

To: Whom it may concern
From: Deepa de Alwis, St. Louis River Area of Concern Data Quality Coordinator
Minnesota Pollution Control Agency

Date: February 22, 2016

RE: Data Quality Disclaimer for this Report - Sediment Assessment Report – Revision 1, St. Louis Bay by
Weston Solutions, Inc., July 2012

The United States Environmental Protection Agency (USEPA), Great Lakes National Program Office (GLNPO) has notified MPCA that at this time the USEPA is unsure of the quality of the Polycyclic Aromatic Hydrocarbon (PAH) and Organic Carbon values in this report. This does not mean the data is of poor quality, but the quality is unknown at this time. The USEPA is conducting audits to determine the quality of the data, and will notify the MPCA when they have made a final determination.

TO: Whom It May Concern

FROM: Diane Desotelle, St. Louis River Area of Concern Coordinator
Susan Johnson, Superfund Project Leader

RE: MPCA Disclaimer for this Report – Sediment Assessment Report – Revision 1, St. Louis Bay by
Weston Solutions, Inc., July 2012

DATE: April 12, 2013

The study for this report was funded by the United States Environmental Protection Agency (U.S. EPA) Great Lakes National Program Office (GLNPO) as part of the sediment investigation work in the St. Louis River.

The values and analysis presented in the report is considered preliminary as the MPCA is aware of some data discrepancies. Since the date of this report, the calculated values and analysis have been modified as part of the MPCA data interpretation effort. In particular, calculated values and summations have been modified to reflect appropriate treatment of non-detect values. The outcome of this report in addition to MPCA's modifications will be included as part of the sediment database for the St. Louis River Area of Concern. Any mention of trade names or commercial products does not constitute endorsement or recommendation for use by the MPCA.

**SEDIMENT ASSESSMENT REPORT – REVISION 1
ST. LOUIS BAY-ST. LOUIS RIVER AREA OF CONCERN
DULUTH, ST. LOUIS COUNTY, MINNESOTA**

Prepared for

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ACRONYMS AND ABBREVIATIONS

%	Percent
ADR	Automated Data Review
AOC	Area of Concern
bss	Below sediment surface
BUI	Beneficial use impairment
CLP	Contract Laboratory Program
COPC	Contaminants of Potential Concern
DM&IR	Duluth, Missabe, and Iron Range
DRO	Diesel range organic
ESAT	Environmental Services Assistance Team
EXES	Exchange and Evaluation System
GLLA	Great Lakes Legacy Act
GLNPO	Great Lakes National Program Office
µg/kg	Microgram per kilogram
mg/kg	Milligram per kilogram
NFG	National Functional Guideline
ORO	Oil range organic
PAH	Polycyclic aromatic hydrocarbon
PCB	Polychlorinated biphenyl
PCDD	Polychlorinated dibenzo- <i>p</i> -dioxin
PCDF	Polychlorinated dibenzofuran
Pg/g	Picogram per gram
QA	Quality assurance
QC	Quality control
QAPP	Quality Assurance Project Plan
RAP	Remedial Action Plan
RPD	Relative Percent Difference
R/V	Research vessel
SMO	Sample Management Office
SOP	Standard Operating Procedure
SQT	Sediment Quality Target
START	Superfund Technical Assistance and Response Team
SVOC	Semivolatile organic compound
TAL	Target Analyte List
TCDD	2,3,7,8-tetrachlorodibenzo- <i>p</i> -dioxin
TCDD-TEQ	TCDD equivalent concentration
TCL	Target Compound List
TDD	Technical Direction Document
TEC	Toxicity Equivalence Concentration
TEF	Toxicity Equivalence Factor
TOC	Total organic carbon
TPH	Total petroleum hydrocarbon
U.S. EPA	United States Environmental Protection Agency
VSP	Visual Sampling Plan
WESTON	Weston Solutions, Inc.
WWTP	Wastewater treatment plant

EXECUTIVE SUMMARY

Weston Solutions, Inc. (WESTON[®]) has prepared this Sediment Assessment Report to summarize site characterization activities conducted for the St. Louis Bay Site (the Site) in Duluth, St. Louis County, Minnesota. WESTON prepared the Sediment Assessment Report in response to a request from the United States Environmental Protection Agency (U.S. EPA) Great Lakes National Program Office (GLNPO) under the Superfund Technical Assessment and Response Team (START) III contract EP-S5-06-04, Technical Direction Document (TDD) No. S05-0008-1004-031. The site characterization activities were conducted as part of the St. Louis River Area of Concern (AOC) Great Lakes Legacy Act (GLLA) project. The objectives of the site characterization activities were to collect geophysical and chemical samples needed to support project area characterization and potential remediation activities. The data collection activities were conducted in accordance with WESTON's Quality Assurance Project Plan (QAPP) dated September 2010.

St. Louis Bay is located within the St. Louis River AOC, Duluth, St. Louis County, Minnesota. The project area extends from the St. Louis River Interlake Duluth Tar Superfund Site to Superior Bay. The approximate area of the St. Louis Bay project area is 1,100 acres. The St. Louis Bay project area was segregated into the following focus areas:

- Area 1
 - Hibbard Power Plant Bay
 - Erie Pier Slip
 - Erie Pier Bay
 - Erie Pier Ponds
 - Coffee Ground Flats
- Area 2
 - Grassy Point
- Area 3
 - Interstate Island
 - Duluth, Missabe, and Iron Range (DM&IR) Slip and Bays

A total of 385 sediment samples (339 investigative and 46 duplicate samples) were collected from 92 sampling locations in the St. Louis Bay project area. A total of 175 sediment samples

(147 investigative and 28 duplicate) were collected from 43 locations within Area 1. A total of 127 sediment samples (118 investigative and 9 duplicate) were collected from 31 locations within Area 2. A total of 83 sediment samples (74 investigative and 9 duplicate) were collected from 18 locations within Area 3. Where sediment recovery was adequate, samples typically were collected from the following sampling intervals: 0 to 6 inches, 0 to 12 inches, 12 to 36 inches, 36 to 60 inches, 60 to 84 inches, 84 to 108 inches, and 108 to 132 inches below sediment surface (bss). Sediment cores were completed with the GLNPO research vessel (R/V) Mudpuppy II vibracoring system through the sediment depth to refusal or until native material was encountered. In shallower areas that were inaccessible with the Mudpuppy, sediment cores were completed with a vibracoring system mounted to a pontoon or hand-driven Lexan tubes.

All sediment samples were analyzed for the following contaminants of potential concern (COPC): Target Analyte List (TAL) metals (including mercury), polychlorinated biphenyls (PCB) Aroclors, polycyclic aromatic hydrocarbons (PAH) 17 list, and total petroleum hydrocarbons (TPH) as diesel range organics (DRO) corresponding to an alkaline range of C₁₀ through C₂₈, and oil range organics (ORO) corresponding to an alkaline range of C₂₈ through C₃₆. In addition, approximately 10 percent (%) of all sediment samples collected were analyzed for Target Compound List (TCL) pesticides, dioxins/furans, PCB congeners, PAH list 34 (in lieu of PAH list 17), and black carbon. All sediment samples also were analyzed for physical properties, including % moisture, total organic carbon (TOC), and grain size.

The sample results for PAHs, metals, PCBs, dioxin/furans, and pesticides were compared to the Level I and Level II Sediment Quality Targets (SQTs) as set forth in the document “Development of a Framework for Evaluating Numerical Sediment Quality Targets and Sediment Contamination in the St. Louis River Area of Concern” (by D.D. MacDonald, et. al., dated 2000). The Level I SQTs identify chemical concentrations which will provide a high level of protection for designated water uses in the St. Louis River AOC, specifically for aquatic life. By comparison, a lower level of protection for designated water uses in the St. Louis River AOC will be provided by the Level II SQTs.

A summary of the SQT exceedances is provided below for Areas 1, 2, and 3.

Area 1

Exceedances of Level I SQTs were identified for the following:

- Total PAH 17 concentrations exceeded Level I SQTs in 72 sediment samples and Total PAH 34 concentrations exceeded Level I SQTs in 10 sediment samples. At least one PAH exceeded Level I SQTs in 109 sediment samples.
- At least one metal exceeded Level I SQTs in 91 sediment samples.
- Total PCB concentrations exceeded Level I SQTs in 15 sediment samples for PCB Aroclors and Total PCB concentrations exceeded Level I SQTs in 11 sediment samples for PCB Congeners.
- TCDD-TEQ concentrations exceeded Level I SQTs in 15 sediment samples.

Exceedances of Level II SQTs were identified for the following:

- At least one PAH exceeded Level II SQTs in 14 sediment samples.
- At least one metal exceeded Level II SQTs in eight sediment samples.
- Total PCB concentrations exceeded Level II SQTs in one sediment sample for PCB Aroclors and Total PCB concentrations exceeded Level II SQTs in two sediment samples for PCB Congeners.

Area 2

Exceedances of Level I SQTs were identified for the following:

- Total PAH 17 concentrations exceeded Level I SQTs in 57 sediment samples and Total PAH 34 concentrations exceeded Level I SQTs in 8 sediment samples. At least one PAH exceeded Level I SQTs in 77 sediment samples.
- At least one metal exceeded Level I SQTs in 52 sediment samples.
- Total PCB concentrations exceeded Level I SQTs in one sediment sample for PCB Aroclors and Total PCB concentrations exceeded Level I SQTs in 5 sediment samples for PCB Congeners.
- TCDD-TEQ concentrations exceeded Level I SQTs in 11 sediment samples.

Exceedances of Level II SQTs were identified for the following:

- Total PAH 17 concentrations exceeded Level II SQTs in one sediment sample. At least one PAH exceeded Level II SQTs in 20 sediment samples.
- One metal exceeded Level II SQTs in two sediment samples.
- TCDD-TEQ concentrations exceeded Level II SQTs in three sediment samples.

Area 3

Exceedances of Level I SQTs were identified for the following:

- Total PAH 17 concentrations exceeded Level I SQTs in 14 sediment samples and Total PAH 34 concentrations exceeded Level I SQTs in three sediment samples. At least one PAH exceeded Level I SQTs in 35 sediment samples.
- At least one metal exceeded Level I SQTs in 22 sediment samples.
- Total PCB concentrations exceeded Level I SQTs in two sediment samples for PCB Aroclors and Total PCB concentrations exceeded Level I SQTs in two sediment samples for PCB Congeners.
- TCDD-TEQ concentrations exceeded Level I SQTs in four sediment samples.

Exceedances of Level II SQTs were identified for the following:

- One PAH exceeded Level II SQTs in two sediment samples.

1. INTRODUCTION

Weston Solutions, Inc. (WESTON[®]) has prepared this Sediment Assessment Report to summarize site characterization activities conducted for the St. Louis Bay Site (the Site) in Duluth, St. Louis County, Minnesota (**Figure 1-1**). WESTON prepared the Sediment Assessment Report in response to a request from the United States Environmental Protection Agency (U.S. EPA) Great Lakes National Program Office (GLNPO) under the Superfund Technical Assessment and Response Team (START) III contract EP-S5-06-04, Technical Direction Document (TDD) No. S05-0008-1004-031. The site characterization activities were conducted as part of the St. Louis River Area of Concern (AOC) Great Lakes Legacy Act (GLLA) project. The objectives of the site characterization activities were to collect geophysical and chemical samples needed to support project area characterization and potential remediation activities. The data collection activities were conducted in accordance with WESTON's Quality Assurance Project Plan (QAPP) dated September 2010.

The sections below discuss the report organization, site description, site history, the purpose of the study and project objectives, and contaminants of potential concern (COPC) and target analytes.

1.1 REPORT ORGANIZATION

This Sediment Assessment Report is organized as follows:

- Section 1 – Introduction
- Section 2 – Site Characterization Activities
- Section 3 – Field and Analytical Results
- Section 4 – Data Completeness
- Section 5 – Summary

Tables and figures are included after Section 5. Photographs of sampling activities are included in **Appendix A** and sediment collection field data sheets for each sediment core are included in **Appendix B**.

1.2 SITE DESCRIPTION

St. Louis Bay is located within the St. Louis River AOC, Duluth, St. Louis County, Minnesota (**Figure 1-1**). The project area extends from the St. Louis River Interlake Duluth Tar Superfund Site to Superior Bay. The approximate area of the St. Louis Bay project area is 1,100 acres. The St. Louis Bay project area was segregated into the following focus areas (**Figure 1-2**):

- Area 1
 - Hibbard Power Plant Bay
 - Erie Pier Slip
 - Erie Pier Bay
 - Erie Pier Ponds
 - Coffee Ground Flats
- Area 2
 - Grassy Point
- Area 3
 - Interstate Island
 - Duluth, Missabe, and Iron Range (DM&IR) Slip and Bays

The land surrounding St. Louis Bay is primarily industrial and commercial and includes a power plant, loading docks, a paper mill (established in 2001), and a wastewater treatment plant (WWTP). St. Louis Bay may have received inputs of contaminants from several sources over the past century including a coal-fired power plant, taconite storage and shipping facility, and sawmill. In general, sediments in the area are suspected to have elevated concentrations of oil and grease, mercury, and heavy metals. Most historical samples collected from St. Louis Bay have been collected at the sediment surface, thus potential contamination at depth is unknown.

1.3 SITE HISTORY

Contaminated sediments in the St. Louis Bay project area are assumed to contribute to beneficial use impairments (BUI) for the AOC. However, adequate historical sampling data for the St. Louis Bay project area is not available to assess the impact of the contamination. When AOCs were designated, delisting was based upon restoration of 14 BUIs for the entire AOC. Impairment of beneficial use means a change in the chemical, physical, or biological integrity of

the Great Lakes ecosystem. According to the Remedial Action Plan (RAP), nine BUIs in the St. Louis River AOC required restoration. These BUIs included the following:

- Restrictions on fish and wildlife consumption
- Excessive loading of sediment and nutrients
- Degradation of fish and wildlife populations
- Beach closings
- Fish tumors or other deformities
- Degradation of aesthetics
- Degradation of benthos
- Restriction on dredging activities
- Loss of fish and wildlife habitat

In 2004, the St. Louis River Remedial Action Committee identified the goal to “clean-up all hotspot contaminated sediments sites by 2020” as part of the AOC’s delisting strategy and named St. Louis Bay as a target for sediment remediation.

1.4 PURPOSE OF STUDY AND PROJECT OBJECTIVE

The purpose of the St. Louis Bay site characterization activities was to further define chemical contaminants in the sediment, locate contaminated areas for additional evaluation, delineate hotspots, and attempt to identify any ongoing sources. The objective of the site characterization activities was to collect samples for chemical and physical properties analysis needed to support project area characterization and potential remediation activities.

1.5 COPCs AND TARGET ANALYTES

All sediment samples were analyzed for the following COPCs: Target Analyte List (TAL) metals (including mercury), polychlorinated biphenyls (PCB) Aroclors, polycyclic aromatic hydrocarbons (PAH) 17 list, and total petroleum hydrocarbons (TPH) as diesel range organics (DRO) corresponding to an alkaline range of C₁₀ through C₂₈, and oil range organics (ORO) corresponding to an alkaline range of C₂₈ through C₃₆. In addition, approximately 10 percent (%) of all sediment samples collected were analyzed for Target Compound List (TCL) pesticides, dioxins/furans, PCB congeners, PAH list 34 (in lieu of PAH list 17), and black carbon. All sediment samples also were analyzed for physical properties, including % moisture, total organic carbon (TOC), and grain size.

2. SITE CHARACTERIZATION ACTIVITIES

Site characterization activities were conducted from October 5 through 16, 2010, and included sediment sample collection and sediment characterization as discussed below.

2.1 SEDIMENT SAMPLE COLLECTION

The sample collection procedures are detailed in WESTON's QAPP dated September 2010. The data collected during characterization activities will be used to (1) evaluate the locations of the most heavily contaminated sediment and (2) focus areas for further evaluation and/or remediation.

The St. Louis Bay project area extends from the St. Louis River Interlake Duluth Tar Superfund Site to Superior Bay (**Figure 1-1**). The approximate area of the St. Louis Bay project area is 1,100 acres. Most sediment sampling locations were selected using Visual Sampling Plan (VSP) software with a sample design based on detecting "hot spots" (local areas of elevated concentrations). Area 1 consisted of sampling locations SLB10-1-20 through SLB10-1-40, SLB10-1-42, and SLB10-1-44 through SLB10-1-64. Proposed sampling locations SLB-41 and SLB-43 within Area 1 were not completed because of inaccessibility. Area 2 consisted of sampling locations SLB10-2-65 through SLB10-2-77, SLB10-2-79, and SLB10-2-81 through SLB10-2-97. Proposed sampling location SLB10-2-78 was not completed because of inaccessibility and location SLB10-2-80 was not completed because of a wood obstruction. Area 3 consisted of sampling locations SLB10-3-2 through SLB10-3-19. Proposed sampling location SLB10-3-1 was not completed because of inaccessibility. **Table 2-1** presents the sampling location coordinates for Area 1, Area 2, and Area 3. **Figure 2-1** presents the sediment sampling locations for Area 1, Area 2, and Area 3.

Sediment cores were completed with the GLNPO research vessel (R/V) Mudpuppy II vibracoring system through the sediment depth to refusal or until native material was encountered. In shallower areas that were inaccessible with the Mudpuppy, sediment cores were completed with a vibracoring system mounted to a pontoon or hand-driven Lexan tubes. The

maximum water depth encountered during sediment sampling was 26.25 feet and the maximum sediment depth measured was 9.75 feet.

Where sediment recovery was adequate, samples typically were collected from the following sampling intervals: 0 to 6 inches, 0 to 12 inches, 12 to 36 inches, 36 to 60 inches, 60 to 84 inches, 84 to 108 inches, and 108 to 132 inches below sediment surface (bss). If less than 12 inches of sediment was encountered in the bottom interval, it was included with the previous interval. If more than 12 inches of sediment was encountered in the bottom interval, it was considered a new interval. The surface interval, 0 to 6 inches, was collected using a ponar to ensure that the required sample volumes were obtained. In addition, the 6- to 12-inch interval, presented in the QAPP, was changed to the 0- to 12-inch interval to ensure that the required sample volumes were obtained. Sediment collected from each sampling depth interval, noted above, was homogenized and an aliquot of each sediment sample was submitted for laboratory analysis.

A total of 385 sediment samples (339 investigative and 46 duplicate samples) were collected from 92 sampling locations in the St. Louis Bay project area. A total of 175 sediment samples (147 investigative and 28 duplicate) were collected from 43 locations within Area 1. A total of 127 sediment samples (118 investigative and 9 duplicate) were collected from 31 locations within Area 2. A total of 83 sediment samples (74 investigative and 9 duplicate) were collected from 18 locations within Area 3.

A U.S. EPA Contract Laboratory Program (CLP) laboratory analyzed the samples for TAL metals (including mercury), PCB Aroclors, PCB congeners, PAHs (17 and 34 lists), % moisture, TCL pesticides, and dioxin/furans. A WESTON-procured subcontracted laboratory, Test America Burlington of Burlington, Vermont, analyzed the samples for grain size, TOC, and black carbon where co-located PAH (34 list) samples were collected. A WESTON-procured subcontracted laboratory, Columbia Analytical Services in Kelso, Washington, analyzed the samples for TOC at all other locations. A WESTON-procured subcontracted laboratory, TriMatrix Laboratories in Grand Rapids, Michigan, analyzed the samples for TPH DRO and TPH ORO. A summary of the sample information and analyses for Areas 1, 2, and 3 is

presented on **Table 2-2**. The results of the sediment sampling investigation are discussed in Section 3.

2.2 SEDIMENT CHARACTERISTICS

2.2.1 Area 1

During site characterization activities, sediment from the area of Erie Pier Slip, Bay, and Ponds of Area 1 consisted mostly of dark brown to black fine-grained silty sand and sandy silt. Some coal fragments were noted at SLB10-1-21. Sediment from the area of Hibbard Power Plant Bay of Area 1 consisted mostly of dark brown to black fine-to medium-grained sand with some silt. Trace organics were noted at SLB10-1-36. Sediment from the area of Coffee Ground Flats of Area 1 consisted mostly of dark brown fine-grained silt with sand. Trace organics (less than 10% organic material present) were noted at SLB10-1-47 and SLB10-1-50 through SLB10-1-54. Sediment from the remainder of Area 1 consisted mostly of dark brown silt with trace sands and organics. Depth of sediment recovery at Area 1 ranged from 10 inches to 9.66 feet. Additional detail regarding geologic profile and water and sediment depth are included in the sediment collection field data sheets in **Appendix B**.

2.2.2 Area 2

During site characterization activities, sediment from the area of Grassy Point of Area 2 consisted mostly of dark brown silt with trace sands. Trace organics (less than 10% organic material present) were noted at SLB10-279, SLB10-2-84, and SLB10-2-85. Sediment from the remainder of Area 2 consisted mostly of dark brown silt with trace sands and organics. Cobbles of coal were noted in SLB10-2-88. In the area of SLB10-2-82, light brown fine- to medium-grained sand was encountered. Depth of sediment recovery at Area 2 ranged from 1 foot to 9.42 feet. Additional detail regarding geologic profile and water and sediment depth are included in the sediment collection field data sheets in **Appendix B**.

2.2.3 Area 3

During site characterization activities, sediment from the area of Interstate Island of Area 3 consisted mostly of dark brown silt with trace sands. Several organic layers were noted in SLB10-3-3. In the area of SLB10-3-4, dark brown medium-grained sand with silt was encountered. Sediment from the area of DM&IR Slip and Bays of Area 3 consisted mostly of dark brown silt with trace sands. Some organics were noted in SLB10-3-6 and SLB10-3-10. Sediment from the remainder of Area 3 consisted mostly of dark brown silty sand/sandy silt. Trace organics (less than 10% organic material present) were noted in SLB10-3-16, SLB10-3-17, and SLB10-3-19. Cobbles were noted in SLB10-3-19. In the area of SLB10-3-12, brown silty clay with some medium-grained sand was encountered and in the area of SLB10-3-13, brown fine- to medium-grained sand was encountered. Depth of sediment recovery at Area 3 ranged from 10 inches to 9.75 feet. Additional detail regarding geologic profile and water and sediment depth are included in the sediment collection field data sheets in **Appendix B**.

3. FIELD AND ANALYTICAL RESULTS

This section summarizes analytical results for the site characterization samples collected from October 5 to 16, 2010. A total of 385 sediment samples (339 investigative and 46 duplicate) were collected from 92 sampling locations within St. Louis Bay. The table below summarizes the analytical parameters for the samples collected.

Analysis	Sample Depth (inches bss)	Area 1 No. Samples	Area 2 No. Samples	Area 3 No. Samples	Total Sediment Samples
PAHs (17 list)	All depths	156	114	77	347
PAHs (34 list)	0–6	19	13	6	38
TAL Metals	All depths	175	127	83	385
PCB Aroclors	All depths	175	127	83	385
PCB Congeners	0–6	19	13	6	38
Pesticides	0–6	19	13	6	38
TPH DRO/ORO	All depths	175	127	83	385
Dioxins/Furans	0–6	19	13	6	38
Grain Size	All depths	147	121	74	342
TOC	All depths	175	127	83	385
Black Carbon	0–6	19	15	6	40

The sample results for PAHs, metals, PCBs, dioxin/furans, and pesticides were compared to the Level I and Level II Sediment Quality Targets (SQTs) as set forth in the document “Development of a Framework for Evaluating Numerical Sediment Quality Targets and Sediment Contamination in the St. Louis River Area of Concern” (by D.D. MacDonald, et. al., dated 2000). The Level I SQTs identify chemical concentrations which will provide a high level of protection for designated water uses in the St. Louis River AOC, specifically for aquatic life. By comparison, a lower level of protection for designated water uses in the St. Louis River AOC will be provided by the Level II SQTs.

Tables 3-1a through **3-1d** summarize the analytical results by sediment depth interval. These tables include the number of samples analyzed per depth interval; the number of detected results; number and percent of non-detect results; maximum, minimum, and average detected concentrations; screening criteria; and the percent of samples exceeding the screening criteria. **Tables 3-2a** through **3-9a** present the analytical results for Area 1, **Tables 3-2b** through **3-9b** present the analytical results for Area 2, and **Tables 3-2c** through **3-9c** present the analytical results for Area 3. The sample results for % moisture, TOC, grain size, black carbon, TPH DRO, and TPH ORO are tabulated but are not compared to any numerical screening criteria. **Figure 3-1** shows the locations where concentrations of COPCs exceeded SQTs for the entire St. Louis Bay project area. The sections below compare the analytical data for Areas 1, 2, and 3 to the SQTs.

3.1 AREA 1

A total of 175 sediment samples (147 investigative and 28 duplicate) were collected from 43 locations within Area 1 and consisted of sampling locations SLB10-1-20 through SLB10-1-40, SLB10-1-42, and SLB10-1-44 through SLB10-1-64. **Table 3-1b** summarizes the analytical results by sediment depth interval. A comparison of the analytical data to the respective SQTs, when available, is discussed in the following sections per parameter group.

3.1.1 PAHs

A total of 156 and 19 sediment samples from Area 1 were analyzed for PAH (17 list) and PAH (34 list), respectively. Twenty-five PAHs were detected in the sediment samples:

- 1,2-benzphenanthracene (Chrysene)
- 2-methylnaphthalene
- Acenaphthene
- Acenaphthylene
- Anthracene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(g,h,i)perylene
- Benzo(k)fluoranthene
- Dibenzo(a,h)anthracene
- Fluoranthene
- Fluorene
- Indeno(1,2,3-cd)pyrene
- Naphthalene
- Phenanthrene
- Pyrene
- 1-methylnaphthalene
- Benzo(e)pyrene
- C1-Chrysenes
- C1-Fluoranthenes/pyrenes
- C1-Fluorenes
- C1-Phenanthrenes/anthracenes
- C2-Fluoranthenes/pyrenes
- Perylene

Of the 25 PAHs detected, 13 PAHs—1,2-benzphenanthracene (chrysene), 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, dibenzo(a,h)anthracene, fluoranthene, fluorene, naphthalene, phenanthrene, and pyrene—were detected at concentrations that exceeded their respective Level I and/or Level II SQTs as summarized below:

Analyte	No. of Results	Level I Exceedances			Level II Exceedances			Maximum Detection	
		SQT (µg/kg)	No.	%	SQT (µg/kg)	No.	%	Result (µg/kg)	Sample ID
1,2-benzphenanthracene (Chrysene)	175	170	54	30.8	1300	1	0.5	1400	SLB10-1-63-36
2-methylnaphthalene	175	20	49	28	200	0	0	190	SLB10-1-39-84
Acenaphthene	175	6.7	72	41.1	89	3	1.7	120	SLB10-1-35-16
Acenaphthylene	175	5.9	77	44	130	0	0	78	SLB10-1-38-12
Anthracene	175	57	42	24	850	0	0	720	SLB10-1-63-36
Benzo(a)anthracene	175	110	75	42.8	1100	2	1.1	1300	SLB10-1-22-06DP
Benzo(a)pyrene	175	150	51	29.1	1500	0	0	1000	SLB10-1-22-06DP
Dibenzo(a,h)anthracene	175	33	55	31.4	140	5	2.8	390	SLB10-1-46-06
Fluoranthene	175	420	37	21.1	2200	1	0.6	3400	SLB10-1-22-06DP
Fluorene	175	77	5	2.8	540	0	0	180	SLB10-1-54-06

Analyte	No. of Results	Level I Exceedances			Level II Exceedances			Maximum Detection	
		SQT (µg/kg)	No.	%	SQT (µg/kg)	No.	%	Result (µg/kg)	Sample ID
Naphthalene	175	180	16	9.1	560	4	2.2	2900	SLB10-1-45-60
Phenanthrene	175	200	38	21.7	1200	2	1.1	2500	SLB10-1-22-06DP
Pyrene	175	200	73	41.7	1500	5	2.8	2500	SLB10-1-22-06DP
Total PAH 17	175	1600	72	41.1	23000	0	0	17393.9	SLB10-1-22-06DP
Total PAH 34	19	1600	10	52.6	23000	0	0	7749	SLB10-1-54-06

Notes:

BOLD – Chemical detected at a concentration exceeding Level I and Level II SQTs in at least one sample

SQT – Sediment Quality Target

µg/kg – Microgram per kilogram

The complete PAH analytical results are presented on **Table 3-2a**. The calculated Total PAH 17 concentration exceeded Level I SQTs in 72 sediment samples and the calculated Total PAH 34 concentration exceeded Level I SQTs in 10 sediment samples. The calculated Total PAH 17 and 34 concentrations did not exceed Level II SQTs. At least one PAH was detected at a concentration exceeding Level I SQTs in 109 sediment samples and at least one PAH was detected at a concentration exceeding Level II SQTs in 14 sediment samples. Sampling locations where Total PAH concentrations exceeded the SQTs are shown on **Figure 3-2a**.

3.1.2 TAL Metals

A total of 175 sediment samples from Area 1 were analyzed for TAL metals. Twenty-two TAL metals were detected in the sediment samples:

- Aluminum
- Antimony
- Arsenic
- Barium
- Beryllium
- Cadmium
- Calcium
- Chromium
- Cobalt
- Copper
- Iron
- Lead
- Magnesium
- Manganese
- Mercury
- Nickel
- Potassium
- Selenium
- Silver
- Sodium
- Vanadium
- Zinc

Of the 22 TAL metals detected, eight metals—arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc—were detected at concentrations that exceeded their respective Level I and/or Level II SQTs as summarized below:

Analyte	No. of Results	Level I Exceedances			Level II Exceedances			Maximum Detection	
		SQT (mg/kg)	No.	%	SQT (mg/kg)	No.	%	Result (mg/kg)	Sample ID
Arsenic	175	9.8	12	6.9	33	0	0.0	21	SLB10-1-42-24
Cadmium	175	0.99	27	15.4	5	3	1.7	6.7	SLB10-1-25-84
Chromium	175	43	10	5.7	110	0	0.0	87.7	SLB10-1-26-06
Copper	175	32	33	18.9	150	1	0.6	156	SLB10-1-35-06DP
Lead	175	36	52	29.7	130	5	2.9	215	SLB10-1-61-60
Mercury	175	0.18	76	43.4	1.1	2	1.1	1.9	SLB10-1-25-84
Nickel	175	23	43	24.6	49	1	0.6	54.5	SLB10-1-26-06
Zinc	175	120	50	28.6	460	1	0.6	1340	SLB10-1-26-06

Notes:

BOLD – Chemical detected at a concentration exceeding Level I and Level II SQTs in at least one sample

SQT – Sediment Quality Target

mg/kg – Milligram per kilogram

The complete TAL metals analytical results are presented on **Table 3-3a**. At least one metal was detected at a concentration exceeding Level I SQTs in 91 sediment samples and at least one metal was detected at a concentration exceeding Level II SQTs in eight sediment samples. Concentrations of metals exceeding Level II SQTs were detected along the western boundary of Hibbard Power Plant Bay at depths of 0 to 6 and 0 to 16 inches bss (SLB10-1-35), along the western boundary of the Erie Pier Slip, Erie Pier Bay, and Erie Pier Ponds at depths of 0 to 6 and 0 to 12 inches bss (SLB10-1-26) and 60 to 84 and 84 to 116 inches bss (SLB10-1-25), and along the western and southern boundaries of Coffee Ground Flats at depths of 0 to 6 inches bss (SLB10-1-54) and 36 to 60 inches bss (SLB10-1-61). Sampling locations where TAL metal concentrations exceeded the SQTs are shown on **Figure 3-2b**.

3.1.3 PCBs

A total of 175 sediment samples from Area 1 were analyzed for PCB Aroclors. Three PCB Aroclors were detected in the sediment samples:

- Aroclor-1016
- Aroclor-1254
- Aroclor-1260

A total of 19 sediment samples collected from the 0- to 6-inch bss interval from Area 1 were analyzed for PCB congeners. A total of 184 of the 209 PCB congeners were detected in the sediment samples.

A total PCB concentration was calculated for each of the 175 sediment samples analyzed for PCB Aroclors. Total PCBs for PCB Aroclors was calculated by summing the detections for each sample. Total PCB concentrations that exceeded the Level I and/or Level II SQTs are summarized below:

Analyte	No. of Results	Level I Exceedances			Level II Exceedances			Maximum Detection	
		SQT (µg/kg)	No.	%	SQT (µg/kg)	No.	%	Result (µg/kg)	Sample ID
Total PCB Aroclors	175	60	15	8.6	680	1	0.6	990	SLB10-1-25-60

Notes:

BOLD – Chemical detected at a concentration exceeding Level I and Level II SQTs in at least one sample
 SQT – Sediment Quality Target
 µg/kg – Microgram per kilogram

A total PCB concentration was also calculated for each of the 19 sediment samples analyzed for PCB congeners. Total PCBs for PCB congeners was calculated by summing the detections for each sample. Total PCB concentrations that exceeded the Level I and/or Level II SQTs are summarized below:

Analyte	No. of Results	Level I Exceedances			Level II Exceedances			Maximum Detection	
		SQT (pg/g)	No.	%	SQT (pg/g)	No.	%	Result (pg/g)	Sample ID
Total PCB Congeners	19	60,000	11	57.9	680,000	2	10.5	1,470,786.8	SLB10-1-26-06

Notes:

BOLD – Chemical detected at a concentration exceeding Level I and Level II SQTs in at least one sample
 pg/g – Picogram per gram
 SQT – Sediment Quality Target

The complete PCB Aroclor and PCB congener analytical results are presented on **Tables 3-4a** and **3-5a**, respectively. For samples analyzed for PCBs Aroclors, Total PCB concentrations exceeded Level I SQTs in 15 sediment samples and exceeded Level II SQTs in one sediment sample. For samples analyzed for PCB congeners, Total PCB concentrations exceeded Level I SQTs in 11 sediment samples and exceeded Level II SQTs in two sediment samples. Sampling locations where Total PCB concentrations exceeded the SQTs are shown on **Figure 3-2c**.

In addition, dioxin-like PCB equivalent concentration (TEQ) was calculated for each of the 19 sediment samples. Based on the “Framework for Application of the Toxicity Equivalence

Methodology for Polychlorinated Dioxins, Furans, and Biphenyls in Ecological Risk Assessment”, the 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD) toxicity equivalence concentration (TEC) is the primary expression of exposure to an organism. The dioxin-like PCB TEQ in a sample is estimated by multiplying the concentration of specific PCB congeners in the sample by its appropriate fish toxicity equivalence factor (TEF) and summing the equivalents. TEFs are numerical factors that express the toxicity of an individual polychlorinated dibenzo-*p*-dioxin (PCDD), dibenzofuran (PCDF), and biphenyl (PCB) relative to the toxicity of TCDD, the highly toxic and best-studied among the 210 congeners. The calculated dioxin-like PCB TEQ concentrations are presented on **Table 3-5a**.

3.1.4 TCL Pesticides

A total of 19 sediment samples collected from the 0- to 6-inch bss interval from Area 1 were analyzed for TCL pesticides. Two TCL pesticides were detected in the sediment samples:

- Endosulfan Sulfate
- Gamma-Chlordane

The complete pesticides analytical results are presented on **Table 3-6a**. All concentrations of TCL pesticides did not exceed the Level I or Level II SQTs. Sampling locations where samples were collected for TCL pesticide analysis are shown on **Figure 3-2d**.

3.1.5 TPH

A total of 175 sediment samples from Area 1 were analyzed for TPH DRO and TPH ORO. TPH DRO was detected in 138 sediment samples at concentrations ranging from 8 to 620 mg/kg. The highest concentration was detected in sediment sample SLB10-1-25-84. Ranges of TPH DRO concentrations are presented on **Figure 3-2e**. TPH ORO was detected in 167 sediment samples at concentrations ranging from 5 to 900 mg/kg. The highest concentration was detected in sediment sample SLB10-1-25-60. Ranges of TPH ORO concentrations are presented on **Figure 3-2f**. The complete TPH DRO and ORO analytical results are presented on **Table 3-7a**.

3.1.6 Dioxin/Furan

A total of 19 sediment samples collected from the 0- to 6-inch bss interval from Area 1 were analyzed for dioxin/furans. All 17 dioxin/furans were detected in the sediment samples.

Dioxin TEQ was calculated for each of the 19 sediment samples. Based on the “Framework for Application of the Toxicity Equivalence Methodology for Polychlorinated Dioxins, Furans, and Biphenyls in Ecological Risk Assessment”, the TCDD TEC is the primary expression of exposure to an organism. The dioxin TEQ in a sample is estimated by multiplying the concentration of each dioxin/furan in the sample by its appropriate fish TEF and summing the equivalents. TEFs are numerical factors that express the toxicity of an individual PCDD, PCDF, and PCB relative to the toxicity of TCDD, the highly toxic and best-studied among the 210 congeners. The TCDD-TEQ was calculated by summing the dioxin-like PCB TEQ and dioxin TEQ. The calculated dioxin-like PCB TEQ, dioxin TEQ, and TCDD-TEQ concentrations are presented on **Table 3-8a**. The calculated TCDD-TEQ concentrations that exceeded the Level I and/or Level II SQTs are summarized below:

Analyte	No. of Results	Level I Exceedances			Level II Exceedances			Maximum Detection	
		SQT (pg/g)	No.	%	SQT (pg/g)	No.	%	Result (pg/g)	Sample ID
TCDD-TEQ	19	0.85	15	78.9	21.5	0	0.0	18.9	SLB10-1-51-06

Notes:

SQT – Sediment Quality Target

pg/g – Picogram per gram

The complete dioxin/furan analytical results are presented on **Table 3-8a**. TCDD-TEQ concentrations exceeded Level I SQTs in 15 sediment samples and did not exceed Level II SQTs in any of the sediment samples. Sampling locations where TCDD-TEQ concentrations exceeded the SQTs are shown on **Figure 3-2g**.

3.1.7 Physical Properties

From Area 1, a total of 147 sediment samples were analyzed for grain size and a total of 175 sediment samples were analyzed for TOC. A total of 19 sediment samples collected from the 0- to 6-inch bss interval from Area 1 were analyzed for black carbon. The analytical results are

presented on **Table 3-9a**. The geotechnical results for the 147 samples collected for grain size analysis indicate that the material sampled consisted of a mixture of silt, sand, and clay. The average composition was 44% silt, 41% sand, and 12% clay.

3.2 AREA 2

A total of 128 sediment samples (119 investigative and 9 duplicate) were collected from 31 locations within Area 2 and consisted of sampling locations SLB-65 through SLB-77, SLB-79, and SLB-81 through SLB-97. Location SLB10-2-97-06 was initially collected on October 7, 2010, and sampled for PAHs, PCB Aroclors, grain size, and TOC. An additional sample from this sediment location was collected on October 12, 2010, and sampled for TAL metals, TPH DRO, and TPH ORO. **Table 3-1c** summarizes the analytical results by sediment depth interval. A comparison of the analytical data to the respective SQTs, when available, is discussed in the following sections per parameter group.

3.2.1 PAHs

A total of 114 and 13 sediment samples from Area 2 were analyzed for PAH (17 list) and PAH (34 list), respectively. Twenty-five PAHs were detected in the sediment samples:

- 1,2-benzphenanthracene (Chrysene)
- 1-methylnaphthalene
- 2-methylnaphthalene
- Acenaphthene
- Acenaphthylene
- Anthracene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(e)pyrene
- Benzo(g,h,i)perylene
- Benzo(k)fluoranthene
- Dibenzo(a,h)anthracene
- Fluoranthene
- Fluorene
- Indeno(1,2,3-cd)pyrene
- Naphthalene
- Perylene
- Phenanthrene
- Pyrene
- C1-Chrysenes
- C1-Fluoranthenes/pyrenes
- C1-Fluorenes
- C1-Phenanthrenes/anthracenes
- C2-Fluoranthenes/pyrenes

Of the 25 PAHs detected, 13 PAHs—1,2-benzphenanthracene (chrysene), 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene,

dibenzo(a,h)anthracene, fluoranthene, fluorene, naphthalene, phenanthrene, and pyrene—were detected at concentrations their respective Level I and/or Level II SQTs as summarized below:

Analyte	No. of Results	Level I Exceedances			Level II Exceedances			Maximum Detection	
		SQT (µg/kg)	No.	%	SQT (µg/kg)	No.	%	Result (µg/kg)	Sample ID
1,2-benzphenanthracene (Chrysene)	127	170	41	32.2	1300	2	1.5	2100	SLB10-2-88-06
2-methylnaphthalene	127	20	51	40.1	200	7	5.5	360	SLB10-2-90-06
Acenaphthene	127	6.7	52	40.9	89	2	1.5	110	SLB10-2-72-24
Acenaphthylene	127	5.9	59	46.4	130	0	0	110	SLB10-2-74-06
Anthracene	127	57	40	31.4	850	3	2.3	1400	SLB10-2-74-06
Benzo(a)anthracene	127	110	61	48.0	1100	5	3.9	2000	SLB10-2-72-12
Benzo(a)pyrene	127	150	45	35.4	1500	1	0.78	2100	SLB10-2-72-12
Dibenzo(a,h)anthracene	127	33	44	34.6	140	13	10.2	1100	SLB10-2-72-12
Fluoranthene	127	420	30	23.6	2200	5	3.9	4400	SLB10-2-72-12
Fluorene	127	77	12	9.4	540	0	0	260	SLB10-2-74-06
Naphthalene	127	180	26	20.4	560	2	1.5	850	SLB10-2-95-84
Phenanthrene	127	200	25	19.6	1200	4	3.1	3800	SLB10-2-72-12
Pyrene	127	200	55	43.3	1500	8	6.3	4400	SLB10-2-72-12
Total PAH 17	127	1600	57	44.8	23000	1	0.78	29160	SLB10-2-72-12
Total PAH 34	13	1600	8	61.5	23000	0	0	16176	SLB10-2-74-06

Notes:

BOLD – Chemical detected at a concentration exceeding Level I and Level II SQTs in at least one sample

SQT – Sediment Quality Target

µg/kg – Microgram per kilogram

The complete PAH analytical results are presented on **Table 3-2b**. The calculated Total PAH 17 concentration exceeded Level I SQTs in 57 sediment samples and the calculated Total PAH 34 concentration exceeded Level I SQTs in 8 sediment samples. The calculated Total PAH 17 concentration exceeded Level II SQTs in 1 sediment sample and the calculated Total PAH 34 concentration did not exceed Level II SQTs. At least one PAH was detected at a concentration exceeding Level I SQTs in 77 sediment samples and at least one PAH was detected at a concentration exceeding Level II SQTs in 20 sediment samples. Sampling locations where Total PAH concentrations exceeded the SQTs are shown on **Figure 3-3a**.

3.2.2 TAL Metals

A total of 127 sediment samples from Area 2 were analyzed for TAL metals. Twenty TAL metals were detected in the sediment samples:

- Aluminum
- Arsenic
- Barium
- Beryllium
- Cadmium
- Calcium
- Chromium
- Cobalt
- Copper
- Iron
- Lead
- Magnesium
- Manganese
- Mercury
- Nickel
- Potassium
- Selenium
- Sodium
- Vanadium
- Zinc

Of the 20 TAL metals detected, eight metals—arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc—were detected at concentrations that exceeded their respective Level I and/or Level II SQTs as summarized below:

Analyte	No. of Results	Level I Exceedances			Level II Exceedances			Maximum Detection	
		SQT (mg/kg)	No.	%	SQT (mg/kg)	No.	%	Result (mg/kg)	Sample ID
Arsenic	127	9.8	1	0.8	33	0	0.0	11.5	SLB10-2-76-12
Cadmium	127	0.99	1	0.8	5	0	0.0	1	SLB10-2-90-06
Chromium	127	43	1	0.8	110	0	0.0	45.1	SLB10-2-83-60
Copper	127	32	14	11.0	150	0	0.0	68.7	SLB10-2-72-12
Lead	127	36	21	16.5	130	2	1.6	184	SLB10-2-82-12
Mercury	127	0.18	34	26.8	1.1	0	0.0	1.1	SLB10-2-83-36
Nickel	127	23	19	15.0	49	0	0.0	40.4	SLB10-2-83-60
Zinc	127	120	31	24.4	460	0	0.0	334	SLB10-2-95-06

Notes:

BOLD – Chemical detected at a concentration exceeding Level I and Level II SQTs in at least one sample

SQT – Sediment Quality Target

mg/kg – Milligram per kilogram

The complete TAL metals analytical results are presented on **Table 3-3b**. At least one metal was detected at a concentration exceeding Level I SQTs in 52 sediment samples and at least one metal was detected at a concentration exceeding Level II SQTs in 2 sediment samples. Lead exceeded the Level II SQT in the northern portion of Area 2 at a depth of 0 to 12 inches bss (SLB10-2-72) and in the central portion of Area 2 at a depth of 0 to 12 inches bss (SLB10-2-82). Sampling locations where TAL metal concentrations exceeded the SQTs are shown on **Figure 3-3b**.

3.2.3 PCBs

A total of 127 sediment samples from Area 2 were analyzed for PCB Aroclors. Two PCB Aroclors were detected in the sediment samples:

- Aroclor-1254
- Aroclor-1260

A total of 13 sediment samples collected from the 0- to 6-inch bss interval from Area 2 were analyzed for PCB congeners. A total of 158 of the 209 PCB congeners were detected in the sediment samples.

A total PCB concentration was calculated for each of the 127 sediment samples analyzed for PCB Aroclors. Total PCBs for PCB Aroclors was calculated by summing the detections for each sample. Total PCB concentrations that exceeded the Level I and/or Level II SQT are summarized below:

Analyte	No. of Results	Level I Exceedances			Level II Exceedances			Maximum Detection	
		SQT (µg/kg)	No.	%	SQT (µg/kg)	No.	%	Result (µg/kg)	Sample ID
Total PCB Aroclors	127	60	1	0.8	680	0	0.0	150	SLB10-2-87-06

Notes:

SQT – Sediment Quality Target
 µg/kg – Microgram per kilogram

A total PCB concentration was also calculated for each of the 13 sediment samples analyzed for PCB congeners. Total PCBs for PCB congeners was calculated by summing the detections for each sample. Total PCB concentrations that exceeded the Level I and/or Level II SQT are summarized below:

Analyte	No. of Results	Level I Exceedances			Level II Exceedances			Maximum Detection	
		SQT (pg/g)	No.	%	SQT (pg/g)	No.	%	Result (pg/g)	Sample ID
Total PCB Congeners	13	60,000	5	38.5	680,000	0	0.0	191,081.7	SLB10-2-83-06

Notes:

pg/g – Picogram per gram
 SQT – Sediment Quality Target

The complete PCB Aroclor and PCB congener analytical results are presented on **Tables 3-4b** and **3-5b**, respectively. For samples analyzed for PCBs Aroclors, Total PCBs exceeded Level I SQTs in one sediment sample and did not exceed Level II SQTs. For samples analyzed for PCBs congeners, Total PCBs exceeded Level I SQTs in five sediment samples and did not exceed Level II SQTs. Sampling locations where Total PCB concentrations exceeded the SQTs are shown on **Figure 3-3c**.

Dioxin-like PCB TEQ was calculated for each of the 13 sediment samples as described in Section 3.1.6. The calculated dioxin-like PCB TEQ concentrations are presented on **Table 3-5b**.

3.2.4 TCL Pesticides

A total of 13 sediment samples collected from the 0- to 6-inch bss interval from Area 2 were analyzed for TCL pesticides. TCL pesticides were not detected in any sediment samples collected during site characterization activities.

The complete pesticide analytical results are presented on **Table 3-6b**. The sampling locations where samples were collected for TCL pesticide analysis are shown on **Figure 3-3d**.

3.2.5 TPH

A total of 127 sediment samples from Area 2 were analyzed for TPH DRO and TPH ORO. TPH DRO was detected in 94 sediment samples at concentrations ranging from 7 to 630 mg/kg. The highest concentration was detected in sediment sample SLB10-2-72-06. Ranges of TPH DRO concentrations are presented on **Figure 3-3e**. TPH ORO was detected in 118 sediment samples at concentrations ranging from 5 to 940 mg/kg. The highest concentration was detected in sediment sample SLB10-2-72-06. Ranges of TPH ORO concentrations are presented on **Figure 3-3f**. The complete TPH DRO and ORO analytical results are presented on **Table 3-7b**.

3.2.6 Dioxin/Furan

A total of 13 sediment samples collected from the 0- to 6-inch bss interval from Area 2 were analyzed for dioxin/furans. All 17 dioxin/furans were detected in the sediment samples.

Dioxin TEQ and total TCDD-TEQ was calculated for each of the 13 sediment samples as described in Section 3.1.9. The calculated dioxin-like PCB TEQ, dioxin TEQ, and TCDD-TEQ concentrations are presented on **Table 3-8b**. The calculated TCDD-TEQ concentrations that exceeded the Level I and/or Level II SQTs are summarized below:

Analyte	No. of Results	Level I Exceedances			Level II Exceedances			Maximum Detection	
		SQT (pg/g)	No.	%	SQT (pg/g)	No.	%	Result (pg/g)	Sample ID
TCDD-TEQ	13	0.85	11	84.6	21.5	3	23.1	42.4	SLB10-2-74-06DP

Notes:

BOLD – Chemical detected at a concentration exceeding Level I and Level II SQTs in at least one sample

SQT – Sediment Quality Target

pg/g – Picogram per gram

The complete dioxin/furan analytical results are presented on **Table 3-8b**. TCDD-TEQ concentrations exceeded Level I SQTs in 11 sediment samples and exceeded Level II SQTs in three sediment samples. TCDD-TEQ concentrations exceeded the Level II SQT in the northern portion of Area 2 (SLB10-2-74) and in the central portion of Grassy Point (SLB10-2-83). Sampling locations where TCDD-TEQ concentrations exceeded the SQTs are shown on **Figure 3-3g**.

3.2.7 Physical Properties

From Area 2, a total of 121 sediment samples were analyzed for grain size and a total of 127 sediment samples were analyzed for TOC. A total of 15 sediment samples collected from the 0- to 6-inch bss interval from Area 2 were analyzed for black carbon. The analytical results are presented on **Table 3-9b**. The geotechnical results for the 121 samples collected for grain size analysis indicate that the material sampled consisted of a mixture of silt, sand, and clay. The average composition was 57% silt, 23% sand, and 17% clay.

3.3 AREA 3

A total of 83 sediment samples (74 investigative and 9 duplicate) were collected from 18 locations within Area 3 and consisted of sampling locations SLB10-3-2 through SLB10-3-19. **Table 3-1d** summarizes the analytical results by sediment depth interval. A comparison of the

analytical data to the respective SQTs, when available, is discussed in the following sections per parameter group.

3.3.1 PAHs

A total of 77 and six sediment samples from Area 3 were analyzed for PAH (17 list) and PAH (34 list), respectively. Twenty-five PAHs were detected in the sediment samples:

- 1,2-benzphenanthracene (Chrysene)
- 1-methylnaphthalene
- 2-methylnaphthalene
- Acenaphthene
- Acenaphthylene
- Anthracene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(e)pyrene
- Benzo(b)fluoranthene
- Benzo(g,h,i)perylene
- Benzo(k)fluoranthene
- Dibenzo(a,h)anthracene
- Fluoranthene
- Fluorene
- Indeno(1,2,3-cd)pyrene
- Naphthalene
- Perylene
- Phenanthrene
- Pyrene
- C1-Chrysenes
- C1-Fluoranthenes/pyrenes
- C1-Fluorenes
- C1-Phenanthrenes/anthracenes
- C2-Fluoranthenes/pyrenes

Of the 25 PAHs detected, 12 PAHs—1,2-benzphenanthracene (chrysene), 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, dibenzo(a,h)anthracene, fluoranthene, naphthalene, phenanthrene, and pyrene—were detected at concentrations their respective Level I and/or Level II SQTs as summarized below:

Analyte	No. of Results	Level I Exceedances			Level II Exceedances			Maximum Detection	
		SQT (µg/kg)	No.	%	SQT (µg/kg)	No.	%	Result (µg/kg)	Sample ID
1,2-benzphenanthracene (Chrysene)	83	170	9	10.8	1300	0	0	720	SLB10-3-16-12
2-methylnaphthalene	83	20	18	21.6	200	0	0	160	SLB10-3-17-06
Acenaphthene	83	6.7	17	20.4	89	0	0	37	SLB10-3-11-50
Acenaphthylene	83	5.9	24	28.9	130	0	0	38	SLB10-3-16-06
Anthracene	83	57	7	8.4	850	0	0	250	SLB10-3-16-12
Benzo(a)anthracene	83	110	18	21.6	1100	0	0	770	SLB10-3-16-12
Benzo(a)pyrene	83	150	10	12.0	1500	0	0	920	SLB10-3-16-12
Dibenzo(a,h)anthracene	83	33	12	14.4	140	2	2.4	700	SLB10-3-16-12

Analyte	No. of Results	Level I Exceedances			Level II Exceedances			Maximum Detection	
		SQT (µg/kg)	No.	%	SQT (µg/kg)	No.	%	Result (µg/kg)	Sample ID
Fluoranthene	83	420	4	4.8	2200	0	0	1300	SLB10-3-16-12
Naphthalene	83	180	3	3.6	560	0	0	370	SLB10-3-17-06
Phenanthrene	83	200	5	6.0	1200	0	0	420	SLB10-3-16-12
Pyrene	83	200	16	19.2	1500	0	0	1200	SLB10-3-16-12
Total PAH 17	83	1600	14	16.8	23000	0	0	10318	SLB10-3-16-12
Total PAH 34	6	1600	3	50	23000	0	0	3735	SLB10-3-16-06

Notes:

BOLD – Chemical detected at a concentration exceeding Level I and Level II SQTs in at least one sample

SQT – Sediment Quality Target

µg/kg – Microgram per kilogram

The complete PAH analytical results are presented on **Table 3-2c**. The calculated Total PAH 17 concentration exceeded Level I SQTs in 14 sediment samples and the calculated Total PAH 34 concentration exceeded Level I SQTs in three sediment samples. The calculated Total PAH 17 and 34 concentrations did not exceed Level II SQTs. At least one PAH was detected at a concentration exceeding Level I SQTs in 35 sediment samples and at least one PAH was detected at a concentration exceeding Level II SQTs in two sediment samples. Dibenzo(a,h)anthracene was the only PAH detected at concentrations exceeding Level II SQTs at locations southeast of DM&IR Slip and Bays, SLB10-3-16 (0 to 12 inches bss) and SLB10-3-19 (12 to 36 inches bss). Sampling locations where Total PAH concentrations exceeded the SQTs are shown on **Figure 3-4a**.

3.3.2 TAL Metals

A total of 83 sediment samples from Area 3 were analyzed for TAL metals. Twenty-one TAL metals were detected in the sediment samples:

- Aluminum
- Arsenic
- Barium
- Beryllium
- Cadmium
- Calcium
- Chromium
- Cobalt
- Copper
- Iron
- Lead
- Magnesium
- Manganese
- Mercury
- Nickel
- Potassium
- Selenium
- Silver
- Sodium
- Vanadium
- Zinc

Of the 21 TAL metals detected, six metals—cadmium, copper, lead, mercury, nickel, and zinc—were detected at concentrations that exceeded their respective Level I and/or Level II SQTs as summarized below:

Analyte	No. of Results	Level I Exceedances			Level II Exceedances			Maximum Detection	
		SQT (mg/kg)	No.	%	SQT (mg/kg)	No.	%	Result (mg/kg)	Sample ID
Cadmium	83	0.99	1	1.2	5	0	0.0	1.1	SLB10-3-05-06
Copper	83	32	2	2.4	150	0	0.0	69.1	SLB10-3-07-06
Lead	83	36	10	12.0	130	0	0.0	128	SLB10-3-07-06
Mercury	83	0.18	13	15.7	1.1	0	0.0	0.65	SLB10-3-05-06
Nickel	83	23	15	18.1	49	0	0.0	28.1	SLB10-3-05-06
Zinc	83	120	13	15.7	460	0	0.0	210	SLB10-3-16-06

Notes:

SQT – Sediment Quality Target
 mg/kg – Milligram per kilogram

The complete TAL metals analytical results are presented on **Table 3-3c**. At least one metal was detected at a concentration exceeding Level I SQTs in 22 sediment samples. TAL metal concentrations did not exceed Level II SQTs. Sampling locations where TAL metal concentrations exceeded the SQTs are shown on **Figure 3-4b**.

3.3.3 PCBs

A total of 83 sediment samples from Area 3 were analyzed for PCB Aroclors. Two PCB Aroclors were detected in the sediment samples:

- Aroclor-1254
- Aroclor-1260

A total of six sediment samples collected from the 0- to 6-inch bss interval from Area 3 were analyzed for PCB congeners. A total of 164 of the 209 PCB congeners were detected in the sediment samples.

A total PCB concentration was calculated for each of the 83 sediment samples analyzed for PCB Aroclors. Total PCBs for PCB Aroclors was calculated by summing the detections for each sample. Total PCB concentrations that exceeded the Level I and/or Level II SQTs are summarized below:

Analyte	No. of Results	Level I Exceedances			Level II Exceedances			Maximum Detection	
		SQT (µg/kg)	No.	%	SQT (µg/kg)	No.	%	Result (µg/kg)	Sample ID
Total PCB Aroclors	83	60	2	2.4	680	0	0.0	65	SLB10-3-08-104

Notes:

SQT – Sediment Quality Target
µg/kg – Microgram per kilogram

A total PCB concentration was calculated for each of the six sediment samples analyzed for PCB congeners. Total PCBs for PCB congeners were calculated by summing the detections for each sample. Total PCB concentrations that exceeded the Level I and/or Level II SQTs are summarized as follows:

Analyte	No. of Results	Level I Exceedances			Level II Exceedances			Maximum Detection	
		SQT (pg/g)	No.	%	SQT (pg/g)	No.	%	Result (pg/g)	Sample ID
Total PCB Congeners	6	60,000	2	33.3	680,000	0	0.0	181,189.5	SLB10-3-16-06

Notes:

pg/g – Picogram per gram
SQT – Sediment Quality Target

The complete PCB Aroclor and PCB congener analytical results are presented on **Tables 3-4c and 3-5c**, respectively. For samples analyzed for PCB Aroclors, Total PCBs exceeded Level I SQTs in two sediment samples and did not exceed Level II SQTs. For samples analyzed for PCB congeners, Total PCBs exceeded Level I SQTs in two sediment samples and did not exceed Level II SQTs. Sampling locations where Total PCB concentrations exceeded the SQTs are shown on **Figure 3-4c**.

Dioxin-like PCB TEQ was calculated for each of the six sediment samples as described in Section 3.1.6. The calculated dioxin-like PCB TEQ concentrations are presented on **Table 3-5c**.

3.3.4 TCL Pesticides

A total of six sediment samples collected from the 0- to 6-inch bss interval from Area 3 were analyzed for TCL pesticides. TCL pesticides were not detected in any sediment samples collected during site characterization activities.

The complete pesticide analytical results are presented on **Table 3-6c**. The sampling locations where samples were collected for TCL pesticide analysis are shown on **Figure 3-4d**.

3.3.5 TPH

A total of 83 sediment samples from Area 3 were analyzed for TPH DRO and TPH ORO. TPH DRO was detected in 50 sediment samples at concentrations ranging from non-detect to 170 mg/kg. The highest concentration was detected in sediment sample SLB10-3-08-104. Ranges of TPH DRO concentrations are presented on **Figure 3-4e**. TPH ORO was detected in all 83 sediment samples at concentrations ranging from non-detect to 220 mg/kg. The highest concentration was detected in sediment sample SLB10-3-08-104. Ranges of TPH ORO concentrations are presented on **Figure 3-4f**. The complete TPH DRO and ORO analytical results are presented on **Table 3-7c**.

3.3.6 Dioxin/Furan

A total of six sediment samples collected from the 0- to 6-inch bss interval from Area 3 were analyzed for dioxin/furans. All 17 dioxin/furans were detected in the sediment samples.

Dioxin TEQ and total TCDD-TEQ was calculated for each of the six sediment samples as described in Section 3.1.9. The calculated dioxin-like PCB TEQ, dioxin TEQ, and TCDD-TEQ concentrations are presented on **Table 3-8c**. The calculated TCDD-TEQ concentrations that exceeded the Level I and/or Level II SQTs are summarized below:

Analyte	No. of Results	Level I Exceedances			Level II Exceedances			Maximum Detection	
		SQT (pg/g)	No.	%	SQT (pg/g)	No.	%	Result (pg/g)	Sample ID
TCDD-TEQ	6	0.85	4	66.7	21.5	0	0.0	18.3	SLB10-3-16-06

Notes:

SQT – Sediment Quality Target

pg/g – Picogram per gram

The complete dioxin/furan analytical results are presented on **Table 3-8c**. TCDD-TEQ concentrations exceeded Level I SQTs in four sediment samples and did not exceed Level II SQTs. Sampling locations where TCDD-TEQ concentrations exceeded the SQTs are shown on

Figure 3-4g.

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3.3.7 Physical Properties

From Area 3, a total of 74 sediment samples were analyzed for grain size and a total of 83 sediment samples were analyzed for TOC. A total of six sediment samples collected from the 0- to 6-inch bss interval from Area 3 were analyzed for black carbon. The analytical results are presented on **Table 3-9c**. The geotechnical results for the 74 samples collected for grain size analysis indicate that the material sampled consisted of a mixture of silt, sand, and clay. The average composition was 52% silt, 32% sand, and 15% clay.

4. DATA COMPLETENESS

Data validation summaries were produced for each chemical group. Data generated through the U.S. EPA CLP had an initial performance assessment and compliance screening check that was performed and uploaded by the Sample Management Office (SMO) to the Electronic Data Exchange and Evaluation System (EXES) website. These checks were to confirm conformance with the U.S. EPA CLP National Functional Guidelines (NFGs). After this assessment was completed, U.S. EPA Region 5 Environmental Services Assistance Team (ESAT) completed full manual data validation of approximately 5% of the data generated by the U.S. EPA CLP (TAL metals, mercury, PCB Aroclors, PCB congeners, PAHs, % moisture, TCL pesticides, and dioxin/furan analyses).

During the validation process, ESAT may have removed data qualifiers for following reasons:

- The EXES Software often J or R flag analytical results for temperature more precisely than U.S. CLP NFG standards. Data flags may have been removed in some instances where temperature was not out of range, but the software indicated it was.
- EXES generated flags may have been removed by a validator because EXES does not decipher between multiple columns/calibrations.
- U.S. CLP NFG does not qualify for matrix spikes; EXES qualifies for spikes based on R2 guidance. Validation was conducted following U.S. EPA CLP NFGs and some flags may have been removed by the validator.
- Relative percent difference (RPD) over 40 are noted by a validator and flagged with the dataset.

Data received from a subcontracted laboratory was run through the Automated Data Review (ADR) checker. This was conducted for all parameters except grain size. WESTON completed a 5% full manual data validation for all of the analyses conducted by the WESTON-procured subcontractor laboratories (grain size, TOC, black carbon, TPH DRO, and TPH ORO). The following are the general guidelines for the data validation:

- NFGs for Superfund Organics Method Data Review, U.S. EPA, June 2008
- NFGs for Superfund Inorganics Method Data Review, U.S. EPA, January 2010
- NFGs for Inorganic Data Review, U.S. EPA, January 2010
- NFGs for Chlorinated Dioxin/Furan Data Review, U.S. EPA September 2005
- Data not covered in the NFGs were compared to the applicable analytical methods, the laboratory standard operating procedures (SOPs), and guidelines described in WESTON's QAPP dated September 2010

The data validation consisted of completing the GLNPO Quality Assurance/Quality Control checklist and preparing a data narrative summary report for each chemical parameter, which included the following completeness and usability components:

- Summary of Data Review
- Minor problems
 - Holding times
 - Method Blanks
 - Matrix Spike/Matrix Spike Duplicates
 - Surrogates, as applicable
 - Calibration
 - Laboratory Control Samples
 - Laboratory Duplicates
 - Field Duplicate Results
- Data Quality Indicator Review
 - Sensitivity
 - Precision
 - Accuracy
 - Completeness

Overall, the data are considered usable for project decisions. All of the data validation summaries have been previously submitted to GLNPO under separate cover along with all of the ESAT and WESTON Data Validation Summaries for inclusion into GLNPO's GLSED.

5. SUMMARY

A total of 385 sediment samples (339 investigative and 46 duplicate) were collected from 92 sampling locations within St. Louis Bay. Where sediment recovery was adequate, samples typically were collected from the following sampling intervals: 0 to 6 inches, 0 to 12 inches, 12 to 36 inches, 36 to 60 inches, 60 to 84 inches, 84 to 108 inches, and 108 to 132 inches bss. Sediment cores were completed with the GLNPO R/V Mudpuppy II vibracoring system through the sediment depth to refusal or until native material was encountered. In shallower areas that were inaccessible with the Mudpuppy, sediment cores were completed with a vibracoring system mounted to a pontoon or hand-driven Lexan tubes.

All sediment samples were analyzed for the following COPCs: TAL metals (including mercury), PCB Aroclors, PAH 17 list, and TPH as DRO corresponding to an alkaline range of C₁₀ through C₂₈, and ORO corresponding to an alkaline range of C₂₈ through C₃₆. In addition, approximately 10% of all sediment samples collected were analyzed for TCL pesticides, dioxins/furans, PCB congeners, PAH list 34 (in lieu of PAH list 17), and black carbon. All sediment samples also were analyzed for physical properties, including % moisture, TOC, and grain size.

The sample results for PAHs, metals, PCBs, dioxin/furans, and pesticides were compared to the Level I and Level II SQTs as set forth in the document "Development of a Framework for Evaluating Numerical Sediment Quality Targets and Sediment Contamination in the St. Louis River Area of Concern" (by D.D. MacDonald, et. al., dated 2000). The Level I SQTs identify chemical concentrations which will provide a high level of protection for designated water uses in the St. Louis River AOC, specifically for aquatic life. By comparison, a lower level of protection for designated water uses in the St. Louis River AOC will be provided by the Level II SQTs.

A summary of the SQT exceedances is provided below for Areas 1, 2, and 3.

Area 1

Exceedances of Level I SQTs were identified for the following:

- Total PAH 17 concentrations exceeded Level I SQTs in 72 sediment samples and Total PAH 34 concentrations exceeded Level I SQTs in 10 sediment samples. At least one PAH exceeded Level I SQTs in 109 sediment samples; 1,2-benzphenanthracene (chrysene), 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, dibenzo(a,h)anthracene, fluoranthene, fluorene, naphthalene, phenanthrene, and pyrene.
- At least one metal exceeded Level I SQTs in 91 sediment samples; arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc.
- Total PCB concentrations exceeded Level I SQTs in 15 sediment samples for PCB Aroclors and Total PCB concentrations exceeded Level I SQTs in 11 sediment samples for PCB Congeners.
- TCDD-TEQ concentrations exceeded Level I SQTs in 15 sediment samples.

Exceedances of Level II SQTs were identified for the following:

- At least one PAH exceeded Level II SQTs in 14 sediment samples; 1,2-benzphenanthracene (chrysene), acenaphthene, benzo(a)anthracene, dibenzo(a,h)anthracene, fluoranthene, naphthalene, phenanthrene, and pyrene.
- At least one metal exceeded Level II SQTs in eight sediment samples; cadmium, copper, lead, mercury, nickel, and zinc.
- Total PCB concentrations exceeded Level II SQTs in one sediment sample for PCB Aroclors and Total PCB concentrations exceeded Level II SQTs in two sediment samples for PCB Congeners.

Area 2

Exceedances of Level I SQTs were identified for the following:

- Total PAH 17 concentrations exceeded Level I SQTs in 57 sediment samples and Total PAH 34 concentrations exceeded Level I SQTs in 8 sediment samples. At least one PAH exceeded Level I SQTs in 77 sediment samples; 1,2-benzphenanthracene (chrysene), 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, dibenzo(a,h)anthracene, fluoranthene, fluorene, naphthalene, phenanthrene, and pyrene.
- At least one metal exceeded Level I SQTs in 52 sediment samples; arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc.
- Total PCB concentrations exceeded Level I SQTs in one sediment sample for PCB Aroclors and Total PCB concentrations exceeded Level I SQTs in 5 sediment samples for PCB Congeners.

- TCDD-TEQ concentrations exceeded Level I SQTs in 11 sediment samples.

Exceedances of Level II SQTs were identified for the following:

- Total PAH 17 concentrations exceeded Level II SQTs in one sediment sample. At least one PAH exceeded Level II SQTs in 20 sediment samples; 1,2-benzphenanthracene (chrysene), 2-methylnaphthalene, acenaphthene, benzo(a)anthracene, benzo(a)pyrene, dibenzo(a,h)anthracene, fluoranthene, naphthalene, phenanthrene, and pyrene.
- One metal (lead) exceeded Level II SQTs in two sediment samples.
- TCDD-TEQ concentrations exceeded Level II SQTs in three sediment samples.

Area 3

Exceedances of Level I SQTs were identified for the following:

- Total PAH 17 concentrations exceeded Level I SQTs in 14 sediment samples and Total PAH 34 concentrations exceeded Level I SQTs in three sediment samples. At least one PAH exceeded Level I SQTs in 35 sediment samples; 1,2-benzphenanthracene (chrysene), 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, dibenzo(a,h)anthracene, fluoranthene, naphthalene, phenanthrene, and pyrene.
- At least one metal exceeded Level I SQTs in 22 sediment samples; cadmium, copper, lead, mercury, nickel, and zinc.
- Total PCB concentrations exceeded Level I SQTs in two sediment samples for PCB Aroclors and Total PCB concentrations exceeded Level I SQTs in two sediment samples for PCB Congeners.
- TCDD-TEQ concentrations exceeded Level I SQTs in four sediment samples.

Exceedances of Level II SQTs were identified for the following:

- One PAH (dibenzo(a,h)anthracene) exceeded Level II SQTs in two sediment samples.

TABLES

**Table 2-1
Sampling Location Coordinates
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota**

Location ID	Longitude (D.d)	Latitude (D.d)
Area 1		
SLB10-1-20	46.74170278	-92.15150590
SLB10-1-21	46.74184052	-92.15130462
SLB10-1-22	46.74137461	-92.15193943
SLB10-1-23	46.74081911	-92.15280552
SLB10-1-24	46.74087672	-92.15137091
SLB10-1-25	46.74109363	-92.14918600
SLB10-1-26	46.74013068	-92.15373186
SLB10-1-27	46.74019223	-92.15191943
SLB10-1-28	46.73991223	-92.15017000
SLB10-1-29	46.73989083	-92.14839507
SLB10-1-30	46.73881920	-92.15457452
SLB10-1-31	46.73885426	-92.15284682
SLB10-1-32	46.73885334	-92.15104670
SLB10-1-33	46.73879532	-92.14733218
SLB10-1-34	46.73873542	-92.14555025
SLB10-1-35	46.73782818	-92.15539215
SLB10-1-36	46.73777543	-92.15383117
SLB10-1-37	46.73775981	-92.15198024
SLB10-1-38	46.73774809	-92.15014153
SLB10-1-39	46.73810532	-92.14771402
SLB10-1-40	46.73812514	-92.14361850
SLB10-1-42	46.73665653	-92.15108118
SLB10-1-44	46.73555128	-92.15017605
SLB10-1-45	46.73599362	-92.14897080
SLB10-1-46	46.73598222	-92.14548850
SLB10-1-47	46.73450064	-92.15664978
SLB10-1-48	46.73387533	-92.15489957
SLB10-1-49	46.73438518	-92.15367397
SLB10-1-50	46.73399187	-92.15067558
SLB10-1-51	46.73391453	-92.14739912
SLB10-1-52	46.73340903	-92.15758924
SLB10-1-53	46.73339544	-92.15574457
SLB10-1-54	46.73230383	-92.15668403
SLB10-1-55	46.73196400	-92.15243018
SLB10-1-56	46.73193458	-92.14896742
SLB10-1-57	46.73186123	-92.14559220
SLB10-1-58	46.73121222	-92.15762345
SLB10-1-59	46.73119862	-92.15577885
SLB10-1-60	46.73025480	-92.15573685
SLB10-1-61	46.73025052	-92.15321997
SLB10-1-62	46.73025775	-92.15023300
SLB10-1-63	46.72984445	-92.14725952
SLB10-1-64	46.72881888	-92.14669377

Location ID	Longitude (D.d)	Latitude (D.d)
Area 2		
SLB10-2-65	46.72766428	-92.15002042
SLB10-2-66	46.72764778	-92.14780183
SLB10-2-67	46.72763124	-92.14558324
SLB10-2-68	46.72664855	-92.15521803
SLB10-2-69	46.72607583	-92.15418085
SLB10-2-70	46.72583884	-92.15225054
SLB10-2-71	46.72635132	-92.15115044
SLB10-2-72	46.72633484	-92.14893191
SLB10-2-73	46.72631832	-92.14671337
SLB10-2-74	46.72630175	-92.14449483
SLB10-2-75	46.72502189	-92.15006193
SLB10-2-76	46.72500539	-92.14784344
SLB10-2-77	46.72498884	-92.14562496
SLB10-2-79	46.72369244	-92.14897346
SLB10-2-81	46.72365936	-92.14453661
SLB10-2-82	46.72239594	-92.15232181
SLB10-2-83	46.72237949	-92.15010343
SLB10-2-84	46.72236299	-92.14788505
SLB10-2-85	46.72234645	-92.14566668
SLB10-2-86	46.72105005	-92.14901502
SLB10-2-87	46.72103353	-92.14679669
SLB10-2-88	46.72565442	-92.15928504
SLB10-2-89	46.72438972	-92.15824928
SLB10-2-90	46.72316460	-92.15771579
SLB10-2-91	46.72183523	-92.15662717
SLB10-2-92	46.72052219	-92.15775692
SLB10-2-93	46.72050584	-92.15553861
SLB10-2-94	46.72057997	-92.15303190
SLB10-2-95	46.71937746	-92.16043785
SLB10-2-96	46.71936196	-92.15832748
SLB10-2-97	46.71934642	-92.15621712
Area 3		
SLB10-3-02	46.75164568	-92.11403785
SLB10-3-03	46.74944167	-92.11229500
SLB10-3-04	46.74898752	-92.11061423
SLB10-3-05	46.74829658	-92.12193932
SLB10-3-06	46.75049484	-92.12588266
SLB10-3-07	46.75026336	-92.12879977
SLB10-3-08	46.75050120	-92.13520228
SLB10-3-09	46.74810087	-92.13180255
SLB10-3-10	46.74911225	-92.13654405
SLB10-3-11	46.74709220	-92.13349330
SLB10-3-12	46.74579474	-92.14302201
SLB10-3-13	46.74480182	-92.14226575
SLB10-3-14	46.74316885	-92.13825320
SLB10-3-15	46.74476134	-92.13688164
SLB10-3-16	46.73944233	-92.13726762
SLB10-3-17	46.73945715	-92.13237440
SLB10-3-18	46.74218572	-92.13012067
SLB10-3-19	46.74146478	-92.12660175

Notes:
D.d - Decimal Degrees
ID - Identification

**Table 2-2
Sampling and Analysis Summary
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota**

Location ID	Field Sample ID	Depth (inches bss)	Sampling Date	PAH (17 list)	PAH (34 list)	TAL Metal	PCB Aroclor	PCB Congener	TCL Pesticide	TPH DRO/ORO	Dioxin/Furan	Grain Size	TOC	Black Carbon
AREA 1														
SLB10-1-20	SLB10-1-20-06	0 - 6	10/15/10		X	X	X	X	X	X	X	X	X	X
	SLB10-1-20-10	0 - 10	10/15/10	X		X	X			X		X	X	
SLB10-1-21	SLB10-1-21-06	0 - 6	10/15/10	X		X	X			X		X	X	
	SLB10-1-21-06DP	0 - 6	10/15/10	X		X	X			X			X	
SLB10-1-22	SLB10-1-21-14	0 - 14	10/15/10	X		X	X			X		X	X	
	SLB10-1-22-06	0 - 6	10/15/10	X		X	X			X		X	X	
SLB10-1-23	SLB10-1-22-06DP	0 - 6	10/15/10	X		X	X			X			X	
	SLB10-1-22-19	0 - 19	10/15/10	X		X	X			X		X	X	
SLB10-1-24	SLB10-1-23-06	0 - 6	10/15/10	X		X	X			X		X	X	
	SLB10-1-23-06DP	0 - 6	10/15/10	X		X	X			X			X	
SLB10-1-25	SLB10-1-23-16	0 - 16	10/15/10	X		X	X			X		X	X	
	SLB10-1-24-06	0 - 6	10/15/10		X	X	X	X	X	X	X	X	X	X
SLB10-1-26	SLB10-1-24-06DP	0 - 6	10/15/10		X	X	X	X	X	X	X		X	X
	SLB10-1-24-12	0 - 12	10/15/10	X		X	X			X		X	X	
SLB10-1-27	SLB10-1-24-24	12 - 24	10/15/10	X		X	X			X		X	X	
	SLB10-1-25-06	0 - 6	10/15/10	X		X	X			X		X	X	
SLB10-1-28	SLB10-1-25-06DP	0 - 6	10/15/10	X		X	X			X			X	
	SLB10-1-25-116	84 - 116	10/15/10	X		X	X			X		X	X	
SLB10-1-29	SLB10-1-25-12	0 - 12	10/15/10	X		X	X			X		X	X	
	SLB10-1-25-36	12 - 36	10/15/10	X		X	X			X		X	X	
SLB10-1-30	SLB10-1-25-60	36 - 60	10/15/10	X		X	X			X		X	X	
	SLB10-1-25-84	60 - 84	10/15/10	X		X	X			X		X	X	
SLB10-1-31	SLB10-1-26-06	0 - 6	10/15/10		X	X	X	X	X	X	X	X	X	X
	SLB10-1-26-12	0 - 12	10/15/10	X		X	X			X		X	X	
SLB10-1-32	SLB10-1-27-06	0 - 6	10/15/10	X		X	X			X		X	X	
	SLB10-1-27-06DP	0 - 6	10/15/10	X		X	X			X			X	
SLB10-1-33	SLB10-1-27-17	0 - 17	10/15/10	X		X	X			X		X	X	
	SLB10-1-28-06	0 - 6	10/13/10	X		X	X			X		X	X	
SLB10-1-34	SLB10-1-28-06DP	0 - 6	10/13/10	X		X	X			X			X	
	SLB10-1-28-106	84 - 106	10/13/10	X		X	X			X		X	X	
SLB10-1-35	SLB10-1-28-12	0 - 12	10/13/10	X		X	X			X		X	X	
	SLB10-1-28-36	12 - 36	10/13/10	X		X	X			X		X	X	
SLB10-1-36	SLB10-1-28-60	36 - 60	10/13/10	X		X	X			X		X	X	
	SLB10-1-28-84	60 - 84	10/13/10	X		X	X			X		X	X	
SLB10-1-37	SLB10-1-29-06	0 - 6	10/13/10		X	X	X	X	X	X	X	X	X	X
	SLB10-1-29-12	0 - 12	10/13/10	X		X	X			X		X	X	
SLB10-1-38	SLB10-1-29-36	12 - 36	10/13/10	X		X	X			X		X	X	
	SLB10-1-29-60	36 - 60	10/13/10	X		X	X			X		X	X	
SLB10-1-39	SLB10-1-29-78	60 - 78	10/13/10	X		X	X			X		X	X	
	SLB10-1-30-06	0 - 6	10/16/10	X		X	X			X		X	X	
SLB10-1-40	SLB10-1-30-06DP	0 - 6	10/16/10	X		X	X			X			X	
	SLB10-1-30-10	0 - 10	10/16/10	X		X	X			X		X	X	
SLB10-1-41	SLB10-1-31-06	0 - 6	10/16/10		X	X	X	X	X	X	X	X	X	X
	SLB10-1-31-13	0 - 13	10/16/10	X		X	X			X		X	X	
SLB10-1-42	SLB10-1-32-06	0 - 6	10/16/10	X		X	X			X		X	X	
	SLB10-1-32-06DP	0 - 6	10/16/10	X		X	X			X			X	
SLB10-1-43	SLB10-1-32-20	0 - 20	10/16/10	X		X	X			X		X	X	
	SLB10-1-33-06	0 - 6	10/13/10		X	X	X	X	X	X	X	X	X	X
SLB10-1-44	SLB10-1-33-12	0 - 12	10/13/10	X		X	X			X		X	X	
	SLB10-1-33-36	12 - 36	10/13/10	X		X	X			X		X	X	
SLB10-1-45	SLB10-1-33-60	36 - 60	10/13/10	X		X	X			X		X	X	
	SLB10-1-33-77	60 - 77	10/13/10	X		X	X			X		X	X	
SLB10-1-46	SLB10-1-34-06	0 - 6	10/14/10	X		X	X			X		X	X	
	SLB10-1-34-06DP	0 - 6	10/14/10	X		X	X			X			X	
SLB10-1-47	SLB10-1-34-17	0 - 17	10/14/10	X		X	X			X		X	X	
	SLB10-1-35-06	0 - 6	10/16/10	X		X	X			X		X	X	
SLB10-1-48	SLB10-1-35-06DP	0 - 6	10/16/10	X		X	X			X			X	
	SLB10-1-35-16	0 - 16	10/16/10	X		X	X			X		X	X	
SLB10-1-49	SLB10-1-36-06	0 - 6	10/16/10	X		X	X			X		X	X	
	SLB10-1-36-06DP	0 - 6	10/16/10	X		X	X			X			X	
SLB10-1-50	SLB10-1-36-15	0 - 15	10/16/10	X		X	X			X		X	X	
	SLB10-1-37-06	0 - 6	10/16/10	X		X	X			X		X	X	
SLB10-1-51	SLB10-1-37-06DP	0 - 6	10/16/10	X		X	X			X			X	
	SLB10-1-37-18	0 - 18	10/16/10	X		X	X			X		X	X	

**Table 2-2
Sampling and Analysis Summary
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota**

Location ID	Field Sample ID	Depth (inches bss)	Sampling Date	PAH (17 list)	PAH (34 list)	TAL Metal	PCB Aroclor	PCB Congener	TCL Pesticide	TPH DRO/ORO	Dioxin/Furan	Grain Size	TOC	Black Carbon
SLB10-1-38	SLB10-1-38-06	0 - 6	10/15/10		X	X	X	X	X	X	X	X	X	X
	SLB10-1-38-12	0 - 12	10/15/10	X		X	X			X		X	X	
	SLB10-1-38-43	12 - 43	10/15/10	X		X	X			X		X	X	
SLB10-1-39	SLB10-1-39-06	0 - 6	10/13/10	X		X	X			X		X	X	
	SLB10-1-39-06DP	0 - 6	10/13/10	X		X	X			X			X	
	SLB10-1-39-115	84 - 115	10/13/10	X		X	X			X		X	X	
	SLB10-1-39-12	0 - 12	10/13/10	X		X	X			X		X	X	
	SLB10-1-39-36	12 - 36	10/13/10	X		X	X			X		X	X	
	SLB10-1-39-60	36 - 60	10/13/10	X		X	X			X		X	X	
SLB10-1-39-84	60 - 84	10/13/10	X		X	X			X		X	X		
SLB10-1-40	SLB10-1-40-06	0 - 6	10/15/10		X	X	X	X	X	X	X	X	X	X
	SLB10-1-40-12	0 - 12	10/15/10	X		X	X			X		X	X	
	SLB10-1-40-36	12 - 36	10/15/10	X		X	X			X		X	X	
	SLB10-1-40-52	36 - 52	10/15/10	X		X	X			X		X	X	
SLB10-1-42	SLB10-1-42-06	0 - 6	10/16/10	X		X	X			X		X	X	
	SLB10-1-42-06DP	0 - 6	10/16/10	X		X	X			X			X	
	SLB10-1-42-12	0 - 12	10/16/10	X		X	X			X		X	X	
	SLB10-1-42-24	12 - 24	10/16/10	X		X	X			X		X	X	
SLB10-1-44	SLB10-1-44-06	0 - 6	10/16/10		X	X	X	X	X	X	X	X	X	
SLB10-1-45	SLB10-1-45-06	0 - 6	10/13/10	X		X	X			X		X	X	
	SLB10-1-45-114	84 - 114	10/13/10	X		X	X			X		X	X	
	SLB10-1-45-12	0 - 12	10/13/10	X		X	X			X		X	X	
	SLB10-1-45-36	12 - 36	10/13/10	X		X	X			X		X	X	
	SLB10-1-45-60	36 - 60	10/13/10	X		X	X			X		X	X	
	SLB10-1-45-84	60 - 84	10/13/10	X		X	X			X		X	X	
SLB10-1-46	SLB10-1-46-06	0 - 6	10/12/10	X		X	X			X		X	X	
	SLB10-1-46-06DP	0 - 6	10/12/10	X		X	X			X			X	
	SLB10-1-46-12	0 - 12	10/12/10	X		X	X			X		X	X	
	SLB10-1-46-36	12 - 36	10/12/10	X		X	X			X		X	X	
SLB10-1-47	SLB10-1-47-06	0 - 6	10/15/10		X	X	X	X	X	X	X	X	X	X
	SLB10-1-47-10	0 - 10	10/15/10	X		X	X			X		X	X	
SLB10-1-48	SLB10-1-48-06	0 - 6	10/13/10	X		X	X			X		X	X	
	SLB10-1-48-06DP	0 - 6	10/13/10	X		X	X			X			X	
	SLB10-1-48-12	0 - 12	10/13/10	X		X	X			X		X	X	
	SLB10-1-48-36	12 - 36	10/13/10	X		X	X			X		X	X	
SLB10-1-49	SLB10-1-48-68	36 - 68	10/13/10	X		X	X			X		X	X	
	SLB10-1-49-06	0 - 6	10/13/10		X	X	X	X	X	X	X	X	X	X
	SLB10-1-49-12	0 - 12	10/13/10	X		X	X			X		X	X	
	SLB10-1-49-36	12 - 36	10/13/10	X		X	X			X		X	X	
SLB10-1-50	SLB10-1-49-53	36 - 53	10/13/10	X		X	X			X		X	X	
	SLB10-1-50-06	0 - 6	10/13/10	X		X	X			X		X	X	
	SLB10-1-50-06DP	0 - 6	10/13/10	X		X	X			X			X	
	SLB10-1-50-12	0 - 12	10/13/10	X		X	X			X		X	X	
SLB10-1-51	SLB10-1-50-36	12 - 36	10/13/10	X		X	X			X		X	X	
	SLB10-1-51-06	0 - 6	10/12/10		X	X	X	X	X	X	X	X	X	X
	SLB10-1-51-12	0 - 12	10/12/10	X		X	X			X		X	X	
	SLB10-1-51-36	12 - 36	10/12/10	X		X	X			X		X	X	
	SLB10-1-51-60	36 - 60	10/12/10	X		X	X			X		X	X	
SLB10-1-52	SLB10-1-51-76	60 - 76	10/12/10	X		X	X			X		X	X	
	SLB10-1-52-06	0 - 6	10/15/10	X		X	X			X		X	X	
	SLB10-1-52-06DP	0 - 6	10/15/10	X		X	X			X			X	
	SLB10-1-52-12	0 - 12	10/15/10	X		X	X			X		X	X	
SLB10-1-53	SLB10-1-52-24	12 - 24	10/15/10	X		X	X			X		X	X	
	SLB10-1-53-06	0 - 6	10/15/10	X		X	X			X		X	X	
	SLB10-1-53-06DP	0 - 6	10/15/10	X		X	X			X			X	
	SLB10-1-53-12	0 - 12	10/15/10	X		X	X			X		X	X	
SLB10-1-54	SLB10-1-53-26	12 - 26	10/15/10	X		X	X			X		X	X	
	SLB10-1-54-06	0 - 6	10/15/10		X	X	X	X	X	X	X	X	X	X
	SLB10-1-54-12	0 - 12	10/15/10	X		X	X			X		X	X	

