	0.32 J	0.061	0.0086	0.59 J	0.42 J
BENZO(A)ANTHRACENE	1.7	0.33 J	0.76	0.18 J	0.027 J	1.8 J	1.5
BENZO(A)PYRENE	1.5	0.23 J	0.81	0.14 J	0.015 J	1.7 J	1.4
BENZO(B)FLUORANTHENE	1.1	0.38 J	0.49	0.18	0.017 J	0.99 J	0.92
BENZO(K)FLUORANTHENE	1.1 J	0.28	0.66 J	0.13	0.011	1.5 J	1.4 J
CHRYSENE	1.9	0.47	1	0.27	0.031 U	1.8	1.7
DIBENZ(A,H)ANTHRACENE	0.32 J	0.031	0.15 J	0.017	0.005	0.13 J	0.12 J
FLUORANTHENE	2.5	0.97	1.2	0.5	0.051 U	2.9	2.6
FLUORENE	0.43	0.043	0.08	0.022	0.005 U	0.13	0.24
INDENO(1,2,3-C,D)PYRENE	0.6 J	0.074	0.18	0.035 J	0.005 U	0.19 U	0.24 U
NAPHTHALENE	0.064	0.012	0.02	0.0094	0.005	0.069	0.064
PENTACHLOROPHENOL	--	--	--	--	--	--	--
PHENANTHRENE	1.5 J	0.38	0.57 J	0.2	0.02	1.6 J	1.4 J
PYRENE	2.8 J	0.62 J	1.3 J	0.33 J	0.042 J	2.8 J	2.5 J
PAHs (total)	17	4.1	7.9	2.2	0.22	17	15
Pesticides by MC PEST (mg/kg)							
ALDRIN	--	--	--	--	--	--	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--
ALPHA-CHLORDANE	--	--	--	--	--	--	--
ALPHA ENDOSULFAN	--	--	--	--	--	--	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--
BETA ENDOSULFAN	--	--	--	--	--	--	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--
GAMMA BHC (LINDANE)	--	--	--	--	--	--	--
GAMMA-CHLORDANE	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--
P,P'-DDD	--	--	--	--	--	--	--
P,P'-DDE	--	--	--	--	--	--	--
P,P'-DDT	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-189-C-Z1a	R7-190-C-Comp	R7-191-C-Comp	R7-191-C-Z1a	R7-192-C-Z1a	R7-193-C-Comp	R7-193-C-Z1a	R7-194-C-Comp
Sample Date	6/30/2010	6/30/2010	6/29/2010	6/29/2010	6/29/2010	6/29/2010	6/29/2010	6/29/2010
Sample Depth Range (ft BGS)	0-0.5	0-0.7	0-0.9	0-0.5	0-0.3	0-0.8	0-0.5	0-0.6
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	10800 J	9120	11000 J	11600 J	9630 J	9390	8430 J	11300 J
ANTIMONY	1 UJ	0.65 UJ	1 UJ	1.3 UJ	0.92 UJ	0.77 UJ	0.9 UJ	0.82 UJ
ARSENIC	4.4 J	5.7 J	5.1 J	4.1 J	4.5 J	10.2 J	6.1 J	3.6 J
BARIUM	278 J	298	269 J	185 J	228 J	463	383 J	312 J
BERYLLIUM	0.35 J	0.46 J	0.11 UJ	0.13 UJ	0.095 UJ	0.079 UJ	0.093 UJ	0.084 UJ
CADMIUM	1.7 J	1.6 J	2.2 J	0.067 UJ	1.7 J	1.2 J	2.8 J	0.042 UJ
CALCIUM	18700 J	12200	22000 J	23600 J	22100 J	14200	15900 J	23100 J
CHROMIUM	88.9 J	85	119 J	80.4 J	110 J	81.8 J	95.2 J	93.6 J
COBALT	0.11 UJ	10.9	10.3 J	9.6 J	9 J	9.1 J	7.6 J	6.9 J
COPPER	323 J	343	414 J	314 J	427 J	524	409 J	487 J
IRON	18700 J	20000	18600 J	19300 J	17700 J	20800	16200 J	14600 J
LEAD	382 J	320	475 J	313 J	436 J	652	519 J	358 J
MAGNESIUM	8430 J	5590	9090 J	9550 J	9130 J	6760	7090 J	6200 J
MANGANESE	498 J	364	315 J	355 J	293 J	267	286 J	365 J
NICKEL	54.3 J	60.7	63.7 J	45.9 J	65.5 J	83.3	55.2 J	51.2 J
POTASSIUM	1450 J	1030	1520 J	1770 J	1290 J	1270	12.3 UJ	11.1 UJ
SELENIUM	2 J	1.1 J	1.3 J	1.6 J	1 J	1.3 J	1.2 J	0.71 U
SILVER	1.2 J	0.7 J	1.8 J	2.5 J	1.9 J	1.3 J	1.2 J	1.8 J
SODIUM	245 J	335 J	7.6 UJ	9.7 UJ	6.9 UJ	5.7 UJ	6.7 UJ	6.1 UJ
THALLIUM	0.79 U	0.5 U	0.79 U	1 U	0.71 U	0.59 U	0.7 U	0.63 U
VANADIUM	19.5 J	16.3	19.4 J	19 J	17.3 J	16.9	15.3 J	13.1 J
ZINC	649 J	664	782 J	625 J	691 J	786	666 J	498 J
Mercury by CV (mg/kg)								
MERCURY	1.9 J	0.64	1.1 J	2.1 J	1.2 J	2.9	5.5 J	0.77 J
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.082 U	0.058 U	0.064 U	0.12 U	0.074 U	0.062 U	0.073 U	0.089 U
PCB-1221 (AROCLOR 1221)	0.082 U	0.058 U	0.064 U	0.12 U	0.074 U	0.062 U	0.073 U	0.089 U
PCB-1232 (AROCLOR 1232)	0.082 U	0.058 U	0.064 U	0.12 U	0.074 U	0.062 U	0.073 U	0.089 U
PCB-1242 (AROCLOR 1242)	0.082 U	0.058 U	0.064 U	0.12 U	0.074 U	0.062 U	0.073 U	0.089 U
PCB-1248 (AROCLOR 1248)	0.082 U	0.17 NJ	0.47 NJ	0.64 J	0.17	0.076	0.57 J	23
PCB-1254 (AROCLOR 1254)	0.082 U	0.39 J	0.34	0.4 J	0.1	0.084 J	0.5 J	10
PCB-1260 (AROCLOR 1260)	0.082 U	0.29	0.13 J	0.12 U	0.074 U	0.024 J	0.26 J	2.4 NJ
PCB-1262 (AROCHLOR 1262)	0.082 U	0.058 U	0.064 U	0.12 U	0.074 U	0.062 U	0.073 U	0.089 U
PCB-1268 (AROCLOR 1268)	0.082 U	0.058 U	0.064 U	0.12 U	0.074 U	0.062 U	0.073 U	0.089 U
PCBs (total)	0.082 U	0.85 J	0.94 J	1 J	0.27	0.18 J	1.3 J	35 NJ
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	0.032	0.041	0.028	0.044	0.056	0.18	0.075	0.29
ACENAPHTHENE	0.11	0.1	0.074	0.11	0.12	0.92	0.25	1.1
ACENAPHTHYLENE	0.26 J	0.17	0.1	0.1	0.14	0.1	0.23	0.31 J

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-189-C-Z1a	R7-190-C-Comp	R7-191-C-Comp	R7-191-C-Z1a	R7-192-C-Z1a	R7-193-C-Comp	R7-193-C-Z1a	R7-194-C-Comp
Sample Date	6/30/2010	6/30/2010	6/29/2010	6/29/2010	6/29/2010	6/29/2010	6/29/2010	6/29/2010
Sample Depth Range (ft BGS)	0-0.5	0-0.7	0-0.9	0-0.5	0-0.3	0-0.8	0-0.5	0-0.6
Analyte								
ANTHRACENE	0.18 J	0.52	0.3 J	0.63	0.45 J	4.4 J	1.7	1.7
BENZO(A)ANTHRACENE	0.94	1.5	0.89	4.8	1.2	8.7 J	4.2	9.3
BENZO(A)PYRENE	0.91	0.3	0.86	0.57	1.2	7.7 J	0.69	8.9
BENZO(B)FLUORANTHENE	0.69	0.23	0.41	0.5	0.82	5.5	0.45	0.94
BENZO(K)FLUORANTHENE	0.8 J	0.29	0.62 J	0.71 J	0.98 J	4.1 J	3.6	1.5
CHRYSENE	1.2	2.2	1.1	2.1	1.5	10	5.8	13
DIBENZ(A,H)ANTHRACENE	0.16 J	0.13	0.1 J	0.25	0.38 J	1.4 J	0.3	0.86
FLUORANTHENE	1.6	3.8	1.6	4.5	2	9.7	4.9	8.8
FLUORENE	0.16	0.14	0.091	0.2	0.14	1.3	0.3	0.93
INDENO(1,2,3-C,D)PYRENE	0.26	0.19	0.5	0.41	0.66	3.4	0.44	0.99
NAPHTHALENE	0.031	0.046	0.026	0.053	0.047	0.059	0.066	0.21
PENTACHLOROPHENOL	--	--	--	--	--	--	--	--
PHENANTHRENE	0.72 J	1.8	0.75 J	2.6	1 J	15 J	4.3	8.3
PYRENE	1.5 J	2.4 J	1.4 J	4.1 J	2.2 J	17 J	4.1 J	11 J
PAHs (total)	9.8	14	9.4	22	14	93	32	69
Pesticides by MC PEST (mg/kg)								
ALDRIN	--	--	--	--	--	--	--	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
ALPHA-CHLORDANE	--	--	--	--	--	--	--	--
ALPHA ENDOSULFAN	--	--	--	--	--	--	--	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
BETA ENDOSULFAN	--	--	--	--	--	--	--	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--
GAMMA BHC (LINDANE)	--	--	--	--	--	--	--	--
GAMMA-CHLORDANE	--	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--	--
P,P'-DDD	--	--	--	--	--	--	--	--
P,P'-DDE	--	--	--	--	--	--	--	--
P,P'-DDT	--	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--	--

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-195-C-Comp	R7-196-C-Comp	R7-196-C-Z1a	R7-197-C-Comp	R7-197-CR	R7-197-C-Z1a	R7-198-C-Comp	R7-198-C-Z1a
Sample Date	6/29/2010	6/29/2010	6/29/2010	6/28/2010	6/28/2010	6/28/2010	6/28/2010	6/28/2010
Sample Depth Range (ft BGS)	0-0	0-1.3	0-0.5	0-1.2	0-1.2	0-0.5	0-0.9	0-0.5
Analyte								
Metals by C200.7 (mg/kg)								
ALUMINUM	8660	11700 J	10500 J	9700	9570	7700 J	9750	7830
ANTIMONY	21.4 J	0.83 UJ	0.96 UJ	0.75 UJ	0.71 UJ	0.83 UR	0.67 UR	0.66 UR
ARSENIC	4 J	14.7 J	5.4 J	10.2 J	8.1 J	6.4 J	6.4 J	4.6 J
BARIUM	544	364 J	203 J	321	279	203 J	399	353
BERYLLIUM	0.074 UJ	0.085 UJ	0.098 UJ	0.077 UJ	0.073 UJ	0.25 J	0.31 J	0.27 J
CADMIUM	1.4 J	9.9 J	5.6 J	3.9 J	4 J	2.3 J	1.9 J	1.8 J
CALCIUM	19300	19800 J	26400 J	21300	21500	24000 J	21600	22000
CHROMIUM	142 J	374 J	172 J	190 J	172 J	104 J	117	99.6608
COBALT	7.7 J	15.7 J	9.4 J	13.1	13.9	9 J	9.7	7.3 J
COPPER	677	839 J	506 J	829	626	468 J	510	466
IRON	14700	22800 J	17500 J	17900	17200	15100 J	16500	15000
LEAD	471	1330 J	652 J	932	803	522 J	534	423
MAGNESIUM	7140	8220 J	9080 J	8470	8450	9460 J	8100	8250
MANGANESE	323	311 J	351 J	285	282	337 J	305	336
NICKEL	65.9	151 J	105 J	154	191	71.9 J	69.3	79.5
POTASSIUM	932	1320 J	1310 J	1020	964 J	901 J	1050	835 J
SELENIUM	0.81 J	1.4 J	1.4 J	1.3 J	1.1 J	2.5 J	2.2 J	2.1 J
SILVER	3.4	4.2 J	4.1 J	2.1	3.9	2.1 J	2.4	2.2
SODIUM	5.4 UJ	6.2 UJ	7.1 UJ	5.6 UJ	5.3 UJ	167 J	186 J	138 J
THALLIUM	0.55 U	0.64 U	0.74 U	0.58 U	0.55 U	0.64 U	0.52 U	0.51 U
VANADIUM	15.1	36.7 J	23.6 J	23	21.5	14 J	14.9	12.5
ZINC	613	2340 J	1200 J	1710	1540	738 J	802	595
Mercury by CV (mg/kg)								
MERCURY	1.3	2.1 J	1.7 J	1.9 J	0.91 J	4.5 J	0.84 J	0.81 J
PCBS by MC ARO (mg/kg)								
PCB-1016 (AROCLOR 1016)	0.057 U	0.061 U	0.072 U	0.062 U	0.075 U	0.061 U	0.055 U	0.06 U
PCB-1221 (AROCLOR 1221)	0.057 U	0.061 U	0.072 U	0.062 U	0.075 U	0.061 U	0.055 U	0.06 U
PCB-1232 (AROCLOR 1232)	0.057 U	0.061 U	0.072 U	0.062 U	0.075 U	0.061 U	0.055 U	0.06 U
PCB-1242 (AROCLOR 1242)	0.057 U	0.061 U	0.072 U	0.062 U	0.075 U	0.061 U	0.055 U	0.06 U
PCB-1248 (AROCLOR 1248)	2 NJ	0.31	0.47 J	0.57 NJ	0.075 U	0.43 NJ	0.8 J	0.06 U
PCB-1254 (AROCLOR 1254)	2.2	0.2	0.26 J	0.73 J	0.42 J	0.68	1.3	0.06 U
PCB-1260 (AROCLOR 1260)	0.54 NJ	0.084 NJ	0.072 U	0.46 J	0.11 J	0.2 J	0.45 J	0.06 U
PCB-1262 (AROCHLOR 1262)	0.057 U	0.061 U	0.072 U	0.062 U	0.075 U	0.061 U	0.055 U	0.06 U
PCB-1268 (AROCLOR 1268)	0.057 U	0.061 U	0.072 U	0.062 U	0.075 U	0.061 U	0.055 U	0.06 U
PCBs (total)	4.7 NJ	0.59 NJ	0.73 J	1.8 J	0.53 J	1.3 J	2.6 J	0.06 U
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
2-METHYLNAPHTHALENE	2.1	0.08	0.053	0.055	0.08	0.081	0.073	0.055
ACENAPHTHENE	9	0.3	0.16	0.25	0.29	0.32	0.23	0.18
ACENAPHTHYLENE	0.34	0.2	0.2 J	0.19	0.21	0.33	0.1	0.13

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-195-C-Comp	R7-196-C-Comp	R7-196-C-Z1a	R7-197-C-Comp	R7-197-CR	R7-197-C-Z1a	R7-198-C-Comp	R7-198-C-Z1a
Sample Date	6/29/2010	6/29/2010	6/29/2010	6/28/2010	6/28/2010	6/28/2010	6/28/2010	6/28/2010
Sample Depth Range (ft BGS)	0-0	0-1.3	0-0.5	0-1.2	0-1.2	0-0.5	0-0.9	0-0.5
Analyte								
ANTHRACENE	7.4 J	0.53	0.31	0.45	0.55	0.79	0.52	0.38
BENZO(A)ANTHRACENE	14 J	2.4	1.3	2.7	2.5	3.2	1.7	1.3
BENZO(A)PYRENE	12	2.1	1.3	2.4	2.3	3.1	1.5	1.2
BENZO(B)FLUORANTHENE	8.7 J	1.3	1.1	1.7	2	1.9	0.91	0.94
BENZO(K)FLUORANTHENE	12	1.3	0.92	1.6	1.9	2.4	1.2	0.94
CHRYSENE	16 J	2.8	1.6 J	2.9	2.7	3.9	1.9	1.5
DIBENZ(A,H)ANTHRACENE	2.5	0.56	0.25	0.27	0.26	0.53 J	0.39	0.32
FLUORANTHENE	32	3.2	2.6	3.9	3.9	5	2.9	2.3
FLUORENE	6.4 J	0.17	0.19	0.27	0.3	0.35	0.24	0.2
INDENO(1,2,3-C,D)PYRENE	4.3	0.84	0.73	1.4	0.77	1.3	0.83	0.74
NAPHTHALENE	4.3	0.074	0.063	0.064	0.097	0.085	0.075	0.058
PENTACHLOROPHENOL	--	--	--	--	--	--	--	--
PHENANTHRENE	37	0.94	1.3	2	2.1	3.1 J	1.9	1.5
PYRENE	29 J	4.1	2.2 J	4.7 J	4.4	4.6 J	3	2.3 J
PAHs (total)	200	22	15	26	25	32	18	15
Pesticides by MC PEST (mg/kg)								
ALDRIN	--	--	--	--	--	--	--	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
ALPHA-CHLORDANE	--	--	--	--	--	--	--	--
ALPHA ENDOSULFAN	--	--	--	--	--	--	--	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
BETA ENDOSULFAN	--	--	--	--	--	--	--	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--
GAMMA BHC (LINDANE)	--	--	--	--	--	--	--	--
GAMMA-CHLORDANE	--	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--	--
P,P'-DDD	--	--	--	--	--	--	--	--
P,P'-DDE	--	--	--	--	--	--	--	--
P,P'-DDT	--	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--	--

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-199-C-Comp	R7-199-C-Z1a	R7-200-C-Comp	R7-200-C-Z1a	R7-201-T-Comp	R7-201-T-Z1a	R7-202-T-Comp
Sample Date	6/28/2010	6/28/2010	6/28/2010	6/28/2010	6/25/2010	6/25/2010	6/29/2010
Sample Depth Range (ft BGS)	0-1.5	0-0.5	0-3	0-0.5	0-1.1	0-0.5	0-0.9
Analyte							
Metals by C200.7 (mg/kg)							
ALUMINUM	9930 J	8790 J	8660	6660	10400	13100 J	11000
ANTIMONY	0.83 UJ	1.2 UR	0.65 UJ	0.65 UJ	0.75 UR	0.94 UR	0.74 UJ
ARSENIC	5.8 J	6.2 J	6.4 J	4.5 J	3.8 J	3.5 J	3.4 J
BARIUM	469 J	283 J	199	166	113	131 J	117
BERYLLIUM	0.31 J	0.26 J	0.24 J	0.21 J	0.42 J	0.42 J	0.44 J
CADMIUM	2.1 J	2.5 J	1.9 J	1.5 J	0.8 J	0.91 J	0.038 UJ
CALCIUM	23900 J	27500 J	29900	25900	6020	7900 J	6560
CHROMIUM	111 J	89.1 J	84.5	49.1	14.7	17.1 J	15.9
COBALT	8.4 J	10 J	10.8	7.9 J	10	10.2 J	10.6
COPPER	907 J	634 J	785	362	14.5	18.3 J	15.7
IRON	15600 J	18200 J	18500	14300	18100	19100 J	18100
LEAD	666 J	540 J	363	256	21.9	23 J	19.2
MAGNESIUM	7770 J	9550 J	9530	9660	4300	4940 J	4630
MANGANESE	318 J	462 J	358	339	317	632 J	431
NICKEL	87.2 J	62.8 J	95.3	56	20.5	21.7 J	21.8
POTASSIUM	845 J	1130 J	782 J	1040	1430	1650 J	1500
SELENIUM	2.3 J	3 J	2.4 J	2.1 J	2.4 J	2.4 J	0.9 J
SILVER	10.1 J	2 J	3.7	2.5	0.79 U	0.99 U	0.78 U
SODIUM	183 J	253 J	151 J	120 J	88.9 J	172 J	205 J
THALLIUM	0.64 U	0.96 U	0.5 U	0.5 U	0.58 U	0.72 U	0.57 U
VANADIUM	13.8 J	16.4 J	13.9	11.3	17.1	18 J	19.6
ZINC	758 J	721 J	483	367	88.5	108 J	95.7
Mercury by CV (mg/kg)							
MERCURY	0.86 J	0.67 J	4.7 J	0.7 J	0.083 J	0.097 UJ	0.076 UJ
PCBS by MC ARO (mg/kg)							
PCB-1016 (AROCLOR 1016)	0.069 U	0.1 U	0.05 U	0.059 U	0.064 U	0.07 U	0.067 U
PCB-1221 (AROCLOR 1221)	0.069 U	0.1 U	0.05 U	0.059 U	0.064 U	0.07 U	0.067 U
PCB-1232 (AROCLOR 1232)	0.069 U	0.1 U	0.05 U	0.059 U	0.064 U	0.07 U	0.067 U
PCB-1242 (AROCLOR 1242)	0.069 U	0.1 U	0.05 U	0.059 U	0.064 U	0.07 U	0.067 U
PCB-1248 (AROCLOR 1248)	0.069 U	0.1 U	3 J	0.9 J	0.064 U	0.07 U	0.067 U
PCB-1254 (AROCLOR 1254)	0.069 U	0.1 U	5.1	0.52	0.064 U	0.07 U	0.067 U
PCB-1260 (AROCLOR 1260)	0.069 U	0.1 U	5.1	0.3	0.064 U	0.07 U	0.067 U
PCB-1262 (AROCHLOR 1262)	0.069 U	0.1 U	0.05 U	0.059 U	0.064 U	0.07 U	0.067 U
PCB-1268 (AROCLOR 1268)	0.069 U	0.1 U	0.05 U	0.059 U	0.064 U	0.07 U	0.067 U
PCBs (total)	0.069 U	0.1 U	13 J	1.7 J	0.064 U	0.07 U	0.067 U
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)							
2-METHYLNAPHTHALENE	0.098	0.086	0.29	0.0079	0.006 U	0.007 U	0.006 U
ACENAPHTHENE	0.26	0.36	0.9	0.026	0.006 J	0.007 U	0.006 U
ACENAPHTHYLENE	0.11	0.15	0.08	0.014	0.0059	0.007 U	0.006

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-199-C-Comp	R7-199-C-Z1a	R7-200-C-Comp	R7-200-C-Z1a	R7-201-T-Comp	R7-201-T-Z1a	R7-202-T-Comp
Sample Date	6/28/2010	6/28/2010	6/28/2010	6/28/2010	6/25/2010	6/25/2010	6/29/2010
Sample Depth Range (ft BGS)	0-1.5	0-0.5	0-3	0-0.5	0-1.1	0-0.5	0-0.9
Analyte							
ANTHRACENE	0.62	0.59 J	1.6 J	0.045	0.012	0.007 J	0.011
BENZO(A)ANTHRACENE	2.2	1.9	3.3	0.076	0.039	0.011 J	0.021 J
BENZO(A)PYRENE	1.9	1.7	3.4	0.081 J	0.019	0.007 U	0.011 J
BENZO(B)FLUORANTHENE	1.2	1.1	1.9	0.13	0.029	0.007 U	0.02 J
BENZO(K)FLUORANTHENE	1.4	1.3 J	2.2 J	0.07	0.018	0.007	0.01
CHRYSENE	2.3	2.2	3.8	0.11	0.057 U	0.019 U	0.024 U
DIBENZ(A,H)ANTHRACENE	0.2	0.27 J	0.53 J	0.023	0.006	0.007	0.006
FLUORANTHENE	3.6	3.4	5	0.18	0.042 U	0.031 UJ	0.053 U
FLUORENE	0.26	0.35	0.82	0.033	0.006	0.007 U	0.006 U
INDENO(1,2,3-C,D)PYRENE	0.8	0.99	1.3	0.035	0.0079 U	0.007 U	0.006 U
NAPHTHALENE	0.097	0.11	0.11	0.01	0.006	0.007	0.006
PENTACHLOROPHENOL	--	--	--	--	--	--	--
PHENANTHRENE	2.6	2.2 J	4.7 J	0.039	0.021	0.012	0.029
PYRENE	4	3.3 J	6.2 J	0.13 J	0.033 J	0.022 J	0.035 J
PAHs (total)	22	21	37	1.1	0.28	0.1	0.21
Pesticides by MC PEST (mg/kg)							
ALDRIN	--	--	--	--	--	--	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--
ALPHA-CHLORDANE	--	--	--	--	--	--	--
ALPHA ENDOSULFAN	--	--	--	--	--	--	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--
BETA ENDOSULFAN	--	--	--	--	--	--	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--
GAMMA BHC (LINDANE)	--	--	--	--	--	--	--
GAMMA-CHLORDANE	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--
P,P'-DDD	--	--	--	--	--	--	--
P,P'-DDE	--	--	--	--	--	--	--
P,P'-DDT	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-202-T-Z1a	R7-203-T-Comp	R7-203-T-Z1a	R7-204-T-Z1a	R7-205-T-Comp	R7-205-T-Z1a
Sample Date	6/29/2010	6/29/2010	6/29/2010	6/29/2010	6/29/2010	6/29/2010
Sample Depth Range (ft BGS)	0-0.5	0-0.7	0-0.5	0-0.3	0-0.8	0-0.5
Analyte						
Metals by C200.7 (mg/kg)						
ALUMINUM	12200 J	15000 J	11900 J	8730 J	8150	7990
ANTIMONY	1.2 UJ	1.1 UJ	0.8 UJ	0.81 UJ	0.61 UJ	0.64 UJ
ARSENIC	3.5 J	6.5 J	6.5 J	1 J	5.7 J	8 J
BARIUM	121 J	78.5 J	72.9 J	63.4 J	46.1	64.8
BERYLLIUM	0.12 UJ	0.11 UJ	0.082 UJ	0.4 J	0.31 J	0.39 J
CADMIUM	0.061 UJ	1.6 J	1.3 J	0.041 UJ	0.031 UJ	0.033 UJ
CALCIUM	7160 J	35500 J	35700 J	42800 J	53600	46900
CHROMIUM	17.3 J	201 J	149 J	89.4 J	85	77.6
COBALT	9.9 J	7.8 J	7.4 J	0.089 UJ	0.067 UJ	0.07 UJ
COPPER	20.6 J	292 J	250 J	270 J	117	179
IRON	18600 J	16400 J	15400 J	14200 J	12500	15300
LEAD	18.3 J	800 J	823 J	679 J	425	521
MAGNESIUM	4770 J	8920 J	8500 J	9710 J	10500	10200
MANGANESE	454 J	437 J	838 J	547 J	598	983
NICKEL	21.4 J	40.8 J	31.9 J	22.8 J	18.1	24.6
POTASSIUM	1880 J	2170 J	1760 J	1460 J	1080	1300
SELENIUM	1 U	0.95 U	1.1 J	0.71 UJ	0.86 J	0.91 J
SILVER	1.2 U	1.1 U	0.84 U	0.85 U	0.64 U	0.67 U
SODIUM	8.8 UJ	8.1 UJ	6 UJ	408 J	530 J	525 J
THALLIUM	0.91 U	0.84 U	0.62 U	0.62 U	0.47 U	0.49 U
VANADIUM	20.9 J	17.7 J	15.7 J	14.4 J	11.5	13.8
ZINC	113 J	1600 J	1490 J	1150 J	722	841
Mercury by CV (mg/kg)						
MERCURY	0.12 U	0.22 J	0.13 J	0.083 UJ	0.17	0.18
PCBS by MC ARO (mg/kg)						
PCB-1016 (AROCLOR 1016)	0.11 U	0.087 U	0.08 U	0.062 U	0.051 U	0.052 U
PCB-1221 (AROCLOR 1221)	0.11 U	0.087 U	0.08 U	0.062 U	0.051 U	0.052 U
PCB-1232 (AROCLOR 1232)	0.11 U	0.087 U	0.08 U	0.062 U	0.051 U	0.052 U
PCB-1242 (AROCLOR 1242)	0.11 U	0.087 U	0.08 U	0.062 U	0.051 U	0.052 U
PCB-1248 (AROCLOR 1248)	0.11 U	0.087 U	0.08 U	0.062 U	0.051 U	0.063 NJ
PCB-1254 (AROCLOR 1254)	0.11 U	0.087 U	0.08 U	0.062 U	0.051 U	0.034 J
PCB-1260 (AROCLOR 1260)	0.11 U	0.087 U	0.08 U	0.062 U	0.051 U	0.012 J
PCB-1262 (AROCHLOR 1262)	0.11 U	0.087 U	0.08 U	0.062 U	0.051 U	0.052 U
PCB-1268 (AROCLOR 1268)	0.11 U	0.087 U	0.08 U	0.062 U	0.051 U	0.052 U
PCBs (total)	0.11 U	0.087 U	0.08 U	0.062 U	0.051 U	0.11 J
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)						
2-METHYLNAPHTHALENE	0.011 U	0.43	0.014	0.013	0.0098	0.017
ACENAPHTHENE	0.011 U	2.4	0.063	0.047	0.048	0.056
ACENAPHTHYLENE	0.011	0.16	0.035	0.051	0.047	0.058

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Sample ID	R7-202-T-Z1a	R7-203-T-Comp	R7-203-T-Z1a	R7-204-T-Z1a	R7-205-T-Comp	R7-205-T-Z1a
Sample Date	6/29/2010	6/29/2010	6/29/2010	6/29/2010	6/29/2010	6/29/2010
Sample Depth Range (ft BGS)	0-0.5	0-0.7	0-0.5	0-0.3	0-0.8	0-0.5
Analyte						
ANTHRACENE	0.011	3.3	0.34	0.24	0.25	0.56
BENZO(A)ANTHRACENE	0.2	6.3	0.7	0.46	0.37	0.75
BENZO(A)PYRENE	0.054	6.2	0.27	0.51	0.41	0.14
BENZO(B)FLUORANTHENE	0.07	5.1	0.22	0.47	0.36	0.13
BENZO(K)FLUORANTHENE	0.058	6.3	0.36	0.52	0.41	0.19
CHRYSENE	0.3	7.4	1.7	0.6	0.46	1.1
DIBENZ(A,H)ANTHRACENE	0.013	0.51	0.14	0.049	0.043	0.066
FLUORANTHENE	0.051 U	19	2.2	1.2	0.93	2.8
FLUORENE	0.011	2.7	0.079	0.073	0.071	0.081
INDENO(1,2,3-C,D)PYRENE	0.026 U	2.3	0.23	0.13	0.069	0.12
NAPHTHALENE	0.011	0.8	0.018	0.017	0.013	0.02
PENTACHLOROPHENOL	--	--	--	--	--	--
PHENANTHRENE	0.022	19	1.4	0.59	0.55	1.3
PYRENE	0.058 J	14	1.5 J	0.81	0.73	1 J
PAHs (total)	0.89	97	9.5	5.9	4.8	8.5
Pesticides by MC PEST (mg/kg)						
ALDRIN	--	--	--	--	--	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--
ALPHA-CHLORDANE	--	--	--	--	--	--
ALPHA ENDOSULFAN	--	--	--	--	--	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--
BETA ENDOSULFAN	--	--	--	--	--	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--
GAMMA BHC (LINDANE)	--	--	--	--	--	--
GAMMA-CHLORDANE	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--
P,P'-DDD	--	--	--	--	--	--
P,P'-DDE	--	--	--	--	--	--
P,P'-DDT	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--

Key at the end of table

Table 4-6a
Summary of Results for Reach 7 Sediment Samples

Key:

BGS =	Below ground surface (in this case below top of sediment surface).
-C =	Hand-core creek location/sample.
-Comp =	Hand-core creek composite sample.
-CR=	Hand-core creek duplicate sample.
ft =	Feet.
J =	Estimated at the concentration listed.
mg/Kg =	Milligrams per kilogram.
NJ =	Estimated.
PCB =	Polychlorinated biphenyl.
SVOA =	Semivoloatile organic compounds analysis.
-T =	Tributary location/sample.
U =	Non-detect.
UJ =	Non-detect/estimated.
-Z =	Sample depth interval consecutively numbered.
-- =	Not submitted for this parameter.

Table 4-6b
Summary of Result for Reach 7 Soil Samples

Sample ID	R7-118-W	R7-130-H	R7-131-H	R7-132-H	R7-133-H	R7-134-H
Sample Date	11/30/2009	11/30/2009	11/30/2009	11/25/2009	11/24/2009	11/23/2009
Sample Depth Range (ft BGS)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Analyte						
Metals by C200.7 (mg/kg)						
ALUMINUM	9240 J	9620 J	9050 J	13100	11900	12500
ANTIMONY	2.6 J	1.4 U	1.3 U	3 U	1.5 U	1.9 U
ARSENIC	4.3	3.7 J+	3.6 J+	10.7	6.4 J+	6.8
BARIUM	122 J	116 J	178 J	255	173	176
BERYLLIUM	0.64 J	0.57 J+	0.51 J+	0.83 J	0.81 J+	0.79 J+
CADMIUM	0.96	0.085 UJ	0.081 UJ	2.4	0.49 J-	2.7
CALCIUM	12800 J	4650 J	11100 J	9360	5160	22800
CHROMIUM	78.4 J	25.6 J	88.5 J	57.9	34.4	109
COBALT	9.3 J	8.5	8.1	8.5 J	9.7	11.4
COPPER	275 J	41.7 J	268 J	143	66.8	272
IRON	17300 J	18700 J	17600 J	18800	23200	24600
LEAD	339 J	56.9 J	309 J	276 J+	139 J+	400
MAGNESIUM	7130 J	3160 J	6030 J	4370	3820	9670
MANGANESE	305 J	404 J	248 J	126	406	526
NICKEL	101	22	49.6	40.1	28.7	77.4
POTASSIUM	922 J	949	721 J	1800 J	1490	1400
SELENIUM	2.3 J	2 J	2.2 J	3.7 J	0.94 U	1.2 U
SILVER	0.77 J	0.15 UJ	0.73 J-	0.34 U	0.17 UJ	0.3 J-
SODIUM	4 UJ	3.6 UJ	3.4 UJ	428 J-	271 J	821 J
THALLIUM	0.6 U	0.54 U	0.52 U	1.2 U	0.62 U	0.76 U
VANADIUM	24.3	20.5	18.6	31.2	24.8	28.7
ZINC	820 J	159 J	717 J	535	193	1030
Mercury by CV (mg/kg)						
MERCURY	0.99	0.16 J	1.5	0.89	1	0.27
PCBS by MC ARO (mg/kg)						
PCB-1016 (AROCLOR 1016)	0.016 U	0.014 U	0.015 U	0.019 U	0.016 U	0.015 U
PCB-1221 (AROCLOR 1221)	0.03 U	0.026 U	0.028 U	0.036 U	0.031 U	0.028 U
PCB-1232 (AROCLOR 1232)	0.011 U	0.0094 U	0.01 U	0.013 U	0.011 U	0.01 U
PCB-1242 (AROCLOR 1242)	0.007 U	0.006 U	0.0064 U	0.0083 U	0.0072 U	0.0066 U
PCB-1248 (AROCLOR 1248)	0.012 U	0.0098 U	0.011 U	0.014 U	0.012 U	0.011 U
PCB-1254 (AROCLOR 1254)	0.19	0.0079 U	1.3	0.035 J	0.045 J	3.3 J
PCB-1260 (AROCLOR 1260)	0.014 U	0.012 U	0.012 U	0.016 U	0.014 U	0.013 U
PCB-1262 (AROCHLOR 1262)	0.013 U	0.011 U	0.012 U	0.015 U	0.013 U	0.012 U
PCB-1268 (AROCLOR 1268)	0.018 U	0.015 U	0.017 U	0.021 U	0.018 U	0.017 U
PCBs (total)	0.19	0.011 U	1.3	0.035	0.045	3.3

Key at the end Table

Table 4-6b
Summary of Result for Reach 7 Soil Samples

Sample ID	R7-118-W	R7-130-H	R7-131-H	R7-132-H	R7-133-H	R7-134-H
Sample Date	11/30/2009	11/30/2009	11/30/2009	11/25/2009	11/24/2009	11/23/2009
Sample Depth Range (ft BGS)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Analyte						
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)						
2-METHYLNAPHTHALENE	0.14	--	--	--	0.19	--
ACENAPHTHENE	0.29	--	--	--	0.25	--
ACENAPHTHYLENE	0.08	--	--	--	0.21 J	--
ANTHRACENE	0.55	--	--	--	0.82	--
BENZO(A)ANTHRACENE	2.2	--	--	--	3.2	--
BENZO(A)PYRENE	0.96	--	--	--	1.9	--
BENZO(B)FLUORANTHENE	1.8	--	--	--	2.4	--
BENZO(K)FLUORANTHENE	1.3	--	--	--	1.6	--
CHRYSENE	1.9	--	--	--	2.6	--
DIBENZ(A,H)ANTHRACENE	0.21	--	--	--	0.61	--
FLUORANTHENE	5.4	--	--	--	4.6	--
FLUORENE	0.31	--	--	--	0.33 J	--
INDENO(1,2,3-C,D)PYRENE	2.8	--	--	--	3.9	--
NAPHTHALENE	0.28	--	--	--	0.2 J	--
PENTACHLOROPHENOL	0.045	--	--	--	0.045	--
PHENANTHRENE	3.7	--	--	--	2.6	--
PYRENE	3	--	--	--	3.9	--
PAHs (total)	25	--	--	--	29	--
Pesticides by MC PEST (mg/kg)						
ALDRIN	0.00057 U	--	--	--	0.00056 U	--
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	0.00089 U	--	--	--	0.00089 U	--
ALPHA-CHLORDANE	0.00044 U	--	--	--	0.00044 U	--
ALPHA ENDOSULFAN	0.00052 U	--	--	--	0.00052 U	--
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	0.0012 U	--	--	--	0.0012 U	--
BETA ENDOSULFAN	0.003 U	--	--	--	0.003 U	--
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	0.0011 U	--	--	--	0.001 U	--
DIELDRIN	0.0074	--	--	--	0.001 U	--
ENDOSULFAN SULFATE	0.0071 J	--	--	--	0.001 U	--
ENDRIN	0.001 U	--	--	--	0.001 U	--
ENDRIN ALDEHYDE	0.0033 U	--	--	--	0.0033 U	--
ENDRIN KETONE	0.004 U	--	--	--	0.004 U	--
GAMMA BHC (LINDANE)	0.00084 U	--	--	--	0.00084 U	--
GAMMA-CHLORDANE	0.0086	--	--	--	0.00066 U	--
HEPTACHLOR	0.0011 U	--	--	--	0.0011 U	--
HEPTACHLOR EPOXIDE	0.00075 U	--	--	--	0.00075 U	--

Key at the end Table

Table 4-6b
Summary of Result for Reach 7 Soil Samples

Sample ID	R7-118-W	R7-130-H	R7-131-H	R7-132-H	R7-133-H	R7-134-H
Sample Date	11/30/2009	11/30/2009	11/30/2009	11/25/2009	11/24/2009	11/23/2009
Sample Depth Range (ft BGS)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Analyte						
METHOXYCHLOR	0.0033 U	--	--	--	0.0033 U	--
P,P'-DDD	0.0023 U	--	--	--	0.0023 U	--
P,P'-DDE	0.0014 U	--	--	--	0.0014 U	--
P,P'-DDT	0.0039 U	--	--	--	0.0039 U	--
TOXAPHENE	0.17 U	--	--	--	0.17 U	--

Key:

BGS = Below ground surface.
ft = Feet.
J = Estimated at the concentration listed.
-H = Historical channel location/sample.
mg/Kg = Milligrams per kilogram.
PCB = Polychlorinated biphenyl.
SVOA = Semivoloatile organic compounds analysis.
U = Non-detect.
UJ = Non-detect/estimated.
-W = Wetland location/sample.
-- = Not submitted for this parameter.

Key at the end Table

Table 4-7
Summary of Results for Total Organic Carbon Analysis

Sample ID	Sample Date	Sample Depth Range (ft BGS)	Total Organic Carbon (mg/kg)
R2-001-V-Z1P	05/18/10	0-1	44,600
R2-001-V-Z2	05/18/10	1-2	47,300
R2-001-V-Z3	05/18/10	2-3	91,800
R2-001-V-Z4	05/18/10	3-4	97,600
R2-001-V-Z5	05/18/10	4-5	41,600
R2-001-V-Z6	05/18/10	6-7	12,400
R2-002-V-Z1P	05/18/10	0-1	46,200
R2-002-V-Z1	05/18/10	0-1	43,200
R2-002-V-Z2	05/18/10	1-2	46,400
R2-002-V-Z3	05/18/10	2-3	60,700
R2-002-V-Z4	05/18/10	3-4	86,600
R2-002-V-Z5	05/18/10	4-6	46,800
R2-002-VR	05/18/10	4-6	86,700
R2-002-V-Z6	05/18/10	6-7.5	57,700
R2-003-V-Z1P	05/18/10	0-1	43,800
R2-003-V-Z1	05/18/10	0-1	39,400
R2-003-V-Z2	05/18/10	1-2	42,800
R2-003-V-Z3	05/18/10	2-3	92,400
R2-003-V-Z4	05/18/10	3-4	81,000
R2-003-V-Z5	05/18/10	4-5	56,300
R2-003-V-Z6	05/18/10	6-7	89,600
R2-004-V-Z1P	05/18/10	0-1	42,300
R2-004-V-Z1	05/18/10	0-1	39,000
R2-004-V-Z2	05/18/10	1-2	47,800
R2-004-VR	05/18/10	1-2	42,800
R2-004-V-Z3	05/18/10	2-3	73,100
R2-004-V-Z4	05/18/10	3-3.5	67,300
R2-004-V-Z5	05/18/10	4.5-5	24,400
R2-005-V-Z1P	05/19/10	0-1	93,100
R2-005-V-Z1	05/19/10	0-1	43,900
R2-005-V-Z2	05/19/10	1-2	46,900
R2-005-V-Z3	05/19/10	2-3	107,000
R2-005-V-Z4	05/19/10	3-4	69,800
R2-005-V-Z5	05/19/10	4-6	87,400
R2-005-V-Z6	05/19/10	6-7	63,100
R2-006-V-Z1P	05/19/10	0-1	46,500
R2-006-V-Z1	05/19/10	0-1	29,600
R2-006-V-Z2	05/19/10	1-2	44,800
R2-006-V-Z3	05/19/10	2-3	78,500
R2-006-VR	05/19/10	2-3	105,000
R2-006-V-Z4	05/19/10	3-4	92,700
R2-006-V-Z5a	05/19/10	4-5	75,200
R2-006-V-Z5b	05/19/10	5-6	40,400
R2-007-V-Z1	05/19/10	0-1	40,600
R2-007-V-Z1P	05/19/10	0-1	51,100
R2-007-V-Z2	05/19/10	1-2	58,300
R2-007-V-Z3	05/19/10	2-3	136,000
R2-007-V-Z4	05/19/10	3-4	78,800
R2-007-V-Z5a	05/19/10	4-5	29,800
R2-007-V-Z5b	05/19/10	5-6	3,980
R2-008-V-Z1	05/19/10	0-1	56,300
R2-008-V-Z1P	05/19/10	0-1	45,500
R2-008-V-Z2	05/19/10	1-2	57,400
R2-008-V-Z3	05/19/10	2-3	106,000
R2-008-V-Z4	05/19/10	3-4	70,000
R2-008-V-Z5	05/19/10	4.5-5	12,700
R2-009-V-Z1	05/19/10	0-1	45,700
R2-009-V-Z1P	05/19/10	0-1	37,200
R2-009-V-Z2	05/19/10	1-2	54,300
R2-009-V-Z3	5/19/10	2-3	99,700
R2-009-V-Z4	5/19/10	3-4	85,400
R2-009-VR	5/19/10	3-4	51,500
R2-009-V-Z5	5/19/10	4-5.5	61,700
R2-010-V-Z1	5/25/10	0-1	55,200
R2-010-V-Z2	5/25/10	1-2	60,400
R2-010-V-Z3	5/25/10	2-3	72,100
R2-010-V-Z4	5/25/10	3-4	138,000
R2-010-V-Z5	5/25/10	4-6	95,200
R2-010-V-Z6	5/25/10	6-8	64,500
R2-010-VR	5/25/10	6-8	66,500
R2-010-V-Z7a	5/25/10	8-9	8,750
R2-010-V-Z7b	5/25/10	9-10	20,100
R2-011-V-Z1	5/25/10	0-1	32,000
R2-011-V-Z2	5/25/10	1-2	55,600
R2-011-V-Z3	5/25/10	2-3	73,200
R2-011-V-Z4	5/25/10	3-4	62,200
R2-011-V-Z5	5/25/10	4-6	124,000
R2-011-V-Z6	5/25/10	6-8	106,000
R2-011-V-Z7	5/25/10	8-10	79,500
R2-011-V-Z8	5/25/10	10-11.5	43,200
R2-012-V-Z1	5/25/10	0-1	48,900
R2-012-V-Z2	5/25/10	1-2	52,300
R2-012-V-Z3	5/25/10	2-3	47,600
R2-012-V-Z4	5/25/10	3-4	87,700
R2-012-VR	5/25/10	3-4	84,600
R2-012-V-Z5	5/25/10	4-6	139,000
R2-012-V-Z6	5/25/10	6-8	59,800
R2-012-V-Z7	5/25/10	8-9	25,900
R2-013-V-Z1	5/25/10	0-1	53,000
R2-013-V-Z2	5/25/10	1-2	50,700
R2-013-V-Z3	5/25/10	2-3	49,400
R2-013-V-Z4	5/25/10	3-4	67,500
R2-013-V-Z5	5/25/10	4-6	133,000
R2-013-V-Z6	5/25/10	6-8	128,000
R2-013-V-Z7	5/25/10	8-10	109,000
R2-013-V-Z8	5/25/10	10-12	89,600
R2-014-V-Z1	5/25/10	0-1	60,000
R2-014-V-Z2	5/25/10	1-2	45,900
R2-014-V-Z3	5/25/10	2-3	124,000
R2-014-V-Z4	5/25/10	3-4	150,000
R2-014-V-Z5	5/25/10	4-6	130,000
R2-014-VR	5/25/10	4-6	128,000
R2-014-V-Z6	5/25/10	6-8	97,600
R2-014-V-Z7	5/25/10	8-10	107,000
R2-015-V-Z1	5/25/10	0-1	31,700
R2-015-V-Z2	5/25/10	1-2	64,500
R2-015-V-Z3	5/25/10	2-3	131,000
R2-015-V-Z4	5/25/10	3-4	116,000
R2-015-V-Z5	5/25/10	4-6	92,100
R2-015-V-Z6	5/25/10	6-8	66,100
R2-015-V-Z7a	5/25/10	8-9	33,500
R2-015-V-Z7b	5/25/10	9-9.5	2,470

Key at the end of Table

Table 4-7
Summary of Results for Total Organic Carbon Analysis

Sample ID	Sample Date	Sample Depth Range (ft BGS)	Total Organic Carbon (mg/kg)
R3-016-V-Z1	05/26/10	0-1	70,900
R3-016-V-Z2	05/26/10	1-2	109,000
R3-016-V-Z3	05/26/10	2-3	97,900
R3-016-V-Z4	05/26/10	3-4	86,800
R3-016-VR	05/26/10	3-4	76,000
R3-016-V-Z5	05/26/10	4-6	82,300
R3-016-V-Z6	05/26/10	6-8	67,500
R3-016-V-Z7	05/26/10	8-9	3,380
R3-017-V-Z1	05/26/10	0-1	34,000
R3-017-V-Z2	05/26/10	1-2	44,900
R3-017-V-Z3	05/26/10	2-3	71,000
R3-017-V-Z4	05/26/10	3-4	125,000
R3-017-V-Z5	05/26/10	4-6	130,000
R3-017-VR	05/26/10	4-6	121,000
R3-017-V-Z6	05/26/10	6-8	77,900
R3-017-V-Z7	05/26/10	8-8.5	62,800
R3-018-V-Z1	05/25/10	0-1	57,400
R3-018-V-Z2	05/25/10	1-2	68,800
R3-018-V-Z3	05/25/10	2-3	126,000
R3-018-V-Z4	05/25/10	3-4	141,000
R3-018-V-Z5	05/25/10	4-6	118,000
R3-018-V-Z6	05/25/10	6-8	95,000
R3-018-V-Z7	05/25/10	8-10	88,400
R3-018-V-Z8	05/25/10	10-12	56,800
R3-019-V-Z1	05/26/10	0-1	61,400
R3-019-V-Z2	05/26/10	1-2	73,200
R3-019-V-Z3	05/26/10	2-3	99,200
R3-019-V-Z4	05/26/10	3-4	85,900
R3-020-V-Z1	05/26/10	0-1	47,300
R3-020-V-Z2	05/26/10	1-2	139,000
R3-020-V-Z3	05/26/10	2-3	122,000
R3-020-V-Z4	05/26/10	3-4	106,000
R3-020-V-Z5	05/26/10	4-6	102,000
R3-020-V-Z6	05/26/10	6-8	81,800
R3-020-V-Z7	05/26/10	8-10	68,100
R3-021-V-Z1	05/26/10	0-1	9,710
R3-021-V-Z2	05/26/10	1-2	2,250
R3-021-V-Z3	05/26/10	2-3	1,240
R3-022-V-Z1	05/26/10	0-1	21,600
R3-022-V-Z2	05/26/10	1-2	43,100
R3-022-VR	05/26/10	1-2	37,100
R3-022-V-Z3	05/26/10	2-3	53,500
R3-022-V-Z4	05/26/10	3-4	48,200
R3-022-V-Z5	05/26/10	4-6	45,900
R3-022-V-Z6	05/26/10	6-6.8	2,980
R3-023-V-Z1	05/26/10	0-1	24,600
R3-023-V-Z2	05/26/10	1-2	6,390
R3-024-V-Z1	05/26/10	0-1	62,500
R3-024-V-Z2	05/26/10	1-2	125,000
R3-024-V-Z3	05/26/10	2-3	114,000
R3-024-V-Z4	05/26/10	3-4	116,000
R3-024-V-Z5	05/26/10	4-6	55,700
R3-024-V-Z6	05/26/10	6-8	29,300
R3-025-V-Z1	05/26/10	0-1	3,400
R3-026-V-Z1	05/27/10	0-1	47,400
R3-026-V-Z2	05/27/10	1-2	46,000
R3-026-V-Z3	05/27/10	2-3	103,000
R3-026-V-Z4	05/27/10	3-4	80,800
R3-027-V-Z1	05/27/10	0-1	47,100
R3-027-V-Z2	05/27/10	1-2	82,200
R3-027-V-Z3	05/27/10	2-3	114,000
R3-027-V-Z4	05/27/10	3-4	102,000
R3-107-W	11/16/09	0-0.5	80,000
R3-108-W	11/16/09	0-0.5	68,000
R3-109-W	11/16/09	0-0.5	44,000
R3-110-W	11/16/09	0-0.5	73,000

Table 4-7
Summary of Results for Total Organic Carbon Analysis

Sample ID	Sample Date	Sample Depth Range (ft BGS)	Total Organic Carbon (mg/kg)
R4-028-C	11/17/09	0-1.55	56,000
R4-029-C	11/16/09	0-1.2	47,000
R4-030-C	11/16/09	0-1.1	147,000
R4-031-C	11/16/09	0-0.8	52,000
R4-032-C	11/16/09	0-0.7	39,000
R4-033-C	11/17/09	0-0.4	16,000
R4-034-C	11/17/09	0-0.4	63,000
R4-035-C	11/17/09	0-0.8	63,000
R4-036-C	11/17/09	0-0.9	104,000
R4-037-C	11/17/09	0-0.6	30,000
R4-038-C	11/18/09	0-0.4	32,000
R4-111-W	11/16/09	0-0.5	20,000
R4-112-W	11/18/09	0-0.5	46,000
R4-119-T	11/17/09	0-0.5	22,000
R4-126-H	11/16/09	0-0.5	103,000
R4-135-C-Z1a	06/21/10	0-0.5	115,000
R4-135-C-Comp	06/21/10	0-0.8	46,100
R4-136-C-Z1a	06/21/10	0-0.4	80,900
R4-137-C-Comp	06/21/10	0-0.7	61,900
R4-138-C-Comp	06/21/10	0-0.4	60,700
R4-139-C-Z1a	06/22/10	0-0.3	59,200
R4-140-C-Z1a	06/23/10	0-0.3	26,900
R4-141-C-Z1a	06/23/10	0-0.5	41,300
R4-141-CR	06/23/10	0-0.5	30,700
R4-141-C-Comp	06/23/10	0-0.8	46,200
R4-142-C-Z1a	06/23/10	0-0.2	29,000
R4-143-C-Z1a	06/23/10	0-0.3	102,000

Table 4-7
Summary of Results for Total Organic Carbon Analysis

Sample ID	Sample Date	Sample Depth Range (ft BGS)	Total Organic Carbon (mg/kg)
R5-039-V-Z1	05/21/10	0-1	41,600
R5-040-V-Z1	05/20/10	0-1	64,900
R5-040-V-Z2	05/20/10	1-2	58,500
R5-040-V-Z3	05/20/10	2-3	61,900
R5-040-V-Z4	05/20/10	3-4	55,900
R5-040-V-Z5a	05/20/10	4.5-5	3,990
R5-041-V-Z1	05/24/10	0-1	65,100
R5-041-V-Z2	05/24/10	1-2	61,400
R5-041-V-Z3	05/24/10	2-3	63,600
R5-041-V-Z4	05/24/10	3-4	81,600
R5-041-V-Z5a	05/24/10	4-5	68,300
R5-041-V-Z5b	05/24/10	5-6	44,200
R5-041-V-Z6a	05/24/10	6-7	24,600
R5-041-V-Z6b	05/24/10	7-7.5	1,170
R5-042-V-Z1	05/20/10	0-1	63,200
R5-042-V-Z2	05/20/10	1-2	39,400
R5-042-V-Z3	05/20/10	2-3	68,000
R5-042-V-Z4	05/20/10	3-4	48,400
R5-042-V-Z5a	05/20/10	4.5-5	22,500
R5-043-V-Z1	05/20/10	0-1	51,300
R5-043-V-Z1P	05/20/10	0-1	61,600
R5-043-V-Z2	05/20/10	1-2	61,800
R5-043-V-Z3	05/20/10	2-3	80,800
R5-043-V-Z4	05/20/10	3-4	51,500
R5-043-V-Z5a	05/20/10	4-4.5	52,400
R5-043-V-Z5b	05/20/10	4.5-5	4,380
R5-044-V-Z1	05/20/10	0-1	88,300
R5-044-V-Z2	05/20/10	1-2	76,700
R5-044-VR	05/20/10	1-2	79,700
R5-044-V-Z3	05/20/10	2-3	8,210
R5-045-V-Z2	05/20/10	1-2	64,400
R5-045-V-Z3	05/20/10	2-3	54,800
R5-045-V-Z4	05/20/10	3-4	52,900
R5-045-VR	05/20/10	3-4	32,900
R5-045-V-Z5a	05/20/10	4.5-5	27,600
R5-046-V-Z1	05/20/10	0-1	106,000
R5-046-V-Z2	05/20/10	1-2	67,100
R5-046-V-Z3	05/20/10	2-3	64,400
R5-046-V-Z4	05/20/10	3-4	56,900
R5-046-V-Z5a	05/20/10	4-5	65,800
R5-046-V-Z5b	05/20/10	5-6	52,000
R5-046-V-Z6a	05/20/10	6-7	29,800
R5-047-V-Z1	05/20/10	0-1	58,300
R5-047-V-Z2	05/20/10	1-2	57,300
R5-047-V-Z3	05/20/10	2-3	56,100
R5-047-V-Z4	05/20/10	3-4	62,700
R5-048-V-Z1	05/21/10	0-1	51,500
R5-048-V-Z2	05/21/10	1-2	22,100
R5-048-V-Z3	05/21/10	2-3	4,890
R5-049-V-Z1	05/21/10	0-1	42,600
R5-049-V-Z2	05/21/10	1-2	67,000
R5-049-V-Z3	05/21/10	2-3	119,000
R5-049-V-Z4	05/21/10	3-4	53,100
R5-049-V-Z5a	05/21/10	4-4.5	57,900
R5-050-V-Z1	05/21/10	0-1	62,900
R5-050-V-Z2	05/21/10	1-2	87,200
R5-050-VR	05/21/10	1-2	83,200
R5-050-V-Z3	05/21/10	2-3	130,000
R5-050-V-Z4	05/21/10	3-4	122,000
R5-050-V-Z5a	05/21/10	4-4.5	57,100
R5-113-W	11/18/09	0-0.5	48,000
R5-114-W	11/18/09	0-0.5	81,000
R5-115-W	11/18/09	0-0.5	175,000
R5-116-W	11/19/09	0-0.5	73,000
R5-127-H	11/18/09	0-0.5	54,000

Table 4-7
Summary of Results for Total Organic Carbon Analysis

Sample ID	Sample Date	Sample Depth Range (ft BGS)	Total Organic Carbon (mg/kg)
R6-051-C	11/19/09	0-1.2	62,000
R6-051-CR	11/19/09	0-1.2	81,000
R6-052-C	11/19/09	0-1.3	84,000
R6-053-C	11/19/09	0-1.2	59,000
R6-054-C	12/02/09	0-0.5	38,000
R6-055-C	11/17/09	0-1.1	51,000
R6-056-C	11/17/09	0-1.2	39,000
R6-056-CR	11/17/09	0-1.2	26,000
R6-057-C	11/17/09	0-1.4	41,000
R6-058-C	11/18/09	0-2.2	67,000
R6-059-C	11/18/09	0-1.3	38,000
R6-060-C	11/18/09	0-0.8	50,000
R6-061-C	11/18/09	0-4	86,000
R6-062-C	11/19/09	0-3.7	62,000
R6-063-C	11/19/09	0-1.1	88,000
R6-064-C	11/19/09	0-1.4	89,000
R6-065-C	11/19/09	0-2.4	39,000
R6-066-C	11/25/09	0-1.9	47,000
R6-067-C	11/25/09	0-2.1	47,000
R6-117-W	12/02/09	0-0.5	26,000
R6-128-H	12/02/09	0-0.5	33,000
R6-129-H	12/02/09	0-0.5	23,000
R6-144-C-Z1a	07/02/10	0-0.5	41,200
R6-144-C-Comp	07/02/10	0-1.3	72,400
R6-145-C-Z1a	07/02/10	0-0.5	36,900
R6-145-C-Comp	07/02/10	0-0.7	30,400
R6-146-C-Z1a	07/02/10	0-0.5	75,100
R6-146-C-Comp	07/02/10	0-1.1	64,800
R6-147-C-Z1a	07/01/10	0-0.5	51,800
R6-147-C-Comp	07/01/10	0-0.8	54,900
R6-148-C-Comp	07/01/10	0-0.9	21,500
R6-148-CR	07/01/10	0-0.9	26,700
R6-149-C-Comp	07/01/10	0-0.9	48,600
R6-150-C-Comp	07/01/10	0-0.9	46,100
R6-151-C-Comp	07/02/10	0-0.7	39,600
R6-152-C-Comp	07/02/10	0-0.7	50,000
R6-152-CR	07/02/10	0-0.7	34,400
R6-153-C-Comp	07/02/10	0-0.5	31,200
R6-154-C-Z1a	07/01/10	0-0.5	44,500
R6-154-C-Comp	07/01/10	0-1.1	45,400
R6-155-C-Comp	07/01/10	0-0.7	49,900
R6-156-C-Comp	07/01/10	0-0.7	33,200
R6-157-C-Z1a	07/01/10	0-0.5	23,300
R6-157-C-Comp	07/01/10	0-1.2	64,600
R6-158-C-Z1a	07/01/10	0-0.5	21,900
R6-158-CR	07/01/10	0-0.5	17,900
R6-158-C-Comp	07/01/10	0-1.4	41,400
R6-159-C-Z1a	07/01/10	0-0.5	28,100
R6-159-C-Comp	07/01/10	0-1.3	37,900
R6-160-C-Z1a	07/01/10	0-0.5	116,000
R6-160-C-Comp	07/01/10	0-1.7	94,100
R6-161-C-Z1a	07/01/10	0-0.5	37,000
R6-161-C-Z1	07/01/10	0.5-1.5	51,500
R6-162-C-Comp	06/30/10	0-0.8	42,800
R6-163-C-Z1a	06/30/10	0-0.5	12,000
R6-163-C-Z1	06/30/10	0.5-1.4	32,100
R6-164-C-Z1a	06/30/10	0-0.5	27,800
R6-164-C-Comp	06/30/10	0-1.4	34,700
R6-165-C-Z1a	06/30/10	0-0.5	81,400
R6-165-C-Comp	06/30/10	0-1.6	72,400
R6-166-C-Z1a	06/30/10	0-0.5	73,600
R6-166-C-Comp	06/30/10	0-2.1	66,100
R6-167-C-Z1a	06/30/10	0-0.5	64,600
R6-167-C-Comp	06/30/10	0-1.3	72,500
R6-168-C-Z1a	06/30/10	0-0.5	51,100
R6-168-C-Comp	06/30/10	0-1.3	35,800
R6-169-C-Z1a	06/28/10	0-0.5	77,200
R6-169-C-Comp	06/28/10	0-1.4	84,800
R6-170-C-Z1a	06/25/10	0-0.5	56,900
R6-170-C-Comp	06/25/10	0-1.5	74,300
R6-171-C-Z1a	06/25/10	0-0.5	53,500
R6-171-C-Comp	06/25/10	0-1.2	80,100

Table 4-7
Summary of Results for Total Organic Carbon Analysis

Sample ID	Sample Date	Sample Depth Range (ft BGS)	Total Organic Carbon (mg/kg)
R7-068-C	11/25/09	0-2.1	79,000
R7-068-CR	11/25/09	0-2.1	109,000
R7-069-C	11/25/09	0-2.4	63,000
R7-070-C	11/25/09	0-2.4	54,000
R7-071-C	11/25/09	0-1.5	72,000
R7-072-C	11/24/09	0-0.8	93,000
R7-073-C	11/24/09	0-2.4	103,000
R7-074-C	11/24/09	0-2.3	45,000
R7-075-C	11/24/09	0-2.1	129,000
R7-076-C	11/24/09	0-2	102,000
R7-077-C	11/24/09	0-1.2	73,000
R7-078-C	12/02/09	0-4	75,000
R7-079-C	12/02/09	0-2.4	77,000
R7-080-C	12/02/09	0-1.7	41,000
R7-081-C	12/02/09	0-1.7	107,000
R7-082-C	11/30/09	0-1.6	44,000
R7-082-CR	11/30/09	0-1.6	39,000
R7-083-C	11/30/09	0-3.3	70,000
R7-084-C	11/30/09	0-3.3	26,000
R7-085-C	11/30/09	0-1.6	62,000
R7-086-C	11/30/09	0-3.2	80,000
R7-087-C	11/30/09	0-2.1	64,000
R7-088-C	11/25/09	0-1	91,000
R7-089-C	11/25/09	0-2.9	68,000
R7-090-C	11/25/09	0-3.5	159,000
R7-091-C	11/24/09	0-1.4	109,000
R7-092-C	11/24/09	0-1	64,000
R7-093-C	11/24/09	0-0.9	60,000
R7-094-C	11/23/09	0-1	64,000
R7-095-C	11/23/09	0-1.3	89,000
R7-095-CR	11/23/09	0-1.3	69,000
R7-096-C	11/23/09	0-1.3	52,000
R7-097-C	11/23/09	0-0.9	51,000
R7-098-C	11/23/09	0-1.9	37,000
R7-099-C	11/23/09	0-1.3	72,000
R7-100-C	11/23/09	0-1.2	20,000
R7-101-C	11/30/09	0-0.5	75,000
R7-102-C	11/30/09	0-1.5	86,000
R7-103-C	11/30/09	0-2.3	118,000
R7-104-C	12/02/09	0-1	65,000
R7-105-C	11/30/09	0-1.4	87,000
R7-106-C	11/30/09	0-0.5	32,000
R7-118-W	11/30/09	0-0.5	61,000
R7-120-T-Z1	11/24/09	0-0.5	20,000
R7-120-T-Z2	11/24/09	0.5-2.1	15,000
R7-121-T-Z1	12/02/09	0-0.5	28,000
R7-122-T-Z1	11/25/09	0-0.5	11,000
R7-122-T-Z2	11/25/09	0.5-1	23,000
R7-123-T-Z1	11/23/09	0-0.5	30,000
R7-123-T-Z2	11/23/09	0.5-1	74,000
R7-124-T-Z1	11/23/09	0-0.4	17,000
R7-125-T-Z1	11/30/09	0-0.5	112,000
R7-125-T-Z2	11/30/09	0.5-0.8	88,000
R7-130-H	11/30/09	0-0.5	35,000
R7-131-H	11/30/09	0-0.5	60,000
R7-132-H	11/25/09	0-0.5	97,000
R7-133-H	11/24/09	0-0.5	46,000
R7-134-H	11/23/09	0-0.5	71,000
R7-172-C-Z1a	06/25/10	0-0.5	58,600
R7-172-C-Com	06/25/10	0-0.9	42,900
R7-173-C-Z1a	06/25/10	0-0.5	51,200
R7-173-C-Com	06/25/10	0-1.1	60,500
R7-174-C-Z1a	06/25/10	0-0.5	82,200
R7-174-C-Com	06/25/10	0-1.2	68,700
R7-175-C-Z1a	06/24/10	0-0.5	73,200
R7-175-C-Z1	06/24/10	0.5-1.4	45,600
R7-176-C-Z1a	06/24/10	0-0.5	106,000
R7-176-C-Com	06/24/10	0-0.9	108,000
R7-177-C-Z1a	06/24/10	0-0.5	65,500
R7-177-C-Z1	06/24/10	0.5-1.1	67,000
R7-177-CR	06/24/10	0.5-1.1	62,100
R7-178-C-Z1a	06/24/10	0-0.5	76,300
R7-178-C-Z1	06/24/10	0.5-1.2	130,000
R7-179-C-Z1a	06/23/10	0-0.5	68,900
R7-179-C-Com	06/23/10	0-0.7	41,400
R7-180-C-Z1a	06/23/10	0-0.5	65,300
R7-180-C-Com	06/23/10	0-1.1	64,500
R7-181-C-Z1a	07/01/10	0-0.5	48,800
R7-181-C-Com	07/01/10	0-1.3	16,000
R7-182-C-COM	07/01/10	0-0.8	19,200
R7-183-C-Z1a	07/01/10	0-0.5	68,100
R7-183-C-Com	07/01/10	0-1.3	131,000
R7-184-C-Com	06/30/10	0-0.75	101,000
R7-185-C-Z1a	06/30/10	0-0.5	76,100
R7-185-C-Com	06/30/10	0-0.7	77,100
R7-186-C-Z1a	06/30/10	0-0.5	46,600
R7-186-C-Com	06/30/10	0-0.7	50,800
R7-187-C-Z1a	06/30/10	0-0.5	49,100
R7-187-C-Com	06/30/10	0-0.95	53,700
R7-188-C-Z1a	06/30/10	0-0.5	47,600
R7-188-C-Z1	06/30/10	0.4-1.1	48,500
R7-189-C-Z1a	06/30/10	0-0.5	97,900
R7-189-C-Com	06/30/10	0-1.2	76,200
R7-189-CR	06/30/10	0-1.2	64,600
R7-190-C-Com	06/30/10	0-0.7	63,400
R7-191-C-Z1a	06/29/10	0-0.5	63,400
R7-191-C-Com	06/29/10	0-0.9	80,700
R7-192-C-Z1a	06/29/10	0-0.3	54,500
R7-193-C-Z1a	06/29/10	0-0.5	79,400
R7-193-C-Com	06/29/10	0-0.8	95,000
R7-194-C-Com	06/29/10	0-0.6	84,700
R7-195-C-Com	06/29/10	0-0	66,600
R7-196-C-Z1a	06/29/10	0-0.5	58,000
R7-196-C-Com	06/29/10	0-1.3	77,800
R7-197-C-Z1a	06/28/10	0-0.5	90,600
R7-197-C-Com	06/28/10	0-1.2	99,700
R7-197-CR	06/28/10	0-1.2	92,100
R7-198-C-Z1a	06/28/10	0-0.5	57,000
R7-198-C-Com	06/28/10	0-0.9	57,500
R7-199-C-Z1a	06/28/10	0-0.5	67,100
R7-199-C-Com	06/28/10	0-1.5	102,000
R7-200-C-Z1a	06/28/10	0-0.5	66,900
R7-200-C-Com	06/28/10	0-3	50,600
R7-201-T-Z1a	06/25/10	0-0.5	34,200

Table 4-7
Summary of Results for Total Organic Carbon Analysis

Sample ID	Sample Date	Sample Depth Range (ft BGS)	Total Organic Carbon (mg/kg)
R7-201-T-Comp	06/25/10	0-1.1	28,400
R7-202-T-Z1a	06/29/10	0-0.5	45,900
R7-202-T-Comp	06/29/10	0-0.9	30,600
R7-203-T-Z1a	06/29/10	0-0.5	50,200
R7-203-T-Comp	06/29/10	0-0.7	57,300
R7-204-T-Z1a	06/29/10	0-0.3	52,300
R7-205-T-Z1a	06/29/10	0-0.5	45,200
R7-205-T-Comp	06/29/10	0-0.8	29,600

Key:
-C = Hand-core creek location/sample.
-Comp = Hand-core creek composite sample.
ft = Feet.
-H = Historical channel location/sample.
J = Estimated at the concentration listed.
mg/Kg = Milligrams per kilogram.
-P = Ponar creek location/sample.
-T = Tributary location/sample.
U = Non-detect.
-V = Vibracore creek location/sample.
-W = Wetland location/sample.
-Z = Sample depth interval consecutively numbered.

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R2-001-V-Z1P2	R2-002-V-Z1P	R2-003-V-Z1P2	R2-004-V-Z1P2	R2-005-V-Z1P	R2-005-V-Z4	R2-006-V-Z1P2	R2-007-V-Z1P2	R2-008-V-Z1P
Sample Date	5/24/2010	5/18/2010	5/24/2010	5/24/2010	5/19/2010	5/19/2010	5/24/2010	5/25/2010	5/19/2010
Sample Depth Range (ft BGS)	0-1	0-1	0-1	0-1	0-1	3-4	0-1	0-1	0-1
Analyte									
PCB Congeners by HRGC/HRMS (mg/kg)									
PCB-1	0.000792 HM	0.00114 HM	0.000766 HM	0.000741	0.000759	0.127	0.000597 UH	0.00112	0.000983 HM
PCB-2	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.0169	0.000597 UH	0.00054 U	0.000611 UH
PCB-3	0.00106 HM	0.0015 HM	0.0011 HM	0.00104	0.00136	0.101	0.000864 HM	0.00178	0.00193 HM
PCB-4	0.012 HM	0.0148 HM	0.0109 HM	0.0102	0.0128	0.0983	0.00819 HM	0.014	0.0117 HM
PCB-5	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.0028	0.000597 UH	0.00054 U	0.000611 UH
PCB-6	0.00495 HM	0.00562 HM	0.00441 HM	0.00418	0.00593	0.0597	0.00353 HM	0.00651	0.00626 HM
PCB-7	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000768	0.0196	0.000597 UH	0.00072	0.000762 HM
PCB-8	0.00597 HM	0.00653 HM	0.00526 HM	0.00493	0.00696	0.229	0.00419 HM	0.00764	0.00706 HM
PCB-9	0.000685 HM	0.000749 HM	0.000695 UH	0.000619 U	0.000794	0.0229	0.000597 UH	0.00086	0.000762 HM
PCB-10	0.00066 UH	0.000747 HM	0.000695 UH	0.000619 U	0.000661	0.00672	0.000597 UH	0.00058	0.000784 HM
PCB-11	0.033 UH	0.0332 UH	0.0347 UH	0.031 U	0.0263 U	0.05 U	0.0299 UH	0.0272 U	0.0305 UH
PCB-12/13	0.005 HM	0.00631 HM	0.00438 HM	0.00412 C	0.00333 C	0.0258 C	0.00346 HM	0.00547 C	0.00493 HM
PCB-13	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-14	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-15	0.0204 HM	0.028 HM	0.0202 HM	0.0188	0.0195	0.119	0.0158 HM	0.0263	0.0236 HM
PCB-16	0.00478 HM	0.00565 HM	0.00441 HM	0.00408	0.00659	0.168	0.00364 HM	0.00578	0.00611 HM
PCB-17	0.0354 HM	0.0416 HM	0.0328 HM	0.031	0.037	0.254	0.0243 HM	0.041	0.0356 HM
PCB-18/30	0.0252 HM	0.0308 HM	0.0241 HM	0.0228 C	0.0318 C	0.442 C	0.0183 HM	0.0311 C	0.0278 HM
PCB-19	0.0107 HM	0.0121 HM	0.00951 HM	0.00877	0.00957	0.0416	0.00744 HM	0.012	0.01 HM
PCB-20/28	0.0628 HM	0.0784 HM	0.06 HM	0.058 C	0.0715 C	0.769 C	0.0456 HM	0.0775 C	0.0637 HM
PCB-21/33	0.00743 HM	0.00938 HM	0.00722 HM	0.00689 C	0.0115 C	0.36 C	0.00597 UH	0.0111 C	0.0105 HM
PCB-22	0.00932 HM	0.0121 HM	0.00898 HM	0.00843	0.0113	0.223	0.00668 HM	0.0118	0.00966 HM
PCB-23	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-24	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-25	0.0304 HM	0.0372 HM	0.029 HM	0.0275	0.0317	0.05	0.0216 HM	0.0362	0.0304 HM
PCB-26/29	0.0476 HM	0.0595 HM	0.0458 HM	0.0438 C	0.0476 C	0.106 C	0.0342 HM	0.0564 C	0.0494 HM
PCB-27	0.0144 HM	0.0165 HM	0.0133 HM	0.0123	0.0131	0.0355	0.0106 HM	0.0167	0.0146 HM
PCB-28	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-30	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-31	0.066 HM	0.0819 HM	0.0624 HM	0.0605	0.0714	0.624	0.0476 HM	0.0786	0.066 HM
PCB-32	0.0202 HM	0.024 HM	0.0184 HM	0.0176	0.02	0.132	0.014 HM	0.0236	0.021 HM
PCB-33	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-34	0.00113 HM	0.00124 HM	0.00101 HM	0.00102	0.00113	0.00761	0.000782 HM	0.00132	0.00115 HM
PCB-35	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.00589	0.000597 UH	0.00054 U	0.000611 UH
PCB-36	0.0011 HM	0.00133 HM	0.001 HM	0.000962	0.00097	0.00565	0.000749 HM	0.00126	0.00118 HM
PCB-37	0.0114 HM	0.0149 HM	0.011 HM	0.0106	0.0128	0.201	0.00833 HM	0.0151	0.0128 HM
PCB-38	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-39	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.0031	0.000597 UH	0.00054 U	0.000611 UH
PCB-40/41/71	0.0453 HM	0.0545 HM	0.0424 HM	0.0405 C	0.0409 C	0.276 C	0.0309 HM	0.0542 C	0.048 HM
PCB-41	0.033 UH	0.0332 UH	0.0347 UH	0.031 U	0.0263 U	0.05 U	0.0299 UH	0.0272 U	0.0305 UH
PCB-42	0.0291 HM	0.0361 HM	0.0279 HM	0.0266	0.0292	0.188	0.0204 HM	0.0352	0.0307 HM
PCB-43	0.00549 HM	0.00632 HM	0.00484 HM	0.00504	0.00484	0.0375	0.0044 HM	0.00658	0.00658 HM

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R2-001-V-Z1P2	R2-002-V-Z1P	R2-003-V-Z1P2	R2-004-V-Z1P2	R2-005-V-Z1P	R2-005-V-Z4	R2-006-V-Z1P2	R2-007-V-Z1P2	R2-008-V-Z1P
Sample Date	5/24/2010	5/18/2010	5/24/2010	5/24/2010	5/19/2010	5/19/2010	5/24/2010	5/25/2010	5/19/2010
Sample Depth Range (ft BGS)	0-1	0-1	0-1	0-1	0-1	3-4	0-1	0-1	0-1
Analyte									
PCB-44/47/65	0.12 HM	0.15 HM	0.115 HM	0.111 C	0.113 C	0.689 C	0.0851 HM	0.147 C	0.126 HM
PCB-45/51	0.0228 HM	0.0282 HM	0.0216 HM	0.0207 C	0.0211 C	0.126 C	0.016 HM	0.0274 C	0.0225 HM
PCB-46	0.00692 HM	0.00856 HM	0.00651 HM	0.00639	0.00659	0.0443	0.00506 HM	0.00817	0.0067 HM
PCB-47	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-48	0.0107 HM	0.0131 HM	0.0102 HM	0.0097	0.011	0.161	0.00771 HM	0.0131	0.0112 HM
PCB-49/69	0.0926 HM	0.116 HM	0.0895 HM	0.0861 C	0.0869 C	0.436 C	0.0663 HM	0.115 C	0.0955 HM
PCB-50/53	0.0228 HM	0.0286 HM	0.0217 HM	0.0208 C	0.0205 C	0.0925 C	0.0162 HM	0.0276 C	0.0215 HM
PCB-51	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-52	0.14 HM	0.177 HM	0.136 HM	0.132	0.136	0.761	0.101 HM	0.176	0.15 HM
PCB-53	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-54	0.000875 HM	0.00102 HM	0.000816 HM	0.000703	0.000546	0.00157	0.000643 HM	0.00106	0.000831 HM
PCB-55	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-56	0.029 HM	0.0363 HM	0.0274 HM	0.0266	0.0241	0.309	0.0209 HM	0.0366	0.0316 HM
PCB-57	0.00129 HM	0.00174 HM	0.00131 HM	0.00119	0.00109	0.00286	0.000855 HM	0.00182	0.00132 HM
PCB-58	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.00196	0.000597 UH	0.00054 U	0.000611 UH
PCB-59/62/75	0.00921 HM	0.0111 HM	0.0087 HM	0.00842 C	0.00894 C	0.0566 C	0.00632 HM	0.0114 C	0.00991 HM
PCB-60	0.00819 HM	0.0104 HM	0.00778 HM	0.00719	0.00424	0.0584	0.0062 HM	0.00949	0.00832 HM
PCB-61/70/74/76	0.106 HM	0.135 HM	0.102 HM	0.0977 C	0.0894 C	1.07 C	0.0776 HM	0.132 C	0.111 HM
PCB-62	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-63	0.00494 HM	0.00607 HM	0.00462 HM	0.00426	0.00388	0.0264	0.00342 HM	0.0058	0.00506 HM
PCB-64	0.0444 HM	0.0556 HM	0.0425 HM	0.0406	0.0433	0.302	0.0315 HM	0.0539	0.046 HM
PCB-65	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-66	0.0735 HM	0.0918 HM	0.0704 HM	0.0674	0.0627	0.656	0.0535 HM	0.0919	0.0788 HM
PCB-67	0.00211 HM	0.00264 HM	0.00202 HM	0.00191	0.00193	0.0175	0.00141 HM	0.00255	0.00221 HM
PCB-68	0.00175 HM	0.00206 HM	0.00163 HM	0.00159	0.00129	0.00304	0.0012 HM	0.00207	0.0017 HM
PCB-69	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-70	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-71	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-72	0.00241 HM	0.00282 HM	0.00228 HM	0.00212	0.00191	0.00552	0.00168 HM	0.003	0.00244 HM
PCB-73	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-74	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-75	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-76	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-77	0.00769 HM	0.00954 HM	0.00707 HM	0.00668	0.00583	0.0497	0.0056 HM	0.00909	0.00772 HM
PCB-78	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.00103	0.000597 UH	0.00054 U	0.000611 UH
PCB-79	0.000992 HM	0.00117 HM	0.00093 HM	0.000813	0.000635	0.001 U	0.000648 HM	0.00111	0.000616 HM
PCB-80	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-81	0.000868 HM	0.00108 HM	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-82	0.0094 HM	0.000664 UH	0.0101 HM	0.0093	0.00619	0.0456	0.0079 HM	0.0115	0.0112 HM
PCB-83/99	0.00491 HM	0.0065 HM	0.0047 HM	0.00477	0.00396	0.0206	0.0035 HM	0.0057	0.00646 HM
PCB-84	0.0283 HM	0.0355 HM	0.027 HM	0.0257	0.0232	0.111	0.0207 HM	0.0344	0.0288 HM
PCB-85/116/117	0.0161 HM	0.0197 HM	0.0155 HM	0.0144 C	0.00913 C	0.0559 C	0.0118 HM	0.0199 C	0.0169 HM
PCB-86/87/97/108/119/125	0.0475 HM	0.0604 HM	0.0458 HM	0.0427 C	0.0309 C	0.212 C	0.0356 HM	0.0587 C	0.0504 HM

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R2-001-V-Z1P2	R2-002-V-Z1P	R2-003-V-Z1P2	R2-004-V-Z1P2	R2-005-V-Z1P	R2-005-V-Z4	R2-006-V-Z1P2	R2-007-V-Z1P2	R2-008-V-Z1P
Sample Date	5/24/2010	5/18/2010	5/24/2010	5/24/2010	5/19/2010	5/19/2010	5/24/2010	5/25/2010	5/19/2010
Sample Depth Range (ft BGS)	0-1	0-1	0-1	0-1	0-1	3-4	0-1	0-1	0-1
Analyte									
PCB-87	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-88/91	0.0182 HM	0.0232 HM	0.0173 HM	0.0166 C	0.0147 C	0.0584 C	0.013 HM	0.0226 C	0.0185 HM
PCB-89	0.00209 HM	0.0027 HM	0.00194 HM	0.0019	0.00125	0.00928	0.00146 HM	0.00247	0.00203 HM
PCB-90/101/113	0.0624 HM	0.0781 HM	0.06 HM	0.0561 C	0.0458 C	0.288 C	0.047 HM	0.0783 C	0.0653 HM
PCB-91	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-92	0 HM	0 HM	0 HM	0	0	0	0 HM	0	0 HM
PCB-93/95/98/100/102	0.0171 HM	0.0215 HM	0.0161 HM	0.0152 C	0.0127 C	0.0559 CU	0.0125 HM	0.0211 C	0.0178 HM
PCB-94	0.00264 HM	0.00265 HM	0.00211 HM	0.00207	0.00165	0.002	0.00174 HM	0.00285	0.00225 HM
PCB-95	0.00144 HM	0.00173 HM	0.00131 HM	0.00123	0.00102	0.00289	0.001 HM	0.00173	0.00134 HM
PCB-96	0.0599 HM	0.0751 HM	0.0573 HM	0.0551	0.0497	0.245	0.0437 HM	0.0736	0.06 HM
PCB-97	0.00135 HM	0.00169 HM	0.00129 HM	0.00121 C	0.00109 CE	0.00461 CE	0.000932 HM	0.00161 C	0.00131 HM
PCB-98	0 HM	0 HM	0 HM	0 C	0 C	0 C	0 HM	0 C	0 HM
PCB-99	0.0059 HM	0.00789 HM	0.00587 HM	0.00564	0.00499	0.0195	0.00453 HM	0.00763	0.00608 HM
PCB-100	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-101	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-102	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-103	0.00126 HM	0.00144 HM	0.00117 HM	0.00111	0.00103	0.0032	0.000932 HM	0.00148	0.00119 HM
PCB-104	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-105	0.0281 HM	0.0357 HM	0.0267 HM	0.0247	0.0145	0.107	0.0217 HM	0.0344	0.0293 HM
PCB-106	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-107/124	0.00526 HM	0.00701 HM	0.00474 HM	0.00474	0.0034	0.0205	0.00399 HM	0.00636	0.00546 HM
PCB-108	0.00181 HM	0.00223 HM	0.00167 HM	0.00154 C	0.00105 CU	0.00725 C	0.00134 HM	0.00213 C	0.00195 HM
PCB-109	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-110/115	0.0934 HM	0.119 HM	0.0917 HM	0.0854 C	0.0718 C	0.344 C	0.0712 HM	0.116 C	0.101 HM
PCB-111	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-112	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-113	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-114	0.0018 HM	0.00223 HM	0.00169 HM	0.0016	0.000887	0.00732	0.00128 HM	0.00227	0.00186 HM
PCB-115	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-117	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-118	0.0659 HM	0.0817 HM	0.0617 HM	0.058	0.0416	0.283	0.0497 HM	0.0821	0.0701 HM
PCB-119	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-120	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-121	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-122	0.000753 HM	0.000957 HM	0.00075 HM	0.000641	0.000525 U	0.00241	0.000597 UH	0.00095	0.00092 HM
PCB-123	0.00143 HM	0.00122 HM	0.00136 HM	0.00103	0.000525 U	0.00586	0.000936 HM	0.00148	0.00157 HM
PCB-124	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-125	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-126	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-127	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-128/166	0.00595 HM	0.00741 HM	0.00555 HM	0.00506 C	0.00353 C	0.0239 C	0.00464 HM	0.00763 C	0.00652 HM
PCB-129/138/160/163	0.0352 HM	0.044 HM	0.0333 HM	0.0304 C	0.0208 C	0.151 C	0.0273 HM	0.0449 C	0.0398 HM
PCB-130	0.00229 HM	0.00295 HM	0.00225 HM	0.00199	0.00132	0.0101	0.00176 HM	0.00292	0.0025 HM

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R2-001-V-Z1P2	R2-002-V-Z1P	R2-003-V-Z1P2	R2-004-V-Z1P2	R2-005-V-Z1P	R2-005-V-Z4	R2-006-V-Z1P2	R2-007-V-Z1P2	R2-008-V-Z1P
Sample Date	5/24/2010	5/18/2010	5/24/2010	5/24/2010	5/19/2010	5/19/2010	5/24/2010	5/25/2010	5/19/2010
Sample Depth Range (ft BGS)	0-1	0-1	0-1	0-1	0-1	3-4	0-1	0-1	0-1
Analyte									
PCB-131	0.00066 UH	0.000678 HM	0.000695 UH	0.000619 U	0.000525 U	0.00248	0.000597 UH	0.00066	0.000611 UH
PCB-132	0.0134 HM	0.0168 HM	0.0125 HM	0.0116	0.00846	0.0585	0.0103 HM	0.0166	0.0143 HM
PCB-133	0.000725 HM	0.000664 UH	0.000775 HM	0.000672	0.000593	0.00207	0.000597 UH	0.00095	0.000815 HM
PCB-134/143	0.00301 HM	0.00387 HM	0.00283 HM	0.00272	0.00188	0.0128	0.00192 HM	0.00372	0.00333 HM
PCB-135/151/154	0.0114 HM	0.0142 HM	0.0107 HM	0.00999 C	0.00812 C	0.0441 C	0.00863 HM	0.0143 C	0.0123 HM
PCB-136	0.00465 HM	0.00569 HM	0.00435 HM	0.00413	0.00326	0.0186	0.00354 HM	0.00579	0.00477 HM
PCB-137	0.00194 HM	0.00218 HM	0.00163 HM	0.00143	0.000885	0.001 U	0.00141 HM	0.00224	0.00195 HM
PCB-138	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-139/140	0.00132 UH	0.00133 UH	0.00139 UH	0.00124 CU	0.00105 CU	0.00306 C	0.00119 UH	0.00109 CU	0.00122 UH
PCB-140	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-141	0.00462 HM	0.00571 HM	0.00429 HM	0.00405	0.00277	0.0233	0.00398 HM	0.00559	0.00506 HM
PCB-142	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-143	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-144	0.00121 HM	0.00149 HM	0.00113 HM	0.00105	0.000686	0.0049	0.000961 HM	0.00139	0.00126 HM
PCB-145	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-146	0.005 HM	0.00622 HM	0.00473 HM	0.00447	0.00333	0.0222	0.0038 HM	0.00635	0.00571 HM
PCB-147/149	0.0268 HM	0.0337 HM	0.0255 HM	0.0234 C	0.0191 C	0.116 C	0.0204 HM	0.0339 C	0.0291 HM
PCB-148	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-149	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-150	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-151	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-152	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-153/168	0.0241 HM	0.0301 HM	0.0226 HM	0.0208 C	0.0157 C	0.115 C	0.0184 HM	0.031 C	0.027 HM
PCB-154	0.00087 HM	0.00104 HM	0.000836 HM	0.000755	0.000731	0.00178	0.000605 HM	0.00107	0.000913 HM
PCB-155	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-156/157	0.00544 HM	0.00676 HM	0.00499 HM	0.00472 C	0.00283 C	0.0212 C	0.00422 HM	0.00665 C	0.00582 HM
PCB-157	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-158	0.00335 HM	0.00409 HM	0.00314 HM	0.00292	0.00192	0.0143	0.00256 HM	0.00407	0.00374 HM
PCB-159	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-160	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-161	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-162	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-163	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-164	0.00199 HM	0.00258 HM	0.00196 HM	0.00186	0.00135	0.01	0.00154 HM	0.00265	0.00228 HM
PCB-165	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-166	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-167	0.00164 HM	0.00199 HM	0.00154 HM	0.00141	0.000939	0.00628	0.00121 HM	0.002	0.00175 HM
PCB-168	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-169	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-170	0.00521 HM	0.00662 HM	0.0048 HM	0.00452	0.0031	0.0219	0.00407 HM	0.00664	0.00622 HM
PCB-171/173	0.00158 HM	0.00203 HM	0.00156 HM	0.00134 C	0.00105 CU	0.00705 C	0.00132 HM	0.00211 C	0.00181 HM
PCB-172	0.00101 HM	0.00126 HM	0.000886 HM	0.000846	0.000545	0.00421	0.000767 HM	0.00127	0.00117 HM
PCB-173	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R2-001-V-Z1P2	R2-002-V-Z1P	R2-003-V-Z1P2	R2-004-V-Z1P2	R2-005-V-Z1P	R2-005-V-Z4	R2-006-V-Z1P2	R2-007-V-Z1P2	R2-008-V-Z1P
Sample Date	5/24/2010	5/18/2010	5/24/2010	5/24/2010	5/19/2010	5/19/2010	5/24/2010	5/25/2010	5/19/2010
Sample Depth Range (ft BGS)	0-1	0-1	0-1	0-1	0-1	3-4	0-1	0-1	0-1
Analyte									
PCB-174	0.00568 HM	0.00726 HM	0.0054 HM	0.00481	0.00345	0.0252	0.00441 HM	0.00759	0.00619 HM
PCB-175	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.00102	0.000597 UH	0.00054 U	0.000611 UH
PCB-176	0.000736 HM	0.00098 HM	0.000745 HM	0.00068	0.000525 U	0.00355	0.000597 UH	0.00097	0.000833 HM
PCB-177	0.00364 HM	0.00463 HM	0.00341 HM	0.00315	0.00212	0.0141	0.00286 HM	0.00461	0.00392 HM
PCB-178	0.00167 HM	0.00213 HM	0.00167 HM	0.00146	0.00116	0.00544	0.00126 HM	0.00228	0.00193 HM
PCB-179	0.00289 HM	0.00368 HM	0.00272 HM	0.0025	0.00184	0.0115	0.00227 HM	0.00372	0.00317 HM
PCB-180/193	0.0123 HM	0.0155 HM	0.0113 HM	0.0105 C	0.00718 C	0.0505 C	0.00974 HM	0.0162 C	0.0144 HM
PCB-181	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-182	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-183/185	0.00388 HM	0.00485 HM	0.00367 HM	0.0034 C	0.00242 C	0.0169 C	0.00309 HM	0.00515 C	0.00426 HM
PCB-184	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-185	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-186	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-187	0.00837 HM	0.0108 HM	0.0081 HM	0.00744	0.00532	0.0304	0.00662 HM	0.011	0.00962 HM
PCB-188	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-189	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-190	0.00109 HM	0.00134 HM	0.00098 HM	0.000966	0.00062	0.00418	0.000847 HM	0.00135	0.00125 HM
PCB-191	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-192	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-193	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-194	0.00351 HM	0.00446 HM	0.00339 HM	0.00309	0.00196	0.0108	0.00287 HM	0.00463	0.00404 HM
PCB-195	0.00133 HM	0.00158 HM	0.00117 HM	0.00117	0.000728	0.00382	0.00107 HM	0.00168	0.00148 HM
PCB-196	0.00197 HM	0.00236 HM	0.00184 HM	0.00168	0.00112	0.00658	0.00156 HM	0.00251	0.0021 HM
PCB-197/200	0.00132 UH	0.00133 UH	0.00139 UH	0.00124 CU	0.00105 CU	0.00215 C	0.00119 UH	0.00109 CU	0.00122 UH
PCB-198/199	0.00528 HM	0.0066 HM	0.00493 HM	0.00448 C	0.00311 C	0.0173 C	0.00421 HM	0.00679 C	0.00572 HM
PCB-199	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-200	0 HM	0 HM	0 HM	0 C	0 CE	0 CE	0 HM	0 C	0 HM
PCB-201	0.00066 UH	0.000779 HM	0.000695 UH	0.000619 U	0.000525 U	0.002	0.000597 UH	0.0008	0.000646 HM
PCB-202	0.00131 HM	0.00156 HM	0.0012 HM	0.0011	0.000786	0.0041	0.000976 HM	0.00164	0.00138 HM
PCB-203	0.00281 HM	0.00357 HM	0.00264 HM	0.00252	0.00175	0.00944	0.00231 HM	0.00372	0.00318 HM
PCB-204	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-205	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.001 U	0.000597 UH	0.00054 U	0.000611 UH
PCB-206	0.00645 HM	0.0079 HM	0.00605 HM	0.00545	0.00513	0.0326	0.0052 HM	0.0082	0.00716 HM
PCB-207	0.00066 UH	0.000664 UH	0.000695 UH	0.000619 U	0.000525 U	0.00294	0.000597 UH	0.00079	0.000617 HM
PCB-208	0.00262 HM	0.00331 HM	0.00248 HM	0.00233	0.00226	0.0149	0.002 HM	0.00349	0.0029 HM
PCB-209	0.0118 HM	0.0148 HM	0.00993 HM	0.00943	0.012	0.108	0.00917 HM	0.0149	0.0126 HM
TOTAL PCB CONGENERS	1.95 HM	2.42 HM	1.85 HM	1.76	1.67	12.8	1.42 HM	2.4	2.06 HM

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R2-009-V-Z1P2	R2-010-V-Z1	R2-011-V-Z1	R2-011-V-Z2	R2-011-V-Z3	R2-011-V-Z4	R2-011-V-Z5	R2-011-V-Z6	R2-011-V-Z7	R2-011-V-Z8
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft BGS)	0-1	0-1	0-1	1-2	2-3	3-4	4-6	6-8	8-10	10-11.5
Analyte										
PCB Congeners by HRGC/HRMS (mg/kg										
PCB-1	0.00153 HM	0.00157 HM	0.00172	0.00329	0.00357	0.00277	0.0219	0.00715	0.00082 U	0.000276 U
PCB-2	0.000672 UH	0.000579 UH	0.0004	0.000673	0.00093	0.000905	0.00356	0.00107	0.00082 U	0.000276 U
PCB-3	0.0025 HM	0.00297 HM	0.00266	0.00324	0.0042	0.00514	0.0186	0.0068	0.00082 U	0.000276 U
PCB-4	0.0154 HM	0.0167 HM	0.0186	0.0283	0.0447	0.0377	0.183	0.0228	0.00082 U	0.000276 U
PCB-5	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-6	0.00753 HM	0.00867 HM	0.00789	0.0142	0.0229	0.0199	0.0867	0.0094	0.00082 U	0.000276 U
PCB-7	0.000714 HM	0.00102 HM	0.000902	0.00184	0.00415	0.00265	0.0147	0.00205	0.00082 U	0.000276 U
PCB-8	0.00824 HM	0.0102 HM	0.00945	0.0362	0.0547	0.0315	0.383	0.0415	0.00082 U	0.000276 U
PCB-9	0.000927 HM	0.00106 HM	0.00101	0.00244	0.00497	0.00288	0.022	0.00273	0.00082 U	0.000276 U
PCB-10	0.00117 HM	0.000892 HM	0.000681	0.00151	0.00196	0.00181	0.00682	0.00095	0.00082 U	0.000276 U
PCB-11	0.0336 UH	0.0289 UH	0.0132 U	0.0124 U	0.0191 U	0.0214 U	0.122 U	0.0415 U	0.041 U	0.0138 U
PCB-12/13	0.00653 HM	0.0065 HM	0.00708 C	0.00637 C	0.0103 C	0.0104 C	0.0223 C	0.00403 C	0.00164 CU	0.000552 CU
PCB-13	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-14	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-15	0.0296 HM	0.0328 HM	0.0378	0.047	0.0685	0.0728	0.249	0.0317	0.0041 U	0.00138 U
PCB-16	0.00695 HM	0.00838 HM	0.00994	0.0251	0.0892	0.0536	0.397	0.0476	0.00082 U	0.000276 U
PCB-17	0.0435 HM	0.049 HM	0.0469	0.062	0.157	0.12	0.63	0.084	0.00082 U	0.000276 U
PCB-18/30	0.0334 HM	0.0384 HM	0.0368 C	0.0717 C	0.245 C	0.163 C	1.18 C	0.147 C	0.00164 CU	0.000552 CU
PCB-19	0.014 HM	0.0159 HM	0.0162	0.0144	0.0308	0.0265	0.128	0.0128	0.00082 U	0.000276 U
PCB-20/28	0.0806 HM	0.0939 HM	0.0866 C	0.179 C	0.451 C	0.32 C	1.79 C	0.273 C	0.0082 CU	0.00276 CU
PCB-21/33	0.0125 HM	0.0172 HM	0.0137 C	0.0583 C	0.149 C	0.0821 C	0.886 C	0.103 C	0.0082 CU	0.00276 CU
PCB-22	0.0128 HM	0.0152 HM	0.0145	0.0434	0.113	0.0692	0.559	0.0703	0.0041 U	0.00138 U
PCB-23	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00277	0.00083 U	0.00082 U	0.000276 U
PCB-24	0.000672 UH	0.00626 HM	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-25	0.0398 HM	0.044 HM	0.0393	0.045	0.067	0.082	0.139	0.0162	0.00082 U	0.000276 U
PCB-26/29	0.0613 HM	0.0671 HM	0.0626 C	0.0736 C	0.12 C	0.134 C	0.303 C	0.0345 C	0.00164 CU	0.000552 CU
PCB-27	0.019 HM	0.0208 HM	0.0192	0.0175	0.0273	0.0285	0.117	0.0125	0.00082 U	0.000276 U
PCB-28	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-30	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-31	0.0871 HM	0.0989 HM	0.0905	0.161	0.363	0.274	1.47	0.203	0.0041 U	0.00138 U
PCB-32	0.0253 HM	0.0287 HM	0.0277	0.0337	0.0766	0.0628	0.331	0.0409	0.00082 U	0.000276 U
PCB-33	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-34	0.00147 HM	0.0017 HM	0.0016	0.00192	0.00572	0.00418	0.0145	0.00323	0.00082 U	0.000276 U
PCB-35	0.000672 UH	0.000579 UH	0.000534	0.00123	0.00384	0.00257	0.0133	0.00173	0.00082 U	0.000276 U
PCB-36	0.000672 UH	0.00162 HM	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-37	0.0165 HM	0.0195 HM	0.0203	0.0504	0.122	0.0786	0.54	0.0715	0.0041 U	0.00138 U
PCB-38	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-39	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00128	0.00082 U	0.000276 U
PCB-40/41/71	0.0584 HM	0.0659 HM	0.0614 C	0.0619 C	0.177 C	0.152 C	0.578 C	0.0925 C	0.00138 C	0.000276 CU
PCB-41	0.0336 UH	0.0289 UH	0.0132 U	0.0124 U	0.0191 U	0.0214 U	0.122 U	0.0415 U	0.041 U	0.0138 U
PCB-42	0.0375 HM	0.0433 HM	0.0404	0.0445	0.117	0.104	0.337	0.0646	0.00164	0.000276 U
PCB-43	0.00822 HM	0.00849 HM	0.0072	0.00871	0.0222	0.0178	0.0962	0.0132	0.00082 U	0.000276 U

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R2-009-V-Z1P2	R2-010-V-Z1	R2-011-V-Z1	R2-011-V-Z2	R2-011-V-Z3	R2-011-V-Z4	R2-011-V-Z5	R2-011-V-Z6	R2-011-V-Z7	R2-011-V-Z8
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft BGS)	0-1	0-1	0-1	1-2	2-3	3-4	4-6	6-8	8-10	10-11.5
Analyte										
PCB-44/47/65	0.155 HM	0.179 HM	0.169 C	0.168 C	0.437 C	0.398 C	1.32 C	0.264 C	0.00865 C	0.000828 CU
PCB-45/51	0.0278 HM	0.0314 HM	0.0315 C	0.0298 C	0.0887 C	0.0754 C	0.306 C	0.0436 C	0.00164 CU	0.000552 CU
PCB-46	0.00852 HM	0.00956 HM	0.00957	0.00922	0.029	0.0238	0.102	0.0149	0.00082 U	0.000276 U
PCB-47	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-48	0.0138 HM	0.0159 HM	0.0155	0.0208	0.0843	0.0547	0.343	0.0526	0.00082 U	0.000276 U
PCB-49/69	0.118 HM	0.135 HM	0.126 C	0.121 C	0.277 C	0.268 C	0.808 C	0.182 C	0.00885 C	0.000552 CU
PCB-50/53	0.0275 HM	0.031 HM	0.0312 C	0.0273 C	0.0723 C	0.0661 C	0.224 C	0.0343 C	0.00164 CU	0.000552 CU
PCB-51	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-52	0.185 HM	0.211 HM	0.21	0.206	0.509	0.482	1.49	0.339	0.0183	0.000781
PCB-53	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-54	0.00112 HM	0.00124 HM	0.0014	0.000744	0.00149	0.00146	0.00433	0.00083 U	0.00082 U	0.000276 U
PCB-55	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-56	0.0399 HM	0.0463 HM	0.0416	0.0474	0.162	0.112	0.562	0.104	0.00206	0.000276 U
PCB-57	0.00201 HM	0.00202 HM	0.00183	0.00147	0.00252	0.00237	0.00586	0.00083 U	0.00082 U	0.000276 U
PCB-58	0.000709 HM	0.000852 HM	0.000264 U	0.000453	0.000381 U	0.00141	0.00489	0.00109	0.00082 U	0.000276 U
PCB-59/62/75	0.0122 HM	0.0138 HM	0.0131 C	0.0142 C	0.0394 C	0.0342 C	0.127 C	0.0205 C	0.00246 CU	0.000828 CU
PCB-60	0.0116 HM	0.0135 HM	0.0129	0.0107	0.0313	0.0151	0.18	0.00482	0.00082 U	0.000276 U
PCB-61/70/74/76	0.143 HM	0.164 HM	0.151 C	0.167 C	0.548 C	0.388 C	1.87 C	0.385 C	0.0166 C	0.0011 CU
PCB-62	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-63	0.00653 HM	0.00767 HM	0.00702	0.00604	0.0174	0.0129	0.0481	0.00957	0.00082 U	0.000276 U
PCB-64	0.0562 HM	0.0645 HM	0.0602	0.0672	0.19	0.161	0.58	0.105	0.00226	0.000276 U
PCB-65	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-66	0.0992 HM	0.114 HM	0.102	0.114	0.345	0.257	1.14	0.247	0.00954	0.00138 U
PCB-67	0.00287 HM	0.00326 HM	0.00297	0.00337	0.0103	0.00785	0.0357	0.00552	0.00082 U	0.000276 U
PCB-68	0.00224 HM	0.00245 HM	0.00239	0.00167	0.0025	0.00303	0.00383	0.00215	0.00082 U	0.000276 U
PCB-69	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-70	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-71	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-72	0.00319 HM	0.00341 HM	0.00333	0.00263	0.00434	0.00518	0.00716	0.00374	0.00082 U	0.000276 U
PCB-73	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-74	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-75	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-76	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-77	0.00994 HM	0.0112 HM	0.0117	0.0115	0.0345	0.0256	0.11	0.0178	0.00082 U	0.000276 U
PCB-78	0.000672 UH	0.000579 UH	0.000515	0.000275	0.000896	0.00066	0.00255	0.00083 U	0.00082 U	0.000276 U
PCB-79	0.00132 HM	0.00142 HM	0.00174	0.0011	0.00316	0.00263	0.00828	0.00253	0.00082 U	0.000276 U
PCB-80	0.000672 UH	0.000579 UH	0.000543	0.000247 U	0.000803	0.000764	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-81	0.000672 UH	0.00117 HM	0.000264 U	0.000247 U	0.000381 U	0.000429	0.00295	0.00083 U	0.00082 U	0.000276 U
PCB-82	0.0141 HM	0.0169 HM	0.0149	0.0084	0.0291	0.022	0.0844	0.0158	0.00157	0.000276 U
PCB-83/99	0.00694 HM	0.00753 HM	0.00707	0.00419	0.0125	0.0105	0.031	0.011	0.00179	0.000276 U
PCB-84	0.035 HM	0.0399 HM	0.0381	0.0296	0.0704	0.0679	0.175	0.0581	0.00739	0.000403
PCB-85/116/117	0.0215 HM	0.0246 HM	0.0232 C	0.0117 C	0.0355 C	0.0277 C	0.0943 C	0.0219 C	0.00246 CU	0.000828 CU
PCB-86/87/97/108/119/125	0.0637 HM	0.0731 HM	0.069 C	0.0428 C	0.126 C	0.104 C	0.349 C	0.105 C	0.0158 C	0.00166 CU

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R2-009-V-Z1P2	R2-010-V-Z1	R2-011-V-Z1	R2-011-V-Z2	R2-011-V-Z3	R2-011-V-Z4	R2-011-V-Z5	R2-011-V-Z6	R2-011-V-Z7	R2-011-V-Z8
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft BGS)	0-1	0-1	0-1	1-2	2-3	3-4	4-6	6-8	8-10	10-11.5
Analyte										
PCB-87	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-88/91	0.0225 HM	0.0263 HM	0.0255 C	0.0199 C	0.0402 C	0.0418 C	0.0939 C	0.0292 C	0.00334 C	0.000552 CU
PCB-89	0.00254 HM	0.00289 HM	0.00289	0.00179	0.00703	0.00552	0.0177	0.00343	0.00082 U	0.000276 U
PCB-90/101/113	0.0819 HM	0.0952 HM	0.0877 C	0.0605 C	0.155 C	0.139 C	0.4 C	0.185 C	0.0348 C	0.000968 C
PCB-91	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-92	0 HM	0 HM	0	0	0	0	0	0	0	0 U
PCB-93/95/98/100/102	0.0217 HM	0.0252 HM	0.0243 C	0.0165 C	0.0354 C	0.036 C	0.0764 CU	0.0379 CU	0.00771 CU	0.000276 CU
PCB-94	0.00302 HM	0.00304 HM	0.00297	0.00153	0.0031	0.00414	0.00489	0.00166	0.00164 U	0.000552 U
PCB-95	0.00179 HM	0.00191 HM	0.00192	0.00118	0.0022	0.00233	0.00516	0.00123	0.00082	0.000276
PCB-96	0.0726 HM	0.0832 HM	0.0823	0.0651	0.147	0.15	0.341	0.149	0.0232 U	0.00114 U
PCB-97	0.00156 HM	0.00182 HM	0.00193 CE	0.00144 CE	0.00369 CE	0.00336 CE	0.00975 CE	0.00185 CE	0.00082 CE	0.000276 CE
PCB-98	0 HM	0 HM	0 C	0 C	0 C	0 C	0 C	0 C	0 CU	0 CU
PCB-99	0.00747 HM	0.00863 HM	0.00843	0.00629	0.0147	0.0139	0.0288	0.00899	0.00164	0.000552
PCB-100	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-101	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-102	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-103	0.00147 HM	0.00167 HM	0.00166	0.00122	0.00221	0.00241	0.00416	0.00248	0.00082 U	0.000276 U
PCB-104	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-105	0.0386 HM	0.045 HM	0.0445	0.0202	0.0617	0.0425	0.205	0.0398	0.00694	0.000423
PCB-106	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-107/124	0.00683 HM	0.00835 HM	0.00811	0.00443	0.0128	0.0103	0.0314	0.0133	0.00216	0.000276 U
PCB-108	0.00255 HM	0.0028 HM	0.00269 C	0.00133 C	0.00401 C	0.00314 C	0.0119 C	0.00289 C	0.00164 CU	0.000552 CU
PCB-109	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-110/115	0.125 HM	0.145 HM	0.131 C	0.0947 C	0.211 C	0.209 C	0.501 C	0.209 C	0.0343 C	0.00145 C
PCB-111	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-112	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-113	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-114	0.00265 HM	0.00303 HM	0.00297	0.0012	0.00493	0.00287	0.0154	0.00249	0.00082 U	0.000276 U
PCB-115	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-117	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-118	0.0899 HM	0.104 HM	0.0984	0.0586	0.159	0.133	0.422	0.181	0.0319	0.000933
PCB-119	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-120	0.000672 UH	0.000579 UH	0.000335	0.000247 U	0.000491	0.000521	0.00244 U	0.00094	0.00082 U	0.000276 U
PCB-121	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-122	0.00108 HM	0.00145 HM	0.00132	0.000495	0.00197	0.00122	0.00551	0.00083 U	0.00082 U	0.000276 U
PCB-123	0.0019 HM	0.00203 HM	0.00129	0.000797	0.00273	0.00168	0.0093	0.00199	0.00082 U	0.000276 U
PCB-124	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-125	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-126	0.000672 UH	0.000719 HM	0.000718	0.00031	0.00106	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-127	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-128/166	0.00857 HM	0.00983 HM	0.00916 C	0.00424 C	0.0113 C	0.0102 C	0.0282 C	0.0164 C	0.00434 C	0.000552 CU
PCB-129/138/160/163	0.053 HM	0.0617 HM	0.0522 C	0.0254 C	0.0667 C	0.06 C	0.163 C	0.105 C	0.0309 C	0.00166 C
PCB-130	0.00333 HM	0.00396 HM	0.00347	0.00164	0.00457	0.00373	0.0114	0.00708	0.00183	0.000276 U

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R2-009-V-Z1P2	R2-010-V-Z1	R2-011-V-Z1	R2-011-V-Z2	R2-011-V-Z3	R2-011-V-Z4	R2-011-V-Z5	R2-011-V-Z6	R2-011-V-Z7	R2-011-V-Z8
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft BGS)	0-1	0-1	0-1	1-2	2-3	3-4	4-6	6-8	8-10	10-11.5
Analyte										
PCB-131	0.000672 UH	0.000771 HM	0.000794	0.000374	0.00104	0.000951	0.00296	0.00135	0.00082 U	0.000276 U
PCB-132	0.0179 HM	0.021 HM	0.0194	0.0107	0.0257	0.0258	0.0618	0.0413	0.0113	0.000609
PCB-133	0.00105 HM	0.00125 HM	0.0011	0.000615	0.00115	0.00122	0.00244 U	0.00187	0.0042	0.000276 U
PCB-134/143	0.00438 HM	0.00505 HM	0.00409	0.002	0.00516	0.00492	0.0152	0.00868	0.00274	0.000276 U
PCB-135/151/154	0.0151 HM	0.0174 HM	0.0163 C	0.0101 C	0.0222 C	0.0225 C	0.0497 C	0.036 C	0.0193 C	0.000812 C
PCB-136	0.0058 HM	0.00658 HM	0.00651	0.00397	0.0087	0.00876	0.0213	0.0146	0.00477	0.000276 U
PCB-137	0.00254 HM	0.00351 HM	0.00252	0.00107	0.00316	0.00312	0.00979	0.00479	0.00141	0.000276 U
PCB-138	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-139/140	0.00134 UH	0.00123 HM	0.00117 C	0.000624 C	0.00138 C	0.00142 C	0.00489 CU	0.00217 C	0.00164 CU	0.000552 CU
PCB-140	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-141	0.00647 HM	0.00758 HM	0.00682	0.00307	0.00986	0.00802	0.0262	0.0135	0.00445	0.000336
PCB-142	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-143	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-144	0.00155 HM	0.00182 HM	0.00163	0.000872	0.00221	0.00191	0.00684	0.00332	0.00116	0.000276 U
PCB-145	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-146	0.0073 HM	0.00859 HM	0.00784	0.00431	0.0106	0.0104	0.0219	0.0186	0.0133	0.000276 U
PCB-147/149	0.0364 HM	0.0427 HM	0.0393 C	0.0237 C	0.0514 C	0.0521 C	0.117 C	0.0848 C	0.0295 C	0.00162 C
PCB-148	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00277	0.000276 U
PCB-149	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-150	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-151	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-152	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-153/168	0.0347 HM	0.0409 HM	0.036 C	0.0198 C	0.0494 C	0.0467 C	0.116 C	0.0898 C	0.0336 C	0.00164 C
PCB-154	0.00111 HM	0.00123 HM	0.00111	0.000796	0.00106	0.00142	0.00244 U	0.00175	0.00303	0.000276 U
PCB-155	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-156/157	0.00761 HM	0.00854 HM	0.00842 C	0.00358 C	0.0108 C	0.00879 C	0.0287 C	0.0154 C	0.00422 C	0.000552 CU
PCB-157	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-158	0.00481 HM	0.00565 HM	0.00506	0.00234	0.00658	0.00574	0.0166	0.00934	0.003	0.000276 U
PCB-159	0.000672 UH	0.000579 UH	0.000335	0.000247 U	0.000558	0.000494	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-160	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-161	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-162	0.000672 UH	0.000579 UH	0.00038	0.000247 U	0.00057	0.000519	0.00244 U	0.0009	0.00082 U	0.000276 U
PCB-163	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-164	0.00313 HM	0.00322 HM	0.00321	0.00174	0.00442	0.00375	0.0103	0.00694	0.00198	0.000276 U
PCB-165	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-166	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-167	0.00223 HM	0.00255 HM	0.00238	0.0011	0.00319	0.00281	0.00759	0.00449	0.00125	0.000276 U
PCB-168	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-169	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-170	0.00821 HM	0.00934 HM	0.00797	0.00362	0.0118	0.00988	0.0254	0.0187	0.00678	0.000677
PCB-171/173	0.00232 HM	0.00276 HM	0.00239 C	0.00113 C	0.00368 C	0.0031 C	0.0079 C	0.00589 C	0.00231 C	0.000552 CU
PCB-172	0.00159 HM	0.00183 HM	0.00135	0.000662	0.00218	0.00167	0.00458	0.00355	0.00166	0.000276 U
PCB-173	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R2-009-V-Z1P2	R2-010-V-Z1	R2-011-V-Z1	R2-011-V-Z2	R2-011-V-Z3	R2-011-V-Z4	R2-011-V-Z5	R2-011-V-Z6	R2-011-V-Z7	R2-011-V-Z8
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft BGS)	0-1	0-1	0-1	1-2	2-3	3-4	4-6	6-8	8-10	10-11.5
Analyte										
PCB-174	0.00824 HM	0.0095 HM	0.00841	0.00402	0.0135	0.011	0.0284	0.0211	0.0135	0.00117
PCB-175	0.000672 UH	0.000579 UH	0.00036	0.000247 U	0.000521	0.000447	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-176	0.00107 HM	0.00129 HM	0.00115	0.000583	0.00174	0.00153	0.00409	0.00297	0.00183	0.000276 U
PCB-177	0.00512 HM	0.00603 HM	0.0053	0.00252	0.00752	0.00602	0.0156	0.012	0.00673	0.000538
PCB-178	0.00242 HM	0.00285 HM	0.00251	0.00125	0.00312	0.00294	0.006	0.00502	0.00837	0.000307
PCB-179	0.00395 HM	0.00464 HM	0.00426	0.00218	0.0061	0.00541	0.0128	0.00978	0.00899	0.000564
PCB-180/193	0.0192 HM	0.0221 HM	0.0188 C	0.0088 C	0.0295 C	0.0241 C	0.0607 C	0.0456 C	0.03 C	0.00259 C
PCB-181	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-182	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-183/185	0.00574 HM	0.00647 HM	0.00577 C	0.00274 C	0.0089 C	0.0074 C	0.0194 C	0.0141 C	0.00975 C	0.000859 C
PCB-184	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-185	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-186	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-187	0.0126 HM	0.0146 HM	0.0123	0.00615	0.0166	0.0148	0.0337	0.0256	0.0281	0.00182
PCB-188	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-189	0.000672 UH	0.000579 UH	0.000336	0.000247 U	0.000735	0.000556	0.00244 U	0.00087	0.00082 U	0.000276 U
PCB-190	0.00168 HM	0.00202 HM	0.00166	0.000802	0.00259	0.00208	0.00541	0.0037	0.00166	0.000276 U
PCB-191	0.000672 UH	0.000579 UH	0.000302	0.000247 U	0.000526	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-192	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-193	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-194	0.00527 HM	0.00607 HM	0.0053	0.00227	0.00759	0.00644	0.0154	0.0113	0.0154	0.00151
PCB-195	0.00186 HM	0.0022 HM	0.00186	0.000829	0.00277	0.00224	0.00586	0.00403	0.00391	0.000405
PCB-196	0.00272 HM	0.00315 HM	0.00277	0.00135	0.00419	0.00359	0.00866	0.00665	0.0108	0.00122
PCB-197/200	0.00134 UH	0.00116 UH	0.000999 C	0.000495 CU	0.00141 C	0.00127 C	0.00489 CU	0.00208 C	0.00343 C	0.000552 CU
PCB-198/199	0.00788 HM	0.00837 HM	0.00777 C	0.00373 C	0.0107 C	0.00953 C	0.0235 C	0.0194 C	0.0436 C	0.00597 C
PCB-199	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-200	0 HM	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE
PCB-201	0.000905 HM	0.001 HM	0.000872	0.000392	0.00122	0.00108	0.00272	0.00203	0.00431	0.000445
PCB-202	0.00184 HM	0.00209 HM	0.00195	0.000998	0.00254	0.00254	0.0057	0.00526	0.0153	0.00206
PCB-203	0.00411 HM	0.00448 HM	0.00421	0.00203	0.00609	0.00537	0.0129	0.00968	0.021	0.00246
PCB-204	0.000672 UH	0.000579 UH	0.000264 U	0.000247 U	0.000381 U	0.000427 U	0.00244 U	0.00083 U	0.00082 U	0.000276 U
PCB-205	0.000672 UH	0.000579 UH	0.000369	0.000247 U	0.000644	0.000464	0.00244 U	0.00083 U	0.000882	0.000276 U
PCB-206	0.011 HM	0.0103 HM	0.00875	0.00613	0.0127	0.0151	0.0363	0.0514	0.183	0.0297
PCB-207	0.000968 HM	0.000881 HM	0.000836	0.000525	0.00119	0.00137	0.00313	0.00459	0.0125	0.00158
PCB-208	0.00469 HM	0.00432 HM	0.00371	0.00271	0.00519	0.0067	0.0159	0.0251	0.0857	0.0137
PCB-209	0.0173 HM	0.019 HM	0.0168	0.0136	0.0281	0.0521	0.0909	0.204	0.319	0.0355
TOTAL PCB CONGENERS	2.59 HM	2.98 HM	2.8	2.82	7.2	5.98	24.1	5.46	1.27	0.116