Table 2-2
Sampling and Analysis Summary
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Location ID	Field Sample ID	Depth (inches bss)	Sampling Date	PAH (17 list)	PAH (34 list)	TAL Metal	PCB Aroclor	PCB Congener	TCL Pesticide	TPH DRO/ORO	Dioxin/Furan	Grain Size	TOC	Black Carbon
SLB10-1-55	SLB10-1-55-06	0 - 6	10/13/10	X		X	X			X		X	X	
	SLB10-1-55-06DP	0 - 6	10/13/10	X		X	X			X			X	
	SLB10-1-55-116	84 - 116	10/13/10	X		X	X			X		X	X	
	SLB10-1-55-12	0 - 12	10/13/10	X		X	X			X		X	X	
	SLB10-1-55-36	12 - 36	10/13/10	X		X	X			X		X	X	
	SLB10-1-55-60	36 - 60	10/13/10	X		X	X			X		X	X	
SLB10-1-55-84	60 - 84	10/13/10	X		X	X			X		X	X		
SLB10-1-56	SLB10-1-56-06	0 - 6	10/7/10		X	X	X	X	X	X	X	X	X	X
	SLB10-1-56-06DP	0 - 6	10/7/10		X	X	X	X	X	X	X		X	X
	SLB10-1-56-12	0 - 12	10/7/10	X		X	X			X		X	X	
	SLB10-1-56-36	12 - 36	10/7/10	X		X	X			X		X	X	
	SLB10-1-56-60	36 - 60	10/7/10	X		X	X			X		X	X	
	SLB10-1-56-86	60 - 86	10/7/10	X		X	X			X		X	X	
SLB10-1-57	SLB10-1-57-06	0 - 6	10/12/10	X		X	X			X		X	X	
	SLB10-1-57-06DP	0 - 6	10/12/10	X		X	X			X			X	
	SLB10-1-57-12	0 - 12	10/12/10	X		X	X			X		X	X	
	SLB10-1-57-36	12 - 36	10/12/10	X		X	X			X		X	X	
	SLB10-1-57-60	36 - 60	10/12/10	X		X	X			X		X	X	
	SLB10-1-57-77	60 - 77	10/12/10	X		X	X			X		X	X	
SLB10-1-58	SLB10-1-58-20	0 - 20	10/13/10	X		X	X			X		X	X	
SLB10-1-59	SLB10-1-59-06	0 - 6	10/13/10	X		X	X			X		X	X	
	SLB10-1-59-06DP	0 - 6	10/13/10	X		X	X			X			X	
	SLB10-1-59-12	0 - 12	10/13/10	X		X	X			X		X	X	
	SLB10-1-59-25	12 - 25	10/13/10	X		X	X			X		X	X	
SLB10-1-60	SLB10-1-60-06	0 - 6	10/14/10		X	X	X	X	X	X	X	X	X	X
	SLB10-1-60-106	84 - 106	10/14/10	X		X	X			X		X	X	
	SLB10-1-60-12	0 - 12	10/14/10	X		X	X			X		X	X	
	SLB10-1-60-36	12 - 36	10/14/10	X		X	X			X		X	X	
	SLB10-1-60-60	36 - 60	10/14/10	X		X	X			X		X	X	
	SLB10-1-60-84	60 - 84	10/14/10	X		X	X			X		X	X	
SLB10-1-61	SLB10-1-61-06	0 - 6	10/14/10	X		X	X			X		X	X	
	SLB10-1-61-06DP	0 - 6	10/14/10	X		X	X			X			X	
	SLB10-1-61-12	0 - 12	10/14/10	X		X	X			X		X	X	
	SLB10-1-61-36	12 - 36	10/14/10	X		X	X			X		X	X	
	SLB10-1-61-60	36 - 60	10/14/10	X		X	X			X		X	X	
	SLB10-1-61-79	60 - 79	10/14/10	X		X	X			X		X	X	
SLB10-1-62	SLB10-1-62-06	0 - 6	10/14/10		X	X	X	X	X	X	X	X	X	X
	SLB10-1-62-06DP	0 - 6	10/14/10		X	X	X	X	X	X	X		X	X
	SLB10-1-62-12	0 - 12	10/14/10	X		X	X			X		X	X	
	SLB10-1-62-32	12 - 32	10/14/10	X		X	X			X		X	X	
SLB10-1-63	SLB10-1-63-06	0 - 6	10/7/10	X		X	X			X		X	X	
	SLB10-1-63-06DP	0 - 6	10/7/10	X		X	X			X			X	
	SLB10-1-63-12	0 - 12	10/7/10	X		X	X			X		X	X	
	SLB10-1-63-36	12 - 36	10/7/10	X		X	X			X		X	X	
	SLB10-1-63-60	36 - 60	10/7/10	X		X	X			X		X	X	
	SLB10-1-63-84	60 - 84	10/7/10	X		X	X			X		X	X	
SLB10-1-64	SLB10-1-64-06	0 - 6	10/13/10	X		X	X			X		X	X	
	SLB10-1-64-06DP	0 - 6	10/13/10	X		X	X			X			X	
	SLB10-1-64-12	0 - 12	10/13/10	X		X	X			X		X	X	
	SLB10-1-64-36	12 - 36	10/13/10	X		X	X			X		X	X	
	SLB10-1-64-48	36 - 48	10/13/10	X		X	X			X		X	X	
Total number of samples analyzed for Area 1:				156	19	175	175	19	19	175	19	147	175	19
AREA 2														
SLB10-2-65	SLB10-2-65-06	0 - 6	10/7/10		X	X	X	X	X	X	X	X	X	X
	SLB10-2-65-12	0 - 12	10/7/10	X		X	X			X		X	X	
	SLB10-2-65-36	12 - 36	10/7/10	X		X	X			X		X	X	
	SLB10-2-65-60	36 - 60	10/7/10	X		X	X			X		X	X	
	SLB10-2-65-84	60 - 84	10/7/10	X		X	X			X		X	X	
SLB10-2-66	SLB10-2-66-06	0 - 6	10/6/10	X		X	X			X		X	X	
	SLB10-2-66-06DP	0 - 6	10/6/10	X		X	X			X			X	
	SLB10-2-66-12	0 - 12	10/6/10	X		X	X			X		X	X	
	SLB10-2-66-36	12 - 36	10/6/10	X		X	X			X		X	X	
	SLB10-2-66-60	36 - 60	10/6/10	X		X	X			X		X	X	
SLB10-2-66-89	60 - 89	10/6/10	X		X	X			X		X	X		

**Table 2-2
Sampling and Analysis Summary
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota**

Location ID	Field Sample ID	Depth (inches bss)	Sampling Date	PAH (17 list)	PAH (34 list)	TAL Metal	PCB Aroclor	PCB Congener	TCL Pesticide	TPH DRO/ ORO	Dioxin/ Furan	Grain Size	TOC	Black Carbon
SLB10-2-67	SLB10-2-67-06	0 - 6	10/6/10	X		X	X			X		X	X	
	SLB10-2-67-102	84 - 102	10/6/10	X		X	X			X		X	X	
	SLB10-2-67-12	0 - 12	10/6/10	X		X	X			X		X	X	
	SLB10-2-67-36	12 - 36	10/6/10	X		X	X			X		X	X	
	SLB10-2-67-60	36 - 60	10/6/10	X		X	X			X		X	X	
SLB10-2-68	SLB10-2-67-84	60 - 84	10/6/10	X		X	X			X		X	X	
	SLB10-2-68-06	0 - 6	10/7/10	X		X	X			X		X	X	
SLB10-2-69	SLB10-2-68-21	0 - 21	10/7/10	X		X	X			X		X	X	
	SLB10-2-69-06	0 - 6	10/7/10		X	X	X	X	X	X	X	X	X	X
SLB10-2-70	SLB10-2-69-17	0 - 17	10/7/10	X		X	X			X		X	X	
	SLB10-2-70-06	0 - 6	10/7/10	X		X	X			X		X	X	
	SLB10-2-70-06DP	0 - 6	10/7/10	X		X	X			X		X	X	
SLB10-2-71	SLB10-2-70-19	0 - 19	10/7/10	X		X	X			X		X	X	
	SLB10-2-71-06	0 - 6	10/7/10		X	X	X	X	X	X	X	X	X	X
	SLB10-2-71-12	0 - 12	10/7/10	X		X	X			X		X	X	
	SLB10-2-71-36	12 - 36	10/7/10	X		X	X			X		X	X	
SLB10-2-72	SLB10-2-71-54	36 - 54	10/7/10	X		X	X			X		X	X	
	SLB10-2-72-06	0 - 6	10/7/10	X		X	X			X		X	X	
	SLB10-2-72-12	0 - 12	10/7/10	X		X	X			X		X	X	
SLB10-2-73	SLB10-2-72-24	12 - 24	10/7/10	X		X	X			X		X	X	
	SLB10-2-73-06	0 - 6	10/7/10	X		X	X			X		X	X	
	SLB10-2-73-12	0 - 12	10/7/10	X		X	X			X		X	X	
SLB10-2-74	SLB10-2-73-31	12 - 31	10/7/10	X		X	X			X		X	X	
	SLB10-2-74-06	0 - 6	10/6/10		X	X	X	X	X	X	X	X	X	X
	SLB10-2-74-06DP	0 - 6	10/6/10		X	X	X	X	X	X	X	X	X	X
	SLB10-2-74-108	84 - 108	10/6/10	X		X	X			X		X	X	
	SLB10-2-74-12	0 - 12	10/6/10	X		X	X			X		X	X	
	SLB10-2-74-120	108 - 120	10/6/10	X		X	X			X		X	X	
	SLB10-2-74-36	12 - 36	10/6/10	X		X	X			X		X	X	
	SLB10-2-74-36DP	12 - 36	10/6/10	X		X	X			X		X	X	
SLB10-2-75	SLB10-2-74-60	36 - 60	10/6/10	X		X	X			X		X	X	
	SLB10-2-74-84	60 - 84	10/6/10	X		X	X			X		X	X	
	SLB10-2-75-06	0 - 6	10/7/10	X		X	X			X		X	X	
SLB10-2-76	SLB10-2-75-12	0 - 12	10/7/10	X		X	X			X		X	X	
	SLB10-2-75-34	12 - 34	10/7/10	X		X	X			X		X	X	
SLB10-2-77	SLB10-2-76-06	0 - 6	10/13/10		X	X	X	X	X	X	X	X	X	X
	SLB10-2-76-12	0 - 12	10/13/10	X		X	X			X		X	X	
SLB10-2-79	SLB10-2-77-06	0 - 6	10/7/10	X		X	X			X		X	X	
	SLB10-2-77-12	0 - 12	10/7/10	X		X	X			X		X	X	
	SLB10-2-77-36	12 - 36	10/7/10	X		X	X			X		X	X	
	SLB10-2-77-60	36 - 60	10/7/10	X		X	X			X		X	X	
SLB10-2-81	SLB10-2-77-73	60 - 73	10/7/10	X		X	X			X		X	X	
	SLB10-2-79-12	0 - 12	10/13/10	X		X	X			X		X	X	
	SLB10-2-81-06	0 - 6	10/5/10	X		X	X			X		X	X	
	SLB10-2-81-06DP	0 - 6	10/5/10	X		X	X			X		X	X	
	SLB10-2-81-12	0 - 12	10/5/10	X		X	X			X		X	X	
	SLB10-2-81-36	12 - 36	10/5/10	X		X	X			X		X	X	
SLB10-2-82	SLB10-2-81-60	36 - 60	10/5/10	X		X	X			X		X	X	
	SLB10-2-81-84	60 - 84	10/5/10	X		X	X			X		X	X	
	SLB10-2-81-92	84 - 92	10/5/10	X		X	X			X		X	X	
	SLB10-2-82-06	0 - 6	10/7/10	X		X	X			X		X	X	
	SLB10-2-82-06DP	0 - 6	10/7/10	X		X	X			X		X	X	
SLB10-2-83	SLB10-2-82-12	0 - 12	10/7/10	X		X	X			X		X	X	
	SLB10-2-82-27	12 - 27	10/7/10	X		X	X			X		X	X	
	SLB10-2-83-06	0 - 6	10/6/10		X	X	X	X	X	X	X	X	X	X
SLB10-2-84	SLB10-2-83-12	0 - 12	10/6/10	X		X	X			X		X	X	
	SLB10-2-83-36	12 - 36	10/6/10	X		X	X			X		X	X	
SLB10-2-84	SLB10-2-83-60	36 - 60	10/6/10	X		X	X			X		X	X	
	SLB10-2-84-12	0 - 12	10/13/10	X		X	X			X		X	X	
	SLB10-2-84-33	12 - 33	10/13/10	X		X	X			X		X	X	

Table 2-2
Sampling and Analysis Summary
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Location ID	Field Sample ID	Depth (inches bss)	Sampling Date	PAH (17 list)	PAH (34 list)	TAL Metal	PCB Aroclor	PCB Congener	TCL Pesticide	TPH DRO/ORO	Dioxin/Furan	Grain Size	TOC	Black Carbon
SLB10-2-85	SLB10-2-85-06	0 - 6	10/6/10		X	X	X	X	X	X	X	X	X	X
	SLB10-2-85-117	84 - 117	10/6/10	X		X	X			X		X	X	
	SLB10-2-85-12	0 - 12	10/6/10	X		X	X			X		X	X	
	SLB10-2-85-36	12 - 36	10/6/10	X		X	X			X		X	X	
	SLB10-2-85-60	36 - 60	10/6/10	X		X	X			X		X	X	
	SLB10-2-85-84	60 - 84	10/6/10	X		X	X			X		X	X	
SLB10-2-86	SLB10-2-86-06	0 - 6	10/7/10	X		X	X			X		X	X	
	SLB10-2-86-12	0 - 12	10/7/10	X		X	X			X		X	X	
	SLB10-2-86-24	12 - 24	10/7/10	X		X	X			X		X	X	
SLB10-2-87	SLB10-2-87-06	0 - 6	10/6/10		X	X	X	X	X	X	X	X	X	X
	SLB10-2-87-108	84 - 108	10/6/10	X		X	X			X		X	X	
	SLB10-2-87-12	0 - 12	10/6/10	X		X	X			X		X	X	
	SLB10-2-87-120	84 - 120	10/6/10	X		X	X			X		X	X	
	SLB10-2-87-36	12 - 36	10/6/10	X		X	X			X		X	X	
	SLB10-2-87-60	36 - 60	10/6/10	X		X	X			X		X	X	
SLB10-2-88	SLB10-2-88-06	0 - 6	10/6/10	X		X	X			X		X	X	X
	SLB10-2-88-18	0 - 18	10/6/10	X		X	X			X		X	X	X
SLB10-2-89	SLB10-2-89-06	0 - 6	10/7/10		X	X	X	X	X	X	X	X	X	X
	SLB10-2-89-16	0 - 16	10/7/10	X		X	X			X		X	X	
SLB10-2-90	SLB10-2-90-06	0 - 6	10/6/10	X		X	X			X		X	X	
	SLB10-2-90-06DP	0 - 6	10/6/10	X		X	X			X			X	
	SLB10-2-90-12	0 - 12	10/6/10	X		X	X			X		X	X	
	SLB10-2-90-12DP	0 - 12	10/6/10	X		X	X			X		X	X	
	SLB10-2-90-32	12 - 32	10/6/10	X		X	X			X		X	X	
	SLB10-2-90-32DP	12 - 32	10/6/10	X		X	X			X		X	X	
SLB10-2-91	SLB10-2-91-06	0 - 6	10/5/10	X		X	X			X		X	X	
	SLB10-2-91-12	0 - 12	10/6/10	X		X	X			X		X	X	
	SLB10-2-91-36	12 - 36	10/6/10	X		X	X			X		X	X	
SLB10-2-92	SLB10-2-92-06	0 - 6	10/6/10		X	X	X	X	X	X	X	X	X	X
	SLB10-2-92-12	0 - 12	10/6/10	X		X	X			X		X	X	
	SLB10-2-92-36	12 - 36	10/6/10	X		X	X			X		X	X	
SLB10-2-93	SLB10-2-93-06	0 - 6	10/6/10	X		X	X			X		X	X	
	SLB10-2-93-12	0 - 12	10/6/10	X		X	X			X		X	X	
	SLB10-2-93-41	12 - 41	10/6/10	X		X	X			X		X	X	
SLB10-2-94	SLB10-2-94-06	0 - 6	10/7/10		X	X	X	X	X	X	X	X	X	X
	SLB10-2-94-12	0 - 12	10/7/10	X		X	X			X		X	X	
	SLB10-2-94-36	12 - 36	10/7/10	X		X	X			X		X	X	
	SLB10-2-94-60	36 - 60	10/7/10	X		X	X			X		X	X	
	SLB10-2-94-84	60 - 84	10/7/10	X		X	X			X		X	X	
	SLB10-2-94-96	84 - 96	10/7/10	X		X	X			X		X	X	
SLB10-2-95	SLB10-2-95-06	0 - 6	10/7/10	X		X	X			X		X	X	
	SLB10-2-95-12	0 - 12	10/7/10	X		X	X			X		X	X	
	SLB10-2-95-36	12 - 36	10/7/10	X		X	X			X		X	X	
	SLB10-2-95-60	36 - 60	10/7/10	X		X	X			X		X	X	
	SLB10-2-95-84	60 - 84	10/7/10	X		X	X			X		X	X	
SLB10-2-96	SLB10-2-96-06	0 - 6	10/7/10		X	X	X	X	X	X	X	X	X	X
	SLB10-2-96-12	0 - 12	10/7/10	X		X	X			X		X	X	
	SLB10-2-96-36	12 - 36	10/7/10	X		X	X			X		X	X	
	SLB10-2-96-60	36 - 60	10/7/10	X		X	X			X		X	X	
	SLB10-2-96-84	60 - 84	10/7/10	X		X	X			X		X	X	
SLB10-2-97	SLB10-2-97-06	0 - 6	10/7/10	X			X					X	X	
	SLB10-2-97-06	0 - 6	10/12/10			X				X				
	SLB10-2-97-12	0 - 12	10/7/10	X		X	X			X		X	X	
	SLB10-2-97-36	12 - 36	10/7/10	X		X	X			X		X	X	
	SLB10-2-97-60	36 - 60	10/7/10	X		X	X			X		X	X	
SLB10-2-97-75	60 - 75	10/7/10	X		X	X			X		X	X		
Total number of samples analyzed for Area 2:				114	13	127	127	13	13	127	13	121	127	15
AREA 3														
SLB10-3-02	SLB10-3-02-06	0 - 6	10/5/10	X		X	X			X		X	X	
	SLB10-3-02-12	0 - 12	10/5/10	X		X	X			X		X	X	
	SLB10-3-02-36	12 - 36	10/5/10	X		X	X			X		X	X	
	SLB10-3-02-60	36 - 60	10/5/10	X		X	X			X		X	X	
	SLB10-3-02-84	60 - 84	10/5/10	X		X	X			X		X	X	

Table 2-2
Sampling and Analysis Summary
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Location ID	Field Sample ID	Depth (inches bss)	Sampling Date	PAH (17 list)	PAH (34 list)	TAL Metal	PCB Aroclor	PCB Congener	TCL Pesticide	TPH DRO/ORO	Dioxin/Furan	Grain Size	TOC	Black Carbon
SLB10-3-03	SLB10-3-03-06	0 - 6	10/5/10	X		X	X			X		X	X	
	SLB10-3-03-12	0 - 12	10/5/10	X		X	X			X		X	X	
	SLB10-3-03-36	12 - 36	10/5/10	X		X	X			X		X	X	
	SLB10-3-03-56	36 - 56	10/5/10	X		X	X			X		X	X	
SLB10-3-04	SLB10-3-04-06	0 - 6	10/5/10	X		X	X			X		X	X	
	SLB10-3-04-12	0 - 12	10/5/10	X		X	X			X		X	X	
	SLB10-3-04-36	12 - 36	10/5/10	X		X	X			X		X	X	
	SLB10-3-04-60	36 - 60	10/5/10	X		X	X			X		X	X	
SLB10-3-05	SLB10-3-05-06	0 - 6	10/15/10		X	X	X	X	X	X	X	X	X	X
	SLB10-3-05-116	84 - 116	10/15/10	X		X	X			X		X	X	
	SLB10-3-05-12	0 - 12	10/15/10	X		X	X			X		X	X	
	SLB10-3-05-36	12 - 36	10/15/10	X		X	X			X		X	X	
	SLB10-3-05-60	36 - 60	10/15/10	X		X	X			X		X	X	
	SLB10-3-05-84	60 - 84	10/15/10	X		X	X			X		X	X	
SLB10-3-06	SLB10-3-06-06	0 - 6	10/15/10	X		X	X			X		X	X	
	SLB10-3-06-06DP	0 - 6	10/15/10	X		X	X			X			X	
	SLB10-3-06-12	0 - 12	10/15/10	X		X	X			X		X	X	
	SLB10-3-06-36	12 - 36	10/15/10	X		X	X			X		X	X	
	SLB10-3-06-48	36 - 48	10/15/10	X		X	X			X		X	X	
SLB10-3-07	SLB10-3-07-06	0 - 6	10/14/10		X	X	X	X	X	X	X	X	X	X
	SLB10-3-07-12	0 - 12	10/14/10	X		X	X			X		X	X	
	SLB10-3-07-33	12 - 33	10/14/10	X		X	X			X		X	X	
SLB10-3-08	SLB10-3-08-06	0 - 6	10/14/10	X		X	X			X		X	X	
	SLB10-3-08-06DP	0 - 6	10/14/10	X		X	X			X			X	
	SLB10-3-08-104	84 - 104	10/14/10	X		X	X			X		X	X	
	SLB10-3-08-12	0 - 12	10/14/10	X		X	X			X		X	X	
	SLB10-3-08-36	12 - 36	10/14/10	X		X	X			X		X	X	
	SLB10-3-08-60	36 - 60	10/14/10	X		X	X			X		X	X	
	SLB10-3-08-84	60 - 84	10/14/10	X		X	X			X		X	X	
SLB10-3-09	SLB10-3-09-06	0 - 6	10/14/10	X		X	X			X		X	X	
	SLB10-3-09-06DP	0 - 6	10/14/10	X		X	X			X			X	
	SLB10-3-09-115	84 - 115	10/14/10	X		X	X			X		X	X	
	SLB10-3-09-12	0 - 12	10/14/10	X		X	X			X		X	X	
	SLB10-3-09-36	12 - 36	10/14/10	X		X	X			X		X	X	
	SLB10-3-09-60	36 - 60	10/14/10	X		X	X			X		X	X	
	SLB10-3-09-84	60 - 84	10/14/10	X		X	X			X		X	X	
SLB10-3-10	SLB10-3-10-06	0 - 6	10/15/10		X	X	X	X	X	X	X	X	X	X
	SLB10-3-10-12	0 - 12	10/15/10	X		X	X			X		X	X	
	SLB10-3-10-36	12 - 36	10/15/10	X		X	X			X		X	X	
	SLB10-3-10-60	36 - 60	10/15/10	X		X	X			X		X	X	
	SLB10-3-10-86	60 - 86	10/15/10	X		X	X			X		X	X	
SLB10-3-11	SLB10-3-11-06	0 - 6	10/15/10	X		X	X			X		X	X	
	SLB10-3-11-06DP	0 - 6	10/15/10	X		X	X			X			X	
	SLB10-3-11-12	0 - 12	10/15/10	X		X	X			X		X	X	
	SLB10-3-11-36	12 - 36	10/15/10	X		X	X			X		X	X	
	SLB10-3-11-50	36 - 50	10/15/10	X		X	X			X		X	X	
SLB10-3-12	SLB10-3-12-06	0 - 6	10/16/10	X		X	X			X		X	X	
	SLB10-3-12-06DP	0 - 6	10/16/10	X		X	X			X			X	
	SLB10-3-12-10	0 - 10	10/16/10	X		X	X			X		X	X	
SLB10-3-13	SLB10-3-13-06	0 - 6	10/16/10	X		X	X			X		X	X	
	SLB10-3-13-06DP	0 - 6	10/16/10	X		X	X			X			X	
	SLB10-3-13-12	0 - 12	10/16/10	X		X	X			X		X	X	
SLB10-3-14	SLB10-3-14-06	0 - 6	10/14/10		X	X	X	X	X	X	X	X	X	X
	SLB10-3-14-12	0 - 12	10/14/10	X		X	X			X		X	X	
	SLB10-3-14-42	12 - 42	10/14/10	X		X	X			X		X	X	
SLB10-3-15	SLB10-3-15-06	0 - 6	10/15/10	X		X	X			X		X	X	
	SLB10-3-15-06DP	0 - 6	10/15/10	X		X	X			X			X	
	SLB10-3-15-12	0 - 12	10/15/10	X		X	X			X		X	X	
	SLB10-3-15-32	12 - 32	10/15/10	X		X	X			X		X	X	
SLB10-3-16	SLB10-3-16-06	0 - 6	10/15/10		X	X	X	X	X	X	X	X	X	X
	SLB10-3-16-12	0 - 12	10/15/10	X		X	X			X		X	X	
	SLB10-3-16-36	12 - 36	10/15/10	X		X	X			X		X	X	
	SLB10-3-16-71	36 - 71	10/15/10	X		X	X			X		X	X	

**Table 2-2
Sampling and Analysis Summary
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota**

Location ID	Field Sample ID	Depth (inches bss)	Sampling Date	PAH (17 list)	PAH (34 list)	TAL Metal	PCB Aroclor	PCB Congener	TCL Pesticide	TPH DRO/ ORO	Dioxin/ Furan	Grain Size	TOC	Black Carbon
SLB10-3-17	SLB10-3-17-06	0 - 6	10/15/10	X		X	X			X		X	X	
	SLB10-3-17-06DP	0 - 6	10/15/10	X		X	X			X			X	
	SLB10-3-17-12	0 - 12	10/15/10	X		X	X			X		X	X	
	SLB10-3-17-36	12 - 36	10/15/10	X		X	X			X		X	X	
	SLB10-3-17-69	36 - 69	10/15/10	X		X	X			X		X	X	
SLB10-3-18	SLB10-3-18-06	0 - 6	10/15/10	X		X	X			X		X	X	
	SLB10-3-18-06DP	0 - 6	10/15/10	X		X	X			X			X	
	SLB10-3-18-12	0 - 12	10/15/10	X		X	X			X		X	X	
	SLB10-3-18-36	12 - 36	10/15/10	X		X	X			X		X	X	
	SLB10-3-18-60	36 - 60	10/15/10	X		X	X			X		X	X	
	SLB10-3-18-95	60 - 95	10/15/10	X		X	X			X		X	X	
SLB10-3-19	SLB10-3-19-06	0 - 6	10/15/10		X	X	X	X	X	X	X	X	X	X
	SLB10-3-19-12	0 - 12	10/15/10	X		X	X			X		X	X	
	SLB10-3-19-36	12 - 36	10/15/10	X		X	X			X		X	X	
	SLB10-3-19-69	36 - 69	10/15/10	X		X	X			X		X	X	
Total number of samples analyzed for Area 3:				77	6	83	83	6	6	83	6	74	83	6
Total number of samples analyzed for St. Louis Bay:				347	38	385	385	38	38	385	38	342	385	40

Notes:

bss = below sediment surface
 DP = Duplicate
 DRO = Diesel Range Organic
 ID = Identification

ORO = Oil Range Organic
 PAH = Polycyclic Aromatic Hydrocarbon
 PCB = Polychlorinated Biphenyls
 TAL = Target Analyte List

TCL = Target Compound List
 TOC = Total Organic Carbon
 TPH = Total Petroleum Hydrocarbon

Table 3-1a
Summary of St. Louis Bay Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	Level II SQT ²	% Above Level I ¹	% Above Level II ²
PAHs (17 and 34 List) (µg/kg)												
1,2-BENZPHENANTHRACENE	0-6	132	121	11	8.3	4	2100	223.9	170	1300	36.4	0.8
	0-12	92	81	11	12.0	2.9	2000	193.1	170	1300	28.3	1.1
	12-36	68	54	14	20.6	4.7	1400	155.4	170	1300	20.6	1.5
	36-60	45	23	22	48.9	5.4	1100	178.5	170	1300	17.8	0.0
	60-84	31	15	16	51.6	9.1	1200	229.2	170	1300	22.6	0.0
	84-108	16	5	11	68.8	64	280	134.4	170	1300	6.3	0.0
108-132	1	0	1	100.0	--	--	--	--	170	1300	0.0	0.0
1-METHYLNAPHTHALENE	0-6	38	21	17	44.7	0.69	83	18.9	NL	NL	--	--
2-METHYLNAPHTHALENE	0-6	132	79	53	40.2	4.9	360	45.9	20	200	38.6	0.8
	0-12	92	50	42	45.7	1.6	270	62.2	20	200	33.7	3.3
	12-36	68	33	35	51.5	6.6	270	59.6	20	200	35.3	2.9
	36-60	45	11	34	75.6	4.7	270	51.3	20	200	13.3	2.2
	60-84	31	6	25	80.6	7.8	190	62.3	20	200	16.1	0.0
	84-108	16	1	15	93.8	46	46	46.0	20	200	6.3	0.0
108-132	1	0	1	100.0	--	--	--	--	20	200	0.0	0.0
ACENAPHTHENE	0-6	132	62	70	53.0	4.2	100	20.8	6.7	89	41.7	2.3
	0-12	92	43	49	53.3	1.3	120	22.1	6.7	89	41.3	1.1
	12-36	68	27	41	60.3	6.1	110	25.7	6.7	89	36.8	1.5
	36-60	45	12	33	73.3	6.2	65	24.7	6.7	89	24.4	0.0
	60-84	31	8	23	74.2	8.2	54	21.7	6.7	89	25.8	0.0
	84-108	16	4	12	75.0	8.8	25	17.5	6.7	89	25.0	0.0
108-132	1	0	1	100.0	--	--	--	--	6.7	89	0.0	0.0
ACENAPHTHYLENE	0-6	132	75	57	43.2	1.7	110	26.4	5.9	130	53.8	0.0
	0-12	92	48	44	47.8	2	110	27.6	5.9	130	46.7	0.0
	12-36	68	26	42	61.8	6	100	29.8	5.9	130	38.2	0.0
	36-60	45	9	36	80.0	19	62	36.7	5.9	130	20.0	0.0
	60-84	31	8	23	74.2	4.9	44	21.9	5.9	130	22.6	0.0
	84-108	16	4	12	75.0	10	50	29.5	5.9	130	25.0	0.0
108-132	1	0	1	100.0	--	--	--	--	5.9	130	0.0	0.0
ANTHRACENE	0-6	132	95	37	28.0	3.3	1400	101.0	57	850	34.1	0.8
	0-12	92	57	35	38.0	3.6	1100	86.9	57	850	25.0	1.1
	12-36	68	34	34	50.0	3.6	720	75.2	57	850	17.6	0.0
	36-60	45	13	32	71.1	3.1	840	96.8	57	850	6.7	0.0
	60-84	31	11	20	64.5	5.6	1100	149.3	57	850	12.9	3.2
	84-108	16	4	12	75.0	26	100	63.8	57	850	12.5	0.0
108-132	1	0	1	100.0	--	--	--	--	57	850	0.0	0.0
BENZO(A)ANTHRACENE	0-6	132	123	9	6.8	4	1400	199.4	110	1100	49.2	2.3
	0-12	92	83	9	9.8	3.8	2000	186.6	110	1100	43.5	1.1
	12-36	68	54	14	20.6	4.3	1200	162.9	110	1100	33.8	1.5
	36-60	45	23	22	48.9	4.7	1200	198.3	110	1100	26.7	2.2
	60-84	31	15	16	51.6	11	1500	288.7	110	1100	32.3	3.2
	84-108	16	5	11	68.8	99	280	183.8	110	1100	25.0	0.0
108-132	1	0	1	100.0	--	--	--	--	110	1100	0.0	0.0
BENZO(A)PYRENE	0-6	132	125	7	5.3	3	1100	179.2	150	1500	34.8	0.0
	0-12	92	89	3	3.3	2.7	2100	171.1	150	1500	29.3	1.1
	12-36	68	65	3	4.4	5.5	910	121.4	150	1500	23.5	0.0
	36-60	45	38	7	15.6	3.9	1100	118.3	150	1500	15.6	0.0
	60-84	31	24	7	22.6	5.5	1200	149.4	150	1500	29.0	0.0
	84-108	16	11	5	31.3	5.7	320	69.6	150	1500	6.3	0.0
108-132	1	0	1	100.0	--	--	--	--	150	1500	0.0	0.0
BENZO(B)FLUORANTHENE	0-6	132	127	5	3.8	3.6	1700	197.7	NL	NL	--	--
	0-12	92	89	3	3.3	5	1600	162.3	NL	NL	--	--
	12-36	68	63	5	7.4	4.8	900	120.9	NL	NL	--	--
	36-60	45	35	10	22.2	4	940	118.4	NL	NL	--	--
	60-84	31	23	8	25.8	4	880	141.7	NL	NL	--	--
	84-108	16	8	8	50.0	4.1	280	99.5	NL	NL	--	--
108-132	1	0	1	100.0	--	--	--	--	NL	NL	--	--
BENZO(E)PYRENE	0-6	38	30	8	21.1	7	300	72.4	NL	NL	--	--
BENZO(G,H,I)PERYLENE	0-6	132	131	1	0.8	19	940	158.5	NL	NL	--	--
	0-12	92	92	0	0.0	17	1500	156.1	NL	NL	--	--
	12-36	68	68	0	0.0	9.8	1100	121.6	NL	NL	--	--
	36-60	45	43	2	4.4	21	660	100.8	NL	NL	--	--
	60-84	31	31	0	0.0	18	750	104.8	NL	NL	--	--
	84-108	16	16	0	0.0	25	180	58.8	NL	NL	--	--
108-132	1	1	0	0.0	38	38	38.0	NL	NL	--	--	

Table 3-1a
Summary of St. Louis Bay Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	Level II SQT ²	% Above Level I ¹	% Above Level II ²
BENZO(K)FLUORANTHENE	0-6	132	124	8	6.1	4.3	1200	140.8	NL	NL	--	--
	0-12	92	84	8	8.7	3.1	1800	143.0	NL	NL	--	--
	12-36	68	60	8	11.8	3.8	730	96.7	NL	NL	--	--
	36-60	45	32	13	28.9	4.5	870	107.7	NL	NL	--	--
	60-84	31	21	10	32.3	2.9	1000	135.5	NL	NL	--	--
	84-108	16	6	10	62.5	5.7	240	95.0	NL	NL	--	--
108-132	1	0	1	100.0	--	--	--	--	NL	NL	--	--
C1-CHRYSENES	0-6	38	8	30	78.9	7	180	64.4	NL	NL	--	--
C1-FLUORANTHENES/PYRENES	0-6	38	10	28	73.7	1.8	250	94.0	NL	NL	--	--
C1-FLUORENES	0-6	38	5	33	86.8	1.9	15	6.0	NL	NL	--	--
C1-NAPHTHALENES	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
C1-PHENANTHRENE/ANTHRACENES	0-6	38	9	29	76.3	5	250	69.1	NL	NL	--	--
C2-CHRYSENES	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
C2-FLUORANTHENES/PYRENES	0-6	38	9	29	76.3	5	280	75.3	NL	NL	--	--
C2-FLUORENES	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
C2-NAPHTHALENES	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
C2-PHENANTHRENE/ANTHRACENES	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
C3-CHRYSENES	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
C3-FLUORANTHENES/PYRENES	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
C3-FLUORENES	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
C3-NAPHTHALENES	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
C3-PHENANTHRENE/ANTHRACENES	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
C4-CHRYSENES	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
C4-NAPHTHALENES	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
C4-PHENANTHRENE/ANTHRACENES	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
DIBENZO(A,H)ANTHRACENE	0-6	132	104	28	21.2	3	390	48.8	33	140	37.1	3.0
	0-12	92	69	23	25.0	2.8	1100	83.6	33	140	35.9	8.7
	12-36	68	35	33	48.5	3	980	63.1	33	140	19.1	4.4
	36-60	45	25	20	44.4	3.4	460	54.9	33	140	15.6	6.7
	60-84	31	16	15	48.4	3.9	580	78.1	33	140	22.6	6.5
	84-108	16	6	10	62.5	4.4	52	21.5	33	140	12.5	0.0
108-132	1	0	1	100.0	--	--	--	--	33	140	0.0	0.0
FLUORANTHENE	0-6	132	125	7	5.3	0	3400	374.0	420	2200	23.5	2.3
	0-12	92	83	9	9.8	4	4400	320.6	420	2200	20.7	1.1
	12-36	68	55	13	19.1	5.4	1900	243.8	420	2200	13.2	0.0
	36-60	45	25	20	44.4	5.3	2500	303.2	420	2200	8.9	2.2
	60-84	31	15	16	51.6	15	3100	522.0	420	2200	22.6	3.2
	84-108	16	5	11	68.8	100	530	250.0	420	2200	6.3	0.0
108-132	1	0	1	100.0	--	--	--	--	420	2200	0.0	0.0
FLUORENE	0-6	132	80	52	39.4	4.8	260	39.4	77	540	4.5	0.0
	0-12	92	53	39	42.4	3.4	200	41.4	77	540	7.6	0.0
	12-36	68	31	37	54.4	2	140	35.2	77	540	4.4	0.0
	36-60	45	11	34	75.6	5.8	140	39.8	77	540	2.2	0.0
	60-84	31	7	24	77.4	4.3	56	31.6	77	540	0.0	0.0
	84-108	16	3	13	81.3	27	53	39.3	77	540	0.0	0.0
108-132	1	0	1	100.0	--	--	--	--	77	540	0.0	0.0
INDENO(1,2,3-CD)PYRENE	0-6	132	131	1	0.8	7.1	1400	157.7	NL	NL	--	--
	0-12	92	92	0	0.0	7.5	1400	137.4	NL	NL	--	--
	12-36	68	68	0	0.0	7.3	1000	105.0	NL	NL	--	--
	36-60	45	44	1	2.2	7.4	700	88.1	NL	NL	--	--
	60-84	31	30	1	3.2	7	900	104.9	NL	NL	--	--
	84-108	16	16	0	0.0	7.3	240	43.9	NL	NL	--	--
108-132	1	1	0	0.0	15	15	15.0	NL	NL	--	--	
NAPHTHALENE	0-6	132	94	38	28.8	6	490	79.1	180	560	9.8	0.0
	0-12	92	64	28	30.4	2.8	860	119.7	180	560	16.3	2.2
	12-36	68	42	26	38.2	4.9	540	101.4	180	560	11.8	0.0
	36-60	45	14	31	68.9	5.4	2900	366.8	180	560	11.1	4.4
	60-84	31	9	22	71.0	12	1000	271.8	180	560	9.7	6.5
	84-108	16	3	13	81.3	46	210	132.0	180	560	6.3	0.0
108-132	1	0	1	100.0	--	--	--	--	180	560	0.0	0.0
PERYLENE	0-6	38	33	5	13.2	4	370	101.5	NL	NL	--	--
PHENANTHRENE	0-6	132	119	13	9.8	5	2500	180.7	200	1200	15.9	2.3
	0-12	92	82	10	10.9	4.5	3800	193.2	200	1200	21.7	1.1
	12-36	68	51	17	25.0	4.6	890	139.9	200	1200	14.7	0.0
	36-60	45	22	23	51.1	5.9	1600	195.1	200	1200	13.3	2.2
	60-84	31	15	16	51.6	6.8	2200	317.1	200	1200	25.8	3.2
	84-108	16	5	11	68.8	110	360	224.0	200	1200	18.8	0.0
108-132	1	0	1	100.0	--	--	--	--	200	1200	0.0	0.0

Table 3-1a
Summary of St. Louis Bay Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	Level II SQT ²	% Above Level I ¹	% Above Level II ²
PYRENE	0-6	132	129	3	2.3	4.3	2600	331.6	200	1500	46.2	4.5
	0-12	92	85	7	7.6	4.9	4400	318.8	200	1500	41.3	3.3
	12-36	68	63	5	7.4	4.8	1800	215.4	200	1500	30.9	2.9
	36-60	45	34	11	24.4	4.8	1600	201.1	200	1500	24.4	2.2
	60-84	31	22	9	29.0	4.1	2200	292.1	200	1500	32.3	3.2
	84-108	16	8	8	50.0	4.6	530	173.2	200	1500	18.8	0.0
	108-132	1	0	1	100.0	--	--	--	200	1500	0.0	0.0
Total PAHs 17	0-6	132	132	0	0.0	61.3	19000	2382.4	1600	23000	47.0	0.0
	0-12	92	92	0	0.0	80.75	29160	2205.3	1600	23000	41.3	1.1
	12-36	68	68	0	0.0	76.6	12742	1541.4	1600	23000	29.4	0.0
	36-60	45	45	0	0.0	62.65	14620	1413.5	1600	23000	24.4	0.0
	60-84	31	31	0	0.0	58.75	18340	1665.8	1600	23000	29.0	0.0
	84-108	16	16	0	0.0	63.3	3591	687.4	1600	23000	18.8	0.0
	108-132	1	1	0	0.0	100.25	100.25	100.3	1600	23000	0.0	0.0
Total PAHs 34	0-6	38	38	0	0.0	101.69	16176	2616.4	1600	23000	55.3	0.0
TAL Metals (mg/kg)												
ALUMINUM	0-6	132	131	1	0.8	1150	30400	7988.9	NL	NL	--	--
	0-12	92	92	0	0.0	1490	20300	7734.7	NL	NL	--	--
	12-36	68	68	0	0.0	1410	15600	7638.8	NL	NL	--	--
	36-60	45	45	0	0.0	1340	18900	7728.4	NL	NL	--	--
	60-84	31	31	0	0.0	3170	12600	6972.3	NL	NL	--	--
	84-108	16	16	0	0.0	3110	12000	7650.0	NL	NL	--	--
	108-132	1	1	0	0.0	8160	8160	8160.0	NL	NL	--	--
ANTIMONY	0-6	132	7	125	94.7	0.33	0.62	0.5	NL	NL	--	--
	0-12	92	2	90	97.8	0.43	0.74	0.6	NL	NL	--	--
	12-36	68	1	67	98.5	0.35	0.35	0.4	NL	NL	--	--
	36-60	45	0	45	100.0	--	--	--	NL	NL	--	--
	60-84	31	0	31	100.0	--	--	--	NL	NL	--	--
	84-108	16	1	15	93.8	0.98	0.98	1.0	NL	NL	--	--
	108-132	1	0	1	100.0	--	--	--	NL	NL	--	--
ARSENIC	0-6	132	129	3	2.3	0.65	15.3	4.1	9.8	33	1.5	0.0
	0-12	92	92	0	0.0	0.54	18.1	4.3	9.8	33	6.5	0.0
	12-36	68	68	0	0.0	0.73	21	3.7	9.8	33	2.9	0.0
	36-60	45	45	0	0.0	0.63	11.9	3.5	9.8	33	2.2	0.0
	60-84	31	31	0	0.0	0.84	12.7	3.4	9.8	33	6.5	0.0
	84-108	16	16	0	0.0	1.1	9.2	3.5	9.8	33	0.0	0.0
	108-132	1	1	0	0.0	2.2	2.2	2.2	9.8	33	0.0	0.0
BARIUM	0-6	132	124	8	6.1	8.1	2920	248.3	NL	NL	--	--
	0-12	92	87	5	5.4	6.9	2910	165.3	NL	NL	--	--
	12-36	68	64	4	5.9	6.8	1180	119.3	NL	NL	--	--
	36-60	45	45	0	0.0	6	627	97.8	NL	NL	--	--
	60-84	31	31	0	0.0	18.7	253	67.3	NL	NL	--	--
	84-108	16	16	0	0.0	29.1	147	73.1	NL	NL	--	--
	108-132	1	1	0	0.0	73.7	73.7	73.7	NL	NL	--	--
BERYLLIUM	0-6	132	80	52	39.4	0.02	3.4	0.5	NL	NL	--	--
	0-12	92	57	35	38.0	0.025	2.7	0.5	NL	NL	--	--
	12-36	68	35	33	48.5	0.027	2.2	0.5	NL	NL	--	--
	36-60	45	23	22	48.9	0.024	1.5	0.5	NL	NL	--	--
	60-84	31	12	19	61.3	0.21	1.5	0.6	NL	NL	--	--
	84-108	16	6	10	62.5	0.26	0.75	0.5	NL	NL	--	--
	108-132	1	0	1	100.0	--	--	--	NL	NL	--	--
CADMIUM	0-6	132	64	68	51.5	0.04	6	0.8	0.99	5	11.4	0.8
	0-12	92	44	48	52.2	0.05	5.1	0.8	0.99	5	7.6	1.1
	12-36	68	23	45	66.2	0.1	1.7	0.6	0.99	5	2.9	0.0
	36-60	45	17	28	62.2	0.057	3.9	0.6	0.99	5	4.4	0.0
	60-84	31	13	18	58.1	0.054	6.7	0.8	0.99	5	3.2	3.2
	84-108	16	6	10	62.5	0.063	2.2	0.9	0.99	5	12.5	0.0
	108-132	1	0	1	100.0	--	--	--	0.99	5	0.0	0.0
CALCIUM	0-6	132	131	1	0.8	565	27700	7343.8	NL	NL	--	--
	0-12	92	92	0	0.0	666	24700	6922.9	NL	NL	--	--
	12-36	68	68	0	0.0	652	14700	7548.3	NL	NL	--	--
	36-60	45	45	0	0.0	595	16000	7351.7	NL	NL	--	--
	60-84	31	31	0	0.0	1790	29400	7170.6	NL	NL	--	--
	84-108	16	16	0	0.0	1610	22100	8767.5	NL	NL	--	--
	108-132	1	1	0	0.0	5560	5560	5560.0	NL	NL	--	--
CHROMIUM	0-6	132	131	1	0.8	2.3	87.7	20.7	43	110	3.8	0.0
	0-12	92	92	0	0.0	2.8	56.7	19.9	43	110	3.3	0.0
	12-36	68	68	0	0.0	2.4	35.1	19.0	43	110	0.0	0.0
	36-60	45	45	0	0.0	2.5	77.2	20.4	43	110	4.4	0.0
	60-84	31	31	0	0.0	9.6	67	19.0	43	110	3.2	0.0
	84-108	16	16	0	0.0	9	36.5	21.1	43	110	0.0	0.0
	108-132	1	1	0	0.0	24.1	24.1	24.1	43	110	0.0	0.0

Table 3-1a
Summary of St. Louis Bay Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	Level II SQT ²	% Above Level I ¹	% Above Level II ²
COBALT	0-6	132	106	26	19.7	1.5	14.6	8.3	NL	NL	--	--
	0-12	92	76	16	17.4	1.7	14	8.1	NL	NL	--	--
	12-36	68	60	8	11.8	1.6	13.1	8.2	NL	NL	--	--
	36-60	45	43	2	4.4	1.5	16.5	8.2	NL	NL	--	--
	60-84	31	29	2	6.5	4.6	11.6	7.7	NL	NL	--	--
	84-108	16	15	1	6.3	3.6	11.6	8.3	NL	NL	--	--
108-132	1	1	0	0.0	9.4	9.4	9.4	9.4	NL	NL	--	--
COPPER	0-6	132	130	2	1.5	1.6	156	23.7	32	150	18.2	0.8
	0-12	92	90	2	2.2	1.7	72.6	21.8	32	150	15.2	0.0
	12-36	68	67	1	1.5	1.4	42.7	18.3	32	150	5.9	0.0
	36-60	45	45	0	0.0	1.3	52.2	17.8	32	150	8.9	0.0
	60-84	31	31	0	0.0	5.6	57.6	16.1	32	150	3.2	0.0
	84-108	16	16	0	0.0	6.4	52.2	20.2	32	150	12.5	0.0
108-132	1	1	0	0.0	16.1	16.1	16.1	32	150	0.0	0.0	
IRON	0-6	132	131	1	0.8	2510	33000	16807.9	NL	NL	--	--
	0-12	92	92	0	0.0	2580	31200	15632.6	NL	NL	--	--
	12-36	68	68	0	0.0	2480	35300	14877.8	NL	NL	--	--
	36-60	45	45	0	0.0	2430	34500	14926.2	NL	NL	--	--
	60-84	31	31	0	0.0	5930	28800	14091.3	NL	NL	--	--
	84-108	16	16	0	0.0	8360	27500	15341.9	NL	NL	--	--
108-132	1	1	0	0.0	15100	15100	15100.0	NL	NL	--	--	
LEAD	0-6	132	131	1	0.8	1.3	163	27.7	36	130	22.7	1.5
	0-12	92	92	0	0.0	0.84	184	26.9	36	130	28.3	2.2
	12-36	68	68	0	0.0	0.75	97.6	19.7	36	130	16.2	0.0
	36-60	45	45	0	0.0	0.81	215	22.2	36	130	15.6	2.2
	60-84	31	31	0	0.0	2	175	17.9	36	130	16.1	3.2
	84-108	16	16	0	0.0	2.1	182	28.2	36	130	25.0	6.3
108-132	1	1	0	0.0	4.5	4.5	4.5	36	130	0.0	0.0	
MAGNESIUM	0-6	132	131	1	0.8	645	14700	4919.2	NL	NL	--	--
	0-12	92	92	0	0.0	517	11000	4715.9	NL	NL	--	--
	12-36	68	68	0	0.0	705	9660	5239.7	NL	NL	--	--
	36-60	45	45	0	0.0	675	9780	5256.6	NL	NL	--	--
	60-84	31	31	0	0.0	1810	14600	5082.3	NL	NL	--	--
	84-108	16	16	0	0.0	1570	11100	6331.9	NL	NL	--	--
108-132	1	1	0	0.0	4670	4670	4670.0	NL	NL	--	--	
MANGANESE	0-6	132	131	1	0.8	43.1	1750	466.5	NL	NL	--	--
	0-12	92	92	0	0.0	30.4	1120	356.6	NL	NL	--	--
	12-36	68	68	0	0.0	26.7	1040	335.5	NL	NL	--	--
	36-60	45	45	0	0.0	25.7	842	318.8	NL	NL	--	--
	60-84	31	31	0	0.0	93.9	657	276.1	NL	NL	--	--
	84-108	16	16	0	0.0	94.9	716	325.2	NL	NL	--	--
108-132	1	1	0	0.0	330	330	330.0	NL	NL	--	--	
MERCURY	0-6	132	102	30	22.7	0.052	0.99	0.2	0.18	1.1	36.4	0.0
	0-12	92	66	26	28.3	0.041	1.6	0.2	0.18	1.1	33.7	1.1
	12-36	68	53	15	22.1	0.05	1.1	0.2	0.18	1.1	30.9	0.0
	36-60	45	30	15	33.3	0.043	0.74	0.2	0.18	1.1	24.4	0.0
	60-84	31	19	12	38.7	0.046	1.9	0.3	0.18	1.1	25.8	3.2
	84-108	16	9	7	43.8	0.041	0.5	0.3	0.18	1.1	25.0	0.0
108-132	1	1	0	0.0	0.11	0.11	0.1	0.18	1.1	0.0	0.0	
NICKEL	0-6	132	130	2	1.5	2.5	54.5	18.0	23	49	26.5	0.8
	0-12	92	90	2	2.2	2.9	46.9	17.6	23	49	23.9	0.0
	12-36	68	66	2	2.9	2.9	28.5	16.9	23	49	13.2	0.0
	36-60	45	45	0	0.0	3.2	42.9	17.0	23	49	15.6	0.0
	60-84	31	31	0	0.0	8.5	46.4	16.3	23	49	3.2	0.0
	84-108	16	16	0	0.0	7.4	25.1	17.9	23	49	18.8	0.0
108-132	1	1	0	0.0	20.1	20.1	20.1	23	49	0.0	0.0	
POTASSIUM	0-6	132	102	30	22.7	165	1750	819.0	NL	NL	--	--
	0-12	92	78	14	15.2	156	1630	809.2	NL	NL	--	--
	12-36	68	62	6	8.8	153	1490	760.5	NL	NL	--	--
	36-60	45	39	6	13.3	147	1600	769.8	NL	NL	--	--
	60-84	31	27	4	12.9	310	1390	652.1	NL	NL	--	--
	84-108	16	15	1	6.3	226	1390	771.7	NL	NL	--	--
108-132	1	1	0	0.0	777	777	777.0	NL	NL	--	--	
SELENIUM	0-6	132	46	86	65.2	0.5	2.3	1.1	NL	NL	--	--
	0-12	92	32	60	65.2	0.53	2.7	1.3	NL	NL	--	--
	12-36	68	21	47	69.1	0.52	2.1	1.0	NL	NL	--	--
	36-60	45	17	28	62.2	0.5	2.6	1.0	NL	NL	--	--
	60-84	31	10	21	67.7	0.59	2.2	1.1	NL	NL	--	--
	84-108	16	5	11	68.8	0.71	5	1.9	NL	NL	--	--
108-132	1	0	1	100.0	--	--	--	NL	NL	--	--	

Table 3-1a
Summary of St. Louis Bay Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	Level II SQT ²	% Above Level I ¹	% Above Level II ²
SILVER	0-6	132	2	130	98.5	0.24	0.83	0.5	NL	NL	--	--
	0-12	92	3	89	96.7	0.087	0.39	0.2	NL	NL	--	--
	12-36	68	1	67	98.5	0.14	0.14	0.1	NL	NL	--	--
	36-60	45	1	44	97.8	0.054	0.054	0.1	NL	NL	--	--
	60-84	31	0	31	100.0	--	--	--	NL	NL	--	--
	84-108	16	0	16	100.0	--	--	--	NL	NL	--	--
	108-132	1	0	1	100.0	--	--	--	NL	NL	--	--
SODIUM	0-6	132	18	114	86.4	96	1800	445.4	NL	NL	--	--
	0-12	92	12	80	87.0	64.3	4930	682.2	NL	NL	--	--
	12-36	68	4	64	94.1	171	13000	3541.5	NL	NL	--	--
	36-60	45	2	43	95.6	360	9900	5130.0	NL	NL	--	--
	60-84	31	1	30	96.8	8170	8170	8170.0	NL	NL	--	--
	84-108	16	1	15	93.8	8530	8530	8530.0	NL	NL	--	--
	108-132	1	0	1	100.0	--	--	--	NL	NL	--	--
THALLIUM	0-6	132	0	132	100.0	--	--	--	NL	NL	--	--
	0-12	92	0	92	100.0	--	--	--	NL	NL	--	--
	12-36	68	0	68	100.0	--	--	--	NL	NL	--	--
	36-60	45	0	45	100.0	--	--	--	NL	NL	--	--
	60-84	31	0	31	100.0	--	--	--	NL	NL	--	--
	84-108	16	0	16	100.0	--	--	--	NL	NL	--	--
	108-132	1	0	1	100.0	--	--	--	NL	NL	--	--
VANADIUM	0-6	132	131	1	0.8	6.9	50.7	25.1	NL	NL	--	--
	0-12	92	92	0	0.0	7.6	83	27.0	NL	NL	--	--
	12-36	68	68	0	0.0	6.8	54.8	27.2	NL	NL	--	--
	36-60	45	45	0	0.0	8.7	56.9	26.6	NL	NL	--	--
	60-84	31	31	0	0.0	13.2	43.7	25.6	NL	NL	--	--
	84-108	16	16	0	0.0	16.2	31.4	25.3	NL	NL	--	--
	108-132	1	1	0	0.0	26.3	26.3	26.3	NL	NL	--	--
ZINC	0-6	132	130	2	1.5	7.8	1340	105.6	120	460	24.2	0.8
	0-12	92	91	1	1.1	6.1	322	89.4	120	460	29.3	0.0
	12-36	68	66	2	2.9	5.7	293	77.1	120	460	17.6	0.0
	36-60	45	45	0	0.0	5.5	282	79.2	120	460	26.7	0.0
	60-84	31	31	0	0.0	17.7	406	74.8	120	460	19.4	0.0
	84-108	16	16	0	0.0	16.1	416	106.4	120	460	31.3	0.0
	108-132	1	1	0	0.0	62.1	62.1	62.1	120	460	0.0	0.0
PCB Aroclors (µg/kg)												
AROCLOR-1016	0-6	132	1	131	99.2	140	140	140.0	NL	NL	--	--
	0-12	92	1	91	98.9	320	320	320.0	NL	NL	--	--
	12-36	68	0	68	100.0	--	--	--	NL	NL	--	--
	36-60	45	0	45	100.0	--	--	--	NL	NL	--	--
	60-84	31	0	31	100.0	--	--	--	NL	NL	--	--
	84-108	16	0	16	100.0	--	--	--	NL	NL	--	--
	108-132	1	0	1	100.0	--	--	--	NL	NL	--	--
AROCLOR-1221	0-6	132	0	132	100.0	--	--	--	NL	NL	--	--
	0-12	92	0	92	100.0	--	--	--	NL	NL	--	--
	12-36	68	0	68	100.0	--	--	--	NL	NL	--	--
	36-60	45	0	45	100.0	--	--	--	NL	NL	--	--
	60-84	31	0	31	100.0	--	--	--	NL	NL	--	--
	84-108	16	0	16	100.0	--	--	--	NL	NL	--	--
	108-132	1	0	1	100.0	--	--	--	NL	NL	--	--
AROCLOR-1232	0-6	132	0	132	100.0	--	--	--	NL	NL	--	--
	0-12	92	0	92	100.0	--	--	--	NL	NL	--	--
	12-36	68	0	68	100.0	--	--	--	NL	NL	--	--
	36-60	45	0	45	100.0	--	--	--	NL	NL	--	--
	60-84	31	0	31	100.0	--	--	--	NL	NL	--	--
	84-108	16	0	16	100.0	--	--	--	NL	NL	--	--
	108-132	1	0	1	100.0	--	--	--	NL	NL	--	--
AROCLOR-1242	0-6	132	0	132	100.0	--	--	--	NL	NL	--	--
	0-12	92	0	92	100.0	--	--	--	NL	NL	--	--
	12-36	68	0	68	100.0	--	--	--	NL	NL	--	--
	36-60	45	0	45	100.0	--	--	--	NL	NL	--	--
	60-84	31	0	31	100.0	--	--	--	NL	NL	--	--
	84-108	16	0	16	100.0	--	--	--	NL	NL	--	--
	108-132	1	0	1	100.0	--	--	--	NL	NL	--	--
AROCLOR-1248	0-6	132	0	132	100.0	--	--	--	NL	NL	--	--
	0-12	92	0	92	100.0	--	--	--	NL	NL	--	--
	12-36	68	0	68	100.0	--	--	--	NL	NL	--	--
	36-60	45	0	45	100.0	--	--	--	NL	NL	--	--
	60-84	31	0	31	100.0	--	--	--	NL	NL	--	--
	84-108	16	0	16	100.0	--	--	--	NL	NL	--	--
	108-132	1	0	1	100.0	--	--	--	NL	NL	--	--

Table 3-1a
Summary of St. Louis Bay Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	Level II SQT ²	% Above Level I ¹	% Above Level II ²
AROCLOR-1254	0-6	132	2	130	98.5	26	150	88.0	NL	NL	--	--
	0-12	92	2	90	97.8	28	44	36.0	NL	NL	--	--
	12-36	68	1	67	98.5	39	39	39.0	NL	NL	--	--
	36-60	45	5	40	88.9	43	380	115.0	NL	NL	--	--
	60-84	31	3	28	90.3	35	68	55.0	NL	NL	--	--
	84-108	16	3	13	81.3	54	65	58.0	NL	NL	--	--
108-132	1	0	1	100.0	--	--	--	--	NL	NL	--	--
AROCLOR-1260	0-6	132	30	102	77.3	1.2	180	35.1	NL	NL	--	--
	0-12	92	15	77	83.7	1.6	270	61.6	NL	NL	--	--
	12-36	68	6	62	91.2	3.6	73	38.8	NL	NL	--	--
	36-60	45	2	43	95.6	46	610	328.0	NL	NL	--	--
	60-84	31	2	29	93.5	53	64	58.5	NL	NL	--	--
	84-108	16	0	16	100.0	--	--	--	NL	NL	--	--
108-132	1	0	1	100.0	--	--	--	--	NL	NL	--	--
AROCLOR-1262	0-6	132	0	132	100.0	--	--	--	NL	NL	--	--
	0-12	92	0	92	100.0	--	--	--	NL	NL	--	--
	12-36	68	0	68	100.0	--	--	--	NL	NL	--	--
	36-60	45	0	45	100.0	--	--	--	NL	NL	--	--
	60-84	31	0	31	100.0	--	--	--	NL	NL	--	--
	84-108	16	0	16	100.0	--	--	--	NL	NL	--	--
108-132	1	0	1	100.0	--	--	--	--	NL	NL	--	--
AROCLOR-1268	0-6	132	0	132	100.0	--	--	--	NL	NL	--	--
	0-12	92	0	92	100.0	--	--	--	NL	NL	--	--
	12-36	68	0	68	100.0	--	--	--	NL	NL	--	--
	36-60	45	0	45	100.0	--	--	--	NL	NL	--	--
	60-84	31	0	31	100.0	--	--	--	NL	NL	--	--
	84-108	16	0	16	100.0	--	--	--	NL	NL	--	--
108-132	1	0	1	100.0	--	--	--	--	NL	NL	--	--
Total PCBs	0-6	132	32	100	75.8	1.2	250	42.8	60	680	4.5	0.0
	0-12	92	16	76	82.6	1.6	590	82.3	60	680	5.4	0.0
	12-36	68	7	61	89.7	3.6	73	38.8	60	680	1.5	0.0
	36-60	45	5	40	88.9	43	990	246.2	60	680	4.4	2.2
	60-84	31	3	28	90.3	62	132	94.0	60	680	9.7	0.0
	84-108	16	3	13	81.3	54	65	58.0	60	680	6.3	0.0
108-132	1	0	1	100.0	--	--	--	--	60	680	0.0	0.0
PCB Congeners (pg/g)												
PCB-1	0-6	38	31	7	18.4	3.3	760	97.4	NL	NL	--	--
PCB-10	0-6	38	7	31	81.6	2.8	51	13.1	NL	NL	--	--
PCB-100	0-6	38	13	25	65.8	11.2	410	100.9	NL	NL	--	--
PCB-101	0-6	38	38	0	0.0	11.2	38000	3007.7	NL	NL	--	--
PCB-102	0-6	38	13	25	65.8	11.2	410	100.9	NL	NL	--	--
PCB-103	0-6	38	12	26	68.4	12	1980	211.5	NL	NL	--	--
PCB-104	0-6	38	10	28	73.7	3.6	171	23.3	NL	NL	--	--
PCB-105	0-6	38	37	1	2.6	3.4	5320	617.0	NL	NL	--	--
PCB-106	0-6	38	1	37	97.4	8.2	8.2	8.2	NL	NL	--	--
PCB-107	0-6	38	17	21	55.3	3.6	220	68.0	NL	NL	--	--
PCB-108	0-6	38	26	12	31.6	2.8	4000	285.1	NL	NL	--	--
PCB-109	0-6	38	37	1	2.6	2.6	8570	1137.5	NL	NL	--	--
PCB-11	0-6	38	29	9	23.7	2.4	450	63.3	NL	NL	--	--
PCB-110	0-6	38	38	0	0.0	16.5	38600	3926.0	NL	NL	--	--
PCB-111	0-6	38	8	30	78.9	11	190	65.5	NL	NL	--	--
PCB-112	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
PCB-113	0-6	38	38	0	0.0	11.2	38000	3007.7	NL	NL	--	--
PCB-114	0-6	38	12	26	68.4	9	84.5	25.9	NL	NL	--	--
PCB-115	0-6	38	2	36	94.7	110	200	155.0	NL	NL	--	--
PCB-116	0-6	38	38	0	0.0	16.5	38600	3926.0	NL	NL	--	--
PCB-117	0-6	38	38	0	0.0	16.5	38600	3926.0	NL	NL	--	--
PCB-118	0-6	38	33	5	13.2	5.8	4400	585.8	NL	NL	--	--
PCB-119	0-6	38	37	1	2.6	3	8570	1137.5	NL	NL	--	--
PCB-12	0-6	38	22	16	42.1	5.4	370	53.9	NL	NL	--	--
PCB-120	0-6	38	3	35	92.1	5.5	99.3	40.0	NL	NL	--	--
PCB-121	0-6	38	1	37	97.4	6.1	6.1	6.1	NL	NL	--	--
PCB-122	0-6	38	24	14	36.8	5.5	751	71.1	NL	NL	--	--
PCB-123	0-6	38	24	14	36.8	8.9	4420	1013.9	NL	NL	--	--
PCB-124	0-6	38	26	12	31.6	2.8	3980	284.5	NL	NL	--	--
PCB-125	0-6	38	37	1	2.6	3	8570	1137.5	NL	NL	--	--
PCB-126	0-6	38	6	32	84.2	4.7	67	19.1	NL	NL	--	--
PCB-127	0-6	38	1	37	97.4	110	110	110.0	NL	NL	--	--
PCB-128	0-6	38	34	4	10.5	4.9	3900	521.6	NL	NL	--	--
PCB-129	0-6	38	38	0	0.0	13	62300	4895.2	NL	NL	--	--
PCB-13	0-6	38	22	16	42.1	5.4	370	53.9	NL	NL	--	--
PCB-130	0-6	38	34	4	10.5	2.8	1810	267.1	NL	NL	--	--

Table 3-1a
Summary of St. Louis Bay Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	Level II SQT ²	% Above Level I ¹	% Above Level II ²
PCB-131	0-6	38	21	17	44.7	4.6	1330	117.7	NL	NL	--	--
PCB-132	0-6	38	37	1	2.6	4.5	10000	1229.2	NL	NL	--	--
PCB-133	0-6	38	29	9	23.7	4.4	416	95.2	NL	NL	--	--
PCB-134	0-6	38	33	5	13.2	5.1	5200	357.3	NL	NL	--	--
PCB-135	0-6	38	38	0	0.0	3.9	29000	2298.2	NL	NL	--	--
PCB-136	0-6	38	35	3	7.9	4.4	9800	768.3	NL	NL	--	--
PCB-137	0-6	38	32	6	15.8	4.8	1200	226.3	NL	NL	--	--
PCB-138	0-6	38	38	0	0.0	13.5	62300	4867.6	NL	NL	--	--
PCB-139	0-6	38	27	11	28.9	3.3	354	71.3	NL	NL	--	--
PCB-14	0-6	38	1	37	97.4	7.1	7.1	7.1	NL	NL	--	--
PCB-140	0-6	38	27	11	28.9	3.3	354	71.7	NL	NL	--	--
PCB-141	0-6	38	36	2	5.3	2.6	19000	1421.5	NL	NL	--	--
PCB-142	0-6	38	1	37	97.4	1000	1000	1000.0	NL	NL	--	--
PCB-143	0-6	38	33	5	13.2	5.1	5210	357.5	NL	NL	--	--
PCB-144	0-6	38	29	9	23.7	4.1	6140	408.2	NL	NL	--	--
PCB-145	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
PCB-146	0-6	38	35	3	7.9	4.3	4400	726.6	NL	NL	--	--
PCB-147	0-6	38	38	0	0.0	9.8	66000	4704.4	NL	NL	--	--
PCB-148	0-6	38	17	21	55.3	3.7	430	46.7	NL	NL	--	--
PCB-149	0-6	38	38	0	0.0	9.8	66300	4691.8	NL	NL	--	--
PCB-15	0-6	38	32	6	15.8	4	1900	252.2	NL	NL	--	--
PCB-150	0-6	38	20	18	47.4	3.7	875	57.7	NL	NL	--	--
PCB-151	0-6	38	38	0	0.0	3.9	29000	2285.9	NL	NL	--	--
PCB-152	0-6	38	12	26	68.4	4	80	14.2	NL	NL	--	--
PCB-153	0-6	38	37	1	2.6	9.8	29000	3050.5	NL	NL	--	--
PCB-154	0-6	38	27	11	28.9	3.9	1700	146.7	NL	NL	--	--
PCB-155	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
PCB-156	0-6	38	34	4	10.5	3.5	8930	603.2	NL	NL	--	--
PCB-157	0-6	38	34	4	10.5	3.5	8930	601.1	NL	NL	--	--
PCB-158	0-6	38	32	6	15.8	3.2	2580	372.1	NL	NL	--	--
PCB-159	0-6	38	26	12	31.6	3	1100	88.7	NL	NL	--	--
PCB-16	0-6	38	16	22	57.9	13	889	193.1	NL	NL	--	--
PCB-160	0-6	38	1	37	97.4	89000	89000	89000.0	NL	NL	--	--
PCB-161	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
PCB-162	0-6	38	19	19	50.0	3.7	790	58.3	NL	NL	--	--
PCB-163	0-6	38	38	0	0.0	13.5	62300	4867.6	NL	NL	--	--
PCB-164	0-6	38	14	24	63.2	9.3	1860	414.8	NL	NL	--	--
PCB-165	0-6	38	4	34	89.5	11	630	225.0	NL	NL	--	--
PCB-166	0-6	38	33	5	13.2	4.9	3900	531.2	NL	NL	--	--
PCB-167	0-6	38	32	6	15.8	5.7	3700	240.7	NL	NL	--	--
PCB-168	0-6	38	37	1	2.6	9.8	29100	3035.7	NL	NL	--	--
PCB-169	0-6	38	2	36	94.7	9.1	52.1	30.6	NL	NL	--	--
PCB-17	0-6	38	33	5	13.2	4.1	480	89.0	NL	NL	--	--
PCB-170	0-6	38	38	0	0.0	3.1	22700	1759.9	NL	NL	--	--
PCB-171	0-6	38	35	3	7.9	3.1	7340	590.9	NL	NL	--	--
PCB-172	0-6	38	31	7	18.4	8	6700	469.6	NL	NL	--	--
PCB-173	0-6	38	34	4	10.5	3.1	7340	605.4	NL	NL	--	--
PCB-174	0-6	38	38	0	0.0	3.2	41500	2683.6	NL	NL	--	--
PCB-175	0-6	38	27	11	28.9	3.3	584	74.0	NL	NL	--	--
PCB-176	0-6	38	31	7	18.4	9.6	5900	365.2	NL	NL	--	--
PCB-177	0-6	38	37	1	2.6	4.5	16600	1327.0	NL	NL	--	--
PCB-178	0-6	38	33	5	13.2	3.2	6010	507.9	NL	NL	--	--
PCB-179	0-6	38	36	2	5.3	3	13700	998.4	NL	NL	--	--
PCB-18	0-6	38	34	4	10.5	4.2	2310	240.3	NL	NL	--	--
PCB-180	0-6	38	38	0	0.0	6.9	60300	4204.5	NL	NL	--	--
PCB-181	0-6	38	2	36	94.7	8.1	11.4	9.8	NL	NL	--	--
PCB-182	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
PCB-183	0-6	38	36	2	5.3	3.2	11000	991.2	NL	NL	--	--
PCB-184	0-6	38	2	36	94.7	4.2	12.7	8.5	NL	NL	--	--
PCB-185	0-6	38	31	7	18.4	8	1600	202.0	NL	NL	--	--
PCB-186	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
PCB-187	0-6	38	37	1	2.6	4	15500	1713.2	NL	NL	--	--
PCB-188	0-6	38	3	35	92.1	5.8	143	56.1	NL	NL	--	--
PCB-189	0-6	38	29	9	23.7	3.4	970	81.6	NL	NL	--	--
PCB-19	0-6	38	22	16	42.1	3.8	130	32.7	NL	NL	--	--
PCB-190	0-6	38	32	6	15.8	6.3	6210	412.2	NL	NL	--	--
PCB-191	0-6	38	27	11	28.9	5.1	1200	97.4	NL	NL	--	--
PCB-192	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
PCB-193	0-6	38	38	0	0.0	6.9	60300	4191.1	NL	NL	--	--
PCB-194	0-6	38	35	3	7.9	6.9	13000	1078.6	NL	NL	--	--
PCB-195	0-6	38	33	5	13.2	2.8	5650	477.9	NL	NL	--	--
PCB-196	0-6	38	34	4	10.5	3.1	7160	545.1	NL	NL	--	--

Table 3-1a
Summary of St. Louis Bay Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	Level II SQT ²	% Above Level I ¹	% Above Level II ²
PCB-197	0-6	38	24	14	36.8	3.5	190	32.3	NL	NL	--	--
PCB-198	0-6	38	36	2	5.3	3.6	15700	1186.6	NL	NL	--	--
PCB-199	0-6	38	36	2	5.3	3.6	15700	1189.6	NL	NL	--	--
PCB-2	0-6	38	29	9	23.7	4.6	89.8	39.4	NL	NL	--	--
PCB-20	0-6	38	38	0	0.0	3.4	4700	428.8	NL	NL	--	--
PCB-200	0-6	38	29	9	23.7	7.1	4020	243.6	NL	NL	--	--
PCB-201	0-6	38	31	7	18.4	5.8	2900	172.8	NL	NL	--	--
PCB-202	0-6	38	33	5	13.2	4.7	3740	241.7	NL	NL	--	--
PCB-203	0-6	38	35	3	7.9	4.2	8880	693.0	NL	NL	--	--
PCB-204	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
PCB-205	0-6	38	21	17	44.7	11	850	83.2	NL	NL	--	--
PCB-206	0-6	38	35	3	7.9	3.3	4400	343.0	NL	NL	--	--
PCB-207	0-6	38	28	10	26.3	4.1	640	57.3	NL	NL	--	--
PCB-208	0-6	38	30	8	21.1	4.8	900	109.3	NL	NL	--	--
PCB-209	0-6	38	33	5	13.2	3.6	900	187.7	NL	NL	--	--
PCB-21	0-6	38	32	6	15.8	4.5	2100	226.8	NL	NL	--	--
PCB-22	0-6	38	33	5	13.2	3.2	1430	165.6	NL	NL	--	--
PCB-23	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
PCB-24	0-6	38	18	20	52.6	3.5	535	59.3	NL	NL	--	--
PCB-25	0-6	38	25	13	34.2	3.2	418	61.0	NL	NL	--	--
PCB-26	0-6	38	31	7	18.4	4.1	760	105.6	NL	NL	--	--
PCB-27	0-6	38	24	14	36.8	3.5	85.4	24.5	NL	NL	--	--
PCB-28	0-6	38	38	0	0.0	3.4	4670	427.3	NL	NL	--	--
PCB-29	0-6	38	30	8	21.1	4.2	760	107.7	NL	NL	--	--
PCB-3	0-6	38	32	6	15.8	3.5	812	116.0	NL	NL	--	--
PCB-30	0-6	38	34	4	10.5	4.2	2310	239.0	NL	NL	--	--
PCB-31	0-6	38	37	1	2.6	2.8	3200	357.9	NL	NL	--	--
PCB-32	0-6	38	32	6	15.8	3.4	360	75.9	NL	NL	--	--
PCB-33	0-6	38	32	6	15.8	4.5	2090	226.5	NL	NL	--	--
PCB-34	0-6	38	5	33	86.8	5	9.2	6.2	NL	NL	--	--
PCB-35	0-6	38	18	20	52.6	3.2	78	18.9	NL	NL	--	--
PCB-36	0-6	38	7	31	81.6	6.4	100	25.6	NL	NL	--	--
PCB-37	0-6	38	34	4	10.5	3.2	950	151.6	NL	NL	--	--
PCB-38	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
PCB-39	0-6	38	3	35	92.1	5.1	9.6	7.3	NL	NL	--	--
PCB-4	0-6	38	25	13	34.2	7.6	473	69.2	NL	NL	--	--
PCB-40	0-6	38	35	3	7.9	2.8	2360	251.9	NL	NL	--	--
PCB-41	0-6	38	34	4	10.5	2.8	2360	259.2	NL	NL	--	--
PCB-42	0-6	38	30	8	21.1	3.7	1600	152.8	NL	NL	--	--
PCB-43	0-6	38	11	27	71.1	5.9	48.9	20.2	NL	NL	--	--
PCB-44	0-6	38	38	0	0.0	2.4	15600	941.7	NL	NL	--	--
PCB-45	0-6	38	29	9	23.7	2.9	4280	267.0	NL	NL	--	--
PCB-46	0-6	38	20	18	47.4	6.4	116	32.3	NL	NL	--	--
PCB-47	0-6	38	38	0	0.0	2.4	15600	941.7	NL	NL	--	--
PCB-48	0-6	38	27	11	28.9	7.9	330	72.3	NL	NL	--	--
PCB-49	0-6	38	35	3	7.9	4.9	5600	496.3	NL	NL	--	--
PCB-5	0-6	38	3	35	92.1	6.2	40.6	17.9	NL	NL	--	--
PCB-50	0-6	38	33	5	13.2	2.8	6430	296.6	NL	NL	--	--
PCB-51	0-6	38	28	10	26.3	2.9	4280	275.8	NL	NL	--	--
PCB-52	0-6	38	38	0	0.0	4	14800	1355.2	NL	NL	--	--
PCB-53	0-6	38	31	7	18.4	2.8	6430	313.6	NL	NL	--	--
PCB-54	0-6	38	19	19	50.0	3.1	474	37.2	NL	NL	--	--
PCB-55	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
PCB-56	0-6	38	34	4	10.5	3.3	850	172.4	NL	NL	--	--
PCB-57	0-6	38	5	33	86.8	6.3	18	12.6	NL	NL	--	--
PCB-58	0-6	38	6	32	84.2	3.5	231	46.0	NL	NL	--	--
PCB-59	0-6	38	25	13	34.2	6	460	63.1	NL	NL	--	--
PCB-6	0-6	38	26	12	31.6	5.7	379	45.8	NL	NL	--	--
PCB-60	0-6	38	28	10	26.3	4.1	529	103.2	NL	NL	--	--
PCB-61	0-6	38	36	2	5.3	2.5	11000	1178.6	NL	NL	--	--
PCB-62	0-6	38	26	12	31.6	6	461	61.2	NL	NL	--	--
PCB-63	0-6	38	17	21	55.3	4.3	20000	1195.8	NL	NL	--	--
PCB-64	0-6	38	31	7	18.4	6.9	730	182.5	NL	NL	--	--
PCB-65	0-6	38	38	0	0.0	2.4	15600	941.2	NL	NL	--	--
PCB-66	0-6	38	34	4	10.5	3.8	1800	405.0	NL	NL	--	--
PCB-67	0-6	38	14	24	63.2	4.6	49.4	21.1	NL	NL	--	--
PCB-68	0-6	38	9	29	76.3	4.6	16	9.2	NL	NL	--	--
PCB-69	0-6	38	35	3	7.9	4.9	5590	493.9	NL	NL	--	--
PCB-7	0-6	38	15	23	60.5	4.6	130	18.2	NL	NL	--	--
PCB-70	0-6	38	36	2	5.3	2.5	10800	1176.7	NL	NL	--	--
PCB-71	0-6	38	34	4	10.5	2.8	2360	259.2	NL	NL	--	--
PCB-72	0-6	38	13	25	65.8	4.4	49	16.8	NL	NL	--	--

Table 3-1a
Summary of St. Louis Bay Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	Level II SQT ²	% Above Level I ¹	% Above Level II ²
PCB-73	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
PCB-74	0-6	38	36	2	5.3	2.5	10800	1176.7	NL	NL	--	--
PCB-75	0-6	38	26	12	31.6	6	461	61.2	NL	NL	--	--
PCB-76	0-6	38	36	2	5.3	2.5	10800	1176.7	NL	NL	--	--
PCB-77	0-6	38	30	8	21.1	3.3	280	70.5	NL	NL	--	--
PCB-78	0-6	38	5	33	86.8	4.3	77.8	25.3	NL	NL	--	--
PCB-79	0-6	38	9	29	76.3	4.8	58	17.9	NL	NL	--	--
PCB-8	0-6	38	29	9	23.7	9.3	1780	201.4	NL	NL	--	--
PCB-80	0-6	38	1	37	97.4	13	13	13.0	NL	NL	--	--
PCB-81	0-6	38	2	36	94.7	12	17	14.5	NL	NL	--	--
PCB-82	0-6	38	33	5	13.2	2.4	1590	233.0	NL	NL	--	--
PCB-83	0-6	38	38	0	0.0	5	13400	1371.9	NL	NL	--	--
PCB-84	0-6	38	34	4	10.5	2.8	2430	356.3	NL	NL	--	--
PCB-85	0-6	38	38	0	0.0	16	39000	3941.6	NL	NL	--	--
PCB-86	0-6	38	37	1	2.6	3	8600	1142.2	NL	NL	--	--
PCB-87	0-6	38	37	1	2.6	3	8570	1137.5	NL	NL	--	--
PCB-88	0-6	38	34	4	10.5	6.6	6600	413.0	NL	NL	--	--
PCB-89	0-6	38	4	34	89.5	4.6	55.4	29.4	NL	NL	--	--
PCB-9	0-6	38	17	21	55.3	7	152	24.0	NL	NL	--	--
PCB-90	0-6	38	38	0	0.0	11	38000	3022.5	NL	NL	--	--
PCB-91	0-6	38	33	5	13.2	6.6	6620	425.3	NL	NL	--	--
PCB-92	0-6	38	33	5	13.2	4.8	3790	537.1	NL	NL	--	--
PCB-93	0-6	38	13	25	65.8	11	410	100.5	NL	NL	--	--
PCB-94	0-6	38	11	27	71.1	4.2	100	23.8	NL	NL	--	--
PCB-95	0-6	38	36	2	5.3	4.4	14000	997.2	NL	NL	--	--
PCB-96	0-6	38	22	16	42.1	4.8	2000	107.7	NL	NL	--	--
PCB-97	0-6	38	37	1	2.6	3	8570	1137.5	NL	NL	--	--
PCB-98	0-6	38	13	25	65.8	11.2	410	100.9	NL	NL	--	--
PCB-99	0-6	38	38	0	0.0	5	13400	1369.4	NL	NL	--	--
Total PCB Congeners	0-6	38	38	0	0.0	340.9	1470786.8	127785.1	60000	680000	47.4	5.3
TCL Pesticides (µg/kg)												
1,1,1-TRICHLORO-2,2-BIS (P-METHOXYPHENYL)-ETHANE	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
4,4'-DDD	0-6	38	0	38	100.0	--	--	--	4.9	28	0.0	0.0
4,4'-DDE	0-6	38	0	38	100.0	--	--	--	3.2	31	0.0	0.0
4,4'-DDT	0-6	38	0	38	100.0	--	--	--	4.2	63	0.0	0.0
ALDRIN	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
ALPHA-BHC	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
ALPHA-CHLORDANE	0-6	38	0	38	100.0	--	--	--	3.2	18	0.0	0.0
BETA-BHC	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
CAMPHECHLOR	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
DELTA-BHC	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
DIELDRIN	0-6	38	0	38	100.0	--	--	--	1.9	62	0.0	0.0
ENDOSULFAN I	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
ENDOSULFAN II	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
ENDOSULFAN SULFATE	0-6	38	1	37	97.4	9	9	9.0	NL	NL	--	--
ENDRIN	0-6	38	0	38	100.0	--	--	--	2.2	210	0.0	0.0
ENDRIN ALDEHYDE	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
ENDRIN KETONE	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
GAMMA-BHC (LINDANE)	0-6	38	0	38	100.0	--	--	--	2.4	5	0.0	0.0
GAMMA-CHLORDANE	0-6	38	1	37	97.4	3	3	3.0	3.2	3.2	0.0	0.0
HEPTACHLOR	0-6	38	0	38	100.0	--	--	--	NL	NL	--	--
HEPTACHLOR EPOXIDE	0-6	38	0	38	100.0	--	--	--	2.5	16	0.0	0.0
TPH (mg/kg)												
DRO	0-6	132	115	17	12.9	9	630	65.6	NL	NL	--	--
	0-12	92	74	18	19.6	6	510	70.2	NL	NL	--	--
	12-36	68	46	22	32.4	9	430	74.8	NL	NL	--	--
	36-60	45	23	22	48.9	9	560	81.2	NL	NL	--	--
	60-84	31	19	12	38.7	8	620	103.8	NL	NL	--	--
	84-108	16	5	11	68.8	39	240	110.0	NL	NL	--	--
108-132	1	0	1	100.0	--	--	--	NL	NL	--	--	
ORO	0-6	132	132	0	0.0	7	940	103.4	NL	NL	--	--
	0-12	92	89	3	3.3	6	750	95.3	NL	NL	--	--
	12-36	68	64	4	5.9	5	800	104.8	NL	NL	--	--
	36-60	45	42	3	6.7	7	900	73.0	NL	NL	--	--
	60-84	31	29	2	6.5	5	760	85.6	NL	NL	--	--
	84-108	16	11	5	31.3	5	240	76.5	NL	NL	--	--
108-132	1	1	0	0.0	29	29	29.0	NL	NL	--	--	
Dioxin/Furan (pg/g)												
1,2,3,4,6,7,8-HpCDD	0-6	38	38	0	0.0	0.38	650	173.2	NL	NL	--	--
1,2,3,4,6,7,8-HpCDF	0-6	38	38	0	0.0	0.48	1600	247.2	NL	NL	--	--
1,2,3,4,7,8,9-HpCDF	0-6	38	30	8	21.1	0.22	10	3.2	NL	NL	--	--

Table 3-1a
Summary of St. Louis Bay Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	Level II SQT ²	% Above Level I ¹	% Above Level II ²
1,2,3,4,7,8-HxCDD	0-6	38	30	8	21.1	0.13	6.8	2.3	NL	NL	--	--
1,2,3,4,7,8-HxCDF	0-6	38	35	3	7.9	0.06	16	4.2	NL	NL	--	--
1,2,3,6,7,8-HxCDD	0-6	38	35	3	7.9	0.17	41	10.4	NL	NL	--	--
1,2,3,6,7,8-HxCDF	0-6	38	35	3	7.9	0.08	50	7.1	NL	NL	--	--
1,2,3,7,8,9-HxCDD	0-6	38	35	3	7.9	0.11	26	6.3	NL	NL	--	--
1,2,3,7,8,9-HxCDF	0-6	38	12	26	68.4	0.21	1.4	0.5	NL	NL	--	--
1,2,3,7,8-PeCDD	0-6	38	26	12	31.6	0.56	9.3	2.7	NL	NL	--	--
1,2,3,7,8-PeCDF	0-6	38	21	17	44.7	0.33	3.5	1.3	NL	NL	--	--
2,3,4,6,7,8-HxCDF	0-6	38	33	5	13.2	0.08	6	1.8	NL	NL	--	--
2,3,4,7,8-PeCDF	0-6	38	26	12	31.6	0.48	8.26	2.3	NL	NL	--	--
2,3,7,8-TCDD	0-6	38	30	8	21.1	0.17	3.2	1.3	NL	NL	--	--
2,3,7,8-TCDF	0-6	38	34	4	10.5	0.05	7.32	3.1	NL	NL	--	--
OCDD	0-6	38	38	0	0.0	4.24	4240	1498.5	NL	NL	--	--
OCDF	0-6	38	38	0	0.0	0.22	580	128.3	NL	NL	--	--
Total HpCDD	0-6	38	38	0	0.0	1.01	3100	496.8	NL	NL	--	--
Total HpCDF	0-6	38	38	0	0.0	0.87	3300	518.4	NL	NL	--	--
Total HxCDD	0-6	38	38	0	0.0	0.16	440	107.0	NL	NL	--	--
Total HxCDF	0-6	38	37	1	2.6	1.5	1200	173.2	NL	NL	--	--
Total PeCDD	0-6	38	36	2	5.3	0.42	94	22.9	NL	NL	--	--
Total PeCDF	0-6	38	35	3	7.9	0.4	120	28.3	NL	NL	--	--
Total TCDD	0-6	38	35	3	7.9	0.1	36	14.0	NL	NL	--	--
Total TCDF	0-6	38	35	3	7.9	0.09	97.2	19.8	NL	NL	--	--

Notes:

"--" = Not Applicable

% = Percent

AOC = Area of Concern

bss = below sediment surface

DL = Detection Limit

DRO = Diesel Range Organic

mg/kg = Milligram per kilogram

ND = Non-Detect

NL = Not Listed

ORO = Oil Range Organic

PAH = Polycyclic Aromatic Hydrocarbon

PCB = Polychlorinated Biphenyls

pg/g = pico gram per gram

SQT = Sediment Quality Targets

TAL = Target Analyte List

TCL = Target Compound List

TPH = Total Petroleum Hydrocarbon

µg/kg = Microgram per kilogram

TOTAL PCBs = Sum of Detections

TOTAL PAHs 17 = Sum of detections plus 1/2 DL for NDs

TOTAL PAHs 34 = Sum of detections plus 1/2 DL for NDs

¹ Evaluation of Numerical SQTs-St Louis River AOC-Level I

² Evaluation of Numerical SQTs-St Louis River AOC-Level II

Table 3-1b
Summary of Area 1 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
PAHs (17 and 34 List) (µg/kg)												
1,2-BENZPHENANTHRACENE	0-6	70	65	5	7.1	8	1100	239.8	170	42.9	1300	0.0
	0-12	42	37	5	11.9	2.9	790	156.2	170	28.6	1300	0.0
	12-36	26	19	7	26.9	4.9	1400	164.2	170	15.4	1300	3.8
	36-60	18	8	10	55.6	5.4	760	179.6	170	16.7	1300	0.0
	60-84	13	7	6	46.2	9.1	280	188.4	170	30.8	1300	0.0
84-108	6	3	3	50.0	120	280	176.7	170	16.7	1300	0.0	
1-METHYLNAPHTHALENE	0-6	19	9	10	52.6	3.7	73	17.3	NL	--	NL	--
2-METHYLNAPHTHALENE	0-6	70	37	33	47.1	5.8	75	32.4	20	32.9	200	0.0
	0-12	42	26	16	38.1	1.6	160	37.4	20	31.0	200	0.0
	12-36	26	10	16	61.5	14	58	38.5	20	26.9	200	0.0
	36-60	18	3	15	83.3	33	95	62.7	20	16.7	200	0.0
	60-84	13	3	10	76.9	38	190	98.3	20	23.1	200	0.0
84-108	6	0	6	100.0	--	--	--	20	0.0	200	0.0	
ACENAPHTHENE	0-6	70	35	35	50.0	4.9	100	21.7	6.7	44.3	89	2.9
	0-12	42	17	25	59.5	1.3	120	21.3	6.7	35.7	89	2.4
	12-36	26	10	16	61.5	9.5	37	21.0	6.7	38.5	89	0.0
	36-60	18	7	11	61.1	9.6	41	22.9	6.7	38.9	89	0.0
	60-84	13	6	7	53.8	13	54	23.3	6.7	46.2	89	0.0
84-108	6	3	3	50.0	15	25	20.3	6.7	50.0	89	0.0	
ACENAPHTHYLENE	0-6	70	37	33	47.1	4.4	74	25.9	5.9	51.4	130	0.0
	0-12	42	22	20	47.6	2	78	26.2	5.9	45.2	130	0.0
	12-36	26	9	17	65.4	6	33	18.6	5.9	34.6	130	0.0
	36-60	18	5	13	72.2	19	62	37.6	5.9	27.8	130	0.0
	60-84	13	5	8	61.5	14	44	25.0	5.9	38.5	130	0.0
84-108	6	3	3	50.0	28	50	36.0	5.9	50.0	130	0.0	
ANTHRACENE	0-6	70	48	22	31.4	5.3	700	108.3	57	38.6	850	0.0
	0-12	42	23	19	45.2	3.6	190	59.0	57	21.4	850	0.0
	12-36	26	11	15	57.7	3.6	720	91.2	57	3.8	850	0.0
	36-60	18	6	12	66.7	3.1	71	38.5	57	5.6	850	0.0
	60-84	13	5	8	61.5	42	120	75.0	57	15.4	850	0.0
84-108	6	3	3	50.0	50	100	76.3	57	33.3	850	0.0	
BENZO(A)ANTHRACENE	0-6	70	66	4	5.7	6.9	1300	206.4	110	50.0	1100	1.4
	0-12	42	37	5	11.9	3.8	670	154.8	110	42.9	1100	0.0
	12-36	26	19	7	26.9	4.3	1200	178.3	110	30.8	1100	3.8
	36-60	18	8	10	55.6	5.9	750	193.6	110	27.8	1100	0.0
	60-84	13	7	6	46.2	11	480	265.9	110	46.2	1100	0.0
84-108	6	3	3	50.0	200	280	230.0	110	50.0	1100	0.0	
BENZO(A)PYRENE	0-6	70	68	2	2.9	3	1000	184.3	150	35.7	1500	0.0
	0-12	42	40	2	4.8	5.5	540	124.2	150	26.2	1500	0.0
	12-36	26	25	1	3.8	7.9	670	102.9	150	23.1	1500	0.0
	36-60	18	16	2	11.1	11	790	100.9	150	11.1	1500	0.0
	60-84	13	13	0	0.0	9.5	290	112.3	150	46.2	1500	0.0
84-108	6	5	1	16.7	6.5	320	117.7	150	16.7	1500	0.0	
BENZO(B)FLUORANTHENE	0-6	70	68	2	2.9	8.8	1700	222.1	NL	--	NL	--
	0-12	42	40	2	4.8	6.3	510	137.6	NL	--	NL	--
	12-36	26	25	1	3.8	4.8	900	112.6	NL	--	NL	--
	36-60	18	16	2	11.1	8.2	630	93.9	NL	--	NL	--
	60-84	13	13	0	0.0	4	480	119.5	NL	--	NL	--
84-108	6	5	1	16.7	4.1	280	117.2	NL	--	NL	--	
BENZO(E)PYRENE	0-6	19	13	6	31.6	7	120	58.9	NL	--	NL	--
BENZO(G,H,I)PERYLENE	0-6	70	69	1	1.4	30	650	161.9	NL	--	NL	--
	0-12	42	42	0	0.0	17	360	128.1	NL	--	NL	--
	12-36	26	26	0	0.0	29	310	102.3	NL	--	NL	--
	36-60	18	16	2	11.1	26	500	95.4	NL	--	NL	--
	60-84	13	13	0	0.0	26	230	100.9	NL	--	NL	--
84-108	6	6	0	0.0	25	180	80.3	NL	--	NL	--	
BENZO(K)FLUORANTHENE	0-6	70	67	3	4.3	4.3	610	143.5	NL	--	NL	--
	0-12	42	39	3	7.1	4.3	430	96.8	NL	--	NL	--
	12-36	26	23	3	11.5	3.8	490	80.0	NL	--	NL	--
	36-60	18	15	3	16.7	5	660	87.1	NL	--	NL	--
	60-84	13	13	0	0.0	2.9	240	86.1	NL	--	NL	--
84-108	6	4	2	33.3	5.7	240	112.2	NL	--	NL	--	
C1-CHRYSENES	0-6	19	4	15	78.9	7	78	50.5	NL	--	NL	--
C1-FLUORANTHENES/PYRENES	0-6	19	4	15	78.9	10	150	83.3	NL	--	NL	--
C1-FLUORENES	0-6	19	1	18	94.7	4.2	4.2	4.2	NL	--	NL	--
C1-NAPHTHALENES	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
C1-PHENANTHRENES/ ANTHRACENES	0-6	19	4	15	78.9	26	68	44.0	NL	--	NL	--
C2-CHRYSENES	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
C2-FLUORANTHENES/PYRENES	0-6	19	4	15	78.9	5	99	53.8	NL	--	NL	--
C2-FLUORENES	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--

Table 3-1b
Summary of Area 1 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
C2-NAPHTHALENES	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
C2-PHENANTHRENES/ ANTHRACENES	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
C3-CHRYSENES	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
C3-FLUORANTHENES/PYRENES	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
C3-FLUORENES	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
C3-NAPHTHALENES	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
C3-PHENANTHRENES/ ANTHRACENES	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
C4-CHRYSENES	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
C4-NAPHTHALENES	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
C4-PHENANTHRENES/ ANTHRACENES	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
DIBENZO(A,H)ANTHRACENE	0-6	70	51	19	27.1	5.8	390	52.8	33	35.7	140	1.4
	0-12	42	32	10	23.8	2.8	160	49.5	33	38.1	140	4.8
	12-36	26	12	14	53.8	3	150	30.6	33	11.5	140	3.8
	36-60	18	12	6	33.3	4.8	370	47.5	33	22.2	140	5.6
	60-84	13	10	3	23.1	3.9	130	36.2	33	38.5	140	0.0
84-108	6	4	2	33.3	4.4	52	25.0	33	33.3	140	0.0	
FLUORANTHENE	0-6	70	67	3	4.3	0	3400	382.8	420	28.6	2200	1.4
	0-12	42	37	5	11.9	5.4	1300	253.0	420	21.4	2200	0.0
	12-36	26	20	6	23.1	6.4	1900	229.6	420	7.7	2200	0.0
	36-60	18	8	10	55.6	12	1200	291.9	420	5.6	2200	0.0
	60-84	13	7	6	46.2	15	570	392.1	420	30.8	2200	0.0
84-108	6	3	3	50.0	230	530	340.0	420	16.7	2200	0.0	
FLUORENE	0-6	70	42	28	40.0	5.1	180	37.3	77	4.3	540	0.0
	0-12	42	28	14	33.3	3.4	140	35.9	77	4.8	540	0.0
	12-36	26	10	16	61.5	2	43	24.4	77	0.0	540	0.0
	36-60	18	5	13	72.2	5.8	58	33.6	77	0.0	540	0.0
	60-84	13	4	9	69.2	5.7	56	34.9	77	0.0	540	0.0
84-108	6	2	4	66.7	38	53	45.5	77	0.0	540	0.0	
INDENO(1,2,3-CD)PYRENE	0-6	70	69	1	1.4	13	900	164.5	NL	--	NL	--
	0-12	42	42	0	0.0	7.7	390	100.8	NL	--	NL	--
	12-36	26	26	0	0.0	9.2	510	85.5	NL	--	NL	--
	36-60	18	17	1	5.6	7.4	520	82.8	NL	--	NL	--
	60-84	13	12	1	7.7	11	270	108.9	NL	--	NL	--
84-108	6	6	0	0.0	7.3	240	71.9	NL	--	NL	--	
NAPHTHALENE	0-6	70	45	25	35.7	6	300	52.5	180	1.4	560	0.0
	0-12	42	30	12	28.6	2.8	860	117.0	180	14.3	560	2.4
	12-36	26	16	10	38.5	8.7	450	105.3	180	11.5	560	0.0
	36-60	18	5	13	72.2	52	2900	830.4	180	16.7	560	11.1
	60-84	13	4	9	69.2	62	1000	360.5	180	15.4	560	7.7
84-108	6	2	4	66.7	140	210	175.0	180	16.7	560	0.0	
PERYLENE	0-6	19	17	2	10.5	4	250	96.0	NL	--	NL	--
PHENANTHRENE	0-6	70	62	8	11.4	5.1	2500	208.6	200	18.6	1200	2.9
	0-12	42	38	4	9.5	5	840	157.9	200	21.4	1200	0.0
	12-36	26	18	8	30.8	4.6	770	142.7	200	19.2	1200	0.0
	36-60	18	8	10	55.6	5.9	520	179.0	200	16.7	1200	0.0
	60-84	13	7	6	46.2	6.8	390	235.3	200	38.5	1200	0.0
84-108	6	3	3	50.0	250	360	300.0	200	50.0	1200	0.0	
PYRENE	0-6	70	68	2	2.9	5.1	2500	367.8	200	50.0	1500	4.3
	0-12	42	37	5	11.9	7.7	1600	283.0	200	40.5	1500	2.4
	12-36	26	23	3	11.5	6.9	1800	212.5	200	26.9	1500	3.8
	36-60	18	12	6	33.3	4.8	1300	206.3	200	27.8	1500	0.0
	60-84	13	10	3	23.1	4.6	540	264.0	200	46.2	1500	0.0
84-108	6	4	2	33.3	5	530	276.3	200	50.0	1500	0.0	
Total PAHs 17	0-6	70	70	0	0.0	73	17393.9	2493.5	1600	47.1	23000	0.0
	0-12	42	42	0	0.0	101	7870	1737.2	1600	40.5	23000	0.0
	12-36	26	26	0	0.0	104	11712	1401.8	1600	26.9	23000	0.0
	36-60	18	18	0	0.0	62.65	9541	1495.9	1600	33.3	23000	0.0
	60-84	13	13	0	0.0	115.1	4456	1585.6	1600	46.2	23000	0.0
84-108	6	6	0	0.0	63.3	3591	1344.6	1600	50.0	23000	0.0	
Total PAHs 34	0-6	19	19	0	0.0	109	7749	2453.2	1600	52.6	23000	0.0
TAL Metals (mg/kg)												
ALUMINUM	0-6	70	69	1	1.4	1150	30400	8525.8	NL	--	NL	--
	0-12	42	42	0	0.0	1490	16200	8353.8	NL	--	NL	--
	12-36	26	26	0	0.0	1410	15600	8425.4	NL	--	NL	--
	36-60	18	18	0	0.0	1340	18900	7824.4	NL	--	NL	--
	60-84	13	13	0	0.0	4210	12600	7546.9	NL	--	NL	--
84-108	6	6	0	0.0	3110	12000	7253.3	NL	--	NL	--	

Table 3-1b
Summary of Area 1 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
ANTIMONY	0-6	70	7	63	90.0	0.33	0.62	0.5	NL	--	NL	--
	0-12	42	2	40	95.2	0.43	0.74	0.6	NL	--	NL	--
	12-36	26	1	25	96.2	0.35	0.35	0.4	NL	--	NL	--
	36-60	18	0	18	100.0	--	--	--	NL	--	NL	--
	60-84	13	0	13	100.0	--	--	--	NL	--	NL	--
84-108	6	1	5	83.3	0.98	0.98	1.0	NL	--	NL	--	
ARSENIC	0-6	70	67	3	4.3	0.65	15.3	4.6	9.8	2.9	33	0.0
	0-12	42	42	0	0.0	0.54	18.1	4.9	9.8	11.9	33	0.0
	12-36	26	26	0	0.0	0.73	21	4.7	9.8	7.7	33	0.0
	36-60	18	18	0	0.0	0.63	11.9	4.4	9.8	5.6	33	0.0
	60-84	13	13	0	0.0	1.3	12.7	4.5	9.8	15.4	33	0.0
84-108	6	6	0	0.0	1.1	9.2	4.2	9.8	0.0	33	0.0	
BARIUM	0-6	70	68	2	2.9	8.1	2920	392.5	NL	--	NL	--
	0-12	42	40	2	4.8	6.9	2390	211.3	NL	--	NL	--
	12-36	26	23	3	11.5	6.8	1180	220.5	NL	--	NL	--
	36-60	18	18	0	0.0	6	627	148.5	NL	--	NL	--
	60-84	13	13	0	0.0	34	253	84.7	NL	--	NL	--
84-108	6	6	0	0.0	29.1	147	81.2	NL	--	NL	--	
BERYLLIUM	0-6	70	55	15	21.4	0.02	3.4	0.6	NL	--	NL	--
	0-12	42	34	8	19.0	0.025	2.1	0.6	NL	--	NL	--
	12-36	26	16	10	38.5	0.027	2.2	0.7	NL	--	NL	--
	36-60	18	9	9	50.0	0.024	1.5	0.9	NL	--	NL	--
	60-84	13	6	7	53.8	0.25	1.5	0.9	NL	--	NL	--
84-108	6	3	3	50.0	0.49	0.75	0.6	NL	--	NL	--	
CADMIUM	0-6	70	35	35	50.0	0.06	6	1.1	0.99	18.6	5	1.4
	0-12	42	19	23	54.8	0.094	5.1	1.2	0.99	16.7	5	2.4
	12-36	26	10	16	61.5	0.12	1.7	0.7	0.99	7.7	5	0.0
	36-60	18	8	10	55.6	0.057	3.9	0.9	0.99	11.1	5	0.0
	60-84	13	6	7	53.8	0.054	6.7	1.4	0.99	7.7	5	7.7
84-108	6	3	3	50.0	0.063	2.2	1.4	0.99	33.3	5	0.0	
CALCIUM	0-6	70	69	1	1.4	565	27700	6958.8	NL	--	NL	--
	0-12	42	42	0	0.0	666	17700	6004.9	NL	--	NL	--
	12-36	26	26	0	0.0	652	12100	6722.2	NL	--	NL	--
	36-60	18	18	0	0.0	595	13100	6295.8	NL	--	NL	--
	60-84	13	13	0	0.0	1980	8540	5360.8	NL	--	NL	--
84-108	6	6	0	0.0	1610	12800	7283.3	NL	--	NL	--	
CHROMIUM	0-6	70	69	1	1.4	2.3	87.7	22.3	43	7.1	110	0.0
	0-12	42	42	0	0.0	2.8	56.7	22.3	43	7.1	110	0.0
	12-36	26	26	0	0.0	2.4	35.1	19.4	43	0.0	110	0.0
	36-60	18	18	0	0.0	2.5	77.2	20.2	43	5.6	110	0.0
	60-84	13	13	0	0.0	11	67	20.9	43	7.7	110	0.0
84-108	6	6	0	0.0	9	36.5	20.3	43	0.0	110	0.0	
COBALT	0-6	70	53	17	24.3	1.5	14.6	7.9	NL	--	NL	--
	0-12	42	31	11	26.2	1.7	14	8.3	NL	--	NL	--
	12-36	26	21	5	19.2	1.6	12.8	8.2	NL	--	NL	--
	36-60	18	16	2	11.1	1.5	12.7	7.6	NL	--	NL	--
	60-84	13	11	2	15.4	4.6	11.6	7.3	NL	--	NL	--
84-108	6	5	1	16.7	3.6	10.4	6.9	NL	--	NL	--	
COPPER	0-6	70	68	2	2.9	1.6	156	26.9	32	22.9	150	1.4
	0-12	42	41	1	2.4	1.7	72.6	24.4	32	21.4	150	0.0
	12-36	26	25	1	3.8	1.4	37.2	19.5	32	7.7	150	0.0
	36-60	18	18	0	0.0	1.3	52.2	19.1	32	16.7	150	0.0
	60-84	13	13	0	0.0	7.4	57.6	19.1	32	7.7	150	0.0
84-108	6	6	0	0.0	6.4	52.2	26.4	32	33.3	150	0.0	
IRON	0-6	70	69	1	1.4	2510	33000	16998.3	NL	--	NL	--
	0-12	42	42	0	0.0	2580	29600	16032.9	NL	--	NL	--
	12-36	26	26	0	0.0	2480	35300	15450.8	NL	--	NL	--
	36-60	18	18	0	0.0	2430	34500	14449.4	NL	--	NL	--
	60-84	13	13	0	0.0	6830	25200	14060.8	NL	--	NL	--
84-108	6	6	0	0.0	8360	24700	15643.3	NL	--	NL	--	
LEAD	0-6	70	69	1	1.4	1.3	163	32.5	36	27.1	130	2.9
	0-12	42	42	0	0.0	0.84	120	27.9	36	31.0	130	0.0
	12-36	26	26	0	0.0	0.75	97.6	25.4	36	26.9	130	0.0
	36-60	18	18	0	0.0	0.81	215	35.2	36	33.3	130	5.6
	60-84	13	13	0	0.0	2.7	175	28.0	36	30.8	130	7.7
84-108	6	6	0	0.0	2.1	182	55.8	36	50.0	130	16.7	
MAGNESIUM	0-6	70	69	1	1.4	645	14700	4505.5	NL	--	NL	--
	0-12	42	42	0	0.0	517	8460	4247.2	NL	--	NL	--
	12-36	26	26	0	0.0	705	9270	4779.3	NL	--	NL	--
	36-60	18	18	0	0.0	675	7810	4304.2	NL	--	NL	--
	60-84	13	13	0	0.0	2200	6610	4103.8	NL	--	NL	--
84-108	6	6	0	0.0	1570	8950	5431.7	NL	--	NL	--	

Table 3-1b
Summary of Area 1 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
MANGANESE	0-6	70	69	1	1.4	43.1	1750	449.6	NL	--	NL	--
	0-12	42	42	0	0.0	30.4	1120	335.4	NL	--	NL	--
	12-36	26	26	0	0.0	26.7	644	318.9	NL	--	NL	--
	36-60	18	18	0	0.0	25.7	562	282.1	NL	--	NL	--
	60-84	13	13	0	0.0	94.9	365	226.1	NL	--	NL	--
84-108	6	6	0	0.0	94.9	422	250.3	NL	--	NL	--	
MERCURY	0-6	70	57	13	18.6	0.056	0.99	0.3	0.18	42.9	1.1	0.0
	0-12	42	30	12	28.6	0.049	1.6	0.3	0.18	47.6	1.1	2.4
	12-36	26	18	8	30.8	0.066	0.64	0.2	0.18	46.2	1.1	0.0
	36-60	18	13	5	27.8	0.059	0.74	0.3	0.18	33.3	1.1	0.0
	60-84	13	10	3	23.1	0.047	1.9	0.5	0.18	38.5	1.1	7.7
84-108	6	5	1	16.7	0.048	0.5	0.3	0.18	50.0	1.1	0.0	
NICKEL	0-6	70	68	2	2.9	2.5	54.5	18.6	23	25.7	49	1.4
	0-12	42	41	1	2.4	2.9	46.9	19.2	23	35.7	49	0.0
	12-36	26	24	2	7.7	2.9	28.5	17.6	23	15.4	49	0.0
	36-60	18	18	0	0.0	3.2	42.9	16.2	23	22.2	49	0.0
	60-84	13	13	0	0.0	9.1	46.4	17.0	23	7.7	49	0.0
84-108	6	6	0	0.0	7.4	24.9	16.4	23	16.7	49	0.0	
POTASSIUM	0-6	70	52	18	25.7	165	1750	794.0	NL	--	NL	--
	0-12	42	39	3	7.1	156	1630	837.9	NL	--	NL	--
	12-36	26	26	0	0.0	153	1490	800.6	NL	--	NL	--
	36-60	18	16	2	11.1	147	1600	759.3	NL	--	NL	--
	60-84	13	11	2	15.4	310	1390	613.6	NL	--	NL	--
84-108	6	5	1	16.7	226	1280	658.6	NL	--	NL	--	
SELENIUM	0-6	70	31	39	55.7	0.7	2.3	1.3	NL	--	NL	--
	0-12	42	21	21	50.0	0.57	2.7	1.6	NL	--	NL	--
	12-36	26	9	17	65.4	0.79	2.1	1.3	NL	--	NL	--
	36-60	18	6	12	66.7	0.61	1.9	1.2	NL	--	NL	--
	60-84	13	5	8	61.5	0.77	2.2	1.5	NL	--	NL	--
84-108	6	2	4	66.7	1.2	1.8	1.5	NL	--	NL	--	
SILVER	0-6	70	2	68	97.1	0.24	0.83	0.5	NL	--	NL	--
	0-12	42	2	40	95.2	0.087	0.39	0.2	NL	--	NL	--
	12-36	26	0	26	100.0	--	--	--	NL	--	NL	--
	36-60	18	0	18	100.0	--	--	--	NL	--	NL	--
	60-84	13	0	13	100.0	--	--	--	NL	--	NL	--
84-108	6	0	6	100.0	--	--	--	NL	--	NL	--	
SODIUM	0-6	70	11	59	84.3	112	587	266.8	NL	--	NL	--
	0-12	42	7	35	83.3	64.3	413	224.6	NL	--	NL	--
	12-36	26	2	24	92.3	171	301	236.0	NL	--	NL	--
	36-60	18	0	18	100.0	--	--	--	NL	--	NL	--
	60-84	13	0	13	100.0	--	--	--	NL	--	NL	--
84-108	6	0	6	100.0	--	--	--	NL	--	NL	--	
THALLIUM	0-6	70	0	70	100.0	--	--	--	NL	--	NL	--
	0-12	42	0	42	100.0	--	--	--	NL	--	NL	--
	12-36	26	0	26	100.0	--	--	--	NL	--	NL	--
	36-60	18	0	18	100.0	--	--	--	NL	--	NL	--
	60-84	13	0	13	100.0	--	--	--	NL	--	NL	--
84-108	6	0	6	100.0	--	--	--	NL	--	NL	--	
VANADIUM	0-6	70	69	1	1.4	6.9	43.8	24.3	NL	--	NL	--
	0-12	42	42	0	0.0	7.9	52.6	27.7	NL	--	NL	--
	12-36	26	26	0	0.0	6.8	54.8	29.3	NL	--	NL	--
	36-60	18	18	0	0.0	8.7	43.5	27.0	NL	--	NL	--
	60-84	13	13	0	0.0	14.3	43.7	27.6	NL	--	NL	--
84-108	6	6	0	0.0	18.6	29.2	24.4	NL	--	NL	--	
ZINC	0-6	70	68	2	2.9	7.8	1340	118.1	120	25.7	460	1.4
	0-12	42	41	1	2.4	6.1	322	97.7	120	31.0	460	0.0
	12-36	26	24	2	7.7	5.7	270	83.3	120	23.1	460	0.0
	36-60	18	18	0	0.0	5.5	282	90.7	120	33.3	460	0.0
	60-84	13	13	0	0.0	17.7	406	94.6	120	30.8	460	0.0
84-108	6	6	0	0.0	16.1	416	162.2	120	50.0	460	0.0	
PCB Aroclors (µg/kg)												
AROCLOR-1016	0-6	70	1	69	98.6	140	140	140.0	NL	--	NL	--
	0-12	42	1	41	97.6	320	320	320.0	NL	--	NL	--
	12-36	26	0	26	100.0	--	--	--	NL	--	NL	--
	36-60	18	0	18	100.0	--	--	--	NL	--	NL	--
	60-84	13	0	13	100.0	--	--	--	NL	--	NL	--
84-108	6	0	6	100.0	--	--	--	NL	--	NL	--	

Table 3-1b
Summary of Area 1 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
AROCLOR-1221	0-6	70	0	70	100.0	--	--	--	NL	--	NL	--
	0-12	42	0	42	100.0	--	--	--	NL	--	NL	--
	12-36	26	0	26	100.0	--	--	--	NL	--	NL	--
	36-60	18	0	18	100.0	--	--	--	NL	--	NL	--
	60-84	13	0	13	100.0	--	--	--	NL	--	NL	--
84-108	6	0	6	100.0	--	--	--	NL	--	NL	--	
AROCLOR-1232	0-6	70	0	70	100.0	--	--	--	NL	--	NL	--
	0-12	42	0	42	100.0	--	--	--	NL	--	NL	--
	12-36	26	0	26	100.0	--	--	--	NL	--	NL	--
	36-60	18	0	18	100.0	--	--	--	NL	--	NL	--
	60-84	13	0	13	100.0	--	--	--	NL	--	NL	--
84-108	6	0	6	100.0	--	--	--	NL	--	NL	--	
AROCLOR-1242	0-6	70	0	70	100.0	--	--	--	NL	--	NL	--
	0-12	42	0	42	100.0	--	--	--	NL	--	NL	--
	12-36	26	0	26	100.0	--	--	--	NL	--	NL	--
	36-60	18	0	18	100.0	--	--	--	NL	--	NL	--
	60-84	13	0	13	100.0	--	--	--	NL	--	NL	--
84-108	6	0	6	100.0	--	--	--	NL	--	NL	--	
AROCLOR-1248	0-6	70	0	70	100.0	--	--	--	NL	--	NL	--
	0-12	42	0	42	100.0	--	--	--	NL	--	NL	--
	12-36	26	0	26	100.0	--	--	--	NL	--	NL	--
	36-60	18	0	18	100.0	--	--	--	NL	--	NL	--
	60-84	13	0	13	100.0	--	--	--	NL	--	NL	--
84-108	6	0	6	100.0	--	--	--	NL	--	NL	--	
AROCLOR-1254	0-6	70	0	70	100.0	--	--	--	NL	--	NL	--
	0-12	42	0	42	100.0	--	--	--	NL	--	NL	--
	12-36	26	0	26	100.0	--	--	--	NL	--	NL	--
	36-60	18	2	16	88.9	46	380	213.0	NL	--	NL	--
	60-84	13	2	11	84.6	35	68	51.5	NL	--	NL	--
84-108	6	1	5	83.3	54	54	54.0	NL	--	NL	--	
AROCLOR-1260	0-6	70	24	46	65.7	1.2	180	42.9	NL	--	NL	--
	0-12	42	13	29	69.0	1.6	270	67.9	NL	--	NL	--
	12-36	26	5	21	80.8	3.6	73	36.9	NL	--	NL	--
	36-60	18	2	16	88.9	46	610	328.0	NL	--	NL	--
	60-84	13	2	11	84.6	53	64	58.5	NL	--	NL	--
84-108	6	0	6	100.0	--	--	--	NL	--	NL	--	
AROCLOR-1262	0-6	70	0	70	100.0	--	--	--	NL	--	NL	--
	0-12	42	0	42	100.0	--	--	--	NL	--	NL	--
	12-36	26	0	26	100.0	--	--	--	NL	--	NL	--
	36-60	18	0	18	100.0	--	--	--	NL	--	NL	--
	60-84	13	0	13	100.0	--	--	--	NL	--	NL	--
84-108	6	0	6	100.0	--	--	--	NL	--	NL	--	
AROCLOR-1268	0-6	70	0	70	100.0	--	--	--	NL	--	NL	--
	0-12	42	0	42	100.0	--	--	--	NL	--	NL	--
	12-36	26	0	26	100.0	--	--	--	NL	--	NL	--
	36-60	18	0	18	100.0	--	--	--	NL	--	NL	--
	60-84	13	0	13	100.0	--	--	--	NL	--	NL	--
84-108	6	0	6	100.0	--	--	--	NL	--	NL	--	
Total PCBs	0-6	70	24	46	65.7	1.2	250	48.7	60	7.1	680	
	0-12	42	13	29	69.0	1.6	590	92.5	60	11.9	680	
	12-36	26	5	21	80.8	3.6	73	36.9	60	3.8	680	
	36-60	18	2	16	88.9	92	990	541.0	60	11.1	680	5.6
	60-84	13	2	11	84.6	88	132	110.0	60	15.4	680	
84-108	6	1	5	83.3	54	54	54.0	60		680		
PCB Congeners (pg/g)												
PCB-1	0-6	19	15	4	21.1	19	760	141.9	NL	--	NL	--
PCB-10	0-6	19	7	12	63.2	2.8	51	13.1	NL	--	NL	--
PCB-100	0-6	19	7	12	63.2	40.4	410	134.4	NL	--	NL	--
PCB-101	0-6	19	19	0	0.0	12.2	38000	4773.0	NL	--	NL	--
PCB-102	0-6	19	7	12	63.2	40.4	410	134.4	NL	--	NL	--
PCB-103	0-6	19	8	11	57.9	13	1980	297.8	NL	--	NL	--
PCB-104	0-6	19	8	11	57.9	3.6	171	27.6	NL	--	NL	--
PCB-105	0-6	19	18	1	5.3	4.1	5320	895.7	NL	--	NL	--
PCB-106	0-6	19	1	18	94.7	8.2	8.2	8.2	NL	--	NL	--
PCB-107	0-6	19	6	13	68.4	6.2	143	65.1	NL	--	NL	--
PCB-108	0-6	19	11	8	42.1	3.7	4000	556.8	NL	--	NL	--
PCB-109	0-6	19	19	0	0.0	7.1	8570	1661.2	NL	--	NL	--
PCB-11	0-6	19	13	6	31.6	2.5	450	90.5	NL	--	NL	--
PCB-110	0-6	19	19	0	0.0	16.5	38600	5454.0	NL	--	NL	--
PCB-111	0-6	19	4	15	78.9	15	190	90.3	NL	--	NL	--
PCB-112	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
PCB-113	0-6	19	19	0	0.0	12.2	38000	4773.0	NL	--	NL	--

Table 3-1b
Summary of Area 1 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
PCB-114	0-6	19	4	15	78.9	19	84.5	41.5	NL	--	NL	--
PCB-115	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
PCB-116	0-6	19	19	0	0.0	16.5	38600	5454.0	NL	--	NL	--
PCB-117	0-6	19	19	0	0.0	16.5	38600	5454.0	NL	--	NL	--
PCB-118	0-6	19	16	3	15.8	8.2	4400	662.8	NL	--	NL	--
PCB-119	0-6	19	19	0	0.0	7.1	8570	1661.2	NL	--	NL	--
PCB-12	0-6	19	13	6	31.6	5.4	370	70.5	NL	--	NL	--
PCB-120	0-6	19	3	16	84.2	5.5	99.3	40.0	NL	--	NL	--
PCB-121	0-6	19	1	18	94.7	6.1	6.1	6.1	NL	--	NL	--
PCB-122	0-6	19	12	7	36.8	12	751	120.8	NL	--	NL	--
PCB-123	0-6	19	12	7	36.8	10	4420	1213.0	NL	--	NL	--
PCB-124	0-6	19	11	8	42.1	3.7	3980	554.9	NL	--	NL	--
PCB-125	0-6	19	19	0	0.0	7.1	8570	1661.2	NL	--	NL	--
PCB-126	0-6	19	5	14	73.7	4.7	67	21.8	NL	--	NL	--
PCB-127	0-6	19	1	18	94.7	110	110	110.0	NL	--	NL	--
PCB-128	0-6	19	16	3	15.8	25	3900	747.4	NL	--	NL	--
PCB-129	0-6	19	19	0	0.0	13	62300	7656.6	NL	--	NL	--
PCB-13	0-6	19	13	6	31.6	5.4	370	70.4	NL	--	NL	--
PCB-130	0-6	19	16	3	15.8	13	1810	358.9	NL	--	NL	--
PCB-131	0-6	19	12	7	36.8	4.6	1330	178.9	NL	--	NL	--
PCB-132	0-6	19	18	1	5.3	4.5	10000	1663.9	NL	--	NL	--
PCB-133	0-6	19	13	6	31.6	4.4	416	121.7	NL	--	NL	--
PCB-134	0-6	19	16	3	15.8	9.8	5200	593.7	NL	--	NL	--
PCB-135	0-6	19	19	0	0.0	3.9	29000	3501.9	NL	--	NL	--
PCB-136	0-6	19	17	2	10.5	26	9800	1228.5	NL	--	NL	--
PCB-137	0-6	19	15	4	21.1	4.8	1200	304.2	NL	--	NL	--
PCB-138	0-6	19	19	0	0.0	13.5	62300	7602.2	NL	--	NL	--
PCB-139	0-6	19	13	6	31.6	3.3	354	88.3	NL	--	NL	--
PCB-14	0-6	19	1	18	94.7	7.1	7.1	7.1	NL	--	NL	--
PCB-140	0-6	19	13	6	31.6	3.3	354	88.5	NL	--	NL	--
PCB-141	0-6	19	18	1	5.3	2.6	19000	2327.7	NL	--	NL	--
PCB-142	0-6	19	1	18	94.7	1000	1000	1000.0	NL	--	NL	--
PCB-143	0-6	19	16	3	15.8	9.8	5210	595.0	NL	--	NL	--
PCB-144	0-6	19	14	5	26.3	9.3	6140	721.9	NL	--	NL	--
PCB-145	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
PCB-146	0-6	19	16	3	15.8	16	4400	938.9	NL	--	NL	--
PCB-147	0-6	19	19	0	0.0	9.8	66000	7443.9	NL	--	NL	--
PCB-148	0-6	19	9	10	52.6	3.7	430	68.7	NL	--	NL	--
PCB-149	0-6	19	19	0	0.0	9.8	66300	7415.9	NL	--	NL	--
PCB-15	0-6	19	17	2	10.5	11	1900	326.0	NL	--	NL	--
PCB-150	0-6	19	11	8	42.1	3.8	875	96.3	NL	--	NL	--
PCB-151	0-6	19	19	0	0.0	3.9	29000	3484.9	NL	--	NL	--
PCB-152	0-6	19	9	10	52.6	4	80	17.0	NL	--	NL	--
PCB-153	0-6	19	18	1	5.3	9.8	29000	4227.5	NL	--	NL	--
PCB-154	0-6	19	14	5	26.3	4.4	1700	208.7	NL	--	NL	--
PCB-155	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
PCB-156	0-6	19	16	3	15.8	17	8930	1053.3	NL	--	NL	--
PCB-157	0-6	19	16	3	15.8	17.1	8930	1049.4	NL	--	NL	--
PCB-158	0-6	19	15	4	21.1	16	2580	562.9	NL	--	NL	--
PCB-159	0-6	19	13	6	31.6	3.6	1100	148.8	NL	--	NL	--
PCB-16	0-6	19	11	8	42.1	13	889	247.5	NL	--	NL	--
PCB-160	0-6	19	1	18	94.7	89000	89000	89000.0	NL	--	NL	--
PCB-161	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
PCB-162	0-6	19	9	10	52.6	5.9	790	110.6	NL	--	NL	--
PCB-163	0-6	19	19	0	0.0	13.5	62300	7602.2	NL	--	NL	--
PCB-164	0-6	19	9	10	52.6	15.8	1860	472.7	NL	--	NL	--
PCB-165	0-6	19	4	15	78.9	11	630	225.0	NL	--	NL	--
PCB-166	0-6	19	15	4	21.1	26.9	3900	782.1	NL	--	NL	--
PCB-167	0-6	19	17	2	10.5	6	3700	379.2	NL	--	NL	--
PCB-168	0-6	19	18	1	5.3	9.8	29100	4191.1	NL	--	NL	--
PCB-169	0-6	19	2	17	89.5	9.1	52.1	30.6	NL	--	NL	--
PCB-17	0-6	19	17	2	10.5	4.1	480	127.5	NL	--	NL	--
PCB-170	0-6	19	19	0	0.0	3.1	22700	2794.2	NL	--	NL	--
PCB-171	0-6	19	17	2	10.5	20	7340	953.0	NL	--	NL	--
PCB-172	0-6	19	16	3	15.8	15	6700	748.7	NL	--	NL	--
PCB-173	0-6	19	16	3	15.8	22.9	7340	1006.8	NL	--	NL	--
PCB-174	0-6	19	19	0	0.0	3.2	41500	4386.2	NL	--	NL	--
PCB-175	0-6	19	14	5	26.3	3.3	584	110.5	NL	--	NL	--
PCB-176	0-6	19	16	3	15.8	9.6	5900	587.7	NL	--	NL	--
PCB-177	0-6	19	18	1	5.3	14	16600	2127.3	NL	--	NL	--
PCB-178	0-6	19	16	3	15.8	19	6010	806.5	NL	--	NL	--
PCB-179	0-6	19	17	2	10.5	38	13700	1680.9	NL	--	NL	--

Table 3-1b
Summary of Area 1 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
PCB-18	0-6	19	17	2	10.5	8.4	2310	386.4	NL	--	NL	--
PCB-180	0-6	19	19	0	0.0	6.9	60300	6880.1	NL	--	NL	--
PCB-181	0-6	19	2	17	89.5	8.1	11.4	9.8	NL	--	NL	--
PCB-182	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
PCB-183	0-6	19	17	2	10.5	36.7	11000	1634.8	NL	--	NL	--
PCB-184	0-6	19	2	17	89.5	4.2	12.7	8.5	NL	--	NL	--
PCB-185	0-6	19	15	4	21.1	11	1600	295.3	NL	--	NL	--
PCB-186	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
PCB-187	0-6	19	18	1	5.3	4	15500	2321.6	NL	--	NL	--
PCB-188	0-6	19	3	16	84.2	5.8	143	56.1	NL	--	NL	--
PCB-189	0-6	19	14	5	26.3	3.4	970	133.4	NL	--	NL	--
PCB-19	0-6	19	14	5	26.3	3.8	130	43.8	NL	--	NL	--
PCB-190	0-6	19	16	3	15.8	12	6210	686.4	NL	--	NL	--
PCB-191	0-6	19	13	6	31.6	7.2	1200	168.2	NL	--	NL	--
PCB-192	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
PCB-193	0-6	19	19	0	0.0	6.9	60300	6850.9	NL	--	NL	--
PCB-194	0-6	19	17	2	10.5	41.7	13000	1761.9	NL	--	NL	--
PCB-195	0-6	19	16	3	15.8	20	5650	771.9	NL	--	NL	--
PCB-196	0-6	19	17	2	10.5	16	7160	862.0	NL	--	NL	--
PCB-197	0-6	19	13	6	31.6	3.5	190	41.0	NL	--	NL	--
PCB-198	0-6	19	17	2	10.5	48.8	15700	2011.3	NL	--	NL	--
PCB-199	0-6	19	17	2	10.5	48.8	15700	2015.3	NL	--	NL	--
PCB-2	0-6	19	13	6	31.6	8.9	89.8	48.6	NL	--	NL	--
PCB-20	0-6	19	19	0	0.0	4.3	4700	677.3	NL	--	NL	--
PCB-200	0-6	19	15	4	21.1	7.4	4020	409.3	NL	--	NL	--
PCB-201	0-6	19	16	3	15.8	7.2	2900	285.4	NL	--	NL	--
PCB-202	0-6	19	17	2	10.5	5.9	3740	380.5	NL	--	NL	--
PCB-203	0-6	19	17	2	10.5	23	8880	1117.8	NL	--	NL	--
PCB-204	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
PCB-205	0-6	19	10	9	47.4	14	850	141.6	NL	--	NL	--
PCB-206	0-6	19	17	2	10.5	8.8	4400	507.1	NL	--	NL	--
PCB-207	0-6	19	15	4	21.1	4.1	640	79.5	NL	--	NL	--
PCB-208	0-6	19	16	3	15.8	4.8	900	129.9	NL	--	NL	--
PCB-209	0-6	19	16	3	15.8	6.4	510	145.5	NL	--	NL	--
PCB-21	0-6	19	16	3	15.8	9.9	2100	351.4	NL	--	NL	--
PCB-22	0-6	19	17	2	10.5	5.9	1430	252.9	NL	--	NL	--
PCB-23	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
PCB-24	0-6	19	8	11	57.9	4.4	535	103.3	NL	--	NL	--
PCB-25	0-6	19	13	6	31.6	3.2	418	85.1	NL	--	NL	--
PCB-26	0-6	19	15	4	21.1	5.9	760	159.8	NL	--	NL	--
PCB-27	0-6	19	12	7	36.8	3.5	85.4	34.6	NL	--	NL	--
PCB-28	0-6	19	19	0	0.0	4.3	4670	674.3	NL	--	NL	--
PCB-29	0-6	19	14	5	26.3	5.9	760	167.6	NL	--	NL	--
PCB-3	0-6	19	15	4	21.1	3.5	812	157.6	NL	--	NL	--
PCB-30	0-6	19	17	2	10.5	8.4	2310	382.8	NL	--	NL	--
PCB-31	0-6	19	18	1	5.3	3.4	3200	570.1	NL	--	NL	--
PCB-32	0-6	19	16	3	15.8	3.4	360	108.7	NL	--	NL	--
PCB-33	0-6	19	16	3	15.8	9.9	2090	351.1	NL	--	NL	--
PCB-34	0-6	19	3	16	84.2	5.1	5.9	5.6	NL	--	NL	--
PCB-35	0-6	19	9	10	52.6	3.2	78	24.7	NL	--	NL	--
PCB-36	0-6	19	4	15	78.9	6.4	100	35.9	NL	--	NL	--
PCB-37	0-6	19	17	2	10.5	6.5	950	220.0	NL	--	NL	--
PCB-38	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
PCB-39	0-6	19	2	17	89.5	5.1	7.1	6.1	NL	--	NL	--
PCB-4	0-6	19	14	5	26.3	9	473	104.7	NL	--	NL	--
PCB-40	0-6	19	17	2	10.5	8.4	2360	391.7	NL	--	NL	--
PCB-41	0-6	19	16	3	15.8	8.4	2360	415.7	NL	--	NL	--
PCB-42	0-6	19	16	3	15.8	4	1600	225.8	NL	--	NL	--
PCB-43	0-6	19	8	11	57.9	5.9	48.9	21.9	NL	--	NL	--
PCB-44	0-6	19	19	0	0.0	2.5	15600	1589.4	NL	--	NL	--
PCB-45	0-6	19	14	5	26.3	7.5	4280	473.6	NL	--	NL	--
PCB-46	0-6	19	10	9	47.4	9	116	41.6	NL	--	NL	--
PCB-47	0-6	19	19	0	0.0	2.5	15600	1589.0	NL	--	NL	--
PCB-48	0-6	19	14	5	26.3	7.9	330	102.3	NL	--	NL	--
PCB-49	0-6	19	17	2	10.5	15	5600	775.9	NL	--	NL	--
PCB-5	0-6	19	3	16	84.2	6.2	40.6	17.9	NL	--	NL	--
PCB-50	0-6	19	17	2	10.5	5.3	6430	502.9	NL	--	NL	--
PCB-51	0-6	19	13	6	31.6	7.5	4280	508.9	NL	--	NL	--
PCB-52	0-6	19	19	0	0.0	6.7	14800	2141.7	NL	--	NL	--
PCB-53	0-6	19	15	4	21.1	5.3	6430	565.5	NL	--	NL	--
PCB-54	0-6	19	11	8	42.1	3.1	474	56.2	NL	--	NL	--
PCB-55	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--

Table 3-1b
Summary of Area 1 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
PCB-56	0-6	19	16	3	15.8	6.9	850	240.4	NL	--	NL	--
PCB-57	0-6	19	3	16	84.2	6.3	16.3	10.1	NL	--	NL	--
PCB-58	0-6	19	3	16	84.2	12	231	87.1	NL	--	NL	--
PCB-59	0-6	19	13	6	31.6	6	460	89.6	NL	--	NL	--
PCB-6	0-6	19	14	5	26.3	5.7	379	66.6	NL	--	NL	--
PCB-60	0-6	19	14	5	26.3	4.1	529	155.2	NL	--	NL	--
PCB-61	0-6	19	18	1	5.3	2.5	11000	1835.9	NL	--	NL	--
PCB-62	0-6	19	14	5	26.3	6	461	84.3	NL	--	NL	--
PCB-63	0-6	19	11	8	42.1	6.1	20000	1839.1	NL	--	NL	--
PCB-64	0-6	19	16	3	15.8	6.9	730	240.7	NL	--	NL	--
PCB-65	0-6	19	19	0	0.0	2.5	15600	1587.9	NL	--	NL	--
PCB-66	0-6	19	17	2	10.5	3.8	1800	528.5	NL	--	NL	--
PCB-67	0-6	19	8	11	57.9	6.3	49.4	24.1	NL	--	NL	--
PCB-68	0-6	19	5	14	73.7	5.9	11.8	8.0	NL	--	NL	--
PCB-69	0-6	19	17	2	10.5	15	5590	771.5	NL	--	NL	--
PCB-7	0-6	19	13	6	31.6	4.6	130	19.8	NL	--	NL	--
PCB-70	0-6	19	18	1	5.3	2.5	10800	1832.0	NL	--	NL	--
PCB-71	0-6	19	16	3	15.8	8.4	2360	415.7	NL	--	NL	--
PCB-72	0-6	19	7	12	63.2	5.7	49	16.3	NL	--	NL	--
PCB-73	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
PCB-74	0-6	19	18	1	5.3	2.5	10800	1832.0	NL	--	NL	--
PCB-75	0-6	19	14	5	26.3	6	461	84.3	NL	--	NL	--
PCB-76	0-6	19	18	1	5.3	2.5	10800	1832.0	NL	--	NL	--
PCB-77	0-6	19	15	4	21.1	3.3	280	84.3	NL	--	NL	--
PCB-78	0-6	19	2	17	89.5	5.9	77.8	41.9	NL	--	NL	--
PCB-79	0-6	19	5	14	73.7	6.8	58	25.5	NL	--	NL	--
PCB-8	0-6	19	15	4	21.1	17	1780	313.8	NL	--	NL	--
PCB-80	0-6	19	1	18	94.7	13	13	13.0	NL	--	NL	--
PCB-81	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
PCB-82	0-6	19	15	4	21.1	11	1590	346.9	NL	--	NL	--
PCB-83	0-6	19	19	0	0.0	5.7	13400	2043.4	NL	--	NL	--
PCB-84	0-6	19	17	2	10.5	2.8	2430	481.9	NL	--	NL	--
PCB-85	0-6	19	19	0	0.0	16	39000	5467.0	NL	--	NL	--
PCB-86	0-6	19	19	0	0.0	7.1	8600	1668.6	NL	--	NL	--
PCB-87	0-6	19	19	0	0.0	7.1	8570	1661.2	NL	--	NL	--
PCB-88	0-6	19	17	2	10.5	10	6600	674.9	NL	--	NL	--
PCB-89	0-6	19	4	15	78.9	4.6	55.4	29.4	NL	--	NL	--
PCB-9	0-6	19	11	8	42.1	8.8	152	31.5	NL	--	NL	--
PCB-90	0-6	19	19	0	0.0	12	38000	4802.2	NL	--	NL	--
PCB-91	0-6	19	16	3	15.8	14.3	6620	718.2	NL	--	NL	--
PCB-92	0-6	19	15	4	21.1	28	3790	763.9	NL	--	NL	--
PCB-93	0-6	19	7	12	63.2	40	410	133.7	NL	--	NL	--
PCB-94	0-6	19	7	12	63.2	7.7	100	31.9	NL	--	NL	--
PCB-95	0-6	19	17	2	10.5	7.4	14000	1605.1	NL	--	NL	--
PCB-96	0-6	19	13	6	31.6	4.8	2000	174.5	NL	--	NL	--
PCB-97	0-6	19	19	0	0.0	7.1	8570	1661.2	NL	--	NL	--
PCB-98	0-6	19	7	12	63.2	40.4	410	134.4	NL	--	NL	--
PCB-99	0-6	19	19	0	0.0	5.7	13400	2039.5	NL	--	NL	--
Total PCB Congeners	0-6	19	19	0	0.0	340.9	1470786.8	195723.4	60000	57.9	680000	10.5
TCL Pesticides (µg/kg)												
1,1,1-TRICHLORO-2,2-BIS (P-METHOXYPHENYL)-ETHANE	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
4,4'-DDD	0-6	19	0	19	100.0	--	--	--	4.9	0.0	28	0.0
4,4'-DDE	0-6	19	0	19	100.0	--	--	--	3.2	0.0	31	0.0
4,4'-DDT	0-6	19	0	19	100.0	--	--	--	4.2	0.0	63	0.0
ALDRIN	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
ALPHA-BHC	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
ALPHA-CHLORDANE	0-6	19	0	19	100.0	--	--	--	3.2	0.0	18	0.0
BETA-BHC	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
CAMPHECHLOR	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
DELTA-BHC	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
DIELDRIN	0-6	19	0	19	100.0	--	--	--	1.9	0.0	62	0.0
ENDOSULFAN I	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
ENDOSULFAN II	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
ENDOSULFAN SULFATE	0-6	19	1	18	94.7	9	9	9.0	NL	--	NL	--
ENDRIN	0-6	19	0	19	100.0	--	--	--	2.2	0.0	210	0.0
ENDRIN ALDEHYDE	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
ENDRIN KETONE	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
GAMMA-BHC (LINDANE)	0-6	19	0	19	100.0	--	--	--	2.4	0.0	5	0.0
GAMMA-CHLORDANE	0-6	19	1	18	94.7	3	3	3.0	3.2	0.0	18	0.0
HEPTACHLOR	0-6	19	0	19	100.0	--	--	--	NL	--	NL	--
HEPTACHLOR EPOXIDE	0-6	19	0	19	100.0	--	--	--	2.5	0.0	16	0.0

Table 3-1b
Summary of Area 1 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
TPH (mg/kg)												
DRO	0-6	70	64	6	8.6	9	470	63.4	NL	--	NL	--
	0-12	42	33	9	21.4	10	510	83.2	NL	--	NL	--
	12-36	26	19	7	26.9	9	190	53.5	NL	--	NL	--
	36-60	18	10	8	44.4	13	560	117.6	NL	--	NL	--
	60-84	13	9	4	30.8	8	620	150.1	NL	--	NL	--
ORO	84-108	6	3	3	50.0	39	240	110.0	NL	--	NL	--
	0-6	70	70	0	0.0	9	840	107.5	NL	--	NL	--
	0-12	42	40	2	4.8	6	750	119.3	NL	--	NL	--
	12-36	26	25	1	3.8	5	390	74.0	NL	--	NL	--
	36-60	18	17	1	5.6	8	900	108.5	NL	--	NL	--
	60-84	13	12	1	7.7	7	760	134.1	NL	--	NL	--
	84-108	6	3	3	50.0	52	240	160.7	NL	--	NL	--
Dioxin/Furan (pg/g)												
1,2,3,4,6,7,8-HpCDD	0-6	19	19	0	0.0	0.38	419	163.9	NL	--	NL	--
1,2,3,4,6,7,8-HpCDF	0-6	19	19	0	0.0	0.48	870	178.7	NL	--	NL	--
1,2,3,4,7,8,9-HpCDF	0-6	19	14	5	26.3	0.5	6.33	3.2	NL	--	NL	--
1,2,3,4,7,8-HxCDD	0-6	19	17	2	10.5	0.13	6.8	2.2	NL	--	NL	--
1,2,3,4,7,8-HxCDF	0-6	19	17	2	10.5	0.06	9.7	4.1	NL	--	NL	--
1,2,3,6,7,8-HxCDD	0-6	19	18	1	5.3	0.28	17.4	9.0	NL	--	NL	--
1,2,3,6,7,8-HxCDF	0-6	19	17	2	10.5	0.27	16	5.1	NL	--	NL	--
1,2,3,7,8,9-HxCDD	0-6	19	18	1	5.3	0.3	11	5.3	NL	--	NL	--
1,2,3,7,8,9-HxCDF	0-6	19	7	12	63.2	0.22	1	0.4	NL	--	NL	--
1,2,3,7,8-PeCDD	0-6	19	13	6	31.6	0.91	3.53	2.4	NL	--	NL	--
1,2,3,7,8-PeCDF	0-6	19	12	7	36.8	0.53	3.03	1.3	NL	--	NL	--
2,3,4,6,7,8-HxCDF	0-6	19	17	2	10.5	0.09	5.07	1.7	NL	--	NL	--
2,3,4,7,8-PeCDF	0-6	19	13	6	31.6	0.97	8.26	2.6	NL	--	NL	--
2,3,7,8-TCDD	0-6	19	15	4	21.1	0.17	2.03	1.1	NL	--	NL	--
2,3,7,8-TCDF	0-6	19	16	3	15.8	0.34	7.32	3.4	NL	--	NL	--
OCDD	0-6	19	19	0	0.0	4.24	4180	1506.4	NL	--	NL	--
OCDF	0-6	19	19	0	0.0	0.22	292	108.8	NL	--	NL	--
Total HpCDD	0-6	19	19	0	0.0	1.01	1240	471.1	NL	--	NL	--
Total HpCDF	0-6	19	19	0	0.0	0.87	1600	386.3	NL	--	NL	--
Total HxCDD	0-6	19	19	0	0.0	0.16	231	95.6	NL	--	NL	--
Total HxCDF	0-6	19	18	1	5.3	3	410	135.4	NL	--	NL	--
Total PeCDD	0-6	19	18	1	5.3	0.5	45	19.8	NL	--	NL	--
Total PeCDF	0-6	19	18	1	5.3	0.42	120	28.7	NL	--	NL	--
Total TCDD	0-6	19	17	2	10.5	0.63	27	12.8	NL	--	NL	--
Total TCDF	0-6	19	17	2	10.5	0.43	97.2	24.1	NL	--	NL	--

Notes:

"--" = Not Applicable

% = Percent

AOC = Area of Concern

bss = below sediment surface

DL = Detection Limit

DRO = Diesel Range Organic

mg/kg = Milligram per kilogram

ND = Non-Detect

NL = Not Listed

ORO = Oil Range Organic

PAH = Polycyclic Aromatic Hydrocarbon

PCB = Polychlorinated Biphenyls

pg/g = pico gram per gram

SQT = Sediment Quality Targets

TAL = Target Analyte List

TCL = Target Compound List

TPH = Total Petroleum Hydrocarbon

µg/kg = Microgram per kilogram

TOTAL PAHs 17 = Sum of detections plus 1/2 DL for NDs

TOTAL PAHs 34 = Sum of detections plus 1/2 DL for NDs

TOTAL PCBs = Sum of Detections

¹ Evaluation of Numerical SQTs-St Louis River AOC-Level I

² Evaluation of Numerical SQTs-St Louis River AOC-Level II

Table 3-1c
Summary of Area 2 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
PAHs (17 and 34 List) (µg/kg)												
1,2-BENZPHENANTHRACENE	0-6	35	32	3	8.6	24	2100	297.7	170	40.0	1300	2.9
	0-12	32	30	2	6.3	4.6	2000	277.0	170	40.6	1300	3.1
	12-36	26	20	6	23.1	4.7	960	205.6	170	30.8	1300	0.0
	36-60	14	7	7	50.0	5.6	1100	302.7	170	28.6	1300	0.0
	60-84	12	4	8	66.7	24	1200	409.0	170	16.7	1300	0.0
	84-108	7	0	7	100.0	--	--	--	170	0.0	1300	0.0
108-132	1	0	1	100.0	--	--	--	170	0.0	1300	0.0	
1-METHYLNAPHTHALENE	0-6	13	9	4	30.8	0.69	83	22.7	NL	--	NL	--
2-METHYLNAPHTHALENE	0-6	35	26	9	25.7	6	360	73.2	20	60.0	200	2.9
	0-12	32	16	16	50.0	19	270	121.2	20	46.9	200	9.4
	12-36	26	16	10	38.5	7.1	270	84.4	20	42.3	200	7.7
	36-60	14	4	10	71.4	6.4	270	83.6	20	21.4	200	7.1
	60-84	12	2	10	83.3	7.8	39	23.4	20	8.3	200	0.0
	84-108	7	0	7	100.0	--	--	--	20	0.0	200	0.0
108-132	1	0	1	100.0	--	--	--	20	0.0	200	0.0	
ACENAPHTHENE	0-6	35	21	14	40.0	4.2	91	21.7	6.7	54.3	89	2.9
	0-12	32	19	13	40.6	4.8	68	26.2	6.7	53.1	89	0.0
	12-36	26	12	14	53.8	8.1	110	36.3	6.7	46.2	89	3.8
	36-60	14	3	11	78.6	12	65	31.0	6.7	21.4	89	0.0
	60-84	12	1	11	91.7	25	25	25.0	6.7	8.3	89	0.0
	84-108	7	0	7	100.0	--	--	--	6.7	0.0	89	0.0
108-132	1	0	1	100.0	--	--	--	6.7	0.0	89	0.0	
ACENAPHTHYLENE	0-6	35	26	9	25.7	5.9	110	31.9	5.9	71.4	130	0.0
	0-12	32	18	14	43.8	4.8	110	34.8	5.9	53.1	130	0.0
	12-36	26	13	13	50.0	9.3	100	41.0	5.9	50.0	130	0.0
	36-60	14	3	11	78.6	31	51	40.7	5.9	21.4	130	0.0
	60-84	12	1	11	91.7	36	36	36.0	5.9	8.3	130	0.0
	84-108	7	0	7	100.0	--	--	--	5.9	0.0	130	0.0
108-132	1	0	1	100.0	--	--	--	5.9	0.0	130	0.0	
ANTHRACENE	0-6	35	31	4	11.4	7.6	1400	125.7	57	42.9	850	2.9
	0-12	32	25	7	21.9	3.9	1100	123.5	57	40.6	850	3.1
	12-36	26	15	11	42.3	10	230	82.8	57	34.6	850	0.0
	36-60	14	4	10	71.4	7.4	840	241.3	57	14.3	850	0.0
	60-84	12	3	9	75.0	5.6	1100	370.8	57	8.3	850	8.3
	84-108	7	0	7	100.0	--	--	--	57	0.0	850	0.0
108-132	1	0	1	100.0	--	--	--	57	0.0	850	0.0	
BENZO(A)ANTHRACENE	0-6	35	32	3	8.6	30	1400	284.7	110	71.4	1100	5.7
	0-12	32	30	2	6.3	4.4	2000	265.9	110	56.3	1100	3.1
	12-36	26	20	6	23.1	4.8	960	205.3	110	46.2	1100	0.0
	36-60	14	7	7	50.0	4.7	1200	325.8	110	28.6	1100	7.1
	60-84	12	4	8	66.7	24	1500	492.0	110	16.7	1100	8.3
	84-108	7	0	7	100.0	--	--	--	110	0.0	1100	0.0
108-132	1	0	1	100.0	--	--	--	110	0.0	1100	0.0	
BENZO(A)PYRENE	0-6	35	33	2	5.7	13	1100	242.9	150	48.6	1500	0.0
	0-12	32	32	0	0.0	7.2	2100	262.2	150	43.8	1500	3.1
	12-36	26	24	2	7.7	5.5	910	170.2	150	30.8	1500	0.0
	36-60	14	10	4	28.6	3.9	1100	217.6	150	28.6	1500	0.0
	60-84	12	6	6	50.0	5.5	1200	282.2	150	16.7	1500	0.0
	84-108	7	3	4	57.1	6.6	10	8.1	150	0.0	1500	0.0
108-132	1	0	1	100.0	--	--	--	150	0.0	1500	0.0	
BENZO(B)FLUORANTHENE	0-6	35	33	2	5.7	16	1700	248.2	NL	--	NL	--
	0-12	32	31	1	3.1	5	1600	235.3	NL	--	NL	--
	12-36	26	23	3	11.5	4.9	780	159.7	NL	--	NL	--
	36-60	14	9	5	35.7	4	940	208.2	NL	--	NL	--
	60-84	12	5	7	58.3	4.9	880	247.7	NL	--	NL	--
	84-108	7	1	6	85.7	5.6	5.6	5.6	NL	--	NL	--
108-132	1	0	1	100.0	--	--	--	NL	--	NL	--	
BENZO(E)PYRENE	0-6	13	12	1	7.7	15	300	86.1	NL	--	NL	--
BENZO(G,H,I)PERYLENE	0-6	35	35	0	0.0	19	940	193.4	NL	--	NL	--
	0-12	32	32	0	0.0	23	1500	211.0	NL	--	NL	--
	12-36	26	26	0	0.0	9.8	1100	161.6	NL	--	NL	--
	36-60	14	14	0	0.0	24	660	132.0	NL	--	NL	--
	60-84	12	12	0	0.0	18	750	121.3	NL	--	NL	--
	84-108	7	7	0	0.0	25	70	38.7	NL	--	NL	--
108-132	1	1	0	0.0	38	38	38.0	NL	--	NL	--	

Table 3-1c
Summary of Area 2 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
BENZO(K)FLUORANTHENE	0-6	35	33	2	5.7	13	1200	196.6	NL	--	NL	--
	0-12	32	31	1	3.1	3.1	1800	220.1	NL	--	NL	--
	12-36	26	22	4	15.4	3.8	730	137.2	NL	--	NL	--
	36-60	14	7	7	50.0	4.5	870	250.6	NL	--	NL	--
	60-84	12	4	8	66.7	13	1000	353.5	NL	--	NL	--
	84-108	7	0	7	100.0	--	--	--	NL	--	NL	--
108-132	1	0	1	100.0	--	--	--	NL	--	NL	--	
C1-CHRYSENES	0-6	13	3	10	76.9	14	180	101.3	NL	--	NL	--
C1-FLUORANTHENES/PYRENES	0-6	13	5	8	61.5	1.8	250	118.8	NL	--	NL	--
C1-FLUORENES	0-6	13	3	10	76.9	1.9	15	7.7	NL	--	NL	--
C1-NAPHTHALENES	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
C1-PHENANTHRENES/ ANTHRACENES	0-6	13	4	9	69.2	20	250	110.3	NL	--	NL	--
C2-CHRYSENES	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
C2-FLUORANTHENES/PYRENES	0-6	13	4	9	69.2	21	280	114.3	NL	--	NL	--
C2-FLUORENES	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
C2-NAPHTHALENES	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
C2-PHENANTHRENES/ ANTHRACENES	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
C3-CHRYSENES	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
C3-FLUORANTHENES/PYRENES	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
C3-FLUORENES	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
C3-NAPHTHALENES	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
C3-PHENANTHRENES/ ANTHRACENES	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
C4-CHRYSENES	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
C4-NAPHTHALENES	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
C4-PHENANTHRENES/ ANTHRACENES	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
DIBENZO(A,H)ANTHRACENE	0-6	35	31	4	11.4	4.2	370	58.3	33	48.6	140	8.6
	0-12	32	25	7	21.9	6.3	1100	130.7	33	43.8	140	15.6
	12-36	26	14	12	46.2	7.6	980	108.2	33	30.8	140	3.8
	36-60	14	5	9	64.3	6.5	460	143.9	33	21.4	140	14.3
	60-84	12	3	9	75.0	28	580	286.0	33	16.7	140	16.7
	84-108	7	0	7	100.0	--	--	--	33	0.0	140	0.0
108-132	1	0	1	100.0	--	--	--	33	0.0	140	0.0	
FLUORANTHENE	0-6	35	33	2	5.7	21	3400	546.2	420	28.6	2200	5.7
	0-12	32	30	2	6.3	4	4400	479.9	420	28.1	2200	3.1
	12-36	26	20	6	23.1	5.4	1500	344.9	420	23.1	2200	0.0
	36-60	14	8	6	42.9	6.6	2500	536.8	420	21.4	2200	7.1
	60-84	12	4	8	66.7	36	3100	993.3	420	16.7	2200	8.3
	84-108	7	0	7	100.0	--	--	--	420	0.0	2200	0.0
108-132	1	0	1	100.0	--	--	--	420	0.0	2200	0.0	
FLUORENE	0-6	35	25	10	28.6	6.6	260	51.1	77	8.6	540	0.0
	0-12	32	16	16	50.0	17	200	62.3	77	15.6	540	0.0
	12-36	26	14	12	46.2	6.4	140	51.5	77	11.5	540	0.0
	36-60	14	4	10	71.4	8.1	140	57.8	77	7.1	540	0.0
	60-84	12	2	10	83.3	4.3	55	29.7	77	0.0	540	0.0
	84-108	7	0	7	100.0	--	--	--	77	0.0	540	0.0
108-132	1	0	1	100.0	--	--	--	77	0.0	540	0.0	
INDENO(1,2,3-CD)PYRENE	0-6	35	35	0	0.0	10	1400	212.1	NL	--	NL	--
	0-12	32	32	0	0.0	11	1400	206.4	NL	--	NL	--
	12-36	26	26	0	0.0	7.3	1000	145.4	NL	--	NL	--
	36-60	14	14	0	0.0	9.2	700	133.8	NL	--	NL	--
	60-84	12	12	0	0.0	7	900	118.0	NL	--	NL	--
	84-108	7	7	0	0.0	9.6	23	13.9	NL	--	NL	--
108-132	1	1	0	0.0	15	15	15.0	NL	--	NL	--	
NAPHTHALENE	0-6	35	29	6	17.1	9.9	490	136.2	180	28.6	560	0.0
	0-12	32	22	10	31.3	5.8	630	157.5	180	25.0	560	3.1
	12-36	26	16	10	38.5	4.9	540	137.9	180	19.2	560	0.0
	36-60	14	4	10	71.4	15	410	203.0	180	14.3	560	0.0
	60-84	12	3	9	75.0	12	850	294.3	180	8.3	560	8.3
	84-108	7	0	7	100.0	--	--	--	180	0.0	560	0.0
108-132	1	0	1	100.0	--	--	--	180	0.0	560	0.0	
PERYLENE	0-6	13	11	2	15.4	14	370	118.5	NL	--	NL	--
PHENANTHRENE	0-6	35	32	3	8.6	10	2200	220.1	200	20.0	1200	2.9
	0-12	32	29	3	9.4	4.5	3800	291.9	200	28.1	1200	3.1
	12-36	26	19	7	26.9	5.5	890	182.1	200	15.4	1200	0.0
	36-60	14	6	8	57.1	6.9	1600	378.8	200	21.4	1200	7.1
	60-84	12	4	8	66.7	14	2200	630.5	200	16.7	1200	8.3
	84-108	7	0	7	100.0	--	--	--	200	0.0	1200	0.0
108-132	1	0	1	100.0	--	--	--	200	0.0	1200	0.0	

Table 3-1c
Summary of Area 2 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
PYRENE	0-6	35	34	1	2.9	4.3	2600	435.8	200	60.0	1500	8.6
	0-12	32	31	1	3.1	4.9	4400	443.6	200	53.1	1500	6.3
	12-36	26	24	2	7.7	4.8	1600	276.1	200	42.3	1500	3.8
	36-60	14	10	4	28.6	5.1	1600	315.7	200	28.6	1500	7.1
	60-84	12	8	4	33.3	4.1	2200	364.8	200	16.7	1500	8.3
	84-108	7	2	5	71.4	4.6	6	5.3	200	0.0	1500	0.0
	108-132	1	0	1	100.0	--	--	--	200	0.0	1500	0.0
Total PAHs 17	0-6	35	35	0	0.0	61.3	19000	3268.9	1600	68.6	23000	0.0
	0-12	32	32	0	0.0	96.2	29160	3343.3	1600	53.1	23000	3.1
	12-36	26	26	0	0.0	76.6	12742	2035.3	1600	38.5	23000	0.0
	36-60	14	14	0	0.0	66.2	14620	2017.8	1600	28.6	23000	0.0
	60-84	12	12	0	0.0	58.75	18340	2052.3	1600	16.7	23000	0.0
	84-108	7	7	0	0.0	69.1	145	96.4	1600	0.0	23000	0.0
	108-132	1	1	0	0.0	100.25	100.25	100.3	1600	0.0	23000	0.0
Total PAHs 34	0-6	13	13	0	0.0	101.69	16176	3200.6	1600	61.5	23000	0.0
TAL Metals (mg/kg)												
ALUMINUM	0-6	35	35	0	0.0	2980	11900	7641.7	NL	--	NL	--
	0-12	32	32	0	0.0	2870	20300	7553.4	NL	--	NL	--
	12-36	26	26	0	0.0	2730	11900	6905.4	NL	--	NL	--
	36-60	14	14	0	0.0	4030	17500	8111.4	NL	--	NL	--
	60-84	12	12	0	0.0	3170	8980	6111.7	NL	--	NL	--
	84-108	7	7	0	0.0	3370	8280	6675.7	NL	--	NL	--
	108-132	1	1	0	0.0	8160	8160	8160.0	NL	--	NL	--
ANTIMONY	0-6	35	0	35	100.0	--	--	--	NL	--	NL	--
	0-12	32	0	32	100.0	--	--	--	NL	--	NL	--
	12-36	26	0	26	100.0	--	--	--	NL	--	NL	--
	36-60	14	0	14	100.0	--	--	--	NL	--	NL	--
	60-84	12	0	12	100.0	--	--	--	NL	--	NL	--
	84-108	7	0	7	100.0	--	--	--	NL	--	NL	--
	108-132	1	0	1	100.0	--	--	--	NL	--	NL	--
ARSENIC	0-6	35	35	0	0.0	1.5	8.3	4.0	9.8	0.0	33	0.0
	0-12	32	32	0	0.0	1.5	11.5	4.2	9.8	3.1	33	0.0
	12-36	26	26	0	0.0	1.1	8.7	3.2	9.8	0.0	33	0.0
	36-60	14	14	0	0.0	1.3	5.6	2.9	9.8	0.0	33	0.0
	60-84	12	12	0	0.0	0.84	4.3	2.3	9.8	0.0	33	0.0
	84-108	7	7	0	0.0	1.7	6.2	2.6	9.8	0.0	33	0.0
	108-132	1	1	0	0.0	2.2	2.2	2.2	9.8	0.0	33	0.0
BARIUM	0-6	35	35	0	0.0	17.3	122	76.2	NL	--	NL	--
	0-12	32	32	0	0.0	19.6	2910	157.9	NL	--	NL	--
	12-36	26	26	0	0.0	12	120	63.9	NL	--	NL	--
	36-60	14	14	0	0.0	31.4	129	70.6	NL	--	NL	--
	60-84	12	12	0	0.0	18.7	82.4	54.5	NL	--	NL	--
	84-108	7	7	0	0.0	43	72.4	60.5	NL	--	NL	--
	108-132	1	1	0	0.0	73.7	73.7	73.7	NL	--	NL	--
BERYLLIUM	0-6	35	6	29	82.9	0.38	0.7	0.5	NL	--	NL	--
	0-12	32	9	23	71.9	0.23	2.7	0.6	NL	--	NL	--
	12-36	26	6	20	76.9	0.31	0.87	0.5	NL	--	NL	--
	36-60	14	4	10	71.4	0.37	0.69	0.5	NL	--	NL	--
	60-84	12	1	11	91.7	0.38	0.38	0.4	NL	--	NL	--
	84-108	7	0	7	100.0	--	--	--	NL	--	NL	--
	108-132	1	0	1	100.0	--	--	--	NL	--	NL	--
CADMIUM	0-6	35	18	17	48.6	0.27	1	0.6	0.99	2.9	5	0.0
	0-12	32	18	14	43.8	0.27	0.99	0.6	0.99	0.0	5	0.0
	12-36	26	7	19	73.1	0.28	0.87	0.5	0.99	0.0	5	0.0
	36-60	14	5	9	64.3	0.27	0.82	0.5	0.99	0.0	5	0.0
	60-84	12	4	8	66.7	0.25	0.57	0.4	0.99	0.0	5	0.0
	84-108	7	2	5	71.4	0.25	0.31	0.3	0.99	0.0	5	0.0
	108-132	1	0	1	100.0	--	--	--	0.99	0.0	5	0.0
CALCIUM	0-6	35	35	0	0.0	2090	10600	6528.0	NL	--	NL	--
	0-12	32	32	0	0.0	2690	24700	6710.9	NL	--	NL	--
	12-36	26	26	0	0.0	1500	14700	6943.8	NL	--	NL	--
	36-60	14	14	0	0.0	3060	16000	7332.9	NL	--	NL	--
	60-84	12	12	0	0.0	1790	29400	7640.0	NL	--	NL	--
	84-108	7	7	0	0.0	4700	22100	8408.6	NL	--	NL	--
	108-132	1	1	0	0.0	5560	5560	5560.0	NL	--	NL	--
CHROMIUM	0-6	35	35	0	0.0	7.7	30.9	20.2	43	0.0	110	0.0
	0-12	32	32	0	0.0	7.4	34.5	18.8	43	0.0	110	0.0
	12-36	26	26	0	0.0	6.7	30	18.9	43	0.0	110	0.0
	36-60	14	14	0	0.0	10.8	45.1	22.7	43	7.1	110	0.0
	60-84	12	12	0	0.0	9.6	25.4	17.1	43	0.0	110	0.0
	84-108	7	7	0	0.0	9.2	25.1	19.5	43	0.0	110	0.0
	108-132	1	1	0	0.0	24.1	24.1	24.1	43	0.0	110	0.0

Table 3-1c
Summary of Area 2 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
COBALT	0-6	35	33	2	5.7	4.3	14.4	9.1	NL	--	NL	--
	0-12	32	29	3	9.4	3.7	13.3	8.2	NL	--	NL	--
	12-36	26	23	3	11.5	4	13.1	8.2	NL	--	NL	--
	36-60	14	14	0	0.0	5.5	16.5	9.1	NL	--	NL	--
	60-84	12	12	0	0.0	4.6	10.4	7.6	NL	--	NL	--
	84-108	7	7	0	0.0	4.7	9.9	8.2	NL	--	NL	--
108-132	1	1	0	0.0	9.4	9.4	9.4	NL	--	NL	--	
COPPER	0-6	35	35	0	0.0	4.9	61.9	23.5	32	20.0	150	0.0
	0-12	32	32	0	0.0	4.4	68.7	22.3	32	12.5	150	0.0
	12-36	26	26	0	0.0	4.3	42.7	18.7	32	7.7	150	0.0
	36-60	14	14	0	0.0	7.6	47.3	18.5	32	7.1	150	0.0
	60-84	12	12	0	0.0	5.6	24.9	13.3	32	0.0	150	0.0
	84-108	7	7	0	0.0	9.8	17.5	14.0	32	0.0	150	0.0
108-132	1	1	0	0.0	16.1	16.1	16.1	32	0.0	150	0.0	
IRON	0-6	35	35	0	0.0	6250	28700	18507.1	NL	--	NL	--
	0-12	32	32	0	0.0	5580	31200	16159.7	NL	--	NL	--
	12-36	26	26	0	0.0	5810	28500	13955.4	NL	--	NL	--
	36-60	14	14	0	0.0	7510	31400	16162.1	NL	--	NL	--
	60-84	12	12	0	0.0	5930	23400	13328.3	NL	--	NL	--
	84-108	7	7	0	0.0	9610	14400	12301.4	NL	--	NL	--
108-132	1	1	0	0.0	15100	15100	15100.0	NL	--	NL	--	
LEAD	0-6	35	35	0	0.0	2.6	64.5	24.3	36	17.1	130	0.0
	0-12	32	32	0	0.0	2.3	184	33.0	36	34.4	130	6.3
	12-36	26	26	0	0.0	2.2	76.6	15.9	36	11.5	130	0.0
	36-60	14	14	0	0.0	2.6	61.2	13.5	36	7.1	130	0.0
	60-84	12	12	0	0.0	2	28.1	7.9	36	0.0	130	0.0
	84-108	7	7	0	0.0	3.1	4.9	4.0	36	0.0	130	0.0
108-132	1	1	0	0.0	4.5	4.5	4.5	36	0.0	130	0.0	
MAGNESIUM	0-6	35	35	0	0.0	1760	7490	4678.0	NL	--	NL	--
	0-12	32	32	0	0.0	1990	9170	4520.3	NL	--	NL	--
	12-36	26	26	0	0.0	1450	8900	4662.7	NL	--	NL	--
	36-60	14	14	0	0.0	2680	8860	5645.7	NL	--	NL	--
	60-84	12	12	0	0.0	1810	14600	5191.7	NL	--	NL	--
	84-108	7	7	0	0.0	4140	10400	5805.7	NL	--	NL	--
108-132	1	1	0	0.0	4670	4670	4670.0	NL	--	NL	--	
MANGANESE	0-6	35	35	0	0.0	107	1320	521.0	NL	--	NL	--
	0-12	32	32	0	0.0	109	997	369.1	NL	--	NL	--
	12-36	26	26	0	0.0	59.1	1040	304.9	NL	--	NL	--
	36-60	14	14	0	0.0	102	505	322.9	NL	--	NL	--
	60-84	12	12	0	0.0	93.9	443	282.7	NL	--	NL	--
	84-108	7	7	0	0.0	242	329	286.1	NL	--	NL	--
108-132	1	1	0	0.0	330	330	330.0	NL	--	NL	--	
MERCURY	0-6	35	26	9	25.7	0.052	0.49	0.2	0.18	40.0	1.1	0.0
	0-12	32	26	6	18.8	0.041	0.54	0.2	0.18	25.0	1.1	0.0
	12-36	26	22	4	15.4	0.053	1.1	0.2	0.18	26.9	1.1	0.0
	36-60	14	9	5	35.7	0.043	0.5	0.2	0.18	21.4	1.1	0.0
	60-84	12	6	6	50.0	0.046	0.94	0.2	0.18	16.7	1.1	0.0
	84-108	7	2	5	71.4	0.041	0.09	0.1	0.18	0.0	1.1	0.0
108-132	1	1	0	0.0	0.11	0.11	0.1	0.18	0.0	1.1	0.0	
NICKEL	0-6	35	35	0	0.0	7.5	29.5	18.5	23	25.7	49	0.0
	0-12	32	32	0	0.0	8.1	28.5	16.8	23	12.5	49	0.0
	12-36	26	26	0	0.0	7.7	26.9	16.3	23	11.5	49	0.0
	36-60	14	14	0	0.0	10.5	40.4	19.3	23	21.4	49	0.0
	60-84	12	12	0	0.0	8.5	20.7	15.4	23	0.0	49	0.0
	84-108	7	7	0	0.0	10.3	20.3	16.8	23	0.0	49	0.0
108-132	1	1	0	0.0	20.1	20.1	20.1	23	0.0	49	0.0	
POTASSIUM	0-6	35	32	3	8.6	254	1280	775.8	NL	--	NL	--
	0-12	32	27	5	15.6	236	1350	747.7	NL	--	NL	--
	12-36	26	22	4	15.4	233	1250	660.7	NL	--	NL	--
	36-60	14	14	0	0.0	275	1550	760.1	NL	--	NL	--
	60-84	12	11	1	8.3	317	858	617.2	NL	--	NL	--
	84-108	7	7	0	0.0	517	793	668.9	NL	--	NL	--
108-132	1	1	0	0.0	777	777	777.0	NL	--	NL	--	
SELENIUM	0-6	35	0	35	100.0	--	--	--	NL	--	NL	--
	0-12	32	0	32	100.0	--	--	--	NL	--	NL	--
	12-36	26	0	26	100.0	--	--	--	NL	--	NL	--
	36-60	14	1	13	92.9	2.6	2.6	2.6	NL	--	NL	--
	60-84	12	0	12	100.0	--	--	--	NL	--	NL	--
	84-108	7	1	6	85.7	5	5	5.0	NL	--	NL	--
108-132	1	0	1	100.0	--	--	--	NL	--	NL	--	

Table 3-1c
Summary of Area 2 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
SILVER	0-6	35	0	35	100.0	--	--	--	NL	--	NL	--
	0-12	32	0	32	100.0	--	--	--	NL	--	NL	--
	12-36	26	0	26	100.0	--	--	--	NL	--	NL	--
	36-60	14	0	14	100.0	--	--	--	NL	--	NL	--
	60-84	12	0	12	100.0	--	--	--	NL	--	NL	--
	84-108	7	0	7	100.0	--	--	--	NL	--	NL	--
SODIUM	108-132	1	0	1	100.0	--	--	--	NL	--	NL	--
	0-6	35	3	32	91.4	1040	1800	1526.7	NL	--	NL	--
	0-12	32	3	29	90.6	308	4930	2122.7	NL	--	NL	--
	12-36	26	2	24	92.3	694	13000	6847.0	NL	--	NL	--
	36-60	14	2	12	85.7	360	9900	5130.0	NL	--	NL	--
	60-84	12	1	11	91.7	8170	8170	8170.0	NL	--	NL	--
THALLIUM	84-108	7	1	6	85.7	8530	8530	8530.0	NL	--	NL	--
	108-132	1	0	1	100.0	--	--	--	NL	--	NL	--
	0-6	35	0	35	100.0	--	--	--	NL	--	NL	--
	0-12	32	0	32	100.0	--	--	--	NL	--	NL	--
	12-36	26	0	26	100.0	--	--	--	NL	--	NL	--
	36-60	14	0	14	100.0	--	--	--	NL	--	NL	--
VANADIUM	60-84	12	0	12	100.0	--	--	--	NL	--	NL	--
	84-108	7	0	7	100.0	--	--	--	NL	--	NL	--
	108-132	1	0	1	100.0	--	--	--	NL	--	NL	--
	0-6	35	35	0	0.0	14.4	45.6	27.9	NL	--	NL	--
	0-12	32	32	0	0.0	11.6	83	28.5	NL	--	NL	--
	12-36	26	26	0	0.0	12.8	40.1	26.8	NL	--	NL	--
ZINC	36-60	14	14	0	0.0	14.9	56.9	29.2	NL	--	NL	--
	60-84	12	12	0	0.0	13.2	34.9	24.0	NL	--	NL	--
	84-108	7	7	0	0.0	16.2	31.4	24.1	NL	--	NL	--
	108-132	1	1	0	0.0	26.3	26.3	26.3	NL	--	NL	--
	0-6	35	35	0	0.0	20.5	334	107.2	120	25.7	460	0.0
	0-12	32	32	0	0.0	19	194	94.7	120	37.5	460	0.0
PCB Aroclors (µg/kg)	12-36	26	26	0	0.0	16.3	293	76.4	120	19.2	460	0.0
	36-60	14	14	0	0.0	22.8	218	77.4	120	28.6	460	0.0
	60-84	12	12	0	0.0	19.4	137	55.5	120	8.3	460	0.0
	84-108	7	7	0	0.0	21.7	61.5	49.4	120	0.0	460	0.0
	108-132	1	1	0	0.0	62.1	62.1	62.1	120	0.0	460	0.0
	AROCLOR-1016	0-6	35	0	35	100.0	--	--	--	NL	--	NL
0-12		32	0	32	100.0	--	--	--	NL	--	NL	--
12-36		26	0	26	100.0	--	--	--	NL	--	NL	--
36-60		14	0	14	100.0	--	--	--	NL	--	NL	--
60-84		12	0	12	100.0	--	--	--	NL	--	NL	--
84-108		7	0	7	100.0	--	--	--	NL	--	NL	--
AROCLOR-1221	108-132	1	0	1	100.0	--	--	--	NL	--	NL	--
	0-6	35	0	35	100.0	--	--	--	NL	--	NL	--
	0-12	32	0	32	100.0	--	--	--	NL	--	NL	--
	12-36	26	0	26	100.0	--	--	--	NL	--	NL	--
	36-60	14	0	14	100.0	--	--	--	NL	--	NL	--
	60-84	12	0	12	100.0	--	--	--	NL	--	NL	--
AROCLOR-1232	84-108	7	0	7	100.0	--	--	--	NL	--	NL	--
	108-132	1	0	1	100.0	--	--	--	NL	--	NL	--
	0-6	35	0	35	100.0	--	--	--	NL	--	NL	--
	0-12	32	0	32	100.0	--	--	--	NL	--	NL	--
	12-36	26	0	26	100.0	--	--	--	NL	--	NL	--
	36-60	14	0	14	100.0	--	--	--	NL	--	NL	--
AROCLOR-1242	60-84	12	0	12	100.0	--	--	--	NL	--	NL	--
	84-108	7	0	7	100.0	--	--	--	NL	--	NL	--
	108-132	1	0	1	100.0	--	--	--	NL	--	NL	--
	0-6	35	0	35	100.0	--	--	--	NL	--	NL	--
	0-12	32	0	32	100.0	--	--	--	NL	--	NL	--
	12-36	26	0	26	100.0	--	--	--	NL	--	NL	--
AROCLOR-1248	36-60	14	0	14	100.0	--	--	--	NL	--	NL	--
	60-84	12	0	12	100.0	--	--	--	NL	--	NL	--
	84-108	7	0	7	100.0	--	--	--	NL	--	NL	--
	108-132	1	0	1	100.0	--	--	--	NL	--	NL	--
	0-6	35	0	35	100.0	--	--	--	NL	--	NL	--
	0-12	32	0	32	100.0	--	--	--	NL	--	NL	--

Table 3-1c
Summary of Area 2 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²	
AROCLOR-1254	0-6	35	2	33	94.3	26	150	88.0	NL	--	NL	--	
	0-12	32	0	32	100.0	--	--	--	NL	--	NL	--	
	12-36	26	0	26	100.0	--	--	--	NL	--	NL	--	
	36-60	14	1	13	92.9	43	43	43.0	NL	--	NL	--	
	60-84	12	0	12	100.0	--	--	--	NL	--	NL	--	
	84-108	7	1	6	85.7	55	55	55.0	NL	--	NL	--	
AROCLOR-1260	0-6	35	0	35	100.0	--	--	--	NL	--	NL	--	
	0-12	32	0	32	100.0	--	--	--	NL	--	NL	--	
	12-36	26	1	25	96.2	48	48	48.0	NL	--	NL	--	
	36-60	14	0	14	100.0	--	--	--	NL	--	NL	--	
	60-84	12	0	12	100.0	--	--	--	NL	--	NL	--	
	84-108	7	0	7	100.0	--	--	--	NL	--	NL	--	
AROCLOR-1262	0-6	35	0	35	100.0	--	--	--	NL	--	NL	--	
	0-12	32	0	32	100.0	--	--	--	NL	--	NL	--	
	12-36	26	0	26	100.0	--	--	--	NL	--	NL	--	
	36-60	14	0	14	100.0	--	--	--	NL	--	NL	--	
	60-84	12	0	12	100.0	--	--	--	NL	--	NL	--	
	84-108	7	0	7	100.0	--	--	--	NL	--	NL	--	
AROCLOR-1268	0-6	35	0	35	100.0	--	--	--	NL	--	NL	--	
	0-12	32	0	32	100.0	--	--	--	NL	--	NL	--	
	12-36	26	0	26	100.0	--	--	--	NL	--	NL	--	
	36-60	14	0	14	100.0	--	--	--	NL	--	NL	--	
	60-84	12	0	12	100.0	--	--	--	NL	--	NL	--	
	84-108	7	0	7	100.0	--	--	--	NL	--	NL	--	
Total PCBs	0-6	35	2	33	94.3	26	150	88.0	60	2.9	680	0.0	
	0-12	32	0	32	100.0	--	--	--	60	0.0	680	0.0	
	12-36	26	1	25	96.2	48	48	48.0	60	0.0	680	0.0	
	36-60	14	1	13	92.9	43	43	43.0	60	0.0	680	0.0	
	60-84	12	0	12	100.0	--	--	--	60	0.0	680	0.0	
	84-108	7	1	6	85.7	55	55	55.0	60	0.0	680	0.0	
PCB Congeners (pg/g)	0-6	1	0	1	100.0	--	--	--	60	0.0	680	0.0	
	PCB-1	0-6	13	11	2	15.4	3.3	160	56.0	NL	--	NL	--
	PCB-10	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
	PCB-100	0-6	13	2	11	84.6	11.2	32.5	21.9	NL	--	NL	--
	PCB-101	0-6	13	13	0	0.0	11.2	3530	1099.9	NL	--	NL	--
	PCB-102	0-6	13	2	11	84.6	11.2	32.5	21.9	NL	--	NL	--
	PCB-103	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
	PCB-104	0-6	13	2	11	84.6	6.2	6.4	6.3	NL	--	NL	--
	PCB-105	0-6	13	13	0	0.0	3.4	750	253.1	NL	--	NL	--
	PCB-106	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
	PCB-107	0-6	13	11	2	15.4	3.6	220	69.6	NL	--	NL	--
	PCB-108	0-6	13	11	2	15.4	2.8	91	33.6	NL	--	NL	--
	PCB-109	0-6	13	13	0	0.0	2.6	867	262.8	NL	--	NL	--
PCB-11	0-6	13	11	2	15.4	2.6	160	40.9	NL	--	NL	--	
PCB-110	0-6	13	13	0	0.0	43.9	13600	2573.5	NL	--	NL	--	
PCB-111	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--	
PCB-112	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--	
PCB-113	0-6	13	13	0	0.0	11.2	3530	1099.9	NL	--	NL	--	
PCB-114	0-6	13	8	5	38.5	9	38	18.1	NL	--	NL	--	
PCB-115	0-6	13	2	11	84.6	110	200	155.0	NL	--	NL	--	
PCB-116	0-6	13	13	0	0.0	43.9	13600	2573.5	NL	--	NL	--	
PCB-117	0-6	13	13	0	0.0	43.9	13600	2573.5	NL	--	NL	--	
PCB-118	0-6	13	13	0	0.0	8	2000	665.4	NL	--	NL	--	
PCB-119	0-6	13	13	0	0.0	3	867	262.8	NL	--	NL	--	
PCB-12	0-6	13	5	8	61.5	20	33	25.0	NL	--	NL	--	
PCB-120	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--	
PCB-121	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--	
PCB-122	0-6	13	8	5	38.5	5.5	24	11.4	NL	--	NL	--	
PCB-123	0-6	13	6	7	53.8	8.9	26	14.9	NL	--	NL	--	
PCB-124	0-6	13	11	2	15.4	2.8	91.2	33.6	NL	--	NL	--	
PCB-125	0-6	13	13	0	0.0	3	867	262.8	NL	--	NL	--	
PCB-126	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--	
PCB-127	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--	
PCB-128	0-6	13	12	1	7.7	11	760	270.8	NL	--	NL	--	
PCB-129	0-6	13	13	0	0.0	21	6700	2120.1	NL	--	NL	--	
PCB-13	0-6	13	5	8	61.5	19.7	32.7	24.9	NL	--	NL	--	
PCB-130	0-6	13	12	1	7.7	7.4	500	163.5	NL	--	NL	--	

Table 3-1c
Summary of Area 2 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
PCB-131	0-6	13	5	8	61.5	16	33	24.8	NL	--	NL	--
PCB-132	0-6	13	13	0	0.0	5.9	2300	698.7	NL	--	NL	--
PCB-133	0-6	13	12	1	7.7	4.6	230	70.6	NL	--	NL	--
PCB-134	0-6	13	12	1	7.7	5.1	350	109.0	NL	--	NL	--
PCB-135	0-6	13	13	0	0.0	7.4	3500	1022.5	NL	--	NL	--
PCB-136	0-6	13	12	1	7.7	14	980	298.3	NL	--	NL	--
PCB-137	0-6	13	12	1	7.7	7.9	500	173.9	NL	--	NL	--
PCB-138	0-6	13	13	0	0.0	20.6	6710	2117.6	NL	--	NL	--
PCB-139	0-6	13	10	3	23.1	8.8	130	48.8	NL	--	NL	--
PCB-14	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-140	0-6	13	10	3	23.1	8.8	133	48.9	NL	--	NL	--
PCB-141	0-6	13	12	1	7.7	18	1300	446.4	NL	--	NL	--
PCB-142	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-143	0-6	13	12	1	7.7	5.1	348	108.2	NL	--	NL	--
PCB-144	0-6	13	11	2	15.4	4.1	260	83.0	NL	--	NL	--
PCB-145	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-146	0-6	13	13	0	0.0	4.3	1800	530.9	NL	--	NL	--
PCB-147	0-6	13	13	0	0.0	17	6900	2030.5	NL	--	NL	--
PCB-148	0-6	13	4	9	69.2	9.2	60	32.3	NL	--	NL	--
PCB-149	0-6	13	13	0	0.0	17.4	6860	2029.0	NL	--	NL	--
PCB-15	0-6	13	11	2	15.4	4	270	139.6	NL	--	NL	--
PCB-150	0-6	13	6	7	53.8	3.7	25	12.5	NL	--	NL	--
PCB-151	0-6	13	13	0	0.0	7.4	3490	1009.9	NL	--	NL	--
PCB-152	0-6	13	1	12	92.3	5.1	5.1	5.1	NL	--	NL	--
PCB-153	0-6	13	13	0	0.0	19	6300	1966.8	NL	--	NL	--
PCB-154	0-6	13	9	4	30.8	3.9	270	82.9	NL	--	NL	--
PCB-155	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-156	0-6	13	12	1	7.7	6.8	420	155.2	NL	--	NL	--
PCB-157	0-6	13	12	1	7.7	6.8	419	154.4	NL	--	NL	--
PCB-158	0-6	13	11	2	15.4	6.5	500	171.8	NL	--	NL	--
PCB-159	0-6	13	11	2	15.4	3	73	25.0	NL	--	NL	--
PCB-16	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-160	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-161	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-162	0-6	13	7	6	46.2	4.4	12	8.0	NL	--	NL	--
PCB-163	0-6	13	13	0	0.0	20.6	6710	2117.6	NL	--	NL	--
PCB-164	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-165	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-166	0-6	13	12	1	7.7	10.8	763	271.1	NL	--	NL	--
PCB-167	0-6	13	11	2	15.4	5.7	150	61.2	NL	--	NL	--
PCB-168	0-6	13	13	0	0.0	18.8	6330	1978.3	NL	--	NL	--
PCB-169	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-17	0-6	13	11	2	15.4	4.6	99	39.2	NL	--	NL	--
PCB-170	0-6	13	13	0	0.0	5.9	1900	641.4	NL	--	NL	--
PCB-171	0-6	13	12	1	7.7	13	620	220.3	NL	--	NL	--
PCB-172	0-6	13	12	1	7.7	8	390	134.5	NL	--	NL	--
PCB-173	0-6	13	12	1	7.7	12.5	618	219.8	NL	--	NL	--
PCB-174	0-6	13	13	0	0.0	7.7	2800	875.6	NL	--	NL	--
PCB-175	0-6	13	9	4	30.8	4.3	67	27.5	NL	--	NL	--
PCB-176	0-6	13	11	2	15.4	14	290	106.3	NL	--	NL	--
PCB-177	0-6	13	13	0	0.0	4.5	1700	526.0	NL	--	NL	--
PCB-178	0-6	13	12	1	7.7	13	650	212.3	NL	--	NL	--
PCB-179	0-6	13	13	0	0.0	3	1100	354.7	NL	--	NL	--
PCB-18	0-6	13	11	2	15.4	11	210	82.0	NL	--	NL	--
PCB-180	0-6	13	13	0	0.0	14	4600	1565.3	NL	--	NL	--
PCB-181	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-182	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-183	0-6	13	13	0	0.0	3.2	1000	358.9	NL	--	NL	--
PCB-184	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-185	0-6	13	12	1	7.7	8	250	81.7	NL	--	NL	--
PCB-186	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-187	0-6	13	13	0	0.0	9.9	3400	1058.1	NL	--	NL	--
PCB-188	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-189	0-6	13	11	2	15.4	3.6	69	28.1	NL	--	NL	--
PCB-19	0-6	13	4	9	69.2	5	15.8	9.3	NL	--	NL	--
PCB-190	0-6	13	12	1	7.7	6.3	320	113.5	NL	--	NL	--
PCB-191	0-6	13	10	3	23.1	5.1	66	27.0	NL	--	NL	--
PCB-192	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-193	0-6	13	13	0	0.0	13.9	4620	1569.8	NL	--	NL	--
PCB-194	0-6	13	12	1	7.7	23	1000	406.8	NL	--	NL	--
PCB-195	0-6	13	12	1	7.7	11	470	177.8	NL	--	NL	--
PCB-196	0-6	13	12	1	7.7	13	480	190.8	NL	--	NL	--