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R2-012-V-Z1	R2-013-V-Z1	R2-014-V-Z1	R2-015-V-Z1	R3-016-V-Z1	R3-017-V-Z1	R3-018-V-Z1	R3-019-V-Z1	R3-020-V-Z1	R3-020-V-Z2
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/26/2010	5/26/2010	5/25/2010	5/26/2010	5/26/2010	5/26/2010
Sample Depth Range (ft BGS)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	1-2
Analyte										
PCB Congeners by HRGC/HRMS (mg/kg										
PCB-1	0.00129	0.0011 HM	0.00166 HM	0.0011 HM	0.00345 HM	0.00248	0.00184 HM	0.000917 UH	0.002	0.0257 HM
PCB-2	0.000325	0.000585 UH	0.000375 HM	0.000542 UH	0.000951 HM	0.000475 U	0.000583 UH	0.000917 UH	0.000671	0.00481 HM
PCB-3	0.00216	0.00176 HM	0.00258 HM	0.00176 HM	0.00351 HM	0.00176	0.00213 HM	0.002 HM	0.00267	0.0239 HM
PCB-4	0.0167	0.0168 HM	0.0207 HM	0.0146 HM	0.0388 HM	0.0218	0.0191 HM	0.0124 HM	0.0286	0.218 HM
PCB-5	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-6	0.00707	0.0059 HM	0.0085 HM	0.00599 HM	0.0213 HM	0.00715	0.00868 HM	0.0072 HM	0.0144	0.125 HM
PCB-7	0.000841	0.000622 HM	0.000936 HM	0.000709 HM	0.00321 HM	0.00073	0.000583 UH	0.000956 HM	0.00166	0.0187 HM
PCB-8	0.00779	0.00722 HM	0.00862 HM	0.00633 HM	0.0598 HM	0.0108	0.01 HM	0.0107 HM	0.0237	0.491 HM
PCB-9	0.000834	0.000827 HM	0.00105 HM	0.000795 HM	0.00435 HM	0.00112	0.000951 HM	0.000959 HM	0.00228	0.026 HM
PCB-10	0.00059	0.00104 HM	0.00128 HM	0.000665 HM	0.00258 HM	0.00134	0.000583 UH	0.000917 UH	0.000353 U	0.0213 HM
PCB-11	0.0109 U	0.0293 UH	0.0128 UH	0.0271 UH	0.0292 UH	0.0238 U	0.0292 UH	0.0459 UH	0.0176 U	0.0713 UH
PCB-12/13	0.00674 C	0.00684 HM	0.00732 HM	0.00491 HM	0.0104 HM	0.00668 C	0.00811 HM	0.00326 HM	0.00915 C	0.0343 HM
PCB-13	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-14	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-15	0.0349	0.0351 HM	0.0375 HM	0.0272 HM	0.0625 HM	0.0267	0.0334 HM	0.0232 HM	0.0395	0.27 HM
PCB-16	0.00651	0.00775 HM	0.00844 HM	0.00527 HM	0.0808 HM	0.0117	0.0108 HM	0.0095 HM	0.0202	0.556 HM
PCB-17	0.0393	0.0449 HM	0.0497 HM	0.0353 HM	0.151 HM	0.0452	0.0555 HM	0.0389 HM	0.0735	0.923 HM
PCB-18/30	0.0302 C	0.0362 HM	0.0397 HM	0.0276 HM	0.235 HM	0.0417 C	0.0433 HM	0.0398 HM	0.0719 C	1.61 HM
PCB-19	0.014	0.0161 HM	0.0188 HM	0.0121 HM	0.0332 HM	0.0161	0.019 HM	0.0107 HM	0.0239	0.16 HM
PCB-20/28	0.0719 C	0.0865 HM	0.0894 HM	0.0643 HM	0.44 HM	0.0883 C	0.105 HM	0.105 HM	0.139 C	2.47 HM
PCB-21/33	0.012 C	0.0157 HM	0.0149 HM	0.0104 HM	0.151 HM	0.0185 C	0.0166 HM	0.0295 HM	0.0365 C	1.26 HM
PCB-22	0.0116	0.0146 HM	0.0149 HM	0.00953 HM	0.107 HM	0.0173	0.0171 HM	0.0183 HM	0.0286	0.787 HM
PCB-23	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-24	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-25	0.0335	0.0357 HM	0.0407 HM	0.0308 HM	0.0643 HM	0.0341	0.0498 HM	0.032 HM	0.0568	0.251 HM
PCB-26/29	0.0521 C	0.0584 HM	0.0648 HM	0.048 HM	0.11 HM	0.0541 C	0.0767 HM	0.0486 HM	0.0904 C	0.484 HM
PCB-27	0.0181	0.0197 HM	0.0226 HM	0.0153 HM	0.0321 HM	0.0176	0.0237 HM	0.0139 HM	0.0274	0.155 HM
PCB-28	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-30	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-31	0.0757	0.0892 HM	0.0932 HM	0.0691 HM	0.364 HM	0.0883	0.111 HM	0.0916 HM	0.144	2.03 HM
PCB-32	0.0237	0.0263 HM	0.0303 HM	0.0209 HM	0.0878 HM	0.0258	0.033 HM	0.02 HM	0.043	0.495 HM
PCB-33	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-34	0.00127	0.00142 HM	0.00157 HM	0.00113 HM	0.00524 HM	0.00132	0.00175 HM	0.00139 HM	0.00221	0.0264 HM
PCB-35	0.000473	0.000665 HM	0.000577 HM	0.000542 UH	0.00308 HM	0.000551	0.000583 UH	0.000917 UH	0.000947	0.0184 HM
PCB-36	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.00437 HM	0.00119	0.00198 HM	0.00152 HM	0.00254	0.00143 UH
PCB-37	0.0174	0.0232 HM	0.0222 HM	0.0148 HM	0.103 HM	0.018	0.0203 HM	0.0255 HM	0.0299	0.632 HM
PCB-38	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.00162 HM	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-39	0.000529	0.000585 UH	0.000256 UH	0.000542 UH	0.00173 HM	0.000475 U	0.000609 HM	0.000917 UH	0.000691	0.00972 HM
PCB-40/41/71	0.0523 C	0.0615 HM	0.0688 HM	0.048 HM	0.223 HM	0.0573 C	0.0803 HM	0.0601 HM	0.0987 C	0.842 HM
PCB-41	0.0109 U	0.0293 UH	0.0128 UH	0.0271 UH	0.0292 UH	0.0238 U	0.0292 UH	0.0459 UH	0.0176 U	0.0991 HM
PCB-42	0.0342	0.039 HM	0.0434 HM	0.031 HM	0.149 HM	0.0364	0.0505 HM	0.0409 HM	0.0623	0.577 HM
PCB-43	0.00709	0.0092 HM	0.00963 HM	0.00691 HM	0.0277 HM	0.00645	0.0119 HM	0.00793 HM	0.0124	0.117 HM

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R2-012-V-Z1	R2-013-V-Z1	R2-014-V-Z1	R2-015-V-Z1	R3-016-V-Z1	R3-017-V-Z1	R3-018-V-Z1	R3-019-V-Z1	R3-020-V-Z1	R3-020-V-Z2
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/26/2010	5/26/2010	5/25/2010	5/26/2010	5/26/2010	5/26/2010
Sample Depth Range (ft BGS)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	1-2
Analyte										
PCB-44/47/65	0.141 C	0.166 HM	0.181 HM	0.131 HM	0.529 HM	0.148 C	0.209 HM	0.162 HM	0.247 C	1.99 HM
PCB-45/51	0.0246 C	0.0294 HM	0.0324 HM	0.023 HM	0.105 HM	0.0304 C	0.0391 HM	0.0276 HM	0.0486 C	0.413 HM
PCB-46	0.00789	0.00911 HM	0.0106 HM	0.00712 HM	0.0346 HM	0.00963	0.0126 HM	0.00831 HM	0.0163	0.156 HM
PCB-47	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-48	0.0133	0.0171 HM	0.0175 HM	0.0119 HM	0.096 HM	0.014	0.0192 HM	0.0189 HM	0.0256	0.464 HM
PCB-49/69	0.106 C	0.122 HM	0.135 HM	0.0984 HM	0.357 HM	0.107 C	0.161 HM	0.122 HM	0.188 C	1.25 HM
PCB-50/53	0.0246 C	0.0287 HM	0.0321 HM	0.0227 HM	0.0831 HM	0.0294 C	0.0395 HM	0.0254 HM	0.0482 C	0.316 HM
PCB-51	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-52	0.168	0.195 HM	0.217 HM	0.157 HM	0.608 HM	0.177	0.259 HM	0.199 HM	0.304	2.12 HM
PCB-53	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-54	0.00112	0.00128 HM	0.00155 HM	0.00093 HM	0.00191 HM	0.00108	0.0016 HM	0.000917 UH	0.00175	0.00545 HM
PCB-55	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-56	0.0347	0.0446 HM	0.0443 HM	0.0304 HM	0.189 HM	0.0357	0.05 HM	0.0448 HM	0.0586	0.784 HM
PCB-57	0.00162	0.00176 HM	0.00217 HM	0.00144 HM	0.00313 HM	0.00141	0.00242 HM	0.00134 HM	0.00258	0.0119 HM
PCB-58	0.000481	0.000671 HM	0.000724 HM	0.000542 UH	0.00171 HM	0.000475 U	0.000583 UH	0.000917 UH	0.000919	0.00679 HM
PCB-59/62/75	0.0116 C	0.0137 HM	0.015 HM	0.0108 HM	0.045 HM	0.011 C	0.0167 HM	0.0129 HM	0.0204 C	0.182 HM
PCB-60	0.0106	0.0132 HM	0.0133 HM	0.00885 HM	0.0287 HM	0.0104	0.0155 HM	0.00948 HM	0.0183	0.153 HM
PCB-61/70/74/76	0.128 C	0.164 HM	0.161 HM	0.114 HM	0.654 HM	0.127 C	0.185 HM	0.164 HM	0.211 C	2.65 HM
PCB-62	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-63	0.00605	0.00697 HM	0.00753 HM	0.00517 HM	0.0188 HM	0.00503	0.00855 HM	0.00608 HM	0.00939	0.0754 HM
PCB-64	0.0517	0.0604 HM	0.0655 HM	0.0474 HM	0.229 HM	0.0529	0.0772 HM	0.0657 HM	0.0943	0.877 HM
PCB-65	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-66	0.0875	0.108 HM	0.109 HM	0.0777 HM	0.427 HM	0.0884	0.126 HM	0.119 HM	0.14	1.59 HM
PCB-67	0.00264	0.00324 HM	0.00328 HM	0.00229 HM	0.0109 HM	0.0023	0.00373 HM	0.00313 HM	0.0044	0.0556 HM
PCB-68	0.00203	0.00225 HM	0.00255 HM	0.00181 HM	0.0034 HM	0.00172	0.00276 HM	0.00163 HM	0.00293	0.0081 HM
PCB-69	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-70	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-71	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-72	0.0029	0.0033 HM	0.0036 HM	0.00246 HM	0.00537 HM	0.00252	0.00402 HM	0.00235 HM	0.00426	0.0141 HM
PCB-73	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-74	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-75	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-76	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-77	0.0102	0.0131 HM	0.0127 HM	0.00873 HM	0.0343 HM	0.00841	0.0124 HM	0.00984 HM	0.0132	0.131 HM
PCB-78	0.000402	0.000585 UH	0.000521 HM	0.000542 UH	0.000791 HM	0.000475 U	0.000583 UH	0.000917 UH	0.000529	0.00143 UH
PCB-79	0.00128	0.00167 HM	0.00169 HM	0.000642 HM	0.00134 HM	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-80	0.000427	0.000585 UH	0.000529 HM	0.000542 UH	0.00077 HM	0.000475 U	0.000583 UH	0.000917 UH	0.000533	0.00143 UH
PCB-81	0.000218 U	0.000585 UH	0.000292 HM	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00228 HM
PCB-82	0.013	0.0144 HM	0.0166 HM	0.0109 HM	0.0368 HM	0.0129	0.0188 HM	0.012 HM	0.0199	0.152 HM
PCB-83/99	0.00613	0.00763 HM	0.00758 HM	0.00572 HM	0.0168 HM	0.00719	0.00911 HM	0.0066 HM	0.000353 U	0.0628 HM
PCB-84	0.0326	0.0382 HM	0.0419 HM	0.0299 HM	0.094 HM	0.0353	0.0488 HM	0.032 HM	0.0563	0.373 HM
PCB-85/116/117	0.0204 C	0.0233 HM	0.0257 HM	0.0171 HM	0.0476 HM	0.0184 C	0.0285 HM	0.0164 HM	0.0287 C	0.193 HM
PCB-86/87/97/108/119/125	0.0581 C	0.0699 HM	0.0728 HM	0.0515 HM	0.156 HM	0.0569 C	0.0837 HM	0.0548 HM	0.086 C	0.661 HM

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R2-012-V-Z1	R2-013-V-Z1	R2-014-V-Z1	R2-015-V-Z1	R3-016-V-Z1	R3-017-V-Z1	R3-018-V-Z1	R3-019-V-Z1	R3-020-V-Z1	R3-020-V-Z2
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/26/2010	5/26/2010	5/25/2010	5/26/2010	5/26/2010	5/26/2010
Sample Depth Range (ft BGS)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	1-2
Analyte										
PCB-87	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-88/91	0.0217 C	0.0247 HM	0.0273 HM	0.0193 HM	0.054 HM	0.0219 C	0.0312 HM	0.0208 HM	0.0352 C	0.204 HM
PCB-89	0.0023	0.00291 HM	0.00297 HM	0.0021 HM	0.00786 HM	0.00263	0.00371 HM	0.00239 HM	0.00416	0.0374 HM
PCB-90/101/113	0.0742 C	0.0885 HM	0.0927 HM	0.0664 HM	0.198 HM	0.0716 C	0.107 HM	0.0735 HM	0.109 C	0.776 HM
PCB-91	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-92	0	0 HM	0 HM	0 HM	0 HM	0	0 HM	0 HM	0	0 HM
PCB-93/95/98/100/102	0.0202 C	0.0236 HM	0.0258 HM	0.0182 HM	0.0441 HM	0.0189 C	0.0286 HM	0.0187 UH	0.0309 C	0.162 HM
PCB-94	0.00276	0.00332 HM	0.00344 HM	0.0024 HM	0.0054 HM	0.00247 U	0.00375 HM	0.00183 HM	0.00396	0.0132 HM
PCB-95	0.00165	0.00181 HM	0.00204 HM	0.00149 HM	0.00298 HM	0.000475	0.00234 HM	0.00132 HM	0.0026	0.0107 HM
PCB-96	0.068	0.0784 HM	0.0868 HM	0.0618 HM	0.188 HM	0.0769	0.102 HM	0.0693 HM	0.116	0.714 HM
PCB-97	0.00154 CE	0.00179 HM	0.00195 HM	0.00138 HM	0.00457 HM	0.00165 CE	0.00243 HM	0.00152 HM	0.00277 C	0.0202 HM
PCB-98	0 C	0 HM	0 HM	0 HM	0 HM	0 C	0 HM	0 HM	0 C	0 HM
PCB-99	0.00721	0.00805 HM	0.00897 HM	0.00645 HM	0.0175 HM	0.00699	0.0102 HM	0.00656 HM	0.0115	0.0711 HM
PCB-100	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-101	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-102	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-103	0.00143	0.00164 HM	0.00183 HM	0.00129 HM	0.00297 HM	0.00127	0.00199 HM	0.00124 HM	0.00216	0.00848 HM
PCB-104	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-105	0.0381	0.0465 HM	0.0467 HM	0.0332 HM	0.0729 HM	0.0278	0.0478 HM	0.0271 HM	0.0436	0.293 HM
PCB-106	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-107/124	0.00608	0.00758 HM	0.00748 HM	0.00503 HM	0.0147 HM	0.00491	0.00821 HM	0.00546 HM	0.00838	0.0583 HM
PCB-108	0.00226 C	0.0028 HM	0.00277 HM	0.00192 HM	0.00522 HM	0.00201 C	0.00317 HM	0.00192 HM	0.00293 C	0.0213 HM
PCB-109	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-110/115	0.111 C	0.129 HM	0.139 HM	0.0999 HM	0.266 HM	0.109 C	0.162 HM	0.108 HM	0.169 C	1.02 HM
PCB-111	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-112	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-113	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-114	0.00249	0.00309 HM	0.00311 HM	0.0022 HM	0.00493 HM	0.00176	0.00318 HM	0.00186 HM	0.00287	0.0246 HM
PCB-115	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-117	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-118	0.0857	0.104 HM	0.103 HM	0.0751 HM	0.188 HM	0.0637	0.108 HM	0.0714 HM	0.102	0.652 HM
PCB-119	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-120	0.000289	0.000585 UH	0.000333 HM	0.000542 UH	0.000604 HM	0.000475 U	0.000583 UH	0.000917 UH	0.00039	0.0019 HM
PCB-121	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-122	0.001	0.00128 HM	0.00126 HM	0.000856 HM	0.00232 HM	0.00086	0.00136 HM	0.000917 UH	0.00125	0.0099 HM
PCB-123	0.00163	0.00186 HM	0.00195 HM	0.00173 HM	0.00387 HM	0.00188	0.000583 UH	0.00148 HM	0.000353 U	0.0162 HM
PCB-124	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-125	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-126	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.00107 HM	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00171 HM
PCB-127	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-128/166	0.00729 C	0.00862 HM	0.00886 HM	0.00614 HM	0.0161 HM	0.00697 C	0.0107 HM	0.00642 HM	0.00953 C	0.054 HM
PCB-129/138/160/163	0.0442 C	0.0527 HM	0.0538 HM	0.038 HM	0.0942 HM	0.0414 C	0.0625 HM	0.0367 HM	0.0574 C	0.297 HM
PCB-130	0.0029	0.00351 HM	0.00361 HM	0.0025 HM	0.00632 HM	0.00276	0.00401 HM	0.00217 HM	0.00376	0.0226 HM

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R2-012-V-Z1	R2-013-V-Z1	R2-014-V-Z1	R2-015-V-Z1	R3-016-V-Z1	R3-017-V-Z1	R3-018-V-Z1	R3-019-V-Z1	R3-020-V-Z1	R3-020-V-Z2
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/26/2010	5/26/2010	5/25/2010	5/26/2010	5/26/2010	5/26/2010
Sample Depth Range (ft BGS)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	1-2
Analyte										
PCB-131	0.000621	0.000757 HM	0.00076 HM	0.000558 HM	0.00155 HM	0.000475 U	0.000892 HM	0.000917 UH	0.000849	0.00555 HM
PCB-132	0.0159	0.019 HM	0.0198 HM	0.0143 HM	0.0358 HM	0.0159	0.0232 HM	0.0148 HM	0.0229	0.125 HM
PCB-133	0.00095	0.00116 HM	0.00118 HM	0.000816 HM	0.00151 HM	0.000805	0.00134 HM	0.000917 UH	0.00133	0.00449 HM
PCB-134/143	0.00315	0.00387 HM	0.00394 HM	0.00263 HM	0.00761 HM	0.00373	0.00506 HM	0.0028 HM	0.00502	0.0269 HM
PCB-135/151/154	0.0134 C	0.0161 HM	0.0169 HM	0.0121 HM	0.0306 HM	0.0142 C	0.0201 HM	0.013 HM	0.0202 C	0.0854 HM
PCB-136	0.00529	0.00634 HM	0.00665 HM	0.00485 HM	0.0127 HM	0.00602	0.00829 HM	0.00493 HM	0.00853	0.0407 HM
PCB-137	0.00228	0.00271 HM	0.0028 HM	0.00186 HM	0.00483 HM	0.00215	0.00331 HM	0.000917 UH	0.000353 U	0.0187 HM
PCB-138	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-139/140	0.000976 C	0.00117 UH	0.00117 HM	0.00108 UH	0.00199 HM	0.00095 CU	0.00138 HM	0.00183 UH	0.00132 C	0.00743 HM
PCB-140	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-141	0.00589	0.00731 HM	0.00726 HM	0.00516 HM	0.0145 HM	0.00577	0.00854 HM	0.00523 HM	0.00763	0.0462 HM
PCB-142	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-143	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-144	0.00131	0.00169 HM	0.0016 HM	0.00128 HM	0.0033 HM	0.00159	0.00204 HM	0.00129 HM	0.00192	0.012 HM
PCB-145	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-146	0.00627	0.00743 HM	0.00775 HM	0.00552 HM	0.0137 HM	0.00598	0.00894 HM	0.0058 HM	0.00842	0.0402 HM
PCB-147/149	0.033 C	0.039 HM	0.0408 HM	0.0297 HM	0.0723 HM	0.0338 C	0.048 HM	0.0303 HM	0.0471 C	0.212 HM
PCB-148	0.000218 U	0.000585 UH	0.000286 HM	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-149	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-150	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-151	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-152	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-153/168	0.0302 C	0.036 HM	0.0363 HM	0.026 HM	0.0672 HM	0.0287 C	0.0418 HM	0.0279 HM	0.039 C	0.193 HM
PCB-154	0.000944	0.00111 HM	0.00118 HM	0.000899 HM	0.00151 HM	0.000843	0.00131 HM	0.000917 UH	0.00137	0.00363 HM
PCB-155	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-156/157	0.00721 C	0.00877 HM	0.00856 HM	0.00593 HM	0.0141 HM	0.00516 C	0.00856 HM	0.00505 HM	0.00747 C	0.0426 HM
PCB-157	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-158	0.00421	0.00498 HM	0.00504 HM	0.0036 HM	0.00923 HM	0.0038	0.00573 HM	0.00358 HM	0.00531	0.0309 HM
PCB-159	0.000258	0.000585 UH	0.000278 HM	0.000542 UH	0.000641 HM	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-160	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-161	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-162	0.000292	0.000585 UH	0.000335 HM	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00174 HM
PCB-163	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-164	0.00262	0.00322 HM	0.00324 HM	0.00234 HM	0.00578 HM	0.00247	0.00349 HM	0.000917 UH	0.00341	0.0192 HM
PCB-165	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-166	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-167	0.00213	0.00258 HM	0.00248 HM	0.00175 HM	0.00413 HM	0.00165	0.00252 HM	0.00157 HM	0.0022	0.012 HM
PCB-168	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-169	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-170	0.00675	0.00797 HM	0.00788 HM	0.00538 HM	0.015 HM	0.00529	0.00792 HM	0.00556 HM	0.00708	0.0322 HM
PCB-171/173	0.00201 C	0.00248 HM	0.00237 HM	0.00165 HM	0.00483 HM	0.00174 C	0.00267 HM	0.00183 UH	0.00243 C	0.0107 HM
PCB-172	0.0012	0.00143 HM	0.00136 HM	0.000941 HM	0.00283 HM	0.00106	0.00152 HM	0.001 HM	0.00134	0.00594 HM
PCB-173	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R2-012-V-Z1	R2-013-V-Z1	R2-014-V-Z1	R2-015-V-Z1	R3-016-V-Z1	R3-017-V-Z1	R3-018-V-Z1	R3-019-V-Z1	R3-020-V-Z1	R3-020-V-Z2
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/26/2010	5/26/2010	5/25/2010	5/26/2010	5/26/2010	5/26/2010
Sample Depth Range (ft BGS)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	1-2
Analyte										
PCB-174	0.00704	0.00858 HM	0.00836 HM	0.00577 HM	0.0189 HM	0.00683	0.00943 HM	0.00706 HM	0.00886	0.0347 HM
PCB-175	0.000312	0.000585 UH	0.000369 HM	0.000542 UH	0.000733 HM	0.000475 U	0.000583 UH	0.000917 UH	0.000361	0.00143 UH
PCB-176	0.000993	0.00118 HM	0.00115 HM	0.000837 HM	0.00243 HM	0.000945	0.00129 HM	0.000917 UH	0.00123	0.00527 HM
PCB-177	0.00441	0.00517 HM	0.00523 HM	0.00365 HM	0.0103 HM	0.00416	0.00582 HM	0.00341 HM	0.00547	0.0208 HM
PCB-178	0.00207	0.00253 HM	0.00247 HM	0.00178 HM	0.00445 HM	0.00202	0.00281 HM	0.00186 HM	0.00272	0.00795 HM
PCB-179	0.00355	0.00429 HM	0.00419 HM	0.00308 HM	0.00889 HM	0.00351	0.00484 HM	0.00327 HM	0.00464	0.0164 HM
PCB-180/193	0.0165 C	0.0191 HM	0.0189 HM	0.0128 HM	0.0379 HM	0.0134 C	0.0191 HM	0.0135 HM	0.0176 C	0.074 HM
PCB-181	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-182	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-183/185	0.0048 C	0.00559 HM	0.00561 HM	0.00392 HM	0.013 HM	0.00475 C	0.00658 HM	0.00469 HM	0.00607 C	0.024 HM
PCB-184	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-185	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-186	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-187	0.0105	0.0123 HM	0.0123 HM	0.00866 HM	0.0254 HM	0.0104	0.0146 HM	0.00971 HM	0.0137	0.0426 HM
PCB-188	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-189	0.000337	0.000585 UH	0.000364 HM	0.000542 UH	0.00073 HM	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00159 HM
PCB-190	0.00144	0.0017 HM	0.00172 HM	0.00113 HM	0.00311 HM	0.00112	0.00161 HM	0.000917 UH	0.00144	0.00646 HM
PCB-191	0.000274	0.000585 UH	0.000318 HM	0.000542 UH	0.000585 HM	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00149 HM
PCB-192	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-193	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-194	0.00473	0.00562 HM	0.00514 HM	0.00383 HM	0.00988 HM	0.00365	0.00514 HM	0.00383 HM	0.00431	0.0154 HM
PCB-195	0.00162	0.00216 HM	0.00185 HM	0.00146 HM	0.00348 HM	0.0013	0.00177 HM	0.00126 HM	0.00157	0.00611 HM
PCB-196	0.00254	0.003 HM	0.00281 HM	0.00195 HM	0.0052 HM	0.00215	0.00279 HM	0.00214 HM	0.00235	0.00929 HM
PCB-197/200	0.000892 C	0.00117 UH	0.00099 HM	0.00108 UH	0.00201 HM	0.00095 CU	0.00117 UH	0.00183 UH	0.000913 C	0.00325 HM
PCB-198/199	0.00684 C	0.00786 HM	0.00764 HM	0.00538 HM	0.0138 HM	0.00715 C	0.00788 HM	0.00512 HM	0.00671 C	0.0244 HM
PCB-199	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-200	0 CE	0 HM	0 HM	0 HM	0 HM	0 CE	0 HM	0 HM	0 C	0 HM
PCB-201	0.000737	0.000922 HM	0.000888 HM	0.000621 HM	0.00168 HM	0.0008	0.000941 HM	0.000917 UH	0.000807	0.003 HM
PCB-202	0.0018	0.00198 HM	0.00209 HM	0.00146 HM	0.00324 HM	0.0021	0.00197 HM	0.00133 HM	0.00175	0.00524 HM
PCB-203	0.00375	0.00434 HM	0.00414 HM	0.00291 HM	0.00763 HM	0.0035	0.00423 HM	0.00313 HM	0.00357	0.0138 HM
PCB-204	0.000218 U	0.000585 UH	0.000256 UH	0.000542 UH	0.000584 UH	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-205	0.000284	0.000585 UH	0.000324 HM	0.000542 UH	0.000687 HM	0.000475 U	0.000583 UH	0.000917 UH	0.000353 U	0.00143 UH
PCB-206	0.00782	0.00881 HM	0.00987 HM	0.00654 HM	0.017 HM	0.0192	0.011 HM	0.00839 HM	0.00891	0.038 HM
PCB-207	0.000705	0.000829 HM	0.000763 HM	0.000657 HM	0.00151 HM	0.0013	0.000892 HM	0.000917 UH	0.000752	0.00376 HM
PCB-208	0.00337	0.00377 HM	0.00429 HM	0.00265 HM	0.00695 HM	0.0091	0.00476 HM	0.00368 HM	0.00378	0.0167 HM
PCB-209	0.0148	0.0169 HM	0.0191 HM	0.0119 HM	0.0366 HM	0.0305	0.0178 HM	0.0206 HM	0.0174	0.108 HM
TOTAL PCB CONGENERS	2.36	2.77 HM	2.95 HM	2.1 HM	8.3 HM	2.44	3.35 HM	2.5 HM	3.84	35.9 HM

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R3-020-V-Z3	R3-020-V-Z4	R3-020-V-Z5	R3-020-V-Z6	R3-020-V-Z7	R3-021-V-Z1	R3-022-V-Z1	R3-023-V-Z1	R3-024-V-Z1	R3-025-V-Z1
Sample Date	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010
Sample Depth Range (ft BGS)	2-3	3-4	4-6	6-8	8-10	0-1	0-1	0-1	0-1	0-1
Analyte										
PCB Congeners by HRGC/HRMS (mg/kg										
PCB-1	0.15 HM	0.00879	0.000973 U	0.00042 U	0.0000726 U	0.0000305	0.00972	0.0000177 U	0.00379 HM	0.000246
PCB-2	0.0261 HM	0.00168	0.000973 U	0.00042 U	0.0000726 U	0.00000461	0.000724	0.0000177 U	0.00146 HM	0.0000211 U
PCB-3	0.133 HM	0.008	0.000973 U	0.00042 U	0.0000726 U	0.0000278	0.00445	0.0000177 U	0.00671 HM	0.0000791
PCB-4	0.205 HM	0.0327	0.00425	0.00042 U	0.0000726 U	0.000372	0.0733	0.0000298	0.0407 HM	0.00201
PCB-5	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000374	0.000832	0.0000177 U	0.00069 UH	0.0000211 U
PCB-6	0.44 HM	0.0216	0.00237	0.00042 U	0.0000726 U	0.000102	0.0186	0.0000177 U	0.0219 HM	0.000283
PCB-7	0.0371 HM	0.00338	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00164	0.0000177 U	0.00198 HM	0.0000211 U
PCB-8	0.549 HM	0.0752	0.011	0.000753	0.0000726 U	0.000162	0.0182	0.0000328	0.0255 HM	0.000318
PCB-9	0.0455 HM	0.00471	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00373	0.0000177 U	0.00248 HM	0.0000211 U
PCB-10	0.0251 HM	0.00292	0.000973 U	0.00042 U	0.0000726 U	0.0000308	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-11	0.0649 UH	0.048 U	0.0487 U	0.021 U	0.00363 U	0.000144 U	0.0195 U	0.000883 U	0.0345 UH	0.00105 U
PCB-12/13	0.0762 HM	0.00817 C	0.00195 CU	0.000841 CU	0.000145 CU	0.0000958 C	0.00934 C	0.0000353 CU	0.0154 HM	0.000221 C
PCB-13	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-14	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-15	0.279 HM	0.0517	0.00682	0.0021 U	0.000363 U	0.000416	0.0265	0.0000883 U	0.0654 HM	0.00109
PCB-16	0.45 HM	0.113	0.0189	0.000773	0.0000726 U	0.000141	0.0134	0.0000177 U	0.0201 HM	0.000246
PCB-17	0.789 HM	0.219	0.0401	0.00138	0.0000726 U	0.000657	0.0756	0.0000421	0.11 HM	0.00119
PCB-18/30	1.4 HM	0.374 C	0.0678 C	0.00245 C	0.000145 CU	0.000623 C	0.0668 C	0.0000461 C	0.104 HM	0.00126 C
PCB-19	0.117 HM	0.0282	0.00444	0.00042 U	0.0000726 U	0.000256	0.0269	0.0000177 U	0.0326 HM	0.000439
PCB-20/28	2.44 HM	0.664 C	0.137 C	0.00453 C	0.000726 CU	0.00116 C	0.127 C	0.000177 CU	0.223 HM	0.0025 C
PCB-21/33	0.774 HM	0.255 C	0.0526 C	0.0042 CU	0.000726 CU	0.000244 C	0.0193 C	0.000177 CU	0.042 HM	0.000357 C
PCB-22	0.686 HM	0.171	0.0333	0.0021 U	0.000363 U	0.000228	0.0176	0.0000883 U	0.0377 HM	0.000404
PCB-23	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-24	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-25	0.441 HM	0.0483	0.00665	0.00051	0.0000726 U	0.000404	0.0437	0.0000363	0.0899 HM	0.000934
PCB-26/29	0.734 HM	0.0929 C	0.014 C	0.000928 C	0.000145 CU	0.000702 C	0.0742 C	0.0000563 C	0.143 HM	0.00156 C
PCB-27	0.121 HM	0.03	0.00507	0.00042 U	0.0000726 U	0.000274	0.0256	0.0000177 U	0.0393 HM	0.000503
PCB-28	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-30	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-31	1.95 HM	0.519	0.102	0.00369	0.000363 U	0.00113	0.115	0.000109	0.227 HM	0.00219
PCB-32	0.404 HM	0.109	0.0208	0.000739	0.0000726 U	0.000358	0.044	0.0000252	0.0635 HM	0.000561
PCB-33	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-34	0.0304 HM	0.00835	0.0015	0.00042 U	0.0000726 U	0.0000178	0.00202	0.0000177 U	0.00348 HM	0.0000292
PCB-35	0.0171 HM	0.00349	0.000973 U	0.00042 U	0.0000726 U	0.00000664	0.000765	0.0000177 U	0.00125 HM	0.0000211 U
PCB-36	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000667
PCB-37	0.496 HM	0.136	0.0235	0.0021 U	0.000363 U	0.00022	0.0243	0.0000883 U	0.0466 HM	0.00056
PCB-38	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-39	0.0102 HM	0.00293	0.000973 U	0.00042 U	0.0000726 U	0.00000626	0.000972	0.0000177 U	0.00114 HM	0.0000211 U
PCB-40/41/71	0.818 HM	0.242 C	0.0481 C	0.00157 C	0.0000726 CU	0.000624 C	0.119 C	0.0000471 C	0.136 HM	0.00122 C
PCB-41	0.0649 UH	0.048 U	0.0487 U	0.021 U	0.00363 U	0.000144 U	0.0195 U	0.000883 U	0.0345 UH	0.00105 U
PCB-42	0.6 HM	0.19	0.0381	0.0011	0.0000726 U	0.000421	0.0739	0.0000177 U	0.0885 HM	0.000879
PCB-43	0.117 HM	0.033	0.00662	0.00042 U	0.0000726 U	0.0000791	0.016	0.0000177 U	0.0152 HM	0.000175

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R3-020-V-Z3	R3-020-V-Z4	R3-020-V-Z5	R3-020-V-Z6	R3-020-V-Z7	R3-021-V-Z1	R3-022-V-Z1	R3-023-V-Z1	R3-024-V-Z1	R3-025-V-Z1
Sample Date	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010
Sample Depth Range (ft BGS)	2-3	3-4	4-6	6-8	8-10	0-1	0-1	0-1	0-1	0-1
Analyte										
PCB-44/47/65	2.1 HM	0.678 C	0.152 C	0.00443 C	0.000218 CU	0.00169 C	0.303 C	0.000155 C	0.354 HM	0.00343 C
PCB-45/51	0.394 HM	0.116 C	0.0218 C	0.000841 CU	0.000145 CU	0.000315 C	0.0584 C	0.0000354 C	0.0691 HM	0.000561 C
PCB-46	0.146 HM	0.0432	0.00829	0.00042 U	0.0000726 U	0.000108	0.0171	0.0000177 U	0.0213 HM	0.000175
PCB-47	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-48	0.404 HM	0.137	0.026	0.000831	0.0000726 U	0.000177	0.0463	0.0000177 U	0.0356 HM	0.000336
PCB-49/69	1.37 HM	0.46 C	0.111 C	0.00288 C	0.000145 CU	0.00127 C	0.208 C	0.0000837 C	0.27 HM	0.00247 C
PCB-50/53	0.296 HM	0.0911 C	0.0179 C	0.000841 CU	0.000145 CU	0.000307 C	0.0496 C	0.0000353 CU	0.0676 HM	0.000557 C
PCB-51	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-52	2.23 HM	0.775	0.201	0.00571	0.000119	0.002	0.367	0.000142	0.423 HM	0.00412
PCB-53	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-54	0.00446 HM	0.00121	0.000973 U	0.00042 U	0.0000726 U	0.0000145	0.00136	0.0000177 U	0.0022 HM	0.0000222
PCB-55	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-56	0.727 HM	0.251	0.0515	0.00182	0.0000726 U	0.000411	0.0867	0.0000351	0.0864 HM	0.000794
PCB-57	0.0129 HM	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.000016	0.00187	0.0000177 U	0.00371 HM	0.000028
PCB-58	0.00853 HM	0.00303	0.000973 U	0.00042 U	0.0000726 U	0.00000658	0.00098	0.0000177 U	0.00069 UH	0.000046
PCB-59/62/75	0.177 HM	0.0523 C	0.00953 C	0.00126 CU	0.000218 CU	0.000133 C	0.0248 C	0.000053 CU	0.0275 HM	0.000286 C
PCB-60	0.0646 HM	0.00731	0.00267	0.000428	0.0000726 U	0.000116	0.0261	0.0000177 U	0.0182 HM	0.000226
PCB-61/70/74/76	2.52 HM	0.909 C	0.215 C	0.00711 C	0.00029 CU	0.00148 C	0.3 C	0.000122 C	0.309 HM	0.00276 C
PCB-62	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-63	0.0807 HM	0.0233	0.00465	0.00042 U	0.0000726 U	0.0000613	0.0089	0.0000177 U	0.0133 HM	0.000106
PCB-64	0.914 HM	0.288	0.0582	0.00188	0.0000726 U	0.000623	0.122	0.0000441	0.135 HM	0.00124
PCB-65	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-66	1.58 HM	0.586	0.137	0.00414	0.000363 U	0.000981	0.194	0.0000883 U	0.209 HM	0.00206
PCB-67	0.0525 HM	0.0123	0.000973 U	0.00042 U	0.0000726 U	0.0000273	0.00484	0.0000177 U	0.00635 HM	0.000055
PCB-68	0.0129 HM	0.0048	0.000973 U	0.00042 U	0.0000726 U	0.0000199	0.00206	0.0000177 U	0.00442 HM	0.0000386
PCB-69	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-70	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-71	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-72	0.0199 HM	0.00825	0.00231	0.00042 U	0.0000726 U	0.0000283	0.00326	0.0000177 U	0.00634 HM	0.0000578
PCB-73	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-74	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-75	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-76	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-77	0.128 HM	0.035	0.0071	0.00042 U	0.0000726 U	0.0000786	0.0149	0.0000177 U	0.0202 HM	0.000213
PCB-78	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-79	0.0106 HM	0.00232	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.000598	0.0000177 U	0.00108 HM	0.0000211 U
PCB-80	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-81	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.000439	0.0000177 U	0.00069 UH	0.0000211 U
PCB-82	0.111 HM	0.03	0.00872	0.000561	0.0000726 U	0.000112	0.0231	0.0000177 U	0.0236 HM	0.000213
PCB-83/99	0.0505 HM	0.0216	0.00718	0.00042 U	0.0000726 U	0.0000561	0.0107	0.0000177 U	0.0121 HM	0.000111
PCB-84	0.329 HM	0.13	0.0399	0.00137	0.0000726 U	0.000322	0.0585	0.0000315	0.075 HM	0.000576
PCB-85/116/117	0.144 HM	0.0449 C	0.0149 C	0.00126 CU	0.000218 CU	0.000188 C	0.0283 C	0.000053 CU	0.0349 HM	0.000328 C
PCB-86/87/97/108/119/125	0.534 HM	0.206 C	0.0702 C	0.0028 C	0.000436 CU	0.00055 C	0.102 C	0.000106 CU	0.111 HM	0.000968 C

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R3-020-V-Z3	R3-020-V-Z4	R3-020-V-Z5	R3-020-V-Z6	R3-020-V-Z7	R3-021-V-Z1	R3-022-V-Z1	R3-023-V-Z1	R3-024-V-Z1	R3-025-V-Z1
Sample Date	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010
Sample Depth Range (ft BGS)	2-3	3-4	4-6	6-8	8-10	0-1	0-1	0-1	0-1	0-1
Analyte										
PCB-87	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-88/91	0.18 HM	0.0655 C	0.0192 C	0.000841 CU	0.000145 CU	0.000201 C	0.0322 C	0.0000353 CU	0.0485 HM	0.00034 C
PCB-89	0.0315 HM	0.00893	0.00199	0.00042 U	0.0000726 U	0.0000228	0.0047	0.0000177 U	0.00514 HM	0.0000404
PCB-90/101/113	0.753 HM	0.362 C	0.135 C	0.00469 C	0.000218 CU	0.000723 C	0.128 C	0.0000928 C	0.148 HM	0.00123 C
PCB-91	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-92	0 HM	0	0	0	0 U	0	0	0	0 HM	0
PCB-93/95/98/100/102	0.16 HM	0.0748 CU	0.0262 CU	0.000811 CU	0.0000726 CU	0.00019 C	0.0282 C	0.0000216 CU	0.0414 HM	0.000321 CU
PCB-94	0.0145 HM	0.00192	0.00195 U	0.000841 U	0.000145 U	0.0000223	0.003	0.0000353 U	0.0053 HM	0.0000422
PCB-95	0.00894 HM	0.00275	0.000973	0.00042	0.0000726 U	0.0000143	0.00202	0.0000177	0.00356 HM	0.0000232
PCB-96	0.648 HM	0.302	0.107	0.00381 U	0.0000726 U	0.000678	0.127	0.0000813 U	0.157 HM	0.00121
PCB-97	0.0152 HM	0.00475 CE	0.00105 CE	0.00042 CE	0.0000726 CE	0.000015 CE	0.00281 CE	0.0000177 CE	0.00379 HM	0.0000261 CE
PCB-98	0 HM	0 C	0 C	0 CU	0 CU	0 C	0 C	0 CU	0 HM	0 C
PCB-99	0.0598 HM	0.0205	0.00524	0.000841	0.000145 U	0.0000649	0.0111	0.0000353	0.0159 HM	0.000114
PCB-100	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-101	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-102	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-103	0.00932 HM	0.0052	0.00171	0.00042 U	0.0000726 U	0.000013	0.00164	0.0000177 U	0.00306 HM	0.0000226
PCB-104	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-105	0.189 HM	0.0564	0.0217	0.0015	0.0000726 U	0.000257	0.0464	0.0000298	0.0544 HM	0.000547
PCB-106	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-107/124	0.0658 HM	0.0239	0.00898	0.00042 U	0.0000726 U	0.0000542	0.00786	0.0000177 U	0.0106 HM	0.0000884
PCB-108	0.0134 HM	0.00513 C	0.00205 C	0.000841 CU	0.000145 CU	0.0000189 C	0.0035 C	0.0000353 CU	0.00388 HM	0.0000422 CU
PCB-109	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-110/115	0.988 HM	0.42 C	0.153 C	0.00542 C	0.000145 CU	0.00105 C	0.182 C	0.000114 C	0.231 HM	0.0019 C
PCB-111	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-112	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-113	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-114	0.0138 HM	0.00358	0.00148	0.00042 U	0.0000726 U	0.0000171	0.00284	0.0000177 U	0.00346 HM	0.0000312
PCB-115	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-117	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-118	0.707 HM	0.291	0.111	0.00418	0.0000726 U	0.0006	0.108	0.0000699	0.138 HM	0.00122
PCB-119	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-120	0.00336 HM	0.00185	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-121	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-122	0.00572 HM	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000844	0.00136	0.0000177 U	0.00162 HM	0.0000211 U
PCB-123	0.00931 HM	0.00449	0.000973 U	0.00042 U	0.0000726 U	0.0000108	0.00248	0.0000177 U	0.00069 UH	0.0000272
PCB-124	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-125	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-126	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.000517	0.0000177 U	0.00069 UH	0.0000211 U
PCB-127	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-128/166	0.0484 HM	0.0269 C	0.0117 C	0.000841 CU	0.000145 CU	0.0000593 C	0.00783 C	0.0000353 CU	0.0125 HM	0.0001 C
PCB-129/138/160/163	0.297 HM	0.175 C	0.0785 C	0.00568 C	0.000218 CU	0.000373 C	0.0747 C	0.0000661 C	0.0786 HM	0.000611 C
PCB-130	0.0225 HM	0.0123	0.00522	0.00042 U	0.0000726 U	0.000025	0.00373	0.0000177 U	0.00498 HM	0.000036

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R3-020-V-Z3	R3-020-V-Z4	R3-020-V-Z5	R3-020-V-Z6	R3-020-V-Z7	R3-021-V-Z1	R3-022-V-Z1	R3-023-V-Z1	R3-024-V-Z1	R3-025-V-Z1
Sample Date	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010
Sample Depth Range (ft BGS)	2-3	3-4	4-6	6-8	8-10	0-1	0-1	0-1	0-1	0-1
Analyte										
PCB-131	0.00437 HM	0.00208	0.00105	0.00042 U	0.0000726 U	0.00000531	0.00111	0.0000177 U	0.00069 UH	0.0000211 U
PCB-132	0.127 HM	0.0715	0.0305	0.00178	0.0000726 U	0.000135	0.0279	0.0000226	0.0301 HM	0.000225
PCB-133	0.0055 HM	0.00308	0.00135	0.00042 U	0.0000726 U	0.0000081	0.00108	0.0000177 U	0.00184 HM	0.0000211 U
PCB-134/143	0.0251 HM	0.0135	0.00584	0.00042 U	0.0000726 U	0.000028	0.00588	0.0000177 U	0.00688 HM	0.0000453
PCB-135/151/154	0.0976 HM	0.0627 C	0.0262 C	0.00252 C	0.000145 CU	0.000121 C	0.034 C	0.0000353 CU	0.0277 HM	0.000192 C
PCB-136	0.0412 HM	0.0256	0.0105	0.000844	0.0000726 U	0.000047	0.0115	0.0000177 U	0.0116 HM	0.0000771
PCB-137	0.0148 HM	0.00658	0.00339	0.00042 U	0.0000726 U	0.0000193	0.00314	0.0000177 U	0.0041 HM	0.0000299
PCB-138	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-139/140	0.00676 HM	0.00357 C	0.00195 CU	0.000841 CU	0.000145 CU	0.00000803 C	0.00136 C	0.0000353 CU	0.00183 HM	0.0000422 CU
PCB-140	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-141	0.0424 HM	0.0244	0.0111	0.0012	0.0000726 U	0.0000508	0.0154	0.0000177 U	0.0101 HM	0.0000877
PCB-142	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-143	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-144	0.0102 HM	0.00497	0.00258	0.00042 U	0.0000726 U	0.0000125	0.00473	0.0000177 U	0.00246 HM	0.0000224
PCB-145	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-146	0.0527 HM	0.032	0.013	0.000848	0.0000726 U	0.0000548	0.0113	0.0000177 U	0.0121 HM	0.0000941
PCB-147/149	0.237 HM	0.149 C	0.0624 C	0.00543 C	0.000145 CU	0.000292 C	0.0768 C	0.0000511 C	0.0652 HM	0.000476 C
PCB-148	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-149	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-150	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-151	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-152	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-153/168	0.233 HM	0.149 C	0.0671 C	0.00589 C	0.000145 CU	0.00026 C	0.0736 C	0.0000508 C	0.0548 HM	0.00042 C
PCB-154	0.00564 HM	0.00331	0.00149	0.00042 U	0.0000726 U	0.00000782	0.000814	0.0000177 U	0.00215 HM	0.0000211 U
PCB-155	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-156/157	0.0404 HM	0.0197 C	0.00933 C	0.000841 CU	0.000145 CU	0.0000463 C	0.00562 C	0.0000353 CU	0.0101 HM	0.0000837 C
PCB-157	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-158	0.0273 HM	0.0149	0.00718	0.000539	0.0000726 U	0.0000346	0.00682	0.0000177 U	0.00707 HM	0.0000566
PCB-159	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00067	0.0000177 U	0.00069 UH	0.0000211 U
PCB-160	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-161	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-162	0.0013 UH	0.0012	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.000448	0.0000177 U	0.00069 UH	0.0000211 U
PCB-163	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-164	0.0215 HM	0.0131	0.00565	0.00042 U	0.0000726 U	0.0000222	0.00423	0.0000177 U	0.00436 HM	0.0000339
PCB-165	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-166	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-167	0.0115 HM	0.00621	0.00301	0.00042 U	0.0000726 U	0.0000138	0.00192	0.0000177 U	0.00311 HM	0.0000211 U
PCB-168	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-169	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-170	0.0453 HM	0.0294	0.0129	0.00175	0.0000726 U	0.0000495	0.00662	0.0000177 U	0.0101 HM	0.0000828
PCB-171/173	0.0145 HM	0.00935 C	0.00406 C	0.000841 CU	0.000145 CU	0.0000158 C	0.00414 C	0.0000353 CU	0.00325 HM	0.0000422 CU
PCB-172	0.00834 HM	0.00569	0.00253	0.000474	0.0000726 U	0.00000935	0.00181	0.0000177 U	0.00187 HM	0.0000211 U
PCB-173	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R3-020-V-Z3	R3-020-V-Z4	R3-020-V-Z5	R3-020-V-Z6	R3-020-V-Z7	R3-021-V-Z1	R3-022-V-Z1	R3-023-V-Z1	R3-024-V-Z1	R3-025-V-Z1
Sample Date	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010
Sample Depth Range (ft BGS)	2-3	3-4	4-6	6-8	8-10	0-1	0-1	0-1	0-1	0-1
Analyte										
PCB-174	0.0491 HM	0.0349	0.0154	0.00348	0.0000726 U	0.0000567	0.0187	0.0000177 U	0.012 HM	0.0000929
PCB-175	0.00225 HM	0.00151	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.000929	0.0000177 U	0.00069 UH	0.0000211 U
PCB-176	0.00788 HM	0.00504	0.00223	0.00042 U	0.0000726 U	0.000008	0.0041	0.0000177 U	0.00167 HM	0.0000211 U
PCB-177	0.0307 HM	0.0209	0.00819	0.00148	0.0000726 U	0.0000352	0.00908	0.0000177 U	0.00732 HM	0.0000589
PCB-178	0.0117 HM	0.00787	0.0038	0.000875	0.0000726 U	0.0000172	0.0052	0.0000177 U	0.00397 HM	0.0000282
PCB-179	0.0241 HM	0.0165	0.0074	0.00159	0.0000726 U	0.0000297	0.0144	0.0000177 U	0.0066 HM	0.0000458
PCB-180/193	0.106 HM	0.0733 C	0.035 C	0.00689 C	0.000145 CU	0.000126 C	0.0252 C	0.0000353 CU	0.0244 HM	0.000205 C
PCB-181	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-182	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-183/185	0.0329 HM	0.0233 C	0.0107 C	0.00231 C	0.000145 CU	0.0000399 C	0.0162 C	0.0000353 CU	0.00805 HM	0.0000637 C
PCB-184	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-185	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-186	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-187	0.0637 HM	0.0434	0.0214	0.00528	0.0000726 U	0.0000919	0.0299	0.0000177 U	0.0185 HM	0.000139
PCB-188	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-189	0.00193 HM	0.00125	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-190	0.0093 HM	0.00587	0.00271	0.000426	0.0000726 U	0.0000108	0.00156	0.0000177 U	0.00222 HM	0.0000211 U
PCB-191	0.00203 HM	0.00121	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-192	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-193	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-194	0.0213 HM	0.015	0.00961	0.00365	0.0000726 U	0.0000324	0.00257	0.0000177 U	0.00663 HM	0.00005
PCB-195	0.00859 HM	0.00601	0.00307	0.000952	0.0000726 U	0.0000117	0.00141	0.0000177 U	0.0025 HM	0.0000234
PCB-196	0.0128 HM	0.00951	0.00671	0.00318	0.0000726 U	0.0000187	0.00287	0.0000177 U	0.00367 HM	0.0000211 U
PCB-197/200	0.00463 HM	0.00329 C	0.00217 C	0.000841 CU	0.000145 CU	0.00000666 C	0.00177 C	0.0000353 CU	0.00138 UH	0.0000422 CU
PCB-198/199	0.0331 HM	0.0269 C	0.0265 C	0.0176 C	0.000145 CU	0.0000577 C	0.00665 C	0.0000353 CU	0.0103 HM	0.0000897 C
PCB-199	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-200	0 HM	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 CE	0 HM	0 CE
PCB-201	0.00401 HM	0.0031	0.00242	0.00116	0.0000726 U	0.00000639	0.00176	0.0000177 U	0.00122 HM	0.0000211 U
PCB-202	0.0068 HM	0.00596	0.00678	0.00563	0.0000726 U	0.0000137	0.00281	0.0000177 U	0.00253 HM	0.0000231
PCB-203	0.0174 HM	0.0138	0.0123	0.00677	0.0000726 U	0.0000298	0.00378	0.0000177 U	0.00542 HM	0.0000438
PCB-204	0.0013 UH	0.00096 U	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-205	0.0014 HM	0.00103	0.000973 U	0.00042 U	0.0000726 U	0.00000287 U	0.00039 U	0.0000177 U	0.00069 UH	0.0000211 U
PCB-206	0.0448 HM	0.0596	0.105	0.107	0.0000893	0.00011	0.00475	0.0000177 U	0.0125 HM	0.000165
PCB-207	0.00423 HM	0.00547	0.00877	0.00509	0.0000726 U	0.00000945	0.000484	0.0000177 U	0.00114 HM	0.0000211 U
PCB-208	0.0202 HM	0.0279	0.0498	0.0485	0.0000726 U	0.0000489	0.00209	0.0000177 U	0.00528 HM	0.000068
PCB-209	0.142 HM	0.273	0.297	0.133	0.000107	0.000227	0.00883	0.0000178	0.0246 HM	0.00031
TOTAL PCB CONGENERS	35.2 HM	11.8	3.5	0.457	0.000315	0.027	4.44	0.00174	5.45 HM	0.0531

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R3-026-V-Z1	R3-026-V-Z4	R3-027-V-Z1	R3-107-W	R4-030-C	R4-035-C	R4-037-C	R5-049-V-Z1	R5-049-V-Z2	R5-049-V-Z3
Sample Date	5/27/2010	5/27/2010	5/27/2010	11/16/2009	11/16/2009	11/17/2009	11/17/2009	5/21/2010	5/21/2010	5/21/2010
Sample Depth Range (ft BGS)	0-1	3-4	0-1	0-0.5	0-1.1	0-0.8	0-0.6	0-1	1-2	2-3
Analyte										
PCB Congeners by HRGC/HRMS (mg/kg										
PCB-1	0.00356	0.0271	0.00113	0.000957 J	0.000571	0.00173 J	0.0117 J	0.00271	0.00268	0.0197
PCB-2	0.000607	0.00318	0.000627 U	0.000147	0.0000538 J	0.00021	0.000986	0.000954 U	0.000932 U	0.00456
PCB-3	0.00425	0.0198	0.00124	0.000718 J	0.000211	0.00123 J	0.00622 J	0.00355	0.00343	0.0127
PCB-4	0.0289	0.0246	0.0161	0.00436 J	0.00972	0.00938 J	0.0656 J	0.0361	0.0425	0.2
PCB-5	0.000437 U	0.00116 U	0.000627 U	0.000169	0.000049 J	0.000471	0.00162	0.000954 U	0.000932 U	0.00549
PCB-6	0.0184	0.0356	0.00667	0.00207 J	0.00122	0.00824 J	0.0297 J	0.0186	0.0294	0.181
PCB-7	0.00167	0.00339	0.000658	0.000227	0.000176	0.000586	0.00389	0.000954 U	0.000932 U	0.018
PCB-8	0.0222	0.065	0.00771	0.00265 J	0.00154	0.00739 J	0.0251 J	0.0216	0.0399	0.305
PCB-9	0.00254	0.00446	0.000904	0.000338 J	0.000253	0.000882 J	0.00517 J	0.00264	0.00357	0.0252
PCB-10	0.00201	0.00193	0.000627 U	0.000119	0.000298	0.000241	0.00132	0.000954 U	0.00286	0.0113
PCB-11	0.0219 U	0.0582 U	0.0314 U	0.000556 J	0.000241	0.000694 J	0.00259 J	0.0477 U	0.0466 U	0.0535 U
PCB-12/13	0.0154 C	0.0117 C	0.00594 C	0.00209	0.00129	0.00294	0.0134	0.0117 C	0.0237 C	0.0387 C
PCB-13	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-14	0.000437 U	0.00116 U	0.000627 U	0.0000025 U	0.0000298 U	0.0000033 U	0.0000054 U	0.000954 U	0.000932 U	0.00107 U
PCB-15	0.046	0.0412	0.0247	0.00839 J	0.00342	0.00844 J	0.0357 J	0.0464	0.0606	0.189
PCB-16	0.023	0.0805	0.00767	0.00186 J	0.00102	0.006 J	0.00973 J	0.0212	0.0663	0.365
PCB-17	0.127	0.138	0.0463	0.0117 J	0.01	0.0207 J	0.0869 J	0.117	0.16	0.638
PCB-18/30	0.0904 C	0.237 C	0.0393 C	0.00952 J	0.00597	0.0244 J	0.062 J	0.108 C	0.239 C	1.07 C
PCB-19	0.0333	0.0187	0.0174	0.00394 J	0.00526	0.00551 J	0.0315 J	0.0341	0.0311	0.115
PCB-20/28	0.175 C	0.477 C	0.0768 C	0.0188 J	0.00899	0.0435 J	0.0929 J	0.191 C	0.438 C	1.82 C
PCB-21/33	0.0378 C	0.157 C	0.00986 C	0.00198 J	0.000741	0.0056 J	0.00828 J	0.0307 C	0.105 C	0.645 C
PCB-22	0.0332	0.111	0.011	0.00298 J	0.00133	0.00987 J	0.0167 J	0.031	0.0902	0.484
PCB-23	0.000437 U	0.00116 U	0.000627 U	0.0000065 U	0.0000514 U	0.0000097 U	0.000008 U	0.000954 U	0.000932 U	0.00107 U
PCB-24	0.000437 U	0.00116 U	0.000627 U	0.0000548	0.0000591 U	0.0000103 U	0.0000093 U	0.000954 U	0.000932 U	0.00107 U
PCB-25	0.0755	0.101	0.0368	0.00807	0.00433	0.0176	0.0529	0.0943	0.102	0.224
PCB-26/29	0.125 C	0.174 C	0.0618 C	0.0153 J	0.00764	0.0317 J	0.0946 J	0.163 C	0.187 C	0.404 C
PCB-27	0.048	0.0156	0.022	0.00488	0.00387	0.00618	0.0313	0.0423	0.0311	0.0968
PCB-28	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-30	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-31	0.194	0.378	0.0767	0.0185 J	0.00959	0.0421 J	0.111 J	0.217	0.369	1.51
PCB-32	0.0629	0.0695	0.0297	0.00676 J	0.00502	0.0122 J	0.0472 J	0.0725	0.0892	0.331
PCB-33	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-34	0.00399	0.0054	0.000627 U	0.000295	0.000222	0.000709	0.00239	0.000954 U	0.00573	0.0213
PCB-35	0.00142	0.00353	0.000627 U	0.000156	0.000105 U	0.000281	0.000637	0.00112	0.00331	0.0142
PCB-36	0.000437 U	0.00116 U	0.000627 U	0.0000241	0.0000983 U	0.0000155 U	0.0000178 U	0.000954 U	0.000932 U	0.00107 U
PCB-37	0.0399	0.0929	0.0136	0.0032 J	0.00114	0.00595 J	0.012 J	0.0294	0.0849	0.405
PCB-38	0.000437 U	0.00116 U	0.000627 U	0.0000245	0.000103 U	0.0000163 U	0.000018 U	0.000954 U	0.000932 U	0.00107 U
PCB-39	0.00143	0.00187	0.000627 U	0.000177	0.000101 U	0.0000156 U	0.0000176 U	0.000954 U	0.00191	0.00801
PCB-40/41/71	0.109 C	0.174 C	0.0568 C	0.0199	0.00784	0.027	0.0813	0.127 C	0.204 C	0.733 C
PCB-41	0.0219 U	0.0582 U	0.0314 U	0	0	0	0	0.0477 U	0.0466 U	0.0844
PCB-42	0.0668	0.142	0.0381	0.0117	0.00437	0.0173	0.0453	0.0848	0.146	0.496
PCB-43	0.0158	0.0205	0.00674	0.00165	0.000832	0.0023	0.00902	0.0173	0.027	0.103

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R3-026-V-Z1	R3-026-V-Z4	R3-027-V-Z1	R3-107-W	R4-030-C	R4-035-C	R4-037-C	R5-049-V-Z1	R5-049-V-Z2	R5-049-V-Z3
Sample Date	5/27/2010	5/27/2010	5/27/2010	11/16/2009	11/16/2009	11/17/2009	11/17/2009	5/21/2010	5/21/2010	5/21/2010
Sample Depth Range (ft BGS)	0-1	3-4	0-1	0-0.5	0-1.1	0-0.8	0-0.6	0-1	1-2	2-3
Analyte										
PCB-44/47/65	0.315 C	0.517 C	0.163 C	0.0479 J	0.0196	0.0633 J	0.174 J	0.344 C	0.534 C	1.79 C
PCB-45/51	0.0693 C	0.0777 C	0.0342 C	0.0102	0.00459	0.0141	0.0448	0.0722 C	0.1 C	0.346 C
PCB-46	0.0209	0.0282	0.0104	0.00281	0.00118	0.00404	0.0121	0.024	0.0335	0.118
PCB-47	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-48	0.0287	0.0762	0.0133	0.00344	0.00172	0.00593	0.0153	0.0305	0.0722	0.395
PCB-49/69	0.219 C	0.384 C	0.123 C	0.0357 J	0.0145	0.0495 J	0.132 J	0.274 C	0.369 C	1.12 C
PCB-50/53	0.0664 C	0.0587 C	0.0352 C	0.0103	0.00452	0.0127	0.0432	0.0736 C	0.0874 C	0.268 C
PCB-51	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-52	0.334	0.625	0.203	0.0506 J	0.0235	0.0753 J	0.218 J	0.439	0.614	1.96
PCB-53	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-54	0.00304	0.00116 U	0.00133	0.000388	0.000283	0.000425	0.00232	0.00251	0.00179	0.00523
PCB-55	0.000437 U	0.00116 U	0.000627 U	0.000543	0.000282	0.0000498 U	0.0000289 U	0.000954 U	0.000932 U	0.00107 U
PCB-56	0.0642	0.163	0.0322	0.0106	0.00449	0.0141	0.0442	0.0644	0.138	0.705
PCB-57	0.00453	0.00569	0.00166	0.000563	0.000293	0.000929	0.00294	0.0039	0.00408	0.00827
PCB-58	0.000437 U	0.00279	0.000627 U	0.000269	0.000164 U	0.000283	0.00185	0.000954 U	0.000932 U	0.00555
PCB-59/62/75	0.0236 C	0.0386 C	0.0123 C	0.00377	0.00151	0.00531	0.0146	0.0266 C	0.0437 C	0.155 C
PCB-60	0.0157	0.00372	0.00936	0.00339	0.00162	0.00356	0.0125	0.0156	0.0152	0.17
PCB-61/70/74/76	0.231 C	0.592 C	0.119 C	0.0387	0.0166	0.0512	0.151	0.243 C	0.49 C	2.46 C
PCB-62	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-63	0.0152	0.0183	0.00511	0.00182	0.000816	0.00276	0.00819	0.011	0.0174	0.0736
PCB-64	0.0961	0.201	0.0537	0.0151 J	0.00607	0.0233 J	0.0638 J	0.123	0.204	0.786
PCB-65	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-66	0.154	0.393	0.0804	0.0269 J	0.011	0.0328 J	0.0985 J	0.159	0.316	1.48
PCB-67	0.00488	0.012	0.00229	0.000844	0.000339	0.00122	0.00381	0.00502	0.0106	0.0464
PCB-68	0.00597	0.0058	0.002	0.000801	0.000354	0.000909	0.00288	0.00377	0.005	0.00837
PCB-69	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-70	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-71	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-72	0.00742	0.00897	0.00293	0.00105	0.000493	0.00126	0.00442	0.00575	0.00784	0.0143
PCB-73	0.000437 U	0.00116 U	0.000627 U	0.000558	0.000309	0.0000227 U	0.0000127 U	0.000954 U	0.000932 U	0.00107 U
PCB-74	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-75	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-76	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-77	0.0175	0.0253	0.00811	0.00258	0.000768	0.00268	0.00798	0.0144	0.027	0.121
PCB-78	0.000437 U	0.00116 U	0.000627 U	0.0000335 U	0.00017 U	0.0000491 U	0.0000282 U	0.000954 U	0.000932 U	0.00107 U
PCB-79	0.000437 U	0.00259	0.000627 U	0.000316	0.000137 U	0.0000394 U	0.0000227 U	0.000954 U	0.000932 U	0.00107 U
PCB-80	0.000437 U	0.00116 U	0.000627 U	0.000027 U	0.000142 U	0.0000396 U	0.0000234 U	0.000954 U	0.000932 U	0.00107 U
PCB-81	0.000437 U	0.00116 U	0.000627 U	0.0000798	0.000167 U	0.0000547 U	0.0000272 U	0.000954 U	0.000932 U	0.00107 U
PCB-82	0.0193	0.0156	0.0122	0.00492	0.00123	0.00438	0.0148	0.0206	0.0276	0.117
PCB-83/99	0.00971	0.0214	0.000627 U	0.00253	0.000654	0.0024	0.00907	0.0103	0.0157	0.0456
PCB-84	0.0608	0.0999	0.0331	0.012	0.0036	0.0139	0.0363	0.066	0.0954	0.279
PCB-85/116/117	0.0308 C	0.0266 C	0.0182 C	0.00765	0.00218	0.00693	0.0226	0.0295 C	0.0361 C	0.145 C
PCB-86/87/97/108/119/125	0.0856 C	0.124 C	0.0541 C	0.0219	0.00622	0.0201	0.0616	0.0923 C	0.121 C	0.49 C

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R3-026-V-Z1	R3-026-V-Z4	R3-027-V-Z1	R3-107-W	R4-030-C	R4-035-C	R4-037-C	R5-049-V-Z1	R5-049-V-Z2	R5-049-V-Z3
Sample Date	5/27/2010	5/27/2010	5/27/2010	11/16/2009	11/16/2009	11/17/2009	11/17/2009	5/21/2010	5/21/2010	5/21/2010
Sample Depth Range (ft BGS)	0-1	3-4	0-1	0-0.5	0-1.1	0-0.8	0-0.6	0-1	1-2	2-3
Analyte										
PCB-87	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-88/91	0.0406 C	0.0509 C	0.0206 C	0.00814	0.00253	0.00895	0.0254	0.0411 C	0.057 C	0.15 C
PCB-89	0.00422	0.00582	0.00242	0.000936	0.000326	0.0011	0.00302	0.0044	0.00787	0.0279
PCB-90/101/113	0.109 C	0.234 C	0.0693 C	0.027	0.00788	0.0256	0.0758	0.124 C	0.164 C	0.585 C
PCB-91	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-92	0	0	0	0	0	0	0	0	0	0
PCB-93/95/98/100/102	0.0345 C	0.0609 CU	0.0192 C	0.00756	0.00206	0.00773	0.0227	0.0359 C	0.0434 CU	0.124 CU
PCB-94	0.00508	0.00233	0.00251	0.00106	0.000377 U	0.00102	0.00328	0.00404	0.00186	0.00214
PCB-95	0.00405	0.00235	0.00169	0.000625	0.000246	0.000627	0.00222	0.003	0.00311	0.00875
PCB-96	0.119	0.233	0.071	0	0	0	0	0.142	0.198	0.546
PCB-97	0.00336 CE	0.0034 CE	0.00167 C	0.000688	0.000212	0.000819	0.00235	0.00337 CE	0.00477 CE	0.0142 CE
PCB-98	0 C	0 C	0 C	0	0	0	0	0 C	0 C	0 C
PCB-99	0.0142	0.0154	0.00702	0	0	0	0	0.0136	0.0193	0.0524
PCB-100	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-101	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-102	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-103	0.00255	0.00481	0.00143	0.000549	0.000217 U	0.000621	0.00177	0.00273	0.00355	0.00734
PCB-104	0.000437 U	0.00116 U	0.000627 U	0.0000406	0.0000801 U	0.000041	0.000135	0.000954 U	0.000932 U	0.00107 U
PCB-105	0.042	0.0307	0.0294	0.0102	0.00314	0.00784	0.0278	0.0444	0.0458	0.26
PCB-106	0.000437 U	0.00116 U	0.000627 U	0.0000398 U	0.000171 U	0.0000521 U	0.0000412 U	0.000954 U	0.000932 U	0.00107 U
PCB-107/124	0.0087	0.0176	0.00521	0.000914	0.000286	0.000749	0.00244	0.0083	0.0113	0.0457
PCB-108	0.00289 C	0.00245 C	0.002 C	0	0	0	0	0.0033 C	0.00353 C	0.0165 C
PCB-109	0 CE	0 CE	0 C	0.00223	0.000648	0.0021	0.00634	0 CE	0 CE	0 CE
PCB-110/115	0.177 C	0.308 C	0.105 C	0.0403 J	0.0108	0.0437 J	0.115 J	0.192 C	0.269 C	0.729 C
PCB-111	0.000437 U	0.00116 U	0.000627 U	0.0000428 U	0.000164 U	0.0000369 U	0.0000911	0.000954 U	0.000932 U	0.00107 U
PCB-112	0.000437 U	0.00116 U	0.000627 U	0.0000425 U	0.000157 U	0.0000366 U	0.0000341 U	0.000954 U	0.000932 U	0.00107 U
PCB-113	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-114	0.00264	0.00192	0.00194	0.000741	0.000188	0.000582	0.0021	0.00302	0.00323	0.0197
PCB-115	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-117	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-118	0.103	0.204	0.067	0.0232 J	0.00699	0.0206 J	0.0637 J	0.112	0.145	0.586
PCB-119	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-120	0.000437 U	0.00175	0.000627 U	0.000112	0.000155 U	0.0000975	0.000265	0.000954 U	0.000932 U	0.00172
PCB-121	0.000437 U	0.00116 U	0.000627 U	0.0000421 U	0.000167 U	0.0000363 U	0.0000337 U	0.000954 U	0.000932 U	0.00107 U
PCB-122	0.00128	0.00116 U	0.00083	0.000443	0.000186 U	0.000314	0.00124	0.000954 U	0.00141	0.007
PCB-123	0.00217	0.00222	0.00172	0.000499	0.000168	0.000247	0.00115	0.0024	0.00272	0.0139
PCB-124	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-125	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-126	0.000437 U	0.00116 U	0.000627 U	0.0000603	0.00017 U	0.0000753 U	0.0000492 U	0.000954 U	0.000932 U	0.00107 U
PCB-127	0.000437 U	0.00116 U	0.000627 U	0.000041 U	0.000186 U	0.0000537 U	0.0000435 U	0.000954 U	0.000932 U	0.00107 U
PCB-128/166	0.00918 C	0.0166 C	0.00614 C	0.00338	0.000814	0.00277	0.00765 J+	0.0109 C	0.0123 C	0.0444 C
PCB-129/138/160/163	0.0597 C	0.112 C	0.0395 C	0.0183	0.00399	0.0158	0.0448 J+	0.065 C	0.0776 C	0.255 C
PCB-130	0.00379	0.00881	0.00258	0.00129	0.000317	0.00118	0.00322 J+	0.00433	0.00581	0.0185

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R3-026-V-Z1	R3-026-V-Z4	R3-027-V-Z1	R3-107-W	R4-030-C	R4-035-C	R4-037-C	R5-049-V-Z1	R5-049-V-Z2	R5-049-V-Z3
Sample Date	5/27/2010	5/27/2010	5/27/2010	11/16/2009	11/16/2009	11/17/2009	11/17/2009	5/21/2010	5/21/2010	5/21/2010
Sample Depth Range (ft BGS)	0-1	3-4	0-1	0-0.5	0-1.1	0-0.8	0-0.6	0-1	1-2	2-3
Analyte										
PCB-131	0.000828	0.00116 U	0.000627 U	0.000238	0.000296 U	0.000211	0.000606 J+	0.00105	0.000932 U	0.00438
PCB-132	0.022	0.0527	0.0139	0.007	0.00173	0.00724	0.000039 UJ	0.0257	0.0363	0.1
PCB-133	0.00121	0.00303	0.000838	0.000394	0.000291 U	0.000359	0.00127 J+	0.00154	0.000932 U	0.00386
PCB-134/143	0.00534	0.0116	0.00314	0.000994	0.000355	0.00118	0.00358 J+	0.0062	0.00761	0.0222
PCB-135/151/154	0.0197 C	0.046 C	0.0124 C	0.00659	0.00129	0.00635	0.0186 J+	0.0229 C	0.03 C	0.0758 C
PCB-136	0.00824	0.0189	0.00506	0.0025	0.000479	0.00256	0.00688 J+	0.00948	0.0128	0.0322
PCB-137	0.00314	0.00431	0.00228	0.00144	0.000285 U	0.00133	0.00331 J+	0.00312	0.00346	0.0148
PCB-138	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-139/140	0.00123 C	0.00292 C	0.00125 CU	0.00043	0.000279 U	0.000402	0.00121 J+	0.00191 CU	0.00206 C	0.00561 C
PCB-140	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-141	0.00764	0.0132	0.00508	0.00231	0.000627	0.00225	0.00571 J+	0.00908	0.0114	0.0424
PCB-142	0.000437 U	0.00116 U	0.000627 U	0.0000826 U	0.000312 U	0.000109 U	0.0203 J+	0.000954 U	0.000932 U	0.00107 U
PCB-143	0.000437 U	0.00116 U	0.000627 U	0	0	0	0	0.000954 U	0.000932 U	0.00107 U
PCB-144	0.00185	0.00307	0.00134	0.000697	0.000185 U	0.000661	0.0018 J+	0.00229	0.00288	0.00932
PCB-145	0.000437 U	0.00116 U	0.000627 U	0.0000176	0.000151 U	0.000018 U	0.0000476 J+	0.000954 U	0.000932 U	0.00107 U
PCB-146	0.0084	0.0257	0.00559	0.00242	0.000621	0.00219	0.00651 J+	0.00977	0.0131	0.037
PCB-147/149	0.0468 C	0.113 C	0.0291 C	0.0138	0.00334	0.014	0.0445 J+	0.0544 C	0.0737 C	0.186 C
PCB-148	0.000437 U	0.00116 U	0.000627 U	0.000101	0.000198 U	0.0000894	0.000341 J+	0.000954 U	0.000932 U	0.00107 U
PCB-149	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-150	0.000437 U	0.00116 U	0.000627 U	0.0000556	0.000148 U	0.0000466	0.000122 J+	0.000954 U	0.000932 U	0.00107 U
PCB-151	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-152	0.000437 U	0.00116 U	0.000627 U	0.0000538	0.000145 U	0.000045	0.000166 J+	0.000954 U	0.000932 U	0.00107 U
PCB-153/168	0.0403 C	0.101 C	0.0262 C	0.0128	0.00294	0.0112	0.0327 J+	0.0453 C	0.0582 C	0.183 C
PCB-154	0.00122	0.00349	0.000831	0	0	0	0	0.00165	0.00225	0.00313
PCB-155	0.000437 U	0.00116 U	0.000627 U	0.0000051 J	0.000115 U	0.0000088 U	0.0000409	0.000954 U	0.000932 U	0.00107 U
PCB-156/157	0.00752 C	0.0127 C	0.00525 C	0.00203	0.000525	0.00159	0.00416	0.00836 C	0.01 C	0.0405 C
PCB-157	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-158	0.00539	0.00852	0.00363	0.00175	0.000422	0.00156	0.00426 J+	0.00589	0.00717	0.0262
PCB-159	0.000437 U	0.00116 U	0.000627 U	0.0000256 U	0.000153 U	0.000039 U	0.0000257 UJ	0.000954 U	0.000932 U	0.00107 U
PCB-160	0.000437 U	0.00116 U	0.000627 U	0	0	0	0	0.000954 U	0.000932 U	0.00107 U
PCB-161	0.000437 U	0.00116 U	0.000627 U	0.0000575 U	0.000215 U	0.000076 U	0.000027 UJ	0.000954 U	0.000932 U	0.00107 U
PCB-162	0.000437 U	0.00116 U	0.000627 U	0.0000252 U	0.000154 U	0.0000383 U	0.0000243 UJ	0.000954 U	0.000932 U	0.00188
PCB-163	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-164	0.00314	0.00874	0.00202	0.000804	0.000219 U	0.000718	0.00195 J+	0.00407	0.0052	0.0164
PCB-165	0.000437 U	0.00116 U	0.000627 U	0.0000642 U	0.000246 U	0.0000848 U	0.000114 J+	0.000954 U	0.000932 U	0.00107 U
PCB-166	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-167	0.00231	0.00396	0.00157	0.000664	0.000153 U	0.000477	0.00132	0.00274	0.00298	0.0113
PCB-168	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-169	0.000437 U	0.00116 U	0.000627 U	0.0000484 U	0.000133 U	0.0000755 U	0.0000652 UJ	0.000954 U	0.000932 U	0.00107 U
PCB-170	0.00805	0.017	0.00509	0.00232	0.000636	0.0018	0.00423	0.00895	0.0123	0.04
PCB-171/173	0.0025 C	0.00592 C	0.00148 C	0.000719	0.000269 U	0.000626	0.00153	0.00296 C	0.00392 C	0.0133 C
PCB-172	0.00153	0.00359	0.000988	0.000378	0.000278 U	0.00033	0.000744	0.00177	0.00246	0.00789
PCB-173	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R3-026-V-Z1	R3-026-V-Z4	R3-027-V-Z1	R3-107-W	R4-030-C	R4-035-C	R4-037-C	R5-049-V-Z1	R5-049-V-Z2	R5-049-V-Z3
Sample Date	5/27/2010	5/27/2010	5/27/2010	11/16/2009	11/16/2009	11/17/2009	11/17/2009	5/21/2010	5/21/2010	5/21/2010
Sample Depth Range (ft BGS)	0-1	3-4	0-1	0-0.5	0-1.1	0-0.8	0-0.6	0-1	1-2	2-3
Analyte										
PCB-174	0.00911	0.0213	0.00563	0.00269	0.000695	0.00231	0.00531	0.0105	0.015	0.0498
PCB-175	0.000437 U	0.00116 U	0.000627 U	0.000119	0.000201 U	0.0000932	0.000267	0.000954 U	0.000932 U	0.00202
PCB-176	0.00127	0.0032	0.000759	0.000378	0.000155 U	0.000328	0.000822	0.00157	0.00218	0.00676
PCB-177	0.00545	0.0133	0.00353	0.0016	0.000432	0.00139	0.00342	0.00644	0.00888	0.0261
PCB-178	0.0027	0.00609	0.00178	0.000831	0.000212 U	0.000658	0.00202	0.0032	0.00418	0.011
PCB-179	0.00462	0.0111	0.00283	0.00138	0.00032	0.00127	0.00319	0.00565	0.00775	0.0235
PCB-180/193	0.0191 C	0.041 C	0.012 C	0.00502	0.00132	0.00396	0.00946	0.0219 C	0.0303 C	0.102 C
PCB-181	0.000437 U	0.00116 U	0.000627 U	0.0000303 U	0.000257 U	0.0000443 U	0.0000217 U	0.000954 U	0.000932 U	0.00107 U
PCB-182	0.000437 U	0.00116 U	0.000627 U	0.0000225 U	0.0002 U	0.000054 U	0.0000372	0.000954 U	0.000932 U	0.00107 U
PCB-183/185	0.0061 C	0.0135 C	0.00384 C	0.00159	0.00049	0.00141	0.00431	0.00703 C	0.01 C	0.034 C
PCB-184	0.000437 U	0.00116 U	0.000627 U	0.0000163 U	0.000149 U	0.000039 U	0.0000153 U	0.000954 U	0.000932 U	0.00107 U
PCB-185	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-186	0.000437 U	0.00116 U	0.000627 U	0.0000178 U	0.00016 U	0.0000426 U	0.0000168 U	0.000954 U	0.000932 U	0.00107 U
PCB-187	0.0132	0.0294	0.00836	0.00432	0.001	0.00344	0.00927	0.0158	0.0211	0.0591
PCB-188	0.000437 U	0.00116 U	0.000627 U	0.0000175 U	0.000172 U	0.0000414 U	0.0000437	0.000954 U	0.000932 U	0.00107 U
PCB-189	0.000437 U	0.00116 U	0.000627 U	0.000097	0.0000862 U	0.0000755	0.000158	0.000954 U	0.000932 U	0.00208
PCB-190	0.00166	0.0032	0.00106	0.00049	0.000221 U	0.000375	0.000847	0.00189	0.00264	0.00848
PCB-191	0.000437 U	0.00116 U	0.000627 U	0.0000858	0.000204 U	0.0000691	0.00017	0.000954 U	0.000932 U	0.00154
PCB-192	0.000437 U	0.00116 U	0.000627 U	0.0000258 U	0.000224 U	0.0000378 U	0.0000188 U	0.000954 U	0.000932 U	0.00107 U
PCB-193	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-194	0.00501	0.00996	0.00348	0.00148	0.000448	0.00111	0.00306	0.00616	0.00798	0.0255
PCB-195	0.00181	0.00366	0.0013	0.000523	0.000209 U	0.000395	0.00112	0.0021	0.00288	0.00912
PCB-196	0.00287	0.00632	0.00187	0.000855	0.000205	0.00074	0.00174	0.00356	0.0046	0.0151
PCB-197/200	0.00095 C	0.00233 CU	0.00125 CU	0.000293	0.000135 U	0.000248	0.000598	0.00191 CU	0.00186 CU	0.00557 C
PCB-198/199	0.00742 C	0.0192 C	0.00489 C	0.00235	0.000616	0.00228	0.00453	0.00853 C	0.012 C	0.0406 C
PCB-199	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-200	0 CE	0 CE	0 C	0	0	0	0	0 CE	0 CE	0 CE
PCB-201	0.000899	0.00217	0.000627 U	0.000258	0.000133 U	0.000249	0.000554	0.00103	0.00145	0.00475
PCB-202	0.00176	0.00497	0.00118	0.000477	0.000158 U	0.000568	0.00109	0.00198	0.0028	0.00876
PCB-203	0.0041	0.00921	0.00271	0.0012	0.000313	0.00114	0.00229	0.00481	0.00636	0.0222
PCB-204	0.000437 U	0.00116 U	0.000627 U	0.0000165 U	0.000135 U	0.0000356 U	0.000006 U	0.000954 U	0.000932 U	0.00107 U
PCB-205	0.000437 U	0.00116 U	0.000627 U	0.0000759	0.000122 U	0.0000615	0.000141	0.000954 U	0.000932 U	0.00175
PCB-206	0.00954	0.0504	0.0056	0.00173	0.000825	0.00348	0.00346	0.00967	0.0144	0.0442
PCB-207	0.000871	0.0041	0.000627 U	0.00019	0.00019 U	0.000377	0.00037	0.000954 U	0.000932 U	0.00427
PCB-208	0.00402	0.0235	0.00234	0.000883	0.000329	0.00226	0.00163	0.00389	0.00595	0.0182
PCB-209	0.0193	0.172	0.0105	0.00439	0.00163	0.00989	0.00728	0.0184	0.0383	0.0871
TOTAL PCB CONGENERS	4.45	8.53	2.35	0.72	0.29	0.97	2.8	4.94	7.65	29.1

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R5-049-V-Z4	R5-115-W	R6-053-C	R6-056-C	R6-056-CR	R6-058-C	R6-062-C	R6-066-C	R6-067-C	R7-068-C
Sample Date	5/21/2010	11/18/2009	11/19/2009	11/17/2009	11/17/2009	11/18/2009	11/19/2009	11/25/2009	11/25/2009	11/25/2009
Sample Depth Range (ft BGS)	3-4	0-0.5	0-1.2	0-1.2	0-1.2	0-2.2	0-3.7	0-1.9	0-2.1	0-2.1
Analyte										
PCB Congeners by HRGC/HRMS (mg/kg										
PCB-1	0.00152	0.000315 J	0.00198 J	0.00662 J	0.00794 J	0.0148 J	0.00566 J	0.0456 J	0.09 J	0.43 J
PCB-2	0.000345 U	0.0000647	0.000271	0.000552	0.000637	0.00226	0.000498	0.0029 J	0.00838 J	0.0355 J
PCB-3	0.000345 U	0.000327 J	0.00127 J	0.00438 J	0.00471 J	0.00874 J	0.00318 J	0.0214 J	0.0407 J	0.161 J
PCB-4	0.00767	0.000546 J	0.0138 J	0.0302 J	0.0376 J	0.0394 J	0.039 J	0.241 J	0.554 J	3.74 J
PCB-5	0.000345 U	0.00000096 U	0.0000015 U	0.00105	0.00182	0.00324	0.000732	0.00326 J	0.00657 J	0.0774 J
PCB-6	0.00146	0.000507 J	0.00627 J	0.0244 J	0.0421 J	0.0403 J	0.0223 J	0.0758 J	0.179 J	2.36 J
PCB-7	0.000347	0.000068	0.000674	0.0015	0.00215	0.00354	0.00204	0.00837 J	0.0135 J	0.0718 J
PCB-8	0.00291	0.00074 J	0.00606 J	0.0238 J	0.0332 J	0.0608 J	0.015 J	0.0676 J	0.138 J	1.05 J
PCB-9	0.000513	0.0000717 J	0.00083 J	0.00215 J	0.00317 J	0.0049 J	0.00299 J	0.0132 J	0.0325 J	0.251 J
PCB-10	0.000379	0.0000099	0.000235	0.000643	0.000865	0.000767	0.000868	0.0044	0.00746	0.0304
PCB-11	0.0172 U	0.00042 J	0.000855 J	0.0017 J	0.00284 J	0.00297 J	0.00162 J	0.00964 J	0.018 J	0.215 J
PCB-12/13	0.000689 CU	0.000342	0.00417	0.00765	0.0108	0.0116	0.0088	0.0508 J	0.113 J	1.17 J
PCB-13	0 CE	0	0	0	0	0	0	0	0	0
PCB-14	0.000345 U	0.0000008 U	0.0000013 U	0.0000044 U	0.0000041 U	0.0000157 U	0.0000017 U	0.000067 J	0.000141	0.00027
PCB-15	0.00176	0.00149 J	0.0109 J	0.0227 J	0.0287 J	0.0341 J	0.0219 J	0.113 J	0.158 J	1.9 J
PCB-16	0.003	0.000306 J	0.00314 J	0.0111 J	0.0173 J	0.0335 J	0.00908 J	0.0238 J	0.0364 J	0.813 J
PCB-17	0.00552	0.000834 J	0.0237 J	0.0439 J	0.0537 J	0.0733 J	0.0559 J	0.224 J	0.447 J	3.57 J
PCB-18/30	0.00897 C	0.00114 J	0.0195 J	0.0565 J	0.0831 J	0.13 J	0.0514 J	0.173 J	0.303 J	3.89 J
PCB-19	0.00159	0.000201 J	0.00836 J	0.0123 J	0.0151 J	0.015 J	0.0167 J	0.088 J	0.242 J	1.11 J
PCB-20/28	0.0139 C	0.0028 J	0.0321 J	0.0695 J	0.0944 J	0.199 J	0.067 J	0.265 J	0.4 J	3.87 J
PCB-21/33	0.00518 C	0.000486 J	0.0000629 J	0.00832 J	0.0108 J	0.0637 J	0.00795 J	0.0222 J	0.0344 J	0.39 J
PCB-22	0.00348	0.00062 J	0.00475 J	0.016 J	0.0237 J	0.0568 J	0.0119 J	0.0422 J	0.0638 J	0.938 J
PCB-23	0.000345 U	0.0000022 U	0.000592	0.0000399	0.0000538	0.0000946	0.0000405	0.000162	0.000362	0.00216
PCB-24	0.000345 U	0.0000025 U	0.0000033 U	0.000328	0.0000134 U	0.00111	0.000434	0.000771	0.000161 U	0.0279
PCB-25	0.00213	0.000789	0.0157	0.0329	0.0451	0.0427	0.0361	0.159 J	0.26 J	2.6 J
PCB-26/29	0.00399 C	0.00137 J	0.0287 J	0.0596 J	0.082 J	0.0815 J	0.0667 J	0.29 J	0.48 J	5.55 J
PCB-27	0.00106	0.0002	0.00804	0.0158	0.0189	0.0147	0.0178	0.0829 J	0.189 J	1.14 J
PCB-28	0 CE	0	0	0	0	0	0	0	0	0
PCB-30	0 CE	0	0	0	0	0	0	0	0	0
PCB-31	0.0119	0.00257 J	0.0362 J	0.0738 J	0.1 J	0.197 J	0.078 J	0.318 J	0.498 J	5.62 J
PCB-32	0.00271	0.000445 J	0.0144 J	0.0262 J	0.0345 J	0.0471 J	0.0316 J	0.129 J	0.269 J	1.95 J
PCB-33	0 CE	0	0	0	0	0	0	0	0	0
PCB-34	0.000345 U	0.0000215	0.000003 U	0.0013	0.00175	0.00183	0.00142	0.00598	0.0114	0.107
PCB-35	0.000345 U	0.0000469	0.000235	0.000392	0.000567	0.0015	0.000419	0.00195 J	0.00285 J	0.0391 J
PCB-36	0.000345 U	0.000004 U	0.000007 U	0.000037	0.0000259 U	0.0000452 U	0.0000367 U	0.000335	0.000716	0.00712
PCB-37	0.00283	0.00097 J	0.00377 J	0.00934 J	0.0127 J	0.0255 J	0.00766 J	0.0297 J	0.0386 J	0.481 J
PCB-38	0.000345 U	0.0000075	0.0000236	0.0000494	0.0000272 U	0.000114	0.0000354 U	0.000214 U	0.000464	0.00256
PCB-39	0.000345 U	0.0000323	0.000313	0.00039	0.000026 U	0.00093	0.0000374 U	0.00218	0.00337	0.0319
PCB-40/41/71	0.00454 C	0.00124	0.0297	0.0466	0.0817	0.0766	0.0412	0.231 J	0.285 J	2.34 J
PCB-41	0.0172 U	0	0	0	0	0	0	0	0	0
PCB-42	0.00302	0.00098	0.0171	0.0285	0.0508	0.0408	0.0249	0.125 J	0.141 J	1.31 J
PCB-43	0.000653	0.0001	0.00281	0.0047	0.00744	0.00676	0.00563	0.0238	0.0305	0.252

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R5-049-V-Z4	R5-115-W	R6-053-C	R6-056-C	R6-056-CR	R6-058-C	R6-062-C	R6-066-C	R6-067-C	R7-068-C
Sample Date	5/21/2010	11/18/2009	11/19/2009	11/17/2009	11/17/2009	11/18/2009	11/19/2009	11/25/2009	11/25/2009	11/25/2009
Sample Depth Range (ft BGS)	3-4	0-0.5	0-1.2	0-1.2	0-1.2	0-2.2	0-3.7	0-1.9	0-2.1	0-2.1
Analyte										
PCB-44/47/65	0.0119 C	0.00491 J	0.0689 J	0.109 J	0.18 J	0.165 J	0.104 J	0.541 J	0.683 J	5.37 J
PCB-45/51	0.00261 C	0.000479	0.0136	0.0289	0.051	0.0322	0.0215	0.125 J	0.214 J	1.17 J
PCB-46	0.000849	0.000129	0.00391	0.00882	0.0158	0.00746	0.00676	0.0356 J	0.0526 J	0.413 J
PCB-47	0 CE	0	0	0	0	0	0	0	0	0
PCB-48	0.00223	0.000301	0.00587	0.00866	0.0123	0.0252	0.00933	0.0385 J	0.0425 J	0.395 J
PCB-49/69	0.00787 C	0.00411 J	0.0509 J	0.0881 J	0.129 J	0.111 J	0.0963 J	0.426 J	0.538 J	3.96 J
PCB-50/53	0.00202 C	0.000469	0.0141	0.0282	0.0451	0.026	0.0235	0.128 J	0.197 J	1.27 J
PCB-51	0 CE	0	0	0	0	0	0	0	0	0
PCB-52	0.0136	0.0076 J	0.0768 J	0.134 J	0.227 J	0.191 J	0.141 J	0.679 J	0.807 J	6.78 J
PCB-53	0 CE	0	0	0	0	0	0	0	0	0
PCB-54	0.000345 U	0.0000083	0.000707	0.000974	0.00125	0.00076	0.00114	0.00726	0.018	0.0476
PCB-55	0.000345 U	0.0000189 U	0.0000816 U	0.000619	0.0000738 U	0.00171	0.000131 U	0.00222 J	0.00356 J	0.0235 J
PCB-56	0.00413	0.00191	0.0163	0.0202	0.0317	0.0598	0.0208	0.1 J	0.11 J	0.747 J
PCB-57	0.000345 U	0.0000436	0.00103	0.00146	0.00263	0.00208	0.00168	0.00991	0.0121	0.105
PCB-58	0.000345 U	0.0000922	0.000214	0.000422	0.000784	0.000566	0.00061	0.00208	0.00221	0.0299
PCB-59/62/75	0.00103 CU	0.000558	0.00569	0.00964	0.0143	0.0134	0.00759	0.0442	0.0497	0.484
PCB-60	0.000937	0.000553	0.00512	0.00617	0.00834	0.0232	0.00458	0.033 J	0.0419 J	0.19 J
PCB-61/70/74/76	0.0149 C	0.0071	0.0595	0.0742	0.122	0.202	0.0769	0.36 J	0.412 J	2.82 J
PCB-62	0 CE	0	0	0	0	0	0	0	0	0
PCB-63	0.000441	0.00032	0.00317	0.00419	0.00558	0.00699	0.00401	0.025	0.0285	0.221
PCB-64	0.00498	0.00266 J	0.0239 J	0.0389 J	0.0571 J	0.0502 J	0.0322 J	0.17 J	0.184 J	1.71 J
PCB-65	0 CE	0	0	0	0	0	0	0	0	0
PCB-66	0.00899	0.00821 J	0.0399 J	0.0469 J	0.0801 J	0.122 J	0.048 J	0.232	0.251	1.56
PCB-67	0.000345 U	0.0000999	0.00138	0.00189	0.00276	0.00459	0.00145	0.0102	0.0109	0.131
PCB-68	0.000345 U	0.000253	0.00119	0.00141	0.00208	0.00172	0.002	0.0096	0.0124	0.0784
PCB-69	0 CE	0	0	0	0	0	0	0	0	0
PCB-70	0 CE	0	0	0	0	0	0	0	0	0
PCB-71	0 CE	0	0	0	0	0	0	0	0	0
PCB-72	0.000345 U	0.00032	0.00182	0.00202	0.00354	0.0027	0.00349	0.0133	0.0161	0.132
PCB-73	0.000345 U	0.000117	0.00121	0.00165	0.0000316 U	0.000886	0.00335	0.00839	0.0104	0.0688
PCB-74	0 CE	0	0	0	0	0	0	0	0	0
PCB-75	0 CE	0	0	0	0	0	0	0	0	0
PCB-76	0 CE	0	0	0	0	0	0	0	0	0
PCB-77	0.000733	0.00112	0.00279	0.00383	0.00605	0.00658	0.00385	0.0205 J	0.0208 J	0.141 J
PCB-78	0.000345 U	0.0000192 U	0.0000828 U	0.0000796 U	0.0000727 U	0.0000935 U	0.000133 U	0.000398 U	0.000436 U	0.00138 U
PCB-79	0.000345 U	0.000015 U	0.000065 U	0.000437	0.0000583 U	0.000643	0.000104 U	0.00238	0.00271	0.0135
PCB-80	0.000345 U	0.0000155 U	0.0000669 U	0.0000642 U	0.0000586 U	0.0000794 U	0.000107 U	0.00181	0.000385 U	0.00122 U
PCB-81	0.000345 U	0.000019 U	0.0000707 U	0.0000902 U	0.0000772 U	0.00019	0.000113 U	0.000475	0.000564	0.00263
PCB-82	0.000707	0.000695	0.00577	0.00601	0.0133	0.00798	0.00707	0.0361	0.0226	0.148
PCB-83/99	0.000345 U	0.000029 U	0.00319	0.00439	0.00753	0.00332	0.0135	0.0214	0.0138	0.137
PCB-84	0.00196	0.00145	0.0164	0.0201	0.0466	0.0227	0.0227	0.105 J	0.0659 J	0.618 J
PCB-85/116/117	0.00103 CU	0.0032	0.00949	0.00897	0.0173	0.0111	0.0119	0.0589 J	0.036 J	0.215 J
PCB-86/87/97/108/119/125	0.00315 C	0.00557	0.0255	0.0271	0.0655	0.0343	0.0364	0.162 J	0.107 J	0.659 J

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R5-049-V-Z4	R5-115-W	R6-053-C	R6-056-C	R6-056-CR	R6-058-C	R6-062-C	R6-066-C	R6-067-C	R7-068-C
Sample Date	5/21/2010	11/18/2009	11/19/2009	11/17/2009	11/17/2009	11/18/2009	11/19/2009	11/25/2009	11/25/2009	11/25/2009
Sample Depth Range (ft BGS)	3-4	0-0.5	0-1.2	0-1.2	0-1.2	0-2.2	0-3.7	0-1.9	0-2.1	0-2.1
Analyte										
PCB-87	0 CE	0	0	0	0	0	0	0	0	0
PCB-88/91	0.00108 C	0.00225	0.0102	0.0127	0.0261	0.0126	0.0169	0.0752	0.0491	0.392
PCB-89	0.000345 U	0.0000722	0.00129	0.00142	0.00325	0.00183	0.00142	0.008	0.00518	0.0526
PCB-90/101/113	0.00409 C	0.0093	0.0328	0.036	0.0828	0.0417	0.0532	0.158 J	0.116 J	0.774 J
PCB-91	0 CE	0	0	0	0	0	0	0	0	0
PCB-92	0	0	0	0	0	0	0	0 J	0 J	0 J
PCB-93/95/98/100/102	0.000957 CU	0.00298	0.00936	0.011	0.0277	0.0111	0.0169	0.0657	0.0492	0.354
PCB-94	0.000689 U	0.000123	0.00138	0.00155	0.00285	0.00143	0.00245	0.0102	0.0164	0.0422
PCB-95	0.000345	0.0000927	0.000836	0.00103	0.00172	0.000885	0.00172	0.00672	0.00795	0.0349
PCB-96	0.0041 U	0	0	0	0	0	0	0	0	0
PCB-97	0.000345 CE	0.0000616	0.000775	0.00123	0.00236	0.00088	0.000998	0.00633	0.00474	0.0374
PCB-98	0 CU	0	0	0	0	0	0	0	0	0
PCB-99	0.000689	0	0	0	0	0	0	0	0	0
PCB-100	0 CE	0	0	0	0	0	0	0	0	0
PCB-101	0 CE	0	0	0	0	0	0	0	0	0
PCB-102	0 CE	0	0	0	0	0	0	0	0	0
PCB-103	0.000345 U	0.0000768	0.000718	0.000883	0.00171	0.000823	0.00145	0.00567	0.00652	0.0318
PCB-104	0.000345 U	0.0000016 U	0.000057	0.0000611	0.0000743	0.0000436	0.0000806	0.00056	0.0031	0.00215
PCB-105	0.0015	0.00324	0.011	0.0107	0.02	0.0135	0.0131	0.0689 J	0.0739 J	0.357 J
PCB-106	0.000345 U	0.0000264 U	0.0000317 U	0.0000708 U	0.0000862 U	0.0000938 U	0.0000496 U	0.00041 U	0.000519 U	0.00145 U
PCB-107/124	0.000345 U	0.000333	0.00103	0.000963	0.00226	0.00131	0.00123	0.00619	0.00391	0.0201
PCB-108	0.000689 CU	0	0	0	0	0	0	0	0	0
PCB-109	0 CE	0.000801	0.00258	0.00251	0.00529	0.00368	0.00426	0.017	0.0102	0.0654
PCB-110/115	0.00554 C	0.015 J	0.0455 J	0.0582 J	0.138 J	0.0634 J	0.0805 J	0.331 J	0.203 J	1.71 J
PCB-111	0.000345 U	0.0000183 U	0.0000424 U	0.000121 U	0.000144	0.0000568 U	0.000112	0.000438	0.000303	0.00189
PCB-112	0.000345 U	0.0000177 U	0.000041 U	0.000899	0.0000706 U	0.000322	0.0000617 U	0.00204	0.00133	0.00907
PCB-113	0 CE	0	0	0	0	0	0	0	0	0
PCB-114	0.000345 U	0.000133	0.000756	0.000792	0.00117	0.0011	0.000914	0.00491	0.00596	0.026
PCB-115	0 CE	0	0	0	0	0	0	0	0	0
PCB-117	0 CE	0	0	0	0	0	0	0	0	0
PCB-118	0.00398	0.00792 J	0.0256 J	0.0258 J	0.0575 J	0.0345 J	0.0404 J	0.16 J	0.164 J	0.869 J
PCB-119	0 CE	0	0	0	0	0	0	0	0	0
PCB-120	0.000345 U	0.0000639	0.000111	0.000115 U	0.000302	0.000149	0.000305	0.000869	0.000617	0.00402
PCB-121	0.000345 U	0.000018 U	0.0000416 U	0.000119 U	0.0000725	0.0000542 U	0.0000627 U	0.000304 U	0.000391	0.00122
PCB-122	0.000345 U	0.000165	0.000432	0.000374	0.000784	0.000525	0.000498	0.0026	0.00162	0.0097
PCB-123	0.000345 U	0.000171	0.000412	0.000428	0.000747	0.000433	0.000432	0.00208	0.00362	0.0142
PCB-124	0 CE	0	0	0	0	0	0	0	0	0
PCB-125	0 CE	0	0	0	0	0	0	0	0	0
PCB-126	0.000345 U	0.0000299 U	0.0000408 U	0.000138	0.000116 U	0.000108	0.000215	0.000446 U	0.000224 UJ	0.00087 UJ
PCB-127	0.000345 U	0.0000272 U	0.0000327 U	0.000073 U	0.0000889 U	0.000102 U	0.0000511 U	0.000427 U	0.000541 U	0.00151 U
PCB-128/166	0.000689 CU	0.00153	0.00351 J+	0.00324	0.00726	0.00313	0.0055 J+	0.0186	0.0297	0.0845
PCB-129/138/160/163	0.00181 C	0.00881	0.0186 J+	0.0195	0.0432	0.0161	0.033 J+	0.105 J	0.249 J	0.533 J
PCB-130	0.000345 U	0.000613	0.00129 J+	0.00126	0.00315	0.00118	0.00216 J+	0.00766	0.0133	0.0419

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R5-049-V-Z4	R5-115-W	R6-053-C	R6-056-C	R6-056-CR	R6-058-C	R6-062-C	R6-066-C	R6-067-C	R7-068-C
Sample Date	5/21/2010	11/18/2009	11/19/2009	11/17/2009	11/17/2009	11/18/2009	11/19/2009	11/25/2009	11/25/2009	11/25/2009
Sample Depth Range (ft BGS)	3-4	0-0.5	0-1.2	0-1.2	0-1.2	0-2.2	0-3.7	0-1.9	0-2.1	0-2.1
Analyte										
PCB-131	0.000345 U	0.0000686	0.000253 J+	0.000241	0.000699	0.000267	0.000348 J+	0.00411 U	0.00236	0.00755
PCB-132	0.000761	0.00272	0.00845 J+	0.00807	0.0242	0.00749	0.0165 J+	0.0478 J	0.0828 J	0.319 J
PCB-133	0.000345 U	0.000219	0.000465 J+	0.000436	0.0012	0.000398	0.00119 J+	0.00406 U	0.00683	0.0216
PCB-134/143	0.000345 U	0.000473	0.00139 J+	0.00129	0.00359	0.00123	0.00281 J+	0.00891	0.0119	0.0488
PCB-135/151/154	0.000689 CU	0.00291	0.00644 J+	0.00908	0.0194	0.00515	0.015 J+	0.0405 J	0.101 J	0.258 J
PCB-136	0.000345 U	0.000786	0.00267 J+	0.00316	0.00814	0.00222	0.00623 J+	0.0159 J	0.0297 J	0.101 J
PCB-137	0.000345 U	0.000528	0.0013 J+	0.00112	0.00313	0.00115	0.00172 J+	0.00829	0.0102	0.0424
PCB-138	0 CE	0	0	0	0	0	0	0	0	0
PCB-139/140	0.000689 CU	0.000172	0.000485 J+	0.000441	0.00122	0.000414	0.000927 J+	0.00386 U	0.00463	0.0184
PCB-140	0 CE	0	0	0	0	0	0	0	0	0
PCB-141	0.000345 U	0.000998	0.00258 J+	0.00327	0.00507	0.0022	0.00394 J+	0.0137	0.0471	0.0579
PCB-142	0.000345 U	0.0000609 U	0.0000392 UJ	0.0000899 U	0.000173 U	0.000222 U	0.0000934 UJ	0.00437 U	0.00195 U	0.0025 U
PCB-143	0.000345 U	0	0	0	0	0	0	0	0	0
PCB-144	0.000345 U	0.000191	0.000579 J+	0.00101	0.00171	0.000509	0.000682 J+	0.00362	0.01	0.0155
PCB-145	0.000345 U	0.0000054 U	0.0000154 J+	0.0000233 U	0.0000122 U	0.0000374 U	0.0000174 J+	0.000185 U	0.000349 U	0.00078 U
PCB-146	0.000345 U	0.00131	0.0000334 UJ	0.00293	0.00578	0.00217	0.0000796 UJ	0.0159	0.0394	0.0945
PCB-147/149	0.00156 C	0.00662	0.0162 J+	0.0182	0.0444	0.0145	0.037 J+	0.0935 J	0.214 J	0.608 J
PCB-148	0.000345 U	0.0000382	0.0000917 J+	0.000124	0.000246	0.0000656	0.000377 J+	0.000817	0.00186	0.00592
PCB-149	0 CE	0	0	0	0	0	0	0	0	0
PCB-150	0.000345 U	0.0000148	0.0000463 J+	0.0000662	0.000127	0.000046	0.000236 J+	0.000416	0.00111	0.002
PCB-151	0 CE	0	0	0	0	0	0	0	0	0
PCB-152	0.000345 U	0.0000146	0.0000549 J+	0.0000612	0.000105	0.000037	0.0000976 J+	0.000334	0.0009	0.00203
PCB-153/168	0.00136 C	0.00679	0.0138 J+	0.0174	0.0286	0.012	0.0248 J+	0.0749 J	0.214 J	0.379 J
PCB-154	0.000345 U	0	0	0	0	0	0	0	0	0
PCB-155	0.000345 U	0.0000031 U	0.0000034 U	0.0000128 U	0.0000066 U	0.0000278 U	0.0000354	0.000122 U	0.000317	0.00058 U
PCB-156/157	0.000689 CU	0.000755	0.00181	0.00184	0.00379	0.00175	0.00253	0.0108	0.0202	0.0498
PCB-157	0 CE	0	0	0	0	0	0	0	0	0
PCB-158	0.000345 U	0.000636	0.00178 J+	0.00196	0.00421	0.0017	0.00257 J+	0.0103	0.0233	0.0509
PCB-159	0.000345 U	0.000015 U	0.000026 UJ	0.0000555 U	0.0000437 U	0.0000954 U	0.0000455 UJ	0.000428	0.00587	0.00218
PCB-160	0.000345 U	0	0	0	0	0	0	0	0	0
PCB-161	0.000345 U	0.0000436 U	0.00219 J+	0.0000626 U	0.000121 U	0.000157 U	0.00464 J+	0.00301 U	0.00134 U	0.00172 U
PCB-162	0.000345 U	0.0000148 U	0.0000256 UJ	0.0000545 U	0.0000429 U	0.0000944 U	0.0000449 UJ	0.000481	0.00107 U	0.00092 U
PCB-163	0 CE	0	0	0	0	0	0	0	0	0
PCB-164	0.000345 U	0.000452	0.000949 J+	0.00111	0.00176	0.00082	0.00189 J+	0.00459	0.015	0.0191
PCB-165	0.000345 U	0.000049 U	0.0000433 J+	0.0000699 U	0.000135 U	0.00017 U	0.000143 J+	0.00333 U	0.00149 U	0.00191
PCB-166	0 CE	0	0	0	0	0	0	0	0	0
PCB-167	0.000345 U	0.000328	0.000556	0.000621	0.00112	0.000551	0.000777	0.00367	0.00677	0.0161
PCB-168	0 CE	0	0	0	0	0	0	0	0	0
PCB-169	0.000345 U	0.0000286	0.0000531 UJ	0.0000699 U	0.0000501 U	0.0000853 U	0.00016 UJ	0.000315 U	0.00118 U	0.00086 U
PCB-170	0.000345 U	0.00121	0.00206	0.00512	0.00319	0.00226	0.00288	0.0117	0.129	0.0591
PCB-171/173	0.000689 CU	0.00035	0.000757	0.00192	0.000126 U	0.000716	0.00109	0.00437	0.0401	0.0228
PCB-172	0.000345 U	0.000214	0.0003	0.0012	0.000568	0.000388	0.0000309 U	0.00234	0.023	0.0119
PCB-173	0 CE	0	0	0	0	0	0	0	0	0

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R5-049-V-Z4	R5-115-W	R6-053-C	R6-056-C	R6-056-CR	R6-058-C	R6-062-C	R6-066-C	R6-067-C	R7-068-C
Sample Date	5/21/2010	11/18/2009	11/19/2009	11/17/2009	11/17/2009	11/18/2009	11/19/2009	11/25/2009	11/25/2009	11/25/2009
Sample Depth Range (ft BGS)	3-4	0-0.5	0-1.2	0-1.2	0-1.2	0-2.2	0-3.7	0-1.9	0-2.1	0-2.1
Analyte										
PCB-174	0.000348	0.00147	0.00265	0.0112	0.00388	0.00249	0.00354	0.0152 J	0.146 J	0.0772 J
PCB-175	0.000345 U	0.0000417	0.0000931	0.000481	0.0000122 U	0.000115 U	0.000122	0.000654	0.00567	0.00401
PCB-176	0.000345 U	0.000145	0.000344	0.00139	0.000715	0.000318	0.000525	0.00211	0.0167	0.0127
PCB-177	0.000345 U	0.000912	0.00167	0.0046	0.00286	0.00163	0.00282	0.0094	0.0865	0.0596
PCB-178	0.000345 U	0.000425	0.00069	0.00291	0.00143	0.000682	0.00147	0.00523	0.0291	0.0312
PCB-179	0.000345 U	0.000678	0.00131	0.00565	0.00248	0.00109	0.0024	0.00848 J	0.0542 J	0.048 J
PCB-180/193	0.000689 CU	0.00252	0.00465	0.0247	0.00644	0.00472	0.00636	0.0263 J	0.286 J	0.131 J
PCB-181	0.000345 U	0.0000125 U	0.0000279	0.000193 U	0.00012 U	0.00019 U	0.0000298 U	0.000356 U	0.000671 U	0.00141 U
PCB-182	0.000345 U	0.0000046 U	0.0000055 U	0.0000231 U	0.000012 U	0.000114 U	0.0000126 U	0.000227 U	0.000484	0.00063 U
PCB-183/185	0.000689 CU	0.000779	0.00206	0.00843	0.00243	0.00146	0.00309	0.00954	0.0881	0.0543
PCB-184	0.000345 U	0.0000034 U	0.0000041 U	0.0000167 U	0.0000087 U	0.0000837 U	0.0000094 U	0.000171 U	0.000189 U	0.00048 U
PCB-185	0 CE	0	0	0	0	0	0	0	0	0
PCB-186	0.000345 U	0.0000037 U	0.0000045 U	0.0000182 U	0.0000095 U	0.0000902 U	0.0000103 U	0.000188 U	0.000208 U	0.00052 U
PCB-187	0.000491	0.00222	0.00369	0.0219	0.00637	0.00322	0.00626	0.0234 J	0.168 J	0.128 J
PCB-188	0.000345 U	0.0000037 U	0.0000047 U	0.0000182 U	0.0000098 U	0.000107 U	0.0000306	0.000164 U	0.000251	0.0005 U
PCB-189	0.000345 U	0.0000509	0.0000738	0.000201	0.000118	0.0000891	0.000103	0.000429	0.00441	0.00249
PCB-190	0.000345 U	0.00028	0.000354	0.00157	0.00064	0.000529	0.000567	0.00267	0.0302	0.0134
PCB-191	0.000345 U	0.0000324	0.0000773	0.000269	0.0000921 U	0.000151 U	0.0000926	0.000519	0.00559	0.00248
PCB-192	0.000345 U	0.0000108 U	0.0000123 U	0.000165 U	0.000103 U	0.000167 U	0.000423	0.000304 U	0.000574 U	0.00121 U
PCB-193	0 CE	0	0	0	0	0	0	0	0	0
PCB-194	0.000345 U	0.000784	0.00137	0.0186	0.00152	0.00169	0.00182	0.00764	0.0862	0.0426
PCB-195	0.000345 U	0.000319	0.000507	0.00497	0.000646	0.000527	0.000544	0.0029	0.0372	0.0156
PCB-196	0.000345 U	0.000391	0.000754	0.0122	0.000978	0.000755	0.00105	0.00443	0.0494	0.0269
PCB-197/200	0.000689 CU	0.000154	0.000292	0.00445	0.000362	0.000238	0.000441	0.00178	0.015	0.00923
PCB-198/199	0.000689 CU	0.00135	0.00205	0.0316	0.00261	0.00201	0.00426	0.012	0.094	0.0636
PCB-199	0 CE	0	0	0	0	0	0	0	0	0
PCB-200	0 CE	0	0	0	0	0	0	0	0	0
PCB-201	0.000345 U	0.000124	0.000268	0.00403	0.000321	0.000246	0.000482	0.0015	0.0117	0.00931
PCB-202	0.000345 U	0.000285	0.000479	0.00572	0.000572	0.000434	0.00103	0.00299	0.0137	0.0182
PCB-203	0.000345 U	0.000686	0.00111	0.0211	0.00128	0.00104	0.00173	0.00599	0.0557	0.0309
PCB-204	0.000345 U	0.0000029 U	0.0000035 U	0.0000174 U	0.0000225 U	0.0000424 U	0.0000066 U	0.000162 U	0.000469 U	0.00068 U
PCB-205	0.000345 U	0.0000417	0.0000596	0.000973	0.0000896	0.0000618	0.0000805	0.000385	0.00501	0.00193
PCB-206	0.000628	0.00105	0.0016	0.0179	0.00194	0.00169	0.00668	0.00872	0.0267	0.0414
PCB-207	0.000345 U	0.000135	0.000196	0.00301	0.000235	0.000183	0.000841	0.00101	0.00319	0.00554
PCB-208	0.000345 U	0.000645	0.000723	0.00643	0.00127	0.000722	0.00329	0.00433	0.00621	0.0244
PCB-209	0.00136	0.00626	0.00333	0.00607	0.00548	0.00519	0.00866	0.0192	0.0196	0.134
TOTAL PCB CONGENERS	0.205	0.18	1	1.8	2.7	2.8	1.8	7.9	12	86

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R7-068-CR	R7-071-C	R7-074-C	R7-075-C	R7-080-C	R7-081-C	R7-082-CR	R7-084-C	R7-086-C	R7-087-C
Sample Date	11/25/2009	11/25/2009	11/24/2009	11/24/2009	12/2/2009	12/2/2009	11/30/2009	11/30/2009	11/30/2009	11/30/2009
Sample Depth Range (ft BGS)	0-2.1	0-1.5	0-2.3	0-2.1	0-1.7	0-1.7	0-1.6	0-3.3	0-3.2	0-2.1
Analyte										
PCB Congeners by HRGC/HRMS (mg/kg										
PCB-1	0.363 J	0.185 J	0.139	0.0742	0.0386 J	2.01 J	0.073 J	0.138 J	0.268 J	0.0962 J
PCB-2	0.0347 J	0.00646	0.00413	0.00218	0.00202 J	0.0727 J	0.00849 J	0.00954 J	0.0159 J	0.00787 J
PCB-3	0.158 J	0.0681 J	0.0339	0.0153	0.0163 J	0.596 J	0.0514 J	0.0655 J	0.117 J	0.0519 J
PCB-4	2.05 J	0.927 J	0.603	0.526	0.199 J	4.86 J	0.145 J	0.642 J	1.1 J	0.429 J
PCB-5	0.0674 J	0.0177	0.00373	0.00676	0.00352 J	0.119 J	0.00321 J	0.01 J	0.019 J	0.00992 J
PCB-6	1.5 J	0.332 J	0.107	0.186	0.0595 J	1.64 J	0.0748 J	0.237 J	0.381 J	0.209 J
PCB-7	0.0525 J	0.0482	0.00823	0.00922	0.00969 J	0.092 J	0.00598 J	0.0206 J	0.0445 J	0.0266 J
PCB-8	0.639 J	0.351 J	0.14	0.139	0.0553 J	1.79 J	0.0589 J	0.217 J	0.404 J	0.189 J
PCB-9	0.15 J	0.0487 J	0.0209	0.0217	0.0108 J	0.243 J	0.0117 J	0.0393 J	0.0563 J	0.0379 J
PCB-10	0.0197	0.028	0.0179	0.00893	0.00384	0.109	0.00219	0.0125	0.0213	0.00552
PCB-11	0.137 J	0.0332 J	0.00795	0.0131	0.00724 J	0.141 J	0.00949 J	0.0242 J	0.0391 J	0.0235 J
PCB-12/13	0.607 J	0.191	0.0587	0.0801	0.0347 J	0.925 J	0.0686 J	0.128 J	0.206 J	0.123 J
PCB-13	0	0	0	0	0	0	0	0	0	0
PCB-14	0.000245	0.0000272 U	0.000097 J	0.0000592 U	0.0000337 U	0.000169 U	0.0000393 J	0.0000508 U	0.0000587 U	0.0000393 U
PCB-15	1.07 J	0.343 J	0.0873	0.18	0.0825 J	1.64 J	0.118 J	0.236 J	0.423 J	0.294 J
PCB-16	0.532 J	0.123 J	0.0202	0.0425	0.0162 J	0.208 J	0.0197 J	0.0692 J	0.09 J	0.0606 J
PCB-17	1.98 J	1.16 J	0.354	0.401	0.161 J	2.55 J	0.23 J	0.565 J	0.944 J	0.51 J
PCB-18/30	2.43 J	0.711 J	0.167	0.386	0.108 J	1.74 J	0.148 J	0.389 J	0.515 J	0.395 J
PCB-19	0.513 J	0.572 J	0.205	0.163	0.0669 J	1.33 J	0.0845 J	0.281 J	0.488 J	0.165 J
PCB-20/28	2.68 J	0.899 J	0.177	0.319	0.162 J	1.97 J	0.187 J	0.547 J	0.781 J	0.583 J
PCB-21/33	0.293 J	0.0901 J	0.0116	0.0262	0.0202 J	0.215 J	0.0172 J	0.0784 J	0.0776 J	0.0491 J
PCB-22	0.646 J	0.184 J	0.0279	0.0577	0.0317 J	0.444 J	0.0339 J	0.113 J	0.148 J	0.113 J
PCB-23	0.00158	0.00098	0.000164 U	0.000144 U	0.000126	0.000908	0.000114	0.000455	0.000707	0.000292
PCB-24	0.0169	0.0000615 U	0.000185 U	0.000162 U	0.000133 U	0.000186 U	0.0000738 U	0.00135	0.00015 U	0.00013 U
PCB-25	1.6 J	0.552	0.122	0.211	0.0855 J	1.04 J	0.114 J	0.278 J	0.434 J	0.323 J
PCB-26/29	3.24 J	0.937 J	0.256	0.416	0.159 J	2.04 J	0.236 J	0.536 J	0.807 J	0.597 J
PCB-27	0.599 J	0.532	0.14	0.133	0.0559 J	0.859 J	0.0877 J	0.204 J	0.332 J	0.164 J
PCB-28	0	0	0	0	0	0	0	0	0	0
PCB-30	0	0	0	0	0	0	0	0	0	0
PCB-31	3.46 J	0.944 J	0.262	0.511	0.2 J	2.69 J	0.268 J	0.696 J	0.968 J	0.759 J
PCB-32	1.09 J	0.676 J	0.191	0.225	0.0864 J	1.57 J	0.134 J	0.319 J	0.521 J	0.287 J
PCB-33	0	0	0	0	0	0	0	0	0	0
PCB-34	0.062	0.0287	0.00739	0.00927	0.00352	0.0594	0.00557	0.0141	0.0208	0.014
PCB-35	0.0245 J	0.00694	0.000881	0.00281	0.00104 J	0.0162 J	0.00146 J	0.00426 J	0.00607 J	0.00458 J
PCB-36	0.00435	0.00142	0.000397	0.000423	0.000225	0.0028	0.000339	0.000915	0.000209 U	0.000231 U
PCB-37	0.363 J	0.105 J	0.0142	0.029	0.0282 J	0.212 J	0.0258 J	0.0664 J	0.0958 J	0.0677 J
PCB-38	0.00205	0.00196	0.000185 U	0.000247 U	0.000172 U	0.000274 U	0.000132 U	0.000512	0.0002 U	0.000221 U
PCB-39	0.0195	0.0106	0.000187 U	0.000249 U	0.000167 U	0.000265 U	0.00169	0.0054	0.000191 U	0.000211 U
PCB-40/41/71	1.69 J	0.926	0.154	0.222	0.131 J	1.34 J	0.162 J	0.499 J	0.615 J	0.421 J
PCB-41	0	0	0	0	0	0	0	0	0	0
PCB-42	0.96 J	0.556	0.0695	0.106	0.0639 J	0.515 J	0.0752 J	0.221 J	0.271 J	0.207 J
PCB-43	0.195	0.126	0.012	0.0154	0.0105	0.0895	0.0123	0.0456	0.0593	0.0378