Table 3-1c
Summary of Area 2 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
PCB-197	0-6	13	8	5	38.5	9.3	39	18.7	NL	--	NL	--
PCB-198	0-6	13	13	0	0.0	3.6	1200	404.4	NL	--	NL	--
PCB-199	0-6	13	13	0	0.0	3.6	1230	407.3	NL	--	NL	--
PCB-2	0-6	13	11	2	15.4	4.6	75	30.7	NL	--	NL	--
PCB-20	0-6	13	13	0	0.0	3.4	380	139.5	NL	--	NL	--
PCB-200	0-6	13	11	2	15.4	7.1	150	59.6	NL	--	NL	--
PCB-201	0-6	13	11	2	15.4	5.8	70	39.8	NL	--	NL	--
PCB-202	0-6	13	12	1	7.7	4.7	220	78.9	NL	--	NL	--
PCB-203	0-6	13	12	1	7.7	15	710	265.2	NL	--	NL	--
PCB-204	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-205	0-6	13	8	5	38.5	11	49	26.0	NL	--	NL	--
PCB-206	0-6	13	12	1	7.7	8.9	516	174.2	NL	--	NL	--
PCB-207	0-6	13	9	4	30.8	14	48	27.3	NL	--	NL	--
PCB-208	0-6	13	10	3	23.1	9.2	208	77.2	NL	--	NL	--
PCB-209	0-6	13	12	1	7.7	3.6	809	189.7	NL	--	NL	--
PCB-21	0-6	13	10	3	23.1	11	220	98.4	NL	--	NL	--
PCB-22	0-6	13	10	3	23.1	6.4	170	67.2	NL	--	NL	--
PCB-23	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-24	0-6	13	10	3	23.1	3.5	58	24.0	NL	--	NL	--
PCB-25	0-6	13	8	5	38.5	13	49	27.1	NL	--	NL	--
PCB-26	0-6	13	11	2	15.4	4.1	100	43.7	NL	--	NL	--
PCB-27	0-6	13	8	5	38.5	6	23	11.6	NL	--	NL	--
PCB-28	0-6	13	13	0	0.0	3.4	378	139.9	NL	--	NL	--
PCB-29	0-6	13	11	2	15.4	4.2	103	44.0	NL	--	NL	--
PCB-3	0-6	13	12	1	7.7	3.9	190	73.7	NL	--	NL	--
PCB-30	0-6	13	11	2	15.4	10.7	209	82.5	NL	--	NL	--
PCB-31	0-6	13	13	0	0.0	2.8	360	131.7	NL	--	NL	--
PCB-32	0-6	13	11	2	15.4	3.8	84	35.1	NL	--	NL	--
PCB-33	0-6	13	10	3	23.1	10.6	218	98.6	NL	--	NL	--
PCB-34	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-35	0-6	13	5	8	61.5	8	13	9.7	NL	--	NL	--
PCB-36	0-6	13	1	12	92.3	7.9	7.9	7.9	NL	--	NL	--
PCB-37	0-6	13	11	2	15.4	6.9	180	70.4	NL	--	NL	--
PCB-38	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-39	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-4	0-6	13	7	6	46.2	9.9	39	21.4	NL	--	NL	--
PCB-40	0-6	13	12	1	7.7	4.1	250	87.7	NL	--	NL	--
PCB-41	0-6	13	12	1	7.7	4.1	252	87.9	NL	--	NL	--
PCB-42	0-6	13	10	3	23.1	3.7	110	41.3	NL	--	NL	--
PCB-43	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-44	0-6	13	13	0	0.0	3.2	700	229.0	NL	--	NL	--
PCB-45	0-6	13	11	2	15.4	2.9	200	68.8	NL	--	NL	--
PCB-46	0-6	13	6	7	53.8	10	32	18.7	NL	--	NL	--
PCB-47	0-6	13	13	0	0.0	3.2	700	229.1	NL	--	NL	--
PCB-48	0-6	13	9	4	30.8	12	66	29.1	NL	--	NL	--
PCB-49	0-6	13	12	1	7.7	12	560	186.1	NL	--	NL	--
PCB-5	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-50	0-6	13	12	1	7.7	2.8	220	72.6	NL	--	NL	--
PCB-51	0-6	13	11	2	15.4	2.9	198	68.2	NL	--	NL	--
PCB-52	0-6	13	13	0	0.0	4	1300	419.6	NL	--	NL	--
PCB-53	0-6	13	12	1	7.7	2.8	222	73.0	NL	--	NL	--
PCB-54	0-6	13	7	6	46.2	4.5	30	11.8	NL	--	NL	--
PCB-55	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-56	0-6	13	12	1	7.7	4.3	240	80.6	NL	--	NL	--
PCB-57	0-6	13	1	12	92.3	14.8	14.8	14.8	NL	--	NL	--
PCB-58	0-6	13	3	10	76.9	3.5	6	5.0	NL	--	NL	--
PCB-59	0-6	13	8	5	38.5	11	54	24.1	NL	--	NL	--
PCB-6	0-6	13	8	5	38.5	10	36	19.5	NL	--	NL	--
PCB-60	0-6	13	9	4	30.8	4.2	110	38.5	NL	--	NL	--
PCB-61	0-6	13	12	1	7.7	4.3	780	332.4	NL	--	NL	--
PCB-62	0-6	13	8	5	38.5	10.8	54.5	24.2	NL	--	NL	--
PCB-63	0-6	13	2	11	84.6	4.3	9.1	6.7	NL	--	NL	--
PCB-64	0-6	13	10	3	23.1	6.9	200	79.2	NL	--	NL	--
PCB-65	0-6	13	13	0	0.0	3.2	700	229.1	NL	--	NL	--
PCB-66	0-6	13	11	2	15.4	20	430	190.9	NL	--	NL	--
PCB-67	0-6	13	2	11	84.6	5.7	7.3	6.5	NL	--	NL	--
PCB-68	0-6	13	2	11	84.6	4.6	7	5.8	NL	--	NL	--
PCB-69	0-6	13	12	1	7.7	12.2	556	186.2	NL	--	NL	--
PCB-7	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-70	0-6	13	12	1	7.7	4.3	783	333.2	NL	--	NL	--
PCB-71	0-6	13	12	1	7.7	4.1	252	87.9	NL	--	NL	--
PCB-72	0-6	13	2	11	84.6	6.2	9.5	7.9	NL	--	NL	--

Table 3-1c
Summary of Area 2 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
PCB-73	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-74	0-6	13	12	1	7.7	4.3	783	333.2	NL	--	NL	--
PCB-75	0-6	13	8	5	38.5	10.8	54.5	24.2	NL	--	NL	--
PCB-76	0-6	13	12	1	7.7	4.3	783	333.2	NL	--	NL	--
PCB-77	0-6	13	11	2	15.4	3.8	110	43.3	NL	--	NL	--
PCB-78	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-79	0-6	13	3	10	76.9	7.3	12	9.6	NL	--	NL	--
PCB-8	0-6	13	9	4	30.8	9.3	160	74.5	NL	--	NL	--
PCB-80	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-81	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-82	0-6	13	12	1	7.7	4.1	300	98.5	NL	--	NL	--
PCB-83	0-6	13	13	0	0.0	5	1800	512.1	NL	--	NL	--
PCB-84	0-6	13	11	2	15.4	8.6	260	127.3	NL	--	NL	--
PCB-85	0-6	13	13	0	0.0	44	14000	2599.8	NL	--	NL	--
PCB-86	0-6	13	13	0	0.0	3	870	263.0	NL	--	NL	--
PCB-87	0-6	13	13	0	0.0	3	867	262.8	NL	--	NL	--
PCB-88	0-6	13	12	1	7.7	6.6	270	100.0	NL	--	NL	--
PCB-89	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-9	0-6	13	3	10	76.9	7	8.4	7.9	NL	--	NL	--
PCB-90	0-6	13	13	0	0.0	11	3500	1104.6	NL	--	NL	--
PCB-91	0-6	13	12	1	7.7	6.6	270	98.2	NL	--	NL	--
PCB-92	0-6	13	12	1	7.7	16	920	286.7	NL	--	NL	--
PCB-93	0-6	13	2	11	84.6	11	33	22.0	NL	--	NL	--
PCB-94	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
PCB-95	0-6	13	13	0	0.0	4.4	850	262.9	NL	--	NL	--
PCB-96	0-6	13	6	7	53.8	5.3	14	8.3	NL	--	NL	--
PCB-97	0-6	13	13	0	0.0	3	867	262.8	NL	--	NL	--
PCB-98	0-6	13	2	11	84.6	11.2	32.5	21.9	NL	--	NL	--
PCB-99	0-6	13	13	0	0.0	5	1780	510.5	NL	--	NL	--
Total PCB Congeners	0-6	13	13	0	0.0	524.2	191081.7	53782.7	60000	38.5	680000	0.0
TCL Pesticides (µg/kg)												
1,1,1-TRICHLORO-2,2-BIS (P-METHOXYPHENYL)-ETHANE	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
4,4'-DDD	0-6	13	0	13	100.0	--	--	--	4.9	0.0	28	0.0
4,4'-DDE	0-6	13	0	13	100.0	--	--	--	3.2	0.0	31	0.0
4,4'-DDT	0-6	13	0	13	100.0	--	--	--	4.2	0.0	63	0.0
ALDRIN	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
ALPHA-BHC	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
ALPHA-CHLORDANE	0-6	13	0	13	100.0	--	--	--	3.2	0.0	18	0.0
BETA-BHC	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
CAMPHECHLOR	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
DELTA-BHC	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
DIELDRIN	0-6	13	0	13	100.0	--	--	--	1.9	0.0	62	0.0
ENDOSULFAN I	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
ENDOSULFAN II	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
ENDOSULFAN SULFATE	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
ENDRIN	0-6	13	0	13	100.0	--	--	--	2.2	0.0	210	0.0
ENDRIN ALDEHYDE	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
ENDRIN KETONE	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
GAMMA-BHC (LINDANE)	0-6	13	0	13	100.0	--	--	--	2.4	0.0	5	0.0
GAMMA-CHLORDANE	0-6	13	0	13	100.0	--	--	--	3.2	0.0	18	0.0
HEPTACHLOR	0-6	13	0	13	100.0	--	--	--	NL	--	NL	--
HEPTACHLOR EPOXIDE	0-6	13	0	13	100.0	--	--	--	2.5	0.0	16	0.0
TPH (mg/kg)												
DRO	0-6	35	33	2	5.7	14	630	84.9	NL	--	NL	--
	0-12	32	29	3	9.4	7	270	71.7	NL	--	NL	--
	12-36	26	19	7	26.9	9	430	109.9	NL	--	NL	--
	36-60	14	7	7	50.0	9	100	52.0	NL	--	NL	--
	60-84	12	6	6	50.0	13	280	69.2	NL	--	NL	--
	84-108	7	0	7	100.0	--	--	--	NL	--	NL	--
ORO	108-132	1	0	1	100.0	--	--	--	NL	--	NL	--
	0-6	35	35	0	0.0	17	940	132.6	NL	--	NL	--
	0-12	32	31	1	3.1	8	420	93.8	NL	--	NL	--
	12-36	26	23	3	11.5	5	800	179.7	NL	--	NL	--
	36-60	14	12	2	14.3	10	150	49.3	NL	--	NL	--
	60-84	12	11	1	8.3	5	300	50.5	NL	--	NL	--
84-108	7	5	2	28.6	5	22	13.0	NL	--	NL	--	
108-132	1	1	0	0.0	29	29	29.0	NL	--	NL	--	
Dioxin/Furan (pg/g)												
1,2,3,4,6,7,8-HpCDD	0-6	13	13	0	0.0	2.1	650	206.7	NL	--	NL	--
1,2,3,4,6,7,8-HpCDF	0-6	13	13	0	0.0	2.7	1600	384.7	NL	--	NL	--
1,2,3,4,7,8,9-HpCDF	0-6	13	12	1	7.7	0.22	10	3.4	NL	--	NL	--

Table 3-1c
Summary of Area 2 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
1,2,3,4,7,8-HxCDD	0-6	13	9	4	30.8	0.23	4.9	2.5	NL	--	NL	--
1,2,3,4,7,8-HxCDF	0-6	13	13	0	0.0	0.06	16	4.8	NL	--	NL	--
1,2,3,6,7,8-HxCDD	0-6	13	12	1	7.7	0.56	41	13.3	NL	--	NL	--
1,2,3,6,7,8-HxCDF	0-6	13	13	0	0.0	0.08	50	10.7	NL	--	NL	--
1,2,3,7,8,9-HxCDD	0-6	13	12	1	7.7	0.27	26	8.8	NL	--	NL	--
1,2,3,7,8,9-HxCDF	0-6	13	3	10	76.9	0.21	1.4	0.8	NL	--	NL	--
1,2,3,7,8-PeCDD	0-6	13	9	4	30.8	1.4	9.3	3.6	NL	--	NL	--
1,2,3,7,8-PeCDF	0-6	13	6	7	53.8	0.33	3.5	1.4	NL	--	NL	--
2,3,4,6,7,8-HxCDF	0-6	13	12	1	7.7	0.08	6	2.2	NL	--	NL	--
2,3,4,7,8-PeCDF	0-6	13	9	4	30.8	0.8	4.5	2.2	NL	--	NL	--
2,3,7,8-TCDD	0-6	13	11	2	15.4	0.27	3.2	1.3	NL	--	NL	--
2,3,7,8-TCDF	0-6	13	12	1	7.7	0.27	6.6	2.7	NL	--	NL	--
OCDD	0-6	13	13	0	0.0	22	3800	1687.1	NL	--	NL	--
OCDF	0-6	13	13	0	0.0	1.2	580	176.6	NL	--	NL	--
Total HpCDD	0-6	13	13	0	0.0	5.1	3100	626.5	NL	--	NL	--
Total HpCDF	0-6	13	13	0	0.0	5.1	3300	789.9	NL	--	NL	--
Total HxCDD	0-6	13	13	0	0.0	1.2	440	140.3	NL	--	NL	--
Total HxCDF	0-6	13	13	0	0.0	1.5	1200	253.0	NL	--	NL	--
Total PeCDD	0-6	13	13	0	0.0	0.42	94	27.8	NL	--	NL	--
Total PeCDF	0-6	13	12	1	7.7	0.4	99	29.8	NL	--	NL	--
Total TCDD	0-6	13	12	1	7.7	1.8	36	15.3	NL	--	NL	--
Total TCDF	0-6	13	12	1	7.7	0.49	43	16.0	NL	--	NL	--

Notes:

- "--" = Not Applicable
- % = Percent
- AOC = Area of Concern
- bss = below sediment surface
- DL = Detection Limit
- DRO = Diesel Range Organic
- mg/kg = Milligram per kilogram
- ND = Non-Detect
- NL = Not Listed
- ORO = Oil Range Organic
- PAH = Polycyclic Aromatic Hydrocarbon
- PCB = Polychlorinated Biphenyls
- pg/g = pico gram per gram
- SQT = Sediment Quality Targets
- TAL = Target Analyte List
- TCL = Target Compound List
- TPH = Total Petroleum Hydrocarbon
- µg/kg = Microgram per kilogram

TOTAL PAHs 17 = Sum of detections plus 1/2 DL for NDs
TOTAL PAHs 34 = Sum of detections plus 1/2 DL for NDs
TOTAL PCBs = Sum of Detections

¹ Evaluation of Numerical SQTs-St Louis River AOC-Level I

² Evaluation of Numerical SQTs-St Louis River AOC-Level II

Table 3-1d
Summary of Area 3 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
PAHs (17 and 34 List) (µg/kg)												
1,2-BENZPHENANTHRACENE	0-6	27	24	3	11.1	4	320	82.3	170	14.8	1300	0.0
	0-12	18	14	4	22.2	5.6	720	111.0	170	5.6	1300	0.0
	12-36	16	15	1	6.3	5.5	310	77.3	170	12.5	1300	0.0
	36-60	13	8	5	38.5	13	230	68.8	170	7.7	1300	0.0
	60-84	6	4	2	33.3	33	250	120.8	170	16.7	1300	0.0
84-108	3	2	1	33.3	64	78	71.0	170	0.0	1300	0.0	
1-METHYLNAPHTHALENE	0-6	6	3	3	50.0	8	15	12.7	NL	--	NL	--
2-METHYLNAPHTHALENE	0-6	27	16	11	40.7	4.9	160	33.0	20	25.9	200	0.0
	0-12	18	8	10	55.6	8	61	24.6	20	16.7	200	0.0
	12-36	16	7	9	56.3	6.6	52	33.2	20	37.5	200	0.0
	36-60	13	4	9	69.2	4.7	19	10.4	20	0.0	200	0.0
	60-84	6	1	5	83.3	32	32	32.0	20	16.7	200	0.0
84-108	3	1	2	66.7	46	46	46.0	20	33.3	200	0.0	
ACENAPHTHENE	0-6	27	6	21	77.8	5.4	18	12.4	6.7	18.5	89	0.0
	0-12	18	7	11	61.1	4.7	23	12.9	6.7	33.3	89	0.0
	12-36	16	5	11	68.8	6.1	15	9.3	6.7	18.8	89	0.0
	36-60	13	2	11	84.6	6.2	37	21.6	6.7	7.7	89	0.0
	60-84	6	1	5	83.3	8.2	8.2	8.2	6.7	16.7	89	0.0
84-108	3	1	2	66.7	8.8	8.8	8.8	6.7	33.3	89	0.0	
ACENAPHTHYLENE	0-6	27	12	15	55.6	1.7	38	15.9	5.9	37.0	130	0.0
	0-12	18	8	10	55.6	4	28	15.6	5.9	38.9	130	0.0
	12-36	16	4	12	75.0	11	30	18.8	5.9	25.0	130	0.0
	36-60	13	1	12	92.3	20	20	20.0	5.9	7.7	130	0.0
	60-84	6	2	4	66.7	4.9	9.2	7.1	5.9	16.7	130	0.0
84-108	3	1	2	66.7	10	10	10.0	5.9	33.3	130	0.0	
ANTHRACENE	0-6	27	16	11	40.7	3.3	92	31.1	57	11.1	850	0.0
	0-12	18	9	9	50.0	10	250	56.3	57	5.6	850	0.0
	12-36	16	8	8	50.0	4.6	100	38.8	57	12.5	850	0.0
	36-60	13	3	10	76.9	7.7	43	20.9	57	0.0	850	0.0
	60-84	6	3	3	50.0	7.5	110	51.5	57	16.7	850	0.0
84-108	3	1	2	66.7	26	26	26.0	57	0.0	850	0.0	
BENZO(A)ANTHRACENE	0-6	27	25	2	7.4	4	250	71.4	110	18.5	1100	0.0
	0-12	18	16	2	11.1	5	770	111.4	110	22.2	1100	0.0
	12-36	16	15	1	6.3	6.1	340	86.7	110	18.8	1100	0.0
	36-60	13	8	5	38.5	11	280	91.5	110	23.1	1100	0.0
	60-84	6	4	2	33.3	36	240	125.3	110	33.3	1100	0.0
84-108	3	2	1	33.3	99	130	114.5	110	33.3	1100	0.0	
BENZO(A)PYRENE	0-6	27	24	3	11.1	4.4	270	77.3	150	14.8	1500	0.0
	0-12	18	17	1	5.6	2.7	920	110.1	150	11.1	1500	0.0
	12-36	16	16	0	0.0	5.8	370	77.2	150	12.5	1500	0.0
	36-60	13	12	1	7.7	5.3	200	58.8	150	7.7	1500	0.0
	60-84	6	5	1	16.7	7.6	210	86.5	150	16.7	1500	0.0
84-108	3	3	0	0.0	5.7	85	50.9	150	0.0	1500	0.0	
BENZO(B)FLUORANTHENE	0-6	27	26	1	3.7	3.6	270	70.1	NL	--	NL	--
	0-12	18	18	0	0.0	5.2	760	91.6	NL	--	NL	--
	12-36	16	15	1	6.3	6.7	270	75.0	NL	--	NL	--
	36-60	13	10	3	23.1	8.1	260	76.7	NL	--	NL	--
	60-84	6	5	1	16.7	5.4	270	93.3	NL	--	NL	--
84-108	3	2	1	33.3	94	110	102.0	NL	--	NL	--	
BENZO(E)PYRENE	0-6	6	5	1	16.7	8	150	74.8	NL	--	NL	--
BENZO(G,H,I)PERYLENE	0-6	27	27	0	0.0	22	250	104.4	NL	--	NL	--
	0-12	18	18	0	0.0	21	840	123.8	NL	--	NL	--
	12-36	16	16	0	0.0	30	340	87.9	NL	--	NL	--
	36-60	13	13	0	0.0	21	220	73.7	NL	--	NL	--
	60-84	6	6	0	0.0	24	150	80.0	NL	--	NL	--
84-108	3	3	0	0.0	41	76	62.3	NL	--	NL	--	
BENZO(K)FLUORANTHENE	0-6	27	24	3	11.1	5.8	190	56.6	NL	--	NL	--
	0-12	18	14	4	22.2	3.9	780	100.8	NL	--	NL	--
	12-36	16	15	1	6.3	4.8	310	62.8	NL	--	NL	--
	36-60	13	10	3	23.1	5.1	120	38.6	NL	--	NL	--
	60-84	6	4	2	33.3	20	150	77.8	NL	--	NL	--
84-108	3	2	1	33.3	40	81	60.5	NL	--	NL	--	
C1-CHRYSENES	0-6	6	1	5	83.3	9	9	9.0	NL	--	NL	--
C1-FLUORANTHENES/PYRENES	0-6	6	1	5	83.3	13	13	13.0	NL	--	NL	--
C1-FLUORENES	0-6	6	1	5	83.3	3	3	3.0	NL	--	NL	--
C1-NAPHTHALENES	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
C1-PHENANTHRENES/ ANTHRACENES	0-6	6	1	5	83.3	5	5	5.0	NL	--	NL	--
C2-CHRYSENES	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
C2-FLUORANTHENES/PYRENES	0-6	6	1	5	83.3	6	6	6.0	NL	--	NL	--
C2-FLUORENES	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--

Table 3-1d
Summary of Area 3 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
C2-NAPHTHALENES	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
C2-PHENANTHRENES/ ANTHRACENES	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
C3-CHRYSENES	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
C3-FLUORANTHENES/PYRENES	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
C3-FLUORENES	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
C3-NAPHTHALENES	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
C3-PHENANTHRENES/ ANTHRACENES	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
C4-CHRYSENES	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
C4-NAPHTHALENES	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
C4-PHENANTHRENES/ ANTHRACENES	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
DIBENZO(A,H)ANTHRACENE	0-6	27	22	5	18.5	3	83	26.3	33	25.9	140	
	0-12	18	12	6	33.3	4.8	700	76.3	33	16.7	140	5.6
	12-36	16	9	7	43.8	4	200	36.2	33	12.5	140	6.3
	36-60	13	8	5	38.5	3.4	30	10.3	33	0.0	140	0.0
	60-84	6	3	3	50.0	5.3	18	9.8	33	0.0	140	0.0
84-108	3	2	1	33.3	6.3	23	14.7	33	0.0	140	0.0	
FLUORANTHENE	0-6	27	25	2	7.4	4.8	430	123.4	420	3.7	2200	0.0
	0-12	18	16	2	11.1	5.6	1300	178.2	420	5.6	2200	0.0
	12-36	16	15	1	6.3	9.1	540	127.9	420	6.3	2200	0.0
	36-60	13	9	4	30.8	5.3	270	105.5	420	0.0	2200	0.0
	60-84	6	4	2	33.3	52	600	278.0	420	16.7	2200	0.0
84-108	3	2	1	33.3	100	130	115.0	420	0.0	2200	0.0	
FLUORENE	0-6	27	13	14	51.9	4.8	55	23.7	77	0.0	540	0.0
	0-12	18	9	9	50.0	5	39	21.7	77	0.0	540	0.0
	12-36	16	7	9	56.3	4.5	35	18.2	77	0.0	540	0.0
	36-60	13	2	11	84.6	10	29	19.5	77	0.0	540	0.0
	60-84	6	1	5	83.3	22	22	22.0	77	0.0	540	0.0
84-108	3	1	2	66.7	27	27	27.0	77	0.0	540	0.0	
INDENO(1,2,3-CD)PYRENE	0-6	27	27	0	0.0	7.1	230	69.8	NL	--	NL	--
	0-12	18	18	0	0.0	7.5	930	100.2	NL	--	NL	--
	12-36	16	16	0	0.0	11	300	71.0	NL	--	NL	--
	36-60	13	13	0	0.0	10	170	45.6	NL	--	NL	--
	60-84	6	6	0	0.0	9.1	190	70.7	NL	--	NL	--
84-108	3	3	0	0.0	13	95	58.0	NL	--	NL	--	
NAPHTHALENE	0-6	27	20	7	25.9	6.8	370	55.9	180	7.4	560	0.0
	0-12	18	12	6	33.3	4.2	270	56.9	180	5.6	560	0.0
	12-36	16	10	6	37.5	5.3	77	37.0	180	0.0	560	0.0
	36-60	13	5	8	61.5	5.4	140	34.2	180	0.0	560	0.0
	60-84	6	2	4	66.7	30	91	60.5	180	0.0	560	0.0
84-108	3	1	2	66.7	46	46	46.0	180	0.0	560	0.0	
PERYLENE	0-6	6	5	1	16.7	13	170	83.0	NL	--	NL	--
PHENANTHRENE	0-6	27	25	2	7.4	5	240	61.1	200	3.7	1200	0.0
	0-12	18	15	3	16.7	4.8	420	91.8	200	11.1	1200	0.0
	12-36	16	14	2	12.5	6.4	220	79.1	200	6.3	1200	0.0
	36-60	13	8	5	38.5	12	180	73.3	200	0.0	1200	0.0
	60-84	6	4	2	33.3	18	300	147.0	200	16.7	1200	0.0
84-108	3	2	1	33.3	110	110	110.0	200	0.0	1200	0.0	
PYRENE	0-6	27	27	0	0.0	5.2	380	109.1	200	18.5	1500	0.0
	0-12	18	17	1	5.6	7.8	1200	169.0	200	22.2	1500	0.0
	12-36	16	16	0	0.0	6.9	570	128.6	200	18.8	1500	0.0
	36-60	13	12	1	7.7	5.3	330	100.5	200	15.4	1500	0.0
	60-84	6	4	2	33.3	59	410	217.3	200	33.3	1500	0.0
84-108	3	2	1	33.3	120	150	135.0	200	0.0	1500	0.0	
Total PAHs 17	0-6	27	27	0	0.0	83.85	3289	945.3	1600	18.5	23000	0.0
	0-12	18	18	0	0.0	80.75	10318	1274.3	1600	22.2	23000	0.0
	12-36	16	16	0	0.0	96.7	4145	965.6	1600	18.8	23000	0.0
	36-60	13	13	0	0.0	72.7	2479	648.6	1600	7.7	23000	0.0
	60-84	6	6	0	0.0	69.85	3052.5	1066.8	1600	16.7	23000	0.0
84-108	3	3	0	0.0	98.5	1231.8	752.1	1600	0.0	23000	0.0	
Total PAHs 34	0-6	6	6	0	0.0	266	3735	1867.9	1600	50.0	23000	0.0
TAL Metals (mg/kg)												
ALUMINUM	0-6	27	27	0	0.0	1970	12800	7067.0	NL	--	NL	--
	0-12	18	18	0	0.0	1860	12300	6612.2	NL	--	NL	--
	12-36	16	16	0	0.0	1940	10800	7552.5	NL	--	NL	--
	36-60	13	13	0	0.0	2150	10500	7183.1	NL	--	NL	--
	60-84	6	6	0	0.0	5360	10200	7448.3	NL	--	NL	--
84-108	3	3	0	0.0	9750	11900	10716.7	NL	--	NL	--	

Table 3-1d
Summary of Area 3 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
ANTIMONY	0-6	27	0	27	100.0	--	--	--	NL	--	NL	--
	0-12	18	0	18	100.0	--	--	--	NL	--	NL	--
	12-36	16	0	16	100.0	--	--	--	NL	--	NL	--
	36-60	13	0	13	100.0	--	--	--	NL	--	NL	--
	60-84	6	0	6	100.0	--	--	--	NL	--	NL	--
84-108	3	0	3	100.0	--	--	--	NL	--	NL	--	
ARSENIC	0-6	27	27	0	0.0	0.99	5.9	3.2	9.8	0.0	33	0.0
	0-12	18	18	0	0.0	0.72	5.7	2.9	9.8	0.0	33	0.0
	12-36	16	16	0	0.0	0.78	4.4	3.1	9.8	0.0	33	0.0
	36-60	13	13	0	0.0	1.2	5.2	3.0	9.8	0.0	33	0.0
	60-84	6	6	0	0.0	1.8	5.3	3.1	9.8	0.0	33	0.0
84-108	3	3	0	0.0	2.8	6	4.5	9.8	0.0	33	0.0	
BARIUM	0-6	27	21	6	22.2	13.1	119	67.9	NL	--	NL	--
	0-12	18	15	3	16.7	13.3	100	58.4	NL	--	NL	--
	12-36	16	15	1	6.3	13.4	91	60.0	NL	--	NL	--
	36-60	13	13	0	0.0	17.8	93.5	57.1	NL	--	NL	--
	60-84	6	6	0	0.0	37.2	83.9	55.2	NL	--	NL	--
84-108	3	3	0	0.0	74.1	110	86.4	NL	--	NL	--	
BERYLLIUM	0-6	27	19	8	29.6	0.061	0.47	0.3	NL	--	NL	--
	0-12	18	14	4	22.2	0.078	0.55	0.3	NL	--	NL	--
	12-36	16	13	3	18.8	0.24	0.44	0.3	NL	--	NL	--
	36-60	13	10	3	23.1	0.18	0.48	0.3	NL	--	NL	--
	60-84	6	5	1	16.7	0.21	0.47	0.3	NL	--	NL	--
84-108	3	3	0	0.0	0.26	0.52	0.4	NL	--	NL	--	
CADMIUM	0-6	27	11	16	59.3	0.04	1.1	0.3	0.99	3.7	5	0.0
	0-12	18	7	11	61.1	0.05	0.65	0.3	0.99	0.0	5	0.0
	12-36	16	6	10	62.5	0.1	0.49	0.3	0.99	0.0	5	0.0
	36-60	13	4	9	69.2	0.14	0.23	0.2	0.99	0.0	5	0.0
	60-84	6	3	3	50.0	0.13	0.57	0.3	0.99	0.0	5	0.0
84-108	3	1	2	66.7	0.86	0.86	0.9	0.99	0.0	5	0.0	
CALCIUM	0-6	27	27	0	0.0	1990	20500	9385.6	NL	--	NL	--
	0-12	18	18	0	0.0	1760	20100	9441.7	NL	--	NL	--
	12-36	16	16	0	0.0	2800	14300	9873.1	NL	--	NL	--
	36-60	13	13	0	0.0	2940	12900	8833.8	NL	--	NL	--
	60-84	6	6	0	0.0	6720	13200	10153.3	NL	--	NL	--
84-108	3	3	0	0.0	8720	14800	12573.3	NL	--	NL	--	
CHROMIUM	0-6	27	27	0	0.0	5.6	33.7	17.1	43	0.0	110	0.0
	0-12	18	18	0	0.0	3.9	31.8	16.4	43	0.0	110	0.0
	12-36	16	16	0	0.0	5.6	30.1	18.5	43	0.0	110	0.0
	36-60	13	13	0	0.0	5.8	25.5	18.1	43	0.0	110	0.0
	60-84	6	6	0	0.0	12	24.7	18.6	43	0.0	110	0.0
84-108	3	3	0	0.0	25	28.7	26.3	43	0.0	110	0.0	
COBALT	0-6	27	20	7	25.9	3.3	13.6	8.3	NL	--	NL	--
	0-12	18	16	2	11.1	2.3	13.5	7.6	NL	--	NL	--
	12-36	16	16	0	0.0	3.3	11.6	8.3	NL	--	NL	--
	36-60	13	13	0	0.0	3.5	10.1	7.8	NL	--	NL	--
	60-84	6	6	0	0.0	6	10.9	8.4	NL	--	NL	--
84-108	3	3	0	0.0	10.4	11.6	11.0	NL	--	NL	--	
COPPER	0-6	27	27	0	0.0	3.6	69.1	16.1	32	3.7	150	0.0
	0-12	18	17	1	5.6	3.5	32.9	14.9	32	5.6	150	0.0
	12-36	16	16	0	0.0	3.2	24.4	15.5	32	0.0	150	0.0
	36-60	13	13	0	0.0	4.8	24.2	15.1	32	0.0	150	0.0
	60-84	6	6	0	0.0	11.2	24.4	15.3	32	0.0	150	0.0
84-108	3	3	0	0.0	15.5	29.1	22.2	32	0.0	150	0.0	
IRON	0-6	27	27	0	0.0	4850	24600	14118.9	NL	--	NL	--
	0-12	18	18	0	0.0	3630	23500	13761.7	NL	--	NL	--
	12-36	16	16	0	0.0	5060	26300	15445.6	NL	--	NL	--
	36-60	13	13	0	0.0	4990	27200	14255.4	NL	--	NL	--
	60-84	6	6	0	0.0	10600	28800	15683.3	NL	--	NL	--
84-108	3	3	0	0.0	15700	27500	21833.3	NL	--	NL	--	
LEAD	0-6	27	27	0	0.0	2.3	128	19.8	36	18.5	130	0.0
	0-12	18	18	0	0.0	2.3	40.1	13.7	36	11.1	130	0.0
	12-36	16	16	0	0.0	3.9	47.7	16.7	36	6.3	130	0.0
	36-60	13	13	0	0.0	3.3	34.8	13.6	36	0.0	130	0.0
	60-84	6	6	0	0.0	3.8	43	16.3	36	16.7	130	0.0
84-108	3	3	0	0.0	4.9	48.9	29.5	36	33.3	130	0.0	
MAGNESIUM	0-6	27	27	0	0.0	1580	11200	6288.9	NL	--	NL	--
	0-12	18	18	0	0.0	1690	11000	6157.2	NL	--	NL	--
	12-36	16	16	0	0.0	1850	9660	6925.6	NL	--	NL	--
	36-60	13	13	0	0.0	1980	9780	6156.2	NL	--	NL	--
	60-84	6	6	0	0.0	5170	9610	6983.3	NL	--	NL	--
84-108	3	3	0	0.0	6980	11100	9360.0	NL	--	NL	--	

Table 3-1d
Summary of Area 3 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
MANGANESE	0-6	27	27	0	0.0	110	925	439.1	NL	--	NL	--
	0-12	18	18	0	0.0	80.4	823	383.7	NL	--	NL	--
	12-36	16	16	0	0.0	98.3	924	412.4	NL	--	NL	--
	36-60	13	13	0	0.0	82.1	842	365.1	NL	--	NL	--
	60-84	6	6	0	0.0	193	657	371.3	NL	--	NL	--
84-108	3	3	0	0.0	390	716	566.3	NL	--	NL	--	
MERCURY	0-6	27	19	8	29.6	0.062	0.65	0.2	0.18	14.8	1.1	0.0
	0-12	18	10	8	44.4	0.054	0.33	0.1	0.18	16.7	1.1	0.0
	12-36	16	13	3	18.8	0.05	0.24	0.1	0.18	12.5	1.1	0.0
	36-60	13	8	5	38.5	0.063	0.22	0.1	0.18	15.4	1.1	0.0
	60-84	6	3	3	50.0	0.086	0.23	0.2	0.18	16.7	1.1	0.0
84-108	3	2	1	33.3	0.18	0.43	0.3	0.18	33.3	1.1	0.0	
NICKEL	0-6	27	27	0	0.0	5.5	28.1	15.9	23	29.6	49	0.0
	0-12	18	17	1	5.6	5.6	26.8	15.5	23	16.7	49	0.0
	12-36	16	16	0	0.0	5.7	24.7	16.8	23	12.5	49	0.0
	36-60	13	13	0	0.0	6.5	21.8	15.8	23	0.0	49	0.0
	60-84	6	6	0	0.0	12.9	22.2	16.7	23	0.0	49	0.0
84-108	3	3	0	0.0	22.5	25.1	23.6	23	66.7	49	0.0	
POTASSIUM	0-6	27	18	9	33.3	277	1470	967.8	NL	--	NL	--
	0-12	18	12	6	33.3	211	1450	854.4	NL	--	NL	--
	12-36	16	14	2	12.5	310	1150	842.7	NL	--	NL	--
	36-60	13	9	4	30.8	352	1200	803.8	NL	--	NL	--
	60-84	6	5	1	16.7	542	1160	813.6	NL	--	NL	--
84-108	3	3	0	0.0	1020	1390	1200.0	NL	--	NL	--	
SELENIUM	0-6	27	15	12	44.4	0.5	1.5	0.9	NL	--	NL	--
	0-12	18	11	7	38.9	0.53	1.2	0.8	NL	--	NL	--
	12-36	16	12	4	25.0	0.52	1.4	0.9	NL	--	NL	--
	36-60	13	10	3	23.1	0.5	1.1	0.8	NL	--	NL	--
	60-84	6	5	1	16.7	0.59	0.77	0.7	NL	--	NL	--
84-108	3	2	1	33.3	0.71	0.84	0.8	NL	--	NL	--	
SILVER	0-6	27	0	27	100.0	--	--	--	NL	--	NL	--
	0-12	18	1	17	94.4	0.11	0.11	0.1	NL	--	NL	--
	12-36	16	1	15	93.8	0.14	0.14	0.1	NL	--	NL	--
	36-60	13	1	12	92.3	0.054	0.054	0.1	NL	--	NL	--
	60-84	6	0	6	100.0	--	--	--	NL	--	NL	--
84-108	3	0	3	100.0	--	--	--	NL	--	NL	--	
SODIUM	0-6	27	4	23	85.2	96	162	125.8	NL	--	NL	--
	0-12	18	2	16	88.9	67.5	179	123.3	NL	--	NL	--
	12-36	16	0	16	100.0	--	--	--	NL	--	NL	--
	36-60	13	0	13	100.0	--	--	--	NL	--	NL	--
	60-84	6	0	6	100.0	--	--	--	NL	--	NL	--
84-108	3	0	3	100.0	--	--	--	NL	--	NL	--	
THALLIUM	0-6	27	0	27	100.0	--	--	--	NL	--	NL	--
	0-12	18	0	18	100.0	--	--	--	NL	--	NL	--
	12-36	16	0	16	100.0	--	--	--	NL	--	NL	--
	36-60	13	0	13	100.0	--	--	--	NL	--	NL	--
	60-84	6	0	6	100.0	--	--	--	NL	--	NL	--
84-108	3	0	3	100.0	--	--	--	NL	--	NL	--	
VANADIUM	0-6	27	27	0	0.0	9.5	50.7	23.4	NL	--	NL	--
	0-12	18	18	0	0.0	7.6	48.5	22.9	NL	--	NL	--
	12-36	16	16	0	0.0	14.8	37.8	24.3	NL	--	NL	--
	36-60	13	13	0	0.0	12.1	28.2	23.4	NL	--	NL	--
	60-84	6	6	0	0.0	18.5	29.6	24.3	NL	--	NL	--
84-108	3	3	0	0.0	27.9	30.9	29.8	NL	--	NL	--	
ZINC	0-6	27	27	0	0.0	16	210	71.9	120	18.5	460	0.0
	0-12	18	18	0	0.0	12.9	167	61.0	120	11.1	460	0.0
	12-36	16	16	0	0.0	15.3	124	68.8	120	6.3	460	0.0
	36-60	13	13	0	0.0	19.1	141	65.2	120	15.4	460	0.0
	60-84	6	6	0	0.0	44.5	142	70.6	120	16.7	460	0.0
84-108	3	3	0	0.0	62.2	198	127.7	120	66.7	460	0.0	
PCB Aroclors (µg/kg)												
AROCLOR-1016	0-6	27	0	27	100.0	--	--	--	NL	--	NL	--
	0-12	18	0	18	100.0	--	--	--	NL	--	NL	--
	12-36	16	0	16	100.0	--	--	--	NL	--	NL	--
	36-60	13	0	13	100.0	--	--	--	NL	--	NL	--
	60-84	6	0	6	100.0	--	--	--	NL	--	NL	--
84-108	3	0	3	100.0	--	--	--	NL	--	NL	--	

Table 3-1d
Summary of Area 3 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
AROCLOR-1221	0-6	27	0	27	100.0	--	--	--	NL	--	NL	--
	0-12	18	0	18	100.0	--	--	--	NL	--	NL	--
	12-36	16	0	16	100.0	--	--	--	NL	--	NL	--
	36-60	13	0	13	100.0	--	--	--	NL	--	NL	--
	60-84	6	0	6	100.0	--	--	--	NL	--	NL	--
84-108	3	0	3	100.0	--	--	--	NL	--	NL	--	
AROCLOR-1232	0-6	27	0	27	100.0	--	--	--	NL	--	NL	--
	0-12	18	0	18	100.0	--	--	--	NL	--	NL	--
	12-36	16	0	16	100.0	--	--	--	NL	--	NL	--
	36-60	13	0	13	100.0	--	--	--	NL	--	NL	--
	60-84	6	0	6	100.0	--	--	--	NL	--	NL	--
84-108	3	0	3	100.0	--	--	--	NL	--	NL	--	
AROCLOR-1242	0-6	27	0	27	100.0	--	--	--	NL	--	NL	--
	0-12	18	0	18	100.0	--	--	--	NL	--	NL	--
	12-36	16	0	16	100.0	--	--	--	NL	--	NL	--
	36-60	13	0	13	100.0	--	--	--	NL	--	NL	--
	60-84	6	0	6	100.0	--	--	--	NL	--	NL	--
84-108	3	0	3	100.0	--	--	--	NL	--	NL	--	
AROCLOR-1248	0-6	27	0	27	100.0	--	--	--	NL	--	NL	--
	0-12	18	0	18	100.0	--	--	--	NL	--	NL	--
	12-36	16	0	16	100.0	--	--	--	NL	--	NL	--
	36-60	13	0	13	100.0	--	--	--	NL	--	NL	--
	60-84	6	0	6	100.0	--	--	--	NL	--	NL	--
84-108	3	0	3	100.0	--	--	--	NL	--	NL	--	
AROCLOR-1254	0-6	27	0	27	100.0	--	--	--	NL	--	NL	--
	0-12	18	2	16	88.9	28.00	44.00	36.0	NL	--	NL	--
	12-36	16	1	15	93.8	39	39	39.0	NL	--	NL	--
	36-60	13	2	11	84.6	52	54	53.0	NL	--	NL	--
	60-84	6	1	5	83.3	62	62	62.0	NL	--	NL	--
84-108	3	1	2	66.7	65	65	65.0	NL	--	NL	--	
AROCLOR-1260	0-6	27	6	21	77.8	2.7	6.9	4.1	NL	--	NL	--
	0-12	18	2	16	88.9	9.7	32	20.9	NL	--	NL	--
	12-36	16	0	16	100.0	--	--	--	NL	--	NL	--
	36-60	13	0	13	100.0	--	--	--	NL	--	NL	--
	60-84	6	0	6	100.0	--	--	--	NL	--	NL	--
84-108	3	0	3	100.0	--	--	--	NL	--	NL	--	
AROCLOR-1262	0-6	27	0	27	100.0	--	--	--	NL	--	NL	--
	0-12	18	0	18	100.0	--	--	--	NL	--	NL	--
	12-36	16	0	16	100.0	--	--	--	NL	--	NL	--
	36-60	13	0	13	100.0	--	--	--	NL	--	NL	--
	60-84	6	0	6	100.0	--	--	--	NL	--	NL	--
84-108	3	0	3	100.0	--	--	--	NL	--	NL	--	
AROCLOR-1268	0-6	27	0	27	100.0	--	--	--	NL	--	NL	--
	0-12	18	0	18	100.0	--	--	--	NL	--	NL	--
	12-36	16	0	16	100.0	--	--	--	NL	--	NL	--
	36-60	13	0	13	100.0	--	--	--	NL	--	NL	--
	60-84	6	0	6	100.0	--	--	--	NL	--	NL	--
84-108	3	0	3	100.0	--	--	--	NL	--	NL	--	
Total PCBs	0-6	27	6	21	77.8	2.7	6.9	4.1	60	0.0	680	0.0
	0-12	18	3	15	83.3	9.7	60	37.9	60	0.0	680	0.0
	12-36	16	1	15	93.8	39	39	39.0	60	0.0	680	0.0
	36-60	13	2	11	84.6	52	54	53.0	60	0.0	680	0.0
	60-84	6	1	5	83.3	62	62	62.0	60	16.7	680	0.0
84-108	3	1	2	66.7	65	65	65.0	60	33.3	680	0.0	
PCB Congeners (pg/g)												
PCB-1	0-6	6	5	1	16.7	8.7	110	54.9	NL	--	NL	--
PCB-10	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-100	0-6	6	4	2	33.3	17.3	170	81.9	NL	--	NL	--
PCB-101	0-6	6	6	0	0.0	23.1	3690	1551.2	NL	--	NL	--
PCB-102	0-6	6	4	2	33.3	17.3	170	81.9	NL	--	NL	--
PCB-103	0-6	6	4	2	33.3	12	74.1	38.9	NL	--	NL	--
PCB-104	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-105	0-6	6	6	0	0.0	7.2	1540	569.0	NL	--	NL	--
PCB-106	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-107	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-108	0-6	6	4	2	33.3	10	430	229.5	NL	--	NL	--
PCB-109	0-6	6	5	1	16.7	12.5	3380	1421.3	NL	--	NL	--
PCB-11	0-6	6	5	1	16.7	2.4	70	41.7	NL	--	NL	--
PCB-110	0-6	6	6	0	0.0	31.30	4770.00	2017.4	NL	--	NL	--
PCB-111	0-6	6	4	2	33.3	11	83.9	40.7	NL	--	NL	--
PCB-112	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-113	0-6	6	6	0	0.0	23.1	3690	1551.2	NL	--	NL	--

Table 3-1d
Summary of Area 3 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
PCB-114	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-115	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-116	0-6	6	6	0	0.0	31.30	4770.00	2017.4	NL	--	NL	--
PCB-117	0-6	6	6	0	0.0	31.30	4770.00	2017.4	NL	--	NL	--
PCB-118	0-6	6	4	2	33.3	5.8	37	18.8	NL	--	NL	--
PCB-119	0-6	6	5	1	16.7	12.5	3380	1421.3	NL	--	NL	--
PCB-12	0-6	6	4	2	33.3	5.9	69.1	36.2	NL	--	NL	--
PCB-120	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-121	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-122	0-6	6	4	2	33.3	12.00	73.70	41.2	NL	--	NL	--
PCB-123	0-6	6	6	0	0.0	21.00	4400.00	1614.8	NL	--	NL	--
PCB-124	0-6	6	4	2	33.3	10.3	434	230.9	NL	--	NL	--
PCB-125	0-6	6	5	1	16.7	12.5	3380	1421.3	NL	--	NL	--
PCB-126	0-6	6	1	5	83.3	5.5	5.5	5.5	NL	--	NL	--
PCB-127	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-128	0-6	6	6	0	0.0	4.90	1080.00	421.2	NL	--	NL	--
PCB-129	0-6	6	6	0	0.0	39	5400	2163.2	NL	--	NL	--
PCB-13	0-6	6	4	2	33.3	5.4	69.1	36.1	NL	--	NL	--
PCB-130	0-6	6	6	0	0.0	2.8	600	229.2	NL	--	NL	--
PCB-131	0-6	6	4	2	33.3	7.4	89	50.1	NL	--	NL	--
PCB-132	0-6	6	6	0	0.0	12	2790	1074.3	NL	--	NL	--
PCB-133	0-6	6	4	2	33.3	28.00	154.00	82.8	NL	--	NL	--
PCB-134	0-6	6	5	1	16.7	7.1	423	196.6	NL	--	NL	--
PCB-135	0-6	6	6	0	0.0	15	3500	1250.3	NL	--	NL	--
PCB-136	0-6	6	6	0	0.0	4.4	1100	404.7	NL	--	NL	--
PCB-137	0-6	6	5	1	16.7	6.7	240	118.1	NL	--	NL	--
PCB-138	0-6	6	6	0	0.0	39	5440	2166.2	NL	--	NL	--
PCB-139	0-6	6	4	2	33.3	17	130	72.3	NL	--	NL	--
PCB-14	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-140	0-6	6	4	2	33.3	17.2	135	73.9	NL	--	NL	--
PCB-141	0-6	6	6	0	0.0	6.9	1730	653.2	NL	--	NL	--
PCB-142	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-143	0-6	6	5	1	16.7	7.1	423	195.9	NL	--	NL	--
PCB-144	0-6	6	4	2	33.3	38	380	204.5	NL	--	NL	--
PCB-145	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-146	0-6	6	6	0	0.0	8.5	1600	584.6	NL	--	NL	--
PCB-147	0-6	6	6	0	0.0	32	4960	1822.8	NL	--	NL	--
PCB-148	0-6	6	4	2	33.3	6.70	23.00	11.7	NL	--	NL	--
PCB-149	0-6	6	6	0	0.0	32.2	4960	1834.9	NL	--	NL	--
PCB-15	0-6	6	4	2	33.3	66	387	248.3	NL	--	NL	--
PCB-150	0-6	6	3	3	50.0	4.20	8.60	6.6	NL	--	NL	--
PCB-151	0-6	6	6	0	0.0	14.8	3530	1253.6	NL	--	NL	--
PCB-152	0-6	6	2	4	66.7	6	6.6	6.3	NL	--	NL	--
PCB-153	0-6	6	6	0	0.0	35	4980	1867.3	NL	--	NL	--
PCB-154	0-6	6	4	2	33.3	27	150	73.3	NL	--	NL	--
PCB-155	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-156	0-6	6	6	0	0.0	3.5	769	299.3	NL	--	NL	--
PCB-157	0-6	6	6	0	0.0	3.5	769	298.8	NL	--	NL	--
PCB-158	0-6	6	6	0	0.0	3.2	660	262.7	NL	--	NL	--
PCB-159	0-6	6	2	4	66.7	12.00	85.00	48.5	NL	--	NL	--
PCB-16	0-6	6	5	1	16.7	14	134	73.6	NL	--	NL	--
PCB-160	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-161	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-162	0-6	6	3	3	50.0	3.7	26.9	18.5	NL	--	NL	--
PCB-163	0-6	6	6	0	0.0	39	5440	2166.2	NL	--	NL	--
PCB-164	0-6	6	5	1	16.7	9.30	681.00	310.5	NL	--	NL	--
PCB-165	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-166	0-6	6	6	0	0.0	4.9	1080	424.3	NL	--	NL	--
PCB-167	0-6	6	4	2	33.3	31	250	146.0	NL	--	NL	--
PCB-168	0-6	6	6	0	0.0	34.90	4980.00	1860.6	NL	--	NL	--
PCB-169	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-17	0-6	6	5	1	16.7	12	124	68.1	NL	--	NL	--
PCB-170	0-6	6	6	0	0.0	9.90	2500.00	908.3	NL	--	NL	--
PCB-171	0-6	6	6	0	0.0	3.1	900	306.5	NL	--	NL	--
PCB-172	0-6	6	3	3	50.0	64	520	321.3	NL	--	NL	--
PCB-173	0-6	6	6	0	0.0	3.1	900	306.4	NL	--	NL	--
PCB-174	0-6	6	6	0	0.0	13	3430	1209.3	NL	--	NL	--
PCB-175	0-6	6	4	2	33.3	13	96	50.8	NL	--	NL	--
PCB-176	0-6	6	4	2	33.3	42	370	187.3	NL	--	NL	--
PCB-177	0-6	6	6	0	0.0	7.6	1950	661.8	NL	--	NL	--
PCB-178	0-6	6	5	1	16.7	3.2	640	262.2	NL	--	NL	--
PCB-179	0-6	6	6	0	0.0	5.9	1360	459.2	NL	--	NL	--

Table 3-1d
Summary of Area 3 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
PCB-18	0-6	6	6	0	0.0	4.2	260	116.7	NL	--	NL	--
PCB-180	0-6	6	6	0	0.0	25	3900	1450.2	NL	--	NL	--
PCB-181	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-182	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-183	0-6	6	6	0	0.0	6.10	1600.00	537.9	NL	--	NL	--
PCB-184	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-185	0-6	6	4	2	33.3	62	440	212.8	NL	--	NL	--
PCB-186	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-187	0-6	6	6	0	0.0	17	3700	1307.7	NL	--	NL	--
PCB-188	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-189	0-6	6	4	2	33.3	12	90.8	47.5	NL	--	NL	--
PCB-19	0-6	6	4	2	33.3	4.30	26.00	17.3	NL	--	NL	--
PCB-190	0-6	6	4	2	33.3	58	393	211.3	NL	--	NL	--
PCB-191	0-6	6	4	2	33.3	11	80	43.1	NL	--	NL	--
PCB-192	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-193	0-6	6	6	0	0.0	24.5	3900	1448.3	NL	--	NL	--
PCB-194	0-6	6	6	0	0.0	6.90	1300.00	486.3	NL	--	NL	--
PCB-195	0-6	6	5	1	16.7	2.8	620	257.6	NL	--	NL	--
PCB-196	0-6	6	5	1	16.7	3.1	740	317.8	NL	--	NL	--
PCB-197	0-6	6	3	3	50.0	7.5	50	31.2	NL	--	NL	--
PCB-198	0-6	6	6	0	0.0	6.5	1450	544.8	NL	--	NL	--
PCB-199	0-6	6	6	0	0.0	6.5	1450	545.0	NL	--	NL	--
PCB-2	0-6	6	5	1	16.7	7.7	71.9	34.3	NL	--	NL	--
PCB-20	0-6	6	6	0	0.0	11	630	268.5	NL	--	NL	--
PCB-200	0-6	6	3	3	50.0	27	206	90.0	NL	--	NL	--
PCB-201	0-6	6	4	2	33.3	22	160	87.8	NL	--	NL	--
PCB-202	0-6	6	4	2	33.3	35	240	140.5	NL	--	NL	--
PCB-203	0-6	6	6	0	0.0	4.2	910	344.9	NL	--	NL	--
PCB-204	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-205	0-6	6	3	3	50.0	13	59.8	40.7	NL	--	NL	--
PCB-206	0-6	6	6	0	0.0	3.30	635.00	215.5	NL	--	NL	--
PCB-207	0-6	6	4	2	33.3	8.4	79.6	41.3	NL	--	NL	--
PCB-208	0-6	6	4	2	33.3	19	231	106.8	NL	--	NL	--
PCB-209	0-6	6	5	1	16.7	9	900	318.0	NL	--	NL	--
PCB-21	0-6	6	6	0	0.0	4.5	244	108.4	NL	--	NL	--
PCB-22	0-6	6	6	0	0.0	3.2	188	82.0	NL	--	NL	--
PCB-23	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-24	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-25	0-6	6	4	2	33.3	11.00	79.00	50.4	NL	--	NL	--
PCB-26	0-6	6	5	1	16.7	6.30	140.00	79.3	NL	--	NL	--
PCB-27	0-6	6	4	2	33.3	5.1	31.5	20.2	NL	--	NL	--
PCB-28	0-6	6	6	0	0.0	10.9	628	268.0	NL	--	NL	--
PCB-29	0-6	6	5	1	16.7	6.3	141	80.4	NL	--	NL	--
PCB-3	0-6	6	5	1	16.7	21	219	92.6	NL	--	NL	--
PCB-30	0-6	6	6	0	0.0	4.2	260	118.5	NL	--	NL	--
PCB-31	0-6	6	6	0	0.0	7.8	490	211.5	NL	--	NL	--
PCB-32	0-6	6	5	1	16.7	7.1	120	61.0	NL	--	NL	--
PCB-33	0-6	6	6	0	0.0	4.5	244	107.5	NL	--	NL	--
PCB-34	0-6	6	2	4	66.7	5	9.2	7.1	NL	--	NL	--
PCB-35	0-6	6	4	2	33.3	3.3	32.4	17.1	NL	--	NL	--
PCB-36	0-6	6	2	4	66.7	6.7	21	13.9	NL	--	NL	--
PCB-37	0-6	6	6	0	0.0	3.2	263	106.6	NL	--	NL	--
PCB-38	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-39	0-6	6	1	5	83.3	9.6	9.6	9.6	NL	--	NL	--
PCB-4	0-6	6	4	2	33.3	7.60	43.00	28.7	NL	--	NL	--
PCB-40	0-6	6	6	0	0.0	2.8	430	184.0	NL	--	NL	--
PCB-41	0-6	6	6	0	0.0	2.8	432	184.4	NL	--	NL	--
PCB-42	0-6	6	4	2	33.3	28	230	139.5	NL	--	NL	--
PCB-43	0-6	6	3	3	50.0	13	19	15.7	NL	--	NL	--
PCB-44	0-6	6	6	0	0.0	2.4	1000	435.1	NL	--	NL	--
PCB-45	0-6	6	4	2	33.3	26	137	88.6	NL	--	NL	--
PCB-46	0-6	6	4	2	33.3	6.4	46.9	29.4	NL	--	NL	--
PCB-47	0-6	6	6	0	0.0	2.4	1010	436.3	NL	--	NL	--
PCB-48	0-6	6	4	2	33.3	15	105	64.4	NL	--	NL	--
PCB-49	0-6	6	6	0	0.0	4.9	800	324.3	NL	--	NL	--
PCB-5	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-50	0-6	6	4	2	33.3	25	140	91.5	NL	--	NL	--
PCB-51	0-6	6	4	2	33.3	25.70	137.00	88.6	NL	--	NL	--
PCB-52	0-6	6	6	0	0.0	11	2230	891.5	NL	--	NL	--
PCB-53	0-6	6	4	2	33.3	25	137	90.9	NL	--	NL	--
PCB-54	0-6	6	1	5	83.3	4.7	4.7	4.7	NL	--	NL	--
PCB-55	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--

Table 3-1d
Summary of Area 3 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
PCB-56	0-6	6	6	0	0.0	3.3	407	174.6	NL	--	NL	--
PCB-57	0-6	6	1	5	83.3	18.00	18.00	18.0	NL	--	NL	--
PCB-58	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-59	0-6	6	4	2	33.3	12	90	54.5	NL	--	NL	--
PCB-6	0-6	6	4	2	33.3	6.10	38.00	26.0	NL	--	NL	--
PCB-60	0-6	6	5	1	16.7	6.3	140	73.9	NL	--	NL	--
PCB-61	0-6	6	6	0	0.0	12	2450	899.5	NL	--	NL	--
PCB-62	0-6	6	4	2	33.3	11.5	89.8	54.3	NL	--	NL	--
PCB-63	0-6	6	4	2	33.3	4.9	35	21.2	NL	--	NL	--
PCB-64	0-6	6	5	1	16.7	10	391	202.6	NL	--	NL	--
PCB-65	0-6	6	6	0	0.0	2.4	1010	436.3	NL	--	NL	--
PCB-66	0-6	6	6	0	0.0	7	1100	447.3	NL	--	NL	--
PCB-67	0-6	6	4	2	33.3	4.6	43.9	22.5	NL	--	NL	--
PCB-68	0-6	6	2	4	66.7	15.5	16	15.8	NL	--	NL	--
PCB-69	0-6	6	6	0	0.0	4.9	796	322.8	NL	--	NL	--
PCB-7	0-6	6	2	4	66.7	6	9.8	7.9	NL	--	NL	--
PCB-70	0-6	6	6	0	0.0	11.8	2450	898.1	NL	--	NL	--
PCB-71	0-6	6	6	0	0.0	2.8	432	184.4	NL	--	NL	--
PCB-72	0-6	6	4	2	33.3	4.4	40	22.1	NL	--	NL	--
PCB-73	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-74	0-6	6	6	0	0.0	11.80	2450.00	898.1	NL	--	NL	--
PCB-75	0-6	6	4	2	33.3	11.5	89.8	54.3	NL	--	NL	--
PCB-76	0-6	6	6	0	0.0	11.8	2450	898.1	NL	--	NL	--
PCB-77	0-6	6	4	2	33.3	25	160	93.5	NL	--	NL	--
PCB-78	0-6	6	3	3	50.0	4.3	21	14.3	NL	--	NL	--
PCB-79	0-6	6	1	5	83.3	4.8	4.8	4.8	NL	--	NL	--
PCB-8	0-6	6	5	1	16.7	22	180	92.6	NL	--	NL	--
PCB-80	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-81	0-6	6	2	4	66.7	12.00	17.00	14.5	NL	--	NL	--
PCB-82	0-6	6	6	0	0.0	2.4	591	217.4	NL	--	NL	--
PCB-83	0-6	6	6	0	0.0	12	2940	1108.5	NL	--	NL	--
PCB-84	0-6	6	6	0	0.0	3	1370	420.2	NL	--	NL	--
PCB-85	0-6	6	6	0	0.0	31	4770	2018.5	NL	--	NL	--
PCB-86	0-6	6	5	1	16.7	12	3380	1427.6	NL	--	NL	--
PCB-87	0-6	6	5	1	16.7	12.5	3380	1421.3	NL	--	NL	--
PCB-88	0-6	6	5	1	16.7	11	710	274.0	NL	--	NL	--
PCB-89	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
PCB-9	0-6	6	3	3	50.0	7.40	15.80	12.7	NL	--	NL	--
PCB-90	0-6	6	6	0	0.0	23	3690	1542.2	NL	--	NL	--
PCB-91	0-6	6	5	1	16.7	11.1	710	272.9	NL	--	NL	--
PCB-92	0-6	6	6	0	0.0	4.8	1200	471.1	NL	--	NL	--
PCB-93	0-6	6	4	2	33.3	17	170	81.8	NL	--	NL	--
PCB-94	0-6	6	4	2	33.3	4.2	18	9.7	NL	--	NL	--
PCB-95	0-6	6	6	0	0.0	8.9	2400	865.7	NL	--	NL	--
PCB-96	0-6	6	3	3	50.0	7.1	25.6	17.5	NL	--	NL	--
PCB-97	0-6	6	5	1	16.7	12.5	3380	1421.3	NL	--	NL	--
PCB-98	0-6	6	4	2	33.3	17.3	170	81.9	NL	--	NL	--
PCB-99	0-6	6	6	0	0.0	12.3	2940	1108.7	NL	--	NL	--
Total PCB Congeners	0-6	6	6	0	0.0	977.4	181189.5	72985.4	60000	33.3	680000	0.0
TCL Pesticides (µg/kg)												
1,1,1-TRICHLORO-2,2-BIS (P-METHOXYPHENYL)-ETHANE	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
4,4'-DDD	0-6	6	0	6	100.0	--	--	--	4.9	0.0	28	0.0
4,4'-DDE	0-6	6	0	6	100.0	--	--	--	3.2	0.0	31	0.0
4,4'-DDT	0-6	6	0	6	100.0	--	--	--	4.2	0.0	63	0.0
ALDRIN	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
ALPHA-BHC	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
ALPHA-CHLORDANE	0-6	6	0	6	100.0	--	--	--	3.2	0.0	18	0.0
BETA-BHC	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
CAMPHECHLOR	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
DELTA-BHC	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
DIELDRIN	0-6	6	0	6	100.0	--	--	--	1.9	0.0	62	0.0
ENDOSULFAN I	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
ENDOSULFAN II	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
ENDOSULFAN SULFATE	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
ENDRIN	0-6	6	0	6	100.0	--	--	--	2.2	0.0	210	0.0
ENDRIN ALDEHYDE	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
ENDRIN KETONE	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
GAMMA-BHC (LINDANE)	0-6	6	0	6	100.0	--	--	--	2.4	0.0	5	0.0
GAMMA-CHLORDANE	0-6	6	0	6	100.0	--	--	--	3.2	0.0	18	0.0
HEPTACHLOR	0-6	6	0	6	100.0	--	--	--	NL	--	NL	--
HEPTACHLOR EPOXIDE	0-6	6	0	6	100.0	--	--	--	2.5	0.0	16	0.0

Table 3-1d
Summary of Area 3 Sediment Sample Results
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Analyte	Depth (inches bss)	No. of Results	No. of Detects	No. of Non-Detects	% Non-Detects	Minimum Detection	Maximum Detection	Average Detection	Level I SQT ¹	% Above Level I ¹	Level II SQT ²	% Above Level II ²
TPH (mg/kg)												
DRO	0-6	27	18	9	33.3	11	84	38.1	NL	--	NL	--
	0-12	18	12	6	33.3	6	95	30.8	NL	--	NL	--
	12-36	16	8	8	50.0	15	100	42.3	NL	--	NL	--
	36-60	13	6	7	53.8	14	97	54.7	NL	--	NL	--
	60-84	6	4	2	33.3	19	110	51.8	NL	--	NL	--
84-108	3	2	1	33.3	50	170	110.0	NL	--	NL	--	
ORO	0-6	27	27	0	0.0	7	140	54.7	NL	--	NL	--
	0-12	18	18	0	0.0	6	130	44.7	NL	--	NL	--
	12-36	16	16	0	0.0	5	130	45.1	NL	--	NL	--
	36-60	13	13	0	0.0	7	150	48.5	NL	--	NL	--
	60-84	6	6	0	0.0	8	180	53.0	NL	--	NL	--
84-108	3	3	0	0.0	10	220	98.3	NL	--	NL	--	
Dioxin/Furan (pg/g)												
1,2,3,4,6,7,8-HpCDD	0-6	6	6	0	0.0	2.69	543	130.1	NL	--	NL	--
1,2,3,4,6,7,8-HpCDF	0-6	6	6	0	0.0	3.89	519	166.1	NL	--	NL	--
1,2,3,4,7,8,9-HpCDF	0-6	6	4	2	33.3	0.79	6.75	2.8	NL	--	NL	--
1,2,3,4,7,8-HxCDD	0-6	6	4	2	33.3	0.44	3.99	1.7	NL	--	NL	--
1,2,3,4,7,8-HxCDF	0-6	6	5	1	16.7	0.09	8.38	3.3	NL	--	NL	--
1,2,3,6,7,8-HxCDD	0-6	6	5	1	16.7	0.17	24.7	8.4	NL	--	NL	--
1,2,3,6,7,8-HxCDF	0-6	6	5	1	16.7	0.14	10.7	4.7	NL	--	NL	--
1,2,3,7,8,9-HxCDD	0-6	6	5	1	16.7	0.11	10.6	3.7	NL	--	NL	--
1,2,3,7,8,9-HxCDF	0-6	6	2	4	66.7	0.26	0.28	0.3	NL	--	NL	--
1,2,3,7,8-PeCDD	0-6	6	4	2	33.3	0.56	3.21	1.9	NL	--	NL	--
1,2,3,7,8-PeCDF	0-6	6	3	3	50.0	0.43	1.32	1.0	NL	--	NL	--
2,3,4,6,7,8-HxCDF	0-6	6	4	2	33.3	0.5	2.5	1.3	NL	--	NL	--
2,3,4,7,8-PeCDF	0-6	6	4	2	33.3	0.48	2.23	1.3	NL	--	NL	--
2,3,7,8-TCDD	0-6	6	4	2	33.3	0.37	2.78	1.6	NL	--	NL	--
2,3,7,8-TCDF	0-6	6	6	0	0.0	0.05	7.3	2.9	NL	--	NL	--
OCDD	0-6	6	6	0	0.0	22	4240	1065.1	NL	--	NL	--
OCDF	0-6	6	6	0	0.0	1.42	315	85.3	NL	--	NL	--
Total HpCDD	0-6	6	6	0	0.0	7.04	1200	297.4	NL	--	NL	--
Total HpCDF	0-6	6	6	0	0.0	8.09	1080	348.5	NL	--	NL	--
Total HxCDD	0-6	6	6	0	0.0	1.67	227	70.9	NL	--	NL	--
Total HxCDF	0-6	6	6	0	0.0	2.58	287	113.7	NL	--	NL	--
Total PeCDD	0-6	6	5	1	16.7	8.18	37.2	20.9	NL	--	NL	--
Total PeCDF	0-6	6	5	1	16.7	0.7	49.1	22.9	NL	--	NL	--
Total TCDD	0-6	6	6	0	0.0	0.1	29.1	14.5	NL	--	NL	--
Total TCDF	0-6	6	6	0	0.0	0.09	39.2	15.0	NL	--	NL	--

Notes:
"--" = Not Applicable
% = Percent
AOC = Area of Concern
bss = below sediment surface
DL = Detection Limit
DRO = Diesel Range Organic
mg/kg = Milligram per kilogram
ND = Non-Detect
NL = Not Listed
ORO = Oil Range Organic
PAH = Polycyclic Aromatic Hydrocarbon
PCB = Polychlorinated Biphenyls
pg/g = pico gram per gram
SQT = Sediment Quality Targets
TAL = Target Analyte List
TCL = Target Compound List
TPH = Total Petroleum Hydrocarbon
µg/kg = Microgram per kilogram

TOTAL PAHs 17 = Sum of detections plus 1/2 DL for NDs
TOTAL PAHs 34 = Sum of detections plus 1/2 DL for NDs
TOTAL PCBs = Sum of Detections

¹ Evaluation of Numerical SQTs-St Louis River AOC-Level I

² Evaluation of Numerical SQTs-St Louis River AOC-Level II

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical			Location ID	SLB10-1-20	SLB10-1-20	SLB10-1-21	SLB10-1-21	SLB10-1-21	SLB10-1-22	SLB10-1-22
	Level I ¹	Level II ²	Field Sample ID	SLB10-1-20-06	SLB10-1-20-10	SLB10-1-21-06	SLB10-1-21-06DP	SLB10-1-21-14	SLB10-1-22-06	SLB10-1-22-06DP
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	0- 6	0- 10	0- 6	0- 6	0- 14	0- 6	0- 6
			Unit							
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	11	16	72	70	27	74 J	1100
1-METHYLNAPHTHALENE	NL	NL	µg/kg	5 U	NA	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	5 U	24	47 U	46 U	15	9.7	450 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	5 U	7 U	47 U	46 U	5 U	5 U	450 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	5 U	7 U	47 U	46 U	5 U	5 U	8.9
<i>ANTHRACENE</i>	57	850	µg/kg	5 U	7 U	47 U	46 U	7.3	16 J	700
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	8	12	56	54	48 J	58 J	1300
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	12	10	77	82	35	55 J	1000
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	11	11	70	78	47	110 J	1700
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	7	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	53	20	110	110	55 J	67 J	650
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	8	8.2	67	68	22	30	510 J
C1-CHRYSENES	NL	NL	µg/kg	7	NA	NA	NA	NA	NA	NA
C1-FLUORANTHENES/PYRENES	NL	NL	µg/kg	10	NA	NA	NA	NA	NA	NA
C1-FLUORENES	NL	NL	µg/kg	5 U	NA	NA	NA	NA	NA	NA
C1-NAPHTHALENES	NL	NL	µg/kg	5 U	NA	NA	NA	NA	NA	NA
C1-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	26 J	NA	NA	NA	NA	NA	NA
C2-CHRYSENES	NL	NL	µg/kg	5 U	NA	NA	NA	NA	NA	NA
C2-FLUORANTHENES/PYRENES	NL	NL	µg/kg	5 J	NA	NA	NA	NA	NA	NA
C2-FLUORENES	NL	NL	µg/kg	5 U	NA	NA	NA	NA	NA	NA
C2-NAPHTHALENES	NL	NL	µg/kg	5 U	NA	NA	NA	NA	NA	NA
C2-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	5 U	NA	NA	NA	NA	NA	NA
C3-CHRYSENES	NL	NL	µg/kg	5 U	NA	NA	NA	NA	NA	NA
C3-FLUORANTHENES/PYRENES	NL	NL	µg/kg	5 U	NA	NA	NA	NA	NA	NA
C3-FLUORENES	NL	NL	µg/kg	5 U	NA	NA	NA	NA	NA	NA
C3-NAPHTHALENES	NL	NL	µg/kg	5 U	NA	NA	NA	NA	NA	NA
C3-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	5 U	NA	NA	NA	NA	NA	NA
C4-CHRYSENES	NL	NL	µg/kg	5 U	NA	NA	NA	NA	NA	NA
C4-NAPHTHALENES	NL	NL	µg/kg	5 U	NA	NA	NA	NA	NA	NA
C4-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	5 U	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	6	10	62	57	7.4	21	450 U
<i>FLUORANTHENE</i>	420	2200	µg/kg	14	45	110	110	39 J	130 J	3400
<i>FLUORENE</i>	77	540	µg/kg	5 U	7 U	47 U	46 U	8.9	9.2	450 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	21	12	110	92	24 J	69 J	900
<i>NAPHTHALENE</i>	180	560	µg/kg	7	29	47 U	46 U	21	12	450 U
<i>PERYLENE</i>	NL	NL	µg/kg	11	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	6	36	51	49	45	47	2500
<i>PYRENE</i>	200	1500	µg/kg	20	57	120	110	67	120 J	2500
TOTAL PAHs 17	1600	23000	µg/kg	189.5	304.6	1046	1018	474.2	833.1	17393.9
TOTAL PAHs 34	1600	23000	µg/kg	280.5	NA	NA	NA	NA	NA	NA

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-22	SLB10-1-23	SLB10-1-23	SLB10-1-23	SLB10-1-24	SLB10-1-24	SLB10-1-24	
	Field Sample ID		SLB10-1-22-19	SLB10-1-23-06	SLB10-1-23-06DP	SLB10-1-23-16	SLB10-1-24-06	SLB10-1-24-06DP	SLB10-1-24-12	
	Sample Date		10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	
	Depth Interval		0- 19	0- 6	0- 6	0- 16	0- 6	0- 6	0- 12	
Level I ¹	Level II ²	Unit								
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	16	56 J	29 U	220	66 U	110	31
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	66 U	13 J	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	4 U	15 J	15 J	110	66 U	57 U	16
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	4 U	5 U	5 U	57 U	66 U	57 U	5 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	4 U	8.7	8.4	57 U	66 U	57 U	5 U
<i>ANTHRACENE</i>	57	850	µg/kg	4 U	19 J	18 J	52 J	66 U	57 U	5.3 J
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	16	58 J	27 J	180	66 U	68	31
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	28	48 J	19 J	170	66 U	72	48
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	23	110 J	42 J	170	71	87	55
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	66 U	57 U	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	72	57 J	69	170	110	120	39
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	14 J	27 J	53	140	52 J	61	33
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	56 J	57 U	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	53 J	57 U	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	66 U	57 U	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	66 U	57 U	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	32 J	57 U	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	66 U	57 U	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	43 J	57 U	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	66 U	57 U	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	66 U	57 U	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	66 U	57 U	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	66 U	57 U	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	66 U	57 U	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	66 U	57 U	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	66 U	57 U	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	66 U	57 U	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	66 U	57 U	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	66 U	57 U	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	66 U	57 U	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	5	23	21	89	66 U	42 J	5 U
<i>FLUORANTHENE</i>	420	2200	µg/kg	21	140 J	68	450	76	150	49
<i>FLUORENE</i>	77	540	µg/kg	4 U	8.8	8.8	42 J	66 U	57 U	5.4
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	16	54	56	130	99	94	27
<i>NAPHTHALENE</i>	180	560	µg/kg	4 U	14	13	92	66 U	18 J	11
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	66 U	54 J	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	12	55 J	24 J	280	66 U	81	33
<i>PYRENE</i>	200	1500	µg/kg	29	110 J	54	480	68	110	46
TOTAL PAHs 17	1600	23000	µg/kg	264.6	806.2	513.6	2832	839	1155.5	437.65
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	1442	1665.5	NA

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-24	SLB10-1-25	SLB10-1-25	SLB10-1-25	SLB10-1-25	SLB10-1-25	SLB10-1-25
			Field Sample ID	SLB10-1-24-24	SLB10-1-25-06	SLB10-1-25-06DP	SLB10-1-25-116	SLB10-1-25-12	SLB10-1-25-36	SLB10-1-25-60
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	12- 24	0- 6	0- 6	84- 116	0- 12	12- 36	36- 60
Chemical	Level I ¹	Level II ²	Unit							
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	47	440	390	120	170	90 J	68 R
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	20	63	60	89 U	24	32	60
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	36	27	25	15	12	14	18
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	5 U	74	64	30	20	15	32
<i>ANTHRACENE</i>	57	850	µg/kg	12	210 J	210 J	79 J	52	36	53
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	47	340	310	200	150	170 J	68 R
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	25	330	300	120	120	94 J	68 R
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	31 J	390	360	140	150	110 J	68 R
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	34	300	270	110 J	97 J	66 J	68 R
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	20	230 J	260 J	93	99	67 J	68 R
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	5 U	64	69	38	39	36	68 R
<i>FLUORANTHENE</i>	420	2200	µg/kg	79	740	740	230	300	160 J	68 R
<i>FLUORENE</i>	77	540	µg/kg	22	73	69	38	24	27	41
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	19	330	300	20 J	120 J	84 J	68 R
<i>NAPHTHALENE</i>	180	560	µg/kg	26	120 U	110	89 U	48	53	68 R
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	75	360	360	360	140	150 J	68 R
<i>PYRENE</i>	200	1500	µg/kg	93	680	620	290	230	190 J	68 R
TOTAL PAHs 17	1600	23000	µg/kg	591	4711	4517	1972	1795	1394	1543.5
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-25	SLB10-1-26	SLB10-1-26	SLB10-1-27	SLB10-1-27	SLB10-1-27	SLB10-1-28	
	Field Sample ID		SLB10-1-25-84	SLB10-1-26-06	SLB10-1-26-12	SLB10-1-27-06	SLB10-1-27-06DP	SLB10-1-27-17	SLB10-1-28-06	
	Sample Date		10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/13/2010	
	Depth Interval		60- 84	0- 6	0- 12	0- 6	0- 6	0- 17	0- 6	
Level I ¹	Level II ²	Unit								
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	250	530	790	27	110 J	2.9 J	120
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	17 J	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	38	23 J	160	22 UJ	5.8 J	1.6 J	44
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	17	24 J	58 U	8.2	4 U	1.3 J	10
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	21	17 J	58 U	7.3	4.4	3 U	17
<i>ANTHRACENE</i>	57	850	µg/kg	42	68 J	78 J	22 J	10 J	3 U	72 J
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	480	270	670	14 J	90 J	4.1 J	100
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	290	320	420	22 U	37	30	94
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	480	390	500	26	36	66	97
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	73 J	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	180 J	270	330	39	130 J	140	67
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	130 J	270	350	22 UJ	26	43	67
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	78 U	NA	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	78 U	NA	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	78 U	NA	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	78 U	NA	NA	NA	NA	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	78 U	NA	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	78 U	NA	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	78 U	NA	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	78 U	NA	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	78 U	NA	NA	NA	NA	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	78 U	NA	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	78 U	NA	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	78 U	NA	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	78 U	NA	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	78 U	NA	NA	NA	NA	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	78 U	NA	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	78 U	NA	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	78 U	NA	NA	NA	NA	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	78 U	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	42	130	150	16	12	7.6	24
<i>FLUORANTHENE</i>	420	2200	µg/kg	520	780 J	1100	31	230 J	3 UJ	220
<i>FLUORENE</i>	77	540	µg/kg	33	35 J	66	26	7	3.4 J	27
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	270 J	340	270	20 J	29	37 J	80
<i>NAPHTHALENE</i>	180	560	µg/kg	62	26 J	200	22 UJ	7.5	2.8 J	58
<i>PERYLENE</i>	NL	NL	µg/kg	NA	250	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	390	310	350	16 J	66	22	140
<i>PYRENE</i>	200	1500	µg/kg	540	660	1600	28	190 J	3 U	230
TOTAL PAHs 17	1600	23000	µg/kg	3785	4463	7092	324.5	992.7	369.5	1467
TOTAL PAHs 34	1600	23000	µg/kg	NA	5387	NA	NA	NA	NA	NA

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-28	SLB10-1-28	SLB10-1-28	SLB10-1-28	SLB10-1-28	SLB10-1-28	SLB10-1-29
			Field Sample ID	SLB10-1-28-06DP	SLB10-1-28-106	SLB10-1-28-12	SLB10-1-28-36	SLB10-1-28-60	SLB10-1-28-84	SLB10-1-29-06
			Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010
			Depth Interval	0- 6	84- 106	0- 12	12- 36	36- 60	60- 84	0- 6
Chemical	Level I ¹	Level II ²	Unit							
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	150	4 U	89	11	4 U	4 U	23 J
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	0.45 U
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	46	4 U	57 U	4 U	4 U	4 U	0.45 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	18	4 U	10	4 U	4 U	4 U	0.45 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	19	4 U	35	4 U	4 U	4 U	0.45 U
<i>ANTHRACENE</i>	57	850	µg/kg	59 J	4 U	55 J	4.4 J	4 U	4 U	0.45 U
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	130	4 U	77	11	4 U	4 U	26 J
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	120	12	71	15	20	15	22 J
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	120	12	74	12	9.8	14	0.45 U
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	0.45 U
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	75	25 J	73	43	51 J	37 J	62
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	90	5.7	56 J	8.5	5.9	6.1	0.45 U
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	0.45 U
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	0.45 U
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	0.45 U
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	0.45 U
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	0.45 U
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	0.45 U
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	0.45 U
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	0.45 U
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	0.45 U
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	0.45 U
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	0.45 U
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	0.45 U
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	0.45 U
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	0.45 U
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	0.45 U
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	0.45 U
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	0.45 U
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	0.45 U
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	20	4.4	16	4 U	7.5	12	0.45 U
<i>FLUORANTHENE</i>	420	2200	µg/kg	270	4 U	190	19	4 U	4 U	53
<i>FLUORENE</i>	77	540	µg/kg	33	4 U	45	4 U	4 U	5.7	0.45 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	93	21 J	54 J	17	22 J	34 J	64
<i>NAPHTHALENE</i>	180	560	µg/kg	77	4 U	140	8.7	4 U	4 U	0.45 U
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	0.45 U
<i>PHENANTHRENE</i>	200	1200	µg/kg	180	4 U	140	9.5	4 U	4 U	0.45 U
<i>PYRENE</i>	200	1500	µg/kg	290	4 U	190	25	4 U	4 U	37 J
TOTAL PAHs 17	1600	23000	µg/kg	1790	102.1	1343.5	195.6	140.95	143.8	492
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA	840.5

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-29	SLB10-1-29	SLB10-1-29	SLB10-1-29	SLB10-1-30	SLB10-1-30	SLB10-1-30	
	Field Sample ID		SLB10-1-29-12	SLB10-1-29-36	SLB10-1-29-60	SLB10-1-29-78	SLB10-1-30-06	SLB10-1-30-06DP	SLB10-1-30-10	
	Sample Date		10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/16/2010	10/16/2010	10/16/2010	
	Depth Interval		0- 12	12- 36	36- 60	60- 78	0- 6	0- 6	0- 10	
Level I ¹	Level II ²	Unit								
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	16	58	4 U	4 U	87	66	11
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	4 U	20	4 U	4 U	48 U	48 U	10
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	4 U	4 U	4 U	4 U	48 U	48 U	4 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	4 U	10	4 U	4 U	48 U	48 U	4 U
<i>ANTHRACENE</i>	57	850	µg/kg	3.6 J	20	4 U	4 U	25 J	48 U	4 UJ
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	18	93	4 U	4 U	69	40 J	9
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	25	63	11	28	73	49	19
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	33	73	10	15	73	54	14
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	40 J	81 J	53 J	49 J	100	92	360
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	12	46	6.1	6.1	57	39 J	15
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	6.2	28	10	14	63	55	4 U
<i>FLUORANTHENE</i>	420	2200	µg/kg	32	100	4 U	4 U	160	97	12
<i>FLUORENE</i>	77	540	µg/kg	4.8	15	4 U	4 U	48 U	48 U	4 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	24 J	71 J	29 J	37 J	84	65	16
<i>NAPHTHALENE</i>	180	560	µg/kg	4 U	47 J	4 U	4 U	48 U	48 U	9
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	20	59 J	4 U	4 U	95	39 J	7
<i>PYRENE</i>	200	1500	µg/kg	27	110	4.8	4 U	160	99	16
TOTAL PAHs 17	1600	23000	µg/kg	270	896.45	143.9	172.2	1166	839	508
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-31	SLB10-1-31	SLB10-1-32	SLB10-1-32	SLB10-1-32	SLB10-1-33	SLB10-1-33	
	Field Sample ID		SLB10-1-31-06	SLB10-1-31-13	SLB10-1-32-06	SLB10-1-32-06DP	SLB10-1-32-20	SLB10-1-33-06	SLB10-1-33-12	
	Sample Date		10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/13/2010	10/13/2010	
	Depth Interval		0- 6	0- 13	0- 6	0- 6	0- 20	0- 6	0- 12	
Level I ¹	Level II ²	Unit								
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	45	4.1 J	210	310	160	140	100 J
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	44 U	NA	NA	NA	NA	0.63 U	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	44 U	4 U	6 U	12	12	0.63 U	14
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	44 U	4 U	6.9	11	8	0.63 U	6 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	44 U	4 U	6 U	6 U	2 J	0.63 U	12
<i>ANTHRACENE</i>	57	850	µg/kg	44 U	4 U	31 J	39 J	50	61	17
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	26 J	3.8 J	240	310	140	170	120 J
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	30 J	5.5	180	240	110	140	73 J
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	39 J	7	400 J	540 J	220	130	110 J
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	44 U	NA	NA	NA	NA	61	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	81	38	180	210	56	150	65 J
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	29 J	4 UJ	120 J	160	60 J	130	31 J
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	44 U	NA	NA	NA	NA	0.63 U	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	44 U	NA	NA	NA	NA	0.63 U	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	44 U	NA	NA	NA	NA	0.63 U	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	44 U	NA	NA	NA	NA	0.63 U	NA
<i>C1-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	44 U	NA	NA	NA	NA	0.63 U	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	44 U	NA	NA	NA	NA	0.63 U	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	44 U	NA	NA	NA	NA	0.63 U	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	44 U	NA	NA	NA	NA	0.63 U	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	44 U	NA	NA	NA	NA	0.63 U	NA
<i>C2-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	44 U	NA	NA	NA	NA	0.63 U	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	44 U	NA	NA	NA	NA	0.63 U	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	44 U	NA	NA	NA	NA	0.63 U	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	44 U	NA	NA	NA	NA	0.63 U	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	44 U	NA	NA	NA	NA	0.63 U	NA
<i>C3-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	44 U	NA	NA	NA	NA	0.63 U	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	44 U	NA	NA	NA	NA	0.63 U	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	44 U	NA	NA	NA	NA	0.63 U	NA
<i>C4-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	44 U	NA	NA	NA	NA	0.63 U	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	21 J	4 U	59	76	18	0.63 U	36
<i>FLUORANTHENE</i>	420	2200	µg/kg	63	5.4	350	640	340	270	120 J
<i>FLUORENE</i>	77	540	µg/kg	44 U	4 U	12	17	14	0.63 U	12
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	51	7.7	220	190	120	200	69 J
<i>NAPHTHALENE</i>	180	560	µg/kg	6 J	4 U	9.3	20	23	42 J	47
<i>PERYLENE</i>	NL	NL	µg/kg	26 J	NA	NA	NA	NA	90	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	27 J	5	140	240	140	100	63
<i>PYRENE</i>	200	1500	µg/kg	53	7.7	380	520	250	210	130 J
TOTAL PAHs 17	1600	23000	µg/kg	581	101	2544.5	3538.45	1723	1885.5	1022.3
TOTAL PAHs 34	1600	23000	µg/kg	959	NA	NA	NA	NA	2464	NA

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-33	SLB10-1-33	SLB10-1-33	SLB10-1-34	SLB10-1-34	SLB10-1-34	SLB10-1-35	
	Field Sample ID		SLB10-1-33-36	SLB10-1-33-60	SLB10-1-33-77	SLB10-1-34-06	SLB10-1-34-06DP	SLB10-1-34-17	SLB10-1-35-06	
	Sample Date		10/13/2010	10/13/2010	10/13/2010	10/14/2010	10/14/2010	10/14/2010	10/16/2010	
	Depth Interval		12- 36	36- 60	60- 77	0- 6	0- 6	0- 17	0- 6	
Level I ¹	Level II ²	Unit								
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	18	4 U	4 U	110	97	36	610
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	4 U	4 U	4 U	20	24	9	200 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	4 U	4 U	4 U	16	20	11	37
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	4 U	4 U	4 U	14	16	6	11
<i>ANTHRACENE</i>	57	850	µg/kg	3.6 J	4 U	4 U	46	44 J	24	260
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	25	4 U	4 U	180	170	66	740
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	32	14	18	110	96	74	570
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	37	11	24	150	130	78	960
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	74 J	59 J	59 J	86 J	90 J	75 J	360
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	24	7.8	10	78	85	55	380 J
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	4 U	4.8	19	31	51	14	200 U
<i>FLUORANTHENE</i>	420	2200	µg/kg	22	4 U	4 U	210	190	72	1300
<i>FLUORENE</i>	77	540	µg/kg	4 U	4 U	4 U	29	37	19	200 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	37 J	29 J	24 U	99 J	92 J	55 J	480
<i>NAPHTHALENE</i>	180	560	µg/kg	8.7	4 U	4 U	49	51 U	18	200 U
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	19	4 U	4 U	170	190	92 J	690
<i>PYRENE</i>	200	1500	µg/kg	33	5	4.6 J	220	210	84	1100
TOTAL PAHs 17	1600	23000	µg/kg	345.05	152.1	170.6	1618	1567.5	788	7898
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-35	SLB10-1-35	SLB10-1-36	SLB10-1-36	SLB10-1-36	SLB10-1-37
			Field Sample ID	SLB10-1-35-06DP	SLB10-1-35-16	SLB10-1-36-06	SLB10-1-36-06DP	SLB10-1-36-15	SLB10-1-37-06
			Sample Date	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010
			Depth Interval	0- 6	0- 16	0- 6	0- 6	0- 15	0- 6
Chemical	Level I ¹	Level II ²	Unit						
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	570	660	370	270	180	23
1-METHYLNAPHTHALENE	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	38 J	90 J	12	9.3	24	4 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	210 U	120 J	18	7.4	11	4 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	210 U	220 U	7.6	6 U	19	4 U
<i>ANTHRACENE</i>	57	850	µg/kg	130 J	190 J	190 J	150	45	6.7
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	530	610	260	230	170	11 J
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	470	540	450	120 J	120	18
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	430	500	870	270	270	23
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	340	350	240	130 U	140	71
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	360	430	510	160 J	36	9.9
C1-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C1-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C1-FLUORENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C1-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C1-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C2-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C2-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C2-FLUORENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C2-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C2-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C3-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C3-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C3-FLUORENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C3-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C3-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C4-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C4-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C4-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	100 J	120 J	59	130 U	20	5.9
<i>FLUORANTHENE</i>	420	2200	µg/kg	910	1300	440	360	330	17 J
<i>FLUORENE</i>	77	540	µg/kg	44 J	140 J	31	15	19	4 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	290	310	470	140	57	20 J
<i>NAPHTHALENE</i>	180	560	µg/kg	55 J	460	21	14	42	9.6
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	310	840	190	100 J	120	11
<i>PYRENE</i>	200	1500	µg/kg	840	1100	410	280	260	18
TOTAL PAHs 17	1600	23000	µg/kg	5627	7870	4548.6	2259.05	1863	253.9
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical			Location ID	SLB10-1-37	SLB10-1-37	SLB10-1-38	SLB10-1-38	SLB10-1-38	SLB10-1-39	SLB10-1-39
	Level I ¹	Level II ²	Field Sample ID	SLB10-1-37-06DP	SLB10-1-37-18	SLB10-1-38-06	SLB10-1-38-12	SLB10-1-38-43	SLB10-1-39-06	SLB10-1-39-06DP
			Sample Date	10/16/2010	10/16/2010	10/15/2010	10/15/2010	10/15/2010	10/13/2010	10/13/2010
			Depth Interval	0- 6	0- 18	0- 6	0- 12	12- 43	0- 6	0- 6
			Unit							
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	11	12	190	320	78	370	420
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	7 J	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	5 U	8.5	18 J	160 U	58	88 U	85 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	5 U	7 U	73 U	15	57 U	88 U	85 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	5 U	5.6 J	26 J	78	57 U	88 U	85 U
<i>ANTHRACENE</i>	57	850	µg/kg	5 UJ	7 U	73 U	76 J	57 U	140 J	210 J
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	9.1	12	110	340	79	260	300
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	32	23	120	320	78	260	290
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	39	22	150	240	73	320	350
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	38 J	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	53	58	150	280	85	190	220
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	18	19 J	110	270	55 J	210	220
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	73 U	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	73 U	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	73 U	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	73 U	NA	NA	NA	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	73 U	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	73 U	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	73 U	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	73 U	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	73 U	NA	NA	NA	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	73 U	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	73 U	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	73 U	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	73 U	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	73 U	NA	NA	NA	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	73 U	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	73 U	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	73 U	NA	NA	NA	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	73 U	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	5 U	7 U	53 J	60	57 U	97	100
<i>FLUORANTHENE</i>	420	2200	µg/kg	15	17	190	460	120	540	660
<i>FLUORENE</i>	77	540	µg/kg	5 U	7.8	13 J	60	57 U	88 U	85 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	24	12	140	240	87	180 J	190 J
<i>NAPHTHALENE</i>	180	560	µg/kg	10	29	31 J	860	220	88 U	100
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	93	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	8.6	18	70 J	140 J	66	200	250
<i>PYRENE</i>	200	1500	µg/kg	15	19	170	540	140	560	650
TOTAL PAHs 17	1600	23000	µg/kg	251.5	274	1614	4379	1281.5	3547	4130
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	2311	NA	NA	NA	NA

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-39	SLB10-1-39	SLB10-1-39	SLB10-1-39	SLB10-1-39	SLB10-1-40	SLB10-1-40	
	Field Sample ID		SLB10-1-39-115	SLB10-1-39-12	SLB10-1-39-36	SLB10-1-39-60	SLB10-1-39-84	SLB10-1-40-06	SLB10-1-40-12	
	Sample Date		10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/15/2010	10/15/2010	
	Depth Interval		84- 115	0- 12	12- 36	36- 60	60- 84	0- 6	0- 12	
Level I ¹	Level II ²	Unit								
<i>I,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	280	350	150	190	280	4 U	3 U
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	4 U	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	100 U	76 U	47	72 U	190	4 U	3 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	21	76 U	10	17	21	4 U	3 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	50	76 U	20	72 U	170 U	4 U	3 U
<i>ANTHRACENE</i>	57	850	µg/kg	100 J	150 J	56 J	71 J	120 J	4 U	3 U
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	280	250	140	180	300	4 U	3 UJ
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	320	250	140	180	250	3 J	7.6
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	280	300	140	180	220	4 U	7.6
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	4 U	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	180	190	100	110	150 J	31	56
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	240	200	130	130	210	4 U	4.3
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	4 U	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	4 U	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	4 U	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	4 U	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	4 U	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	4 U	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	4 U	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	4 U	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	4 U	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	4 U	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	4 U	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	4 U	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	4 U	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	4 U	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	4 U	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	4 U	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	4 U	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	4 U	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	100 U	81	23	49	45	4 U	3.1 J
<i>FLUORANTHENE</i>	420	2200	µg/kg	530	540	190	340	520	0 J	3 UJ
<i>FLUORENE</i>	77	540	µg/kg	100 U	76 U	28	72 U	170 U	4 U	3 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	240	170 J	110 J	120	190 J	13	13 J
<i>NAPHTHALENE</i>	180	560	µg/kg	140	100	86	200	1000	4 U	3 U
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	4	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	250	240	95	200	270	4 U	3 U
<i>PYRENE</i>	200	1500	µg/kg	530	560	250	330	520	4 U	3 U
TOTAL PAHs 17	1600	23000	µg/kg	3591	3533	1715	2405	4456	73	113.05
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	109	NA

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-40	SLB10-1-40	SLB10-1-42	SLB10-1-42	SLB10-1-42	SLB10-1-42	SLB10-1-44	
	Field Sample ID		SLB10-1-40-36	SLB10-1-40-52	SLB10-1-42-06	SLB10-1-42-06DP	SLB10-1-42-12	SLB10-1-42-24	SLB10-1-44-06	
	Sample Date		10/15/2010	10/15/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	
	Depth Interval		12- 36	36- 52	0- 6	0- 6	0- 12	12- 24	0- 6	
Level I ¹	Level II ²	Unit								
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	μg/kg	3 U	5.4	23	25	25	6 U	89
<i>1-METHYLNAPHTHALENE</i>	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	46 U
<i>2-METHYLNAPHTHALENE</i>	20	200	μg/kg	3 U	4 U	4 U	4 U	67	14	46 U
<i>ACENAPHTHENE</i>	6.7	89	μg/kg	3 U	4 U	4 U	4 U	7.8 J	6 U	46 U
<i>ACENAPHTHYLENE</i>	5.9	130	μg/kg	3 U	4 U	4 U	4 U	9.7	6 J	46 U
<i>ANTHRACENE</i>	57	850	μg/kg	3 UJ	4 U	5.3 J	12 J	8.2 J	6 UJ	46 U
<i>BENZO(A)ANTHRACENE</i>	110	1100	μg/kg	3 U	5.9	21	16	26	6 U	43 J
<i>BENZO(A)PYRENE</i>	150	1500	μg/kg	13	14	10	9.4	27	6 U	36 J
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	μg/kg	13	20	27 J	23 J	58 J	8 J	66
<i>BENZO(E)PYRENE</i>	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	46 U
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	μg/kg	49	34	37	30	78	29	80
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	μg/kg	5.2	5	4.3 J	6.4	18	6 U	46 J
<i>C1-CHRYSENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	46 U
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	46 U
<i>C1-FLUORENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	46 U
<i>C1-NAPHTHALENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	46 U
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	46 U
<i>C2-CHRYSENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	46 U
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	46 U
<i>C2-FLUORENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	46 U
<i>C2-NAPHTHALENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	46 U
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	46 U
<i>C3-CHRYSENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	46 U
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	46 U
<i>C3-FLUORENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	46 U
<i>C3-NAPHTHALENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	46 U
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	46 U
<i>C4-CHRYSENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	46 U
<i>C4-NAPHTHALENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	46 U
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	46 U
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	μg/kg	3 U	4 U	4 U	4 U	7 U	6 U	32 J
<i>FLUORANTHENE</i>	420	2200	μg/kg	3 U	12	120	33	65	16	97
<i>FLUORENE</i>	77	540	μg/kg	3 U	4 U	5.1	4 U	15	9.1	46 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	μg/kg	19	21	16	13	29	9.2	60
<i>NAPHTHALENE</i>	180	560	μg/kg	3 U	4 U	9.5	11	200	51	46 U
<i>PERYLENE</i>	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	35 J
<i>PHENANTHRENE</i>	200	1200	μg/kg	3 U	5.9	11	9.8	29	10	35 J
<i>PYRENE</i>	200	1500	μg/kg	3 U	11	43	31	63	14	82
TOTAL PAHs 17	1600	23000	μg/kg	122.6	150.3	341	230.35	729.65	187.3	804
TOTAL PAHs 34	1600	23000	μg/kg	NA	NA	NA	NA	NA	NA	1207

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-45	SLB10-1-45	SLB10-1-45	SLB10-1-45	SLB10-1-45	SLB10-1-45	SLB10-1-46	
	Field Sample ID		SLB10-1-45-06	SLB10-1-45-114	SLB10-1-45-12	SLB10-1-45-36	SLB10-1-45-60	SLB10-1-45-84	SLB10-1-46-06	
	Sample Date		10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/12/2010	
	Depth Interval		0- 6	84- 114	0- 12	12- 36	36- 60	60- 84	0- 6	
Level I ¹	Level II ²	Unit								
<i>I,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	8	4 U	6 U	35	610 U	9.1	810
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	5 U	4 U	19	37	610 U	4 U	360 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	5 U	4 U	6 U	9.5	19 J	4 U	19
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	5 U	4 U	20	33	54	4 U	360 U
<i>ANTHRACENE</i>	57	850	µg/kg	5 U	4 U	6 U	18 J	23 J	4 U	360 U
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	6.9	4 U	6 U	34	610 U	11	770
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	17	4 U	6 U	24	57	12	840
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	8.8	4 U	6 U	18	49	7	690
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	75	26	17	38	55	26	590
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	6.9	4 U	6 U	16	36	6	610
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	5 U	4 U	6 U	6.5	7.3	4 U	390
<i>FLUORANTHENE</i>	420	2200	µg/kg	9.2	4 U	9.7	40	610 U	15	910
<i>FLUORENE</i>	77	540	µg/kg	5 U	4 U	12	28	35	4 U	72
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	23	7.3 J	8.7	15	28	11 J	590
<i>NAPHTHALENE</i>	180	560	µg/kg	5 U	4 U	81 J	140 J	2900	4 U	300 J
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	5.9 J	4 U	19	37 J	610 U	6.8	360 UJ
<i>PYRENE</i>	200	1500	µg/kg	18	4 U	13	45	610 U	22	1200
TOTAL PAHs 17	1600	23000	µg/kg	197.95	63.3	223.8	574	5093.3	142.35	8511
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-46	SLB10-1-46	SLB10-1-46	SLB10-1-46	SLB10-1-47	SLB10-1-47	SLB10-1-48	
	Field Sample ID		SLB10-1-46-06DP	SLB10-1-46-12	SLB10-1-46-36	SLB10-1-46-64	SLB10-1-47-06	SLB10-1-47-10	SLB10-1-48-06	
	Sample Date		10/12/2010	10/12/2010	10/12/2010	10/12/2010	10/15/2010	10/15/2010	10/13/2010	
	Depth Interval		0- 6	0- 12	12- 36	36- 64	0- 6	0- 10	0- 6	
Level I ¹	Level II ²	Unit								
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	μg/kg	830	120	6.3	12 U	410	320	120
<i>1-METHYLNAPHTHALENE</i>	NL	NL	μg/kg	NA	NA	NA	NA	9 J	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	μg/kg	360 U	66 U	5 U	12 U	52 U	60 J	15
<i>ACENAPHTHENE</i>	6.7	89	μg/kg	17	15	5 U	12 U	14 J	80 U	5.9
<i>ACENAPHTHYLENE</i>	5.9	130	μg/kg	360 U	47	5 U	12 U	38 J	80 U	14
<i>ANTHRACENE</i>	57	850	μg/kg	360 U	89 J	5 U	12 U	98	110 J	31
<i>BENZO(A)ANTHRACENE</i>	110	1100	μg/kg	800	130	6.6	12 U	250	300	110
<i>BENZO(A)PYRENE</i>	150	1500	μg/kg	850	140	12	19	240	310	89
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	μg/kg	700	110	22	21	240	270	120
<i>BENZO(E)PYRENE</i>	NL	NL	μg/kg	NA	NA	NA	NA	66	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	μg/kg	540	100	48 J	110 J	220	310	70 J
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	μg/kg	600	110	5 U	12	220	210	73
<i>C1-CHRYSENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	52 U	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	52 U	NA	NA
<i>C1-FLUORENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	52 U	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	52 U	NA	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	52 U	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	52 U	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	52 U	NA	NA
<i>C2-FLUORENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	52 U	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	52 U	NA	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	52 U	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	52 U	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	52 U	NA	NA
<i>C3-FLUORENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	52 U	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	52 U	NA	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	52 U	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	52 U	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	52 U	NA	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	52 U	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	μg/kg	360 U	66	5.6	7.9 J	83	140	39
<i>FLUORANTHENE</i>	420	2200	μg/kg	980	270	6.4	12 U	500 J	620	57 U
<i>FLUORENE</i>	77	540	μg/kg	360 U	66 U	5 U	12 U	24 J	58 J	15
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	μg/kg	680	130	19 J	38 J	230	220	89 J
<i>NAPHTHALENE</i>	180	560	μg/kg	360 U	66 U	5 U	12 U	17 J	100	37
<i>PERYLENE</i>	NL	NL	μg/kg	NA	NA	NA	NA	160	NA	NA
<i>PHENANTHRENE</i>	200	1200	μg/kg	360 UJ	200 J	5 U	12 U	250	430	170
<i>PYRENE</i>	200	1500	μg/kg	1200	240	10	12 U	440	660	150
TOTAL PAHs 17	1600	23000	μg/kg	8457	1866	155.9	273.9	3300	4198	1176.4
TOTAL PAHs 34	1600	23000	μg/kg	NA	NA	NA	NA	3916	NA	NA

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-48	SLB10-1-48	SLB10-1-48	SLB10-1-48	SLB10-1-49	SLB10-1-49	SLB10-1-49	
	Field Sample ID		SLB10-1-48-06DP	SLB10-1-48-12	SLB10-1-48-36	SLB10-1-48-68	SLB10-1-49-06	SLB10-1-49-12	SLB10-1-49-36	
	Sample Date		10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	
	Depth Interval		0- 6	0- 12	12- 36	36- 68	0- 6	0- 12	12- 36	
Level I ¹	Level II ²	Unit								
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	200	10	4.9	3 U	23 J	13	4 U
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	5.9 J	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	23	4.3	4 U	3 U	25 UJ	4 U	4 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	7.3	4 U	4 U	3 U	25 UJ	4 U	4 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	17	4 U	4 U	3 U	25 UJ	4 U	4 U
<i>ANTHRACENE</i>	57	850	µg/kg	240 J	4 U	4 U	3 U	25 UJ	4 U	4 U
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	160	9.2	4.3	3 U	33	11	4 U
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	100	10	8.7	3 U	31	13	12
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	120	6.3	4.8	3 U	32	9.7	5.8
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	18 J	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	86 J	30	36	26	60	33 J	51
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	90	5.6	3.8 J	3 U	24 J	6.2	4.5 J
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	25 U	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	25 U	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	25 U	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	25 U	NA	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	25 U	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	25 U	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	25 U	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	25 U	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	25 U	NA	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	25 U	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	25 U	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	25 U	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	25 U	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	25 U	NA	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	25 U	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	25 U	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	25 U	NA	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	25 U	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	37	4 U	4 U	3 U	25 U	4 U	4 U
<i>FLUORANTHENE</i>	420	2200	µg/kg	330	13	6.4	3 U	40	19	4 U
<i>FLUORENE</i>	77	540	µg/kg	23	4 U	4 U	3 U	25 UJ	4 U	4 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	100 J	10 J	12 J	7.4 J	64	17	17
<i>NAPHTHALENE</i>	180	560	µg/kg	57	14	10	3 U	21 J	4 U	4 U
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	22 J	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	130	7.3	4.6	3 U	25 UJ	6.8	4 U
<i>PYRENE</i>	200	1500	µg/kg	220	22	13	3 U	37	29	12
TOTAL PAHs 17	1600	23000	µg/kg	1940.3	151.95	120.8	62.65	452.5	174.15	127.6
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	723.4	NA	NA

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-49	SLB10-1-50	SLB10-1-50	SLB10-1-50	SLB10-1-50	SLB10-1-51	SLB10-1-51	
	Field Sample ID		SLB10-1-49-53	SLB10-1-50-06	SLB10-1-50-06DP	SLB10-1-50-12	SLB10-1-50-36	SLB10-1-51-06	SLB10-1-51-12	
	Sample Date		10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/12/2010	10/12/2010	
	Depth Interval		36- 53	0- 6	0- 6	0- 12	12- 36	0- 6	0- 12	
Level I ¹	Level II ²	Unit								
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	8.3	110	57	17	4 U	78	25
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	3.7 J	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	4 U	18	34	5.4	4 U	29 UJ	5 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	4 U	5 U	5.2	4 U	4 U	29 UJ	5 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	4 U	9.3	11	3.5 J	4 U	29 UJ	6.7
<i>ANTHRACENE</i>	57	850	µg/kg	4 U	17 J	18 J	4.7 J	4 U	28 J	5 U
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	8.5	110	57	18	4 U	70	24
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	16	130	67	22	9.7	53	50
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	8.5	33	56	13	6.5	73	28
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	67	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	60	180	66	64	34	67	99
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	5.1	32	50	12	4.4 J	60	22
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	29 U	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	29 U	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	29 U	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	29 U	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	29 U	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	29 U	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	29 U	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	29 U	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	29 U	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	29 U	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	29 U	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	29 U	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	29 U	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	29 U	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	29 U	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	29 U	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	29 U	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	29 U	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	4 U	6.5	13	2.8 J	3 J	29 U	13
<i>FLUORANTHENE</i>	420	2200	µg/kg	12	180	87	25	4 U	120	34
<i>FLUORENE</i>	77	540	µg/kg	4 U	12	17	4 U	4 U	29 UJ	5 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	19	31	78	21	17	92	46
<i>NAPHTHALENE</i>	180	560	µg/kg	4 U	48	54	13	4 U	29 UJ	5 U
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	43	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	6.4	44 J	51 J	11	4 U	30 J	8.5
<i>PYRENE</i>	200	1500	µg/kg	23	190	97	38	6.9	100	42
TOTAL PAHs 17	1600	23000	µg/kg	181.85	1153.35	818.2	274.9	104	858	411.7
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	1232.7	NA

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-51	SLB10-1-51	SLB10-1-51	SLB10-1-52	SLB10-1-52	SLB10-1-52	SLB10-1-52	
	Field Sample ID		SLB10-1-51-36	SLB10-1-51-60	SLB10-1-51-76	SLB10-1-52-06	SLB10-1-52-06DP	SLB10-1-52-12	SLB10-1-52-24	
	Sample Date		10/12/2010	10/12/2010	10/12/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	
	Depth Interval		12- 36	36- 60	60- 76	0- 6	0- 6	0- 12	12- 24	
Level I ¹	Level II ²	Unit								
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	6.2	4 U	4 U	870	840	370	12
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	5 U	4 U	4 U	73	72	110	7 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	5 U	4 U	4 U	79	90 J	94 U	7 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	5 U	4 U	4 U	74	69	29	7 U
<i>ANTHRACENE</i>	57	850	µg/kg	5 U	4 U	4 U	230 J	240 J	150 J	7 UJ
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	5.4 J	4 U	4 U	830	820	350	20
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	28	18	13	570	760	310	120
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	15	11	8.3	530	730	270	28
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	78	60	52	360	400	250	260
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	10	6.3	4.5	390	450	230	15
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	8.6	6.1	3.9 J	130	130	160	26
<i>FLUORANTHENE</i>	420	2200	µg/kg	7.6	4 U	4 U	1500	1500	720	21
<i>FLUORENE</i>	77	540	µg/kg	5 U	4 U	4 U	130	130	110	7 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	32	30	22	370	390	210	51
<i>NAPHTHALENE</i>	180	560	µg/kg	5 U	4 U	4 U	170	180	230	7 U
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	5 U	4 U	4 U	950	930	770	20
<i>PYRENE</i>	200	1500	µg/kg	16	7.8	6.5	1900	1800	820	24
TOTAL PAHs 17	1600	23000	µg/kg	226.05	162.7	130.7	9156	9531	5136	618.3
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-53	SLB10-1-53	SLB10-1-53	SLB10-1-53	SLB10-1-54	SLB10-1-54	SLB10-1-55	
	Field Sample ID		SLB10-1-53-06	SLB10-1-53-06DP	SLB10-1-53-12	SLB10-1-53-26	SLB10-1-54-06	SLB10-1-54-12	SLB10-1-55-06	
	Sample Date		10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/13/2010	
	Depth Interval		0- 6	0- 6	0- 12	12- 26	0- 6	0- 12	0- 6	
Level I ¹	Level II ²	Unit								
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	μg/kg	230	190	15	4 U	470	110 U	110
<i>1-METHYLNAPHTHALENE</i>	NL	NL	μg/kg	NA	NA	NA	NA	73 J	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	μg/kg	36	32	5 U	4 U	75 J	110 U	27
<i>ACENAPHTHENE</i>	6.7	89	μg/kg	17	15	5 U	4 U	100	110 U	6.5
<i>ACENAPHTHYLENE</i>	5.9	130	μg/kg	22	24	5 U	4 U	44 J	110 U	18
<i>ANTHRACENE</i>	57	850	μg/kg	75 J	87 J	5 U	4 UJ	380	110 U	37 J
<i>BENZO(A)ANTHRACENE</i>	110	1100	μg/kg	190	150	17	4 U	390	110 U	98
<i>BENZO(A)PYRENE</i>	150	1500	μg/kg	180	150	28	7.9	340	110 U	100
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	μg/kg	180	150	22	8.8	230	110 U	80
<i>BENZO(E)PYRENE</i>	NL	NL	μg/kg	NA	NA	NA	NA	120	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	μg/kg	220	170	150	67	260	200	90
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	μg/kg	130	120	13 J	3.9 J	240	110 U	85
<i>C1-CHRYSENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	100 U	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	100 U	NA	NA
<i>C1-FLUORENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	100 U	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	100 U	NA	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	100 U	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	100 U	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	100 U	NA	NA
<i>C2-FLUORENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	100 U	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	100 U	NA	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	100 U	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	100 U	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	100 U	NA	NA
<i>C3-FLUORENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	100 U	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	100 U	NA	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	100 U	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	100 U	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	100 U	NA	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	μg/kg	NA	NA	NA	NA	100 U	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	μg/kg	5 U	25	5 U	4 U	84 J	130	20
<i>FLUORANTHENE</i>	420	2200	μg/kg	350	310	18	4 U	960	110 U	130
<i>FLUORENE</i>	77	540	μg/kg	31	28	5.7	2 J	180	110 U	22
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	μg/kg	5 U	130	25	13	270	200	79
<i>NAPHTHALENE</i>	180	560	μg/kg	68	60 U	11	4 U	91 J	110 U	55
<i>PERYLENE</i>	NL	NL	μg/kg	NA	NA	NA	NA	190	NA	NA
<i>PHENANTHRENE</i>	200	1200	μg/kg	200	140	15	4 U	1400 J	110 U	48 J
<i>PYRENE</i>	200	1500	μg/kg	440	340	27	4 U	1200 J	110 U	190
TOTAL PAHs 17	1600	23000	μg/kg	2374.9	2091	359.95	125.15	6714	1300	1195.5
TOTAL PAHs 34	1600	23000	μg/kg	NA	NA	NA	NA	7749	NA	NA

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-55	SLB10-1-55	SLB10-1-55	SLB10-1-55	SLB10-1-55	SLB10-1-55	SLB10-1-56
			Field Sample ID	SLB10-1-55-06DP	SLB10-1-55-116	SLB10-1-55-12	SLB10-1-55-36	SLB10-1-55-60	SLB10-1-55-84	SLB10-1-56-06
			Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/7/2010
			Depth Interval	0- 6	84- 116	0- 12	12- 36	36- 60	60- 84	0- 6
Chemical	Level I ¹	Level II ²	Unit							
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	110	4 U	79	14	9 U	4 U	130 J
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	7.2 U
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	37	4 U	10	6 U	9 U	4 U	13
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	8.7	4 U	3.8 J	6 U	9 U	4 U	4.9 J
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	24	4 U	23	6.6	9 U	4 U	18
<i>ANTHRACENE</i>	57	850	µg/kg	54 J	4 U	22 J	6 U	9 U	4 U	38
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	110	4 U	84	13	9 U	4 U	130 J
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	120	6.5	88	39	13	9.5	50
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	100	4.1	60	23	8.2 J	4	48
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	18
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	110	42	83	66	62	58	51
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	96	4 U	69	18	9 U	2.9 J	38
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	61 J
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	120 J
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	7.2 U
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	7.2 U
<i>C1-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	50 J
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	7.2 U
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	68 J
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	7.2 U
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	7.2 U
<i>C2-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	7.2 U
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	7.2 U
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	7.2 U
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	7.2 U
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	7.2 U
<i>C3-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	7.2 U
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	7.2 U
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	7.2 U
<i>C4-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	7.2 U
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	33	5.5	24	8	9 U	4 U	11
<i>FLUORANTHENE</i>	420	2200	µg/kg	190	4 U	110	25	9 U	4 U	150 J
<i>FLUORENE</i>	77	540	µg/kg	28	4 U	9	6 U	9 U	4 U	15
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	120	13	82	40	22	12	45
<i>NAPHTHALENE</i>	180	560	µg/kg	55 U	4 U	40	22	9 U	4 U	38
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	34
<i>PHENANTHRENE</i>	200	1200	µg/kg	90 J	4 U	39 J	24	9 U	4 UJ	42
<i>PYRENE</i>	200	1500	µg/kg	200	5	160	41	11	6.7	170 J
TOTAL PAHs 17	1600	23000	µg/kg	1458.2	98.1	985.8	351.8	173.8	115.1	991.9
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA	1396.9

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-56	SLB10-1-56	SLB10-1-56	SLB10-1-56	SLB10-1-56	SLB10-1-57	SLB10-1-57	
	Field Sample ID		SLB10-1-56-06DP	SLB10-1-56-12	SLB10-1-56-36	SLB10-1-56-60	SLB10-1-56-86	SLB10-1-57-06	SLB10-1-57-06DP	
	Sample Date		10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/12/2010	10/12/2010	
	Depth Interval		0- 6	0- 12	12- 36	36- 60	60- 86	0- 6	0- 6	
Level I ¹	Level II ²	Unit								
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	190 J	280	430	760	240	52 J	140
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	10	NA	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	20	140 UJ	150 UJ	340 UJ	110 UJ	11	23
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	7.6	23	21	41	15	6 U	12
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	26	50	150 U	340 U	44	9.6	18
<i>ANTHRACENE</i>	57	850	µg/kg	69	140 U	150 U	340 U	110 U	24 J	61 U
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	180 J	240	390	750	250	51 J	130
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	210 J	260	370	790	260	50	140
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	220 J	240	330	630	220	41	130
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	79 J	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	220 J	220	270	500	230	49	120
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	180 J	220	310	660	240	36	96
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	78 J	NA	NA	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	150 J	NA	NA	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	4.2 J	NA	NA	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	7.2 U	NA	NA	NA	NA	NA	NA
<i>C1-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	68 J	NA	NA	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	7.2 U	NA	NA	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	99 J	NA	NA	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	7.2 U	NA	NA	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	7.2 U	NA	NA	NA	NA	NA	NA
<i>C2-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	7.2 U	NA	NA	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	7.2 U	NA	NA	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	7.2 U	NA	NA	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	7.2 U	NA	NA	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	7.2 U	NA	NA	NA	NA	NA	NA
<i>C3-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	7.2 U	NA	NA	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	7.2 U	NA	NA	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	7.2 U	NA	NA	NA	NA	NA	NA
<i>C4-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	7.2 U	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	50	60	150 J	370	130	24	31
<i>FLUORANTHENE</i>	420	2200	µg/kg	220 J	39	660	1200	450	100 J	170
<i>FLUORENE</i>	77	540	µg/kg	22	55	150 U	340 U	110 U	16	30
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	240 J	190	210	520	210	42	120
<i>NAPHTHALENE</i>	180	560	µg/kg	59	180	230	820	110 U	36	67
<i>PERYLENE</i>	NL	NL	µg/kg	150 J	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	62	160	330	520	170	49 J	63 J
<i>PYRENE</i>	200	1500	µg/kg	230 J	430	710	1300	470	94 J	240
TOTAL PAHs 17	1600	23000	µg/kg	2205.6	2787	4711	9541	3149	687.7	1560.5
TOTAL PAHs 34	1600	23000	µg/kg	2890.6	NA	NA	NA	NA	NA	NA

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-57	SLB10-1-57	SLB10-1-57	SLB10-1-57	SLB10-1-58	SLB10-1-59	SLB10-1-59	
	Field Sample ID		SLB10-1-57-12	SLB10-1-57-36	SLB10-1-57-60	SLB10-1-57-77	SLB10-1-58-20	SLB10-1-59-06	SLB10-1-59-06DP	
	Sample Date		10/12/2010	10/12/2010	10/12/2010	10/12/2010	10/13/2010	10/13/2010	10/13/2010	
	Depth Interval		0- 12	12- 36	36- 60	60- 77	0- 20	0- 6	0- 6	
Level I ¹	Level II ²	Unit								
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	170	150	13	4 U	150	35	18
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	57 U	50	4 U	4 U	25	15 U	13 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	13	9.9	4 U	4 U	33 J	15 U	13 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	27	22	4 U	4 U	48	15 U	13 U
<i>ANTHRACENE</i>	57	850	µg/kg	5 UJ	26	3.1 J	4 U	83	15 U	13 U
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	210	240	14	4 U	260	28	17
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	150	190	31	14	170	68	54
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	120	270	27	11	220	64	45
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	97 J	140 J	57 J	51 J	140 J	430 J	100 J
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	140	110	24	4 J	130 J	31	19
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	50	100 U	7.9	6.5	61	22	16
<i>FLUORANTHENE</i>	420	2200	µg/kg	52	290	31	4 U	320	30	26
<i>FLUORENE</i>	77	540	µg/kg	39	31	5.8	4 U	57	15 U	13 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	130 J	200 J	34 J	21 J	210 J	79 J	57 J
<i>NAPHTHALENE</i>	180	560	µg/kg	290	100 U	4 U	4 U	99	18	13 U
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	160	140	10	4 U	420	31	13 U
<i>PYRENE</i>	200	1500	µg/kg	290	270	23	4 U	360	42	26
TOTAL PAHs 17	1600	23000	µg/kg	1969.35	2238.9	290.4	130.05	2786	915.5	423.5
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-59	SLB10-1-59	SLB10-1-60	SLB10-1-60	SLB10-1-60	SLB10-1-60	SLB10-1-60	
	Field Sample ID		SLB10-1-59-12	SLB10-1-59-25	SLB10-1-60-06	SLB10-1-60-106	SLB10-1-60-12	SLB10-1-60-36	SLB10-1-60-60	
	Sample Date		10/13/2010	10/13/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	
	Depth Interval		0- 12	12- 25	0- 6	84- 106	0- 12	12- 36	36- 60	
Level I ¹	Level II ²	Unit								
<i>I,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	14 U	15 U	420	130	320	180	140 J
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	17 J	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	14 U	15 U	38 J	68 U	49	49	140 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	14 U	37	18 J	25	36	22	31
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	14 U	15 U	35 J	28	56	30	62
<i>ANTHRACENE</i>	57	850	µg/kg	14 U	15 U	170	50	170 U	56	140 U
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	14 U	15 U	230	210	310	280	170
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	58	13 J	200	130	290	180	120 J
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	51	15 U	220	150	360	200	210
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	65 J	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	120 J	110 J	180	99 J	220 J	160 J	140 U
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	17	15 U	220	110	230	140	130 J
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	0.97 U	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	0.97 U	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	0.97 U	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	0.97 U	NA	NA	NA	NA
<i>C1-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	0.97 U	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	0.97 U	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	0.97 U	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	0.97 U	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	0.97 U	NA	NA	NA	NA
<i>C2-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	0.97 U	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	0.97 U	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	0.97 U	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	0.97 U	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	0.97 U	NA	NA	NA	NA
<i>C3-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	0.97 U	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	0.97 U	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	0.97 U	NA	NA	NA	NA
<i>C4-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	0.97 U	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	30	15 U	0.97 U	52	170 U	67	140 U
<i>FLUORANTHENE</i>	420	2200	µg/kg	14 U	15 U	490	260	580	300	240
<i>FLUORENE</i>	77	540	µg/kg	14 U	15 U	33 J	53	65	43	140 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	70 J	35 J	280	130 J	270 J	170 J	150 J
<i>NAPHTHALENE</i>	180	560	µg/kg	14 U	15 U	67 J	210	170 U	82	140 U
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	160	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	14 U	15 U	170	290	390	270	210
<i>PYRENE</i>	200	1500	µg/kg	14 U	34	410	280	590	320	240
TOTAL PAHs 17	1600	23000	µg/kg	423	319	3224.5	2241	4021	2549	2123
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	4107.5	NA	NA	NA	NA

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-60	SLB10-1-61	SLB10-1-61	SLB10-1-61	SLB10-1-61	SLB10-1-61	SLB10-1-61	
	Field Sample ID		SLB10-1-60-84	SLB10-1-61-06	SLB10-1-61-06DP	SLB10-1-61-12	SLB10-1-61-36	SLB10-1-61-60	SLB10-1-61-79	
	Sample Date		10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	
	Depth Interval		60- 84	0- 6	0- 6	0- 12	12- 36	36- 60	60- 79	
Level I ¹	Level II ²	Unit								
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	220	280	190	340	160	140	160
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	67	38	40	47	58	33	59 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	54	22	21	25	19	9.6	20
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	14	38	45	48	25	19	30
<i>ANTHRACENE</i>	57	850	µg/kg	120	120	110	180 U	51	31	51
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	270	250	160	550	300	230	300
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	210	190	130	340	180	130	160
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	160	310	170	510	230	170	170
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	140 J	120 J	100 J	290 J	200 J	140 J	150 J
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	210	190	130	290	130	100	150
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	40	83 U	84 U	89	75 U	38	50
<i>FLUORANTHENE</i>	420	2200	µg/kg	570	410	310	640	310	210	300
<i>FLUORENE</i>	77	540	µg/kg	80 U	47	57	60	39	28	56
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	180 J	180 J	160 J	390 J	190 J	160 J	110 J
<i>NAPHTHALENE</i>	180	560	µg/kg	270	83 U	84 U	180 U	80	52	110
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	340	250	130	330	250	150	240
<i>PYRENE</i>	200	1500	µg/kg	420	350	220	600	320	230	340
TOTAL PAHs 17	1600	23000	µg/kg	3325	2878	2057	4729	2579.5	1870.6	2426.5
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-62	SLB10-1-62	SLB10-1-62	SLB10-1-62	SLB10-1-63	SLB10-1-63	SLB10-1-63	
	Field Sample ID		SLB10-1-62-06	SLB10-1-62-06DP	SLB10-1-62-12	SLB10-1-62-32	SLB10-1-63-06	SLB10-1-63-06DP	SLB10-1-63-12	
	Sample Date		10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/7/2010	10/7/2010	10/7/2010	
	Depth Interval		0- 6	0- 6	0- 12	12- 32	0- 6	0- 6	0- 12	
Level I ¹	Level II ²	Unit								
<i>I,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	430	370	75	270	210	340	240
1-METHYLNAPHTHALENE	NL	NL	µg/kg	0.87 U	0.91 U	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	39 J	0.91 U	10	150 U	48	72	47
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	17 J	0.91 U	8 U	7 R	19	25	18
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	0.87 U	40 J	9	7 R	26	36	21
<i>ANTHRACENE</i>	57	850	µg/kg	160	140	27	7 R	79 J	150 U	58 J
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	230	200	72 J	330	160	260	190
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	210	200	41	240	190	280	150
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	290	260	58	250	180	280	190
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	80	74 J	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	180	160	25 J	140 J	180	290	95 J
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	200	180	40	220	180	270	110
C1-CHRYSENES	NL	NL	µg/kg	0.87 U	0.91 U	NA	NA	NA	NA	NA
C1-FLUORANTHENES/PYRENES	NL	NL	µg/kg	0.87 U	0.91 U	NA	NA	NA	NA	NA
C1-FLUORENES	NL	NL	µg/kg	0.87 U	0.91 U	NA	NA	NA	NA	NA
C1-NAPHTHALENES	NL	NL	µg/kg	0.87 U	0.91 U	NA	NA	NA	NA	NA
C1-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	0.87 U	0.91 U	NA	NA	NA	NA	NA
C2-CHRYSENES	NL	NL	µg/kg	0.87 U	0.91 U	NA	NA	NA	NA	NA
C2-FLUORANTHENES/PYRENES	NL	NL	µg/kg	0.87 U	0.91 U	NA	NA	NA	NA	NA
C2-FLUORENES	NL	NL	µg/kg	0.87 U	0.91 U	NA	NA	NA	NA	NA
C2-NAPHTHALENES	NL	NL	µg/kg	0.87 U	0.91 U	NA	NA	NA	NA	NA
C2-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	0.87 U	0.91 U	NA	NA	NA	NA	NA
C3-CHRYSENES	NL	NL	µg/kg	0.87 U	0.91 U	NA	NA	NA	NA	NA
C3-FLUORANTHENES/PYRENES	NL	NL	µg/kg	0.87 U	0.91 U	NA	NA	NA	NA	NA
C3-FLUORENES	NL	NL	µg/kg	0.87 U	0.91 U	NA	NA	NA	NA	NA
C3-NAPHTHALENES	NL	NL	µg/kg	0.87 U	0.91 U	NA	NA	NA	NA	NA
C3-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	0.87 U	0.91 U	NA	NA	NA	NA	NA
C4-CHRYSENES	NL	NL	µg/kg	0.87 U	0.91 U	NA	NA	NA	NA	NA
C4-NAPHTHALENES	NL	NL	µg/kg	0.87 U	0.91 U	NA	NA	NA	NA	NA
C4-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	0.87 U	0.91 U	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	96	0.91 U	11	150 U	33	33	60
<i>FLUORANTHENE</i>	420	2200	µg/kg	480	430	84	320	330	480	320
<i>FLUORENE</i>	77	540	µg/kg	39 J	0.91 U	13	7 R	41	56	34
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	210	270	24 J	210 J	180	300	140 J
<i>NAPHTHALENE</i>	180	560	µg/kg	89	83	29	170	79	150 U	92
<i>PERYLENE</i>	NL	NL	µg/kg	160	150	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	140	130	61	240	130	160	200
<i>PYRENE</i>	200	1500	µg/kg	410	370	93	410	290	430	300
TOTAL PAHs 17	1600	23000	µg/kg	3259.5	2997	676	3033	2355	3462	2265
TOTAL PAHs 34	1600	23000	µg/kg	4092.5	3836	NA	NA	NA	NA	NA

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-63	SLB10-1-63	SLB10-1-63	SLB10-1-64	SLB10-1-64	SLB10-1-64	SLB10-1-64	
	Field Sample ID		SLB10-1-63-36	SLB10-1-63-60	SLB10-1-63-84	SLB10-1-64-06	SLB10-1-64-06DP	SLB10-1-64-12	SLB10-1-64-36	
	Sample Date		10/7/2010	10/7/2010	10/7/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	
	Depth Interval		12- 36	36- 60	60- 84	0- 6	0- 6	0- 12	12- 36	
Level I ¹	Level II ²	Unit								
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	1400	180	160	4 U	4 U	3 U	3 U
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	280 U	95	100 U	4 U	4 U	3 U	3 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	32	25	13	4 U	4 U	3 U	3 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	280 U	21	16	4 U	4 U	3 U	3 U
<i>ANTHRACENE</i>	57	850	µg/kg	720 J	50	42	4 U	4 U	3 UJ	3 U
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	1200	190	250	4 U	4 U	3 U	3 U
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	670	150	180	11	19	10	8.5
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	900	120	220	17	11	12	6.5
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	310 J	110 J	130 J	42 J	33 J	54 J	92 J
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	490	170	140	8.7	5.5	5.3	9
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	280 U	56 J	100 U	5.8	8.7	5.6	5.2
<i>FLUORANTHENE</i>	420	2200	µg/kg	1900	290	370	4 U	4 U	3 U	3 U
<i>FLUORENE</i>	77	540	µg/kg	280 U	58	45	4 U	4 U	3 U	3 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	510 J	140 J	210 J	37 J	24 J	27 J	30 J
<i>NAPHTHALENE</i>	180	560	µg/kg	450	180	100 U	4 U	4 U	3 U	3 U
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	770	330	230	4 U	5.1	3 U	3 U
<i>PYRENE</i>	200	1500	µg/kg	1800	290	310	4 U	5.1	3 U	3 U
TOTAL PAHs 17	1600	23000	µg/kg	11712	2455	2466	144.05	130.75	135.35	172.65
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-2a
Area 1 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-64
			Field Sample ID	SLB10-1-64-48
			Sample Date	10/13/2010
			Depth Interval	36- 48
Chemical	Level I ¹	Level II ²	Unit	
<i>I,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	4 U
1-METHYLNAPHTHALENE	NL	NL	µg/kg	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	4 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	4 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	4 U
<i>ANTHRACENE</i>	57	850	µg/kg	4 U
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	4 U
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	32
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	17
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	40 J
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	7.6
C1-CHRYSENES	NL	NL	µg/kg	NA
C1-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA
C1-FLUORENES	NL	NL	µg/kg	NA
C1-NAPHTHALENES	NL	NL	µg/kg	NA
C1-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA
C2-CHRYSENES	NL	NL	µg/kg	NA
C2-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA
C2-FLUORENES	NL	NL	µg/kg	NA
C2-NAPHTHALENES	NL	NL	µg/kg	NA
C2-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA
C3-CHRYSENES	NL	NL	µg/kg	NA
C3-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA
C3-FLUORENES	NL	NL	µg/kg	NA
C3-NAPHTHALENES	NL	NL	µg/kg	NA
C3-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA
C4-CHRYSENES	NL	NL	µg/kg	NA
C4-NAPHTHALENES	NL	NL	µg/kg	NA
C4-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	5.3
<i>FLUORANTHENE</i>	420	2200	µg/kg	4 U
<i>FLUORENE</i>	77	540	µg/kg	4 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	39 J
<i>NAPHTHALENE</i>	180	560	µg/kg	4 U
<i>PERYLENE</i>	NL	NL	µg/kg	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	4 U
<i>PYRENE</i>	200	1500	µg/kg	4 U
TOTAL PAHs 17	1600	23000	µg/kg	162.9
TOTAL PAHs 34	1600	23000	µg/kg	NA

Notes:

Result exceeds SQTs - Level I.

Result exceeds SQTs - Level II.

"-" = Not Calculated

µg/kg = Microgram per kilogram

DL = Detection Limit

ID = Identification

J = Estimated Value

NA = Not Analyzed

ND = Not Detected

NL = Not Listed

PAH = Polycyclic Aromatic Hydrocarbon

SQT = Sediment Quality Targets

U = Not Detected

Italic = PAH 17 List

Total PAHs 17 = Sum of detections plus 1/2 DL for NDs

Total PAHs 34 = Sum of detections plus 1/2 DL for NDs

¹ Evaluation of Numerical SQTs-St Louis River AOC-Level I

² Evaluation of Numerical SQTs-St Louis River AOC-Level II

Table 3-2b
Area 2 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-2-65	SLB10-2-65	SLB10-2-65	SLB10-2-65	SLB10-2-65	SLB10-2-66	SLB10-2-66	
	Field Sample ID		SLB10-2-65-06	SLB10-2-65-12	SLB10-2-65-36	SLB10-2-65-60	SLB10-2-65-84	SLB10-2-66-06	SLB10-2-66-06DP	
	Sample Date		10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/6/2010	10/6/2010	
	Depth Interval		0- 6	0- 12	12- 36	36- 60	60- 84	0- 6	0- 6	
Level I ¹	Level II ²	Unit								
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	130 J	77	42	310	380	190	160
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	33 UJ	NA	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	47 J	5 U	4 U	25	39	52	40
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	33 UJ	5 U	4 U	16	25	19	14
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	33 UJ	5 U	4 U	31	36	38	32
<i>ANTHRACENE</i>	57	850	µg/kg	39 J	13 J	13 J	160 U	170 U	66 J	47 J
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	160 J	47	41	340	410	180	150
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	130 J	79	47	340	430	180	150
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	130 J	94	45	250	330	190	150
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	94 J	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	110 J	87	48	240	310	190	180
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	110 J	42	24	300	370	130	110
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	33 U	NA	NA	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	33 U	NA	NA	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	33 U	NA	NA	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	33 U	NA	NA	NA	NA	NA	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	33 U	NA	NA	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	33 U	NA	NA	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	33 U	NA	NA	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	33 U	NA	NA	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	33 U	NA	NA	NA	NA	NA	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	33 U	NA	NA	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	33 U	NA	NA	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	33 U	NA	NA	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	33 U	NA	NA	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	33 U	NA	NA	NA	NA	NA	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	33 U	NA	NA	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	33 U	NA	NA	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	33 U	NA	NA	NA	NA	NA	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	33 U	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	39 J	7.4	12	180	250	32	24
<i>FLUORANTHENE</i>	420	2200	µg/kg	210 J	140	91	670	800	290	250
<i>FLUORENE</i>	77	540	µg/kg	33 UJ	5 U	6.7	43	55	49 J	39 J
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	130 J	78	42	280	340	160	170
<i>NAPHTHALENE</i>	180	560	µg/kg	94 J	13	12	160 U	170 U	120	87
<i>PERYLENE</i>	NL	NL	µg/kg	81 J	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	67 J	26	28	240	280	110	80 J
<i>PYRENE</i>	200	1500	µg/kg	190 J	100	72	490	620	260	210
TOTAL PAHs 17	NL	NL	µg/kg	1635.5	814.2	531.05	3915	4845	2256	1893
TOTAL PAHs 34	1600	23000	µg/kg	2124	NA	NA	NA	NA	NA	NA

Table 3-2b
Area 2 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-66	SLB10-2-66	SLB10-2-66	SLB10-2-66	SLB10-2-67	SLB10-2-67	SLB10-2-67
			Field Sample ID	SLB10-2-66-12	SLB10-2-66-36	SLB10-2-66-60	SLB10-2-66-89	SLB10-2-67-06	SLB10-2-67-102	SLB10-2-67-12
			Sample Date	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
			Depth Interval	0- 12	12- 36	36- 60	60- 89	0- 6	84- 102	0- 12
Chemical	Level I ¹	Level II ²	Unit							
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	140	450	300	24	150	6 U	10
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	34	49	33	7.8	47	6 U	5 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	12	17	12	4 U	20	6 U	5 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	25	49	40	4 U	41	6 U	5 U
<i>ANTHRACENE</i>	57	850	µg/kg	36 J	150 U	120 U	5.6	62 J	6 U	5 U
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	140	430	330	24	150	6 U	10
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	140	460	300	20	170	6 U	14
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	140	490	270	17	150	6 U	8.9
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	170	410	230	47	150	31	34
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	96	340	250	13	140	6 U	7.4
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	18	65	120 U	4 U	22	6 U	5 U
<i>FLUORANTHENE</i>	420	2200	µg/kg	210	710	390	36	270	6 U	17
<i>FLUORENE</i>	77	540	µg/kg	31 J	49	40	4 U	47 J	6 UJ	5 UJ
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	150	360	320	28	170	12	13
<i>NAPHTHALENE</i>	180	560	µg/kg	71	150 U	120 U	21	130	6 U	6
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	71 J	190	120 U	14	98 J	6 U	5.6 J
<i>PYRENE</i>	200	1500	µg/kg	190	600	440	35	230	6 U	19
TOTAL PAHs 17	NL	NL	µg/kg	1674	4819	3195	302.2	2047	91.75	161.1
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-2b
Area 2 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-2-67	SLB10-2-67	SLB10-2-67	SLB10-2-68	SLB10-2-68	SLB10-2-69	SLB10-2-69	
	Field Sample ID		SLB10-2-67-36	SLB10-2-67-60	SLB10-2-67-84	SLB10-2-68-06	SLB10-2-68-21	SLB10-2-69-06	SLB10-2-69-17	
	Sample Date		10/6/2010	10/6/2010	10/6/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	
	Depth Interval		12- 36	36- 60	60- 84	0- 6	0- 21	0- 6	0- 17	
Level I ¹	Level II ²	Unit								
<i>I,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	5 U	5 U	5 U	200	160	190 J	190
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	38	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	5 U	5 U	5 U	26 J	45 U	60	270 J
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	5 U	5 U	5 U	28	45 U	14 J	26
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	5 U	5 U	5 U	13	45 U	16 J	23
<i>ANTHRACENE</i>	57	850	µg/kg	5 U	5 U	5 U	72 J	45 U	52	71 J
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	5 U	5 U	5 U	170	110	180 J	130
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	5 U	5 U	5 U	170	120	180 J	150
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	5 U	5 U	5 U	170	120	210 J	160
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	72	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	30	26	19	180	120	230 J	190
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	5 U	5 U	5 U	150	92	120	96
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	180 J	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	250 J	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	15 J	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	16 U	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	250 J	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	16 U	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	280 J	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	16 U	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	16 U	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	16 U	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	16 U	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	16 U	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	16 U	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	16 U	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	16 U	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	16 U	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	16 U	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	16 U	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	5 U	5 U	5 U	27	72	49	58
<i>FLUORANTHENE</i>	420	2200	µg/kg	5 U	5 U	5 U	410	220	270 J	240
<i>FLUORENE</i>	77	540	µg/kg	5 UJ	5 UJ	5 UJ	42	45 U	41	90
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	12	9.9	8.7	190	110	200 J	130
<i>NAPHTHALENE</i>	180	560	µg/kg	5 U	5 U	5 U	40	45 U	49	190
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	140	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	5 U	5 U	5 U	290	110	150	260
<i>PYRENE</i>	200	1500	µg/kg	5 U	5 U	5 U	390	220	260 J	290
TOTAL PAHs 17	NL	NL	µg/kg	85.5	77.15	66.7	2568	1589	2271	2564
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	3600	NA

Table 3-2b
Area 2 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-70	SLB10-2-70	SLB10-2-70	SLB10-2-71	SLB10-2-71	SLB10-2-71	SLB10-2-71
			Field Sample ID	SLB10-2-70-06	SLB10-2-70-06DP	SLB10-2-70-19	SLB10-2-71-06	SLB10-2-71-12	SLB10-2-71-36	SLB10-2-71-54
			Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
			Depth Interval	0- 6	0- 6	0- 19	0- 6	0- 12	12- 36	36- 54
Chemical	Level I ¹	Level II ²	Unit							
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	170	170	260	4 U	4.6	92	36
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	0.69 J	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	86	150	240	4 U	3 U	39 U	6.4
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	14	28	87 U	4 U	3 U	39 U	4 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	16	34	87 U	4 U	3 U	39 U	4 U
<i>ANTHRACENE</i>	57	850	µg/kg	47 J	57 J	78 J	4 U	3 U	39 U	7.4 J
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	130	160	250	4 U	4.4	95	38
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	160	160	270	4 U	7.5	89	45
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	160	130	240	4 U	5.1	60	35
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	4 U	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	210	210	210	19	33	210	71 J
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	130	110	190	4 U	3.1 J	52	26
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	4 U	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	1.8 J	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	1.9 J	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	4 U	NA	NA	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	4 U	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	4 U	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	4 U	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	4 U	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	4 U	NA	NA	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	4 U	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	4 U	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	4 U	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	4 U	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	4 U	NA	NA	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	4 U	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	4 U	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	4 U	NA	NA	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	4 U	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	35	36	120	4 U	3 U	32 J	6.5
<i>FLUORANTHENE</i>	420	2200	µg/kg	290	270	390	4 U	4	120	43
<i>FLUORENE</i>	77	540	µg/kg	40	63	84 J	4 U	3 U	39 U	4 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	150	130	180	10	11	80	35
<i>NAPHTHALENE</i>	180	560	µg/kg	71	92	220	4 U	3 U	50	17
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	4 U	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	130	140	260	4 U	3 U	52	13
<i>PYRENE</i>	200	1500	µg/kg	270	330	450	4.3	8.7	180	56 J
TOTAL PAHs 17	NL	NL	µg/kg	2109	2270	3529	61.3	96.2	1209.5	442.05
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	101.69	NA	NA	NA

Table 3-2b
Area 2 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-2-72	SLB10-2-72	SLB10-2-72	SLB10-2-73	SLB10-2-73	SLB10-2-73	SLB10-2-74	
	Field Sample ID		SLB10-2-72-06	SLB10-2-72-12	SLB10-2-72-24	SLB10-2-73-06	SLB10-2-73-12	SLB10-2-73-31	SLB10-2-74-06	
	Sample Date		10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/6/2010	
	Depth Interval		0- 6	0- 12	12- 24	0- 6	0- 12	12- 31	0- 6	
Level I ¹	Level II ²	Unit								
<i>I,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	780	2000	960	710	400	250	840 J
1-METHYLNAPHTHALENE	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	26 J
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	260 UJ	950 UJ	270 J	150 U	160 U	37	58
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	260 U	950 U	110	18	19	17	91
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	29	40	37	73	67	100 J	110
<i>ANTHRACENE</i>	57	850	µg/kg	330 J	1100 J	230 J	170 J	120 J	100 J	1400 J
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	810	2000	960	700	380	250	1400 J
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	790	2100	910	710	530	220	840 J
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	610	1600	780	580	450	160	670 J
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	300 J
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	520	1500	1100	410	440	200	350 J
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	630	1800	730	500	450	160	620 J
C1-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	29 U
C1-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	29 U
C1-FLUORENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	29 U
C1-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	29 U
C1-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	29 U
C2-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	29 U
C2-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	29 U
C2-FLUORENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	29 U
C2-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	29 U
C2-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	29 U
C3-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	29 U
C3-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	29 U
C3-FLUORENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	29 U
C3-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	29 U
C3-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	29 U
C4-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	29 U
C4-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	29 U
C4-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	29 U
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	370	1100	980	250	260	42	120
<i>FLUORANTHENE</i>	420	2200	µg/kg	1600	4400	1500	980	640	400	3400 J
<i>FLUORENE</i>	77	540	µg/kg	260 U	950 U	290 U	71	160 U	53	260
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	560	1400	1000	440	450	170	630 J
<i>NAPHTHALENE</i>	180	560	µg/kg	330	950 U	540	240	160 U	100 U	230
PERYLENE	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	370 J
<i>PHENANTHRENE</i>	200	1200	µg/kg	1100	3800	890	240	200	310	2200 J
<i>PYRENE</i>	200	1500	µg/kg	1600	4400	1600	960	580	580	2000 J
TOTAL PAHs 17	NL	NL	µg/kg	10449	29160	12742	7127	5226	3099	15219
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA	16176

Table 3-2b
Area 2 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-74	SLB10-2-74	SLB10-2-74	SLB10-2-74	SLB10-2-74	SLB10-2-74
			Field Sample ID	SLB10-2-74-06DP	SLB10-2-74-108	SLB10-2-74-12	SLB10-2-74-120	SLB10-2-74-36	SLB10-2-74-36DP
			Sample Date	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
			Depth Interval	0- 6	84- 108	0- 12	108- 120	12- 36	12- 36
Chemical	Level I ¹	Level II ²	Unit						
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	150 J	6 U	120	6 U	240	110
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	24 J	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	46 J	6 U	37	6 U	28	13
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	12 J	6 U	6.4	6 U	18	6 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	26 J	6 U	26	6 U	36	18
<i>ANTHRACENE</i>	57	850	µg/kg	58 J	6 U	36 J	6 U	99 J	28 J
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	200 J	6 U	130	6 U	250	120
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	150 J	10	140	6 U	270	120
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	140 J	6 U	130	6 U	190	59
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	88 J	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	120 J	70	140	38	180	62
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	130 J	6 U	100	6 U	220	97
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	29 U	NA	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	29 U	NA	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	29 U	NA	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	29 U	NA	NA	NA	NA	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	29 U	NA	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	29 U	NA	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	29 U	NA	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	29 U	NA	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	29 U	NA	NA	NA	NA	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	29 U	NA	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	29 U	NA	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	29 U	NA	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	29 U	NA	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	29 U	NA	NA	NA	NA	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	29 U	NA	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	29 U	NA	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	29 U	NA	NA	NA	NA	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	29 U	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	45 J	6 U	18	6 U	58	13
<i>FLUORANTHENE</i>	420	2200	µg/kg	260 J	6 U	190	6 U	490	230
<i>FLUORENE</i>	77	540	µg/kg	30 J	6 UJ	29 J	6 UJ	40 J	22
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	150 J	23	150	15	190	52
<i>NAPHTHALENE</i>	180	560	µg/kg	230 J	6 U	110	6 U	65	29
<i>PERYLENE</i>	NL	NL	µg/kg	89 J	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	94 J	6 U	56 J	6 U	180	82
<i>PYRENE</i>	200	1500	µg/kg	260 J	6 U	170	6 U	430	200
TOTAL PAHs 17	NL	NL	µg/kg	2101	145	1588.4	100.25	2984	1258.15
TOTAL PAHs 34	1600	23000	µg/kg	2464	NA	NA	NA	NA	NA

Table 3-2b
Area 2 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-2-74	SLB10-2-74	SLB10-2-75	SLB10-2-75	SLB10-2-75	SLB10-2-76	SLB10-2-76	
	Field Sample ID		SLB10-2-74-60	SLB10-2-74-84	SLB10-2-75-06	SLB10-2-75-12	SLB10-2-75-34	SLB10-2-76-06	SLB10-2-76-12	
	Sample Date		10/6/2010	10/6/2010	10/7/2010	10/7/2010	10/7/2010	10/13/2010	10/13/2010	
	Depth Interval		36- 60	60- 84	0- 6	0- 12	12- 34	0- 6	0- 12	
Level I ¹	Level II ²	Unit								
<i>I,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	6 U	5 U	130	170	240	24 U	970
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	24 U	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	6 U	5 U	36	66	190	24 U	270
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	6 U	5 U	13	16	56	24 U	68
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	6 U	5 U	12	31	67	24 U	110
<i>ANTHRACENE</i>	57	850	µg/kg	6 U	5 U	58 J	46 J	61 J	24 U	320 J
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	6 U	5 U	120	170	240	24 U	910
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	8.7	5 U	140	170	250	13 J	1000
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	6.2	5 U	150	140	230	24 U	740
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	41	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	31	34	200	150	180	45	590
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	6 U	5 U	89	140	180	24 U	860
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	24 U	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	24 U	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	24 U	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	24 U	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	24 U	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	24 U	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	24 U	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	24 U	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	24 U	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	24 U	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	24 U	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	24 U	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	24 U	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	24 U	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	24 U	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	24 U	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	24 U	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	24 U	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	6 U	5 U	13	55	87	11 J	300
<i>FLUORANTHENE</i>	420	2200	µg/kg	6.6	5 U	230	310	350	21 J	1600
<i>FLUORENE</i>	77	540	µg/kg	6 UJ	5 UJ	33	40	97	24 U	200
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	14	13	160	120	180	43	660
<i>NAPHTHALENE</i>	180	560	µg/kg	6 U	5 U	82	61	350	24 U	630
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	24 U	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	6 U	5 U	100	130	200	24 U	710
<i>PYRENE</i>	200	1500	µg/kg	8.6	5 U	200	280	410	16 J	1600
TOTAL PAHs 17	NL	NL	µg/kg	108.65	89	1766	2095	3368	281	11538
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	562	NA

Table 3-2b
Area 2 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-2-77	SLB10-2-77	SLB10-2-77	SLB10-2-77	SLB10-2-77	SLB10-2-79	SLB10-2-81	
	Field Sample ID		SLB10-2-77-06	SLB10-2-77-12	SLB10-2-77-36	SLB10-2-77-60	SLB10-2-77-73	SLB10-2-79-12	SLB10-2-81-06	
	Sample Date		10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/13/2010	10/5/2010	
	Depth Interval		0- 6	0- 12	12- 36	36- 60	60- 73	0- 12	0- 6	
Level I ¹	Level II ²	Unit								
<i>I,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	140	65	4.7 J	6 U	6 U	120	61
1-METHYLNAPHTHALENE	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	20	200	µg/kg	43	19	5 U	6 U	6 U	110 J	15
ACENAPHTHENE	6.7	89	µg/kg	15	8	5 U	6 U	6 U	20	7 U
ACENAPHTHYLENE	5.9	130	µg/kg	29	15	5 U	6 U	6 U	15 U	14
ANTHRACENE	57	850	µg/kg	55	22	5 U	6 U	6 U	29 J	37 J
BENZO(A)ANTHRACENE	110	1100	µg/kg	130	65	4.8 J	6 U	6 U	92	59
BENZO(A)PYRENE	150	1500	µg/kg	130	64	5.5	6 U	6 U	110	54
BENZO(B)FLUORANTHENE	NL	NL	µg/kg	140	52	5.4	6 U	6.6 J	110	45
BENZO(E)PYRENE	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NL	NL	µg/kg	150	87	39	49	58	110 J	59
BENZO(K)FLUORANTHENE	NL	NL	µg/kg	92	55	3.9 J	6 U	6 U	81	33
C1-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
C1-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
C1-FLUORENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
C1-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
C1-PHENANTHRENE/ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
C2-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
C2-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
C2-FLUORENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
C2-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
C2-PHENANTHRENE/ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
C3-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
C3-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
C3-FLUORENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
C3-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
C3-PHENANTHRENE/ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
C4-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
C4-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
C4-PHENANTHRENE/ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	33	140	µg/kg	30	27	5 U	6 U	6 U	26	7.4
FLUORANTHENE	420	2200	µg/kg	220	99	5.4	6 U	6 U	140	110
FLUORENE	77	540	µg/kg	37	21	5 U	6 U	6 U	53	12
INDENO(1,2,3-CD)PYRENE	NL	NL	µg/kg	110	78	16	18	22	95 J	39
NAPHTHALENE	180	560	µg/kg	110	58	4.9 J	6 U	6 U	130	58
PERYLENE	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	200	1200	µg/kg	89	47	5 U	6 U	6 U	120	55 J
PYRENE	200	1500	µg/kg	190	93	8.4	6 U	6 U	130 J	97
TOTAL PAHs 17	NL	NL	µg/kg	1710	875	115.85	115	133.5	1483.5	758.95
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-2b
Area 2 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-81	SLB10-2-81	SLB10-2-81	SLB10-2-81	SLB10-2-81	SLB10-2-81	SLB10-2-82
			Field Sample ID	SLB10-2-81-06DP	SLB10-2-81-12	SLB10-2-81-36	SLB10-2-81-60	SLB10-2-81-84	SLB10-2-81-92	SLB10-2-82-06
			Sample Date	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/7/2010
			Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	84- 92	0- 6
Chemical	Level I ¹	Level II ²	Unit							
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	66	5 U	5 U	5 U	4 U	5 U	110
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	10	5 U	5 U	5 U	4 U	5 U	51
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	6 U	5 U	5 U	5 U	4 U	5 U	10
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	12	5 U	5 U	5 U	4 U	5 U	13
<i>ANTHRACENE</i>	57	850	µg/kg	15 J	5 U	5 UJ	5 UJ	4 U	5 U	34 J
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	61	5 U	5 U	5 U	4 U	5 U	86
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	40	7.2	19	5 U	4 U	5 U	100
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	35	5 U	10	5 U	4 U	5 U	110
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	48	39	79	24	28	30	130
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	25	5 U	6.4	5 U	4 U	5 U	82
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	6 U	5 U	5 U	5 U	4 U	5 U	30
<i>FLUORANTHENE</i>	420	2200	µg/kg	95	5 U	5 U	5 U	4 U	5 U	170
<i>FLUORENE</i>	77	540	µg/kg	9.5	5 UJ	5 U	5 U	4 U	5 U	32
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	36	13	35	9.7	10	11	100
<i>NAPHTHALENE</i>	180	560	µg/kg	40	5 U	5 U	5 U	4 U	5 U	50 U
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	30 J	5 U	5 UJ	5 UJ	4 U	5 U	74
<i>PYRENE</i>	200	1500	µg/kg	92	4.9 J	7.5	5 U	4.8 J	5 U	170
TOTAL PAHs 17	NL	NL	µg/kg	621.2	99.85	188.25	74.95	76.4	84.5	1327
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-2b
Area 2 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-82	SLB10-2-82	SLB10-2-82	SLB10-2-83	SLB10-2-83	SLB10-2-83	SLB10-2-83
			Field Sample ID	SLB10-2-82-06DP	SLB10-2-82-12	SLB10-2-82-27	SLB10-2-83-06	SLB10-2-83-12	SLB10-2-83-36	SLB10-2-83-60
			Sample Date	10/7/2010	10/7/2010	10/7/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
			Depth Interval	0- 6	0- 12	12- 27	0- 6	0- 12	12- 36	36- 60
Chemical	Level I ¹	Level II ²	Unit							
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	150	53	3 U	120 J	150	280	330
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	83 J	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	130	71	3 U	130 J	110	160	270
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	29 J	18	3 U	29 U	26	37	65
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	11	4.8	3 U	29 UJ	23	40	51
<i>ANTHRACENE</i>	57	850	µg/kg	98 U	37 J	3 U	50 J	44 J	97 J	110 J
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	130	50	3 U	150 J	150	270	330
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	140	49	6.1	120 J	120	250	340
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	120	47	4.9	130 J	160	240	340
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	80 J	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	150	57	26	250 J	160	250	340
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	100	38	3 U	110 J	140	190	270
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	29 U	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	29 U	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	29 U	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	29 U	NA	NA	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	29 U	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	29 U	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	29 U	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	29 U	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	29 U	NA	NA	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	29 U	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	29 U	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	29 U	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	29 U	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	29 U	NA	NA	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	29 U	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	29 U	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	29 U	NA	NA	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	29 U	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	44	6.7	3 U	38 J	48	44	54
<i>FLUORANTHENE</i>	420	2200	µg/kg	220	110	3 U	270 J	250	450	630
<i>FLUORENE</i>	77	540	µg/kg	47	28	3 U	46 J	71 J	100 J	140
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	130	43	12	170 J	140	260	410
<i>NAPHTHALENE</i>	180	560	µg/kg	98 U	47	3 U	200 J	180	220 J	370
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	100 J	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	130	83	3 U	110 J	110 J	180 J	380
<i>PYRENE</i>	200	1500	µg/kg	280	98	4.8	220 J	210	380	490
TOTAL PAHs 17	NL	NL	µg/kg	1909	840.5	76.6	2143	2092	3448	4920
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	2667	NA	NA	NA

Table 3-2b
Area 2 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-2-84	SLB10-2-84	SLB10-2-85	SLB10-2-85	SLB10-2-85	SLB10-2-85	SLB10-2-85	
	Field Sample ID		SLB10-2-84-12	SLB10-2-84-33	SLB10-2-85-06	SLB10-2-85-117	SLB10-2-85-12	SLB10-2-85-36	SLB10-2-85-60	
	Sample Date		10/13/2010	10/13/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	
	Depth Interval		0- 12	12- 33	0- 6	84- 117	0- 12	12- 36	36- 60	
Level I ¹	Level II ²	Unit								
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	240	25	180 J	4 U	6 U	5 U	4 U
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	9.8	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	120 J	16	19	4 U	6 U	5 U	4 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	49	14 U	8.7	4 U	6 U	5 U	4 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	47	14 U	26	4 U	6 U	5 U	4 U
<i>ANTHRACENE</i>	57	850	µg/kg	97 J	14 U	110 J	4 U	6 U	5 U	4 U
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	250	21	290 J	4 U	6 U	5 U	4 U
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	260	37	270 J	7.8	12	8.9	8.3
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	220	28	210 J	4 U	7.9	5 U	4 U
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	110 J	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	170	93	200 J	34	43	42	41
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	210	18	210 J	4 U	4.6 J	5 U	4 U
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	110 J	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	210 J	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	6.1 J	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	6.9 U	NA	NA	NA	NA
<i>C1-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	130 J	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	6.9 U	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	110 J	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	6.9 U	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	6.9 U	NA	NA	NA	NA
<i>C2-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	6.9 U	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	6.9 U	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	6.9 U	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	6.9 U	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	6.9 U	NA	NA	NA	NA
<i>C3-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	6.9 U	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	6.9 U	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	6.9 U	NA	NA	NA	NA
<i>C4-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	6.9 U	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	65	14 U	35	4 U	6 U	5 U	4 U
<i>FLUORANTHENE</i>	420	2200	µg/kg	470	35	370 J	4 U	6 U	5 U	4 U
<i>FLUORENE</i>	77	540	µg/kg	110	14 U	27	4 UJ	6 UJ	5 UJ	4 UJ
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	170 J	47 J	230 J	13	18	16	15
<i>NAPHTHALENE</i>	180	560	µg/kg	280 J	32	58	4 U	6 U	5 U	4 U
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	150 J	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	290 J	23	140 J	4 U	6 U	5 U	4 U
<i>PYRENE</i>	200	1500	µg/kg	440	47	320 J	6	6 U	5.8	5.1
TOTAL PAHs 17	NL	NL	µg/kg	3488	457	2703.7	92	123.3	107.8	99.3
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	3584.45	NA	NA	NA	NA

Table 3-2b
Area 2 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-2-85	SLB10-2-86	SLB10-2-86	SLB10-2-86	SLB10-2-87	SLB10-2-87	SLB10-2-87	
	Field Sample ID		SLB10-2-85-84	SLB10-2-86-06	SLB10-2-86-12	SLB10-2-86-24	SLB10-2-87-06	SLB10-2-87-108	SLB10-2-87-12	
	Sample Date		10/6/2010	10/7/2010	10/7/2010	10/7/2010	10/6/2010	10/6/2010	10/6/2010	
	Depth Interval		60- 84	0- 6	0- 12	12- 24	0- 6	84- 108	0- 12	
Level I ¹	Level II ²	Unit								
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	4 U	390	970	130	45 J	4 U	8.3
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	9.3 J	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	4 U	180	310 U	16	62 U	4 U	5 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	4 U	35	310 U	8.1	62 U	4 U	5 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	4 U	34	310 U	16	62 U	4 U	5 U
<i>ANTHRACENE</i>	57	850	µg/kg	4 U	110 J	320 J	58 J	18 J	4 U	5 U
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	4 U	340	960	130	56 J	4 U	9.7
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	7.4	340	1100	140	47 J	4 U	8.8
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	4 U	310	920	100	72	4 U	5 J
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	71	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	36	290	740	140	120	25	23
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	4 U	250	890	110	47 J	4 U	4.7 J
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	62 U	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	62 U	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	62 U	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	62 U	NA	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	62 U	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	62 U	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	62 U	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	62 U	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	62 U	NA	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	62 U	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	62 U	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	62 U	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	62 U	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	62 U	NA	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	62 U	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	62 U	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	62 U	NA	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	62 U	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	4 U	180	510	20	40 J	4 U	5 U
<i>FLUORANTHENE</i>	420	2200	µg/kg	4 U	600	1700	230	83	4 U	15
<i>FLUORENE</i>	77	540	µg/kg	4 UJ	110 U	310 U	25	62 U	4 UJ	5 UJ
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	14	260	890	110	110	9.6	11
<i>NAPHTHALENE</i>	180	560	µg/kg	4 U	220	310 U	28	62 U	4 U	5 U
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	37 J	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	4 U	250	530	65	29 J	4 U	6.6 J
<i>PYRENE</i>	200	1500	µg/kg	4.9	550	1400	250	55 J	4 U	15
TOTAL PAHs 17	NL	NL	µg/kg	92.2	4394	11705	1576.1	877	69.1	124.95
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	1552.3	NA	NA

Table 3-2b
Area 2 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-87	SLB10-2-87	SLB10-2-87	SLB10-2-87	SLB10-2-88	SLB10-2-88	SLB10-2-89
			Field Sample ID	SLB10-2-87-120	SLB10-2-87-36	SLB10-2-87-60	SLB10-2-87-84	SLB10-2-88-06	SLB10-2-88-18	SLB10-2-89-06
			Sample Date	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/7/2010
			Depth Interval	84- 120	12- 36	36- 60	60- 84	0- 6	0- 18	0- 6
Chemical	Level I ¹	Level II ²	Unit							
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	5 U	4 U	4 U	4 U	2100	280	570 J
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	38 U
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	5 U	4 U	4 U	4 U	840 U	180	42
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	5 U	4 U	4 U	4 U	840 U	40	20 J
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	5 U	4 U	4 U	4 U	840 U	21	69
<i>ANTHRACENE</i>	57	850	µg/kg	5 U	4 U	4 U	4 U	840 U	80	260
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	5 U	4 U	4 U	4 U	1200	200	460 J
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	5 U	4 U	4 U	4 U	1100	160	280
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	5 U	4 U	4 U	4 U	1700	180	490 J
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	89
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	42	34	24	18	940	140	190
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	5 U	4 U	4 U	4 U	1200	120	230
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	38 U
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	38 U
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	38 U
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	38 U
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	38 U
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	38 U
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	38 U
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	38 U
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	38 U
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	38 U
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	38 U
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	38 U
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	38 U
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	38 U
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	38 U
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	38 U
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	38 U
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	38 U
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	5 U	4 U	4 U	4 U	840 U	24	74
<i>FLUORANTHENE</i>	420	2200	µg/kg	5 U	4 U	4 U	4 U	3400	330	1000 J
<i>FLUORENE</i>	77	540	µg/kg	5 UJ	4 UJ	4 UJ	4 UJ	840 U	78	71
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	15	13	9.2	7	1400	120	270
<i>NAPHTHALENE</i>	180	560	µg/kg	5 U	4 U	4 U	4 U	840 U	120	52
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	240
<i>PHENANTHRENE</i>	200	1200	µg/kg	5 U	4 U	4 U	4 U	840 U	250	170
<i>PYRENE</i>	200	1500	µg/kg	5 U	4 U	4 U	4 U	2600	280	690 J
TOTAL PAHs 17	NL	NL	µg/kg	97.5	83	66.2	58.75	19000	2603	4938
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA	5628

Table 3-2b
Area 2 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-89	SLB10-2-90	SLB10-2-90	SLB10-2-90	SLB10-2-90	SLB10-2-90
			Field Sample ID	SLB10-2-89-16	SLB10-2-90-06	SLB10-2-90-06DP	SLB10-2-90-12	SLB10-2-90-12DP	SLB10-2-90-32
			Sample Date	10/7/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
			Depth Interval	0- 16	0- 6	0- 6	0- 12	0- 12	12- 32
Chemical	Level I ¹	Level II ²	Unit						
<i>I,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	610	580	230	300	200	66
1-METHYLNAPHTHALENE	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	20	200	µg/kg	270 U	360	160	170	110 J	43
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	47	61 U	64 U	27	19	28
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	270 U	85	64 U	60	43	14 U
<i>ANTHRACENE</i>	57	850	µg/kg	210 J	240 J	130 J	130 U	78 J	32 J
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	460	520	210	320	170	67
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	430	510	180	300	160	84
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	480	480	180	260	160	66
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	380	290	140	220	140	110
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	390	340	150	250	150	64
C1-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C1-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C1-FLUORENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C1-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C1-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C2-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C2-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C2-FLUORENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C2-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C2-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C3-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C3-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C3-FLUORENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C3-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C3-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C4-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C4-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
C4-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	300	80	64 U	46	53	14 U
<i>FLUORANTHENE</i>	420	2200	µg/kg	790	910	450	440	270	120
<i>FLUORENE</i>	77	540	µg/kg	270 U	140 J	82 J	130 UJ	120 UJ	34 J
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	350	370	180	290	180	68
<i>NAPHTHALENE</i>	180	560	µg/kg	270 U	490	200	230	140	38
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	360	400 J	190 J	160 J	98 J	79 J
<i>PYRENE</i>	200	1500	µg/kg	810	860	370	470	270	130
TOTAL PAHs 17	NL	NL	µg/kg	6157	6685.5	2948	3673	2301	1043
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA

Table 3-2b
Area 2 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-2-90	SLB10-2-91	SLB10-2-91	SLB10-2-91	SLB10-2-92	SLB10-2-92	SLB10-2-92	
	Field Sample ID		SLB10-2-90-32DP	SLB10-2-91-06	SLB10-2-91-12	SLB10-2-91-36	SLB10-2-92-06	SLB10-2-92-12	SLB10-2-92-36	
	Sample Date		10/6/2010	10/5/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	
	Depth Interval		12- 32	0- 6	0- 12	12- 36	0- 6	0- 12	12- 36	
Level I ¹	Level II ²	Unit								
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	100	22 U	47	52	120 J	15	6.6
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	5.7 J	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	95	22 U	40	14	21 UJ	4 U	4 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	31	5.3	4.8 J	6 U	21 UJ	4 U	4 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	28	9.4	7.7	9.3	21 UJ	4 U	4 U
<i>ANTHRACENE</i>	57	850	µg/kg	71 J	36 J	16 J	10 J	47 J	3.9 J	4 U
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	120	22 U	52	61	170 J	15	7.3
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	94	22 U	54	52 J	110 J	13	7.4
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	100	40	46	52	95 J	11	5
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	56 J	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	94	40	67	93	70 J	30	9.8
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	93	30	36	52	89 J	8.4	4.3 J
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	21 U	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	21 U	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	21 U	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	21 U	NA	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	21 U	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	21 U	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	21 U	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	21 U	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	21 U	NA	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	21 U	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	21 U	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	21 U	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	21 U	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	21 U	NA	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	21 U	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	21 U	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	21 U	NA	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	21 U	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	17	7.6	11	6 U	29 J	4 U	4 U
<i>FLUORANTHENE</i>	420	2200	µg/kg	250	22 U	76	70	230 J	23	15
<i>FLUORENE</i>	77	540	µg/kg	75 J	22	17 J	14 J	21 UJ	4 U	4 UJ
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	97	37	48	81	92 J	17	7.3
<i>NAPHTHALENE</i>	180	560	µg/kg	80	38	44	16	18 J	5.8	4 U
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	55 J	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	190 J	38 J	24 J	20 J	39 J	4.5	5.5 J
<i>PYRENE</i>	200	1500	µg/kg	250	22 U	83	77	180 J	21	15
TOTAL PAHs 17	NL	NL	µg/kg	1785	369.3	673.5	679.7	1331	178.1	98.6
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	1636.7	NA	NA

Table 3-2b
Area 2 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-2-93	SLB10-2-93	SLB10-2-93	SLB10-2-94	SLB10-2-94	SLB10-2-94	SLB10-2-94	
	Field Sample ID		SLB10-2-93-06	SLB10-2-93-12	SLB10-2-93-41	SLB10-2-94-06	SLB10-2-94-12	SLB10-2-94-36	SLB10-2-94-60	
	Sample Date		10/6/2010	10/6/2010	10/6/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	
	Depth Interval		0- 6	0- 12	12- 41	0- 6	0- 12	12- 36	36- 60	
Level I ¹	Level II ²	Unit								
<i>I,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	36	37 J	150	75	160	54	4 U
1-METHYLNAPHTHALENE	NL	NL	µg/kg	NA	NA	NA	7.5 J	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	26	92	270	14	64 U	7.1	4 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	4.2	10	18	6.9 J	27	6 U	4 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	5.9	13	16	13	24	6 U	4 U
<i>ANTHRACENE</i>	57	850	µg/kg	15 J	30 J	42 J	35	70 J	11 J	4 U
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	39	37 J	140	89 J	180	49	4 U
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	29	44	140	42	200	36	3.9 J
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	21	34	150	36	170	32	4 J
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	15	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	38	54	140	47	150	44	25
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	17	28	110	31	150	21	4 U
C1-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	7.6 U	NA	NA	NA
C1-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	NA	88 J	NA	NA	NA
C1-FLUORENES	NL	NL	µg/kg	NA	NA	NA	7.6 U	NA	NA	NA
C1-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	7.6 U	NA	NA	NA
C1-PHENANTHRENE/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	41 J	NA	NA	NA
C2-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	7.6 U	NA	NA	NA
C2-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	NA	46 J	NA	NA	NA
C2-FLUORENES	NL	NL	µg/kg	NA	NA	NA	7.6 U	NA	NA	NA
C2-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	7.6 U	NA	NA	NA
C2-PHENANTHRENE/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	7.6 U	NA	NA	NA
C3-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	7.6 U	NA	NA	NA
C3-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	NA	7.6 U	NA	NA	NA
C3-FLUORENES	NL	NL	µg/kg	NA	NA	NA	7.6 U	NA	NA	NA
C3-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	7.6 U	NA	NA	NA
C3-PHENANTHRENE/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	7.6 U	NA	NA	NA
C4-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	7.6 U	NA	NA	NA
C4-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	7.6 U	NA	NA	NA
C4-PHENANTHRENE/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	7.6 U	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	4.2	6.6	39	9.5	30	7.6	4 U
<i>FLUORANTHENE</i>	420	2200	µg/kg	35 J	79	220	110 J	330	52	4 U
<i>FLUORENE</i>	77	540	µg/kg	14 J	31 J	99 UJ	16	46	6.4	4 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	22	32	180	41	150	28	10
<i>NAPHTHALENE</i>	180	560	µg/kg	9.9 J	230	270	58	110	21	4 U
PERYLENE	NL	NL	µg/kg	NA	NA	NA	27	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	22 J	64 J	180 J	39	150	35	4 U
<i>PYRENE</i>	200	1500	µg/kg	45 J	57	240	100 J	250	62	5.3
TOTAL PAHs 17	NL	NL	µg/kg	383.2	878.6	2354.5	762.4	2229	472.3	72.8
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	1043.9	NA	NA	NA

Table 3-2b
Area 2 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-2-94	SLB10-2-94	SLB10-2-95	SLB10-2-95	SLB10-2-95	SLB10-2-95	SLB10-2-95	
	Field Sample ID		SLB10-2-94-84	SLB10-2-94-96	SLB10-2-95-06	SLB10-2-95-12	SLB10-2-95-36	SLB10-2-95-60	SLB10-2-95-84	
	Sample Date		10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	
	Depth Interval		60- 84	84- 96	0- 6	0- 12	12- 36	36- 60	60- 84	
Level I ¹	Level II ²	Unit								
<i>I,2-BENZPHENANTHRACENE</i>	170	1300	μg/kg	4 U	4 U	300	250	450	1100	1200
1-METHYLNAPHTHALENE	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	μg/kg	4 U	4 U	69 J	64 U	100	320 U	440 U
<i>ACENAPHTHENE</i>	6.7	89	μg/kg	4 U	4 U	72 U	64 U	67	320 U	440 U
<i>ACENAPHTHYLENE</i>	5.9	130	μg/kg	4 U	4 U	72 U	64 U	73	320 U	440 U
<i>ANTHRACENE</i>	57	850	μg/kg	4 U	4 U	100	100	180	840 J	1100 J
<i>BENZO(A)ANTHRACENE</i>	110	1100	μg/kg	4 U	4 U	310	260	480	1200	1500
<i>BENZO(A)PYRENE</i>	150	1500	μg/kg	4 U	6.6	290	250	500	1100	1200
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	μg/kg	4.9	5.6	300	250	460	940	880
<i>BENZO(E)PYRENE</i>	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	μg/kg	30	39	250	210	330	660	750
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	μg/kg	4 U	4 U	230	190	340	870	1000
C1-CHRYSENES	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	NA
C1-FLUORANTHENES/PYRENES	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	NA
C1-FLUORENES	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	NA
C1-NAPHTHALENES	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	NA
C1-PHENANTHRENE/ ANTHRACENES	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	NA
C2-CHRYSENES	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	NA
C2-FLUORANTHENES/PYRENES	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	NA
C2-FLUORENES	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	NA
C2-NAPHTHALENES	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	NA
C2-PHENANTHRENE/ ANTHRACENES	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	NA
C3-CHRYSENES	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	NA
C3-FLUORANTHENES/PYRENES	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	NA
C3-FLUORENES	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	NA
C3-NAPHTHALENES	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	NA
C3-PHENANTHRENE/ ANTHRACENES	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	NA
C4-CHRYSENES	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	NA
C4-NAPHTHALENES	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	NA
C4-PHENANTHRENE/ ANTHRACENES	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	μg/kg	4 U	4 U	73	64 U	98	460	580
<i>FLUORANTHENE</i>	420	2200	μg/kg	4 U	4 U	510	450	700	2500	3100
<i>FLUORENE</i>	77	540	μg/kg	4 U	4 U	72 U	68	140	320 U	440 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	μg/kg	12	14	270	270	390	700	900
<i>NAPHTHALENE</i>	180	560	μg/kg	4 U	4 U	370	270	450	410	850
PERYLENE	NL	NL	μg/kg	NA	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	μg/kg	4 U	4 U	190	170	360	1600	2200
<i>PYRENE</i>	200	1500	μg/kg	4.1 J	4.6	430	360	590	1600	2200
TOTAL PAHs 17	NL	NL	μg/kg	78.3	95.0	3800	3226	5708	14620	18340
TOTAL PAHs 34	1600	23000	μg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-2b
Area 2 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-2-96	SLB10-2-96	SLB10-2-96	SLB10-2-96	SLB10-2-96	SLB10-2-97	SLB10-2-97	
	Field Sample ID		SLB10-2-96-06	SLB10-2-96-12	SLB10-2-96-36	SLB10-2-96-60	SLB10-2-96-84	SLB10-2-97-06	SLB10-2-97-12	
	Sample Date		10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	
	Depth Interval		0- 6	0- 12	12- 36	36- 60	60- 84	0- 6	0- 12	
Level I ¹	Level II ²	Unit								
<i>I,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	24	14	4 U	5.6	4 U	260	290
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	5.3 U	NA	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	6	5 U	4 U	4 U	4 U	130 U	130 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	5.3 U	5 U	4 U	4 U	4 U	51	54
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	7	5 U	4 U	4 U	4 U	60	45
<i>ANTHRACENE</i>	57	850	µg/kg	7.6	10 J	4 U	4 U	4 U	140 J	120 J
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	30	14	4 U	4.7 J	4 U	270	410
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	20	18 J	8.5	6.8	5.5	270	310
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	16	13	6.5	5.8	4 U	220	340
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	17	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	33	48	57	40	36	210	220 J
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	13	11	3.8 J	4.5 J	4 U	240	190
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	14 J	NA	NA	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	44 J	NA	NA	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	5.3 U	NA	NA	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	5.3 U	NA	NA	NA	NA	NA	NA
<i>C1-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	20 J	NA	NA	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	5.3 U	NA	NA	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	21 J	NA	NA	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	5.3 U	NA	NA	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	5.3 U	NA	NA	NA	NA	NA	NA
<i>C2-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	5.3 U	NA	NA	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	5.3 U	NA	NA	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	5.3 U	NA	NA	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	5.3 U	NA	NA	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	5.3 U	NA	NA	NA	NA	NA	NA
<i>C3-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	5.3 U	NA	NA	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	5.3 U	NA	NA	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	5.3 U	NA	NA	NA	NA	NA	NA
<i>C4-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	5.3 U	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	5 J	6.3	4 U	4 U	4 U	48	100 J
<i>FLUORANTHENE</i>	420	2200	µg/kg	40	25	4 U	13	4 U	450	440
<i>FLUORENE</i>	77	540	µg/kg	6.6	5 U	4 U	4 U	4 U	130 U	130 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	24	19	15	14	12	240	220 J
<i>NAPHTHALENE</i>	180	560	µg/kg	14	5 U	4 U	4 U	4 U	220	320
<i>PERYLENE</i>	NL	NL	µg/kg	14	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	10	38	4 U	6.9	4 U	240	330
<i>PYRENE</i>	200	1500	µg/kg	39	43	7.8	16	5.3	350	410
TOTAL PAHs 17	NL	NL	µg/kg	297.85	271.8	124.45	133.75	90.65	3399	3929
TOTAL PAHs 34	1600	23000	µg/kg	467.6	NA	NA	NA	NA	NA	NA

Table 3-2b
Area 2 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-97	SLB10-2-97	SLB10-2-97
			Field Sample ID	SLB10-2-97-36	SLB10-2-97-60	SLB10-2-97-75
			Sample Date	10/7/2010	10/7/2010	10/7/2010
			Depth Interval	12- 36	36- 60	60- 75
Chemical	Level I ¹	Level II ²	Unit			
<i>I,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	410	37	32
1-METHYLNAPHTHALENE	NL	NL	µg/kg	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	42	4 U	4 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	29	4 U	4 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	44	4 U	4 U
<i>ANTHRACENE</i>	57	850	µg/kg	210 J	7.8	6.9
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	370	38	34
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	330	23 J	30 J
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	400	23 J	44 U
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	200 J	47 J	90 J
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	200	34	31
C1-CHRYSENES	NL	NL	µg/kg	NA	NA	NA
C1-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	NA
C1-FLUORENES	NL	NL	µg/kg	NA	NA	NA
C1-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA
C1-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA
C2-CHRYSENES	NL	NL	µg/kg	NA	NA	NA
C2-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	NA
C2-FLUORENES	NL	NL	µg/kg	NA	NA	NA
C2-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA
C2-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA
C3-CHRYSENES	NL	NL	µg/kg	NA	NA	NA
C3-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	NA
C3-FLUORENES	NL	NL	µg/kg	NA	NA	NA
C3-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA
C3-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA
C4-CHRYSENES	NL	NL	µg/kg	NA	NA	NA
C4-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA
C4-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	160 U	19	28
<i>FLUORANTHENE</i>	420	2200	µg/kg	860	42	37
<i>FLUORENE</i>	77	540	µg/kg	59	8.1	4.3 J
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	320 J	29 J	49 J
<i>NAPHTHALENE</i>	180	560	µg/kg	160 U	15	12
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	390	33	28
<i>PYRENE</i>	200	1500	µg/kg	480	46	44
TOTAL PAHs 17	NL	NL	µg/kg	4504	409.25	454.8
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA

Notes:

Result exceeds SQTs - Level I.