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R7-068-CR	R7-071-C	R7-074-C	R7-075-C	R7-080-C	R7-081-C	R7-082-CR	R7-084-C	R7-086-C	R7-087-C
Sample Date	11/25/2009	11/25/2009	11/24/2009	11/24/2009	12/2/2009	12/2/2009	11/30/2009	11/30/2009	11/30/2009	11/30/2009
Sample Depth Range (ft BGS)	0-2.1	0-1.5	0-2.3	0-2.1	0-1.7	0-1.7	0-1.6	0-3.3	0-3.2	0-2.1
Analyte										
PCB-44/47/65	4.02 J	2.06 J	0.352	0.455	0.321 J	2.34 J	0.354 J	1.04 J	1.36 J	0.901 J
PCB-45/51	0.851 J	0.793	0.141	0.134	0.0996 J	0.715 J	0.111 J	0.307 J	0.432 J	0.239 J
PCB-46	0.293 J	0.234	0.0277	0.0371	0.0211 J	0.22 J	0.0289 J	0.0785 J	0.0988 J	0.06 J
PCB-47	0	0	0	0	0	0	0	0	0	0
PCB-48	0.328 J	0.196	0.0202	0.034	0.0233 J	0.197 J	0.025 J	0.13 J	0.126 J	0.0656 J
PCB-49/69	2.81 J	1.45 J	0.246	0.382	0.24 J	1.84 J	0.293 J	0.765 J	0.987 J	0.738 J
PCB-50/53	0.89 J	0.649	0.12	0.14	0.085 J	0.704 J	0.112 J	0.266 J	0.377 J	0.236 J
PCB-51	0	0	0	0	0	0	0	0	0	0
PCB-52	4.47 J	1.91 J	0.391	0.588	0.377 J	2.86 J	0.399 J	1.16 J	1.41 J	1.03 J
PCB-53	0	0	0	0	0	0	0	0	0	0
PCB-54	0.034	0.06	0.0131	0.00648	0.00897	0.0485	0.00732	0.0218	0.0375	0.0144
PCB-55	0.0175 J	0.0169	0.000397 U	0.000421 U	0.000502 U	0.000856 U	0.00194 J	0.0111 J	0.000461 U	0.000334 U
PCB-56	0.622 J	0.44	0.0408	0.0625	0.0696 J	0.432 J	0.068 J	0.304 J	0.31 J	0.17 J
PCB-57	0.0738	0.0471	0.00515	0.00554	0.00451	0.0275	0.00464	0.0144	0.0214	0.0143
PCB-58	0.0191	0.00934	0.00103	0.00176	0.00122	0.00583	0.00133	0.00448	0.00368	0.0041
PCB-59/62/75	0.368	0.259	0.0242	0.0358	0.0228	0.165	0.0236	0.0777	0.0992	0.0742
PCB-60	0.138 J	0.201	0.0136	0.0106	0.0272 J	0.199 J	0.0258 J	0.138 J	0.144 J	0.0437 J
PCB-61/70/74/76	2.25 J	1.61	0.173	0.256	0.236 J	1.33 J	0.237 J	0.994 J	1.05 J	0.593 J
PCB-62	0	0	0	0	0	0	0	0	0	0
PCB-63	0.171	0.131	0.0121	0.0155	0.0119	0.0998	0.0138	0.0513	0.0641	0.041
PCB-64	1.29 J	0.711 J	0.0866	0.145	0.0942 J	0.704 J	0.0991 J	0.353 J	0.392 J	0.306 J
PCB-65	0	0	0	0	0	0	0	0	0	0
PCB-66	1.36	0.922 J	0.102	0.142	0.169	0.871	0.154	0.571	0.642	0.389
PCB-67	0.0976	0.0511	0.00522	0.00751	0.00591	0.037	0.00568	0.0219	0.0263	0.0168
PCB-68	0.0575	0.0461	0.00776	0.00741	0.00541	0.0333	0.00688	0.0153	0.0251	0.017
PCB-69	0	0	0	0	0	0	0	0	0	0
PCB-70	0	0	0	0	0	0	0	0	0	0
PCB-71	0	0	0	0	0	0	0	0	0	0
PCB-72	0.0978	0.0634	0.00871	0.00928	0.00774	0.0477	0.00798	0.0205	0.03	0.0225
PCB-73	0.0483	0.0341	0.00757	0.00605	0.00541	0.036	0.00577	0.0162	0.0178	0.0127
PCB-74	0	0	0	0	0	0	0	0	0	0
PCB-75	0	0	0	0	0	0	0	0	0	0
PCB-76	0	0	0	0	0	0	0	0	0	0
PCB-77	0.114 J	0.0886	0.00754	0.0112	0.0167 J	0.0758 J	0.0134 J	0.051 J	0.0618 J	0.0302 J
PCB-78	0.00198 U	0.000485 U	0.000414 U	0.000439 U	0.000484 U	0.000826 U	0.000289 U	0.000473 U	0.000456 U	0.00033 U
PCB-79	0.0111	0.0145	0.000341 U	0.000362 U	0.000391 U	0.000667 U	0.00161	0.00576	0.000372 U	0.000269 U
PCB-80	0.00175 U	0.000391 U	0.00093	0.00104	0.00103	0.00473	0.000924	0.00293	0.00377	0.00259
PCB-81	0.00189 U	0.00193	0.000435 U	0.000493 U	0.000543 U	0.00213	0.000445	0.00125	0.000395 U	0.00053
PCB-82	0.128	0.21	0.016	0.0167	0.00785	0.0278	0.0218	0.0895	0.0789	0.0339
PCB-83/99	0.109	0.134	0.00809	0.0131	0.00379	0.0192	0.0129	0.0383	0.0331	0.024
PCB-84	0.513 J	0.72	0.0568	0.0775	0.0206 J	0.0867 J	0.057 J	0.173 J	0.15 J	0.108 J
PCB-85/116/117	0.165 J	0.303	0.0266	0.029	0.0118 J	0.0438 J	0.0328 J	0.125 J	0.116 J	0.0551 J
PCB-86/87/97/108/119/125	0.59 J	0.972	0.0738	0.0773	0.0378 J	0.118 J	0.0969 J	0.356 J	0.318 J	0.157 J

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R7-068-CR	R7-071-C	R7-074-C	R7-075-C	R7-080-C		R7-081-C	R7-082-CR	R7-084-C	R7-086-C	R7-087-C
Sample Date	11/25/2009	11/25/2009	11/24/2009	11/24/2009	12/2/2009		12/2/2009	11/30/2009	11/30/2009	11/30/2009	11/30/2009
Sample Depth Range (ft BGS)	0-2.1	0-1.5	0-2.3	0-2.1	0-1.7		0-1.7	0-1.6	0-3.3	0-3.2	0-2.1
Analyte											
PCB-87	0	0	0	0	0		0	0	0	0	0
PCB-88/91	0.331	0.43	0.0388	0.0517	0.0155		0.0592	0.0411	0.118	0.112	0.081
PCB-89	0.0419	0.0548	0.00379	0.00505	0.0016		0.00611	0.00481	0.0179	0.0154	0.00888
PCB-90/101/113	0.661 J	1.26	0.0996	0.113	0.0358	J	0.0862 J	0.0891 J	0.279 J	0.24 J	0.155 J
PCB-91	0	0	0	0	0		0	0	0	0	0
PCB-92	0 J	0	0	0	0	J	0 J	0 J	0 J	0 J	0 J
PCB-93/95/98/100/102	0.312	0.444	0.035	0.0361	0.0166		0.0458	0.0358	0.103	0.0998	0.071
PCB-94	0.0387	0.0824	0.0122	0.00728	0.00818		0.0104	0.00813	0.0264	0.0263	0.0131
PCB-95	0.0338	0.0483	0.00522	0.00485	0.00306		0.00623	0.00434	0.0118	0.014	0.00806
PCB-96	0	0	0	0	0		0	0	0	0	0
PCB-97	0.0301	0.0549	0.00367	0.00481	0.0015		0.00679	0.00383	0.0119	0.0117	0.00728
PCB-98	0	0	0	0	0		0	0	0	0	0
PCB-99	0	0	0	0	0		0	0	0	0	0
PCB-100	0	0	0	0	0		0	0	0	0	0
PCB-101	0	0	0	0	0		0	0	0	0	0
PCB-102	0	0	0	0	0		0	0	0	0	0
PCB-103	0.0293	0.0364	0.00431	0.00431	0.00215		0.00497	0.00392	0.00911	0.00998	0.00736
PCB-104	0.0014	0.00476	0.00102	0.000363	0.0018		0.00281	0.000732	0.00287	0.00389	0.00112
PCB-105	0.18 J	0.44	0.032	0.0262	0.0338	J	0.161 J	0.0391 J	0.191 J	0.242 J	0.0735 J
PCB-106	0.00134 U	0.000788 U	0.000368 U	0.000603 U	0.000692	U	0.000176 U	0.000394 U	0.000596 U	0.000525 U	0.000374 U
PCB-107/124	0.0182	0.0436	0.00276	0.00247	0.00144		0.00383	0.00377	0.0151	0.0132	0.00542
PCB-108	0	0	0	0	0		0	0	0	0	0
PCB-109	0.0594	0.126	0.00722	0.00751	0.00345		0.0101	0.0091	0.0346	0.0307	0.0166
PCB-110/115	1.47 J	1.76 J	0.153	0.181	0.0721	J	0.226 J	0.183 J	0.551 J	0.524 J	0.341 J
PCB-111	0.000696 U	0.00196	0.000242 U	0.000447 U	0.000219	U	0.000202	0.000231 U	0.000399 U	0.000558	0.000416 U
PCB-112	0.0079	0.0146	0.000238 U	0.00044 U	0.000217	U	0.000111 U	0.0011	0.00539	0.000417 U	0.0004 U
PCB-113	0	0	0	0	0		0	0	0	0	0
PCB-114	0.0191	0.0425	0.00255	0.00224	0.00209		0.0132	0.00298	0.0143	0.0171	0.00487
PCB-115	0	0	0	0	0		0	0	0	0	0
PCB-117	0	0	0	0	0		0	0	0	0	0
PCB-118	0.61 J	1.12 J	0.0789	0.0863	0.086	J	0.418 J	0.0974 J	0.364 J	0.444 J	0.198 J
PCB-119	0	0	0	0	0		0	0	0	0	0
PCB-120	0.00355	0.00631	0.000517	0.000521	0.000203	U	0.000445	0.000217 U	0.00114	0.00109	0.000994
PCB-121	0.000664 U	0.00171	0.000352	0.000441 U	0.000209	U	0.000213	0.000226 U	0.000607	0.000424 U	0.000406 U
PCB-122	0.00836	0.0183	0.00128	0.000622 U	0.000715	U	0.00171	0.00169	0.0068	0.00612	0.00224
PCB-123	0.00795	0.0148	0.00152	0.00136	0.00183		0.00691	0.00183	0.00693	0.0103	0.00243
PCB-124	0	0	0	0	0		0	0	0	0	0
PCB-125	0	0	0	0	0		0	0	0	0	0
PCB-126	0.00185	0.000875 U	0.000432 U	0.000654 U	0.000275	UJ	7.04E-05 UJ	0.000416 U	0.000791	0.000295 UJ	0.000297 UJ
PCB-127	0.00139 U	0.00263	0.000371 U	0.000608 U	0.000718	U	0.000183 U	0.0004 U	0.000605 U	0.000534 U	0.00038 U
PCB-128/166	0.0526	0.228	0.00809	0.00742	0.00957		0.031	0.0117	0.0358	0.0475	0.0199
PCB-129/138/160/163	0.342 J	1.43	0.0488	0.0476	0.061	J	0.173 J	0.0649 J	0.189 J	0.24 J	0.116 J
PCB-130	0.0252	0.0965	0.00344	0.00355	0.00429		0.0126	0.00443	0.0135	0.018	0.00845

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R7-068-CR	R7-071-C	R7-074-C	R7-075-C	R7-080-C	R7-081-C	R7-082-CR	R7-084-C	R7-086-C	R7-087-C
Sample Date	11/25/2009	11/25/2009	11/24/2009	11/24/2009	12/2/2009	12/2/2009	11/30/2009	11/30/2009	11/30/2009	11/30/2009
Sample Depth Range (ft BGS)	0-2.1	0-1.5	0-2.3	0-2.1	0-1.7	0-1.7	0-1.6	0-3.3	0-3.2	0-2.1
Analyte										
PCB-131	0.0044	0.0198	0.000785	0.00107 U	0.000748 U	0.00289	0.000857	0.00313	0.004	0.00151
PCB-132	0.181 J	0.59	0.0216	0.0223	0.0246 J	0.0819 J	0.0281 J	0.0819 J	0.109 J	0.0571 J
PCB-133	0.0124	0.033	0.00164	0.00185	0.00255	0.00568	0.00165	0.00509	0.00654	0.00441
PCB-134/143	0.0283	0.0917	0.00376	0.00358	0.00413	0.0166	0.0046	0.0125	0.0188	0.00938
PCB-135/151/154	0.156 J	0.653	0.02	0.023	0.0281 J	0.0828 J	0.0253 J	0.0639 J	0.0888 J	0.0541 J
PCB-136	0.0569 J	0.235	0.00784	0.00891	0.00949 J	0.0335 J	0.00976 J	0.0258 J	0.0348 J	0.0201 J
PCB-137	0.0266	0.109	0.00306	0.00214	0.00511	0.0147	0.00431	0.0155	0.0205	0.00824
PCB-138	0	0	0	0	0	0	0	0	0	0
PCB-139/140	0.011	0.0346	0.00136	0.00138	0.00194	0.00498	0.00169	0.00516	0.00679	0.0037
PCB-140	0	0	0	0	0	0	0	0	0	0
PCB-141	0.0371	0.268	0.00634	0.00609	0.00873	0.0233	0.0094	0.0284	0.0366	0.0141
PCB-142	0.00223 U	0.000696 U	0.000479 U	0.00114 U	0.000778 U	0.00163 U	0.000705 U	0.000297 U	0.00142 U	0.00096 U
PCB-143	0	0	0	0	0	0	0	0	0	0
PCB-144	0.0109	0.075	0.00146	0.00161	0.00237	0.00706	0.00258	0.00738	0.0096	0.00408
PCB-145	0.000225 U	0.00125	8.75E-05 U	0.000197 U	0.000274 U	0.000229	0.0000778 U	0.000228	0.000362	0.000241 U
PCB-146	0.0586	0.225	0.00782	0.00885	0.0101	0.027	0.00911	0.025	0.0323	0.0195
PCB-147/149	0.353 J	1.27	0.0459	0.0499	0.0607 J	0.184 J	0.0574 J	0.149 J	0.204 J	0.117 J
PCB-148	0.00316	0.00703	0.000452	0.000569	0.00109	0.0018	0.000442	0.00141	0.0017	0.00122
PCB-149	0	0	0	0	0	0	0	0	0	0
PCB-150	0.00112	0.00398	0.000244	0.000298 J	0.000568	0.000971	0.000281	0.000676	0.00101	0.000677
PCB-151	0	0	0	0	0	0	0	0	0	0
PCB-152	0.00129	0.00431	0.00027	0.000193 J	0.000778	0.000792	0.000182	0.000648	0.00105	0.000421
PCB-153/168	0.252 J	1.2	0.0358	0.0365	0.0497 J	0.121 J	0.0474 J	0.126 J	0.161 J	0.0848 J
PCB-154	0	0	0	0	0	0	0	0	0	0
PCB-155	0.000163 U	0.00045	0.000119 J	0.000137 U	0.000364	0.000327	0.0000833	0.000538	0.000516	0.000148 U
PCB-156/157	0.0371	0.161	0.00608	0.00535	0.00401	0.0171	0.00668	0.0249	0.0302	0.0118
PCB-157	0	0	0	0	0	0	0	0	0	0
PCB-158	0.0325	0.151	0.00498	0.00467	0.00588	0.0173	0.00658	0.0198	0.026	0.011
PCB-159	0.00178	0.0206	0.000202 U	0.000348 U	0.000402 U	0.000321 U	0.000339	0.000603	0.000374 U	0.00032 U
PCB-160	0	0	0	0	0	0	0	0	0	0
PCB-161	0.00153 U	0.000485 U	0.000324 U	0.000768 U	0.000537 U	0.00112 U	0.000499 U	0.00021 U	0.00101 U	0.000679 U
PCB-162	0.000761 U	0.00732	0.000403	0.000341 U	0.000405 U	0.000688	0.000268 U	0.00111	0.00121	0.000546
PCB-163	0	0	0	0	0	0	0	0	0	0
PCB-164	0.0114	0.0724	0.00276	0.00336	0.00228	0.00634	0.00365	0.00932	0.0111	0.00503
PCB-165	0.0017 U	0.00251	0.000364 U	0.000863 U	0.000603 U	0.00126 U	0.00054 U	0.000532	0.00109 U	0.000735 U
PCB-166	0	0	0	0	0	0	0	0	0	0
PCB-167	0.0103	0.0512	0.00178	0.00174	0.00207	0.00527	0.00219	0.00656	0.00868	0.00352
PCB-168	0	0	0	0	0	0	0	0	0	0
PCB-169	0.000573 U	0.00144 U	0.000186 U	0.000331 U	0.000501 U	0.000317 U	0.000218 U	0.000291 U	0.000323 U	0.000315 U
PCB-170	0.0499	0.321	0.0061	0.00749	0.0173	0.0181	0.00959	0.0231	0.032	0.0168
PCB-171/173	0.0183	0.111	0.0021	0.00256	0.00674	0.00698	0.0033	0.0084	0.0113	0.00591
PCB-172	0.0106	0.0625	0.00106	0.00138	0.00434	0.00371	0.00187	0.00455	0.00644	0.0028
PCB-173	0	0	0	0	0	0	0	0	0	0

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R7-068-CR	R7-071-C	R7-074-C	R7-075-C	R7-080-C	R7-081-C	R7-082-CR	R7-084-C	R7-086-C	R7-087-C
Sample Date	11/25/2009	11/25/2009	11/24/2009	11/24/2009	12/2/2009	12/2/2009	11/30/2009	11/30/2009	11/30/2009	11/30/2009
Sample Depth Range (ft BGS)	0-2.1	0-1.5	0-2.3	0-2.1	0-1.7	0-1.7	0-1.6	0-3.3	0-3.2	0-2.1
Analyte										
PCB-174	0.0646 J	0.465	0.0069	0.00801	0.0297 J	0.0243 J	0.0121 J	0.0283 J	0.0423 J	0.02 J
PCB-175	0.00336	0.0199	0.000362	0.000717 U	0.00165	0.00124	0.000132 U	0.00146	0.002	0.000992
PCB-176	0.00973	0.0659	0.000981	0.00142	0.00421	0.00389	0.00172	0.00426	0.00623	0.00316
PCB-177	0.0436	0.254	0.00501	0.00619	0.0184	0.0165	0.00742	0.0196	0.0267	0.0149
PCB-178	0.021	0.116	0.00241	0.00305	0.00956	0.00988	0.0036	0.00933	0.0124	0.00816
PCB-179	0.0345 J	0.239	0.00389	0.00499	0.017 J	0.0157 J	0.00623 J	0.0153 J	0.0234 J	0.0127 J
PCB-180/193	0.13 J	0.796	0.0133	0.016	0.0583 J	0.0429 J	0.0224 J	0.0508 J	0.0787 J	0.0359 J
PCB-181	0.00102 U	0.00237	0.000355 U	0.000698 U	0.000713	0.000352 U	0.00042 U	0.000418	0.000284 U	0.000858 U
PCB-182	0.000428 U	0.0016	0.000247 U	0.000706 U	0.000562 U	0.000195 U	0.000131 U	0.000124 U	0.000307 U	0.000247
PCB-183/185	0.0487	0.284	0.0045	0.00557	0.0218	0.0162	0.00794	0.0183	0.0286	0.0129
PCB-184	0.000323 U	0.000226	0.000187 U	0.000536 U	0.000414 U	0.000144 U	0.0000973 U	0.0000918 U	0.000228 U	0.000145 U
PCB-185	0	0	0	0	0	0	0	0	0	0
PCB-186	0.000356 U	0.000145	0.000199 U	0.000569 U	0.00045 U	0.000156 U	0.000105 U	0.0000988 U	0.000245 U	0.000156 U
PCB-187	0.102 J	0.636	0.0117	0.015	0.053 J	0.046 J	0.0184 J	0.0436 J	0.0658 J	0.0357 J
PCB-188	0.000393 U	0.000682	0.000208 U	0.000611 U	0.000484 U	0.000342	0.000102 U	0.000237	0.000231 U	0.000203
PCB-189	0.00177	0.00961	0.000247	0.000305	0.000475	0.000677	0.0004	0.000823	0.00119	0.000753
PCB-190	0.0124	0.0706	0.00119	0.00164	0.00478	0.00427	0.00218	0.00511	0.00742	0.00353
PCB-191	0.00208	0.0119	0.000274 U	0.000539 U	0.000925	0.000831	0.00042	0.00104	0.00146	0.000676 U
PCB-192	0.000869 U	0.000246 U	0.000304 U	0.000597 U	0.000591 U	0.000305 U	0.000355 U	0.000291 U	0.00024 U	0.000725 U
PCB-193	0	0	0	0	0	0	0	0	0	0
PCB-194	0.0511	0.271	0.00371	0.00444	0.0252	0.0117	0.00751	0.0135	0.0267	0.0103
PCB-195	0.0184	0.0995	0.00133	0.00146	0.0087	0.00402	0.00239	0.00508	0.00973	0.00375
PCB-196	0.0336	0.168	0.00203	0.00247	0.0169	0.00723	0.00446	0.00806	0.0157	0.00604
PCB-197/200	0.00971	0.0595	0.000771	0.000924	0.00559	0.00264	0.00142	0.00317	0.00601	0.00217
PCB-198/199	0.0648	0.389	0.00593	0.00641	0.0423	0.000257 U	0.0145	0.0209	0.0422	0.0161
PCB-199	0	0	0	0	0	0	0	0	0	0
PCB-200	0	0	0	0	0	0	0	0	0	0
PCB-201	0.00885	0.0536	0.000713	0.00081	0.00542	0.00254	0.00139	0.00305	0.0058	0.00217
PCB-202	0.014	0.0771	0.00154	0.00164	0.00866	0.0051	0.00364	0.00505	0.00963	0.0041
PCB-203	0.0355	0.197	0.00319	0.0038	0.0214	0.011	0.00692	0.0111	0.0236	0.00825
PCB-204	0.00027 U	0.0000619 U	0.000168 U	0.00021 U	0.000315 U	0.000173 U	0.000202 U	0.000256 U	0.000119 U	0.000249 U
PCB-205	0.00289	0.0121	0.000228	0.000283 U	0.0013	0.000639	0.000402	0.000633	0.00136	0.000486
PCB-206	0.0481	0.0674	0.00786	0.00595	0.0334	0.0219	0.0358	0.0114	0.0237	0.0135
PCB-207	0.00583	0.0131	0.000656	0.000697	0.00399	0.00265	0.00256	0.00161	0.00308	0.00144
PCB-208	0.0222	0.0263	0.00331	0.00227	0.0144	0.00951	0.0174	0.00527	0.00922	0.00548
PCB-209	0.135	0.0231	0.0123	0.0166	0.0547	0.0376	0.0722	0.0235	0.0228	0.033
TOTAL PCB CONGENERS	58	44	6.2	8.1	4.9	49	5.8	17	22	14

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R7-088-C	R7-089-C	R7-091-C	R7-094-C	R7-099-C	R7-100-C	R7-101-C	R7-103-C	R7-104-C	R7-106-C	R7-131-H
Sample Date	11/25/2009	11/25/2009	11/24/2009	11/23/2009	11/23/2009	11/23/2009	11/30/2009	11/30/2009	12/2/2009	11/30/2009	11/30/2009
Sample Depth Range (ft BGS)	0-1	0-2.9	0-1.4	0-1	0-1.3	0-1.2	0-0.5	0-2.3	0-1	0-0.5	0-0.5
Analyte											
PCB Congeners by HRGC/HRMS (mg/kg											
PCB-1	0.0644 J	1.58 J	0.233	0.05 J	0.0468	0.0415 J	0.267 J	0.256 J	0.305 J	0.0916 J	0.0959 J
PCB-2	0.00177 J	0.0558 J	0.0059	0.00471	0.00109	0.00196	0.0186 J	0.00587 J	0.0111 J	0.00335 J	0.00516 J
PCB-3	0.02 J	0.596 J	0.0554	0.0235 J	0.013	0.0178 J	0.148 J	0.0661 J	0.141 J	0.0434 J	0.0459 J
PCB-4	0.837 J	3.24 J	1.59	0.111 J	0.317	0.214 J	0.542 J	1.53 J	1.28 J	0.407 J	0.143 J
PCB-5	0.0103 J	0.0604 J	0.0152	0.00663	0.00204	0.00423	0.0176 J	0.0336 J	0.0249 J	0.00664 J	0.00488 J
PCB-6	0.293 J	1.22 J	0.265	0.0785 J	0.0853	0.0618 J	0.297 J	0.413 J	0.262 J	0.135 J	0.0954 J
PCB-7	0.0307 J	0.147 J	0.0273	0.00908	0.0083	0.0103	0.0484 J	0.122 J	0.0426 J	0.0178 J	0.0154 J
PCB-8	0.166 J	1.38 J	0.419	0.0769 J	0.081	0.0813 J	0.298 J	0.422 J	0.448 J	0.184 J	0.133 J
PCB-9	0.0773 J	0.169 J	0.0278	0.0113 J	0.0148	0.0145 J	0.0606 J	0.15 J	0.0459 J	0.0282 J	0.0183 J
PCB-10	0.0216	0.0988	0.0539	0.00201	0.00677	0.00337	0.00988	0.0216	0.0269	0.00818	0.00193
PCB-11	0.0196 J	0.13 J	0.0207	0.0089 J	0.00845	0.00647 J	0.0409 J	0.0584 J	0.0317 J	0.0145 J	0.00989 J
PCB-12/13	0.128 J	0.61 J	0.119	0.0279	0.0599	0.0345	0.166 J	0.146 J	0.159 J	0.0813 J	0.0466 J
PCB-13	0	0	0	0	0	0	0	0	0	0	0
PCB-14	0.0004	0.0006	0.00022 J	0.0000293	0.0000789 U	0.0000295	0.0000364 U	0.0000882 U	0.000704	0.0000439 U	0.0000398 U
PCB-15	0.254 J	1.5 J	0.214	0.0679 J	0.0831	0.0733 J	0.517 J	0.547 J	0.402 J	0.294 J	0.204 J
PCB-16	0.121 J	0.234 J	0.0568	0.0372 J	0.0222	0.0162 J	0.0729 J	0.172 J	0.0656 J	0.0583 J	0.0283 J
PCB-17	0.62 J	2.73 J	1.18	0.168 J	0.3	0.146 J	0.468 J	1.26 J	0.743 J	0.37 J	0.096 J
PCB-18/30	0.65 J	1.49 J	0.457	0.185 J	0.161	0.0939 J	0.377 J	0.981 J	0.319 J	0.347 J	0.139 J
PCB-19	0.288 J	1.38 J	0.721	0.0526 J	0.142	0.0591 J	0.119 J	0.518 J	0.501 J	0.141 J	0.0198 J
PCB-20/28	0.601 J	1.87 J	0.396	0.279 J	0.184	0.139 J	0.683 J	1.09 J	0.731 J	0.566 J	0.371 J
PCB-21/33	0.0849 J	0.182 J	0.0266	0.0319 J	0.0143	0.0142 J	0.0667 J	0.081 J	0.0607 J	0.0558 J	0.0461 J
PCB-22	0.163 J	0.391 J	0.0703	0.0574 J	0.0312	0.0258 J	0.143 J	0.153 J	0.131 J	0.119 J	0.0858 J
PCB-23	0.00082	0.0013	0.00045	0.000148	0.000142 U	0.0000982	0.00047	0.00135	0.000794	0.000467	0.0000998
PCB-24	0.00507	0.0002 U	0.00026 U	0.000994	0.000811	0.000588	0.000142 U	0.000228 U	0.000106 U	0.0000994 U	0.000653
PCB-25	0.454 J	1.15 J	0.311	0.13	0.13	0.0681	0.406 J	0.719 J	0.251 J	0.177 J	0.0755 J
PCB-26/29	1.12 J	2.18 J	0.691	0.229 J	0.23	0.127 J	0.673 J	1.37 J	0.449 J	0.356 J	0.136 J
PCB-27	0.22 J	0.95 J	0.393	0.0467	0.103	0.0424	0.129 J	0.353 J	0.217 J	0.131 J	0.0246 J
PCB-28	0	0	0	0	0	0	0	0	0	0	0
PCB-30	0	0	0	0	0	0	0	0	0	0	0
PCB-31	0.717 J	2.56 J	0.699	0.306 J	0.262	0.171 J	0.859 J	1.23 J	0.74 J	0.612 J	0.4 J
PCB-32	0.24 J	1.58 J	0.632	0.0963 J	0.163	0.0748 J	0.241 J	0.628 J	0.425 J	0.288 J	0.0778 J
PCB-33	0	0	0	0	0	0	0	0	0	0	0
PCB-34	0.0138	0.0682	0.0235	0.00489	0.006	0.00318	0.0131	0.0253	0.0132	0.00794	0.00209
PCB-35	0.00675 J	0.0163 J	0.00266	0.00197	0.00127	0.000991	0.00583 J	0.0058 J	0.00511 J	0.00245 J	0.00213 J
PCB-36	0.0116	0.0061	0.0017	0.000446	0.000654	0.000427	0.00378	0.00237	0.00192	0.000126 U	0.000174 U
PCB-37	0.108 J	0.239 J	0.0368	0.0271 J	0.0189	0.016 J	0.0834 J	0.118 J	0.106 J	0.0749 J	0.074 J
PCB-38	0.00044 U	0.0012	0.00034 U	0.000221	0.000266 U	0.000147	0.000187 U	0.00118	0.00017 U	0.00012 U	0.000442
PCB-39	0.00676	0.0187	0.00034 U	0.00188	0.00242	0.00118	0.000181 U	0.00662	0.000164 U	0.000115 U	0.00302
PCB-40/41/71	0.277 J	1.12 J	0.413	0.168	0.187	0.107	0.384 J	1.07 J	0.62 J	0.432 J	0.000316 U
PCB-41	0	0	0	0	0	0	0	0	0	0	0
PCB-42	0.192 J	0.5 J	0.177	0.0884	0.0905	0.0533	0.204 J	0.551 J	0.257 J	0.206 J	0.222 J
PCB-43	0.0242	0.113	0.0378	0.0149	0.0167	0.00876	0.0369	0.0845	0.0423	0.0341	0.0279

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R7-088-C	R7-089-C	R7-091-C	R7-094-C	R7-099-C	R7-100-C	R7-101-C	R7-103-C	R7-104-C	R7-106-C	R7-131-H
Sample Date	11/25/2009	11/25/2009	11/24/2009	11/23/2009	11/23/2009	11/23/2009	11/30/2009	11/30/2009	12/2/2009	11/30/2009	11/30/2009
Sample Depth Range (ft BGS)	0-1	0-2.9	0-1.4	0-1	0-1.3	0-1.2	0-0.5	0-2.3	0-1	0-0.5	0-0.5
Analyte											
PCB-44/47/65	0.913 J	2.58 J	0.922	0.371 J	0.449	0.294 J	0.987 J	2.29 J	1.29 J	0.924 J	0.958 J
PCB-45/51	0.142 J	0.902 J	0.395	0.0798	0.133	0.0711	0.225 J	0.632 J	0.316 J	0.215 J	0.152 J
PCB-46	0.0385 J	0.189 J	0.0745	0.023	0.0314	0.0124	0.0473 J	0.198 J	0.0797 J	0.0602 J	0.0378 J
PCB-47	0	0	0	0	0	0	0	0	0	0	0
PCB-48	0.0332 J	0.144 J	0.039	0.0325	0.0293	0.0208	0.0736 J	0.0999 J	0.144 J	0.114 J	0.133 J
PCB-49/69	1 J	1.75 J	0.732	0.269 J	0.337	0.192 J	0.671 J	1.56 J	0.809 J	0.644 J	0.663 J
PCB-50/53	0.218 J	0.761 J	0.332	0.0777	0.133	0.058	0.183 J	0.631 J	0.301 J	0.23 J	0.145 J
PCB-51	0	0	0	0	0	0	0	0	0	0	0
PCB-52	1.76 J	2.84 J	1.1	0.442 J	0.531	0.42 J	1.07 J	2.71 J	1.34 J	0.974 J	1.16 J
PCB-53	0	0	0	0	0	0	0	0	0	0	0
PCB-54	0.0157	0.0835	0.0392	0.00396	0.0109	0.0074	0.0106	0.0237	0.0319	0.0105	0.00281
PCB-55	0.00297 J	0.0117 J	0.00081 U	0.00249	0.00231	0.00175	0.00079 U	0.00946 J	0.000463 U	0.000468 U	0.0106 J
PCB-56	0.0957 J	0.333 J	0.0829	0.0822	0.0772	0.0736	0.176 J	0.221 J	0.393 J	0.293 J	0.449 J
PCB-57	0.0369	0.0388	0.0145	0.00536	0.00594	0.0034	0.0226	0.0381	0.0162	0.00608	0.00407
PCB-58	0.00635	0.0077	0.00303	0.00148	0.00161	0.00134	0.00875	0.0098	0.00518	0.00188	0.00314
PCB-59/62/75	0.0672	0.194	0.0589	0.0294	0.0304	0.0173	0.0944	0.168	0.0906	0.0703	0.0664
PCB-60	0.00707 J	0.127 J	0.0262	0.0259	0.0269	0.0285	0.0551 J	0.0496 J	0.182 J	0.137 J	0.204 J
PCB-61/70/74/76	0.533 J	1.28 J	0.364	0.303	0.285	0.378	0.674 J	0.885 J	1.27 J	0.892 J	1.41 J
PCB-62	0	0	0	0	0	0	0	0	0	0	0
PCB-63	0.0352	0.104	0.0324	0.0158	0.0169	0.0113	0.0607	0.0637	0.0483	0.0328	0.0344
PCB-64	0.2 J	0.656 J	0.198	0.125 J	0.122	0.0877 J	0.341 J	0.62 J	0.444 J	0.333 J	0.445 J
PCB-65	0	0	0	0	0	0	0	0	0	0	0
PCB-66	0.354	0.777	0.21	0.189 J	0.184	0.186 J	0.475	0.713	0.875	0.599	0.929
PCB-67	0.0337	0.0422	0.014	0.00825	0.00783	0.00539	0.0328	0.0326	0.0224	0.0152	0.0169
PCB-68	0.0311	0.0491	0.0218	0.0054	0.00853	0.00392	0.026	0.0264	0.0212	0.00883	0.00549
PCB-69	0	0	0	0	0	0	0	0	0	0	0
PCB-70	0	0	0	0	0	0	0	0	0	0	0
PCB-71	0	0	0	0	0	0	0	0	0	0	0
PCB-72	0.0654	0.0712	0.0274	0.00802	0.011	0.00635	0.0389	0.0449	0.0268	0.0123	0.0108
PCB-73	0.0179	0.0509	0.0237	0.0029	0.00752	0.00353	0.00979	0.0241	0.0143	0.0107	0.00621
PCB-74	0	0	0	0	0	0	0	0	0	0	0
PCB-75	0	0	0	0	0	0	0	0	0	0	0
PCB-76	0	0	0	0	0	0	0	0	0	0	0
PCB-77	0.0107 J	0.074 J	0.0183	0.0121	0.0119	0.00964	0.0481 J	0.0664 J	0.0707 J	0.0395 J	0.0709 J
PCB-78	0.00152 U	0.0007 U	0.00084 U	0.000142 U	0.000678 U	0.000188 U	0.000763 U	0.00121 U	0.000452 U	0.000463 U	0.00123 U
PCB-79	0.0109	0.0077	0.00069 U	0.00166	0.00229	0.00393	0.000616 U	0.0108	0.000365 U	0.000377 U	0.00818
PCB-80	0.00127 U	0.0068	0.00279	0.00119	0.000567 U	0.000159 U	0.00765	0.00102 U	0.00485	0.00187	0.00103 U
PCB-81	0.0013 U	0.0017	0.00088 U	0.000254	0.000614 U	0.000323	0.0009	0.0016	0.00326	0.00119	0.00215
PCB-82	0.026	0.101	0.0319	0.0207	0.0249	0.0649	0.0755	0.135	0.0874	0.0436	0.124
PCB-83/99	0.0374	0.0673	0.025	0.0108	0.0121	0.0302	0.0624	0.0827	0.0243	0.0136	0.0444
PCB-84	0.276 J	0.325 J	0.136	0.0666	0.0769	0.155	0.227 J	0.418 J	0.184 J	0.0801 J	0.216 J
PCB-85/116/117	0.0343 J	0.166 J	0.0616	0.0309	0.0406	0.0936	0.136 J	0.175 J	0.141 J	0.0631 J	0.19 J
PCB-86/87/97/108/119/125	0.267 J	0.507 J	0.165	0.0999	0.117	0.378	0.453 J	0.591 J	0.367 J	0.177 J	0.529 J

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R7-088-C	R7-089-C	R7-091-C	R7-094-C	R7-099-C	R7-100-C	R7-101-C	R7-103-C	R7-104-C	R7-106-C	R7-131-H
Sample Date	11/25/2009	11/25/2009	11/24/2009	11/23/2009	11/23/2009	11/23/2009	11/30/2009	11/30/2009	12/2/2009	11/30/2009	11/30/2009
Sample Depth Range (ft BGS)	0-1	0-2.9	0-1.4	0-1	0-1.3	0-1.2	0-0.5	0-2.3	0-1	0-0.5	0-0.5
Analyte											
PCB-87	0	0	0	0	0	0	0	0	0	0	0
PCB-88/91	0.169	0.235	0.103	0.0419	0.0509	0.084	0.199	0.271	0.146	0.0559	0.159
PCB-89	0.00582	0.0178	0.00771	0.00501	0.00616	0.00645	0.0221	0.04	0.0189	0.00831	0.0215
PCB-90/101/113	0.487 J	0.486 J	0.246	0.13	0.153	0.503	0.464 J	0.628 J	0.296 J	0.132 J	0.419 J
PCB-91	0	0	0	0	0	0	0	0	0	0	0
PCB-92	0 J	0 J	0	0	0	0	0 J	0 J	0 J	0 J	0 J
PCB-93/95/98/100/102	0.233	0.22	0.095	0.0366	0.0453	0.103	0.213	0.269	0.13	0.0461	0.129
PCB-94	0.0231	0.0565	0.0312	0.00549	0.013	0.0187	0.025	0.0318	0.03	0.00823	0.0137
PCB-95	0.0124	0.0317	0.0165	0.00328	0.00559	0.008	0.0147	0.023	0.0165	0.00467	0.00981
PCB-96	0	0	0	0	0	0	0	0	0	0	0
PCB-97	0.007	0.023	0.0104	0.00319	0.00475	0.00484	0.0153	0.0257	0.0139	0.005	0.0128
PCB-98	0	0	0	0	0	0	0	0	0	0	0
PCB-99	0	0	0	0	0	0	0	0	0	0	0
PCB-100	0	0	0	0	0	0	0	0	0	0	0
PCB-101	0	0	0	0	0	0	0	0	0	0	0
PCB-102	0	0	0	0	0	0	0	0	0	0	0
PCB-103	0.0236	0.0218	0.0125	0.00293	0.00507	0.0056	0.0168	0.023	0.0119	0.00411	0.00667
PCB-104	0.00091	0.0045	0.00252	0.000318	0.00114	0.00222	0.00102	0.00122	0.00347	0.000764	0.000341
PCB-105	0.0468 J	0.232 J	0.0706	0.0409	0.0476	0.185	0.251 J	0.147 J	0.187 J	0.13 J	0.26 J
PCB-106	0.00117 U	0.0006 U	0.00076 U	0.000291 U	0.000696 U	0.000269 U	0.000482 U	0.0013 U	0.000457 U	0.000264 U	0.000668 U
PCB-107/124	0.00652	0.0213	0.00655	0.00453	0.00479	0.0241	0.0196	0.0199	0.0202	0.00674	0.0213
PCB-108	0	0	0	0	0	0	0	0	0	0	0
PCB-109	0.0464	0.0538	0.0174	0.0111	0.0112	0.0422	0.0831	0.0474	0.044	0.0143	0.0426
PCB-110/115	0.94 J	1.04 J	0.375	0.192 J	0.215	0.602 J	0.99 J	1.29 J	0.643 J	0.276 J	0.79 J
PCB-111	0.00185	0.0012	0.00068 U	0.000214 U	0.000515 U	0.000167 U	0.0018	0.00148	0.00164	0.000209 U	0.000589 U
PCB-112	0.00652	0.006	0.00067 U	0.000715	0.00199	0.0019	0.000388 U	0.00863	0.000297 U	0.000201 U	0.00583
PCB-113	0	0	0	0	0	0	0	0	0	0	0
PCB-114	0.00234	0.0183	0.00638	0.00337	0.00355	0.015	0.0238	0.00767	0.0142	0.00896	0.018
PCB-115	0	0	0	0	0	0	0	0	0	0	0
PCB-117	0	0	0	0	0	0	0	0	0	0	0
PCB-118	0.354 J	0.572 J	0.181	0.113 J	0.108	0.498 J	0.967 J	0.503 J	0.399 J	0.262 J	0.487 J
PCB-119	0	0	0	0	0	0	0	0	0	0	0
PCB-120	0.00548	0.0026	0.0013	0.000521	0.000591	0.000745	0.00785	0.00381	0.00249	0.000593	0.00129
PCB-121	0.0012	0.0014	0.00097	0.000205 U	0.000524 U	0.000301	0.000742	0.00104 U	0.00141	0.000204 U	0.000575 U
PCB-122	0.00127 U	0.0073	0.00286	0.00174	0.00233	0.0072	0.00721	0.0097	0.00924	0.00299	0.00968
PCB-123	0.00257	0.0092	0.00353	0.00178	0.00267	0.00695	0.00994	0.00939	0.0094	0.00613	0.0106
PCB-124	0	0	0	0	0	0	0	0	0	0	0
PCB-125	0	0	0	0	0	0	0	0	0	0	0
PCB-126	0.00132 U	0.0014	0.00088 U	0.000378	0.000802 U	0.000879	0.000222 UJ	0.00255	0.00041 UJ	0.000129 UJ	0.000759 J-
PCB-127	0.00127 U	0.0007 U	0.00077 U	0.000316 U	0.000757 U	0.00149	0.0005 U	0.00135 U	0.000474 U	0.000269 U	0.000679 U
PCB-128/166	0.0399	0.091	0.0171	0.0157	0.0122	0.129	0.152	0.0722	0.0536	0.0225	0.0483
PCB-129/138/160/163	0.265 J	0.503 J	0.113	0.082	0.066	0.63	0.859 J	0.433 J	0.258 J	0.116 J	0.257 J
PCB-130	0.018	0.0339	0.00759	0.00577	0.00513	0.0424	0.0625	0.0317	0.0219	0.00827	0.0183

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R7-088-C	R7-089-C	R7-091-C	R7-094-C	R7-099-C	R7-100-C	R7-101-C	R7-103-C	R7-104-C	R7-106-C	R7-131-H
Sample Date	11/25/2009	11/25/2009	11/24/2009	11/23/2009	11/23/2009	11/23/2009	11/30/2009	11/30/2009	12/2/2009	11/30/2009	11/30/2009
Sample Depth Range (ft BGS)	0-1	0-2.9	0-1.4	0-1	0-1.3	0-1.2	0-0.5	0-2.3	0-1	0-0.5	0-0.5
Analyte											
PCB-131	0.00239	0.0073	0.00164	0.00119	0.00105	0.00971	0.0126	0.00574	0.00572	0.00194	0.00415
PCB-132	0.162 J	0.203 J	0.0509	0.0355	0.0304	0.222	0.414 J	0.209 J	0.126 J	0.0529 J	0.114 J
PCB-133	0.0124	0.0115	0.00407	0.00177	0.00183	0.00915	0.0229	0.0132	0.00751	0.00263	0.0043
PCB-134/143	0.0231	0.0363	0.0095	0.0055	0.00516	0.0325	0.0695	0.0264	0.0203	0.00878	0.0167
PCB-135/151/154	0.132 J	0.162 J	0.0545	0.024	0.025	0.133	0.293 J	0.175 J	0.0907 J	0.044 J	0.0803 J
PCB-136	0.0555 J	0.0676 J	0.0207	0.0103	0.00977	0.0575	0.114 J	0.0694 J	0.0362 J	0.0176 J	0.0362 J
PCB-137	0.0187	0.0397	0.00635	0.00597	0.00423	0.0583	0.0767	0.0363	0.0263	0.00881	0.0207
PCB-138	0	0	0	0	0	0	0	0	0	0	0
PCB-139/140	0.00888	0.0126	0.00376	0.00203	0.00196	0.0149	0.0258	0.0119	0.00994	0.00311	0.00679
PCB-140	0	0	0	0	0	0	0	0	0	0	0
PCB-141	0.0196	0.0622	0.015	0.0119	0.01	0.0925	0.11	0.0547	0.0374	0.0178	0.0396
PCB-142	0.00141 U	0.0018 U	0.00126 U	0.000465 U	0.000888 U	0.0012 U	0.00174 U	0.00299 U	0.00109 U	0.000315 U	0.00124 U
PCB-143	0	0	0	0	0	0	0	0	0	0	0
PCB-144	0.00419	0.0164	0.00418	0.00255	0.00234	0.0193	0.0252	0.0153	0.0105	0.00486	0.0103
PCB-145	0.00042 U	0.0004	0.00024 U	0.0000904 U	0.000347 U	0.0000404 U	0.000783	0.000388	0.00131	0.000111	0.000148 U
PCB-146	0.0591	0.0648	0.0207	0.0113	0.0107	0.0703	0.165	0.0714	0.0393	0.0162	0.0322
PCB-147/149	0.352 J	0.406 J	0.122	0.0659	0.0607	0.414	0.739 J	0.406 J	0.225 J	0.0994 J	0.205 J
PCB-148	0.00325	0.0028	0.00138	0.000374	0.000584	0.00143	0.00386	0.00337	0.00208	0.000579	0.00067
PCB-149	0	0	0	0	0	0	0	0	0	0	0
PCB-150	0.00179	0.0016	0.00064	0.000183	0.00034 U	0.00131	0.0023	0.00133	0.0015	0.000328	0.000487
PCB-151	0	0	0	0	0	0	0	0	0	0	0
PCB-152	0.0007	0.0014	0.00081	0.000179	0.000333 U	0.00213	0.00178	0.00118	0.00146	0.000264	0.000509
PCB-153/168	0.227 J	0.336 J	0.0863	0.0599	0.0485	0.437	0.695 J	0.328 J	0.178 J	0.0851 J	0.177 J
PCB-154	0	0	0	0	0	0	0	0	0	0	0
PCB-155	0.00029 U	0.0004	0.0002 J	0.0000612 U	0.000262 U	0.000264	0.0000708 U	0.000142 U	0.00116	0.000055 J	0.0000996 U
PCB-156/157	0.0229	0.0629	0.0131	0.00974	0.0073	0.0897	0.115	0.0372	0.0363	0.0133	0.0288
PCB-157	0	0	0	0	0	0	0	0	0	0	0
PCB-158	0.0206	0.0516	0.0113	0.00858	0.00707	0.0727	0.0862	0.0401	0.027	0.0124	0.0265
PCB-159	0.00068	0.0016	0.00041 U	0.000426	0.000467 U	0.00427	0.000421 U	0.00239	0.000434 U	0.000205 U	0.000875
PCB-160	0	0	0	0	0	0	0	0	0	0	0
PCB-161	0.00097 U	0.0012 U	0.00086 U	0.000329 U	0.000613 U	0.00085 U	0.0012 U	0.00206 U	0.000464 U	0.000223 U	0.000879 U
PCB-162	0.00088	0.0031	0.0004 U	0.00017 U	0.000469 U	0.00324	0.00651	0.00287	0.00355	0.000762	0.000347 U
PCB-163	0	0	0	0	0	0	0	0	0	0	0
PCB-164	0.0117	0.0231	0.00653	0.00438	0.00406	0.0284	0.0418	0.0165	0.00987	0.00643	0.0138
PCB-165	0.00111 U	0.0014 U	0.00096 U	0.000356 U	0.0007 U	0.00092 U	0.00135 U	0.00231 U	0.00142	0.000242 U	0.000951 U
PCB-166	0	0	0	0	0	0	0	0	0	0	0
PCB-167	0.00813	0.0179	0.00398	0.00266	0.00241	0.0227	0.0357	0.0133	0.0105	0.00418	0.00792
PCB-168	0	0	0	0	0	0	0	0	0	0	0
PCB-169	0.00054 U	0.0004 U	0.0004 U	0.000218 U	0.000407 U	0.000401 U	0.000444 U	0.00104 U	0.00175	0.000219 U	0.000374 U
PCB-170	0.0258	0.0511	0.018	0.0108	0.0106	0.0975	0.102	0.0631	0.0406	0.0123	0.0255
PCB-171/173	0.0095	0.0188	0.0061	0.00363	0.00324	0.0301	0.0372	0.0225	0.0156	0.00428	0.000784 U
PCB-172	0.00489	0.0091	0.00358	0.00192	0.00216	0.0171	0.0176	0.0123	0.00843	0.00223	0.00467
PCB-173	0	0	0	0	0	0	0	0	0	0	0

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Sample ID	R7-088-C	R7-089-C	R7-091-C	R7-094-C	R7-099-C	R7-100-C	R7-101-C	R7-103-C	R7-104-C	R7-106-C	R7-131-H
Sample Date	11/25/2009	11/25/2009	11/24/2009	11/23/2009	11/23/2009	11/23/2009	11/30/2009	11/30/2009	12/2/2009	11/30/2009	11/30/2009
Sample Depth Range (ft BGS)	0-1	0-2.9	0-1.4	0-1	0-1.3	0-1.2	0-0.5	0-2.3	0-1	0-0.5	0-0.5
Analyte											
PCB-174	0.0281 J	0.0573 J	0.0215	0.0116	0.0122	0.102	0.0975 J	0.0795 J	0.0459 J	0.0154 J	0.0304 J
PCB-175	0.00108	0.0027	0.00109	0.000525	0.000448	0.00429	0.00505	0.00361	0.00304	0.000713	0.000351 U
PCB-176	0.00443	0.0084	0.00356	0.00162	0.00168	0.0121	0.016	0.0127	0.00695	0.00232	0.00454
PCB-177	0.0256	0.0367	0.0147	0.00777	0.00794	0.0583	0.0796	0.0582	0.0293	0.00974	0.019
PCB-178	0.0131	0.0159	0.00762	0.00306	0.00365	0.0217	0.0271	0.0274	0.0122	0.00441	0.00782
PCB-179	0.0189 J	0.0283 J	0.013	0.00564	0.00607	0.0399	0.0479 J	0.0427 J	0.0224 J	0.00867 J	0.016 J
PCB-180/193	0.0537 J	0.101 J	0.0443	0.0224	0.024	0.206	0.179 J	0.142 J	0.0889 J	0.0286 J	0.0554 J
PCB-181	0.00131 U	0.0012	0.00079 U	0.000414 U	0.000656 U	0.00222	0.00245	0.000903 U	0.00149	0.000182 U	0.000756 U
PCB-182	0.00043 U	0.0004	0.00044 U	0.000383 U	0.000208 U	0.000666	0.000201 U	0.000798 U	0.00114	0.000114	0.00035 U
PCB-183/185	0.0177	0.0376	0.0146	0.00779	0.00759	0.0696	0.0639	0.0504	0.032	0.0102	0.019
PCB-184	0.00032 U	0.0002 U	0.00033 U	0.00028 U	0.000155 U	0.000126	0.000148 U	0.000587 U	0.00117	0.0000535 U	0.000259 U
PCB-185	0	0	0	0	0	0	0	0	0	0	0
PCB-186	0.00035 U	0.0002 U	0.00035 U	0.000302 U	0.000166 U	0.00011	0.000161 U	0.000639 U	0.00113	0.0000576 U	0.000279 U
PCB-187	0.0538 J	0.0785 J	0.0393	0.0157	0.0179	0.121	0.134 J	0.122 J	0.0629 J	0.0242 J	0.042 J
PCB-188	0.00042 U	0.0003	0.00037 U	0.000324 U	0.000186 U	0.00043	0.000175 U	0.000872 U	0.00118	0.0000551 U	0.000282 U
PCB-189	0.0009	0.0021	0.00068	0.000366	0.000437	0.00276	0.00478	0.00217	0.00239	0.000504	0.000941
PCB-190	0.00538	0.0112	0.00409	0.00243	0.00251	0.021	0.0203	0.0141	0.00958	0.00278	0.00541
PCB-191	0.00104 U	0.0021	0.00071	0.000449	0.000521 U	0.00366	0.00415	0.00297	0.0025	0.000551	0.00105
PCB-192	0.00114 U	0.0003 U	0.00068 U	0.000364 U	0.000573 U	0.000322 U	0.000332 U	0.000783 U	0.00104	0.000154 U	0.000639 U
PCB-193	0	0	0	0	0	0	0	0	0	0	0
PCB-194	0.019	0.0232	0.0161	0.00561	0.00766	0.0683	0.0313	0.0457	0.0341	0.00812	0.0155
PCB-195	0.00562	0.009	0.00582	0.0019	0.0025	0.0239	0.0125	0.0181	0.0137	0.00292	0.00532
PCB-196	0.0108	0.0129	0.00872	0.00292	0.00352	0.0343	0.0195	0.027	0.017	0.00498	0.00848
PCB-197/200	0.00285	0.0049	0.00297	0.00106	0.00136	0.0122	0.0063	0.00889	0.0082	0.00194	0.00303
PCB-198/199	0.031	0.0301	0.0226	0.00727	0.00984	0.0836	0.046	0.0678	0.0407	0.013	0.0219
PCB-199	0	0	0	0	0	0	0	0	0	0	0
PCB-200	0	0	0	0	0	0	0	0	0	0	0
PCB-201	0.00354	0.0043	0.00276	0.000959	0.00119	0.0104	0.00621	0.00928	0.00623	0.00181	0.00263
PCB-202	0.00815	0.0069	0.00517	0.00165	0.00241	0.0156	0.011	0.0187	0.00903	0.0028	0.00481
PCB-203	0.0148	0.0156	0.0125	0.00391	0.00527	0.0446	0.0255	0.0335	0.0215	0.00754	0.0119
PCB-204	0.00046 U	0.0002 U	0.00042 U	0.000203 U	0.00026 U	0.0000366 U	0.000339 U	0.000382 U	0.00173	0.000114 U	0.000293 U
PCB-205	0.00064	0.0012	0.00066	0.000269	0.000389	0.00277	0.00158	0.00181	0.00327	0.000326 U	0.00074
PCB-206	0.0321	0.0151	0.0191	0.00536	0.0122	0.0268	0.0329	0.0357	0.0241	0.00803	0.0138
PCB-207	0.00429 J-	0.0021	0.00191	0.000678	0.00115	0.00381	0.00305	0.00455	0.00408	0.000984	0.00165
PCB-208	0.0339 J-	0.0062	0.00734	0.0026	0.00514	0.00949	0.0147	0.0241	0.0129	0.00323	0.00793
PCB-209	0.252	0.0295	0.0364	0.0112	0.021	0.0213	0.0685	0.169	0.0525	0.0364	0.0506
TOTAL PCB CONGENERS	19	50	17	5.9	6.7	10	22	33	22	13	15

Key at the end of Table

Table 4-8a
Summary of Results of PCB Congener Analysis

Key:

-C =	Hand-core creek location/sample.
-Comp =	Hand-core creek composite sample.
-CR=	Hand-core creek duplicate sample.
ft =	Feet.
-H =	Historical channel location/sample.
HM =	High Moisture Content.
J =	Estimated at the concentration listed.
mg/Kg =	Milligrams per kilogram.
-P =	Ponar creek location/sample.
PCB =	Polychlorinated biphenyl.
-T =	Tributary location/sample.
U =	Non-detect.
UM =	Not detected/High Moisture Content.
-V =	Vibracore creek location/sample.
-VR =	Vibracore creek duplicate sample.
-W =	Wetland location/sample.
-Z =	Sample depth interval consecutively numbered.

Table 4-8b
Comparison of Total PCB Congener Results versus Total Aroclor Results

Reach	Location	Sample ID	Sample Date	Sample Depth (feet)	Total PCB Congeners by HRGC/HRMS (mg/kg)	Total Aroclors by MC ARO (mg/kg)
Reach 2	R2-001-V-P, R2-001-V-P2, R2-001-V	R2-001-V-Z1P	05/18/10	0 - 1	--	0.39
		R2-001-V-Z1P2	05/24/10	0 - 1	1.95 HM	--
		R2-001-V-Z1a	05/18/10	0 - 0.5	--	0.48
		R2-001-V-Z1b	05/18/10	0.5 - 1	--	0.41 J
		R2-001-V-Z2	05/18/10	1 - 2	--	0.011 U
		R2-001-V-Z3	05/18/10	2 - 3	--	2.5
		R2-001-V-Z4	05/18/10	3 - 4	--	0.064 J
		R2-001-V-Z5	05/18/10	4 - 5	--	0.0099 J
		R2-001-V-Z6	05/18/10	6 - 7	--	0.012 J
	R2-002-V-P, R2-002-V	R2-002-V-Z1P	05/18/10	0 - 1	2.42 HM	0.28 J
		R2-002-V-Z1	05/18/10	0 - 1	--	0.42
		R2-002-V-Z2	05/18/10	1 - 2	--	0.38 J
		R2-002-V-Z3	05/18/10	2 - 3	--	0.71
		R2-002-V-Z4	05/18/10	3 - 4	--	1
		R2-002-V-Z5	05/18/10	4 - 6	--	0.012 J
		R2-002-VR	05/18/10	4 - 6	--	0.18 J
		R2-002-V-Z6	05/18/10	6 - 7.5	--	0.011 U
	R2-003-V-P, R2-003-V-P2, R2-003-V	R2-003-V-Z1P	05/18/10	0 - 1	--	0.1 J
		R2-003-V-Z1P2	05/24/10	0 - 1	1.85 HM	--
		R2-003-V-Z1	05/18/10	0 - 1	--	0.13 J
		R2-003-V-Z2	05/18/10	1 - 2	--	0.51
		R2-003-V-Z3	05/18/10	2 - 3	--	4.3 J
		R2-003-V-Z4	05/18/10	3 - 4	--	0.85 J
		R2-003-V-Z5	05/18/10	4 - 5	--	0.19 J
		R2-003-V-Z6	05/18/10	6 - 7	--	0.012 J
	R2-004-V-P, R2-004-V-P2, R2-004-V	R2-004-V-Z1P	05/18/10	0 - 1	--	0.4 J
		R2-004-V-Z1P2	05/24/10	0 - 1	1.76	--
		R2-004-V-Z1	05/18/10	0 - 1	--	0.67 J
		R2-004-V-Z2	05/18/10	1 - 2	--	0.47 J
		R2-004-VR	05/18/10	1 - 2	--	0.011 U
		R2-004-V-Z3	05/18/10	2 - 3	--	2.9 J
		R2-004-V-Z4	05/18/10	3 - 3.5	--	0.8 J
		R2-004-V-Z5	05/18/10	4.5 - 5	--	0.009 J
	R2-005-V-P, R2-005-V	R2-005-V-Z1P	05/19/10	0 - 1	1.67	0.26 J
		R2-005-V-Z1	05/19/10	0 - 1	--	0.35 J
		R2-005-V-Z2	05/19/10	1 - 2	--	0.47
		R2-005-V-Z3	05/19/10	2 - 3	--	7.3 J
		R2-005-V-Z4	05/19/10	3 - 4	12.8	3 J
		R2-005-V-Z5	05/19/10	4 - 6	--	0.095 J
		R2-005-V-Z6	05/19/10	6 - 7	--	0.062 J
	R2-006-V-P, R2-006-V	R2-006-V-Z1P	05/19/10	0 - 1	--	0.13 J
		R2-006-V-Z1P2	05/24/10	0 - 1	1.42 HM	--
		R2-006-V-Z1	05/19/10	0 - 1	--	0.15 J
		R2-006-V-Z2	05/19/10	1 - 2	--	0.23 J
		R2-006-V-Z3	05/19/10	2 - 3	--	6.3 J
		R2-006-VR	05/19/10	2 - 3	--	3.1 J
		R2-006-V-Z4	05/19/10	3 - 4	--	0.53 J
		R2-006-V-Z5a	05/19/10	4 - 5	--	0.32 J
		R2-006-V-Z5b	05/19/10	5 - 6	--	0.06 J
	R2-007-V	R2-007-V-Z1	05/19/10	0 - 1	--	0.64 J
		R2-007-V-Z1P	05/19/10	0 - 1	--	0.38 J
		R2-007-V-Z1P2	05/25/10	0 - 1	2.4	--
		R2-007-V-Z2	05/19/10	1 - 2	--	2.3 J
		R2-007-V-Z3	05/19/10	2 - 3	--	23 J
		R2-007-V-Z4	05/19/10	3 - 4	--	0.69 J
		R2-007-V-Z5a	05/19/10	4 - 5	--	0.023 J
		R2-007-V-Z5b	05/19/10	5 - 6	--	0.011 U

Table 4-8b
Comparison of Total PCB Congener Results versus Total Aroclor Results

Reach	Location	Sample ID	Sample Date	Sample Depth (feet)	Total PCB Congeners by HRGC/HRMS (mg/kg)	Total Aroclors by MC ARO (mg/kg)
Reach 2	R2-008-V	R2-008-V-Z1	05/19/10	0 - 1	--	0.35 J
		R2-008-V-Z1P	05/19/10	0 - 1	2.06 HM	0.13 J
		R2-008-V-Z2	05/19/10	1 - 2	--	0.87
		R2-008-V-Z3	05/19/10	2 - 3	--	1 J
		R2-008-V-Z4	05/19/10	3 - 4	--	0.19
		R2-008-V-Z5	05/19/10	4.5 - 5	--	0.011 U
	R2-009-V-P, R2-009-V	R2-009-V-Z1P2	05/25/10	0 - 1	2.59 HM	--
		R2-009-V-Z1	05/19/10	0 - 1	--	0.44 J
		R2-009-V-Z1P	05/19/10	0 - 1	--	0.34 J
		R2-009-V-Z2	05/19/10	1 - 2	--	0.59
		R2-009-V-Z3	05/19/10	2 - 3	--	4.6
		R2-009-V-Z4	05/19/10	3 - 4	--	0.25 J
		R2-009-VR	05/19/10	3 - 4	--	0.5
		R2-009-V-Z5	05/19/10	4 - 5.5	--	0.018 J
	R2-010-V	R2-010-V-Z1	05/25/10	0 - 1	2.98 HM	--
		R2-010-V-Z1a	05/25/10	0 - 0.5	--	0.011 U
		R2-010-V-Z1b	05/25/10	0.5 - 1	--	0.16 J
		R2-010-V-Z2	05/25/10	1 - 2	--	0.17 J
		R2-010-V-Z3	05/25/10	2 - 3	--	0.43 J
		R2-010-V-Z4	05/25/10	3 - 4	--	1.2 J
		R2-010-V-Z5	05/25/10	4 - 6	--	0.49 J
		R2-010-V-Z6	05/25/10	6 - 8	--	0.045 J
		R2-010-VR	05/25/10	6 - 8	--	0.011 U
		R2-010-V-Z7a	05/25/10	8 - 9	--	0.011 U
		R2-010-V-Z7b	05/25/10	9 - 10	--	0.011 U
	R2-011-V	R2-011-V-Z1	05/25/10	0 - 1	2.8	--
		R2-011-V-Z1a	05/25/10	0 - 0.5	--	0.38
		R2-011-V-Z1b	05/25/10	0.5 - 1	--	0.14 J
		R2-011-V-Z2	05/25/10	1 - 2	2.82	0.011 U
		R2-011-V-Z3	05/25/10	2 - 3	7.2	0.53 J
		R2-011-V-Z4	05/25/10	3 - 4	5.98	0.46 J
		R2-011-V-Z5	05/25/10	4 - 6	24.1	4.9 J
		R2-011-V-Z6	05/25/10	6 - 8	5.46	0.98 J
		R2-011-V-Z7	05/25/10	8 - 10	1.27	0.05 J
		R2-011-V-Z8	05/25/10	10 - 11.5	0.116	0.011 U
	R2-012-V	R2-012-V-Z1	05/25/10	0 - 1	2.36	--
		R2-012-V-Z1a	05/25/10	0 - 0.5	--	0.22 J
		R2-012-V-Z1b	05/25/10	0.5 - 1	--	0.6 J
		R2-012-V-Z2	05/25/10	1 - 2	--	0.37 J
		R2-012-V-Z3	05/25/10	2 - 3	--	0.62 J
		R2-012-V-Z4	05/25/10	3 - 4	--	0.48 J
		R2-012-VR	05/25/10	3 - 4	--	0.011 U
		R2-012-V-Z5	05/25/10	4 - 6	--	7.1 J
		R2-012-V-Z6	05/25/10	6 - 8	--	1.2 J
		R2-012-V-Z7	05/25/10	8 - 9	--	0.026 J
	R2-013-V	R2-013-V-Z1	05/25/10	0 - 1	2.77 HM	--
		R2-013-V-Z1a	05/25/10	0 - 0.5	--	0.59
		R2-013-V-Z1b	05/25/10	0.5 - 1	--	2.2 J
		R2-013-V-Z2	05/25/10	1 - 2	--	0.61 J
		R2-013-V-Z3	05/25/10	2 - 3	--	2.5 J
		R2-013-V-Z4	05/25/10	3 - 4	--	0.79 J
		R2-013-V-Z5	05/25/10	4 - 6	--	3.1 J
		R2-013-V-Z6	05/25/10	6 - 8	--	0.5 J
		R2-013-V-Z7	05/25/10	8 - 10	--	0.12 J
		R2-013-V-Z8	05/25/10	10 - 12	--	0.077

Table 4-8b
Comparison of Total PCB Congener Results versus Total Aroclor Results

Reach	Location	Sample ID	Sample Date	Sample Depth (feet)	Total PCB Congeners by HRGC/HRMS (mg/kg)	Total Aroclors by MC ARO (mg/kg)
Reach 2	R2-014-V	R2-014-V-Z1	05/25/10	0 - 1	2.95 HM	--
		R2-014-V-Z1a	05/25/10	0 - 0.5	--	0.53 J
		R2-014-V-Z1b	05/25/10	0.5 - 1	--	0.011 U
		R2-014-V-Z2	05/25/10	1 - 2	--	0.62 J
		R2-014-V-Z3	05/25/10	2 - 3	--	6.1 J
		R2-014-V-Z4	05/25/10	3 - 4	--	7.4 J
		R2-014-V-Z5	05/25/10	4 - 6	--	4.5 J
		R2-014-VR	05/25/10	4 - 6	--	2.7 J
		R2-014-V-Z6	05/25/10	6 - 8	--	0.62 J
		R2-014-V-Z7	05/25/10	8 - 10	--	0.011 U
	R2-015-V	R2-015-V-Z1	05/25/10	0 - 1	2.1 HM	--
		R2-015-V-Z1a	05/25/10	0 - 0.5	--	0.29 J
		R2-015-V-Z1b	05/25/10	0.5 - 1	--	0.24
		R2-015-V-Z2	05/25/10	1 - 2	--	0.36 J
		R2-015-V-Z3	05/25/10	2 - 3	--	6.8 J
		R2-015-V-Z4	05/25/10	3 - 4	--	3.7 J
		R2-015-V-Z5	05/25/10	4 - 6	--	0.46 J
		R2-015-V-Z6	05/25/10	6 - 8	--	0.031 J
		R2-015-V-Z7a	05/25/10	8 - 9	--	0.011 U
		R2-015-V-Z7b	05/25/10	9 - 9.5	--	0.011 U
Reach 3	R3-016-V	R3-016-V-Z1	05/26/10	0 - 1	8.3 HM	--
		R3-016-V-Z1a	05/26/10	0 - 0.5	--	6.7 J
		R3-016-V-Z1b	05/26/10	0.5 - 1	--	10 J
		R3-016-V-Z2	05/26/10	1 - 2	--	5.8 J
		R3-016-V-Z3	05/26/10	2 - 3	--	2.5
		R3-016-V-Z4	05/26/10	3 - 4	--	0.36 J
		R3-016-VR	05/26/10	3 - 4	--	0.35 J
		R3-016-V-Z5	05/26/10	4 - 6	--	0.065 J
		R3-016-V-Z6	05/26/10	6 - 8	--	0.011 U
		R3-016-V-Z7	05/26/10	8 - 9	--	0.011 U
	R3-017-V	R3-017-V-Z1	05/26/10	0 - 1	2.44	--
		R3-017-V-Z1a	05/26/10	0 - 0.5	--	0.11 J
		R3-017-V-Z1b	05/26/10	0.5 - 1	--	0.33 J
		R3-017-V-Z2	05/26/10	1 - 2	--	0.011 U
		R3-017-V-Z3	05/26/10	2 - 3	--	5 J
		R3-017-V-Z4	05/26/10	3 - 4	--	11 J
		R3-017-V-Z5	05/26/10	4 - 6	--	1.8 J
		R3-017-VR	05/26/10	4 - 6	--	1.5 J
		R3-017-V-Z6	05/26/10	6 - 8	--	0.086 J
		R3-017-V-Z7	05/26/10	8 - 8.5	--	0.011 U
	R3-018-V	R3-018-V-Z1	05/25/10	0 - 1	3.35 HM	--
		R3-018-V-Z1a	05/25/10	0 - 0.5	--	0.07 J
		R3-018-V-Z1b	05/25/10	0.5 - 1	--	0.56 J
		R3-018-V-Z2	05/25/10	1 - 2	--	0.77 J
		R3-018-V-Z3	05/25/10	2 - 3	--	3.3 J
		R3-018-V-Z4	05/25/10	3 - 4	--	3.2 J
		R3-018-V-Z5	05/25/10	4 - 6	--	0.76 J
		R3-018-V-Z6	05/25/10	6 - 8	--	0.12 J
		R3-018-V-Z7	05/25/10	8 - 10	--	0.015 J
		R3-018-V-Z8	05/25/10	10 - 12	--	0.011 U
	R3-019-V	R3-019-V-Z1	05/26/10	0 - 1	2.5 HM	--
		R3-019-V-Z1a	05/26/10	0 - 0.5	--	0.76 J
		R3-019-V-Z1b	05/26/10	0.5 - 1	--	0.44 J
		R3-019-V-Z2	05/26/10	1 - 2	--	0.62 J
		R3-019-V-Z3	05/26/10	2 - 3	--	0.72 J
		R3-019-V-Z4	05/26/10	3 - 4	--	0.04 J

Table 4-8b
Comparison of Total PCB Congener Results versus Total Aroclor Results

Reach	Location	Sample ID	Sample Date	Sample Depth (feet)	Total PCB Congeners by HRGC/HRMS (mg/kg)	Total Aroclors by MC ARO (mg/kg)
Reach 3	R3-020-V	R3-020-V-Z1	05/26/10	0 - 1	3.84	--
		R3-020-V-Z1a	05/26/10	0 - 0.5	--	0.48 J
		R3-020-V-Z1b	05/26/10	0.5 - 1	--	2.8 J
		R3-020-V-Z2	05/26/10	1 - 2	35.9 HM	3.9 J
		R3-020-V-Z3	05/26/10	2 - 3	35.2 HM	4.6 J
		R3-020-V-Z4	05/26/10	3 - 4	11.8	1.9 J
		R3-020-V-Z5	05/26/10	4 - 6	3.5	0.21 J
		R3-020-V-Z6	05/26/10	6 - 8	0.457	0.042 J
		R3-020-V-Z7	05/26/10	8 - 10	0.000315	0.011 U
	R3-021-V	R3-021-V-Z1	05/26/10	0 - 1	0.027	--
		R3-021-V-Z1a	05/26/10	0 - 0.5	--	0.011 U
		R3-021-V-Z1b	05/26/10	0.5 - 1	--	0.011 U
		R3-021-V-Z2	05/26/10	1 - 2	--	0.011 U
		R3-021-V-Z3	05/26/10	2 - 3	--	0.011 U
	R3-022-V	R3-022-V-Z1	05/26/10	0 - 1	4.44	--
		R3-022-V-Z1a	05/26/10	0 - 0.5	--	0.25 J
		R3-022-V-Z1b	05/26/10	0.5 - 1	--	0.33 J
		R3-022-V-Z2	05/26/10	1 - 2	--	0.18 J
		R3-022-VR	05/26/10	1 - 2	--	0.79 J
		R3-022-V-Z3	05/26/10	2 - 3	--	0.9 J
		R3-022-V-Z4	05/26/10	3 - 4	--	0.011 U
		R3-022-V-Z5	05/26/10	4 - 6	--	0.011 U
		R3-022-V-Z6	05/26/10	6 - 6.8	--	0.011 U
	R3-023-V	R3-023-V-Z1	05/26/10	0 - 1	0.00174	--
		R3-023-V-Z1a	05/26/10	0 - 0.5	--	0.011 U
		R3-023-V-Z1b	05/26/10	0.5 - 0.9	--	0.011 U
		R3-023-V-Z2	05/26/10	1 - 2	--	0.011 U
	R3-024-V	R3-024-V-Z1	05/26/10	0 - 1	5.45 HM	--
		R3-024-V-Z1a	05/26/10	0 - 0.5	--	0.65 J
		R3-024-V-Z1b	05/26/10	0.5 - 1	--	0.75 J
		R3-024-V-Z2	05/26/10	1 - 2	--	0.44 J
		R3-024-V-Z3	05/26/10	2 - 3	--	4.8 J
		R3-024-V-Z4	05/26/10	3 - 4	--	1.4 J
		R3-024-V-Z5	05/26/10	4 - 6	--	0.059 J
		R3-024-V-Z6	05/26/10	6 - 8	--	0.011 U
	R3-025-V	R3-025-V-Z1	05/26/10	0 - 1	0.0531	--
		R3-025-V-Z1a	05/26/10	0 - 0.5	--	0.12 J
		R3-025-V-Z1b	05/26/10	0.5 - 1	--	0.071 J
	R3-026-V	R3-026-V-Z1	05/27/10	0 - 1	4.45	--
		R3-026-V-Z1a	05/27/10	0 - 0.5	--	0.38 J
		R3-026-V-Z1b	05/27/10	0.5 - 1	--	0.8 J
		R3-026-V-Z2	05/27/10	1 - 2	--	0.54 J
		R3-026-V-Z3	05/27/10	2 - 3	--	1.3 J
		R3-026-V-Z4	05/27/10	3 - 4	8.53	3.6 J
	R3-027-V	R3-027-V-Z1	05/27/10	0 - 1	2.35	--
		R3-027-V-Z1a	05/27/10	0 - 0.5	--	0.32 J
		R3-027-V-Z1b	05/27/10	0.5 - 1	--	0.38 J
		R3-027-V-Z2	05/27/10	1 - 2	--	2.1 J
		R3-027-V-Z3	05/27/10	2 - 3	--	2.8 J
		R3-027-V-Z4	05/27/10	3 - 4	--	1.8 J
	R3-107-W	R3-107-W	11/16/09	0 - 0.5	0.72	0.53
	R3-108-W	R3-108-W	11/16/09	0 - 0.5	--	0.3
	R3-109-W	R3-109-W	11/16/09	0 - 0.5	--	0.27
	R3-110-W	R3-110-W	11/16/09	0 - 0.5	--	0.2

Table 4-8b
Comparison of Total PCB Congener Results versus Total Aroclor Results

Reach	Location	Sample ID	Sample Date	Sample Depth (feet)	Total PCB Congeners by HRGC/HRMS (mg/kg)	Total Aroclors by MC ARO (mg/kg)
Reach 4	R4-028-C	R4-028-C	11/17/09	0 - 1.55	--	0.37
	R4-029-C	R4-029-C	11/16/09	0 - 1.2	--	0.072
	R4-030-C	R4-030-C	11/16/09	0 - 1.1	0.29	0.7
	R4-031-C	R4-031-C	11/16/09	0 - 0.8	--	0.17
	R4-032-C	R4-032-C	11/16/09	0 - 0.7	--	0.3
	R4-033-C	R4-033-C	11/17/09	0 - 0.4	--	0.067
	R4-034-C	R4-034-C	11/17/09	0 - 0.4	--	0.1
	R4-035-C	R4-035-C	11/17/09	0 - 0.8	0.97	0.81
	R4-036-C	R4-036-C	11/17/09	0 - 0.9	--	0.57
	R4-037-C	R4-037-C	11/17/09	0 - 0.6	2.8	0.56
	R4-038-C	R4-038-C	11/18/09	0 - 0.4	--	0.29
	R4-111-W	R4-111-W	11/16/09	0 - 0.5	--	0.011 U
	R4-112-W	R4-112-W	11/18/09	0 - 0.5	--	0.15
	R4-119-T	R4-119-T	11/17/09	0 - 0.5	--	0.011 U
	R4-126-H	R4-126-H	11/16/09	0 - 0.5	--	0.15
	R4-135-C	R4-135-C-Comp	06/21/10	0 - 0.8	--	27 J
	R4-135-C	R4-135-C-Z1a	06/21/10	0 - 0.5	--	5.3
	R4-136-C	R4-136-C-Z1a	06/21/10	0 - 0.4	--	1.1 NJ
	R4-137-C	R4-137-C-Comp	06/21/10	0 - 0.7	--	0.32 J
	R4-138-C	R4-138-C-Comp	06/21/10	0 - 0.4	--	0.33 J
	R4-139-C	R4-139-C-Z1a	06/22/10	0 - 0.3	--	1.5 NJ
	R4-140-C	R4-140-C-Z1a	06/23/10	0 - 0.3	--	0.046 U
	R4-141-C	R4-141-C-Comp	06/23/10	0 - 0.8	--	0.069 U
		R4-141-C-Z1a	06/23/10	0 - 0.5	--	0.71 J
		R4-141-CR	06/23/10	0 - 0.5	--	0.37 J
	R4-142-C	R4-142-C-Z1a	06/23/10	0 - 0.2	--	0.046 U
	R4-143-C	R4-143-C-Z1a	06/23/10	0 - 0.3	--	1.1
Reach 5	R5-039-V	R5-039-V-Z1	05/21/10	0 - 1	--	0.011 U
	R5-039-V	R5-039-V-Z2	05/21/10	1 - 1.9	--	0.48 J
	R5-040-V	R5-040-V-Z1a	05/20/10	0 - 0.5	--	0.011 U
		R5-040-V-Z1b	05/20/10	0.5 - 1	--	0.011 U
		R5-040-V-Z2	05/20/10	1 - 2	--	0.011 U
		R5-040-V-Z3	05/20/10	2 - 3	--	0.011 U
		R5-040-V-Z4	05/20/10	3 - 4	--	0.011 U
		R5-040-V-Z5a	05/20/10	4.5 - 5	--	0.011 U
	R5-041-V	R5-041-V-Z1a	05/24/10	0 - 0.5	--	0.011 J
		R5-041-V-Z1b	05/24/10	0.5 - 1	--	0.011 U
		R5-041-V-Z2	05/24/10	1 - 2	--	0.011 U
		R5-041-V-Z3	05/24/10	2 - 3	--	0.011 U
		R5-041-V-Z4	05/24/10	3 - 4	--	0.011 U
		R5-041-V-Z5a	05/24/10	4 - 5	--	0.011 U
		R5-041-V-Z5b	05/24/10	5 - 6	--	0.011 U
		R5-041-V-Z6a	05/24/10	6 - 7	--	0.011 U
		R5-041-V-Z6b	05/24/10	7 - 7.5	--	0.011 U
	R5-042-V	R5-042-V-Z1A	05/20/10	0 - 0.5	--	0.011 U
		R5-042-V-Z1b	05/20/10	0.5 - 1	--	0.011 U
		R5-042-V-Z2	05/20/10	1 - 2	--	0.011 U
		R5-042-V-Z3	05/20/10	2 - 3	--	0.011 U
		R5-042-V-Z4	05/20/10	3 - 4	--	0.011 U
		R5-042-V-Z5a	05/20/10	4.5 - 5	--	0.0049 J
	R5-043-V	R5-043-V-Z1	05/20/10	0 - 1	--	0.11 J
		R5-043-V-Z1P	05/20/10	0 - 1	--	0.19 J
		R5-043-V-Z2	05/20/10	1 - 2	--	0.011 U
		R5-043-V-Z3	05/20/10	2 - 3	--	0.011 U
		R5-043-V-Z4	05/20/10	3 - 4	--	0.14 J
		R5-043-V-Z5a	05/20/10	4 - 4.5	--	0.011 U
		R5-043-V-Z5b	05/20/10	4.5 - 5	--	0.011 U

Table 4-8b
Comparison of Total PCB Congener Results versus Total Aroclor Results

Reach	Location	Sample ID	Sample Date	Sample Depth (feet)	Total PCB Congeners by HRGC/HRMS (mg/kg)	Total Aroclors by MC ARO (mg/kg)
Reach 5	R5-044-V	R5-044-V-Z1a	05/20/10	0 - 0.5	--	0.028 J
		R5-044-V-Z1b	05/20/10	0.5 - 1	--	1.2 J
		R5-044-V-Z2	05/20/10	1 - 2	--	0.57 J
		R5-044-VR	05/20/10	1 - 2	--	0.011 U
		R5-044-V-Z3	05/20/10	2 - 3	--	0.011 U
	R5-045-V	R5-045-V-Z1	05/20/10	0 - 1	--	1 J
		R5-045-V-Z2	05/20/10	1 - 2	--	0.55 J
		R5-045-V-Z3	05/20/10	2 - 3	--	0.28
		R5-045-V-Z4	05/20/10	3 - 4	--	0.0087 J
		R5-045-VR	05/20/10	3 - 4	--	0.014 J
		R5-045-V-Z5a	05/20/10	4.5 - 5	--	0.0077 J
	R5-046-V	R5-046-V-Z1a	05/20/10	0 - 0.5	--	0.011 U
		R5-046-V-Z1b	05/20/10	0.5 - 1	--	0.021 J
		R5-046-V-Z2	05/20/10	1 - 2	--	0.011 U
		R5-046-V-Z3	05/20/10	2 - 3	--	0.011 U
		R5-046-V-Z4	05/20/10	3 - 4	--	0.011 U
		R5-046-V-Z5a	05/20/10	4 - 5	--	0.011 U
		R5-046-V-Z5b	05/20/10	5 - 6	--	0.011 U
		R5-046-V-Z6a	05/20/10	6 - 7	--	0.011 U
	R5-047-V	R5-047-V-Z1a	05/20/10	0 - 0.5	--	0.39 J
		R5-047-V-Z1b	05/20/10	0.5 - 1	--	0.21 J
		R5-047-V-Z2	05/20/10	1 - 2	--	0.011 U
		R5-047-V-Z3	05/20/10	2 - 3	--	0.011 U
		R5-047-V-Z4	05/20/10	3 - 4	--	0.011 U
	R5-048-V	R5-048-V-Z1a	05/21/10	0 - 0.5	--	0.011 U
		R5-048-V-Z1b	05/21/10	0.5 - 1	--	0.011 U
		R5-048-V-Z2	05/21/10	1 - 2	--	0.011 U
		R5-048-V-Z3	05/21/10	2 - 3	--	0.0056 J
	R5-049-V	R5-049-V-Z1	05/21/10	0 - 1	4.94	--
		R5-049-V-Z1a	05/21/10	0 - 0.5	--	0.011 U
		R5-049-V-Z1b	05/21/10	0.5 - 1	--	0.48
		R5-049-V-Z2	05/21/10	1 - 2	7.65	0.29 J
		R5-049-V-Z3	05/21/10	2 - 3	29.1	1.1 J
		R5-049-V-Z4	05/21/10	3 - 4	0.205	0.011 U
		R5-049-V-Z5a	05/21/10	4 - 4.5	--	0.011 U
	R5-050-V	R5-050-V-Z1a	05/21/10	0 - 0.5	--	0.25 J
		R5-050-V-Z1b	05/21/10	0.5 - 1	--	0.16 J
		R5-050-V-Z2	05/21/10	1 - 2	--	1.1 J
		R5-050-VR	05/21/10	1 - 2	--	0.011 U
		R5-050-V-Z3	05/21/10	2 - 3	--	0.2 J
		R5-050-V-Z4	05/21/10	3 - 4	--	0.91 J
		R5-050-V-Z5a	05/21/10	4 - 4.5	--	0.76 J
	R5-113-W	R5-113-W	11/18/09	0 - 0.5	--	0.13
	R5-114-W	R5-114-W	11/18/09	0 - 0.5	--	0.34
	R5-115-W	R5-115-W	11/18/09	0 - 0.5	0.18	1.2
	R5-116-W	R5-116-W	11/19/09	0 - 0.5	--	0.28
	R5-127-H	R5-127-H	11/18/09	0 - 0.5	--	0.011 U
Reach 6	R6-051-C	R6-051-C	11/19/09	0 - 1.2	--	0.47
		R6-051-CR	11/19/09	0 - 1.2	--	0.47
	R6-052-C	R6-052-C	11/19/09	0 - 1.3	--	1.3
	R6-053-C	R6-053-C	11/19/09	0 - 1.2	1	0.72
	R6-054-C	R6-054-C	12/02/09	0 - 0.5	--	0.47
	R6-055-C	R6-055-C	11/17/09	0 - 1.1	--	0.32
	R6-056-C	R6-056-C	11/17/09	0 - 1.2	1.8	1
		R6-056-CR	11/17/09	0 - 1.2	2.7	3.3
	R6-057-C	R6-057-C	11/17/09	0 - 1.4	--	0.011 U
	R6-058-C	R6-058-C	11/18/09	0 - 2.2	2.8	0.73

Table 4-8b
Comparison of Total PCB Congener Results versus Total Aroclor Results

Reach	Location	Sample ID	Sample Date	Sample Depth (feet)	Total PCB Congeners by HRGC/HRMS (mg/kg)	Total Aroclors by MC ARO (mg/kg)
Reach 6	R6-059-C	R6-059-C	11/18/09	0 - 1.3	--	0.49
	R6-060-C	R6-060-C	11/18/09	0 - 0.8	--	0.4
	R6-061-C	R6-061-C	11/18/09	0 - 4	--	0.53
	R6-062-C	R6-062-C	11/19/09	0 - 3.7	1.8	0.66
	R6-063-C	R6-063-C	11/19/09	0 - 1.1	--	2
	R6-064-C	R6-064-C	11/19/09	0 - 1.4	--	0.39
	R6-065-C	R6-065-C	11/19/09	0 - 2.4	--	1
	R6-066-C	R6-066-C	11/25/09	0 - 1.9	7.9	4.5
	R6-067-C	R6-067-C	11/25/09	0 - 2.1	12	0.87
	R6-117-W	R6-117-W	12/02/09	0 - 0.5	--	0.072
	R6-128-H	R6-128-H	12/02/09	0 - 0.5	--	0.48
	R6-129-H	R6-129-H	12/02/09	0 - 0.5	--	0.011 U
	R6-144-C	R6-144-C-Comp	07/02/10	0 - 1.3	--	0.08 J
	R6-144-C	R6-144-C-Z1a	07/02/10	0 - 0.5	--	0.097 U
	R6-145-C	R6-145-C-Comp	07/02/10	0 - 0.7	--	0.033 U
	R6-145-C	R6-145-C-Z1a	07/02/10	0 - 0.5	--	0.049 J
	R6-146-C	R6-146-C-Comp	07/02/10	0 - 1.1	--	0.033 U
	R6-146-C	R6-146-C-Z1a	07/02/10	0 - 0.5	--	0.65 J
	R6-147-C	R6-147-C-Comp	07/01/10	0 - 0.8	--	0.64 J
	R6-147-C	R6-147-C-Z1a	07/01/10	0 - 0.5	--	0.29 J
	R6-148-C	R6-148-C-Comp	07/01/10	0 - 0.9	--	0.061 U
		R6-148-CR	07/01/10	0 - 0.9	--	0.14 J
	R6-149-C	R6-149-C-Comp	07/01/10	0 - 0.9	--	0.15 NJ
	R6-150-C	R6-150-C-Comp	07/01/10	0 - 0.9	--	0.06 J
	R6-151-C	R6-151-C-Comp	07/02/10	0 - 0.7	--	0.085 U
	R6-152-C	R6-152-C-Comp	07/02/10	0 - 0.7	--	0.02 J
		R6-152-CR	07/02/10	0 - 0.7	--	0.093 J
	R6-153-C	R6-153-C-Comp	07/02/10	0 - 0.5	--	0.49 J
	R6-154-C	R6-154-C-Comp	07/01/10	0 - 1.1	--	0.023 J
		R6-154-C-Z1a	07/01/10	0 - 0.5	--	0.07 J
	R6-155-C	R6-155-C-Comp	07/01/10	0 - 0.7	--	0.77 J
	R6-156-C	R6-156-C-Comp	07/01/10	0 - 0.7	--	0.074 J
	R6-157-C	R6-157-C-Comp	07/01/10	0 - 1.2	--	1.2 J
		R6-157-C-Z1a	07/01/10	0 - 0.5	--	0.48 NJ
	R6-158-C	R6-158-C-Comp	07/01/10	0 - 1.4	--	0.39 J
		R6-158-C-Z1a	07/01/10	0 - 0.5	--	0.053 U
		R6-158-CR	07/01/10	0 - 0.5	--	0.055 U
	R6-159-C	R6-159-C-Comp	07/01/10	0 - 1.3	--	0.41 J
		R6-159-C-Z1a	07/01/10	0 - 0.5	--	0.02 J
	R6-160-C	R6-160-C-Comp	07/01/10	0 - 1.7	--	1.4 J
		R6-160-C-Z1a	07/01/10	0 - 0.5	--	0.1 U
	R6-161-C	R6-161-C-Z1	07/01/10	0.5 - 1.5	--	16 J
		R6-161-C-Z1a	07/01/10	0 - 0.5	--	0.03 J
	R6-162-C	R6-162-C-Comp	06/30/10	0 - 0.8	--	0.066 U
	R6-163-C	R6-163-C-Z1	06/30/10	0.5 - 1.4	--	0.054 U
		R6-163-C-Z1a	06/30/10	0 - 0.5	--	0.046 U
	R6-164-C	R6-164-C-Comp	06/30/10	0 - 1.4	--	0.07 U
		R6-164-C-Z1a	06/30/10	0 - 0.5	--	0.057 U
	R6-165-C	R6-165-C-Comp	06/30/10	0 - 1.6	--	0.24 J
		R6-165-C-Z1a	06/30/10	0 - 0.5	--	0.33 J
	R6-166-C	R6-166-C-Comp	06/30/10	0 - 2.1	--	0.018 J
		R6-166-C-Z1a	06/30/10	0 - 0.5	--	0.05 J
	R6-167-C	R6-167-C-Comp	06/30/10	0 - 1.3	--	0.089 U
		R6-167-C-Z1a	06/30/10	0 - 0.5	--	0.026 J
	R6-168-C	R6-168-C-Comp	06/30/10	0 - 1.3	--	0.064 U
		R6-168-C-Z1a	06/30/10	0 - 0.5	--	0.42 J

Table 4-8b
Comparison of Total PCB Congener Results versus Total Aroclor Results

Reach	Location	Sample ID	Sample Date	Sample Depth (feet)	Total PCB Congeners by HRGC/HRMS (mg/kg)	Total Aroclors by MC ARO (mg/kg)
Reach 6	R6-169-C	R6-169-C-Comp	06/28/10	0 - 1.4	--	0.25 J
		R6-169-C-Z1a	06/28/10	0 - 0.5	--	0.34 J
	R6-170-C	R6-170-C-Comp	06/25/10	0 - 1.5	--	0.24 J
		R6-170-C-Z1a	06/25/10	0 - 0.5	--	0.59 J
	R6-171-C	R6-171-C-Comp	06/25/10	0 - 1.2	--	0.73 J
		R6-171-C-Z1a	06/25/10	0 - 0.5	--	1.5 J
Reach 7	R7-068-C	R7-068-C	11/25/09	0 - 2.1	86	3.6
		R7-068-CR	11/25/09	0 - 2.1	58	11
	R7-069-C	R7-069-C	11/25/09	0 - 2.4	--	1.9
	R7-070-C	R7-070-C	11/25/09	0 - 2.4	--	0.46
	R7-071-C	R7-071-C	11/25/09	0 - 1.5	44	4.2
	R7-072-C	R7-072-C	11/24/09	0 - 0.8	--	3.9
	R7-073-C	R7-073-C	11/24/09	0 - 2.4	--	4.4
	R7-074-C	R7-074-C	11/24/09	0 - 2.3	6.2	4.3
	R7-075-C	R7-075-C	11/24/09	0 - 2.1	8.1	1.3
	R7-076-C	R7-076-C	11/24/09	0 - 2	--	6.8
	R7-077-C	R7-077-C	11/24/09	0 - 1.2	--	1.4
	R7-078-C	R7-078-C	12/02/09	0 - 4	--	0.45
	R7-079-C	R7-079-C	12/02/09	0 - 2.4	--	7.7
	R7-080-C	R7-080-C	12/02/09	0 - 1.7	4.9	0.76
	R7-081-C	R7-081-C	12/02/09	0 - 1.7	49	0.63
	R7-082-C	R7-082-C	11/30/09	0 - 1.6	--	0.32
		R7-082-CR	11/30/09	0 - 1.6	5.8	1.4
	R7-083-C	R7-083-C	11/30/09	0 - 3.3	--	1.5
	R7-084-C	R7-084-C	11/30/09	0 - 3.3	17	0.96
	R7-085-C	R7-085-C	11/30/09	0 - 1.6	--	7.8
	R7-086-C	R7-086-C	11/30/09	0 - 3.2	22	4.1
	R7-087-C	R7-087-C	11/30/09	0 - 2.1	14	0.82
	R7-088-C	R7-088-C	11/25/09	0 - 1	19	55
	R7-089-C	R7-089-C	11/25/09	0 - 2.9	50	97
	R7-090-C	R7-090-C	11/25/09	0 - 3.5	--	3.4
	R7-091-C	R7-091-C	11/24/09	0 - 1.4	17	11
	R7-092-C	R7-092-C	11/24/09	0 - 1	--	2.5
	R7-093-C	R7-093-C	11/24/09	0 - 0.9	--	3.1
	R7-094-C	R7-094-C	11/23/09	0 - 1	5.9	1.3
	R7-095-C	R7-095-C	11/23/09	0 - 1.3	--	1.2
		R7-095-CR	11/23/09	0 - 1.3	--	3
	R7-096-C	R7-096-C	11/23/09	0 - 1.3	--	1.8
	R7-097-C	R7-097-C	11/23/09	0 - 0.9	--	2.2
	R7-098-C	R7-098-C	11/23/09	0 - 1.9	--	1.6
	R7-099-C	R7-099-C	11/23/09	0 - 1.3	6.7	0.65
	R7-100-C	R7-100-C	11/23/09	0 - 1.2	10	0.5
	R7-101-C	R7-101-C	11/30/09	0 - 0.5	22	1.1
	R7-102-C	R7-102-C	11/30/09	0 - 1.5	--	1.9
	R7-103-C	R7-103-C	11/30/09	0 - 2.3	33	1.5
	R7-104-C	R7-104-C	12/02/09	0 - 1	22	9.8
	R7-105-C	R7-105-C	11/30/09	0 - 1.4	--	4.8
	R7-106-C	R7-106-C	11/30/09	0 - 0.5	13	0.43
	R7-118-W	R7-118-W	11/30/09	0 - 0.5	--	0.19
	R7-120-T	R7-120-T-Z1	11/24/09	0 - 0.5	--	0.011 U
	R7-120-T	R7-120-T-Z2	11/24/09	0.5 - 2.1	--	0.011 U
	R7-121-T	R7-121-T-Z1	12/02/09	0 - 0.5	--	0.39
	R7-122-T	R7-122-T-Z1	11/25/09	0 - 0.5	--	0.011 U
		R7-122-T-Z2	11/25/09	0.5 - 1	--	0.011 U
	R7-123-T	R7-123-T-Z1	11/23/09	0 - 0.5	--	0.011 U
	R7-123-T	R7-123-T-Z2	11/23/09	0.5 - 1	--	0.011 U
	R7-124-T	R7-124-T-Z1	11/23/09	0 - 0.4	--	0.011 U

Table 4-8b
Comparison of Total PCB Congener Results versus Total Aroclor Results

Reach	Location	Sample ID	Sample Date	Sample Depth (feet)	Total PCB Congeners by HRGC/HRMS (mg/kg)	Total Aroclors by MC ARO (mg/kg)
Reach 7	R7-125-T	R7-125-T-Z1	11/30/09	0 - 0.5	--	0.011 U
	R7-125-T	R7-125-T-Z2	11/30/09	0.5 - 0.8	--	0.011 U
	R7-130-H	R7-130-H	11/30/09	0 - 0.5	--	0.011 U
	R7-131-H	R7-131-H	11/30/09	0 - 0.5	15	1.3
	R7-132-H	R7-132-H	11/25/09	0 - 0.5	--	0.035
	R7-133-H	R7-133-H	11/24/09	0 - 0.5	--	0.045
	R7-134-H	R7-134-H	11/23/09	0 - 0.5	--	3.3
	R7-172-C	R7-172-C-Comp	06/25/10	0 - 0.9	--	26 J
		R7-172-C-Z1a	06/25/10	0 - 0.5	--	15 J
	R7-173-C	R7-173-C-Comp	06/25/10	0 - 1.1	--	1.4 J
		R7-173-C-Z1a	06/25/10	0 - 0.5	--	1.3 J
	R7-174-C	R7-174-C-Comp	06/25/10	0 - 1.2	--	4.8 J
		R7-174-C-Z1a	06/25/10	0 - 0.5	--	2.7 J
	R7-175-C	R7-175-C-Z1	06/24/10	0.5 - 1.4	--	0.52 J
		R7-175-C-Z1a	06/24/10	0 - 0.5	--	1 J
	R7-176-C	R7-176-C-Comp	06/24/10	0 - 0.9	--	8.1 J
		R7-176-C-Z1a	06/24/10	0 - 0.5	--	11 NJ
	R7-177-C	R7-177-C-Z1	06/24/10	0.5 - 1.1	--	0.74 J
		R7-177-CR	06/24/10	0.5 - 1.1	--	0.42 NJ
		R7-177-C-Z1a	06/24/10	0 - 0.5	--	1.1 J
	R7-178-C	R7-178-C-Z1	06/24/10	0.5 - 1.2	--	84 J
		R7-178-C-Z1a	06/24/10	0 - 0.5	--	4.5 J
	R7-179-C	R7-179-C-Comp	06/23/10	0 - 0.7	--	5.7 J
		R7-179-C-Z1a	06/23/10	0 - 0.5	--	5.4 J
	R7-180-C	R7-180-C-Comp	06/23/10	0 - 1.1	--	44
		R7-180-C-Z1a	06/23/10	0 - 0.5	--	4 J
	R7-181-C	R7-181-C-Comp	07/01/10	0 - 1.3	--	0.11 J
		R7-181-C-Z1a	07/01/10	0 - 0.5	--	0.052 U
	R7-182-C	R7-182-C-COMP	07/01/10	0 - 0.8	--	0.052 U
	R7-183-C	R7-183-C-Comp	07/01/10	0 - 1.3	--	0.033 U
		R7-183-C-Z1a	07/01/10	0 - 0.5	--	0.16 J
	R7-184-C	R7-184-C-Comp	06/30/10	0 - 0.75	--	6.9
	R7-185-C	R7-185-C-Comp	06/30/10	0 - 0.7	--	1.1 NJ
	R7-185-C	R7-185-C-Z1a	06/30/10	0 - 0.5	--	0.091 U
	R7-186-C	R7-186-C-Comp	06/30/10	0 - 0.7	--	0.85 J
		R7-186-C-Z1a	06/30/10	0 - 0.5	--	0.06 U
	R7-187-C	R7-187-C-Comp	06/30/10	0 - 0.95	--	64 J
		R7-187-C-Z1a	06/30/10	0 - 0.5	--	0.67 NJ
	R7-188-C	R7-188-C-Z1	06/30/10	0.4 - 1.1	--	0.056 U
		R7-188-C-Z1a	06/30/10	0 - 0.5	--	0.087 U
	R7-189-C	R7-189-C-Comp	06/30/10	0 - 1.2	--	0.24 J
		R7-189-CR	06/30/10	0 - 1.2	--	0.18 NJ
		R7-189-C-Z1a	06/30/10	0 - 0.5	--	0.082 U
	R7-190-C	R7-190-C-Comp	06/30/10	0 - 0.7	--	0.85 J
	R7-191-C	R7-191-C-Comp	06/29/10	0 - 0.9	--	0.94 J
		R7-191-C-Z1a	06/29/10	0 - 0.5	--	1 J
	R7-192-C	R7-192-C-Z1a	06/29/10	0 - 0.3	--	0.27
	R7-193-C	R7-193-C-Comp	06/29/10	0 - 0.8	--	0.18 J
		R7-193-C-Z1a	06/29/10	0 - 0.5	--	1.3 J
	R7-194-C	R7-194-C-Comp	06/29/10	0 - 0.6	--	35 NJ
	R7-195-C	R7-195-C-Comp	06/29/10	0 - 0.6	--	4.7 NJ
	R7-196-C	R7-196-C-Comp	06/29/10	0 - 1.3	--	0.59 NJ
		R7-196-C-Z1a	06/29/10	0 - 0.5	--	0.73 J
	R7-197-C	R7-197-C-Comp	06/28/10	0 - 1.2	--	1.8 J
		R7-197-CR	06/28/10	0 - 1.2	--	0.53 J
		R7-197-C-Z1a	06/28/10	0 - 0.5	--	1.3 J

Table 4-8b
Comparison of Total PCB Congener Results versus Total Aroclor Results

Reach	Location	Sample ID	Sample Date	Sample Depth (feet)	Total PCB Congeners by HRGC/HRMS (mg/kg)	Total Aroclors by MC ARO (mg/kg)
Reach 7	R7-198-C	R7-198-C-Comp	06/28/10	0 - 0.9	--	2.6 J
		R7-198-C-Z1a	06/28/10	0 - 0.5	--	0.06 U
	R7-199-C	R7-199-C-Comp	06/28/10	0 - 1.5	--	0.069 U
		R7-199-C-Z1a	06/28/10	0 - 0.5	--	0.1 U
	R7-200-C	R7-200-C-Comp	06/28/10	0 - 3	--	13 J
		R7-200-C-Z1a	06/28/10	0 - 0.5	--	1.7 J
	R7-201-T	R7-201-T-Comp	06/25/10	0 - 1.1	--	0.064 U
		R7-201-T-Z1a	06/25/10	0 - 0.5	--	0.07 U
	R7-202-T	R7-202-T-Comp	06/29/10	0 - 0.9	--	0.067 U
		R7-202-T-Z1a	06/29/10	0 - 0.5	--	0.11 U
	R7-203-T	R7-203-T-Comp	06/29/10	0 - 0.7	--	0.087 U
		R7-203-T-Z1a	06/29/10	0 - 0.5	--	0.08 U
	R7-204-T	R7-204-T-Z1a	06/29/10	0 - 0.3	--	0.062 U
	R7-205-T	R7-205-T-Comp	06/29/10	0 - 0.8	--	0.051 U
		R7-205-T-Z1a	06/29/10	0 - 0.5	--	0.11 J

Key:

-C = Hand-core creek location/sample.
-Comp = Hand-core creek composite sample.
-CR= Hand-core creek duplicate sample.
ft = Feet.
-H = Historical channel location/sample.
HM = High Moisture Content.
J = Estimated at the concentration listed.
mg/Kg = Milligrams per kilogram.
NJ = Estimated.
-P = Ponar creek location/sample.
PCB = Polychlorinated biphenyl.
-T = Tributary location/sample.
U = Non-detect.
-V = Vibracore creek location/sample.
-VR = Vibracore creek duplicate sample.
-W = Wetland location/sample.
-Z = Sample depth interval consecutively numbered.