Result exceeds SQTs - Level II.

"-" = Not Calculated

µg/kg = Microgram per kilogram

DL = Detection Limit

ID = Identification

J = Estimated Value

NA = Not Analyzed

ND = Not Detected

NL = Not Listed

PAH = Polycyclic Aromatic Hydrocarbon

SQT = Sediment Quality Targets

U = Not Detected

Italic = PAH 17 List

Total PAHs 17 = Sum of detections plus 1/2 DL for NDs

Total PAHs 34 = Sum of detections plus 1/2 DL for NDs

¹ Evaluation of Numerical SQTs-St Louis River AOC-Level I

² Evaluation of Numerical SQTs-St Louis River AOC-Level II

Table 3-2c
Area 3 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-3-02	SLB10-3-02	SLB10-3-02	SLB10-3-02	SLB10-3-02	SLB10-3-03	SLB10-3-03	
	Field Sample ID		SLB10-3-02-06	SLB10-3-02-12	SLB10-3-02-36	SLB10-3-02-60	SLB10-3-02-84	SLB10-3-03-06	SLB10-3-03-12	
	Sample Date		10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	
	Depth Interval		0- 6	0- 12	12- 36	36- 60	60- 84	0- 6	0- 12	
Level I ¹	Level II ²	Unit								
<i>I,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	60	7.4	6 U	4 U	4 U	13	5 U
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	26	6 U	6 U	4 U	4 U	6.2	5 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	7 U	6 U	6 U	4 U	4 U	4 U	5 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	11	6 U	6 U	4 U	4 U	1.7 J	5 U
<i>ANTHRACENE</i>	57	850	µg/kg	14 J	6 UJ	6 UJ	4 U	4 UJ	4 U	5 U
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	59	7.2	6 U	4 U	4 U	12	5 U
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	80	9.5	5.8 J	5.9	4 U	23	31
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	82	6.3	6 U	4 U	4 U	17	20
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	88	22	32	26	24	43	62
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	63	6 U	6 U	4 U	4 U	12	16
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	18	6 U	6 U	4 U	4 U	5.2	6.6
<i>FLUORANTHENE</i>	420	2200	µg/kg	210	11	6 U	4 U	4 U	27	38
<i>FLUORENE</i>	77	540	µg/kg	19	6 U	6 U	4 UJ	4 U	4 U	5 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	78	12	13	10	9.1	25	29
<i>NAPHTHALENE</i>	180	560	µg/kg	40	6 U	6 U	4 U	4 U	6.8	6.2
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	40 J	6 UJ	6 UJ	4 U	4 UJ	13 J	15 J
<i>PYRENE</i>	200	1500	µg/kg	150	15	6.9	4 U	4 U	29	41
TOTAL PAHs 17	1600	23000	µg/kg	1041.55	117.4	96.7	72.7	69.85	240.65	283.35
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-2c
Area 3 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical			Location ID	SLB10-3-03	SLB10-3-03	SLB10-3-04	SLB10-3-04	SLB10-3-04	SLB10-3-04	SLB10-3-05	
	Level I ¹	Level II ²	Field Sample ID	SLB10-3-03-36	SLB10-3-03-56	SLB10-3-04-06	SLB10-3-04-12	SLB10-3-04-36	SLB10-3-04-60	SLB10-3-05-06	
			Sample Date	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/15/2010
			Depth Interval	12- 36	36- 56	0- 6	0- 12	12- 36	36- 60	0- 6	
			Unit								
<i>I,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	10	13	4 U	7.7	8.6	13	280	
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	15 J	
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	5 U	6	4 U	3 U	3 U	12	61 U	
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	5 U	5 U	4 U	3 U	3 U	4 U	61 U	
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	5 U	5 U	4 U	3 U	3 U	4 U	28 J	
<i>ANTHRACENE</i>	57	850	µg/kg	5 U	5 U	4 U	3 U	3 U	4 U	57 J	
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	9.9	12	4 U	6.7	7.1	11	190	
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	20	23	4 U	9.4	9.3	11	220	
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	13	19	4 U	6.9	6.7	8.1	160	
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	85	
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	47	44	31	33	30	21	190	
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	11	13	4 U	4.9	4.8	5.3	190	
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	61 U	
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	61 U	
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	61 U	
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	61 U	
<i>C1-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	61 U	
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	61 U	
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	61 U	
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	61 U	
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	61 U	
<i>C2-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	61 U	
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	61 U	
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	61 U	
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	61 U	
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	61 U	
<i>C3-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	61 U	
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	61 U	
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	61 U	
<i>C4-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	61 U	
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	5 U	5 U	4 U	3 U	3 U	4 U	72	
<i>FLUORANTHENE</i>	420	2200	µg/kg	18	25	4.8	12	15	18	340	
<i>FLUORENE</i>	77	540	µg/kg	5 U	5 U	4 U	3 U	3 U	4 U	23 J	
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	24	30	12	14	13	12	190	
<i>NAPHTHALENE</i>	180	560	µg/kg	5.9	8.1	4 U	4.2	5.3	9.2	79	
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	130	
<i>PHENANTHRENE</i>	200	1200	µg/kg	8.5 J	12 J	4 U	6.1 J	7.3 J	13 J	83	
<i>PYRENE</i>	200	1500	µg/kg	22	29	8.1	15	17	21	290	
TOTAL PAHs 17	1600	23000	µg/kg	204.3	247.35	83.85	131.3	135.8	164.6	2453	
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA	3125.5	

Table 3-2c
Area 3 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-05	SLB10-3-05	SLB10-3-05	SLB10-3-05	SLB10-3-05	SLB10-3-06	SLB10-3-06
			Field Sample ID	SLB10-3-05-116	SLB10-3-05-12	SLB10-3-05-36	SLB10-3-05-60	SLB10-3-05-84	SLB10-3-06-06	SLB10-3-06-06DP
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	84- 116	0- 12	12- 36	36- 60	60- 84	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit							
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	5 U	140	5.5	4 U	4 U	72	53
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	5 UJ	61 J	5 UJ	4 UJ	4 UJ	6.1 J	31
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	5 U	9.6	5 U	4 U	4 U	5 U	5.4 J
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	5 U	28	5 U	4 U	4 U	5 U	6.8
<i>ANTHRACENE</i>	57	850	µg/kg	5 U	40 J	5 U	4 U	4 U	16 J	18 J
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	5 U	150	6.1	4 U	4 U	51	58
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	5.7	170	16	15	7.6	36 J	65
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	5 U	130	9.5	8.1	5.4	38 J	46
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	41	210	45	48	38	130	130
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	5 U	120	6.6	5.1	4 U	23 J	41
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	6.3	41	7.1	6.9	5.3	11 J	10
<i>FLUORANTHENE</i>	420	2200	µg/kg	5 U	280	9.1	4 U	4 U	160	77
<i>FLUORENE</i>	77	540	µg/kg	5 U	38	5 U	4 U	4 U	7.5	15
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	13	150	17	19	14	26 J	51
<i>NAPHTHALENE</i>	180	560	µg/kg	5 U	120	5 U	4 U	4 U	7.8	37
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	5 U	160 J	5 U	4 U	4 U	71	44
<i>PYRENE</i>	200	1500	µg/kg	5 U	270	15	7.3	4 U	150	100
TOTAL PAHs 17	1600	23000	µg/kg	98.5	2117.6	155.1	133.4	97.9	810.5	788.2
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-2c
Area 3 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-3-06	SLB10-3-06	SLB10-3-06	SLB10-3-07	SLB10-3-07	SLB10-3-07	SLB10-3-08	
	Field Sample ID		SLB10-3-06-12	SLB10-3-06-36	SLB10-3-06-48	SLB10-3-07-06	SLB10-3-07-12	SLB10-3-07-33	SLB10-3-08-06	
	Sample Date		10/15/2010	10/15/2010	10/15/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	
	Depth Interval		0- 12	12- 36	36- 48	0- 6	0- 12	12- 33	0- 6	
Level I ¹	Level II ²	Unit								
<i>I,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	6.1	160	4 U	45 J	6 R	46	66
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	0.84 U	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	4 U	52	4 U	0.84 U	6 R	5 R	5 R
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	4 U	6.1	4 U	0.84 U	6 R	5 R	5 R
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	4 U	30	4 U	0.84 U	6 R	5 R	5 R
<i>ANTHRACENE</i>	57	850	µg/kg	4 U	66 J	4 U	0.84 U	6 R	5 R	5 R
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	5.9	180	4 U	30 J	66	75	99
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	9.1	210	5.3	38 J	39	44	46
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	5.2	180	4 U	52 J	54	50	59
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	150	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	34	210	34	140	66 J	60 J	35 J
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	3.9 J	160	4 U	36 J	6 R	34	38
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	0.84 U	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	0.84 U	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	0.84 U	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	0.84 U	NA	NA	NA
<i>C1-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	0.84 U	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	0.84 U	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	0.84 U	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	0.84 U	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	0.84 U	NA	NA	NA
<i>C2-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	0.84 U	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	0.84 U	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	0.84 U	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	0.84 U	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	0.84 U	NA	NA	NA
<i>C3-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	0.84 U	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	0.84 U	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	0.84 U	NA	NA	NA
<i>C4-PHENANTHRENE/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	0.84 U	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	4.8 J	44	4.9 J	31 J	6 R	5 R	5 R
<i>FLUORANTHENE</i>	420	2200	µg/kg	8.3	320	5.3	54 J	6 R	68	93
<i>FLUORENE</i>	77	540	µg/kg	4 U	35	4 U	0.84 U	6 R	5 R	5 R
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	12	200	12	76 J	49 J	46 J	44 J
<i>NAPHTHALENE</i>	180	560	µg/kg	4 U	39	4 U	7.9 J	6 R	44 J	5 R
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	35 J	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	4.8 J	150	4 U	22 J	6 R	59 J	70 J
<i>PYRENE</i>	200	1500	µg/kg	16	300	11	53 J	82	94	110
TOTAL PAHs 17	1600	23000	µg/kg	124.8	2342.1	99.45	774.9	516.5	670.5	715
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	1529.9	NA	NA	NA

Table 3-2c
Area 3 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical			Location ID	SLB10-3-08	SLB10-3-08	SLB10-3-08	SLB10-3-08	SLB10-3-08	SLB10-3-08	SLB10-3-09
	Level I ¹	Level II ²	Field Sample ID	SLB10-3-08-06DP	SLB10-3-08-104	SLB10-3-08-12	SLB10-3-08-36	SLB10-3-08-60	SLB10-3-08-84	SLB10-3-09-06
			Sample Date	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010
			Depth Interval	0- 6	84- 104	0- 12	12- 36	36- 60	60- 84	0- 6
			Unit							
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	64	64	57	93	100	250	60 J
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	10	49 U	4 R	5 R	5 R	100 U	14
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	5 U	4 R	4 R	5 R	5 R	5 R	6 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	7	4 R	4 R	5 R	5 R	5 R	7
<i>ANTHRACENE</i>	57	850	µg/kg	12	4 R	4 R	24 J	5 R	110	18
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	65	99	92 J	100 J	150	240	76 J
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	58	62	50	70	110	210	47 J
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	70	94	74	80	140	270	51 J
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	87 J	70 J	58 J	67 J	80 J	130 J	50 J
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	51 J	40 J	29	52	66	150	30 J
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	34	4 R	4 R	5 R	5 R	100 U	22
<i>FLUORANTHENE</i>	420	2200	µg/kg	120	100	87 J	140 J	170	600	73 J
<i>FLUORENE</i>	77	540	µg/kg	12	4 R	4 R	5 R	5 R	5 R	15
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	69 J	66 J	49 J	62 J	100 J	190 J	49 J
<i>NAPHTHALENE</i>	180	560	µg/kg	26	49 U	4 R	5 R	52 U	100 U	33
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	53	110	74 J	78 J	110	300	59
<i>PYRENE</i>	200	1500	µg/kg	93	120	110	160	200	410	94 J
TOTAL PAHs 17	1600	23000	µg/kg	833.5	926	744	989	1339	3052.5	701
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-2c
Area 3 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-3-09	SLB10-3-09	SLB10-3-09	SLB10-3-09	SLB10-3-09	SLB10-3-09	SLB10-3-10	
	Field Sample ID		SLB10-3-09-06DP	SLB10-3-09-115	SLB10-3-09-12	SLB10-3-09-36	SLB10-3-09-60	SLB10-3-09-84	SLB10-3-10-06	
	Sample Date		10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/15/2010	
	Depth Interval		0- 6	84- 115	0- 12	12- 36	36- 60	60- 84	0- 6	
Level I ¹	Level II ²	Unit								
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	5 J	78	140	180	230	110	110
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	8 J
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	6 U	46	30	25	99 U	47 U	62 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	6 U	8.8	13	9 J	4 R	4 R	62 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	6 U	10	17	16	4 R	4 R	62 U
<i>ANTHRACENE</i>	57	850	µg/kg	6 U	26	36	32	99 U	4 R	62 U
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	6 J	130 J	210 J	210 J	280 J	130 J	71
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	19	85	130	140	200	100	84
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	26	110	150	200	260	99	88
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	31 J
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	88 J	76 J	80 J	96 J	110 J	100 J	190
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	8	81	88	110	120	71	70
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	62 U
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	62 U
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	62 U
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	62 U
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	62 U
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	62 U
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	62 U
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	62 U
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	62 U
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	62 U
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	62 U
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	62 U
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	62 U
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	62 U
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	62 U
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	62 U
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	62 U
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	62 U
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	5 J	23	51	100 U	99 U	4 R	44 J
<i>FLUORANTHENE</i>	420	2200	µg/kg	6 UJ	130 J	230 J	260 J	270 J	280 J	140
<i>FLUORENE</i>	77	540	µg/kg	6 U	27	28	25	4 R	4 R	62 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	24 J	95 J	110 J	140 J	170 J	95 J	110
<i>NAPHTHALENE</i>	180	560	µg/kg	6 U	46	53 J	46	140	91	17 J
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	67
<i>PHENANTHRENE</i>	200	1200	µg/kg	5 J	110	160	180	180	150	68
<i>PYRENE</i>	200	1500	µg/kg	11	150	260	250	330	220	120
TOTAL PAHs 17	1600	23000	µg/kg	218	1231.8	1786	1969	2479	1532	1267
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA	1830

Table 3-2c
Area 3 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-3-10	SLB10-3-10	SLB10-3-10	SLB10-3-10	SLB10-3-11	SLB10-3-11	SLB10-3-11	
	Field Sample ID		SLB10-3-10-12	SLB10-3-10-36	SLB10-3-10-60	SLB10-3-10-86	SLB10-3-11-06	SLB10-3-11-06DP	SLB10-3-11-12	
	Sample Date		10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	
	Depth Interval		0- 12	12- 36	36- 60	60- 86	0- 6	0- 6	0- 12	
Level I ¹	Level II ²	Unit								
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	150	99	44	90	200	110	98
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	58 UJ	48 J	4.7 J	32 J	36	34	43
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	22	9.7	4 U	8.2	13	12	11
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	18	11	4 U	9.2	13	13	9
<i>ANTHRACENE</i>	57	850	µg/kg	53 J	38 J	12 J	37 J	50 J	52 J	24 J
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	140	91	33	95	150	100	98
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	150	85	32	87	150	110	86
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	150	82	38	73	140	91	67
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	160	97	47	150	230	230	120
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	120	66	21	70	100	66	61
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	30	17	12	18	30	28	19
<i>FLUORANTHENE</i>	420	2200	µg/kg	310	190	95	180	260	190	150
<i>FLUORENE</i>	77	540	µg/kg	39	28	4 U	22	37	35	24
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	130	85	28	95	63	170	68
<i>NAPHTHALENE</i>	180	560	µg/kg	58	40	5.4	30	45	42	56
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	210 J	160 J	44 J	120 J	180	140	85
<i>PYRENE</i>	200	1500	µg/kg	280	190	93	180	250	170	170
TOTAL PAHs 17	1600	23000	µg/kg	2049	1336.7	516.45	1296.4	1947	1593	1189
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-2c
Area 3 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-11	SLB10-3-11	SLB10-3-12	SLB10-3-12	SLB10-3-12	SLB10-3-13
			Field Sample ID	SLB10-3-11-36	SLB10-3-11-50	SLB10-3-12-06	SLB10-3-12-06DP	SLB10-3-12-10	SLB10-3-13-06
			Sample Date	10/15/2010	10/15/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010
			Depth Interval	12- 36	36- 50	0- 6	0- 6	0- 10	0- 6
Chemical	Level I ¹	Level II ²	Unit						
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	48	34	49 U	11	4 U	20
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	6.6	19	49 U	11	4 U	9
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	5 U	37	49 U	4 U	4 U	4 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	5 U	4 U	49 U	4 U	4 U	4 U
<i>ANTHRACENE</i>	57	850	µg/kg	9.6	7.7	49 UJ	3.9 J	4 UJ	3.3 J
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	43	120 J	25 J	10	5.2	22
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	70	150 J	49 U	19	4 U	11
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	76	180 J	48 J	27 J	6.1 J	17
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	62	220 J	64	34	24	29
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	44	27	49 U	8.3	4 U	5.8 J
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	11	8.1	49 U	4 U	4 U	4 U
<i>FLUORANTHENE</i>	420	2200	µg/kg	47 J	160 J	47 J	22	5.6	24
<i>FLUORENE</i>	77	540	µg/kg	9.3	10	49 U	4 U	4 U	4.8
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	54 J	38 J	43 J	27	8.4	14
<i>NAPHTHALENE</i>	180	560	µg/kg	8.7	8.4	49 U	9.1	4 U	11
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	42	120 J	26 J	11	4 U	19
<i>PYRENE</i>	200	1500	µg/kg	39	260 J	35 J	22	7.8	36
TOTAL PAHs 17	1600	23000	µg/kg	575.6	1401.55	533	224.3	80.75	232.35
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA

Table 3-2c
Area 3 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-3-13	SLB10-3-13	SLB10-3-14	SLB10-3-14	SLB10-3-14	SLB10-3-15	SLB10-3-15	
	Field Sample ID		SLB10-3-13-06DP	SLB10-3-13-12	SLB10-3-14-06	SLB10-3-14-12	SLB10-3-14-42	SLB10-3-15-06	SLB10-3-15-06DP	
	Sample Date		10/16/2010	10/16/2010	10/14/2010	10/14/2010	10/14/2010	10/15/2010	10/15/2010	
	Depth Interval		0- 6	0- 12	0- 6	0- 12	12- 42	0- 6	0- 6	
Level I ¹	Level II ²	Unit								
1,2-BENZPHENANTHRACENE	170	1300	µg/kg	24	5.6	0.46 U	7 U	60	4 J	46
1-METHYLNAPHTHALENE	NL	NL	µg/kg	NA	NA	0.46 U	NA	NA	NA	NA
2-METHYLNAPHTHALENE	20	200	µg/kg	12	4 U	0.46 U	8	39	4 UJ	39 UJ
ACENAPHTHENE	6.7	89	µg/kg	4 U	4 U	0.46 U	3 U	4 R	4 U	39 U
ACENAPHTHYLENE	5.9	130	µg/kg	4 U	4 U	0.46 U	4	4 R	4 U	39 U
ANTHRACENE	57	850	µg/kg	5.4	4 U	0.46 U	10	4 R	4 U	39 U
BENZO(A)ANTHRACENE	110	1100	µg/kg	31	5	0.46 U	7 UJ	94	4 J	40
BENZO(A)PYRENE	150	1500	µg/kg	30	2.7 J	0.46 U	12	43	4.4	50
BENZO(B)FLUORANTHENE	NL	NL	µg/kg	40 J	6.4	13 J	16	48	3.6 J	55
BENZO(E)PYRENE	NL	NL	µg/kg	NA	NA	0.46 U	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NL	NL	µg/kg	64	21	67	65 J	54 J	22	82
BENZO(K)FLUORANTHENE	NL	NL	µg/kg	14 J	4 UJ	9.6 J	37	33	4 U	42
C1-CHRYSENES	NL	NL	µg/kg	NA	NA	0.46 U	NA	NA	NA	NA
C1-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	0.46 U	NA	NA	NA	NA
C1-FLUORENES	NL	NL	µg/kg	NA	NA	0.46 U	NA	NA	NA	NA
C1-NAPHTHALENES	NL	NL	µg/kg	NA	NA	0.46 U	NA	NA	NA	NA
C1-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	0.46 U	NA	NA	NA	NA
C2-CHRYSENES	NL	NL	µg/kg	NA	NA	0.46 U	NA	NA	NA	NA
C2-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	0.46 U	NA	NA	NA	NA
C2-FLUORENES	NL	NL	µg/kg	NA	NA	0.46 U	NA	NA	NA	NA
C2-NAPHTHALENES	NL	NL	µg/kg	NA	NA	0.46 U	NA	NA	NA	NA
C2-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	0.46 U	NA	NA	NA	NA
C3-CHRYSENES	NL	NL	µg/kg	NA	NA	0.46 U	NA	NA	NA	NA
C3-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	0.46 U	NA	NA	NA	NA
C3-FLUORENES	NL	NL	µg/kg	NA	NA	0.46 U	NA	NA	NA	NA
C3-NAPHTHALENES	NL	NL	µg/kg	NA	NA	0.46 U	NA	NA	NA	NA
C3-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	0.46 U	NA	NA	NA	NA
C4-CHRYSENES	NL	NL	µg/kg	NA	NA	0.46 U	NA	NA	NA	NA
C4-NAPHTHALENES	NL	NL	µg/kg	NA	NA	0.46 U	NA	NA	NA	NA
C4-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	0.46 U	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	33	140	µg/kg	9.1	4 U	17 J	9	4 R	3 J	47
FLUORANTHENE	420	2200	µg/kg	31	8	0.46 U	7 UJ	85	14	80
FLUORENE	77	540	µg/kg	11	5	0.46 U	9	4 R	4 U	39 U
INDENO(1,2,3-CD)PYRENE	NL	NL	µg/kg	35	7.5	35 J	21 J	42 J	7.1	61
NAPHTHALENE	180	560	µg/kg	14	4 U	0.46 U	22	69	4 U	39 U
PERYLENE	NL	NL	µg/kg	NA	NA	0.46 U	NA	NA	NA	NA
PHENANTHRENE	200	1200	µg/kg	31	5.1	0.46 U	34	97	5.7	39 J
PYRENE	200	1500	µg/kg	27 J	11	5.2 J	7 U	110	21 J	87
TOTAL PAHs 17	1600	23000	µg/kg	382.7	92	372.3	262.5	807	103.15	746
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	720.8	NA	NA	NA	NA

Table 3-2c
Area 3 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-3-15	SLB10-3-15	SLB10-3-16	SLB10-3-16	SLB10-3-16	SLB10-3-16	
	Field Sample ID		SLB10-3-15-12	SLB10-3-15-32	SLB10-3-16-06	SLB10-3-16-12	SLB10-3-16-36	SLB10-3-16-71	
	Sample Date		10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	
	Depth Interval		0- 12	12- 32	0- 6	0- 12	12- 36	36- 71	
Level I ¹	Level II ²	Unit							
<i>I,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	8.9	14	320	720	14	6 U
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	15 J	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	9.8	23	32 J	290 U	4 U	6 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	4 U	4 U	11 J	23	4 U	6 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	4 U	4 U	38 J	290 U	4 U	6 U
<i>ANTHRACENE</i>	57	850	µg/kg	4 U	4.6 J	77	250 J	4 U	6 U
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	7.8	15	250	770	15	6 U
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	17	13	270	920	22	17
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	10	9	270	760	19	14
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	100	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	74	32	210	840	50	100
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	8	5.8	190	780	13 J	9.3
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	66 U	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	66 U	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	66 U	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	66 U	NA	NA	NA
<i>C1-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	66 U	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	66 U	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	66 U	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	66 U	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	66 U	NA	NA	NA
<i>C2-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	66 U	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	66 U	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	66 U	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	66 U	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	66 U	NA	NA	NA
<i>C3-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	66 U	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	66 U	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	66 U	NA	NA	NA
<i>C4-PHENANTHRENES/ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	66 U	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	5.4	4 J	83	700	7.8	11
<i>FLUORANTHENE</i>	420	2200	µg/kg	11	22	430	1300	24	6 U
<i>FLUORENE</i>	77	540	µg/kg	4 U	4.5	28 J	290 U	4 U	6 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	20	11	230	930	25	37
<i>NAPHTHALENE</i>	180	560	µg/kg	20	35	84	270 J	4 U	6 U
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	170	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	7	15	96	420	7.5	6 U
<i>PYRENE</i>	200	1500	µg/kg	16	35	350	1200	31	11
TOTAL PAHs 17	1600	23000	µg/kg	222.9	246.9	2969	10318	242.4	230.3
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	3735	NA	NA	NA

Table 3-2c
Area 3 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-3-17	SLB10-3-17	SLB10-3-17	SLB10-3-17	SLB10-3-17	SLB10-3-18	SLB10-3-18	
	Field Sample ID		SLB10-3-17-06	SLB10-3-17-06DP	SLB10-3-17-12	SLB10-3-17-36	SLB10-3-17-69	SLB10-3-18-06	SLB10-3-18-06DP	
	Sample Date		10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	
	Depth Interval		0- 6	0- 6	0- 12	12- 36	36- 69	0- 6	0- 6	
Level I ¹	Level II ²	Unit								
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	210	150	56	14	4 U	19	18
<i>1-METHYLNAPHTHALENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	160 J	130 J	12	4 U	4 U	5.7 J	4.9 J
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	18	15	4 U	4 U	4 U	4 U	4 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	35	28	16	4 U	4 U	4 U	2.7 J
<i>ANTHRACENE</i>	57	850	µg/kg	92 J	69 J	21 J	4 U	4 U	5.6 J	4.9 J
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	220	170	64	14	4 U	19	18
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	240	180	74	17	4 U	30	30
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	210	160	64	10	4 U	23	23
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	250	210	120	75	31	32	41
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	180	140	56	9.5	4 U	16	15
<i>C1-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C1-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C2-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORANTHENES/PYRENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-FLUORENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C3-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-CHRYSENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-NAPHTHALENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>C4-PHENANTHRENES/ ANTHRACENES</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	49	38	21	5.8	3.4 J	10	8.4
<i>FLUORANTHENE</i>	420	2200	µg/kg	350	270	120	20	4 U	25	25
<i>FLUORENE</i>	77	540	µg/kg	55	46	15	4.5	4 U	4 U	4 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	230	150	77	22	11	21	23
<i>NAPHTHALENE</i>	180	560	µg/kg	370	260	12	4 U	4 U	11	9.5
<i>PERYLENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	NA	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	240 J	180 J	32	6.4	4 U	13	12
<i>PYRENE</i>	200	1500	µg/kg	380	270	110	38 J	5.3	35	35
TOTAL PAHs 17	1600	23000	µg/kg	3289	2466	872.3	247.2	81.25	271.6	274.5
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-2c
Area 3 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-3-18	SLB10-3-18	SLB10-3-18	SLB10-3-18	SLB10-3-19	SLB10-3-19	SLB10-3-19	
	Field Sample ID		SLB10-3-18-12	SLB10-3-18-36	SLB10-3-18-60	SLB10-3-18-95	SLB10-3-19-06	SLB10-3-19-12	SLB10-3-19-36	
	Sample Date		10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	
	Depth Interval		0- 12	12- 36	36- 60	60- 95	0- 6	0- 12	12- 36	
Level I ¹	Level II ²	Unit								
<i>I,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	73	97	100	33	14	84	310
1-METHYLNAPHTHALENE	NL	NL	µg/kg	NA	NA	NA	NA	4 U	NA	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	15	39	47 U	4 U	4 U	18	130 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	4.7	6.6	6.2	4 U	4 U	6.9	15
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	13	18	20	4.9	4 U	20	130 U
<i>ANTHRACENE</i>	57	850	µg/kg	25 J	36 J	43 J	7.5 J	4 U	48 J	100 J
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	71	100	110	36	10	84	340
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	80	100	120	28	14	82	370
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	42	72	90	19	12	80	270
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA	NA	NA	NA	8	NA	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	120	110	160	38	53 J	120	340
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	31	82	110	20 J	9	57	310
C1-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	NA	9 J	NA	NA
C1-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	NA	NA	13 J	NA	NA
C1-FLUORENES	NL	NL	µg/kg	NA	NA	NA	NA	3 J	NA	NA
C1-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	NA	4 U	NA	NA
C1-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	NA	5 J	NA	NA
C2-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	NA	4 U	NA	NA
C2-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	NA	NA	6 J	NA	NA
C2-FLUORENES	NL	NL	µg/kg	NA	NA	NA	NA	4 U	NA	NA
C2-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	NA	4 U	NA	NA
C2-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	NA	4 U	NA	NA
C3-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	NA	4 U	NA	NA
C3-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA	NA	NA	NA	4 U	NA	NA
C3-FLUORENES	NL	NL	µg/kg	NA	NA	NA	NA	4 U	NA	NA
C3-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	NA	4 U	NA	NA
C3-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	NA	4 U	NA	NA
C4-CHRYSENES	NL	NL	µg/kg	NA	NA	NA	NA	4 U	NA	NA
C4-NAPHTHALENES	NL	NL	µg/kg	NA	NA	NA	NA	4 U	NA	NA
C4-PHENANTHRENES/ ANTHRACENES	NL	NL	µg/kg	NA	NA	NA	NA	4 U	NA	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	11	29	30	6.2	4	17	200
<i>FLUORANTHENE</i>	420	2200	µg/kg	120	160	180	52	17	160	540
<i>FLUORENE</i>	77	540	µg/kg	14	21	29	4 U	4 U	23	130 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	33	82	110	21	21	83	300
<i>NAPHTHALENE</i>	180	560	µg/kg	27	77	47 U	4 U	8	34	130 U
PERYLENE	NL	NL	µg/kg	NA	NA	NA	NA	13	NA	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	54	76	94	18	6	110	220
<i>PYRENE</i>	200	1500	µg/kg	120	180	200	59	15	150	570
TOTAL PAHs 17	1600	23000	µg/kg	853.7	1285.6	1449.2	352	193	1176.9	4145
TOTAL PAHs 34	1600	23000	µg/kg	NA	NA	NA	NA	266	NA	NA

Table 3-2c
Area 3 Sediment Sample Analytical Results - PAHs
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-19
			Field Sample ID	SLB10-3-19-69
			Sample Date	10/15/2010
			Depth Interval	36- 69
Chemical	Level I ¹	Level II ²	Unit	
<i>1,2-BENZPHENANTHRACENE</i>	170	1300	µg/kg	16
1-METHYLNAPHTHALENE	NL	NL	µg/kg	NA
<i>2-METHYLNAPHTHALENE</i>	20	200	µg/kg	4 U
<i>ACENAPHTHENE</i>	6.7	89	µg/kg	4 U
<i>ACENAPHTHYLENE</i>	5.9	130	µg/kg	4 U
<i>ANTHRACENE</i>	57	850	µg/kg	4 U
<i>BENZO(A)ANTHRACENE</i>	110	1100	µg/kg	16
<i>BENZO(A)PYRENE</i>	150	1500	µg/kg	16
<i>BENZO(B)FLUORANTHENE</i>	NL	NL	µg/kg	10
<i>BENZO(E)PYRENE</i>	NL	NL	µg/kg	NA
<i>BENZO(G,H,I)PERYLENE</i>	NL	NL	µg/kg	37
<i>BENZO(K)FLUORANTHENE</i>	NL	NL	µg/kg	9.4 J
C1-CHRYSENES	NL	NL	µg/kg	NA
C1-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA
C1-FLUORENES	NL	NL	µg/kg	NA
C1-NAPHTHALENES	NL	NL	µg/kg	NA
C1-PHENANTHRENE/ANTHRACENES	NL	NL	µg/kg	NA
C2-CHRYSENES	NL	NL	µg/kg	NA
C2-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA
C2-FLUORENES	NL	NL	µg/kg	NA
C2-NAPHTHALENES	NL	NL	µg/kg	NA
C2-PHENANTHRENE/ANTHRACENES	NL	NL	µg/kg	NA
C3-CHRYSENES	NL	NL	µg/kg	NA
C3-FLUORANTHENES/PYRENES	NL	NL	µg/kg	NA
C3-FLUORENES	NL	NL	µg/kg	NA
C3-NAPHTHALENES	NL	NL	µg/kg	NA
C3-PHENANTHRENE/ANTHRACENES	NL	NL	µg/kg	NA
C4-CHRYSENES	NL	NL	µg/kg	NA
C4-NAPHTHALENES	NL	NL	µg/kg	NA
C4-PHENANTHRENE/ANTHRACENES	NL	NL	µg/kg	NA
<i>DIBENZO(A,H)ANTHRACENE</i>	33	140	µg/kg	5.7
<i>FLUORANTHENE</i>	420	2200	µg/kg	26
<i>FLUORENE</i>	77	540	µg/kg	4 U
<i>INDENO(1,2,3-CD)PYRENE</i>	NL	NL	µg/kg	16
<i>NAPHTHALENE</i>	180	560	µg/kg	4 U
<i>PERYLENE</i>	NL	NL	µg/kg	NA
<i>PHENANTHRENE</i>	200	1200	µg/kg	13
<i>PYRENE</i>	200	1500	µg/kg	38
TOTAL PAHs 17	1600	23000	µg/kg	217.2
TOTAL PAHs 34	1600	23000	µg/kg	NA

Notes:

Result exceeds SQTs - Level I.

Result exceeds SQTs - Level II.

"-" = Not Calculated

µg/kg = Microgram per kilogram

DL = Detection Limit

ID = Identification

J = Estimated Value

NA = Not Analyzed

ND = Not Detected

NL = Not Listed

PAH = Polycyclic Aromatic Hydrocarbon

SQT = Sediment Quality Targets

U = Not Detected

Italic = PAH 17 List

Total PAHs 17 = Sum of detections plus 1/2 DL for NDs

Total PAHs 34 = Sum of detections plus 1/2 DL for NDs

¹ Evaluation of Numerical SQTs-St Louis River AOC-Level I

² Evaluation of Numerical SQTs-St Louis River AOC-Level II

Table 3-3a
Area 1 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-20	SLB10-1-20	SLB10-1-21	SLB10-1-21	SLB10-1-21	SLB10-1-22	SLB10-1-22	SLB10-1-22
			Field Sample ID	SLB10-1-20-06	SLB10-1-20-10	SLB10-1-21-06	SLB10-1-21-06DP	SLB10-1-21-14	SLB10-1-22-06	SLB10-1-22-06DP	SLB10-1-22-19
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	0- 6	0- 10	0- 6	0- 6	0- 14	0- 6	0- 6	0- 19
Chemical	Level I ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	7420	5130	6800	6590	5860	6560	7190	5250
ANTIMONY	NL	NL	mg/kg	0.6 UJ	0.28 UJ	0.53 UJ	0.49 UJ	0.27 UJ	0.22 UJ	0.23 UJ	0.19 UJ
ARSENIC	9.8	33	mg/kg	14.9 J	5 J	3.7 J	3.8 J	5 J	3 J	2.7 J	1.7 J
BARIUM	NL	NL	mg/kg	128	95.9 J	55	65.9	82.9 J	65.4	74.5	45.9 J
BERYLLIUM	NL	NL	mg/kg	0.9	0.75 J	0.39 J	0.42 J	0.69 J	0.18 J	0.25 J	0.073 J
CADMIUM	0.99	5	mg/kg	2.3 J	2.6 J	1.3 J	1.3 J	2.5 J	1.6	2	0.64 J
CALCIUM	NL	NL	mg/kg	17400	4140	3600	3300	2930	14500	12500	17700
CHROMIUM	43	110	mg/kg	67.7	53.9	30.2	33.2	33.4	39.9	46	17.6
COBALT	NL	NL	mg/kg	6.9 J	5.2 J	8.5	7.9	6 J	0.045 UJ	7.7	5.8 J
COPPER	32	150	mg/kg	46.7	31.7	34.6	36.7	41.7	34.8	43.8	15.3
IRON	NL	NL	mg/kg	17900	12800	15300	16300	15800	16200	19900	9390
LEAD	36	130	mg/kg	40.6	41.8 J	30.2	30.1	27 J	32.3	41.1	9.5 J
MAGNESIUM	NL	NL	mg/kg	3000	1810	3650	3710	2610	5500	5610	7740
MANGANESE	NL	NL	mg/kg	212	147	188	172	172	320	375	230
MERCURY	0.18	1.1	mg/kg	0.18	0.26	0.19	0.16	0.16 J	0.16	0.23	0.082 J
NICKEL	23	49	mg/kg	35.2	27.1 J	27.6	29.4	25.2 J	26.5	28.9	14.9 J
POTASSIUM	NL	NL	mg/kg	8.1 UJ	643 J	7.3 UJ	6.7 UJ	587 J	649 J	673 J	591 J
SELENIUM	NL	NL	mg/kg	1.1 J	2.1 J	0.83 J	0.79 J	1.1 J	0.87 J	0.91 J	0.94 J
SILVER	NL	NL	mg/kg	0.63 U	0.063 U	0.56 U	0.52 U	0.061 U	0.05 UJ	0.052 U	0.043 U
SODIUM	NL	NL	mg/kg	4.4 UJ	6.5 UJ	4 UJ	3.6 UJ	6.3 UJ	5.2 UJ	292 J	4.4 UJ
THALLIUM	NL	NL	mg/kg	0.46 U	0.24 U	0.41 U	0.38 U	0.24 U	0.19 U	0.2 U	0.16 U
VANADIUM	NL	NL	mg/kg	42.8 J	18 J	19.3 J	20.8 J	18.3 J	23.6	25.9	20.9 J
ZINC	120	460	mg/kg	179	94 J	104	110	91.4 J	118	146	38 J

Table 3-3a
Area 1 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-23	SLB10-1-23	SLB10-1-23	SLB10-1-24	SLB10-1-24	SLB10-1-24	SLB10-1-24	SLB10-1-25
			Field Sample ID	SLB10-1-23-06	SLB10-1-23-06DP	SLB10-1-23-16	SLB10-1-24-06	SLB10-1-24-06DP	SLB10-1-24-12	SLB10-1-24-24	SLB10-1-25-06
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	0- 6	0- 6	0- 16	0- 6	0- 6	0- 12	12- 24	0- 6
Chemical	Level I ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	9700	8800	5560	6530	6890	7420	4530	14900
ANTIMONY	NL	NL	mg/kg	0.72 UJ	0.66 UJ	0.32 UJ	0.25 UJ	0.26 UJ	0.27 UJ	0.35 J	1.4 UJ
ARSENIC	9.8	33	mg/kg	6.2 J	15.3 J	8.5 J	8.3 J	8.7 J	8.4 J	5.9 J	6.3
BARIUM	NL	NL	mg/kg	122	116	132 J	519 J	513 J	415	182	180
BERYLLIUM	NL	NL	mg/kg	0.67 J	0.87	1.2	1	1.3	1.3	0.5 J	0.79 J
CADMIUM	0.99	5	mg/kg	3.7 J	3.2 J	2.8 J	0.0095 UJ	0.0098 UJ	0.01 UJ	1.7	0.7 J
CALCIUM	NL	NL	mg/kg	7370	6890	2560	4720	4890	7730	2480	8440
CHROMIUM	43	110	mg/kg	68.7	59.7	43.9	19.4	17.4	15.5	24.1	38.3 J
COBALT	NL	NL	mg/kg	10	8.7	4.9 J	6.7 J	6.7 J	0.054 UJ	0.042 UJ	12.6 J
COPPER	32	150	mg/kg	66	62.8	30.2	44	40.4	35.1	16.6	34.5
IRON	NL	NL	mg/kg	20100	17900	11000	19700	15300	12700	7500	28300
LEAD	36	130	mg/kg	87.7	88	33.4 J	69.4 J	63.9 J	50	30.9	36.8
MAGNESIUM	NL	NL	mg/kg	4880	4150	1330	2080	1950	2920	1520	8150 J
MANGANESE	NL	NL	mg/kg	302	273	149	284	236	215	96.9	685 J
MERCURY	0.18	1.1	mg/kg	0.38	0.5	0.53	0.096 J	0.14 J	0.52	0.23	0.27 J+
NICKEL	23	49	mg/kg	42.5	37.6	23.7 J	18.1 J	16.7 J	16.5	17.8	26.7 J
POTASSIUM	NL	NL	mg/kg	1030	990	831 J	841 J	954 J	1020	650 J	18.8 U
SELENIUM	NL	NL	mg/kg	1.2 J	0.58 U	1.7 J	1.7 J	1.4 J	1.3 J	0.54 U	2.2 J
SILVER	NL	NL	mg/kg	0.75 U	0.7 U	0.072 U	0.24 J	0.058 U	0.061 UJ	0.048 U	1.5 U
SODIUM	NL	NL	mg/kg	5.3 UJ	4.9 UJ	7.4 UJ	5.8 UJ	6 UJ	6.3 UJ	171 J	10.3 U
THALLIUM	NL	NL	mg/kg	0.55 U	0.51 U	0.27 U	0.22 U	0.22 U	0.23 U	0.18 U	1.1 U
VANADIUM	NL	NL	mg/kg	26.4 J	24.1 J	18.8 J	25.6 J	28.4 J	31.7	16	37.1
ZINC	120	460	mg/kg	238	210	69.1 J	185 J	150 J	106	64.6	156

Table 3-3a
Area 1 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-25	SLB10-1-25	SLB10-1-25	SLB10-1-25	SLB10-1-25	SLB10-1-25	SLB10-1-26	SLB10-1-26
			Field Sample ID	SLB10-1-25-06DP	SLB10-1-25-12	SLB10-1-25-36	SLB10-1-25-60	SLB10-1-25-84	SLB10-1-25-116	SLB10-1-26-06	SLB10-1-26-12
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	84- 116	0- 6	0- 12
Chemical	Level I ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	16000	15000	12200	15500	12600	12000	13700	8060
ANTIMONY	NL	NL	mg/kg	1.4 UJ	1.2 UJ	0.81 UJ	0.84 UJ	0.82 UJ	0.98 J	1.3 UJ	0.26 UJ
ARSENIC	9.8	33	mg/kg	6.1	6.5	5.5 J+	8.4 J+	12.5	6.7 J+	7.5 J	6.7 J
BARIUM	NL	NL	mg/kg	197	205	120	420	253	147	2300	161 J
BERYLLIUM	NL	NL	mg/kg	0.8 J	0.8 J	0.67 J+	1.5 J+	1.4 J+	0.52 J+	0.75 J	0.46 J
CADMIUM	0.99	5	mg/kg	0.78 J	0.87 J	0.71 J+	3.9 J+	6.7	2.2 J+	6 J	5.1 J
CALCIUM	NL	NL	mg/kg	9120	9520	12100	9130	8460	7520	19100	12700
CHROMIUM	43	110	mg/kg	40.2 J	39.7 J	31.7 J	77.2 J	67 J	36.5 J	87.7	56.7
COBALT	NL	NL	mg/kg	13.7 J	13 J	11.5	12.7	11.6	10.4	0.14 UJ	8.1 J
COPPER	32	150	mg/kg	37.3	33.9	28.6	52.2	57.6	52.2	89.9	59.5
IRON	NL	NL	mg/kg	29900	28300	21700	23800	25200	21000	28100	17800
LEAD	36	130	mg/kg	40.3	39.6	36.8	124	175	182	124	87.6 J
MAGNESIUM	NL	NL	mg/kg	8560 J	8460 J	9270 J	7310 J	6610 J	7020 J	7800	3940
MANGANESE	NL	NL	mg/kg	724 J	671 J	524 J	424 J	356 J	354 J	1020	326
MERCURY	0.18	1.1	mg/kg	0.3 J+	0.21 J+	0.31 J+	0.62 J+	1.9 J+	0.49 J+	0.71	0.7
NICKEL	23	49	mg/kg	29.5 J	28.4 J	25.6 J	42.9 J	46.4 J	24.9 J	54.5	46.9 J
POTASSIUM	NL	NL	mg/kg	18.7 U	1590	1350	1450	1390	1280	17 UJ	735 J
SELENIUM	NL	NL	mg/kg	1.8 J	2.4 J	1.2 J+	1.9 J+	2.2 J+	1.2 J+	2.3 J	1.5 J
SILVER	NL	NL	mg/kg	1.4 U	1.2 U	0.85 U	0.89 U	0.86 U	0.71 U	1.3 U	0.058 U
SODIUM	NL	NL	mg/kg	10.2 U	8.6 U	6 U	6.3 U	6.1 U	5 U	9.3 UJ	6 UJ
THALLIUM	NL	NL	mg/kg	1.1 U	0.89 U	0.62 U	0.65 U	0.63 U	0.52 U	0.96 U	0.22 U
VANADIUM	NL	NL	mg/kg	38.5	37.3	35	40.5	38.1	29.2	33.9 J	21.8 J
ZINC	120	460	mg/kg	171	158	137	282	406	416	1340	230 J

Table 3-3a
Area 1 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-27	SLB10-1-27	SLB10-1-27	SLB10-1-28	SLB10-1-28	SLB10-1-28	SLB10-1-28	SLB10-1-28	
			Field Sample ID	SLB10-1-27-06	SLB10-1-27-06DP	SLB10-1-27-17	SLB10-1-28-06	SLB10-1-28-06DP	SLB10-1-28-12	SLB10-1-28-36	SLB10-1-28-60	
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	
			Depth Interval	0- 6	0- 6	0- 17	0- 6	0- 6	0- 12	12- 36	36- 60	
Chemical	Level I ¹	Level II ²	Unit									
ALUMINUM	NL	NL	mg/kg	3980	3870	3310	6590	6090	7910	4130	6950	
ANTIMONY	NL	NL	mg/kg	0.51 UJ	0.51 UJ	0.18 UJ	10.8 U	10.4 U	11.5 U	8.6 U	0.22 UJ	
ARSENIC	9.8	33	mg/kg	1.9 J	1.9 J	0.82 J	3.3 J	3.4 J	7	2.3 J	1.3 J	
BARIUM	NL	NL	mg/kg	26.5	27.1	0.12 UJ	203 J+	187 J+	332 J+	41.4 J+	44.1	
BERYLLIUM	NL	NL	mg/kg	0.18 J	0.12 J	0.015 U	0.55 J	0.52 J	1.3 J	0.72 U	0.017 U	
CADMIUM	0.99	5	mg/kg	0.27 J	0.37 J	0.007 UJ	0.57 J	0.52 J	1.6 J	0.24 J	0.1 J	
CALCIUM	NL	NL	mg/kg	4870	3960	3550	7010	6940	5300	10300	7510	
CHROMIUM	43	110	mg/kg	10	10.4	9.8	18.6	16.4	28.1	11.3	15.9	
COBALT	NL	NL	mg/kg	0.056 UJ	0.057 UJ	4.3 J	6.6 J	6.3 J	6.6 J	5.8 J	7.4	
COPPER	32	150	mg/kg	8.5	9.2	6.4	20.2	18	28.3	11.6	10.1	
IRON	NL	NL	mg/kg	7130	7150	6910	13100	12300	15200	8630	11000	
LEAD	36	130	mg/kg	5.8	7.5	3.5 J	21.5	20.3	41.4	10.3	3.2	
MAGNESIUM	NL	NL	mg/kg	3200	2940	2690	4590	4500	3160	6200	5190	
MANGANESE	NL	NL	mg/kg	156	158	120	269	244	238	235	243	
MERCURY	0.18	1.1	mg/kg	0.094 J	0.065 J	0.049 J	0.22	0.22	0.46	0.087 J	0.059 J	
NICKEL	23	49	mg/kg	11	11.6	9.2 J	15.2	13.9	18.1	11.4 J	14.2	
POTASSIUM	NL	NL	mg/kg	6.9 UJ	7 UJ	266 J	586 J+	542 J+	697 J+	438 J+	607 J	
SELENIUM	NL	NL	mg/kg	0.44 U	0.45 U	0.47 UJ	6.3 U	6.1 U	6.7 U	5 U	0.61 J	
SILVER	NL	NL	mg/kg	0.53 U	0.54 U	0.042 U	1.8 UJ	1.7 UJ	1.9 UJ	1.4 UJ	0.049 U	
SODIUM	NL	NL	mg/kg	3.8 UJ	3.8 UJ	4.3 UJ	898 U	867 U	961 U	716 U	5.1 UJ	
THALLIUM	NL	NL	mg/kg	0.39 U	0.4 U	0.16 U	4.5 U	4.3 U	4.8 U	3.6 U	0.19 U	
VANADIUM	NL	NL	mg/kg	12.9 J	12.7 J	14.1 J	20.8	19.4	27.1	18.1	22.9	
ZINC	120	460	mg/kg	30.2	33.9	20.7 J	74.2	68.8	123	42.8	38.3	

Table 3-3a
Area 1 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-28	SLB10-1-28	SLB10-1-29	SLB10-1-29	SLB10-1-29	SLB10-1-29	SLB10-1-29	SLB10-1-30
			Field Sample ID	SLB10-1-28-84	SLB10-1-28-106	SLB10-1-29-06	SLB10-1-29-12	SLB10-1-29-36	SLB10-1-29-60	SLB10-1-29-78	SLB10-1-30-06
			Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/16/2010
			Depth Interval	60- 84	84- 106	0- 6	0- 12	12- 36	36- 60	60- 78	0- 6
Chemical	Level I ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	6180	5110	1780	4290	10200	6190	9480	5030
ANTIMONY	NL	NL	mg/kg	0.2 UJ	0.19 UJ	7.3 U	0.19 UJ	0.26 UJ	0.19 UJ	0.2 UJ	0.23 UJ
ARSENIC	9.8	33	mg/kg	1.5	1.4	1.2 J	1.4	4.9	1.4	1.8	2.6 J
BARIUM	NL	NL	mg/kg	36.3	29.3	14.3 J+	29	177	33.1	59.1	61.9 J
BERYLLIUM	NL	NL	mg/kg	0.016 U	0.015 U	0.61 U	0.015 U	0.47 J	0.015 U	0.016 U	0.13 J
CADMIUM	0.99	5	mg/kg	0.054 J	0.063 J	0.61 U	0.094 J	0.79 J	0.057 J	0.2 J	0.0086 UJ
CALCIUM	NL	NL	mg/kg	4210	4700	1380	3030	5910	6080	7980	2700
CHROMIUM	43	110	mg/kg	12.8	11.7	4.7	9.7	25.2	13.2	22.2	11.1
COBALT	NL	NL	mg/kg	5.7 J	5.3 J	2.8 J	4.9 J	10	6.5	9.8	6.1 J
COPPER	32	150	mg/kg	7.4	10.1	4.1 J	6.9	22.3	8.2	12.9	13.2
IRON	NL	NL	mg/kg	8920	9700	4620	8090	18000	10400	14400	11500
LEAD	36	130	mg/kg	3.2	2.5	3.8	6.9	45.3	2.6	3.6	11.4 J
MAGNESIUM	NL	NL	mg/kg	3320	3430	1170 J	2650	4820	4440	6360	2210
MANGANESE	NL	NL	mg/kg	154	94.9	105	133	293	170	247	186
MERCURY	0.18	1.1	mg/kg	0.054 J	0.049 U	0.056 J	0.077 J	0.2	0.051 U	0.053 U	0.096 J
NICKEL	23	49	mg/kg	11	10.8	5.1 J	9.2	22	12.6	18.7	11.8 J
POTASSIUM	NL	NL	mg/kg	378 J	378 J	606 U	383 J	1020	493 J	919	351 J
SELENIUM	NL	NL	mg/kg	0.77 J	0.47 U	4.2 U	0.48 U	1 J	0.48 U	0.5 U	1.4 J
SILVER	NL	NL	mg/kg	0.044 U	0.042 U	1.2 UJ	0.043 U	0.058 U	0.043 U	0.045 U	0.051 U
SODIUM	NL	NL	mg/kg	4.6 UJ	4.3 UJ	606 U	4.4 UJ	6 UJ	4.4 UJ	4.6 UJ	5.3 UJ
THALLIUM	NL	NL	mg/kg	0.17 U	0.16 U	3 U	0.16 U	0.22 U	0.16 U	0.17 U	0.2 U
VANADIUM	NL	NL	mg/kg	22.7	22.1	10.3 J	20.3	36	21.4	28.4	19.5 J
ZINC	120	460	mg/kg	25.5	21.5	14.5	29.1	105	29.8	53	66.9 J

Table 3-3a
Area 1 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-30	SLB10-1-30	SLB10-1-31	SLB10-1-31	SLB10-1-32	SLB10-1-32	SLB10-1-32	SLB10-1-33
			Field Sample ID	SLB10-1-30-06DP	SLB10-1-30-10	SLB10-1-31-06	SLB10-1-31-13	SLB10-1-32-06	SLB10-1-32-06DP	SLB10-1-32-20	SLB10-1-33-06
			Sample Date	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/13/2010
			Depth Interval	0- 6	0- 10	0- 6	0- 13	0- 6	0- 6	0- 20	0- 6
Chemical	Level I ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	4980	4080	4230	3110	8860	9310	11600	7520
ANTIMONY	NL	NL	mg/kg	0.21 UJ	0.19 UJ	0.2 UJ	0.19 UJ	0.52 J	0.33 UJ	0.33 UJ	10.6 U
ARSENIC	9.8	33	mg/kg	1.8 J	2.7 J	2.4	1.3 J	3.2 J	3.1 J	6.7 J	4
BARIUM	NL	NL	mg/kg	58.9 J	43.8	72.4	36	194	209	733	216 J+
BERYLLIUM	NL	NL	mg/kg	0.13 J	0.11 J	0.05 J	0.038 J	0.46 J	0.46 J	1 J	0.63 J
CADMIUM	0.99	5	mg/kg	0.0081 UJ	0.0073 UJ	0.21 J-	0.0071 UJ	1.3	1.3	0.012 UJ	0.52 J
CALCIUM	NL	NL	mg/kg	2570	1900	2470	2150	8270	9030	8450	6450
CHROMIUM	43	110	mg/kg	10.7	8.8	10.8	6.7	29.8	30.7	20.3	17.9
COBALT	NL	NL	mg/kg	5.9 J	0.038 UJ	4.7 J	0.037 UJ	0.065 UJ	0.067 UJ	0.066 UJ	6.8 J
COPPER	32	150	mg/kg	12.6	8.8	8.1	5.4	34.9	34.9	29.9	18.4
IRON	NL	NL	mg/kg	11400	8720	8980	6890	17900	18900	18600	14600
LEAD	36	130	mg/kg	10.9 J	9	10	5.6	29.8	31	24.7	30.1
MAGNESIUM	NL	NL	mg/kg	2140	1840	1820	1730	4990	5340	4170	4560
MANGANESE	NL	NL	mg/kg	179	109	132	101	418	443	324	309
MERCURY	0.18	1.1	mg/kg	0.084 J	0.051 U	0.05 U	0.05 U	0.24	0.24	0.24	0.23
NICKEL	23	49	mg/kg	11.6 J	9.4	10.6	7.5	20.7	22.3	16.7	14.7
POTASSIUM	NL	NL	mg/kg	362 J	306 J	305 J	236 J	846 J	900 J	905 J	645 J+
SELENIUM	NL	NL	mg/kg	0.84 J	0.69 J	0.5 U	0.57 J	1.3 J	1.3 J	1.7 J	6.2 U
SILVER	NL	NL	mg/kg	0.048 U	0.044 U	0.04 R	0.042 U	0.074 U	0.075 U	0.074 U	1.8 UJ
SODIUM	NL	NL	mg/kg	5 UJ	64.3 J	112 J	66.7 J	245 J	257 J	326 J	887 U
THALLIUM	NL	NL	mg/kg	0.18 U	0.17 U	0.17 U	0.16 U	0.28 U	0.29 U	0.28 U	4.4 U
VANADIUM	NL	NL	mg/kg	17.5 J	15.5	17.4	15.4	24.5	26.1	28.8	25.1
ZINC	120	460	mg/kg	65.1 J	43.6	51.1	29.2	111	118	86.5	88.3

Table 3-3a
Area 1 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-33	SLB10-1-33	SLB10-1-33	SLB10-1-33	SLB10-1-34	SLB10-1-34	SLB10-1-34	SLB10-1-35
			Field Sample ID	SLB10-1-33-12	SLB10-1-33-36	SLB10-1-33-60	SLB10-1-33-77	SLB10-1-34-06	SLB10-1-34-06DP	SLB10-1-34-17	SLB10-1-35-06
			Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/14/2010	10/14/2010	10/14/2010	10/16/2010
			Depth Interval	0- 12	12- 36	36- 60	60- 77	0- 6	0- 6	0- 17	0- 6
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	12400	11500	8300	10100	6470	6190	3310	10600
ANTIMONY	NL	NL	mg/kg	0.32 UJ	0.22 UJ	0.22 UJ	0.22 UJ	0.65 UJ	0.63 UJ	0.51 UJ	0.61 J
ARSENIC	9.8	33	mg/kg	10.7	2.1	1.9	2	3.1	3	1.9	3.4
BARIUM	NL	NL	mg/kg	223	104	56.9	65.4	58.1	53.6	27.3	179
BERYLLIUM	NL	NL	mg/kg	1.6	0.28 J	0.053 J	0.017 U	0.27 J	0.26 J	0.13 J	0.01 U
CADMIUM	0.99	5	mg/kg	1.1	0.26 J	0.14 J	0.18 J	0.033 UJ	0.032 UJ	0.026 UJ	3.4 J+
CALCIUM	NL	NL	mg/kg	6200	10600	6680	5740	6920	6490	2610	11200
CHROMIUM	43	110	mg/kg	28	22	17.9	22.8	15.6	14.9	7.9	17.1
COBALT	NL	NL	mg/kg	11.7	9.6	8.4	10.6	0.072 UJ	0.069 UJ	3.8 J	14.6 J
COPPER	32	150	mg/kg	32.1	21	13.8	14.4	13.7	13.2	6.4	114
IRON	NL	NL	mg/kg	29600	19900	16200	15000	12100	11400	6180	18800
LEAD	36	130	mg/kg	43.9	15.5	4.7	4	25.1 J	24.5 J	8.8	77.3
MAGNESIUM	NL	NL	mg/kg	4560	8140	5130	5070	4950	4700	2240	6670
MANGANESE	NL	NL	mg/kg	364	422	333	326	305	292	179	365
MERCURY	0.18	1.1	mg/kg	0.53	0.066 J	0.057 U	0.058 U	0.12 J	0.11 J	0.076 J	0.25
NICKEL	23	49	mg/kg	24.7	19.4	16.1	19.8	14.1	13.7	6.3 J	28.5
POTASSIUM	NL	NL	mg/kg	1390	1020	756	895	8.8 UJ	8.6 UJ	6.9 UJ	379 J
SELENIUM	NL	NL	mg/kg	2.3 J	0.79 J	0.76 J	0.83 J	0.8 J	0.71 J	0.44 UJ	0.5 UJ
SILVER	NL	NL	mg/kg	0.087 J	0.05 U	0.049 U	0.049 U	0.68 U	0.66 U	0.54 U	0.04 R
SODIUM	NL	NL	mg/kg	7.6 UJ	5.1 UJ	5 UJ	5 UJ	4.8 UJ	4.7 UJ	3.8 UJ	587 J
THALLIUM	NL	NL	mg/kg	0.28 U	0.19 U	0.19 U	0.19 U	0.5 U	0.48 U	0.39 U	0.17 U
VANADIUM	NL	NL	mg/kg	46.4	40.9	29.5	31.7	22.7	23	12.6	26.6
ZINC	120	460	mg/kg	162	58.4	41	54.7	70.9	65.1	30.4	304

Table 3-3a
Area 1 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-35	SLB10-1-35	SLB10-1-36	SLB10-1-36	SLB10-1-36	SLB10-1-37	SLB10-1-37	SLB10-1-37	
			Field Sample ID	SLB10-1-35-06DP	SLB10-1-35-16	SLB10-1-36-06	SLB10-1-36-06DP	SLB10-1-36-15	SLB10-1-37-06	SLB10-1-37-06DP	SLB10-1-37-18	
			Sample Date	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	
			Depth Interval	0- 6	0- 16	0- 6	0- 6	0- 15	0- 6	0- 6	0- 18	
Chemical	Level I ¹	Level II ²	Unit									
ALUMINUM	NL	NL	mg/kg	9560	8380	12000	12000	16200	9790	9560	7570	
ANTIMONY	NL	NL	mg/kg	0.35 J	0.43 J	0.33 J	0.34 J	0.74 J	0.25 UJ	0.24 UJ	0.32 UJ	
ARSENIC	9.8	33	mg/kg	3.1	2.8	5.6	5.5	5.8	6.1 J	6.2 J	10.5 J	
BARIUM	NL	NL	mg/kg	164	122	1460	1400	2390	2500 J	2370	832	
BERYLLIUM	NL	NL	mg/kg	0.01 U	0.14 J+	0.69 J+	0.7 J+	1.2 J+	0.73 J	0.8 J	1.4	
CADMIUM	0.99	5	mg/kg	0.8 J+	0.57 J+	0.23 J	0.26 J	0.34 J	0.0093 UJ	0.0092 UJ	0.012 UJ	
CALCIUM	NL	NL	mg/kg	7500	7440	9350	9250	13800	7910	7670	4300	
CHROMIUM	43	110	mg/kg	19.1	14.2	13.7	13.5	15.7	10.5	9	9	
COBALT	NL	NL	mg/kg	9.8 J	13.7 J	6.6 J	6.7 J	7.6 J	4.7 J	0.049 UJ	0.064 UJ	
COPPER	32	150	mg/kg	156	72.6	25.2	25.9	23.8	16.8	16	20	
IRON	NL	NL	mg/kg	16600	17300	22500	22000	20500	25800	25400	17100	
LEAD	36	130	mg/kg	151	120	14.2 J+	15 J+	18.5	6.7 J	6.3	8.8	
MAGNESIUM	NL	NL	mg/kg	4880	5670	4730	4620	6740	3370	3200	1360	
MANGANESE	NL	NL	mg/kg	240	252	377	386	517	407	332	157	
MERCURY	0.18	1.1	mg/kg	0.34	1.6	0.08 U	0.13 J-	0.06 J	0.085 J	0.065 U	0.11 J	
NICKEL	23	49	mg/kg	24	34.5	14.6 J+	15 J+	16.4 J+	11 J	10.8	13.8	
POTASSIUM	NL	NL	mg/kg	585 J	560 J	799 J	809 J	875	890 J	917	1080	
SELENIUM	NL	NL	mg/kg	0.49 UJ	0.48 UJ	0.78 UJ	0.82 UJ	0.63 UJ	1.6 J	1.3 J	2.2 J	
SILVER	NL	NL	mg/kg	0.04 R	0.04 R	0.07 R	0.07 R	0.05 R	0.056 U	0.055 UJ	0.073 U	
SODIUM	NL	NL	mg/kg	400 J	413 J	251 J	256 J	278 J	5.7 UJ	5.7 UJ	233 J	
THALLIUM	NL	NL	mg/kg	0.17 U	0.17 U	0.27 U	0.28 U	0.21 U	0.21 U	0.21 U	0.28 U	
VANADIUM	NL	NL	mg/kg	24.7	22.8	21.4	21.7	31.9	20.1 J	20.4	44.6	
ZINC	120	460	mg/kg	311	322	67.2	72.1	59.4	41.2 J	34	36.6	

Table 3-3a
Area 1 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-38	SLB10-1-38	SLB10-1-38	SLB10-1-39	SLB10-1-39	SLB10-1-39	SLB10-1-39	SLB10-1-39
			Field Sample ID	SLB10-1-38-06	SLB10-1-38-12	SLB10-1-38-43	SLB10-1-39-06	SLB10-1-39-06DP	SLB10-1-39-12	SLB10-1-39-36	SLB10-1-39-60
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010
			Depth Interval	0- 6	0- 12	12- 43	0- 6	0- 6	0- 12	12- 36	36- 60
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	9510	8530	9400	9980	10000	10000	10900	7760
ANTIMONY	NL	NL	mg/kg	0.88 UJ	0.4 UJ	0.25 UJ	16.1 U	15.1 U	14.3 U	12.5 U	13.7 U
ARSENIC	9.8	33	mg/kg	7.6	13.7 J	6.6 J	4.4 J	4.7 J	4.7 J	4.7	9.1
BARIUM	NL	NL	mg/kg	288	131	91.1	222 J+	226 J+	237 J+	399 J+	287 J+
BERYLLIUM	NL	NL	mg/kg	0.91 J	2.1	0.52 J	0.57 J	0.58 J	0.57 J	0.75 J	1.3 J
CADMIUM	0.99	5	mg/kg	0.045 UJ	0.015 UJ	0.0093 UJ	0.64 J	0.63 J	0.68 J	0.71 J	0.73 J
CALCIUM	NL	NL	mg/kg	6720	3690	5910	8680	8470	8750	11100	5720
CHROMIUM	43	110	mg/kg	22.9	19.7	21.8	26.1	26.9	27.3	25.4	18.5
COBALT	NL	NL	mg/kg	0.097 UJ	0.081 UJ	9	9.9 J	9.8 J	10.4 J	10.1 J	6.7 J
COPPER	32	150	mg/kg	27.1	26.1	20.4	28.4	28.5	28	28	26.3
IRON	NL	NL	mg/kg	17000	23000	20600	21100	22100	21100	19100	15300
LEAD	36	130	mg/kg	28.2 J	26.5	20.7	25.9	25.6	27.7	31.7	37.7
MAGNESIUM	NL	NL	mg/kg	4890	2280	4840	6950	6900	6940	7790	3410
MANGANESE	NL	NL	mg/kg	457	196	281	707	699	730	644	251
MERCURY	0.18	1.1	mg/kg	0.33	0.41	0.31	0.3	0.3	0.25	0.29	0.45
NICKEL	23	49	mg/kg	20.2	18.4	19.1	21.5	21.7	22.3	21.6	15 J
POTASSIUM	NL	NL	mg/kg	11.9 UJ	1210 J	1040	1030 J+	1010 J+	998 J+	979 J+	772 J+
SELENIUM	NL	NL	mg/kg	1.4 J	2.7 J	1.2 J	9.4 U	8.8 U	8.3 U	7.3 U	8 U
SILVER	NL	NL	mg/kg	0.92 U	0.092 UJ	0.056 UJ	2.7 UJ	2.5 UJ	2.4 UJ	2.1 UJ	2.3 UJ
SODIUM	NL	NL	mg/kg	6.5 UJ	9.4 UJ	5.7 UJ	1343 U	1261 U	1193 U	1039 U	1142 U
THALLIUM	NL	NL	mg/kg	0.67 U	0.35 U	0.21 U	6.7 U	6.3 U	6 U	5.2 U	5.7 U
VANADIUM	NL	NL	mg/kg	27.9	43.2	34.8	30.2	30.1	30.5	31	31.6
ZINC	120	460	mg/kg	110	105	83.3	118	116	119	128	130

Table 3-3a
Area 1 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-39	SLB10-1-39	SLB10-1-40	SLB10-1-40	SLB10-1-40	SLB10-1-40	SLB10-1-42	SLB10-1-42
			Field Sample ID	SLB10-1-39-84	SLB10-1-39-115	SLB10-1-40-06	SLB10-1-40-12	SLB10-1-40-36	SLB10-1-40-52	SLB10-1-42-06	SLB10-1-42-06DP
			Sample Date	10/13/2010	10/13/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/16/2010	10/16/2010
			Depth Interval	60- 84	84- 115	0- 6	0- 12	12- 36	36- 52	0- 6	0- 6
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	6880	9480	1150	1490	1640	4800	9050	10000
ANTIMONY	NL	NL	mg/kg	12.7 U	11.1 U	0.47 UJ	0.18 UJ	0.18 UJ	0.22 UJ	0.43 J+	0.62 J+
ARSENIC	9.8	33	mg/kg	12.7	5.2	0.25 UJ	0.79 J	0.95 J	2.3 J	8.5	8.3
BARIUM	NL	NL	mg/kg	135 J+	139 J+	0.16 UJ	0.11 UJ	0.11 UJ	30.3	2210	2560
BERYLLIUM	NL	NL	mg/kg	1.5 J	0.49 J	0.048 U	0.034 J	0.036 J	0.098 J	0.67 J+	0.63 J+
CADMIUM	0.99	5	mg/kg	0.93 J	1.8 J	0.024 U	0.0067 U	0.0068 U	0.0083 UJ	0.08 J	0.12 J
CALCIUM	NL	NL	mg/kg	4610	8980	565 J	666	915	8060	9990	12700
CHROMIUM	43	110	mg/kg	18.3	30.6	2.3	2.8	3.7	11.8	10.4	11.8
COBALT	NL	NL	mg/kg	7 J	9.2 J	0.052 UJ	0.035 UJ	0.036 UJ	0.044 UJ	5.5 J	5.9 J
COPPER	32	150	mg/kg	26.5	46.7	0.17 UJ	0.11 UJ	0.11 UJ	9.3	14.4	15.5
IRON	NL	NL	mg/kg	19900	21300	2510	2580	2880	8840	28400	33000
LEAD	36	130	mg/kg	37.6	75.6	1.4 J	0.84 J	0.98 J	4	6.8 J+	7.1 J+
MAGNESIUM	NL	NL	mg/kg	2850	6940	645	763	867	4800	3570	4450
MANGANESE	NL	NL	mg/kg	259	422	43.1	30.4	36.3	214	441	514
MERCURY	0.18	1.1	mg/kg	0.67	0.42	0.048 U	0.047 U	0.048 U	0.058 U	0.08 J-	0.05 U
NICKEL	23	49	mg/kg	15.4 J	21.7	0.17 UJ	0.099 UJ	0.1 UJ	11.5	12.9 J+	14.4
POTASSIUM	NL	NL	mg/kg	735 J+	959 J+	6.4 UJ	156 J	153 J	455 J	521 J	448 J
SELENIUM	NL	NL	mg/kg	7.4 U	6.5 U	0.41 U	0.45 U	0.45 U	0.71 J	0.5 U	0.5 U
SILVER	NL	NL	mg/kg	2.1 UJ	1.9 UJ	0.49 U	0.04 UJ	0.041 U	0.049 U	0.04 R	0.04 R
SODIUM	NL	NL	mg/kg	1054 U	926 U	3.5 UJ	4.1 UJ	4.2 UJ	5.1 UJ	202 J	167 J
THALLIUM	NL	NL	mg/kg	5.3 U	4.6 U	0.36 U	0.15 U	0.15 U	0.19 U	0.17 U	0.17 U
VANADIUM	NL	NL	mg/kg	34.4	28.2	6.9	8	11.7	28.6	21	20.9
ZINC	120	460	mg/kg	142	288	0.053 UJ	0.11 UJ	0.11 UJ	24.5	36.2	43.5

Table 3-3a
Area 1 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-42	SLB10-1-42	SLB10-1-44	SLB10-1-45	SLB10-1-45	SLB10-1-45	SLB10-1-45	SLB10-1-45
			Field Sample ID	SLB10-1-42-12	SLB10-1-42-24	SLB10-1-44-06	SLB10-1-45-06	SLB10-1-45-12	SLB10-1-45-36	SLB10-1-45-60	SLB10-1-45-84
			Sample Date	10/16/2010	10/16/2010	10/16/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010
			Depth Interval	0- 12	12- 24	0- 6	0- 6	0- 12	12- 36	36- 60	60- 84
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	5060	8980	6520	30400	13500	9670	5910	4370
ANTIMONY	NL	NL	mg/kg	0.34 UJ	0.26 UJ	0.21 UJ	10 U	24.3 U	10.8 U	10.7 U	8.4 U
ARSENIC	9.8	33	mg/kg	18.1	21	2.9	8	10.6	13.6	11.9	2 J
BARIUM	NL	NL	mg/kg	117	1180	1200	2920 J+	143 J+	1080 J+	140 J+	38.5 J+
BERYLLIUM	NL	NL	mg/kg	1.5	2.2 J+	0.28 J+	3.4	2 U	2.1	1.4 J	0.7 U
CADMIUM	0.99	5	mg/kg	0.13 J-	0.12 J	0.06 J	0.83 U	1.4 J	0.9 U	0.66 J	0.7 U
CALCIUM	NL	NL	mg/kg	2850	5670	8360	27700	6300	9930	3870	6080
CHROMIUM	43	110	mg/kg	9.7	12.2	9.1	15.1	35.7	11.5	13.6	12
COBALT	NL	NL	mg/kg	5.5 J	7.4 J	4.3 J	8.7 J	13.7 J	5.8 J	5.8 J	6.3 J
COPPER	32	150	mg/kg	16.7	22.7	11.3	22.4	41.8	19.7	19.7	9.3
IRON	NL	NL	mg/kg	19100	20600	13300	10200	29000	16000	15400	8680
LEAD	36	130	mg/kg	13.3	10.6 J+	5.3 J+	11.4	102	14.9	27.5	3.2
MAGNESIUM	NL	NL	mg/kg	517 J	1850	3390	14700	6690	3490	2060	4180
MANGANESE	NL	NL	mg/kg	64.7	239	480	1750	622	270	178	250
MERCURY	0.18	1.1	mg/kg	0.09 U	0.06 U	0.05 U	0.17 UJ	0.69	0.25	0.31	0.078 J
NICKEL	23	49	mg/kg	12.6	14.2 J+	9.9 J+	10.1 J	29.4 J	14.8	12.3 J	11.4
POTASSIUM	NL	NL	mg/kg	815 J	1190	420 J	553 J+	1400 J+	642 J+	638 J+	431 J+
SELENIUM	NL	NL	mg/kg	1.7 J	1.9 J	0.53 U	5.8 U	14.2 U	6.3 U	6.2 U	4.9 U
SILVER	NL	NL	mg/kg	0.07 R	0.05 R	0.04 R	1.7 UJ	4 UJ	1.8 UJ	1.8 UJ	1.4 UJ
SODIUM	NL	NL	mg/kg	191 J	301 J	166 J	833 U	2023 U	904 U	890 U	696 U
THALLIUM	NL	NL	mg/kg	0.29 U	0.22 U	0.18 U	4.2 U	10.1 U	4.5 U	4.4 U	3.5 U
VANADIUM	NL	NL	mg/kg	26.5	40.5	13.3	34.2	45.2	54.8	32.5	17.9
ZINC	120	460	mg/kg	24.8	28.1	38.2	22.4	302	45.8	90.7	33.9

Table 3-3a
Area 1 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-45	SLB10-1-46	SLB10-1-46	SLB10-1-46	SLB10-1-46	SLB10-1-46	SLB10-1-47	SLB10-1-47
			Field Sample ID	SLB10-1-45-114	SLB10-1-46-06	SLB10-1-46-06DP	SLB10-1-46-12	SLB10-1-46-36	SLB10-1-46-64	SLB10-1-47-06	SLB10-1-47-10
			Sample Date	10/13/2010	10/12/2010	10/12/2010	10/12/2010	10/12/2010	10/12/2010	10/15/2010	10/15/2010
			Depth Interval	84- 114	0- 6	0- 6	0- 12	12- 36	36- 64	0- 6	0- 10
Chemical	Level I ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	3110	10800	10800	9630	6510	8350	5210	14800
ANTIMONY	NL	NL	mg/kg	7 U	13.3 U	13.3 U	12.7 U	9.3 U	19.4 U	0.61 UJ	0.56 UJ
ARSENIC	9.8	33	mg/kg	1.1 J	7.8	7.4	4.6	1.9 J	5.6 J	2.3 J	5.8 J
BARIUM	NL	NL	mg/kg	29.1 J+	139 J+	137 J+	108 J+	58.9 J+	82.6 J+	57.3	156 J
BERYLLIUM	NL	NL	mg/kg	0.58 U	1 J	0.96 J	0.46 J	0.77 U	1.6 U	0.25 J	0.28 J
CADMIUM	0.99	5	mg/kg	0.58 U	1.2 J	1.2 J	0.9 J	0.77 U	1.6 U	0.031 UJ	0.021 UJ
CALCIUM	NL	NL	mg/kg	1610	7930	7920	7620	5810	6790	3790	11000
CHROMIUM	43	110	mg/kg	9	27.1	26.3	24	16.7	24.1	11.3	32.2
COBALT	NL	NL	mg/kg	3.6 J	9.5 J	9.5 J	9.2 J	7.8 J	8.5 J	0.067 UJ	13.9 J
COPPER	32	150	mg/kg	6.4	32	30.9	28.3	12	26	10.9	38
IRON	NL	NL	mg/kg	8800	24300	24500	18800	11200	16000	9720	26100
LEAD	36	130	mg/kg	2.1 J	67.6	66.3	55.6	6.9 J	5.2 J	14.8	47 J
MAGNESIUM	NL	NL	mg/kg	1570	6620	6700	6530	4600	4110	2440	6980
MANGANESE	NL	NL	mg/kg	112	534	508	405	311	562	311	625
MERCURY	0.18	1.1	mg/kg	0.048 J	0.87	0.92	0.45	0.068 J	0.13 J	0.17	0.15 U
NICKEL	23	49	mg/kg	7.4 J	21.2	21.2	19.8	14.5	19.4 J	11	29.4 J
POTASSIUM	NL	NL	mg/kg	226 J+	1040 J+	1040 J+	961 J+	606 J+	745 J+	8.3 UJ	1180 J
SELENIUM	NL	NL	mg/kg	4.1 U	7.8 U	7.8 U	7.4 U	5.4 U	11.3 U	0.73 J	1.8 J
SILVER	NL	NL	mg/kg	1.2 UJ	2.2 UJ	2.2 UJ	2.1 UJ	1.5 U	3.2 U	0.64 U	0.39 J
SODIUM	NL	NL	mg/kg	581 U	1109 U	1112 U	1056 U	772 U	1613 U	4.5 UJ	13.2 UJ
THALLIUM	NL	NL	mg/kg	2.9 U	5.5 U	5.6 U	5.3 U	3.9 U	8.1 U	0.47 U	0.49 U
VANADIUM	NL	NL	mg/kg	18.6	33.5	31.8	26.6	19.8	35.7	13.2 J	47.2 J
ZINC	120	460	mg/kg	16.1	250	246	181	51.5	59.3	56.4	160 J

Table 3-3a
Area 1 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-48	SLB10-1-48	SLB10-1-48	SLB10-1-48	SLB10-1-48	SLB10-1-49	SLB10-1-49	SLB10-1-49
			Field Sample ID	SLB10-1-48-06	SLB10-1-48-06DP	SLB10-1-48-12	SLB10-1-48-36	SLB10-1-48-68	SLB10-1-49-06	SLB10-1-49-12	SLB10-1-49-36
			Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010
			Depth Interval	0- 6	0- 6	0- 12	12- 36	36- 68	0- 6	0- 12	12- 36
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	6960	6300	3560	4810	3440	5170	5230	4600
ANTIMONY	NL	NL	mg/kg	10.7 U	10.4 U	10.8 U	10.3 U	9.2 U	9.2 U	8.8 U	8 U
ARSENIC	9.8	33	mg/kg	5.1	4	2.3 J	1.8 J	1.7 J	2.2 J	1.9 J	1.6 J
BARIUM	NL	NL	mg/kg	126 J+	109 J+	33.2 J+	37.2 J+	28.8 J+	69 J+	49.4 J+	36.1 J+
BERYLLIUM	NL	NL	mg/kg	0.72 J	0.57 J	0.9 U	0.86 U	0.77 U	0.76 U	0.73 U	0.67 U
CADMIUM	0.99	5	mg/kg	0.66 J	0.49 J	0.9 U	0.86 U	0.77 U	0.76 U	0.73 U	0.67 U
CALCIUM	NL	NL	mg/kg	4290	4000	2290	2930	1770	4250	5020	4780
CHROMIUM	43	110	mg/kg	14.9	13	9.3	11.6	8.9	12.7	13.7	12.3
COBALT	NL	NL	mg/kg	7 J	6.4 J	5.1 J	5.3 J	4.7 J	6.4 J	6.7 J	5.9 J
COPPER	32	150	mg/kg	20.2	16.5	6.6 J	7.8 J	6.4 J	9.8	9.6	9
IRON	NL	NL	mg/kg	12800	11800	8890	9500	8970	9460	10900	9810
LEAD	36	130	mg/kg	50.8 J	42.9 J	4.9	4.2	2.5 J	6.6	3.6	2.9
MAGNESIUM	NL	NL	mg/kg	3090	2980	2010	2560	1740	3490	3990	3620
MANGANESE	NL	NL	mg/kg	450	410	140	146	118	407	272	254
MERCURY	0.18	1.1	mg/kg	0.32	0.44	0.085 J	0.08 J	0.063 J	0.1 J	0.14 UJ	0.14 UJ
NICKEL	23	49	mg/kg	13.5 J	12.2 J	9.4 J	10.7 J	9.5 J	11.7 J	12.8	11.3
POTASSIUM	NL	NL	mg/kg	596 J+	528 J+	898 U	358 J+	767 U	454 J+	479 J+	400 J+
SELENIUM	NL	NL	mg/kg	6.2 U	6 U	6.3 U	6 U	5.4 U	5.4 U	5.1 U	4.7 U
SILVER	NL	NL	mg/kg	1.8 U	1.7 U	1.8 UJ	1.7 UJ	1.5 UJ	1.5 UJ	1.5 UJ	1.3 UJ
SODIUM	NL	NL	mg/kg	888 U	864 U	898 U	856 U	767 U	765 U	732 U	666 U
THALLIUM	NL	NL	mg/kg	4.4 U	4.3 U	4.5 U	4.3 U	3.8 U	3.8 U	3.7 U	3.3 U
VANADIUM	NL	NL	mg/kg	23.8	20.7	22.3	22.2	21.2	16.3	19.9	19.6
ZINC	120	460	mg/kg	108	94.5	23	25.3	15.6 J	44.8	39	32.3

Table 3-3a
Area 1 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-49	SLB10-1-50	SLB10-1-50	SLB10-1-50	SLB10-1-50	SLB10-1-51	SLB10-1-51	SLB10-1-51
			Field Sample ID	SLB10-1-49-53	SLB10-1-50-06	SLB10-1-50-06DP	SLB10-1-50-12	SLB10-1-50-36	SLB10-1-51-06	SLB10-1-51-12	SLB10-1-51-36
			Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/12/2010	10/12/2010	10/12/2010
			Depth Interval	36- 53	0- 6	0- 6	0- 12	12- 36	0- 6	0- 12	12- 36
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	5360	3670	3550	3490	5960	4070	5380	4530
ANTIMONY	NL	NL	mg/kg	8.4 U	8.3 U	8.3 U	8 U	8.4 U	8.3 U	9.9 U	9.4 U
ARSENIC	9.8	33	mg/kg	2 J	2.3 J	2.1 J	1.7 J	2.1 J	1.8 J	2.1 J	1.6 J
BARIUM	NL	NL	mg/kg	43.2 J+	74.3 J+	50.1 J+	31.1 J+	49.9 J+	38.5 J+	46.3 J+	37.8 J+
BERYLLIUM	NL	NL	mg/kg	0.7 U	0.29 J	0.69 U	0.67 U	0.7 U	0.69 U	0.82 U	0.78 U
CADMIUM	0.99	5	mg/kg	0.7 U	0.25 J	0.69 U	0.67 U	0.7 U	0.69 U	0.82 U	0.78 U
CALCIUM	NL	NL	mg/kg	5750	2150	1900	2810	8860	2700	3840	7750
CHROMIUM	43	110	mg/kg	14.3	7.4	8	9.6	16.6	11.4	13	12.7
COBALT	NL	NL	mg/kg	7.1 J	4 J	4 J	4.5 J	7.4 J	5 J	6.1 J	5.9 J
COPPER	32	150	mg/kg	10.3	7.9	7.5	7	13.6	9.2	12.3	9.1
IRON	NL	NL	mg/kg	10500	6370	6610	7480	10600	7350	8390	7300
LEAD	36	130	mg/kg	4.2	15.5	15.4	5.8	3.9	13.5	6.3	3.1
MAGNESIUM	NL	NL	mg/kg	4470	1710	1840	2240	6160	2360	3110	5210
MANGANESE	NL	NL	mg/kg	270	195	176	148	218	190	167	157
MERCURY	0.18	1.1	mg/kg	0.14 UJ	0.16	0.14	0.13 UJ	0.14 UJ	0.15	0.083 J	0.075 J
NICKEL	23	49	mg/kg	13.8	7.3 J	7.7 J	8.9 J	15	9.8 J	12.1 J	11.3 J
POTASSIUM	NL	NL	mg/kg	486 J+	277 J+	274 J+	280 J+	586 J+	334 J+	529 J+	389 J+
SELENIUM	NL	NL	mg/kg	4.9 U	4.9 U	4.8 U	4.7 U	4.9 U	4.8 U	5.8 U	5.5 U
SILVER	NL	NL	mg/kg	1.4 UJ	1.4 UJ	1.4 UJ	1.3 UJ	1.4 UJ	1.4 UJ	1.6 UJ	1.6 UJ
SODIUM	NL	NL	mg/kg	698 U	694 U	692 U	667 U	700 U	689 U	822 U	783 U
THALLIUM	NL	NL	mg/kg	3.5 U	3.5 U	3.5 U	3.3 U	3.5 U	3.4 U	4.1 U	3.9 U
VANADIUM	NL	NL	mg/kg	22.1	14.1	12.4 J	16.7	23.8	14.5	18.3	18
ZINC	120	460	mg/kg	35.5	53.5	50.8	28.5	39.5	49.8	38.9	33.4

Table 3-3a
Area 1 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-51	SLB10-1-51	SLB10-1-52	SLB10-1-52	SLB10-1-52	SLB10-1-52	SLB10-1-53	SLB10-1-53
			Field Sample ID	SLB10-1-51-60	SLB10-1-51-76	SLB10-1-52-06	SLB10-1-52-06DP	SLB10-1-52-12	SLB10-1-52-24	SLB10-1-53-06	SLB10-1-53-06DP
			Sample Date	10/12/2010	10/12/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	36- 60	60- 76	0- 6	0- 6	0- 12	12- 24	0- 6	0- 6
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	4920	5560	5060	5260	4150	7490	7510	7690
ANTIMONY	NL	NL	mg/kg	8.5 U	7.3 U	0.27 UJ	0.73 UJ	0.23 UJ	0.75 UJ	0.65 UJ	0.67 UJ
ARSENIC	9.8	33	mg/kg	1.5 J	1.3 J	1.7 J	3.3 J	2 J	1.5 J	4.1 J	4 J
BARIUM	NL	NL	mg/kg	38.8 J+	34 J+	51.5 J	59.8	33.8	0.48 UJ	118	139
BERYLLIUM	NL	NL	mg/kg	0.7 U	0.61 U	0.093 J	0.27 J	0.063 J	0.22 J	0.47 J	0.44 J
CADMIUM	0.99	5	mg/kg	0.7 U	0.61 U	0.01 UJ	0.037 UJ	0.0086 UJ	0.028 UJ	0.033 UJ	0.034 UJ
CALCIUM	NL	NL	mg/kg	4920	1980	4390	4460	5370	9610	4560	4720
CHROMIUM	43	110	mg/kg	12.8	11.7	11	11.1	8.5	15.2	15.9	16
COBALT	NL	NL	mg/kg	6.3 J	5.1 J	5.3 J	0.081 UJ	0.045 UJ	0.15 UJ	0.071 UJ	0.074 UJ
COPPER	32	150	mg/kg	8.6	8.6	15.2	16.5	11.9	31.3	15.1	15
IRON	NL	NL	mg/kg	7660	7590	10700	10500	7760	12700	13700	13500
LEAD	36	130	mg/kg	2.8	2.8	18.8 J	22.3	15.8	5.5	18.9	20.4
MAGNESIUM	NL	NL	mg/kg	3670	2200	2470	2420	3030	2960	3190	3180
MANGANESE	NL	NL	mg/kg	170	108	267	284	152	273	421	411
MERCURY	0.18	1.1	mg/kg	0.068 J	0.047 J	0.99	0.4	0.34	0.2 U	0.17	0.2
NICKEL	23	49	mg/kg	11.3	9.4 J	10.6 J	11.5	9.5	0.42 UJ	14.9	15.3
POTASSIUM	NL	NL	mg/kg	405 J+	323 J+	440 J	9.9 UJ	374 J	539 J	8.8 UJ	9.1 UJ
SELENIUM	NL	NL	mg/kg	4.9 U	4.3 U	1.1 J	0.71 J	1.1 J	1.9 U	0.7 J	0.74 J
SILVER	NL	NL	mg/kg	1.4 UJ	1.2 UJ	0.83 J	0.77 U	0.051 UJ	0.17 UJ	0.68 U	0.7 U
SODIUM	NL	NL	mg/kg	704 U	610 U	6.3 UJ	5.4 UJ	5.3 UJ	17.5 UJ	4.8 UJ	5 UJ
THALLIUM	NL	NL	mg/kg	3.5 U	3.1 U	0.23 U	0.56 U	0.2 U	0.65 U	0.5 U	0.51 U
VANADIUM	NL	NL	mg/kg	18	20.2	17.1 J	14.4 J	15.6	29.4	19.9 J	19.2 J
ZINC	120	460	mg/kg	31.5	17.7	62.3 J	72.7	44.1	0.47 UJ	72	78