Table 4-9
Summary of Results of Extended List (34) PAH Analysis

Sample ID	R2-002-VR	R2-002-V-Z1	R2-002-V-Z2	R2-002-V-Z3	R2-002-V-Z4	R2-002-V-Z5	R2-002-V-Z6	R2-002-V-Z1P	R2-008-V-Z1
Sample Date	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/18/2010	5/19/2010
Sample Depth Range (ft)	4-6	0-1	1-2	2-3	3-4	4-6	6-7.5	0-1	0-1
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
1-METHYLNAPHTHALENE	0.11 J	0.0058 U	0.0051 U	0.018	0.047	0.31 J	0.016	0.0059 U	0.005 U
2-METHYLNAPHTHALENE	0.1 J	0.0058 U	0.0051 U	0.022	0.049	0.16 U	0.019	0.0059 U	0.01 J
ACENAPHTHENE	0.15 J	0.0058 U	0.0051 U	0.0051 U	0.072	0.53 J	0.016	0.0059 U	0.005 U
ACENAPHTHYLENE	0.027 J	0.036	0.027	0.033	0.041	0.019	0.018	0.047	0.028
ANTHRACENE	0.25 J	0.02	0.0051 U	0.016	0.019	0.93 J	0.034	0.012	0.021
BENZO(A)ANTHRACENE	0.43 J	0.11	0.044	0.069	0.12	0.43 J	0.11	0.072	0.14
BENZO(A)PYRENE	0.14 J	0.16	0.051	0.066	0.15	0.4 J	0.13	0.077	0.17
BENZO(B)FLUORANTHENE	0.031 J	0.062	0.027	0.055	0.048	0.16 U	0.11 J	0.039	0.088 J
BENZO(G,H,I)PERYLENE	0.057 J	0.088	0.031 J	0.035 J	0.071 J	0.16 UJ	0.078	0.047 J	0.074 J
BENZO(K)FLUORANTHENE	0.11 J	0.17	0.039	0.051	0.056	0.16 U	0.085	0.063	0.2
BENZO[E]PYRENE	0.097 J	0.11	0.045	0.085	0.24	0.31 J	0.13	0.072	0.18
C1-CHRYSENES	0.42 J	0.094 J	0.041 J	0.15 J	0.46 J	1.2 J	0.2 J	0.067 J	0.15 J
C1-FLUORANTHENES/PYRENES	0.54 J	0.12 J	0.0051 U	0.09 J	0.23 J	1.6 J	0.22 J	0.081 J	0.18 J
C1-FLUORENES	0.16 J	0.023 J	0.018 J	0.0051 U	0.0053 U	0.53 J	0.036 J	0.036 J	0.085 J
C1-NAPHTHALENES	0.14 J	0.011 J	0.0051 U	0.027 J	0.063 J	0.42 J	0.023 J	0.0059 U	0.012 J
C1-PHENANTHRENES/ANTHRACENES	0.61 J	0.052 J	0.024 J	0.093 J	0.29 J	1.9 J	0.17 J	0.037 J	0.073 J
C2-CHRYSENES	0.21 J	0.05 J	0.0051 U	0.1 J	0.0053 U	0.0033 U	0.16 J	0.044 J	0.091 J
C2-FLUORANTHENES/PYRENES	0.27 J	0.12 J	0.0051 U	0.0051 U	0.19 J	0.66 J	0.14 J	0.075 J	0.13 J
C2-FLUORENES	0.18 J	0.0058 U	0.015 J	0.11 J	0.28 J	0.29 J	0.066 J	0.018 J	0.057 J
C2-NAPHTHALENES	0.28 J	0.0058 U	0.0051 U	0.072 J	0.22 J	0.82 J	0.045 J	0.0059 U	0.028 J
C2-PHENANTHRENES/ANTHRACENES	0.54 J	0.048 J	0.022 J	0.14 J	0.34 J	1.1 J	0.22 J	0.034 J	0.1 J
C3-CHRYSENES	0.11 J	0.027 J	0.0051 U	0.0051 U	0.0053 U	0.0033 U	0.0032 U	0.018 J	0.005 U
C3-FLUORANTHENES/PYRENES	0.093 J	0.038 J	0.016 J	0.033 J	0.12 J	0.2 J	0.072 J	0.028 J	0.036 J
C3-FLUORENES	0.2 J	0.0058 U	0.0051 U	0.0051 U	0.38 J	0.25 J	0.0032 U	0.0059 U	0.005 U
C3-NAPHTHALENES	0.35 J	0.0058 U	0.0051 U	0.12 J	0.36 J	0.81 J	0.065 J	0.0059 U	0.036 J
C3-PHENANTHRENES/ANTHRACENES	0.41 J	0.059 J	0.0051 U	0.0051 U	0.41 J	0.54 J	0.21 J	0.0059 U	0.14 J
C4-CHRYSENES	0.032 J	0.0058 U	0.0051 U	0.0051 U	0.0053 U	0.0033 U	0.0032 U	0.0059 U	0.005 U
C4-NAPHTHALENES	0.39 J	0.0058 U	0.0051 U	0.19 J	0.63 J	0.46 J	0.094 J	0.0059 U	0.005 U
C4-PHENANTHRENES/ANTHRACENES	0.3 J	0.057 J	0.0051 U	0.092 J	0.13 J	0.19 J	0.17 J	0.0059 U	0.2 J
CHRYSENE	0.45 J	0.18	0.066	0.13	0.21	0.51 J	0.16	0.13	0.2
DIBENZ(A,H)ANTHRACENE	0.015 J	0.026	0.0051 U	0.0051 U	0.011	0.054 J	0.014	0.017	0.021
FLUORANTHENE	0.71 J	0.31	0.097	0.14	0.21	1.6 J	0.21	0.19	0.33
FLUORENE	0.17 J	0.017	0.0051 U	0.015	0.045	0.43 J	0.022	0.0059 U	0.015
INDENO(1,2,3-C,D)PYRENE	0.052 J	0.076	0.026	0.023	0.028	0.16 UJ	0.039	0.041	0.059
NAPHTHALENE	0.041 J	0.0058 U	0.0051 U	0.0051 U	0.01 J	0.16 U	0.011	0.0059 U	0.0091 J
PERYLENE	0.026 J	0.021	0.0051 U	0.0051 U	0.011	0.16 U	0.023	0.014	0.036
PHENANTHRENE	0.79 J	0.1	0.037	0.071	0.15	2.3 J	0.12	0.067	0.093
PYRENE	0.89 J	0.31	0.079	0.17	0.27	1.2 J	0.26	0.21	0.35
PAHs (total)	4.3 J	1.7 J	0.52 J	0.87 J	1.5 J	8.4 J	1.4 J	1 J	1.8 J

Key at the end of Table

Table 4-9
Summary of Results of Extended List (34) PAH Analysis

Sample ID	R2-008-V-Z1P	R2-008-V-Z2	R2-008-V-Z3	R2-008-V-Z4	R2-008-V-Z5	R2-011-V-Z1a	R2-011-V-Z1b	R2-011-V-Z2	R2-011-V-Z3
Sample Date	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/19/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft)	0-1	1-2	2-3	3-4	40638-5	0-0.5	0.5-1	1-2	2-3
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
1-METHYLNAPHTHALENE	0.0053 U	0.0044 U	0.056	0.024	0.0021 U	0.023 U	0.0054 J	0.0044 U	0.0095 J
2-METHYLNAPHTHALENE	0.011	0.0091	0.021	0.027	0.0021 U	0.023 U	0.0085 J	0.0044 U	0.0041 U
ACENAPHTHENE	0.0053 U	0.0044 U	0.021	0.027	0.0021 U	0.023 U	0.0054 J	0.0044 U	0.01
ACENAPHTHYLENE	0.032	0.024	0.034	0.032	0.011	0.023 U	0.013	0.0044 U	0.027
ANTHRACENE	0.022	0.011	0.049 U	0.074	0.0021 U	0.012	0.028	0.021	0.043
BENZO(A)ANTHRACENE	0.17	0.078	0.21	0.3 J	0.0059	0.13	0.18	0.19 J	0.2
BENZO(A)PYRENE	0.23	0.074	0.26	0.33 J	0.0052	0.1	0.17	0.073	0.2
BENZO(B)FLUORANTHENE	0.33 J	0.051	0.07	0.13 J	0.0021 U	0.11	0.14	0.2 J	0.13
BENZO(G,H,I)PERYLENE	0.1 J	0.041 J	0.12	0.17 J	0.0021 UJ	0.047 J	0.026	0.055 J	0.021
BENZO(K)FLUORANTHENE	0.26	0.057	0.093	0.39 J	0.0045	0.077	0.13	0.058	0.15
BENZO[E]PYRENE	0.23	0.1	0.36	0.34 J	0.006	0.081	0.14	0.16 J	0.2
C1-CHRYSENES	0.14 J	0.18 J	0.82 J	0.35 J	0.0058 J	0.092 J	0.17 J	0.098 J	0.23 J
C1-FLUORANTHENES/PYRENES	0.18 J	0.099 J	0.29 J	0.37 J	0.0085 J	0.16 J	0.22 J	0.15 J	0.38 J
C1-FLUORENES	0.042 J	0.05 J	0.0049 U	0.0044 U	0.012 J	0.023 U	0.009 J	0.0044 U	0.036 J
C1-NAPHTHALENES	0.013 J	0.012 J	0.05 J	0.042 J	0.0021 U	0.023 U	0.01 J	0.0044 U	0.02 J
C1-PHENANTHRENES/ANTHRACENES	0.09 J	0.084 J	0.27 J	0.38 J	0.0068 J	0.062 J	0.068 J	0.06 J	0.093 J
C2-CHRYSENES	0.088 J	0.094 J	0.61 J	0.31 J	0.0021 U	0.023 U	0.0029 U	0.11 J	0.17 J
C2-FLUORANTHENES/PYRENES	0.16 J	0.071 J	0.22 J	0.33 J	0.0054 J	0.083 J	0.17 J	0.091 J	0.32 J
C2-FLUORENES	0.025 J	0.096 J	0.38 J	0.0044 U	0.0021 U	0.023 U	0.024 J	0.0044 U	0.1 J
C2-NAPHTHALENES	0.022 J	0.049 J	0.36 J	0.2 J	0.0021 U	0.023 U	0.038 J	0.0044 U	0.0041 U
C2-PHENANTHRENES/ANTHRACENES	0.068 J	0.14 J	0.44 J	0.59 J	0.011 J	0.05 J	0.059 J	0.061 J	0.18 J
C3-CHRYSENES	0.0053 U	0.0044 U	0.0049 U	0.0044 U	0.0021 U	0.023 U	0.098 J	0.054 J	0.17 J
C3-FLUORANTHENES/PYRENES	0.039 J	0.036 J	0.16 J	0.2 J	0.0021 U	0.04 J	0.16 J	0.048 J	0.22 J
C3-FLUORENES	0.0053 U	0.12 J	0.45 J	0.0044 U	0.0021 U	0.023 U	0.0029 U	0.0044 U	0.0041 U
C3-NAPHTHALENES	0.024 J	0.11 J	0.76 J	0.59 J	0.0081 J	0.023 U	0.022 J	0.0044 U	0.11 J
C3-PHENANTHRENES/ANTHRACENES	0.13 J	0.18 J	0.32 J	0.64 J	0.0021 U	0.042 J	0.058 J	0.056 J	0.22 J
C4-CHRYSENES	0.0053 U	0.0044 U	0.0049 U	0.0044 U	0.0021 U	0.023 U	0.036 J	0.0044 U	0.087 J
C4-NAPHTHALENES	0.023 J	0.26 J	1.3 J	1.1 J	0.011 J	0.023 U	0.025 J	0.0044 U	0.28 J
C4-PHENANTHRENES/ANTHRACENES	0.071 J	0.0044 U	0.21 J	0.38 J	0.0045 J	0.034 J	0.0029 U	0.0044 U	0.0041 UJ
CHRYSENE	0.25	0.11	0.4	0.45 J	0.0075	0.15	0.2	0.21 J	0.25
DIBENZ(A,H)ANTHRACENE	0.028	0.0094	0.023	0.068	0.0021 U	0.039 J	0.017	0.045 J	0.012
FLUORANTHENE	0.36	0.16	0.37	0.69 J	0.011	0.25	0.34	0.34 J	0.45
FLUORENE	0.014	0.019	0.059	0.076	0.0021 U	0.023 U	0.0093	0.01	0.021
INDENO(1,2,3-C,D)PYRENE	0.089	0.028	0.046	0.17 J	0.0021 U	0.045 J	0.031	0.043 J	0.023
NAPHTHALENE	0.011	0.0044 U	0.012	0.021	0.0021 U	0.023 U	0.0062	0.0044 U	0.01
PERYLENE	0.05	0.013	0.018	0.059	0.014	0.024	0.036	0.03	0.032
PHENANTHRENE	0.11	0.063	0.25	0.42 J	0.0051	0.069	0.088 J	0.071	0.12
PYRENE	0.43	0.16	0.44	0.88 J	0.012	0.14	0.16	0.19 J	0.19
PAHs (total)	2.4 J	0.89 J	2.4 J	4.2 J	0.062 J	1.2 J	1.5 J	1.5 J	1.9 J

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Table 4-9
Summary of Results of Extended List (34) PAH Analysis

Sample ID	R2-011-V-Z4	R2-011-V-Z5	R2-011-V-Z6	R2-011-V-Z7	R2-011-V-Z8	R2-014-VR	R2-014-V-Z1a	R2-014-V-Z1b	R2-014-V-Z2
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010
Sample Depth Range (ft)	3-4	4-6	6-8	8-10	10-11.5	4-6	0-0.5	0.5-1	1-2
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
1-METHYLNAPHTHALENE	0.016 J	0.07 J	0.074 J	0.075 J	0.083 J	0.013 J	0.014 J	0.012 J	0.011 J
2-METHYLNAPHTHALENE	0.028	0.1 J	0.058	0.083 J	0.081 J	0.022 J	0.023	0.019 J	0.019
ACENAPHTHENE	0.015	0.024	0.042	0.035	0.023	0.0058 U	0.021	0.013	0.01
ACENAPHTHYLENE	0.026	0.032	0.086 U	0.054	0.045	0.024 J	0.026	0.027	0.025
ANTHRACENE	0.037	0.059 J	0.2	0.11 J	0.1 J	0.032 J	0.091	0.08	0.041
BENZO(A)ANTHRACENE	0.24	0.36	0.55	0.31	0.31	0.12 J	0.39	0.42	0.26
BENZO(A)PYRENE	0.2	0.39	0.43	0.29	0.3	0.11 J	0.31	0.3	0.27
BENZO(B)FLUORANTHENE	0.24	0.25	0.54	0.17	0.26	0.068 J	0.21	0.18	0.2
BENZO(G,H,I)PERYLENE	0.03	0.087	0.058	0.036	0.06	0.043 J	0.032	0.037	0.03
BENZO(K)FLUORANTHENE	0.18	0.17	0.31	0.25	0.18	0.064 J	0.2	0.18	0.17
BENZO[E]PYRENE	0.18	0.5	0.38	0.2	0.36	0.13 J	0.25	0.29	0.26
C1-CHRYSENES	0.26 J	1.5 J	0.63 J	0.43 J	0.88 J	0.24 J	0.59 J	0.48 J	0.39 J
C1-FLUORANTHENES/PYRENES	0.42 J	0.97 J	0.94 J	1.1 J	0.7 J	0.26 J	0.75 J	0.69 J	0.49 J
C1-FLUORENES	0.048 J	0.29 J	0.19 J	0.2 J	0.17 J	0.031 J	0.068 J	0.032 J	0.056 J
C1-NAPHTHALENES	0.034 J	0.24 J	0.1 J	0.11 J	0.12 J	0.025 J	0.027 J	0.024 J	0.024 J
C1-PHENANTHRENES/ANTHRACENES	0.19 J	0.61 J	0.63 J	0.62 J	0.52 J	0.079 J	0.24 J	0.19 J	0.12 J
C2-CHRYSENES	0.28 J	1.4 J	0.45 J	0.24 J	0.69 J	0.24 J	0.21 J	0.24 J	0.19 J
C2-FLUORANTHENES/PYRENES	0.31 J	1.2 J	0.8 J	0.72 J	0.64 J	0.27 J	0.48 J	0.44 J	0.35 J
C2-FLUORENES	0.24 J	0.95 J	0.48 J	0.42 J	0.41 J	0.018 J	0.078 J	0.063 J	0.093 J
C2-NAPHTHALENES	0.2 J	1.4 J	0.75 J	0.92 J	0.83 J	0.054 J	0.11 J	0.077 J	0.11 J
C2-PHENANTHRENES/ANTHRACENES	0.38 J	1.5 J	1.2 J	1 J	0.88 J	0.13 J	0.29 J	0.22 J	0.18 J
C3-CHRYSENES	0.2 J	0.87 J	0.31 J	0.16 J	0.46 J	0.26 J	0.12 J	0.19 J	0.13 J
C3-FLUORANTHENES/PYRENES	0.22 J	0.91 J	0.51 J	0.42 J	0.42 J	0.28 J	0.22 J	0.28 J	0.19 J
C3-FLUORENES	0.0038 U	2.6 J	1.6 J	0.91 J	0.82 J	0.11 J	0.12 J	0.17 J	0.28 J
C3-NAPHTHALENES	1.1 J	5.1 J	2.8 J	3 J	3.8 J	0.089 J	0.15 J	0.11 J	0.15 J
C3-PHENANTHRENES/ANTHRACENES	0.45 J	1.4 J	1.2 J	1.3 J	0.81 J	0.15 J	0.21 J	0.19 J	0.24 J
C4-CHRYSENES	0.078 J	0.39 J	0.079 J	0.085 J	0.15 J	0.18 J	0.0059 U	0.082 J	0.068 J
C4-NAPHTHALENES	0.81 J	10 J	4.1 J	3.5 J	4.3 J	0.087 J	0.22 J	0.13 J	0.33 J
C4-PHENANTHRENES/ANTHRACENES	0.17 J	1 J	0.89 J	0.71 J	0.52 J	0.058 J	0.21 J	0.0046 U	0.14 J
CHRYSENE	0.32	0.57	0.66	0.4	0.49	0.12 J	0.3	0.42	0.31
DIBENZ(A,H)ANTHRACENE	0.021	0.025	0.012	0.012	0.018	0.0058 U	0.017	0.019	0.01
FLUORANTHENE	0.52	0.39	1.2	0.67	0.68	0.15 J	0.72	0.48	0.43
FLUORENE	0.022	0.06	0.085	0.071	0.057	0.012 J	0.034	0.027	0.022
INDENO(1,2,3-C,D)PYRENE	0.035	0.045	0.053	0.04	0.043	0.023 J	0.042	0.04	0.029
NAPHTHALENE	0.012	0.023	0.032	0.022	0.025	0.015 J	0.016	0.013	0.01
PERYLENE	0.043	0.082 J	0.061	0.061	0.049	0.036 J	0.06	0.052	0.044
PHENANTHRENE	0.17	0.21	0.47 J	0.34	0.35	0.056 J	0.23	0.12	0.11
PYRENE	0.27	0.27	0.54	0.38	0.34	0.083 J	0.38	0.21	0.22
PAHs (total)	2.3 J	3 J	5.2 J	3.2 J	3.3 J	0.92 J	3 J	2.6 J	2.1 J

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Table 4-9
Summary of Results of Extended List (34) PAH Analysis

Sample ID	R2-014-V-Z3	R2-014-V-Z4	R2-014-V-Z5	R2-014-V-Z6	R2-014-V-Z7	R3-020-V-Z1a	R3-020-V-Z1b	R3-020-V-Z2	R3-020-V-Z3
Sample Date	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010
Sample Depth Range (ft)	2-3	3-4	4-6	6-8	8-10	0-0.5	0.5-1	1-2	2-3
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
1-METHYLNAPHTHALENE	0.032 J	0.23 J	0.18 J	0.069 J	0.05 J	0.0096 J	0.0047 UJ	0.016 J	0.021 J
2-METHYLNAPHTHALENE	0.063	0.36 J	0.17 J	0.087 U	0.065 J	0.009	0.0094	0.019	0.025
ACENAPHTHENE	0.016	0.041	0.055 J	0.036	0.053	0.019	0.0097	0.014	0.013 J
ACENAPHTHYLENE	0.033	0.066	0.081 J	0.082	0.043	0.017	0.012	0.02	0.025
ANTHRACENE	0.046	0.059 J	0.19 J	0.17 J	0.3	0.064	0.025	0.036	0.029
BENZO(A)ANTHRACENE	0.47	0.84	0.66 J	0.39	0.74	0.32	0.11	0.25	0.26
BENZO(A)PYRENE	0.57	0.8	0.6 J	0.31	0.7	0.25	0.09	0.24	0.21
BENZO(B)FLUORANTHENE	0.18	0.52	0.58 J	0.23	0.33	0.17	0.082	0.13	0.11
BENZO(G,H,I)PERYLENE	0.069	0.088	0.098 J	0.047	0.18	0.026	0.016	0.028	0.044
BENZO(K)FLUORANTHENE	0.28	0.29	0.29 J	0.25	0.41	0.14	0.066	0.081	0.1
BENZO[E]PYRENE	0.62	0.91	0.72 J	0.33	0.62	0.18	0.077	0.28	0.28
C1-CHRYSENES	1.4 J	1.9 J	1.6 J	0.39 J	0.97 J	0.41 J	0.18 J	1.1 J	0.89 J
C1-FLUORANTHENES/PYRENES	0.81 J	1.2 J	1.2 J	0.92 J	1.6 J	0.64 J	0.42 J	0.89 J	0.77 J
C1-FLUORENES	0.62 J	0.48 J	0.35 J	0.18 J	0.13 J	0.044 J	0.06 J	0.12 J	0.092 J
C1-NAPHTHALENES	0.07 J	0.41 J	0.25 J	0.12 J	0.081 J	0.014 J	0.014 J	0.031 J	0.036 J
C1-PHENANTHRENES/ANTHRACENES	0.27 J	0.59 J	0.93 J	0.6 J	0.89 J	0.24 J	0.26 J	0.65 J	0.24 J
C2-CHRYSENES	1.1 J	1.8 J	1.4 J	0.25 J	0.92 J	0.14 J	0.12 J	0.91 J	0.82 J
C2-FLUORANTHENES/PYRENES	0.92 J	1.6 J	1.1 J	0.75 J	1.2 J	0.37 J	0.56 J	0.87 J	0.74 J
C2-FLUORENES	0.42 J	2.9 J	0.98 J	0.61 J	0.34 J	0.05 J	0.2 J	0.42 J	0.37 J
C2-NAPHTHALENES	0.37 J	1.9 J	1.6 J	0.69 J	0.32 J	0.047 J	0.076 J	0.2 J	0.24 J
C2-PHENANTHRENES/ANTHRACENES	0.72 J	1.2 J	1.7 J	1.2 J	1.3 J	0.22 J	0.47 J	0.7 J	0.57 J
C3-CHRYSENES	0.74 J	1.1 J	0.82 J	0.18 J	0.62 J	0.069 J	0.079 J	0.51 J	0.58 J
C3-FLUORANTHENES/PYRENES	0.59 J	1.3 J	0.73 J	0.69 J	1.3 J	0.11 J	1 J	0.69 J	0.67 J
C3-FLUORENES	1.4 J	3.3 J	2.6 J	2 J	0.86 J	0.093 J	0.4 J	1.2 J	1.1 J
C3-NAPHTHALENES	2.2 J	5.9 J	4.9 J	2.1 J	0.64 J	0.095 J	0.3 J	0.91 J	0.72 J
C3-PHENANTHRENES/ANTHRACENES	0.74 J	1.7 J	1.5 J	1.6 J	1.7 J	0.18 J	0.26 J	0.7 J	0.8 J
C4-CHRYSENES	0.29 J	0.47 J	0.43 J	0.068 J	0.37 J	0.0039 U	0.0047 U	0.15 J	0.25 J
C4-NAPHTHALENES	3.4 J	12 J	7.2 J	4.7 J	1 J	0.11 J	0.59 J	1.6 J	1.8 J
C4-PHENANTHRENES/ANTHRACENES	0.71 J	1.3 J	0.97 J	1.2 J	1.2 J	0.1 J	0.19 J	0.44 J	0.51 J
CHRYSENE	0.64	1.2	0.9 J	0.48	0.85	0.33	0.13	0.42	0.42
DIBENZ(A,H)ANTHRACENE	0.022	0.027	0.029 J	0.025	0.045	0.0086	0.0047 U	0.0055 U	0.014
FLUORANTHENE	0.016	0.81	1.2 J	0.95	1.3	0.37	0.22	0.28	0.34
FLUORENE	0.03	0.1	0.15 J	0.078	0.068 U	0.018	0.016	0.031	0.03
INDENO(1,2,3-C,D)PYRENE	0.035	0.055	0.067 J	0.051	0.068 U	0.024	0.012	0.016	0.021
NAPHTHALENE	0.018	0.061 J	0.044 J	0.023	0.033	0.0039 U	0.0047 U	0.0055 U	0.016
PERYLENE	0.071	0.082 J	0.09 J	0.068	0.13 J	0.032	0.014	0.023	0.031
PHENANTHRENE	0.081 J	0.46	0.62 J	0.4 J	0.62 J	0.15 J	0.068 J	0.082 J	0.091 J
PYRENE	0.42	0.61	0.62 J	0.41	0.7	0.28	0.093	0.22	0.26
PAHs (total)	2.9 J	6 J	6.2 J	3.9 J	6.3 J	2.2 J	0.95 J	1.8 J	2 J

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Table 4-9
Summary of Results of Extended List (34) PAH Analysis

Sample ID	R3-020-V-Z4	R3-020-V-Z5	R3-020-V-Z6	R3-020-V-Z7	R3-023-V-Z1a	R3-023-V-Z1b	R3-023-V-Z2	R3-026-V-Z1a	R3-026-V-Z1b
Sample Date	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/26/2010	5/27/2010	5/27/2010
Sample Depth Range (ft)	3-4	4-6	6-8	8-10	0-0.5	0.5-0.9	1-2	0-0.5	0.5-1
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
1-METHYLNAPHTHALENE	0.1	0.1 U	0.096 U	0.034 U	0.0021 U	0.0021 U	0.0023 U	0.028	0.049
2-METHYLNAPHTHALENE	0.083	0.1 U	0.096 U	0.034 U	0.0021 U	0.0021 U	0.0023 U	0.026	0.037
ACENAPHTHENE	0.13 U	0.06	0.056	0.12	0.0021 U	0.0021 U	0.0023 U	0.039 J	0.2
ACENAPHTHYLENE	0.13 U	0.1 U	0.096 U	0.034 U	0.0021 U	0.0021 U	0.0023 U	0.019	0.024
ANTHRACENE	0.13 U	0.1 U	0.096 U	0.042 J	0.0021 U	0.0021 U	0.0023 U	0.2	0.3
BENZO(A)ANTHRACENE	0.73	0.58	0.48	0.44	0.0021 U	0.0021 U	0.0023 U	0.61	0.85
BENZO(A)PYRENE	0.75	0.62	0.46	0.33	0.0021 U	0.0021 U	0.0023 U	0.46	0.53
BENZO(B)FLUORANTHENE	1.1 J	1 J	0.67 J	0.4 J	0.0021 U	0.0021 U	0.0023 U	0.75 J	0.86 J
BENZO(G,H,I)PERYLENE	0.43	0.29	0.25	0.11	0.0021 U	0.0021 U	0.0023 U	0.22	0.22
BENZO(K)FLUORANTHENE	0.58	0.51	0.34	0.23	0.0021 U	0.0021 U	0.0023 U	0.36	0.45
BENZO[E]PYRENE	0.98	0.54	0.67	0.25	0.0021 U	0.0021 U	0.0023 U	0.52	0.8
C1-CHRYSENES	1.6 J	0.84 J	1.2 J	1.8 J	0.0021 U	0.0021 U	0.0023 U	1.4 J	1.7 J
C1-FLUORANTHENES/PYRENES	1.1 J	1.2 J	1.1 J	0.3 J	0.0021 U	0.0021 U	0.0023 U	1.2 J	0.65 J
C1-FLUORENES	0.5 J	0.23 J	0.21 J	0.26 J	0.0021 U	0.0021 U	0.0023 U	0.091 J	0.16 J
C1-NAPHTHALENES	0.14 J	0.2 J	0.16 J	0.14 J	0.0021 U	0.0021 U	0.0023 U	0.045 J	0.066 J
C1-PHENANTHRENES/ANTHRACENES	0.85 J	1.1 J	0.73 J	0.23 J	0.0021 U	0.0021 U	0.0023 U	0.66 J	0.47 J
C2-CHRYSENES	1.2 J	0.52 J	1.4 J	1 J	0.0021 U	0.0021 U	0.0023 U	0.92 J	0.91 J
C2-FLUORANTHENES/PYRENES	0.8 J	0.9 J	0.85 J	0.16 J	0.0021 U	0.0021 U	0.0023 U	0.72 J	0.42 J
C2-FLUORENES	1 J	0.57 J	0.35 J	0.39 J	0.0021 U	0.0021 U	0.0023 U	0.084 J	0.12 J
C2-NAPHTHALENES	1.6 J	1.9 J	0.76 J	0.29 J	0.0021 U	0.0021 U	0.0023 U	0.12 J	0.18 J
C2-PHENANTHRENES/ANTHRACENES	1.5 J	1.9 J	1.3 J	0.27 J	0.0021 U	0.0021 U	0.0023 U	0.77 J	0.45 J
C3-CHRYSENES	0.89 J	0.25 J	0.37 J	0.34 J	0.0021 U	0.0021 U	0.0023 U	0.23 J	0.24 J
C3-FLUORANTHENES/PYRENES	0.69 J	0.63 J	0.64 J	0.091 J	0.0021 U	0.0021 U	0.0023 U	0.51 J	0.23 J
C3-FLUORENES	1.8 J	0.81 J	0.83 J	0.79 J	0.0021 U	0.0021 U	0.0023 U	0.0094 J	0.34 J
C3-NAPHTHALENES	2.8 J	2.7 J	1.7 J	0.63 J	0.0021 U	0.0021 U	0.0023 U	0.14 J	0.46 J
C3-PHENANTHRENES/ANTHRACENES	1.7 J	1.9 J	1.2 J	0.21 J	0.0021 U	0.0021 U	0.0023 U	0.74 J	0.43 J
C4-CHRYSENES	0.34 J	0.074 J	0.44 J	0.11 J	0.0021 U	0.0021 U	0.0023 U	0.092 J	0.13 J
C4-NAPHTHALENES	5.2 J	3.3 J	1.6 J	0.49 J	0.0021 U	0.0021 U	0.0023 U	0.17 J	0.27 J
C4-PHENANTHRENES/ANTHRACENES	0.88 J	1.7 J	0.83 J	0.14 J	0.0021 U	0.0021 U	0.0023 U	0.0044 U	0.14 J
CHRYSENE	0.86	0.61	0.48	0.37	0.0021 U	0.0021 U	0.0023 U	0.58	0.79
DIBENZ(A,H)ANTHRACENE	0.075	0.058	0.059	0.076	0.0021 U	0.0021 U	0.0023 U	0.079	0.086 U
FLUORANTHENE	0.83	0.91	0.58	0.47	0.0048	0.0046	0.0053	0.61	0.96
FLUORENE	0.13 UJ	0.1 UJ	0.096 UJ	0.034 UJ	0.0021 U	0.0021 U	0.0023 U	0.081	0.086 UJ
INDENO(1,2,3-C,D)PYRENE	0.32	0.26	0.19 J	0.09	0.0021 U	0.0021 U	0.0023 U	0.18	0.19
NAPHTHALENE	0.056	0.051	0.049	0.052	0.0021 U	0.0021 U	0.0023 U	0.024	0.03
PERYLENE	0.13 U	0.1 U	0.096 U	0.034 U	0.0089	0.012	0.0023 U	0.089 U	0.086 U
PHENANTHRENE	0.86	0.61	0.49	0.47	0.0021 U	0.0021 U	0.0043 J	0.39	1
PYRENE	1.1	0.96	0.78	0.68	0.0063	0.0044	0.0052	0.92	1.2
PAHs (total)	7.7 J	6.5 J	4.9 J	3.9 J	0.011	0.009	0.015 J	5.5 J	7.6 J

Key at the end of Table

Table 4-9
Summary of Results of Extended List (34) PAH Analysis

Sample ID	R3-026-V-Z2	R3-026-V-Z3	R3-026-V-Z4	R4-135-C-Z1a	R4-137-C-Com	R4-138-C-Com	R4-139-C-Z1a	R4-141-CR	R4-141-C-Z1a
Sample Date	5/27/2010	5/27/2010	5/27/2010	6/21/2010	6/21/2010	6/21/2010	6/22/2010	6/23/2010	6/23/2010
Sample Depth Range (ft)	1-2	2-3	3-4	0-0.5	0-0.7	0-0.4	0-0.3	0-0.5	0-0.5
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
1-METHYLNAPHTHALENE	0.0046 U	0.026	0.05 U	0.45	0.22	8.9 J	0.045	0.0072 J	0.007 U
2-METHYLNAPHTHALENE	0.014	0.046	0.05 U	0.25	0.2	7.5 J	0.036	0.007 U	0.007 U
ACENAPHTHENE	0.012 J	0.048	0.05 U	1.2 J	0.46	13 J	0.28	0.031	0.023
ACENAPHTHYLENE	0.064	0.09	0.05 U	0.067	0.15	0.65	0.073	0.06	0.046
ANTHRACENE	0.038	0.053 J	0.17	2.2	1.2	5.2	1.8	0.13 J	0.053 J
BENZO(A)ANTHRACENE	0.54	0.56	0.43	1.8	2.6	7.5	1.7	0.5 J	0.21 J
BENZO(A)PYRENE	0.45	0.49	0.27	2.6	1.6	6.8	0.66	0.26 J	0.11 J
BENZO(B)FLUORANTHENE	0.68 J	0.5 J	0.32 J	1.6	1.3	5.2	0.38	0.25 J	0.067 J
BENZO(G,H,I)PERYLENE	0.064	0.21	0.12	2.1	1.5	4.9	0.48	0.2 J	0.079 J
BENZO(K)FLUORANTHENE	0.35	0.29	0.2	1.7	1.4	5.2	0.82	0.24 J	0.095 J
BENZO[E]PYRENE	0.64	0.72	0.35	2.9	2.5	8.1	0.73	0.34 J	0.15 J
C1-CHRYSENES	0.77 J	2.3 J	1.7 J	5.8 J	3.4 J	52 J	1.3 J	0.5 J	0.37 J
C1-FLUORANTHENES/PYRENES	0.36 J	0.62 J	1.1 J	7.1 J	3.1 J	97 J	1.5 J	0.64 J	0.33 J
C1-FLUORENES	0.054 J	0.31 J	0.3 J	0.86 J	0.28 J	4 J	0.1 J	0.046 J	0.057 J
C1-NAPHTHALENES	0.033 J	0.062 J	0.21 J	0.58 J	0.3 J	17 J	0.061 J	0.017 J	0.016 J
C1-PHENANTHRENES/ANTHRACENES	0.13 J	0.41 J	0.96 J	6.5 J	1.6 J	110 J	0.59 J	0.28 J	0.099 J
C2-CHRYSENES	0.45 J	1.7 J	1.1 J	2.8 J	1.9 J	15 J	0.74 J	0.28 J	0.2 J
C2-FLUORANTHENES/PYRENES	0.34 J	0.55 J	0.89 J	2.5 J	1.3 J	32 J	0.57 J	0.27 J	0.16 J
C2-FLUORENES	0.064 J	0.7 J	0.44 J	0.86 J	0.32 J	3.7 J	0.13 J	0.049 J	0.014 J
C2-NAPHTHALENES	0.13 J	0.73 J	1.4 J	1.3 J	0.32 J	26 J	0.1 J	0.029 J	0.029 J
C2-PHENANTHRENES/ANTHRACENES	0.22 J	0.65 J	1.3 J	4 J	1.1 J	56 J	0.33 J	0.22 J	0.085 J
C3-CHRYSENES	0.28 J	0.98 J	0.5 J	1.1 J	0.96 J	8.4 J	0.49 J	0.095 J	0.059 J
C3-FLUORANTHENES/PYRENES	0.24 J	0.75 J	0.73 J	1.2 J	0.68 J	16 J	0.35 J	0.15 J	0.078 J
C3-FLUORENES	0.19 J	1.3 J	1.1 J	0.65 J	0.21 J	3.7 J	0.16 J	0.007 U	0.007 U
C3-NAPHTHALENES	0.11 J	1.4 J	3.2 J	1.4 J	0.39 J	24 J	0.13 J	0.051 J	0.034 J
C3-PHENANTHRENES/ANTHRACENES	0.52 J	1.1 J	0.99 J	2 J	0.73 J	26 J	0.3 J	0.12 J	0.05 J
C4-CHRYSENES	0.13 J	0.32 J	0.23 J	0.01 U	0.1 J	1.5 J	0.083 J	0.078 U	0.007 U
C4-NAPHTHALENES	0.25 J	2.7 J	3.8 J	0.97 J	0.23 J	10 J	0.24 J	0.007 U	0.017 J
C4-PHENANTHRENES/ANTHRACENES	0.2 J	0.59 J	0.53 J	0.74 J	0.27 J	4.6 J	0.2 J	0.07 J	0.007 U
CHRYSENE	0.57	0.72	0.44	2.8	3.7	11	2.2	0.65 J	0.29 J
DIBENZ(A,H)ANTHRACENE	0.026	0.096	0.05 U	0.52	0.63	2.7 J	0.088	0.028	0.019
FLUORANTHENE	0.56	0.5	0.45	3	4	51 J	4.7	0.49	0.24
FLUORENE	0.04	0.055 UJ	0.05 UJ	0.91	0.56	11 J	0.32	0.024	0.035
INDENO(1,2,3-C,D)PYRENE	0.05	0.12	0.05 U	0.63	1.2	4 J	0.44	0.056	0.032
NAPHTHALENE	0.015	0.062	0.05 U	0.13	0.19	5.1 J	0.013	0.0087	0.008
PERYLENE	0.034	0.055 U	0.05 U	0.43	0.82	3.8 J	0.28	0.054	0.036
PHENANTHRENE	0.28	0.52	0.41	3.3	1.9	73 J	2.8	0.25 J	0.076 J
PYRENE	0.67	0.87	0.7	4.2	3.8	44 J	3.2	0.57 J	0.16 J
PAHs (total)	4.4 J	5.1 J	3.5 J	29 J	26 J	250 J	20 J	3.7 J	1.5 J

Key at the end of Table

Table 4-9
Summary of Results of Extended List (34) PAH Analysis

Sample ID	R5-040-V-Z1a	R5-040-V-Z1b	R5-040-V-Z2	R5-040-V-Z3	R5-040-V-Z4	R5-040-V-Z5a	R5-045-VR	R5-045-V-Z1
Sample Date	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010
Sample Depth Range (ft)	0-0.5	0.5-1	1-2	2-3	3-4	40638-5	3-4	0-1
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
1-METHYLNAPHTHALENE	0.015	0.004 U	0.0034 U	0.003 U	0.0031 U	0.002 U	0.0036 U	0.042 J
2-METHYLNAPHTHALENE	0.021	0.0091	0.0034 U	0.003 U	0.0031 U	0.002 U	0.0036 U	0.041 J
ACENAPHTHENE	0.033	0.01	0.0034 U	0.003 U	0.0031 U	0.002 U	0.0036 UJ	0.051
ACENAPHTHYLENE	0.021	0.019	0.017	0.015	0.017	0.0089	0.0036 U	0.02
ANTHRACENE	0.047	0.016	0.013	0.0078	0.017	0.002 U	0.013	0.066 U
BENZO(A)ANTHRACENE	0.11	0.058	0.051	0.038	0.061	0.002 U	0.054	0.45
BENZO(A)PYRENE	0.084	0.034	0.033	0.027	0.045	0.002 U	0.049	0.36
BENZO(B)FLUORANTHENE	0.086 J	0.018	0.0071 J	0.028 J	0.044 J	0.002 UJ	0.066	0.39 J
BENZO(G,H,I)PERYLENE	0.038 J	0.015 J	0.013	0.01	0.016	0.002 U	0.023	0.061
BENZO(K)FLUORANTHENE	0.081	0.029	0.032	0.027	0.043	0.002 U	0.068 J	0.23
BENZO[E]PYRENE	0.07	0.028	0.026	0.022	0.036	0.002 U	0.056 J	0.68 J
C1-CHRYSENES	0.35 J	0.19 J	0.11 J	0.066 J	0.076 J	0.002 U	0.12 J	0.66 J
C1-FLUORANTHENES/PYRENES	0.31 J	0.1 J	0.11 J	0.052 J	0.081 J	0.002 U	0.055 J	0.8 J
C1-FLUORENES	0.054 J	0.042 J	0.031 J	0.015 J	0.0031 U	0.002 U	0.0036 U	0.0066 U
C1-NAPHTHALENES	0.024 J	0.01 J	0.0034 U	0.003 U	0.0031 U	0.002 U	0.0036 U	0.056 J
C1-PHENANTHRENES/ANTHRACENES	0.25 J	0.095 J	0.05 J	0.033 J	0.046 J	0.002 U	0.0036 U	0.46 J
C2-CHRYSENES	0.16 J	0.098 J	0.0034 U	0.003 U	0.0031 U	0.002 U	0.0036 U	0.22 J
C2-FLUORANTHENES/PYRENES	0.19 J	0.087 J	0.073 J	0.053 J	0.051 J	0.002 U	0.0036 U	0.36 J
C2-FLUORENES	0.08 J	0.042 J	0.016 J	0.01 J	0.0031 U	0.002 U	0.0036 U	0.14 J
C2-NAPHTHALENES	0.049 J	0.022 J	0.0095 J	0.0066 J	0.0078 J	0.002 U	0.0036 U	0.13 J
C2-PHENANTHRENES/ANTHRACENES	0.39 J	0.15 J	0.11 J	0.068 J	0.074 J	0.002 U	0.0036 U	0.33 J
C3-CHRYSENES	0.0037 U	0.004 U	0.0034 U	0.003 U	0.0031 U	0.002 U	0.0036 U	0.081 J
C3-FLUORANTHENES/PYRENES	0.13 J	0.058 J	0.06 J	0.032 J	0.034 J	0.002 U	0.0036 U	0.21 J
C3-FLUORENES	0.12 J	0.004 U	0.0034 U	0.003 U	0.0031 U	0.002 U	0.0036 U	0.0066 U
C3-NAPHTHALENES	0.12 J	0.048 J	0.016 J	0.011 J	0.013 J	0.002 U	0.0036 U	0.15 J
C3-PHENANTHRENES/ANTHRACENES	0.32 J	0.16 J	0.12 J	0.073 J	0.064 J	0.002 U	0.0036 U	0.21 J
C4-CHRYSENES	0.0037 U	0.004 U	0.0034 U	0.003 U	0.0031 U	0.002 U	0.0036 U	0.041 J
C4-NAPHTHALENES	0.14 J	0.054 J	0.023 J	0.003 U	0.0031 U	0.002 U	0.0036 U	0.13 J
C4-PHENANTHRENES/ANTHRACENES	0.24 J	0.14 J	0.11 J	0.077 J	0.054 J	0.002 U	0.0036 U	0.081 J
CHRYSENE	0.14	0.08	0.056	0.055	0.084	0.002 U	0.034 J	0.43
DIBENZ(A,H)ANTHRACENE	0.013 J	0.004 U	0.0034 U	0.003 U	0.0031 U	0.002 U	0.015	0.032
FLUORANTHENE	0.22	0.11	0.095	0.06	0.13	0.0041	0.066	0.52
FLUORENE	0.04	0.018	0.0063 J	0.003 U	0.0076	0.002 U	0.0074	0.047
INDENO(1,2,3-C,D)PYRENE	0.034 J	0.014	0.012	0.0098	0.016	0.002 U	0.019	0.07
NAPHTHALENE	0.017	0.011	0.0093	0.0066	0.0031 U	0.002 U	0.0036 U	0.019
PERYLENE	0.028	0.014	0.021	0.019	0.024	0.0048	0.15 J	0.078
PHENANTHRENE	0.16	0.069	0.036	0.025	0.047	0.002 U	0.03	0.38
PYRENE	0.25	0.11	0.11	0.057	0.13	0.0064	0.041	0.57
PAHs (total)	1.4 J	0.61 J	0.49 J	0.37 J	0.66 J	0.019	0.49 J	3.6 J

Key at the end of Table

Table 4-9
Summary of Results of Extended List (34) PAH Analysis

Sample ID	R5-045-V-Z2	R5-045-V-Z3	R5-045-V-Z4	R5-045-V-Z5a	R5-047-V-Z1a	R5-047-V-Z1b	R5-047-V-Z2	R5-047-V-Z3	R5-047-V-Z4
Sample Date	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010
Sample Depth Range (ft)	1-2	2-3	3-4	4.5-5	0-0.5	0.5-1	1-2	2-3	3-4
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)									
1-METHYLNAPHTHALENE	0.0034 U	0.0036 UJ	0.0034 U	0.0032 U	0.0066 U	0.0061 U	0.014	0.011	0.011
2-METHYLNAPHTHALENE	0.0064 J	0.0074 J	0.0034 U	0.0032 U	0.012 J	0.013	0.015	0.019	0.024
ACENAPHTHENE	0.0082 J	0.01	0.0034 U	0.0032 U	0.0066 U	0.0061 U	0.017	0.0081 J	0.0036 U
ACENAPHTHYLENE	0.0097	0.01	0.0034 U	0.0032 U	0.032	0.024	0.03	0.014 J	0.0098
ANTHRACENE	0.04	0.041	0.0086	0.011	0.06	0.07	0.091	0.043	0.044
BENZO(A)ANTHRACENE	0.22	0.22	0.066	0.059	0.37	0.37	0.4	0.19	0.18
BENZO(A)PYRENE	0.17	0.19	0.053 J	0.044 J	0.35	0.35	0.33	0.16	0.12
BENZO(B)FLUORANTHENE	0.24 J	0.2 J	0.062	0.038	0.55 J	0.53 J	0.46 J	0.39 J	0.15 J
BENZO(G,H,I)PERYLENE	0.03	0.032	0.015	0.012	0.12	0.093	0.44 J	0.066	0.037
BENZO(K)FLUORANTHENE	0.12	0.11	0.03 J	0.037	0.26	0.25	0.22	0.11	0.078
BENZO[E]PYRENE	0.38 J	0.36 J	0.04 J	0.039 J	0.77 J	0.79 J	0.74 J	0.31 J	0.21 J
C1-CHRYSENES	0.21 J	0.31 J	0.072 J	0.019 J	0.059 J	0.087 J	0.15 J	0.14 J	0.061 J
C1-FLUORANTHENES/PYRENES	0.17 J	0.34 J	0.041 J	0.0032 U	0.0066 U	0.011 J	0.017 J	0.017 J	0.021 J
C1-FLUORENES	0.026 J	0.017 J	0.0034 U	0.0032 U	0.0066 U	0.0061 U	0.0055 U	0.0041 U	0.0036 U
C1-NAPHTHALENES	0.0064 J	0.01 J	0.0034 U	0.0032 U	0.0066 U	0.0061 U	0.0055 U	0.0077 J	0.0071 J
C1-PHENANTHRENES/ANTHRACENES	0.097 J	0.17 J	0.019 J	0.0032 U	0.0066 U	0.034 J	0.0055 U	0.0041 U	0.097 J
C2-CHRYSENES	0.0034 U	0.12 J	0.0034 U	0.0032 U	0.0066 U	0.0061 U	0.0055 U	0.0041 U	0.0036 U
C2-FLUORANTHENES/PYRENES	0.11 J	0.16 J	0.026 J	0.0032 U	0.0066 U	0.0061 U	0.0055 U	0.0041 U	0.0036 U
C2-FLUORENES	0.026 J	0.059 J	0.0079 J	0.0092 J	0.0066 U	0.0061 U	0.032 J	0.036 J	0.034 J
C2-NAPHTHALENES	0.0034 U	0.024 J	0.0034 U	0.0032 U	0.0066 U	0.0061 U	0.0055 U	0.0041 U	0.0036 U
C2-PHENANTHRENES/ANTHRACENES	0.12 J	0.13 J	0.032 J	0.042 J	0.1 J	0.11 J	0.085 J	0.086 J	0.1 J
C3-CHRYSENES	0.0034 U	0.038 J	0.0034 U	0.0032 U	0.0066 U	0.0061 U	0.0055 U	0.0041 U	0.0036 U
C3-FLUORANTHENES/PYRENES	0.0034 U	0.13 J	0.015 J	0.0092 J	0.0066 U	0.034 J	0.072 J	0.046 J	0.037 J
C3-FLUORENES	0.0034 U	0.0036 U	0.0034 U	0.0032 U	0.0066 U	0.0061 U	0.0055 U	0.0041 U	0.0036 U
C3-NAPHTHALENES	0.0034 U	0.051 J	0.0073 J	0.0032 U	0.019 J	0.016 J	0.028 J	0.031 J	0.027 J
C3-PHENANTHRENES/ANTHRACENES	0.082 J	0.13 J	0.0034 U	0.0032 U	0.0066 U	0.0061 U	0.0055 U	0.0041 U	0.0036 U
C4-CHRYSENES	0.0034 U	0.019 J	0.0034 U	0.0032 U	0.0066 U	0.0061 U	0.0055 U	0.0041 U	0.0036 U
C4-NAPHTHALENES	0.0034 U	0.049 J	0.0034 U	0.0032 U	0.0066 U	0.0061 U	0.0055 U	0.0041 U	0.0036 U
C4-PHENANTHRENES/ANTHRACENES	0.0034 U	0.049 J	0.0034 U	0.0032 U	0.0066 U	0.0061 U	0.0055 U	0.0041 U	0.0036 U
CHRYSENE	0.23	0.21	0.044	0.026	0.42	0.42	0.41	0.21	0.21
DIBENZ(A,H)ANTHRACENE	0.016	0.017	0.0034 U	0.0032 U	0.05	0.031	0.048	0.026	0.016
FLUORANTHENE	0.41	0.24	0.036	0.058	0.63	0.61	0.57	0.28	0.26
FLUORENE	0.018	0.013	0.0067	0.0082	0.024	0.023	0.036	0.021 J	0.021
INDENO(1,2,3-C,D)PYRENE	0.026	0.038	0.011	0.011	0.11	0.08	0.45 J	0.054	0.031
NAPHTHALENE	0.0066 J	0.0036 U	0.0034 U	0.0032 U	0.015	0.014	0.015	0.021	0.031
PERYLENE	0.014	0.095	0.06 J	0.16	0.055	0.044	0.071	0.054	0.044
PHENANTHRENE	0.11	0.11	0.026	0.053	0.21	0.21	0.28	0.1	0.12
PYRENE	0.4	0.26	0.029 J	0.046 J	0.51	0.52	0.53	0.25	0.22
PAHs (total)	2.1 J	1.7 J	0.39 J	0.4 J	3.7 J	3.6 J	4.3 J	1.9 J	1.5 J

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Table 4-9
Summary of Results of Extended List (34) PAH Analysis

Sample ID	R5-050-VR	R5-050-V-Z1a	R5-050-V-Z1b	R5-050-V-Z2	R5-050-V-Z3	R5-050-V-Z4	R5-050-V-Z5a
Sample Date	5/21/2010	5/21/2010	5/21/2010	5/21/2010	5/21/2010	5/21/2010	5/21/2010
Sample Depth Range (ft)	1-2	0-0.5	0.5-1	1-2	2-3	3-4	4-4.5
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)							
1-METHYLNAPHTHALENE	0.023 J	0.0053 UJ	0.0053 UJ	0.015 J	0.24 UJ	0.057 J	0.011 J
2-METHYLNAPHTHALENE	0.013 J	0.0053 UJ	0.0053 UJ	0.025 J	0.09 J	0.068 J	0.017 J
ACENAPHTHENE	0.015 J	0.009 J	0.0053 UJ	0.033 J	0.094 J	0.069 J	0.024 J
ACENAPHTHYLENE	0.047 J	0.044 J	0.02 J	0.044 J	0.075 J	0.057 J	0.0032 UJ
ANTHRACENE	0.0042 UJ	0.031 J	0.039 J	0.1 J	0.0048 UJ	0.073 J	0.16 UJ
BENZO(A)ANTHRACENE	0.63 J	0.21 J	0.2 J	0.45 J	0.81 J	1.5 J	0.41 J
BENZO(A)PYRENE	0.01 J	0.27 J	0.25 J	0.65 J	0.65 J	1.5 J	0.35 J
BENZO(B)FLUORANTHENE	0.0042 UJ	0.15 J	0.13 J	0.31 J	0.56 J	0.92 J	0.16 UJ
BENZO(G,H,I)PERYLENE	0.0042 UJ	0.078 J	0.068 J	0.095 J	0.24 UJ	0.48 UJ	0.16 UJ
BENZO(K)FLUORANTHENE	0.014 J	0.22 J	0.21 J	0.35 J	0.52 J	0.93 J	0.33 J
BENZO[E]PYRENE	0.0042 UJ	0.22 J	0.2 J	0.75 J	0.56 J	1.9 J	0.52 J
C1-CHRYSENES	0.42 J	0.19 J	0.13 J	1.3 J	0.95 J	2.7 J	0.35 J
C1-FLUORANTHENES/PYRENES	0.0042 UJ	0.17 J	0.14 J	1.2 J	0.66 J	0.52 J	0.43 J
C1-FLUORENES	0.011 J	0.0053 UJ	0.029 J	0.0047 UJ	0.49 J	0.28 J	0.078 J
C1-NAPHTHALENES	0.0087 J	0.0072 J	0.0076 J	0.035 J	0.15 J	0.096 J	0.023 J
C1-PHENANTHRENES/ANTHRACENES	0.0042 UJ	0.064 J	0.052 J	0.18 J	2.7 J	1 J	0.35 J
C2-CHRYSENES	0.017 J	0.084 J	0.0053 UJ	0.73 J	1.1 J	3.5 J	0.28 J
C2-FLUORANTHENES/PYRENES	0.0042 UJ	0.14 J	0.12 J	1.1 J	0.64 J	0.61 J	0.32 J
C2-FLUORENES	0.092 J	0.0053 UJ	0.014 J	0.77 J	2.4 J	1.8 J	0.45 J
C2-NAPHTHALENES	0.0042 UJ	0.02 J	0.023 J	0.12 J	1.8 J	1.1 J	0.053 J
C2-PHENANTHRENES/ANTHRACENES	0.0042 UJ	0.07 J	0.051 J	0.8 J	2.2 J	0.96 J	0.66 J
C3-CHRYSENES	0.0089 J	0.0053 UJ	0.0053 UJ	0.47 J	1 J	2.8 J	0.28 J
C3-FLUORANTHENES/PYRENES	0.0042 UJ	0.082 J	0.054 J	0.71 J	0.53 J	0.62 J	0.25 J
C3-FLUORENES	0.022 J	0.0053 UJ	0.0053 UJ	1.7 J	3 J	2.7 J	0.72 J
C3-NAPHTHALENES	0.11 J	0.02 J	0.021 J	0.9 J	7.4 J	2.7 J	0.38 J
C3-PHENANTHRENES/ANTHRACENES	0.0042 UJ	0.053 J	0.0053 UJ	1.1 J	2.4 J	1.3 J	0.85 J
C4-CHRYSENES	0.0042 UJ	0.0053 UJ	0.0053 UJ	0.16 J	0.75 J	1.5 J	0.086 J
C4-NAPHTHALENES	0.033 J	0.0053 UJ	0.052 J	2.4 J	7.6 J	4.2 J	0.72 J
C4-PHENANTHRENES/ANTHRACENES	0.0042 UJ	0.0053 UJ	0.0053 UJ	0.65 J	2.3 J	1.2 J	0.75 J
CHRYSENE	0.92 J	0.27 J	0.25 J	0.62 J	1.3 J	2.3 J	0.63 J
DIBENZ(A,H)ANTHRACENE	0.0042 UJ	0.029 J	0.024 J	0.034 J	0.24 UJ	0.48 UJ	0.16 UJ
FLUORANTHENE	0.0042 UJ	0.44 J	0.41 J	0.67 J	2.2 J	0.48 UJ	1 J
FLUORENE	0.051 J	0.026 J	0.012 J	0.037 J	0.24 UJ	0.48 UJ	0.16 UJ
INDENO(1,2,3-C,D)PYRENE	0.0042 UJ	0.065 J	0.06 J	0.075 J	0.24 UJ	0.48 UJ	0.16 UJ
NAPHTHALENE	0.016 J	0.0064 J	0.0077 J	0.016 J	0.035 J	0.038 J	0.016 J
PERYLENE	0.0042 UJ	0.033 J	0.046 J	0.13 J	0.24 UJ	0.48 UJ	0.16 UJ
PHENANTHRENE	0.0042 UJ	0.1 J	0.1 J	0.086 J	1.4 J	0.94 J	0.16 UJ
PYRENE	0.6 J	0.25 J	0.22 J	0.42 J	1.2 J	1.2 J	0.6 J
PAHs (total)	2.3 J	2.2 J	2 J	4 J	8.8 J	9.5 J	3.4 J

Key at the end of Table

Table 4-9
Summary of Results of Extended List (34) PAH Analysis

Sample ID	R6-144-C-Z1a	R6-146-C-Z1a	R6-149-C-Comp	R6-151-C-Comp	R6-153-C-Comp	R6-154-C-Z1a	R6-156-C-Comp	R6-158-CR
Sample Date	7/2/2010	7/2/2010	7/1/2010	7/2/2010	7/2/2010	7/1/2010	7/1/2010	7/1/2010
Sample Depth Range (ft)	0-0.5	0-0.5	0-0.9	0-0.7	0-0.5	0-0.5	0-0.7	0-0.5
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
1-METHYLNAPHTHALENE	0.009 UJ	0.02	0.0071 J	0.0078 J	0.018 J	0.0073 J	0.019 J	0.005 UJ
2-METHYLNAPHTHALENE	0.049 U	0.047	0.007	0.0087 J	0.019	0.0085	0.019	0.005 U
ACENAPHTHENE	0.0091 J	0.052	0.015	0.013 J	0.033	0.014	0.063	0.0055 J
ACENAPHTHYLENE	0.022	0.079 J	0.023	0.038 J	0.1 J	0.037	0.05	0.012
ANTHRACENE	0.043	0.18	0.11	0.049 J	0.11	0.057	0.24	0.064 J
BENZO(A)ANTHRACENE	0.12	0.7	0.18	0.2	0.38	0.22	0.28	0.083 J
BENZO(A)PYRENE	0.081	0.18	0.061	0.055 J	0.13	0.077	0.12	0.037
BENZO(B)FLUORANTHENE	0.11 J	0.15	0.081	0.059 J	0.2	0.1	0.077	0.034
BENZO(G,H,I)PERYLENE	0.065	0.2	0.048	0.062	0.074	0.068 J	0.099	0.03 J
BENZO(K)FLUORANTHENE	0.053	0.15	0.061	0.064 J	0.13	0.081	0.12	0.042
BENZO[E]PYRENE	0.064	0.4	0.067	0.12	0.19	0.13	0.12	0.049
C1-CHRYSENES	0.18 J	1.4 J	0.27 J	0.19 J	0.5 J	0.27 J	0.64 J	0.15 J
C1-FLUORANTHENES/PYRENES	0.21 J	1.5 J	0.29 J	0.23 J	0.77 J	0.28 J	0.79 J	0.22 J
C1-FLUORENES	0.028 J	0.23 J	0.035 J	0.041 J	0.077 J	0.038 J	0.085 J	0.034 J
C1-NAPHTHALENES	0.011 J	0.055 J	0.013 J	0.013 J	0.028 J	0.013 J	0.029 J	0.0062 J
C1-PHENANTHRENES/ANTHRACENES	0.091 J	0.32 J	0.17 J	0.12 J	0.4 J	0.11 J	0.38 J	0.097 J
C2-CHRYSENES	0.079 J	2.1 J	0.13 J	0.12 J	0.2 J	0.12 J	0.37 J	0.073 J
C2-FLUORANTHENES/PYRENES	0.084 J	1.4 J	0.11 J	0.1 J	0.32 J	0.12 J	0.33 J	0.09 J
C2-FLUORENES	0.037 J	0.37 J	0.034 J	0.008 U	0.096 J	0.007 U	0.11 J	0.005 U
C2-NAPHTHALENES	0.014 J	0.24 J	0.027 J	0.03 J	0.06 J	0.04 J	0.087 J	0.009 J
C2-PHENANTHRENES/ANTHRACENES	0.068 J	0.8 J	0.13 J	0.075 J	0.31 J	0.1 J	0.32 J	0.069 J
C3-CHRYSENES	0.058 J	1.2 J	0.11 J	0.075 J	0.16 J	0.094 J	0.18 J	0.05 J
C3-FLUORANTHENES/PYRENES	0.06 J	1.2 J	0.099 J	0.066 J	0.25 J	0.11 J	0.3 J	0.067 J
C3-FLUORENES	0.009 U	1.4 J	0.006 U	0.008 U	0.008 U	0.007 U	0.006 U	0.005 U
C3-NAPHTHALENES	0.03 J	0.48 J	0.038 J	0.025 J	0.087 J	0.033 J	0.091 J	0.022 J
C3-PHENANTHRENES/ANTHRACENES	0.036 J	1.4 J	0.055 J	0.059 J	0.18 J	0.057 J	0.25 J	0.043 J
C4-CHRYSENES	0.009 U	0.52 J	0.006 U	0.032 J	0.047 J	0.007 U	0.048 J	0.005 U
C4-NAPHTHALENES	0.021 J	0.95 J	0.026 J	0.017 J	0.049 J	0.026 J	0.095 J	0.017 J
C4-PHENANTHRENES/ANTHRACENES	0.038 J	1.1 J	0.006 U	0.008 U	0.079 J	0.052 J	0.1 J	0.032 J
CHRYSENE	0.21	1.1	0.27	0.3	0.5	0.29	0.4	0.12 J
DIBENZ(A,H)ANTHRACENE	0.026	0.072	0.026	0.028	0.038	0.047	0.062	0.015
FLUORANTHENE	0.37	0.95	0.43	0.42	0.58	0.3	0.7	0.21
FLUORENE	0.013	0.068	0.017	0.025 J	0.048	0.015	0.064	0.0078 J
INDENO(1,2,3-C,D)PYRENE	0.059	0.096	0.043	0.059	0.076	0.08 J	0.078	0.026
NAPHTHALENE	0.009 U	0.027	0.0079	0.0086 J	0.013	0.0089	0.034	0.005 U
PERYLENE	0.04	0.068	0.04	0.041	0.055	0.062	0.048	0.019 J
PHENANTHRENE	0.12	0.32	0.19	0.17	0.33	0.18	0.43	0.083 J
PYRENE	0.22	1.2	0.3	0.4	0.73	0.35	0.4	0.13 J
PAHs (total)	1.5 J	5.5 J	1.9 J	2 J	3.5 J	1.9 J	3.2 J	0.9 J

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Table 4-9
Summary of Results of Extended List (34) PAH Analysis

Sample ID	R6-158-C-Z1a	R6-161-C-Z1a	R6-163-C-Z1a	R6-165-C-Z1a	R6-168-C-Z1a	R6-170-C-Z1a	R6-171-C-Z1a	R7-172-C-Z1a
Sample Date	7/1/2010	7/1/2010	6/30/2010	6/30/2010	6/30/2010	6/25/2010	6/25/2010	6/25/2010
Sample Depth Range (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
1-METHYLNAPHTHALENE	0.0063 J	0.032	0.004 U	0.009 U	0.009 U	0.008 U	0.0097	0.068
2-METHYLNAPHTHALENE	0.0066	0.047	0.0049	0.009 U	0.009 J	0.0075 J	0.012	0.064
ACENAPHTHENE	0.018 J	0.11	0.007	0.014	0.017	0.012	0.028	0.72
ACENAPHTHYLENE	0.02	0.081	0.019	0.033	0.038	0.019	0.029	0.2
ANTHRACENE	0.15 J	0.32	0.025	0.067	0.047	0.053	0.092	2.9
BENZO(A)ANTHRACENE	0.19 J	0.36	0.057	0.21	0.2	0.77	1.2 J	3.7
BENZO(A)PYRENE	0.069	0.16	0.024	0.089 J	0.089 J	0.51	0.55	3.1
BENZO(B)FLUORANTHENE	0.07	0.15	0.025	0.12	0.14	0.54	0.3	1
BENZO(G,H,I)PERYLENE	0.064 J	0.12	0.019	0.12	0.11	0.21	0.24	1.3
BENZO(K)FLUORANTHENE	0.053	0.17	0.027	0.099	0.1	0.54	0.53	2.5
BENZO[E]PYRENE	0.084	0.2	0.034	0.13	0.11	0.62	0.65	3.2
C1-CHRYSENES	0.41 J	0.67 J	0.063 J	0.35 J	0.28 J	0.29 J	0.5 J	5.1 J
C1-FLUORANTHENES/PYRENES	0.43 J	0.93 J	0.086 J	0.35 J	0.25 J	0.31 J	0.5 J	3.6 J
C1-FLUORENES	0.039 J	0.089 J	0.015 J	0.032 J	0.009 U	0.029 J	0.06 J	0.45 J
C1-NAPHTHALENES	0.0096 J	0.059 J	0.0089 J	0.011 J	0.012 J	0.01 J	0.015 J	0.094 J
C1-PHENANTHRENES/ANTHRACENES	0.29 J	0.59 J	0.049 J	0.17 J	0.11 J	0.15 J	0.28 J	1.9 J
C2-CHRYSENES	0.22 J	0.44 J	0.034 J	0.15 J	0.15 J	0.15 J	0.25 J	2.4 J
C2-FLUORANTHENES/PYRENES	0.2 J	0.37 J	0.035 J	0.14 J	0.11 J	0.11 J	0.19 J	1.5 J
C2-FLUORENES	0.095 J	0.12 J	0.031 J	0.009 U	0.009 U	0.029 J	0.066 J	0.79 J
C2-NAPHTHALENES	0.02 J	0.091 J	0.012 J	0.021 J	0.026 J	0.016 J	0.022 J	0.3 J
C2-PHENANTHRENES/ANTHRACENES	0.22 J	0.33 J	0.027 J	0.13 J	0.083 J	0.11 J	0.21 J	1.8 J
C3-CHRYSENES	0.13 J	0.18 J	0.026 J	0.092 J	0.11 J	0.081 J	0.075 J	0.82 J
C3-FLUORANTHENES/PYRENES	0.21 J	0.27 J	0.02 J	0.11 J	0.1 J	0.08 J	0.13 J	0.87 J
C3-FLUORENES	0.005 U	0.005 U	0.004 U	0.009 U	0.009 U	0.008 U	0.009 U	1.2 J
C3-NAPHTHALENES	0.038 J	0.1 J	0.016 J	0.026 J	0.025 J	0.019 J	0.042 J	1.4 J
C3-PHENANTHRENES/ANTHRACENES	0.12 J	0.15 J	0.014 J	0.071 J	0.061 J	0.062 J	0.13 J	1.2 J
C4-CHRYSENES	0.059 J	0.053 J	0.004 U	0.009 U	0.048 J	0.008 U	0.009 U	0.007 U
C4-NAPHTHALENES	0.022 J	0.092 J	0.004 U	0.018 J	0.009 U	0.018 J	0.033 J	1 J
C4-PHENANTHRENES/ANTHRACENES	0.048 J	0.058 J	0.004 U	0.009 U	0.05 J	0.008 U	0.06 J	0.38 J
CHRYSENE	0.29 J	0.54	0.078	0.33	0.34	0.47	1.3	5.1
DIBENZ(A,H)ANTHRACENE	0.031	0.072	0.01	0.062	0.054	0.038	0.062	0.8
FLUORANTHENE	0.43	1	0.16	0.54	0.73	0.5	0.77	7.1
FLUORENE	0.022 J	0.19	0.0075	0.017	0.019	0.022	0.038	0.41
INDENO(1,2,3-C,D)PYRENE	0.045	0.1	0.017	0.094 J	0.11 J	0.066	0.21	1
NAPHTHALENE	0.0056	0.051	0.0049	0.011	0.011	0.0079 J	0.011	0.062
PERYLENE	0.044 J	0.062	0.017	0.079	0.068	0.043	0.069	0.92
PHENANTHRENE	0.24 J	0.78	0.064	0.18	0.23	0.28	0.43	5.3
PYRENE	0.28 J	0.57	0.075	0.32	0.32	0.47	0.74	6.9
PAHs (total)	2 J	4.8 J	0.62 J	2.3 J	2.6 J	4.5 J	6.5 J	42 J

Key at the end of Table

Table 4-9
Summary of Results of Extended List (34) PAH Analysis

Sample ID	R7-174-C-Z1a	R7-176-C-Z1a	R7-178-C-Z1a	R7-180-C-Z1a	R7-182-C-COMP	R7-184-C-Comp	R7-186-C-Z1a	R7-190-C-Comp
Sample Date	6/25/2010	6/24/2010	6/24/2010	6/23/2010	7/1/2010	6/30/2010	6/30/2010	6/30/2010
Sample Depth Range (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.8	0-0.75	0-0.5	0-0.7
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
1-METHYLNAPHTHALENE	0.018	0.053	0.072	0.24	0.0058	0.042	0.061	0.04
2-METHYLNAPHTHALENE	0.025	0.047	0.071	0.16	0.012	0.045	0.055	0.041
ACENAPHTHENE	0.046	0.13 J	0.14 J	0.86	0.012	0.16	0.21	0.1
ACENAPHTHYLENE	0.17 J	0.15	0.25 J	0.17	0.031	0.19	0.22	0.17
ANTHRACENE	0.27	0.52	0.41	2.7	0.032	0.49	1.4	0.52
BENZO(A)ANTHRACENE	0.33	2.3	1.1	3.3	0.14	2	1.9	1.5
BENZO(A)PYRENE	0.37	0.91	0.51	1.7	0.052	0.2	0.51	0.3
BENZO(B)FLUORANTHENE	0.28	0.82	0.59	1.1 J	0.064 J	0.3	0.38	0.23
BENZO(G,H,I)PERYLENE	0.38	0.66	0.4	1.5	0.042	0.18	0.37	0.22
BENZO(K)FLUORANTHENE	0.24	1	0.56	1.3	0.048 J	0.21	0.57	0.29
BENZO[E]PYRENE	0.42	1.2	0.64	1.9	0.061	0.28	0.59	0.38
C1-CHRYSENES	0.9 J	2.6 J	2.1 J	6.5 J	0.22 J	1.2 J	2.8 J	1.9 J
C1-FLUORANTHENES/PYRENES	1.2 J	2.5 J	1.9 J	9.1 J	0.19 J	1.8 J	2.2 J	1.7 J
C1-FLUORENES	0.1 J	0.26 J	0.3 J	0.74 J	0.026 J	0.23 J	0.3 J	0.15 J
C1-NAPHTHALENES	0.041 J	0.083 J	0.092 J	0.33 J	0.016 J	0.063 J	0.084 J	0.06 J
C1-PHENANTHRENES/ANTHRACENES	0.43 J	1 J	0.81 J	8.2 J	0.093 J	0.91 J	1.3 J	0.81 J
C2-CHRYSENES	0.41 J	1.2 J	0.87 J	3.4 J	0.14 J	0.67 J	1.5 J	0.97 J
C2-FLUORANTHENES/PYRENES	0.52 J	1.1 J	0.8 J	3.4 J	0.079 J	0.8 J	0.9 J	0.74 J
C2-FLUORENES	0.011 U	0.34 J	0.35 J	0.9 J	0.081 J	0.42 J	0.48 J	0.34 J
C2-NAPHTHALENES	0.074 J	0.17 J	0.2 J	0.94 J	0.026 J	0.15 J	0.16 J	0.09 J
C2-PHENANTHRENES/ANTHRACENES	0.31 J	0.88 J	0.65 J	5.3 J	0.085 J	0.9 J	0.9 J	0.67 J
C3-CHRYSENES	0.15 J	0.57 J	0.48 J	1.3 J	0.075 J	0.33 J	0.61 J	0.45 J
C3-FLUORANTHENES/PYRENES	0.32 J	0.59 J	0.57 J	2.1 J	0.051 J	0.65 J	0.71 J	0.52 J
C3-FLUORENES	0.011 U	0.013 U	0.015 U	1.2 J	0.005 U	0.72 J	0.49 J	0.42 J
C3-NAPHTHALENES	0.096 J	0.22 J	0.26 J	1.7 J	0.056 J	0.64 J	0.29 J	0.18 J
C3-PHENANTHRENES/ANTHRACENES	0.26 J	0.64 J	0.44 J	2.7 J	0.059 J	0.89 J	0.47 J	0.38 J
C4-CHRYSENES	0.011 U	0.013 U	0.015 U	0.01 U	0.033 J	0.13 J	0.14 J	0.096 J
C4-NAPHTHALENES	0.011 U	0.26 J	0.31 J	0.76 J	0.1 J	0.88 J	0.27 J	0.2 J
C4-PHENANTHRENES/ANTHRACENES	0.15 J	0.25 J	0.18 J	0.98 J	0.034 J	0.49 J	0.23 J	0.18 J
CHRYSENE	0.49	3.2	1.4	4.2	0.21	2.9	2.6	2.2
DIBENZ(A,H)ANTHRACENE	0.23	0.31	0.2	0.51	0.023	0.078	0.23	0.13
FLUORANTHENE	0.66	3.9	5.2	5.5	0.35	5.3	4.3	3.8
FLUORENE	0.059	0.18	0.15	0.67	0.017	0.14	0.23	0.14
INDENO(1,2,3-C,D)PYRENE	0.33	0.54	0.33	0.81	0.037	0.15	0.31	0.19
NAPHTHALENE	0.021	0.044	0.1	0.093	0.0099	0.046	0.045	0.046
PERYLENE	0.21 J	0.38	0.23	0.51	0.045	0.11	0.18	0.11
PHENANTHRENE	0.47	1.9	1.1	5	0.16	2.6	2.3	1.8
PYRENE	0.62 J	4.2	4.3	6.1	0.24 J	3.4	2.6	2.4
PAHs (total)	5 J	21 J	17 J	36 J	1.5 J	18 J	18 J	14 J

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Table 4-9
Summary of Results of Extended List (34) PAH Analysis

Sample ID	R7-191-C-Z1a	R7-193-C-Z1a	R7-194-C-Comp	R7-200-C-Z1a	R7-201-T-Comp	R7-202-T-Z1a	R7-203-T-Z1a	R7-205-T-Z1a
Sample Date	6/29/2010	6/29/2010	6/29/2010	6/28/2010	6/25/2010	6/29/2010	6/29/2010	6/29/2010
Sample Depth Range (ft)	0-0.5	0-0.5	0-0.6	0-0.5	0-1.1	0-0.5	0-0.5	0-0.5
SVOAs by MC SVOA (LS) and (SIMS) (mg/kg)								
1-METHYLNAPHTHALENE	0.041	0.088	0.35	0.009	0.006 U	0.011 U	0.015	0.018
2-METHYLNAPHTHALENE	0.044	0.075	0.29	0.0079	0.006 U	0.011 U	0.014	0.017
ACENAPHTHENE	0.11	0.25	1.1	0.026	0.006 U	0.011 U	0.063	0.056
ACENAPHTHYLENE	0.1	0.23	0.31	0.014	0.0059 J	0.011 U	0.035	0.058
ANTHRACENE	0.63	1.7	1.7 J	0.045	0.012	0.011	0.34	0.56
BENZO(A)ANTHRACENE	4.8	4.2	9.3	0.076	0.039	0.2	0.7	0.75
BENZO(A)PYRENE	0.57	0.69	8.9	0.081	0.019	0.054	0.27	0.14
BENZO(B)FLUORANTHENE	0.5	0.45	0.94	0.13 J	0.029	0.07	0.22	0.13
BENZO(G,H,I)PERYLENE	0.48	0.55	1.3	0.057	0.006 U	0.029	0.27	0.14
BENZO(K)FLUORANTHENE	0.71	3.6	1.5	0.07	0.018	0.058	0.36	0.19
BENZO[E]PYRENE	0.72	4.5	10	0.1	0.023	0.071	0.34	0.19
C1-CHRYSENES	1.6 J	2.2 J	8.2 J	0.25 J	0.073 J	0.27 J	0.69 J	0.31 J
C1-FLUORANTHENES/PYRENES	1.9 J	2.8 J	1.8 J	0.43 J	0.082 J	0.1 J	0.73 J	0.62 J
C1-FLUORENES	0.17 J	0.15 J	0.67 J	0.053 J	0.045 J	0.011 U	0.037 J	0.032 J
C1-NAPHTHALENES	0.062 J	0.12 J	0.39 J	0.02 J	0.006 U	0.011 U	0.024 J	0.027 J
C1-PHENANTHRENES/ANTHRACENES	1.2 J	1.9 J	1.5 J	0.18 J	0.029 J	0.018 J	0.33 J	0.29 J
C2-CHRYSENES	0.62 J	1.1 J	4.1 J	0.12 J	0.006 U	0.011 U	0.28 J	0.21 J
C2-FLUORANTHENES/PYRENES	0.74 J	1.1 J	0.72 J	0.16 J	0.04 J	0.095 J	0.35 J	0.29 J
C2-FLUORENES	0.4 J	0.34 J	0.98 J	0.032 J	0.006 U	0.011 U	0.12 J	0.005 U
C2-NAPHTHALENES	0.091 J	0.14 J	0.87 J	0.027 J	0.006 U	0.01 J	0.023 J	0.027 J
C2-PHENANTHRENES/ANTHRACENES	0.86 J	1.4 J	1 J	0.15 J	0.02 J	0.018 J	0.15 J	0.11 J
C3-CHRYSENES	0.35 J	0.38 J	1.5 J	0.04 J	0.006 U	0.011 U	0.15 J	0.096 J
C3-FLUORANTHENES/PYRENES	0.68 J	0.74 J	0.39 J	0.088 J	0.006 U	0.038 J	0.21 J	0.16 J
C3-FLUORENES	0.012 U	0.007 U	0.92 J	0.005 U	0.006 U	0.011 U	0.008 U	0.005 U
C3-NAPHTHALENES	0.16 J	0.23 J	1.1 J	0.049 J	0.006 U	0.011 U	0.039 J	0.041 J
C3-PHENANTHRENES/ANTHRACENES	0.46 J	0.79 J	0.6 J	0.097 J	0.006 U	0.011 U	0.07 J	0.048 J
C4-CHRYSENES	0.012 U	0.053 J	0.36 J	0.005 U	0.006 U	0.011 U	0.008 U	0.066 J
C4-NAPHTHALENES	0.16 J	0.16 J	0.71 J	0.005 U	0.006 U	0.011 U	0.019 J	0.005 U
C4-PHENANTHRENES/ANTHRACENES	0.18 J	0.28 J	0.21 J	0.005 U	0.006 U	0.011 U	0.008 U	0.005 U
CHRYSENE	2.1 J	5.8	13	0.11	0.057	0.3	1.7	1.1
DIBENZ(A,H)ANTHRACENE	0.25	0.3	0.86	0.023	0.006 U	0.013	0.14	0.066
FLUORANTHENE	4.5	4.9	8.8	0.18	0.042	0.051	2.2	2.8
FLUORENE	0.2	0.3	0.93	0.033	0.006 U	0.011 U	0.079	0.081
INDENO(1,2,3-C,D)PYRENE	0.41	0.44	0.99	0.035	0.0079	0.026	0.23	0.12
NAPHTHALENE	0.053	0.066	0.21	0.01	0.006 U	0.011 U	0.018	0.02
PERYLENE	0.3	0.37	0.61	0.04	0.05	0.031	0.13	0.076
PHENANTHRENE	2.6	4.3	8.3	0.039	0.021	0.022	1.4	1.3
PYRENE	4.1	4.1	11	0.13	0.033	0.058	1.5	1
PAHs (total)	22 J	32 J	69 J	1.1 J	0.28 J	0.89 J	9.5 J	8.5 J

Key at the end of Table

Table 4-9
Summary of Results of Extended List (34) PAH Analysis

Key:

-C =	Hand-core creek location/sample.
-Comp =	Hand-core creek composite sample.
-CR=	Hand-core creek duplicate sample.
ft =	Feet.
J =	Estimated at the concentration listed.
mg/Kg =	Milligrams per kilogram.
SVOA =	Semivoloatile organic compounds analysis.
-T =	Tributary location/sample.
U =	Non-detect.
-V =	Vibracore creek location/sample.
-VR =	Vibracore creek duplicate sample.
-Z =	Sample depth interval consecutively numbered.

Table 4-10
Summary of Results of AVS/SEM Analysis

	Reach 2		Reach 3				Reach 4				
Sample ID	**R2-002-V-Z1P**	**R2-005-V-Z1P**	**R3-016-V-Z1**	**R3-018-V-Z1**	**R3-020-V-Z1**	**R3-027-V-Z1**	**R4-028-C**	**R4-030-C**	**R4-031-C**	**R4-034-C**	**R4-119-T**
Sample Date	**05/18/10**	**05/19/10**	**05/26/10**	**05/25/10**	**05/26/10**	**05/27/10**	**11/17/09**	**11/16/09**	**11/16/09**	**11/17/09**	**11/17/09**
Sample depth (ft):	**0 - 1**	**0 - 1**	**0 - 1**	**0 - 1**	**0 - 1**	**0 - 1**	**0 - 1.55**	**0 - 1.1**	**0 - 0.8**	**0 - 0.4**	**0 - 0.5**
AVS (µmole/g)											
Sulfide	0.4873	3.3583	4.732	5.0498	4.167	0.8616	20.8	15.3	61.1	4.1	2.1
SEM by SW6010B (µmole/g)											
Cadmium	0.0125 J	0.0107 J	0.0302 J	0.0116 J	0.0249 J	0.0125 J	0.014 J	0.002 J	0.032	0.0017 J	0.00059 J
Copper	0.2486 J	0.3619	0.0346 J	0.1007 J	0.2298 J	1.506	0.013 J	0.12 J	0.006 J	0.23	0.011 J
Lead	0.7577	0.6226	2.0415	0.7143	0.8736	0.8929	1	0.23	4.2	0.24	0.024
Nickel	0.1925 J	0.1499 J	1.1211	0.1823 J	0.2454 J	0.2709 J	0.84	0.22 J	1.1	0.14 J	0.013 J
Silver	0.0797 U	0.0695 U	0.0816 U	0.0667 U	0.0658 U	0.0566 U	0.048 U	0.04 U	0.06 U	0.038 U	0.031 U
Zinc	5.8428	5.1086	25.8489	7.9688	8.3665	7.6476	15.6	2.8	64.5	2	0.1

Key at the end of Table

Table 4-10
Summary of Results of AVS/SEM Analysis

	Reach 5					Reach 6					Reach 7	
Sample ID	**R5-044-V-Z1**	**R5-050-V-Z1**	**R5-116-W**	**R6-051-C**	**R6-051-CR**	**R6-052-C**	**R6-053-C**	**R6-055-C**	**R6-058-C**	**R6-061-C**	**R7-068-C**	**R7-068-CR**
Sample Date	**05/20/10**	**05/21/10**	**11/19/09**	**11/19/09**	**11/19/09**	**11/19/09**	**11/19/09**	**11/17/09**	**11/18/09**	**11/18/09**	**11/25/09**	**11/25/09**
Sample depth (ft):	**0 - 1**	**0 - 1**	**0 - 0.5**	**0 - 1.2**	**0 - 1.2**	**0 - 1.3**	**0 - 1.2**	**0 - 1.1**	**0 - 2.2**	**0 - 4**	**0 - 2.1**	**0 - 2.1**
AVS (µmole/g)												
Sulfide	9.358	17.586	1.8	9	44.6	37.4	54.6	26.1	11.6	15.3	61.7	48.6
SEM by SW6010B (µmole/g)												
Cadmium	0.0347 J	0.024 J	0.017 J	0.004 J	0.0041 J	0.023 J	0.0059 J	0.0056 J	0.0098 J	0.0054 J	0.034 J	0.027 J
Copper	0.0692 J	0.0614 J	2.5	0.54	0.53	0.29 U	0.047 J	0.087 J	0.4	0.066 J	0.32 U	0.0036 J
Lead	3.8224	1.5154	1.3	0.45	0.42	6.3	0.84	0.72	0.97	0.44	3.7	3.6
Nickel	1.0939	0.5895	0.47 J	0.14 J	0.16 J	0.99	0.29 J	0.29 J	0.18 J	0.18 J	1.1	0.97
Silver	0.0946 U	0.0658 U	0.0029 J	0.067 U	0.07 U	0.069 U	0.096 U	0.064 U	0.068 U	0.066 U	0.075 U	0.062 U
Zinc	42.9795	13.8422	7.9	2.8	2.9	21.7	6.7	5.6	5.9	4.5	45.4	41.1

Key at the end of Table

Table 4-10
Summary of Results of AVS/SEM Analysis

	Reach 7											
Sample ID	**R7-073-C**	**R7-075-C**	**R7-083-C**	**R7-085-C**	**R7-087-C**	**R7-089-C**	**R7-093-C**	**R7-094-C**	**R7-095-C**	**R7-095-CR**	**R7-099-C**	**R7-100-C**
Sample Date	**11/24/09**	**11/24/09**	**11/30/09**	**11/30/09**	**11/30/09**	**11/25/09**	**11/24/09**	**11/23/09**	**11/23/09**	**11/23/09**	**11/23/09**	**11/23/09**
Sample depth (ft):	**0 - 2.4**	**0 - 2.1**	**0 - 3.3**	**0 - 1.6**	**0 - 2.1**	**0 - 2.9**	**0 - 0.9**	**0 - 1**	**0 - 1.3**	**0 - 1.3**	**0 - 1.3**	**0 - 1.2**
AVS (µmole/g)												
Sulfide	35.2	41.5	32.1	22.9	27.7	19	19.9	49.6	11.1	9.3	35.9	7.2
SEM by SW6010B (µmole/g)												
Cadmium	0.016 J	0.034 J	0.0089 J	0.013 J	0.012 J	0.0089 J	0.0071 J	0.012 J	0.025 J	0.028 J	0.013 J	0.006 J
Copper	0.074 J	0.011 J	0.024 J	0.0099 J	0.0083 J	0.1 J	0.022 J	0.25 J	1.7	2	0.022 J	0.25
Lead	1.7	2.1	0.71	1.2	1	0.62	0.78	1.5	1.8	2	1.2	1.1
Nickel	0.39 J	0.99	0.2 J	0.35 J	0.26 J	0.25 J	0.32 J	0.3 J	0.45 J	0.5	0.31 J	0.22 J
Silver	0.068 U	0.077 U	0.0021 J	0.0043 J	0.054 U	0.055 U	0.062 U	0.09 U	0.067 U	0.064 U	0.072 U	0.046 U
Zinc	13.3	22.9	5.2	14.3	7.3	5.8	6.7	9.7	9.3	10.2	8.5	5

Key at the end of Table

Table 4-10
Summary of Results of AVS/SEM Analysis

	Recah 7			
Sample ID	**R7-104-C**	**R7-105-C**	**R7-106-C**	**R7-120-T-Z1**
Sample Date	**12/02/09**	**11/30/09**	**11/30/09**	**11/24/09**
Sample depth (ft):	**0 - 1**	**0 - 1.4**	**0 - 0.5**	**0 - 0.5**
AVS (µmole/g)				
Sulfide	30.1	3.8	12.1	3.9
SEM by SW6010B (µmole/g)				
Cadmium	0.0077 J	0.0098 J	0.002 J	0.0013 J
Copper	0.039 J	0.035 J	0.066 J	0.035 J
Lead	2.2	2.6	0.36	0.046
Nickel	0.39 J	0.52	0.11 J	0.031 J
Silver	0.0051 J	0.0083 J	0.0022 J	0.045 U
Zinc	7.2	11.3	1.8	0.36

Key:

AVS = Acid Volatile Sulfides
-C = Hand-core creek location/sample.
-CR = Duplicate hand-core creek sample.
ft = Feet.
J = Estimated at the concentration listed.
µmole/g = Micromole per gram.
-P = Ponar creek location/sample.
SEM = Simultaneously extracted metals.
-T = Tributary location/sample.
U = Non-detect.
-V = Vibracore creek location/sample.
-W = Wetland location/sample.
-Z = Sample depth interval consecutively numbered.

Key at the end of Table

Table 4-11
Comparison of TCLP Metals Analysis Results versus Total Metals Analysis Results

	Reach 2												Reach 3			
Sample ID	**R2-002-V-Z4**		**R2-005-V-Z3**		**R2-005-V-Z4**		**R2-008-V-Z3**		**R2-014-V-Z4**		**R2-014-V-Z6**		**R3-017-V-Z4**		**R3-017-V-Z6**	
Sample Date	**05/18/10**		**05/19/10**		**05/19/10**		**05/19/10**		**05/25/10**		**05/25/10**		**05/26/10**		**05/26/10**	
Sample Depth (ft)	**3 - 4**		**2 - 3**		**3 - 4**		**2 - 3**		**3 - 4**		**6 - 8**		**3 - 4**		**6 - 8**	
Method	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**
Analyte																
Arsenic	29.3 J	0.2 U	25 J	0.2 U	32.2 J	0.2 U	22.8 J	0.2 U	12.7 J	0.2 U	10.3 J	0.2 U	14.9 J	0.2 U	10.9 J	0.2 U
Barium	378 J	0.109	368 J	0.156	394 J	0.148	372 J	0.144	337 J	0.095	321 J	0.449	313 J	0.08	283 J	0.448
Cadmium	8.9 J	0.02 U	17.5 J	0.02 U	9.9 J	0.02 U	12.9 J	0.02 U	17.9 J	0.02 U	8.6 J	0.02 U	27.9 J	0.02 U	6 J	0.064
Chromium	1200 J	0.05 U	1780 J	0.05 U	969 J	0.05 U	1100 J	0.05 U	1670 J	0.05 U	547 J	0.05 U	2090 J	0.05 U	224 J	0.05 U
Lead	6760 J	0.15 U	3970 J	0.15 U	6760 J	0.283	5060 J	0.15 U	5490 J	0.396	4500 J	2.33	5500 J	0.304	1820 J	4.61
Selenium	1.1 U	0.3 U	1.2 J	0.3 U	1 U	0.3 U	1 U	0.3 U	4.1 J	0.3 U	1.1 J	0.3 U	2.1 J	0.3 U	0.88 U	0.3 U
Silver	4.3 J	0.05 U	3.8 J	0.05 U	5.7 J	0.05 U	5 J	0.05 U	5.7 J	0.05 U	10 J	0.05 U	5.5 J	0.05 U	4.9 J	0.05 U

Key at the end of table

Table 4-11
Comparison of TCLP Metals Analysis Results versus Total Metals Analysis Results

	Reach 3		Reach 4		Reach 5											
Sample ID	**R3-026-V-Z3**		**R4-031-C**		**R5-040-V-Z1b**		**R5-043-V-Z1P**		**R5-043-V-Z4**		**R5-045-V-Z2**		**R5-046-V-Z5b**		**R5-047-V-Z2**	
Sample Date	**05/27/10**		**11/16/2009**		**05/20/10**		**05/20/10**		**05/20/10**		**05/20/10**		**05/20/10**		**05/20/10**	
Sample Depth (ft)	**2 - 3**		**0 - 0.8**		**0.5 - 1**		**0 - 1**		**3 - 4**		**1 - 2**		**5 - 6**		**1 - 2**	
Method	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**
Analyte																
Arsenic	14.8 J	0.2 U	6.4 J+	0.06 U	18.4 J	0.2 U	6.3 J	0.2 U	14.3 J	0.2 U	6.2 J	0.2 U	10.8 J	0.2 U	5.7 J	0.2 U
Barium	274 J	0.279	162	0.388	602 J	0.58	177 J	0.412	611 J	0.637	165 J	0.353	610 J	0.46	207 J	0.361
Cadmium	12 J	0.02 U	7.2	0.004 U	1.9 J	0.02 U	2.7 J	0.02 U	1.7 J	0.02 U	2.7 J	0.02 U	1.7 J	0.02 U	3.4 J	0.02 U
Chromium	926 J	0.05 U	451	0.015 U	143 J	0.05 U	116 J	0.05 U	167 J	0.05 U	87.5 J	0.05 U	146 J	0.05 U	117 J	0.05 U
Lead	3980 J	0.754	1460	1.08	543 J	0.453	384 J	0.282	485 J	0.638	293 J	0.15 U	487 J	0.453	400 J	0.15 U
Selenium	5 J	0.3 U	1.5 J	0.088 U	3.4 J	0.3 U	3.5 J	0.3 U	0.73 U	0.3 U	3.8 J	0.3 U	1.2 J	0.3 U	1.1 U,	0.3 U
Silver	4.2 J	0.05 U	0.31 J-	0.011 U	2.6 J	0.05 U	1.7 J	0.05 U	2 J	0.05 U	1.6 J	0.05 U	0.07 U,	0.05 U	0.1 U,	0.05 U

Key at the end of table

Table 4-11
Comparison of TCLP Metals Analysis Results versus Total Metals Analysis Results

	Reach 5								Reach 6		Reach 7			
Sample ID	**R5-049-V-Z2**		**R5-049-V-Z3**		**R5-050-V-Z2**		**R5-050-V-Z4**		**R6-052-C**		**R7-069-C**		**R7-105-C**	
Sample Date	**05/21/10**		**05/21/10**		**05/21/10**		**05/21/10**		**11/19/2009**		**11/25/2009**		**11/30/2009**	
Sample Depth (ft)	**1 - 2**		**2 - 3**		**1 - 2**		**3 - 4**		**0 - 1.3**		**0 - 2.4**		**0 - 1.4**	
Method	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**	**Total Metals (mg/kg)**	**TCLP Metals (mg/L)**
Analyte														
Arsenic	7 J	0.2 U	10.7 J	0.2 U	7.9 J	0.2 U	13.4 J	0.2 U	10.7	0.06 U	7 J+	0.06 U	16.8	0.06 U
Barium	234 J	0.192	257 J	0.165	252 J	0.536	300 J	0.286	308	0.671	195	0.389	222 J	0.349
Cadmium	12.1 J	0.02 U	13.5 J	0.02 U	10.8 J	0.02 U	11.6 J	0.02 U	7.1	0.023	4.7	0.004 U	5.2 J-	0.027
Chromium	434 J	0.05 U	1240 J	0.05 U	826 J	0.05 U	1070 J	0.05 U	539 J	0.015 U	349	0.015 U	443 J	0.015 U
Lead	1150 J	0.15 U	2180 J	0.225	1830 J	1.12	6130 J	1.79	3790 J	6.98	1250 J+	0.751	1630 J	1.6
Selenium	1.8 J	0.3 U	3.7 J	0.3 U	2.3 J	0.3 U	2.6 J	0.3 U	3.4 J	0.088 U	1.2 U	0.088 U	3.8 J	0.088 U
Silver	3.9 J	0.05 U	4 J	0.05 U	2.6 J	0.05 U	6.9 J	0.05 U	6 J-	0.011 U	1.2 J-	0.011 U	4.6 J-	0.011 U

Key:

-C = Hand-core creek location/sample.
ft = Feet.
J = Estimated at the concentration listed.
mg/Kg = Milligrams per kilogram.
mg/L = Milligrams per liter.
-P = Ponar creek location/sample.
TCLP = Toxicity characteristic leaching procedure.
U = Non-detect.
UJ = Non-detect/estimated.
-V = Vibracore creek location/sample.
-Z = Sample depth interval consecutively numbered.

Key at the end of table

Table 4-12a
Summary of Results of Particle Grain Size Analysis for the Samples Collected in 2009

Reach	Location	Sample ID	Sample Date	Sample Depth (ft)	% Retained by						
					Bottom Plate	Sieve No. 200	Sieve No.100	Sieve No.50	Sieve No.35	Sieve No.16	Sieve No. 10
Reach 3	R3-107-W	R3-107-W	11/16/09	0-0.5	54.7	12.8	11.4	8.1	11.9	1.1	0
	R3-108-W	R3-108-W	11/16/09	0-0.5	60.2	14.1	13.5	8.5	3.6	0	0
	R3-109-W	R3-109-W	11/16/09	0-0.5	59.2	14.5	13.5	8.6	4.2	0	0
	R3-110-W	R3-110-W	11/16/09	0-0.5	61.2	12.5	10.7	7.5	7.7	0.3	0.001
Reach 4	R4-028-C	R4-028-C	11/17/09	0-1.55	61.3	10.3	10.3	7.6	10.2	0.3	0
	R4-029-C	R4-029-C	11/16/09	0-1.2	62.1	12.9	10	5.7	8.7	0.6	0
	R4-030-C	R4-030-C	11/16/09	0-1.1	48.4	6.9	7	7.7	27.4	2.7	0.002
	R4-031-C	R4-031-C	11/16/09	0-0.8	58.2	13.3	11.3	7.1	9.2	1	0.001
	R4-032-C	R4-032-C	11/16/09	0-0.7	53.2	12.9	12.6	10	11.1	0.1	0
	R4-033-C	R4-033-C	11/17/09	0-0.4	66.1	4.4	3.8	3.8	18	3.8	0.002
	R4-034-C	R4-034-C	11/17/09	0-0.4	50.6	6.3	5.8	6.3	25.5	4.2	1.2
	R4-035-C	R4-035-C	11/17/09	0-0.8	52.4	10.4	12.7	11.3	12.8	0.4	0
	R4-036-C	R4-036-C	11/17/09	0-0.9	51.1	11.4	13.2	10.1	13.7	0.5	0
	R4-037-C	R4-037-C	11/17/09	0-0.6	44.8	9.4	12.2	13.1	19.1	1.3	0.03
	R4-038-C	R4-038-C	11/18/09	0-0.4	54.8	9.7	8.5	7.4	18.4	1.2	0.001
	R4-111-W	R4-111-W	11/16/09	0-0.5	80.6	10.2	6.3	1.3	1.6	0.02	0
	R4-112-W	R4-112-W	11/18/09	0-0.5	77.5	9.7	8.4	2.6	1.8	0.05	0
	R4-119-T	R4-119-T	11/17/09	0-0.5	80.4	9.8	6.3	1.4	1.8	0.4	0
	R4-126-H	R4-126-H	11/16/09	0-0.5	52.8	12.1	10.8	8.2	15.4	0.8	0
Reach 5	R5-113-W	R5-113-W	11/18/09	0-0.5	72.5	10.2	9.1	4	4	0.2	0
	R5-114-W	R5-114-W	11/18/09	0-0.5	59	10.3	9.2	8.4	12.7	0.4	0
	R5-115-W	R5-115-W	11/18/09	0-0.5	43.7	14.1	13.7	13	15.4	0.2	0
	R5-116-W	R5-116-W	11/19/09	0-0.5	76.1	11	9	2.6	1.4	0	0
	R5-127-H	R5-127-H	11/18/09	0-0.5	48.9	18	9.5	7.4	15.8	0.4	0
Reach 6	R6-051-C	R6-051-C	11/19/09	0-1.2	58.5	11.1	10.9	8.1	10.5	0.8	0
	R6-051-C	R6-051-CR	11/19/09	0-1.2	56	11.3	10.8	8.1	12	1.8	0.02
	R6-052-C	R6-052-C	11/19/09	0-1.3	67.6	12.1	9.9	5.5	4.8	0.1	0
	R6-053-C	R6-053-C	11/19/09	0-1.2	64.9	12.5	9.4	5.5	7.3	0.4	0.001
	R6-054-C	R6-054-C	12/02/09	0-0.5	56.8	13.2	12	7.4	10.2	0.3	0
	R6-055-C	R6-055-C	11/17/09	0-1.1	62.2	11.8	9.3	6.5	9.9	0.3	0
	R6-056-C	R6-056-C	11/17/09	0-1.2	56.8	9.2	9.2	8.7	14.8	1.2	0.001
	R6-056-C	R6-056-CR	11/17/09	0-1.2	52.5	8.8	9	9.1	19.8	0.8	0
	R6-057-C	R6-057-C	11/17/09	0-1.4	80.7	11.8	6.4	0.6	0.4	0.02	0

Key at the end of Table

Table 4-12a
Summary of Results of Particle Grain Size Analysis for the Samples Collected in 2009

Reach	Location	Sample ID	Sample Date	Sample Depth (ft)	% Retained by						
					Bottom Plate	Sieve No. 200	Sieve No.100	Sieve No.50	Sieve No.35	Sieve No.16	Sieve No. 10
Reach 6	R6-058-C	R6-058-C	11/18/09	0-2.2	71.2	11.1	7.9	4.1	5.4	0.2	0
	R6-059-C	R6-059-C	11/18/09	0-1.3	70.7	12.8	8.6	5	2.8	0.03	0
	R6-060-C	R6-060-C	11/18/09	0-0.8	77.3	13.4	7.8	0.9	0.6	0	0
	R6-061-C	R6-061-C	11/18/09	0-4	73.4	12.2	7.9	2.6	3.6	0.2	0
	R6-062-C	R6-062-C	11/19/09	0-3.7	67.9	12	8.4	4.4	7.1	0.3	0
	R6-063-C	R6-063-C	11/19/09	0-1.1	63.7	10.9	9	6.7	9.3	0.4	0
	R6-064-C	R6-064-C	11/19/09	0-1.4	58.8	10.7	9.4	7.7	12.5	0.9	0
	R6-065-C	R6-065-C	11/19/09	0-2.4	48.5	10.5	11.1	9.5	18.8	1.2	0.3
	R6-066-C	R6-066-C	11/25/09	0-1.9	69.9	12.3	8.6	4.2	4.9	0.1	0
	R6-067-C	R6-067-C	11/25/09	0-2.1	67.1	11.2	8.8	4.5	7.8	0.5	0
	R6-117-W	R6-117-W	12/02/09	0-0.5	75.5	8.7	8	4.8	3	0.02	0
	R6-128-H	R6-128-H	12/02/09	0-0.5	69.7	11.9	10.4	5	2.9	0.03	0
	R6-129-H	R6-129-H	12/02/09	0-0.5	89	8	3	0.07	0	0	0
Reach 7	R7-068-C	R7-068-C	11/25/09	0-2.1	73.3	11.9	9.7	2.7	2.4	0.02	0
	R7-068-C	R7-068-CR	11/25/09	0-2.1	66	12.7	10.1	5.9	5.3	0.1	0
	R7-069-C	R7-069-C	11/25/09	0-2.4	76.6	11.7	7.7	1.9	2	0	0
	R7-070-C	R7-070-C	11/25/09	0-2.4	69.8	12.9	9.6	4.1	3.7	0	0
	R7-071-C	R7-071-C	11/25/09	0-1.5	64.1	13.4	10.1	5.7	6.5	0.1	0
	R7-072-C	R7-072-C	11/24/09	0-0.8	67.2	15.3	13	3.7	0.8	0	0
	R7-073-C	R7-073-C	11/24/09	0-2.4	67	16.5	10.9	3.3	2.2	0	0
	R7-074-C	R7-074-C	11/24/09	0-2.3	63	17.5	12.7	4.5	2.2	0.01	0
	R7-075-C	R7-075-C	11/24/09	0-2.1	73.1	11.5	8.1	3.5	3.8	0.04	0
	R7-076-C	R7-076-C	11/24/09	0-2	62	16.9	13	4.9	3.1	0.2	0
	R7-077-C	R7-077-C	11/24/09	0-1.2	69.4	13.9	9.7	3.7	3.2	0.2	0
	R7-078-C	R7-078-C	12/02/09	0-4	61.8	13.2	11	7	7	0.1	0
	R7-079-C	R7-079-C	12/02/09	0-2.4	60	13.1	11.4	7.1	8.3	0.1	0
	R7-080-C	R7-080-C	12/02/09	0-1.7	64.3	14.2	11	4.9	5.4	0.2	0
	R7-081-C	R7-081-C	12/02/09	0-1.7	42.5	16.2	12.8	12.1	16.4	0.1	0
	R7-082-C	R7-082-C	11/30/09	0-1.6	62.8	14.2	12.7	6.6	3.8	0.01	0
	R7-082-C	R7-082-CR	11/30/09	0-1.6	61.5	14.3	13.1	7.2	3.9	0.07	0
	R7-083-C	R7-083-C	11/30/09	0-3.3	55.2	13.2	10.7	8.5	12.1	0.2	0
	R7-084-C	R7-084-C	11/30/09	0-3.3	47.9	16.6	14.4	10.2	10.9	0.03	0
	R7-085-C	R7-085-C	11/30/09	0-1.6	45.7	15.6	14	11.2	13.2	0.3	0

Key at the end of Table

Table 4-12a
Summary of Results of Particle Grain Size Analysis for the Samples Collected in 2009

Reach	Location	Sample ID	Sample Date	Sample Depth (ft)	% Retained by						
					Bottom Plate	Sieve No. 200	Sieve No.100	Sieve No.50	Sieve No.35	Sieve No.16	Sieve No. 10
Reach 7	R7-086-C	R7-086-C	11/30/09	0-3.2	43.8	12.5	12.1	11.8	19.2	0.6	0.001
	R7-087-C	R7-087-C	11/30/09	0-2.1	59.4	16.7	12.9	7.2	3.7	0.04	0
	R7-088-C	R7-088-C	11/25/09	0-1	61.8	13.3	12.2	6.8	4.8	0.02	0
	R7-089-C	R7-089-C	11/25/09	0-2.9	33.5	12	14.3	13.7	24.8	1.6	0
	R7-090-C	R7-090-C	11/25/09	0-3.5	60.2	13.2	11.9	7.4	7	0.2	0
	R7-091-C	R7-091-C	11/24/09	0-1.4	44.5	19.1	18.8	12.4	5.2	0	0
	R7-092-C	R7-092-C	11/24/09	0-1	53.1	14.5	13.3	9.4	9.7	0.07	0
	R7-093-C	R7-093-C	11/24/09	0-0.9	43.7	15.3	13.9	13	14	0.07	0
	R7-094-C	R7-094-C	11/23/09	0-1	62.1	13.6	11.2	7.2	5.9	0.07	0
	R7-095-C	R7-095-C	11/23/09	0-1.3	61.9	18.1	13.6	4	2.2	0.07	0
	R7-095-C	R7-095-CR	11/23/09	0-1.3	59.7	17	12.8	6.1	4.4	0.01	0
	R7-096-C	R7-096-C	11/23/09	0-1.3	52	21.9	17	6.3	2.8	0.04	0
	R7-097-C	R7-097-C	11/23/09	0-0.9	42.4	18.5	19.2	13.3	6.7	0.01	0
	R7-098-C	R7-098-C	11/23/09	0-1.9	38.6	16.1	15.3	15	14.9	0.1	0
	R7-099-C	R7-099-C	11/23/09	0-1.3	37.3	15.4	14.3	12.2	20	0.8	0.01
	R7-100-C	R7-100-C	11/23/09	0-1.2	69.3	16.6	11.8	1.9	0.5	0	0
	R7-101-C	R7-101-C	11/30/09	0-0.5	46.7	16.9	15.4	11.2	9.8	0.06	0
	R7-102-C	R7-102-C	11/30/09	0-1.5	65.6	14.6	11.5	4.9	3.4	0.05	0
	R7-103-C	R7-103-C	11/30/09	0-2.3	59.2	13.5	12	7.8	7.3	0.1	0
	R7-104-C	R7-104-C	12/02/09	0-1	54.2	13	14.1	10	8.7	0	0
	R7-105-C	R7-105-C	11/30/09	0-1.4	59.4	14.8	12.9	7.6	5.3	0.06	0
	R7-106-C	R7-106-C	11/30/09	0-0.5	42.7	15.1	18	13.5	10.5	0.2	0
	R7-118-W	R7-118-W	11/30/09	0-0.5	70	10.6	10.1	6.4	2.9	0	0
	R7-120-T	R7-120-T-Z1	11/24/09	0-0.5	82.2	9.5	6.1	1.1	1.1	0	0
	R7-120-T	R7-120-T-Z2	11/24/09	0.5-2.1	77.1	8.9	8.4	3.2	2.4	0	0
	R7-121-T	R7-121-T-Z1	12/02/09	0-0.5	63.9	12	11.4	7.6	5.2	0	0
	R7-122-T	R7-122-T-Z1	11/25/09	0-0.5	54.7	12.2	12.9	11.7	8.5	0.02	0
	R7-122-T	R7-122-T-Z2	11/25/09	0.5-1	54	16.4	16.2	9.3	4.1	0.02	0
	R7-123-T	R7-123-T-Z1	11/23/09	0-0.5	80.2	12.1	6.7	0.8	0.2	0.01	0
	R7-123-T	R7-123-T-Z2	11/23/09	0.5-1	81.2	9.2	6.4	1.2	1.9	0.07	0
	R7-124-T	R7-124-T-Z1	11/23/09	0-0.4	69.1	6.5	7.8	7	9	0.5	0
	R7-125-T	R7-125-T-Z1	11/30/09	0-0.5	53	12.3	12.3	9.8	12.4	0.2	0
	R7-125-T	R7-125-T-Z2	11/30/09	0.5-0.8	56.3	13.9	12.4	9.1	9	0.3	0

Key at the end of Table

Table 4-12a
Summary of Results of Particle Grain Size Analysis for the Samples Collected in 2009

Reach	Location	Sample ID	Sample Date	Sample Depth (ft)	% Retained by						
					Bottom Plate	Sieve No. 200	Sieve No.100	Sieve No.50	Sieve No.35	Sieve No.16	Sieve No. 10
Reach 7	R7-130-H	R7-130-H	11/30/09	0-0.5	79.2	10.6	6.9	1.6	1.6	0.02	0
	R7-131-H	R7-131-H	11/30/09	0-0.5	60.3	13.6	12.9	8.8	4.5	0	0
	R7-132-H	R7-132-H	11/25/09	0-0.5	54.5	14.4	14	9.8	7.2	0.08	0
	R7-133-H	R7-133-H	11/24/09	0-0.5	77.9	10.6	7.4	2.3	1.8	0	0
	R7-134-H	R7-134-H	11/23/09	0-0.5	58.8	9	11.1	9.7	11.1	0.2	0

Key:

-C = Hand-core creek location/sample.
-Comp = Hand-core creek composite sample.
-C R= Duplicate hand-core creek sample.
ft = Feet.
-H = Historical channel location/sample.
-P = Ponar creek location/sample.
-T = Tributary location/sample.
-V = Vibracore creek location/sample.
-W = Wetland location/sample.
-Z = Sample depth interval consecutively numbered.

Key at the end of Table

Table 4-12b
Summary of Results of Particle Grain Size Analysis for the Samples Collected in 2010

Reach	Location	Sample ID	Sample Date	Sample Depth (ft)	% Passing													
					Sieve No. 200	Sieve No. 100	Sieve No. 80	Sieve No. 60	Sieve No. 40	Sieve No. 20	Sieve No. 10	Sieve No. 4	9500 microns Sieve	19000 microns Sieve	25000 microns Sieve	37500 microns Sieve	50000 microns Sieve	75000 microns Sieve
Reach 2	R2-001-V-P	R2-001-V-Z1P	05/18/10	0-1	99.1	99.3	99.3	99.3	99.4	99.5	99.5	100	100	100	100	100	100	100
	R2-001-V	R2-001-V-Z2	05/18/10	1-2	98.7	98.9	98.9	99	99.2	99.5	99.8	100	100	100	100	100	100	100
	R2-001-V	R2-001-V-Z3	05/18/10	2-3	97.9	98.8	98.9	98.9	99	99.3	99.4	100	100	100	100	100	100	100
	R2-001-V	R2-001-V-Z4	05/18/10	3-4	97.3	97.8	97.9	98	98.4	99	99.4	100	100	100	100	100	100	100
	R2-001-V	R2-001-V-Z5	05/18/10	4-5	87.9	91.5	92.1	93.1	95	97.7	100	100	100	100	100	100	100	100
	R2-001-V	R2-001-V-Z6	05/18/10	6-7	91.5	95.4	96	96.9	97.7	98.5	99.4	100	100	100	100	100	100	100
	R2-002-V-P	R2-002-V-Z1P	05/18/10	0-1	98.5	98.7	98.7	98.7	98.9	98.9	99	100	100	100	100	100	100	100
	R2-002-V	R2-002-V-Z1	05/18/10	0-1	98.8	98.9	98.9	98.9	98.9	98.9	98.9	100	100	100	100	100	100	100
	R2-002-V	R2-002-V-Z2	05/18/10	1-2	97.7	98	98.1	98.2	98.7	99.3	99.5	100	100	100	100	100	100	100
	R2-002-V	R2-002-V-Z3	05/18/10	2-3	98.9	98.9	98.9	98.9	99	99.2	99.3	100	100	100	100	100	100	100
	R2-002-V	R2-002-V-Z4	05/18/10	3-4	96.4	97.5	97.6	97.7	98.1	99	99.5	100	100	100	100	100	100	100
	R2-002-V	R2-002-V-Z5	05/18/10	4-6	88	95.8	96.4	97	97.6	98.4	98.9	99.7	100	100	100	100	100	100
	R2-002-V	R2-002-VR	05/18/10	4-6	88.6	95.9	96.5	97	97.7	98.5	99.4	99.8	100	100	100	100	100	100
	R2-002-V	R2-002-V-Z6	05/18/10	6-7.5	90.5	97.2	97.6	98.1	98.6	99	99.4	100	100	100	100	100	100	100
	R2-003-V-P	R2-003-V-Z1P	05/18/10	0-1	98.5	99.2	99.2	99.3	99.4	99.4	99.5	99.5	100	100	100	100	100	100
	R2-003-V	R2-003-V-Z1	05/18/10	0-1	98	98.3	98.3	98.5	98.6	98.6	98.9	99.4	100	100	100	100	100	100
	R2-003-V	R2-003-V-Z2	05/18/10	1-2	99.4	99.5	99.5	99.7	99.7	99.7	99.8	100	100	100	100	100	100	100
	R2-003-V	R2-003-V-Z3	05/18/10	2-3	98.3	98.9	99	99.2	99.5	99.6	99.8	100	100	100	100	100	100	100
	R2-003-V	R2-003-V-Z4	05/18/10	3-4	98.9	99.2	99.2	99.4	99.5	99.6	99.7	100	100	100	100	100	100	100
	R2-003-V	R2-003-V-Z5	05/18/10	4-5	96.2	96.7	96.8	97.2	97.8	99.1	99.9	100	100	100	100	100	100	100
	R2-003-V	R2-003-V-Z6	05/18/10	6-7	55.4	76.5	80.2	83.7	86.9	91.3	93.9	98.5	100	100	100	100	100	100
	R2-004-V-P	R2-004-V-Z1P	05/18/10	0-1	99.5	99.7	99.7	99.8	99.8	100	100	100	100	100	100	100	100	100
	R2-004-V	R2-004-V-Z1	05/18/10	0-1	99.5	99.7	99.7	99.8	99.8	99.9	100	100	100	100	100	100	100	100
	R2-004-V	R2-004-V-Z2	05/18/10	1-2	99.6	99.7	99.7	99.8	99.9	99.9	100	100	100	100	100	100	100	100
	R2-004-V	R2-004-V-Z3	05/18/10	2-3	98.1	99.1	99.2	99.4	99.6	99.9	100	100	100	100	100	100	100	100
	R2-004-V	R2-004-V-Z4	05/18/10	3-3.5	98.4	98.9	98.9	99	99.3	99.7	100	100	100	100	100	100	100	100
	R2-004-V	R2-004-VR	05/18/10	1-2	99.4	99.5	99.6	99.9	100	100	100	100	100	100	100	100	100	100
	R2-004-V	R2-004-V-Z5	05/18/10	4.5-5	77.8	83.7	84.7	86.1	88	91	92.4	95.7	100	100	100	100	100	100
	R2-005-V-P	R2-005-V-Z1P	05/19/10	0-1	99.4	99.7	99.7	99.8	99.9	99.9	99.9	100	100	100	100	100	100	100
	R2-005-V	R2-005-V-Z1	05/19/10	0-1	98.7	99.3	99.4	99.6	99.6	99.8	100	100	100	100	100	100	100	100
	R2-005-V	R2-005-V-Z2	05/19/10	1-2	99.2	99.3	99.3	99.5	99.6	99.7	99.9	100	100	100	100	100	100	100

Key at the end of Table

Table 4-12b
Summary of Results of Particle Grain Size Analysis for the Samples Collected in 2010

					% Passing												
Reach	Location	Sample ID	Sample Date	Sample Depth (ft)	Sieve No. 200	Sieve No. 100	Sieve No. 80	Sieve No. 60	Sieve No. 40	Sieve No. 20	Sieve No. 10	Sieve No. 4	9500 microns Sieve	19000 microns Sieve	25000 microns Sieve	37500 microns Sieve	50000 microns Sieve	75000 microns Sieve
Reach 2	R2-005-V	R2-005-V-Z3	05/19/10	2-3	97.9	98.8	98.8	99	99.3	99.6	100	100	100	100	100	100	100	100
	R2-005-V	R2-005-V-Z4	05/19/10	3-4	97.2	98.5	98.7	99	99.2	99.7	100	100	100	100	100	100	100	100
	R2-005-V	R2-005-V-Z5	05/19/10	4-6	97.3	98.4	98.5	98.8	99.2	99.7	100	100	100	100	100	100	100	100
	R2-005-V	R2-005-V-Z6	05/19/10	6-7	98.8	99.1	99.1	99.3	99.4	99.5	100	100	100	100	100	100	100	100
	R2-006-V-P	R2-006-V-Z1P	05/19/10	0-1	97.7	98.7	98.7	98.9	99.1	99.4	99.4	100	100	100	100	100	100	100
	R2-006-V	R2-006-V-Z1	05/19/10	0-1	94.1	97.6	98	98.5	99	99.4	99.6	100	100	100	100	100	100	100
	R2-006-V	R2-006-V-Z2	05/19/10	1-2	98	98.9	99	99.2	99.4	99.7	99.9	100	100	100	100	100	100	100
	R2-006-V	R2-006-V-Z3	05/19/10	2-3	94.4	97.2	97.5	98	98.7	99.4	99.6	100	100	100	100	100	100	100
	R2-006-V	R2-006-VR	05/19/10	2-3	91.8	95.1	95.7	96.6	97.9	99.2	99.6	100	100	100	100	100	100	100
	R2-006-V	R2-006-V-Z4	05/19/10	3-4	99.3	99.5	99.5	99.6	99.6	99.9	100	100	100	100	100	100	100	100
	R2-006-V	R2-006-V-Z5a	05/19/10	4-5	99.3	99.6	99.6	99.7	99.7	99.9	100	100	100	100	100	100	100	100
	R2-006-V	R2-006-V-Z5b	05/19/10	5-6	96.8	98.6	98.8	99.4	99.6	99.9	100	100	100	100	100	100	100	100
	R2-007-V	R2-007-V-Z1	05/19/10	0-1	99.7	99.8	99.8	99.8	99.8	100	100	100	100	100	100	100	100	100
	R2-007-V	R2-007-V-Z1P	05/19/10	0-1	99.9	100	100	100	100	100	100	100	100	100	100	100	100	100
	R2-007-V	R2-007-V-Z2	05/19/10	1-2	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	R2-007-V	R2-007-V-Z3	05/19/10	2-3	99.8	99.9	99.9	99.9	99.9	99.9	100	100	100	100	100	100	100	100
	R2-007-V	R2-007-V-Z4	05/19/10	3-4	99.9	100	100	100	100	100	100	100	100	100	100	100	100	100
	R2-007-V	R2-007-V-Z5a	05/19/10	4-5	64.9	68.7	69.3	71.5	74	78.6	85.6	89.2	93.9	100	100	100	100	100
	R2-007-V	R2-007-V-Z5b	05/19/10	5-6	80	88.2	89.2	92.8	95.8	97.8	98.9	99.6	100	100	100	100	100	100
	R2-008-V	R2-008-V-Z1	05/19/10	0-1	99.7	99.9	99.9	99.9	99.9	99.9	100	100	100	100	100	100	100	100
	R2-008-V	R2-008-V-Z1P	05/19/10	0-1	99.6	99.7	99.7	99.7	99.7	99.7	99.7	100	100	100	100	100	100	100
	R2-008-V	R2-008-V-Z2	05/19/10	1-2	98.9	99.2	99.3	99.4	99.6	99.8	100	100	100	100	100	100	100	100
	R2-008-V	R2-008-V-Z3	05/19/10	2-3	98.9	99.2	99.2	99.3	99.3	99.5	100	100	100	100	100	100	100	100
	R2-008-V	R2-008-V-Z4	05/19/10	3-4	99.1	99.3	99.3	99.4	99.5	99.7	100	100	100	100	100	100	100	100
	R2-008-V	R2-008-V-Z5	05/19/10	4.5-5	66.4	72.2	73.5	76	80.1	85.4	94.4	96.7	98.7	100	100	100	100	100
	R2-009-V	R2-009-V-Z1	05/19/10	0-1	99.2	99.4	99.4	99.5	99.6	99.8	100	100	100	100	100	100	100	100
	R2-009-V	R2-009-V-Z1P	05/19/10	0-1	98.8	99.2	99.2	99.4	99.6	99.8	100	100	100	100	100	100	100	100
	R2-009-V	R2-009-V-Z2	05/19/10	1-2	98.9	99.1	99.1	99.3	99.4	99.6	100	100	100	100	100	100	100	100
	R2-009-V	R2-009-V-Z3	05/19/10	2-3	97.2	98.9	99	99.2	99.5	99.7	99.8	100	100	100	100	100	100	100
	R2-009-V	R2-009-V-Z4	05/19/10	3-4	91.5	94.9	95.3	96	96.8	97.8	99.7	100	100	100	100	100	100	100
	R2-009-V	R2-009-V-VR	05/19/10	3-4	99.2	99.4	99.4	99.5	99.6	99.8	100	100	100	100	100	100	100	100

Key at the end of Table

Table 4-12b
Summary of Results of Particle Grain Size Analysis for the Samples Collected in 2010

Reach	Location	Sample ID	Sample Date	Sample Depth (ft)	% Passing													
					Sieve No. 200	Sieve No. 100	Sieve No. 80	Sieve No. 60	Sieve No. 40	Sieve No. 20	Sieve No. 10	Sieve No. 4	9500 microns Sieve	19000 microns Sieve	25000 microns Sieve	37500 microns Sieve	50000 microns Sieve	75000 microns Sieve
Reach 2	R2-009-V	R2-009-V-Z5	05/19/10	4-5.5	65.4	72.8	74.8	79.7	87.1	92.7	96.1	98.6	100	100	100	100	100	100
	R2-010-V	R2-010-V-Z1	05/25/10	0-1	98.9	99.5	99.6	99.7	99.8	99.9	100	100	100	100	100	100	100	100
	R2-010-V	R2-010-V-Z2	05/25/10	1-2	98.5	99.4	99.5	99.7	99.8	99.9	100	100	100	100	100	100	100	100
	R2-010-V	R2-010-V-Z3	05/25/10	2-3	99.1	99.4	99.5	99.6	99.7	99.8	100	100	100	100	100	100	100	100
	R2-010-V	R2-010-V-Z4	05/25/10	3-4	98	98.3	98.4	98.5	98.6	98.9	100	100	100	100	100	100	100	100
	R2-010-V	R2-010-V-Z5	05/25/10	4-6	98.5	99	99.1	99.2	99.3	99.5	100	100	100	100	100	100	100	100
	R2-010-V	R2-010-V-Z6	05/25/10	6-8	97.9	99.2	99.3	99.5	99.7	99.9	100	100	100	100	100	100	100	100
	R2-010-V	R2-010-VR	05/25/10	6-8	97.5	98.7	98.8	99.1	99.5	99.8	100	100	100	100	100	100	100	100
	R2-010-V	R2-010-V-Z7a	05/25/10	8-9	90	96.1	97.1	98.4	99.4	99.8	100	100	100	100	100	100	100	100
	R2-010-V	R2-010-V-Z7b	05/25/10	9-10	84.6	91.8	93.2	95.8	98	99.1	100	100	100	100	100	100	100	100
	R2-011-V	R2-011-V-Z1	05/25/10	0-1	94.9	97.7	98	98.6	99.2	99.7	100	100	100	100	100	100	100	100
	R2-011-V	R2-011-V-Z2	05/25/10	1-2	97.8	98.9	98.9	99.1	99.3	99.5	100	100	100	100	100	100	100	100
	R2-011-V	R2-011-V-Z3	05/25/10	2-3	97.2	99	99.1	99.3	99.5	99.7	100	100	100	100	100	100	100	100
	R2-011-V	R2-011-V-Z4	05/25/10	3-4	98.6	99.1	99.2	99.2	99.4	99.6	100	100	100	100	100	100	100	100
	R2-011-V	R2-011-V-Z5	05/25/10	4-6	97.5	98.1	98.2	98.4	98.6	99.1	100	100	100	100	100	100	100	100
	R2-011-V	R2-011-V-Z6	05/25/10	6-8	98	98.7	98.8	98.9	98.9	99.1	100	100	100	100	100	100	100	100
	R2-011-V	R2-011-V-Z7	05/25/10	8-10	96.3	98.6	98.8	99	99.3	99.6	100	100	100	100	100	100	100	100
	R2-011-V	R2-011-V-Z8	05/25/10	10-11.5	99	99.6	99.6	99.7	99.7	99.7	100	100	100	100	100	100	100	100
	R2-012-V	R2-012-V-Z1	05/25/10	0-1	97.4	99	99.2	99.4	99.7	99.8	100	100	100	100	100	100	100	100
	R2-012-V	R2-012-V-Z2	05/25/10	1-2	98.8	99.6	99.6	99.7	99.8	99.8	100	100	100	100	100	100	100	100
	R2-012-V	R2-012-V-Z3	05/25/10	2-3	94.2	96.9	97.2	97.8	98.7	99.3	99.5	100	100	100	100	100	100	100
	R2-012-V	R2-012-V-Z4	05/25/10	3-4	96.8	97.8	98	98.4	99	99.5	99.8	100	100	100	100	100	100	100
	R2-012-V	R2-012-VR	05/25/10	3-4	98.7	99.2	99.2	99.3	99.6	99.9	100	100	100	100	100	100	100	100
	R2-012-V	R2-012-V-Z5	05/25/10	4-6	92.6	93.9	94.2	94.7	95.4	96.4	98.8	99.4	100	100	100	100	100	100
	R2-012-V	R2-012-V-Z6	05/25/10	6-8	76.9	80.2	80.9	82.4	85.4	89	90.7	93.3	93.7	100	100	100	100	100
	R2-012-V	R2-012-V-Z7	05/25/10	8-9	41.6	45.4	46.3	48.1	52.1	61.1	76.3	83	91.5	100	100	100	100	100
	R2-013-V	R2-013-V-Z1	05/25/10	0-1	91.9	95.5	95.9	96.8	97.8	98.7	99.4	100	100	100	100	100	100	100
	R2-013-V	R2-013-V-Z2	05/25/10	1-2	93	96.3	96.7	97.3	98	98.4	99.2	100	100	100	100	100	100	100
	R2-013-V	R2-013-V-Z3	05/25/10	2-3	92	94.8	95.3	96.1	97.4	98.9	99.7	100	100	100	100	100	100	100
	R2-013-V	R2-013-V-Z4	05/25/10	3-4	94.8	97.4	97.6	98.1	98.6	99.1	99.8	100	100	100	100	100	100	100
	R2-013-V	R2-013-V-Z5	05/25/10	4-6	91.5	92.9	93.2	93.7	94.6	95.7	98.5	100	100	100	100	100	100	100

Key at the end of Table

Table 4-12b
Summary of Results of Particle Grain Size Analysis for the Samples Collected in 2010

Reach	Location	Sample ID	Sample Date	Sample Depth (ft)	% Passing													
					Sieve No. 200	Sieve No. 100	Sieve No. 80	Sieve No. 60	Sieve No. 40	Sieve No. 20	Sieve No. 10	Sieve No. 4	9500 microns Sieve	19000 microns Sieve	25000 microns Sieve	37500 microns Sieve	50000 microns Sieve	75000 microns Sieve
Reach 2	R2-013-V	R2-013-V-Z6	05/25/10	6-8	89.3	91.1	91.5	92.5	94.2	96.9	99.3	100	100	100	100	100	100	100
	R2-013-V	R2-013-V-Z7	05/25/10	8-10	88.9	91.4	91.9	92.9	95.1	97.7	99.2	100	100	100	100	100	100	100
	R2-013-V	R2-013-V-Z8	05/25/10	10-12	87.4	90.6	91	92	94.3	98.1	99.9	100	100	100	100	100	100	100
	R2-014-V	R2-014-V-Z1	05/25/10	0-1	72.8	86.2	87.9	90.7	94.8	98.2	98.9	100	100	100	100	100	100	100
	R2-014-V	R2-014-V-Z2	05/25/10	1-2	75.4	89.5	91.2	93.7	96.9	99.5	99.6	100	100	100	100	100	100	100
	R2-014-V	R2-014-V-Z3	05/25/10	2-3	88.4	94.2	94.8	96	97.7	99.1	99.4	100	100	100	100	100	100	100
	R2-014-V	R2-014-V-Z4	05/25/10	3-4	92.1	94.2	94.6	95.5	97.1	98.7	99	100	100	100	100	100	100	100
	R2-014-V	R2-014-V-Z5	05/25/10	4-6	89.3	92.1	92.8	94	96.3	98.6	99	100	100	100	100	100	100	100
	R2-014-V	R2-014-VR	05/25/10	4-6	88.2	90	90.4	91.4	93.6	98.4	99.6	100	100	100	100	100	100	100
	R2-014-V	R2-014-V-Z6	05/25/10	6-8	89.9	91.8	92.3	93.5	96.1	99.6	100	100	100	100	100	100	100	100
	R2-014-V	R2-014-V-Z7	05/25/10	8-10	94.9	96.8	97	97.5	98.3	99.3	100	100	100	100	100	100	100	100
	R2-015-V	R2-015-V-Z1	05/25/10	0-1	89.8	95.2	95.8	96.7	98	99	99.7	100	100	100	100	100	100	100
	R2-015-V	R2-015-V-Z2	05/25/10	1-2	85.5	95.4	96.4	97.3	98.2	98.8	99.7	100	100	100	100	100	100	100
	R2-015-V	R2-015-V-Z3	05/25/10	2-3	91.8	94	94.3	95	95.9	97	98.4	100	100	100	100	100	100	100
	R2-015-V	R2-015-V-Z4	05/25/10	3-4	90.8	92.4	92.7	93.3	94.5	96.3	99.6	100	100	100	100	100	100	100
	R2-015-V	R2-015-V-Z5	05/25/10	4-6	89.5	90.9	91.2	91.9	93.4	95.7	100	100	100	100	100	100	100	100
	R2-015-V	R2-015-V-Z6	05/25/10	6-8	92.9	94.7	95	95.4	96.3	97.8	99.5	99.6	100	100	100	100	100	100
	R2-015-V	R2-015-V-Z7a	05/25/10	8-9	91.3	96.2	97	98.4	99.6	99.9	100	100	100	100	100	100	100	100
	R2-015-V	R2-015-V-Z7b	05/25/10	9-9.5	93	98	98.5	99.3	99.8	100	100	100	100	100	100	100	100	100
Reach 3	R3-016-V	R3-016-VR	05/26/10	3-4	92.4	96.4	96.6	97.6	98.4	99.7	100	100	100	100	100	100	100	100
	R3-016-V	R3-016-V-Z1	05/26/10	0-1	65.3	84.5	87.5	93.5	95.5	97	97.2	99.2	99.2	100	100	100	100	100
	R3-016-V	R3-016-V-Z2	05/26/10	1-2	88.7	93.9	94.4	95.9	97.1	99.3	100	100	100	100	100	100	100	100
	R3-016-V	R3-016-V-Z3	05/26/10	2-3	93.3	96.8	97	98.1	98.6	99.8	100	100	100	100	100	100	100	100
	R3-016-V	R3-016-V-Z4	05/26/10	3-4	93.3	97.4	97.7	98.7	99.2	100	100	100	100	100	100	100	100	100
	R3-016-V	R3-016-VR	05/26/10	3-4	92.4	96.4	96.6	97.6	98.4	99.7	100	100	100	100	100	100	100	100
	R3-016-V	R3-016-V-Z5	05/26/10	4-6	94.4	96.1	96.3	97.2	97.9	99.2	99.8	100	100	100	100	100	100	100
	R3-016-V	R3-016-V-Z6	05/26/10	6-8	91.8	95.1	95.4	96.6	97.7	99.5	99.8	100	100	100	100	100	100	100
	R3-016-V	R3-016-V-Z7	05/26/10	8-9	92	97.5	98	99	99.5	99.9	100	100	100	100	100	100	100	100
	R3-017-V	R3-017-V-Z1	05/26/10	0-1	59.7	64	65.1	70.7	78.4	89.5	95.9	98.3	100	100	100	100	100	100
	R3-017-V	R3-017-V-Z2	05/26/10	1-2	41.8	48.3	50.7	63.7	78	87.1	91.5	96.2	99.1	100	100	100	100	100
	R3-017-V	R3-017-V-Z3	05/26/10	2-3	46.1	55.8	59.5	71.1	75.8	79.4	81	84.9	90.1	100	100	100	100	100

Key at the end of Table

Table 4-12b
Summary of Results of Particle Grain Size Analysis for the Samples Collected in 2010

					% Passing												
Reach	Location	Sample ID	Sample Date	Sample Depth (ft)	Sieve No. 200	Sieve No. 100	Sieve No. 80	Sieve No. 60	Sieve No. 40	Sieve No. 20	Sieve No. 10	Sieve No. 4	9500 microns Sieve	19000 microns Sieve	25000 microns Sieve	37500 microns Sieve	50000 microns Sieve	75000 microns Sieve
Reach 3	R3-017-V	R3-017-V-Z4	05/26/10	3-4	94.6	96.2	96.5	97.2	98.1	99	99.8	100	100	100	100	100	100	100
	R3-017-V	R3-017-V-Z5	05/26/10	4-6	94.1	96.5	96.8	97.5	98.4	99.4	99.9	100	100	100	100	100	100	100
	R3-017-V	R3-017-VR	05/26/10	4-6	88.7	91.7	92	93.6	95.3	98.6	99.8	100	100	100	100	100	100	100
	R3-017-V	R3-017-V-Z6	05/26/10	6-8	97.9	98.8	98.9	99	99.3	99.8	100	100	100	100	100	100	100	100
	R3-017-V	R3-017-V-Z7	05/26/10	8-8.5	96.5	98.1	98.3	98.7	99.1	99.7	100	100	100	100	100	100	100	100
	R3-018-V	R3-018-V-Z1	05/25/10	0-1	84.5	95.9	96.5	97.3	98.3	99.1	99.4	100	100	100	100	100	100	100
	R3-018-V	R3-018-V-Z2	05/25/10	1-2	90.2	97.5	97.8	98.3	98.8	99.3	99.8	100	100	100	100	100	100	100
	R3-018-V	R3-018-V-Z3	05/25/10	2-3	95.3	97.6	97.6	97.8	98	98.4	99.9	100	100	100	100	100	100	100
	R3-018-V	R3-018-V-Z4	05/25/10	3-4	97.3	98.2	98.3	98.5	98.7	99.2	100	100	100	100	100	100	100	100
	R3-018-V	R3-018-V-Z5	05/25/10	4-6	97	98.8	99	99.2	99.3	99.6	99.9	100	100	100	100	100	100	100
	R3-018-V	R3-018-V-Z6	05/25/10	6-8	93.1	98.2	98.4	98.8	99	99.5	99.9	100	100	100	100	100	100	100
	R3-018-V	R3-018-V-Z7	05/25/10	8-10	95.4	98.7	98.8	99.1	99.2	99.5	99.8	100	100	100	100	100	100	100
	R3-018-V	R3-018-V-Z8	05/25/10	10-12	98.9	99.5	99.5	99.6	99.7	99.7	100	100	100	100	100	100	100	100
	R3-019-V	R3-019-V-Z1	05/26/10	0-1	98.6	99.2	99.2	99.3	99.6	99.9	99.9	100	100	100	100	100	100	100
	R3-019-V	R3-019-V-Z2	05/26/10	1-2	98.8	99.3	99.4	99.5	99.7	99.9	100	100	100	100	100	100	100	100
	R3-019-V	R3-019-V-Z3	05/26/10	2-3	97.9	98.5	98.5	98.7	99	99.7	100	100	100	100	100	100	100	100
	R3-019-V	R3-019-V-Z4	05/26/10	3-4	98	98.5	98.5	98.6	98.8	99.2	99.9	100	100	100	100	100	100	100
	R3-020-V	R3-020-V-Z1	05/26/10	0-1	61.3	83.1	87.5	94.6	96.3	98.4	99.3	99.7	100	100	100	100	100	100
	R3-020-V	R3-020-V-Z2	05/26/10	1-2	93.9	97.2	97.5	98.2	98.6	99.3	100	100	100	100	100	100	100	100
	R3-020-V	R3-020-V-Z3	05/26/10	2-3	93.9	97.2	97.5	98.1	98.5	99.1	100	100	100	100	100	100	100	100
	R3-020-V	R3-020-V-Z4	05/26/10	3-4	93.2	97.7	98	98.8	99.1	99.6	100	100	100	100	100	100	100	100
	R3-020-V	R3-020-V-Z5	05/26/10	4-6	94.7	98.5	98.7	99.1	99.3	99.6	100	100	100	100	100	100	100	100
	R3-020-V	R3-020-V-Z6	05/26/10	6-8	95.3	98.3	98.5	99.1	99.3	99.6	100	100	100	100	100	100	100	100
	R3-020-V	R3-020-V-Z7	05/26/10	8-10	96	98.4	98.6	99	99.2	99.5	99.8	99.8	100	100	100	100	100	100
	R3-021-V	R3-021-V-Z1	05/26/10	0-1	55.4	68.6	69.7	72.5	74.9	78.9	82.3	83.5	85.6	100	100	100	100	100
	R3-021-V	R3-021-V-Z2	05/26/10	1-2	60.7	71.5	73.1	77.5	82.3	87.7	97.7	98.4	100	100	100	100	100	100
	R3-021-V	R3-021-V-Z3	05/26/10	2-3	77	87.9	89.2	92.8	95.3	97.1	99	99.5	100	100	100	100	100	100
	R3-022-V	R3-022-V-Z1	05/26/10	0-1	34.2	38.7	41.3	56.6	80.2	91.1	94.1	96.6	98.6	100	100	100	100	100
	R3-022-V	R3-022-V-Z2	05/26/10	1-2	51.2	63.8	68.9	83.5	94.1	96	96.9	98.8	100	100	100	100	100	100
	R3-022-V	R3-022-V-Z3	05/26/10	2-3	73.1	85.2	88.2	92.8	95.6	96.9	97.6	98.3	99.4	100	100	100	100	100
	R3-022-V	R3-022-V-Z4	05/26/10	3-4	79	83.1	84.1	86.5	94.5	99.3	100	100	100	100	100	100	100	100

Key at the end of Table

Table 4-12b
Summary of Results of Particle Grain Size Analysis for the Samples Collected in 2010

Reach	Location	Sample ID	Sample Date	Sample Depth (ft)	% Passing													
					Sieve No. 200	Sieve No. 100	Sieve No. 80	Sieve No. 60	Sieve No. 40	Sieve No. 20	Sieve No. 10	Sieve No. 4	9500 microns Sieve	19000 microns Sieve	25000 microns Sieve	37500 microns Sieve	50000 microns Sieve	75000 microns Sieve
Reach 3	R3-022-V	R3-022-V-Z5	05/26/10	4-6	85	91.9	93.2	95.4	97.7	99	99.4	99.7	100	100	100	100	100	100
	R3-022-V	R3-022-V-Z6	05/26/10	6-6.8	62.8	67.7	68.7	70.5	73.1	76.5	80.6	87.5	93.9	100	100	100	100	100
	R3-023-V	R3-023-V-Z1	05/26/10	0-1	21.8	24.7	25.5	27.8	31.7	36.2	51.6	77.4	97.4	100	100	100	100	100
	R3-023-V	R3-023-V-Z2	05/26/10	1-2	74.3	81	82.5	85.2	89	92.7	96	97.9	98.6	100	100	100	100	100
	R3-024-V	R3-024-V-Z1	05/26/10	0-1	83.5	93.7	95.4	96.8	98.1	99	99.2	99.7	100	100	100	100	100	100
	R3-024-V	R3-024-V-Z2	05/26/10	1-2	91.2	95.5	96	96.7	97.8	98.8	99.4	100	100	100	100	100	100	100
	R3-024-V	R3-024-V-Z3	05/26/10	2-3	96.4	97.3	97.5	97.9	98.5	99.5	99.8	100	100	100	100	100	100	100
	R3-024-V	R3-024-V-Z4	05/26/10	3-4	96.9	98	98.2	98.5	99.1	99.8	99.9	100	100	100	100	100	100	100
	R3-024-V	R3-024-V-Z5	05/26/10	4-6	93	95.4	95.8	97	98.1	98.9	99.1	99.2	99.3	100	100	100	100	100
	R3-024-V	R3-024-V-Z6	05/26/10	6-8	82.5	84.9	85.2	85.9	87.1	89.2	91	93.3	100	100	100	100	100	100
	R3-025-V	R3-025-V-Z1	05/26/10	0-1	7.9	8.4	8.5	8.9	10.6	13.6	19.5	39.2	75.9	100	100	100	100	100
	R3-026-V	R3-026-V-Z1	05/27/10	0-1	59.9	69.7	74.2	86	95.3	97.2	97.9	99.1	100	100	100	100	100	100
	R3-026-V	R3-026-V-Z2	05/27/10	1-2	66.7	77.8	81.1	87.4	92.6	94.3	94.5	95.7	98.8	100	100	100	100	100
	R3-026-V	R3-026-V-Z3	05/27/10	2-3	86.6	92.6	93.6	95.1	96.5	97.5	98.2	100	100	100	100	100	100	100
	R3-026-V	R3-026-V-Z4	05/27/10	3-4	76.6	83.6	85.4	89.5	94	97.1	98	100	100	100	100	100	100	100
	R3-027-V	R3-027-V-Z1	05/27/10	0-1	75.6	89.7	92.8	96.2	97.5	98.6	98.7	100	100	100	100	100	100	100
	R3-027-V	R3-027-V-Z2	05/27/10	1-2	56.1	68.8	75.2	87.6	93.4	95.9	96.3	98	100	100	100	100	100	100
	R3-027-V	R3-027-V-Z3	05/27/10	2-3	92.1	95.2	96	97.5	98.6	99.4	99.7	100	100	100	100	100	100	100
	R3-027-V	R3-027-V-Z4	05/27/10	3-4	75.6	82.5	84.4	89.8	94.8	96.8	97.5	98.4	100	100	100	100	100	100
Reach 4	R4-135-C	R4-135-C-Z1a	06/21/10	0-0.5	47.1	54.8	57.2	63.8	76.2	83.6	86.3	91	97.6	100	100	100	100	100
	R4-135-C	R4-135-C-Comp	06/21/10	0-0.8	21.1	24.5	25.6	28.8	39.2	58.3	78.7	93.5	100	100	100	100	100	100
	R4-136-C	R4-136-C-Z1a	06/21/10	0-0.4	45.6	48.6	49.3	50.9	54.4	60	71.3	84	95.6	100	100	100	100	100
	R4-137-C	R4-137-C-Comp	06/21/10	0-0.7	44.4	50.2	51.9	55.8	64.2	74.2	81.2	89.5	95.5	100	100	100	100	100
	R4-138-C	R4-138-C-Comp	06/21/10	0-0.4	12.9	17.4	19	23.4	34	49.8	69.6	87.4	97.9	100	100	100	100	100
	R4-139-C	R4-139-C-Z1a	06/22/10	0-0.3	64.2	74	76.1	80.5	86.9	92.7	93.7	96.6	100	100	100	100	100	100
	R4-140-C	R4-140-C-Z1a	06/23/10	0-0.3	12.8	14.6	15.1	16.4	19.9	30.2	55.6	84.4	98.3	100	100	100	100	100
	R4-141-C	R4-141-C-Z1a	06/23/10	0-0.5	42.9	47.1	48.2	50.9	58.4	70.4	79.7	91.2	100	100	100	100	100	100
	R4-141-C	R4-141-CR	06/23/10	0-0.5	38.1	42.6	43.7	46.8	55.5	69.8	81.2	93.8	96.6	100	100	100	100	100
	R4-141-C	R4-141-C-Comp	06/23/10	0-0.8	33.3	38.1	39.4	42.6	51.4	63.6	72.7	84.4	93	100	100	100	100	100
	R4-142-C	R4-142-C-Z1a	06/23/10	0-0.2	20	26.9	28.7	32.4	37.6	44.5	52.8	66.9	82.1	100	100	100	100	100
	R4-143-C	R4-143-C-Z1a	06/23/10	0-0.3	33.7	43	46.2	54.8	67.9	73	75.2	84.9	91.9	100	100	100	100	100

Key at the end of Table

Table 4-12b
Summary of Results of Particle Grain Size Analysis for the Samples Collected in 2010

Reach	Location	Sample ID	Sample Date	Sample Depth (ft)	% Passing													
					Sieve No. 200	Sieve No. 100	Sieve No. 80	Sieve No. 60	Sieve No. 40	Sieve No. 20	Sieve No. 10	Sieve No. 4	9500 microns Sieve	19000 microns Sieve	25000 microns Sieve	37500 microns Sieve	50000 microns Sieve	75000 microns Sieve
Reach 5	R5-039-V	R5-039-V-Z1	05/21/10	0-1	18.1	19.2	19.5	20.3	23.1	36.4	61.6	85.7	96.8	100	100	100	100	100
	R5-040-V	R5-040-V-Z1	05/20/10	0-1	90	94.8	95.8	97	97.4	97.6	97.9	100	100	100	100	100	100	100
	R5-040-V	R5-040-V-Z2	05/20/10	1-2	94.9	99	99.2	99.5	99.8	99.9	100	100	100	100	100	100	100	100
	R5-040-V	R5-040-V-Z3	05/20/10	2-3	96.8	99	99.3	99.6	99.8	99.9	100	100	100	100	100	100	100	100
	R5-040-V	R5-040-V-Z4	05/20/10	3-4	90.8	96	96.5	97.1	97.8	98.7	100	100	100	100	100	100	100	100
	R5-040-V	R5-040-V-Z5a	05/20/10	4.5-5	59.3	62.7	63.4	65	67.9	73.3	84.4	87.8	91.9	100	100	100	100	100
	R5-041-V	R5-041-V-Z1	05/24/10	0-1	98.7	99.3	99.3	99.4	99.4	99.6	99.7	99.7	100	100	100	100	100	100
	R5-041-V	R5-041-V-Z2	05/24/10	1-2	98.9	99.5	99.6	99.7	99.8	99.8	100	100	100	100	100	100	100	100
	R5-041-V	R5-041-V-Z3	05/24/10	2-3	99.6	99.8	99.9	99.9	99.9	99.9	100	100	100	100	100	100	100	100
	R5-041-V	R5-041-V-Z4	05/24/10	3-4	97.1	97.9	98.1	98.4	98.8	99.4	100	100	100	100	100	100	100	100
	R5-041-V	R5-041-V-Z5a	05/24/10	4-5	95.7	97.2	97.4	97.8	98.3	98.7	99.1	100	100	100	100	100	100	100
	R5-041-V	R5-041-V-Z5b	05/24/10	5-6	96.8	98.8	98.9	99.1	99.5	99.9	100	100	100	100	100	100	100	100
	R5-041-V	R5-041-V-Z6a	05/24/10	6-7	98.4	99.3	99.3	99.5	99.7	99.9	100	100	100	100	100	100	100	100
	R5-041-V	R5-041-V-Z6b	05/24/10	7-7.5	75	78.4	79.2	81.3	85.4	89.5	94.6	96.7	100	100	100	100	100	100
	R5-042-V	R5-042-V-Z1	05/20/10	0-1	94.8	98.4	98.7	99	99.2	99.5	100	100	100	100	100	100	100	100
	R5-042-V	R5-042-V-Z2	05/20/10	1-2	96.7	99.1	99.3	99.5	99.7	99.9	100	100	100	100	100	100	100	100
	R5-042-V	R5-042-V-Z3	05/20/10	2-3	67.3	69.5	69.9	71.1	73.7	80.1	94.2	97.4	98.3	100	100	100	100	100
	R5-042-V	R5-042-V-Z4	05/20/10	3-4	89.5	91.1	91.6	92.4	93.2	94.7	96.4	99.4	100	100	100	100	100	100
	R5-042-V	R5-042-V-Z5a	05/20/10	4.5-5	98.4	99.5	99.7	99.8	99.9	99.9	100	100	100	100	100	100	100	100
	R5-043-V	R5-043-V-Z1	05/20/10	0-1	34.6	39.1	40.9	47.1	54.8	58.5	60.7	66.9	71.4	71.4	100	100	100	100
	R5-043-V	R5-043-V-Z1P	05/20/10	0-1	86.8	90.7	91.8	94	96.7	98.4	98.8	99.4	100	100	100	100	100	100
	R5-043-V	R5-043-V-Z2	05/20/10	1-2	62.5	66.3	67.3	70.2	75	79.2	84.1	90	95.8	100	100	100	100	100
	R5-043-V	R5-043-V-Z3	05/20/10	2-3	66.7	71.2	72.3	74	76	78.3	81.6	89.1	97.9	100	100	100	100	100
	R5-043-V	R5-043-V-Z4	05/20/10	3-4	88.4	91.3	91.9	93.2	95.4	97.3	98.3	99.6	100	100	100	100	100	100
	R5-043-V	R5-043-V-Z5a	05/20/10	4-4.5	83.9	90.5	92.3	95.1	96.4	97.4	97.8	99.1	100	100	100	100	100	100
	R5-043-V	R5-043-V-Z5b	05/20/10	4.5-5	30.7	33.9	34.7	36.3	40	46.6	64.8	75.6	91.4	100	100	100	100	100
	R5-044-V	R5-044-V-Z2	05/20/10	1-2	93.8	96.8	97.2	98	98.8	99.6	100	100	100	100	100	100	100	100
	R5-044-V	R5-044-VR	05/20/10	1-2	93.8	96.5	97	97.9	98.8	99.5	100	100	100	100	100	100	100	100
	R5-044-V	R5-044-V-Z3	05/20/10	2-3	86	93.4	94.9	97.2	98.9	99.4	99.7	99.8	100	100	100	100	100	100
	R5-045-V	R5-045-V-Z2	05/20/10	1-2	76.2	80.7	81.8	83.7	86.2	88	89.5	91.2	100	100	100	100	100	100
	R5-045-V	R5-045-V-Z3	05/20/10	2-3	51.9	55.3	56.3	59.1	63.5	66.9	70.4	76.3	88.1	97	100	100	100	100

T-2596

Table 4-12b
Summary of Results of Particle Grain Size Analysis for the Samples Collected in 2010

Reach	Location	Sample ID	Sample Date	Sample Depth (ft)	% Passing													
					Sieve No. 200	Sieve No. 100	Sieve No. 80	Sieve No. 60	Sieve No. 40	Sieve No. 20	Sieve No. 10	Sieve No. 4	9500 microns Sieve	19000 microns Sieve	25000 microns Sieve	37500 microns Sieve	50000 microns Sieve	75000 microns Sieve
Reach 5	R5-045-V	R5-045-V-Z4	05/20/10	3-4	74.8	83.2	84.9	88.5	94.5	98.1	98.3	99.3	100	100	100	100	100	100
	R5-045-V	R5-045-V-Z5a	05/20/10	4.5-5	83.4	90.2	91.2	92.9	95.2	97.3	99.2	99.6	100	100	100	100	100	100
	R5-046-V	R5-046-V-Z1	05/20/10	0-1	87.5	91.1	91.7	92.6	93.9	95.8	96.4	96.9	97.6	100	100	100	100	100
	R5-046-V	R5-046-V-Z2	05/20/10	1-2	94.5	97.2	97.5	97.9	98.4	98.6	98.7	99	100	100	100	100	100	100
	R5-046-V	R5-046-V-Z3	05/20/10	2-3	95	98	98.5	99.3	99.8	100	100	100	100	100	100	100	100	100
	R5-046-V	R5-046-V-Z4	05/20/10	3-4	92.5	96.6	97.3	98.3	99	99.6	100	100	100	100	100	100	100	100
	R5-046-V	R5-046-V-Z5a	05/20/10	4-5	91.3	96	97.1	98.4	99.1	99.6	100	100	100	100	100	100	100	100
	R5-046-V	R5-046-V-Z5b	05/20/10	5-6	73.6	81	82.4	86.7	90	93.5	96.2	98.1	98.5	100	100	100	100	100
	R5-046-V	R5-046-V-Z6a	05/20/10	6-7	58.5	62.8	63.6	66	68.9	76.8	87.5	89	91.7	100	100	100	100	100
	R5-047-V	R5-047-V-Z1	05/20/10	0-1	95.8	98.1	98.4	99	99.3	99.6	99.7	99.8	100	100	100	100	100	100
	R5-047-V	R5-047-V-Z2	05/20/10	1-2	93.9	97.3	97.7	98.3	98.7	99.1	99.3	99.7	100	100	100	100	100	100
	R5-047-V	R5-047-V-Z3	05/20/10	2-3	95.5	97.3	97.6	98.5	99	99.5	100	100	100	100	100	100	100	100
	R5-047-V	R5-047-V-Z4	05/20/10	3-4	95.9	97.9	98.2	98.9	99.1	99.4	100	100	100	100	100	100	100	100
	R5-048-V	R5-048-V-Z1	05/21/10	0-1	82.6	85.2	86.1	88.4	92.5	95.4	97.3	99.1	100	100	100	100	100	100
	R5-048-V	R5-048-V-Z2	05/21/10	1-2	96.3	98.5	98.7	99.1	99.4	99.7	99.9	100	100	100	100	100	100	100
	R5-048-V	R5-048-V-Z3	05/21/10	2-3	75.7	77.6	78.2	79.5	82.3	86.4	89.3	92.3	100	100	100	100	100	100
	R5-049-V	R5-049-V-Z1	05/21/10	0-1	81.1	90.6	92.1	94.2	96.1	97.3	98.9	100	100	100	100	100	100	100
	R5-049-V	R5-049-V-Z2	05/21/10	1-2	86.2	94.7	95.8	97.3	98.2	98.7	99.8	100	100	100	100	100	100	100
	R5-049-V	R5-049-V-Z3	05/21/10	2-3	89.5	92.8	93.3	94.3	95.3	96	96.8	97.5	100	100	100	100	100	100
	R5-049-V	R5-049-V-Z4	05/21/10	3-4	80.6	89.2	90.3	92.6	96.1	97.5	98.5	99.2	100	100	100	100	100	100
	R5-049-V	R5-049-V-Z5a	05/21/10	4-4.5	88.9	94.1	94.9	96.3	97.7	98.6	98.8	100	100	100	100	100	100	100
	R5-050-V	R5-050-V-Z1	05/21/10	0-1	51.6	62.1	64.2	67.2	69.3	70.4	97.5	100	100	100	100	100	100	100
	R5-050-V	R5-050-V-Z2	05/21/10	1-2	88.7	94.2	95.1	96.3	97.5	98.2	98.2	100	100	100	100	100	100	100
	R5-050-V	R5-050-VR	05/21/10	1-2	85.3	90	90.8	91.8	93	93.7	93.8	100	100	100	100	100	100	100
	R5-050-V	R5-050-V-Z3	05/21/10	2-3	91.3	94.7	95.3	96.1	97	98.1	99.1	100	100	100	100	100	100	100
	R5-050-V	R5-050-V-Z4	05/21/10	3-4	91.4	94.4	95	95.8	96.7	97.8	99.8	100	100	100	100	100	100	100
	R5-050-V	R5-050-V-Z5a	05/21/10	4-4.5	41.4	46.4	47.6	49.6	53	57.9	57.9	59.6	61.5	72.3	100	100	100	100
Reach 6	R6-144-C	R6-144-C-Z1a	07/02/10	0-0.5	95.3	98.2	98.5	99	99.5	99.8	100	100	100	100	100	100	100	100
	R6-144-C	R6-144-C-Comp	07/02/10	0-1.3	94.5	97.7	98	98.5	99	99.3	99.6	100	100	100	100	100	100	100
	R6-145-C	R6-145-C-Z1a	07/02/10	0-0.5	77.1	83.5	85	88.7	95.7	98.7	99.4	100	100	100	100	100	100	100
	R6-145-C	R6-145-C-Comp	07/02/10	0-0.7	59.4	67.6	69.8	75.4	87.1	94.1	97	97.9	100	100	100	100	100	100

Key at the end of Table

Table 4-12b
Summary of Results of Particle Grain Size Analysis for the Samples Collected in 2010

Reach	Location	Sample ID	Sample Date	Sample Depth (ft)	% Passing													
					Sieve No. 200	Sieve No. 100	Sieve No. 80	Sieve No. 60	Sieve No. 40	Sieve No. 20	Sieve No. 10	Sieve No. 4	9500 microns Sieve	19000 microns Sieve	25000 microns Sieve	37500 microns Sieve	50000 microns Sieve	75000 microns Sieve
Reach 6	R6-146-C	R6-146-C-Z1a	07/02/10	0-0.5	85.3	89.4	90.3	92.9	97.2	99.2	99.3	100	100	100	100	100	100	100
	R6-146-C	R6-146-C-Comp	07/02/10	0-1.1	70	74.5	75.5	77.7	82	87.2	89.6	93.8	100	100	100	100	100	100
	R6-147-C	R6-147-C-Z1a	07/01/10	0-0.5	87.3	92.9	93.8	95.3	97.3	98.9	99.3	100	100	100	100	100	100	100
	R6-147-C	R6-147-C-Comp	07/01/10	0-0.8	76.7	85.2	86.8	89.7	93.1	95.9	97.1	98.1	100	100	100	100	100	100
	R6-148-C	R6-148-C-Comp	07/01/10	0-0.9	55.8	75.6	77.7	80.4	82.2	84.7	88.6	92.8	94.7	100	100	100	100	100
	R6-148-C	R6-148-CR	07/01/10	0-0.9	72	85.4	87.1	89.1	90.6	92.4	95.3	97.7	100	100	100	100	100	100
	R6-149-C	R6-149-C-Comp	07/01/10	0-0.9	23.7	28.9	30.9	35.7	45.1	62	78.7	86.6	95.5	100	100	100	100	100
	R6-150-C	R6-150-C-Comp	07/01/10	0-0.9	66.7	75.7	77.9	82.9	90.4	94.4	97.6	98.6	100	100	100	100	100	100
	R6-151-C	R6-151-C-Comp	07/02/10	0-0.7	94	97.9	98	98.2	98.6	98.9	98.9	100	100	100	100	100	100	100
	R6-152-C	R6-152-C-Comp	07/02/10	0-0.7	79	89	90.4	92.3	93.7	94.7	95.1	96	100	100	100	100	100	100
	R6-152-C	R6-152-CR	07/02/10	0-0.7	82.3	91.5	92.7	94.3	95.5	96.4	96.6	97.5	100	100	100	100	100	100
	R6-153-C	R6-153-C-Comp	07/02/10	0-0.5	86	90.7	91.5	93.1	95.9	97.5	98	100	100	100	100	100	100	100
	R6-154-C	R6-154-C-Comp	07/01/10	0-1.1	61.9	68.8	70.2	73	76.6	79.8	83.7	89	100	100	100	100	100	100
	R6-154-C	R6-154-C-Z1a	07/01/10	0-0.5	75.4	85.5	87.1	90	93.4	96.1	98	99	100	100	100	100	100	100
	R6-155-C	R6-155-C-Comp	07/01/10	0-0.7	88.9	94.4	95.3	96.8	98.3	99.2	99.7	100	100	100	100	100	100	100
	R6-156-C	R6-156-C-Comp	07/01/10	0-0.7	45.4	62.6	68.5	80.7	92	95.2	96.6	98.2	100	100	100	100	100	100
	R6-157-C	R6-157-C-Z1a	07/01/10	0-0.5	60.7	78.2	82.9	91.5	97.7	99	99.2	100	100	100	100	100	100	100
	R6-157-C	R6-157-C-Comp	07/01/10	0-1.2	79.4	88.7	90.7	94.3	97.4	98.9	99.5	100	100	100	100	100	100	100
	R6-158-C	R6-158-C-Z1a	07/01/10	0-0.5	47.7	66.6	72.3	85	97.3	98.8	98.9	99.2	99.9	100	100	100	100	100
	R6-158-C	R6-158-CR	07/01/10	0-0.5	49.4	65.6	71	83.9	97.4	99.3	99.5	99.8	100	100	100	100	100	100
	R6-158-C	R6-158-C-Comp	07/01/10	0-1.4	74.4	84.6	87.4	93.1	98.2	99.3	99.5	100	100	100	100	100	100	100
	R6-159-C	R6-159-C-Z1a	07/01/10	0-0.5	82	93	94.6	97.1	98.7	99.3	99.5	99.6	100	100	100	100	100	100
	R6-159-C	R6-159-C-Comp	07/01/10	0-1.3	73.8	87.9	90.8	95.5	98.4	99.4	99.6	99.8	100	100	100	100	100	100
	R6-160-C	R6-160-C-Z1a	07/01/10	0-0.5	92.6	96.3	96.8	97.6	98.7	99.3	99.4	99.7	100	100	100	100	100	100
	R6-160-C	R6-160-C-Comp	07/01/10	0-1.7	92.8	96.1	96.7	97.6	98.8	99.7	100	100	100	100	100	100	100	100
	R6-161-C	R6-161-C-Z1a	07/01/10	0-0.5	65.1	73.1	75.3	81.8	94.4	97.4	98.1	98.9	99.3	100	100	100	100	100
	R6-161-C	R6-161-C-Z1	07/01/10	0.5-1.5	57.5	63.4	65.3	70.6	81.4	86	88.3	95.1	99	100	100	100	100	100
	R6-162-C	R6-162-C-Comp	06/30/10	0-0.8	80	92.7	94.2	95.7	96.8	97.6	98	98.5	99.3	100	100	100	100	100
	R6-163-C	R6-163-C-Z1a	06/30/10	0-0.5	70.6	89.6	90.8	93.5	97.8	99.2	100	100	100	100	100	100	100	100
	R6-163-C	R6-163-C-Z1	06/30/10	0.5-1.4	76.5	91.9	93.3	95.9	98.4	99.1	99.4	99.8	100	100	100	100	100	100
	R6-164-C	R6-164-C-Z1a	06/30/10	0-0.5	77.5	96.7	97.8	98.9	99.4	99.7	99.9	100	100	100	100	100	100	100

Key at the end of Table

Table 4-12b
Summary of Results of Particle Grain Size Analysis for the Samples Collected in 2010

Reach	Location	Sample ID	Sample Date	Sample Depth (ft)	% Passing													
					Sieve No. 200	Sieve No. 100	Sieve No. 80	Sieve No. 60	Sieve No. 40	Sieve No. 20	Sieve No. 10	Sieve No. 4	9500 microns Sieve	19000 microns Sieve	25000 microns Sieve	37500 microns Sieve	50000 microns Sieve	75000 microns Sieve
Reach 6	R6-164-C	R6-164-C-Comp	06/30/10	0-1.4	87.2	95.8	96.7	97.8	98.6	99	99.2	99.7	100	100	100	100	100	100
	R6-165-C	R6-165-C-Z1a	06/30/10	0-0.5	90.5	96.3	97	97.7	98.3	98.6	98.6	99.2	100	100	100	100	100	100
	R6-165-C	R6-165-C-Comp	06/30/10	0-1.6	84.7	90.1	91	92.4	94.1	95.3	95.7	97.6	100	100	100	100	100	100
	R6-166-C	R6-166-C-Z1a	06/30/10	0-0.5	83.3	91.3	92.3	93.5	94.6	95.2	95.3	95.7	96.7	96.7	100	100	100	100
	R6-166-C	R6-166-C-Comp	06/30/10	0-2.1	85.4	91.5	92.8	94.8	96.6	97.8	98.4	99.2	100	100	100	100	100	100
	R6-167-C	R6-167-C-Z1a	06/30/10	0-0.5	95.5	97.8	98.1	98.6	99.6	100	100	100	100	100	100	100	100	100
	R6-167-C	R6-167-C-Comp	06/30/10	0-1.3	85.7	90.6	91.7	93.7	96.8	98.2	98.4	99.1	100	100	100	100	100	100
	R6-168-C	R6-168-C-Z1a	06/30/10	0-0.5	88.6	96.9	97.3	98.2	98.6	99	99.4	99.7	100	100	100	100	100	100
	R6-168-C	R6-168-C-Comp	06/30/10	0-1.3	69.7	94	95	96.2	97.1	97.7	97.9	98.2	98.3	100	100	100	100	100
	R6-169-C	R6-169-C-Z1a	06/28/10	0-0.5	69.8	76.9	78.1	80.6	84.9	91.8	97.7	99.4	100	100	100	100	100	100
	R6-169-C	R6-169-C-Comp	06/28/10	0-1.4	76.8	83.3	84.8	88.2	92.6	97.2	99	99.7	100	100	100	100	100	100
	R6-170-C	R6-170-C-Z1a	06/25/10	0-0.5	77.8	85.6	87	89.4	92.5	95.6	97.6	98.6	100	100	100	100	100	100
	R6-170-C	R6-170-C-Comp	06/25/10	0-1.5	79.5	86	87.2	89.4	92.5	96	98.3	98.9	100	100	100	100	100	100
	R6-171-C	R6-171-C-Z1a	06/25/10	0-0.5	69.8	80.3	82	85	88.3	91.8	98.4	99.4	100	100	100	100	100	100
	R6-171-C	R6-171-C-Comp	06/25/10	0-1.2	81.1	89.5	91	93.3	95.5	97.2	99.2	99.8	100	100	100	100	100	100
Reach 7	R7-172-C	R7-172-C-Z1a	06/25/10	0-0.5	30	40.8	46.9	62.4	83.2	89.3	92.2	97.4	100	100	100	100	100	100
	R7-172-C	R7-172-C-Comp	06/25/10	0-0.9	35	44.6	48.6	60.3	82.2	88.9	92	97.2	100	100	100	100	100	100
	R7-173-C	R7-173-C-Z1a	06/25/10	0-0.5	77.5	87.9	89.5	92.7	96.6	99.2	99.5	100	100	100	100	100	100	100
	R7-173-C	R7-173-C-Comp	06/25/10	0-1.1	77	87.3	88.9	91.8	95.4	98.2	98.5	100	100	100	100	100	100	100
	R7-174-C	R7-174-C-Z1a	06/25/10	0-0.5	79.3	88.1	89.2	91	93.2	94.7	95.5	97.8	100	100	100	100	100	100
	R7-174-C	R7-174-C-Comp	06/25/10	0-1.2	71.7	81.3	82.9	85.7	89	91.7	95	97.5	100	100	100	100	100	100
	R7-175-C	R7-175-C-Z1a	06/24/10	0-0.5	80.3	89.8	91	92.8	94.8	96.2	97.1	97.8	98.9	100	100	100	100	100
	R7-175-C	R7-175-C-Z1	06/24/10	0.5-1.4	84.5	92.9	93.8	95.3	96.6	97.2	97.4	98	100	100	100	100	100	100
	R7-176-C	R7-176-C-Z1a	06/24/10	0-0.5	44.8	68.2	73.2	82.2	90.3	94	94.8	99.4	100	100	100	100	100	100
	R7-176-C	R7-176-C-Comp	06/24/10	0-0.9	31.3	46	49.7	58	69.8	80.3	82.1	91.5	96.3	100	100	100	100	100
	R7-177-C	R7-177-C-Z1a	06/24/10	0-0.5	75.1	85.3	86.7	88.9	92	94.7	97.3	98.2	100	100	100	100	100	100
	R7-177-C	R7-177-C-Z1	06/24/10	0.5-1.1	71.7	84.7	86.8	90.6	94.4	97.3	99.1	99.9	100	100	100	100	100	100
	R7-177-C	R7-177-CR	06/24/10	0.5-1.1	72.8	84.5	86.5	89.6	92.6	94.5	95	96.7	100	100	100	100	100	100
	R7-178-C	R7-178-C-Z1a	06/24/10	0-0.5	52.2	62.3	65.4	71.4	76.6	80.6	82.9	89.4	97.4	100	100	100	100	100
	R7-178-C	R7-178-C-Z1	06/24/10	0.5-1.2	34.3	46	49.8	58.2	67.5	76	87	89.5	97.6	100	100	100	100	100

Key at the end of Table

Table 4-12b
Summary of Results of Particle Grain Size Analysis for the Samples Collected in 2010

Reach	Location	Sample ID	Sample Date	Sample Depth (ft)	% Passing												
					Sieve No. 200	Sieve No. 100	Sieve No. 80	Sieve No. 60	Sieve No. 40	Sieve No. 20	Sieve No. 10	Sieve No. 4	9500 microns Sieve	19000 microns Sieve	25000 microns Sieve	37500 microns Sieve	50000 microns Sieve	75000 microns Sieve
Reach 7	R7-179-C	R7-179-C-Z1a	06/23/10	0-0.5	55.8	80.8	84.4	88.9	92.8	95.2	97.2	99.4	100	100	100	100	100	100
	R7-179-C	R7-179-C-Comp	06/23/10	0-0.7	80.7	90.9	92.1	93.9	96.2	98	98.4	99.1	100	100	100	100	100	100
	R7-180-C	R7-180-C-Z1a	06/23/10	0-0.5	60.9	74.6	78.4	85.5	91.5	94.9	96.7	99.2	99.7	100	100	100	100	100
	R7-180-C	R7-180-C-Comp	06/23/10	0-1.1	42.7	62	67.3	77.7	86.9	92.5	95.7	98.5	99.3	100	100	100	100	100
	R7-181-C	R7-181-C-Z1a	07/01/10	0-0.5	43.1	67.7	75.2	88	96.3	98.3	99.1	99.7	100	100	100	100	100	100
	R7-181-C	R7-181-C-Comp	07/01/10	0-1.3	35.4	51.1	57.9	73.6	89.2	95.2	97.3	99.5	100	100	100	100	100	100
	R7-182-C	R7-182-C-Comp	07/01/10	0-0.8	79.6	87.8	89.1	91.5	94.3	96	97.1	97.4	97.6	97.6	100	100	100	100
	R7-183-C	R7-183-C-Z1a	07/01/10	0-0.5	63.4	77	81.8	91.1	96.7	98.9	99.2	99.4	99.6	99.9	99.9	100	100	100
	R7-183-C	R7-183-C-Comp	07/01/10	0-1.3	58.3	71.8	75.7	83.7	91.3	95.2	96.7	98.4	100	100	100	100	100	100
	R7-184-C	R7-184-C-Comp	06/30/10	0-0.75	67.8	79.9	82.2	88.9	92.4	95.6	98.1	99.6	100	100	100	100	100	100
	R7-185-C	R7-185-C-Z1a	06/30/10	0-0.5	86.8	95.6	96.1	97.2	97.9	98.5	98.7	99.3	100	100	100	100	100	100
	R7-185-C	R7-185-C-Comp	06/30/10	0-0.7	70.4	85.6	87.5	92.9	95.9	97.5	98	99.2	100	100	100	100	100	100
	R7-186-C	R7-186-C-Z1a	06/30/10	0-0.5	39	76.2	81.7	91.2	96.2	98.8	99.7	99.9	100	100	100	100	100	100
	R7-186-C	R7-186-C-Comp	06/30/10	0-0.7	31.2	54.1	58.7	69.6	78.5	86.5	91.4	95.6	99.2	100	100	100	100	100
	R7-187-C	R7-187-C-Z1a	06/30/10	0-0.5	95.8	98.8	98.9	99.3	99.5	99.7	99.8	100	100	100	100	100	100	100
	R7-187-C	R7-187-C-Comp	06/30/10	0-0.95	71.1	81.4	83.1	88.4	92.7	95.9	96.6	97.9	98.9	100	100	100	100	100
	R7-188-C	R7-188-C-Z1a	06/30/10	0-0.5	89.7	98	98.5	99.5	99.8	99.9	99.9	100	100	100	100	100	100	100
	R7-188-C	R7-188-C-Z1	06/30/10	0.4-1.1	41	53.5	58.8	78.4	93.7	97.4	98.2	98.8	100	100	100	100	100	100
	R7-189-C	R7-189-C-Z1a	06/30/10	0-0.5	58.2	63	64.4	68.1	75.6	88.9	98.8	99.4	100	100	100	100	100	100
	R7-189-C	R7-189-C-Comp	06/30/10	0-1.2	68	86.9	89	93.3	96	98.3	99.5	99.7	100	100	100	100	100	100
	R7-189-C	R7-189-CR	06/30/10	0-1.2	68.8	88.2	90.2	94.3	96.4	98.2	99.2	99.4	100	100	100	100	100	100
	R7-190-C	R7-190-C-Comp	06/30/10	0-0.7	47.4	72.2	77.1	84	89.9	94.2	98.4	99.3	100	100	100	100	100	100
	R7-191-C	R7-191-C-Z1a	06/29/10	0-0.5	77.4	91.6	93.4	95.7	97.8	98.9	99.2	99.6	99.7	100	100	100	100	100
	R7-191-C	R7-191-C-Comp	06/29/10	0-0.9	69.7	89.5	91.7	94.5	97.5	99	99.3	99.6	99.7	100	100	100	100	100
	R7-192-C	R7-192-C-Z1a	06/29/10	0-0.3	43.4	69.6	72.7	76.9	80.3	81.8	82.2	82.6	85.4	90.7	100	100	100	100
	R7-193-C	R7-193-C-Z1a	06/29/10	0-0.5	53.7	76.9	81	87.1	93.3	96.9	98	98.8	99.3	100	100	100	100	100
	R7-193-C	R7-193-C-Comp	06/29/10	0-0.8	55.1	72.3	76.4	83.5	90.8	95.6	98.1	99.1	99.4	100	100	100	100	100
	R7-194-C	R7-194-C-Comp	06/29/10	0-0.6	21.8	32.1	35.2	42.9	56.3	69	81.4	92.4	98.5	100	100	100	100	100
	R7-195-C	R7-195-C-Comp	06/29/10	0-0	22.8	44.1	49	57.3	68.3	78.4	86.1	91.2	95.6	100	100	100	100	100
	R7-196-C	R7-196-C-Z1a	06/29/10	0-0.5	61	77.2	79.3	82.4	87.1	92.8	96	97.7	98.6	99.7	100	100	100	100
	R7-196-C	R7-196-C-Comp	06/29/10	0-1.3	57.4	87.2	90.4	94	96.9	98.4	98.9	99.5	99.8	100	100	100	100	100

Key at the end of Table

Table 4-12b
Summary of Results of Particle Grain Size Analysis for the Samples Collected in 2010

Reach	Location	Sample ID	Sample Date	Sample Depth (ft)	% Passing													
					Sieve No. 200	Sieve No. 100	Sieve No. 80	Sieve No. 60	Sieve No. 40	Sieve No. 20	Sieve No. 10	Sieve No. 4	9500 microns Sieve	19000 microns Sieve	25000 microns Sieve	37500 microns Sieve	50000 microns Sieve	75000 microns Sieve
Reach 7	R7-197-C	R7-197-C-Z1a	06/28/10	0-0.5	30.9	74.1	79.4	86.1	93	96.8	98.7	99.5	100	100	100	100	100	100
	R7-197-C	R7-197-C-Comp	06/28/10	0-1.2	30.7	66.5	71.4	78.2	86.1	93.5	97.7	99.1	100	100	100	100	100	100
	R7-197-C	R7-197-CR	06/28/10	0-1.2	35.7	69	73.6	80.2	86.8	92.6	96.6	99	100	100	100	100	100	100
	R7-198-C	R7-198-C-Z1a	06/28/10	0-0.5	22.9	55.2	66.4	80.4	90.2	95.5	98.3	99.5	100	100	100	100	100	100
	R7-198-C	R7-198-C-Comp	06/28/10	0-0.9	28.4	60.2	70	81.5	89.5	94.2	96.6	98.3	100	100	100	100	100	100
	R7-199-C	R7-199-C-Z1a	06/28/10	0-0.5	41.9	63.6	68.6	76.2	85	92.2	92.8	96.9	100	100	100	100	100	100
	R7-199-C	R7-199-C-Comp	06/28/10	0-1.5	27	49.8	55.7	66	77.9	85.4	90.4	95.3	98.6	100	100	100	100	100
	R7-200-C	R7-200-C-Z1a	06/28/10	0-0.5	23.5	61.1	71.6	85	94.1	99.1	99.4	99.7	100	100	100	100	100	100
	R7-200-C	R7-200-C-Comp	06/28/10	0-3	15.5	34.6	41.6	54.5	71.2	83.7	89.8	95.2	98.6	100	100	100	100	100
	R7-201-T	R7-201-T-Z1a	06/25/10	0-0.5	89.3	95.1	96	97.2	98.2	99	99.3	100	100	100	100	100	100	100
	R7-201-T	R7-201-T-Comp	06/25/10	0-1.1	52.4	58.4	60.2	63.5	67.1	70.5	74.8	82.7	100	100	100	100	100	100
	R7-202-T	R7-202-T-Z1a	06/29/10	0-0.5	84.9	90.2	91.4	92.9	94	94.8	95.2	97	98.6	99.8	100	100	100	100
	R7-202-T	R7-202-T-Comp	06/29/10	0-0.9	65	73.9	76.9	81.5	84.4	86.7	88.7	92.6	94.8	99.8	100	100	100	100
	R7-203-T	R7-203-T-Z1a	06/29/10	0-0.5	53.7	66.9	70.8	79.4	92.4	97.7	98.9	99.7	99.8	100	100	100	100	100
	R7-203-T	R7-203-T-Comp	06/29/10	0-0.7	52	61.5	64.3	71.3	84.1	90.9	93	95.5	98.2	100	100	100	100	100
	R7-204-T	R7-204-T-Z1a	06/29/10	0-0.3	40.3	56.4	60	66.4	74.4	80.1	83.2	87.7	92.7	100	100	100	100	100
	R7-205-T	R7-205-T-Z1a	06/29/10	0-0.5	51	62.6	65.9	73.5	86	94	97.6	98.7	99.8	100	100	100	100	100
	R7-205-T	R7-205-T-Comp	06/29/10	0-0.8	41.6	53.3	56.9	65.5	80.4	90.4	96	99.5	99.8	100	100	100	100	100

Key:

-C = Hand-core creek location/sample.
-Comp = Hand-core creek composite sample.
-C R= Duplicate hand-core creek sample.
ft = Feet.
-P = Ponar creek location/sample.
-T = Tributary location/sample.
-V = Vibracore creek location/sample.
-VR = Vibracore creek duplicate sample.
-Z = Sample depth interval consecutively numbered.

Key at the end of Table

Figures

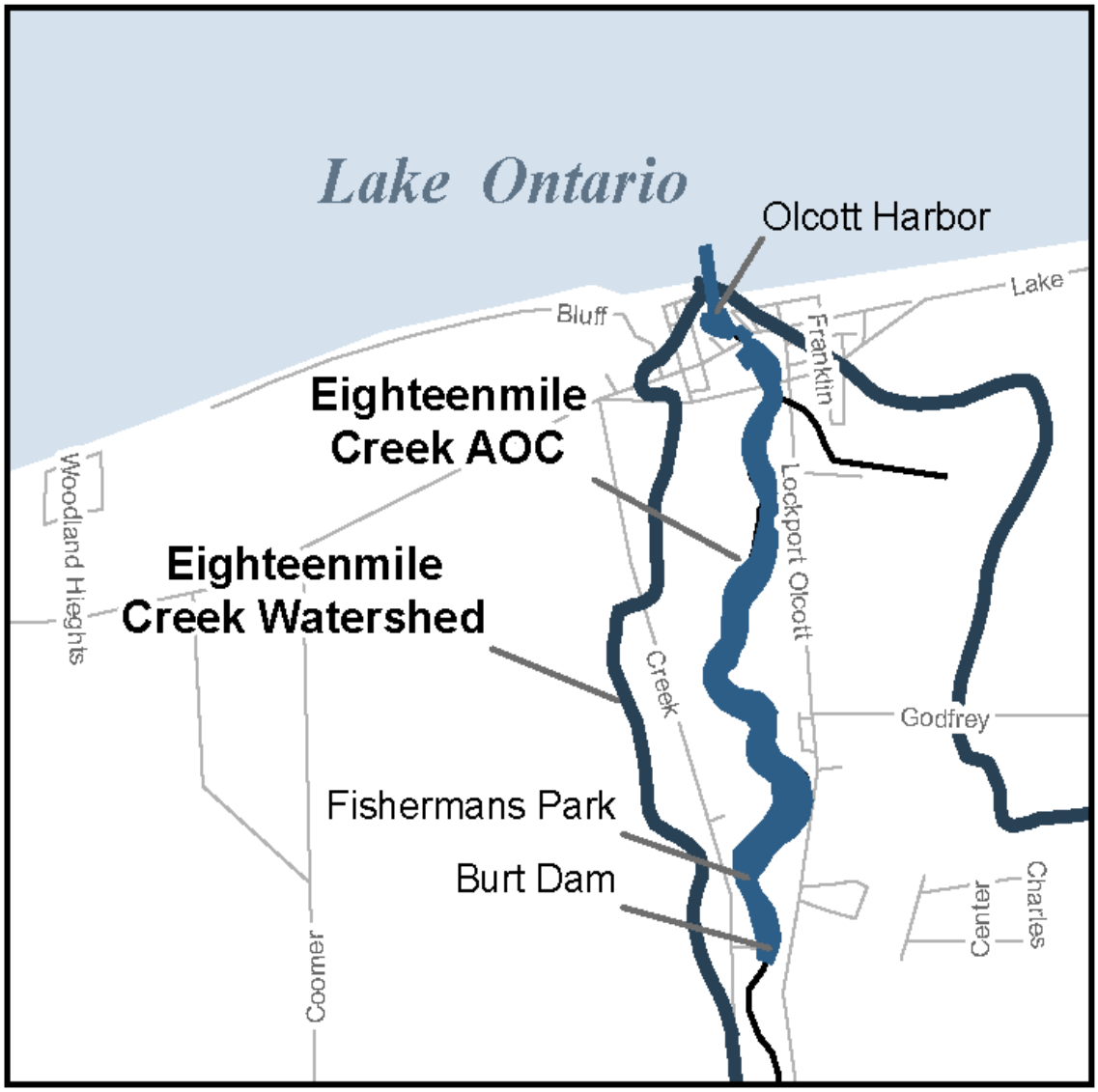


Figure 1-1 Eighteenmile Creek AOC Location Map

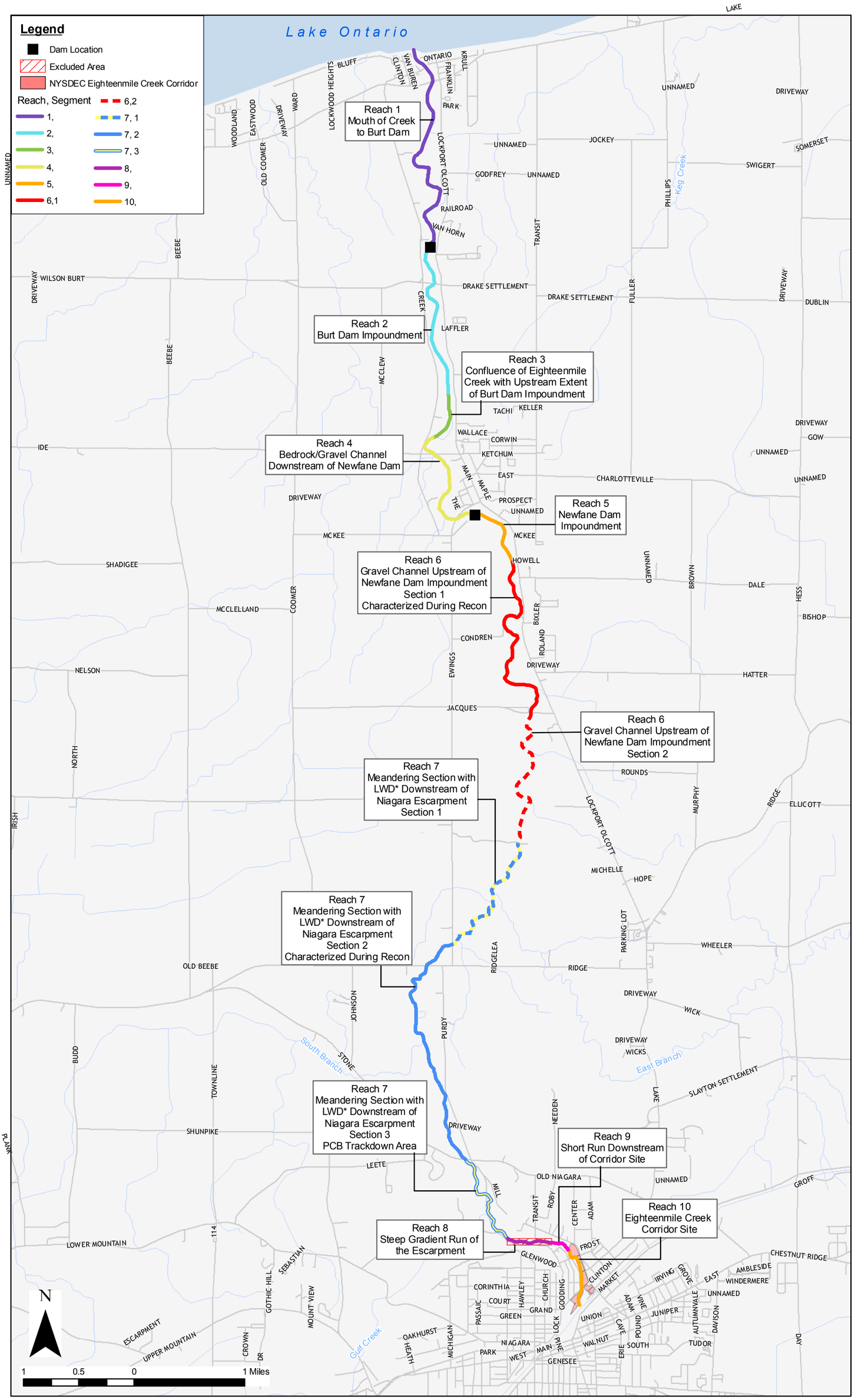


Figure 1-2 Eighteenmile Creek AOC and Investigation Areas

© Ecology & Environment, Inc. GIS Department Project #
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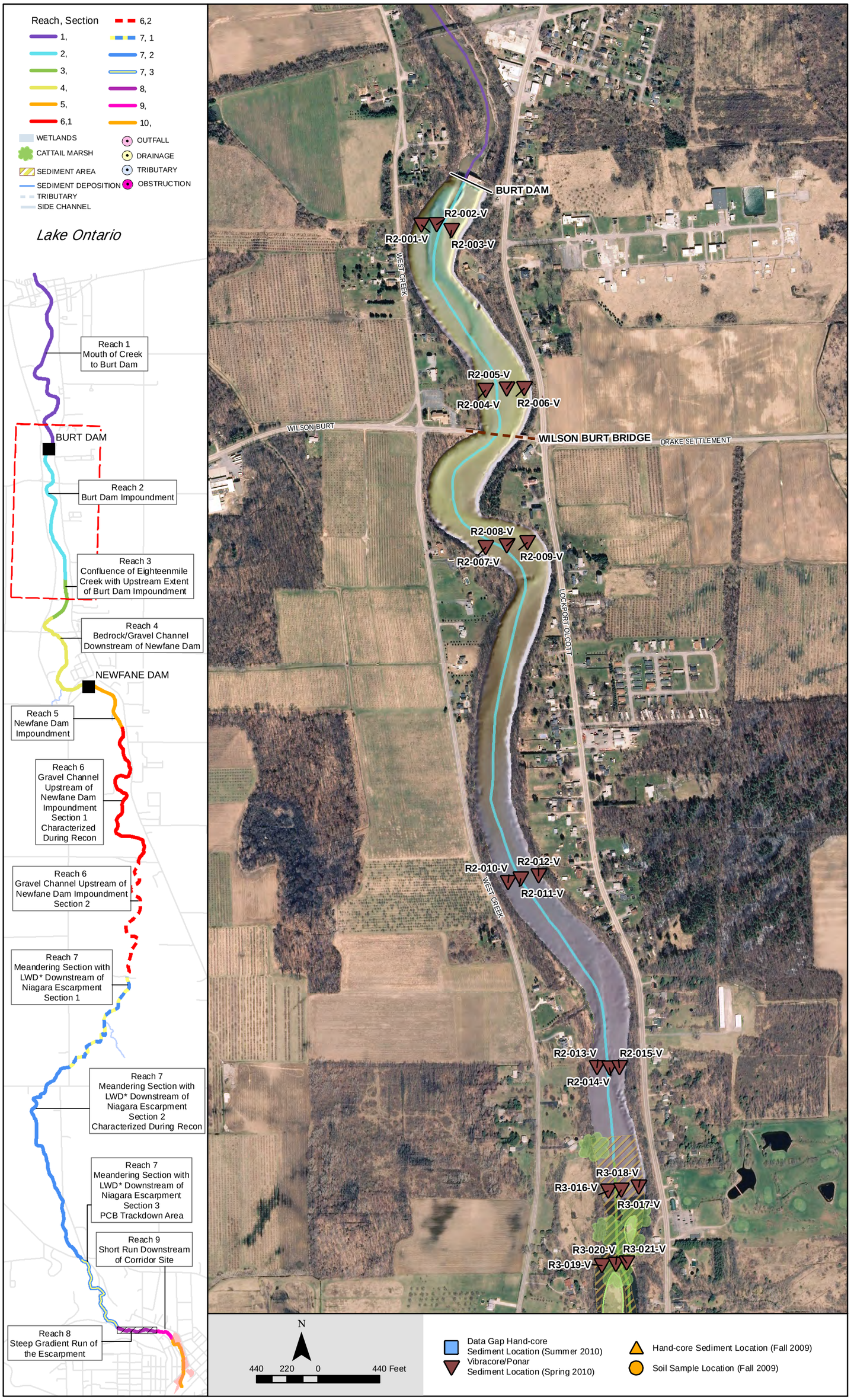


Figure 2-1 Sampling Locations in Eighteenmile Creek Reach 2

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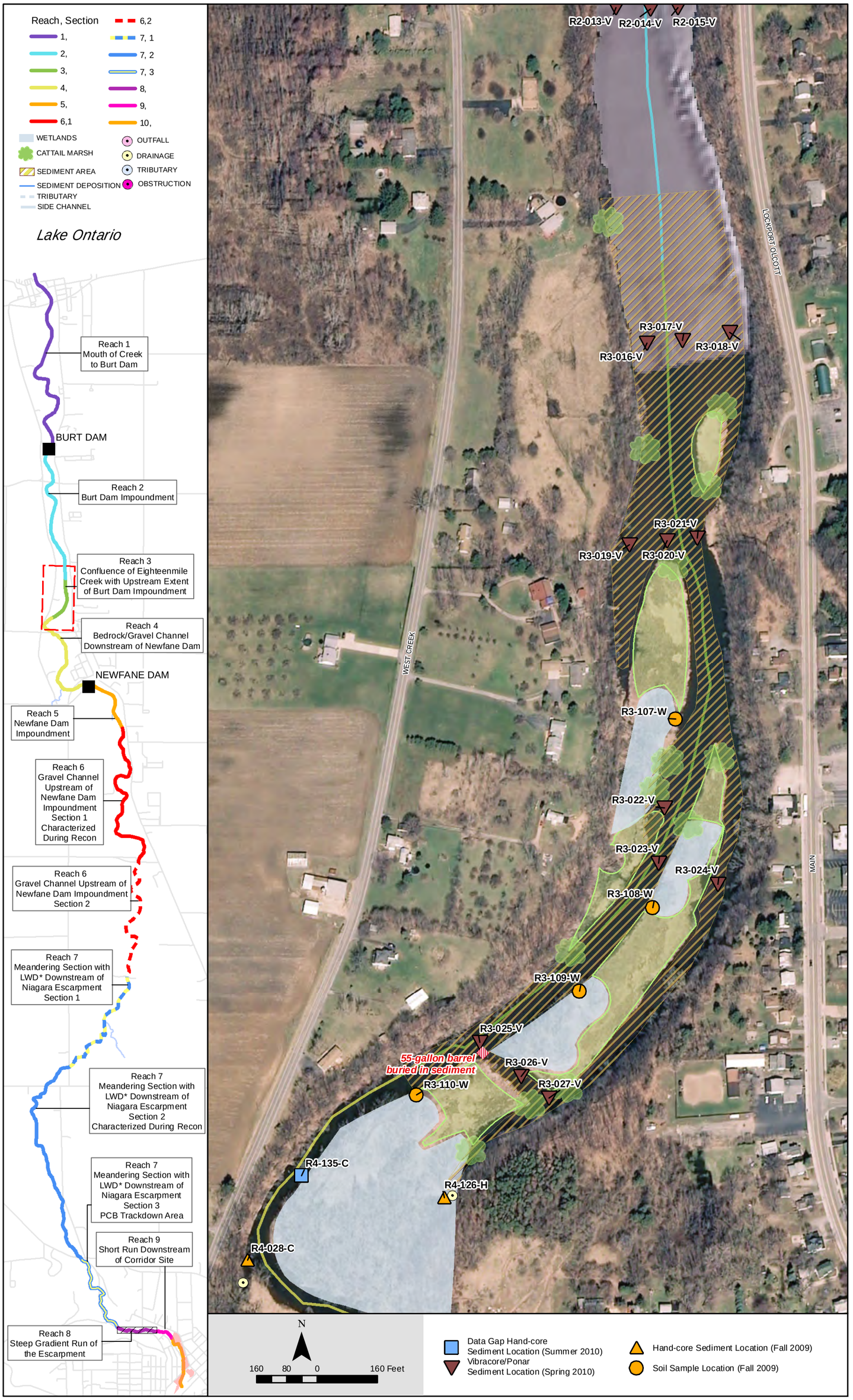


Figure 2-2 Sampling Locations in Eighteenmile Creek Reach 3

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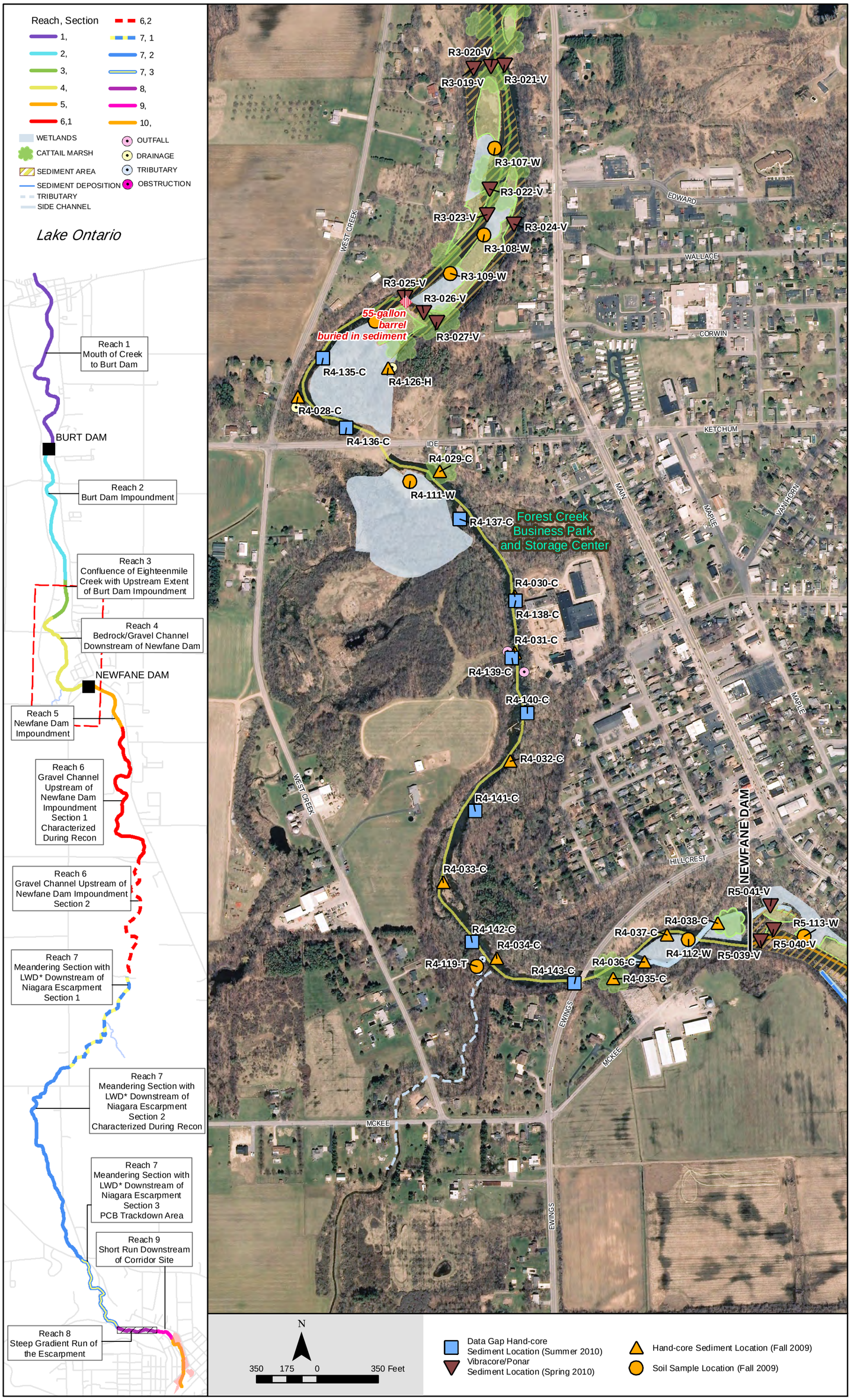


Figure 2-3 Sampling Locations in Eighteenmile Creek Reach 4

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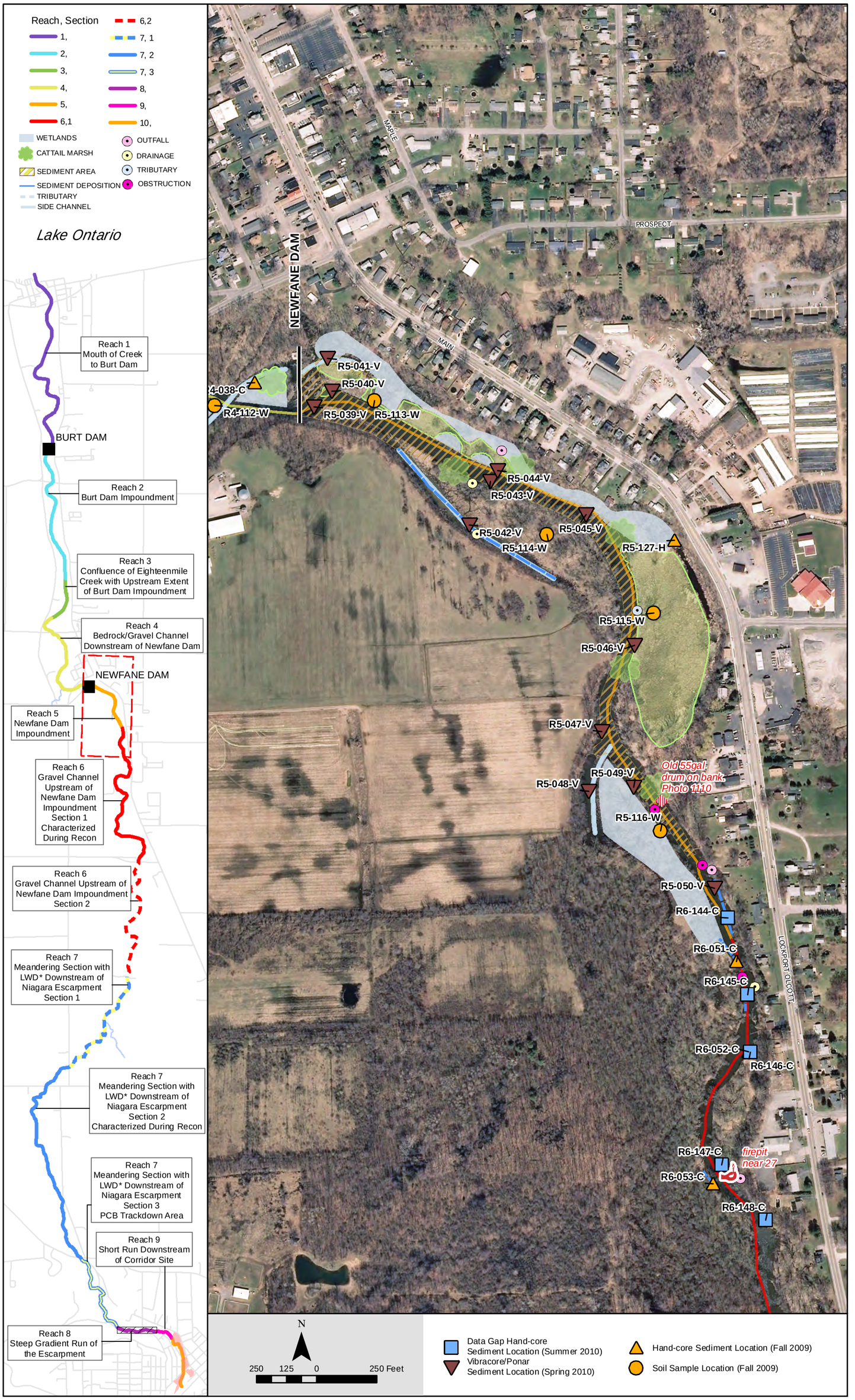


Figure 2-4 Sampling Locations in Eighteenmile Creek Reach 5

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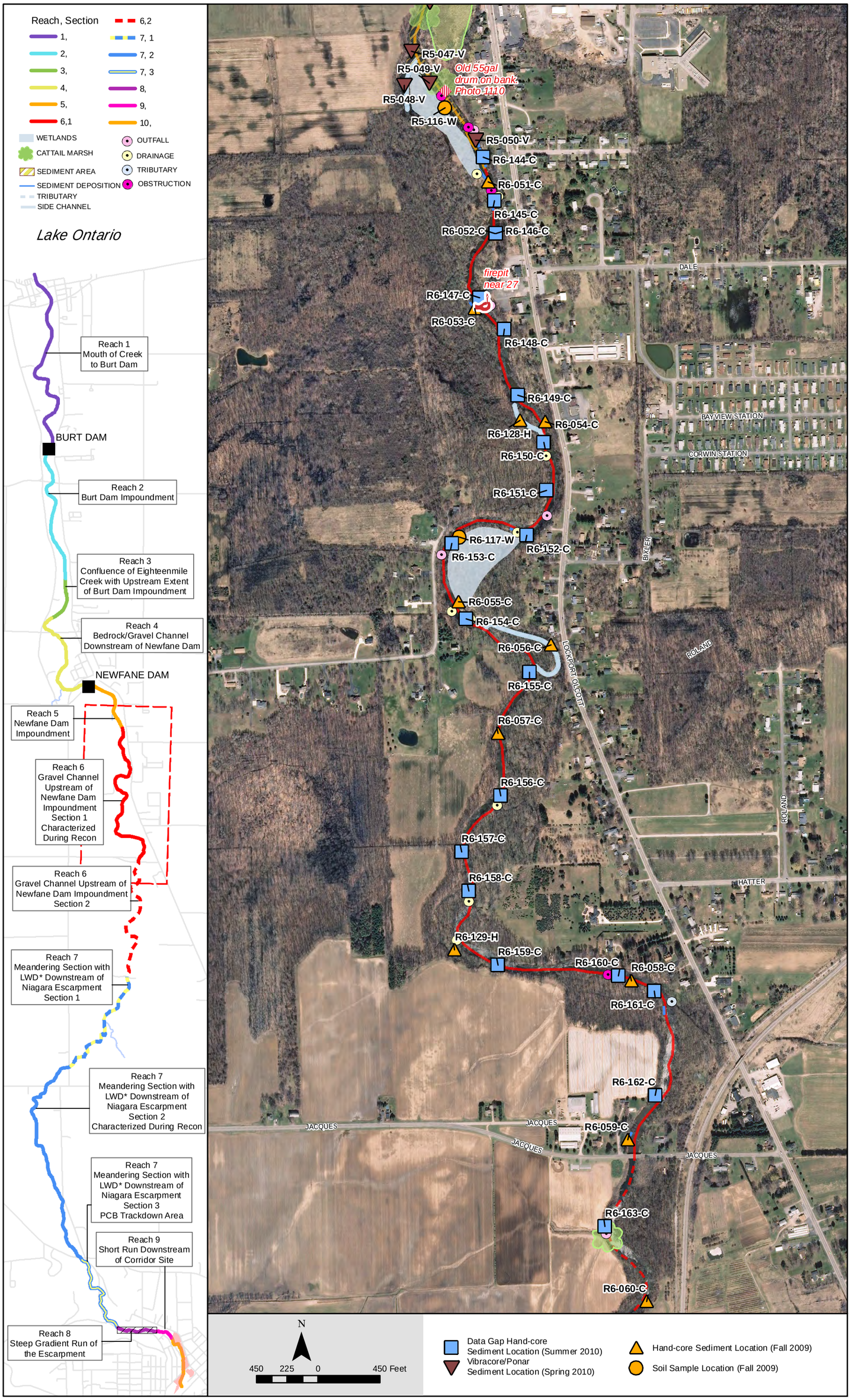


Figure 2-5a Sampling Locations in Eighteenmile Creek Reach 6, Section 1

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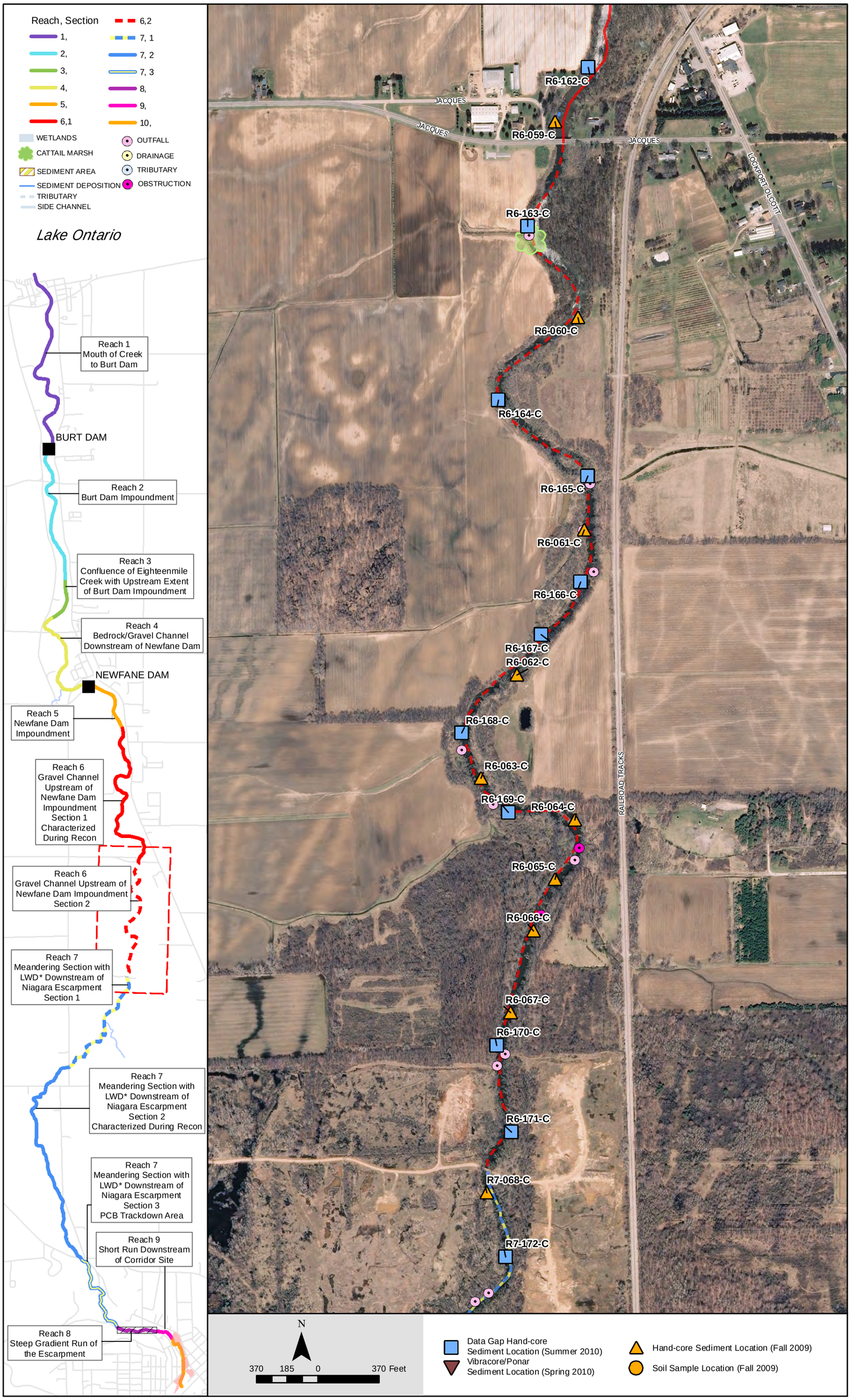


Figure 2-5b Sampling Locations in Eighteenmile Creek Reach 6, Section 2

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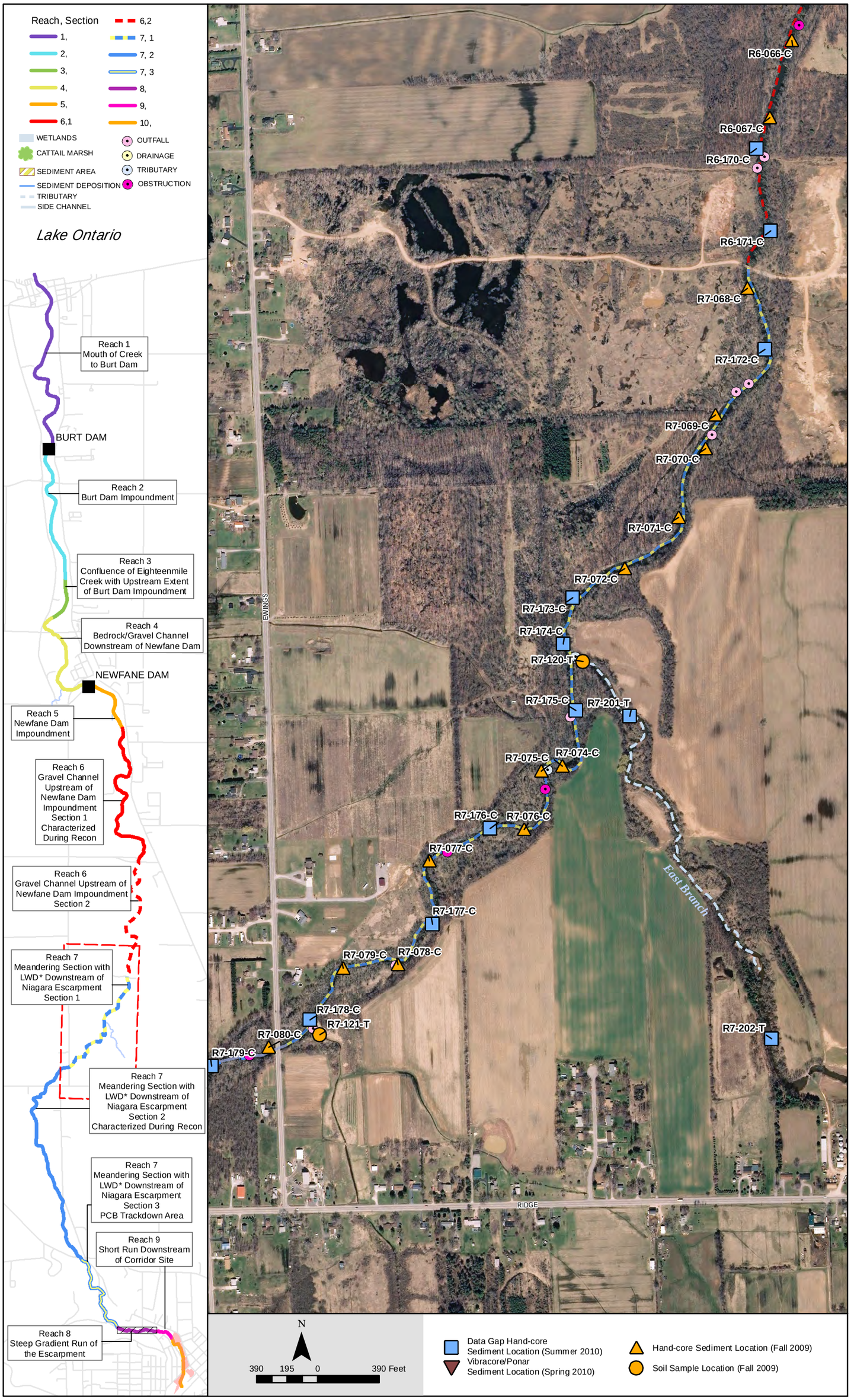


Figure 2-6a Sampling Locations in Eighteenmile Creek Reach 7, Section 1

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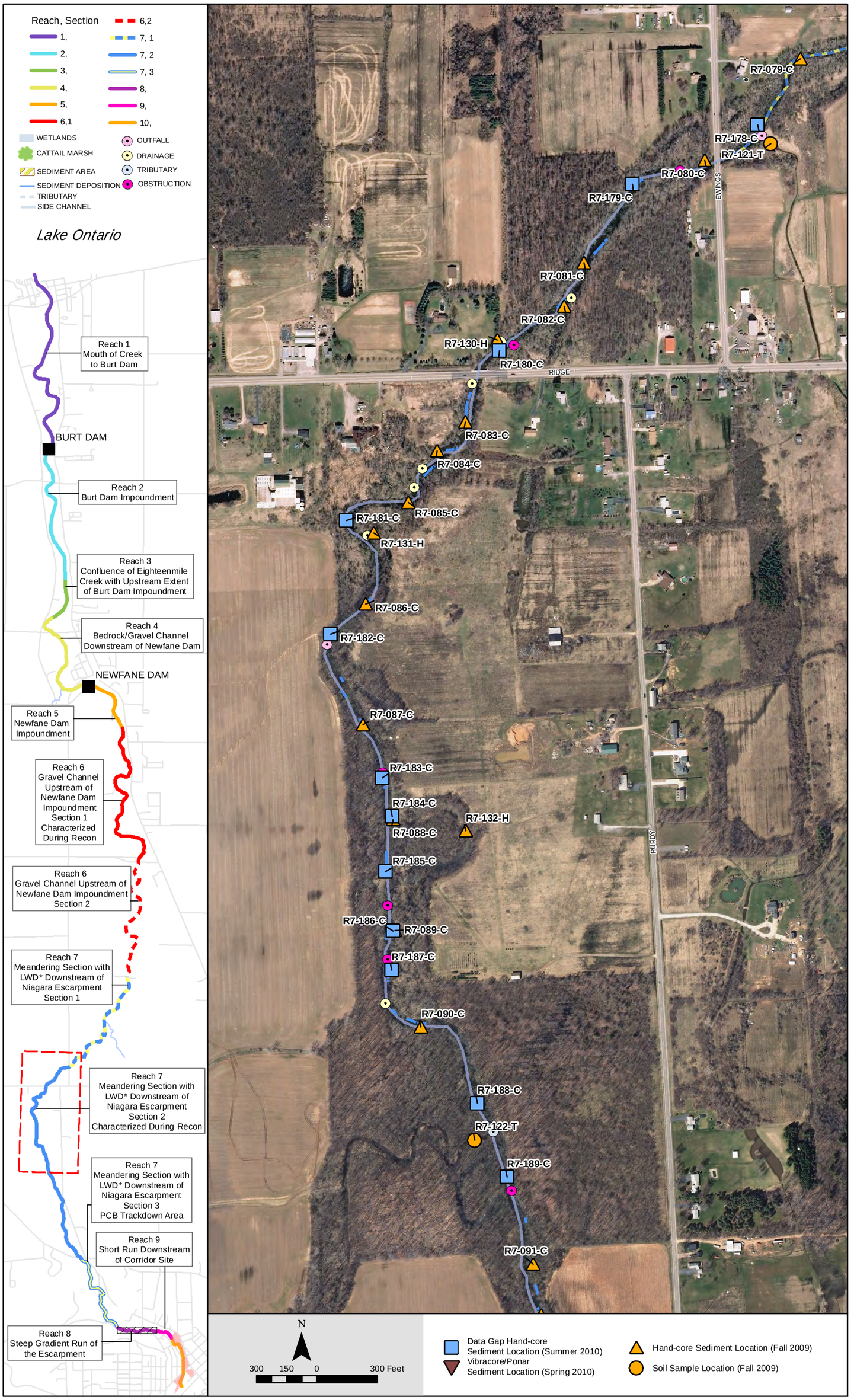


Figure 2-6b Sampling Locations in Eighteenmile Creek Reach 7, Section 2, Part 1

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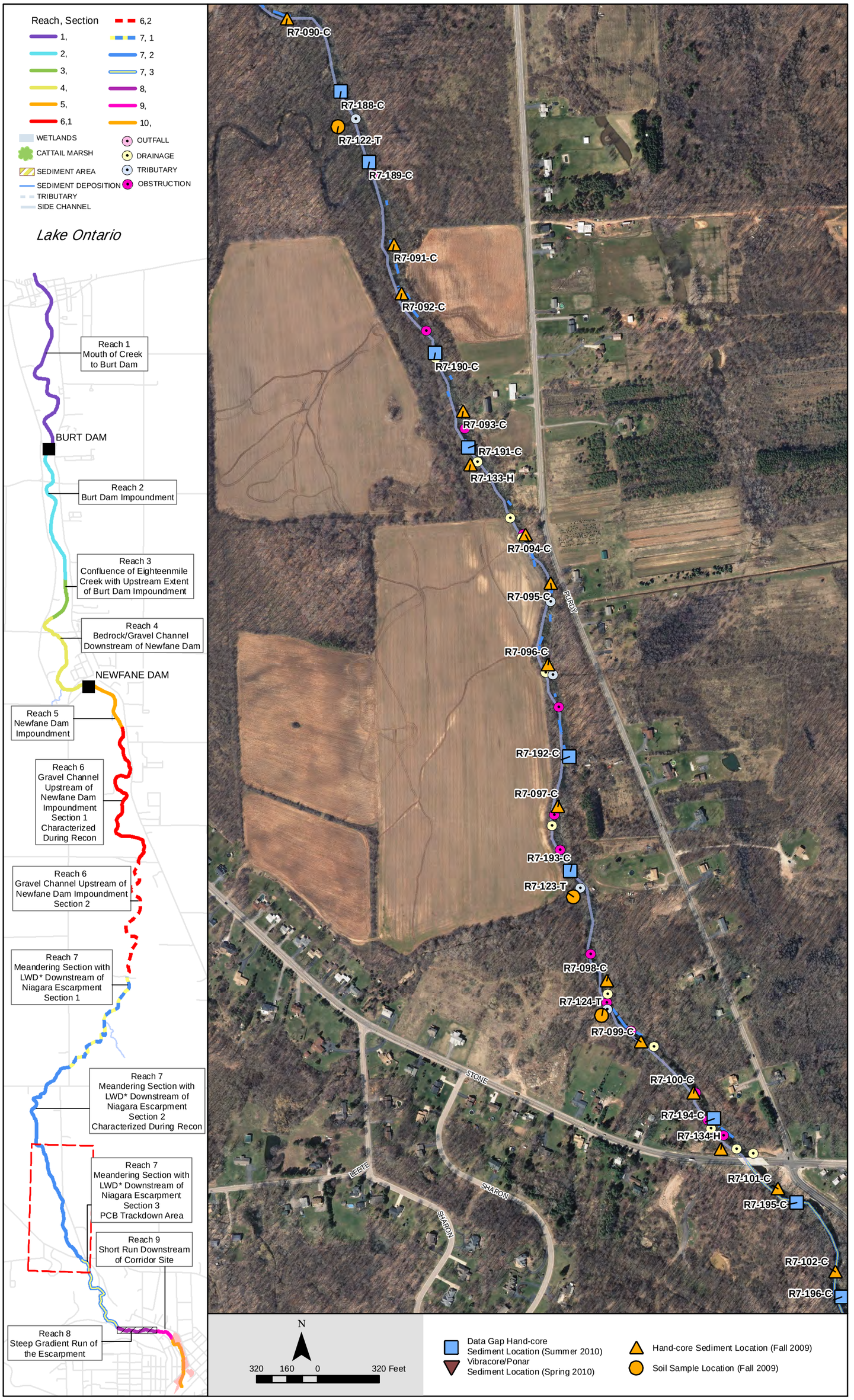


Figure 2-6c Sampling Locations in Eighteenmile Creek Reach 7, Section 2, Part 2

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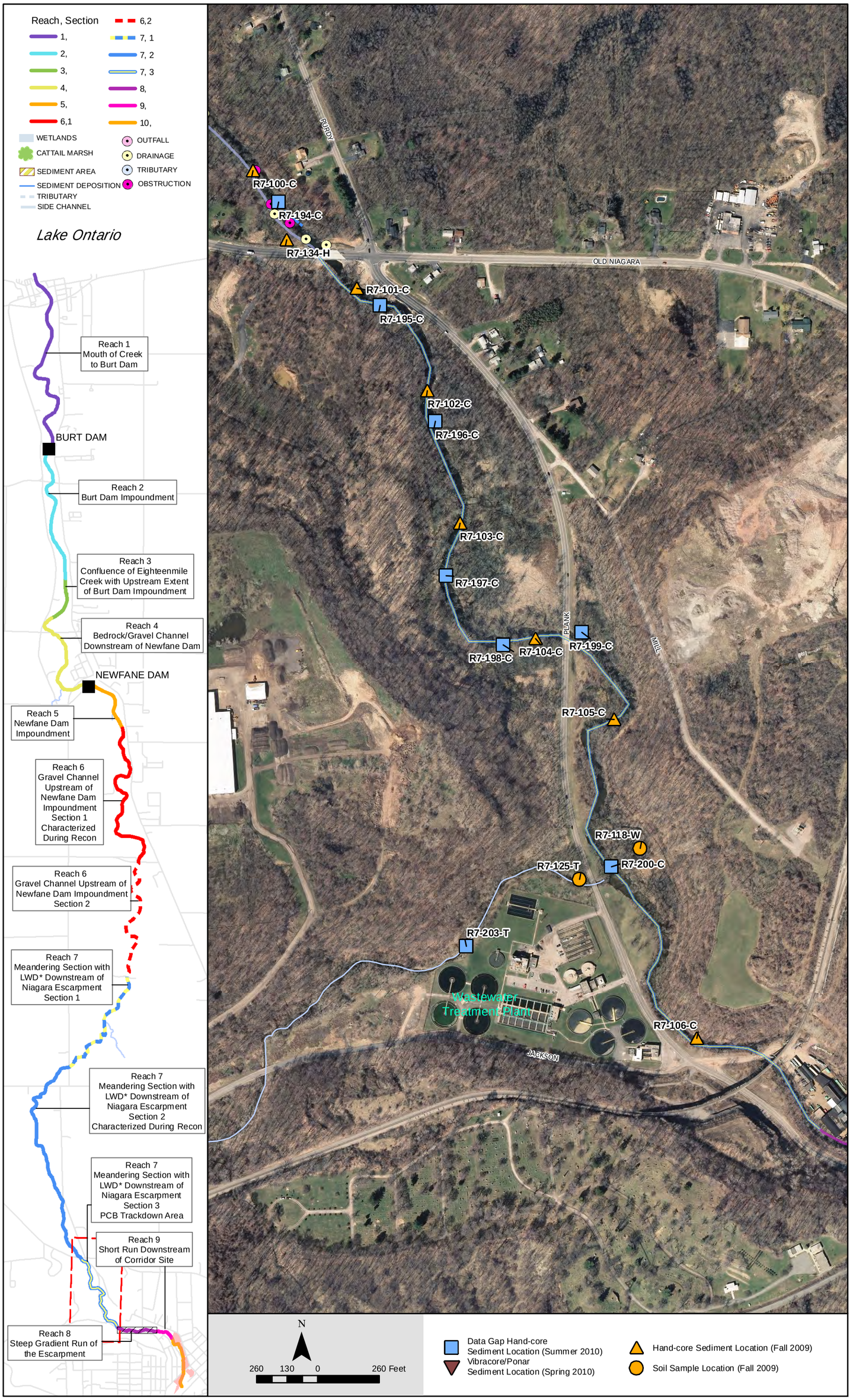


Figure 2-6d Sampling Locations in Eighteenmile Creek Reach 7, Section 3

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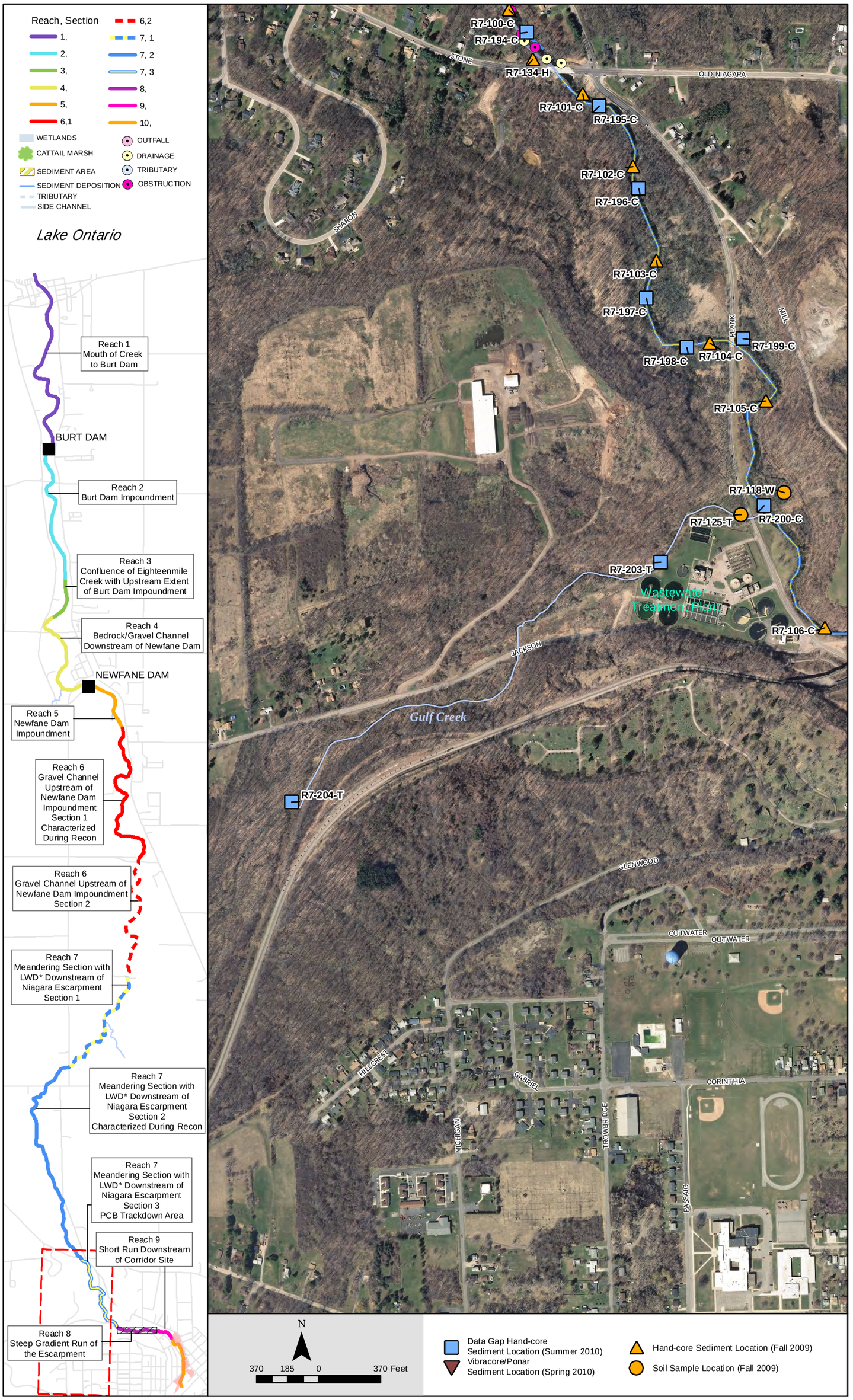


Figure 2-7 Sampling Locations in Gulf Creek

Appendix A

Core Logs

The geology of each core was logged on a core log during the sample collection process. Copies of these core logs are presented here.

During the logging process, the field geologists used the Unified Soil Classification System (USCS) code to assign a classification to each matrix encountered. These classifications were assigned based on the observed textures. Note that geotechnical data reports for the sediment samples selected for geotechnical analysis also report a USCS classification. Most of the field and laboratory classifications agree; instances of disagreement, however, do occur, chiefly as a result of a matrix being a blend of two particle size groups having similar texture discernable to the human eye and through touch. In some instances the field geologists sometimes classified a sediment matrix based on what was considered the dominant particle size, while the laboratory analysis proved another particle size to be dominant. For all sediments, the laboratory's USCS soil classification designation should be used, if available, regardless of whether or not it agrees with the field designation.

November / December 2009 Hand-coring Core Logs

May 2010 Vibracoring Core Logs

July / June 2010 Hand-coring Core Logs

Appendix B

Daily Summary Forms and Field Audit Form

This appendix contains copies of the daily summary forms prepared by the field team leader at the end of each field day. Additionally, the field audit forms are included at the end of this Appendix.

November / December 2009 Hand-coring Daily Summary Forms

May 2010 Vibracoring Daily Summary Forms

July / June 2010 Hand-coring Daily Summary Forms

November 2010 Sediment thickness and Bankfull Survey Daily Summary Forms

Appendix C

Photographs

Photographs of the cores, sampling locations, and sampling techniques are presented by reach in the attached compact disk (CD). Additionally, photographs taken during the October 2009 supplemental reconnaissance survey are included in this CD.

Appendix D

GPS Forms

A Data Checklist and Metadata Recording Form was prepared for each GPS unit used for this project. Additionally, a Daily GPS Form was completed every day for each unit every day. These forms are presented in this Appendix.

Appendix E

Data Usability Summary Reports

Chemical data from sediment analysis were reviewed for completeness and quality. The findings of this quality control review are presented in the Data Usability Summary Reports presented in this appendix folder. Data from November/December 2009 hand-coring analysis by USEPA CLP was validated by another USEPA contractor and the validated data was provided electronically. Data validation reports for these samples are not included in this appendix.

Electronic data contract compliance screening was performed on all USEPA CLP data. The associated review summary tables are not included in this appendix.

Appendix F

Electronic Data Files

The Equis® database used to track all project analytical and locational data is included in the Appendix F CD. In addition, the GPS data files are included herein. The Equis database included coordinates in both the NAD 1983 UTM Zone 18N coordinate system and the WGS84 a global coordinate system.

Total Calculations for the PCB (Aroclors) were performed assuming a value of zero for Aroclors that were not detected in the sample. The values were summed per individual sample and reported as a value with two significant figures to maintain laboratory accuracy.

Total calculations for the PAHs were performed using ½ the value of the Reporting Limit for compounds that were not detected for all of the 16 TCL compounds. The values were summed per individual sample and reported as a value with two significant figures to maintain laboratory accuracy.

Appendix G

Analytical Data Reports

This appendix contains the laboratory analytical reports generated from all chemical analyses conducted under this project under subcontract to CH2M HILL. The primary analysis includes geotechnical and AVS/SEM sample results. Each report contains the data from one sample delivery group (SDG). Table G-1 summarizes the samples included in each SDG.

Analytical reports provided by the USEPA CLP program are not included in this appendix.

Appendix C

Supporting Reports

(Provided in electronic version of RI report on DVD.)

Appendix D
Electronic Data

(Additional information provided in the electronic version of RI report on DVD.)

Table D-1 Detailed List of Sediment Chemistry Results for Remedial Investigation
Eighteenmile Creek Area of Concern

Table D-2 List of Sediment Chemistry Locations for Remedial Investigation
Eighteenmile Creek Area of Concern

Table D-3 AVS/SEM Sediment Chemistry Results for Remedial Investigation
Eighteenmile Creek Area of Concern

Table D-4 Dioxin TEQ Sediment Chemistry Results for Remedial Investigation
Eighteenmile Creek Area of Concern

Table D-5 Sediment Geotechnical Results for Remedial Investigation
Eighteenmile Creek Area of Concern

Table D-6 Detailed Final Sediment Model Output
Eighteenmile Creek Area of Concern

Table D-7 Detailed List of Sediment Chemistry TCLP Results for Remedial Investigation
Eighteenmile Creek Area of Concern

The database file, named 18 Mile Creek Data for RI Evaluation.accdb, is provided on the DVD included with this RI report.

Table D-1

Detailed List of Sediment Chemistry Results for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	PCBs (total)	TOTAL PCB CONGENERS	LEAD	ARSENIC	CHROMIUM	COPPER	ZINC	PAHs (total)	MERCURY	Sum of DDT+DDE+DDD	DIELDRIN	TOTAL ORGANIC CARBON	Sample ID
Creek	01	79984	USACE 2010	EMC-1	Surface	10/26/10	0	0.5	N	0.31	0.77										19000	EMC-1
Creek	01	79868	USACE 2004	EM1-EBU1	Surface	08/27/03	0	0.5	N												33000	EM1-EBU1-8/27/2003
Creek	01	79868	USACE 2004	EM1-EBU1	Surface	08/27/03	0	0.5	N			102	3.4	41	65	328		0.17			33000	EM1-EBU1-EMC-1
Creek	01	79868	USACE 2004	EM1-EBU1	Surface	08/27/03	0	0.5	N		0.20								0.016			EM1-EBU1-SURFACE-8/27/2003
Creek	01	79868	USACE 2004	EM1-EMC1	Surface	08/27/03	0	0.5	N			82	1.24	8.34	14	72		0.09	0.00322		11000	EM1-EMC1
Creek	01	79868	USACE 2004	EM1-EMC1	Surface	08/27/03	0	0.5	N												11000	EM1-EMC1-8/27/2003
Creek	01	79868	USACE 2004	EM1-EMC1	Surface	08/27/03	0	0.5	N		0.03								0.003			EM1-EMC1-SURFACE-8/27/2003
Creek	01	79667	NYSDEC 1998	DEC-2	Surface	09/12/94	0	2	N			231	11.3	61.2	106	299		2.8				DEC-2-0-61 CM CORE-9/12/1994
Creek	01	79667	NYSDEC 1998	DEC-2	Surface	10/11/94	0	0.5	N			66.5	2.5	21.7	35.9	128		0.53	0.004			DEC-2-SURFACE-10/11/1994
Creek	01	79667	NYSDEC 1998	DEC-2	Subsurface	09/12/94	2	3.84	N			419	11.6	101	155	401		3.3				DEC-2-61-117 CM CORE-9/12/1994
Creek	01	79231	USACE 2004	EM1-EMC2	Surface	08/26/03	0	0.5	N												32000	EM1-EMC2-8/26/2003
Creek	01	79231	USACE 2004	EM1-EMC2	Surface	08/26/03	0	0.5	N		0.04								0.017			EM1-EMC2-SURFACE-8/26/2003
Creek	01	79231	USACE 2004	EM1-EMC2	Surface	08/27/03	0	0.5	N			92	3.39	46	66	302		0.15			32000	EM1-EMC2
Creek	01	79170	USACE 2010	EMC-2	Surface	10/26/10	0	0.5	N	0.45	0.83										15000	EMC-2
Creek	01	78639	NYSDEC 1998	DEC-3	Surface	09/12/94	0	2	N			6.7	1.8	17.7	10.9	67.3						DEC-3-0-61 CM CORE-9/12/1994
Creek	01	78639	NYSDEC 1998	DEC-3	Surface	10/11/94	0	0.5	N	0.0006		226	4	94.7	131	0.48		0.48	0.011			DEC-3-SURFACE-10/11/1994
Creek	01	78639	NYSDEC 1998	DEC-3	Subsurface	09/12/94	2	5.84	N			7.2	1.6	17.2	11.2	66						DEC-3-61-178 CM CORE-9/12/1994
Creek	01	78639	NYSDEC 1998	DEC-3	Subsurface	09/12/94	5.84	6.66	N			7.5	1.9	17.9	13.1	68.2						DEC-3-178-203 CM CORE-9/12/1994
Creek	01	78639	NYSDEC 1998	DEC-3	Subsurface	09/12/94	6.66	9.15	N			7.6	1.5	16.3	11	67.4						DEC-3-203-279 CM CORE-9/12/1994
Creek	01	78619	USACE 2004	EM1-EMC3	Surface	08/26/03	0	0.5	N												47000	EM1-EMC3-8/26/2003
Creek	01	78619	USACE 2004	EM1-EMC3	Surface	08/26/03	0	0.5	N		0.32								0.033			EM1-EMC3-SURFACE-8/26/2003
Creek	01	78619	USACE 2004	EM1-EMC3	Surface	08/27/03	0	0.5	N			162	4.02	70	130	485		0.35			47000	EM1-EMC3
Creek	01	78615	USACE 2010	EMC-3	Surface	10/26/10	0	0.5	N	0.59	0.79										15000	EMC-3
Creek	01	78383	NYSDEC 1998	DEC-Q2	Surface	08/10/94	0	0.5	FD		0.06	291	5.7	45.1	78.6	252		1.9	0.0087			DEC-Q2-SURFACE-8/10/1994
Creek	01	78185	USEPA 2008	EM3-DOWNSTREAM	Surface	08/01/08	0	0.5	N			64	3.8	32	58	260		0.11			42000	EM3-DOWNSTREAM
Creek	01	77931	USACE 2004	EMC-4	Surface	08/27/03	0	0.5	FD		0.34											EMC-4 QA-SURFACE-8/27/2003
Creek	01	77931	USACE 2010	EMC-4	Surface	10/26/10	0	0.5	N	0.23	0.30										16000	EMC-4
Creek	01	77930	USACE 2004	EM1-EMC4	Surface	08/27/03	0	0.5	N			189	4.91	101	150	674		0.47			45000	EM1-EMC4
Creek	01	77930	USACE 2004	EM1-EMC4	Surface	08/27/03	0	0.5	N												45000	EM1-EMC4-8/27/2003
Creek	01	77930	USACE 2004	EM1-EMC4	Surface	08/27/03	0	0.5	FD			202	4.65	105	156	718						EM1-EMC4MD
Creek	01	77930	USACE 2004	EM1-EMC4	Surface	08/27/03	0	0.5	N		0.26								0.028			EM1-EMC4-SURFACE-8/27/2003
Creek	01	77743	NYSDEC 1998	DEC-4	Surface	09/12/94	0	2	N			8.6	1.1	18	11.1	86.4						DEC-4-0-24 IN CORE-9/12/1994
Creek	01	77743	NYSDEC 1998	DEC-4	Surface	10/12/94	0	0.5	N	0.86		196	4.5	112	142	918		0.55	0.016			DEC-4-SURFACE-10/12/1994
Creek	01	77743	NYSDEC 1998	DEC-4	Subsurface	09/12/94	2	6.67	N			7.6	1	17.7	10.2	74						DEC-4-24-80 IN CORE-9/12/1994
Creek	01	77743	NYSDEC 1998	DEC-4	Subsurface	09/12/94	2.62	3.71	N			6.4	1.4	18.7	10.2	68.6						DEC-4-80-113 IN CORE-9/12/1994
Creek	01	77584	NYSDEC 1998	DEC-4a	Surface	05/25/94	1	1.67	N			296	7	128	228	1080		2.251				DEC-4a-0-4 CM CORE-5/25/1994
Creek	01	77584	NYSDEC 1998	DEC-4a	Subsurface	05/25/94	1	1.67	N			222	10	75	92	289		3.609				DEC-4a-13-23 CM CORE-5/25/1994
Creek	01	77584	NYSDEC 1998	DEC-4a	Subsurface	05/25/94	1	1.67	N			19	5	21	22	91		0.102				DEC-4a-23-33 CM CORE-5/25/1994
Creek	01	77584	NYSDEC 1998	DEC-4a	Subsurface	05/25/94	1	1.67	N			14	5	21	19	81		0.0422				DEC-4a-33-43 CM CORE-5/25/1994
Creek	01	77584	NYSDEC 1998	DEC-4a	Subsurface	05/25/94	1	1.67	N			4	6	19	20	79		0.038				DEC-4a-43-53 CM CORE-5/25/1994
Creek	01	77584	NYSDEC 1998	DEC-4a	Subsurface	05/25/94	1	1.67	N			249	13	102	177	957		1.892				DEC-4a-4-8 CM CORE-5/25/1994
Creek	01	77584	NYSDEC 1998	DEC-4a	Subsurface	05/25/94	1	1.67	N			4	6	19	16	71		0.033				DEC-4a-53-64 CM CORE-5/25/1994
Creek	01	77584	NYSDEC 1998	DEC-4a	Subsurface	05/25/94	1	1.67	N			277	13	88	131	483		3.759				DEC-4a-8-13 CM CORE-5/25/1994
Creek	01	77242	USACE 2010	EMC-5	Surface	10/26/10	0	0.5	N	0.46	0.54										14000	EMC-5
Creek	01	77230	USACE 2004	EM1-EMC5	Surface	08/27/03	0	0.5	N			138	4.09	75	115	486		0.36			44000	EM1-EMC5
Creek	01	77230	USACE 2004	EM1-EMC5	Surface	08/27/03	0	0.5	N												44000	EM1-EMC5-8/27/2003
Creek	01	77230	USACE 2004	EM1-EMC5	Surface	08/27/03	0	0.5	N		0.23								0.026			EM1-EMC5-SURFACE-8/27/2003
Creek	01	77230	USACE 2004	EM1-EBU2	Surface	08/27/03	0	0.5	N												39000	EM1-EBU2-8/27/2003
Creek	01	77230	USACE 2004	EM1-EBU2	Surface	08/27/03	0	0.5	N			146	4.13	74	123	536		0.33			39000	EM1-EBU2-EMC-4
Creek	01	77230	USACE 2004	EM1-EBU2	Surface	08/27/03	0	0.5	N		0.19								0.022			EM1-EBU2-SURFACE-8/27/2003
Creek	01	76553	USACE 2004	EM1-EMC6	Surface	08/27/03	0	0.5	N			118	5.42	55	87	429		0.23			30000	EM1-EMC6
Creek	01	76553	USACE 2004	EM1-EMC6	Surface	08/27/03	0	0.5	N												30000	EM1-EMC6-8/27/2003
Creek	01	76553	USACE 2004	EM1-EMC6	Surface	08/27/03	0	0.5	N		0.16								0.016			EM1-EMC6-SURFACE-8/27/2003
Creek	01	76529	USACE 2010	EMC-6	Surface	10/26/10	0	0.5	N	0.31	0.36										13000	EMC-6
Creek	01	76048	USACE 2010	EMC-7	Surface	10/26/10	0	0.5	N	0.25	0.30										14000	EMC-7
Creek	01	75868	USACE 2004	EM1-EMC7	Surface	08/27/03	0	0.5	N			37	2.34	28	30	140		0.25			35000	EM1-EMC7
Creek	01	75868	USACE 2004	EM1-EMC7	Surface	08/27/03	0	0.5	N												35000	EM1-EMC7-8/27/2003
Creek	01	75868	USACE 2004	EM1-EMC7	Surface	08/27/03	0	0.5	N		0.06								0.007			EM1-EMC7-SURFACE-8/27/2003
Creek	01	75211	USACE 2010	EMC-8	Surface	10/26/10	0	0.5	N	0.48	0.63										14000	EMC-8
Creek	01	75208	USACE 2004	EM1-EBU3	Surface	08/27/03	0	0.5	N												36000	EM1-EBU3-8/27/2003
Creek	01	75208	USACE 2004	EM1-EBU3	Surface	08/27/03	0	0.5	N			203	3.75	109	157	800		0.37			36000	EM1-EBU3-EMC-7
Creek	01	75208	USACE 2004	EM1-EBU3	Surface	08/27/03	0	0.5	N		0.25								0.014			EM1-EBU3-SURFACE-8/27/2003
Creek	01	75208	USACE 2004	EM1-EMC8	Surface	08/27/03	0	0.5	N			321	5.05	187	245	1350		0.56			36000	EM1-EMC8
Creek	01	75208	USACE 2004	EM1-EMC8	Surface	08/27/03	0	0.5	N												36000	EM1-EMC8-8/27/2003
Creek	01	75208	USACE 2004	EM1-EMC8	Surface	08/27/03	0	0.5	N		0.42								0.029			EM1-EMC8-SURFACE-8/27/2003
Creek	01	74932	NYSDEC 1998	DEC-5	Surface	09/12/94	0	2	N			7.1	1.4	18.5	10.3	63						DEC-5-0-24 IN CORE-9/12/1994
Creek	01	74932	NYSDEC 1998	DEC-5	Surface	10/12/94	0	0.5	N	0.63		178	4.3	80	127	470		0.72	0.0079			DEC-5-SURFACE-10/12/1994
Creek	01	74932	NYSDEC 1998	DEC-5	Subsurface	09/12/94	2	8	N			7.6	1.6	17.7	11.2	61.7						DEC-5-24-96 IN CORE-9/12/1994
Creek	01	74932	NYSDEC 1998	DEC-5	Subsurface	09/12/94	8	10	N			6.7	1.4	19	10.8	63.6						DEC-5-96-120 IN CORE-9/12/1994

Table D-1

Detailed List of Sediment Chemistry Results for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	PCBs (total)	TOTAL PCB CONGENERS	LEAD	ARSENIC	CHROMIUM	COPPER	ZINC	PAHs (total)	MERCURY	Sum of DDT+DDE+DDD	DIELDRIN	TOTAL ORGANIC CARBON	Sample ID
Creek	01	74793	USEPA 2008	EM3-MIDSTREAM	Surface	08/01/08	0	0.5	N			210	4.3	60	80	470		0.16			33000	EM3-MIDSTREAM
Creek	01	74620	USACE 2010	EMC-9	Surface	10/26/10	0	0.5	N	0.66	0.75										15000	EMC-9
Creek	01	74596	USACE 2004	EM1-EMC9	Surface	08/27/03	0	0.5	N			133	3.31	49	75	497		0.16			30000	EM1-EMC9
Creek	01	74596	USACE 2004	EM1-EMC9	Surface	08/27/03	0	0.5	N												30000	EM1-EMC9-8/27/2003
Creek	01	74596	USACE 2004	EM1-EMC9	Surface	08/27/03	0	0.5	N		0.17								0.02			EM1-EMC9-SURFACE-8/27/2003
Creek	01	73677	USACE 2010	EMC-10	Surface	10/26/10	0	0.5	N	0.87	1.96										38000	EMC-10
Creek	01	73587	USACE 2004	EM1-EMC10	Surface	08/27/03	0	0.5	N			157	3.39	54	92	525		0.22			24000	EM1-EMC10
Creek	01	73587	USACE 2004	EM1-EMC10	Surface	08/27/03	0	0.5	N												24000	EM1-EMC10-8/27/2003
Creek	01	73587	USACE 2004	EM1-EMC10	Surface	08/27/03	0	0.5	N		0.19								0.011			EM1-EMC10-SURFACE-8/27/2003
Creek	01	72858	USACE 2010	EMC-11	Surface	10/26/10	0	0.5	N	0.55	1.03										23000	EMC-11
Creek	01	72851	USACE 2004	EM1-EBU4	Surface	08/27/03	0	0.5	N												31000	EM1-EBU4-8/27/2003
Creek	01	72851	USACE 2004	EM1-EBU4	Surface	08/27/03	0	0.5	N			153	3.38	53	73	444		0.17			31000	EM1-EBU4-EMC-10
Creek	01	72851	USACE 2004	EM1-EBU4	Surface	08/27/03	0	0.5	N		0.25								0.034			EM1-EBU4-SURFACE-8/27/2003
Creek	01	72851	USACE 2004	EM1-EMC11	Surface	08/27/03	0	0.5	N			85	2.99	39	47	388		0.12			32000	EM1-EMC11
Creek	01	72851	USACE 2004	EM1-EMC11	Surface	08/27/03	0	0.5	N												32000	EM1-EMC11-8/27/2003
Creek	01	72851	USACE 2004	EM1-EMC11	Surface	08/27/03	0	0.5	N		0.12								0.01			EM1-EMC11-SURFACE-8/27/2003
Creek	01	72106	USACE 2010	EMC-12	Surface	10/26/10	0	0.5	N	0.66	0.95										18000	EMC-12
Creek	01	72101	USACE 2004	EM1-EMC12	Surface	08/27/03	0	0.5	N			157	4.29	62	86	411		0.18			48000	EM1-EMC12
Creek	01	72101	USACE 2004	EM1-EMC12	Surface	08/27/03	0	0.5	N												48000	EM1-EMC12-8/27/2003
Creek	01	72101	USACE 2004	EM1-EMC12	Surface	08/27/03	0	0.5	N		0.45								0.051			EM1-EMC12-SURFACE-8/27/2003
Creek	01	71495	USACE 2004	EM1-EMC13	Surface	08/27/03	0	0.5	N			27	2.02	19	15	88		0.022			32000	EM1-EMC13
Creek	01	71495	USACE 2004	EM1-EMC13	Surface	08/27/03	0	0.5	N												32000	EM1-EMC13-8/27/2003
Creek	01	71495	USACE 2004	EM1-EMC13	Surface	08/27/03	0	0.5	N		0.04								0.003			EM1-EMC13-SURFACE-8/27/2003
Creek	01	71416	USACE 2010	EMC-13	Surface	10/26/10	0	0.5	N	0.15	0.18										14000	EMC-13
Creek	01	70848	USACE 2010	EMC-14	Surface	10/26/10	0	0.5	N	0.02	0.02										13000	EMC-14
Creek	01	70798	USEPA 2008	EM3-UPSTREAM	Surface	08/01/08	0	0.5	N			32	4	13	12	63		0.09			7100	EM3-UPSTREAM
Creek	01	70564	USACE 2004	EM1-EBU5	Surface	08/27/03	0	0.5	N												29000	EM1-EBU5-8/27/2003
Creek	01	70564	USACE 2004	EM1-EBU5	Surface	08/27/03	0	0.5	N			70	2.78	102	32	238		0.044			29000	EM1-EBU5-EMC-13
Creek	01	70564	USACE 2004	EM1-EBU5	Surface	08/27/03	0	0.5	N		0.05								0.004			EM1-EBU5-SURFACE-8/27/2003
Creek	01	70564	USACE 2004	EM1-EMC14	Surface	08/27/03	0	0.5	N			89	3.03	30	32	236		0.027			18000	EM1-EMC14
Creek	01	70564	USACE 2004	EM1-EMC14	Surface	08/27/03	0	0.5	N												18000	EM1-EMC14-8/27/2003
Creek	01	70564	USACE 2004	EM1-EMC14	Surface	08/27/03	0	0.5	N		0.07								0.007			EM1-EMC14-SURFACE-8/27/2003
Creek	01	70374	USACE 2010	EMC-15	Surface	10/26/10	0	0.5	N	0.19	0.11										6900	EMC-15
Creek	01	70081	USACE 2004	EM1-EMC15	Surface	08/27/03	0	0.5	N			322	5.6	867	179	776		0.23			45000	EM1-EMC15
Creek	01	70081	USACE 2004	EM1-EMC15	Surface	08/27/03	0	0.5	N												45000	EM1-EMC15-8/27/2003
Creek	01	70081	USACE 2004	EM1-EMC15	Surface	08/27/03	0	0.5	N		0.16								0.026			EM1-EMC15-SURFACE-8/27/2003
Creek	01	69355	USACE 2010	EMC-16	Surface	10/26/10	0	0.5	N	0.18	0.11										7400	EMC-16
Creek	02	68416	USEPA GLNPO	R2-003-V-P	Surface	05/18/10	0	1	N	0.10		210	7.1	71	154	642	1.6	0.36			43800	R2-003-V-Z1P
Creek	02	68415	USEPA GLNPO	R2-003-V	Surface	05/18/10	0	1	N	0.13		270	7	94	188	792	0.9	0.56			39400	R2-003-V-Z1
Creek	02	68415	USEPA GLNPO	R2-003-V	Subsurface	05/18/10	1	2	N	0.51		715	11	228	452	2060	2.1	0.68			42800	R2-003-V-Z2
Creek	02	68415	USEPA GLNPO	R2-003-V	Subsurface	05/18/10	2	3	N	4.30		5370	28	1480	2330	8900	4.9	1.8			92400	R2-003-V-Z3
Creek	02	68415	USEPA GLNPO	R2-003-V	Subsurface	05/18/10	3	4	N	0.85		3240	25	684	1950	2390	9.5	4.2			81000	R2-003-V-Z4
Creek	02	68415	USEPA GLNPO	R2-003-V	Subsurface	05/18/10	4	5	N	0.19		552	19	261	467	1690	2.5	2			56300	R2-003-V-Z5
Creek	02	68415	USEPA GLNPO	R2-003-V	Subsurface	05/18/10	6	7	N	0.01		12	3.9	14	17	57					89600	R2-003-V-Z6
Creek	02	68410	USEPA GLNPO	R2-003-V-P2	Surface	05/24/10	0	1	N		1.85											R2-003-V-Z1P2
Creek	02	68399	USEPA GLNPO	R2-002-V-P	Surface	05/18/10	0	1	N	0.28	2.42	213	7.9	74	159	630	1	0.36			46200	R2-002-V-Z1P
Creek	02	68395	USEPA GLNPO	R2-002-V	Surface	05/18/10	0	1	N	0.42		256	8.1	89	185	736	1.7	0.33			43200	R2-002-V-Z1
Creek	02	68395	USEPA GLNPO	R2-002-V	Subsurface	05/18/10	1	2	N	0.38		329	9.2	124	215	926	0.52	0.53			46400	R2-002-V-Z2
Creek	02	68395	USEPA GLNPO	R2-002-V	Subsurface	05/18/10	2	3	N	0.71		878	13	333	541	2650	0.87	0.59			60700	R2-002-V-Z3
Creek	02	68395	USEPA GLNPO	R2-002-V	Subsurface	05/18/10	3	4	N	1.00		6760	29	1200	3030	6830	1.5	2.6			86600	R2-002-V-Z4
Creek	02	68395	USEPA GLNPO	R2-002-V	Subsurface	05/18/10	4	6	FD	0.18		789	15	277	673	1250	4.3	1.5			86700	R2-002-VR
Creek	02	68395	USEPA GLNPO	R2-002-V	Subsurface	05/18/10	4	6	N	0.01		873	15	290	639	1290	8.4	2.1			46800	R2-002-V-Z5
Creek	02	68395	USEPA GLNPO	R2-002-V	Subsurface	05/18/10	6	7.5	N			325	15	82	227	852	1.4	1.9			57700	R2-002-V-Z6
Creek	02	68375	USEPA GLNPO	R2-001-V-P	Surface	05/18/10	0	1	N	0.39		210	8.1	73	157	630	2	0.3			44600	R2-001-V-Z1P
Creek	02	68375	USEPA GLNPO	R2-001-V-P2	Surface	05/24/10	0	1	N		1.95											R2-001-V-Z1P2
Creek	02	68375	USEPA GLNPO	R2-001-V	Surface	05/18/10	0	0.5	N	0.48		256	8	89	184	741	1.8	0.3				R2-001-V-Z1A
Creek	02	68375	USEPA GLNPO	R2-001-V	Subsurface	05/18/10	0.5	1	N	0.41		322	8.1	119	209	915	2.2	0.5				R2-001-V-Z1B
Creek	02	68375	USEPA GLNPO	R2-001-V	Subsurface	05/18/10	1	2	N			615	10	202	370	1830	1.2	0.55			47300	R2-001-V-Z2
Creek	02	68375	USEPA GLNPO	R2-001-V	Subsurface	05/18/10	2	3	N	2.50		5500	27	1680	2230	11000	3.2	1.9			91800	R2-001-V-Z3
Creek	02	68375	USEPA GLNPO	R2-001-V	Subsurface	05/18/10	3	4	N	0.06		3140	21	489	1830	2460	4.4	2.5			97600	R2-001-V-Z4
Creek	02	68375	USEPA GLNPO	R2-001-V	Subsurface	05/18/10	4	5	N	0.01		367	17	97	258	1030	0.38	2.9			41600	R2-001-V-Z5
Creek	02	68375	USEPA GLNPO	R2-001-V	Subsurface	05/18/10	6	7	N	0.01		88	4.5	29	36	127	0.048	1.8			12400	R2-001-V-Z6
Creek	02	67111	USEPA GLNPO	R2-005-V	Surface	05/19/10	0	1	N	0.35		278	6.9	95	208	839	0.94	0.75			43900	R2-005-V-Z1
Creek	02	67111	USEPA GLNPO	R2-005-V	Subsurface	05/19/10	1	2	N	0.47		576	9.3	204	383	1770	2.3	0.64			46900	R2-005-V-Z2
Creek	02	67111	USEPA GLNPO	R2-005-V	Subsurface	05/19/10	2	3	N	7.30		3970	25	1780	1890	9430	8.4	1.7			107000	R2-005-V-Z3
Creek	02	67111	USEPA GLNPO	R2-005-V	Subsurface	05/19/10	3	4	N	3.00	12.80	6760	32	969	3240	6050	7.1	2.8			69800	R2-005-V-Z4
Creek	02	67111	USEPA GLNPO	R2-005-V	Subsurface	05/19/10	4	6	N	0.10		2140	17	505	1600	2660	14	3.3			87400	R2-005-V-Z5
Creek	02	67111	USEPA GLNPO	R2-005-V	Subsurface	05/19/10	6	7	N	0.06		548	23	565	888	2680	8.7	1.6			63100	R2-005-V-Z6