Table 3-3a
Area 1 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-53	SLB10-1-53	SLB10-1-54	SLB10-1-54	SLB10-1-55	SLB10-1-55	SLB10-1-55	SLB10-1-55
			Field Sample ID	SLB10-1-53-12	SLB10-1-53-26	SLB10-1-54-06	SLB10-1-54-12	SLB10-1-55-06	SLB10-1-55-06DP	SLB10-1-55-12	SLB10-1-55-36
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010
			Depth Interval	0- 12	12- 26	0- 6	0- 12	0- 6	0- 6	0- 12	12- 36
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	5640	5670	9790	10900	4570	4780	7670	8430
ANTIMONY	NL	NL	mg/kg	0.22 UJ	0.18 UJ	0.38 UJ	0.46 UJ	9.6 U	9.9 U	11.8 U	11.4 U
ARSENIC	9.8	33	mg/kg	1.5 J	1.3 J	2.6 J	1.5 J	2.3 J	2.5 J	2.4 J	2.6 J
BARIUM	NL	NL	mg/kg	38	0.12 UJ	63.5 J	89.4 J	55.3 J+	55.3 J+	65 J+	71.8 J+
BERYLLIUM	NL	NL	mg/kg	0.029 J	0.015 U	0.03 U	0.092 J	0.8 U	0.83 U	0.98 U	0.95 U
CADMIUM	0.99	5	mg/kg	0.0084 UJ	0.007 UJ	0.014 UJ	0.017 UJ	0.8 U	0.83 U	0.98 U	0.95 U
CALCIUM	NL	NL	mg/kg	3630	1970	7970	6360	3680	3710	4980	5800
CHROMIUM	43	110	mg/kg	12	10.8	14.1	27	10.8	11.9	19.8	21.5
COBALT	NL	NL	mg/kg	0.044 UJ	0.037 UJ	9.6 J	7.6 J	5.5 J	6 J	7.9 J	8.6 J
COPPER	32	150	mg/kg	8.3	4.1	22.6	20.4	11.9	12.6	17.8	19
IRON	NL	NL	mg/kg	9230	8420	27800	14600	8060	8770	12200	14800
LEAD	36	130	mg/kg	5.4	2.2	163 J	15.4 J	70.1	11	9.5	11.1
MAGNESIUM	NL	NL	mg/kg	2940	1810	3760	4800	2980	3330	4720	5370
MANGANESE	NL	NL	mg/kg	164	90.5	458	359	231	260	225	297
MERCURY	0.18	1.1	mg/kg	0.059 U	0.049 U	0.1 U	0.12 U	0.15 J	0.15 J	0.11 J	0.14 J
NICKEL	23	49	mg/kg	10.5	9.4	14.7 J	18.5 J	10.8 J	12.2 J	17.6	18.9
POTASSIUM	NL	NL	mg/kg	522 J	277 J	1670 J	828 J	385 J+	395 J+	764 J+	834 J+
SELENIUM	NL	NL	mg/kg	0.56 U	0.47 U	1.9 J	1.5 J	5.6 U	5.8 U	6.9 U	6.7 U
SILVER	NL	NL	mg/kg	0.05 UJ	0.042 U	0.086 U	0.1 U	1.6 UJ	1.7 UJ	2 UJ	1.9 UJ
SODIUM	NL	NL	mg/kg	5.2 UJ	4.3 UJ	8.8 UJ	10.7 UJ	798 U	826 U	982 U	950 U
THALLIUM	NL	NL	mg/kg	0.19 U	0.16 U	0.33 U	0.4 U	4 U	4.1 U	4.9 U	4.8 U
VANADIUM	NL	NL	mg/kg	20	22	25.2 J	40.8 J	17.3	17.4	24.3	29.2
ZINC	120	460	mg/kg	31	14.7	54.2 J	63.5 J	42.2	44	55.1	59.2

Table 3-3a
Area 1 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-55	SLB10-1-55	SLB10-1-55	SLB10-1-56	SLB10-1-56	SLB10-1-56	SLB10-1-56	SLB10-1-56
			Field Sample ID	SLB10-1-55-60	SLB10-1-55-84	SLB10-1-55-116	SLB10-1-56-06	SLB10-1-56-06DP	SLB10-1-56-12	SLB10-1-56-36	SLB10-1-56-60
			Sample Date	10/13/2010	10/13/2010	10/13/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
			Depth Interval	36- 60	60- 84	84- 116	0- 6	0- 6	0- 12	12- 36	36- 60
Chemical	Level I ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	3470	4820	4690	9110	44 U	11700	15600	11900
ANTIMONY	NL	NL	mg/kg	17.3 U	7.5 U	7.5 U	13.1 U	13.2 U	13.5 U	13.4 U	12.1 U
ARSENIC	9.8	33	mg/kg	2.4 J	1.6 J	1.4 J	5	2.2 U	4.8	8.8	8
BARIUM	NL	NL	mg/kg	41.2 J+	42 J+	50.9 J+	156 J+	44 U	177 J+	453 J+	143 J+
BERYLLIUM	NL	NL	mg/kg	1.4 U	0.25 J	0.62 U	0.45 J	1.1 U	0.58 J	1.3 J	0.81 J
CADMIUM	0.99	5	mg/kg	1.4 U	0.63 U	0.62 U	0.48 J	1.1 U	0.48 J	0.93 J	1.2 J
CALCIUM	NL	NL	mg/kg	4520	2410	12800	6930	1099 U	7540	10000	7460
CHROMIUM	43	110	mg/kg	8.8	12.9	11.9	23.4	2.2 U	29.6	35.1	32.1
COBALT	NL	NL	mg/kg	14.4 U	5.4 J	6 J	9.7 J	11 U	11.7 J	12.4 J	10.9 J
COPPER	32	150	mg/kg	16.2	9.6	12.1	21.4	5.5 U	24.4	37.2	36.3
IRON	NL	NL	mg/kg	6490	8880	8360	22000	22 U	28300	35300	34500
LEAD	36	130	mg/kg	3.6 J	4.5	3.4	21.9	2.2 U	24.2 J	53.2 J	66.4 J
MAGNESIUM	NL	NL	mg/kg	1800 J	2400	8950	5580	1099 U	6900	7820	6620
MANGANESE	NL	NL	mg/kg	209	94.9	110	1160	3.3 U	919	639	484
MERCURY	0.18	1.1	mg/kg	0.16 J	0.058 J	0.055 J	0.18	0.12 J	0.25	0.35	0.74
NICKEL	23	49	mg/kg	7.2 J	10.6	13.4	19.8	8.8 U	25	28.5	24.8
POTASSIUM	NL	NL	mg/kg	1440 U	310 J+	450 J+	933 J+	1100 U	1170 J+	1350 J+	1140 J+
SELENIUM	NL	NL	mg/kg	10.1 U	4.4 U	4.4 U	7.7 U	7.7 U	7.9 U	7.8 U	7.1 U
SILVER	NL	NL	mg/kg	2.9 UJ	1.3 UJ	1.2 UJ	2.2 U	2.2 U	2.3 U	2.2 U	2 U
SODIUM	NL	NL	mg/kg	1442 U	628 U	623 U	1093 U	1099 U	1129 U	1114 U	1012 U
THALLIUM	NL	NL	mg/kg	7.2 U	3.1 U	3.1 U	5.5 U	5.5 U	5.6 U	5.6 U	5.1 U
VANADIUM	NL	NL	mg/kg	16 J	24.4	19.5	28.2	11 U	37.8	46.9	38.4
ZINC	120	460	mg/kg	16.5 J	21.5	26.4	106	13.2 U	117	212	250

Table 3-3a
Area 1 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-56	SLB10-1-57	SLB10-1-57	SLB10-1-57	SLB10-1-57	SLB10-1-57	SLB10-1-57	SLB10-1-58
			Field Sample ID	SLB10-1-56-86	SLB10-1-57-06	SLB10-1-57-06DP	SLB10-1-57-12	SLB10-1-57-36	SLB10-1-57-60	SLB10-1-57-77	SLB10-1-58-20
			Sample Date	10/7/2010	10/12/2010	10/12/2010	10/12/2010	10/12/2010	10/12/2010	10/12/2010	10/13/2010
			Depth Interval	60- 86	0- 6	0- 6	0- 12	12- 36	36- 60	60- 77	0- 20
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	10200	7160	7280	10200	6800	4470	4210	13000
ANTIMONY	NL	NL	mg/kg	9.5 U	11.9 U	12 U	12 U	10.1 U	8.5 U	7.6 U	1.4 UJ
ARSENIC	9.8	33	mg/kg	2.9 J	2.9 J	3.1 J	4.4	3.1 J	1.6 J	1.4 J	2.9 J
BARIUM	NL	NL	mg/kg	89.2 J+	82.9 J+	87.1 J+	98 J+	62.4 J+	40.6 J+	35.2 J+	88.8
BERYLLIUM	NL	NL	mg/kg	0.45 J	0.99 U	1 U	0.44 J	0.84 U	0.71 U	0.63 U	0.33 J
CADMIUM	0.99	5	mg/kg	0.79 U	0.99 U	1 U	0.92 J	0.54 J	0.71 U	0.63 U	0.071 UJ
CALCIUM	NL	NL	mg/kg	4680	6450	6610	7750	5950	4710	6210	6500
CHROMIUM	43	110	mg/kg	27.8	21.1	19.1	25.4	16.7	10.7	11	28.6
COBALT	NL	NL	mg/kg	9.2 J	8.2 J	9 J	9.9 J	7.5 J	5.9 J	5.3 J	0.15 UJ
COPPER	32	150	mg/kg	28.7	15.8	19.3	27.8	17.8	9.3	7.4	46.5
IRON	NL	NL	mg/kg	18800	15500	15500	23800	13300	7400	6830	18200
LEAD	36	130	mg/kg	12.3 J	44.8	23	60 J	32.5 J	5.1 J	2.7 J	20.9 J
MAGNESIUM	NL	NL	mg/kg	5380	5190	5490	6520	4700	3440	4380	5930
MANGANESE	NL	NL	mg/kg	220	694	729	469	306	193	185	266
MERCURY	0.18	1.1	mg/kg	0.16 U	0.11 J	0.17 J	0.4	0.27	0.075 J	0.049 J	0.14 U
NICKEL	23	49	mg/kg	21.6	16.7	16.6	20.8	14.7	10.3 J	9.7 J	25
POTASSIUM	NL	NL	mg/kg	626 J+	749 J+	764 J+	963 J+	644 J+	404 J+	391 J+	18.8 UJ
SELENIUM	NL	NL	mg/kg	5.5 U	6.9 U	7 U	7 U	5.9 U	5 U	4.4 U	1.7 J
SILVER	NL	NL	mg/kg	1.6 U	2 UJ	2 UJ	2 U	1.7 U	1.4 U	1.3 U	1.5 U
SODIUM	NL	NL	mg/kg	792 U	988 U	1002 U	1004 U	840 U	711 U	630 U	10.3 UJ
THALLIUM	NL	NL	mg/kg	4 U	4.9 U	5 U	5 U	4.2 U	3.6 U	3.1 U	1.1 U
VANADIUM	NL	NL	mg/kg	43.7	21.5	22	26.4	20.4	14.4	14.3	37.6
ZINC	120	460	mg/kg	63.8	72.1	74.4	205	107	33.2	28.8	101

Table 3-3a
Area 1 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-59	SLB10-1-59	SLB10-1-59	SLB10-1-59	SLB10-1-60	SLB10-1-60	SLB10-1-60	SLB10-1-60
			Field Sample ID	SLB10-1-59-06	SLB10-1-59-06DP	SLB10-1-59-12	SLB10-1-59-25	SLB10-1-60-06	SLB10-1-60-12	SLB10-1-60-36	SLB10-1-60-60
			Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010
			Depth Interval	0- 6	0- 6	0- 12	12- 25	0- 6	0- 12	12- 36	36- 60
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	12200	12900	16200	13900	15200	15300	13800	18900
ANTIMONY	NL	NL	mg/kg	0.97 UJ	1 UJ	0.7 UJ	0.79 UJ	1 UJ	1.1 UJ	0.95 UJ	0.88 UJ
ARSENIC	9.8	33	mg/kg	1.3 U	3.7 J	3.6 J	2.5 J	6.1	6.6	5.9	7.8
BARIUM	NL	NL	mg/kg	105 J	113 J	121	112	202	208	226	627
BERYLLIUM	NL	NL	mg/kg	0.083 J	0.082 U	0.079 J	0.063 U	0.67 J	0.69 J	0.67 J	1.4 J
CADMIUM	0.99	5	mg/kg	0.037 UJ	0.039 UJ	0.13 J	0.03 UJ	0.054 UJ	0.058 UJ	0.049 UJ	0.045 UJ
CALCIUM	NL	NL	mg/kg	7510	8270	8680	7370	7950	8350	7300	13100
CHROMIUM	43	110	mg/kg	29.6	29.8	40.3	34.1	34.2	34.6	29.8	33.8
COBALT	NL	NL	mg/kg	8 J	8.5 J	10.3 J	8.6 J	0.12 UJ	0.12 UJ	0.1 UJ	12.2
COPPER	32	150	mg/kg	20.8	22.4	27.7	23.6	31.9	31.4	29.6	38
IRON	NL	NL	mg/kg	16400	16800	18100	17200	28500	28000	23200	24600
LEAD	36	130	mg/kg	8	8.4	6.9	4.7 J	37.6 J	39.1 J	97.6 J	72.1 J
MAGNESIUM	NL	NL	mg/kg	5620	5870	7300	5760	7300	7370	6210	7810
MANGANESE	NL	NL	mg/kg	436	459	356	263	760	832	625	516
MERCURY	0.18	1.1	mg/kg	0.26 U	0.27 U	0.19 U	0.21 U	0.33	0.26 J	0.3	0.3
NICKEL	23	49	mg/kg	21.1 J	21.6 J	27	23	29.6	29.9	26.7	27.6
POTASSIUM	NL	NL	mg/kg	1170 J	1240 J	1510 J	1230 J	1610	1620	1400	1600
SELENIUM	NL	NL	mg/kg	2.5 U	2.6 U	1.8 U	2.1 J	1.6 J	1.6 J	1.1 J	1.8 J
SILVER	NL	NL	mg/kg	0.22 U	0.23 U	0.16 U	0.18 U	1.1 U	1.2 U	1 U	0.93 U
SODIUM	NL	NL	mg/kg	22.7 UJ	23.8 UJ	16.4 UJ	18.5 UJ	7.8 UJ	8.4 UJ	7 UJ	6.6 UJ
THALLIUM	NL	NL	mg/kg	0.84 U	0.88 U	0.61 U	0.69 U	0.8 U	0.86 U	0.73 U	0.68 U
VANADIUM	NL	NL	mg/kg	38.2	43.2	52.6	46.4	41.4	41.3	38.9	43.5
ZINC	120	460	mg/kg	65	69.3	73.4	58.1	156	147	147	220

Table 3-3a
Area 1 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-60	SLB10-1-60	SLB10-1-61	SLB10-1-61	SLB10-1-61	SLB10-1-61	SLB10-1-61	SLB10-1-61
			Field Sample ID	SLB10-1-60-84	SLB10-1-60-106	SLB10-1-61-06	SLB10-1-61-06DP	SLB10-1-61-12	SLB10-1-61-36	SLB10-1-61-60	SLB10-1-61-79
			Sample Date	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010
			Depth Interval	60- 84	84- 106	0- 6	0- 6	0- 12	12- 36	36- 60	60- 79
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	10300	9130	16300	16100	15100	14800	16900	7980
ANTIMONY	NL	NL	mg/kg	0.98 UJ	0.81 UJ	1 UJ	1 UJ	0.96 UJ	0.81 UJ	0.82 UJ	0.85 UJ
ARSENIC	9.8	33	mg/kg	9	9.2	6	6.9	5.9	6.1	7.2	7.8
BARIUM	NL	NL	mg/kg	156	91.6	218	219	196	241	535	114
BERYLLIUM	NL	NL	mg/kg	1.1 J	0.75 J	0.8 J	0.71 J	0.67 J	0.81 J	1.2 J	0.81 J
CADMIUM	0.99	5	mg/kg	0.05 UJ	0.041 UJ	0.052 UJ	0.051 UJ	0.049 UJ	0.042 UJ	0.042 UJ	0.043 UJ
CALCIUM	NL	NL	mg/kg	8540	8090	8390	8180	7830	7710	10900	5140
CHROMIUM	43	110	mg/kg	23.5	22.3	36.1	35.6	35.3	30.8	31.8	18.6
COBALT	NL	NL	mg/kg	0.11 UJ	0.089 UJ	14	13.7	13.3	12.8	11.1	0.093 UJ
COPPER	32	150	mg/kg	29.9	30.9	30.3	29	29.2	26.2	30.8	25.1
IRON	NL	NL	mg/kg	21400	24700	30100	30400	27100	24200	25700	18900
LEAD	36	130	mg/kg	54.3 J	69.3 J	34.9 J	34 J	33.7 J	68.4 J	215 J	42.9 J
MAGNESIUM	NL	NL	mg/kg	4580	4680	7890	7660	7570	6700	6680	3440
MANGANESE	NL	NL	mg/kg	365	409	920	923	849	558	365	171
MERCURY	0.18	1.1	mg/kg	0.37	0.5	0.26	0.29	0.23 J	0.24	0.15 J	1
NICKEL	23	49	mg/kg	20.7	20.1	31.4	30.6	29.8	28.5	25.5	17.7
POTASSIUM	NL	NL	mg/kg	13.3 UJ	11 UJ	1750	1730	1630	1490	1470	11.5 UJ
SELENIUM	NL	NL	mg/kg	1.8 J	1.8 J	1.7 J	1.2 J	1.3 J	1.3 J	1.3 J	1.7 J
SILVER	NL	NL	mg/kg	1 U	0.85 U	1.1 U	1.1 U	1 U	0.86 U	0.86 U	0.89 U
SODIUM	NL	NL	mg/kg	7.3 UJ	6 UJ	7.5 UJ	7.4 UJ	7.2 UJ	6.1 UJ	6.1 UJ	6.3 UJ
THALLIUM	NL	NL	mg/kg	0.75 U	0.62 U	0.77 U	0.77 U	0.74 U	0.63 U	0.63 U	0.65 U
VANADIUM	NL	NL	mg/kg	33.4	28.7	43.8	43.1	40.8	39.6	41.7	29.1
ZINC	120	460	mg/kg	198	205	157	151	145	144	178	131

Table 3-3a
Area 1 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-62	SLB10-1-62	SLB10-1-62	SLB10-1-62	SLB10-1-63	SLB10-1-63	SLB10-1-63	SLB10-1-63
			Field Sample ID	SLB10-1-62-06	SLB10-1-62-06DP	SLB10-1-62-12	SLB10-1-62-32	SLB10-1-63-06	SLB10-1-63-06DP	SLB10-1-63-12	SLB10-1-63-36
			Sample Date	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
			Depth Interval	0- 6	0- 6	0- 12	12- 32	0- 6	0- 6	0- 12	12- 36
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	15900	14900	15300	11100	10200	10800	9030	10500
ANTIMONY	NL	NL	mg/kg	0.98 UJ	0.97 UJ	0.96 UJ	0.75 UJ	12.7 U	14.7 U	12 U	11.3 U
ARSENIC	9.8	33	mg/kg	6.7	5.7	6.5	5.1	4.6	5.2	4.5	7.2
BARIUM	NL	NL	mg/kg	226	214	237	186	139 J+	153 J+	137 J+	119 J+
BERYLLIUM	NL	NL	mg/kg	0.73 J	0.68 J	0.71 J	0.57 J	0.44 J	0.45 J	0.53 J	0.72 J
CADMIUM	0.99	5	mg/kg	0.05 UJ	0.05 UJ	0.049 UJ	0.039 UJ	0.47 J	0.5 J	0.66 J	1.3 J
CALCIUM	NL	NL	mg/kg	8320	7750	7310	5620	6160	6850	6380	7750
CHROMIUM	43	110	mg/kg	35	33.5	34.6	23.9	27.3	27.3	20.7	25.9
COBALT	NL	NL	mg/kg	13.7	13.3	14	10.1	10.8 J	11.7 J	9 J	9.5 J
COPPER	32	150	mg/kg	27.9	27.2	27.2	20.3	21.8	23.2	23.5	34.9
IRON	NL	NL	mg/kg	30300	27700	28300	19600	26400	26500	16900	27200
LEAD	36	130	mg/kg	31 J	30.4 J	29.5	60.4	28.2	23.8	37.3 J	85.1 J
MAGNESIUM	NL	NL	mg/kg	7630	7370	7550	5200	5800	6260	5280	6090
MANGANESE	NL	NL	mg/kg	1180	1090	1120	571	892	977	542	514
MERCURY	0.18	1.1	mg/kg	0.26	0.21 J	0.2 J	0.23	0.21 UJ	0.27	0.31	0.64
NICKEL	23	49	mg/kg	30.3	29.5	27.8 J	19.8 J	22.1	23.7	18.3	20.5
POTASSIUM	NL	NL	mg/kg	1700	1580	1580	1080	1100 J+	1160 J+	840 J+	994 J+
SELENIUM	NL	NL	mg/kg	1.5 J	1.5 J	1.4 J	0.9 J	7.4 U	8.6 U	7 U	6.6 U
SILVER	NL	NL	mg/kg	1 U	1 U	1 U	0.79 U	2.1 U	2.4 U	2 U	1.9 U
SODIUM	NL	NL	mg/kg	7.2 UJ	7.2 UJ	7.1 UJ	5.6 UJ	1056 U	1222 U	998 U	943 U
THALLIUM	NL	NL	mg/kg	0.75 U	0.75 U	0.74 U	0.58 U	5.3 U	6.1 U	5 U	4.7 U
VANADIUM	NL	NL	mg/kg	40.9	39.4	39.6	28.7	32.7	34.1	26.4	30.1
ZINC	120	460	mg/kg	146	144	136	106	106	112	132	270

Table 3-3a
Area 1 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-63	SLB10-1-63	SLB10-1-64	SLB10-1-64	SLB10-1-64	SLB10-1-64	SLB10-1-64
			Field Sample ID	SLB10-1-63-60	SLB10-1-63-84	SLB10-1-64-06	SLB10-1-64-06DP	SLB10-1-64-12	SLB10-1-64-36	SLB10-1-64-48
			Sample Date	10/7/2010	10/7/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010
			Depth Interval	36- 60	60- 84	0- 6	0- 6	0- 12	12- 36	36- 48
Chemical	Level I ¹	Level II ²	Unit							
ALUMINUM	NL	NL	mg/kg	6380	5430	1400	1540	1560	1410	1340
ANTIMONY	NL	NL	mg/kg	9.7 U	8.6 U	0.19 UJ	0.2 UJ	0.19 UJ	0.18 UJ	0.18 UJ
ARSENIC	9.8	33	mg/kg	3.6	2.1 J	0.65 J	0.66 J	0.54 J	0.73 J	0.63 J
BARIUM	NL	NL	mg/kg	74.5 J+	43.1 J+	8.1 J	8.3 J	6.9 J	6.8 J	6 J
BERYLLIUM	NL	NL	mg/kg	0.81 U	0.72 U	0.02 J	0.016 U	0.025 J	0.027 J	0.024 J
CADMIUM	0.99	5	mg/kg	0.77 J	0.28 J	0.0071 UJ	0.0075 U	0.0071 U	0.0069 U	0.007 U
CALCIUM	NL	NL	mg/kg	5760	3650	699	710	679	652	595 J
CHROMIUM	43	110	mg/kg	16.2	11.5	2.7	3	2.8	2.4	2.5
COBALT	NL	NL	mg/kg	6.6 J	4.6 J	1.5 J	1.6 J	1.7 J	1.6 J	1.5 J
COPPER	32	150	mg/kg	21.3	11.1	1.6 J	1.8 J	1.7 J	1.4 J	1.3 J
IRON	NL	NL	mg/kg	14900	8290	2990	3160	2670	2480	2430
LEAD	36	130	mg/kg	51.5 J	17.5 J	1.4	1.3	0.85 J	0.75 J	0.81 J
MAGNESIUM	NL	NL	mg/kg	4120	2580	735	809	803	705	675
MANGANESE	NL	NL	mg/kg	352	203	53	53.8	30.8	26.7	25.7
MERCURY	0.18	1.1	mg/kg	0.63	0.28	0.05 U	0.052 U	0.054 J	0.049 U	0.049 U
NICKEL	23	49	mg/kg	13.7	9.1 J	2.5 J	2.9 J	2.9 J	2.9 J	3.2 J
POTASSIUM	NL	NL	mg/kg	580 J+	352 J+	165 J	171 J	173 J	157 J	147 J
SELENIUM	NL	NL	mg/kg	5.7 U	5 U	0.47 U	0.5 U	0.47 U	0.46 U	0.47 U
SILVER	NL	NL	mg/kg	1.6 U	1.4 U	0.043 U	0.045 U	0.042 U	0.041 U	0.042 U
SODIUM	NL	NL	mg/kg	809 U	718 U	4.4 UJ	4.6 UJ	4.3 UJ	4.2 UJ	4.3 UJ
THALLIUM	NL	NL	mg/kg	4 U	3.6 U	0.16 U	0.17 U	0.16 U	0.16 U	0.16 U
VANADIUM	NL	NL	mg/kg	18.6	21	9.4	8.8	7.9	6.8	8.7
ZINC	120	460	mg/kg	151	54.5	8	7.8 J	6.1 J	5.7 J	5.5 J

Notes:

Result exceeds SQTs - Level I.
Result exceeds SQTs - Level II.

ID = Identification
J = Estimated Value
mg/kg = Milligram per kilogram
NL = Not Listed
SQT = Sediment Quality Targets
TAL = Target Analyte List
U = Not Detected

¹ Evaluation of Numerical SQTs-St Louis River AOC-Level I

² Evaluation of Numerical SQTs-St Louis River AOC-Level II

Table 3-3b
Area 2 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-65	SLB10-2-65	SLB10-2-65	SLB10-2-65	SLB10-2-65	SLB10-2-66	SLB10-2-66	SLB10-2-66	
			Field Sample ID	SLB10-2-65-06	SLB10-2-65-12	SLB10-2-65-36	SLB10-2-65-60	SLB10-2-65-84	SLB10-2-66-06	SLB10-2-66-06DP	SLB10-2-66-12	
			Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/6/2010	10/6/2010	10/6/2010	
			Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	0- 6	0- 6	0- 12	
Chemical	Level I ¹	Level II ²	Unit									
ALUMINUM	NL	NL	mg/kg	9040	7120	4980	9250	8980	11200	10800	12600	
ANTIMONY	NL	NL	mg/kg	12.2 U	10.6 U	9.6 U	11.3 U	11.8 U	15.4 U	15 U	14.4 U	
ARSENIC	9.8	33	mg/kg	4 J	3.4 J	2.1 J	4.4	4.3	4.4 J	4.1 J	4.7 J	
BARIUM	NL	NL	mg/kg	72.2 J+	62.6 J+	42.1 J+	88.9 J+	82.4 J+	117 J+	117 J+	123 J+	
BERYLLIUM	NL	NL	mg/kg	1 U	0.89 U	0.8 U	0.37 J	0.98 U	1.3 U	1.2 U	0.45 J	
CADMIUM	0.99	5	mg/kg	0.51 J	0.35 J	0.8 U	0.58 J	0.57 J	1.3 U	1.2 U	1.2 U	
CALCIUM	NL	NL	mg/kg	6930	10400	13900	10400	9050	6690	7050	6900	
CHROMIUM	43	110	mg/kg	22.7	20.1	12.8	26.2	25.4	30.9	30	34.5	
COBALT	NL	NL	mg/kg	10.3 J	8.2 J	6.1 J	9.7 J	9.7 J	12.4 J	12 J	13.3 J	
COPPER	32	150	mg/kg	19.8	19.1	11.5	26.2	24.9	21.4	21.4	24.2	
IRON	NL	NL	mg/kg	20900	15800	10500	21400	21400	26500	25900	28200	
LEAD	36	130	mg/kg	20	13.7	5.8	28.2	27.2	21.5	20.8	27.3	
MAGNESIUM	NL	NL	mg/kg	6040	7120	7300	7000	6380	6070	5910	6650	
MANGANESE	NL	NL	mg/kg	375	332	194	411	443	907	956	828	
MERCURY	0.18	1.1	mg/kg	0.2	0.17 UJ	0.22	0.19 UJ	0.3	0.24	0.22 J	0.3	
NICKEL	23	49	mg/kg	20.4	17	12.1 J	21.2	20.7	25.5	25	28.5	
POTASSIUM	NL	NL	mg/kg	974 J+	795 J+	532 J+	925 J+	858 J+	1150 J+	1130 J+	1300 J+	
SELENIUM	NL	NL	mg/kg	7.1 U	6.2 U	5.6 U	6.6 U	6.9 U	9 U	8.7 U	8.4 U	
SILVER	NL	NL	mg/kg	2 U	1.8 U	1.6 U	1.9 U	2 U	2.6 U	2.5 U	2.4 U	
SODIUM	NL	NL	mg/kg	1017 U	887 U	804 U	945 U	984 U	1285 U	1248 U	1202 U	
THALLIUM	NL	NL	mg/kg	5.1 U	4.4 U	4 U	4.7 U	4.9 U	6.4 U	6.2 U	6 U	
VANADIUM	NL	NL	mg/kg	31.9	29.2	24.1	35.8	34.9	37.3	35.5	40.4	
ZINC	120	460	mg/kg	106	69	31.5	123	118	114	113	140	

Table 3-3b
Area 2 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-66	SLB10-2-66	SLB10-2-66	SLB10-2-67	SLB10-2-67	SLB10-2-67	SLB10-2-67	SLB10-2-67
			Field Sample ID	SLB10-2-66-36	SLB10-2-66-60	SLB10-2-66-89	SLB10-2-67-06	SLB10-2-67-12	SLB10-2-67-36	SLB10-2-67-60	SLB10-2-67-84
			Sample Date	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
			Depth Interval	12- 36	36- 60	60- 89	0- 6	0- 12	12- 36	36- 60	60- 84
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	10600	10600	3720	8610	7690	6590	7190	6180
ANTIMONY	NL	NL	mg/kg	11.8 U	10.8 U	7.4 U	12.6 U	11.8 U	10.4 U	11 U	10 U
ARSENIC	9.8	33	mg/kg	3.7 J	3.5 J	1.6 J	3.4 J	3.3 J	2.1 J	2.4 J	1.8 J
BARIUM	NL	NL	mg/kg	97.5 J+	88.1 J+	18.7 J+	98.2 J+	78.1 J+	57.5 J+	62.9 J+	54.1 J+
BERYLLIUM	NL	NL	mg/kg	0.43 J	0.38 J	0.62 U	1.1 U	0.99 U	0.87 U	0.92 U	0.83 U
CADMIUM	0.99	5	mg/kg	0.98 U	0.9 U	0.62 U	1.1 U	0.99 U	0.87 U	0.92 U	0.83 U
CALCIUM	NL	NL	mg/kg	14700	7220	1790	6890	6510	5820	5030	5540
CHROMIUM	43	110	mg/kg	28.8	30.9	9.6	22.9	20.8	18.9	21.7	18.8
COBALT	NL	NL	mg/kg	11.2 J	10.6 J	4.7 J	10.1 J	9.5 J	8.5 J	8.8 J	8 J
COPPER	32	150	mg/kg	28.3	23.3	5.6 J	17.2	17.1	13.3	16.4	12.7
IRON	NL	NL	mg/kg	20900	23100	9100	18500	15400	10700	12200	10900
LEAD	36	130	mg/kg	17.9	22	3.2	17.4 J	14.8 J	4.2 J	4.7 J	3.9 J
MAGNESIUM	NL	NL	mg/kg	8900	6340	1810	5750	5140	4340	4030	4130
MANGANESE	NL	NL	mg/kg	409	429	93.9	834	578	247	285	240
MERCURY	0.18	1.1	mg/kg	0.38	0.27	0.046 J	0.12 J	0.1 J	0.18 U	0.17 U	0.17 U
NICKEL	23	49	mg/kg	25.2	24.6	9.8 J	19.5	18.5	16.4	18.3	15.6
POTASSIUM	NL	NL	mg/kg	1120 J+	988 J+	620 U	916 J+	791 J+	633 J+	661 J+	555 J+
SELENIUM	NL	NL	mg/kg	6.9 U	6.3 U	4.3 U	7.4 U	6.9 U	6.1 U	6.4 U	5.8 U
SILVER	NL	NL	mg/kg	2 U	1.8 U	1.2 U	2.1 U	2 U	1.7 U	1.8 U	1.7 U
SODIUM	NL	NL	mg/kg	983 U	901 U	620 U	1051 U	986 U	868 U	917 U	832 U
THALLIUM	NL	NL	mg/kg	4.9 U	4.5 U	3.1 U	5.3 U	4.9 U	4.3 U	4.6 U	4.2 U
VANADIUM	NL	NL	mg/kg	40.1	35.3	23	26	24.5	23.5	27.7	21.3
ZINC	120	460	mg/kg	93.5	121	19.4	94.3	83.9	48.7	52.1	48.3

Table 3-3b
Area 2 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-67	SLB10-2-68	SLB10-2-68	SLB10-2-69	SLB10-2-69	SLB10-2-70	SLB10-2-70	SLB10-2-70
			Field Sample ID	SLB10-2-67-102	SLB10-2-68-06	SLB10-2-68-21	SLB10-2-69-06	SLB10-2-69-17	SLB10-2-70-06	SLB10-2-70-06DP	SLB10-2-70-19
			Sample Date	10/6/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
			Depth Interval	84- 102	0- 6	0- 21	0- 6	0- 17	0- 6	0- 6	0- 19
Chemical	Level I ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	7130	4380	5220	7060	6480	10500	11900	6390
ANTIMONY	NL	NL	mg/kg	10.2 U	9.1 U	11.3 U	17.9 U	25 U	14.2 U	17.3 U	13.1 U
ARSENIC	9.8	33	mg/kg	6.2	1.8 J	2.5 J	3.6 J	5.8 J	5.9	6.3	4.5
BARIUM	NL	NL	mg/kg	64.7 J+	35.4 J+	53 J+	74.8 J+	83 J+	101 J+	119 J+	73.7 J+
BERYLLIUM	NL	NL	mg/kg	0.85 U	0.76 U	0.94 U	1.5 U	2.1 U	0.45 J	1.4 U	1.1 U
CADMIUM	0.99	5	mg/kg	0.85 UJ	0.76 U	0.43 J	0.53 J	0.75 J	0.76 J	0.85 J	0.58 J
CALCIUM	NL	NL	mg/kg	5860	6270	7250	5960	8080	9170	10400	6060
CHROMIUM	43	110	mg/kg	20.4	12.2	14	18.6	17.6	26.1	29.2	15.5
COBALT	NL	NL	mg/kg	7.8 J	5.5 J	5.8 J	6.6 J	20.9 U	12.1 J	13.8 J	6.9 J
COPPER	32	150	mg/kg	14.2	19.3	28.7	38.8	37.4	54	61.9	41.1
IRON	NL	NL	mg/kg	12700	11400	11500	20600	31200	23700	27200	15600
LEAD	36	130	mg/kg	3.1 J	15.6	34.8	35.8	50.4	50.1	56.7	48.7
MAGNESIUM	NL	NL	mg/kg	4580	2720	3070	3450	3360 J	6000	6680	3320
MANGANESE	NL	NL	mg/kg	267	209	216	235	289	316	349	210
MERCURY	0.18	1.1	mg/kg	0.17 U	0.063 J	0.091 J	0.29 UJ	0.059 J	0.19 J	0.49	0.11 J
NICKEL	23	49	mg/kg	17.2	10.7 J	12.6 J	15.5 J	15.7 J	26.4	29.5	15.6 J
POTASSIUM	NL	NL	mg/kg	675 J+	305 J+	405 J+	629 J+	2090 U	806 J+	930 J+	507 J+
SELENIUM	NL	NL	mg/kg	5 J	5.3 U	6.6 U	10.4 U	14.6 U	8.3 U	10.1 U	7.6 U
SILVER	NL	NL	mg/kg	1.7 U	1.5 U	1.9 U	3 U	4.2 U	2.4 U	2.9 U	2.2 U
SODIUM	NL	NL	mg/kg	847 U	756 U	939 U	1491 U	2086 U	1184 U	1445 U	1092 U
THALLIUM	NL	NL	mg/kg	4.2 U	3.8 U	4.7 U	7.5 U	10.4 U	5.9 U	7.2 U	5.5 U
VANADIUM	NL	NL	mg/kg	23.3	20.4	20.2	28.4 J	27 J	39.4	45.6	23.9
ZINC	120	460	mg/kg	56.4	56.1	88.4	115	129	167	187	132

Table 3-3b
Area 2 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-71	SLB10-2-71	SLB10-2-71	SLB10-2-71	SLB10-2-72	SLB10-2-72	SLB10-2-72	SLB10-2-73
			Field Sample ID	SLB10-2-71-06	SLB10-2-71-12	SLB10-2-71-36	SLB10-2-71-54	SLB10-2-72-06	SLB10-2-72-12	SLB10-2-72-24	SLB10-2-73-06
			Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
			Depth Interval	0- 6	0- 12	12- 36	36- 54	0- 6	0- 12	12- 24	0- 6
Chemical	Level I ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	4260	3900	2730	4030	4580	9080	6390	11700
ANTIMONY	NL	NL	mg/kg	7.3 U	6.5 U	7 U	8 U	25.9 U	22 U	22.9 U	14.7 U
ARSENIC	9.8	33	mg/kg	1.7 J	1.5 J	1.2 J	1.7 J	5.8 J	7.7	7.9	6.1
BARIUM	NL	NL	mg/kg	23.7 J+	23.5 J+	22.1 J+	40 J+	59.6 J+	81.4 J+	106 J+	108 J+
BERYLLIUM	NL	NL	mg/kg	0.61 U	0.55 U	0.58 U	0.67 U	2.2 U	1.8 U	0.87 J	0.55 J
CADMIUM	0.99	5	mg/kg	0.61 U	0.55 U	0.58 U	0.67 U	0.92 J	0.99 J	0.87 J	0.94 J
CALCIUM	NL	NL	mg/kg	3760	3790	4550	16000	5320	4890	7570	8170
CHROMIUM	43	110	mg/kg	9.8	7.5	6.7	10.8	17.1	24.4	14.3	29.9
COBALT	NL	NL	mg/kg	5.5 J	4.7 J	4 J	5.5 J	21.6 U	8.8 J	19.1 U	11.9 J
COPPER	32	150	mg/kg	11.5	11.9	7	10.6	30.5	68.7	39.4	29
IRON	NL	NL	mg/kg	11000	8210	5810	7580	9280	17600	19600	28700
LEAD	36	130	mg/kg	2.6	2.3	2.4	4.4	64.5	138	76.6	43.8
MAGNESIUM	NL	NL	mg/kg	3280	2730	2630	8440	1860 J	4110	2830 J	7490
MANGANESE	NL	NL	mg/kg	150	116	86.7	198	351	258	420	683
MERCURY	0.18	1.1	mg/kg	0.12 UJ	0.041 J	0.057 J	0.071 J	0.11 J	0.13	0.1 J	0.47
NICKEL	23	49	mg/kg	12.8	9.9	7.7 J	10.9	12.1 J	20.4 J	15.7 J	25.3
POTASSIUM	NL	NL	mg/kg	275 J+	247 J+	233 J+	486 J+	2160 U	900 J+	1910 U	1280 J+
SELENIUM	NL	NL	mg/kg	4.2 U	3.8 U	4.1 U	4.7 U	15.1 U	12.8 U	13.4 U	8.6 U
SILVER	NL	NL	mg/kg	1.2 U	1.1 U	1.2 U	1.3 U	4.3 U	3.7 U	3.8 U	2.5 U
SODIUM	NL	NL	mg/kg	606 U	545 U	583 U	671 U	2157 U	1834 U	1908 U	1225 U
THALLIUM	NL	NL	mg/kg	3 U	2.7 U	2.9 U	3.4 U	10.8 U	9.2 U	9.5 U	6.1 U
VANADIUM	NL	NL	mg/kg	19.7	13.6	13.6	19.2	26.3 J	33.2 J	27 J	35.5
ZINC	120	460	mg/kg	20.5	19	16.3	25.8	138	194	158	218

Table 3-3b
Area 2 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-73	SLB10-2-73	SLB10-2-74	SLB10-2-74	SLB10-2-74	SLB10-2-74	SLB10-2-74	SLB10-2-74
			Field Sample ID	SLB10-2-73-12	SLB10-2-73-31	SLB10-2-74-06	SLB10-2-74-06DP	SLB10-2-74-12	SLB10-2-74-36	SLB10-2-74-36DP	SLB10-2-74-60
			Sample Date	10/7/2010	10/7/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
			Depth Interval	0- 12	12- 31	0- 6	0- 6	0- 12	12- 36	12- 36	36- 60
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	12800	5130	6270	6550	7310	7790	7530	7290
ANTIMONY	NL	NL	mg/kg	14.3 U	18.2 U	10.6 U	10.6 U	10.4 U	11 U	11.4 U	11 U
ARSENIC	9.8	33	mg/kg	6.7	1.5 J	3.1 J	3.4 J	3.8	2.8 J	2.3 J	3.9
BARIUM	NL	NL	mg/kg	103 J+	66.2 J+	65.9 J+	66.7 J+	70.5 J+	65.1 J+	65.3 J+	65.9 J+
BERYLLIUM	NL	NL	mg/kg	0.49 J	1.5 U	0.88 U	0.88 U	0.86 U	0.92 U	0.95 U	0.91 U
CADMIUM	0.99	5	mg/kg	0.75 J	1.5 U	0.88 UJ	0.88 UJ	0.86 UJ	0.92 U	0.95 U	0.91 UJ
CALCIUM	NL	NL	mg/kg	6300	6160	7710	6010	6430	5190	5010	4870
CHROMIUM	43	110	mg/kg	32	12.5	16.4	17.4	19.6	20.8	21.7	20.9
COBALT	NL	NL	mg/kg	12.5 J	15.2 U	7.4 J	7.7 J	8.3 J	9 J	9 J	8.7 J
COPPER	32	150	mg/kg	30	13.7 J	14.5	16.1	19.1	17	15.3	14.5
IRON	NL	NL	mg/kg	24400	11800	14100	14900	16000	13500	12500	12300
LEAD	36	130	mg/kg	44.7	10.2	21.2	24	33.2 J	11.7 J	5.4	5 J
MAGNESIUM	NL	NL	mg/kg	6860	2230 J	4180	4310	4830	4350	3900	3710
MANGANESE	NL	NL	mg/kg	407	302	581	546	405	302	304	322
MERCURY	0.18	1.1	mg/kg	0.37	0.34	0.23	0.24	0.2	0.066 J	0.11 J	0.18 U
NICKEL	23	49	mg/kg	27.5	9.5 J	14.4	15.3	16.9	18.7	18.3	17.6
POTASSIUM	NL	NL	mg/kg	1330 J+	1520 U	637 J+	644 J+	719 J+	743 J+	712 J+	681 J+
SELENIUM	NL	NL	mg/kg	8.3 U	10.6 U	6.2 U	6.2 U	6.1 U	6.4 U	6.6 U	2.6 J
SILVER	NL	NL	mg/kg	2.4 U	3 U	1.8 U	1.8 U	1.7 U	1.8 U	1.9 U	1.8 U
SODIUM	NL	NL	mg/kg	1190 U	1518 U	880 U	880 U	865 U	916 U	947 U	914 U
THALLIUM	NL	NL	mg/kg	6 U	7.6 U	4.4 U	4.4 U	4.3 U	4.6 U	4.7 U	4.6 U
VANADIUM	NL	NL	mg/kg	40.5	22.9 J	19.6	20.9	22.2	24.9	25.9	24
ZINC	120	460	mg/kg	161	52.3	102	114	145	64.9	54.6	58.8

Table 3-3b
Area 2 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-74	SLB10-2-74	SLB10-2-74	SLB10-2-75	SLB10-2-75	SLB10-2-75	SLB10-2-76	SLB10-2-76
			Field Sample ID	SLB10-2-74-84	SLB10-2-74-108	SLB10-2-74-120	SLB10-2-75-06	SLB10-2-75-12	SLB10-2-75-34	SLB10-2-76-06	SLB10-2-76-12
			Sample Date	10/6/2010	10/6/2010	10/6/2010	10/7/2010	10/7/2010	10/7/2010	10/13/2010	10/13/2010
			Depth Interval	60- 84	84- 108	108- 120	0- 6	0- 12	12- 34	0- 6	0- 12
Chemical	Level I ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	7700	7800	8160	10700	9420	8810	5040	20300
ANTIMONY	NL	NL	mg/kg	10.5 U	10.5 U	11 U	19.2 U	14.6 U	21.1 U	9.8 U	11.1 U
ARSENIC	9.8	33	mg/kg	2.1 J	2.1 J	2.2 J	4.7 J	4.7 J	6.1 J	2.5 J	11.5
BARIUM	NL	NL	mg/kg	68 J+	67.7 J+	73.7 J+	96.7 J+	93.3 J+	90.5 J+	46 J+	2910 J+
BERYLLIUM	NL	NL	mg/kg	0.88 U	0.88 U	0.91 U	1.6 U	1.2 U	1.8 U	0.81 U	2.7
CADMIUM	0.99	5	mg/kg	0.88 U	0.88 U	0.91 U	0.64 J	0.7 J	0.85 J	0.27 J	0.92 U
CALCIUM	NL	NL	mg/kg	5270	4700	5560	7290	6740	6210	4450	24700
CHROMIUM	43	110	mg/kg	21.8	22.9	24.1	27.5	24.8	20.9	15.2	12.6
COBALT	NL	NL	mg/kg	9.3 J	9.6 J	9.4 J	11.5 J	10.2 J	10.8 J	6 J	6.5 J
COPPER	32	150	mg/kg	14.4	15.7	16.1	37.7	30.9	31.8	35.4	18.5
IRON	NL	NL	mg/kg	13400	13600	15100	22900	19000	17500	10000	13600
LEAD	36	130	mg/kg	4.7 J	4.4	4.5	35.6	38.2	40.5	10.2	9.4
MAGNESIUM	NL	NL	mg/kg	4470	4140	4670	6100	5470	4160	3070	9170
MANGANESE	NL	NL	mg/kg	319	307	330	414	345	327	268	470
MERCURY	0.18	1.1	mg/kg	0.18 U	0.09 J	0.11 J	0.32 UJ	0.12	0.12 J	0.16 UJ	0.18 UJ
NICKEL	23	49	mg/kg	18.7	19.6	20.1	24.3 J	21.6	19.3 J	12.9 J	11.4 J
POTASSIUM	NL	NL	mg/kg	740 J+	750 J+	777 J+	1130 J+	970 J+	865 J+	416 J+	660 J+
SELENIUM	NL	NL	mg/kg	6.1 U	6.1 U	6.4 U	11.2 U	8.5 U	12.3 U	5.7 U	6.5 U
SILVER	NL	NL	mg/kg	1.8 U	1.8 U	1.8 U	3.2 U	2.4 U	3.5 U	1.6 UJ	1.8 UJ
SODIUM	NL	NL	mg/kg	876 U	877 U	914 U	1597 U	1220 U	1761 U	813 U	925 U
THALLIUM	NL	NL	mg/kg	4.4 U	4.4 U	4.6 U	8 U	6.1 U	8.8 U	4.1 U	4.6 U
VANADIUM	NL	NL	mg/kg	25	25.9	26.3	36.1	29.9	32.3 J	20.9	52.1
ZINC	120	460	mg/kg	57.3	57.5	62.1	132	135	148	49.6	21.1 J

Table 3-3b
Area 2 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-77	SLB10-2-77	SLB10-2-77	SLB10-2-77	SLB10-2-77	SLB10-2-79	SLB10-2-81	SLB10-2-81
			Field Sample ID	SLB10-2-77-06	SLB10-2-77-12	SLB10-2-77-36	SLB10-2-77-60	SLB10-2-77-73	SLB10-2-79-12	SLB10-2-81-06	SLB10-2-81-06DP
			Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/13/2010	10/5/2010	10/5/2010
			Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 73	0- 12	0- 6	0- 6
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	10100	8450	6450	8460	8900	4670	7760	6980
ANTIMONY	NL	NL	mg/kg	14.4 U	11 U	9.4 U	12.1 U	12 U	24.7 U	12.6 U	12.3 U
ARSENIC	9.8	33	mg/kg	4.3 J	3.2 J	1.8 J	2.2 J	2.2 J	5.7 J	2.5 J	2.5 J
BARIUM	NL	NL	mg/kg	114 J+	72.6 J+	53.5 J+	75 J+	80.1 J+	75.6 J+	73.6 J+	69.2 J+
BERYLLIUM	NL	NL	mg/kg	1.2 U	0.92 U	0.79 U	1 U	1 U	2.1 U	1 U	1 U
CADMIUM	0.99	5	mg/kg	0.49 J	0.34 J	0.79 U	1 U	1 U	0.73 J	0.36 J	0.34 J
CALCIUM	NL	NL	mg/kg	7040	5850	3560	4350	4810	9910	5740	5340
CHROMIUM	43	110	mg/kg	26.7	22	17.2	24.9	24.4	11	22.5	20.4
COBALT	NL	NL	mg/kg	11.3 J	9.6 J	7.2 J	9.3 J	9.4 J	20.6 U	9.5 J	8.7 J
COPPER	32	150	mg/kg	20.6	17.8	11.3	15.2	17	30.3	16	14.9
IRON	NL	NL	mg/kg	25300	16500	11300	15600	16500	13800	13800	12900
LEAD	36	130	mg/kg	18.4	9.9	3.7	4.4	4.8	53.5	7.5 J	7.1 J
MAGNESIUM	NL	NL	mg/kg	6320	5230	3070	3810	4240	2290 J	4740	4300
MANGANESE	NL	NL	mg/kg	1140	422	225	361	376	678	716	718
MERCURY	0.18	1.1	mg/kg	0.23 J	0.12 J	0.078 J	0.11 J	0.099 J	0.37 J	0.075 J	0.08 J
NICKEL	23	49	mg/kg	22.8	19.3	14.3	19.9	20.1	12.3 J	18.5	16.7
POTASSIUM	NL	NL	mg/kg	1110 J+	882 J+	595 J+	765 J+	783 J+	2060 U	796 J+	720 J+
SELENIUM	NL	NL	mg/kg	8.4 U	6.4 U	5.5 U	7 U	7 U	14.4 U	7.3 U	7.2 U
SILVER	NL	NL	mg/kg	2.4 U	1.8 U	1.6 U	2 U	2 U	4.1 UJ	2.1 U	2.1 U
SODIUM	NL	NL	mg/kg	1202 U	918 U	787 U	1007 U	1002 U	2060 U	1046 U	1027 U
THALLIUM	NL	NL	mg/kg	6 U	4.6 U	3.9 U	5 U	5 U	10.3 U	5.2 U	5.1 U
VANADIUM	NL	NL	mg/kg	32.5	29.6	22.3	28	28.2	18.7 J	28.3	25.5
ZINC	120	460	mg/kg	105	70.7	44.4	59.5	61.1	111	65.4	61.2

Table 3-3b
Area 2 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-81	SLB10-2-81	SLB10-2-81	SLB10-2-81	SLB10-2-81	SLB10-2-82	SLB10-2-82	SLB10-2-82
			Field Sample ID	SLB10-2-81-12	SLB10-2-81-36	SLB10-2-81-60	SLB10-2-81-84	SLB10-2-81-92	SLB10-2-82-06	SLB10-2-82-06DP	SLB10-2-82-12
			Sample Date	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/7/2010	10/7/2010	10/7/2010
			Depth Interval	0- 12	12- 36	36- 60	60- 84	84- 92	0- 6	0- 6	0- 12
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	6680	6750	8000	6230	7890	9130	9600	7300
ANTIMONY	NL	NL	mg/kg	10.1 U	10 U	9.9 U	8.7 U	10.4 U	9.4 U	9.6 U	7.7 U
ARSENIC	9.8	33	mg/kg	1.9 J	1.7 J	1.8 J	1.7 J	2.3 J	4.4	4.5	2.4 J
BARIIUM	NL	NL	mg/kg	53 J+	58.7 J+	73.3 J+	51.5 J+	66.9 J+	69.2 J+	71.2 J+	59.1 J+
BERYLLIUM	NL	NL	mg/kg	0.84 U	0.83 U	0.82 U	0.73 U	0.87 U	0.62 J	0.7 J	0.44 J
CADMIUM	0.99	5	mg/kg	0.28 J	0.29 J	0.32 J	0.25 J	0.31 J	0.78 U	0.8 U	0.64 U
CALCIUM	NL	NL	mg/kg	5280	4510	6350	6450	5250	7440	8030	3490
CHROMIUM	43	110	mg/kg	17.9	19.7	22.8	18.6	25.1	18.5	19.2	14.4
COBALT	NL	NL	mg/kg	7.5 J	8.4 J	9.5 J	8.4 J	9.2 J	13.2 J	14.4 J	8 J
COPPER	32	150	mg/kg	13.6	13.1	16.5	13.1	17.5	26.1	27.5	17.3
IRON	NL	NL	mg/kg	10500	10900	14100	10900	12900	26100	27100	16600
LEAD	36	130	mg/kg	4.8 J	4.1 J	4.9 J	3.9 J	4.9 J	18	20.9	184
MAGNESIUM	NL	NL	mg/kg	4180	3770	5550	5160	4850	4990	5300	3610
MANGANESE	NL	NL	mg/kg	240	247	293	218	255	313	313	182
MERCURY	0.18	1.1	mg/kg	0.047 J	0.053 J	0.052 J	0.15 U	0.17 U	0.083 J	0.14 U	0.13 UJ
NICKEL	23	49	mg/kg	14.9	16.3	19	15.9	19.1	26.6	28.4	17.7
POTASSIUM	NL	NL	mg/kg	622 J+	599 J+	783 J+	610 J+	738 J+	814 J+	864 J+	680 J+
SELENIUM	NL	NL	mg/kg	5.9 U	5.8 U	5.8 U	5.1 U	6.1 U	5.5 U	5.6 U	4.5 U
SILVER	NL	NL	mg/kg	1.7 U	1.7 U	1.6 U	1.5 U	1.7 U	1.6 U	1.6 U	1.3 U
SODIUM	NL	NL	mg/kg	842 U	834 U	822 U	726 U	867 U	1800 J+	1740 J+	1130 J+
THALLIUM	NL	NL	mg/kg	4.2 U	4.2 U	4.1 U	3.6 U	4.3 U	3.9 U	4 U	3.2 U
VANADIUM	NL	NL	mg/kg	24.7	25.1	27.6	24.4	31.4	37.5	40.8	28.4
ZINC	120	460	mg/kg	47.6	51.7	59.6	46.4	58.8	76.2	76.7	43.3

Table 3-3b
Area 2 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-82	SLB10-2-83	SLB10-2-83	SLB10-2-83	SLB10-2-83	SLB10-2-84	SLB10-2-84	SLB10-2-85
			Field Sample ID	SLB10-2-82-27	SLB10-2-83-06	SLB10-2-83-12	SLB10-2-83-36	SLB10-2-83-60	SLB10-2-84-12	SLB10-2-84-33	SLB10-2-85-06
			Sample Date	10/7/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/13/2010	10/13/2010	10/6/2010
			Depth Interval	12- 27	0- 6	0- 12	12- 36	36- 60	0- 12	12- 33	0- 6
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	3210	6970	4500	10500	17500	12300	9040	5760
ANTIMONY	NL	NL	mg/kg	7.1 U	44.5 U	28.7 U	27 U	17.5 U	22.5 U	31.7 U	12.1 U
ARSENIC	9.8	33	mg/kg	1.5 J	7.1 J	4.6 J	8.7 J	5.6 J	5.4 J	5.3 J	3.1 J
BARIUM	NL	NL	mg/kg	12 J+	97.5 J+	62.9 J+	91.4 J+	129 J+	105 J+	82.2 J+	64.5 J+
BERYLLIUM	NL	NL	mg/kg	0.6 U	3.7 U	2.4 U	2.2 U	0.69 J	1.9 U	2.6 U	1 U
CADMIUM	0.99	5	mg/kg	0.6 U	3.7 U	2.4 U	2.2 UJ	1.5 U	0.69 J	2.6 U	0.39 J
CALCIUM	NL	NL	mg/kg	1500	10400	6700	6830	8590	6350	6380	4670
CHROMIUM	43	110	mg/kg	10.9	20.8	13.5	29.6	45.1	33.2	24.9	16.7
COBALT	NL	NL	mg/kg	4.2 J	37.1 U	23.9 U	13.1 J	16.5 J	10.8 J	26.5 U	7.6 J
COPPER	32	150	mg/kg	21.6	35.5 J	22.9 J	42.7	47.3	41.3	27.3	14.3
IRON	NL	NL	mg/kg	8120	20200	13100	21800	31400	19200	14400	13300
LEAD	36	130	mg/kg	2.5	35	22.6	71.8	31.7	31.7	9.5 J	12.6
MAGNESIUM	NL	NL	mg/kg	1450	3800 J	2450 J	4330 J	8860	6140	3900 J	3650
MANGANESE	NL	NL	mg/kg	59.1	735	475	242	460	439	375	752
MERCURY	0.18	1.1	mg/kg	0.11 UJ	0.49 J	0.54	1.1	0.5	0.45	0.24 J	0.11 J
NICKEL	23	49	mg/kg	7.8 J	20.3 J	13.1 J	26.9 J	40.4	28.2 J	19 J	14.2 J
POTASSIUM	NL	NL	mg/kg	595 U	3710 U	2390 U	943 J+	1550 J+	1350 J+	2650 U	600 J+
SELENIUM	NL	NL	mg/kg	4.2 U	25.9 U	16.7 U	15.7 U	10.2 U	13.1 U	18.5 U	7 U
SILVER	NL	NL	mg/kg	1.2 U	7.4 U	4.8 U	4.5 U	2.9 U	3.8 UJ	5.3 UJ	2 U
SODIUM	NL	NL	mg/kg	694 J+	3706 U	2392 U	2249 U	1462 U	1875 U	2646 U	1007 U
THALLIUM	NL	NL	mg/kg	3 U	18.5 U	12 U	11.2 U	7.3 U	9.4 U	13.2 U	5 U
VANADIUM	NL	NL	mg/kg	31	25.3 J	16.3 J	31.7 J	56.9	41.2	34.9 J	22.5
ZINC	120	460	mg/kg	18.8	127	81.9	293	147	125	54.7 J	71.6

Table 3-3b
Area 2 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-85	SLB10-2-85	SLB10-2-85	SLB10-2-85	SLB10-2-85	SLB10-2-86	SLB10-2-86	SLB10-2-86
			Field Sample ID	SLB10-2-85-12	SLB10-2-85-36	SLB10-2-85-60	SLB10-2-85-84	SLB10-2-85-117	SLB10-2-86-06	SLB10-2-86-12	SLB10-2-86-24
			Sample Date	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/7/2010	10/7/2010	10/7/2010
			Depth Interval	0- 12	12- 36	36- 60	60- 84	84- 117	0- 6	0- 12	12- 24
Chemical	Level I ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	6420	6410	5320	3170	6170	4610	7540	7000
ANTIMONY	NL	NL	mg/kg	9.5 U	9.3 U	8.1 U	8 U	8.5 U	10.4 U	10.2 U	9.8 U
ARSENIC	9.8	33	mg/kg	2.3 J	1.9 J	1.7 J	0.84 J	1.8 J	3.1 J	5.4	2.4 J
BARIUM	NL	NL	mg/kg	54.1 J+	53.7 J+	44.1 J+	27.7 J+	56.4 J+	45.9 J+	66.1 J+	60.4 J+
BERYLLIUM	NL	NL	mg/kg	0.79 U	0.78 U	0.67 U	0.67 U	0.71 U	0.86 U	0.33 J	0.82 U
CADMIUM	0.99	5	mg/kg	0.27 J	0.28 J	0.67 U	0.67 U	0.25 J	0.86 U	0.6 J	0.82 U
CALCIUM	NL	NL	mg/kg	4420	3920	6070	4270	8360	3690	6040	7130
CHROMIUM	43	110	mg/kg	18.5	19.3	16.2	10.1	19.3	13.9	19.5	19
COBALT	NL	NL	mg/kg	8 J	7.7 J	7.2 J	4.6 J	9 J	6.3 J	8.1 J	8.3 J
COPPER	32	150	mg/kg	13.6	12.9	11.5	6.3 J	13.2	12.5	20.9	15.8
IRON	NL	NL	mg/kg	10200	10100	9480	5930	11400	14300	20300	12500
LEAD	36	130	mg/kg	4.8	4.2	3.5	2 J	4	13.3	38.2	5.6
MAGNESIUM	NL	NL	mg/kg	3550	3400	4750	3210	6390	3020	4460	5380
MANGANESE	NL	NL	mg/kg	270	230	198	127	242	380	348	286
MERCURY	0.18	1.1	mg/kg	0.051 J	0.054 J	0.043 J	0.14 U	0.041 J	0.14 J	0.17 U	0.059 J
NICKEL	23	49	mg/kg	15.3	15.2	13.8	8.5 J	16.4	12.1 J	16.8	17.1
POTASSIUM	NL	NL	mg/kg	599 J+	572 J+	501 J+	317 J+	619 J+	472 J+	693 J+	662 J+
SELENIUM	NL	NL	mg/kg	5.5 U	5.4 U	4.7 U	4.7 U	4.9 U	6 U	6 U	5.7 U
SILVER	NL	NL	mg/kg	1.6 U	1.6 U	1.3 U	1.3 U	1.4 U	1.7 U	1.7 U	1.6 U
SODIUM	NL	NL	mg/kg	792 U	778 U	674 U	671 U	706 U	863 U	853 U	818 U
THALLIUM	NL	NL	mg/kg	4 U	3.9 U	3.4 U	3.4 U	3.5 U	4.3 U	4.3 U	4.1 U
VANADIUM	NL	NL	mg/kg	26.8	26.2	22.8	13.2 J	24.7	22	25.5	24.1
ZINC	120	460	mg/kg	49.6	48.9	39.5	24.2	49.6	61.7	129	49.8

Table 3-3b
Area 2 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-87	SLB10-2-87	SLB10-2-87	SLB10-2-87	SLB10-2-87	SLB10-2-87	SLB10-2-87	SLB10-2-88
			Field Sample ID	SLB10-2-87-06	SLB10-2-87-12	SLB10-2-87-36	SLB10-2-87-60	SLB10-2-87-84	SLB10-2-87-108	SLB10-2-87-120	SLB10-2-88-06
			Sample Date	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
			Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	84- 108	84- 120	0- 6
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	5810	4940	4390	4080	4540	6090	8280	8030
ANTIMONY	NL	NL	mg/kg	12.3 U	8.9 U	8.6 U	8.1 U	7.8 U	8.2 U	9.8 U	15.2 U
ARSENIC	9.8	33	mg/kg	2.4 J	1.6 J	1.6 J	1.3 J	1.6 J	1.8 J	2.3 J	5.4
BARIUM	NL	NL	mg/kg	58.3 J+	40.3 J+	36.4 J+	34.3 J+	38.2 J+	52.5 J+	72.4 J+	91.3 J+
BERYLLIUM	NL	NL	mg/kg	1 U	0.74 U	0.71 U	0.68 U	0.65 U	0.68 U	0.81 U	1.3 U
CADMIUM	0.99	5	mg/kg	1 U	0.74 U	0.71 U	0.68 U	0.65 U	0.68 U	0.81 U	1.3 U
CALCIUM	NL	NL	mg/kg	4320	3820	5280	5080	4780	7590	5000	8610
CHROMIUM	43	110	mg/kg	15.5	14.5	12.8	11.6	12.8	16.2	23.5	21.9
COBALT	NL	NL	mg/kg	7 J	6.4 J	6 J	5.7 J	6.3 J	7.5 J	9.9 J	8.3 J
COPPER	32	150	mg/kg	11.9	9.7	8.6	7.6	8.9	12.1	15.6	25.6
IRON	NL	NL	mg/kg	11200	7800	7620	7510	8610	11500	14400	21100
LEAD	36	130	mg/kg	7.5 J	3.4 J	2.8 J	2.6 J	2.5 J	3.5 J	4.7 J	30.7
MAGNESIUM	NL	NL	mg/kg	3340	2890	3630	3640	3630	5640	4640	5330
MANGANESE	NL	NL	mg/kg	630	191	184	183	209	291	312	345
MERCURY	0.18	1.1	mg/kg	0.061 J	0.14 U	0.14 U	0.13 U	0.13 U	0.13 U	0.16 U	0.22 J
NICKEL	23	49	mg/kg	13.4 J	11.8	10.7 J	10.5 J	12	14.9	20.3	18.5 J
POTASSIUM	NL	NL	mg/kg	608 J+	419 J+	384 J+	355 J+	423 J+	590 J+	793 J+	834 J+
SELENIUM	NL	NL	mg/kg	7.2 U	5.2 U	5 U	4.7 U	4.5 U	4.8 U	5.7 U	8.8 U
SILVER	NL	NL	mg/kg	2 U	1.5 U	1.4 U	1.4 U	1.3 U	1.4 U	1.6 U	2.5 U
SODIUM	NL	NL	mg/kg	1025 U	739 U	713 U	677 U	646 U	683 U	814 U	1263 U
THALLIUM	NL	NL	mg/kg	5.1 U	3.7 U	3.6 U	3.4 U	3.2 U	3.4 U	4.1 U	6.3 U
VANADIUM	NL	NL	mg/kg	20.2 J	18.9	17.2	14.9	16.7	21.2	26.1	24.7 J
ZINC	120	460	mg/kg	51.2	38.5	35.4	30.8	32.5	40.6	61.5	113

Table 3-3b
Area 2 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-88	SLB10-2-89	SLB10-2-89	SLB10-2-90	SLB10-2-90	SLB10-2-90	SLB10-2-90	SLB10-2-90
			Field Sample ID	SLB10-2-88-18	SLB10-2-89-06	SLB10-2-89-16	SLB10-2-90-06	SLB10-2-90-06DP	SLB10-2-90-12	SLB10-2-90-12DP	SLB10-2-90-32
			Sample Date	10/6/2010	10/7/2010	10/7/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
			Depth Interval	0- 18	0- 6	0- 16	0- 6	0- 6	0- 12	0- 12	12- 32
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	3670	9720	6590	9880	7140	5510	7560	6770
ANTIMONY	NL	NL	mg/kg	7.2 U	13.3 U	11.5 U	10.4 U	11.5 U	10.5 U	11.5 U	10.8 U
ARSENIC	9.8	33	mg/kg	3.9	5.1	7.7	8.3	5.8	3.8	5.3	2.8 J
BARIUM	NL	NL	mg/kg	52.5 J+	96.7 J+	78.7 J+	97.3 J+	71.1 J+	56.8 J+	71.6 J+	64.8 J+
BERYLLIUM	NL	NL	mg/kg	0.23 J	1.1 U	0.96 U	0.53 J	0.38 J	0.34 J	0.4 J	0.9 U
CADMIUM	0.99	5	mg/kg	0.6 UJ	0.56 J	0.76 J	1 J	0.89 J	0.87 UJ	0.96 UJ	0.9 UJ
CALCIUM	NL	NL	mg/kg	3650	8820	7630	8970	6130	6480	6810	12200
CHROMIUM	43	110	mg/kg	9.7	26.5	17.9	27.5	20.4	15.2	22.1	21.4
COBALT	NL	NL	mg/kg	3.7 J	10.2 J	7.2 J	12.3 J	7.9 J	6.5 J	8.7 J	8.2 J
COPPER	32	150	mg/kg	15.5	25.4	24.9	35.2	26.7	16.9	24.9	20.2
IRON	NL	NL	mg/kg	10700	26000	21200	23800	19300	11700	18600	13400
LEAD	36	130	mg/kg	50.6	24.6	41.7	62	59.1	26.2	42.6	10.4
MAGNESIUM	NL	NL	mg/kg	2100	6830	4950	6610	4500	3740	5260	7830
MANGANESE	NL	NL	mg/kg	139	596	452	475	304	263	316	324
MERCURY	0.18	1.1	mg/kg	0.14	0.22 UJ	0.16	0.21	0.19	0.12 J	0.21	0.061 J
NICKEL	23	49	mg/kg	8.4 J	22.4	15.3 J	25	16.1	13.2 J	17.8	17.5
POTASSIUM	NL	NL	mg/kg	329 J+	1070 J+	666 J+	939 J+	681 J+	531 J+	716 J+	630 J+
SELENIUM	NL	NL	mg/kg	4.2 U	7.8 U	6.7 U	6 U	6.7 U	6.1 U	6.7 U	6.3 U
SILVER	NL	NL	mg/kg	1.2 U	2.2 U	1.9 U	1.7 U	1.9 U	1.7 U	1.9 U	1.8 U
SODIUM	NL	NL	mg/kg	308 J+	1109 U	961 U	863 U	956 U	872 U	959 U	904 U
THALLIUM	NL	NL	mg/kg	3 U	5.5 U	4.8 U	4.3 U	4.8 U	4.4 U	4.8 U	4.5 U
VANADIUM	NL	NL	mg/kg	11.6 J	32.8	22.1	37	24.2	22	29.3	32.3
ZINC	120	460	mg/kg	96.5	115	161	232	196	108	151	63.2

Table 3-3b
Area 2 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-90	SLB10-2-91	SLB10-2-91	SLB10-2-91	SLB10-2-92	SLB10-2-92	SLB10-2-92	SLB10-2-93
			Field Sample ID	SLB10-2-90-32DP	SLB10-2-91-06	SLB10-2-91-12	SLB10-2-91-36	SLB10-2-92-06	SLB10-2-92-12	SLB10-2-92-36	SLB10-2-93-06
			Sample Date	10/6/2010	10/5/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
			Depth Interval	12- 32	0- 6	0- 12	12- 36	0- 6	0- 12	12- 36	0- 6
Chemical	Level I ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	6660	3620	3620	8090	3450	2870	3370	2980
ANTIMONY	NL	NL	mg/kg	11.5 U	8.1 U	10.4 U	10 U	8.6 U	7.6 U	7.5 U	7 U
ARSENIC	9.8	33	mg/kg	3.6 J	1.6 J	2.7 J	2.4 J	1.5 J	1.5 J	1.1 J	1.7 J
BARIUM	NL	NL	mg/kg	64.5 J+	25.4 J+	29.6 J+	71.1 J+	24.5 J+	19.6 J+	25 J+	17.3 J+
BERYLLIUM	NL	NL	mg/kg	0.96 U	0.67 U	0.87 U	0.31 J	0.72 U	0.63 U	0.63 U	0.58 U
CADMIUM	0.99	5	mg/kg	0.96 UJ	0.67 U	0.87 U	0.83 UJ	0.72 U	0.63 U	0.63 U	0.58 U
CALCIUM	NL	NL	mg/kg	11900	3380	3870	7530	3810	4260	5480	2090
CHROMIUM	43	110	mg/kg	20.6	8.6	14.8	23.7	8.9	7.4	8.7	7.7
COBALT	NL	NL	mg/kg	8.2 J	4.9 J	7.2 J	9.2 J	5.3 J	4.7 J	4.9 J	4.3 J
COPPER	32	150	mg/kg	21.2	7.1	9.4	20.2	6.1 J	4.4 J	4.3 J	4.9 J
IRON	NL	NL	mg/kg	13600	7270	7620	15100	6250	5580	6390	7550
LEAD	36	130	mg/kg	14.8	5.4 J	4.9	7.5	3.8	3.3	2.2 J	7.4
MAGNESIUM	NL	NL	mg/kg	7260	2510	2780	6190	2490	2390	3320	1760
MANGANESE	NL	NL	mg/kg	331	128	163	338	122	109	128	107
MERCURY	0.18	1.1	mg/kg	0.083 J	0.14 U	0.17 U	0.061 J	0.078 J	0.044 J	0.077 J	0.052 J
NICKEL	23	49	mg/kg	16.5	9.5 J	15.9	19.7	9.4 J	8.1 J	8.5 J	7.5 J
POTASSIUM	NL	NL	mg/kg	595 J+	254 J+	869 U	626 J+	284 J+	630 U	287 J+	579 U
SELENIUM	NL	NL	mg/kg	6.7 U	4.7 U	6.1 U	5.8 U	5 U	4.4 U	4.4 U	4.1 U
SILVER	NL	NL	mg/kg	1.9 U	1.3 U	1.7 U	1.7 U	1.4 U	1.3 U	1.3 U	1.2 U
SODIUM	NL	NL	mg/kg	956 U	674 U	869 U	830 U	717 U	630 U	627 U	579 U
THALLIUM	NL	NL	mg/kg	4.8 U	3.4 U	4.3 U	4.1 U	3.6 U	3.1 U	3.1 U	2.9 U
VANADIUM	NL	NL	mg/kg	32.4	17.8	83	36.1	14.4	13.8	12.8	17.5
ZINC	120	460	mg/kg	74.6	34.9	31.7	60.2	32.1	23.9	23.3	43.8

Table 3-3b
Area 2 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-93	SLB10-2-93	SLB10-2-94	SLB10-2-94	SLB10-2-94	SLB10-2-94	SLB10-2-94	SLB10-2-94
			Field Sample ID	SLB10-2-93-12	SLB10-2-93-41	SLB10-2-94-06	SLB10-2-94-12	SLB10-2-94-36	SLB10-2-94-60	SLB10-2-94-84	SLB10-2-94-96
			Sample Date	10/6/2010	10/6/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
			Depth Interval	0- 12	12- 41	0- 6	0- 12	12- 36	36- 60	60- 84	60- 96
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	3440	5780	7920	9060	6520	4430	4490	3370
ANTIMONY	NL	NL	mg/kg	7.1 U	8.4 U	12.9 U	11.6 U	9.6 U	8.8 U	8.1 U	7.4 U
ARSENIC	9.8	33	mg/kg	1.8 J	3	4.7	4.2	3.3	1.9 J	2.4 J	1.7 J
BARIUM	NL	NL	mg/kg	23.4 J+	48.1 J+	112 J+	86.4 J+	59.4 J+	31.4 J+	50.6 J+	43 J+
BERYLLIUM	NL	NL	mg/kg	0.59 U	0.35 J	1.1 U	0.96 U	0.8 U	0.74 U	0.67 U	0.62 U
CADMIUM	0.99	5	mg/kg	0.59 U	0.7 UJ	0.38 J	0.45 J	0.33 J	0.74 U	0.67 U	0.62 U
CALCIUM	NL	NL	mg/kg	2690	6450	6000	6180	4580	3060	29400	22100
CHROMIUM	43	110	mg/kg	8.5	14.9	21.1	22.8	17	11.6	11.9	9.2
COBALT	NL	NL	mg/kg	4.6 J	6.8 J	9.2 J	10.2 J	7 J	5.9 J	6 J	4.7 J
COPPER	32	150	mg/kg	5.7 J	14.5	19.9	19.4	15.8	8.9	12.6	9.8
IRON	NL	NL	mg/kg	8700	13700	22200	25500	17000	11700	12700	9610
LEAD	36	130	mg/kg	12.3	26.3	20.6	21.2	12.9	4.8	4	3.1
MAGNESIUM	NL	NL	mg/kg	1990	3590	5200	5810	3780	2680	14600	10400
MANGANESE	NL	NL	mg/kg	129	274	707	502	218	102	395	329
MERCURY	0.18	1.1	mg/kg	0.047 J	0.14 U	0.21 UJ	0.32	0.18	0.15 UJ	0.13 UJ	0.12 UJ
NICKEL	23	49	mg/kg	8.4 J	13.1	18.5	21	15.2	12.6	13.1	10.3
POTASSIUM	NL	NL	mg/kg	236 J+	423 J+	853 J+	941 J+	613 J+	275 J+	688 J+	517 J+
SELENIUM	NL	NL	mg/kg	4.2 U	4.9 U	7.5 U	6.7 U	5.6 U	5.1 U	4.7 U	4.3 U
SILVER	NL	NL	mg/kg	1.2 U	1.4 U	2.1 U	1.9 U	1.6 U	1.5 U	1.3 U	1.2 U
SODIUM	NL	NL	mg/kg	594 U	697 U	1040 J+	4930 J+	13000 J+	9900 J+	8170 J+	8530 J+
THALLIUM	NL	NL	mg/kg	3 U	3.5 U	5.4 U	4.8 U	4 U	3.7 U	3.4 U	3.1 U
VANADIUM	NL	NL	mg/kg	17	20.2	26.9	29.8	26.1	28	22	16.2
ZINC	120	460	mg/kg	54.1	96.3	85	104	70.9	22.8	27.7	21.7

Table 3-3b
Area 2 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-95	SLB10-2-95	SLB10-2-95	SLB10-2-95	SLB10-2-95	SLB10-2-96	SLB10-2-96	SLB10-2-96
			Field Sample ID	SLB10-2-95-06	SLB10-2-95-12	SLB10-2-95-36	SLB10-2-95-60	SLB10-2-95-84	SLB10-2-96-06	SLB10-2-96-12	SLB10-2-96-36
			Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
			Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	0- 6	0- 12	12- 36
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	11000	11600	11900	11500	6670	5120	6860	5950
ANTIMONY	NL	NL	mg/kg	15.9 U	12.4 U	11.9 U	10.8 U	9.1 U	9.5 U	10.1 U	8.8 U
ARSENIC	9.8	33	mg/kg	5.1 J	4.8	5.5	5.1	4	3.4	2.9 J	1.9 J
BARIUM	NL	NL	mg/kg	122 J+	125 J+	120 J+	112 J+	65.7 J+	45 J+	69.1 J+	55.3 J+
BERYLLIUM	NL	NL	mg/kg	1.3 U	0.42 J	0.47 J	0.46 J	0.38 J	0.8 U	0.84 U	0.73 U
CADMIUM	0.99	5	mg/kg	0.75 J	0.47 J	0.58 J	0.82 J	0.45 J	0.8 U	0.37 J	0.73 U
CALCIUM	NL	NL	mg/kg	10600	10300	10200	10900	7490	4020	5060	5930
CHROMIUM	43	110	mg/kg	26.8	30.3	30	29.4	16.1	13.6	19.4	17.3
COBALT	NL	NL	mg/kg	11.1 J	13 J	12.8 J	11.1 J	7.3 J	6.6 J	8.7 J	8.1 J
COPPER	32	150	mg/kg	21.7	23.5	25.2	31.4	17.4	21.8	14.8	10.8
IRON	NL	NL	mg/kg	28500	27200	28500	27700	23400	12300	12100	10900
LEAD	36	130	mg/kg	27.4	20	26.5	61.2	28.1	12.2	5.3	3.7
MAGNESIUM	NL	NL	mg/kg	6980	8350	8320	8340	4790	2840	3700	4580
MANGANESE	NL	NL	mg/kg	1320	997	1040	505	345	277	288	265
MERCURY	0.18	1.1	mg/kg	0.38	0.18 J	0.25	0.42	0.94	0.11 J	0.068 J	0.063 J
NICKEL	23	49	mg/kg	23	26.2	26.7	25.2	15	12.8	16.5	14.7
POTASSIUM	NL	NL	mg/kg	1190 J+	1250 J+	1250 J+	1150 J+	600 J+	495 J+	659 J+	574 J+
SELENIUM	NL	NL	mg/kg	9.3 U	7.2 U	6.9 U	6.3 U	5.3 U	5.6 U	5.9 U	5.1 U
SILVER	NL	NL	mg/kg	2.6 U	2.1 U	2 U	1.8 U	1.5 U	1.6 U	1.7 U	1.5 U
SODIUM	NL	NL	mg/kg	1323 U	1030 U	988 U	360 J+	755 U	796 U	842 U	732 U
THALLIUM	NL	NL	mg/kg	6.6 U	5.1 U	4.9 U	4.5 U	3.8 U	4 U	4.2 U	3.7 U
VANADIUM	NL	NL	mg/kg	32.7	37.2	37.3	34.3	26	19	26.9	20
ZINC	120	460	mg/kg	334	129	139	218	137	51	57.4	47

Table 3-3b
Area 2 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-96	SLB10-2-96	SLB10-2-97	SLB10-2-97	SLB10-2-97	SLB10-2-97	SLB10-2-97
			Field Sample ID	SLB10-2-96-60	SLB10-2-96-84	SLB10-2-97-12	SLB10-2-97-36	SLB10-2-97-60	SLB10-2-97-75	SLB10-2-97-06
			Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/12/2010
			Depth Interval	36- 60	60- 84	0- 12	12- 36	36- 60	60- 75	0- 6
Chemical	Level I ¹	Level II ²	Unit							
ALUMINUM	NL	NL	mg/kg	6750	6430	9820	10200	9160	6330	9290
ANTIMONY	NL	NL	mg/kg	8.8 U	8.8 U	12.7 U	11.5 U	9.7 U	8.5 U	13 U
ARSENIC	9.8	33	mg/kg	2 J	2.9	4.6	4.7	3.1 J	2.7 J	3.7 J
BARIUM	NL	NL	mg/kg	64.3 J+	63.6 J+	96.1 J+	92.7 J+	78.6 J+	53.7 J+	100 J+
BERYLLIUM	NL	NL	mg/kg	0.74 U	0.73 U	1.1 U	0.39 J	0.81 U	0.71 U	1.1 U
CADMIUM	0.99	5	mg/kg	0.27 J	0.28 J	0.41 J	0.6 J	0.3 J	0.71 U	0.4 J
CALCIUM	NL	NL	mg/kg	7750	5390	7910	8050	6990	7440	7310
CHROMIUM	43	110	mg/kg	18.9	18	26.5	28	26.1	17.6	24.1
COBALT	NL	NL	mg/kg	8.6 J	10.4 J	10.5 J	10.2 J	10.5 J	7.6 J	10.4 J
COPPER	32	150	mg/kg	13	14.8	19.8	24	16.3	11.8	19.1
IRON	NL	NL	mg/kg	12800	12400	23700	24700	19400	14700	23700
LEAD	36	130	mg/kg	4.3	4.9	18.4 J	30.1 J	7 J	5.7 J	16.1
MAGNESIUM	NL	NL	mg/kg	5870	4250	6950	6790	6020	5630	6310
MANGANESE	NL	NL	mg/kg	295	268	755	569	479	358	984
MERCURY	0.18	1.1	mg/kg	0.052 J	0.048 J	0.18 J	0.26	0.17	0.065 J	0.2 UJ
NICKEL	23	49	mg/kg	16.1	20.7	22	22.7	20.6	14.7	21.1
POTASSIUM	NL	NL	mg/kg	689 J+	638 J+	992 J+	945 J+	833 J+	577 J+	1020 J+
SELENIUM	NL	NL	mg/kg	5.1 U	5.1 U	7.4 U	6.7 U	5.7 U	4.9 U	7.6 U
SILVER	NL	NL	mg/kg	1.5 U	1.5 U	2.1 U	1.9 U	1.6 U	1.4 U	2.2 U
SODIUM	NL	NL	mg/kg	735 U	730 U	1059 U	956 U	810 U	705 U	1087 U
THALLIUM	NL	NL	mg/kg	3.7 U	3.6 U	5.3 U	4.8 U	4.1 U	3.5 U	5.4 U
VANADIUM	NL	NL	mg/kg	22.6	26.1	33.4	33.7	32.2	27.1	30.3
ZINC	120	460	mg/kg	53.2	46.6	101	148	73	47.6	92.5

Notes:

Result exceeds SQTs - Level I.

Result exceeds SQTs - Level II.