Table D-1

Detailed List of Sediment Chemistry Results for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	PCBs (total)	TOTAL PCB CONGENERS	LEAD	ARSENIC	CHROMIUM	COPPER	ZINC	PAHs (total)	MERCURY	Sum of DDT+DDE+DDD	DIELDRIN	TOTAL ORGANIC CARBON	Sample ID
Creek	02	67109	USEPA GLNPO	R2-004-V	Surface	05/18/10	0	1	N	0.67		306	7.3	108	223	904	0.89	0.51			39000	R2-004-V-Z1
Creek	02	67109	USEPA GLNPO	R2-004-V	Subsurface	05/18/10	1	2	FD			519	9.2	178	338	1580	0.8	0.63			42800	R2-004-VR
Creek	02	67109	USEPA GLNPO	R2-004-V	Subsurface	05/18/10	1	2	N	0.47		526	9	173	328	1560	0.82	0.55			47800	R2-004-V-Z2
Creek	02	67109	USEPA GLNPO	R2-004-V	Subsurface	05/18/10	2	3	N	2.90		4810	26	1680	2120	10900	4.6	2			73100	R2-004-V-Z3
Creek	02	67109	USEPA GLNPO	R2-004-V	Subsurface	05/18/10	3	3.5	N	0.80		4250	22	602	2180	3200	1.9	2.2			67300	R2-004-V-Z4
Creek	02	67109	USEPA GLNPO	R2-004-V	Subsurface	05/18/10	4.5	5	N	0.01		192	6.2	50	72	229	0.28	3.1			24400	R2-004-V-Z5
Creek	02	67108	USEPA GLNPO	R2-004-V-P	Surface	05/18/10	0	1	N	0.40		211	7.6	73	158	649	0.78	0.47			42300	R2-004-V-Z1P
Creek	02	67108	USEPA GLNPO	R2-005-V-P	Surface	05/19/10	0	1	N	0.26	1.67	234	7.3	81	183	710	1.7	0.53			93100	R2-005-V-Z1P
Creek	02	67107	USEPA GLNPO	R2-004-V-P2	Surface	05/24/10	0	1	N		1.76											R2-004-V-Z1P2
Creek	02	67102	USEPA GLNPO	R2-006-V-P	Surface	05/19/10	0	1	N	0.13		188	6.6	70	151	579	2.4	0.43			46500	R2-006-V-Z1P
Creek	02	67102	USEPA GLNPO	R2-006-V-P	Surface	05/24/10	0	1	N		1.42											R2-006-V-Z1P2
Creek	02	67100	USEPA GLNPO	R2-006-V	Surface	05/19/10	0	1	N	0.15		203	5.3	70	145	599	1.3	0.32			29600	R2-006-V-Z1
Creek	02	67100	USEPA GLNPO	R2-006-V	Subsurface	05/19/10	1	2	N	0.23		603	9.1	200	379	1820	0.7	0.62			44800	R2-006-V-Z2
Creek	02	67100	USEPA GLNPO	R2-006-V	Subsurface	05/19/10	2	3	FD	3.10		3790	21	1320	1720	8650	7.5	1.9			105000	R2-006-VR
Creek	02	67100	USEPA GLNPO	R2-006-V	Subsurface	05/19/10	2	3	N	6.30		3750	23	1570	1770	9070	2.3	1.6			78500	R2-006-V-Z3
Creek	02	67100	USEPA GLNPO	R2-006-V	Subsurface	05/19/10	3	4	N	0.53		2110	16	532	1740	2690	2	3.1			92700	R2-006-V-Z4
Creek	02	67100	USEPA GLNPO	R2-006-V	Subsurface	05/19/10	4	5	N	0.32		1820	23	602	1480	2460	3.6	2.7			75200	R2-006-V-Z5A
Creek	02	67100	USEPA GLNPO	R2-006-V	Subsurface	05/19/10	5	6	N	0.06		272	8.7	56	173	755	0.55	1.7			40400	R2-006-V-Z5B
Creek	02	65759	USEPA GLNPO	R2-007-V	Surface	05/19/10	0	1	N	0.64		347	6.7	131	261	1050	0.77	0.6			40600	R2-007-V-Z1
Creek	02	65759	USEPA GLNPO	R2-007-V	Surface	05/19/10	0	1	N	0.38		244	6.5	84	189	727	1.1	0.59			51100	R2-007-V-Z1P
Creek	02	65759	USEPA GLNPO	R2-007-V	Surface	05/25/10	0	1	N		2.40											R2-007-V-Z1P2
Creek	02	65759	USEPA GLNPO	R2-007-V	Subsurface	05/19/10	1	2	N	2.30		958	11	381	687	3230	1.4	0.72			58300	R2-007-V-Z2
Creek	02	65759	USEPA GLNPO	R2-007-V	Subsurface	05/19/10	2	3	N	23.00		5240	26	1600	2430	10500	5.5	2.1			136000	R2-007-V-Z3
Creek	02	65759	USEPA GLNPO	R2-007-V	Subsurface	05/19/10	3	4	N	0.69		2370	19	622	1820	2620	2.8	2.6			78800	R2-007-V-Z4
Creek	02	65759	USEPA GLNPO	R2-007-V	Subsurface	05/19/10	4	5	N	0.02		173	7.8	99	192	633	0.54	0.58			29800	R2-007-V-Z5A
Creek	02	65759	USEPA GLNPO	R2-007-V	Subsurface	05/19/10	5	6	N			8.2	1.9	15	9.7	60		0.05			3980	R2-007-V-Z5B
Creek	02	65640	USEPA GLNPO	R2-008-V	Surface	05/19/10	0	1	N	0.35		475	7.4	162	325	1480	1.8	0.81			56300	R2-008-V-Z1
Creek	02	65640	USEPA GLNPO	R2-008-V	Surface	05/19/10	0	1	N	0.13	2.06	258	6.6	89	204	769	2.4	0.58			45500	R2-008-V-Z1P
Creek	02	65640	USEPA GLNPO	R2-008-V	Subsurface	05/19/10	1	2	N	0.87		1220	12	605	833	4040	0.89	0.97			57400	R2-008-V-Z2
Creek	02	65640	USEPA GLNPO	R2-008-V	Subsurface	05/19/10	2	3	N	1.00		5060	23	1100	2620	7850	2.4	2.4			106000	R2-008-V-Z3
Creek	02	65640	USEPA GLNPO	R2-008-V	Subsurface	05/19/10	3	4	N	0.19		2430	18	520	1730	2810	4.2	2.8			70000	R2-008-V-Z4
Creek	02	65640	USEPA GLNPO	R2-008-V	Subsurface	05/19/10	4.5	5	N			13	2.8	15	13	63	0.062	0.26			12700	R2-008-V-Z5
Creek	02	65564	USEPA GLNPO	R2-009-V-P	Surface	05/25/10	0	1	N		2.59											R2-009-V-Z1P2
Creek	02	65562	USEPA GLNPO	R2-009-V	Surface	05/19/10	0	1	N	0.44		355	6.8	128	274	1090	0.93	0.73			45700	R2-009-V-Z1
Creek	02	65562	USEPA GLNPO	R2-009-V	Surface	05/19/10	0	1	N	0.34		270	6.9	92	218	848	1.7	0.61			37200	R2-009-V-Z1P
Creek	02	65562	USEPA GLNPO	R2-009-V	Subsurface	05/19/10	1	2	N	0.59		712	9.1	244	507	2440	7.1	0.86			54300	R2-009-V-Z2
Creek	02	65562	USEPA GLNPO	R2-009-V	Subsurface	05/19/10	2	3	N	4.60		3670	24	1530	1850	9600	2.4	1.7			99700	R2-009-V-Z3
Creek	02	65562	USEPA GLNPO	R2-009-V	Subsurface	05/19/10	3	4	FD	0.50		705	8.8	245	493	2360	0.93	0.84			51500	R2-009-VR
Creek	02	65562	USEPA GLNPO	R2-009-V	Subsurface	05/19/10	3	4	N	0.25		2650	17	554	1740	3950	5.5	2.4			85400	R2-009-V-Z4
Creek	02	65562	USEPA GLNPO	R2-009-V	Subsurface	05/19/10	4	5.5	N	0.02		698	13	301	799	2060	65	2.2			61700	R2-009-V-Z5
Creek	02	63171	USEPA GLNPO	R2-010-V	Surface	05/25/10	0	1	N		2.98										55200	R2-010-V-Z1
Creek	02	63171	USEPA GLNPO	R2-010-V	Surface	05/25/10	0	0.5	N			329	4.3	113	267	1030	3.4	0.7				R2-010-V-Z1A
Creek	02	63171	USEPA GLNPO	R2-010-V	Subsurface	05/25/10	0.5	1	N	0.16		395	4.6	135	302	1220	3	0.83				R2-010-V-Z1B
Creek	02	63171	USEPA GLNPO	R2-010-V	Subsurface	05/25/10	1	2	N	0.17		764	5.3	250	513	2780	4.3	0.78			60400	R2-010-V-Z2
Creek	02	63171	USEPA GLNPO	R2-010-V	Subsurface	05/25/10	2	3	N	0.43		1190	7.2	634	930	4970	4	1.1			72100	R2-010-V-Z3
Creek	02	63171	USEPA GLNPO	R2-010-V	Subsurface	05/25/10	3	4	N	1.20		3530	11	1950	2030	11500	12	1.8			138000	R2-010-V-Z4
Creek	02	63171	USEPA GLNPO	R2-010-V	Subsurface	05/25/10	4	6	N	0.49		4580	12	911	2650	8160	11	3			95200	R2-010-V-Z5
Creek	02	63171	USEPA GLNPO	R2-010-V	Subsurface	05/25/10	6	8	FD			844	9.2	318	831	1940	12	1.9			66500	R2-010-VR
Creek	02	63171	USEPA GLNPO	R2-010-V	Subsurface	05/25/10	6	8	N	0.05		1190	11	449	1210	2420	17	2.3			64500	R2-010-V-Z6
Creek	02	63171	USEPA GLNPO	R2-010-V	Subsurface	05/25/10	8	9	N			12	1.7	17	9.1	66	0.054	0.09			8750	R2-010-V-Z7A
Creek	02	63171	USEPA GLNPO	R2-010-V	Subsurface	05/25/10	9	10	N			6.8	2.2	17	8.7	61		0.32			20100	R2-010-V-Z7B
Creek	02	63153	USEPA GLNPO	R2-011-V	Surface	05/25/10	0	1	N		2.80										32000	R2-011-V-Z1
Creek	02	63153	USEPA GLNPO	R2-011-V	Surface	05/25/10	0	0.5	N	0.38		291	4.2	103	231	906	1.2	0.67				R2-011-V-Z1A
Creek	02	63153	USEPA GLNPO	R2-011-V	Subsurface	05/25/10	0.5	1	N	0.14		313	3.5	112	255	1020	1.5	0.77				R2-011-V-Z1B
Creek	02	63153	USEPA GLNPO	R2-011-V	Subsurface	05/25/10	1	2	N		2.82	416	5.1	155	312	1340	1.5	1.1			55600	R2-011-V-Z2
Creek	02	63153	USEPA GLNPO	R2-011-V	Subsurface	05/25/10	2	3	N	0.53	7.20	802	5.3	306	606	3060	1.9	1.3			73200	R2-011-V-Z3
Creek	02	63153	USEPA GLNPO	R2-011-V	Subsurface	05/25/10	3	4	N	0.46	5.98	1230	7	709	926	4890	2.3	1.4			62200	R2-011-V-Z4
Creek	02	63153	USEPA GLNPO	R2-011-V	Subsurface	05/25/10	4	6	N	4.90	24.10	2750	10	1590	1740	9170	3	2.1			124000	R2-011-V-Z5
Creek	02	63153	USEPA GLNPO	R2-011-V	Subsurface	05/25/10	6	8	N	0.98	5.46	3620	13	737	2120	6780	5.2	5			106000	R2-011-V-Z6
Creek	02	63153	USEPA GLNPO	R2-011-V	Subsurface	05/25/10	8	10	N	0.05	1.27	589	13	501	1110	3630	3.2	3			79500	R2-011-V-Z7
Creek	02	63153	USEPA GLNPO	R2-011-V	Subsurface	05/25/10	10	11.5	N		0.12	280	9.7	65	224	864	3.3	3			43200	R2-011-V-Z8
Creek	02	63096	USEPA GLNPO	R2-012-V	Surface	05/25/10	0	1	N		2.36										48900	R2-012-V-Z1
Creek	02	63096	USEPA GLNPO	R2-012-V	Surface	05/25/10	0	0.5	N	0.22		271	5.5	95	215	873	0.94	1.5				R2-012-V-Z1A
Creek	02	63096	USEPA GLNPO	R2-012-V	Subsurface	05/25/10	0.5	1	N	0.60		325	5.1	110	256	1020	1.2	1.1				R2-012-V-Z1B
Creek	02	63096	USEPA GLNPO	R2-012-V	Subsurface	05/25/10	1	2	N	0.37		540	5.6	183	381	1810	0.92	1.1			52300	R2-012-V-Z2
Creek	02	63096	USEPA GLNPO	R2-012-V	Subsurface	05/25/10	2	3	N	0.62		957	6.3	351	737	3960	1.5	1.2			47600	R2-012-V-Z3
Creek	02	63096	USEPA GLNPO	R2-012-V	Subsurface	05/25/10	3	4	FD			1520	8.5	948	1110	5360	1.4	1.4			84600	R2-012-VR
Creek	02	63096	USEPA GLNPO	R2-012-V	Subsurface	05/25/10	3	4	N	0.48		1540	9	961	1110	5420	1.5	1.4			87700	R2-012-V-Z4
Creek	02	63096	USEPA GLNPO	R2-012-V	Subsurface	05/25/10	4	6	N	7.10		2520	11	1470	1410	8590	8.4	0.25			139000	R2-012-V-Z5
Creek	02	63096	USEPA GLNPO	R2-012-V	Subsurface	05/25/10	6	8	N	1.20		2110	12	459	1600	3570	3	2.5			59800	R2-012-V-Z6

Table D-1

Detailed List of Sediment Chemistry Results for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	PCBs (total)	TOTAL PCB CONGENERS	LEAD	ARSENIC	CHROMIUM	COPPER	ZINC	PAHs (total)	MERCURY	Sum of DDT+DDE+DDD	DIELDRIN	TOTAL ORGANIC CARBON	Sample ID
Creek	02	63096	USEPA GLNPO	R2-012-V	Subsurface	05/25/10	8	9	N	0.03		124	6.1	153	246	849	0.62	0.64			25900	R2-012-V-Z7
Creek	02	62416	NYSDEC 2001	DEC-6BCEF	Surface	08/18/98	0	0.5	N	0.68	0.63	278	6.5	103	197	813	2.75	0.64	0.009			DEC-6BCEF-SURFACE-8/18/1998
Creek	02	62416	NYSDEC 2001	DEC-6C	Surface	08/18/98	0	0.33	N	0.42	0.39	357	5.9	121	258	1010	1.405	0.757	0.007			DEC-6C-0-10 CM CORE-8/18/1998
Creek	02	62416	NYSDEC 2001	DEC-6C	Surface	08/18/98	0.34	0.66	N	0.32	0.29	413	6.2	152	298	1260	1.019	0.717	0.004			DEC-6C-10-20 CM CORE-8/18/1998
Creek	02	62416	NYSDEC 2001	DEC-6C	Subsurface	08/18/98	0.66	0.98	N	0.92	0.85	488	7.8	175	352	1550	3.27	0.596	0.004			DEC-6C-20-30 CM CORE-8/18/1998
Creek	02	62416	NYSDEC 2001	DEC-6C	Subsurface	08/18/98	0.98	1.31	N	1.32	1.20	870	6.9	251	532	2880	4.166	0.914	0.01			DEC-6C-30-40 CM CORE-8/18/1998
Creek	02	62416	NYSDEC 2001	DEC-6C	Subsurface	08/18/98	1.31	1.64	N	2.01	1.90	909	6.9	344	653	3520	4.297	0.988	0.007			DEC-6C-40-50 CM CORE-8/18/1998
Creek	02	62416	NYSDEC 2001	DEC-6C	Subsurface	08/18/98	1.64	1.97	N	1.96	1.80	872	7	365	563	3340	4.331	0.87	0.009			DEC-6C-50-60 CM CORE-8/18/1998
Creek	02	62416	NYSDEC 2001	DEC-6C	Subsurface	08/18/98	1.97	2.3	N	10.61	9.80	1990	10.8	1240	1260	6560	8.251	1.27	0.028			DEC-6C-60-70 CM CORE-8/18/1998
Creek	02	62416	NYSDEC 2001	DEC-6C	Subsurface	08/18/98	2.3	2.62	N	12.56	12.00	4490	12.3	848	2450	10800	13.268	2.38	0.06			DEC-6C-70-80 CM CORE-8/18/1998
Creek	02	62416	NYSDEC 2001	DEC-6C	Subsurface	08/18/98	2.62	2.95	N	1.67	1.40	3120	12.1	424	2200	2540	13.19	3.31	0.051			DEC-6C-80-90 CM CORE-8/18/1998
Creek	02	62416	NYSDEC 2001	DEC-6C	Subsurface	08/18/98	2.95	3.25	N	1.25	1.00	2190	10.6	450	1880	2850	14.54	3.13	0.026			DEC-6C-90-99 CM CORE-8/18/1998
Creek	02	62234	NYSDEC 1998	DEC-6	Surface	10/11/94	0	1.7	N	2.42		644	5.1	250	462	2360		0.79				DEC-6-0-20 IN CORE-10/11/1994
Creek	02	62234	NYSDEC 1998	DEC-6	Surface	10/11/94	0	0.5	N	2.49		486	5.6	189	353	1540		0.69	0.03			DEC-6-SURFACE-10/11/1994
Creek	02	62234	NYSDEC 1998	DEC-6	Subsurface	10/11/94	1.67	2	N	21.00		4500	14.5	1910	2340	16500		1.1	0.301			DEC-6-20-24 IN CORE-10/11/1994
Creek	02	61625	USEPA GLNPO	R2-013-V	Surface	05/25/10	0	1	N		2.77										53000	R2-013-V-Z1
Creek	02	61625	USEPA GLNPO	R2-013-V	Surface	05/25/10	0	0.5	N	0.59		388	5.4	135	285	1240	1.8	0.79				R2-013-V-Z1A
Creek	02	61625	USEPA GLNPO	R2-013-V	Subsurface	05/25/10	0.5	1	N	2.20		338	4.5	120	254	1090	4.6	0.95				R2-013-V-Z1B
Creek	02	61625	USEPA GLNPO	R2-013-V	Subsurface	05/25/10	1	2	N	0.61		394	4.8	140	299	1300	1.4	0.97			50700	R2-013-V-Z2
Creek	02	61625	USEPA GLNPO	R2-013-V	Subsurface	05/25/10	2	3	N	2.50		441	4.8	167	331	1490	3.3	0.97			49400	R2-013-V-Z3
Creek	02	61625	USEPA GLNPO	R2-013-V	Subsurface	05/25/10	3	4	N	0.79		930	6.3	394	693	3930	0.88	1			67500	R2-013-V-Z4
Creek	02	61625	USEPA GLNPO	R2-013-V	Subsurface	05/25/10	4	6	N	3.10		4350	13	1580	2100	11900	2.1	2.1			133000	R2-013-V-Z5
Creek	02	61625	USEPA GLNPO	R2-013-V	Subsurface	05/25/10	6	8	N	0.50		5980	14	909	3610	9630	3.9	3.2			128000	R2-013-V-Z6
Creek	02	61625	USEPA GLNPO	R2-013-V	Subsurface	05/25/10	8	10	N	0.12		2140	15	875	1350	3210	5.7	4.2			109000	R2-013-V-Z7
Creek	02	61625	USEPA GLNPO	R2-013-V	Subsurface	05/25/10	10	12	N	0.08		723	14	557	1400	3790	6.1	3			89600	R2-013-V-Z8
Creek	02	61620	USEPA GLNPO	R2-015-V	Surface	05/25/10	0	1	N		2.10										31700	R2-015-V-Z1
Creek	02	61620	USEPA GLNPO	R2-015-V	Surface	05/25/10	0	0.5	N	0.29		306	3.8	104	229	1000	1.8	1.2				R2-015-V-Z1A
Creek	02	61620	USEPA GLNPO	R2-015-V	Subsurface	05/25/10	0.5	1	N	0.24		375	4.8	125	275	1190	2.7	1.3				R2-015-V-Z1B
Creek	02	61620	USEPA GLNPO	R2-015-V	Subsurface	05/25/10	1	2	N	0.36		590	4.9	224	393	2270	3.1	1.2			64500	R2-015-V-Z2
Creek	02	61620	USEPA GLNPO	R2-015-V	Subsurface	05/25/10	2	3	N	6.80		4190	11	1830	2240	14400	7.2	2.7			131000	R2-015-V-Z3
Creek	02	61620	USEPA GLNPO	R2-015-V	Subsurface	05/25/10	3	4	N	3.70		5420	13	1170	2640	15100	4.5	3.4			116000	R2-015-V-Z4
Creek	02	61620	USEPA GLNPO	R2-015-V	Subsurface	05/25/10	4	6	N	0.46		2520	12	469	2010	3140	7.4	4			92100	R2-015-V-Z5
Creek	02	61620	USEPA GLNPO	R2-015-V	Subsurface	05/25/10	6	8	N	0.03		469	10	270	676	2230	4.6	2.8			66100	R2-015-V-Z6
Creek	02	61620	USEPA GLNPO	R2-015-V	Subsurface	05/25/10	8	10	N			135	5.7	38	157	515	2	2			33500	R2-015-V-Z7A
Creek	02	61620	USEPA GLNPO	R2-015-V	Subsurface	05/25/10	9	9.5	N			5.5	1.6	17	11	62		0.13			2470	R2-015-V-Z7B
Creek	02	61618	USEPA GLNPO	R2-014-V	Surface	05/25/10	0	1	N		2.95										60000	R2-014-V-Z1
Creek	02	61618	USEPA GLNPO	R2-014-V	Surface	05/25/10	0	0.5	N	0.53		440	4.7	149	320	1400	3	1.2				R2-014-V-Z1A
Creek	02	61618	USEPA GLNPO	R2-014-V	Subsurface	05/25/10	0.5	1	N			457	4.6	161	308	1560	2.6	1.3				R2-014-V-Z1B
Creek	02	61618	USEPA GLNPO	R2-014-V	Subsurface	05/25/10	1	2	N	0.62		680	4.4	240	470	2900	2.1	0.87			45900	R2-014-V-Z2
Creek	02	61618	USEPA GLNPO	R2-014-V	Subsurface	05/25/10	2	3	N	6.10		3310	11	1620	1920	11400	2.9	1.9			124000	R2-014-V-Z3
Creek	02	61618	USEPA GLNPO	R2-014-V	Subsurface	05/25/10	3	4	N	7.40		5490	13	1670	2550	11400	6	2.8			150000	R2-014-V-Z4
Creek	02	61618	USEPA GLNPO	R2-014-V	Subsurface	05/25/10	4	6	FD	2.70		5760	15	1040	2880	12100	0.92	2.5			128000	R2-014-VR
Creek	02	61618	USEPA GLNPO	R2-014-V	Subsurface	05/25/10	4	6	N	4.50		5100	13	982	2740	10400	6.2	8.6			130000	R2-014-V-Z5
Creek	02	61618	USEPA GLNPO	R2-014-V	Subsurface	05/25/10	6	8	N	0.62		4500	10	547	3790	2630	3.9	3.7			97600	R2-014-V-Z6
Creek	02	61618	USEPA GLNPO	R2-014-V	Subsurface	05/25/10	8	10	N			340	11	78	273	943	6.3	3.1			107000	R2-014-V-Z7
Creek	03	60757	USEPA GLNPO	R3-018-V	Surface	05/25/10	0	1	N		3.35										57400	R3-018-V-Z1
Creek	03	60757	USEPA GLNPO	R3-018-V	Surface	05/25/10	0	0.5	N	0.07		301	4	105	224	999	1.5	0.87				R3-018-V-Z1A
Creek	03	60757	USEPA GLNPO	R3-018-V	Subsurface	05/25/10	0.5	1	N	0.56		386	4.6	141	273	1380	3.3	1				R3-018-V-Z1B
Creek	03	60757	USEPA GLNPO	R3-018-V	Subsurface	05/25/10	1	2	N	0.77		742	4.9	324	532	2830	2.9	1.3			68800	R3-018-V-Z2
Creek	03	60757	USEPA GLNPO	R3-018-V	Subsurface	05/25/10	2	3	N	3.30		2540	10	1630	1610	9390	5.1	2.5			126000	R3-018-V-Z3
Creek	03	60757	USEPA GLNPO	R3-018-V	Subsurface	05/25/10	3	4	N	3.20		5790	11	1750	2560	17300	8.9	3.8			141000	R3-018-V-Z4
Creek	03	60757	USEPA GLNPO	R3-018-V	Subsurface	05/25/10	4	6	N	0.76		5080	11	703	3170	5470	7.4	4.6			118000	R3-018-V-Z5
Creek	03	60757	USEPA GLNPO	R3-018-V	Subsurface	05/25/10	6	8	N	0.12		1400	11	554	1540	2850	5.3	4			95000	R3-018-V-Z6
Creek	03	60757	USEPA GLNPO	R3-018-V	Subsurface	05/25/10	8	10	N	0.02		443	11	193	458	1670	1.4	3.2			88400	R3-018-V-Z7
Creek	03	60757	USEPA GLNPO	R3-018-V	Subsurface	05/25/10	10	12	N			288	9.2	60	255	1000	1.8	2.7			56800	R3-018-V-Z8
Creek	03	60754	NYSDEC 2001	DEC-6E	Surface	08/18/98	0	0.85	N	1.06	0.98	454	4.4	158	328	1400	4.283	1.03	0.007			DEC-6E-0-26 CM CORE-8/18/1998
Creek	03	60754	NYSDEC 2001	DEC-6E	Subsurface	08/18/98	0.85	1.31	N	1.88	1.70	787	4.3	284	562	3290	5.517	0.949	0.009			DEC-6E-26-40 CM CORE-8/18/1998
Creek	03	60754	NYSDEC 2001	DEC-6E	Subsurface	08/18/98	1.31	1.84	N	10.28	9.50	1190	4.8	753	851	3070	6.696	1.42	0.019			DEC-6E-40-56 CM CORE-8/18/1998
Creek	03	60754	NYSDEC 2001	DEC-6E	Subsurface	08/18/98	1.84	2.43	N	6.74	6.30	4150	12.5	1490	2310	11600	14.39	2.62	0.095			DEC-6E-56-74 CM CORE-8/18/1998
Creek	03	60738	USEPA GLNPO	R3-017-V	Surface	05/26/10	0	1	N		2.44										34000	R3-017-V-Z1
Creek	03	60738	USEPA GLNPO	R3-017-V	Surface	05/26/10	0	0.5	N	0.11		260	4.3	86	172	821	1.6	1.2				R3-017-V-Z1A
Creek	03	60738	USEPA GLNPO	R3-017-V	Subsurface	05/26/10	0.5	1	N	0.33		299	5.2	92	212	984	0.76	1.5				R3-017-V-Z1B
Creek	03	60738	USEPA GLNPO	R3-017-V	Subsurface	05/26/10	1	2	N			340	4.4	110	214	1130	4.5	0.87			44900	R3-017-V-Z2
Creek	03	60738	USEPA GLNPO	R3-017-V	Subsurface	05/26/10	2	3	N	5.00		1390	7.8	693	777	6170	8.5	1.1			71000	R3-017-V-Z3
Creek	03	60738	USEPA GLNPO	R3-017-V	Subsurface	05/26/10	3	4	N	11.00		5500	15	2090	2470	15900	10	2.4			125000	R3-017-V-Z4
Creek	03	60738	USEPA GLNPO	R3-017-V	Subsurface	05/26/10	4	6	FD	1.50		5280	16	1100	2540	11500	3.6	2.7			121000	R3-017-VR
Creek	03	60738	USEPA GLNPO	R3-017-V	Subsurface	05/26/10	4	6	N	1.80		5230	15	1000	2480	9330	5.6	2.5			130000	R3-017-V-Z5
Creek	03	60738	USEPA GLNPO	R3-017-V	Subsurface	05/26/10	6	8	N	0.09		1820	11	224	1540	1620	4.3	2.7			77900	R3-017-V-Z6
Creek	03	60738	USEPA GLNPO	R3-017-V	Subsurface	05/26/10	8	8.5	N			290	10	64	354	1160	5	3.4			62800	R3-017-V-Z7
Creek	03	60734	USEPA GLNPO	R3-016-V	Surface	05/26/10	0	1	N		8.30										70900	R3-016-V-Z1

Table D-1

Detailed List of Sediment Chemistry Results for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	PCBs (total)	TOTAL PCB CONGENERS	LEAD	ARSENIC	CHROMIUM	COPPER	ZINC	PAHs (total)	MERCURY	Sum of DDT+DDE+DDD	DIELDRIN	TOTAL ORGANIC CARBON	Sample ID
Creek	03	60734	USEPA GLNPO	R3-016-V	Surface	05/26/10	0	0.5	N	6.70		2270	15	1290	1290	9350	7.1	1.5				R3-016-V-Z1A
Creek	03	60734	USEPA GLNPO	R3-016-V	Subsurface	05/26/10	0.5	1	N	10.00		4650	17	1940	2320	16700	12	2				R3-016-V-Z1B
Creek	03	60734	USEPA GLNPO	R3-016-V	Subsurface	05/26/10	1	2	N	5.80		4430	15	1040	2160	12500	6.1	2.1			109000	R3-016-V-Z2
Creek	03	60734	USEPA GLNPO	R3-016-V	Subsurface	05/26/10	2	3	N	2.50		3880	11	441	2470	3000	10	3.1			97900	R3-016-V-Z3
Creek	03	60734	USEPA GLNPO	R3-016-V	Subsurface	05/26/10	3	4	FD	0.35		1600	11	549	1330	2960	11	3.3			76000	R3-016-VR
Creek	03	60734	USEPA GLNPO	R3-016-V	Subsurface	05/26/10	3	4	N	0.36		1600	14	512	1310	3050	13	3.4			86800	R3-016-V-Z4
Creek	03	60734	USEPA GLNPO	R3-016-V	Subsurface	05/26/10	4	6	N	0.07		619	14	379	1020	3240	20				82300	R3-016-V-Z5
Creek	03	60734	USEPA GLNPO	R3-016-V	Subsurface	05/26/10	6	8	N			304	9.6	66	288	976	12				67500	R3-016-V-Z6
Creek	03	60734	USEPA GLNPO	R3-016-V	Subsurface	05/26/10	8	9	N			7.1	2.1	16	10	69	0.01				3380	R3-016-V-Z7
Creek	03	60224	USEPA GLNPO	R3-019-V	Surface	05/26/10	0	1	N		2.50										61400	R3-019-V-Z1
Creek	03	60224	USEPA GLNPO	R3-019-V	Surface	05/26/10	0	0.5	N	0.76		447	4.5	184	332	1650	0.82	0.34				R3-019-V-Z1A
Creek	03	60224	USEPA GLNPO	R3-019-V	Subsurface	05/26/10	0.5	1	N	0.44		613	4.8	266	453	2410	0.59	0.53				R3-019-V-Z1B
Creek	03	60224	USEPA GLNPO	R3-019-V	Subsurface	05/26/10	1	2	N	0.62		2470	8.5	923	1320	9750	4.2	4.8			73200	R3-019-V-Z2
Creek	03	60224	USEPA GLNPO	R3-019-V	Subsurface	05/26/10	2	3	N	0.72		3480	10	741	2110	6860	6.9	2.8			99200	R3-019-V-Z3
Creek	03	60224	USEPA GLNPO	R3-019-V	Subsurface	05/26/10	3	4	N	0.04		942	12	554	1240	3350	6.4	2.3			85900	R3-019-V-Z4
Creek	03	60215	USEPA GLNPO	R3-020-V	Surface	05/26/10	0	1	N		3.84										47300	R3-020-V-Z1
Creek	03	60215	USEPA GLNPO	R3-020-V	Surface	05/26/10	0	0.5	N	0.48		571	5.1	232	355	2040	2.2	0.35				R3-020-V-Z1A
Creek	03	60215	USEPA GLNPO	R3-020-V	Subsurface	05/26/10	0.5	1	N	2.80		753	5.6	360	486	2670	0.95	0.78				R3-020-V-Z1B
Creek	03	60215	USEPA GLNPO	R3-020-V	Subsurface	05/26/10	1	2	N	3.90	35.90	4390	13	1770	2210	13000	1.8	2.5			139000	R3-020-V-Z2
Creek	03	60215	USEPA GLNPO	R3-020-V	Subsurface	05/26/10	2	3	N	4.60	35.20	4850	12	1100	2430	20000	2	2.4			122000	R3-020-V-Z3
Creek	03	60215	USEPA GLNPO	R3-020-V	Subsurface	05/26/10	3	4	N	1.90	11.80	5490	15	973	2830	8750	7.7	3.5			106000	R3-020-V-Z4
Creek	03	60215	USEPA GLNPO	R3-020-V	Subsurface	05/26/10	4	6	N	0.21	3.50	2350	12	514	1710	3050	6.5	2.9			102000	R3-020-V-Z5
Creek	03	60215	USEPA GLNPO	R3-020-V	Subsurface	05/26/10	6	8	N	0.04	0.46	508	12	172	537	1910	4.9	3.2			81800	R3-020-V-Z6
Creek	03	60215	USEPA GLNPO	R3-020-V	Subsurface	05/26/10	8	10	N		0.00	325	9.5	60	322	1100	3.9	3.6			68100	R3-020-V-Z7
Creek	03	60207	USEPA GLNPO	R3-021-V	Surface	05/26/10	0	1	N		0.03										9710	R3-021-V-Z1
Creek	03	60207	USEPA GLNPO	R3-021-V	Surface	05/26/10	0	0.5	N			5.4	2.4	12	10	47	0.0041					R3-021-V-Z1A
Creek	03	60207	USEPA GLNPO	R3-021-V	Subsurface	05/26/10	0.5	1	N			5.3	2	16	8	86						R3-021-V-Z1B
Creek	03	60207	USEPA GLNPO	R3-021-V	Subsurface	05/26/10	1	2	N			5.7	3.4	19	8.6	114		0.13			2250	R3-021-V-Z2
Creek	03	60207	USEPA GLNPO	R3-021-V	Subsurface	05/26/10	2	3	N			4.5	2	15	5.9	84		0.14			1240	R3-021-V-Z3
Creek	03	59488	NYSDEC 2001	DEC-6F	Surface	08/18/98	0	0.33	N	1.12	1.00	318	6.5	107	351	950	2.475	0.59	0.013			DEC-6F-0-10 CM CORE-8/18/1998
Creek	03	59488	NYSDEC 2001	DEC-6F	Surface	08/18/98	0.33	0.92	N	3.03	2.80	320	4.9	124	191	1210	17.921	0.536				DEC-6F-10-28 CM CORE-8/18/1998
Creek	03	59488	NYSDEC 2001	DEC-6F	Subsurface	08/18/98	0.92	1.71	N	25.85	24.00	2740	11.7	616	1270	15100	12.844	2.06	0.062			DEC-6F-28-52 CM CORE-8/18/1998
Creek	03	59488	NYSDEC 2001	DEC-6F	Subsurface	08/18/98	1.71	2.3	N	0.03	0.02	673	9.6	113	449	1160	24.11	2.37				DEC-6F-52-70 CM CORE-8/18/1998
Creek	03	59488	NYSDEC 2001	DEC-6F	Subsurface	08/18/98	2.3	3.61	N	0.00	0.00	315	10.5	75	299	1140	21.73	2.97				DEC-6F-70-110 CM CORE-8/18/1998
Creek	03	59465	USEPA GLNPO	R3-022-V	Surface	05/26/10	0	1	N		4.44										21600	R3-022-V-Z1
Creek	03	59465	USEPA GLNPO	R3-022-V	Surface	05/26/10	0	0.5	N	0.25		343	4.9	131	237	1120	2.6	0.73				R3-022-V-Z1A
Creek	03	59465	USEPA GLNPO	R3-022-V	Subsurface	05/26/10	0.5	1	N	0.33		402	4.6	145	264	1390	6	0.8				R3-022-V-Z1B
Creek	03	59465	USEPA GLNPO	R3-022-V	Subsurface	05/26/10	1	2	FD	0.79		509	3.9	167	287	2280	3.7	0.56			37100	R3-022-VR
Creek	03	59465	USEPA GLNPO	R3-022-V	Subsurface	05/26/10	1	2	N	0.18		591	4	186	375	2380	19	0.67			43100	R3-022-V-Z2
Creek	03	59465	USEPA GLNPO	R3-022-V	Subsurface	05/26/10	2	3	N	0.90		1180	6.6	442	635	5500	2.7	0.88			53500	R3-022-V-Z3
Creek	03	59465	USEPA GLNPO	R3-022-V	Subsurface	05/26/10	3	4	N			417	9	66	265	931	5.6	2.6			48200	R3-022-V-Z4
Creek	03	59465	USEPA GLNPO	R3-022-V	Subsurface	05/26/10	4	6	N			235	8.4	52	196	669	2.1	2.4			45900	R3-022-V-Z5
Creek	03	59465	USEPA GLNPO	R3-022-V	Subsurface	05/26/10	6	6.8	N			25	2.7	19	16	74	0.062	0.24			2980	R3-022-V-Z6
Creek	03	59359	USEPA GLNPO	R3-024-V	Surface	05/26/10	0	1	N		5.45										62500	R3-024-V-Z1
Creek	03	59359	USEPA GLNPO	R3-024-V	Surface	05/26/10	0	0.5	N	0.65		431	6.1	166	300	1540	2.4	0.6				R3-024-V-Z1A
Creek	03	59359	USEPA GLNPO	R3-024-V	Subsurface	05/26/10	0.5	1	N	0.75		708	6.1	241	442	2470	2.3	0.64				R3-024-V-Z1B
Creek	03	59359	USEPA GLNPO	R3-024-V	Subsurface	05/26/10	1	2	N	0.44		3220	11	1510	1750	11600	7.6	1.7			125000	R3-024-V-Z2
Creek	03	59359	USEPA GLNPO	R3-024-V	Subsurface	05/26/10	2	3	N	4.80		4810	14	1170	2370	12700	4	2.6			114000	R3-024-V-Z3
Creek	03	59359	USEPA GLNPO	R3-024-V	Subsurface	05/26/10	3	4	N	1.40		5260	14	732	2970	5760	6.7	2.7			116000	R3-024-V-Z4
Creek	03	59359	USEPA GLNPO	R3-024-V	Subsurface	05/26/10	4	6	N	0.06		563	11	110	478	1320	3.1	3.1			55700	R3-024-V-Z5
Creek	03	59359	USEPA GLNPO	R3-024-V	Subsurface	05/26/10	6	8	N			240	8.2	57	252	741	2.9	2.1			29300	R3-024-V-Z6
Creek	03	59325	USEPA GLNPO	R3-023-V	Surface	05/26/10	0	1	N		0.00										24600	R3-023-V-Z1
Creek	03	59325	USEPA GLNPO	R3-023-V	Surface	05/26/10	0	0.5	N			27	2.9	18	17	82	0.011					R3-023-V-Z1A
Creek	03	59325	USEPA GLNPO	R3-023-V	Subsurface	05/26/10	0.5	0.9	N			17	2.7	17	14	75	0.009	1.4				R3-023-V-Z1B
Creek	03	59325	USEPA GLNPO	R3-023-V	Subsurface	05/26/10	1	2	N			6.7	2	15	8.7	60	0.015	1.7			6390	R3-023-V-Z2
Creek	03	58706	USEPA GLNPO	R3-027-V	Surface	05/27/10	0	1	N		2.35										47100	R3-027-V-Z1
Creek	03	58706	USEPA GLNPO	R3-027-V	Surface	05/27/10	0	0.5	N	0.32		273	6	103	196	953	3.4	0.53				R3-027-V-Z1A
Creek	03	58706	USEPA GLNPO	R3-027-V	Subsurface	05/27/10	0.5	1	N	0.38		417	6.2	189	266	1670	4.6	0.7				R3-027-V-Z1B
Creek	03	58706	USEPA GLNPO	R3-027-V	Subsurface	05/27/10	1	2	N	2.10		1610	9.2	701	877	7510	8.4	1.2			82200	R3-027-V-Z2
Creek	03	58706	USEPA GLNPO	R3-027-V	Subsurface	05/27/10	2	3	N	2.80		4880	17	1500	2440	17900	7.3	2.8			114000	R3-027-V-Z3
Creek	03	58706	USEPA GLNPO	R3-027-V	Subsurface	05/27/10	3	4	N	1.80		3200	13	674	1640	6320	6.7	2.5			102000	R3-027-V-Z4
Creek	03	58684	USEPA GLNPO	R3-026-V	Surface	05/27/10	0	1	N		4.45										47400	R3-026-V-Z1
Creek	03	58684	USEPA GLNPO	R3-026-V	Surface	05/27/10	0	0.5	N	0.38		284	5.5	124	233	859	5.5	0.6				R3-026-V-Z1A
Creek	03	58684	USEPA GLNPO	R3-026-V	Subsurface	05/27/10	0.5	1	N	0.80		337	3.8	132	215	1240	7.6	0.44				R3-026-V-Z1B
Creek	03	58684	USEPA GLNPO	R3-026-V	Subsurface	05/27/10	1	2	N	0.54		493	6.2	172	298	2030	4.4	0.69			46000	R3-026-V-Z2
Creek	03	58684	USEPA GLNPO	R3-026-V	Subsurface	05/27/10	2	3	N	1.30		3980	15	926	2020	14300	5.1	2			103000	R3-026-V-Z3
Creek	03	58684	USEPA GLNPO	R3-026-V	Subsurface	05/27/10	3	4	N	3.60	8.53	3480	15	692	2040	6480	3.5	2.2			80800	R3-026-V-Z4
Creek	03	58656	USEPA GLNPO	R3-025-V	Surface	05/26/10	0	1	N		0.05										3400	R3-025-V-Z1
Creek	03	58656	USEPA GLNPO	R3-025-V	Surface	05/26/10	0	0.5	N	0.12		92	2.7	38	40	538	0.31					R3-025-V-Z1A
Creek	03	58656	USEPA GLNPO	R3-025-V	Subsurface	05/26/10	0.5	1	N	0.07		381	3.7	117	113	1230	0.48	0.16				R3-025-V-Z1B

Table D-1

Detailed List of Sediment Chemistry Results for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	PCBs (total)	TOTAL PCB CONGENERS	LEAD	ARSENIC	CHROMIUM	COPPER	ZINC	PAHs (total)	MERCURY	Sum of DDT+DDE+DDD	DIELDRIN	TOTAL ORGANIC CARBON	Sample ID
Creek	04	58038	USEPA GLNPO	R4-135-C	Surface	06/21/10	0	0.8	N	27.00		200	4.7	73	109	624	44	0.13			46100	R4-135-C-COMP
Creek	04	58038	USEPA GLNPO	R4-135-C	Surface	06/21/10	0	0.5	N	5.30		385	5.7	109	232	909	29	0.71			115000	R4-135-C-Z1A
Creek	04	57787	USEPA GLNPO	R4-028-C	Surface	11/17/09	0	1.55	N	0.37		450	5.5	211	304	1750	2.9	0.42	0.0125	0.013	56000	R4-028-C
Creek	04	57468	USEPA GLNPO	R4-136-C	Surface	06/21/10	0	0.4	N	1.10		2320	14	1090	1230	8670	5.5	1.2			80900	R4-136-C-Z1A
Creek	04	56862	USEPA GLNPO	R4-029-C	Surface	11/16/09	0	1.2	N	0.07		264	4.2	90	191	829		0.72			47000	R4-029-C
Creek	04	56559	USEPA GLNPO	R4-137-C	Surface	06/21/10	0	0.7	N	0.32		256	4.6	76	99	536	26	0.39			61900	R4-137-C-Comp
Creek	04	56006	USEPA GLNPO	R4-030-C	Surface	11/16/09	0	1.1	N	0.70	0.29	103	2.9	36	50	345	40	0.19	0.0599	0.019	147000	R4-030-C
Creek	04	55979	USEPA GLNPO	R4-138-C	Surface	06/21/10	0	0.4	N	0.33		107	3.5	39	70	411	250	0.38			60700	R4-138-C-Comp
Creek	04	55678	USEPA GLNPO	R4-031-C	Surface	11/16/09	0	0.8	N	0.17		1460	6.4	451	725	6510	11	1	0.0137		52000	R4-031-C
Creek	04	55647	USEPA GLNPO	R4-139-C	Surface	06/22/10	0	0.3	N	1.50		810	6.4	261	427	3510	20	0.8			59200	R4-139-C-Z1A
Creek	04	55325	USEPA GLNPO	R4-140-C	Surface	06/23/10	0	0.3	N			103	5.9	35	244	611	1.1	0.17			26900	R4-140-C-Z1A
Creek	04	55037	USEPA GLNPO	R4-032-C	Surface	11/16/09	0	0.7	N	0.30		392	5.2	133	238	1200		0.63			39000	R4-032-C
Creek	04	54677	USEPA GLNPO	R4-141-C	Surface	06/23/10	0	0.8	N			888	6.9	139	537	1150	11	1.1			46200	R4-141-C-COMP
Creek	04	54677	USEPA GLNPO	R4-141-C	Surface	06/23/10	0	0.5	FD	0.37		491	4.9	121	332	1500	3.7	0.64			30700	R4-141-CR
Creek	04	54677	USEPA GLNPO	R4-141-C	Surface	06/23/10	0	0.5	N	0.71		408	4.5	101	251	1230	1.5	0.6			41300	R4-141-C-Z1A
Creek	04	54208	USEPA GLNPO	R4-033-C	Surface	11/17/09	0	0.4	N	0.07		47	3	19	26	183		0.16			16000	R4-033-C
Creek	04	53793	USEPA GLNPO	R4-142-C	Surface	06/23/10	0	0.2	N			456	4.1	67	128	623	0.86	0.24			29000	R4-142-C-Z1A
Creek	04	53633	USEPA GLNPO	R4-034-C	Surface	11/17/09	0	0.4	N	0.10		62	3.3	20	27	224	5.4	0.31		0.0037	63000	R4-034-C
Creek	04	53123	USEPA GLNPO	R4-143-C	Surface	06/23/10	0	0.3	N	1.10		244	5.3	82	153	672	4.2	0.79			102000	R4-143-C-Z1A
Creek	04	52919	USEPA GLNPO	R4-035-C	Surface	11/17/09	0	0.8	N	0.81	0.97	307	2.6	98	160	688		1.2			63000	R4-035-C
Creek	04	52719	USEPA GLNPO	R4-036-C	Surface	11/17/09	0	0.9	N	0.57		200	3.4	60	128	507		0.56			104000	R4-036-C
Creek	04	52514	USEPA GLNPO	R4-037-C	Surface	11/17/09	0	0.6	N	0.56	2.80	176	3.1	69	249	575		0.47			30000	R4-037-C
Creek	04	52226	USEPA GLNPO	R4-038-C	Surface	11/18/09	0	0.4	N	0.29		238	2.9	101	136	574		0.28			32000	R4-038-C
Creek	04	52061	NYSDEC 2001	DEC-7A	Surface	08/19/98	0	0.66	N	0.25	0.23	2840	10.6	798	1330	8640	5.038	1.33	0.02			DEC-7A-0-20 CM CORE-8/19/1998
Creek	04	52061	NYSDEC 2001	DEC-7A	Surface	08/19/98	0	0.5	N	0.12	0.11	329	7.5	105	241	816	3.25	1.1	0.008			DEC-7ABC-SURFACE-8/19/1998
Creek	05	52061	NYSDEC 2001	DEC-7A	Subsurface	08/19/98	0.66	1.64	N	0.24	0.21	900	12.1	251	795	2040	15.543	4.73	0.009			DEC-7A-20-50 CM CORE-8/19/1998
Creek	05	52061	NYSDEC 2001	DEC-7A	Subsurface	08/19/98	1.64	2.95	N		0.00	346	12.5	89.9	193	485	14.54	4.36				DEC-7A-50-90 CM CORE-8/19/1998
Creek	05	52061	NYSDEC 2001	DEC-7A	Subsurface	08/19/98	2.95	3.41	N	0.00		545	11.2	176	215	424	6.268	10.1				DEC-7A-90-104 CM CORE-8/19/1998
Creek	05	51954	USEPA GLNPO	R5-039-V	Surface	05/21/10	0	1	N			188	1.8	34	56	319	17	0.24			41600	R5-039-V-Z1
Creek	05	51954	USEPA GLNPO	R5-039-V	Subsurface	05/21/10	1	1.9	N	0.48		167	2	57	86	412	0.65	0.8				R5-039-V-Z2
Creek	05	51903	NYSDEC 1998	DEC-7	Surface	10/12/94	0	1	N	18.36		7850	11.3	1470	2130	24000		2.2	0.031			DEC-7-0-12 IN CORE-10/12/1994
Creek	05	51903	NYSDEC 1998	DEC-7	Subsurface	10/12/94	1	1.67	N	13.00		3670	12.7	927	1620	10500		1.7	0.052			DEC-7-12-20 IN CORE-10/12/1994
Creek	05	51887	USEPA GLNPO	R5-041-V	Surface	05/24/10	0	1	N												65100	R5-041-V-Z1
Creek	05	51887	USEPA GLNPO	R5-041-V	Surface	05/24/10	0	0.5	N	0.01		389	9.8	80	305	1220	11	3				R5-041-V-Z1A
Creek	05	51887	USEPA GLNPO	R5-041-V	Subsurface	05/24/10	0.5	1	N			346	11	77	306	1090	12	3				R5-041-V-Z1B
Creek	05	51887	USEPA GLNPO	R5-041-V	Subsurface	05/24/10	1	2	N			302	12	78	224	913	12	2.9			61400	R5-041-V-Z2
Creek	05	51887	USEPA GLNPO	R5-041-V	Subsurface	05/24/10	2	3	N			473	16	117	211	586	3.7	5.3			63600	R5-041-V-Z3
Creek	05	51887	USEPA GLNPO	R5-041-V	Subsurface	05/24/10	3	4	N			648	14	165	247	593	2	8.3			81600	R5-041-V-Z4
Creek	05	51887	USEPA GLNPO	R5-041-V	Subsurface	05/24/10	4	5	N			456	8.7	182	197	394	1.9	11			68300	R5-041-V-Z5A
Creek	05	51887	USEPA GLNPO	R5-041-V	Subsurface	05/24/10	5	6	N			136	8	42	57	180	1	2			44200	R5-041-V-Z5B
Creek	05	51887	USEPA GLNPO	R5-041-V	Subsurface	05/24/10	6	7	N			40	4	20	23	111	0.44	0.28			24600	R5-041-V-Z6A
Creek	05	51887	USEPA GLNPO	R5-041-V	Subsurface	05/24/10	7	7.5	N			6.1	2.2	20	4.8	68	0.0039					R5-041-V-Z6B
Creek	05	51876	USEPA GLNPO	R5-040-V	Surface	05/20/10	0	1	N												64900	R5-040-V-Z1
Creek	05	51876	USEPA GLNPO	R5-040-V	Surface	05/20/10	0	0.5	N			430	20	89	206	606	1.4	4.2				R5-040-V-Z1A
Creek	05	51876	USEPA GLNPO	R5-040-V	Subsurface	05/20/10	0.5	1	N			543	18	143	248	594	0.61	7.8				R5-040-V-Z1B
Creek	05	51876	USEPA GLNPO	R5-040-V	Subsurface	05/20/10	1	2	N			545	11	161	208	445	0.49	11			58500	R5-040-V-Z2
Creek	05	51876	USEPA GLNPO	R5-040-V	Subsurface	05/20/10	2	3	N			566	11	191	238	467	0.37	11			61900	R5-040-V-Z3
Creek	05	51876	USEPA GLNPO	R5-040-V	Subsurface	05/20/10	3	4	N			419	11	128	161	355	0.66	9.2			55900	R5-040-V-Z4
Creek	05	51876	USEPA GLNPO	R5-040-V	Subsurface	05/20/10	4.5	5	N			8.1	2.5	18	8.7	72	0.019	0.062			3990	R5-040-V-Z5A
Creek	05	51152	USEPA GLNPO	R5-042-V	Surface	05/20/10	0	1	N												63200	R5-042-V-Z1
Creek	05	51152	USEPA GLNPO	R5-042-V	Surface	05/20/10	0	0.5	N			353	13	85	165	462	1.3	4				R5-042-V-Z1A
Creek	05	51152	USEPA GLNPO	R5-042-V	Subsurface	05/20/10	0.5	1	N			532	14	122	217	509	1.1	6.1				R5-042-V-Z1B
Creek	05	51152	USEPA GLNPO	R5-042-V	Subsurface	05/20/10	1	2	N			335	8.3	98	131	287	0.49	8.1			39400	R5-042-V-Z2
Creek	05	51152	USEPA GLNPO	R5-042-V	Subsurface	05/20/10	2	3	N			178	7.2	32	56	172	0.73	4.4			68000	R5-042-V-Z3
Creek	05	51152	USEPA GLNPO	R5-042-V	Subsurface	05/20/10	3	4	N			54	9.3	18	29	126	0.097	0.4			48400	R5-042-V-Z4
Creek	05	51152	USEPA GLNPO	R5-042-V	Subsurface	05/20/10	4.5	5	N	0.00		34	3.7	18	24	103	0.15	0.27			22500	R5-042-V-Z5A
Creek	05	51134	USEPA GLNPO	R5-043-V	Surface	05/20/10	0	1	N	0.11		362	13	107	237	881	4.3	2.3			51300	R5-043-V-Z1
Creek	05	51134	USEPA GLNPO	R5-043-V	Surface	05/20/10	0	1	N	0.19		384	6.3	116	274	892	1.4	0.69			61600	R5-043-V-Z1P
Creek	05	51134	USEPA GLNPO	R5-043-V	Subsurface	05/20/10	1	2	N			419	11	102	226	695	3	6.9			61800	R5-043-V-Z2
Creek	05	51134	USEPA GLNPO	R5-043-V	Subsurface	05/20/10	2	3	N			526	11	123	219	471	0.88	7.7			80800	R5-043-V-Z3
Creek	05	51134	USEPA GLNPO	R5-043-V	Subsurface	05/20/10	3	4	N	0.14		485	14	167	211	420	0.44	8			51500	R5-043-V-Z4
Creek	05	51134	USEPA GLNPO	R5-043-V	Subsurface	05/20/10	4	4.5	N			429	11	182	191	426	0.37	8.3			52400	R5-043-V-Z5A
Creek	05	51134	USEPA GLNPO	R5-043-V	Subsurface	05/20/10	4.5	5	N			27	4.3	18	19	75	0.031	0.33			4380	R5-043-V-Z5B
Creek	05	51122	USEPA GLNPO	R5-044-V	Surface	05/20/10	0	1	N												88300	R5-044-V-Z1
Creek	05	51122	USEPA GLNPO	R5-044-V	Surface	05/20/10	0	0.5	N	0.03		500	8.7	211	339	1610	1.7	0.39				R5-044-V-Z1A
Creek	05	51122	USEPA GLNPO	R5-044-V	Subsurface	05/20/10	0.5	1	N	1.20		2720	18	1280	1350	8890	4.6	1.3				R5-044-V-Z1B
Creek	05	51122	USEPA GLNPO	R5-044-V	Subsurface	05/20/10	1	2	FD			3730	15	1130	1500	9290	2.1	2.6			79700	R5-044-VR
Creek	05	51122	USEPA GLNPO	R5-044-V	Subsurface	05/20/10	1	2	N	0.57		3500	14	1070	1410	8720	2.5	2.9			76700	R5-044-V-Z2
Creek	05	51122	USEPA GLNPO	R5-044-V	Subsurface	05/20/10	2	3	N			15	2.5	19	14	90	0.0095	0.052			8210	R5-044-V-Z3
Creek	05	50710	USEPA GLNPO	R5-045-V	Surface	05/20/10	0	1	N	1.00		284	6.6	95	203	767	3.6	0.62				R5-045-V-Z1

Table D-1

Detailed List of Sediment Chemistry Results for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	PCBs (total)	TOTAL PCB CONGENERS	LEAD	ARSENIC	CHROMIUM	COPPER	ZINC	PAHs (total)	MERCURY	Sum of DDT+DDE+DDD	DIELDRIN	TOTAL ORGANIC CARBON	Sample ID
Creek	05	50710	USEPA GLNPO	R5-045-V	Subsurface	05/20/10	1	2	N	0.55		293	6.2	88	223	791	2.1	0.63			64400	R5-045-V-Z2
Creek	05	50710	USEPA GLNPO	R5-045-V	Subsurface	05/20/10	2	3	N	0.28		188	4.6	60	140	609	1.7	1.4			54800	R5-045-V-Z3
Creek	05	50710	USEPA GLNPO	R5-045-V	Subsurface	05/20/10	3	4	FD	0.01		32	4	15	22	88	0.49	0.24			32900	R5-045-VR
Creek	05	50710	USEPA GLNPO	R5-045-V	Subsurface	05/20/10	3	4	N	0.01		31	4.1	16	22	89	0.39	0.21			52900	R5-045-V-Z4
Creek	05	50710	USEPA GLNPO	R5-045-V	Subsurface	05/20/10	4.5	5	N	0.01		24	4.3	16	22	85	0.4	0.18			27600	R5-045-V-Z5A
Creek	05	50627	NYSDEC 2001	DEC-7B	Surface	08/19/98	0	0.66	N	0.14	0.13	321	6.2	112	246	829	3.718	0.757	0.012			DEC-7B-0-20 CM CORE-8/19/1998
Creek	05	50627	NYSDEC 2001	DEC-7B	Subsurface	08/19/98	0.66	1.9	N	0.27	0.26	21.3	4.3	15.7	19.9	71.8	7.84	0.101	0.014			DEC-7B-20-58 CM CORE-8/19/1998
Creek	05	50627	NYSDEC 2001	DEC-7B	Subsurface	08/19/98	1.9	2.17	N			15.9	4.3	14.4	15.9	60.4						DEC-7B-58-66 CM CORE-8/19/1998
Creek	05	50099	USEPA GLNPO	R5-046-V	Surface	05/20/10	0	1	N												106000	R5-046-V-Z1
Creek	05	50099	USEPA GLNPO	R5-046-V	Surface	05/20/10	0	0.5	N			559	15	547	1020	3190	1.4	1.7				R5-046-V-Z1A
Creek	05	50099	USEPA GLNPO	R5-046-V	Subsurface	05/20/10	0.5	1	N	0.02		763	18	769	1110	4370	1.5	2.9				R5-046-V-Z1B
Creek	05	50099	USEPA GLNPO	R5-046-V	Subsurface	05/20/10	1	2	N			369	11	66	313	1100	2.5	2.6			67100	R5-046-V-Z2
Creek	05	50099	USEPA GLNPO	R5-046-V	Subsurface	05/20/10	2	3	N			401	16	83	259	1210	5.4	3.3			64400	R5-046-V-Z3
Creek	05	50099	USEPA GLNPO	R5-046-V	Subsurface	05/20/10	3	4	N			439	33	104	245	637	3.7	4.8			56900	R5-046-V-Z4
Creek	05	50099	USEPA GLNPO	R5-046-V	Subsurface	05/20/10	4	5	N			413	11	93	180		0.38	3.8			65800	R5-046-V-Z5A
Creek	05	50099	USEPA GLNPO	R5-046-V	Subsurface	05/20/10	5	6	N			487	11	146	194		1.2	6.3			52000	R5-046-V-Z5B
Creek	05	50099	USEPA GLNPO	R5-046-V	Subsurface	05/20/10	6	7	N			60	3.9	39	32		0.024	1.3			29800	R5-046-V-Z6A
Creek	05	49732	NYSDEC 2001	DEC-7C	Surface	08/19/98	0	0.66	N	0.42	0.39	1240	7.5	380	639	3620	7.606	0.966	0.009			DEC-7C-0-20 CM CORE-8/19/1998
Creek	05	49732	NYSDEC 2001	DEC-7C	Subsurface	08/19/98	0.66	2.3	N	0.00	0.00	825	11	195	468	1820	18.18	3.34	0.002			DEC-7C-20-70 CM CORE-8/19/1998
Creek	05	49732	NYSDEC 2001	DEC-7C	Subsurface	08/19/98	2.3	2.72	N	0.00	0.00	353	12.3	89.2	172	443	4.171	4.34				DEC-7C-70-83 CM CORE-8/19/1998
Creek	05	49723	USEPA GLNPO	R5-047-V	Surface	05/20/10	0	1	N												58300	R5-047-V-Z1
Creek	05	49723	USEPA GLNPO	R5-047-V	Surface	05/20/10	0	0.5	N	0.39		317	6.4	96	222		3.7	0.51				R5-047-V-Z1A
Creek	05	49723	USEPA GLNPO	R5-047-V	Subsurface	05/20/10	0.5	1	N	0.21		316	6	93	226		3.6	0.61				R5-047-V-Z1B
Creek	05	49723	USEPA GLNPO	R5-047-V	Subsurface	05/20/10	1	2	N			400	5.7	117	275		4.3	0.74			57300	R5-047-V-Z2
Creek	05	49723	USEPA GLNPO	R5-047-V	Subsurface	05/20/10	2	3	N			395	11	106	208		1.9	3.3			56100	R5-047-V-Z3
Creek	05	49723	USEPA GLNPO	R5-047-V	Subsurface	05/20/10	3	4	N			406	10	93	185		1.5	3.2			62700	R5-047-V-Z4
Creek	05	49556	USEPA GLNPO	R5-048-V	Surface	05/21/10	0	1	N												51500	R5-048-V-Z1
Creek	05	49556	USEPA GLNPO	R5-048-V	Surface	05/21/10	0	0.5	N			666	13	163	240		1.2	7				R5-048-V-Z1A
Creek	05	49556	USEPA GLNPO	R5-048-V	Subsurface	05/21/10	0.5	1	N			42	4.1	26	28		0.21	0.47				R5-048-V-Z1B
Creek	05	49556	USEPA GLNPO	R5-048-V	Subsurface	05/21/10	1	2	N			11	1.5	18	14		0.0082	0.095			22100	R5-048-V-Z2
Creek	05	49556	USEPA GLNPO	R5-048-V	Subsurface	05/21/10	2	3	N	0.01		6.2	1.2	17	8.5		0.0076	0.076			4890	R5-048-V-Z3
Creek	05	49472	USEPA GLNPO	R5-049-V	Surface	05/21/10	0	1	N		4.94										42600	R5-049-V-Z1
Creek	05	49472	USEPA GLNPO	R5-049-V	Surface	05/21/10	0	0.5	N			372	5	138	243		1.1	0.62				R5-049-V-Z1A
Creek	05	49472	USEPA GLNPO	R5-049-V	Subsurface	05/21/10	0.5	1	N	0.48		619	5.8	227	373		1.6	0.95				R5-049-V-Z1B
Creek	05	49472	USEPA GLNPO	R5-049-V	Subsurface	05/21/10	1	2	N	0.29	7.65	1150	7	434	854		1.2	1			67000	R5-049-V-Z2
Creek	05	49472	USEPA GLNPO	R5-049-V	Subsurface	05/21/10	2	3	N	1.10	29.10	2180	11	1240	1150		1.4	1.4			119000	R5-049-V-Z3
Creek	05	49472	USEPA GLNPO	R5-049-V	Subsurface	05/21/10	3	4	N		0.21	480	10	120	178		0.47	5.2			53100	R5-049-V-Z4
Creek	05	49472	USEPA GLNPO	R5-049-V	Subsurface	05/21/10	4	4.5	N			431	11	174	177		1.2	8.6			57900	R5-049-V-Z5A
Creek	05	48925	USEPA GLNPO	R5-050-V	Surface	05/21/10	0	1	N												62900	R5-050-V-Z1
Creek	05	48925	USEPA GLNPO	R5-050-V	Surface	05/21/10	0	0.5	N	0.25		245	5.1	80	181		2.2	0.55				R5-050-V-Z1A
Creek	05	48925	USEPA GLNPO	R5-050-V	Subsurface	05/21/10	0.5	1	N	0.16		239	3.2	79	159	665	2	0.48				R5-050-V-Z1B
Creek	05	48925	USEPA GLNPO	R5-050-V	Subsurface	05/21/10	1	2	FD			1930	8.7	875	1010		2.3	1.7			83200	R5-050-VR
Creek	05	48925	USEPA GLNPO	R5-050-V	Subsurface	05/21/10	1	2	N	1.10		1830	7.9	826	1010	5980	4	1			87200	R5-050-V-Z2
Creek	05	48925	USEPA GLNPO	R5-050-V	Subsurface	05/21/10	2	3	N	0.20		6190	12	1410	2500	10900	8.8	2.6			130000	R5-050-V-Z3
Creek	05	48925	USEPA GLNPO	R5-050-V	Subsurface	05/21/10	3	4	N	0.91		6130	13	1070	3000	8800	9.5	2.5			122000	R5-050-V-Z4
Creek	05	48925	USEPA GLNPO	R5-050-V	Subsurface	05/21/10	4	4.5	N	0.76		708	5.3	130	594	914	3.4	1.3			57100	R5-050-V-Z5A
Creek	05	48794	USEPA GLNPO	R6-144-C	Surface	07/02/10	0	1.3	N	0.08		1620	8.2	796	827	4570	2.7	0.95			72400	R6-144-C-COMP
Creek	05	48794	USEPA GLNPO	R6-144-C	Surface	07/02/10	0	0.5	N			246	5.6	81	170	642	1.5	0.67			41200	R6-144-C-Z1A
Creek	06	48613	USEPA GLNPO	R6-051-C	Surface	11/19/09	0	1.2	N	0.47		207	4	79	156	543	6.2	0.51	0.028	0.014	62000	R6-051-C
Creek	06	48613	USEPA GLNPO	R6-051-C	Surface	11/19/09	0	1.2	FD	0.47		193	3.9	65	153	603	6.6	0.61	0.045	0.015	81000	R6-051-CR
Creek	06	48468	USEPA GLNPO	R6-145-C	Surface	07/02/10	0	0.7	N			153	4.1	49	98	387	1	0.5			30400	R6-145-C-COMP
Creek	06	48468	USEPA GLNPO	R6-145-C	Surface	07/02/10	0	0.5	N	0.05		164	5	50	103	434	1.2	0.62			36900	R6-145-C-Z1A
Creek	06	48245	USEPA GLNPO	R6-146-C	Surface	07/02/10	0	1.1	N			2780	9.3	450	1530	4100	2.5	2.3			64800	R6-146-C-COMP
Creek	06	48245	USEPA GLNPO	R6-146-C	Surface	07/02/10	0	0.5	N	0.65		3310	9.8	679	1530	6800	5.5	1.6			75100	R6-146-C-Z1A
Creek	06	48241	USEPA GLNPO	R6-052-C	Surface	11/19/09	0	1.3	N	1.30		3790	11	539	2710	3640	27	3.4	0.118		84000	R6-052-C
Creek	06	47676	USEPA GLNPO	R6-147-C	Surface	07/01/10	0	0.8	N	0.64		371	5	128	313	1180	3.3	0.52			54900	R6-147-C-COMP
Creek	06	47676	USEPA GLNPO	R6-147-C	Surface	07/01/10	0	0.5	N	0.29		208	4.7	71	147	546	3.1	0.52			51800	R6-147-C-Z1A
Creek	06	47630	USEPA GLNPO	R6-053-C	Surface	11/19/09	0	1.2	N	0.72	1.00	277	4	97	217	715	5.2	0.5	0.022		59000	R6-053-C
Creek	06	47394	USEPA GLNPO	R6-148-C	Surface	07/01/10	0	0.9	N			199	4.3	61	134	580	1.5	0.67			21500	R6-148-C-COMP
Creek	06	47394	USEPA GLNPO	R6-148-C	Surface	07/01/10	0	0.9	FD	0.14		187	3.6	57	125	539	1.4	0.24			26700	R6-148-CR
Creek	06	46875	USEPA GLNPO	R6-149-C	Surface	07/01/10	0	0.9	N	0.15		141	2.9	48	98	425	1.9	0.29			48600	R6-149-C-COMP
Creek	06	46600	USEPA GLNPO	R6-054-C	Surface	12/02/09	0	0.5	N	0.47		196	3.6	81	158	642		0.25			38000	R6-054-C
Creek	06	46461	USEPA GLNPO	R6-150-C	Surface	07/01/10	0	0.9	N	0.06		211	4.5	69	126	525	2.4	0.39			46100	R6-150-C-COMP
Creek	06	46094	USEPA GLNPO	R6-151-C	Surface	07/02/10	0	0.7	N			189	4.2	61	147	469	2	0.5			39600	R6-151-C-COMP
Creek	06	45738	USEPA GLNPO	R6-152-C	Surface	07/02/10	0	0.7	N	0.02		188	3.9	65	135	519	1.6	0.54			50000	R6-152-C-COMP
Creek	06	45738	USEPA GLNPO	R6-152-C	Surface	07/02/10	0	0.7	FD	0.09		189	3.6	65	142	495	1.8	0.49			34400	R6-152-CR
Creek	06	45097	USEPA GLNPO	R6-153-C	Surface	07/02/10	0	0.5	N	0.49		162	3.8	54	111	388	3.5	0.43			31200	R6-153-C-COMP
Creek	06	44611	USEPA GLNPO	R6-055-C	Surface	11/17/09	0	1.1	N	0.32		359	3.1	109	208	882	130	0.89	0.014	0.011	51000	R6-055-C
Creek	06	44475	USEPA GLNPO	R6-154-C	Surface	07/01/10	0	1.1	N	0.02		179	4.2	58	117	439	1.8	0.43			45400	R6-154-C-COMP
Creek	06	44475	USEPA GLNPO	R6-154-C	Surface	07/01/10	0	0.5	N	0.07		233	4.5	72	146	650	1.9	0.7			44500	R6-154-C-Z1A

Table D-1
Detailed List of Sediment Chemistry Results for Remedial Investigation
Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	TOTAL PCB		LEAD	ARSENIC	CHROMIUM	COPPER	ZINC	PAHs (total)	MERCURY	Sum of DDT+DDE+DDD	DIELDRIN	TOTAL ORGANIC CARBON	Sample ID
										PCBs (total)	CONGENERS											
Creek	06	43904	USEPA GLNPO	R6-056-C	Surface	11/17/09	0	1.2	N	1.00	1.80	160	3.2	58	104	772		0.97			39000	R6-056-C
Creek	06	43904	USEPA GLNPO	R6-056-C	Surface	11/17/09	0	1.2	FD	3.30	2.70	149	1.9	51	82	627		0.57			26000	R6-056-CR
Creek	06	43766	USEPA GLNPO	R6-155-C	Surface	07/01/10	0	0.7	N	0.77		212	5.2	65	142	483	3.5	0.64			49900	R6-155-C-COMP
Creek	06	43252	USEPA GLNPO	R6-057-C	Surface	11/17/09	0	1.4	N			250	4.4	69	184	546		0.49			41000	R6-057-C
Creek	06	42790	USEPA GLNPO	R6-156-C	Surface	07/01/10	0	0.7	N	0.07		152	3.8	46	84	383	3.2	0.41			33200	R6-156-C-COMP
Creek	06	42279	USEPA GLNPO	R6-157-C	Surface	07/01/10	0	1.2	N	1.20		464	5.5	125	253	825	1.7	0.68			64600	R6-157-C-COMP
Creek	06	42279	USEPA GLNPO	R6-157-C	Surface	07/01/10	0	0.5	N	0.48		137	3.6	48	89	315	1.7	0.41			23300	R6-157-C-Z1A
Creek	06	41988	USEPA GLNPO	R6-158-C	Surface	07/01/10	0	1.4	N	0.39		181	4.2	54	127	430	2.2	0.6			41400	R6-158-C-COMP
Creek	06	41988	USEPA GLNPO	R6-158-C	Surface	07/01/10	0	0.5	FD			94	3.2	26	52	191	0.9	0.27			17900	R6-158-CR
Creek	06	41988	USEPA GLNPO	R6-158-C	Surface	07/01/10	0	0.5	N			116	3.3	27	50	202	2	0.46			21900	R6-158-C-Z1A
Creek	06	41258	USEPA GLNPO	R6-159-C	Surface	07/01/10	0	1.3	N	0.41		212	5.8	59	131	462	2.9	0.47			37900	R6-159-C-COMP
Creek	06	41258	USEPA GLNPO	R6-159-C	Surface	07/01/10	0	0.5	N	0.02		152	6.6	44	96	335	2.4	0.34			28100	R6-159-C-Z1A
Creek	06	40369	USEPA GLNPO	R6-160-C	Surface	07/01/10	0	1.7	N	1.40		4380	13	1220	1950	9760	7.2	2.1			94100	R6-160-C-COMP
Creek	06	40369	USEPA GLNPO	R6-160-C	Surface	07/01/10	0	0.5	N			3240	11	1380	1530	8800	5.6	1.4			116000	R6-160-C-Z1A
Creek	06	40268	USEPA GLNPO	R6-058-C	Surface	11/18/09	0	2.2	N	0.73	2.80	452	5	164	309	929	5.1	2.8	0.09	0.022	67000	R6-058-C
Creek	06	40082	USEPA GLNPO	R6-161-C	Surface	07/01/10	0	0.5	N	0.03		166	5.7	60	115	391	4.8	0.33			37000	R6-161-C-Z1A
Creek	06	40082	USEPA GLNPO	R6-161-C	Surface	07/01/10	0.5	1.5	N	25.00		1550	6.4	325	593	3880	3.1	1.1			51500	R6-161-C-Z1
Creek	06	39209	USEPA GLNPO	R6-162-C	Surface	06/30/10	0	0.8	N			169	4.7	53	134	408	1.7	0.46			42800	R6-162-C-COMP
Creek	06	38848	USEPA GLNPO	R6-059-C	Surface	11/18/09	0	1.3	N	0.49		261	5.3	83	186	554		0.43			38000	R6-059-C
Creek	06	38173	USEPA GLNPO	R6-163-C	Surface	06/30/10	0	0.5	N			76	13	13	28	82	0.62	0.15			12000	R6-163-C-Z1A
Creek	06	38173	USEPA GLNPO	R6-163-C	Surface	06/30/10	0.5	1.4	N			201	6.5	60	149	516	1.2	0.44			32100	R6-163-C-Z1
Creek	06	37526	USEPA GLNPO	R6-060-C	Surface	11/18/09	0	0.8	N	0.40		250	4.7	79	247	599		0.52			50000	R6-060-C
Creek	06	36804	USEPA GLNPO	R6-164-C	Surface	06/30/10	0	1.4	N			326	7.8	121	288	1050	4.8	1.3			34700	R6-164-C-COMP
Creek	06	36804	USEPA GLNPO	R6-164-C	Surface	06/30/10	0	0.5	N			84	3.1	29	62	199	0.49	0.25			27800	R6-164-C-Z1A
Creek	06	36085	USEPA GLNPO	R6-165-C	Surface	06/30/10	0	1.6	N	0.24		350	4.8	95	238	888	4	0.68			72400	R6-165-C-COMP
Creek	06	36085	USEPA GLNPO	R6-165-C	Surface	06/30/10	0	0.5	N	0.33		218	4.5	61	152	507	2.3	0.46			81400	R6-165-C-Z1A
Creek	06	35766	USEPA GLNPO	R6-061-C	Surface	11/18/09	0	4	N	0.53		337	5.2	107	281	834	8.2	0.88			86000	R6-061-C
Creek	06	35433	USEPA GLNPO	R6-166-C	Surface	06/30/10	0	2.1	N	0.02		422	5.4	127	295	929	3.6	0.88			66100	R6-166-C-COMP
Creek	06	35433	USEPA GLNPO	R6-166-C	Surface	06/30/10	0	0.5	N	0.05		252	4.5	78	195	575	4.1	1.5			73600	R6-166-C-Z1A
Creek	06	35023	USEPA GLNPO	R6-167-C	Surface	06/30/10	0	1.3	N			203	3.6	65	146	498	1.9	0.36			72500	R6-167-C-COMP
Creek	06	35023	USEPA GLNPO	R6-167-C	Surface	06/30/10	0	0.5	N	0.03		273	5.3	78	210	624	3.9	0.72			64600	R6-167-C-Z1A
Creek	06	34754	USEPA GLNPO	R6-062-C	Surface	11/19/09	0	3.7	N	0.66	1.80	720	6.1	176	550	1310		1.4			62000	R6-062-C
Creek	06	34255	USEPA GLNPO	R6-168-C	Surface	06/30/10	0	1.3	N			297	3.7	132	185	735	1.6	0.37			35800	R6-168-C-COMP
Creek	06	34255	USEPA GLNPO	R6-168-C	Surface	06/30/10	0	0.5	N	0.42		251	4.7	66	207	572	2.6	0.44			51100	R6-168-C-Z1A
Creek	06	33962	USEPA GLNPO	R6-063-C	Surface	11/19/09	0	1.1	N	2.00		393	4.4	137	293	1040		0.65			88000	R6-063-C
Creek	06	33691	USEPA GLNPO	R6-169-C	Surface	06/28/10	0	1.4	N	0.25		2360	8	391	1360	2590	5.3	2.1			84800	R6-169-C-COMP
Creek	06	33691	USEPA GLNPO	R6-169-C	Surface	06/28/10	0	0.5	N	0.34		280	4.6	86	206	685	5.3	0.67			77200	R6-169-C-Z1A
Creek	06	33292	USEPA GLNPO	R6-064-C	Surface	11/19/09	0	1.4	N	0.39		129	4	45	101	290		0.23			89000	R6-064-C
Creek	06	32904	USEPA GLNPO	R6-065-C	Surface	11/19/09	0	2.4	N	1.00		170	3.3	62	126	431		0.4			39000	R6-065-C
Creek	06	32562	USEPA GLNPO	R6-066-C	Surface	11/25/09	0	1.9	N	4.50	7.90	299	4.9	99	238	703		0.53			47000	R6-066-C
Creek	06	32046	USEPA GLNPO	R6-067-C	Surface	11/25/09	0	2.1	N	0.87	12.00	235	4.8	87	216	643		1.6			47000	R6-067-C
Creek	06	31840	USEPA GLNPO	R6-170-C	Surface	06/25/10	0	1.5	N	0.24		1240	6.5	286	662	1680	5.5	1.2			74300	R6-170-C-COMP
Creek	06	31840	USEPA GLNPO	R6-170-C	Surface	06/25/10	0	0.5	N	0.59		407	5.7	151	260	1080	4.5	0.64			56900	R6-170-C-Z1A
Creek	06	31325	USEPA GLNPO	R6-171-C	Surface	06/25/10	0	1.2	N	0.73		1260	7.7	444	661	3760	5.7	1.1			80100	R6-171-C-COMP
Creek	06	31325	USEPA GLNPO	R6-171-C	Surface	06/25/10	0	0.5	N	1.50		178	3.9	60	160	446	6.5	0.63			53500	R6-171-C-Z1A
Creek	07	30918	USEPA GLNPO	R7-068-C	Surface	11/25/09	0	2.1	N	3.60	86.00	1770	12	703	1000	5980	20	1.1			79000	R7-068-C
Creek	07	30918	USEPA GLNPO	R7-068-C	Surface	11/25/09	0	2.1	FD	11.00	58.00	1650	11	638	985	5280	10	1.6	0.006		109000	R7-068-CR
Creek	07	30500	USEPA GLNPO	R7-172-C	Surface	06/25/10	0	0.9	N	26.00		1060	6.7	179	862	1670	46	1.4			42900	R7-172-C-COMP
Creek	07	30500	USEPA GLNPO	R7-172-C	Surface	06/25/10	0	0.5	N	15.00		1930	6.2	193	850	1350	42	1.5			58600	R7-172-C-Z1A
Creek	07	29933	USEPA GLNPO	R7-069-C	Surface	11/25/09	0	2.4	N	1.90		1250	7	349	652	2820		1.2			63000	R7-069-C
Creek	07	29724	USEPA GLNPO	R7-070-C	Surface	11/25/09	0	2.4	N	0.46		358	4.3	109	257	960		0.45			54000	R7-070-C
Creek	07	29233	USEPA GLNPO	R7-071-C	Surface	11/25/09	0	1.5	N	4.20	44.00	399	4.5	147	338	977		0.68			72000	R7-071-C
Creek	07	28712	USEPA GLNPO	R7-072-C	Surface	11/24/09	0	0.8	N	3.90		790	5.7	191	599	1220		1.7			93000	R7-072-C
Creek	07	28328	USEPA GLNPO	R7-173-C	Surface	06/25/10	0	1.1	N	1.40		377	6.1	102	287	823	7.3	0.67			60500	R7-173-C-COMP
Creek	07	28328	USEPA GLNPO	R7-173-C	Surface	06/25/10	0	0.5	N	1.30		331	6.1	99	282	699	9.2	0.69			51200	R7-173-C-Z1A
Creek	07	28037	USEPA GLNPO	R7-174-C	Surface	06/25/10	0	1.2	N	4.80		780	7.4	272	608	2070	13	0.94			68700	R7-174-C-COMP
Creek	07	28037	USEPA GLNPO	R7-174-C	Surface	06/25/10	0	0.5	N	2.70		318	5.1	96	270	681	5	0.54			82200	R7-174-C-Z1A
Creek	07	28034	USEPA GLNPO	R7-073-C	Surface	11/24/09	0	2.4	N	4.40		528	5.3	186	471	1370	380	2.3	0.2	0.078	103000	R7-073-C
Creek	07	27600	USEPA GLNPO	R7-175-C	Surface	06/24/10	0	0.5	N	1.00		367	5.7	112	325	826	9.2	0.65			73200	R7-175-C-Z1A
Creek	07	27600	USEPA GLNPO	R7-175-C	Surface	06/24/10	0.5	1.4	N	0.52		428	7.2	131	361	955	5.5	1.1			45600	R7-175-C-Z1
Creek	07	27127	USEPA GLNPO	R7-074-C	Surface	11/24/09	0	2.3	N	4.30	6.20	382	6.4	100	301	769		0.88			45000	R7-074-C
Creek	07	26960	USEPA GLNPO	R7-075-C	Surface	11/24/09	0	2.1	N	1.30	8.10	851	6.4	270	623	2710	18		0.0177		129000	R7-075-C
Creek	07	26511	USEPA GLNPO	R7-076-C	Surface	11/24/09	0	2	N	6.80		351	6	130	332	897		0.67			102000	R7-076-C
Creek	07	26286	USEPA GLNPO	R7-176-C	Surface	06/24/10	0	0.9	N	8.10		369	5.2	138	462	865	12	1			108000	R7-176-C-COMP
Creek	07	26286	USEPA GLNPO	R7-176-C	Surface	06/24/10	0	0.5	N	11.00		447	6	140	389	938	21	1.5			106000	R7-176-C-Z1A
Creek	07	25843	USEPA GLNPO	R7-077-C	Surface	11/24/09	0	1.2	N	1.40		288		89	280	741					73000	R7-077-C
Creek	07	25419	USEPA GLNPO	R7-177-C	Surface	06/24/10	0	0.5	FD	0.42		1170	9.2	349	762	3190	10	1.3			62100	R7-177-CR
Creek	07	25419	USEPA GLNPO	R7-177-C	Surface	06/24/10	0	0.5	N	1.10		476	6.4	159	391	1080	10	0.93			65500	R7-177-C-Z1A
Creek	07	25419	USEPA GLNPO	R7-177-C	Surface	06/24/10	0.5	1.1	N	0.74		1190	9.2	340	751	3150		3.7			67000	R7-177-C-Z1
Creek	07	25068	USEPA GLNPO	R7-078-C	Surface	12/02/09	0	4	N	0.45		629	6.8	284	516	1370		1.1			75000	R7-078-C

Table D-1

Detailed List of Sediment Chemistry Results for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	PCBs (total)	TOTAL PCB CONGENERS	LEAD	ARSENIC	CHROMIUM	COPPER	ZINC	PAHs (total)	MERCURY	Sum of DDT+DDE+DDD	DIELDRIN	TOTAL ORGANIC CARBON	Sample ID
Creek	07	24710	USEPA GLNPO	R7-079-C	Surface	12/02/09	0	2.4	N	7.70		481	4.5	192	392	1220		0.4			77000	R7-079-C
Creek	07	24295	USEPA GLNPO	R7-178-C	Surface	06/24/10	0	0.5	N	5.80		358	6.4	101	330	983	17	4.5			76300	R7-178-C-Z1A
Creek	07	24295	USEPA GLNPO	R7-178-C	Surface	06/24/10	0.5	1.2	N	84.00		711	13	230	972	3440	34	0.57			130000	R7-178-C-Z1
Creek	07	23960	USEPA GLNPO	R7-080-C	Surface	12/02/09	0	1.7	N	0.76	4.90	624	6.1	106	349	1730		1.5			41000	R7-080-C
Creek	07	23569	USEPA GLNPO	R7-179-C	Surface	06/23/10	0	0.7	N	5.70		424	7.9	117	378	934	15	0.96			41400	R7-179-C-COMP
Creek	07	23569	USEPA GLNPO	R7-179-C	Surface	06/23/10	0	0.5	N	5.40		363	6.4	120	347	900	25	0.86			68900	R7-179-C-Z1A
Creek	07	23100	USEPA GLNPO	R7-081-C	Surface	12/02/09	0	1.7	N	0.63	49.00	308	4.9	119	540	1090		0.52			107000	R7-081-C
Creek	07	22856	USEPA GLNPO	R7-082-C	Surface	11/30/09	0	1.6	N	0.32		481	6	98	347	858		1.8			44000	R7-082-C
Creek	07	22856	USEPA GLNPO	R7-082-C	Surface	11/30/09	0	1.6	FD	1.40	5.80	416	6.2	92	408	839		1.3			39000	R7-082-CR
Creek	07	22470	USEPA GLNPO	R7-180-C	Surface	06/23/10	0	1.1	N	44.00		475	5.7	138	397	1070	33	0.59			64500	R7-180-C-COMP
Creek	07	22470	USEPA GLNPO	R7-180-C	Surface	06/23/10	0	0.5	N	4.00		354	5.7	99.7372	338	741	36	0.98			65300	R7-180-C-Z1A
Creek	07	22057	USEPA GLNPO	R7-083-C	Surface	11/30/09	0	3.3	N	1.50		345	5	99	321	917	0.065	0.59	0.091	0.039	70000	R7-083-C
Creek	07	21809	USEPA GLNPO	R7-084-C	Surface	11/30/09	0	3.3	N	0.96	17.00	279	6.2	86	278	644		0.39			26000	R7-084-C
Creek	07	21492	USEPA GLNPO	R7-085-C	Surface	11/30/09	0	1.6	N	7.80		534	5.4	195	477	1610	0.037	0.42	0.75	0.22	62000	R7-085-C
Creek	07	21130	USEPA GLNPO	R7-181-C	Surface	07/01/10	0	1.3	N	0.11		165	4.2	39	128	311	2.8	0.46			16000	R7-181-C-COMP
Creek	07	21130	USEPA GLNPO	R7-181-C	Surface	07/01/10	0	0.5	N			108	3.2	33	93	246	2.6	0.21			48800	R7-181-C-Z1A
Creek	07	20624	USEPA GLNPO	R7-086-C	Surface	11/30/09	0	3.2	N	4.10	22.00	351	4.1	115	420	858		0.48			80000	R7-086-C
Creek	07	20394	USEPA GLNPO	R7-182-C	Surface	07/01/10	0	0.8	N			209	13	45	123	320	1.5	0.69			19200	R7-182-C-COMP
Creek	07	19884	USEPA GLNPO	R7-087-C	Surface	11/30/09	0	2.1	N	0.82	14.00	445	5.1	141	419	1020	28	0.68		0.017	64000	R7-087-C
Creek	07	19601	USEPA GLNPO	R7-183-C	Surface	07/01/10	0	1.3	N			682	4.8	116	407	1190	10	2.4			131000	R7-183-C-COMP
Creek	07	19601	USEPA GLNPO	R7-183-C	Surface	07/01/10	0	0.5	N	0.16		364	4.4	91	387	697	5.7	1.1			68100	R7-183-C-Z1A
Creek	07	19406	USEPA GLNPO	R7-184-C	Surface	06/30/10	0	0.75	N	6.90		1300	11	409	1030	2360	18	3.6			101000	R7-184-C-COMP
Creek	07	19391	USEPA GLNPO	R7-088-C	Surface	11/25/09	0	1	N	55.00	19.00	1830	13	335	1400	2130		3.4			91000	R7-088-C
Creek	07	19132	USEPA GLNPO	R7-185-C	Surface	06/30/10	0	0.7	N	1.10		294	4.5	91	257	628	8	0.55			77100	R7-185-C-COMP
Creek	07	19132	USEPA GLNPO	R7-185-C	Surface	06/30/10	0	0.5	N			324	4.2	95	293	721	9.6	1.1			76100	R7-185-C-Z1A
Creek	07	18838	USEPA GLNPO	R7-089-C	Surface	11/25/09	0	2.9	N	97.00	50.00	1500	8.2	264	1100	1680	45	0.42	5.68	0.44	68000	R7-089-C
Creek	07	18836	USEPA GLNPO	R7-186-C	Surface	06/30/10	0	0.7	N	0.85		585	3.2	91	434	535	17	0.68			50800	R7-186-C-COMP
Creek	07	18836	USEPA GLNPO	R7-186-C	Surface	06/30/10	0	0.5	N			275	3.9	83	324	469	18	0.78			46600	R7-186-C-Z1A
Creek	07	18638	USEPA GLNPO	R7-187-C	Surface	06/30/10	0	0.95	N	64.00		338	4.5	96	288	902	7.9	0.84			53700	R7-187-C-COMP
Creek	07	18638	USEPA GLNPO	R7-187-C	Surface	06/30/10	0	0.5	N	0.67		275	4.6	67	243	598	4.1	0.81			49100	R7-187-C-Z1A
Creek	07	18255	USEPA GLNPO	R7-090-C	Surface	11/25/09	0	3.5	N	3.40		809	8.6	237	995	2910		0.92			159000	R7-090-C
Creek	07	17701	USEPA GLNPO	R7-188-C	Surface	06/30/10	0	0.5	N			179	3.8	44	150	377	2.2	1.3			47600	R7-188-C-Z1A
Creek	07	17701	USEPA GLNPO	R7-188-C	Surface	06/30/10	0.4	1.1	N			11	2.2	13	18	76	0.22				48500	R7-188-C-Z1
Creek	07	17307	USEPA GLNPO	R7-189-C	Surface	06/30/10	0	1.2	N	0.24		810	9.1	214	656	2090	17	1.3			76200	R7-189-C-COMP
Creek	07	17307	USEPA GLNPO	R7-189-C	Surface	06/30/10	0	1.2	FD	0.18		714	6.2	198	682	1850	15	1.1			64600	R7-189-CR
Creek	07	17307	USEPA GLNPO	R7-189-C	Surface	06/30/10	0	0.5	N			382	4.4	89	323	649	9.8	1.9			97900	R7-189-C-Z1A
Creek	07	16833	USEPA GLNPO	R7-091-C	Surface	11/24/09	0	1.4	N	11.00	17.00	402	3.8	114	696	1680		13			109000	R7-091-C
Creek	07	16587	USEPA GLNPO	R7-092-C	Surface	11/24/09	0	1	N	2.50		880	5.9	142	511	950		0.98			64000	R7-092-C
Creek	07	16217	USEPA GLNPO	R7-190-C	Surface	06/30/10	0	0.7	N	0.85		320	5.7	85	343	664	14	0.64			63400	R7-190-C-COMP
Creek	07	15878	USEPA GLNPO	R7-093-C	Surface	11/24/09	0	0.9	N	3.10		496	6.2	141	512	903	170	0.72	0.164	0.081	60000	R7-093-C
Creek	07	15682	USEPA GLNPO	R7-191-C	Surface	06/29/10	0	0.9	N	0.94		475	5.1	119	414	782	9.4	1.1			80700	R7-191-C-COMP
Creek	07	15682	USEPA GLNPO	R7-191-C	Surface	06/29/10	0	0.5	N	1.00		313	4.1	80	314	625	22	2.1			63400	R7-191-C-Z1A
Creek	07	15136	USEPA GLNPO	R7-094-C	Surface	11/23/09	0	1	N	1.30	5.90	463	6.7	132	400	996	31	0.68	0.147	0.023	64000	R7-094-C
Creek	07	14846	USEPA GLNPO	R7-095-C	Surface	11/23/09	0	1.3	N	1.20		625	7.4	173	631	1090	47	0.86	0.105	0.03	89000	R7-095-C
Creek	07	14846	USEPA GLNPO	R7-095-C	Surface	11/23/09	0	1.3	FD	3.00		608	5	167	592	1050	59	0.52	0.53	0.12	69000	R7-095-CR
Creek	07	14397	USEPA GLNPO	R7-096-C	Surface	11/23/09	0	1.3	N	1.80		548	5.1	162	1220	721		1.6			52000	R7-096-C
Creek	07	13907	USEPA GLNPO	R7-192-C	Surface	06/29/10	0	0.3	N	0.27		436	4.5	110	427	691	14	1.2			54500	R7-192-C-Z1A
Creek	07	13648	USEPA GLNPO	R7-097-C	Surface	11/23/09	0	0.9	N	2.20		590	6	141	567	856		0.56			51000	R7-097-C
Creek	07	13280	USEPA GLNPO	R7-193-C	Surface	06/29/10	0	0.8	N	0.18		652	10	82	524	786	93	2.9			95000	R7-193-C-COMP
Creek	07	13280	USEPA GLNPO	R7-193-C	Surface	06/29/10	0	0.5	N	1.30		519	6.1	95	409	666	32	5.5			79400	R7-193-C-Z1A
Creek	07	12647	USEPA GLNPO	R7-098-C	Surface	11/23/09	0	1.9	N	1.60		488	5.6	130	520	791		0.98			37000	R7-098-C
Creek	07	12247	USEPA GLNPO	R7-099-C	Surface	11/23/09	0	1.3	N	0.65	6.70	628	5.5	161	567	1010	34	0.69	0.092	0.019	72000	R7-099-C
Creek	07	11865	USEPA GLNPO	R7-100-C	Surface	11/23/09	0	1.2	N	0.50	10.00	486	6.4	105	385	763	43	1.8	0.061	0.018	20000	R7-100-C
Creek	07	11695	USEPA GLNPO	R7-194-C	Surface	06/29/10	0	0.6	N	35.00		358	3.6	94	487	498	69	0.77			84700	R7-194-C-COMP
Creek	07	11180	USEPA GLNPO	R7-101-C	Surface	11/30/09	0	0.5	N	1.10	22.00	2070	7.1	265	1620	942		0.96			75000	R7-101-C
Creek	07	11119	NCSWCD 2007	EMC-C-10-SD	Surface	08/24/06	0	0.5	N	7.76		1270	8.8	200	859	1530		18				EMC-C-10-SD-A
Creek	07	11119	NCSWCD 2007	EMC-C-10-SD	Subsurface	08/24/06	0.5	1	N	1.51												EMC-C-10-SD-B
Creek	07	11119	NCSWCD 2007	EMC-C-10-SD	Subsurface	08/24/06	1	1.5	N	1.10											86400	EMC-C-10-SD-C
Creek	07	11048	USEPA GLNPO	R7-195-C	Surface	06/29/10	0	0.5	N	6.30		471	4	142	677	613	200	1.3			66600	R7-195-C-COMP
Creek	07	10757	NCSWCD 2007	EMC-C-12-SD	Surface	09/08/06	0	0.79	N	2.05		892	31	268	1040	4050		1.8			79600	EMC-C-12-SD-A
Creek	07	10757	NCSWCD 2007	EMC-C-12-SD	Subsurface	09/08/06	0.8	1.6	N													EMC-C-12-SD-B
Creek	07	10757	NCSWCD 2007	EMC-C-12-SD	Subsurface	09/08/06	1.58	2.4	N													EMC-C-12-SD-C
Creek	07	10585	USEPA GLNPO	R7-102-C	Surface	11/30/09	0	1.5	N	1.90		813	10	136	608	1390		3			86000	R7-102-C
Creek	07	10442	USEPA GLNPO	R7-196-C	Surface	06/29/10	0	1.3	N	0.59		1330	15	374	839	2340	22	2.1			77800	R7-196-C-COMP
Creek	07	10442	USEPA GLNPO	R7-196-C	Surface	06/29/10	0	0.5	N	0.73		652	5.4	172	506	1200	15	1.7			58000	R7-196-C-Z1A
Creek	07	10143	NCSWCD 2007	EMC-C-11-SD	Surface	09/08/06	0	0.79	N	0.09		1010	11	68	511	1150		6				EMC-C-11-SD-A
Creek	07	10143	NCSWCD 2007	EMC-C-11-SD	Subsurface	09/08/06	0.8	1.6	N	0.04											43400	EMC-C-11-SD-B
Creek	07	10143	NCSWCD 2007	EMC-C-11-SD	Subsurface	09/08/06	1.58	2.4	N	0.06												EMC-C-11-SD-C
Creek	07	9991	USEPA GLNPO	R7-103-C	Surface	11/30/09	0	2.3	N	1.50	33.00	2940	16	414	1560	2220		3.6			118000	R7-103-C
Creek	07	9757	USEPA GLNPO	R7-197-C	Surface	06/28/10	0	1.2	N	1.80		932	10	190	829	1710	26	1.9			99700	R7-197-C-COMP

Table D-1

Detailed List of Sediment Chemistry Results for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	PCBs (total)	TOTAL PCB CONGENERS	LEAD	ARSENIC	CHROMIUM	COPPER	ZINC	PAHs (total)	MERCURY	Sum of DDT+DDE+DDD	DIELDRIN	TOTAL ORGANIC CARBON	Sample ID
Creek	07	9757	USEPA GLNPO	R7-197-C	Surface	06/28/10	0	1.2	FD	0.53		803	8.1	172	626	1540	25	0.91			92100	R7-197-CR
Creek	07	9757	USEPA GLNPO	R7-197-C	Surface	06/28/10	0	0.5	N	1.30		522	6.4	104	468	738	32	4.5			90600	R7-197-C-Z1A
Creek	07	9410	NCSWCD 2007	EMC-C-08-SD	Surface	08/24/06	0	0.5	N	53.00		558	6.2	113	458	927		0.88				EMC-C-08-SD-A
Creek	07	9410	NCSWCD 2007	EMC-C-08-SD	Subsurface	08/24/06	0.5	1	N	37.00											59300	EMC-C-08-SD-B
Creek	07	9410	NCSWCD 2007	EMC-C-08-SD	Subsurface	08/24/06	1	1.5	N	0.53												EMC-C-08-SD-C
Creek	07	9310	USEPA GLNPO	R7-198-C	Surface	06/28/10	0	0.9	N	2.60		534	6.4	117	510	802	18	0.84			57500	R7-198-C-COMP
Creek	07	9310	USEPA GLNPO	R7-198-C	Surface	06/28/10	0	0.5	N			423	4.6	99.6608	466	595	15	0.81			57000	R7-198-C-Z1A
Creek	07	9173	USEPA GLNPO	R7-104-C	Surface	12/02/09	0	1	N	9.80	22.00	849	7.9	136	576	907	79	0.93	1.01	0.19	65000	R7-104-C
Creek	07	9070	NCSWCD 2007	EMC-C-09-SD	Surface	08/24/06	0	0.66	N	37.00		600	7.1	108	771	770		1.1				EMC-C-09-SD-A
Creek	07	9070	NCSWCD 2007	EMC-C-09-SD	Subsurface	08/24/06	0.67	1.3	N	69.00												EMC-C-09-SD-B
Creek	07	9070	NCSWCD 2007	EMC-C-09-SD	Subsurface	08/24/06	1.3	2	N	48.00											58500	EMC-C-09-SD-C
Creek	07	8998	USEPA GLNPO	R7-199-C	Surface	06/28/10	0	1.5	N			666	5.8	111	907	758	22	0.86			102000	R7-199-C-COMP
Creek	07	8998	USEPA GLNPO	R7-199-C	Surface	06/28/10	0	0.5	N			540	6.2	89	634	721	21	0.67			67100	R7-199-C-Z1A
Creek	07	8835	NCSWCD 2007	EMC-C-01-SD	Surface	08/23/06	0	0.875	N	4.30		535	7	118	340	1040		0.65				EMC-C-01-SD-A
Creek	07	8835	NCSWCD 2007	EMC-C-01-SD	Subsurface	08/23/06	0.83	1.75	N	0.02												EMC-C-01-SD-B
Creek	07	8835	NCSWCD 2007	EMC-C-01-SD	Subsurface	08/23/06	1.75	2.7	N												8630	EMC-C-01-SD-C
Creek	07	8556	USEPA GLNPO	R7-105-C	Surface	11/30/09	0	1.4	N	4.80		1630	17	443	966	2460	32	1.2	0.256	0.12	87000	R7-105-C
Creek	07	8267	NCSWCD 2007	EMC-C-02-SD	Surface	08/23/06	0	0.66	N	5.40		1630	9.4	612	1150	4540		1.3				EMC-C-02-SD-A
Creek	07	8267	NCSWCD 2007	EMC-C-02-SD	Subsurface	08/23/06	0.67	1.3	N	4.50											53200	EMC-C-02-SD-B
Creek	07	8267	NCSWCD 2007	EMC-C-02-SD	Subsurface	08/23/06	1.3	2	N	0.10												EMC-C-02-SD-C
Creek	07	7878	NCSWCD 2007	EMC-C-03-SD	Surface	08/23/06	0	0.58	N	7.10		282	15	63	294	426		0.61				EMC-C-03-SD-A
Creek	07	7878	NCSWCD 2007	EMC-C-03-SD	Subsurface	08/23/06	0.58	1.2	N	0.02											14500	EMC-C-03-SD-B
Creek	07	7878	NCSWCD 2007	EMC-C-03-SD	Subsurface	08/23/06	1.2	1.8	N													EMC-C-03-SD-C
Creek	07	7812	USEPA GLNPO	R7-200-C	Surface	06/28/10	0	3	N	13.00		363	6.4	84	785	483	37	4.7			50600	R7-200-C-COMP
Creek	07	7812	USEPA GLNPO	R7-200-C	Surface	06/28/10	0	0.5	N	1.70		256	4.5	49	362	367	1.1	0.7			66900	R7-200-C-Z1A
Creek	07	7404	NCSWCD 2007	EMC-C-04-SD	Surface	08/23/06	0	0.5	N	1.83		300	5.6	135	1320	427		0.35				EMC-C-04-SD-A
Creek	07	7404	NCSWCD 2007	EMC-C-04-SD	Subsurface	08/23/06	0.5	1	N	4.10											35100	EMC-C-04-SD-B
Creek	07	7404	NCSWCD 2007	EMC-C-04-SD	Subsurface	08/23/06	1	1.5	N													EMC-C-04-SD-C
Creek	07	6889	USEPA GLNPO	R7-106-C	Surface	11/30/09	0	0.5	N	0.43	13.00	311	5.3	61	462	402	0.054	0.67	0.0255	0.011	32000	R7-106-C
Creek	07	6654	NCSWCD 2007	EMC-C-05-SD	Surface	08/23/06	0	0.5	N	1.29		426	5.8	77	1030	430		0.29				EMC-C-05-SD-A
Creek	07	6654	NCSWCD 2007	EMC-C-05-SD	Subsurface	08/23/06	0.5	1	N	0.68												EMC-C-05-SD-B
Creek	07	6654	NCSWCD 2007	EMC-C-05-SD	Subsurface	08/23/06	1	1.5	N	3.70											40500	EMC-C-05-SD-C
Creek	09	3551	NCSWCD 2007	EMC-C-07-SD	Surface	08/24/06	0	0.4	N	14.30		531	12	84	1720	1600		0.6				EMC-C-07-SD-A
Creek	09	3551	NCSWCD 2007	EMC-C-07-SD	Surface	08/24/06	0.42	0.83	N	25.90												EMC-C-07-SD-B
Creek	09	3551	NCSWCD 2007	EMC-C-07-SD	Subsurface	08/24/06	0.83	1.25	N	50.00											48400	EMC-C-07-SD-C
Creek	09	3470	NYSDEC SRI	18MC-L18-S01	Surface	04/25/07	0.3	0.9	N	0.11		44	2.8	9	27	72						18MC-L18-S01-Z1
Creek	09	3469	NYSDEC SRI	18MC-L18-S02	Surface	04/25/07	0.2	0.9	N	1.43		576	9.7	22	1370	889	13			0.016	36300	18MC-L18-S02-Z1
Creek	09	3469	NYSDEC SRI	18MC-L18-S02	Subsurface	04/25/07	1.2	1.8	N	0.02		33	4	10	32	90	1.63				48300	18MC-L18-S02-Z2
Creek	09	3259	NYSDEC RI	SED-40	Surface	09/01/05	0	0.17	N	2.20		224										SED-40-Z1
Creek	09	3259	NYSDEC RI	SED-40	Surface	09/01/05	0.17	0.5	N	24.00		951										SED-40-Z2
Creek	09	3243	NYSDEC SRI	18MC-L17-S03	Surface	04/25/07	0.5	1	N	0.41		320	15	22	473	1140						18MC-L17-S03-Z1
Creek	09	3241	NYSDEC SRI	18MC-L17-S02	Surface	04/25/07	0.5	1	N			235	6.9	27	170	273	1.753		0.0013		75700	18MC-L17-S02-Z1
Creek	09	3231	NYSDEC SRI	18MC-L17-S01	Surface	04/25/07	0.4	0.8	N			410	12	46	227	653						18MC-L17-S01-Z1
Creek	09	3226	NCSWCD 2007	EMC-C-06-SD	Surface	08/24/06	0	0.4	N			246	11	21	80	198		2.5			79800	EMC-C-06-SD-A
Creek	09	3226	NCSWCD 2007	EMC-C-06-SD	Surface	08/24/06	0.42	0.83	N	0.37												EMC-C-06-SD-B
Creek	09	3226	NCSWCD 2007	EMC-C-06-SD	Subsurface	08/24/06	0.83	1.25	N	0.01												EMC-C-06-SD-C
Creek	09	3131	NYSDEC RI	SED-38	Surface	09/01/05	0	0.17	N	8.30		164										SED-38-Z1
Creek	09	3131	NYSDEC RI	SED-39	Surface	09/01/05	0	0.17	N	0.06		179										SED-39-Z1
Creek	09	3131	NYSDEC RI	SED-38	Surface	09/01/05	0.25	0.75	N	8.00		291										SED-38-Z2
Creek	09	3131	NYSDEC RI	SED-39	Surface	09/01/05	0.25	0.58	N	0.51		166										SED-39-Z2
Creek	09	3116	NYSDEC 2004	EM4-SED-01	Surface	12/30/99	0	0.5	N	3.27												EM4-SED-01-0-0
Creek	09	3116	NYSDEC 2004	EM4-SED-01	Surface	08/07/96	0	0.17	N			362	3.6	36	352	712		0.73				EM4-SED-01-0-0.1667
Creek	09	3116	NYSDEC 2004	EM4-SED-01	Surface	08/07/96	0	0.16	N	6.10							17.3					EM4-SED-01-0-0.1651
Creek	09	3095	NYSDEC SRI	18MC-L16W-S03	Surface	04/25/07	0.5	1	N	0.04		63	10	11	29	51						18MC-L16W-S03-Z1
Creek	09	3093	NYSDEC SRI	18MC-L16E-S03	Surface	04/24/07	0.5	1	N	8.70		2040	18	196	1170	672						18MC-L16E-S03-Z1
Creek	09	3091	NYSDEC SRI	18MC-L16E-S02	Surface	04/24/07	0	0.16	N	5.80		323	7.7	43	273	696	11.06			0.0035	50200	18MC-L16E-S02-Z1
Creek	09	3090	NYSDEC SRI	18MC-L16E-S01	Surface	04/24/07	0.4	1	N	38.00		1140	25	68	2640	2280						18MC-L16E-S01-Z1
Creek	09	3082	NYSDEC SRI	18MC-L16W-S01	Surface	04/24/07	0.2	0.8	N	10.00		206	5.7	76	138	272						18MC-L16W-S01-Z1
Creek	10	3409	NYSDEC 2001	DEC-12	SURFACE	08/17/98	0	0.59	N		24.93	354	6.2	42.6	252	640	13.272		0.06155			DEC-12-0-18 CM CORE-8/19/1998
Creek	10	3409	NYSDEC 2001	DEC-12	SUBSURFACE	08/17/98	0.59	0.89	N		9.55	493	9.9	64.2	291	774	9.878		0.02514			DEC-12-18-27 CM CORE-8/19/1998
Creek	10	2978	NYSDEC RI	SED-37	Surface	09/01/05	0	0.17	N	9.00		214										SED-37-Z1
Creek	10	2978	NYSDEC RI	SED-37	Surface	09/01/05	0.17	0.58	N	66.00		1190										SED-37-Z2
Creek	10	2978	NYSDEC RI	SED-37	Subsurface	09/01/05	0.8	1	N	234.00		428										SED-37-Z3
Creek	10	2909	NYSDEC 2004	EM4-SED-02	Surface	08/07/96	0	0.17	N			558	4.8	74	415	1020		2.1				EM4-SED-02-0-0.1667

Table D-1

Detailed List of Sediment Chemistry Results for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	PCBs (total)	TOTAL PCB CONGENERS	LEAD	ARSENIC	CHROMIUM	COPPER	ZINC	PAHs (total)	MERCURY	Sum of DDT+DDE+DDD	DIELDRIN	TOTAL ORGANIC CARBON	Sample ID
Creek	10	2909	NYSDEC 2004	EM4-SED-02	Surface	08/07/96	0	0.16	N	2.96							19.8					EM4-SED-02-0-0.1651
Creek	10	2898	NYSDEC SRI	18MC-L15W-S01	Surface	04/24/07	0.3	1.2	N	1.40		356	4.1	131	407	582						18MC-L15W-S01-Z1
Creek	10	2894	NYSDEC SRI	18MC-L15W-S03	Surface	04/24/07	0.3	0.8	N	0.12		55	7.1	8.7	152	85						18MC-L15W-S03-Z1
Creek	10	2891	NYSDEC SRI	18MC-L15E-S02	Surface	04/24/07	0	0.16	N	4.80		568	9.9	28	728	1030	593.07			0.0084	100000	18MC-L15E-S02-Z1
Creek	10	2891	NYSDEC SRI	18MC-L15E-S03	Surface	04/24/07	0.5	1	N	17.00		1850	12	63	6830	4610						18MC-L15E-S03-Z1
Creek	10	2890	NYSDEC SRI	18MC-L15E-S01	Surface	04/24/07	0	0.5	FD	13.00		999	9.3	47	1220	1500						18MC-L15E-S01-Z1/D
Creek	10	2890	NYSDEC SRI	18MC-L15E-S01	Surface	04/24/07	0.5	0.9	N	29.00		1370	12	55	1370	1740						18MC-L15E-S01-Z1
Creek	10	2870	NYSDEC 2004	EM4-SED-03	Surface	08/07/96	0	0.17	N			189	2.1	20.7	108	427		0.26				EM4-SED-03-0-0.1667
Creek	10	2870	NYSDEC 2004	EM4-SED-03	Surface	08/07/96	0	0.16	N	0.36							14.3					EM4-SED-03-0-0.1651
Creek	10	2833	NYSDEC RI	SED-35	Surface	09/01/05	0	0.17	N	6.50		94										SED-35-Z1
Creek	10	2833	NYSDEC RI	SED-35	Surface	09/01/05	0.25	0.67	N	12.00		247										SED-35-Z2
Creek	10	2681	NYSDEC SRI	18MC-L14W-S02	Surface	04/24/07	0	0.5	N	0.01		11	5.7	11	89	51	0.095			0.0035	24700	18MC-L14W-S02-Z1
Creek	10	2680	NYSDEC SRI	18MC-L14W-S03	Surface	04/24/07	0.5	1.2	N			1780	22	88	1550	2000						18MC-L14W-S03-Z1
Creek	10	2680	NYSDEC SRI	18MC-L14W-S03	Subsurface	04/24/07	1.8	2.3	N			1690	15	466	1370	3170						18MC-L14W-S03-Z2
Creek	10	2664	NYSDEC SRI	18MC-L14W-S01	Surface	04/24/07	0.5	1.6	N			74	5.7	12	42	105						18MC-L14W-S01-Z1
Creek	10	2605	NYSDEC RI	SED-32	Surface	09/01/05	0	0.17	N	0.42		169										SED-32-Z1
Creek	10	2605	NYSDEC RI	SED-32	Surface	09/01/05	0.25	0.42	N	0.64		171										SED-32-Z2
Creek	10	2482	NYSDEC 2004	EM4-SED-A	Surface	10/27/95	0	0.16	N	4.07		343	4.7	28.2	244	483	19.9	1.025				EM4-SED-A-0-0.1651
Creek	10	2454	NYSDEC 2004	EM4-SED-4A	Surface	12/30/99	0	0.5	N	1.87												EM4-SED-4A-0-0
Creek	10	2454	NYSDEC 2004	EM4-SED-04	Surface	08/07/96	0	0.17	N			398	6.3	43.9	181	723		0.69				EM4-SED-04-0-0.1667
Creek	10	2454	NYSDEC RI	SED-34	Surface	09/01/05	0	0.17	N	49.00		146										SED-34-Z1
Creek	10	2454	NYSDEC SRI	18MC-L14E-S02	Surface	04/24/07	0	0.16	N	237.00		1430	17	41	1150	1060	36.19		0.85		51000	18MC-L14E-S02-Z1
Creek	10	2454	NYSDEC 2004	EM4-SED-04	Surface	08/07/96	0	0.16	N	6.14							33.5					EM4-SED-04-0-0.1651
Creek	10	2454	NYSDEC RI	SED-34	Surface	09/01/05	0.17	0.58	N	390.00		1150										SED-34-Z2
Creek	10	2454	NYSDEC SRI	18MC-L14E-S01	Surface	04/24/07	0.5	0.8	N	0.20		18	3.1	5.9	16	150						18MC-L14E-S01-Z1
Creek	10	2454	NYSDEC SRI	18MC-L14E-S03	Subsurface	04/24/07	0.8	1.2	N	59.00		1000	9.6	43	860	1970						18MC-L14E-S03-Z1
Creek	10	2454	NYSDEC SRI	18MC-L14E-S02	Subsurface	04/24/07	1	1.5	N	142.00		709	12	1200	646	1390	13.01		0.3		79000	18MC-L14E-S02-Z2
Creek	10	2412	NYSDEC RI	SED-FS	Surface	09/01/05	0	0.17	N			119										SED-FS-Z1
Creek	10	2371	NYSDEC 2004	EM4-SED-05	Surface	08/07/96	0	0.17	N			343	36.8	167	7550	13000		4.9				EM4-SED-05-0-0.1667
Creek	10	2371	NYSDEC 2004	EM4-SED-05	Surface	08/07/96	0	0.16	N	8.80							35.6					EM4-SED-05-0-0.1651
Creek	10	2369	NYSDEC SRI	18MC-L13-S03	Surface	04/24/07	0.5	1	N	46.00		3990	25	114	2830	7340						18MC-L13-S03-Z1
Creek	10	2369	NYSDEC RI	SED-29	Surface	09/01/05	0	0.17	N	2.02		581										SED-29-Z1
Creek	10	2369	NYSDEC RI	SED-29	Surface	09/01/05	0.25	0.5	N	1.42		6840										SED-29-Z2
Creek	10	2363	NYSDEC SRI	18MC-L13-S02	Surface	04/24/07	0.5	1	N	0.12		176	4.8	25	103	245	3.072				48300	18MC-L13-S02-Z1
Creek	10	2357	NYSDEC SRI	18MC-L13-S01	Subsurface	04/24/07	0.8	1.5	N			155	4.5	6.6	34	100						18MC-L13-S01-Z1
Creek	10	2328	NYSDEC RI	SED-30	Surface	09/01/05	0	0.17	N	0.17		143										SED-30-Z1
Creek	10	2328	NYSDEC RI	SED-30	Surface	09/01/05	0.17	0.58	N			44										SED-30-Z2
Creek	10	2297	NYSDEC RI	SED-28	Surface	09/01/05	0	0.17	N	10.00		3040										SED-28-Z1
Creek	10	2297	NYSDEC RI	SED-28	Subsurface	09/01/05	0.67	0.92	N	150.00		1240										SED-28-Z2
Creek	10	2205	NYSDEC RI	SED-43	Surface	09/01/05	0	0.17	N	1.67		434										SED-43-Z1
Creek	10	2205	NYSDEC RI	SED-43	Surface	09/01/05	0.25	0.75	N	7.49		582										SED-43-Z2
Creek	10	2185	NYSDEC RI	SED-27	Surface	09/01/05	0	0.17	N	0.67		148										SED-27-Z1
Creek	10	2185	NYSDEC RI	SED-27	Surface	09/01/05	0.25	0.75	N	0.27		229										SED-27-Z2
Creek	10	2182	NYSDEC SRI	18MC-L12-S03	Surface	04/24/07	0.5	1.4	N	0.22		1110	9.5	27	526	668						18MC-L12-S03-Z1
Creek	10	2180	NYSDEC SRI	18MC-L12-S02	Surface	04/24/07	0.5	0.9	N			84	2.6	5.5	17	46	0.313		0.0033	0.0028	59300	18MC-L12-S02-Z1
Creek	10	2177	NYSDEC SRI	18MC-L12-S01	Subsurface	04/24/07	1	1.6	N	0.04		513	9.3	87	725	960						18MC-L12-S01-Z1
Creek	10	2115	NYSDEC RI	SED-42	Surface	09/01/05	0	0.17	N	0.20		291										SED-42-Z1
Creek	10	1974	NYSDEC SRI	18MC-L11-S01	Subsurface	04/24/07	1	1.6	N	1.65		920	7.1	85	477	855						18MC-L11-S01-Z1
Creek	10	1974	NYSDEC SRI	18MC-L11-S03	Surface	04/24/07	0	0.8	N	0.59		98	32	11	66	99						18MC-L11-S03-Z1
Creek	10	1973	NYSDEC SRI	18MC-L11-S02	Surface	04/24/07	0.5	0.9	N	0.38		2530	19	20	394	7660	100.16		0.03		53300	18MC-L11-S02-Z1
Creek	10	1940	NYSDEC RI	SED-25	Surface	09/01/05	0	0.17	N	4.00		251										SED-25-Z1
Creek	10	1940	NYSDEC RI	SED-25	Surface	09/01/05	0.42	0.58	N	0.90		211										SED-25-Z2
Creek	10	1784	NYSDEC SRI	18MC-L10-S03	Surface	04/23/07	0.5	9	N	0.56		737	6.8	62	329	595						18MC-L10-S03-Z1
Creek	10	1760	NYSDEC SRI	18MC-L10-S01	Surface	04/23/07	0	0.5	FD	1.83		792	19	42	241	1830						18MC-L10-S01-Z1/D
Creek	10	1760	NYSDEC SRI	18MC-L10-S01	Surface	04/23/07	0.5	1.5	N	2.75		1070	27	76	397	1900						18MC-L10-S01-Z1
Creek	10	1713	NYSDEC 2004	EM4-SED-06	Surface	08/07/96	0	0.17	N			805	3.5	18.5	388	905						EM4-SED-06-0-0.1667

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Detailed List of Sediment Chemistry Results for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	PCBs (total)	TOTAL PCB CONGENERS	LEAD	ARSENIC	CHROMIUM	COPPER	ZINC	PAHs (total)	MERCURY	Sum of DDT+DDE+DDD	DIELDRIN	TOTAL ORGANIC CARBON	Sample ID
Creek	10	1713	NYSDEC RI	SED-6	Surface	07/23/02	0	0.17	N	3.50		6000										SED-6-Z1
Creek	10	1713	NYSDEC 2004	EM4-SED-06	Surface	08/07/96	0	0.16	N	5.57							57.5					EM4-SED-06-0-0.1651
Creek	10	1712	NYSDEC RI	SED-23	Surface	09/01/05	0	0.17	N	0.78		136										SED-23-Z1
Creek	10	1712	NYSDEC RI	SED-23	Surface	09/01/05	0.17	0.42	N	17.00		213										SED-23-Z2
Creek	10	1634	NYSDEC RI	SED-22	Surface	09/01/05	0	0.3	N	1400.00		2000										SED-22-Z2
Creek	10	1634	NYSDEC RI	SED-22	Surface	09/01/05	0	0.17	N	201.00		3170										SED-22-Z1
Creek	10	1587	NYSDEC RI	SED-20	Surface	09/01/05	0	0.17	N	1.82		149										SED-20-Z1
Creek	10	1587	NYSDEC RI	SED-20	Surface	09/01/05	0.25	0.5	N	3.74		324										SED-20-Z2
Creek	10	1566	NYSDEC SRI	18MC-L09-S03	Subsurface	04/23/07	1.5	2.5	N	61.00		15000	21	85	54900	21400						18MC-L09-S03-Z1
Creek	10	1565	NYSDEC SRI	18MC-L09-S01	Surface	04/23/07	0.5	1.2	N	33.00		1470	12	115	857	2640						18MC-L09-S01-Z1
Creek	10	1565	NYSDEC SRI	18MC-L09-S02	Surface	04/23/07	0	0.5	N	11.00		526	3.3	26	122	243	16.03		0.81	1.8	50600	18MC-L09-S02-Z1
Creek	10	1565	NYSDEC SRI	18MC-L09-S02	Subsurface	04/23/07	0.8	1.5	N			213	9.4	15	162	131	0.049		0.0014		5390	18MC-L09-S02-Z2
Creek	10	1539	NYSDEC RI	SED-21	Surface	09/01/05	0	0.17	N	12.00		369										SED-21-Z1
Creek	10	1454	NYSDEC 2004	EM4-SED-08	Surface	11/26/02	0	0.17	N			449										EM4-SED-08-0-0.1667
Creek	10	1454	NYSDEC 2004	EM4-SED-08	Surface	11/26/02	0	0.16	N	1.94												EM4-SED-08-0-0.1651
Creek	10	1379	NYSDEC 2004	EM4-SED-07	Surface	11/26/02	0	0.17	N			25000										EM4-SED-07-0-0.1667
Creek	10	1379	NYSDEC 2004	EM4-SED-07	Surface	11/26/02	0	0.16	N	0.84												EM4-SED-07-0-0.1651
Creek	10	1363	NYSDEC RI	SED-18	Surface	09/01/05	0	0.17	N	0.87		275										SED-18-Z1
Creek	10	1363	NYSDEC RI	SED-18	Surface	09/01/05	0.25	0.5	N	7.10		484										SED-18-Z2
Creek	10	1363	NYSDEC 2004	EM4-OLC-08	Surface	10/12/94	0	0.33	N	1.72												EM4-OLC-08-0-0.3302
Creek	10	1363	NYSDEC 2004	EM4-OLC-08	Surface	01/01/94	0	0.17	N			475										EM4-OLC-08-0-0.1667
Creek	10	1363	NYSDEC 2004	EM4-OLC-08	Surface	12/30/99	0	0.16	N	3.66												EM4-OLC-08-0-0.1651
Creek	10	1361	NYSDEC SRI	18MC-L08-S02	Surface	04/23/07	0.4	1	N	0.04		46	4.5	7.9	17	52	6.424		0.0086		34500	18MC-L08-S02-Z1
Creek	10	1358	NYSDEC SRI	18MC-L08-S01	Surface	04/23/07	0.5	1.5	N			658	21	75	609	2120						18MC-L08-S01-Z1
Creek	10	1350	NYSDEC SRI	18MC-L08-S03	Surface	04/23/07	0.5	1.5	N	35.00		284	9.9	43	123	654						18MC-L08-S03-Z1
Creek	10	1329	NYSDEC RI	SED-16	Surface	09/01/05	0	0.17	N	0.33		169										SED-16-Z1
Creek	10	1329	NYSDEC RI	SED-16	Surface	09/01/05	0.25	0.5	N	0.51		229										SED-16-Z2
Creek	10	1249	NYSDEC 2004	EM4-SED-09	Surface	11/26/02	0	0.17	N			146										EM4-SED-09-0-0.1667
Creek	10	1249	NYSDEC 2004	EM4-SED-09	Surface	11/26/02	0	0.16	N													EM4-SED-09-0-0.1651
Creek	10	1176	NYSDEC RI	SED-17	Surface	09/01/05	0	0.17	N	1.60		402										SED-17-Z1
Creek	10	1176	NYSDEC RI	SED-17	Surface	09/01/05	0.25	0.75	N	0.73		1020										SED-17-Z2
Creek	10	1134	NYSDEC SRI	18MC-L07-S03	Subsurface	04/23/07	1.5	2.5	N	0.76		628	14	105	458	1170						18MC-L07-S03-Z1
Creek	10	1125	NYSDEC SRI	18MC-L07-S02	Surface	04/23/07	0	0.8	N	23.00		408	5.1	52	134	289	19.29		0.084	0.083	80500	18MC-L07-S02-Z1
Creek	10	1106	NYSDEC SRI	18MC-L07-S01	Surface	04/23/07	0	0.5	FD	0.23		280	7.3	39	188	412						18MC-L07-S01-Z1/D
Creek	10	1106	NYSDEC SRI	18MC-L07-S01	Subsurface	04/23/07	3	3.5	N	0.33		323	8.4	40	206	590						18MC-L07-S01-Z1
Creek	10	1056	NYSDEC RI	SED-15	Surface	09/01/05	0	0.17	N	8.60		997										SED-15-Z1
Creek	10	1056	NYSDEC RI	SED-15	Subsurface	09/01/05	0.5	0.75	N	1.53		2720										SED-15-Z2
Creek	10	993	NYSDEC SRI	18MC-L06-S03	Surface	04/19/07	0	0.5	FD	0.07		170	5	12	69	147						18MC-L06-S03-Z1/D
Creek	10	993	NYSDEC SRI	18MC-L06-S03	Surface	04/19/07	0.5	1.2	N	0.08		88	3.9	10	57	148						18MC-L06-S03-Z1
Creek	10	993	NYSDEC SRI	18MC-L06-S03	Subsurface	04/19/07	1.5	2.5	N	0.09		125	5.9	11	54	130						18MC-L06-S03-Z2
Creek	10	985	NYSDEC RI	SED-14	Surface	09/01/05	0	0.17	N	0.12		72										SED-14-Z1
Creek	10	985	NYSDEC RI	SED-14	Surface	09/01/05	0.25	0.5	N	0.31		231										SED-14-Z2
Creek	10	985	NYSDEC RI	SED-14	Subsurface	09/01/05	0.58	0.75	N	0.01		15										SED-14-Z3
Creek	10	983	NYSDEC SRI	18MC-L06-S01	Subsurface	04/23/07	1	1.5	N			368	8.1	40	265	410						18MC-L06-S01-Z1
Creek	10	983	NYSDEC SRI	18MC-L06-S02	Surface	04/18/07	0	0.16	N	0.05		32	5.2	8.9	19	74	0.795		0.015	0.0067	37400	18MC-L06-S02-Z1
Creek	10	983	NYSDEC SRI	18MC-L06-S02	Subsurface	04/18/07	1	2	N	0.87		61	4	10	54	116	0.428		0.011		27800	18MC-L06-S02-Z2
Creek	10	837	NYSDEC RI	SED-44	Surface	09/01/05	0	0.17	N	0.07		60										SED-44-Z1
Creek	10	825	NYSDEC SRI	18MC-L05W-S01	Subsurface	04/19/07	1	2	N	0.13		198	4.9	22	124	419						18MC-L05W-S01-Z1
Creek	10	819	NYSDEC 1998	DEC-8	Surface	10/12/94	0	1.07	N	8.87	3.38	1260	4.8	66.5	447	874		2.1	0.121			DEC-8-0-33 CM CORE-10/12/1994
Creek	10	819	NYSDEC 1998	DEC-8	Surface	10/12/94	0	0.5	N	1.39	1.67	475	3.6	44.8	238	423		0.66	0.0165			DEC-8-SURFACE-10/12/1994
Creek	10	819	NYSDEC 2004	DEC-8	Surface	12/30/99	0	0.5	N	0.36		1330										EM4-STATION-08-0-0
Creek	10	817	NYSDEC SRI	18MC-L05W-S02	Surface	04/19/07	0	0.2	N	0.07		159	5.8	11	29	209	4.862		0.02		33700	18MC-L05W-S02-Z1
Creek	10	817	NYSDEC SRI	18MC-L05W-S02	Subsurface	04/18/07	1.5	3	N	0.34		183	5.5	20	103	296	15.52		0.036		30900	18MC-L05W-S02-Z2
Creek	10	805	NYSDEC SRI	18MC-L05W-S03	Surface	04/19/07	0	0.5	N	0.33		857	5.2	146	702	1300						18MC-L05W-S03-Z1
Creek	10	805	NYSDEC SRI	18MC-L05W-S03	Subsurface	04/19/07	1	1.5	N	0.14		459	7.1	62	424	1020						18MC-L05W-S03-Z2
Creek	10	805	NYSDEC SRI	18MC-L05W-S03	Subsurface	04/19/07	2	2.5	N	0.03		173	3.8	21	176	591						18MC-L05W-S03-Z3
Creek	10	789	NYSDEC RI	SED-12	Surface	09/01/05	0	0.17	N	0.06		226										SED-12-Z1
Creek	10	789	NYSDEC RI	SED-12	Surface	09/01/05	0.17	0.5	N	0.04		130										SED-12-Z2
Creek	10	737	NYSDEC SRI	18MC-L04W-S03	Subsurface	04/20/07	1	2	N			47	5.1	10	25	80						18MC-L04W-S03-Z1
Creek	10	733	NYSDEC SRI	18MC-L04W-S02	Surface	04/20/07	0	0.16	N	0.15		292	7.7	35	84	215	11.22		0.018		25400	18MC-L04W-S02-Z1
Creek	10	733	NYSDEC SRI	18MC-L04W-S02	Subsurface	04/20/07	1	1.2	N			80	6.9	6.7	22	91	0.512		0.0014		46400	18MC-L04W-S02-Z2

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Creek	10	729	NYSDEC SRI	18MC-L04W-S01	Surface	04/19/07	0.5	1.5	N	0.06		220	4.9	32	146	460						18MC-L04W-S01-Z1
Creek	10	538	NYSDEC RI	SED-11	Surface	09/01/05	0	0.17	N	0.19		462										SED-11-Z1
Creek	10	538	NYSDEC RI	SED-11	Surface	09/01/05	0.17	0.58	N	0.34		418										SED-11-Z2
Creek	10	534	NYSDEC SRI	18MC-L03W-S03	Subsurface	04/19/07	2	3	N	0.15		232	4.9	27	120	490						18MC-L03W-S03-Z1
Creek	10	534	NYSDEC SRI	18MC-L03W-S02	Surface	04/19/07	0	0.16	N			75	4.3	5.4	16	60	0.442		0.0021		16400	18MC-L03W-S02-Z1
Creek	10	532	NYSDEC SRI	18MC-L03W-S01	Subsurface	04/19/07	0.8	1.8	N	0.73		552	8.6	35	122	511						18MC-L03W-S01-Z1
Creek	10	335	NYSDEC SRI	18MC-L02W-S01	Subsurface	04/18/07	1	2	N			89	6.6	8.6	22	65						18MC-L02W-S01-Z1
Creek	10	335	NYSDEC SRI	18MC-L02W-S01	Subsurface	04/18/07	2	3.2	N			204	7.9	13	71	149						18MC-L02W-S01-Z2
Creek	10	333	NYSDEC SRI	18MC-L02W-S02	Surface	04/18/07	0	0.16	N	0.01		951	11	25	55	140	0.302		0.0099		22400	18MC-L02W-S02-Z1
Creek	10	333	NYSDEC SRI	18MC-L02W-S02	Subsurface	04/18/07	1	2	N			63	6.3	7.8	16	52					31500	18MC-L02W-S02-Z2
Creek	10	333	NYSDEC SRI	18MC-L02W-S02	Subsurface	04/18/07	1	2	FD			138	11	12	30	124					31000	18MC-L02W-S02-Z2/D
Creek	10	329	NYSDEC SRI	18MC-L02W-S03	Surface	04/18/07	0	0.16	N			87	12	8.2	81	141						18MC-L02W-S03-Z1
Creek	10	329	NYSDEC SRI	18MC-L02W-S03	Subsurface	04/18/07	3.2	4	N			29	5.5	6.3	18	48						18MC-L02W-S03-Z2
Creek	10	181	NYSDEC SRI	18MC-L01W-S03	Surface	04/18/07	0.3	1	N	0.10		227	14	13	42	240						18MC-L01W-S03-Z1
Creek	10	174	NYSDEC SRI	18MC-L01W-S02	Surface	04/18/07	0	0.16	N	0.05		412	14	77	106	213	0.69		0.0016	0.0026		18MC-L01W-S02-Z1
Creek	10	174	NYSDEC SRI	18MC-L01W-S02	Subsurface	04/18/07	0.5	1	N	0.01		1660	18	21	46	176	1.896		0.0035			18MC-L01W-S02-Z2
Creek	10	167	NYSDEC SRI	18MC-L01W-S01	Surface	04/18/07	0	0.16	N			411	11	9.9	35	1030					6490	18MC-L01W-S01-Z1
Creek	10	167	NYSDEC SRI	18MC-L01W-S01	Subsurface	04/18/07	0.5	1.2	N			127	6.2	9.5	21	73					29200	18MC-L01W-S01-Z2
Creek_E	10	847	NYSDEC SRI	18MC-L03E-S03	Surface	04/20/07	0	0.5	FD	0.09		165	5	8.3	32	97						18MC-L03E-S03-Z1/D
Creek_E	10	847	NYSDEC SRI	18MC-L03E-S03	Subsurface	04/20/07	0.7	1.7	N	0.10		202	6.1	11	45	112						18MC-L03E-S03-Z1
Creek_E	10	836	NYSDEC SRI	18MC-L03E-S02	Surface	04/20/07	0	0.16	N	0.72		592	4.4	25	272	5190	36.64		0.042	0.0082	38500	18MC-L03E-S02-Z1
Creek_E	10	828	NYSDEC SRI	18MC-L03E-S01	Surface	04/20/07	0.5	1.5	N	0.24		175	4.1	20	70	275						18MC-L03E-S01-Z1
Creek_E	10	781	NYSDEC SRI	18MC-L02E-S03	Surface	04/20/07	0.5	1	N	0.03		166	6.3	15	53	108						18MC-L02E-S03-Z1
Creek_E	10	774	NYSDEC SRI	18MC-L02E-S02	Surface	04/20/07	0	0.16	N	0.03		176	2.9	7.7	46	88	6.592		0.18	0.37	14000	18MC-L02E-S02-Z1
Creek_E	10	761	NYSDEC SRI	18MC-L02E-S01	Subsurface	04/20/07	0.8	1.5	N	3.80		807	5.2	41	361	498						18MC-L02E-S01-Z1
Creek_E	10	759	NYSDEC SRI	18MC-L01E-S03	Surface	04/20/07	0	0.16	N	0.03		113	6.5	9.8	60	131	3.8		0.186		51400	18MC-L01E-S03-Z1
Creek_E	10	759	NYSDEC SRI	18MC-L01E-S03	Subsurface	04/20/07	0.5	1.2	N	0.18		170	3.4	11	131	158						18MC-L01E-S03-Z2
Creek_E	10	749	NYSDEC SRI	18MC-AS-S01	Surface	04/25/07	0	0.16	N	0.05		148	8.9	14	46	129	4.74	0.113	0.0053			18MC-AS-S01-Z1
Creek_E	10	749	NYSDEC SRI	18MC-AS-S01	Subsurface	04/25/07	0.8	1.5	N	0.01		63	11	9.4	32	66	1.857	0.174				18MC-AS-S01-Z2
Creek_E	10	749	NYSDEC RI	SED-13	Surface	09/01/05	0	0.17	N	0.25		183										SED-13-Z1
Creek_E	10	749	NYSDEC SRI	18MC-L01E-S01	Surface	04/20/07	0	0.16	N	0.04		145	1.2	8.3	58	292	3.598		0.0297		193000	18MC-L01E-S01-Z1
Creek_E	10	749	NYSDEC RI	SED-13	Surface	09/01/05	0.25	0.75	N	0.23		116										SED-13-Z2
Canal	Erie Canal	0	NYSDEC RI	SED-23 CANAL	Surface	09/01/05	0	1	N	14.00		216										SED-23 CANAL
Canal	Erie Canal	0	NYSDEC RI	SED-24 CANAL	Surface	09/01/05	0	1	N	66.00		272										SED-24 CANAL
Canal	Erie Canal	0	NYSDEC SRI	18MC-BC03	Surface	06/15/07	0	0.5	FD	1.70		68	5.3	8.9	56	106	1.269			0.0028	33600	18MC-BC03-Z1/D
Canal	Erie Canal	0	NYSDEC 2001	DEC-8A	SURFACE	08/20/98	0	0.33	N		0.12	33.6	5.7	29.4	40	212	1.87	0.118				DEC-8A-0-10 CM CORE-8/20/1998
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L02-S01	Surface	12/06/08	0	0.17	N	28.00		387	5.2	45	57	352					58200	BC-L02-S01-Z1
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L02-S02	Surface	12/06/08	0	0.17	N	8.10		242	4.2	37	33	168					37000	BC-L02-S02-Z1

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Detailed List of Sediment Chemistry Results for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	PCBs (total)	TOTAL PCB CONGENERS	LEAD	ARSENIC	CHROMIUM	COPPER	ZINC	PAHs (total)	MERCURY	Sum of DDT+DDE+DDD	DIELDRIN	TOTAL ORGANIC CARBON	Sample ID
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L02-S03	Surface	12/06/08	0	0.17	N	0.42		40	4.8	28	37	184					34100	BC-L02-S03-Z1
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L03-S01	Surface	12/06/08	0	0.17	N	0.07		149	3.2	19	13	40					4440	BC-L03-S01-Z1
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L03-S02	Surface	12/06/08	0	0.17	N	0.44		88	4.2	25	30	184					22300	BC-L03-S02-Z1
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L03-S03	Surface	12/06/08	0	0.17	N	1.20		68	3.6	12	19	85					27800	BC-L03-S03-Z1
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L04-S01	Surface	12/06/08	0	0.17	N	15.00		106	4.5	28	28	187					19200	BC-L04-S01-Z1
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L04-S02	Surface	12/05/08	0	0.17	FD	8.10		51	4.9	28	44	191						BC-L04-S02-Z1A fines (passing the 200 sieve)
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L04-S02	Surface	12/05/08	0	0.17	FD	17.00		97	6	33	48	223						BC-L04-S02-Z1B fine sand (passing through #40 sieve but retained on the #200 sieve
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L04-S02	Surface	12/05/08	0	0.17	FD	64.00		72	5	28	38	190						BC-L04-S02-Z1C medium and coarse sand (passing through the #4 sieve but retained on the #40 sieve)
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L04-S02	Surface	12/05/08	0	0.17	FD	0.10		3.3		1.3	2.7	12						BC-L04-S02-Z1D gravel-size particles (retained on the #4 sieve)
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L04-S02	Surface	12/05/08	0	0.17	N	110.00		70	5.6	30	47	306					53100	BC-L04-S02-Z1
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L04-S03	Surface	12/06/08	0	0.17	N	5.30		123	3.9	40	43	256					51400	BC-L04-S03-Z1
Canal	Erie Canal	0	NYSDEC RI	SED-10	Surface	09/01/05	0	0.17	N	0.10		483										SED-10-Z1
Canal	Erie Canal	0	NYSDEC SRI	18MC-BC01	Surface	06/14/07	0	0.16	N	0.01		33	4.5	10	13	45						18MC-BC01-Z1
Canal	Erie Canal	0	NYSDEC SRI	18MC-BC02	Surface	06/14/07	0	0.16	N			39	4.1	6.5	8.4	19						18MC-BC02-Z1
Canal	Erie Canal	0	NYSDEC SRI	18MC-BC03	Surface	06/15/07	0	0.16	N	0.76		169	20	15	84	192	12.68			0.0063	32900	18MC-BC03-Z1
Canal	Erie Canal	0	NYSDEC SRI	18MC-BC04	Surface	06/14/07	0	0.16	N	2.63		65	3.2	15	18	110						18MC-BC04-Z1
Canal	Erie Canal	0	NYSDEC SRI	18MC-BC05	Surface	06/15/07	0	0.16	N	0.02		38	6.8	7.6	11	32	21.35				25400	18MC-BC05-Z1
Canal	Erie Canal	0	NYSDEC SRI	18MC-BC06	Surface	06/13/07	0	0.16	N	0.84		190	5.5	17	61	253						18MC-BC06-Z1
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L02-S02	Subsurface	12/06/08	0.17	1	N	1.40		121	4.2	16	59	149					29400	BC-L02-S02-Z2
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L02-S02	Subsurface	12/06/08	0.17	1	FD	5.00		149	4.1	29	64	160					19200	BC-L02-S02-Z2/D
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L02-S01	Subsurface	12/06/08	0.17	0.83	N	2.40		204	9.1	18	54	365					67500	BC-L02-S01-Z2
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L02-S03	Subsurface	12/06/08	0.17	0.58	N	0.32		34	4.3	27	33	175					21500	BC-L02-S03-Z2
Canal	Erie Canal	0	NYSDEC RI	SED-10	Surface	09/01/05	0.17	0.58	N	0.07		392										SED-10-Z2
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L03-S02	Subsurface	12/06/08	0.17	0.5	N	0.42		52	4.8	27	34	217					23800	BC-L03-S02-Z2
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L03-S03	Subsurface	12/06/08	0.17	0.5	N	6.20		165	3.9	11	36	116					39000	BC-L03-S03-Z2
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L03-S01	Subsurface	12/06/08	0.17	0.42	N	0.20		39	1.8	6.3	5.1	41					11400	BC-L03-S01-Z2
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L04-S01	Subsurface	12/06/08	0.17	0.42	N	0.81		88	4.8	29	42	202					31400	BC-L04-S01-Z2
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L04-S02	Subsurface	12/06/08	0.17	0.42	FD	5.00		149	4.1	29	64	160						BC-L04-S02-Z2/D
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L04-S02	Subsurface	12/06/08	0.17	0.42	N	17.00		161	5.4	38	57	208					28600	BC-L04-S02-Z2
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L04-S03	Subsurface	12/06/08	0.17	0.3	N	41.00		138	3.8	35	37	189					43500	BC-L04-S03-Z2
Canal	Erie Canal	0	NYSDEC 2001	DEC-8A	SUBSURFACE	08/20/98	0.33	0.66	N		0.37	40.3	5.5	33.2	45.4	254	4.43	0.526				DEC-8A-10-20 CM CORE-8/20/1998
Canal	Erie Canal	0	NYSDEC RI	SED-14 CANAL	Surface	09/01/05	0.5	1.5	N	0.19		176										SED-14 CANAL
Canal	Erie Canal	0	NYSDEC RI	SED-15 CANAL	Surface	09/01/05	0.5	1.5	N	37.00		162										SED-15 CANAL
Canal	Erie Canal	0	NYSDEC 2001	DEC-8A	SUBSURFACE	08/20/98	0.66	0.98	N		5.33	80.1	15.1	90.8	97.8	669	6.068	0.673	0.01461			DEC-8A-20-30 CM CORE-8/20/1998

Table D-1

Detailed List of Sediment Chemistry Results for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	PCBs (total)	TOTAL PCB CONGENERS	LEAD	ARSENIC	CHROMIUM	COPPER	ZINC	PAHs (total)	MERCURY	Sum of DDT+DDE+DDD	DIELDRIN	TOTAL ORGANIC CARBON	Sample ID
Canal	Erie Canal	0	NYSDEC 2001	DEC-8A	SUBSURFACE	08/20/98	0.98	1.31	N		3.15	115	4.2	47.3	58.1	341	2.768	0.197	0.01202			DEC-8A-30-40 CM CORE-8/20/1998
Canal	Erie Canal	0	NYSDEC 2001	DEC-8A	SUBSURFACE	08/20/98	1.31	1.64	N		0.56	75.2	10	64.6	79.3	603	9.497	0.27				DEC-8A-40-50 CM CORE-8/20/1998
Canal	Erie Canal	0	NYSDEC RI	SED-14B CANAL	Subsurface	09/01/05	1.5	2.5	N	0.01		48										SED-14B CANAL
Canal	Erie Canal	0	NYSDEC RI	SED-15B CANAL	Subsurface	09/01/05	1.5	2.5	N	8.20		265										SED-15B CANAL
Canal	Erie Canal	0	NYSDEC RI	SED-23B CANAL	Subsurface	09/01/05	1.5	2.5	N	0.04		54										SED-23B CANAL
Canal	Erie Canal	0	NYSDEC RI	SED-24B CANAL	Subsurface	09/01/05	1.5	2.5	N	5.50		184										SED-24B CANAL
Canal	Erie Canal	0	NYSDEC 2001	DEC-8A	SUBSURFACE	08/20/98	1.64	1.97	N		0.56	101	4.9	31.8	43.7	233	3.716	0.142				DEC-8A-50-60 CM CORE-8/20/1998
Canal	Erie Canal	0	NYSDEC 2001	DEC-8A	SUBSURFACE	08/20/98	1.97	2.3	N		0.24	55.4	4.9	36.3	50.2	263	8.518	0.18				DEC-8A-60-70 CM CORE-8/20/1998
Canal	Erie Canal	0	NYSDEC RI	SED-22 CANAL	Subsurface	09/01/05	2	3	N	310.00		286										SED-22 CANAL
Canal	Erie Canal	0	NYSDEC 2001	DEC-8A	SUBSURFACE	08/20/98	2.3	2.62	N		0.32	54.2	5.1	39.6	51.8	277	14.959	0.195				DEC-8A-70-80 CM CORE-8/20/1998
Canal	Erie Canal	0	NYSDEC 2001	DEC-8A	SUBSURFACE	08/20/98	2.62	2.95	N		1.10	84	5.5	65.7	75.4	450	29.804	0.21				DEC-8A-80-90 CM CORE-8/20/1998
Canal	Erie Canal	0	NYSDEC 2001	DEC-8A	SUBSURFACE	08/20/98	2.95	3.08	N		3.22	99.7	7.5	90.5	106	899	16.23	0.455	0.01554			DEC-8A-90-94 CM CORE-8/20/1998
Upstream	Upstream	-9999	NYSDEC 2001	DEC-9	SURFACE	08/17/98	0	0.5	N		0.02	103	7.7	17.9	20.2	170	25.62		0.0088			DEC-9-SURFACE-8/17/1998
Upstream	Upstream	-9999	NYSDEC SRI	18MC-UP-S01	Surface	04/25/07	0.1	0.8	N			34	3.7	11	21	108	9.183			0.023	15500	18MC-UP-S01-Z1
Upstream	Upstream	-9999	NYSDEC SRI	18MC-UP-S01	Subsurface	04/25/07	1.1	1.8	N			8.6	3.3	9.2	12	44	5.632				1650	18MC-UP-S01-Z2
Tributary	04	53665	USEPA GLNPO	R4-119-T	Surface	11/17/09	0	0.5	N			20	2.6	13	9.5	63	0.4	0.053	0.0064		22000	R4-119-T
Tributary	07	27915	USEPA GLNPO	R7-120-T	Surface	11/24/09	0	0.5	N			36	5	23	25	134	0.75		0.015		20000	R7-120-T-Z1
Tributary	07	27915	USEPA GLNPO	R7-120-T	Subsurface	11/24/09	0.5	2.1	N			25	5.1	17	16	109	1	0.26			15000	R7-120-T-Z2
Tributary	07	27522	USEPA GLNPO	R7-201-T	Surface	06/25/10	0	1.1	N			22	3.8	15	15	88	0.28	0.083			28400	R7-201-T-COMP
Tributary	07	27522	USEPA GLNPO	R7-201-T	Surface	06/25/10	0	0.5	N			23	3.5	17	18	108	0.1				34200	R7-201-T-Z1A
Tributary	07	27500	NYSDEC 2001	DEC-10	SURFACE	08/18/98	0	0.5	N		0.00	26.4	6.5	22.5	24.2	130		0.058				DEC-10-SURFACE-8/18/1998
Tributary	07	26631	USEPA GLNPO	R7-202-T	Surface	06/29/10	0	0.9	N			19	3.4	16	16	96	0.21				30600	R7-202-T-COMP
Tributary	07	26631	USEPA GLNPO	R7-202-T	Surface	06/29/10	0	0.5	N			18	3.5	17	21	113	0.89				45900	R7-202-T-Z1A
Tributary	07	24253	USEPA GLNPO	R7-121-T	Surface	12/02/09	0	0.5	N	0.39		63	3.6	31	57	176	1.5	0.1	0.132	0.023	28000	R7-121-T-Z1
Tributary	07	17530	USEPA GLNPO	R7-122-T	Surface	11/25/09	0	0.5	N			15	1.7	9.9	14	56	0.2		0.029	0.028	11000	R7-122-T-Z1
Tributary	07	17530	USEPA GLNPO	R7-122-T	Subsurface	11/25/09	0.5	1	N			4.6	2.4	7.8	8.6	39	0.046				23000	R7-122-T-Z2
Tributary	07	13126	USEPA GLNPO	R7-123-T	Surface	11/23/09	0	0.5	N			94	5.4	39	68	317	1.8	0.17			30000	R7-123-T-Z1
Tributary	07	13126	USEPA GLNPO	R7-123-T	Subsurface	11/23/09	0.5	1	N			43	5.6	21	37	127	1.3	0.12			74000	R7-123-T-Z2
Tributary	07	12476	USEPA GLNPO	R7-124-T	Surface	11/23/09	0	0.4	N			18	6.4	16	16	133	1.2				17000	R7-124-T-Z1
Tributary	07	7893	USEPA GLNPO	R7-203-T	Surface	06/29/10	0	0.7	N			800	6.5	201	292	1600	97	0.22			57300	R7-203-T-COMP
Tributary	07	7893	USEPA GLNPO	R7-203-T	Surface	06/29/10	0	0.5	N			823	6.5	149	250	1490	9.5	0.13			50200	R7-203-T-Z1A
Tributary	07	7847	USEPA GLNPO	R7-125-T	Surface	11/30/09	0	0.5	N			586	5.2	136	239	1420	0.053	0.14			112000	R7-125-T-Z1
Tributary	07	7847	USEPA GLNPO	R7-125-T	Subsurface	11/30/09	0.5	0.8	N			790	6.8	201	292	1850	10	0.2			88000	R7-125-T-Z2
Tributary	07	7750	NYSDEC 2001	DEC-11	Surface	08/17/98	0	0.5	N		0.20	236	4.2	82.1	80.2	558	22.926	0.083				DEC-11-SURFACE-8/17/1998
Tributary	07	7122	USEPA GLNPO	R7-205-T	Surface	06/29/10	0	0.8	N			425	5.7	85	117	722	4.8	0.17			29600	R7-205-T-COMP
Tributary	07	7122	USEPA GLNPO	R7-205-T	Surface	06/29/10	0	0.5	N	0.11		521	8	78	179	841	8.5	0.18			45200	R7-205-T-Z1A
Tributary	07	7122	USEPA GLNPO	R7-204-T	Surface	06/29/10	0	0.3	N			679	1	89	270	1150	5.9				52300	R7-204-T-Z1A
Historic Creek	04	58365	USEPA GLNPO	R4-126-H	Surface	11/16/09	0	0.5	N	0.15		193	4.1	65	153	892		0.5			103000	R4-126-H
Historic Creek	05	50439	USEPA GLNPO	R5-127-H	Surface	11/18/09	0	0.5	N			31	3.2	14	24	309	49		0.0157		54000	R5-127-H
Historic Creek	06	46767	USEPA GLNPO	R6-128-H	Surface	12/02/09	0	0.5	N	0.48		433	5.3	199	301	1280	4	0.64	0.0364	0.015	33000	R6-128-H
Historic Creek	06	41557	USEPA GLNPO	R6-129-H	Surface	12/02/09	0	0.5	N			359	12	95	210	557		1.9			23000	R6-129-H
Historic Creek	07	22493	USEPA GLNPO	R7-130-H	Surface	11/30/09	0	0.5	N			57	3.7	26	42	159		0.16			35000	R7-130-H
Historic Creek	07	20971	USEPA GLNPO	R7-131-H	Surface	11/30/09	0	0.5	N	1.30	15.00	309	3.6	88	268	717		1.5			60000	R7-131-H
Historic Creek	07	19323	USEPA GLNPO	R7-132-H	Surface	11/25/09	0	0.5	N	0.04		276	11	58	143	535		0.89			97000	R7-132-H
Historic Creek	07	15606	USEPA GLNPO	R7-133-H	Surface	11/24/09	0	0.5	N	0.05		139	6.4	34	67	193	29	1			46000	R7-133-H
Historic Creek	07	11544	USEPA GLNPO	R7-134-H	Surface	11/23/09	0	0.5	N	3.30		400	6.8	109	272	1030		0.27			71000	R7-134-H

Table D-1

Detailed List of Sediment Chemistry Results for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	PCBs (total)	TOTAL PCB CONGENERS	LEAD	ARSENIC	CHROMIUM	COPPER	ZINC	PAHs (total)	MERCURY	Sum of DDT+DDE+DDD	DIELDRIN	TOTAL ORGANIC CARBON	Sample ID
Wetland	03	59706	USEPA GLNPO	R3-107-W	Surface	11/16/09	0	0.5	N	0.53	0.72	334	4.5	108	210	926		0.6			80000	R3-107-W
Wetland	03	59217	USEPA GLNPO	R3-108-W	Surface	11/16/09	0	0.5	N	0.30		310	5	111	211	899		0.69			68000	R3-108-W
Wetland	03	58946	USEPA GLNPO	R3-109-W	Surface	11/16/09	0	0.5	N	0.27		342	5.4	126	234	1050		1			44000	R3-109-W
Wetland	03	58435	USEPA GLNPO	R3-110-W	Surface	11/16/09	0	0.5	N	0.20		533	5.4	216	347	1710	2.1	0.72		0.007	73000	R3-110-W
Wetland	04	56998	USEPA GLNPO	R4-111-W	Surface	11/16/09	0	0.5	N			125	3.8	36	72	304		0.76			20000	R4-111-W
Wetland	04	52367	USEPA GLNPO	R4-112-W	Surface	11/18/09	0	0.5	N	0.15		170	4.2	62	110	444	2	0.71	0.0148		46000	R4-112-W
Wetland	05	51709	USEPA GLNPO	R5-113-W	Surface	11/18/09	0	0.5	N	0.13		345	5.4	121	218	975		0.8			48000	R5-113-W
Wetland	05	50833	USEPA GLNPO	R5-114-W	Surface	11/18/09	0	0.5	N	0.34		265	4.9	94	247	709		0.62			81000	R5-114-W
Wetland	05	50230	USEPA GLNPO	R5-115-W	Surface	11/18/09	0	0.5	N	1.20	0.18	344	8.6	146	182	728		0.51			175000	R5-115-W
Wetland	05	49252	USEPA GLNPO	R5-116-W	Surface	11/19/09	0	0.5	N	0.28		473	6	172	301	1310	5.3	0.81	0.039	0.011	73000	R5-116-W
Wetland	06	45170	USEPA GLNPO	R6-117-W	Surface	12/02/09	0	0.5	N	0.07		299	6.8	72	186	543		2.5			26000	R6-117-W
Wetland	07	7785	USEPA GLNPO	R7-118-W	Surface	11/30/09	0	0.5	N	0.19		339	4.3	78	275	820	25	0.99		0.0074	61000	R7-118-W

Notes:

All concentrations reported in milligram/kilogram (mg/kg)

Key:

18MC	=	Eighteenmile Creek
	=	No detections
-AS	=	Added Sample
-BC	=	Barge Canal
-C	=	Hand-core creek location/sample
-CR	=	Hand-core creek location/sample Replicate
-COMP	=	Composite
Creek_E	=	Headwater East Branch
DEC	=	New York State Department of Environmental Conservation
EM	=	Eighteenmile
EMC	=	Eighteenmile Creek
ft	=	Feet
FD	=	Field Duplicate
-H	=	Historical channel location/sample
-P	=	Ponar creek location/sample
N	=	Normal Sample
-SD	=	Sediment Sample
SED	=	Sediment Sample
-T	=	Tributary location/sample
-UP	=	Upstream
-V	=	Vibracore creek location/sample
-VR	=	Vibracore creek location/sample Replicate
-W	=	Wetland location/sample.
-Z	=	Sample depth interval consecutively numbered

Table D-2

List of Sediment Chemistry Locations for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Sample Date	X Coordinate	Y Coordinate
Creek	01	79984	USACE 2010	EMC-1	10/26/10	684917.1318	4800944.01
Creek	01	79868	USACE 2004	EM1-EBU1	08/27/03	684944.5913	4800918.83
Creek	01	79868	USACE 2004	EM1-EMC1	08/27/03	684944.5913	4800918.83
Creek	01	79667	NYSDEC 1998	DEC-2	10/11/94	684956.6807	4800822.83
Creek	01	79231	USACE 2004	EM1-EMC2	08/27/03	685093.8993	4800798.80
Creek	01	79170	USACE 2010	EMC-2	10/26/10	685094.5679	4800774.37
Creek	01	78639	NYSDEC 1998	DEC-3	10/11/94	685186.9278	4800643.90
Creek	01	78619	USACE 2004	EM1-EMC3	08/27/03	685190.2324	4800638.43
Creek	01	78615	USACE 2010	EMC-3	10/26/10	685190.0028	4800636.94
Creek	01	78185	USEPA 2008	EM3-DOWNSTREAM	08/01/08	685156.7753	4800517.11
Creek	01	77931	USACE 2010	EMC-4	10/26/10	685131.9984	4800444.19
Creek	01	77930	USACE 2004	EM1-EMC4	08/27/03	685134.7514	4800442.41
Creek	01	77743	NYSDEC 1998	DEC-4	10/12/94	685124.5588	4800386.97
Creek	01	77584	NYSDEC 1998	DEC-4a	05/25/94	685155.4001	4800149.06
Creek	01	77242	USACE 2010	EMC-5	10/26/10	685164.1621	4800247.23
Creek	01	77230	USACE 2004	EM1-EMC5	08/27/03	685175.2013	4800249.02
Creek	01	77230	USACE 2004	EM1-EBU2	08/27/03	685175.2013	4800249.02
Creek	01	76553	USACE 2004	EM1-EMC6	08/27/03	685210.4002	4800049.92
Creek	01	76529	USACE 2010	EMC-6	10/26/10	685209.5118	4800042.86
Creek	01	76048	USACE 2010	EMC-7	10/26/10	685195.7491	4799893.55
Creek	01	75868	USACE 2004	EM1-EMC7	08/27/03	685150.9103	4799851.94
Creek	01	75211	USACE 2010	EMC-8	10/26/10	685102.4060	4799657.59
Creek	01	75208	USACE 2004	EM1-EBU3	08/27/03	685087.1599	4799661.25
Creek	01	75208	USACE 2004	EM1-EMC8	08/27/03	685087.1599	4799661.25
Creek	01	74932	NYSDEC 1998	DEC-5	10/12/94	685039.8133	4799587.64
Creek	01	74793	USEPA 2008	EM3-MIDSTREAM	08/01/08	685023.0675	4799562.06
Creek	01	74620	USACE 2010	EMC-9	10/26/10	685030.4225	4799471.13
Creek	01	74596	USACE 2004	EM1-EMC9	08/27/03	685020.8041	4799466.79
Creek	01	73677	USACE 2010	EMC-10	10/26/10	685081.6108	4799320.26
Creek	01	73587	USACE 2004	EM1-EMC10	08/27/03	685109.7366	4799330.29
Creek	01	72858	USACE 2010	EMC-11	10/26/10	685179.1713	4799165.11
Creek	01	72851	USACE 2004	EM1-EBU4	08/27/03	685173.8062	4799163.48

Table D-2

List of Sediment Chemistry Locations for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Sample Date	X Coordinate	Y Coordinate
Creek	01	72851	USACE 2004	EM1-EMC11	08/27/03	685173.8062	4799163.48
Creek	01	72106	USACE 2010	EMC-12	10/26/10	685308.5320	4799034.17
Creek	01	72101	USACE 2004	EM1-EMC12	08/27/03	685313.7958	4799039.50
Creek	01	71495	USACE 2004	EM1-EMC13	08/27/03	685344.0859	4798871.76
Creek	01	71416	USACE 2010	EMC-13	10/26/10	685336.4063	4798845.99
Creek	01	70848	USACE 2010	EMC-14	10/26/10	685213.0689	4798727.02
Creek	01	70798	USEPA 2008	EM3-UPSTREAM	08/01/08	685206.1963	4798711.27
Creek	01	70564	USACE 2004	EM1-EBU5	08/27/03	685143.8271	4798677.33
Creek	01	70564	USACE 2004	EM1-EMC14	08/27/03	685143.8271	4798677.33
Creek	01	70374	USACE 2010	EMC-15	10/26/10	685122.6405	4798621.18
Creek	01	70081	USACE 2004	EM1-EMC15	08/27/03	685159.8895	4798535.14
Creek	01	69355	USACE 2010	EMC-16	10/26/10	685284.9725	4798353.33
Creek	02	68416	USEPA GLNPO	R2-003-V-P	05/18/10	685201.5454	4798080.94
Creek	02	68415	USEPA GLNPO	R2-003-V	05/18/10	685201.4951	4798080.57
Creek	02	68410	USEPA GLNPO	R2-003-V-P2	05/24/10	685200.2984	4798079.78
Creek	02	68399	USEPA GLNPO	R2-002-V-P	05/18/10	685169.8595	4798091.52
Creek	02	68395	USEPA GLNPO	R2-002-V	05/18/10	685166.6434	4798092.01
Creek	02	68375	USEPA GLNPO	R2-001-V	05/18/10	685137.8950	4798094.87
Creek	02	68375	USEPA GLNPO	R2-001-V-P	05/18/10	685137.7916	4798094.22
Creek	02	68375	USEPA GLNPO	R2-001-V-P2	05/24/10	685136.9707	4798094.14
Creek	02	67111	USEPA GLNPO	R2-005-V	05/19/10	685320.1889	4797738.01
Creek	02	67109	USEPA GLNPO	R2-004-V	05/18/10	685273.7921	4797734.26
Creek	02	67108	USEPA GLNPO	R2-004-V-P	05/18/10	685274.7437	4797734.04
Creek	02	67108	USEPA GLNPO	R2-005-V-P	05/19/10	685321.1922	4797737.06
Creek	02	67107	USEPA GLNPO	R2-004-V-P2	05/24/10	685276.4597	4797733.76
Creek	02	67102	USEPA GLNPO	R2-006-V-P	05/24/10	685359.7498	4797737.72
Creek	02	67100	USEPA GLNPO	R2-006-V	05/19/10	685358.0593	4797737.12
Creek	02	65759	USEPA GLNPO	R2-007-V	05/25/10	685275.1616	4797390.92
Creek	02	65640	USEPA GLNPO	R2-008-V	05/19/10	685320.9428	4797394.87
Creek	02	65564	USEPA GLNPO	R2-009-V-P	05/25/10	685365.3447	4797402.22
Creek	02	65562	USEPA GLNPO	R2-009-V	05/19/10	685366.2310	4797402.16
Creek	02	63171	USEPA GLNPO	R2-010-V	05/25/10	685323.6467	4796659.82

Table D-2

List of Sediment Chemistry Locations for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Sample Date	X Coordinate	Y Coordinate
Creek	02	63153	USEPA GLNPO	R2-011-V	05/25/10	685351.3246	4796667.61
Creek	02	63096	USEPA GLNPO	R2-012-V	05/25/10	685390.4857	4796674.81
Creek	02	62416	NYSDEC 2001	DEC-6BCEF	08/18/98	685525.3861	4796516.17
Creek	02	62416	NYSDEC 2001	DEC-6C	08/18/98	685525.3861	4796516.17
Creek	02	62234	NYSDEC 1998	DEC-6	10/11/94	685490.2112	4796427.50
Creek	02	61625	USEPA GLNPO	R2-013-V	05/25/10	685517.7850	4796256.10
Creek	02	61620	USEPA GLNPO	R2-015-V	05/25/10	685567.7056	4796256.11
Creek	02	61618	USEPA GLNPO	R2-014-V	05/25/10	685545.6604	4796254.96
Creek	03	60757	USEPA GLNPO	R3-018-V	05/25/10	685609.3077	4795994.57
Creek	03	60754	NYSDEC 2001	DEC-6E	08/18/98	685607.3532	4795993.58
Creek	03	60738	USEPA GLNPO	R3-017-V	05/26/10	685571.3260	4795987.71
Creek	03	60734	USEPA GLNPO	R3-016-V	05/26/10	685542.4741	4795985.71
Creek	03	60224	USEPA GLNPO	R3-019-V	05/26/10	685528.6315	4795823.35
Creek	03	60215	USEPA GLNPO	R3-020-V	05/26/10	685559.0056	4795826.49
Creek	03	60207	USEPA GLNPO	R3-021-V	05/26/10	685583.0014	4795828.74
Creek	03	59488	NYSDEC 2001	DEC-6F	08/18/98	685549.8900	4795621.53
Creek	03	59465	USEPA GLNPO	R3-022-V	05/26/10	685556.6643	4795611.27
Creek	03	59359	USEPA GLNPO	R3-024-V	05/26/10	685599.6786	4795549.61
Creek	03	59325	USEPA GLNPO	R3-023-V	05/26/10	685551.8594	4795566.55
Creek	03	58706	USEPA GLNPO	R3-027-V	05/27/10	685463.6520	4795377.37
Creek	03	58684	USEPA GLNPO	R3-026-V	05/27/10	685441.2544	4795394.71
Creek	03	58656	USEPA GLNPO	R3-025-V	05/26/10	685408.0485	4795421.99
Creek	04	58038	USEPA GLNPO	R4-135-C	06/21/10	685264.4320	4795314.61
Creek	04	57787	USEPA GLNPO	R4-028-C	11/17/09	685220.8250	4795246.51
Creek	04	57468	USEPA GLNPO	R4-136-C	06/21/10	685306.0170	4795192.16
Creek	04	56862	USEPA GLNPO	R4-029-C	11/16/09	685469.1483	4795115.82
Creek	04	56559	USEPA GLNPO	R4-137-C	06/21/10	685504.5940	4795032.30
Creek	04	56006	USEPA GLNPO	R4-030-C	11/16/09	685601.2389	4794897.41
Creek	04	55979	USEPA GLNPO	R4-138-C	06/21/10	685602.6700	4794889.44
Creek	04	55678	USEPA GLNPO	R4-031-C	11/16/09	685600.5692	4794797.76
Creek	04	55647	USEPA GLNPO	R4-139-C	06/22/10	685595.9170	4794788.20
Creek	04	55325	USEPA GLNPO	R4-140-C	06/23/10	685622.8750	4794692.63

Table D-2

List of Sediment Chemistry Locations for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Sample Date	X Coordinate	Y Coordinate
Creek	04	55037	USEPA GLNPO	R4-032-C	11/16/09	685593.3969	4794608.00
Creek	04	54677	USEPA GLNPO	R4-141-C	06/23/10	685531.3110	4794520.59
Creek	04	54208	USEPA GLNPO	R4-033-C	11/17/09	685475.7376	4794396.07
Creek	04	53793	USEPA GLNPO	R4-142-C	06/23/10	685526.2060	4794290.59
Creek	04	53633	USEPA GLNPO	R4-034-C	11/17/09	685569.7138	4794262.84
Creek	04	53123	USEPA GLNPO	R4-143-C	06/23/10	685705.5350	4794218.19
Creek	04	52919	USEPA GLNPO	R4-035-C	11/17/09	685773.4465	4794227.22
Creek	04	52719	USEPA GLNPO	R4-036-C	11/17/09	685828.7503	4794256.34
Creek	04	52514	USEPA GLNPO	R4-037-C	11/17/09	685868.0085	4794303.65
Creek	04	52226	USEPA GLNPO	R4-038-C	11/18/09	685956.5722	4794324.25
Creek	05	52061	NYSDEC 2001	DEC-7A	08/19/98	686037.0115	4794307.34
Creek	05	51954	USEPA GLNPO	R5-039-V	05/21/10	686031.7366	4794293.35
Creek	05	51903	NYSDEC 1998	DEC-7	10/12/94	686045.2328	4794319.11
Creek	05	51887	USEPA GLNPO	R5-041-V	05/24/10	686049.0181	4794354.81
Creek	05	51876	USEPA GLNPO	R5-040-V	05/20/10	686053.4658	4794313.86
Creek	05	51152	USEPA GLNPO	R5-042-V	05/20/10	686227.9963	4794143.99
Creek	05	51134	USEPA GLNPO	R5-043-V	05/20/10	686255.1185	4794199.45
Creek	05	51122	USEPA GLNPO	R5-044-V	05/20/10	686263.9352	4794213.03
Creek	05	50710	USEPA GLNPO	R5-045-V	05/20/10	686373.1156	4794147.45
Creek	05	50627	NYSDEC 2001	DEC-7B	08/19/98	686380.1628	4794131.48
Creek	05	50099	USEPA GLNPO	R5-046-V	05/20/10	686436.8405	4793991.82
Creek	05	49732	NYSDEC 2001	DEC-7C	08/19/98	686386.9482	4793884.71
Creek	05	49723	USEPA GLNPO	R5-047-V	05/20/10	686395.7062	4793883.10
Creek	05	49556	USEPA GLNPO	R5-048-V	05/21/10	686379.1686	4793807.51
Creek	05	49472	USEPA GLNPO	R5-049-V	05/21/10	686435.8007	4793812.72
Creek	05	48925	USEPA GLNPO	R5-050-V	05/21/10	686538.1161	4793685.06
Creek	05	48794	USEPA GLNPO	R6-144-C	07/02/10	686555.3080	4793647.20
Creek	06	48613	USEPA GLNPO	R6-051-C	11/19/09	686566.1865	4793592.21
Creek	06	48468	USEPA GLNPO	R6-145-C	07/02/10	686579.8720	4793550.40
Creek	06	48245	USEPA GLNPO	R6-146-C	07/02/10	686583.3130	4793477.66
Creek	06	48241	USEPA GLNPO	R6-052-C	11/19/09	686580.9901	4793478.08
Creek	06	47676	USEPA GLNPO	R6-147-C	07/01/10	686547.0460	4793335.07

Table D-2

List of Sediment Chemistry Locations for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Sample Date	X Coordinate	Y Coordinate
Creek	06	47630	USEPA GLNPO	R6-053-C	11/19/09	686536.4199	4793311.23
Creek	06	47394	USEPA GLNPO	R6-148-C	07/01/10	686602.6920	4793265.18
Creek	06	46875	USEPA GLNPO	R6-149-C	07/01/10	686632.4540	4793118.52
Creek	06	46600	USEPA GLNPO	R6-054-C	12/02/09	686693.3589	4793059.87
Creek	06	46461	USEPA GLNPO	R6-150-C	07/01/10	686690.4030	4793013.63
Creek	06	46094	USEPA GLNPO	R6-151-C	07/02/10	686696.2450	4792906.60
Creek	06	45738	USEPA GLNPO	R6-152-C	07/02/10	686651.7990	4792806.87
Creek	06	45097	USEPA GLNPO	R6-153-C	07/02/10	686484.9280	4792789.17
Creek	06	44611	USEPA GLNPO	R6-055-C	11/17/09	686500.4367	4792658.96
Creek	06	44475	USEPA GLNPO	R6-154-C	07/01/10	686517.2420	4792621.23
Creek	06	43904	USEPA GLNPO	R6-056-C	11/17/09	686706.1167	4792563.36
Creek	06	43766	USEPA GLNPO	R6-155-C	07/01/10	686657.8170	4792502.56
Creek	06	43252	USEPA GLNPO	R6-057-C	11/17/09	686588.3765	4792366.98
Creek	06	42790	USEPA GLNPO	R6-156-C	07/01/10	686594.0660	4792228.37
Creek	06	42279	USEPA GLNPO	R6-157-C	07/01/10	686507.1000	4792103.20
Creek	06	41988	USEPA GLNPO	R6-158-C	07/01/10	686523.3980	4792016.17
Creek	06	41258	USEPA GLNPO	R6-159-C	07/01/10	686587.9810	4791852.09
Creek	06	40369	USEPA GLNPO	R6-160-C	07/01/10	686855.9940	4791828.08
Creek	06	40268	USEPA GLNPO	R6-058-C	11/18/09	686884.2965	4791817.05
Creek	06	40082	USEPA GLNPO	R6-161-C	07/01/10	686935.1240	4791793.42
Creek	06	39209	USEPA GLNPO	R6-162-C	06/30/10	686937.8770	4791562.74
Creek	06	38848	USEPA GLNPO	R6-059-C	11/18/09	686876.9869	4791463.23
Creek	06	38173	USEPA GLNPO	R6-163-C	06/30/10	686826.2730	4791270.69
Creek	06	37526	USEPA GLNPO	R6-060-C	11/18/09	686918.3984	4791103.96
Creek	06	36804	USEPA GLNPO	R6-164-C	06/30/10	686772.7310	4790952.22
Creek	06	36085	USEPA GLNPO	R6-165-C	06/30/10	686936.8310	4790813.10
Creek	06	35766	USEPA GLNPO	R6-061-C	11/18/09	686930.4741	4790713.94
Creek	06	35433	USEPA GLNPO	R6-166-C	06/30/10	686923.7090	4790618.28
Creek	06	35023	USEPA GLNPO	R6-167-C	06/30/10	686850.9970	4790521.56
Creek	06	34754	USEPA GLNPO	R6-062-C	11/19/09	686806.8785	4790447.21
Creek	06	34255	USEPA GLNPO	R6-168-C	06/30/10	686705.2590	4790340.94
Creek	06	33962	USEPA GLNPO	R6-063-C	11/19/09	686740.5754	4790258.36

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List of Sediment Chemistry Locations for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Sample Date	X Coordinate	Y Coordinate
Creek	06	33691	USEPA GLNPO	R6-169-C	06/28/10	686790.6770	4790195.25
Creek	06	33292	USEPA GLNPO	R6-064-C	11/19/09	686912.7015	4790181.79
Creek	06	32904	USEPA GLNPO	R6-065-C	11/19/09	686876.8074	4790072.55
Creek	06	32562	USEPA GLNPO	R6-066-C	11/25/09	686837.2086	4789978.00
Creek	06	32046	USEPA GLNPO	R6-067-C	11/25/09	686795.1900	4789827.66
Creek	06	31840	USEPA GLNPO	R6-170-C	06/25/10	686769.3030	4789768.00
Creek	06	31325	USEPA GLNPO	R6-171-C	06/25/10	686796.8470	4789608.43
Creek	07	30918	USEPA GLNPO	R7-068-C	11/25/09	686751.4157	4789497.25
Creek	07	30500	USEPA GLNPO	R7-172-C	06/25/10	686785.8450	4789379.34
Creek	07	29933	USEPA GLNPO	R7-069-C	11/25/09	686689.4039	4789251.88
Creek	07	29724	USEPA GLNPO	R7-070-C	11/25/09	686670.5293	4789187.30
Creek	07	29233	USEPA GLNPO	R7-071-C	11/25/09	686618.0832	4789053.93
Creek	07	28712	USEPA GLNPO	R7-072-C	11/24/09	686513.6174	4788954.99
Creek	07	28328	USEPA GLNPO	R7-173-C	06/25/10	686412.9470	4788897.90
Creek	07	28037	USEPA GLNPO	R7-174-C	06/25/10	686394.4270	4788808.13
Creek	07	28034	USEPA GLNPO	R7-073-C	11/24/09	686394.6254	4788807.32
Creek	07	27600	USEPA GLNPO	R7-175-C	06/24/10	686418.7470	4788679.43
Creek	07	27127	USEPA GLNPO	R7-074-C	11/24/09	686393.4623	4788572.04
Creek	07	26960	USEPA GLNPO	R7-075-C	11/24/09	686352.5823	4788562.57
Creek	07	26511	USEPA GLNPO	R7-076-C	11/24/09	686319.5573	4788449.54
Creek	07	26286	USEPA GLNPO	R7-176-C	06/24/10	686253.2910	4788450.77
Creek	07	25843	USEPA GLNPO	R7-077-C	11/24/09	686135.2506	4788387.83
Creek	07	25419	USEPA GLNPO	R7-177-C	06/24/10	686141.2310	4788265.79
Creek	07	25068	USEPA GLNPO	R7-078-C	12/02/09	686074.7301	4788187.20
Creek	07	24710	USEPA GLNPO	R7-079-C	12/02/09	685968.1177	4788180.60
Creek	07	24295	USEPA GLNPO	R7-178-C	06/24/10	685903.9050	4788080.31
Creek	07	23960	USEPA GLNPO	R7-080-C	12/02/09	685824.0403	4788026.86
Creek	07	23569	USEPA GLNPO	R7-179-C	06/23/10	685714.0130	4787990.52
Creek	07	23100	USEPA GLNPO	R7-081-C	12/02/09	685640.7792	4787871.81
Creek	07	22856	USEPA GLNPO	R7-082-C	11/30/09	685611.1574	4787805.91
Creek	07	22470	USEPA GLNPO	R7-180-C	06/23/10	685513.4860	4787738.76
Creek	07	22057	USEPA GLNPO	R7-083-C	11/30/09	685461.3014	4787630.73

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List of Sediment Chemistry Locations for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Sample Date	X Coordinate	Y Coordinate
Creek	07	21809	USEPA GLNPO	R7-084-C	11/30/09	685419.0130	4787587.04
Creek	07	21492	USEPA GLNPO	R7-085-C	11/30/09	685374.9603	4787509.01
Creek	07	21130	USEPA GLNPO	R7-181-C	07/01/10	685281.2740	4787482.06
Creek	07	20624	USEPA GLNPO	R7-086-C	11/30/09	685310.4382	4787355.45
Creek	07	20394	USEPA GLNPO	R7-182-C	07/01/10	685257.4440	4787309.57
Creek	07	19884	USEPA GLNPO	R7-087-C	11/30/09	685306.9010	4787172.89
Creek	07	19601	USEPA GLNPO	R7-183-C	07/01/10	685335.7460	4787092.22
Creek	07	19406	USEPA GLNPO	R7-184-C	06/30/10	685350.9830	4787034.02
Creek	07	19391	USEPA GLNPO	R7-088-C	11/25/09	685351.9608	4787029.52
Creek	07	19132	USEPA GLNPO	R7-185-C	06/30/10	685340.7620	4786950.57
Creek	07	18838	USEPA GLNPO	R7-089-C	11/25/09	685354.7552	4786861.25
Creek	07	18836	USEPA GLNPO	R7-186-C	06/30/10	685352.2630	4786860.57
Creek	07	18638	USEPA GLNPO	R7-187-C	06/30/10	685350.1020	4786801.81
Creek	07	18255	USEPA GLNPO	R7-090-C	11/25/09	685394.4671	4786715.64
Creek	07	17701	USEPA GLNPO	R7-188-C	06/30/10	685479.9640	4786599.81
Creek	07	17307	USEPA GLNPO	R7-189-C	06/30/10	685524.6990	4786488.23
Creek	07	16833	USEPA GLNPO	R7-091-C	11/24/09	685563.9178	4786356.78
Creek	07	16587	USEPA GLNPO	R7-092-C	11/24/09	685576.5346	4786278.90
Creek	07	16217	USEPA GLNPO	R7-190-C	06/30/10	685629.6520	4786184.63
Creek	07	15878	USEPA GLNPO	R7-093-C	11/24/09	685674.1875	4786091.77
Creek	07	15682	USEPA GLNPO	R7-191-C	06/29/10	685682.8140	4786033.82
Creek	07	15136	USEPA GLNPO	R7-094-C	11/23/09	685773.4979	4785895.33
Creek	07	14846	USEPA GLNPO	R7-095-C	11/23/09	685813.0258	4785818.73
Creek	07	14397	USEPA GLNPO	R7-096-C	11/23/09	685809.3432	4785689.14
Creek	07	13907	USEPA GLNPO	R7-192-C	06/29/10	685843.0070	4785543.31
Creek	07	13648	USEPA GLNPO	R7-097-C	11/23/09	685824.8319	4785463.70
Creek	07	13280	USEPA GLNPO	R7-193-C	06/29/10	685844.9070	4785361.31
Creek	07	12647	USEPA GLNPO	R7-098-C	11/23/09	685902.4854	4785186.58
Creek	07	12247	USEPA GLNPO	R7-099-C	11/23/09	685956.8314	4785089.84
Creek	07	11865	USEPA GLNPO	R7-100-C	11/23/09	686040.1985	4785008.59
Creek	07	11695	USEPA GLNPO	R7-194-C	06/29/10	686073.3770	4784968.00
Creek	07	11180	USEPA GLNPO	R7-101-C	11/30/09	686174.2126	4784856.48

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List of Sediment Chemistry Locations for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Sample Date	X Coordinate	Y Coordinate
Creek	07	11119	NCSWCD 2007	EMC-C-10-SD	08/24/06	686183.5977	4784841.09
Creek	07	11048	USEPA GLNPO	R7-195-C	06/29/10	686204.4820	4784834.23
Creek	07	10757	NCSWCD 2007	EMC-C-12-SD	09/08/06	686257.5212	4784772.94
Creek	07	10585	USEPA GLNPO	R7-102-C	11/30/09	686265.7812	4784724.04
Creek	07	10442	USEPA GLNPO	R7-196-C	06/29/10	686275.9600	4784684.54
Creek	07	10143	NCSWCD 2007	EMC-C-11-SD	09/08/06	686311.5111	4784600.99
Creek	07	9991	USEPA GLNPO	R7-103-C	11/30/09	686307.7959	4784553.09
Creek	07	9757	USEPA GLNPO	R7-197-C	06/28/10	686289.8200	4784485.17
Creek	07	9410	NCSWCD 2007	EMC-C-08-SD	08/24/06	686332.5661	4784405.88
Creek	07	9310	USEPA GLNPO	R7-198-C	06/28/10	686363.5950	4784395.75
Creek	07	9173	USEPA GLNPO	R7-104-C	12/02/09	686405.1271	4784403.92
Creek	07	9070	NCSWCD 2007	EMC-C-09-SD	08/24/06	686434.5095	4784406.24
Creek	07	8998	USEPA GLNPO	R7-199-C	06/28/10	686465.2080	4784411.89
Creek	07	8835	NCSWCD 2007	EMC-C-01-SD	08/23/06	686499.9151	4784372.21
Creek	07	8556	USEPA GLNPO	R7-105-C	11/30/09	686506.9640	4784299.05
Creek	07	8267	NCSWCD 2007	EMC-C-02-SD	08/23/06	686490.2121	4784236.30
Creek	07	7878	NCSWCD 2007	EMC-C-03-SD	08/23/06	686497.6081	4784129.28
Creek	07	7812	USEPA GLNPO	R7-200-C	06/28/10	686503.3560	4784108.95
Creek	07	7404	NCSWCD 2007	EMC-C-04-SD	08/23/06	686554.9353	4784006.17
Creek	07	6889	USEPA GLNPO	R7-106-C	11/30/09	686613.7039	4783887.02
Creek	07	6654	NCSWCD 2007	EMC-C-05-SD	08/23/06	686685.7419	4783876.87
Creek	09	3551	NCSWCD 2007	EMC-C-07-SD	08/24/06	687540.8442	4783723.40
Creek	09	3470	NYSDEC SRI	18MC-L18-S01	04/25/07	687565.4913	4783716.78
Creek	09	3469	NYSDEC SRI	18MC-L18-S02	04/25/07	687566.6756	4783724.86
Creek	09	3259	NYSDEC RI	SED-40	09/01/05	687621.7622	4783687.38
Creek	09	3243	NYSDEC SRI	18MC-L17-S03	04/25/07	687625.9806	4783684.44
Creek	09	3241	NYSDEC SRI	18MC-L17-S02	04/25/07	687621.7170	4783680.78
Creek	09	3231	NYSDEC SRI	18MC-L17-S01	04/25/07	687617.5771	4783674.42
Creek	09	3226	NCSWCD 2007	EMC-C-06-SD	08/24/06	687608.8529	4783666.53
Creek	09	3131	NYSDEC RI	SED-38	09/01/05	687654.4496	4783663.67
Creek	09	3131	NYSDEC RI	SED-39	09/01/05	687659.0548	4783669.65
Creek	09	3116	NYSDEC 2004	EM4-SED-01	12/30/99	687657.2909	4783658.78

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List of Sediment Chemistry Locations for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Sample Date	X Coordinate	Y Coordinate
Creek	09	3095	NYSDEC SRI	18MC-L16W-S03	04/25/07	687655.4500	4783650.30
Creek	09	3093	NYSDEC SRI	18MC-L16E-S03	04/24/07	687677.5704	4783663.46
Creek	09	3091	NYSDEC SRI	18MC-L16E-S02	04/24/07	687676.2249	4783661.84
Creek	09	3090	NYSDEC SRI	18MC-L16E-S01	04/24/07	687674.7899	4783660.36
Creek	09	3082	NYSDEC SRI	18MC-L16W-S01	04/24/07	687645.7712	4783639.45
Creek	10	3409	NYSDEC 2001	DEC-12	08/17/98	687696.1136	4783638.32
Creek	10	2978	NYSDEC RI	SED-37	09/01/05	687693.6696	4783636.97
Creek	10	2909	NYSDEC 2004	EM4-SED-02	08/07/96	687715.4507	4783610.86
Creek	10	2898	NYSDEC SRI	18MC-L15W-S01	04/24/07	687675.2486	4783593.32
Creek	10	2894	NYSDEC SRI	18MC-L15W-S03	04/24/07	687683.9747	4783595.05
Creek	10	2891	NYSDEC SRI	18MC-L15E-S02	04/24/07	687720.7410	4783604.95
Creek	10	2891	NYSDEC SRI	18MC-L15E-S03	04/24/07	687722.8954	4783606.36
Creek	10	2890	NYSDEC SRI	18MC-L15E-S01	04/24/07	687717.6450	4783603.24
Creek	10	2870	NYSDEC 2004	EM4-SED-03	08/07/96	687728.2455	4783600.10
Creek	10	2833	NYSDEC RI	SED-35	09/01/05	687724.3018	4783587.28
Creek	10	2681	NYSDEC SRI	18MC-L14W-S02	04/24/07	687708.6432	4783537.96
Creek	10	2680	NYSDEC SRI	18MC-L14W-S03	04/24/07	687709.3268	4783538.22
Creek	10	2664	NYSDEC SRI	18MC-L14W-S01	04/24/07	687703.1918	4783528.08
Creek	10	2605	NYSDEC RI	SED-32	09/01/05	687717.3906	4783511.80
Creek	10	2482	NYSDEC 2004	EM4-SED-A	10/27/95	687754.7517	4783524.38
Creek	10	2454	NYSDEC 2004	EM4-SED-04	08/07/96	687750.6854	4783565.73
Creek	10	2454	NYSDEC 2004	EM4-SED-4A	12/30/99	687751.8799	4783555.15
Creek	10	2454	NYSDEC RI	SED-34	09/01/05	687748.1685	4783562.85
Creek	10	2454	NYSDEC SRI	18MC-L14E-S01	04/24/07	687749.0716	4783572.30
Creek	10	2454	NYSDEC SRI	18MC-L14E-S02	04/24/07	687749.5875	4783567.04
Creek	10	2454	NYSDEC SRI	18MC-L14E-S03	04/24/07	687752.2060	4783564.16
Creek	10	2412	NYSDEC RI	SED-FS	09/01/05	687780.2722	4783537.09
Creek	10	2371	NYSDEC 2004	EM4-SED-05	08/07/96	687792.8631	4783528.78
Creek	10	2369	NYSDEC SRI	18MC-L13-S03	04/24/07	687786.9172	4783523.48
Creek	10	2369	NYSDEC RI	SED-29	09/01/05	687788.1207	4783523.82
Creek	10	2363	NYSDEC SRI	18MC-L13-S02	04/24/07	687780.9321	4783519.67
Creek	10	2357	NYSDEC SRI	18MC-L13-S01	04/24/07	687770.5181	4783514.21

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Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Sample Date	X Coordinate	Y Coordinate
Creek	10	2328	NYSDEC RI	SED-30	09/01/05	687773.6555	4783505.79
Creek	10	2297	NYSDEC RI	SED-28	09/01/05	687793.7971	4783503.26
Creek	10	2205	NYSDEC RI	SED-43	09/01/05	687805.4644	4783478.82
Creek	10	2185	NYSDEC RI	SED-27	09/01/05	687795.5995	4783465.27
Creek	10	2182	NYSDEC SRI	18MC-L12-S03	04/24/07	687805.6992	4783470.76
Creek	10	2180	NYSDEC SRI	18MC-L12-S02	04/24/07	687802.6227	4783468.12
Creek	10	2177	NYSDEC SRI	18MC-L12-S01	04/24/07	687796.4286	4783462.79
Creek	10	2115	NYSDEC RI	SED-42	09/01/05	687820.4135	4783454.26
Creek	10	1974	NYSDEC SRI	18MC-L11-S01	04/24/07	687826.7118	4783411.20
Creek	10	1974	NYSDEC SRI	18MC-L11-S03	04/24/07	687834.8425	4783413.81
Creek	10	1973	NYSDEC SRI	18MC-L11-S02	04/24/07	687831.8534	4783412.42
Creek	10	1940	NYSDEC RI	SED-25	09/01/05	687831.3757	4783401.91
Creek	10	1784	NYSDEC SRI	18MC-L10-S03	04/23/07	687853.4097	4783357.92
Creek	10	1760	NYSDEC SRI	18MC-L10-S01	04/23/07	687842.3882	4783348.34
Creek	10	1713	NYSDEC 2004	EM4-SED-06	08/07/96	687851.2539	4783335.42
Creek	10	1713	NYSDEC RI	SED-6	07/23/02	687851.2539	4783335.42
Creek	10	1712	NYSDEC RI	SED-23	09/01/05	687850.8062	4783335.01
Creek	10	1634	NYSDEC RI	SED-22	09/01/05	687859.6813	4783312.75
Creek	10	1587	NYSDEC RI	SED-20	09/01/05	687868.4875	4783300.81
Creek	10	1566	NYSDEC SRI	18MC-L09-S03	04/23/07	687870.3729	4783294.54
Creek	10	1565	NYSDEC SRI	18MC-L09-S01	04/23/07	687861.5272	4783291.61
Creek	10	1565	NYSDEC SRI	18MC-L09-S02	04/23/07	687866.2275	4783292.94
Creek	10	1539	NYSDEC RI	SED-21	09/01/05	687863.7385	4783283.76
Creek	10	1454	NYSDEC 2004	EM4-SED-08	11/26/02	687869.9349	4783256.44
Creek	10	1379	NYSDEC 2004	EM4-SED-07	11/26/02	687872.0837	4783239.24
Creek	10	1363	NYSDEC RI	SED-18	09/01/05	687874.1186	4783234.94
Creek	10	1363	NYSDEC 2004	EM4-OLC-08	12/30/99	687881.4668	4783237.03
Creek	10	1361	NYSDEC SRI	18MC-L08-S02	04/23/07	687884.1093	4783237.20
Creek	10	1358	NYSDEC SRI	18MC-L08-S01	04/23/07	687863.0800	4783229.82
Creek	10	1350	NYSDEC SRI	18MC-L08-S03	04/23/07	687890.8994	4783235.71
Creek	10	1329	NYSDEC RI	SED-16	09/01/05	687868.3051	4783221.75
Creek	10	1249	NYSDEC 2004	EM4-SED-09	11/26/02	687866.2268	4783197.05

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Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Sample Date	X Coordinate	Y Coordinate
Creek	10	1176	NYSDEC RI	SED-17	09/01/05	687876.8077	4783174.82
Creek	10	1134	NYSDEC SRI	18MC-L07-S03	04/23/07	687885.4401	4783161.65
Creek	10	1125	NYSDEC SRI	18MC-L07-S02	04/23/07	687869.7260	4783159.41
Creek	10	1106	NYSDEC SRI	18MC-L07-S01	04/23/07	687857.8834	4783153.73
Creek	10	1056	NYSDEC RI	SED-15	09/01/05	687878.6690	4783137.87
Creek	10	993	NYSDEC SRI	18MC-L06-S03	04/19/07	687874.9966	4783118.79
Creek	10	985	NYSDEC RI	SED-14	09/01/05	687864.5157	4783116.63
Creek	10	983	NYSDEC SRI	18MC-L06-S01	04/23/07	687861.6872	4783115.64
Creek	10	983	NYSDEC SRI	18MC-L06-S02	04/18/07	687870.2627	4783116.66
Creek	10	837	NYSDEC RI	SED-44	09/01/05	687889.9994	4783076.22
Creek	10	825	NYSDEC SRI	18MC-L05W-S01	04/19/07	687875.9170	4783069.18
Creek	10	819	NYSDEC 1998	DEC-8	10/12/94	687763.8933	4783240.62
Creek	10	819	NYSDEC 2004	DEC-8	12/30/99	687880.8096	4783068.44
Creek	10	817	NYSDEC SRI	18MC-L05W-S02	04/19/07	687881.2440	4783067.16
Creek	10	805	NYSDEC SRI	18MC-L05W-S03	04/19/07	687887.8444	4783063.04
Creek	10	789	NYSDEC RI	SED-12	09/01/05	687874.1592	4783057.53
Creek	10	737	NYSDEC SRI	18MC-L04W-S03	04/20/07	687884.2702	4783036.80
Creek	10	733	NYSDEC SRI	18MC-L04W-S02	04/20/07	687876.4448	4783038.61
Creek	10	729	NYSDEC SRI	18MC-L04W-S01	04/19/07	687867.1347	4783040.71
Creek	10	538	NYSDEC RI	SED-11	09/01/05	687850.3626	4782985.05
Creek	10	534	NYSDEC SRI	18MC-L03W-S03	04/19/07	687859.2701	4782980.34
Creek	10	534	NYSDEC SRI	18MC-L03W-S02	04/19/07	687853.1410	4782982.58
Creek	10	532	NYSDEC SRI	18MC-L03W-S01	04/19/07	687847.1702	4782984.01
Creek	10	335	NYSDEC SRI	18MC-L02W-S01	04/18/07	687830.6753	4782926.54
Creek	10	333	NYSDEC SRI	18MC-L02W-S02	04/18/07	687832.4576	4782925.76
Creek	10	329	NYSDEC SRI	18MC-L02W-S03	04/18/07	687840.0351	4782922.95
Creek	10	181	NYSDEC SRI	18MC-L01W-S03	04/18/07	687823.2839	4782879.79
Creek	10	174	NYSDEC SRI	18MC-L01W-S02	04/18/07	687824.4355	4782877.21
Creek	10	167	NYSDEC SRI	18MC-L01W-S01	04/18/07	687819.1749	4782874.20
Creek_E	10	847	NYSDEC SRI	18MC-L03E-S03	04/20/07	687923.2499	4783087.14
Creek_E	10	836	NYSDEC SRI	18MC-L03E-S02	04/20/07	687921.8321	4783083.28
Creek_E	10	828	NYSDEC SRI	18MC-L03E-S01	04/20/07	687919.3086	4783080.20

Table D-2

List of Sediment Chemistry Locations for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Sample Date	X Coordinate	Y Coordinate
Creek_E	10	781	NYSDEC SRI	18MC-L02E-S03	04/20/07	687959.7416	4783045.47
Creek_E	10	774	NYSDEC SRI	18MC-L02E-S02	04/20/07	687959.3208	4783043.11
Creek_E	10	761	NYSDEC SRI	18MC-L02E-S01	04/20/07	687956.8701	4783039.68
Creek_E	10	759	NYSDEC SRI	18MC-L01E-S03	04/20/07	688026.9610	4783031.04
Creek_E	10	749	NYSDEC SRI	18MC-AS-S01	04/25/07	687985.9272	4783009.89
Creek_E	10	749	NYSDEC RI	SED-13	09/01/05	687987.0573	4783006.44
Creek_E	10	749	NYSDEC SRI	18MC-L01E-S01	04/20/07	688013.8241	4783025.78
Canal	Erie Canal	0	NYSDEC 2001	DEC-8A	08/20/98	9999.0000	9999.00
Canal	Erie Canal	0	NYSDEC RI	SED-10	09/01/05	687826.8239	4782810.13
Canal	Erie Canal	0	NYSDEC RI	SED-14 CANAL	09/01/05	99999.0000	99999.00
Canal	Erie Canal	0	NYSDEC RI	SED-14B CANAL	09/01/05	99999.0000	99999.00
Canal	Erie Canal	0	NYSDEC RI	SED-15 CANAL	09/01/05	99999.0000	99999.00
Canal	Erie Canal	0	NYSDEC RI	SED-15B CANAL	09/01/05	99999.0000	99999.00
Canal	Erie Canal	0	NYSDEC RI	SED-22 CANAL	09/01/05	99999.0000	99999.00
Canal	Erie Canal	0	NYSDEC RI	SED-23 CANAL	09/01/05	99999.0000	99999.00
Canal	Erie Canal	0	NYSDEC RI	SED-23B CANAL	09/01/05	99999.0000	99999.00
Canal	Erie Canal	0	NYSDEC RI	SED-24 CANAL	09/01/05	99999.0000	99999.00
Canal	Erie Canal	0	NYSDEC RI	SED-24B CANAL	09/01/05	99999.0000	99999.00
Canal	Erie Canal	0	NYSDEC SRI	18MC-BC01	06/14/07	687727.6064	4782628.50
Canal	Erie Canal	0	NYSDEC SRI	18MC-BC02	06/14/07	687780.7515	4782715.62
Canal	Erie Canal	0	NYSDEC SRI	18MC-BC03	06/15/07	687873.2338	4782820.97
Canal	Erie Canal	0	NYSDEC SRI	18MC-BC04	06/14/07	687954.9702	4782900.72
Canal	Erie Canal	0	NYSDEC SRI	18MC-BC05	06/15/07	688045.9725	4782989.14
Canal	Erie Canal	0	NYSDEC SRI	18MC-BC06	06/13/07	688170.4446	4783113.91
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L02-S01	12/06/08	687685.9562	4782590.30
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L02-S02	12/06/08	687698.3642	4782581.35
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L02-S03	12/06/08	687710.2119	4782573.13
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L03-S01	12/06/08	687874.0065	4782842.89
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L03-S02	12/06/08	687883.6229	4782834.06
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L03-S03	12/06/08	687893.2450	4782825.70
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L04-S01	12/06/08	688008.3369	4782975.18
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L04-S02	12/06/08	688018.3890	4782964.73

Table D-2

List of Sediment Chemistry Locations for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Sample Date	X Coordinate	Y Coordinate
Canal	Erie Canal	0	NYSDEC SRI-A	BC-L04-S03	12/06/08	688028.9704	4782954.54
Upstream	Upstream	-9999	NYSDEC 2001	DEC-9	08/17/98	9999.0000	9999.00
Upstream	Upstream	-9999	NYSDEC SRI	18MC-UP-S01	04/25/07	688994.1844	4782449.43
Tributary	04	53665	USEPA GLNPO	R4-119-T	11/17/09	685534.8089	4794248.59
Tributary	07	27915	USEPA GLNPO	R7-120-T	11/24/09	686433.4491	4788774.23
Tributary	07	27522	USEPA GLNPO	R7-201-T	06/25/10	686523.8410	4788668.30
Tributary	07	27500	NYSDEC 2001	DEC-10	08/18/98	9999.0000	9999.00
Tributary	07	26631	USEPA GLNPO	R7-202-T	06/29/10	686798.7240	4788044.18
Tributary	07	24253	USEPA GLNPO	R7-121-T	12/02/09	685923.2709	4788051.66
Tributary	07	17530	USEPA GLNPO	R7-122-T	11/25/09	685475.8699	4786544.34
Tributary	07	13126	USEPA GLNPO	R7-123-T	11/23/09	685849.7213	4785320.69
Tributary	07	12476	USEPA GLNPO	R7-124-T	11/23/09	685894.5970	4785132.12
Tributary	07	7893	USEPA GLNPO	R7-203-T	06/29/10	686316.0780	4784006.08
Tributary	07	7847	USEPA GLNPO	R7-125-T	11/30/09	686462.3623	4784092.71
Tributary	07	7750	NYSDEC 2001	DEC-11	08/17/98	9999.0000	9999.00
Tributary	07	7122	USEPA GLNPO	R7-204-T	06/29/10	685645.8790	4783570.53
Tributary	07	7122	USEPA GLNPO	R7-205-T	06/29/10	685105.1640	4782883.78
Historic Creek	04	58365	USEPA GLNPO	R4-126-H	11/16/09	685379.2685	4795296.93
Historic Creek	05	50439	USEPA GLNPO	R5-127-H	11/18/09	686487.6107	4794125.03
Historic Creek	06	46767	USEPA GLNPO	R6-128-H	12/02/09	686636.7785	4793062.14
Historic Creek	06	41557	USEPA GLNPO	R6-129-H	12/02/09	686491.8568	4791885.80
Historic Creek	07	22493	USEPA GLNPO	R7-130-H	11/30/09	685509.7439	4787755.14
Historic Creek	07	20971	USEPA GLNPO	R7-131-H	11/30/09	685323.1280	4787462.63
Historic Creek	07	19323	USEPA GLNPO	R7-132-H	11/25/09	685462.0313	4787012.05
Historic Creek	07	15606	USEPA GLNPO	R7-133-H	11/24/09	685685.8198	4786007.11
Historic Creek	07	11544	USEPA GLNPO	R7-134-H	11/23/09	686083.6047	4784919.36
Wetland	03	59706	USEPA GLNPO	R3-107-W	11/16/09	685565.9342	4795682.82
Wetland	03	59217	USEPA GLNPO	R3-108-W	11/16/09	685547.2585	4795530.91
Wetland	03	58946	USEPA GLNPO	R3-109-W	11/16/09	685488.4384	4795463.37
Wetland	03	58435	USEPA GLNPO	R3-110-W	11/16/09	685356.9321	4795379.65
Wetland	04	56998	USEPA GLNPO	R4-111-W	11/16/09	685417.8120	4795099.12
Wetland	04	52367	USEPA GLNPO	R4-112-W	11/18/09	685906.0119	4794295.41

Table D-2

List of Sediment Chemistry Locations for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Sample Date	X Coordinate	Y Coordinate
Wetland	05	51709	USEPA GLNPO	R5-113-W	11/18/09	686108.4243	4794301.27
Wetland	05	50833	USEPA GLNPO	R5-114-W	11/18/09	686326.6280	4794132.31
Wetland	05	50230	USEPA GLNPO	R5-115-W	11/18/09	686461.3575	4794032.79
Wetland	05	49252	USEPA GLNPO	R5-116-W	11/19/09	686470.2348	4793757.45
Wetland	06	45170	USEPA GLNPO	R6-117-W	12/02/09	686502.3495	4792802.86
Wetland	07	7785	USEPA GLNPO	R7-118-W	11/30/09	686540.4577	4784132.48

Key:

18MC	=	Eighteenmile Creek
-C	=	Hand-core creek location/sample
Creek_E	=	Headwater East Branch
DEC	=	New York State Department of Environmental Conservation
EM	=	Eighteenmile
EMC	=	Eighteenmile Creek
ft	=	Feet
-H	=	Historical channel location/sample
-P	=	Ponar creek location/sample
SED	=	Sediment
-T	=	Tributary location/sample
-V	=	Vibracore creek location/sample
-W	=	Wetland location/sample
X Coordinate	=	X Coordinate in UTM Zone 17
Y Coordinate	=	Y Coordinate in UTM Zone 17

Table D-3
AVS/SEM Sediment Chemistry Results for Remedial Investigation
Eighteenmile Creek Area of Concern

	Reach 2		Reach 3				Reach 4			
Sample ID	**R2-002-V-Z1P**	**R2-005-V-Z1P**	**R3-016-V-Z1**	**R3-018-V-Z1**	**R3-020-V-Z1**	**R3-027-V-Z1**	**R4-028-C**	**R4-030-C**	**R4-031-C**	**R4-034-C**
Sample Date	**05/18/10**	**05/19/10**	**05/26/10**	**05/25/10**	**05/26/10**	**05/27/10**	**11/17/09**	**11/16/09**	**11/16/09**	**11/17/09**
Sample depth (ft):	**0 - 1**	**0 - 1**	**0 - 1**	**0 - 1**	**0 - 1**	**0 - 1**	**0 - 1.55**	**0 - 1.1**	**0 - 0.8**	**0 - 0.4**
AVS (µmole/g)										
Sulfide	0.4873	3.3583	4.732	5.0498	4.167	0.8616	20.8	15.3	61.1	4.1
SEM by SW6010B (µmole/g)										
Cadmium	0.0125 J	0.0107 J	0.0302 J	0.0116 J	0.0249 J	0.0125 J	0.014 J	0.002 J	0.032	0.0017 J
Copper	0.2486 J	0.3619	0.0346 J	0.1007 J	0.2298 J	1.506	0.013 J	0.12 J	0.006 J	0.23
Lead	0.7577	0.6226	2.0415	0.7143	0.8736	0.8929	1	0.23	4.2	0.24
Nickel	0.1925 J	0.1499 J	1.1211	0.1823 J	0.2454 J	0.2709 J	0.84	0.22 J	1.1	0.14 J
Silver	0.0797 U	0.0695 U	0.0816 U	0.0667 U	0.0658 U	0.0566 U	0.048 U	0.04 U	0.06 U	0.038 U
Zinc	5.8428	5.1086	25.8489	7.9688	8.3665	7.6476	15.6	2.8	64.5	2
∑SEM	7.1	6.3	29.1	9.0	9.8	10.4	17.5	3.4	69.9	2.6
SEM-AVS	6.6	2.9	24.4	4.0	5.6	9.5	-3.3	-11.9	8.8	-1.5
SEM/AVS Ratio	14.6	1.9	6.2	1.8	2.3	12.0	0.8	0.2	1.1	0.6
Foc(g/g)										
Fraction organic carbon	0.05	0.09	0.07	0.06	0.05	0.05	0.06	0.15	0.05	0.06
Bioavailability Calcs										
Is ∑SEM > AVS?	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No
(∑SEM > AVS)/Foc	143	31	344	69	119	202	-59	-81	169	-23
Is (∑SEM > AVS)/Foc <130?	No	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes

Key at the end of Table

Table D-3
AVS/SEM Sediment Chemistry Results for Remedial Investigation
Eighteenmile Creek Area of Concern

	Reach 5							Reach 6			
Sample ID	**R4-119-T**	**R5-044-V-Z1**	**R5-050-V-Z1**	**R5-116-W**	**R6-051-C**	**R6-051-CR**	**R6-052-C**	**R6-053-C**	**R6-055-C**	**R6-058-C**	**R6-061-C**
Sample Date	**11/17/09**	**05/20/10**	**05/21/10**	**11/19/09**	**11/19/09**	**11/19/09**	**11/19/09**	**11/19/09**	**11/17/09**	**11/18/09**	**11/18/09**
Sample depth (ft):	**0 - 0.5**	**0 - 1**	**0 - 1**	**0 - 0.5**	**0 - 1.2**	**0 - 1.2**	**0 - 1.3**	**0 - 1.2**	**0 - 1.1**	**0 - 2.2**	**0 - 4**
AVS (µmole/g)											
Sulfide	2.1	9.358	17.586	1.8	9	44.6	37.4	54.6	26.1	11.6	15.3
SEM by SW6010B (µmole/g)											
Cadmium	0.00059 J	0.0347 J	0.024 J	0.017 J	0.004 J	0.0041 J	0.023 J	0.0059 J	0.0056 J	0.0098 J	0.0054 J
Copper	0.011 J	0.0692 J	0.0614 J	2.5	0.54	0.53	0.29 U	0.047 J	0.087 J	0.4	0.066 J
Lead	0.024	3.8224	1.5154	1.3	0.45	0.42	6.3	0.84	0.72	0.97	0.44
Nickel	0.013 J	1.0939	0.5895	0.47 J	0.14 J	0.16 J	0.99	0.29 J	0.29 J	0.18 J	0.18 J
Silver	0.031 U	0.0946 U	0.0658 U	0.0029 J	0.067 U	0.07 U	0.069 U	0.096 U	0.064 U	0.068 U	0.066 U
Zinc	0.1	42.9795	13.8422	7.9	2.8	2.9	21.7	6.7	5.6	5.9	4.5
∑SEM	0.2	48.0	16.1	12.2	4.0	4.0	29.3	7.9	6.7	7.5	5.2
SEM-AVS	-1.9	38.7	-1.5	10.4	-5.0	-40.6	-8.1	-46.7	-19.4	-4.1	-10.1
SEM/AVS Ratio	0.1	5.1	0.9	6.8	0.4	0.1	0.8	0.1	0.3	0.6	0.3
Foc(g/g)											
Fraction organic carbon	0.02	0.09	0.06	0.07	0.06	0.08	0.08	0.06	0.05	0.07	0.09
Bioavailability Calcs											
Is ∑SEM > AVS?	No	Yes	No	Yes	No	No	No	No	No	No	No
(∑SEM > AVS)/Foc	-88	438	-24	142	-81	-501	-96	-791	-380	-61	-117
Is (∑SEM > AVS)/Foc <130?	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table D-3
AVS/SEM Sediment Chemistry Results for Remedial Investigation
Eighteenmile Creek Area of Concern

	Reach 7							Reach 7				
Sample ID	**R7-068-C**	**R7-068-CR**	**R7-073-C**	**R7-075-C**	**R7-083-C**	**R7-085-C**	**R7-087-C**	**R7-089-C**	**R7-093-C**	**R7-094-C**	**R7-095-C**	**R7-095-CR**
Sample Date	**11/25/09**	**11/25/09**	**11/24/09**	**11/24/09**	**11/30/09**	**11/30/09**	**11/30/09**	**11/25/09**	**11/24/09**	**11/23/09**	**11/23/09**	**11/23/09**
Sample depth (ft):	**0 - 2.1**	**0 - 2.1**	**0 - 2.4**	**0 - 2.1**	**0 - 3.3**	**0 - 1.6**	**0 - 2.1**	**0 - 2.9**	**0 - 0.9**	**0 - 1**	**0 - 1.3**	**0 - 1.3**
AVS (µmole/g)												
Sulfide	61.7	48.6	35.2	41.5	32.1	22.9	27.7	19	19.9	49.6	11.1	9.3
SEM by SW6010B (µmole/g)												
Cadmium	0.034 J	0.027 J	0.016 J	0.034 J	0.0089 J	0.013 J	0.012 J	0.0089 J	0.0071 J	0.012 J	0.025 J	0.028 J
Copper	0.32 U	0.0036 J	0.074 J	0.011 J	0.024 J	0.0099 J	0.0083 J	0.1 J	0.022 J	0.25 J	1.7	2
Lead	3.7	3.6	1.7	2.1	0.71	1.2	1	0.62	0.78	1.5	1.8	2
Nickel	1.1	0.97	0.39 J	0.99	0.2 J	0.35 J	0.26 J	0.25 J	0.32 J	0.3 J	0.45 J	0.5
Silver	0.075 U	0.062 U	0.068 U	0.077 U	0.0021 J	0.0043 J	0.054 U	0.055 U	0.062 U	0.09 U	0.067 U	0.064 U
Zinc	45.4	41.1	13.3	22.9	5.2	14.3	7.3	5.8	6.7	9.7	9.3	10.2
∑SEM	50.6	45.7	15.5	26.1	6.1	15.9	8.6	6.8	7.9	11.8	13.3	14.8
SEM-AVS	-11.1	-2.9	-19.7	-15.4	-26.0	-7.0	-19.1	-12.2	-12.0	-37.8	2.2	5.5
SEM/AVS Ratio	0.8	0.9	0.4	0.6	0.2	0.7	0.3	0.4	0.4	0.2	1.2	1.6
Foc(g/g)												
Fraction organic carbon	0.08	0.11	0.10	0.13	0.07	0.06	0.06	0.07	0.06	0.06	0.09	0.07
Bioavailability Calcs												
Is ∑SEM > AVS?	No	No	No	No	No	No	No	No	No	No	Yes	Yes
(∑SEM > AVS)/Foc	-141	-26	-191	-120	-371	-113	-298	-179	-201	-591	25	79
Is (∑SEM > AVS)/Foc <130?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table D-3
AVS/SEM Sediment Chemistry Results for Remedial Investigation
Eighteenmile Creek Area of Concern

	Reach 7					
Sample ID	**R7-099-C**	**R7-100-C**	**R7-104-C**	**R7-105-C**	**R7-106-C**	**R7-120-T-Z1**
Sample Date	**11/23/09**	**11/23/09**	**12/02/09**	**11/30/09**	**11/30/09**	**11/24/09**
Sample depth (ft):	**0 - 1.3**	**0 - 1.2**	**0 - 1**	**0 - 1.4**	**0 - 0.5**	**0 - 0.5**
AVS (µmole/g)						
Sulfide	35.9	7.2	30.1	3.8	12.1	3.9
SEM by SW6010B (µmole/g)						
Cadmium	0.013 J	0.006 J	0.0077 J	0.0098 J	0.002 J	0.0013 J
Copper	0.022 J	0.25	0.039 J	0.035 J	0.066 J	0.035 J
Lead	1.2	1.1	2.2	2.6	0.36	0.046
Nickel	0.31 J	0.22 J	0.39 J	0.52	0.11 J	0.031 J
Silver	0.072 U	0.046 U	0.0051 J	0.0083 J	0.0022 J	0.045 U
Zinc	8.5	5	7.2	11.3	1.8	0.36
∑SEM	10.1	6.6	9.8	14.5	2.3	0.5
SEM-AVS	-25.8	-0.6	-20.3	10.7	-9.8	-3.4
SEM/AVS Ratio	0.3	0.9	0.3	3.8	0.2	0.1
Foc(g/g)						
Fraction organic carbon	0.07	0.02	0.07	0.09	0.03	0.02
Bioavailability Calcs						
Is ∑SEM > AVS?	No	No	No	Yes	No	No
(∑SEM > AVS)/Foc	-359	-30	-312	123	-305	-170
Is (∑SEM > AVS)/Foc <130?	Yes	Yes	Yes	Yes	Yes	Yes

Key:

Yes	Exceeds criteria
AVS =	Acid Volatile Sulfides
-C =	Hand-core creek location/sample
-CR =	Duplicate hand-core creek sample
ft =	Feet
J =	Estimated at the concentration listed
µmole/g =	Micromole per gram
-P =	Ponar creek location/sample
SEM =	Simultaneously extracted metals
-T =	Tributary location/sample
U =	Non-detect.
-V =	Vibracore creek location/sample
-W =	Wetland location/sample
-Z =	Sample depth interval consecutively numbered

Table D-4

Dioxin TEQ Sediment Chemistry Results for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	TCDD TEQ	Sample ID
Creek	01	79667.36	NYSDEC 1998	DEC-2	Surface	9/12/1994	0	2	N	0.00258	DEC-2-0-61 CM CORE-9/12/1994
Creek	01	79667.36	NYSDEC 1998	DEC-2	Subsurface	9/12/1994	2	3.84	N	0.0066	DEC-2-61-117 CM CORE-9/12/1994
Creek	01	78639.06	NYSDEC 1998	DEC-3	Surface	9/12/1994	0	2	N	0.00051	DEC-3-0-61 CM CORE-9/12/1994
Creek	01	78639.06	NYSDEC 1998	DEC-3	Subsurface	9/12/1994	2	5.84	N	0.00028	DEC-3-61-178 CM CORE-9/12/1994
Creek	01	78639.06	NYSDEC 1998	DEC-3	Subsurface	9/12/1994	5.84	6.66	N	0.00029	DEC-3-178-203 CM CORE-9/12/1994
Creek	01	78639.06	NYSDEC 1998	DEC-3	Subsurface	9/12/1994	6.66	9.15	N	0.00033	DEC-3-203-279 CM CORE-9/12/1994
Creek	01	77742.53	NYSDEC 1998	DEC-4	Surface	9/12/1994	0	2	N	0.0004	DEC-4-0-24 IN CORE-9/12/1994
Creek	01	77742.53	NYSDEC 1998	DEC-4	Subsurface	9/12/1994	2	6.67	N	0.000369	DEC-4-24-80 IN CORE-9/12/1994
Creek	01	77742.53	NYSDEC 1998	DEC-4	Subsurface	9/12/1994	2.62	3.71	N	0.00011	DEC-4-80-113 IN CORE-9/12/1994
Creek	01	74931.51	NYSDEC 1998	DEC-5	Surface	9/12/1994	0	2	N	0.0006	DEC-5-0-24 IN CORE-9/12/1994
Creek	01	74931.51	NYSDEC 1998	DEC-5	Subsurface	9/12/1994	2	8	N	0.00031	DEC-5-24-96 IN CORE-9/12/1994
Creek	01	74931.51	NYSDEC 1998	DEC-5	Subsurface	9/12/1994	8	10	N	0.00036	DEC-5-96-120 IN CORE-9/12/1994
Creek	02	62416.30	NYSDEC 2001	DEC-6BCEF	Surface	8/18/1998	0	0.5	N	0.0000183	DEC-6BCEF-SURFACE-8/18/1998
Creek	02	62416.30	NYSDEC 2001	DEC-6C	Surface	8/18/1998	0	0.33	N	0.0000156	DEC-6C-0-10 CM CORE-8/18/1998
Creek	02	62416.30	NYSDEC 2001	DEC-6C	Surface	8/18/1998	0.34	0.66	N	0.0000169	DEC-6C-10-20 CM CORE-8/18/1998
Creek	02	62416.30	NYSDEC 2001	DEC-6C	Subsurface	8/18/1998	0.66	0.98	N	0.0000302	DEC-6C-20-30 CM CORE-8/18/1998
Creek	02	62416.30	NYSDEC 2001	DEC-6C	Subsurface	8/18/1998	0.98	1.31	N	0.0000428	DEC-6C-30-40 CM CORE-8/18/1998
Creek	02	62416.30	NYSDEC 2001	DEC-6C	Subsurface	8/18/1998	1.31	1.64	N	0.0000916	DEC-6C-40-50 CM CORE-8/18/1998
Creek	02	62416.30	NYSDEC 2001	DEC-6C	Subsurface	8/18/1998	1.64	1.97	N	0.0001677	DEC-6C-50-60 CM CORE-8/18/1998
Creek	02	62416.30	NYSDEC 2001	DEC-6C	Subsurface	8/18/1998	1.97	2.3	N	0.0002287	DEC-6C-60-70 CM CORE-8/18/1998
Creek	02	62416.30	NYSDEC 2001	DEC-6C	Subsurface	8/18/1998	2.3	2.62	N	0.000318	DEC-6C-70-80 CM CORE-8/18/1998
Creek	02	62416.30	NYSDEC 2001	DEC-6C	Subsurface	8/18/1998	2.62	2.95	N	0.0002231	DEC-6C-80-90 CM CORE-8/18/1998
Creek	02	62416.30	NYSDEC 2001	DEC-6C	Subsurface	8/18/1998	2.95	3.25	N	0.000193	DEC-6C-90-99 CM CORE-8/18/1998
Creek	02	62233.91	NYSDEC 1998	DEC-6	Surface	10/11/1994	0	1.7	N	0.1329	DEC-6-0-20 IN CORE-10/11/1994
Creek	02	62233.91	NYSDEC 1998	DEC-6	Subsurface	10/11/1994	1.67	2	N	1.3053	DEC-6-20-24 IN CORE-10/11/1994
Creek	03	60753.83	NYSDEC 2001	DEC-6E	Surface	8/18/1998	0	0.85	N	0.0000407	DEC-6E-0-26 CM CORE-8/18/1998
Creek	03	60753.83	NYSDEC 2001	DEC-6E	Subsurface	8/18/1998	0.85	1.31	N	0.0000823	DEC-6E-26-40 CM CORE-8/18/1998
Creek	03	60753.83	NYSDEC 2001	DEC-6E	Subsurface	8/18/1998	1.31	1.84	N	0.0004366	DEC-6E-40-56 CM CORE-8/18/1998
Creek	03	60753.83	NYSDEC 2001	DEC-6E	Subsurface	8/18/1998	1.84	2.43	N	0.0002581	DEC-6E-56-74 CM CORE-8/18/1998
Creek	03	59487.84	NYSDEC 2001	DEC-6F	Surface	8/18/1998	0	0.33	N	0.0000134	DEC-6F-0-10 CM CORE-8/18/1998
Creek	03	59487.84	NYSDEC 2001	DEC-6F	Surface	8/18/1998	0.33	0.92	N	0.000034	DEC-6F-10-28 CM CORE-8/18/1998
Creek	03	59487.84	NYSDEC 2001	DEC-6F	Subsurface	8/18/1998	0.92	1.71	N	0.0000888	DEC-6F-28-52 CM CORE-8/18/1998

Table D-4

Dioxin TEQ Sediment Chemistry Results for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	TCDD TEQ	Sample ID
Creek	03	59487.84	NYSDEC 2001	DEC-6F	Subsurface	8/18/1998	1.71	2.3	N	0.000016	DEC-6F-52-70 CM CORE-8/18/1998
Creek	03	59487.84	NYSDEC 2001	DEC-6F	Subsurface	8/18/1998	2.3	3.61	N	0.0000001	DEC-6F-70-110 CM CORE-8/18/1998
Creek	04	52060.78	NYSDEC 2001	DEC-7A	Surface	8/19/1998	0	0.66	N	0.0000535	DEC-7A-0-20 CM CORE-8/19/1998
Creek	04	52060.78	NYSDEC 2001	DEC-7A	Surface	8/19/1998	0	0.5	N	0.0000371	DEC-7ABC-SURFACE-8/19/1998
Creek	04	52060.78	NYSDEC 2001	DEC-7A	Subsurface	8/19/1998	0.66	1.64	N	0.0002183	DEC-7A-20-50 CM CORE-8/19/1998
Creek	04	52060.78	NYSDEC 2001	DEC-7A	Subsurface	8/19/1998	1.64	2.95	N	0.0000041	DEC-7A-50-90 CM CORE-8/19/1998
Creek	04	52060.78	NYSDEC 2001	DEC-7A	Subsurface	8/19/1998	2.95	3.41	N	0.0000087	DEC-7A-90-104 CM CORE-8/19/1998
Creek	05	51902.61	NYSDEC 1998	DEC-7	Surface	10/12/1994	0	1	N	0.6476	DEC-7-0-12 IN CORE-10/12/1994
Creek	05	51902.61	NYSDEC 1998	DEC-7	Subsurface	10/12/1994	1	1.67	N	0.7133	DEC-7-12-20 IN CORE-10/12/1994
Creek	05	50626.56	NYSDEC 2001	DEC-7B	Surface	8/19/1998	0	0.66	N	0.0000391	DEC-7B-0-20 CM CORE-8/19/1998
Creek	05	50626.56	NYSDEC 2001	DEC-7B	Subsurface	8/19/1998	0.66	1.9	N	0.0000107	DEC-7B-20-58 CM CORE-8/19/1998
Creek	05	50626.56	NYSDEC 2001	DEC-7B	Subsurface	8/19/1998	1.9	2.17	N	0.0000001	DEC-7B-58-66 CM CORE-8/19/1998
Creek	05	49732.26	NYSDEC 2001	DEC-7C	Surface	8/19/1998	0	0.66	N	0.0001213	DEC-7C-0-20 CM CORE-8/19/1998
Creek	05	49732.26	NYSDEC 2001	DEC-7C	Subsurface	8/19/1998	0.66	2.3	N	0.0000001	DEC-7C-20-70 CM CORE-8/19/1998
Creek	05	49732.26	NYSDEC 2001	DEC-7C	Subsurface	8/19/1998	2.3	2.72	N	0.0000007	DEC-7C-70-83 CM CORE-8/19/1998
Creek	10	3408.73	NYSDEC 2001	DEC-12	SURFACE	8/17/1998	0	0.59	N	0.0001591	DEC-12-0-18 CM CORE-8/19/1998
Creek	10	3408.73	NYSDEC 2001	DEC-12	SUBSURFACE	8/17/1998	0.59	0.89	N	0.0000667	DEC-12-18-27 CM CORE-8/19/1998
Creek	10	818.58	NYSDEC 1998	DEC-8	Surface	10/12/1994	0	1.07	N	0.06053	DEC-8-0-33 cm core-10/12/1994
Canal	Erie Canal	0.00	NYSDEC 2001	DEC-8A	SURFACE	8/20/1998	0	0.33	N	0.0000018	DEC-8A-0-10 CM CORE-8/20/1998
Canal	Erie Canal	0.00	NYSDEC 2001	DEC-8A	SUBSURFACE	8/20/1998	0.33	0.66	N	0.0000244	DEC-8A-10-20 CM CORE-8/20/1998
Canal	Erie Canal	0.00	NYSDEC 2001	DEC-8A	SUBSURFACE	8/20/1998	0.66	0.98	N	0.0000528	DEC-8A-20-30 CM CORE-8/20/1998
Canal	Erie Canal	0.00	NYSDEC 2001	DEC-8A	SUBSURFACE	8/20/1998	0.98	1.31	N	0.0001827	DEC-8A-30-40 CM CORE-8/20/1998
Canal	Erie Canal	0.00	NYSDEC 2001	DEC-8A	SUBSURFACE	8/20/1998	1.31	1.64	N	0.0000486	DEC-8A-40-50 CM CORE-8/20/1998
Canal	Erie Canal	0.00	NYSDEC 2001	DEC-8A	SUBSURFACE	8/20/1998	1.64	1.97	N	0.0000165	DEC-8A-50-60 CM CORE-8/20/1998
Canal	Erie Canal	0.00	NYSDEC 2001	DEC-8A	SUBSURFACE	8/20/1998	1.97	2.3	N	0.000013	DEC-8A-60-70 CM CORE-8/20/1998
Canal	Erie Canal	0.00	NYSDEC 2001	DEC-8A	SUBSURFACE	8/20/1998	2.3	2.62	N	0.0000262	DEC-8A-70-80 CM CORE-8/20/1998

Table D-4

Dioxin TEQ Sediment Chemistry Results for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	TCDD TEQ	Sample ID
Canal	Erie Canal	0.00	NYSDEC 2001	DEC-8A	SUBSURFACE	8/20/1998	2.62	2.95	N	0.0001473	DEC-8A-80-90 CM CORE-8/20/1998
Canal	Erie Canal	0.00	NYSDEC 2001	DEC-8A	SUBSURFACE	8/20/1998	2.95	3.08	N	0.0000613	DEC-8A-90-94 CM CORE-8/20/1998
Upstream	Upstream	-9999.00	NYSDEC 2001	DEC-9	SURFACE	8/17/1998	0	0.5	N	0.0000017	DEC-9-SURFACE-8/17/1998
Tributary	07	27500.00	NYSDEC 2001	DEC-10	SURFACE	8/18/1998	0	0.5	N	0.0000007	DEC-10-SURFACE-8/18/1998
Tributary	07	7750.00	NYSDEC 2001	DEC-11	Surface	8/17/1998	0	0.5	N	0.0000067	DEC-11-SURFACE-8/17/1998

Notes:

All concentrations reported in milligram/kilogram (mg/kg)

Key:

-9999	=	Upstream no coordinate or distance available
DEC	=	New York State Department of Environmental Conservation
ft	=	Feet
N	=	Normal Sample
TCDD	=	2,3,7,8-tetrachlorodibenzo-p-dioxin
TEQ	=	toxic equivalent

Table D-5
Sediment Geotechnical Results for Remedial Investigation
Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	Fines	Fine Sand	Coarse Sand	Medium Sand	Sand	Gravel	Sieve Bottom Plate	Sieve No. 4	Sieve No. 10	Sieve No. 16	Sieve No. 35	Sieve, No. 20	Sieve No. 40	Sieve No. 50	Sieve, No. 60	Sieve No. 80	Sieve, No. 100	Sieve No. 200	Sieve, 19000 (microns)	Sieve, 25000 (microns)	Sieve, 37500 (microns)	Sieve, 50000 (microns)	Sieve, 75000 (microns)	Sieve, 9500 (microns)	Solids, Percent	Sample ID
Creek	02	68416	USEPA GLNPO	R2-003-V-P	Surface	05/18/10	0	1	N	98	0.9	0.1	0.1		0.5		99	99			99	99		99	99	99	98	100	100	100	100	100	100	28	R2-003-V-Z1P
Creek	02	68415	USEPA GLNPO	R2-003-V	Surface	05/18/10	0	1	N	98	0.6	0.5	0.3		0.6		99	99			99	99		98	98	98	98	100	100	100	100	100	100	28	R2-003-V-Z1
Creek	02	68415	USEPA GLNPO	R2-003-V	Subsurface	05/18/10	1	2	N	99	0.3	0.2	0.1				100	100			100	100		100	99	99	99	100	100	100	100	100	100	33	R2-003-V-Z2
Creek	02	68415	USEPA GLNPO	R2-003-V	Subsurface	05/18/10	2	3	N	98	1.2	0.2	0.3				100	100			100	99		99	99	99	98	100	100	100	100	100	100	29	R2-003-V-Z3
Creek	02	68415	USEPA GLNPO	R2-003-V	Subsurface	05/18/10	3	4	N	99	0.6	0.3	0.2				100	100			100	99		99	99	99	99	100	100	100	100	100	100	34	R2-003-V-Z4
Creek	02	68415	USEPA GLNPO	R2-003-V	Subsurface	05/18/10	4	5	N	96	1.6	0.1	2.1				100	100			99	98		97	97	97	96	100	100	100	100	100	100	46	R2-003-V-Z5
Creek	02	68415	USEPA GLNPO	R2-003-V	Subsurface	05/18/10	6	7	N	55	31	4.6	7		1.5		98	94			91	87		84	80	77	55	100	100	100	100	100	100	54	R2-003-V-Z6
Creek	02	68399	USEPA GLNPO	R2-002-V-P	Surface	05/18/10	0	1	N	98	0.4	1	0.1				100	99			99	99		99	99	99	98	100	100	100	100	100	100	27	R2-002-V-Z1P
Creek	02	68395	USEPA GLNPO	R2-002-V	Surface	05/18/10	0	1	N	99	0.1	1.1					100	99			99	99		99	99	99	99	100	100	100	100	100	100	28	R2-002-V-Z1
Creek	02	68395	USEPA GLNPO	R2-002-V	Subsurface	05/18/10	1	2	N	98	0.9	0.5	0.9				100	99			99	99		98	98	98	98	100	100	100	100	100	100	30	R2-002-V-Z2
Creek	02	68395	USEPA GLNPO	R2-002-V	Subsurface	05/18/10	2	3	N	99	0.1	0.7	0.3				100	99			99	99		99	99	99	99	100	100	100	100	100	100	32	R2-002-V-Z3
Creek	02	68395	USEPA GLNPO	R2-002-V	Subsurface	05/18/10	3	4	N	96	1.8	0.5	1.4				100	99			99	98		98	98	98	96	100	100	100	100	100	100	31	R2-002-V-Z4
Creek	02	68395	USEPA GLNPO	R2-002-V	Subsurface	05/18/10	4	6	FD	89	9.1	0.4	1.7		0.2		100	99			98	98		97	97	96	89	100	100	100	100	100	100	39	R2-002-VR
Creek	02	68395	USEPA GLNPO	R2-002-V	Subsurface	05/18/10	4	6	N	88	9.6	0.8	1.3		0.3		100	99			98	98		97	96	96	88	100	100	100	100	100	100	46	R2-002-V-Z5
Creek	02	68395	USEPA GLNPO	R2-002-V	Subsurface	05/18/10	6	7.5	N	91	8.1	0.6	0.8				100	99			99	99		98	98	97	91	100	100	100	100	100	100	48	R2-002-V-Z6
Creek	02	68375	USEPA GLNPO	R2-001-V-P	Surface	05/18/10	0	1	N	99	0.3	0.5	0.1				100	99			99	99		99	99	99	99	100	100	100	100	100	100	30	R2-001-V-Z1P
Creek	02	68375	USEPA GLNPO	R2-001-V	Subsurface	05/18/10	1	2	N	99	0.5	0.2	0.5				100	100			99	99		99	99	99	99	100	100	100	100	100	100	30	R2-001-V-Z2
Creek	02	68375	USEPA GLNPO	R2-001-V	Subsurface	05/18/10	2	3	N	98	1.1	0.6	0.4				100	99			99	99		99	99	99	98	100	100	100	100	100	100	28	R2-001-V-Z3
Creek	02	68375	USEPA GLNPO	R2-001-V	Subsurface	05/18/10	3	4	N	97	1.1	0.6	1.1				100	99			99	98		98	98	98	97	100	100	100	100	100	100	33	R2-001-V-Z4
Creek	02	68375	USEPA GLNPO	R2-001-V	Subsurface	05/18/10	4	5	N	88	7.1		5				100	100			98	95		93	92	92	88	100	100	100	100	100	100	53	R2-001-V-Z5
Creek	02	68375	USEPA GLNPO	R2-001-V	Subsurface	05/18/10	6	7	N	92	6.2	0.6	1.7				100	99			98	98		97	96	95	92	100	100	100	100	100	100	76	R2-001-V-Z6
Creek	02	67111	USEPA GLNPO	R2-005-V	Surface	05/19/10	0	1	N	99	0.9		0.3				100	100			100	100		100	99	99	99	100	100	100	100	100	100	34	R2-005-V-Z1
Creek	02	67111	USEPA GLNPO	R2-005-V	Subsurface	05/19/10	1	2	N	99	0.4	0.1	0.3				100	100			100	100		99	99	99	99	100	100	100	100	100	100	37	R2-005-V-Z2
Creek	02	67111	USEPA GLNPO	R2-005-V	Subsurface	05/19/10	2	3	N	98	1.3		0.7				100	100			100	99		99	99	99	98	100	100	100	100	100	100	31	R2-005-V-Z3
Creek	02	67111	USEPA GLNPO	R2-005-V	Subsurface	05/19/10	3	4	N	97	2		0.7				100	100			100	99		99	99	98	97	100	100	100	100	100	100	34	R2-005-V-Z4
Creek	02	67111	USEPA GLNPO	R2-005-V	Subsurface	05/19/10	4	6	N	97	1.9		0.8				100	100			100	99		99	98	98	97	100	100	100	100	100	100	42	R2-005-V-Z5
Creek	02	67111	USEPA GLNPO	R2-005-V	Subsurface	05/19/10	6	7	N	99	0.6		0.6				100	100			99	99		99	99	99	99	100	100	100	100	100	100	39	R2-005-V-Z6
Creek	02	67109	USEPA GLNPO	R2-004-V	Surface	05/18/10	0	1	N	99	0.3		0.2				100	100			100	100		100	100	100	99	100	100	100	100	100	100	31	R2-004-V-Z1
Creek	02	67109	USEPA GLNPO	R2-004-V	Subsurface	05/18/10	1	2	FD	99	0.6						100	100			100	100		100	100	99	99	100	100	100	100	100	100	33	R2-004-VR
Creek	02	67109	USEPA GLNPO	R2-004-V	Subsurface	05/18/10	1	2	N	100	0.3		0.1				100	100			100	100		100	100	100	100	100	100	100	100	100	100	33	R2-004-V-Z2
Creek	02	67109	USEPA GLNPO	R2-004-V	Subsurface	05/18/10	2	3	N	98	1.5		0.4				100	100			100	100		99	99	99	98	100	100	100	100	100	100	30	R2-004-V-Z3
Creek	02	67109	USEPA GLNPO	R2-004-V	Subsurface	05/18/10	3	3.5	N	98	0.9		0.7				100	100			100	99		99	99	99	98	100	100	100	100	100	100	35	R2-004-V-Z4
Creek	02	67109	USEPA GLNPO	R2-004-V	Subsurface	05/18/10	4.5	5	N	78	10	3.3	4.4		4.3		96	92			91	88		86	85	84	78	100	100	100	100	100	100	70	R2-004-V-Z5
Creek	02	67108	USEPA GLNPO	R2-004-V-P	Surface	05/18/10	0	1	N	99	0.3		0.2				100	100			100	100		100	100	100	99	100	100	100	100	100	100	26	R2-004-V-Z1P
Creek	02	67108	USEPA GLNPO	R2-005-V-P	Surface	05/19/10	0	1	N	99	0.4	0.1	0.1				100	100			100	100		100	100	100	99	100	100	100	100	100	100	34	R2-005-V-Z1P
Creek	02	67102	USEPA GLNPO	R2-006-V-P	Surface	05/19/10	0	1	N	98	1.4	0.6	0.3				100	99			99	99		99	99	99	98	100	100	100	100	100	100	35	R2-006-V-Z1P
Creek	02	67100	USEPA GLNPO	R2-006-V	Surface	05/19/10	0	1	N	94	4.9	0.4	0.6				100	100			99	99		98	98	98	94	100	100	100	100	100	100	45	R2-006-V-Z1
Creek	02	67100	USEPA GLNPO	R2-006-V	Subsurface	05/19/10	1	2	N	98	1.4	0.1	0.5				100	100			100	99		99	99	99	98	100	100	100	100	100	100	38	R2-006-V-Z2
Creek	02	67100	USEPA GLNPO	R2-006-V	Subsurface	05/19/10	2	3	FD	92	6.2	0.4	1.7				100	100			99	98		97	96	95	92	100	100	100	100	100	100	32	R2-006-VR
Creek	02	67100	USEPA GLNPO	R2-006-V	Subsurface	05/19/10	2	3	N	94	4.3	0.4	1				100	100			99	99		98	98	97	94	100	100	100	100	100	100	38	R2-006-V-Z3
Creek	02	67100	USEPA GLNPO	R2-006-V	Subsurface	05/19/10	3	4	N	99	0.3		0.4				100	100			100	99		99	99	99	99	100	100	100	100	100	100	40	R2-006-V-Z4
Creek	02	67100	USEPA GLNPO	R2-006-V	Subsurface	05/19/10	4	5	N	99	0.4		0.3				100	100			100	100		100	100	100	99	100	100	100	100	100	100	39	R2-006-V-Z5A
Creek	02	67100	USEPA GLNPO	R2-006-V	Subsurface	05/19/10	5	6	N	97	2.9		0.4				100	100			100	100		99	99	99	97	100	100	100	100	100	100	59	R2-006-V-Z5B
Creek	02	65759	USEPA GLNPO	R2-007-V	Surface	05/19/10	0	1	N	100	0.1		0.2				100	100			100	100		100	100	100	100	100	100	100	100	100	100	31	R2-007-V-Z1
Creek	02	65759	USEPA GLNPO	R2-007-V	Surface	05/19/10	0	1	N	100	0.1						100	100			100	100		100	100	100	100	100	100	100	100	100	100	33	R2-007-V-Z1P
Creek	02	65759	USEPA GLNPO	R2-007-V	Subsurface	05/19/10	1	2	N	100							100	100			100	100		100	100	100	100	100	100	100	100	100	100	35	R2-007-V-Z2
Creek	02	65759	USEPA GLNPO	R2-007-V	Subsurface	05/19/10	2	3	N	100	0.1		0.1				100	100			100	100		100	100	100	100	100	100	100	100	100	100	30	R2-007-V-Z3
Creek	02	65759	USEPA GLNPO	R2-007-V	Subsurface	05/19/10	3	4	N	100	0.1						100	100			100	100		100	100	100	100	100	100	100	100	100	100	37	R2-007-V-Z4
Creek	02	65759	USEPA GLNPO	R2-007-V	Subsurface	05/19/10	4	5	N	65	9.1	3.6	12		11		89	86			79	74		72	69	69	65	100	100	100	100	100	94	63	R2-007-V-Z5A
Creek	02	65759	USEPA GLNPO	R2-007-V	Subsurface	05/19/10	5	6	N	80	16	0.7	3.1		0.4		100	99			98	96		93	89	88	80	100	100	100	100	100	100	81	R2-007-V-Z5B
Creek	02	65640	USEPA GLNPO	R2-008-V	Surface	05/19/10	0	1	N	100	0.2		0.1				100	100			100	100		100	100	100	100	100	100	100	100	100	100	33	R2-008-V-Z1
Creek	02	65640	USEPA GLNPO	R2-008-V	Surface	05/19/10	0	1	N	100	0.1	0.3					100	100			100	100		100	100	100	100	100	100	100	100	100	100	31	R2-008-V-Z1P
Creek	02	65640	USEPA GLNPO	R2-008-V	Subsurface	05/19/10	1	2	N	99	0.7		0.4				100	100			100	100		99	99	99	99	100	100	100	100	100	100	36	R2-008-V-Z2
Creek	02	65640	USEPA GLNPO	R2-008-V	Subsurface	05/19/10	2	3	N	99	0.4		0.7				100	100			99	99		99	99	99	99	100	100	100	100	100	100	33	R2-008-V-Z3
Creek	02	65640	USEPA GLNPO	R2-008-V	Subsurface	05/19/10	3	4	N	99	0.4		0.5				100	100			100	99		99	99	99	99	100	100	100	100	100	100	38	R2-008-V-Z4
Creek	02	65640	USEPA GLNPO	R2-008-V	Subsurface	05/19/10	4.5	5	N	66	14	2.3	14		3.3		97	94			85	80		76	73	72	66	100	100	100	100	100	99	84	R2-008-V-Z5
Creek	02	65562	USEPA GLNPO	R2-009-V	Surface	05/19/10	0	1	N	99	0.4		0.4				100	100			100	100		99	99	99	99	100	100	100	100	100	100	34	R2-009-V-Z1

Table D-5
Sediment Geotechnical Results for Remedial Investigation
Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	Fines	Fine Sand	Coarse Sand	Medium Sand	Sand	Gravel	Sieve Bottom Plate	Sieve No. 4	Sieve No. 10	Sieve No. 16	Sieve No. 35	Sieve, No. 20	Sieve No. 40	Sieve No. 50	Sieve, No. 60	Sieve No. 80	Sieve, No. 100	Sieve No. 200	Sieve, 19000 (microns)	Sieve, 25000 (microns)	Sieve, 37500 (microns)	Sieve, 50000 (microns)	Sieve, 75000 (microns)	Sieve, 9500 (microns)	Solids, Percent	Sample ID
Creek	02	65562	USEPA GLNPO	R2-009-V	Surface	05/19/10	0	1	N	99	0.8		0.4				100	100			100	100		99	99	99	99	100	100	100	100	100	100	30	R2-009-V-Z1P
Creek	02	65562	USEPA GLNPO	R2-009-V	Subsurface	05/19/10	1	2	N	99	0.5		0.6				100	100			100	99		99	99	99	99	100	100	100	100	100	100	36	R2-009-V-Z2
Creek	02	65562	USEPA GLNPO	R2-009-V	Subsurface	05/19/10	2	3	N	97	2.3	0.2	0.4				100	100			100	99		99	99	99	97	100	100	100	100	100	100	34	R2-009-V-Z3
Creek	02	65562	USEPA GLNPO	R2-009-V	Subsurface	05/19/10	3	4	FD	99	0.4		0.4				100	100			100	100		99	99	99	99	100	100	100	100	100	100	38	R2-009-VR
Creek	02	65562	USEPA GLNPO	R2-009-V	Subsurface	05/19/10	3	4	N	92	5.3	0.3	2.9				100	100			98	97		96	95	95	92	100	100	100	100	100	100	39	R2-009-V-Z4
Creek	02	65562	USEPA GLNPO	R2-009-V	Subsurface	05/19/10	4	5.5	N	65	22	2.6	8.9		1.4		99	96			93	87		80	75	73	65	100	100	100	100	100	100	49	R2-009-V-Z5
Creek	02	63171	USEPA GLNPO	R2-010-V	Surface	05/25/10	0	1	N	99	0.9		0.2				100	100			100	100		100	100	99	99	100	100	100	100	100	100	29	R2-010-V-Z1
Creek	02	63171	USEPA GLNPO	R2-010-V	Subsurface	05/25/10	1	2	N	98	1.3		0.2				100	100			100	100		100	99	99	98	100	100	100	100	100	100	34	R2-010-V-Z2
Creek	02	63171	USEPA GLNPO	R2-010-V	Subsurface	05/25/10	2	3	N	99	0.6		0.3				100	100			100	100		100	99	99	99	100	100	100	100	100	100	38	R2-010-V-Z3
Creek	02	63171	USEPA GLNPO	R2-010-V	Subsurface	05/25/10	3	4	N	98	0.7		1.4				100	100			99	99		98	98	98	98	100	100	100	100	100	100	32	R2-010-V-Z4
Creek	02	63171	USEPA GLNPO	R2-010-V	Subsurface	05/25/10	4	6	N	98	0.8		0.7				100	100			99	99		99	99	99	98	100	100	100	100	100	100	36	R2-010-V-Z5
Creek	02	63171	USEPA GLNPO	R2-010-V	Subsurface	05/25/10	6	8	FD	98	2		0.5				100	100			100	99		99	99	99	98	100	100	100	100	100	100	48	R2-010-VR
Creek	02	63171	USEPA GLNPO	R2-010-V	Subsurface	05/25/10	6	8	N	98	1.8		0.3				100	100			100	100		99	99	99	98	100	100	100	100	100	100	50	R2-010-V-Z6
Creek	02	63171	USEPA GLNPO	R2-010-V	Subsurface	05/25/10	8	9	N	90	9.4		0.6				100	100			100	99		98	97	96	90	100	100	100	100	100	100	79	R2-010-V-Z7A
Creek	02	63171	USEPA GLNPO	R2-010-V	Subsurface	05/25/10	9	10	N	85	13		2				100	100			99	98		96	93	92	85	100	100	100	100	100	100	79	R2-010-V-Z7B
Creek	02	63153	USEPA GLNPO	R2-011-V	Surface	05/25/10	0	1	N	95	4.3		0.8				100	100			100	99		99	98	98	95	100	100	100	100	100	100	30	R2-011-V-Z1
Creek	02	63153	USEPA GLNPO	R2-011-V	Subsurface	05/25/10	1	2	N	98	1.6		0.7				100	100			99	99		99	99	99	98	100	100	100	100	100	100	40	R2-011-V-Z2
Creek	02	63153	USEPA GLNPO	R2-011-V	Subsurface	05/25/10	2	3	N	97	2.3		0.5				100	100			100	99		99	99	99	97	100	100	100	100	100	100	40	R2-011-V-Z3
Creek	02	63153	USEPA GLNPO	R2-011-V	Subsurface	05/25/10	3	4	N	99	0.8		0.6				100	100			100	99		99	99	99	99	100	100	100	100	100	100	37	R2-011-V-Z4
Creek	02	63153	USEPA GLNPO	R2-011-V	Subsurface	05/25/10	4	6	N	98	1.1		1.4				100	100			99	99		98	98	98	98	100	100	100	100	100	100	34	R2-011-V-Z5
Creek	02	63153	USEPA GLNPO	R2-011-V	Subsurface	05/25/10	6	8	N	98	0.8		1.1				100	100			99	99		99	99	99	98	100	100	100	100	100	100	37	R2-011-V-Z6
Creek	02	63153	USEPA GLNPO	R2-011-V	Subsurface	05/25/10	8	10	N	96	3.1		0.7				100	100			100	99		99	99	99	96	100	100	100	100	100	100	45	R2-011-V-Z7
Creek	02	63153	USEPA GLNPO	R2-011-V	Subsurface	05/25/10	10	11.5	N	99	0.7		0.3				100	100			100	100		100	100	100	99	100	100	100	100	100	100	52	R2-011-V-Z8
Creek	02	63096	USEPA GLNPO	R2-012-V	Surface	05/25/10	0	1	N	97	2.3		0.3				100	100			100	100		99	99	99	97	100	100	100	100	100	100	29	R2-012-V-Z1
Creek	02	63096	USEPA GLNPO	R2-012-V	Subsurface	05/25/10	1	2	N	99	0.9		0.2				100	100			100	100		100	100	100	99	100	100	100	100	100	100	38	R2-012-V-Z2
Creek	02	63096	USEPA GLNPO	R2-012-V	Subsurface	05/25/10	2	3	N	94	4.4	0.5	0.8				100	99			99	99		98	97	97	94	100	100	100	100	100	100	40	R2-012-V-Z3
Creek	02	63096	USEPA GLNPO	R2-012-V	Subsurface	05/25/10	3	4	FD	99	0.9		0.4				100	100			100	100		99	99	99	99	100	100	100	100	100	100	37	R2-012-VR
Creek	02	63096	USEPA GLNPO	R2-012-V	Subsurface	05/25/10	3	4	N	97	2.2	0.2	0.8				100	100			99	99		98	98	98	97	100	100	100	100	100	100	37	R2-012-V-Z4
Creek	02	63096	USEPA GLNPO	R2-012-V	Subsurface	05/25/10	4	6	N	93	2.8	0.6	3.3		0.6		99	99			96	95		95	94	94	93	100	100	100	100	100	100	35	R2-012-V-Z5
Creek	02	63096	USEPA GLNPO	R2-012-V	Subsurface	05/25/10	6	8	N	77	8.5	2.6	5.4		6.7		93	91			89	85		82	81	80	77	100	100	100	100	100	94	48	R2-012-V-Z6
Creek	02	63096	USEPA GLNPO	R2-012-V	Subsurface	05/25/10	8	9	N	42	11	6.8	24		17		83	76			61	52		48	46	45	42	100	100	100	100	100	92	78	R2-012-V-Z7
Creek	02	61625	USEPA GLNPO	R2-013-V	Surface	05/25/10	0	1	N	92	5.9	0.6	1.6				100	99			99	98		97	96	96	92	100	100	100	100	100	100	25	R2-013-V-Z1
Creek	02	61625	USEPA GLNPO	R2-013-V	Subsurface	05/25/10	1	2	N	93	5	0.8	1.3				100	99			98	98		97	97	96	93	100	100	100	100	100	100	34	R2-013-V-Z2
Creek	02	61625	USEPA GLNPO	R2-013-V	Subsurface	05/25/10	2	3	N	92	5.4	0.3	2.3				100	100			99	97		96	95	95	92	100	100	100	100	100	100	39	R2-013-V-Z3
Creek	02	61625	USEPA GLNPO	R2-013-V	Subsurface	05/25/10	3	4	N	95	3.8	0.2	1.2				100	100			99	99		98	98	97	95	100	100	100	100	100	100	40	R2-013-V-Z4
Creek	02	61625	USEPA GLNPO	R2-013-V	Subsurface	05/25/10	4	6	N	92	3.1	1.5	3.9				100	98			96	95		94	93	93	92	100	100	100	100	100	100	32	R2-013-V-Z5
Creek	02	61625	USEPA GLNPO	R2-013-V	Subsurface	05/25/10	6	8	N	89	4.9	0.7	5				100	99			97	94		93	92	91	89	100	100	100	100	100	100	35	R2-013-V-Z6
Creek	02	61625	USEPA GLNPO	R2-013-V	Subsurface	05/25/10	8	10	N	89	6.2	0.8	4.1				100	99			98	95		93	92	91	89	100	100	100	100	100	100	38	R2-013-V-Z7
Creek	02	61625	USEPA GLNPO	R2-013-V	Subsurface	05/25/10	10	12	N	87	6.9	0.1	5.6				100	100			98	94		92	91	91	87	100	100	100	100	100	100	43	R2-013-V-Z8
Creek	02	61620	USEPA GLNPO	R2-015-V	Surface	05/25/10	0	1	N	90	8.2	0.3	1.7				100	100			99	98		97	96	95	90	100	100	100	100	100	100	38	R2-015-V-Z1
Creek	02	61620	USEPA GLNPO	R2-015-V	Subsurface	05/25/10	1	2	N	86	13	0.3	1.6				100	100			99	98		97	96	95	86	100	100	100	100	100	100	31	R2-015-V-Z2
Creek	02	61620	USEPA GLNPO	R2-015-V	Subsurface	05/25/10	2	3	N	92	4.1	1.6	2.5				100	98			97	96		95	94	94	92	100	100	100	100	100	100	31	R2-015-V-Z3
Creek	02	61620	USEPA GLNPO	R2-015-V	Subsurface	05/25/10	3	4	N	91	3.7	0.4	5				100	100			96	94		93	93	92	91	100	100	100	100	100	100	31	R2-015-V-Z4
Creek	02	61620	USEPA GLNPO	R2-015-V	Subsurface	05/25/10	4	6	N	89	3.9		6.6				100	100			96	93		92	91	91	89	100	100	100	100	100	100	38	R2-015-V-Z5
Creek	02	61620	USEPA GLNPO	R2-015-V	Subsurface	05/25/10	6	8	N	93	3.4	0.1	3.2		0.4		100	99			98	96		95	95	95	93	100	100	100	100	100	100	47	R2-015-V-Z6
Creek	02	61620	USEPA GLNPO	R2-015-V	Subsurface	05/25/10	8	10	N	91	8.4		0.3				100	100			100	100		98	97	96	91	100	100	100	100	100	100	62	R2-015-V-Z7A
Creek	02	61620	USEPA GLNPO	R2-015-V	Subsurface	05/25/10	9	9.5	N	93	6.8		0.2				100	100			100	100		99	98	98	93	100	100	100	100	100	100	82	R2-015-V-Z7B
Creek	02	61618	USEPA GLNPO	R2-014-V	Surface	05/25/10	0	1	N	73	22	1.1	4.1				100	99			98	95		91	88	86	73	100	100	100	100	100	100	29	R2-014-V-Z1
Creek	02	61618	USEPA GLNPO	R2-014-V	Subsurface	05/25/10	1	2	N	75	21	0.4	2.8				100	100			99	97		94	91	89	75	100	100	100	100	100	100	40	R2-014-V-Z2
Creek	02	61618	USEPA GLNPO	R2-014-V	Subsurface	05/25/10	2	3	N	88	9.4	0.6	1.6				100	99			99	98		96	95	94	88	100	100	100	100	100	100	32	R2-014-V-Z3
Creek	02	61618	USEPA GLNPO	R2-014-V	Subsurface	05/25/10	3	4	N	92	5	1	1.9				100	99			99	97		96	95	94	92	100	100	100	100	100	100	29	R2-014-V-Z4
Creek	02	61618	USEPA GLNPO	R2-014-V	Subsurface	05/25/10	4	6	FD	88	5.3	0.4	6				100	100			98	94		91	90	90	88	100	100	100	100	100	100	32	R2-014-VR
Creek	02	61618	USEPA GLNPO	R2-014-V	Subsurface	05/25/10	4	6	N	89	7	1	2.6				100	99			99	96		94	93	92	89	100	100	100	100	100	100	32	R2-014-V-Z5
Creek	02	61618	USEPA GLNPO	R2-014-V	Subsurface	05/25/10	6	8	N	90	6.2		3.9				100	100			100	96		93	92	92	90	100	100	100	100	100	100	36	R2-014-V-Z6
Creek	02	61618	USEPA GLNPO	R2-014-V	Subsurface	05/25/10	8	10	N	95	3.3		1.7				100	100			99	98		98	97	97	95	100	100	100	100	100	100	29	R2-014-V-Z7
Creek	03	60757	USEPA GLNPO	R3-018-V	Surface	05/25/10	0	1	N	84	14	0.6	1.1				100	99			99	98		97	97	96	84	100	100	100	100	100	100		R3-018-V-Z1
Creek	03	60757	USEPA GLNPO	R3-018-V	Subsurface	05/25/10	1	2	N	90	8.6	0.2	0.9				100	100			99	99		98	98	98	90	100	100	100	100	100	100	37	R3-018-V-Z2

Table D-5
Sediment Geotechnical Results for Remedial Investigation
Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	Fines	Fine Sand	Coarse Sand	Medium Sand	Sand	Gravel	Sieve Bottom Plate	Sieve No. 4	Sieve No. 10	Sieve No. 16	Sieve No. 35	Sieve, No. 20	Sieve No. 40	Sieve No. 50	Sieve, No. 60	Sieve No. 80	Sieve, No. 100	Sieve No. 200	Sieve, 19000 (microns)	Sieve, 25000 (microns)	Sieve, 37500 (microns)	Sieve, 50000 (microns)	Sieve, 75000 (microns)	Sieve, 9500 (microns)	Solids, Percent	Sample ID
Creek	03	60757	USEPA GLNPO	R3-018-V	Subsurface	05/25/10	2	3	N	95	2.7	0.1	1.9				100	100			98	98		98	98	98	95	100	100	100	100	100	100	29	R3-018-V-Z3
Creek	03	60757	USEPA GLNPO	R3-018-V	Subsurface	05/25/10	3	4	N	97	1.4		1.3				100	100			99	99		98	98	98	97	100	100	100	100	100	100	30	R3-018-V-Z4
Creek	03	60757	USEPA GLNPO	R3-018-V	Subsurface	05/25/10	4	6	N	97	2.3	0.1	0.6				100	100			100	99		99	99	99	97	100	100	100	100	100	100	31	R3-018-V-Z5
Creek	03	60757	USEPA GLNPO	R3-018-V	Subsurface	05/25/10	6	8	N	93	5.9	0.1	0.8				100	100			99	99		99	98	98	93	100	100	100	100	100	100	39	R3-018-V-Z6
Creek	03	60757	USEPA GLNPO	R3-018-V	Subsurface	05/25/10	8	10	N	95	3.9	0.2	0.6				100	100			99	99		99	99	99	95	100	100	100	100	100	100	45	R3-018-V-Z7
Creek	03	60757	USEPA GLNPO	R3-018-V	Subsurface	05/25/10	10	12	N	99	0.8		0.3				100	100			100	100		100	99	99	99	100	100	100	100	100	100	54	R3-018-V-Z8
Creek	03	60738	USEPA GLNPO	R3-017-V	Surface	05/26/10	0	1	N	60	19	2.4	18		1.7		98	96			89	78		71	65	64	60	100	100	100	100	100	100	36	R3-017-V-Z1
Creek	03	60738	USEPA GLNPO	R3-017-V	Subsurface	05/26/10	1	2	N	42	36	4.6	14		3.8		96	92			87	78		64	51	48	42	100	100	100	100	100	99	47	R3-017-V-Z2
Creek	03	60738	USEPA GLNPO	R3-017-V	Subsurface	05/26/10	2	3	N	46	30	3.8	5.3		15		85	81			79	76		71	60	56	46	100	100	100	100	100	90	40	R3-017-V-Z3
Creek	03	60738	USEPA GLNPO	R3-017-V	Subsurface	05/26/10	3	4	N	95	3.5	0.2	1.6				100	100			99	98		97	97	96	95	100	100	100	100	100	100	30	R3-017-V-Z4
Creek	03	60738	USEPA GLNPO	R3-017-V	Subsurface	05/26/10	4	6	FD	89	6.7	0.2	4.5				100	100			99	95		94	92	92	89	100	100	100	100	100	100	32	R3-017-VR
Creek	03	60738	USEPA GLNPO	R3-017-V	Subsurface	05/26/10	4	6	N	94	4.3	0.1	1.6				100	100			99	98		98	97	97	94	100	100	100	100	100	100	35	R3-017-V-Z5
Creek	03	60738	USEPA GLNPO	R3-017-V	Subsurface	05/26/10	6	8	N	98	1.4		0.7				100	100			100	99		99	99	99	98	100	100	100	100	100	100	43	R3-017-V-Z6
Creek	03	60738	USEPA GLNPO	R3-017-V	Subsurface	05/26/10	8	8.5	N	97	2.6		0.8				100	100			100	99		99	98	98	97	100	100	100	100	100	100	48	R3-017-V-Z7
Creek	03	60734	USEPA GLNPO	R3-016-V	Surface	05/26/10	0	1	N	65	30	2	1.7		0.8		99	97			97	96		93	88	84	65	100	100	100	100	100	99		R3-016-V-Z1
Creek	03	60734	USEPA GLNPO	R3-016-V	Subsurface	05/26/10	1	2	N	89	8.4		2.9				100	100			99	97		96	94	94	89	100	100	100	100	100	100	32	R3-016-V-Z2
Creek	03	60734	USEPA GLNPO	R3-016-V	Subsurface	05/26/10	2	3	N	93	5.4		1.4				100	100			100	99		98	97	97	93	100	100	100	100	100	100	37	R3-016-V-Z3
Creek	03	60734	USEPA GLNPO	R3-016-V	Subsurface	05/26/10	3	4	FD	92	6		1.6				100	100			100	98		98	97	96	92	100	100	100	100	100	100	42	R3-016-VR
Creek	03	60734	USEPA GLNPO	R3-016-V	Subsurface	05/26/10	3	4	N	93	5.9		0.8				100	100			100	99		99	98	97	93	100	100	100	100	100	100	41	R3-016-V-Z4
Creek	03	60734	USEPA GLNPO	R3-016-V	Subsurface	05/26/10	4	6	N	94	3.6	0.2	1.9				100	100			99	98		97	96	96	94	100	100	100	100	100	100	44	R3-016-V-Z5
Creek	03	60734	USEPA GLNPO	R3-016-V	Subsurface	05/26/10	6	8	N	92	5.9	0.2	2.1				100	100			99	98		97	95	95	92	100	100	100	100	100	100	47	R3-016-V-Z6
Creek	03	60734	USEPA GLNPO	R3-016-V	Subsurface	05/26/10	8	9	N	92	7.5		0.5				100	100			100	99		99	98	98	92	100	100	100	100	100	100	80	R3-016-V-Z7
Creek	03	60224	USEPA GLNPO	R3-019-V	Surface	05/26/10	0	1	N	99	0.9	0.1	0.4				100	100			100	100		99	99	99	99	100	100	100	100	100	100	25	R3-019-V-Z1
Creek	03	60224	USEPA GLNPO	R3-019-V	Subsurface	05/26/10	1	2	N	99	0.9		0.3				100	100			100	100		99	99	99	99	100	100	100	100	100	100	29	R3-019-V-Z2
Creek	03	60224	USEPA GLNPO	R3-019-V	Subsurface	05/26/10	2	3	N	98	1.1		1				100	100			100	99		99	98	98	98	100	100	100	100	100	100	31	R3-019-V-Z3
Creek	03	60224	USEPA GLNPO	R3-019-V	Subsurface	05/26/10	3	4	N	98	0.8	0.1	1.1				100	100			99	99		99	98	98	98	100	100	100	100	100	100	38	R3-019-V-Z4
Creek	03	60215	USEPA GLNPO	R3-020-V	Surface	05/26/10	0	1	N	61	35	0.3	3.1		0.3		100	99			98	96		95	88	83	61	100	100	100	100	100	100		R3-020-V-Z1
Creek	03	60215	USEPA GLNPO	R3-020-V	Subsurface	05/26/10	1	2	N	74	4.8		1.4				100	100			99	99		98	98	97	94	100	100	100	100	100	100	29	R3-020-V-Z2
Creek	03	60215	USEPA GLNPO	R3-020-V	Subsurface	05/26/10	2	3	N	94	4.6		1.5				100	100			99	98		98	98	97	94	100	100	100	100	100	100	30	R3-020-V-Z3
Creek	03	60215	USEPA GLNPO	R3-020-V	Subsurface	05/26/10	3	4	N	93	5.9		0.9				100	100			100	99		99	98	98	93	100	100	100	100	100	100	30	R3-020-V-Z4
Creek	03	60215	USEPA GLNPO	R3-020-V	Subsurface	05/26/10	4	6	N	95	4.6		0.7				100	100			100	99		99	99	98	95	100	100	100	100	100	100	38	R3-020-V-Z5
Creek	03	60215	USEPA GLNPO	R3-020-V	Subsurface	05/26/10	6	8	N	95	4		0.7				100	100			100	99		99	98	98	95	100	100	100	100	100	100	45	R3-020-V-Z6
Creek	03	60215	USEPA GLNPO	R3-020-V	Subsurface	05/26/10	8	10	N	96	3.2		0.6	0.2			100	100			99	99		99	99	98	96	100	100	100	100	100	100	53	R3-020-V-Z7
Creek	03	60207	USEPA GLNPO	R3-021-V	Surface	05/26/10	0	1	N	55	20	1.2	7.4	16			83	82			79	75		73	70	69	55	100	100	100	100	100	86	67	R3-021-V-Z1
Creek	03	60207	USEPA GLNPO	R3-021-V	Subsurface	05/26/10	1	2	N	61	21	0.7	15	1.6			98	98			88	82		78	73	72	61	100	100	100	100	100	100	79	R3-021-V-Z2
Creek	03	60207	USEPA GLNPO	R3-021-V	Subsurface	05/26/10	2	3	N	77	18	0.5	3.7	0.5			99	99			97	95		93	89	88	77	100	100	100	100	100	100	82	R3-021-V-Z3
Creek	03	59465	USEPA GLNPO	R3-022-V	Surface	05/26/10	0	1	N	34	46	2.5	14	3.4			97	94			91	80		57	41	39	34	100	100	100	100	100	99	39	R3-022-V-Z1
Creek	03	59465	USEPA GLNPO	R3-022-V	Subsurface	05/26/10	1	2	FD																									43	R3-022-VR
Creek	03	59465	USEPA GLNPO	R3-022-V	Subsurface	05/26/10	1	2	N	51	43	2	2.8	1.2			99	97			96	94		83	69	64	51	100	100	100	100	100	100	51	R3-022-V-Z2
Creek	03	59465	USEPA GLNPO	R3-022-V	Subsurface	05/26/10	2	3	N	73	23	0.7	2	1.7			98	98			97	96		93	88	85	73	100	100	100	100	100	99	43	R3-022-V-Z3
Creek	03	59465	USEPA GLNPO	R3-022-V	Subsurface	05/26/10	3	4	N	79	16		5.5				100	100			99	94		87	84	83	79	100	100	100	100	100	100	51	R3-022-V-Z4
Creek	03	59465	USEPA GLNPO	R3-022-V	Subsurface	05/26/10	4	6	N	85	13	0.2	1.8	0.3			100	99			99	98		95	93	92	85	100	100	100	100	100	100	57	R3-022-V-Z5
Creek	03	59465	USEPA GLNPO	R3-022-V	Subsurface	05/26/10	6	6.8	N	63	10	6.9	7.5	13			88	81			77	73		70	69	68	63	100	100	100	100	100	94	81	R3-022-V-Z6
Creek	03	59359	USEPA GLNPO	R3-024-V	Surface	05/26/10	0	1	N	83	15	0.6	1.1	0.3			100	99			99	98		97	95	94	83	100	100	100	100	100	100	28	R3-024-V-Z1
Creek	03	59359	USEPA GLNPO	R3-024-V	Subsurface	05/26/10	1	2	N	91	6.6	0.6	1.6				100	99			99	98		97	96	96	91	100	100	100	100	100	100	29	R3-024-V-Z2
Creek	03	59359	USEPA GLNPO	R3-024-V	Subsurface	05/26/10	2	3	N	96	2.1	0.2	1.3				100	100			99	98		98	98	97	96	100	100	100	100	100	100	27	R3-024-V-Z3
Creek	03	59359	USEPA GLNPO	R3-024-V	Subsurface	05/26/10	3	4	N	97	2.2	0.1	0.8				100	100			100	99		98	98	98	97	100	100	100	100	100	100	31	R3-024-V-Z4
Creek	03	59359	USEPA GLNPO	R3-024-V	Subsurface	05/26/10	4	6	N	93	5.1	0.1	1	0.8			99	99			99	98		97	96	95	93	100	100	100	100	100	99	49	R3-024-V-Z5
Creek	03	59359	USEPA GLNPO	R3-024-V	Subsurface	05/26/10	6	8	N	83	4.5	2.3	4	6.7			93	91			89	87		86	85	85	83	100	100	100	100	100	100	64	R3-024-V-Z6
Creek	03	59325	USEPA GLNPO	R3-023-V	Surface	05/26/10	0	1	N	22	9.9	26	20	23			77	52			36	32		28	25	25	22	100	100	100	100	100	97	74	R3-023-V-Z1
Creek	03	59325	USEPA GLNPO	R3-023-V	Subsurface	05/26/10	1	2	N	74	15	1.9	7	2.1			98	96			93	89		85	83	81	74	100	100	100	100	100	99	78	R3-023-V-Z2
Creek	03	58706	USEPA GLNPO	R3-027-V	Surface	05/27/10	0	1	N	76	22	1.3	1.2				100	99			99	98		96	93	90	76	100	100	100	100	100	100	31	R3-027-V-Z1
Creek	03	58706	USEPA GLNPO	R3-027-V	Subsurface	05/27/10	1	2	N	56	37	1.7	3	2			98	96			96	93		88	75	69	56	100	100	100	100	100	100	40	R3-027-V-Z2
Creek	03	58706	USEPA GLNPO	R3-027-V	Subsurface	05/27/10	2	3	N	92	6.5	0.3	1.1				100	100			99	99		98	96	95	92	100	100	100	100	100	100	31	R3-027-V-Z3
Creek	03	58706	USEPA GLNPO	R3-027-V	Subsurface	05/27/10	3	4	N	76	19	0.8	2.7	1.6			98	98			97	95		90	84	83	76	100	100	100	100	100	100	33	R3-027-V-Z4
Creek	03	58684	USEPA GLNPO	R3-026-V	Surface	05/27/10	0	1	N	60	35	1.2	2.6	0.9			99	98			97	95		86	74	70	60	100	100	100	100	100	100	40	R3-026-V-Z1
Creek	03	58684	USEPA GLNPO	R3-026-V	Subsurface	05/27/10	1	2	N	67	26	1.2	1.9	4.3			96	94			94	93		87	81	78	67	100	100	100	100	100	99	36	R3-026-V-Z2

Table D-5
Sediment Geotechnical Results for Remedial Investigation
Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	Fines	Fine Sand	Coarse Sand	Medium Sand	Sand	Gravel	Sieve Bottom Plate	Sieve No. 4	Sieve No. 10	Sieve No. 16	Sieve No. 35	Sieve, No. 20	Sieve No. 40	Sieve No. 50	Sieve, No. 60	Sieve No. 80	Sieve, No. 100	Sieve No. 200	Sieve, 19000 (microns)	Sieve, 25000 (microns)	Sieve, 37500 (microns)	Sieve, 50000 (microns)	Sieve, 75000 (microns)	Sieve, 9500 (microns)	Solids, Percent	Sample ID
Creek	03	58684	USEPA GLNPO	R3-026-V	Subsurface	05/27/10	2	3	N	87	9.9	1.8	1.7				100	98			98	97		95	94	93	87	100	100	100	100	100	100	31	R3-026-V-Z3
Creek	03	58684	USEPA GLNPO	R3-026-V	Subsurface	05/27/10	3	4	N	77	17	2	3.9				100	98			97	94		89	85	84	77	100	100	100	100	100	100	35	R3-026-V-Z4
Creek	03	58656	USEPA GLNPO	R3-025-V	Surface	05/26/10	0	1	N	7.9	2.7	20	8.8		61		39	20			14	11		8.9	8.5	8.4	7.9	100	100	100	100	100	76	90	R3-025-V-Z1
Creek	04	58038	USEPA GLNPO	R4-135-C	Surface	06/21/10			N	21	18	15	40	72	6.5		93	79			58	39		29	26	25	21	100	100	100	100	100	100	52	R4-135-C-COMP
Creek	04	58038	USEPA GLNPO	R4-135-C	Surface	06/21/10			N	47	29	4.7	10	44	9		91	86			84	76		64	57	55	47	100	100	100	100	100	98	24	R4-135-C-Z1A
Creek	04	57787	USEPA GLNPO	R4-028-C	Surface	11/17/09	0	1.55	N							61			0.3	10			7.6			10	10							46	R4-028-C
Creek	04	57468	USEPA GLNPO	R4-136-C	Surface	06/21/10			N	46	8.8	13	17	38	16		84	71			60	54		51	49	49	46	100	100	100	100	100	96	31	R4-136-C-Z1A
Creek	04	56862	USEPA GLNPO	R4-029-C	Surface	11/16/09	0	1.2	N							62			0.6	8.7			5.7			10	13								R4-029-C
Creek	04	56559	USEPA GLNPO	R4-137-C	Surface	06/21/10	0	0.7	N	44	20	8.3	17	45	11		89	81			74	64		56	52	50	44	100	100	100	100	100	96	40	R4-137-C-Comp
Creek	04	56006	USEPA GLNPO	R4-030-C	Surface	11/16/09	0	1.1	N							48		0.002	2.7	27			7.7			7	6.9							53	R4-030-C
Creek	04	55979	USEPA GLNPO	R4-138-C	Surface	06/21/10	0	0.4	N	13	21	18	36	75	13		87	70			50	34		23	19	17	13	100	100	100	100	100	98	26	R4-138-C-Comp
Creek	04	55678	USEPA GLNPO	R4-031-C	Surface	11/16/09	0	0.8	N							58		0.001	1	9.2			7.1			11	13							36	R4-031-C
Creek	04	55647	USEPA GLNPO	R4-139-C	Surface	06/22/10	0	0.3	N	64	23	2.9	6.8	32	3.4		97	94			93	87		81	76	74	64	100	100	100	100	100	100	30	R4-139-C-Z1A
Creek	04	55325	USEPA GLNPO	R4-140-C	Surface	06/23/10			N	13	7.1	29	36	72	16		84	56			30	20		16	15	15	13	100	100	100	100	100	98	68	R4-140-C-Z1A
Creek	04	55037	USEPA GLNPO	R4-032-C	Surface	11/16/09	0	0.7	N							53			0.1	11			10			13	13								R4-032-C
Creek	04	54677	USEPA GLNPO	R4-141-C	Surface	06/23/10			N	33	18	12	21	51	16		84	73			64	51		43	39	38	33	100	100	100	100	100	93	43	R4-141-C-COMP
Creek	04	54677	USEPA GLNPO	R4-141-C	Surface	06/23/10			FD	38	17	13	26	56	6.2		94	81			70	55		47	44	43	38	100	100	100	100	100	97	47	R4-141-CR
Creek	04	54677	USEPA GLNPO	R4-141-C	Surface	06/23/10			N	43	16	11	21	48	8.8		91	80			70	58		51	48	47	43	100	100	100	100	100	100	46	R4-141-C-Z1A
Creek	04	54208	USEPA GLNPO	R4-033-C	Surface	11/17/09	0	0.4	N							66		0.002	3.8	18			3.8			3.8	4.4								R4-033-C
Creek	04	53793	USEPA GLNPO	R4-142-C	Surface	06/23/10			N	20	18	14	15	47	33		67	53			45	38		32	29	27	20	100	100	100	100	100	82	60	R4-142-C-Z1A
Creek	04	53633	USEPA GLNPO	R4-034-C	Surface	11/17/09	0	0.4	N							51		1.2	4.2	25			6.3			5.8	6.3							58	R4-034-C
Creek	04	53123	USEPA GLNPO	R4-143-C	Surface	06/23/10			N	34	34	9.7	7.3	51	15		85	75			73	68		55	46	43	34	100	100	100	100	100	92	26	R4-143-C-Z1A
Creek	04	52919	USEPA GLNPO	R4-035-C	Surface	11/17/09	0	0.8	N							52			0.4	13			11			13	10								R4-035-C
Creek	04	52719	USEPA GLNPO	R4-036-C	Surface	11/17/09	0	0.9	N							51			0.5	14			10			13	11								R4-036-C
Creek	04	52514	USEPA GLNPO	R4-037-C	Surface	11/17/09	0	0.6	N							45		0.03	1.3	19			13			12	9.4								R4-037-C
Creek	04	52226	USEPA GLNPO	R4-038-C	Surface	11/18/09	0	0.4	N							55		0.001	1.2	18			7.4			8.5	9.7								R4-038-C
Creek	05	51954	USEPA GLNPO	R5-039-V	Surface	05/21/10	0	1	N	18	5	24	39		14		86	62			36	23		20	20	19	18	100	100	100	100	100	97	45	R5-039-V-Z1
Creek	05	51887	USEPA GLNPO	R5-041-V	Surface	05/24/10	0	1	N	99	0.7		0.3	0.3			100	100			100	99		99	99	99	99	100	100	100	100	100	100	32	R5-041-V-Z1
Creek	05	51887	USEPA GLNPO	R5-041-V	Subsurface	05/24/10	1	2	N	99	0.9		0.2				100	100			100	100		100	100	99	99	100	100	100	100	100	100	40	R5-041-V-Z2
Creek	05	51887	USEPA GLNPO	R5-041-V	Subsurface	05/24/10	2	3	N	100	0.3		0.1				100	100			100	100		100	100	100	100	100	100	100	100	100	100	43	R5-041-V-Z3
Creek	05	51887	USEPA GLNPO	R5-041-V	Subsurface	05/24/10	3	4	N	97	1.7		1.2				100	100			99	99		98	98	98	97	100	100	100	100	100	100	43	R5-041-V-Z4
Creek	05	51887	USEPA GLNPO	R5-041-V	Subsurface	05/24/10	4	5	N	96	2.6	0.9	0.8				100	99			99	98		98	97	97	96	100	100	100	100	100	100	48	R5-041-V-Z5A
Creek	05	51887	USEPA GLNPO	R5-041-V	Subsurface	05/24/10	5	6	N	97	2.7		0.5				100	100			100	99		99	99	99	97	100	100	100	100	100	100	54	R5-041-V-Z5B
Creek	05	51887	USEPA GLNPO	R5-041-V	Subsurface	05/24/10	6	7	N	98	1.3		0.3				100	100			100	100		99	99	99	98	100	100	100	100	100	100	61	R5-041-V-Z6A
Creek	05	51887	USEPA GLNPO	R5-041-V	Subsurface	05/24/10	7	7.5	N	75	10	2.1	9.3	3.3			97	95			89	85		81	79	78	75	100	100	100	100	100	100	86	R5-041-V-Z6B
Creek	05	51876	USEPA GLNPO	R5-040-V	Surface	05/20/10	0	1	N	90	7.4	2.1	0.4				100	98			98	97		97	96	95	90	100	100	100	100	100	100	39	R5-040-V-Z1
Creek	05	51876	USEPA GLNPO	R5-040-V	Subsurface	05/20/10	1	2	N	95	4.8		0.2				100	100			100	100		99	99	99	95	100	100	100	100	100	100	50	R5-040-V-Z2
Creek	05	51876	USEPA GLNPO	R5-040-V	Subsurface	05/20/10	2	3	N	97	3.1		0.2				100	100			100	100		100	99	99	97	100	100	100	100	100	100	51	R5-040-V-Z3
Creek	05	51876	USEPA GLNPO	R5-040-V	Subsurface	05/20/10	3	4	N	91	6.9		2.2				100	100			99	98		97	97	96	91	100	100	100	100	100	100	50	R5-040-V-Z4
Creek	05	51876	USEPA GLNPO	R5-040-V	Subsurface	05/20/10	4.5	5	N	59	8.6	3.5	16	12			88	84			73	68		65	63	63	59	100	100	100	100	100	92	80	R5-040-V-Z5A
Creek	05	51152	USEPA GLNPO	R5-042-V	Surface	05/20/10	0	1	N	95	4.4		0.8				100	100			99	99		99	99	98	95	100	100	100	100	100	100	40	R5-042-V-Z1
Creek	05	51152	USEPA GLNPO	R5-042-V	Subsurface	05/20/10	1	2	N	97	2.9		0.3				100	100			100	100		99	99	99	97	100	100	100	100	100	100	50	R5-042-V-Z2
Creek	05	51152	USEPA GLNPO	R5-042-V	Subsurface	05/20/10	2	3	N	67	6.4	3.2	20	2.6			97	94			80	74		71	70	70	67	100	100	100	100	100	98	38	R5-042-V-Z3
Creek	05	51152	USEPA GLNPO	R5-042-V	Subsurface	05/20/10	3	4	N	89	3.6	2.9	3.3	0.6			99	96			95	93		92	92	91	89	100	100	100	100	100	100	42	R5-042-V-Z4
Creek	05	51152	USEPA GLNPO	R5-042-V	Subsurface	05/20/10	4.5	5	N	98	1.5		0.1				100	100			100	100		100	100	99	98	100	100	100	100	100	100	60	R5-042-V-Z5A
Creek	05	51134	USEPA GLNPO	R5-043-V	Surface	05/20/10	0	1	N	35	20	6.2	5.9	33			67	61			58	55		47	41	39	35	71	100	100	100	100	71	33	R5-043-V-Z1
Creek	05	51134	USEPA GLNPO	R5-043-V	Surface	05/20/10	0	1	N	87	9.9	0.6	2	0.6			99	99			98	97		94	92	91	87	100	100	100	100	100	100	27	R5-043-V-Z1P
Creek	05	51134	USEPA GLNPO	R5-043-V	Subsurface	05/20/10	1	2	N	63	12	5.9	9.1	10			90	84			79	75		70	67	66	63	100	100	100	100	100	96	45	R5-043-V-Z2
Creek	05	51134	USEPA GLNPO	R5-043-V	Subsurface	05/20/10	2	3	N	67	9.3	7.5	5.6	11			89	82			78	76		74	72	71	67	100	100	100	100	100	98	48	R5-043-V-Z3
Creek	05	51134	USEPA GLNPO	R5-043-V	Subsurface	05/20/10	3	4	N	88	7	1.3	2.9	0.4			100	98			97	95		93	92	91	88	100	100	100	100	100	100	48	R5-043-V-Z4
Creek	05	51134	USEPA GLNPO	R5-043-V	Subsurface	05/20/10	4	4.5	N	84	13	1.2	1.4	0.9			99	98			97	96		95	92	91	84	100	100	100	100	100	100	53	R5-043-V-Z5A
Creek	05	51134	USEPA GLNPO	R5-043-V	Subsurface	05/20/10	4.5	5	N	31	9.3	11	25	24			76	65			47	40		36	35	34	31	100	100	100	100	100	91	84	R5-043-V-Z5B
Creek	05	51122	USEPA GLNPO	R5-044-V	Surface	05/20/10	0	1	N																									21	R5-044-V-Z1
Creek	05	51122	USEPA GLNPO	R5-044-V	Subsurface	05/20/10	1	2	FD	94	5		1.2				100	100			99	99		98	97	97	94	100	100	100	100	100	100	33	R5-044-VR
Creek	05	51122	USEPA GLNPO	R5-044-V	Subsurface	05/20/10	1	2	N	94	5		1.2				100	100			100	99		98	97	97	94	100	100	100	100	100	100	34	R5-044-V-Z2
Creek	05	51122	USEPA GLNPO	R5-044-V	Subsurface	05/20/10	2	3	N	86	13	0.1	0.8	0.2			100	100			99	99		97	95	93	86	100	100	100	100	100	100	80	R5-044-V-Z3
Creek	05	50710	USEPA GLNPO	R5-045-V	Subsurface	05/20/10	1	2	N	76	10	1.7	3.3	8.8			91	89			88	86		84	82	81	76	100	100	100	100	100	100	33	R5-045-V-Z2

Table D-5
Sediment Geotechnical Results for Remedial Investigation
Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	Fines	Fine Sand	Coarse Sand	Medium Sand	Sand	Gravel	Sieve Bottom Plate	Sieve No. 4	Sieve No. 10	Sieve No. 16	Sieve No. 35	Sieve, No. 20	Sieve No. 40	Sieve No. 50	Sieve, No. 60	Sieve No. 80	Sieve, No. 100	Sieve No. 200	Sieve, 19000 (microns)	Sieve, 25000 (microns)	Sieve, 37500 (microns)	Sieve, 50000 (microns)	Sieve, 75000 (microns)	Sieve, 9500 (microns)	Solids, Percent	Sample ID
Creek	05	50710	USEPA GLNPO	R5-045-V	Subsurface	05/20/10	2	3	N	52	12	6	6.9	24			76	70			67	63		59	56	55	52	97	100	100	100	100	88	42	R5-045-V-Z3
Creek	05	50710	USEPA GLNPO	R5-045-V	Subsurface	05/20/10	3	4	FD																									58	R5-045-VR
Creek	05	50710	USEPA GLNPO	R5-045-V	Subsurface	05/20/10	3	4	N	75	20	1	3.8	0.7			99	98			98	94		88	85	83	75	100	100	100	100	100	100	52	R5-045-V-Z4
Creek	05	50710	USEPA GLNPO	R5-045-V	Subsurface	05/20/10	4.5	5	N	83	12	0.4	4	0.4			100	99			97	95		93	91	90	83	100	100	100	100	100	100	58	R5-045-V-Z5A
Creek	05	50099	USEPA GLNPO	R5-046-V	Surface	05/20/10	0	1	N	88	6.4	0.5	2.6	3.1			97	96			96	94		93	92	91	88	100	100	100	100	100	98	33	R5-046-V-Z1
Creek	05	50099	USEPA GLNPO	R5-046-V	Subsurface	05/20/10	1	2	N	94	3.9	0.2	0.4	1			99	99			99	98		98	98	97	94	100	100	100	100	100	100	45	R5-046-V-Z2
Creek	05	50099	USEPA GLNPO	R5-046-V	Subsurface	05/20/10	2	3	N	95	4.8		0.2				100	100			100	100		99	98	98	95	100	100	100	100	100	100	48	R5-046-V-Z3
Creek	05	50099	USEPA GLNPO	R5-046-V	Subsurface	05/20/10	3	4	N	93	6.5		1				100	100			100	99		98	97	97	93	100	100	100	100	100	100	49	R5-046-V-Z4
Creek	05	50099	USEPA GLNPO	R5-046-V	Subsurface	05/20/10	4	5	N	91	7.8		0.9				100	100			100	99		98	97	96	91	100	100	100	100	100	100	48	R5-046-V-Z5A
Creek	05	50099	USEPA GLNPO	R5-046-V	Subsurface	05/20/10	5	6	N	74	16	1.9	6.3	1.9			98	96			93	90		87	82	81	74	100	100	100	100	100	98	51	R5-046-V-Z5B
Creek	05	50099	USEPA GLNPO	R5-046-V	Subsurface	05/20/10	6	7	N	58	10	1.5	19	11			89	88			77	69		66	64	63	58	100	100	100	100	100	92	63	R5-046-V-Z6A
Creek	05	49723	USEPA GLNPO	R5-047-V	Surface	05/20/10	0	1	N	96	3.6	0.1	0.3	0.2			100	100			100	99		99	98	98	96	100	100	100	100	100	100	31	R5-047-V-Z1
Creek	05	49723	USEPA GLNPO	R5-047-V	Subsurface	05/20/10	1	2	N	94	4.8	0.4	0.6	0.3			100	99			99	99		98	98	97	94	100	100	100	100	100	100	33	R5-047-V-Z2
Creek	05	49723	USEPA GLNPO	R5-047-V	Subsurface	05/20/10	2	3	N	96	3.5		1				100	100			99	99		98	98	97	96	100	100	100	100	100	100	46	R5-047-V-Z3
Creek	05	49723	USEPA GLNPO	R5-047-V	Subsurface	05/20/10	3	4	N	96	3.2		0.9				100	100			99	99		99	98	98	96	100	100	100	100	100	100	46	R5-047-V-Z4
Creek	05	49556	USEPA GLNPO	R5-048-V	Surface	05/21/10	0	1	N	83	9.8	1.8	4.8	0.9			99	97			95	93		88	86	85	83	100	100	100	100	100	100	30	R5-048-V-Z1
Creek	05	49556	USEPA GLNPO	R5-048-V	Subsurface	05/21/10	1	2	N	96	3.1	0.1	0.5				100	100			100	99		99	99	98	96	100	100	100	100	100	100	67	R5-048-V-Z2
Creek	05	49556	USEPA GLNPO	R5-048-V	Subsurface	05/21/10	2	3	N	76	6.6	3.1	7	7.7			92	89			86	82		80	78	78	76	100	100	100	100	100	100	84	R5-048-V-Z3
Creek	05	49472	USEPA GLNPO	R5-049-V	Surface	05/21/10	0	1	N	81	15	1.1	2.8				100	99			97	96		94	92	91	81	100	100	100	100	100	100	32	R5-049-V-Z1
Creek	05	49472	USEPA GLNPO	R5-049-V	Subsurface	05/21/10	1	2	N	86	12	0.2	1.6				100	100			99	98		97	96	95	86	100	100	100	100	100	100	43	R5-049-V-Z2
Creek	05	49472	USEPA GLNPO	R5-049-V	Subsurface	05/21/10	2	3	N	89	5.8	0.7	1.4	2.5			98	97			96	95		94	93	93	89	100	100	100	100	100	100	35	R5-049-V-Z3
Creek	05	49472	USEPA GLNPO	R5-049-V	Subsurface	05/21/10	3	4	N	81	16	0.7	2.4	0.8			99	98			98	96		93	90	89	81	100	100	100	100	100	100	52	R5-049-V-Z4
Creek	05	49472	USEPA GLNPO	R5-049-V	Subsurface	05/21/10	4	4.5	N	89	8.8	1.2	1.1				100	99			99	98		96	95	94	89	100	100	100	100	100	100	45	R5-049-V-Z5A
Creek	05	48925	USEPA GLNPO	R5-050-V	Surface	05/21/10	0	1	N	52	18	2.5	28				100	98			70	69		67	64	62	52	100	100	100	100	100	100	29	R5-050-V-Z1
Creek	05	48925	USEPA GLNPO	R5-050-V	Subsurface	05/21/10	1	2	FD	85	7.7	6.2	0.9				100	94			94	93		92	91	90	85	100	100	100	100	100	100	39	R5-050-VR
Creek	05	48925	USEPA GLNPO	R5-050-V	Subsurface	05/21/10	1	2	N	89	8.9	1.8	0.7				100	98			98	98		96	95	94	89	100	100	100	100	100	100	38	R5-050-V-Z2
Creek	05	48925	USEPA GLNPO	R5-050-V	Subsurface	05/21/10	2	3	N	91	5.7	0.9	2				100	99			98	97		96	95	95	91	100	100	100	100	100	100	33	R5-050-V-Z3
Creek	05	48925	USEPA GLNPO	R5-050-V	Subsurface	05/21/10	3	4	N	91	5.3	0.2	3.1				100	100			98	97		96	95	94	91	100	100	100	100	100	100	36	R5-050-V-Z4
Creek	05	48925	USEPA GLNPO	R5-050-V	Subsurface	05/21/10	4	4.5	N	41	12	1.6	4.9		40		60	58			58	53		50	48	46	41	72	100	100	100	100	62	56	R5-050-V-Z5A
Creek	05	48794	USEPA GLNPO	R6-144-C	Surface	07/02/10			N	94	4.5	0.4	0.6	5.5			100	100			99	99		98	98	98	94	100	100	100	100	100	100	38	R6-144-C-COMP
Creek	05	48794	USEPA GLNPO	R6-144-C	Surface	07/02/10			N	95	4.2		0.5	4.7			100	100			100	99		99	98	98	95	100	100	100	100	100	100	28	R6-144-C-Z1A
Creek	06	48613	USEPA GLNPO	R6-051-C	Surface	11/19/09	0	1.2	N							58			0.8	11			8.1			11	11						33	R6-051-C
Creek	06	48613	USEPA GLNPO	R6-051-C	Surface	11/19/09	0	1.2	FD							56		0.02	1.8	12			8.1			11	11						32	R6-051-CR
Creek	06	48468	USEPA GLNPO	R6-145-C	Surface	07/02/10			N	59	28	0.9	9.9	39	2.1		98	97			94	87		75	70	68	59	100	100	100	100	100	100	48	R6-145-C-COMP
Creek	06	48468	USEPA GLNPO	R6-145-C	Surface	07/02/10			N	77	19	0.6	3.7	23			100	99			99	96		89	85	83	77	100	100	100	100	100	100	36	R6-145-C-Z1A
Creek	06	48245	USEPA GLNPO	R6-146-C	Surface	07/02/10			N	70	12	4.2	7.6	24	6.2		94	90			87	82		78	75	75	70	100	100	100	100	100	100	46	R6-146-C-COMP
Creek	06	48245	USEPA GLNPO	R6-146-C	Surface	07/02/10			N	85	12	0.7	2.1	15			100	99			99	97		93	90	89	85	100	100	100	100	100	100	42	R6-146-C-Z1A
Creek	06	48241	USEPA GLNPO	R6-052-C	Surface	11/19/09	0	1.3	N							68			0.1	4.8			5.5			9.9	12						33	R6-052-C
Creek	06	47676	USEPA GLNPO	R6-147-C	Surface	07/01/10			N	77	16	1	4	21	1.9		98	97			96	93		90	87	85	77	100	100	100	100	100	100	43	R6-147-C-COMP
Creek	06	47676	USEPA GLNPO	R6-147-C	Surface	07/01/10			N	87	10	0.7	2	13			100	99			99	97		95	94	93	87	100	100	100	100	100	100	41	R6-147-C-Z1A
Creek	06	47630	USEPA GLNPO	R6-053-C	Surface	11/19/09	0	1.2	N							65		0.001	0.4	7.3			5.5			9.4	13						21	R6-053-C
Creek	06	47394	USEPA GLNPO	R6-148-C	Surface	07/01/10			N	56	26	4.2	6.4	37	7.2		93	89			85	82		80	78	76	56	100	100	100	100	100	95	49	R6-148-C-COMP
Creek	06	47394	USEPA GLNPO	R6-148-C	Surface	07/01/10			FD	72	19	2.4	4.7	26	2.3		98	95			92	91		89	87	85	72	100	100	100	100	100	100	47	R6-148-CR
Creek	06	46875	USEPA GLNPO	R6-149-C	Surface	07/01/10			N	24	21	7.9	34	63	13		87	79			62	45		36	31	29	24	100	100	100	100	100	96	56	R6-149-C-COMP
Creek	06	46600	USEPA GLNPO	R6-054-C	Surface	12/02/09	0	0.5	N							57			0.3	10			7.4			12	13							R6-054-C
Creek	06	46461	USEPA GLNPO	R6-150-C	Surface	07/01/10			N	67	24	1	7.2	32	1.4		99	98			94	90		83	78	76	67	100	100	100	100	100	100	43	R6-150-C-COMP
Creek	06	46094	USEPA GLNPO	R6-151-C	Surface	07/02/10			N	94	4.6	1.1	0.3	6			100	99			99	99		98	98	98	94	100	100	100	100	100	100	34	R6-151-C-COMP
Creek	06	45738	USEPA GLNPO	R6-152-C	Surface	07/02/10			N	79	15	0.9	1.4	17	4		96	95			95	94		92	90	89	79	100	100	100	100	100	100	37	R6-152-C-COMP
Creek	06	45738	USEPA GLNPO	R6-152-C	Surface	07/02/10			FD	82	13	0.9	1.1	15	2.5		98	97			96	96		94	93	92	82	100	100	100	100	100	100	43	R6-152-CR
Creek	06	45097	USEPA GLNPO	R6-153-C	Surface	07/02/10			N	86	9.9	2	2.1	14			100	98			98	96		93	92	91	86	100	100	100	100	100	100	41	R6-153-C-COMP
Creek	06	44611	USEPA GLNPO	R6-055-C	Surface	11/17/09	0	1.1	N							62			0.3	9.9			6.5			9.3	12						35	R6-055-C
Creek	06	44475	USEPA GLNPO	R6-154-C	Surface	07/01/10			N	62	15	5.3	7.1	27	11		89	84			80	77		73	70	69	62	100	100	100	100	100	100	36	R6-154-C-COMP
Creek	06	44475	USEPA GLNPO	R6-154-C	Surface	07/01/10			N	75	18	1	4.6	24	1		99	98			96	93		90	87	86	75	100	100	100	100	100	100	34	R6-154-C-Z1A
Creek	06	43904	USEPA GLNPO	R6-056-C	Surface	11/17/09	0	1.2	N							57		0.001	1.2	15			8.7			9.2	9.2							R6-056-C
Creek	06	43904	USEPA GLNPO	R6-056-C	Surface	11/17/09	0	1.2	FD							53			0.8	20			9.1			9	8.8							R6-056-CR
Creek	06	43766	USEPA GLNPO	R6-155-C	Surface	07/01/10			N	89	9.4	0.3	1.4	11			100	100			99	98		97	95	94	89	100	100	100	100	100	100	32	R6-155-C-COMP
Creek	06	43252	USEPA GLNPO	R6-057-C	Surface	11/17/09	0	1.4	N							81			0.02	0.4			0.6			6.4	12							R6-057-C

Table D-5
Sediment Geotechnical Results for Remedial Investigation
Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	Fines	Fine Sand	Coarse Sand	Medium Sand	Sand	Gravel	Sieve Bottom Plate	Sieve No. 4	Sieve No. 10	Sieve No. 16	Sieve No. 35	Sieve, No. 20	Sieve No. 40	Sieve No. 50	Sieve, No. 60	Sieve No. 80	Sieve, No. 100	Sieve No. 200	Sieve, 19000 (microns)	Sieve, 25000 (microns)	Sieve, 37500 (microns)	Sieve, 50000 (microns)	Sieve, 75000 (microns)	Sieve, 9500 (microns)	Solids, Percent	Sample ID
Creek	06	42790	USEPA GLNPO	R6-156-C	Surface	07/01/10			N	45	47	1.6	4.6	53	1.8		98	97			95	92		81	68	63	45	100	100	100	100	100	100	42	R6-156-C-COMP
Creek	06	42279	USEPA GLNPO	R6-157-C	Surface	07/01/10			N	79	18	0.5	2.1	21			100	99			99	97		94	91	89	79	100	100	100	100	100	100	48	R6-157-C-COMP
Creek	06	42279	USEPA GLNPO	R6-157-C	Surface	07/01/10			N	61	37	0.8	1.5	39			100	99			99	98		92	83	78	61	100	100	100	100	100	100	46	R6-157-C-Z1A
Creek	06	41988	USEPA GLNPO	R6-158-C	Surface	07/01/10			N	74	24	0.5	1.3	26			100	99			99	98		93	87	85	74	100	100	100	100	100	100	46	R6-158-C-COMP
Creek	06	41988	USEPA GLNPO	R6-158-C	Surface	07/01/10			FD	49	48	0.3	2.1	50	0.2		100	99			99	97		84	71	66	49	100	100	100	100	100	100	57	R6-158-CR
Creek	06	41988	USEPA GLNPO	R6-158-C	Surface	07/01/10			N	48	50	0.3	1.6	52	0.8		99	99			99	97		85	72	67	48	100	100	100	100	100	100	67	R6-158-C-Z1A
Creek	06	41258	USEPA GLNPO	R6-159-C	Surface	07/01/10			N	74	25	0.2	1.2	26	0.2		100	100			99	98		96	91	88	74	100	100	100	100	100	100	42	R6-159-C-COMP
Creek	06	41258	USEPA GLNPO	R6-159-C	Surface	07/01/10			N	82	17	0.1	0.8	18	0.4		100	99			99	99		97	95	93	82	100	100	100	100	100	100	42	R6-159-C-Z1A
Creek	06	40369	USEPA GLNPO	R6-160-C	Surface	07/01/10			N	93	6		1.2	7.2			100	100			100	99		98	97	96	93	100	100	100	100	100	100	38	R6-160-C-COMP
Creek	06	40369	USEPA GLNPO	R6-160-C	Surface	07/01/10			N	93	6.1	0.3	0.7	7.1	0.3		100	99			99	99		98	97	96	93	100	100	100	100	100	100	32	R6-160-C-Z1A
Creek	06	40268	USEPA GLNPO	R6-058-C	Surface	11/18/09	0	2.2	N							71			0.2	5.4			4.1			7.9	11							34	R6-058-C
Creek	06	40082	USEPA GLNPO	R6-161-C	Surface	07/01/10			N	58	24	6.8	6.9	38	4.9		95	88			86	81		71	65	63	58	100	100	100	100	100	99	30	R6-161-C-Z1
Creek	06	40082	USEPA GLNPO	R6-161-C	Surface	07/01/10			N	65	29	0.8	3.7	34	1.1		99	98			97	94		82	75	73	65	100	100	100	100	100	99	39	R6-161-C-Z1A
Creek	06	39209	USEPA GLNPO	R6-162-C	Surface	06/30/10			N	80	17	0.5	1.2	19	1.5		98	98			98	97		96	94	93	80	100	100	100	100	100	99	46	R6-162-C-COMP
Creek	06	38848	USEPA GLNPO	R6-059-C	Surface	11/18/09	0	1.3	N							71			0.03	2.8			5			8.6	13								R6-059-C
Creek	06	38173	USEPA GLNPO	R6-163-C	Surface	06/30/10			N	77	22	0.4	1	23	0.2		100	99			99	98		96	93	92	77	100	100	100	100	100	100	60	R6-163-C-Z1
Creek	06	38173	USEPA GLNPO	R6-163-C	Surface	06/30/10			N	71	27		2.2	29			100	100			99	98		93	91	90	71	100	100	100	100	100	100	66	R6-163-C-Z1A
Creek	06	37526	USEPA GLNPO	R6-060-C	Surface	11/18/09	0	0.8	N							77				0.6			0.9			7.8	13								R6-060-C
Creek	06	36804	USEPA GLNPO	R6-164-C	Surface	06/30/10			N	87	11	0.5	0.6	13	0.3		100	99			99	99		98	97	96	87	100	100	100	100	100	100	57	R6-164-C-COMP
Creek	06	36804	USEPA GLNPO	R6-164-C	Surface	06/30/10			N	78	22	0.1	0.5	23			100	100			100	99		99	98	97	78	100	100	100	100	100	100	46	R6-164-C-Z1A
Creek	06	36085	USEPA GLNPO	R6-165-C	Surface	06/30/10			N	85	9.4	1.9	1.6	13	2.4		98	96			95	94		92	91	90	85	100	100	100	100	100	100	37	R6-165-C-COMP
Creek	06	36085	USEPA GLNPO	R6-165-C	Surface	06/30/10			N	91	7.8	0.6	0.3	8.7	0.8		99	99			99	98		98	97	96	91	100	100	100	100	100	100	18	R6-165-C-Z1A
Creek	06	35766	USEPA GLNPO	R6-061-C	Surface	11/18/09	0	4	N							73			0.2	3.6			2.6			7.9	12							33	R6-061-C
Creek	06	35433	USEPA GLNPO	R6-166-C	Surface	06/30/10			N	85	11	0.8	1.8	14	0.8		99	98			98	97		95	93	92	85	100	100	100	100	100	100	41	R6-166-C-COMP
Creek	06	35433	USEPA GLNPO	R6-166-C	Surface	06/30/10			N	83	11	0.4	0.7	12	4.3		96	95			95	95		93	92	91	83	97	100	100	100	100	97	32	R6-166-C-Z1A
Creek	06	35023	USEPA GLNPO	R6-167-C	Surface	06/30/10			N	86	11	0.7	1.6	13	0.9		99	98			98	97		94	92	91	86	100	100	100	100	100	100	34	R6-167-C-COMP
Creek	06	35023	USEPA GLNPO	R6-167-C	Surface	06/30/10			N	96	4.1		0.4	4.5			100	100			100	100		99	98	98	96	100	100	100	100	100	100	27	R6-167-C-Z1A
Creek	06	34754	USEPA GLNPO	R6-062-C	Surface	11/19/09	0	3.7	N							68			0.3	7.1			4.4			8.4	12								R6-062-C
Creek	06	34255	USEPA GLNPO	R6-168-C	Surface	06/30/10			N	70	27	0.3	0.8	29	1.8		98	98			98	97		96	95	94	70	100	100	100	100	100	98	50	R6-168-C-COMP
Creek	06	34255	USEPA GLNPO	R6-168-C	Surface	06/30/10			N	89	10	0.3	0.8	11	0.3		100	99			99	99		98	97	97	89	100	100	100	100	100	100	32	R6-168-C-Z1A
Creek	06	33962	USEPA GLNPO	R6-063-C	Surface	11/19/09	0	1.1	N							64			0.4	9.3			6.7			9	11								R6-063-C
Creek	06	33691	USEPA GLNPO	R6-169-C	Surface	06/28/10			N	77	16	0.7	6.4	23	0.3		100	99			97	93		88	85	83	77	100	100	100	100	100	100	42	R6-169-C-COMP
Creek	06	33691	USEPA GLNPO	R6-169-C	Surface	06/28/10			N	70	15	1.7	13	30	0.6		99	98			92	85		81	78	77	70	100	100	100	100	100	100	30	R6-169-C-Z1A
Creek	06	33292	USEPA GLNPO	R6-064-C	Surface	11/19/09	0	1.4	N							59			0.9	13			7.7			9.4	11								R6-064-C
Creek	06	32904	USEPA GLNPO	R6-065-C	Surface	11/19/09	0	2.4	N							48		0.3	1.2	19			9.5			11	11								R6-065-C
Creek	06	32562	USEPA GLNPO	R6-066-C	Surface	11/25/09	0	1.9	N							70			0.1	4.9			4.2			8.6	12								R6-066-C
Creek	06	32046	USEPA GLNPO	R6-067-C	Surface	11/25/09	0	2.1	N							67			0.5	7.8			4.5			8.8	11								R6-067-C
Creek	06	31840	USEPA GLNPO	R6-170-C	Surface	06/25/10			N	80	13	0.6	5.8	19	1.1		99	98			96	93		89	87	86	80	100	100	100	100	100	100	36	R6-170-C-COMP
Creek	06	31840	USEPA GLNPO	R6-170-C	Surface	06/25/10			N	78	15	1	5.1	21	1.4		99	98			96	93		89	87	86	78	100	100	100	100	100	100	39	R6-170-C-Z1A
Creek	06	31325	USEPA GLNPO	R6-171-C	Surface	06/25/10			N	81	14	0.6	3.7	19	0.2		100	99			97	96		93	91	89	81	100	100	100	100	100	100	44	R6-171-C-COMP
Creek	06	31325	USEPA GLNPO	R6-171-C	Surface	06/25/10			N	70	19	1	10	30	0.6		99	98			92	88		85	82	80	70	100	100	100	100	100	100	36	R6-171-C-Z1A
Creek	07	30918	USEPA GLNPO	R7-068-C	Surface	11/25/09	0	2.1	N							73			0.02	2.4			2.7			9.7	12							30	R7-068-C
Creek	07	30918	USEPA GLNPO	R7-068-C	Surface	11/25/09	0	2.1	FD							66			0.1	5.3			5.9			10	13							35	R7-068-CR
Creek	07	30500	USEPA GLNPO	R7-172-C	Surface	06/25/10			N	35	47	5.2	9.8	62	2.8		97	92			89	82		60	49	45	35	100	100	100	100	100	100	43	R7-172-C-COMP
Creek	07	30500	USEPA GLNPO	R7-172-C	Surface	06/25/10			N	30	53	5.2	9	67	2.6		97	92			89	83		62	47	41	30	100	100	100	100	100	100	48	R7-172-C-Z1A
Creek	07	29933	USEPA GLNPO	R7-069-C	Surface	11/25/09	0	2.4	N							77				2			1.9			7.7	12								R7-069-C
Creek	07	29724	USEPA GLNPO	R7-070-C	Surface	11/25/09	0	2.4	N							70				3.7			4.1			9.6	13								R7-070-C
Creek	07	29233	USEPA GLNPO	R7-071-C	Surface	11/25/09	0	1.5	N							64			0.1	6.5			5.7			10	13								R7-071-C
Creek	07	28712	USEPA GLNPO	R7-072-C	Surface	11/24/09	0	0.8	N							67				0.8			3.7			13	15								R7-072-C
Creek	07	28328	USEPA GLNPO	R7-173-C	Surface	06/25/10			N	77	18	1.5	3.1	23			100	98			98	95		92	89	87	77	100	100	100	100	100	100	36	R7-173-C-COMP
Creek	07	28328	USEPA GLNPO	R7-173-C	Surface	06/25/10			N	78	19	0.5	2.9	23			100	99			99	97		93	89	88	78	100	100	100	100	100	100	35	R7-173-C-Z1A
Creek	07	28037	USEPA GLNPO	R7-174-C	Surface	06/25/10			N	72	17	2.5	6	26	2.5		98	95			92	89		86	83	81	72	100	100	100	100	100	100	37	R7-174-C-COMP
Creek	07	28037	USEPA GLNPO	R7-174-C	Surface	06/25/10			N	79	14	2.3	2.3	19	2.2		98	96			95	93		91	89	88	79	100	100	100	100	100	100	27	R7-174-C-Z1A
Creek	07	28034	USEPA GLNPO	R7-073-C	Surface	11/24/09	0	2.4	N							67				2.2			3.3			11	16							34	R7-073-C
Creek	07	27600	USEPA GLNPO	R7-175-C	Surface	06/24/10			N	84	12	0.6	0.8	14	2		98	97			97	97		95	94	93	84	100	100	100	100	100	100	40	R7-175-C-Z1
Creek	07	27600	USEPA GLNPO	R7-175-C	Surface	06/24/10			N	80	15	0.7	2.3	18	2.2		98	97			96	95		93	91	90	80	100	100	100	100	100	99	33	R7-175-C-Z1A
Creek	07	27127	USEPA GLNPO	R7-074-C	Surface	11/24/09	0	2.3	N							63			0.01	2.2			4.5			13	18								R7-074-C

Table D-5
Sediment Geotechnical Results for Remedial Investigation
Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	Fines	Fine Sand	Coarse Sand	Medium Sand	Sand	Gravel	Sieve Bottom Plate	Sieve No. 4	Sieve No. 10	Sieve No. 16	Sieve No. 35	Sieve, No. 20	Sieve No. 40	Sieve No. 50	Sieve, No. 60	Sieve No. 80	Sieve, No. 100	Sieve No. 200	Sieve, 19000 (microns)	Sieve, 25000 (microns)	Sieve, 37500 (microns)	Sieve, 50000 (microns)	Sieve, 75000 (microns)	Sieve, 9500 (microns)	Solids, Percent	Sample ID
Creek	07	26960	USEPA GLNPO	R7-075-C	Surface	11/24/09	0	2.1	N							73			0.04	3.8			3.5			8.1	11							29	R7-075-C
Creek	07	26511	USEPA GLNPO	R7-076-C	Surface	11/24/09	0	2	N							62			0.2	3.1			4.9			13	17								R7-076-C
Creek	07	26286	USEPA GLNPO	R7-176-C	Surface	06/24/10			N	31	39	9.4	12	60	8.5		92	82			80	70		58	50	46	31	100	100	100	100	100	96	37	R7-176-C-COMP
Creek	07	26286	USEPA GLNPO	R7-176-C	Surface	06/24/10			N	45	45	4.6	4.5	55	0.6		99	95			94	90		82	73	68	45	100	100	100	100	100	100	26	R7-176-C-Z1A
Creek	07	25843	USEPA GLNPO	R7-077-C	Surface	11/24/09	0	1.2	N							69			0.2	3.2			3.7			9.7	14								R7-077-C
Creek	07	25419	USEPA GLNPO	R7-177-C	Surface	06/24/10			FD	73	20	1.7	2.4	24	3.3		97	95			94	93		90	87	84	73	100	100	100	100	100	100	37	R7-177-CR
Creek	07	25419	USEPA GLNPO	R7-177-C	Surface	06/24/10			N	72	23	0.8	4.7	28	0.1		100	99			97	94		91	87	85	72	100	100	100	100	100	100	36	R7-177-C-Z1
Creek	07	25419	USEPA GLNPO	R7-177-C	Surface	06/24/10			N	75	17	0.9	5.3	23	1.8		98	97			95	92		89	87	85	75	100	100	100	100	100	100	30	R7-177-C-Z1A
Creek	07	25068	USEPA GLNPO	R7-078-C	Surface	12/02/09	0	4	N							62			0.1	7			7			11	13								R7-078-C
Creek	07	24710	USEPA GLNPO	R7-079-C	Surface	12/02/09	0	2.4	N							60			0.1	8.3			7.1			11	13								R7-079-C
Creek	07	24295	USEPA GLNPO	R7-178-C	Surface	06/24/10			N	34	33	2.5	20	55	11		89	87			76	68		58	50	46	34	100	100	100	100	100	98	32	R7-178-C-Z1
Creek	07	24295	USEPA GLNPO	R7-178-C	Surface	06/24/10			N	52	24	6.5	6.3	37	11		89	83			81	77		71	65	62	52	100	100	100	100	100	97	22	R7-178-C-Z1A
Creek	07	23960	USEPA GLNPO	R7-080-C	Surface	12/02/09	0	1.7	N							64			0.2	5.4			4.9			11	14								R7-080-C
Creek	07	23569	USEPA GLNPO	R7-179-C	Surface	06/23/10			N	81	16	0.7	2.2	18	0.9		99	98			98	96		94	92	91	81	100	100	100	100	100	100	31	R7-179-C-COMP
Creek	07	23569	USEPA GLNPO	R7-179-C	Surface	06/23/10			N	56	37	2.2	4.4	44	0.6		99	97			95	93		89	84	81	56	100	100	100	100	100	100	34	R7-179-C-Z1A
Creek	07	23100	USEPA GLNPO	R7-081-C	Surface	12/02/09	0	1.7	N							43			0.1	16			12			13	16								R7-081-C
Creek	07	22856	USEPA GLNPO	R7-082-C	Surface	11/30/09	0	1.6	N							63			0.01	3.8			6.6			13	14								R7-082-C
Creek	07	22856	USEPA GLNPO	R7-082-C	Surface	11/30/09	0	1.6	FD							62			0.07	3.9			7.2			13	14								R7-082-CR
Creek	07	22470	USEPA GLNPO	R7-180-C	Surface	06/23/10			N	43	44	2.8	8.8	56	1.5		98	96			93	87		78	67	62	43	100	100	100	100	100	99	49	R7-180-C-COMP
Creek	07	22470	USEPA GLNPO	R7-180-C	Surface	06/23/10			N	61	31	2.5	5.2	38	0.8		99	97			95	92		86	78	75	61	100	100	100	100	100	100	31	R7-180-C-Z1A
Creek	07	22057	USEPA GLNPO	R7-083-C	Surface	11/30/09	0	3.3	N							55			0.2	12			8.5			11	13							36	R7-083-C
Creek	07	21809	USEPA GLNPO	R7-084-C	Surface	11/30/09	0	3.3	N							48			0.03	11			10			14	17								R7-084-C
Creek	07	21492	USEPA GLNPO	R7-085-C	Surface	11/30/09	0	1.6	N							46			0.3	13			11			14	16							43	R7-085-C
Creek	07	21130	USEPA GLNPO	R7-181-C	Surface	07/01/10			N	35	54	2.2	8.1	64	0.5		99	97			95	89		74	58	51	35	100	100	100	100	100	100	73	R7-181-C-COMP
Creek	07	21130	USEPA GLNPO	R7-181-C	Surface	07/01/10			N	43	53	0.6	2.8	57	0.3		100	99			98	96		88	75	68	43	100	100	100	100	100	100	63	R7-181-C-Z1A
Creek	07	20624	USEPA GLNPO	R7-086-C	Surface	11/30/09	0	3.2	N							44		0.001	0.6	19			12			12	13								R7-086-C
Creek	07	20394	USEPA GLNPO	R7-182-C	Surface	07/01/10			N	80	15	0.3	2.8	18	2.6		97	97			96	94		92	89	88	80	98	100	100	100	100	98	67	R7-182-C-COMP
Creek	07	19884	USEPA GLNPO	R7-087-C	Surface	11/30/09	0	2.1	N							59			0.04	3.7			7.2			13	17							41	R7-087-C
Creek	07	19601	USEPA GLNPO	R7-183-C	Surface	07/01/10			N	58	33	1.7	5.4	40	1.6		98	97			95	91		84	76	72	58	100	100	100	100	100	100	51	R7-183-C-COMP
Creek	07	19601	USEPA GLNPO	R7-183-C	Surface	07/01/10			N	63	33	0.2	2.5	36	0.6		99	99			99	97		91	82	77	63	100	100	100	100	100	100	28	R7-183-C-Z1A
Creek	07	19406	USEPA GLNPO	R7-184-C	Surface	06/30/10			N	68	25	1.5	5.7	32	0.4		100	98			96	92		89	82	80	68	100	100	100	100	100	100	46	R7-184-C-COMP
Creek	07	19391	USEPA GLNPO	R7-088-C	Surface	11/25/09	0	1	N							62			0.02	4.8			6.8			12	13								R7-088-C
Creek	07	19132	USEPA GLNPO	R7-185-C	Surface	06/30/10			N	70	25	1.2	2.1	29	0.8		99	98			98	96		93	88	86	70	100	100	100	100	100	100	43	R7-185-C-COMP
Creek	07	19132	USEPA GLNPO	R7-185-C	Surface	06/30/10			N	87	11	0.6	0.8	13	0.7		99	99			98	98		97	96	96	87	100	100	100	100	100	100	31	R7-185-C-Z1A
Creek	07	18838	USEPA GLNPO	R7-089-C	Surface	11/25/09	0	2.9	N							34			1.6	25			14			14	12							40	R7-089-C
Creek	07	18836	USEPA GLNPO	R7-186-C	Surface	06/30/10			N	31	47	4.2	13	64	4.4		96	91			87	78		70	59	54	31	100	100	100	100	100	99	46	R7-186-C-COMP
Creek	07	18836	USEPA GLNPO	R7-186-C	Surface	06/30/10			N	39	57	0.2	3.5	61	0.1		100	100			99	96		91	82	76	39	100	100	100	100	100	100	48	R7-186-C-Z1A
Creek	07	18638	USEPA GLNPO	R7-187-C	Surface	06/30/10			N	71	22	1.3	3.9	27	2.1		98	97			96	93		88	83	81	71	100	100	100	100	100	99	36	R7-187-C-COMP
Creek	07	18638	USEPA GLNPO	R7-187-C	Surface	06/30/10			N	96	3.7	0.2	0.3	4.2			100	100			100	99		99	99	99	96	100	100	100	100	100	100	26	R7-187-C-Z1A
Creek	07	18255	USEPA GLNPO	R7-090-C	Surface	11/25/09	0	3.5	N							60			0.2	7			7.4			12	13								R7-090-C
Creek	07	17701	USEPA GLNPO	R7-188-C	Surface	06/30/10			N	41	53	0.6	4.5	58	1.2		99	98			97	94		78	59	53	41	100	100	100	100	100	100	60	R7-188-C-Z1
Creek	07	17701	USEPA GLNPO	R7-188-C	Surface	06/30/10			N	90	10	0.1	0.1	10			100	100			100	100		99	98	98	90	100	100	100	100	100	100	27	R7-188-C-Z1A
Creek	07	17307	USEPA GLNPO	R7-189-C	Surface	06/30/10			N	68	28	0.2	3.5	32	0.3		100	99			98	96		93	89	87	68	100	100	100	100	100	100	46	R7-189-C-COMP
Creek	07	17307	USEPA GLNPO	R7-189-C	Surface	06/30/10			FD	69	28	0.2	2.8	31	0.6		99	99			98	96		94	90	88	69	100	100	100	100	100	100	45	R7-189-CR
Creek	07	17307	USEPA GLNPO	R7-189-C	Surface	06/30/10			N	58	17	0.6	23	41	0.6		99	99			89	76		68	64	63	58	100	100	100	100	100	100	38	R7-189-C-Z1A
Creek	07	16833	USEPA GLNPO	R7-091-C	Surface	11/24/09	0	1.4	N							45				5.2			12			19	19								R7-091-C
Creek	07	16587	USEPA GLNPO	R7-092-C	Surface	11/24/09	0	1	N							53			0.07	9.7			9.4			13	15								R7-092-C
Creek	07	16217	USEPA GLNPO	R7-190-C	Surface	06/30/10			N	47	43	0.9	8.5	52	0.7		99	98			94	90		84	77	72	47	100	100	100	100	100	100	57	R7-190-C-COMP
Creek	07	15878	USEPA GLNPO	R7-093-C	Surface	11/24/09	0	0.9	N							44			0.07	14			13			14	15							37	R7-093-C
Creek	07	15682	USEPA GLNPO	R7-191-C	Surface	06/29/10			N	70	28	0.3	1.8	30	0.4		100	99			99	98		94	92	89	70	100	100	100	100	100	100	40	R7-191-C-COMP
Creek	07	15682	USEPA GLNPO	R7-191-C	Surface	06/29/10			N	77	20	0.4	1.4	22	0.4		100	99			99	98		96	93	92	77	100	100	100	100	100	100	28	R7-191-C-Z1A
Creek	07	15136	USEPA GLNPO	R7-094-C	Surface	11/23/09	0	1	N							62			0.07	5.9			7.2			11	14							25	R7-094-C
Creek	07	14846	USEPA GLNPO	R7-095-C	Surface	11/23/09	0	1.3	N							62			0.07	2.2			4			14	18							34	R7-095-C
Creek	07	14846	USEPA GLNPO	R7-095-C	Surface	11/23/09	0	1.3	FD							60			0.01	4.4			6.1			13	17							34	R7-095-CR
Creek	07	14397	USEPA GLNPO	R7-096-C	Surface	11/23/09	0	1.3	N							52			0.04	2.8			6.3			17	22								R7-096-C
Creek	07	13907	USEPA GLNPO	R7-192-C	Surface	06/29/10			N	43	37	0.4	1.9	39	17		83	82			82	80		77	73	70	43	91	100	100	100	100	85	39	R7-192-C-Z1A
Creek	07	13648	USEPA GLNPO	R7-097-C	Surface	11/23/09	0	0.9	N							42			0.01	6.7			13			19	19								R7-097-C

Table D-5
Sediment Geotechnical Results for Remedial Investigation
Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	Fines	Fine Sand	Coarse Sand	Medium Sand	Sand	Gravel	Sieve Bottom Plate	Sieve No. 4	Sieve No. 10	Sieve No. 16	Sieve No. 35	Sieve, No. 20	Sieve No. 40	Sieve No. 50	Sieve, No. 60	Sieve No. 80	Sieve, No. 100	Sieve No. 200	Sieve, 19000 (microns)	Sieve, 25000 (microns)	Sieve, 37500 (microns)	Sieve, 50000 (microns)	Sieve, 75000 (microns)	Sieve, 9500 (microns)	Solids, Percent	Sample ID
Creek	07	13280	USEPA GLNPO	R7-193-C	Surface	06/29/10			N	55	36	1	7.3	44	0.9		99	98			96	91		83	76	72	55	100	100	100	100	100	99	50	R7-193-C-COMP
Creek	07	13280	USEPA GLNPO	R7-193-C	Surface	06/29/10			N	54	40	0.8	4.7	45	1.2		99	98			97	93		87	81	77	54	100	100	100	100	100	99	41	R7-193-C-Z1A
Creek	07	12647	USEPA GLNPO	R7-098-C	Surface	11/23/09	0	1.9	N							39			0.1	15			15			15	16								R7-098-C
Creek	07	12247	USEPA GLNPO	R7-099-C	Surface	11/23/09	0	1.3	N							37		0.01	0.8	20			12			14	15							29	R7-099-C
Creek	07	11865	USEPA GLNPO	R7-100-C	Surface	11/23/09	0	1.2	N							69				0.5			1.9			12	17							48	R7-100-C
Creek	07	11695	USEPA GLNPO	R7-194-C	Surface	06/29/10			N	22	35	11	25	71	7.6		92	81			69	56		43	35	32	22	100	100	100	100	100	98	39	R7-194-C-COMP
Creek	07	11180	USEPA GLNPO	R7-101-C	Surface	11/30/09	0	0.5	N							47			0.06	9.8			11			15	17								R7-101-C
Creek	07	11048	USEPA GLNPO	R7-195-C	Surface	06/29/10			N	23	45	5.1	18	68	8.8		91	86			78	68		57	49	44	23	100	100	100	100	100	96	49	R7-195-C-COMP
Creek	07	10585	USEPA GLNPO	R7-102-C	Surface	11/30/09	0	1.5	N							66			0.05	3.4			4.9			11	15								R7-102-C
Creek	07	10442	USEPA GLNPO	R7-196-C	Surface	06/29/10			N	57	40	0.6	2	42	0.5		99	99			98	97		94	90	87	57	100	100	100	100	100	100	52	R7-196-C-COMP
Creek	07	10442	USEPA GLNPO	R7-196-C	Surface	06/29/10			N	61	26	1.7	8.9	37	2.3		98	96			93	87		82	79	77	61	100	100	100	100	100	99	39	R7-196-C-Z1A
Creek	07	9991	USEPA GLNPO	R7-103-C	Surface	11/30/09	0	2.3	N							59			0.1	7.3			7.8			12	14								R7-103-C
Creek	07	9757	USEPA GLNPO	R7-197-C	Surface	06/28/10			N	31	55	1.4	12	68	0.9		99	98			93	86		78	71	67	31	100	100	100	100	100	100	55	R7-197-C-COMP
Creek	07	9757	USEPA GLNPO	R7-197-C	Surface	06/28/10			FD	36	51	2.4	9.8	63	1		99	97			93	87		80	74	69	36	100	100	100	100	100	100	60	R7-197-CR
Creek	07	9757	USEPA GLNPO	R7-197-C	Surface	06/28/10			N	31	62	0.8	5.7	69	0.5		99	99			97	93		86	79	74	31	100	100	100	100	100	100	47	R7-197-C-Z1A
Creek	07	9310	USEPA GLNPO	R7-198-C	Surface	06/28/10			N	28	61	1.7	7.1	70	1.7		98	97			94	89		82	70	60	28	100	100	100	100	100	100	57	R7-198-C-COMP
Creek	07	9310	USEPA GLNPO	R7-198-C	Surface	06/28/10			N	23	67	1.2	8.1	77	0.5		99	98			96	90		80	66	55	23	100	100	100	100	100	100	53	R7-198-C-Z1A
Creek	07	9173	USEPA GLNPO	R7-104-C	Surface	12/02/09	0	1	N							54				8.7			10			14	13							39	R7-104-C
Creek	07	8998	USEPA GLNPO	R7-199-C	Surface	06/28/10			N	27	51	4.9	13	68	4.7		95	90			85	78		66	56	50	27	100	100	100	100	100	99	45	R7-199-C-COMP
Creek	07	8998	USEPA GLNPO	R7-199-C	Surface	06/28/10			N	42	43	4.1	7.8	55	3.1		97	93			92	85		76	69	64	42	100	100	100	100	100	100	33	R7-199-C-Z1A
Creek	07	8556	USEPA GLNPO	R7-105-C	Surface	11/30/09	0	1.4	N							59			0.06	5.3			7.6			13	15							45	R7-105-C
Creek	07	7812	USEPA GLNPO	R7-200-C	Surface	06/28/10			N	16	56	5.4	19	80	4.8		95	90			84	71		55	42	35	16	100	100	100	100	100	99	62	R7-200-C-COMP
Creek	07	7812	USEPA GLNPO	R7-200-C	Surface	06/28/10			N	24	71	0.3	5.3	76	0.3		100	99			99	94		85	72	61	24	100	100	100	100	100	100	52	R7-200-C-Z1A
Creek	07	6889	USEPA GLNPO	R7-106-C	Surface	11/30/09	0	0.5	N							43			0.2	11			14			18	15							51	R7-106-C
Tributary	04	53665	USEPA GLNPO	R4-119-T	Surface	11/17/09	0	0.5	N							80			0.4	1.8			1.4			6.3	9.8							70	R4-119-T
Tributary	07	27915	USEPA GLNPO	R7-120-T	Surface	11/24/09	0	0.5	N							82				1.1			1.1			6.1	9.5							47	R7-120-T-Z1
Tributary	07	27915	USEPA GLNPO	R7-120-T	Subsurface	11/24/09	0.5	2.1	N							77				2.4			3.2			8.4	8.9								R7-120-T-Z2
Tributary	07	27522	USEPA GLNPO	R7-201-T	Surface	06/25/10			N	52	15	7.9	7.7	30	17		83	75			70	67		63	60	58	52	100	100	100	100	100	100	50	R7-201-T-COMP
Tributary	07	27522	USEPA GLNPO	R7-201-T	Surface	06/25/10			N	89	8.9	0.7	1.1	11			100	99			99	98		97	96	95	89	100	100	100	100	100	100	33	R7-201-T-Z1A
Tributary	07	26631	USEPA GLNPO	R7-202-T	Surface	06/29/10			N	65	19	3.9	4.3	28	7.4		93	89			87	84		82	77	74	65	100	100	100	100	100	95	43	R7-202-T-COMP
Tributary	07	26631	USEPA GLNPO	R7-202-T	Surface	06/29/10			N	85	9.1	1.8	1.2	12	3		97	95			95	94		93	91	90	85	100	100	100	100	100	99	34	R7-202-T-Z1A
Tributary	07	24253	USEPA GLNPO	R7-121-T	Surface	12/02/09	0	0.5	N							64				5.2			7.6			11	12								R7-121-T-Z1
Tributary	07	17530	USEPA GLNPO	R7-122-T	Surface	11/25/09	0	0.5	N							55			0.02	8.5			12			13	12								R7-122-T-Z1
Tributary	07	17530	USEPA GLNPO	R7-122-T	Subsurface	11/25/09	0.5	1	N							54			0.02	4.1			9.3			16	16								R7-122-T-Z2
Tributary	07	13126	USEPA GLNPO	R7-123-T	Surface	11/23/09	0	0.5	N							80			0.01	0.2			0.8			6.7	12								R7-123-T-Z1
Tributary	07	13126	USEPA GLNPO	R7-123-T	Subsurface	11/23/09	0.5	1	N							81			0.07	1.9			1.2			6.4	9.2								R7-123-T-Z2
Tributary	07	12476	USEPA GLNPO	R7-124-T	Surface	11/23/09	0	0.4	N							69			0.5	9			7			7.8	6.5								R7-124-T-Z1
Tributary	07	7893	USEPA GLNPO	R7-203-T	Surface	06/29/10			N	52	32	2.5	8.9	43	4.5		96	93			91	84		71	64	62	52	100	100	100	100	100	98	39	R7-203-T-COMP
Tributary	07	7893	USEPA GLNPO	R7-203-T	Surface	06/29/10			N	54	39	0.8	6.5	46	0.3		100	99			98	92		79	71	67	54	100	100	100	100	100	100	46	R7-203-T-Z1A
Tributary	07	7847	USEPA GLNPO	R7-125-T	Surface	11/30/09	0	0.5	N							53			0.2	12			9.8			12	12								R7-125-T-Z1
Tributary	07	7847	USEPA GLNPO	R7-125-T	Subsurface	11/30/09	0.5	0.8	N							56			0.3	9			9.1			12	14								R7-125-T-Z2
Tributary	07	7122	USEPA GLNPO	R7-204-T	Surface	06/29/10			N	40	34	4.5	8.8	47	12		88	83			80	74		66	60	56	40	100	100	100	100	100	93	44	R7-204-T-Z1A
Tributary	07	7122	USEPA GLNPO	R7-205-T	Surface	06/29/10			N	42	39	3.5	16	58	0.5		99	96			90	80		65	57	53	42	100	100	100	100	100	100	64	R7-205-T-COMP
Tributary	07	7122	USEPA GLNPO	R7-205-T	Surface	06/29/10			N	51	35	1.1	12	48	1.3		99	98			94	86		73	66	63	51	100	100	100	100	100	100	62	R7-205-T-Z1A
Historic Creek	04	58365	USEPA GLNPO	R4-126-H	Surface	11/16/09	0	0.5	N							53			0.8	15			8.2			11	12								R4-126-H
Historic Creek	05	50439	USEPA GLNPO	R5-127-H	Surface	11/18/09	0	0.5	N							49			0.4	16			7.4			9.5	18								R5-127-H
Historic Creek	06	46767	USEPA GLNPO	R6-128-H	Surface	12/02/09	0	0.5	N							70			0.03	2.9			5			10	12								R6-128-H
Historic Creek	06	41557	USEPA GLNPO	R6-129-H	Surface	12/02/09	0	0.5	N							89							0.07			3	8								R6-129-H
Historic Creek	07	22493	USEPA GLNPO	R7-130-H	Surface	11/30/09	0	0.5	N							79			0.02	1.6			1.6			6.9	11								R7-130-H
Historic Creek	07	20971	USEPA GLNPO	R7-131-H	Surface	11/30/09	0	0.5	N							60				4.5			8.8			13	14								R7-131-H
Historic Creek	07	19323	USEPA GLNPO	R7-132-H	Surface	11/25/09	0	0.5	N							55			0.08	7.2			9.8			14	14								R7-132-H
Historic Creek	07	15606	USEPA GLNPO	R7-133-H	Surface	11/24/09	0	0.5	N							78				1.8			2.3			7.4	11								R7-133-H
Historic Creek	07	11544	USEPA GLNPO	R7-134-H	Surface	11/23/09	0	0.5	N							59			0.2	11			9.7			11	9								R7-134-H

Table D-5

Sediment Geotechnical Results for Remedial Investigation

Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	Fines	Fine Sand	Coarse Sand	Medium Sand	Sand	Gravel	Sieve Bottom Plate	Sieve No. 4	Sieve No. 10	Sieve No. 16	Sieve No. 35	Sieve, No. 20	Sieve No. 40	Sieve No. 50	Sieve, No. 60	Sieve No. 80	Sieve, No. 100	Sieve No. 200	Sieve, 19000 (microns)	Sieve, 25000 (microns)	Sieve, 37500 (microns)	Sieve, 50000 (microns)	Sieve, 75000 (microns)	Sieve, 9500 (microns)	Solids, Percent	Sample ID
Wetland	03	59706	USEPA GLNPO	R3-107-W	Surface	11/16/09	0	0.5	N							55			1.1	12			8.1			11	13								R3-107-W
Wetland	03	59217	USEPA GLNPO	R3-108-W	Surface	11/16/09	0	0.5	N							60				3.6			8.5			14	14								R3-108-W
Wetland	03	58946	USEPA GLNPO	R3-109-W	Surface	11/16/09	0	0.5	N							59				4.2			8.6			14	15								R3-109-W
Wetland	03	58435	USEPA GLNPO	R3-110-W	Surface	11/16/09	0	0.5	N							61		0.001	0.3	7.7			7.5			11	13								R3-110-W
Wetland	04	56998	USEPA GLNPO	R4-111-W	Surface	11/16/09	0	0.5	N							81			0.02	1.6			1.3			6.3	10								R4-111-W
Wetland	04	52367	USEPA GLNPO	R4-112-W	Surface	11/18/09	0	0.5	N							78			0.05	1.8			2.6			8.4	9.7								R4-112-W
Wetland	05	51709	USEPA GLNPO	R5-113-W	Surface	11/18/09	0	0.5	N							73			0.2	4			4			9.1	10								R5-113-W
Wetland	05	50833	USEPA GLNPO	R5-114-W	Surface	11/18/09	0	0.5	N							59			0.4	13			8.4			9.2	10								R5-114-W
Wetland	05	50230	USEPA GLNPO	R5-115-W	Surface	11/18/09	0	0.5	N							44			0.2	15			13			14	14								R5-115-W
Wetland	05	49252	USEPA GLNPO	R5-116-W	Surface	11/19/09	0	0.5	N							76				1.4			2.6			9	11							28	R5-116-W
Wetland	06	45170	USEPA GLNPO	R6-117-W	Surface	12/02/09	0	0.5	N							75			0.02	3			4.8			8	8.7								R6-117-W
Wetland	07	7785	USEPA GLNPO	R7-118-W	Surface	11/30/09	0	0.5	N							70				2.9			6.4			10	11								R7-118-W

Notes:

All concentrations reported in milligram/kilogram (mg/kg)

Key:

18MC	=	Eighteenmile Creek
	=	No detections
-C	=	Hand-core creek location/sample
-COMP	=	Composite
-CR	=	Hand-core creek location/sample Replicate
ft	=	Feet
FD	=	Field Duplicate
-H	=	Historical channel location/sample
-P	=	Ponar creek location/sample
N	=	Normal Sample
-T	=	Tributary location/sample.
-V	=	Vibracore creek location/sample
-VR	=	Vibracore creek location/sample Replicate
-W	=	Wetland location/sample
-Z	=	Sample depth interval consecutively numbered

Table D-6
Detailed Final Sediment Model Output
Eighteenmile Creek Area of Concern

Segment	Reach	Start		End Meter		Area	Volume	Water Depth	Top of Water	Sediment Depth	Top of Sediment	Bottom of Sediment
		(meters)	(ft)	(meter)	(ft)	(square ft)	(Average in cubic ft)	(Average in ft)	(Elevation in ft)	(Average in ft)	(Elevation in ft)	(Elevation in ft)
0	10	0	0	152	500			1.00	499.54	2.00	498.54	496.54
1	10	152	500	297	973			1.30	481.16	2.10	479.86	477.76
2	10	297	973	421	1381	29110	61131	1.30	481.32	2.10	480.02	477.92
3	10	421	1381	580	1902	16766	26825	5.00	468.02	1.60	463.02	461.42
4	10	580	1902	730	2394	19622	29433	2.00	464.38	1.50	462.38	460.88
5	10	730	2394	889	2918	18624	27936	3.00	461.84	1.50	458.84	457.34
6	10	889	2918	1035	3395	19335	5135	2.00	452.52	0.27	450.52	450.25
7	9	1035	3395	1189	3903	18616	18732	1.50	446.68	1.01	445.18	444.18
8	9	1189	3903	1340	4396	15990	15015	1.00	442.59	0.94	441.59	440.65
9	8	1340	4396	1497	4912	14282	11661	0.50	426.04	0.82	425.54	424.72
10	8	1497	4912	1641	5385	14727	10351	0.50	402.81	0.70	402.31	401.60
11	8	1641	5385	1794	5885	12731	7356	0.50	379.76	0.58	379.26	378.68
12	8	1794	5885	1947	6389	12923	8424	0.50	366.99	0.65	366.49	365.84
13	7	1947	6389	2093	6867	17771	11928	0.60	359.36	0.67	358.76	358.09
14	7	2093	6867	2248	7376	21875	21700	1.80	357.93	0.99	356.13	355.14
15	7	2248	7376	2401	7879	51138	109784	2.63	357.85	2.15	355.22	353.08
16	7	2401	7879	2561	8402	43165	87006	2.50	357.73	2.02	355.23	353.22
17	7	2561	8402	2701	8863	23200	43160	4.33	357.35	1.86	353.02	351.16
18	7	2701	8863	2845	9334	23348	35345	3.67	356.94	1.51	353.28	351.76
19	7	2845	9334	3005	9860	21499	24713	4.00	356.17	1.15	352.17	351.02
20	7	3005	9860	3158	10362	20801	54265	2.75	356.14	2.61	353.39	350.78
21	7	3158	10362	3309	10856	23672	40335	3.00	356.21	1.70	353.21	351.51
22	7	3309	10856	3462	11360	23093	14503	2.67	355.94	0.63	353.27	352.64
23	7	3462	11360	3619	11873	24525	24559	2.44	354.22	1.00	351.78	350.78
24	7	3619	11873	3767	12360	24071	26458	2.67	354.71	1.10	352.04	350.94
25	7	3767	12360	3925	12878	27891	29018	2.63	354.55	1.04	351.92	350.88
26	7	3925	12878	4078	13379	25027	19197	3.17	354.00	0.77	350.83	350.07
27	7	4078	13379	4234	13892	27174	19612	2.25	353.40	0.72	351.15	350.43
28	7	4234	13892	4389	14399	25714	23108	2.33	353.54	0.90	351.21	350.31
29	7	4389	14399	4544	14909	23754	20372	2.67	353.75	0.86	351.09	350.23
30	7	4544	14909	4699	15416	20984	16977	2.83	352.94	0.81	350.10	349.29
31	7	4699	15416	4856	15931	25391	18767	2.56	352.30	0.74	349.74	349.00
32	7	4856	15931	5006	16426	31207	23411	2.06	352.66	0.75	350.59	349.84
33	7	5006	16426	5167	16952	30124	26127	1.83	352.19	0.87	350.35	349.49
34	7	5167	16952	5318	17450	32963	38396	2.00	351.20	1.16	349.20	348.04
35	7	5318	17450	5471	17952	37579	53461	2.25	350.57	1.42	348.32	346.90
36	7	5471	17952	5619	18436	23652	38655	2.65	350.53	1.63	347.88	346.25

Table D-6
Detailed Final Sediment Model Output
Eighteenmile Creek Area of Concern

Segment	Reach	Start		End Meter		Area	Volume	Water Depth	Top of Water	Sediment Depth	Top of Sediment	Bottom of Sediment
		(meters)	(ft)	(meter)	(ft)	(square ft)	(Average in cubic ft)	(Average in ft)	(Elevation in ft)	(Average in ft)	(Elevation in ft)	(Elevation in ft)
37	7	5619	18436	5775	18948	29529	42111	1.62	350.05	1.43	348.43	347.01
38	7	5775	18948	5932	19464	78207	87539	2.44	350.05	1.12	347.61	346.49
39	7	5932	19464	6084	19963	23719	43511	1.88	349.42	1.83	347.54	345.71
40	7	6084	19963	6243	20482	29044	41792	1.40	349.82	1.44	348.42	346.98
41	7	6243	20482	6397	20987	27070	42202	1.60	349.57	1.56	347.97	346.41
42	7	6397	20987	6564	21536	25857	35275	2.17	348.57	1.36	346.40	345.04
43	7	6564	21536	6738	22108	27381	55217	2.20	348.06	2.02	345.86	343.84
44	7	6738	22108	6893	22614	26974	34587	2.48	348.98	1.28	346.50	345.22
45	7	6893	22614	7038	23092	27602	32158	2.00	348.35	1.17	346.35	345.18
46	7	7038	23092	7200	23623	28792	41429	1.83	348.49	1.44	346.65	345.22
47	7	7200	23623	7352	24122	25357	33084	2.29	348.40	1.30	346.11	344.81
48	7	7352	24122	7509	24636	25829	36019	3.04	348.02	1.39	344.97	343.58
49	7	7509	24636	7657	25121	21054	43870	2.33	347.75	2.08	345.41	343.33
50	7	7657	25121	7813	25633	23119	29022	2.13	347.58	1.26	345.45	344.20
51	7	7813	25633	7964	26131	20966	23371	0.00	346.93	1.11	346.93	345.82
52	7	7964	26131	8113	26619	23221	38749	2.76	347.04	1.67	344.28	342.61
53	7	8113	26619	8261	27104	34240	65323	1.69	346.52	1.91	344.83	342.93
54	7	8261	27104	8440	27691	27991	54057	2.06	345.75	1.93	343.69	341.75
55	7	8440	27691	8593	28195	30413	58929	2.33	345.43	1.94	343.10	341.16
56	7	8593	28195	8745	28693	33479	46089	2.15	344.79	1.38	342.64	341.27
57	7	8745	28693	8897	29192	35582	30362	2.17	344.51	0.85	342.34	341.49
58	7	8897	29192	9050	29693	32422	62432	2.33	344.27	1.93	341.93	340.01
59	7	9050	29693	9203	30197	37641	73015	2.20	344.47	1.94	342.27	340.33
60	7	9203	30197	9355	30695	29766	36725	1.92	344.50	1.23	342.59	341.35
61	7	9355	30695	9507	31191	33016	35236	2.80	343.77	1.07	340.97	339.90
62	6	9507	31191	9659	31692	37097	55964	2.37	342.96	1.51	340.59	339.09
63	6	9659	31692	9812	32193	35554	69879	2.72	343.12	1.97	340.40	338.44
64	6	9812	32193	9965	32694	38941	71903	2.43	343.40	1.85	340.97	339.12
65	6	9965	32694	10117	33194	34960	49167	2.53	343.01	1.41	340.48	339.07
66	6	10117	33194	10277	33720	41802	44332	2.80	342.56	1.06	339.76	338.70
67	6	10277	33720	10431	34225	30996	21776	2.63	342.11	0.70	339.48	338.78
68	6	10431	34225	10583	34724	29419	23217	2.17	342.14	0.79	339.97	339.18
69	6	10583	34724	10734	35219	36237	61188	2.90	342.16	1.69	339.26	337.57
70	6	10734	35219	10886	35718	34063	47957	2.03	342.03	1.41	340.01	338.60
71	6	10886	35718	11034	36202	39709	43813	2.18	341.82	1.10	339.64	338.54
72	6	11034	36202	11186	36703	36973	30242	2.52	341.76	0.82	339.24	338.42
73	6	11186	36703	11349	37235	35034	26615	1.84	341.53	0.76	339.69	338.93

Table D-6
Detailed Final Sediment Model Output
Eighteenmile Creek Area of Concern

Segment	Reach	Start		End Meter		Area	Volume	Water Depth	Top of Water	Sediment Depth	Top of Sediment	Bottom of Sediment
		(meters)	(ft)	(meter)	(ft)	(square ft)	(Average in cubic ft)	(Average in ft)	(Elevation in ft)	(Average in ft)	(Elevation in ft)	(Elevation in ft)
74	6	11349	37235	11492	37704	39861	20408	2.03	341.32	0.51	339.29	338.78
75	6	11492	37704	11648	38218	34896	16275	1.06	340.14	0.47	339.08	338.61
76	6	11648	38218	11801	38719	33385	19847	1.27	338.79	0.59	337.52	336.92
77	6	11801	38719	11956	39226	46600	24574	1.37	338.46	0.53	337.09	336.57
78	6	11956	39226	12113	39742	34551	13438	1.13	337.57	0.39	336.45	336.06
79	6	12113	39742	12267	40248	33545	27515	1.60	337.34	0.82	335.74	334.92
80	6	12267	40248	12417	40740	44737	36273	1.48	337.32	0.81	335.84	335.02
81	6	12417	40740	12567	41232	39590	6188	1.13	337.36	0.16	336.23	336.07
82	6	12567	41232	12721	41738	38141	13720	1.45	336.08	0.36	334.63	334.27
83	6	12721	41738	12878	42251	32594	15952	1.90	335.10	0.49	333.20	332.71
84	6	12878	42251	13035	42767	35355	15892	2.34	334.89	0.45	332.55	332.10
85	6	13035	42767	13191	43279	36351	25073	1.96	339.73	0.69	337.77	337.08
86	6	13191	43279	13342	43774	31997	17609	2.15	338.98	0.55	336.83	336.28
87	6	13342	43774	13494	44273	23981	9271	1.20	337.42	0.39	336.22	335.83
88	6	13494	44273	13642	44761	40769	24553	1.37	341.04	0.60	339.68	339.07
89	6	13642	44761	13803	45288	34878	11270	1.18	343.95	0.32	342.77	342.45
90	6	13803	45288	13954	45782	33430	8524	1.07	333.44	0.25	332.37	332.12
91	6	13954	45782	14098	46256	45060	15262	1.11	332.86	0.34	331.74	331.40
92	6	14098	46256	14246	46742	52701	18708	0.95	330.26	0.35	329.31	328.95
93	6	14246	46742	14411	47281	45776	16784	1.31	327.99	0.37	326.68	326.31
94	6	14411	47281	14560	47770	42667	30418	1.51	331.91	0.71	330.40	329.69
95	6	14560	47770	14717	48287	33547	19824	1.77	331.67	0.59	329.90	329.31
96	6	14717	48287	14865	48773	35483	37959	2.17	325.08	1.07	322.91	321.84
97	5	14865	48773	15021	49282	45014	112573	2.72	324.02	2.50	321.30	318.80
98	5	15021	49282	15172	49779	44555	116454	4.03	323.86	2.61	319.83	317.22
99	5	15172	49779	15326	50286	198732	675728	5.02	325.50	3.40	320.48	317.08
100	5	15326	50286	15482	50797	139620	425614	3.13	325.12	3.05	321.99	318.94
101	5	15482	50797	15633	51293	46606	173799	3.86	323.97	3.73	320.12	316.39
102	5	15633	51293	15788	51800	63800	240556	5.75	324.46	3.77	318.71	314.94
103	5	15788	51800	15944	52314	71128	120175	0.53	316.52	1.69	316.00	314.31
104	4	15944	52314	16096	52811	53721	25749	0.96	309.35	0.48	308.40	307.92
105	4	16096	52811	16246	53305	46668	19715	1.42	308.38	0.42	306.96	306.54
106	4	16246	53305	16399	53806	51523	21267	1.22	307.35	0.41	306.13	305.72
107	4	16399	53806	16553	54309	54946	15424	0.97	305.92	0.28	304.95	304.67
108	4	16553	54309	16709	54821	46412	19469	0.88	304.06	0.42	303.18	302.77
109	4	16709	54821	16865	55335	41532	18165	1.02	301.90	0.44	300.88	300.44
110	4	16865	55335	17020	55843	38893	13731	0.58	299.12	0.35	298.53	298.18

Table D-6
Detailed Final Sediment Model Output
Eighteenmile Creek Area of Concern

Segment	Reach	Start		End Meter		Area	Volume	Water Depth	Top of Water	Sediment Depth	Top of Sediment	Bottom of Sediment
		(meters)	(ft)	(meter)	(ft)	(square ft)	(Average in cubic ft)	(Average in ft)	(Elevation in ft)	(Average in ft)	(Elevation in ft)	(Elevation in ft)
111	4	17020	55843	17174	56348	35671	25472	1.00	296.85	0.71	295.85	295.13
112	4	17174	56348	17327	56850	56288	19661	0.87	295.44	0.35	294.57	294.22
113	4	17327	56850	17490	57384	47644	14855	1.80	301.91	0.31	300.11	299.80
114	4	17490	57384	17640	57876	40833	18873	1.08	292.76	0.46	291.68	291.22
115	4	17640	57876	17799	58397	36323	42006	2.75	292.56	1.16	289.81	288.65
116	4	17799	58397	17952	58900	91058	249460	2.28	292.00	2.74	289.72	286.98
117	3	17952	58900	18102	59392	52424	146465	2.61	292.16	2.79	289.55	286.76
118	3	18102	59392	18257	59901	88073	468380	2.74	292.06	5.32	289.32	284.00
119	3	18257	59901	18410	60402	113003	652833	2.75	291.80	5.78	289.05	283.27
120	3	18410	60402	18562	60901	148511	1274917	2.63	291.76	8.58	289.13	280.55
121	3	18562	60901	18715	61405	153538	1560134	1.93	291.55	10.16	289.62	279.46
122	2	18715	61405	18867	61902	123743	1605662	2.91	291.45	12.98	288.54	275.56
123	2	18867	61902	19012	62378	151671	1963669	3.27	291.62	12.95	288.35	275.40
124	2	19012	62378	19163	62874	157299	2095600	4.65	291.72	13.32	287.07	273.75
125	2	19163	62874	19317	63378	148921	2031800	6.88	291.88	13.64	285.00	271.35
126	2	19317	63378	19473	63891	136194	1817672	8.97	292.27	13.35	283.31	269.96
127	2	19473	63891	19627	64396	134557	1618356	10.91	292.23	12.03	281.32	269.30
128	2	19627	64396	19777	64888	129179	1336047	13.86	291.92	10.34	278.06	267.72
129	2	19777	64888	19929	65387	139624	1252828	15.21	291.80	8.97	276.59	267.61
130	2	19929	65387	20083	65892	175465	1507651	17.49	291.79	8.59	274.30	265.70
131	2	20083	65892	20239	66403	176050	1698222	19.33	291.38	9.65	272.05	262.40
132	2	20239	66403	20389	66897	156261	1700529	20.69	291.48	10.88	270.79	259.91
133	2	20389	66897	20543	67403	196187	2279035	24.18	291.21	11.62	267.03	255.41
134	2	20543	67403	20695	67900	171328	2063470	25.08	291.51	12.04	266.42	254.38
135	2	20695	67900	20840	68376	171838	2137506	27.50	291.57	12.44	264.08	251.64
136	2	20840	68500	21031	68500			2.00	291.47	1.00	289.47	288.47
137	1	21031	69000	21184	69000			2.00	247.22	1.00	245.22	244.22
138	1	21184	69500	21336	69500			2.25	245.83	1.13	243.58	242.46
139	1	21336	70000	21488	70000			2.50	245.63	1.25	243.13	241.88
140	1	21488	70500	21641	70500			3.50	245.46	1.75	241.96	240.21
141	1	21641	71000	21793	71000			4.50	245.82	2.25	241.32	239.07
142	1	21793	71500	21946	71500			5.50	245.58	2.75	240.08	237.33
143	1	21946	72000	22098	72000			6.50	245.63	3.25	239.13	235.88
144	1	22098	72500	22250	72500			5.50	245.73	2.75	240.23	237.48
145	1	22250	73000	22403	73000			5.00	251.12	2.50	246.12	243.62
146	1	22403	73500	22555	73500			5.00	245.91	2.50	240.91	238.41
147	1	22555	74000	22708	74000			4.50	245.71	2.25	241.21	238.96

Table D-6
Detailed Final Sediment Model Output
Eighteenmile Creek Area of Concern

Segment	Reach	Start		End Meter		Area	Volume	Water Depth	Top of Water	Sediment Depth	Top of Sediment	Bottom of Sediment
		(meters)	(ft)	(meter)	(ft)	(square ft)	(Average in cubic ft)	(Average in ft)	(Elevation in ft)	(Average in ft)	(Elevation in ft)	(Elevation in ft)
148	1	22708	74500	22860	74500			4.00	245.15	2.00	241.15	239.15
149	1	22860	75000	23012	75000			8.00	245.46	4.00	237.46	233.46
150	1	23012	75500	23165	75500			8.25	245.38	4.13	237.13	233.01
151	1	23165	76000	23317	76000			8.50	245.30	4.25	236.80	232.55
152	1	23317	76500	23470	76500			10.50	245.44	5.25	234.94	229.69
153	1	23470	77000	23622	77000			8.50	245.61	4.25	237.11	232.86
154	1	23622	77500	23774	77500			10.00	245.69	5.00	235.69	230.69
155	1	23774	78000	23927	78000			9.50	245.82	4.75	236.32	231.57
156	1	23927	78500	24079	78500			9.00	245.91	4.50	236.91	232.41
157	1	24079	79000	24232	79000			6.00	245.72	3.00	239.72	236.72
158	1	24232	79500	24384	79500			13.50	245.71	6.75	232.21	225.46
159	1	24384	80000	25000	80000			14.00	245.57	7.00	231.57	224.57

Key:

ft = Feet

Table D-7
Detailed List of Sediment Chemistry TCLP Positive Results for Remedial Investigation
Eighteenmile Creek Area of Concern

Sample Location	Reach	Distance from Erie Canal (ft)	Study	Location	Overall Depth	Sample Date	Start Depth (ft)	End Depth (ft)	Sample Type	ARSENIC	BARIUM	CADMIUM	CHROMIUM, TOTAL	LEAD	SELENIUM	SILVER	Sample ID
Creek	02	68395	USEPA GLNPO	R2-002-V	Subsurface	5/18/2010	3	4	N		0.109						R2-002-V-Z4
Creek	02	67111	USEPA GLNPO	R2-005-V	Subsurface	5/19/2010	2	3	N		0.156						R2-005-V-Z3
Creek	02	67111	USEPA GLNPO	R2-005-V	Subsurface	5/19/2010	3	4	N		0.148			0.283			R2-005-V-Z4
Creek	02	65640	USEPA GLNPO	R2-008-V	Subsurface	5/19/2010	2	3	N		0.144						R2-008-V-Z3
Creek	02	61618	USEPA GLNPO	R2-014-V	Subsurface	5/25/2010	3	4	N		0.095			0.396			R2-014-V-Z4
Creek	02	61618	USEPA GLNPO	R2-014-V	Subsurface	5/25/2010	6	8	N		0.449			2.33			R2-014-V-Z6
Creek	03	60738	USEPA GLNPO	R3-017-V	Subsurface	5/26/2010	3	4	N		0.08			0.304			R3-017-V-Z4
Creek	03	60738	USEPA GLNPO	R3-017-V	Subsurface	5/26/2010	6	8	N		0.448	0.064		4.61			R3-017-V-Z6
Creek	03	58684	USEPA GLNPO	R3-026-V	Subsurface	5/27/2010	2	3	N		0.279			0.754			R3-026-V-Z3
Creek	04	55678	USEPA GLNPO	R4-031-C	Surface	11/16/2009	0	0.8	N		0.388			1.08			R4-031-C
Creek	05	51876	USEPA GLNPO	R5-040-V	Subsurface	5/20/2010	0.5	1	N		0.58			0.453			R5-040-V-Z1b
Creek	05	51134	USEPA GLNPO	R5-043-V	Surface	5/20/2010	0	1	N		0.412			0.282			R5-043-V-Z1P
Creek	05	51134	USEPA GLNPO	R5-043-V	Subsurface	5/20/2010	3	4	N		0.637			0.638			R5-043-V-Z4
Creek	05	50710	USEPA GLNPO	R5-045-V	Subsurface	5/20/2010	1	2	N		0.353						R5-045-V-Z2
Creek	05	50099	USEPA GLNPO	R5-046-V	Subsurface	5/20/2010	5	6	N		0.46			0.453			R5-046-V-Z5b
Creek	05	49723	USEPA GLNPO	R5-047-V	Subsurface	5/20/2010	1	2	N		0.361						R5-047-V-Z2
Creek	05	49472	USEPA GLNPO	R5-049-V	Subsurface	5/21/2010	1	2	N		0.192						R5-049-V-Z2
Creek	05	49472	USEPA GLNPO	R5-049-V	Subsurface	5/21/2010	2	3	N		0.165			0.225			R5-049-V-Z3
Creek	05	48925	USEPA GLNPO	R5-050-V	Subsurface	5/21/2010	1	2	N		0.536			1.12			R5-050-V-Z2
Creek	05	48925	USEPA GLNPO	R5-050-V	Subsurface	5/21/2010	3	4	N		0.286			1.79			R5-050-V-Z4
Creek	06	48241	USEPA GLNPO	R6-052-C	Surface	11/19/2009	0	1.3	N		0.671	0.023		6.98			R6-052-C
Creek	07	29933	USEPA GLNPO	R7-069-C	Surface	11/25/2009	0	2.4	N		0.389			0.751			R7-069-C
Creek	07	8556	USEPA GLNPO	R7-105-C	Surface	11/30/2009	0	1.4	N		0.349	0.027		1.6			R7-105-C
Creek	09	3093	NYSDEC SRI	18MC-L16E-S03	Surface	4/24/2007	0.5	1	N		0.634	0.0143		0.683			18MC-L16E-S03-Z1
Creek	09	3090	NYSDEC SRI	18MC-L16E-S01	Surface	4/24/2007	0.4	1	N		0.74	0.0516		1.75			18MC-L16E-S01-Z1
Creek	10	2891	NYSDEC SRI	18MC-L15E-S03	Surface	4/24/2007	0.5	1	N		0.557	0.0604		8.04			18MC-L15E-S03-Z1
Creek	10	2890	NYSDEC SRI	18MC-L15E-S01	Surface	4/24/2007	0.5	0.9	N		0.627	0.0226		1.68			18MC-L15E-S01-Z1
Creek	10	2680	NYSDEC SRI	18MC-L14W-S03	Surface	4/24/2007	0.5	1.2	N		0.584	0.165		8.03			18MC-L14W-S03-Z1
Creek	10	2680	NYSDEC SRI	18MC-L14W-S03	Subsurface	4/24/2007	1.8	2.3	N		0.78	0.077		5.9			18MC-L14W-S03-Z2
Creek	10	2454	NYSDEC SRI	18MC-L14E-S03	Subsurface	4/24/2007	0.8	1.2	N		0.636	0.043		3.93			18MC-L14E-S03-Z1
Creek	10	2454	NYSDEC SRI	18MC-L14E-S02	Surface	4/24/2007	0	0.16	N		0.733	0.0148		1.24			18MC-L14E-S02-Z1
Creek	10	2454	NYSDEC SRI	18MC-L14E-S02	Subsurface	4/24/2007	1	1.5	N		0.457	0.0311		0.958			18MC-L14E-S02-Z2
Creek	10	2369	NYSDEC SRI	18MC-L13-S03	Surface	4/24/2007	0.5	1	N		0.609	0.0362		6.2			18MC-L13-S03-Z1
Creek	10	2182	NYSDEC SRI	18MC-L12-S03	Surface	4/24/2007	0.5	1.4	N		0.569	0.0056		1.3			18MC-L12-S03-Z1
Creek	10	1973	NYSDEC SRI	18MC-L11-S02	Surface	4/24/2007	0.5	0.9	N		0.258			0.717			18MC-L11-S02-Z1
Creek	10	1760	NYSDEC SRI	18MC-L10-S01	Surface	4/23/2007	0.5	1.5	N		0.61	0.0152	0.0072				18MC-L10-S01-Z1
Creek	10	1566	NYSDEC SRI	18MC-L09-S03	Subsurface	4/23/2007	1.5	2.5	N		0.828		0.002 J				18MC-L09-S03-Z1
Creek	10	1565	NYSDEC SRI	18MC-L09-S01	Surface	4/23/2007	0.5	1.2	N		0.381	0.0604	0.0018 J	5.12			18MC-L09-S01-Z1
Creek	10	174	NYSDEC SRI	18MC-L01W-S02	Subsurface	4/18/2007	0.5	1	N		0.362	0.0049					18MC-L01W-S02-Z2
Creek_E	10	761	NYSDEC SRI	18MC-L02E-S01	Subsurface	4/20/2007	0.8	1.5	N		0.375	0.01		0.793			18MC-L02E-S01-Z1

Notes:
All concentrations reported in milligram/L (mg/L)
Key:

18MC	=	Eighteenmile Creek
	=	No detections
-C	=	Hand-core creek location/sample
ft	=	Feet
N	=	Normal Sample
-V	=	Vibracore creek location/sample
-Z	=	Sample depth interval consecutively numbered