ID = Identification

J = Estimated Value

mg/kg = Milligram per kilogram

NL = Not Listed

SQT = Sediment Quality Targets

TAL = Target Analyte List

U = Not Detected

¹ Evaluation of Numerical SQTs-St Louis River AOC-Level I

² Evaluation of Numerical SQTs-St Louis River AOC-Level II

Table 3-3c
Area 3 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-02	SLB10-3-02	SLB10-3-02	SLB10-3-02	SLB10-3-02	SLB10-3-03	SLB10-3-03	SLB10-3-03
			Field Sample ID	SLB10-3-02-06	SLB10-3-02-12	SLB10-3-02-36	SLB10-3-02-60	SLB10-3-02-84	SLB10-3-03-06	SLB10-3-03-12	SLB10-3-03-36
			Sample Date	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010
			Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	0- 6	0- 12	12- 36
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	11400	9980	10800	4950	6130	2850	3940	3810
ANTIMONY	NL	NL	mg/kg	13 U	10.5 U	10.7 U	8.1 U	8.9 U	8 U	9.6 U	9 U
ARSENIC	9.8	33	mg/kg	4 J	3 J	3.7	1.6 J	1.8 J	1.3 J	2.3 J	1.9 J
BARIUM	NL	NL	mg/kg	103 J+	87.5 J+	91 J+	43.6 J+	46.3 J+	24.2 J+	36 J+	36.8 J+
BERYLLIUM	NL	NL	mg/kg	0.41 J	0.34 J	0.4 J	0.68 U	0.74 U	0.67 U	0.8 U	0.75 U
CADMIUM	0.99	5	mg/kg	0.69 J	0.37 J	0.49 J	0.68 U	0.25 J	0.67 U	0.8 U	0.75 U
CALCIUM	NL	NL	mg/kg	12400	12200	9540	4950	8160	8530	13500	13500
CHROMIUM	43	110	mg/kg	33.7	29.9	30.1	16	18.8	8.2	11.9	11.4
COBALT	NL	NL	mg/kg	12.5 J	11.8 J	11.6 J	6.7 J	7.9 J	4 J	5.9 J	5.9 J
COPPER	32	150	mg/kg	26.5	21.4	24.4	10.2	12.9	6.5 J	12.7	12.3
IRON	NL	NL	mg/kg	23200	19500	21800	8380	10600	5970	8030	7700
LEAD	36	130	mg/kg	24.2 J	7.5 J	20.4 J	3.3	3.8 J	3.4 J	4.5 J	3.9 J
MAGNESIUM	NL	NL	mg/kg	10100	9380	8380	3780	6020	3360	7920	7870
MANGANESE	NL	NL	mg/kg	693	614	574	197	193	207	304	271
MERCURY	0.18	1.1	mg/kg	0.16 J	0.054 J	0.16 J	0.14 U	0.15 U	0.13 U	0.16 U	0.14 U
NICKEL	23	49	mg/kg	26.3	24.2	24.7	12.6	15	7.5 J	11.5 J	11.5 J
POTASSIUM	NL	NL	mg/kg	1260 J+	1030 J+	1090 J+	411 J+	542 J+	282 J+	426 J+	392 J+
SELENIUM	NL	NL	mg/kg	7.6 U	6.1 U	6.3 U	4.8 U	5.2 U	4.7 U	5.6 U	5.2 U
SILVER	NL	NL	mg/kg	2.2 U	1.8 U	1.8 U	1.4 U	1.5 U	1.3 U	1.6 U	1.5 U
SODIUM	NL	NL	mg/kg	1080 U	876 U	895 U	679 U	739 U	669 U	800 U	748 U
THALLIUM	NL	NL	mg/kg	5.4 U	4.4 U	4.5 U	3.4 U	3.7 U	3.3 U	4 U	3.7 U
VANADIUM	NL	NL	mg/kg	41.1	38.7	37.8	22.3	29.2	15.5	22.4	20.8
ZINC	120	460	mg/kg	125	72.7	99.2	39.1	44.5	20.7	25.3	24.2

Table 3-3c
Area 3 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-03	SLB10-3-04	SLB10-3-04	SLB10-3-04	SLB10-3-04	SLB10-3-05	SLB10-3-05	SLB10-3-05
			Field Sample ID	SLB10-3-03-56	SLB10-3-04-06	SLB10-3-04-12	SLB10-3-04-36	SLB10-3-04-60	SLB10-3-05-06	SLB10-3-05-12	SLB10-3-05-36
			Sample Date	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	36- 56	0- 6	0- 12	12- 36	36- 60	0- 6	0- 12	12- 36
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	3500	1970	2020	1940	2150	12800	11700	10300
ANTIMONY	NL	NL	mg/kg	9.6 U	7.6 U	7 U	7.1 U	7 U	0.72 UJ	0.67 UJ	0.6 UJ
ARSENIC	9.8	33	mg/kg	2.1 J	0.99 J	1 J	1 J	1.2 J	5.4	4.7	2.7
BARIUM	NL	NL	mg/kg	36.7 J+	13.8 J+	15.4 J+	13.4 J+	17.8 J+	106	93.2	75.5
BERYLLIUM	NL	NL	mg/kg	0.8 U	0.63 U	0.58 U	0.59 U	0.59 U	0.47 J	0.31 J	0.35 J
CADMIUM	0.99	5	mg/kg	0.8 U	0.63 U	0.58 U	0.59 U	0.59 U	1.1	0.035 UJ	0.031 UJ
CALCIUM	NL	NL	mg/kg	10100	2130	2300	2800	2940	14100	11700	8290
CHROMIUM	43	110	mg/kg	11.2	5.6	5.4	5.6	5.8	32.1	28.9	23.6
COBALT	NL	NL	mg/kg	5.8 J	3.3 J	3.3 J	3.3 J	3.5 J	12.3	11.8	10.8
COPPER	32	150	mg/kg	14.2	3.6 J	3.5 J	3.2 J	4.8 J	29.7	24.9	16.7
IRON	NL	NL	mg/kg	6950	4850	5060	5060	4990	24600	21900	16000
LEAD	36	130	mg/kg	4.4 J	4 J	2.7 J	6.5 J	5.1 J	46 J	28.1 J	5.9 J
MAGNESIUM	NL	NL	mg/kg	5630	1580	1690	1850	1980	11000	9190	6610
MANGANESE	NL	NL	mg/kg	220	110	85.7	98.3	82.1	560	513	441
MERCURY	0.18	1.1	mg/kg	0.16 U	0.13 U	0.11 U	0.12 U	0.12 U	0.65	0.29	0.081 J
NICKEL	23	49	mg/kg	11.1 J	5.5 J	5.6 J	5.7 J	6.5 J	28.1	26.2	22.7
POTASSIUM	NL	NL	mg/kg	352 J+	633 U	581 U	591 U	586 U	1470	1270	1110
SELENIUM	NL	NL	mg/kg	5.6 U	4.4 U	4.1 U	4.1 U	4.1 U	0.72 J	0.8 J	0.71 J
SILVER	NL	NL	mg/kg	1.6 U	1.3 U	1.2 U	1.2 U	1.2 U	0.76 U	0.71 U	0.63 U
SODIUM	NL	NL	mg/kg	800 U	633 U	581 U	591 U	586 U	5.4 UJ	5 UJ	4.4 UJ
THALLIUM	NL	NL	mg/kg	4 U	3.2 U	2.9 U	3 U	2.9 U	0.55 U	0.52 U	0.46 U
VANADIUM	NL	NL	mg/kg	23.3	14.5	13.1	14.9	12.1	33.3	31.9	29.1
ZINC	120	460	mg/kg	20.9	16	15.7	15.3	19.1	210	134	60.2

Table 3-3c
Area 3 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-05	SLB10-3-05	SLB10-3-05	SLB10-3-06	SLB10-3-06	SLB10-3-06	SLB10-3-06	SLB10-3-06
			Field Sample ID	SLB10-3-05-60	SLB10-3-05-84	SLB10-3-05-116	SLB10-3-06-06	SLB10-3-06-06DP	SLB10-3-06-12	SLB10-3-06-36	SLB10-3-06-48
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	36- 60	60- 84	84- 116	0- 6	0- 6	0- 12	12- 36	36- 48
Chemical	Level I ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	8630	8160	9750	6780	7350	3980	8150	7940
ANTIMONY	NL	NL	mg/kg	0.56 UJ	0.54 UJ	0.59 UJ	0.64 UJ	0.68 UJ	0.54 UJ	0.62 UJ	0.57 UJ
ARSENIC	9.8	33	mg/kg	2.5	2.4	2.8	3.2 J	3.5 J	1.8	4	2.7
BARIUM	NL	NL	mg/kg	65.2	57.8	75.2	49.5	53	0.18 UJ	61.2	52.7
BERYLLIUM	NL	NL	mg/kg	0.18 J	0.21 J	0.26 J	0.25 J	0.28 J	0.078 J	0.27 J	0.21 J
CADMIUM	0.99	5	mg/kg	0.029 UJ	0.028 UJ	0.03 UJ	0.25 J	0.29 J	0.028 UJ	0.032 UJ	0.029 UJ
CALCIUM	NL	NL	mg/kg	8880	9340	8720	9980	9330	8660	12100	7450
CHROMIUM	43	110	mg/kg	21.8	20.4	25	16.5	17.7	9.2	19.8	19.1
COBALT	NL	NL	mg/kg	9.6	9.4	10.9	0.07 UJ	0.075 UJ	0.059 UJ	9	8.9
COPPER	32	150	mg/kg	13.1	14	15.5	14.3	15.6	8.1	18.3	13.4
IRON	NL	NL	mg/kg	13200	13100	15700	11600	12500	6940	15400	12600
LEAD	36	130	mg/kg	4.1 J	3.8 J	4.9 J	11.6	15.2	4.3 J	18.7 J	5.4 J
MAGNESIUM	NL	NL	mg/kg	6730	6950	6980	6530	6440	4890	8020	5750
MANGANESE	NL	NL	mg/kg	361	336	390	333	322	201	409	322
MERCURY	0.18	1.1	mg/kg	0.063 J	0.056 U	0.06 U	0.1 J	0.14 J	0.055 U	0.091 J	0.072 J
NICKEL	23	49	mg/kg	19.7	19.5	22.5	15.7	16.6	10.6	19.1	18.2
POTASSIUM	NL	NL	mg/kg	909	850	1020	8.7 UJ	9.3 UJ	7.3 UJ	872	795
SELENIUM	NL	NL	mg/kg	0.78 J	0.71 J	0.71 J	0.56 U	0.83 J	0.56 J	0.8 J	0.71 J
SILVER	NL	NL	mg/kg	0.59 U	0.57 U	0.62 U	0.67 U	0.72 U	0.56 U	0.65 U	0.6 U
SODIUM	NL	NL	mg/kg	4.2 UJ	4 UJ	4.4 UJ	4.7 UJ	5.1 UJ	4 UJ	4.6 UJ	4.3 UJ
THALLIUM	NL	NL	mg/kg	0.43 U	0.42 U	0.45 U	0.49 U	0.52 U	0.41 U	0.48 U	0.44 U
VANADIUM	NL	NL	mg/kg	24.7	24.6	27.9	21.4 J	21.8 J	14.6	27.8	24.8
ZINC	120	460	mg/kg	53.7	48.8	62.2	59	71.1	22.3	74.6	48.9

Table 3-3c
Area 3 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-07	SLB10-3-07	SLB10-3-07	SLB10-3-08	SLB10-3-08	SLB10-3-08	SLB10-3-08	SLB10-3-08	
			Field Sample ID	SLB10-3-07-06	SLB10-3-07-12	SLB10-3-07-33	SLB10-3-08-06	SLB10-3-08-06DP	SLB10-3-08-12	SLB10-3-08-36	SLB10-3-08-60	
			Sample Date	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	
			Depth Interval	0- 6	0- 12	12- 33	0- 6	0- 6	0- 12	12- 36	36- 60	
Chemical	Level I ¹	Level II ²	Unit									
ALUMINUM	NL	NL	mg/kg	12200	12300	8620	7990	8610	7320	8400	10500	
ANTIMONY	NL	NL	mg/kg	0.99 UJ	0.77 UJ	0.58 UJ	0.68 UJ	0.71 UJ	0.6 UJ	0.6 UJ	0.61 UJ	
ARSENIC	9.8	33	mg/kg	5.9	5.7	3.7	4	4.2	3.7	4.1	5.2	
BARIUM	NL	NL	mg/kg	104	100	61.1	68.8	72.3	59.2	66.2	93.5	
BERYLLIUM	NL	NL	mg/kg	0.46 J	0.55 J	0.28 J	0.37 J	0.38 J	0.29 J	0.38 J	0.48 J	
CADMIUM	0.99	5	mg/kg	0.051 UJ	0.31 J	0.24 J	0.14 J	0.14 J	0.031 UJ	0.031 UJ	0.031 UJ	
CALCIUM	NL	NL	mg/kg	13300	14500	8060	20400	20500	20100	14000	12900	
CHROMIUM	43	110	mg/kg	33.2	31.8	21	18.2	19.4	18	20.2	25.5	
COBALT	NL	NL	mg/kg	13.6	13.5	8.9	8.1 J	8.6 J	0.066 U	8.6	10.1	
COPPER	32	150	mg/kg	69.1	32.9	16.4	15.5	16.5	14.9	17.6	24.2	
IRON	NL	NL	mg/kg	21700	22900	16600	17000	18800	16000	18600	27200	
LEAD	36	130	mg/kg	128	13.1	13.4	12.4	13.3	12.1	18	34.4	
MAGNESIUM	NL	NL	mg/kg	10300	11000	6460	10500	11200	10000	9060	9780	
MANGANESE	NL	NL	mg/kg	607	598	324	845	897	663	598	631	
MERCURY	0.18	1.1	mg/kg	0.15 J	0.096 J	0.063 J	0.12 J	0.14 J	0.062 U	0.1 J	0.19	
NICKEL	23	49	mg/kg	27 J	26.8 J	17.7 J	16 J	17 J	15.4 J	17.5 J	21.8 J	
POTASSIUM	NL	NL	mg/kg	1440	1450	873	976	1050	873	967	1200	
SELENIUM	NL	NL	mg/kg	1.5 J	1.2 J	0.52 J	0.77 J	0.72 J	0.64 J	0.91 J	0.95 J	
SILVER	NL	NL	mg/kg	1 U	0.81 U	0.61 U	0.71 U	0.75 U	0.63 U	0.64 U	0.64 U	
SODIUM	NL	NL	mg/kg	7.4 UJ	5.7 UJ	4.3 UJ	5 UJ	5.3 UJ	4.5 UJ	4.5 UJ	4.5 UJ	
THALLIUM	NL	NL	mg/kg	0.76 U	0.59 U	0.45 U	0.52 U	0.55 U	0.46 U	0.47 U	0.47 U	
VANADIUM	NL	NL	mg/kg	50.7	48.5	25.7	23.6	25.9	22.3	24.9	28.2	
ZINC	120	460	mg/kg	71.5	73.1	66.9	62.6	67.3	56.1	76.8	127	

Table 3-3c
Area 3 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-08	SLB10-3-08	SLB10-3-09	SLB10-3-09	SLB10-3-09	SLB10-3-09	SLB10-3-09	SLB10-3-09
			Field Sample ID	SLB10-3-08-84	SLB10-3-08-104	SLB10-3-09-06	SLB10-3-09-06DP	SLB10-3-09-12	SLB10-3-09-36	SLB10-3-09-60	SLB10-3-09-84
			Sample Date	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010
			Depth Interval	60- 84	84- 104	0- 6	0- 6	0- 12	12- 36	36- 60	60- 84
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	10200	11900	10900	10500	9210	10200	8470	7200
ANTIMONY	NL	NL	mg/kg	0.6 UJ	0.63 UJ	0.73 UJ	0.74 UJ	0.61 UJ	0.59 UJ	0.55 UJ	0.53 UJ
ARSENIC	9.8	33	mg/kg	5.3	6	4.7	5	4.2	4.4	5	4
BARIUM	NL	NL	mg/kg	83.9	110	97.3	94.2	71.8	77.9	73.1	54.5
BERYLLIUM	NL	NL	mg/kg	0.47 J	0.52 J	0.44 J	0.4 J	0.39 J	0.43 J	0.4 J	0.31 J
CADMIUM	0.99	5	mg/kg	0.57 J	0.86 J	0.22 J	0.038 UJ	0.031 UJ	0.03 UJ	0.028 UJ	0.027 UJ
CALCIUM	NL	NL	mg/kg	13200	14800	13000	11500	10600	11900	10500	10500
CHROMIUM	43	110	mg/kg	24.7	28.7	25.5	25.1	22	24.2	20.9	17.6
COBALT	NL	NL	mg/kg	10.9	11.6	10.9	10.9	9.3	10.5	9.2	8.4
COPPER	32	150	mg/kg	24.4	29.1	18.3	18.6	19.3	22.5	20.7	15.8
IRON	NL	NL	mg/kg	28800	27500	22900	22100	22800	25100	22600	18300
LEAD	36	130	mg/kg	43	48.9	15.3	15.8	28.7 J	47.7 J	34.8	29.6
MAGNESIUM	NL	NL	mg/kg	9610	11100	9920	9280	8000	9040	7680	7470
MANGANESE	NL	NL	mg/kg	657	716	925	875	524	548	528	485
MERCURY	0.18	1.1	mg/kg	0.23	0.43	0.12 J	0.14 J	0.21	0.2	0.22	0.16
NICKEL	23	49	mg/kg	22.2 J	25.1 J	21.7 J	21.5 J	20.4	23.3	18.9 J	15.6 J
POTASSIUM	NL	NL	mg/kg	1160	1390	1280	1230	1050	1150	923	765
SELENIUM	NL	NL	mg/kg	0.74 J	0.84 J	1.1 J	0.67 J	0.54 UJ	0.51 UJ	0.6 J	0.77 J
SILVER	NL	NL	mg/kg	0.63 U	0.66 U	0.77 U	0.78 U	0.65 U	0.62 U	0.58 U	0.56 U
SODIUM	NL	NL	mg/kg	4.4 UJ	4.7 UJ	5.4 UJ	5.5 UJ	4.6 UJ	4.4 UJ	4.1 UJ	4 UJ
THALLIUM	NL	NL	mg/kg	0.46 U	0.48 U	0.56 U	0.57 U	0.47 U	0.45 U	0.43 U	0.41 U
VANADIUM	NL	NL	mg/kg	29.6	30.9	31.8	30.4	28	30.8	24.3	22.4
ZINC	120	460	mg/kg	142	198	83.5	82.7	111	124	141	92.3

Table 3-3c
Area 3 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-09	SLB10-3-10	SLB10-3-10	SLB10-3-10	SLB10-3-10	SLB10-3-10	SLB10-3-11	SLB10-3-11
			Field Sample ID	SLB10-3-09-115	SLB10-3-10-06	SLB10-3-10-12	SLB10-3-10-36	SLB10-3-10-60	SLB10-3-10-86	SLB10-3-11-06	SLB10-3-11-06DP
			Sample Date	10/14/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	84- 115	0- 6	0- 12	12- 36	36- 60	60- 86	0- 6	0- 6
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	10500	10200	7920	7570	8270	5360	9510	9650
ANTIMONY	NL	NL	mg/kg	0.58 UJ	0.77 UJ	0.61 UJ	0.6 UJ	0.57 UJ	0.53 UJ	0.74 UJ	0.77 UJ
ARSENIC	9.8	33	mg/kg	4.6	4.2	4.5 J	4.4 J	3.5 J	2.6 J	4.2	4.3
BARIUM	NL	NL	mg/kg	74.1	86.2	64.3	62.3	64.5	37.2	82.4	85.2
BERYLLIUM	NL	NL	mg/kg	0.35 J	0.35 J	0.39 J	0.31 J	0.32 J	0.21 J	0.39 J	0.28 J
CADMIUM	0.99	5	mg/kg	0.03 UJ	0.04 UJ	0.031 UJ	0.031 UJ	0.029 UJ	0.027 UJ	0.038 UJ	0.04 UJ
CALCIUM	NL	NL	mg/kg	14200	15300	12200	11900	10800	13000	13800	15400
CHROMIUM	43	110	mg/kg	25.1	23.3	19.5	18.7	19.1	12	22.6	24.1
COBALT	NL	NL	mg/kg	10.4	10.7	9	8.8	8.1	6 J	10.1	10.4
COPPER	32	150	mg/kg	22	27.1	21.6	20.9	23.3	13.4	20.2	21.8
IRON	NL	NL	mg/kg	22300	20400	21400	20300	16900	11200	20200	20700
LEAD	36	130	mg/kg	34.7 J	22.3 J	39.1	34.6	27.8	12.8	30.6 J	15.3 J
MAGNESIUM	NL	NL	mg/kg	10000	9510	7350	7400	7100	6680	9120	9720
MANGANESE	NL	NL	mg/kg	593	684	621	550	371	262	802	863
MERCURY	0.18	1.1	mg/kg	0.18	0.13 J	0.064 J	0.12 J	0.14 J	0.086 J	0.1 J	0.12 J
NICKEL	23	49	mg/kg	23.3	23.8	18.9	18.1	18.2	12.9	22.4	23.5
POTASSIUM	NL	NL	mg/kg	1190	1160	829	785	862	7.2 UJ	1130	1140
SELENIUM	NL	NL	mg/kg	0.5 UJ	0.86 J	1 J	0.89 J	0.82 J	0.59 J	0.87 J	0.78 J
SILVER	NL	NL	mg/kg	0.61 U	0.81 U	0.64 U	0.63 U	0.6 U	0.56 U	0.78 U	0.81 U
SODIUM	NL	NL	mg/kg	4.3 UJ	5.7 UJ	4.5 UJ	4.5 UJ	4.2 UJ	4 UJ	5.5 UJ	5.7 UJ
THALLIUM	NL	NL	mg/kg	0.44 U	0.59 U	0.47 U	0.46 U	0.44 U	0.41 U	0.57 U	0.59 U
VANADIUM	NL	NL	mg/kg	30.5	32.2	24.8 J	22.7 J	22.1 J	18.5 J	29.3	30.2
ZINC	120	460	mg/kg	123	96.6	91.7	91.1	103	49.6	80.5	83

Table 3-3c
Area 3 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-11	SLB10-3-11	SLB10-3-11	SLB10-3-12	SLB10-3-12	SLB10-3-12	SLB10-3-13	SLB10-3-13
			Field Sample ID	SLB10-3-11-12	SLB10-3-11-36	SLB10-3-11-50	SLB10-3-12-06	SLB10-3-12-06DP	SLB10-3-12-10	SLB10-3-13-06	SLB10-3-13-06DP
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010
			Depth Interval	0- 12	12- 36	36- 50	0- 6	0- 6	0- 10	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	9690	9640	8650	2900	3310	5190	2610	2670
ANTIMONY	NL	NL	mg/kg	0.26 UJ	0.25 UJ	0.21 UJ	0.2 UJ	0.2 UJ	0.19 UJ	0.19 UJ	0.21 UJ
ARSENIC	9.8	33	mg/kg	2.9 J	3.4 J	3.5 J	1.4	1.4	1.6	1.4	1.3 J
BARIUM	NL	NL	mg/kg	83.1 J	83.6 J	80.4 J	0.13 U	0.13 U	36.1	18.7 J	20.6 J
BERYLLIUM	NL	NL	mg/kg	0.19 J	0.24 J	0.19 J	0.01 U	0.01 U	0.09 J	0.01 U	0.01 U
CADMIUM	0.99	5	mg/kg	0.0097 UJ	0.0095 UJ	0.0079 UJ	0.04 J-	0.07 J-	0.05 J-	0.09 J-	0.11 J-
CALCIUM	NL	NL	mg/kg	13400	12000	12000	7090	8510	7150	3860	4280
CHROMIUM	43	110	mg/kg	24.1	23.9	21.3	6.2	7	10.7	6	5.9
COBALT	NL	NL	mg/kg	10.6 J	11.1 J	9.5 J	3.5 J	3.9 J	6.1 J	3.4 J	3.5 J
COPPER	32	150	mg/kg	20.1	22.4	22.3	6	7	11.4	5.5	5.6
IRON	NL	NL	mg/kg	23500	26300	24600	6930	8280	9360	6430	6810
LEAD	36	130	mg/kg	20.5 J	27.6 J	30.9 J	6.5	8	4.3	7.2	7.3
MAGNESIUM	NL	NL	mg/kg	9130	8460	8490	3460	4130	5240	1810	1920
MANGANESE	NL	NL	mg/kg	823	924	842	147	189	227	131	154
MERCURY	0.18	1.1	mg/kg	0.1 J	0.14 J	0.17	0.05 U	0.05 U	0.05 U	0.09 J	0.12 J
NICKEL	23	49	mg/kg	21 J	21.9 J	19.3 J	7.4	8.1	12.6	6.2	6.5
POTASSIUM	NL	NL	mg/kg	1080 J	1060 J	951 J	291 J	336 J	704	277 J	298 J
SELENIUM	NL	NL	mg/kg	0.96 J	1.4 J	0.73 J	0.51 U	0.52 U	0.48 U	0.48 U	0.53 U
SILVER	NL	NL	mg/kg	0.11 J	0.14 J	0.054 J	0.04 UJ	0.04 UJ	0.04 R	0.04 UJ	0.04 UJ
SODIUM	NL	NL	mg/kg	6 UJ	5.8 UJ	4.8 UJ	141 J	162 J	179 J	96 J	104 J
THALLIUM	NL	NL	mg/kg	0.22 U	0.22 U	0.18 U	0.17 U	0.18 U	0.16 U	0.16 U	0.18 U
VANADIUM	NL	NL	mg/kg	30.6 J	29.2 J	27.7 J	11.3	13.2	17.6	11.4	9.5
ZINC	120	460	mg/kg	91.3 J	97.5 J	91.4 J	21	27.3	22.1	30.9	32.2

Table 3-3c
Area 3 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-13	SLB10-3-14	SLB10-3-14	SLB10-3-14	SLB10-3-15	SLB10-3-15	SLB10-3-15	SLB10-3-15
			Field Sample ID	SLB10-3-13-12	SLB10-3-14-06	SLB10-3-14-12	SLB10-3-14-42	SLB10-3-15-06	SLB10-3-15-06DP	SLB10-3-15-12	SLB10-3-15-32
			Sample Date	10/16/2010	10/14/2010	10/14/2010	10/14/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	0- 12	0- 6	0- 12	12- 42	0- 6	0- 6	0- 12	12- 32
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	1860	2910	2990	7690	2740	2810	3320	3780
ANTIMONY	NL	NL	mg/kg	0.19 UJ	0.52 UJ	0.47 UJ	0.58 UJ	0.48 UJ	0.49 UJ	0.18 UJ	0.18 UJ
ARSENIC	9.8	33	mg/kg	1 J	2	2.1	3.9	1.4	1.5	0.72 J	0.78 J
BARIUM	NL	NL	mg/kg	0.12 U	13.1 J	13.3 J	61.4	0.16 UJ	0.16 UJ	0.12 UJ	0.12 UJ
BERYLLIUM	NL	NL	mg/kg	0.01 U	0.053 U	0.11 J	0.29 J	0.049 U	0.061 J	0.015 U	0.015 U
CADMIUM	0.99	5	mg/kg	7.00E-03 U	0.026 UJ	0.024 UJ	0.03 UJ	0.025 UJ	0.025 UJ	0.0069 UJ	0.007 UJ
CALCIUM	NL	NL	mg/kg	2760	1990	1760	14300	2860	2810	5150	7930
CHROMIUM	43	110	mg/kg	3.9	8.7	7.1	18.5	5.7	5.7	7.2	7.8
COBALT	NL	NL	mg/kg	2.3 J	4.4 J	4 J	8.1	0.053 UJ	0.054 UJ	4.9 J	5.3 J
COPPER	32	150	mg/kg	0.11 U	3.9	3.8	16.9	4.4	4.2	5.4	6.2
IRON	NL	NL	mg/kg	3630	7560	6400	14300	5440	5700	6490	7170
LEAD	36	130	mg/kg	2.3	3.4	3.7	19.1	2.3 J	2.5 J	3.7 J	4.6 J
MAGNESIUM	NL	NL	mg/kg	1780	1840	1820	9660	2010	2010	2960	4580
MANGANESE	NL	NL	mg/kg	80.4	128	104	393	113	114	154	185
MERCURY	0.18	1.1	mg/kg	0.04 U	0.053 U	0.048 U	0.18	0.049 U	0.05 U	0.048 U	0.049 U
NICKEL	23	49	mg/kg	0.1 U	7.2 J	6.4 J	16.3 J	7.6	7.9	8.9 J	9.5 J
POTASSIUM	NL	NL	mg/kg	211 J	7 UJ	6.4 UJ	816	6.5 UJ	6.7 UJ	250 J	310 J
SELENIUM	NL	NL	mg/kg	0.47 U	0.45 UJ	0.41 UJ	1.1 J	0.42 U	0.43 U	0.53 J	0.91 J
SILVER	NL	NL	mg/kg	0.04 UJ	0.54 U	0.49 U	0.61 U	0.51 U	0.52 U	0.041 U	0.042 U
SODIUM	NL	NL	mg/kg	67.5 J	3.8 UJ	3.5 UJ	4.3 UJ	3.6 UJ	3.7 UJ	4.2 UJ	4.3 UJ
THALLIUM	NL	NL	mg/kg	0.16 U	0.4 U	0.36 U	0.45 U	0.37 U	0.38 U	0.16 U	0.16 U
VANADIUM	NL	NL	mg/kg	7.6	27.5	17	24.7	12.1	13.2	13.8 J	14.8 J
ZINC	120	460	mg/kg	12.9	22.2	22.5	88	18	18.8	21.7 J	25.5 J

Table 3-3c
Area 3 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-16	SLB10-3-16	SLB10-3-16	SLB10-3-16	SLB10-3-17	SLB10-3-17	SLB10-3-17	SLB10-3-17
			Field Sample ID	SLB10-3-16-06	SLB10-3-16-12	SLB10-3-16-36	SLB10-3-16-71	SLB10-3-17-06	SLB10-3-17-06DP	SLB10-3-17-12	SLB10-3-17-36
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	0- 6	0- 12	12- 36	36- 71	0- 6	0- 6	0- 12	12- 36
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	12700	10500	7470	8280	11400	11100	5500	7160
ANTIMONY	NL	NL	mg/kg	0.78 UJ	0.7 UJ	0.54 UJ	0.8 UJ	0.71 UJ	0.73 UJ	0.56 UJ	0.53 UJ
ARSENIC	9.8	33	mg/kg	5.5	5.2 J+	2.4	3.6	4.8 J	4.7 J	2.7	2.5
BARIUM	NL	NL	mg/kg	119	82.2	49.9	62.3	86.4	86.1	35.4	46.3
BERYLLIUM	NL	NL	mg/kg	0.44 J	0.51 J+	0.26 J	0.32 J	0.42 J	0.46 J	0.23 J	0.26 J
CADMIUM	0.99	5	mg/kg	0.04 UJ	0.65 J+	0.13 J	0.15 J	0.036 UJ	0.037 UJ	0.19 J	0.1 J
CALCIUM	NL	NL	mg/kg	9560	8250	5440	6060	8750	8760	5200	6100
CHROMIUM	43	110	mg/kg	29.3	25.8 J	17.4 J	21.2 J	26.7	26.8	12.6 J	16.6 J
COBALT	NL	NL	mg/kg	11.7	10.1	7.7	7.7 J	10.3	10.5	6.8 J	7.4
COPPER	32	150	mg/kg	27.3	22.1	9.8	13.7	22.8	23	9.9	10.7
IRON	NL	NL	mg/kg	22400	20500	11400	12100	20700	20500	10400	11700
LEAD	36	130	mg/kg	43.7 J	40.1	4.1	4.3	39	41.3	10.9	5
MAGNESIUM	NL	NL	mg/kg	8130	6950 J	4360 J	4090 J	7440	7320	3830 J	4910 J
MANGANESE	NL	NL	mg/kg	621	405 J	261 J	324 J	412	414	238 J	263 J
MERCURY	0.18	1.1	mg/kg	0.35	0.33 J+	0.06 J+	0.08 U	0.29	0.29	0.11 J+	0.05 J+
NICKEL	23	49	mg/kg	26.7	20.6 J	14.3 J	14.9 J	23.3	23.4	11.5 J	14.2 J
POTASSIUM	NL	NL	mg/kg	1400	1080	703	10.8 U	1220	1180	7.6 U	697
SELENIUM	NL	NL	mg/kg	0.99 J	1.1 J	0.65 J	1.1 J	1.3 J	0.84 J	0.76 J	0.68 J
SILVER	NL	NL	mg/kg	0.82 U	0.74 U	0.57 U	0.84 U	0.74 U	0.76 U	0.59 U	0.55 U
SODIUM	NL	NL	mg/kg	5.8 UJ	5.2 U	4 U	5.9 U	5.2 UJ	5.4 UJ	4.1 U	3.9 U
THALLIUM	NL	NL	mg/kg	0.6 U	0.54 U	0.42 U	0.61 U	0.54 U	0.56 U	0.43 U	0.4 U
VANADIUM	NL	NL	mg/kg	30.9	26.8	20.8	28.2	28.5 J	27 J	19.3	20.8
ZINC	120	460	mg/kg	210	167	45.8	47	163	167	49.8	42.3

Table 3-3c
Area 3 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-17	SLB10-3-18	SLB10-3-18	SLB10-3-18	SLB10-3-18	SLB10-3-18	SLB10-3-18	SLB10-3-19
			Field Sample ID	SLB10-3-17-69	SLB10-3-18-06	SLB10-3-18-06DP	SLB10-3-18-12	SLB10-3-18-36	SLB10-3-18-60	SLB10-3-18-95	SLB10-3-19-06
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	36- 69	0- 6	0- 6	0- 12	12- 36	36- 60	60- 95	0- 6
Chemical	Level 1 ¹	Level II ²	Unit								
ALUMINUM	NL	NL	mg/kg	7580	3640	3790	5500	6020	6490	7640	5520
ANTIMONY	NL	NL	mg/kg	0.55 UJ	0.49 UJ	0.49 UJ	0.51 UJ	0.55 UJ	0.54 UJ	0.54 UJ	0.59 UJ
ARSENIC	9.8	33	mg/kg	2.6	1.8	1.6	2.7	3.3	2.9	2.6	2.1
BARIUM	NL	NL	mg/kg	50.8	0.16 UJ	0.16 UJ	40.9	44.3	44.2	51.2	41.5
BERYLLIUM	NL	NL	mg/kg	0.27 J	0.1 J	0.11 J	0.25 J	0.29 J	0.29 J	0.28 J	0.15 J
CADMIUM	0.99	5	mg/kg	0.15 J	0.025 UJ	0.025 UJ	0.19 J	0.33 J	0.23 J	0.13 J	0.03 UJ
CALCIUM	NL	NL	mg/kg	8150	3820	4020	7620	9510	9210	6720	7430
CHROMIUM	43	110	mg/kg	19.6 J	7.9	8.8	12.5 J	14.9 J	15.3 J	18 J	12.6
COBALT	NL	NL	mg/kg	8	0.054 UJ	0.054 UJ	6 J	6.9 J	6.8 J	7.8	0.065 UJ
COPPER	32	150	mg/kg	11.8	6.1	6.7	10.5	12.9	12.6	11.2	10
IRON	NL	NL	mg/kg	11200	6970	7220	10500	12800	12000	12100	9750
LEAD	36	130	mg/kg	3.9	4.2 J	4.3 J	11.5	18.1	13.2	4.6	7.9 J
MAGNESIUM	NL	NL	mg/kg	5980 J	2940	3140	5200 J	6340 J	6270 J	5170 J	5090
MANGANESE	NL	NL	mg/kg	190 J	187	199	229 J	320 J	332 J	295 J	323
MERCURY	0.18	1.1	mg/kg	0.05 U	0.05 U	0.062 J	0.12 J+	0.18 J+	0.09 J+	0.05 U	0.081 J
NICKEL	23	49	mg/kg	15.4 J	9.2	10.6	11.5 J	13 J	13.2 J	15 J	12.9
POTASSIUM	NL	NL	mg/kg	7.5 U	6.7 UJ	6.6 UJ	7 U	7.5 U	7.4 U	751	8 UJ
SELENIUM	NL	NL	mg/kg	0.5 J	0.5 J	0.43 U	0.68 J	0.82 J	0.58 J	0.62 J	0.65 J
SILVER	NL	NL	mg/kg	0.58 U	0.52 U	0.51 U	0.54 U	0.58 U	0.57 U	0.57 U	0.62 U
SODIUM	NL	NL	mg/kg	4.1 U	3.6 UJ	3.6 UJ	3.8 U	4.1 U	4 U	4 U	4.4 UJ
THALLIUM	NL	NL	mg/kg	0.43 U	0.38 U	0.38 U	0.4 U	0.42 U	0.42 U	0.42 U	0.45 U
VANADIUM	NL	NL	mg/kg	23.5	13.9	14.8	18.1	18.1	20.4	21.4	17.4
ZINC	120	460	mg/kg	47.7	26.4	28.5	57.7	77.5	61.7	46.2	46

Table 3-3c
Area 3 Sediment Sample Analytical Results - TAL Metals
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-19	SLB10-3-19	SLB10-3-19
			Field Sample ID	SLB10-3-19-12	SLB10-3-19-36	SLB10-3-19-69
			Sample Date	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	0- 12	12- 36	36- 69
Chemical	Level I ¹	Level II ²	Unit			
ALUMINUM	NL	NL	mg/kg	6100	9290	7970
ANTIMONY	NL	NL	mg/kg	0.61 UJ	0.6 UJ	0.58 UJ
ARSENIC	9.8	33	mg/kg	2.9	4.1 J+	3.2
BARIUM	NL	NL	mg/kg	57.2	68.8	57.8
BERYLLIUM	NL	NL	mg/kg	0.24 J	0.44 J+	0.3 J
CADMIUM	0.99	5	mg/kg	0.14 J	0.33 J+	0.14 J
CALCIUM	NL	NL	mg/kg	12900	10600	10900
CHROMIUM	43	110	mg/kg	14.3 J	22.2 J	18.8 J
COBALT	NL	NL	mg/kg	6.6 J	9.1	8
COPPER	32	150	mg/kg	10	17.2	12.3
IRON	NL	NL	mg/kg	12400	16900	12600
LEAD	36	130	mg/kg	8.9	19.3	5.7
MAGNESIUM	NL	NL	mg/kg	4500 J	7810 J	6770 J
MANGANESE	NL	NL	mg/kg	522 J	439 J	346 J
MERCURY	0.18	1.1	mg/kg	0.09 J+	0.24 J+	0.07 J+
NICKEL	23	49	mg/kg	12.1 J	18.7 J	15.7 J
POTASSIUM	NL	NL	mg/kg	8.2 U	973	831
SELENIUM	NL	NL	mg/kg	1 J	1 J	0.91 J
SILVER	NL	NL	mg/kg	0.64 U	0.63 U	0.61 U
SODIUM	NL	NL	mg/kg	4.5 U	4.5 U	4.3 U
THALLIUM	NL	NL	mg/kg	0.47 U	0.46 U	0.45 U
VANADIUM	NL	NL	mg/kg	17.8	25.7	22.7
ZINC	120	460	mg/kg	51.1	92.3	47.2

Notes:

Result exceeds SQTs - Level I.

Result exceeds SQTs - Level II.

ID = Identification

J = Estimated Value

mg/kg = Milligram per kilogram

NL = Not Listed

SQT = Sediment Quality Targets

TAL = Target Analyte List

U = Not Detected

¹ Evaluation of Numerical SQTs-St Louis River AOC-Level I

² Evaluation of Numerical SQTs-St Louis River AOC-Level II

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-20	SLB10-1-20	SLB10-1-21	SLB10-1-21	SLB10-1-21	SLB10-1-22	SLB10-1-22
			Field Sample ID	SLB10-1-20-06	SLB10-1-20-10	SLB10-1-21-06	SLB10-1-21-06DP	SLB10-1-21-14	SLB10-1-22-06	SLB10-1-22-06DP
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	0- 6	0- 10	0- 6	0- 6	0- 14	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	49 U	61 U	47 U	47 U	51 U	47 U	55 U
AROCLOR-1221	NL	NL	µg/kg	49 U	61 U	47 U	47 U	51 U	47 U	55 U
AROCLOR-1232	NL	NL	µg/kg	49 U	61 U	47 U	47 U	51 U	47 U	55 U
AROCLOR-1242	NL	NL	µg/kg	49 U	61 U	47 U	47 U	51 U	47 U	55 U
AROCLOR-1248	NL	NL	µg/kg	49 U	61 U	47 U	47 U	51 U	47 U	55 U
AROCLOR-1254	NL	NL	µg/kg	49 U	61 U	47 U	47 U	51 U	47 U	55 U
AROCLOR-1260	NL	NL	µg/kg	42 J	26 J	39 J	49 NJ	51 U	81 J	87 J
AROCLOR-1262	NL	NL	µg/kg	49 U	61 U	47 U	47 U	51 U	47 U	55 U
AROCLOR-1268	NL	NL	µg/kg	49 U	61 U	47 U	47 U	51 U	47 U	55 U
TOTAL PCBs	60	680	µg/kg	42	26	39	49	0 U	81	87

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-22	SLB10-1-23	SLB10-1-23	SLB10-1-23	SLB10-1-24	SLB10-1-24	SLB10-1-24
			Field Sample ID	SLB10-1-22-19	SLB10-1-23-06	SLB10-1-23-06DP	SLB10-1-23-16	SLB10-1-24-06	SLB10-1-24-06DP	SLB10-1-24-12
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	0- 19	0- 6	0- 6	0- 16	0- 6	0- 6	0- 12
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	40 U	57 U	52 U	73 U	54 U	61 U	51 U
AROCLOR-1221	NL	NL	µg/kg	40 U	57 U	52 U	73 U	54 U	61 U	51 U
AROCLOR-1232	NL	NL	µg/kg	40 U	57 U	52 U	73 U	54 U	61 U	51 U
AROCLOR-1242	NL	NL	µg/kg	40 U	57 U	52 U	73 U	54 U	61 U	51 U
AROCLOR-1248	NL	NL	µg/kg	40 U	57 U	52 U	73 U	54 U	61 U	51 U
AROCLOR-1254	NL	NL	µg/kg	40 U	57 U	52 U	73 U	54 U	61 U	51 U
AROCLOR-1260	NL	NL	µg/kg	40 U	180 J	170 NJ	240 J	14 J	18 J	20 J
AROCLOR-1262	NL	NL	µg/kg	40 U	57 U	52 U	73 U	54 U	61 U	51 U
AROCLOR-1268	NL	NL	µg/kg	40 U	57 U	52 U	73 U	54 U	61 U	51 U
TOTAL PCBs	60	680	µg/kg	0 U	180	170	240	14	18	20

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-24	SLB10-1-25	SLB10-1-25	SLB10-1-25	SLB10-1-25	SLB10-1-25	SLB10-1-25
			Field Sample ID	SLB10-1-24-24	SLB10-1-25-06	SLB10-1-25-06DP	SLB10-1-25-12	SLB10-1-25-36	SLB10-1-25-60	SLB10-1-25-84
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	12- 24	0- 6	0- 6	0- 12	12- 36	36- 60	60- 84
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	46 U	120 U	110 U	97 U	69 U	80 U	67 U
AROCLOR-1221	NL	NL	µg/kg	46 U	120 U	110 U	97 U	69 U	80 U	67 U
AROCLOR-1232	NL	NL	µg/kg	46 U	120 U	110 U	97 U	69 U	80 U	67 U
AROCLOR-1242	NL	NL	µg/kg	46 U	120 U	110 U	97 U	69 U	80 U	67 U
AROCLOR-1248	NL	NL	µg/kg	46 U	120 U	110 U	97 U	69 U	80 U	67 U
AROCLOR-1254	NL	NL	µg/kg	46 U	120 U	110 U	97 U	69 U	380	68
AROCLOR-1260	NL	NL	µg/kg	28 J	120 U	57 J	58 J	73	610	64 J
AROCLOR-1262	NL	NL	µg/kg	46 U	120 U	110 U	97 U	69 U	80 U	67 U
AROCLOR-1268	NL	NL	µg/kg	46 U	120 U	110 U	97 U	69 U	80 U	67 U
TOTAL PCBs	60	680	µg/kg	28	0 U	57	58	73	990	132

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-25	SLB10-1-26	SLB10-1-26	SLB10-1-27	SLB10-1-27	SLB10-1-27	SLB10-1-28
			Field Sample ID	SLB10-1-25-116	SLB10-1-26-06	SLB10-1-26-12	SLB10-1-27-06	SLB10-1-27-06DP	SLB10-1-27-17	SLB10-1-28-06
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/13/2010
			Depth Interval	84- 116	0- 6	0- 12	0- 6	0- 6	0- 17	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	48 U	83 U	63 U	44 U	39 U	38 U	60 U
AROCLOR-1221	NL	NL	µg/kg	48 U	83 U	63 U	44 U	39 U	38 U	60 U
AROCLOR-1232	NL	NL	µg/kg	48 U	83 U	63 U	44 U	39 U	38 U	60 U
AROCLOR-1242	NL	NL	µg/kg	48 U	83 U	63 U	44 U	39 U	38 U	60 U
AROCLOR-1248	NL	NL	µg/kg	48 U	83 U	63 U	44 U	39 U	38 U	60 U
AROCLOR-1254	NL	NL	µg/kg	48 U	83 U	63 U	44 U	39 U	38 U	60 U
AROCLOR-1260	NL	NL	µg/kg	48 U	83 U	75 NJ	11 J	17 J	9.4 J	60 U
AROCLOR-1262	NL	NL	µg/kg	48 U	83 U	63 U	44 U	39 U	38 U	60 U
AROCLOR-1268	NL	NL	µg/kg	48 U	83 U	63 U	44 U	39 U	38 U	60 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	75	11	17	9.4	0 U

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-28	SLB10-1-28	SLB10-1-28	SLB10-1-28	SLB10-1-28	SLB10-1-28	SLB10-1-29
			Field Sample ID	SLB10-1-28-06DP	SLB10-1-28-12	SLB10-1-28-36	SLB10-1-28-60	SLB10-1-28-84	SLB10-1-28-106	SLB10-1-29-06
			Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010
			Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	84- 106	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	56 U	66 U	56 U	44 U	41 U	40 U	41 U
AROCLOR-1221	NL	NL	µg/kg	56 U	66 U	56 U	44 U	41 U	40 U	41 U
AROCLOR-1232	NL	NL	µg/kg	56 U	66 U	56 U	44 U	41 U	40 U	41 U
AROCLOR-1242	NL	NL	µg/kg	56 U	66 U	56 U	44 U	41 U	40 U	41 U
AROCLOR-1248	NL	NL	µg/kg	56 U	66 U	56 U	44 U	41 U	40 U	41 U
AROCLOR-1254	NL	NL	µg/kg	56 U	66 U	56 U	44 U	41 U	40 U	41 U
AROCLOR-1260	NL	NL	µg/kg	34 J	66 U	56 U	44 U	41 U	40 U	41 U
AROCLOR-1262	NL	NL	µg/kg	56 U	66 U	56 U	44 U	41 U	40 U	41 U
AROCLOR-1268	NL	NL	µg/kg	56 U	66 U	56 U	44 U	41 U	40 U	41 U
TOTAL PCBs	60	680	µg/kg	34	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-29	SLB10-1-29	SLB10-1-29	SLB10-1-29	SLB10-1-30	SLB10-1-30	SLB10-1-30
			Field Sample ID	SLB10-1-29-12	SLB10-1-29-36	SLB10-1-29-60	SLB10-1-29-78	SLB10-1-30-06	SLB10-1-30-06DP	SLB10-1-30-10
			Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/16/2010	10/16/2010	10/16/2010
			Depth Interval	0- 12	12- 36	36- 60	60- 78	0- 6	0- 6	0- 10
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	42 U	58 U	40 U	43 U	140	48 U	40 U
AROCLOR-1221	NL	NL	µg/kg	42 U	58 U	40 U	43 U	51 U	48 U	40 U
AROCLOR-1232	NL	NL	µg/kg	42 U	58 U	40 U	43 U	51 U	48 U	40 U
AROCLOR-1242	NL	NL	µg/kg	42 U	58 U	40 U	43 U	51 U	48 U	40 U
AROCLOR-1248	NL	NL	µg/kg	42 U	58 U	40 U	43 U	51 U	48 U	40 U
AROCLOR-1254	NL	NL	µg/kg	42 U	58 U	40 U	43 U	51 U	48 U	40 U
AROCLOR-1260	NL	NL	µg/kg	42 U	58 U	40 U	43 U	110 NJ	14 J	1.6 J
AROCLOR-1262	NL	NL	µg/kg	42 U	58 U	40 U	43 U	51 U	48 U	40 U
AROCLOR-1268	NL	NL	µg/kg	42 U	58 U	40 U	43 U	51 U	48 U	40 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	250	14	1.6

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-31	SLB10-1-31	SLB10-1-32	SLB10-1-32	SLB10-1-32	SLB10-1-33	SLB10-1-33
			Field Sample ID	SLB10-1-31-06	SLB10-1-31-13	SLB10-1-32-06	SLB10-1-32-06DP	SLB10-1-32-20	SLB10-1-33-06	SLB10-1-33-12
			Sample Date	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/13/2010	10/13/2010
			Depth Interval	0- 6	12- 13	0- 6	0- 6	12- 20	0- 6	0- 12
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	38 U	38 U	61 U	64 U	49 U	58 U	66 U
AROCLOR-1221	NL	NL	µg/kg	38 U	38 U	61 U	64 U	49 U	58 U	66 U
AROCLOR-1232	NL	NL	µg/kg	38 U	38 U	61 U	64 U	49 U	58 U	66 U
AROCLOR-1242	NL	NL	µg/kg	38 U	38 U	61 U	64 U	49 U	58 U	66 U
AROCLOR-1248	NL	NL	µg/kg	38 U	38 U	61 U	64 U	49 U	58 U	66 U
AROCLOR-1254	NL	NL	µg/kg	38 U	38 U	61 U	64 U	49 U	58 U	66 U
AROCLOR-1260	NL	NL	µg/kg	2.1 J	1.8 J	60 J	64 U	83 J	58 U	66 U
AROCLOR-1262	NL	NL	µg/kg	38 U	38 U	61 U	64 U	49 U	58 U	66 U
AROCLOR-1268	NL	NL	µg/kg	38 U	38 U	61 U	64 U	49 U	58 U	66 U
TOTAL PCBs	60	680	µg/kg	2.1	1.8	60	0 U	83	0 U	0 U

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-33	SLB10-1-33	SLB10-1-33	SLB10-1-34	SLB10-1-34	SLB10-1-34	SLB10-1-35
			Field Sample ID	SLB10-1-33-36	SLB10-1-33-60	SLB10-1-33-77	SLB10-1-34-06	SLB10-1-34-06DP	SLB10-1-34-17	SLB10-1-35-06
			Sample Date	10/13/2010	10/13/2010	10/13/2010	10/14/2010	10/14/2010	10/14/2010	10/16/2010
			Depth Interval	12- 36	36- 60	60- 77	0- 6	0- 6	0- 17	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	48 U	48 U	49 U	53 U	52 U	42 U	36 U
AROCLOR-1221	NL	NL	µg/kg	48 U	48 U	49 U	53 U	52 U	42 U	36 U
AROCLOR-1232	NL	NL	µg/kg	48 U	48 U	49 U	53 U	52 U	42 U	36 U
AROCLOR-1242	NL	NL	µg/kg	48 U	48 U	49 U	53 U	52 U	42 U	36 U
AROCLOR-1248	NL	NL	µg/kg	48 U	48 U	49 U	53 U	52 U	42 U	36 U
AROCLOR-1254	NL	NL	µg/kg	48 U	48 U	49 U	53 U	52 U	42 U	36 U
AROCLOR-1260	NL	NL	µg/kg	48 U	48 U	49 U	53 U	52 U	42 U	36 U
AROCLOR-1262	NL	NL	µg/kg	48 U	48 U	49 U	53 U	52 U	42 U	36 U
AROCLOR-1268	NL	NL	µg/kg	48 U	48 U	49 U	53 U	52 U	42 U	36 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-35	SLB10-1-35	SLB10-1-36	SLB10-1-36	SLB10-1-36	SLB10-1-37	SLB10-1-37
			Field Sample ID	SLB10-1-35-06DP	SLB10-1-35-16	SLB10-1-36-06	SLB10-1-36-06DP	SLB10-1-36-15	SLB10-1-37-06	SLB10-1-37-06DP
			Sample Date	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010
			Depth Interval	0- 6	0- 16	0- 6	0- 6	0- 15	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	42 U	40 U	64 U	69 U	53 U	52 U	55 U
AROCLOR-1221	NL	NL	µg/kg	42 U	40 U	64 U	69 U	53 U	52 U	55 U
AROCLOR-1232	NL	NL	µg/kg	42 U	40 U	64 U	69 U	53 U	52 U	55 U
AROCLOR-1242	NL	NL	µg/kg	42 U	40 U	64 U	69 U	53 U	52 U	55 U
AROCLOR-1248	NL	NL	µg/kg	42 U	40 U	64 U	69 U	53 U	52 U	55 U
AROCLOR-1254	NL	NL	µg/kg	42 U	40 U	64 U	69 U	53 U	52 U	55 U
AROCLOR-1260	NL	NL	µg/kg	42 U	40 U	64 U	69 U	20 J	52 U	3.9 J
AROCLOR-1262	NL	NL	µg/kg	42 U	40 U	64 U	69 U	53 U	52 U	55 U
AROCLOR-1268	NL	NL	µg/kg	42 U	40 U	64 U	69 U	53 U	52 U	55 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	20	0 U	3.9

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-37	SLB10-1-38	SLB10-1-38	SLB10-1-38	SLB10-1-39	SLB10-1-39	SLB10-1-39
			Field Sample ID	SLB10-1-37-18	SLB10-1-38-06	SLB10-1-38-12	SLB10-1-38-43	SLB10-1-39-06	SLB10-1-39-06DP	SLB10-1-39-12
			Sample Date	10/16/2010	10/15/2010	10/15/2010	10/15/2010	10/13/2010	10/13/2010	10/13/2010
			Depth Interval	0- 18	0- 6	0- 12	Dec-43	0- 6	0- 6	0- 12
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	77 U	73 U	79 U	44 U	88 U	90 U	84 U
AROCLOR-1221	NL	NL	µg/kg	77 U	73 U	79 U	44 U	88 U	90 U	84 U
AROCLOR-1232	NL	NL	µg/kg	77 U	73 U	79 U	44 U	88 U	90 U	84 U
AROCLOR-1242	NL	NL	µg/kg	77 U	73 U	79 U	44 U	88 U	90 U	84 U
AROCLOR-1248	NL	NL	µg/kg	77 U	73 U	79 U	44 U	88 U	90 U	84 U
AROCLOR-1254	NL	NL	µg/kg	77 U	73 U	79 U	44 U	88 U	90 U	84 U
AROCLOR-1260	NL	NL	µg/kg	5.5 J	13 J	79 U	3.6 J	88 U	90 U	84 U
AROCLOR-1262	NL	NL	µg/kg	77 U	73 U	79 U	44 U	88 U	90 U	84 U
AROCLOR-1268	NL	NL	µg/kg	77 U	73 U	79 U	44 U	88 U	90 U	84 U
TOTAL PCBs	60	680	µg/kg	5.5	13	0 U	3.6	0 U	0 U	0 U

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-39	SLB10-1-39	SLB10-1-39	SLB10-1-39	SLB10-1-40	SLB10-1-40	SLB10-1-40
			Field Sample ID	SLB10-1-39-36	SLB10-1-39-60	SLB10-1-39-84	SLB10-1-39-115	SLB10-1-40-06	SLB10-1-40-12	SLB10-1-40-36
			Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	12- 36	36- 60	60- 84	84- 115	0- 6	0- 12	12- 36
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	72 U	79 U	71 U	52 U	39 U	38 U	38 U
AROCLOR-1221	NL	NL	µg/kg	72 U	79 U	71 U	52 U	39 U	38 U	38 U
AROCLOR-1232	NL	NL	µg/kg	72 U	79 U	71 U	52 U	39 U	38 U	38 U
AROCLOR-1242	NL	NL	µg/kg	72 U	79 U	71 U	52 U	39 U	38 U	38 U
AROCLOR-1248	NL	NL	µg/kg	72 U	79 U	71 U	52 U	39 U	38 U	38 U
AROCLOR-1254	NL	NL	µg/kg	72 U	79 U	71 U	52 U	39 U	38 U	38 U
AROCLOR-1260	NL	NL	µg/kg	42 J	79 U	71 U	52 U	39 U	38 U	38 U
AROCLOR-1262	NL	NL	µg/kg	72 U	79 U	71 U	52 U	39 U	38 U	38 U
AROCLOR-1268	NL	NL	µg/kg	72 U	79 U	71 U	52 U	39 U	38 U	38 U
TOTAL PCBs	60	680	µg/kg	42	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-40	SLB10-1-42	SLB10-1-42	SLB10-1-42	SLB10-1-42	SLB10-1-44	SLB10-1-45
			Field Sample ID	SLB10-1-40-52	SLB10-1-42-06	SLB10-1-42-06DP	SLB10-1-42-12	SLB10-1-42-24	SLB10-1-44-06	SLB10-1-45-06
			Sample Date	10/15/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/13/2010
			Depth Interval	36- 52	0- 6	0- 6	0- 12	12- 24	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	47 U	42 U	47 U	56 U	55 U	42 U	56 U
AROCLOR-1221	NL	NL	µg/kg	47 U	42 U	47 U	56 U	55 U	42 U	56 U
AROCLOR-1232	NL	NL	µg/kg	47 U	42 U	47 U	56 U	55 U	42 U	56 U
AROCLOR-1242	NL	NL	µg/kg	47 U	42 U	47 U	56 U	55 U	42 U	56 U
AROCLOR-1248	NL	NL	µg/kg	47 U	42 U	47 U	56 U	55 U	42 U	56 U
AROCLOR-1254	NL	NL	µg/kg	47 U	42 U	47 U	56 U	55 U	42 U	56 U
AROCLOR-1260	NL	NL	µg/kg	47 U	1.2 J	47 U	56 U	55 U	7.2 J	56 U
AROCLOR-1262	NL	NL	µg/kg	47 U	42 U	47 U	56 U	55 U	42 U	56 U
AROCLOR-1268	NL	NL	µg/kg	47 U	42 U	47 U	56 U	55 U	42 U	56 U
TOTAL PCBs	60	680	µg/kg	0 U	1.2	0 U	0 U	0 U	7.2	0 U

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-45	SLB10-1-45	SLB10-1-45	SLB10-1-45	SLB10-1-45	SLB10-1-46	SLB10-1-46
			Field Sample ID	SLB10-1-45-12	SLB10-1-45-36	SLB10-1-45-60	SLB10-1-45-84	SLB10-1-45-114	SLB10-1-46-06	SLB10-1-46-06DP
			Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/12/2010	10/12/2010
			Depth Interval	0- 12	12- 36	36- 60	60- 84	84- 114	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	57 U	65 U	61 U	48 U	40 U	71 U	71 U
AROCLOR-1221	NL	NL	µg/kg	57 U	65 U	61 U	48 U	40 U	71 U	71 U
AROCLOR-1232	NL	NL	µg/kg	57 U	65 U	61 U	48 U	40 U	71 U	71 U
AROCLOR-1242	NL	NL	µg/kg	57 U	65 U	61 U	48 U	40 U	71 U	71 U
AROCLOR-1248	NL	NL	µg/kg	57 U	65 U	61 U	48 U	40 U	71 U	71 U
AROCLOR-1254	NL	NL	µg/kg	57 U	65 U	61 U	48 U	40 U	71 U	71 U
AROCLOR-1260	NL	NL	µg/kg	57 U	65 U	61 U	48 U	40 U	71 U	71 U
AROCLOR-1262	NL	NL	µg/kg	57 U	65 U	61 U	48 U	40 U	71 U	71 U
AROCLOR-1268	NL	NL	µg/kg	57 U	65 U	61 U	48 U	40 U	71 U	71 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-46	SLB10-1-46	SLB10-1-46	SLB10-1-47	SLB10-1-47	SLB10-1-48	SLB10-1-48
			Field Sample ID	SLB10-1-46-12	SLB10-1-46-36	SLB10-1-46-64	SLB10-1-47-06	SLB10-1-47-10	SLB10-1-48-06	SLB10-1-48-06DP
			Sample Date	10/12/2010	10/12/2010	10/12/2010	10/15/2010	10/15/2010	10/13/2010	10/13/2010
			Depth Interval	0- 12	12- 36	36- 64	0- 6	0- 10	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	51 U	47 U	110 U	53 U	52 U	55 U	60 U
AROCLOR-1221	NL	NL	µg/kg	51 U	47 U	110 U	53 U	52 U	55 U	60 U
AROCLOR-1232	NL	NL	µg/kg	51 U	47 U	110 U	53 U	52 U	55 U	60 U
AROCLOR-1242	NL	NL	µg/kg	51 U	47 U	110 U	53 U	52 U	55 U	60 U
AROCLOR-1248	NL	NL	µg/kg	51 U	47 U	110 U	53 U	52 U	55 U	60 U
AROCLOR-1254	NL	NL	µg/kg	51 U	47 U	110 U	53 U	52 U	55 U	60 U
AROCLOR-1260	NL	NL	µg/kg	51 U	47 U	110 U	4.2 J	52 U	55 U	60 U
AROCLOR-1262	NL	NL	µg/kg	51 U	47 U	110 U	53 U	52 U	55 U	60 U
AROCLOR-1268	NL	NL	µg/kg	51 U	47 U	110 U	53 U	52 U	55 U	60 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	4.2	0 U	0 U	0 U

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-48	SLB10-1-48	SLB10-1-48	SLB10-1-49	SLB10-1-49	SLB10-1-49	SLB10-1-49
			Field Sample ID	SLB10-1-48-12	SLB10-1-48-36	SLB10-1-48-68	SLB10-1-49-06	SLB10-1-49-12	SLB10-1-49-36	SLB10-1-49-53
			Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010
			Depth Interval	0- 12	12- 36	36- 68	0- 6	0- 12	12- 36	36- 53
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	42 U	41 U	38 U	50 U	47 U	45 U	44 U
AROCLOR-1221	NL	NL	µg/kg	42 U	41 U	38 U	50 U	47 U	45 U	44 U
AROCLOR-1232	NL	NL	µg/kg	42 U	41 U	38 U	50 U	47 U	45 U	44 U
AROCLOR-1242	NL	NL	µg/kg	42 U	41 U	38 U	50 U	47 U	45 U	44 U
AROCLOR-1248	NL	NL	µg/kg	42 U	41 U	38 U	50 U	47 U	45 U	44 U
AROCLOR-1254	NL	NL	µg/kg	42 U	41 U	38 U	50 U	47 U	45 U	44 U
AROCLOR-1260	NL	NL	µg/kg	42 U	41 U	38 U	50 U	47 U	45 U	44 U
AROCLOR-1262	NL	NL	µg/kg	42 U	41 U	38 U	50 U	47 U	45 U	44 U
AROCLOR-1268	NL	NL	µg/kg	42 U	41 U	38 U	50 U	47 U	45 U	44 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-50	SLB10-1-50	SLB10-1-50	SLB10-1-50	SLB10-1-51	SLB10-1-51	SLB10-1-51
			Field Sample ID	SLB10-1-50-06	SLB10-1-50-06DP	SLB10-1-50-12	SLB10-1-50-36	SLB10-1-51-06	SLB10-1-51-12	SLB10-1-51-36
			Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/12/2010	10/12/2010	10/12/2010
			Depth Interval	0- 6	0- 6	0- 12	12- 36	0- 6	0- 12	12- 36
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	44 U	46 U	43 U	75 U	45 U	54 U	69 U
AROCLOR-1221	NL	NL	µg/kg	44 U	46 U	43 U	75 U	45 U	54 U	69 U
AROCLOR-1232	NL	NL	µg/kg	44 U	46 U	43 U	75 U	45 U	54 U	69 U
AROCLOR-1242	NL	NL	µg/kg	44 U	46 U	43 U	75 U	45 U	54 U	69 U
AROCLOR-1248	NL	NL	µg/kg	44 U	46 U	43 U	75 U	45 U	54 U	69 U
AROCLOR-1254	NL	NL	µg/kg	44 U	46 U	43 U	75 U	45 U	54 U	69 U
AROCLOR-1260	NL	NL	µg/kg	44 U	46 U	43 U	75 U	45 U	54 U	69 U
AROCLOR-1262	NL	NL	µg/kg	44 U	46 U	43 U	75 U	45 U	54 U	69 U
AROCLOR-1268	NL	NL	µg/kg	44 U	46 U	43 U	75 U	45 U	54 U	69 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-51	SLB10-1-51	SLB10-1-52	SLB10-1-52	SLB10-1-52	SLB10-1-52	SLB10-1-53
			Field Sample ID	SLB10-1-51-60	SLB10-1-51-76	SLB10-1-52-06	SLB10-1-52-06DP	SLB10-1-52-12	SLB10-1-52-24	SLB10-1-53-06
			Sample Date	10/12/2010	10/12/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	36- 60	60- 76	0- 6	0- 6	0- 12	12- 24	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	48 U	41 U	54 U	64 U	49 U	110 U	60 U
AROCLOR-1221	NL	NL	µg/kg	48 U	41 U	54 U	64 U	49 U	110 U	60 U
AROCLOR-1232	NL	NL	µg/kg	48 U	41 U	54 U	64 U	49 U	110 U	60 U
AROCLOR-1242	NL	NL	µg/kg	48 U	41 U	54 U	64 U	49 U	110 U	60 U
AROCLOR-1248	NL	NL	µg/kg	48 U	41 U	54 U	64 U	49 U	110 U	60 U
AROCLOR-1254	NL	NL	µg/kg	48 U	41 U	54 U	64 U	49 U	110 U	60 U
AROCLOR-1260	NL	NL	µg/kg	48 U	41 U	54 U	64 UJ	49 U	110 U	7.8 J
AROCLOR-1262	NL	NL	µg/kg	48 U	41 U	54 U	64 U	49 U	110 U	60 U
AROCLOR-1268	NL	NL	µg/kg	48 U	41 U	54 U	64 U	49 U	110 U	60 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	7.8

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-53	SLB10-1-53	SLB10-1-53	SLB10-1-54	SLB10-1-54	SLB10-1-55	SLB10-1-55
			Field Sample ID	SLB10-1-53-06DP	SLB10-1-53-12	SLB10-1-53-26	SLB10-1-54-06	SLB10-1-54-12	SLB10-1-55-06	SLB10-1-55-06DP
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/13/2010	10/13/2010
			Depth Interval	0- 6	0- 12	12- 26	0- 6	0- 12	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	58 U	57 U	40 U	170 U	320	55 U	54 U
AROCLOR-1221	NL	NL	µg/kg	58 U	57 U	40 U	170 U	110 U	55 U	54 U
AROCLOR-1232	NL	NL	µg/kg	58 U	57 U	40 U	170 U	110 U	55 U	54 U
AROCLOR-1242	NL	NL	µg/kg	58 U	57 U	40 U	170 U	110 U	55 U	54 U
AROCLOR-1248	NL	NL	µg/kg	58 U	57 U	40 U	170 U	110 U	55 U	54 U
AROCLOR-1254	NL	NL	µg/kg	58 U	57 U	40 U	170 U	110 U	55 U	54 U
AROCLOR-1260	NL	NL	µg/kg	6.5 J	57 U	40 U	170 U	270 J	55 U	54 U
AROCLOR-1262	NL	NL	µg/kg	58 U	57 U	40 U	170 U	110 U	55 U	54 U
AROCLOR-1268	NL	NL	µg/kg	58 U	57 U	40 U	170 U	110 U	55 U	54 U
TOTAL PCBs	60	680	µg/kg	6.5	0 U	0 U	0 U	590	0 U	0 U

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-55	SLB10-1-55	SLB10-1-55	SLB10-1-55	SLB10-1-55	SLB10-1-56	SLB10-1-56
			Field Sample ID	SLB10-1-55-12	SLB10-1-55-36	SLB10-1-55-60	SLB10-1-55-84	SLB10-1-55-116	SLB10-1-56-06	SLB10-1-56-06DP
			Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/7/2010	10/7/2010
			Depth Interval	0- 12	12- 36	36- 60	60- 84	96- 116	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	63 U	62 U	110 U	42 U	41 U	74 U	72 U
AROCLOR-1221	NL	NL	µg/kg	63 U	62 U	110 U	42 U	41 U	74 U	72 U
AROCLOR-1232	NL	NL	µg/kg	63 U	62 U	110 U	42 U	41 U	74 U	72 U
AROCLOR-1242	NL	NL	µg/kg	63 U	62 U	110 U	42 U	41 U	74 U	72 U
AROCLOR-1248	NL	NL	µg/kg	63 U	62 U	110 U	42 U	41 U	74 U	72 U
AROCLOR-1254	NL	NL	µg/kg	63 U	62 U	110 U	42 U	41 U	74 U	72 U
AROCLOR-1260	NL	NL	µg/kg	63 U	62 U	110 U	42 U	41 U	74 U	72 U
AROCLOR-1262	NL	NL	µg/kg	63 U	62 U	110 U	42 U	41 U	74 U	72 U
AROCLOR-1268	NL	NL	µg/kg	63 U	62 U	110 U	42 U	41 U	74 U	72 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-56	SLB10-1-56	SLB10-1-56	SLB10-1-56	SLB10-1-57	SLB10-1-57	SLB10-1-57
			Field Sample ID	SLB10-1-56-12	SLB10-1-56-36	SLB10-1-56-60	SLB10-1-56-86	SLB10-1-57-06	SLB10-1-57-06DP	SLB10-1-57-12
			Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/12/2010	10/12/2010	10/12/2010
			Depth Interval	0- 12	12- 36	36- 60	60- 86	0- 6	0- 6	0- 12
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	74 U	78 U	70 U	61 U	67 U	72 U	57 U
AROCLOR-1221	NL	NL	µg/kg	74 U	78 U	70 U	61 U	67 U	72 U	57 U
AROCLOR-1232	NL	NL	µg/kg	74 U	78 U	70 U	61 U	67 U	72 U	57 U
AROCLOR-1242	NL	NL	µg/kg	74 U	78 U	70 U	61 U	67 U	72 U	57 U
AROCLOR-1248	NL	NL	µg/kg	74 U	78 U	70 U	61 U	67 U	72 U	57 U
AROCLOR-1254	NL	NL	µg/kg	74 U	78 U	70 U	61 U	67 U	72 U	57 U
AROCLOR-1260	NL	NL	µg/kg	74 U	78 U	70 U	61 U	67 U	72 U	57 U
AROCLOR-1262	NL	NL	µg/kg	74 U	78 U	70 U	61 U	67 U	72 U	57 U
AROCLOR-1268	NL	NL	µg/kg	74 U	78 U	70 U	61 U	67 U	72 U	57 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-57	SLB10-1-57	SLB10-1-57	SLB10-1-58	SLB10-1-59	SLB10-1-59	SLB10-1-59
			Field Sample ID	SLB10-1-57-36	SLB10-1-57-60	SLB10-1-57-77	SLB10-1-58-20	SLB10-1-59-06	SLB10-1-59-06DP	SLB10-1-59-12
			Sample Date	10/12/2010	10/12/2010	10/12/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010
			Depth Interval	12- 36	36- 60	60- 77	0- 20	0- 6	0- 6	0- 12
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	55 U	46 U	43 U	96 U	220 U	170 U	150 U
AROCLOR-1221	NL	NL	µg/kg	55 U	46 U	43 U	96 U	220 U	170 U	150 U
AROCLOR-1232	NL	NL	µg/kg	55 U	46 U	43 U	96 U	220 U	170 U	150 U
AROCLOR-1242	NL	NL	µg/kg	55 U	46 U	43 U	96 U	220 U	170 U	150 U
AROCLOR-1248	NL	NL	µg/kg	55 U	46 U	43 U	96 U	220 U	170 U	150 U
AROCLOR-1254	NL	NL	µg/kg	55 U	46 U	43 U	96 U	220 U	170 U	150 U
AROCLOR-1260	NL	NL	µg/kg	55 U	46 U	43 U	96 U	220 U	170 U	150 U
AROCLOR-1262	NL	NL	µg/kg	55 U	46 U	43 U	96 U	220 U	170 U	150 U
AROCLOR-1268	NL	NL	µg/kg	55 U	46 U	43 U	96 U	220 U	170 U	150 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-59	SLB10-1-60	SLB10-1-60	SLB10-1-60	SLB10-1-60	SLB10-1-60	SLB10-1-60
			Field Sample ID	SLB10-1-59-25	SLB10-1-60-06	SLB10-1-60-12	SLB10-1-60-36	SLB10-1-60-60	SLB10-1-60-84	SLB10-1-60-106
			Sample Date	10/13/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010
			Depth Interval	12- 25	0- 6	0- 12	12- 36	36- 60	60- 84	84- 106
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	170 U	96 U	93 UJ	84 UJ	86 UJ	93 UJ	74 U
AROCLOR-1221	NL	NL	µg/kg	170 U	96 U	93 UJ	84 UJ	86 UJ	93 UJ	74 U
AROCLOR-1232	NL	NL	µg/kg	170 U	96 U	93 UJ	84 UJ	86 UJ	93 UJ	74 U
AROCLOR-1242	NL	NL	µg/kg	170 U	96 U	93 UJ	84 UJ	86 UJ	93 UJ	74 U
AROCLOR-1248	NL	NL	µg/kg	170 U	96 U	93 UJ	84 UJ	86 UJ	93 UJ	74 U
AROCLOR-1254	NL	NL	µg/kg	170 U	96 U	93 UJ	84 UJ	86 UJ	93 UJ	54 J
AROCLOR-1260	NL	NL	µg/kg	170 U	96 U	93 UJ	84 UJ	86 UJ	93 UJ	74 U
AROCLOR-1262	NL	NL	µg/kg	170 U	96 U	93 UJ	84 UJ	86 UJ	93 UJ	74 U
AROCLOR-1268	NL	NL	µg/kg	170 U	96 U	93 UJ	84 UJ	86 UJ	93 UJ	74 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	54

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-61	SLB10-1-61	SLB10-1-61	SLB10-1-61	SLB10-1-61	SLB10-1-61	SLB10-1-62
			Field Sample ID	SLB10-1-61-06	SLB10-1-61-06DP	SLB10-1-61-12	SLB10-1-61-36	SLB10-1-61-60	SLB10-1-61-79	SLB10-1-62-06
			Sample Date	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010
			Depth Interval	0- 6	0- 6	0- 12	12- 36	36- 60	60- 79	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	89 U	89 U	87 U	75 U	73 U	62 U	89 U
AROCLOR-1221	NL	NL	µg/kg	89 U	89 U	87 U	75 U	73 U	62 U	89 U
AROCLOR-1232	NL	NL	µg/kg	89 U	89 U	87 U	75 U	73 U	62 U	89 U
AROCLOR-1242	NL	NL	µg/kg	89 U	89 U	87 U	75 U	73 U	62 U	89 U
AROCLOR-1248	NL	NL	µg/kg	89 U	89 U	87 U	75 U	73 U	62 U	89 U
AROCLOR-1254	NL	NL	µg/kg	89 U	89 U	87 U	75 U	46 J	35 J	89 U
AROCLOR-1260	NL	NL	µg/kg	89 U	89 U	87 U	75 U	46 J	53 J	89 U
AROCLOR-1262	NL	NL	µg/kg	89 U	89 U	87 U	75 U	73 U	62 U	89 U
AROCLOR-1268	NL	NL	µg/kg	89 U	89 U	87 U	75 U	73 U	62 U	89 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	92	88	0 U

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-62	SLB10-1-62	SLB10-1-62	SLB10-1-63	SLB10-1-63	SLB10-1-63	SLB10-1-63
			Field Sample ID	SLB10-1-62-06DP	SLB10-1-62-12	SLB10-1-62-32	SLB10-1-63-06	SLB10-1-63-06DP	SLB10-1-63-12	SLB10-1-63-36
			Sample Date	10/14/2010	10/14/2010	10/14/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
			Depth Interval	0- 6	0- 12	12- 32	0- 6	0- 6	0- 12	12- 36
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	87 U	88 U	70 U	74 U	73 U	68 U	59 U
AROCLOR-1221	NL	NL	µg/kg	87 U	88 U	70 U	74 U	73 U	68 U	59 U
AROCLOR-1232	NL	NL	µg/kg	87 U	88 U	70 U	74 U	73 U	68 U	59 U
AROCLOR-1242	NL	NL	µg/kg	87 U	88 U	70 U	74 U	73 U	68 U	59 U
AROCLOR-1248	NL	NL	µg/kg	87 U	88 U	70 U	74 U	73 U	68 U	59 U
AROCLOR-1254	NL	NL	µg/kg	87 U	88 U	70 U	74 U	73 U	68 U	59 U
AROCLOR-1260	NL	NL	µg/kg	87 U	72 J	38 J	74 U	73 U	68 U	59 U
AROCLOR-1262	NL	NL	µg/kg	87 U	88 U	70 U	74 U	73 U	68 U	59 U
AROCLOR-1268	NL	NL	µg/kg	87 U	88 U	70 U	74 U	73 U	68 U	59 U
TOTAL PCBs	60	680	µg/kg	0 U	72	38	0 U	0 U	0 U	0 U

Table 3-4a
Area 1 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-63	SLB10-1-63	SLB10-1-64	SLB10-1-64	SLB10-1-64	SLB10-1-64	SLB10-1-64
			Field Sample ID	SLB10-1-63-60	SLB10-1-63-84	SLB10-1-64-06	SLB10-1-64-06DP	SLB10-1-64-12	SLB10-1-64-36	SLB10-1-64-48
			Sample Date	10/7/2010	10/7/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010
			Depth Interval	36- 60	60- 84	0- 6	0- 6	0- 12	12- 36	36- 48
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	57 U	50 U	41 U	41 U	39 U	39 U	40 U
AROCLOR-1221	NL	NL	µg/kg	57 U	50 U	41 U	41 U	39 U	39 U	40 U
AROCLOR-1232	NL	NL	µg/kg	57 U	50 U	41 U	41 U	39 U	39 U	40 U
AROCLOR-1242	NL	NL	µg/kg	57 U	50 U	41 U	41 U	39 U	39 U	40 U
AROCLOR-1248	NL	NL	µg/kg	57 U	50 U	41 U	41 U	39 U	39 U	40 U
AROCLOR-1254	NL	NL	µg/kg	57 U	50 U	41 U	41 U	39 U	39 U	40 U
AROCLOR-1260	NL	NL	µg/kg	57 U	50 U	41 U	41 U	39 U	39 U	40 U
AROCLOR-1262	NL	NL	µg/kg	57 U	50 U	41 U	41 U	39 U	39 U	40 U
AROCLOR-1268	NL	NL	µg/kg	57 U	50 U	41 U	41 U	39 U	39 U	40 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Notes:

Result exceeds SQTs - Level I.

Result exceeds SQTs - Level II.

ID = Identification

J = Estimated Value

NL = Not Listed

PCB = Polychlorinated Biphenyls

SQT = Sediment Quality Targets

U = Not Detected

µg/kg = Microgram per kilogram

Total PCBs = Sum of Detections

¹ Evaluation of Numerical SQTs-St Louis River AOC-Level I

² Evaluation of Numerical SQTs-St Louis River AOC-Level II

Table 3-4b
Area 2 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-65	SLB10-2-65	SLB10-2-65	SLB10-2-65	SLB10-2-65	SLB10-2-66	SLB10-2-66
			Field Sample ID	SLB10-2-65-06	SLB10-2-65-12	SLB10-2-65-36	SLB10-2-65-60	SLB10-2-65-84	SLB10-2-66-06	SLB10-2-66-06DP
			Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/6/2010	10/6/2010
			Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	66 U	60 U	50 U	58 U	64 U	88 U	94 U
AROCLOR-1221	NL	NL	µg/kg	66 U	60 U	50 U	58 U	64 U	88 U	94 U
AROCLOR-1232	NL	NL	µg/kg	66 U	60 U	50 U	58 U	64 U	88 U	94 U
AROCLOR-1242	NL	NL	µg/kg	66 U	60 U	50 U	58 U	64 U	88 U	94 U
AROCLOR-1248	NL	NL	µg/kg	66 U	60 U	50 U	58 U	64 U	88 U	94 U
AROCLOR-1254	NL	NL	µg/kg	66 U	60 U	50 U	58 U	64 U	88 U	94 U
AROCLOR-1260	NL	NL	µg/kg	66 U	60 U	50 U	58 U	64 U	88 U	94 U
AROCLOR-1262	NL	NL	µg/kg	66 U	60 U	50 U	58 U	64 U	88 U	94 U
AROCLOR-1268	NL	NL	µg/kg	66 U	60 U	50 U	58 U	64 U	88 U	94 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4b
Area 2 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-66	SLB10-2-66	SLB10-2-66	SLB10-2-66	SLB10-2-67	SLB10-2-67	SLB10-2-67
			Field Sample ID	SLB10-2-66-12	SLB10-2-66-36	SLB10-2-66-60	SLB10-2-66-89	SLB10-2-67-06	SLB10-2-67-12	SLB10-2-67-36
			Sample Date	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
			Depth Interval	0- 12	12- 36	36- 60	60- 89	0- 6	0- 12	12- 36
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	81 U	78 U	85 U	58 U	70 U	58 U	54 U
AROCLOR-1221	NL	NL	µg/kg	81 U	78 U	85 U	58 U	70 U	58 U	54 U
AROCLOR-1232	NL	NL	µg/kg	81 U	78 U	85 U	58 U	70 U	58 U	54 U
AROCLOR-1242	NL	NL	µg/kg	81 U	78 U	85 U	58 U	70 U	58 U	54 U
AROCLOR-1248	NL	NL	µg/kg	81 U	78 U	85 U	58 U	70 U	58 U	54 U
AROCLOR-1254	NL	NL	µg/kg	81 U	78 U	85 U	58 U	70 U	58 U	54 U
AROCLOR-1260	NL	NL	µg/kg	81 U	48 J	85 U	58 U	70 U	58 U	54 U
AROCLOR-1262	NL	NL	µg/kg	81 U	78 U	85 U	58 U	70 U	58 U	54 U
AROCLOR-1268	NL	NL	µg/kg	81 U	78 U	85 U	58 U	70 U	58 U	54 U
TOTAL PCBs	60	680	µg/kg	0 U	48	0 U	0 U	0 U	0 U	0 U

Table 3-4b
Area 2 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-67	SLB10-2-67	SLB10-2-67	SLB10-2-68	SLB10-2-68	SLB10-2-69	SLB10-2-69
			Field Sample ID	SLB10-2-67-60	SLB10-2-67-84	SLB10-2-67-102	SLB10-2-68-06	SLB10-2-68-21	SLB10-2-69-06	SLB10-2-69-17
			Sample Date	10/6/2010	10/6/2010	10/6/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
			Depth Interval	36- 60	60- 84	84- 102	0- 6	0- 21	0- 6	0- 17
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	56 U	54 U	58 U	50 U	49 U	160 U	150 U
AROCLOR-1221	NL	NL	µg/kg	56 U	54 U	58 U	50 U	49 U	160 U	150 U
AROCLOR-1232	NL	NL	µg/kg	56 U	54 U	58 U	50 U	49 U	160 U	150 U
AROCLOR-1242	NL	NL	µg/kg	56 U	54 U	58 U	50 U	49 U	160 U	150 U
AROCLOR-1248	NL	NL	µg/kg	56 U	54 U	58 U	50 U	49 U	160 U	150 U
AROCLOR-1254	NL	NL	µg/kg	43 J	54 U	58 U	50 U	49 U	160 U	150 U
AROCLOR-1260	NL	NL	µg/kg	56 U	54 U	58 U	50 U	49 U	160 U	150 U
AROCLOR-1262	NL	NL	µg/kg	56 U	54 U	58 U	50 U	49 U	160 U	150 U
AROCLOR-1268	NL	NL	µg/kg	56 U	54 U	58 U	50 U	49 U	160 U	150 U
TOTAL PCBs	60	680	µg/kg	43	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4b
Area 2 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-70	SLB10-2-70	SLB10-2-70	SLB10-2-71	SLB10-2-71	SLB10-2-71	SLB10-2-71
			Field Sample ID	SLB10-2-70-06	SLB10-2-70-06DP	SLB10-2-70-19	SLB10-2-71-06	SLB10-2-71-12	SLB10-2-71-36	SLB10-2-71-54
			Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
			Depth Interval	0- 6	0- 6	0- 19	0- 6	0- 12	12- 36	36- 54
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	83 U	85 U	81 U	38 U	38 U	39 U	46 U
AROCLOR-1221	NL	NL	µg/kg	83 U	85 U	81 U	38 U	38 U	39 U	46 U
AROCLOR-1232	NL	NL	µg/kg	83 U	85 U	81 U	38 U	38 U	39 U	46 U
AROCLOR-1242	NL	NL	µg/kg	83 U	85 U	81 U	38 U	38 U	39 U	46 U
AROCLOR-1248	NL	NL	µg/kg	83 U	85 U	81 U	38 U	38 U	39 U	46 U
AROCLOR-1254	NL	NL	µg/kg	83 U	85 U	81 U	38 U	38 U	39 U	46 U
AROCLOR-1260	NL	NL	µg/kg	83 U	85 U	81 U	38 U	38 U	39 U	46 U
AROCLOR-1262	NL	NL	µg/kg	83 U	85 U	81 U	38 U	38 U	39 U	46 U
AROCLOR-1268	NL	NL	µg/kg	83 U	85 U	81 U	38 U	38 U	39 U	46 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4b
Area 2 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-72	SLB10-2-72	SLB10-2-72	SLB10-2-73	SLB10-2-73	SLB10-2-73	SLB10-2-74
			Field Sample ID	SLB10-2-72-06	SLB10-2-72-12	SLB10-2-72-24	SLB10-2-73-06	SLB10-2-73-12	SLB10-2-73-31	SLB10-2-74-06
			Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/6/2010
			Depth Interval	0- 6	0- 12	12- 24	0- 6	0- 12	12- 31	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	130 U	79 U	110 U	80 U	73 U	94 U	58 U
AROCLOR-1221	NL	NL	µg/kg	130 U	79 U	110 U	80 U	73 U	94 U	58 U
AROCLOR-1232	NL	NL	µg/kg	130 U	79 U	110 U	80 U	73 U	94 U	58 U
AROCLOR-1242	NL	NL	µg/kg	130 U	79 U	110 U	80 U	73 U	94 U	58 U
AROCLOR-1248	NL	NL	µg/kg	130 U	79 U	110 U	80 U	73 U	94 U	58 U
AROCLOR-1254	NL	NL	µg/kg	130 U	79 U	110 U	80 U	73 U	94 U	58 U
AROCLOR-1260	NL	NL	µg/kg	130 U	79 U	110 U	80 U	73 U	94 U	58 U
AROCLOR-1262	NL	NL	µg/kg	130 U	79 U	110 U	80 U	73 U	94 U	58 U
AROCLOR-1268	NL	NL	µg/kg	130 U	79 U	110 U	80 U	73 U	94 U	58 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4b
Area 2 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-74	SLB10-2-74	SLB10-2-74	SLB10-2-74	SLB10-2-74	SLB10-2-74	SLB10-2-74
			Field Sample ID	SLB10-2-74-06DP	SLB10-2-74-12	SLB10-2-74-36	SLB10-2-74-36DP	SLB10-2-74-60	SLB10-2-74-84	SLB10-2-74-108
			Sample Date	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
			Depth Interval	0- 6	0- 12	12- 36	12- 36	36- 60	60- 84	84- 108
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	58 U	63 U	69 U	66 U	62 U	54 U	61 U
AROCLOR-1221	NL	NL	µg/kg	58 U	63 U	69 U	66 U	62 U	54 U	61 U
AROCLOR-1232	NL	NL	µg/kg	58 U	63 U	69 U	66 U	62 U	54 U	61 U
AROCLOR-1242	NL	NL	µg/kg	58 U	63 U	69 U	66 U	62 U	54 U	61 U
AROCLOR-1248	NL	NL	µg/kg	58 U	63 U	69 U	66 U	62 U	54 U	61 U
AROCLOR-1254	NL	NL	µg/kg	58 U	63 U	69 U	66 U	62 U	54 U	61 U
AROCLOR-1260	NL	NL	µg/kg	58 U	63 U	69 U	66 U	62 U	54 U	61 U
AROCLOR-1262	NL	NL	µg/kg	58 U	63 U	69 U	66 U	62 U	54 U	61 U
AROCLOR-1268	NL	NL	µg/kg	58 U	63 U	69 U	66 U	62 U	54 U	61 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4b
Area 2 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-74	SLB10-2-75	SLB10-2-75	SLB10-2-75	SLB10-2-76	SLB10-2-76	SLB10-2-77
			Field Sample ID	SLB10-2-74-120	SLB10-2-75-06	SLB10-2-75-12	SLB10-2-75-34	SLB10-2-76-06	SLB10-2-76-12	SLB10-2-77-06
			Sample Date	10/6/2010	10/7/2010	10/7/2010	10/7/2010	10/13/2010	10/13/2010	10/7/2010
			Depth Interval	108- 120	0- 6	0- 12	12- 34	0- 6	0- 12	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	62 U	100 U	86 U	99 U	55 U	160 U	76 U
AROCLOR-1221	NL	NL	µg/kg	62 U	100 U	86 U	99 U	55 U	160 U	76 U
AROCLOR-1232	NL	NL	µg/kg	62 U	100 U	86 U	99 U	55 U	160 U	76 U
AROCLOR-1242	NL	NL	µg/kg	62 U	100 U	86 U	99 U	55 U	160 U	76 U
AROCLOR-1248	NL	NL	µg/kg	62 U	100 U	86 U	99 U	55 U	160 U	76 U
AROCLOR-1254	NL	NL	µg/kg	62 U	100 U	86 U	99 U	55 U	160 U	76 U
AROCLOR-1260	NL	NL	µg/kg	62 U	100 U	86 U	99 U	55 U	160 U	76 U
AROCLOR-1262	NL	NL	µg/kg	62 U	100 U	86 U	99 U	55 U	160 U	76 U
AROCLOR-1268	NL	NL	µg/kg	62 U	100 U	86 U	99 U	55 U	160 U	76 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4b
Area 2 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-77	SLB10-2-77	SLB10-2-77	SLB10-2-77	SLB10-2-79	SLB10-2-81	SLB10-2-81
			Field Sample ID	SLB10-2-77-12	SLB10-2-77-36	SLB10-2-77-60	SLB10-2-77-73	SLB10-2-79-12	SLB10-2-81-06	SLB10-2-81-06DP
			Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/13/2010	10/5/2010	10/5/2010
			Depth Interval	0- 12	12- 36	36- 60	60- 73	0- 12	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	67 U	61 U	68 U	70 U	100 U	70 U	69 U
AROCLOR-1221	NL	NL	µg/kg	67 U	61 U	68 U	70 U	100 U	70 U	69 U
AROCLOR-1232	NL	NL	µg/kg	67 U	61 U	68 U	70 U	100 U	70 U	69 U
AROCLOR-1242	NL	NL	µg/kg	67 U	61 U	68 U	70 U	100 U	70 U	69 U
AROCLOR-1248	NL	NL	µg/kg	67 U	61 U	68 U	70 U	100 U	70 U	69 U
AROCLOR-1254	NL	NL	µg/kg	67 U	61 U	68 U	70 U	100 U	70 U	69 U
AROCLOR-1260	NL	NL	µg/kg	67 U	61 U	68 U	70 U	100 U	70 U	69 U
AROCLOR-1262	NL	NL	µg/kg	67 U	61 U	68 U	70 U	100 U	70 U	69 U
AROCLOR-1268	NL	NL	µg/kg	67 U	61 U	68 U	70 U	100 U	70 U	69 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4b
Area 2 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-81	SLB10-2-81	SLB10-2-81	SLB10-2-81	SLB10-2-81	SLB10-2-82	SLB10-2-82
			Field Sample ID	SLB10-2-81-12	SLB10-2-81-36	SLB10-2-81-60	SLB10-2-81-84	SLB10-2-81-92	SLB10-2-82-06	SLB10-2-82-06DP
			Sample Date	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/7/2010	10/7/2010
			Depth Interval	0- 12	12- 36	36- 60	60- 84	84- 92	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	55 U	60 U	57 U	52 U	57 U	48 U	48 U
AROCLOR-1221	NL	NL	µg/kg	55 U	60 U	57 U	52 U	57 U	48 U	48 U
AROCLOR-1232	NL	NL	µg/kg	55 U	60 U	57 U	52 U	57 U	48 U	48 U
AROCLOR-1242	NL	NL	µg/kg	55 U	60 U	57 U	52 U	57 U	48 U	48 U
AROCLOR-1248	NL	NL	µg/kg	55 U	60 U	57 U	52 U	57 U	48 U	48 U
AROCLOR-1254	NL	NL	µg/kg	55 U	60 U	57 U	52 U	57 U	48 U	48 U
AROCLOR-1260	NL	NL	µg/kg	55 U	60 U	57 U	52 U	57 U	48 U	48 U
AROCLOR-1262	NL	NL	µg/kg	55 U	60 U	57 U	52 U	57 U	48 U	48 U
AROCLOR-1268	NL	NL	µg/kg	55 U	60 U	57 U	52 U	57 U	48 U	48 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4b
Area 2 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-82	SLB10-2-82	SLB10-2-83	SLB10-2-83	SLB10-2-83	SLB10-2-83	SLB10-2-84
			Field Sample ID	SLB10-2-82-12	SLB10-2-82-27	SLB10-2-83-06	SLB10-2-83-12	SLB10-2-83-36	SLB10-2-83-60	SLB10-2-84-12
			Sample Date	10/7/2010	10/7/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/13/2010
			Depth Interval	0- 12	12- 27	0- 6	0- 12	12- 36	36- 60	0- 12
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	44 U	38 U	270 U	190 U	120 U	95 U	150 U
AROCLOR-1221	NL	NL	µg/kg	44 U	38 U	270 U	190 U	120 U	95 U	150 U
AROCLOR-1232	NL	NL	µg/kg	44 U	38 U	270 U	190 U	120 U	95 U	150 U
AROCLOR-1242	NL	NL	µg/kg	44 U	38 U	270 U	190 U	120 U	95 U	150 U
AROCLOR-1248	NL	NL	µg/kg	44 U	38 U	270 U	190 U	120 U	95 U	150 U
AROCLOR-1254	NL	NL	µg/kg	44 U	38 U	270 U	190 U	120 U	95 U	150 U
AROCLOR-1260	NL	NL	µg/kg	44 U	38 U	270 U	190 U	120 U	95 U	150 U
AROCLOR-1262	NL	NL	µg/kg	44 U	38 U	270 U	190 U	120 U	95 U	150 U
AROCLOR-1268	NL	NL	µg/kg	44 U	38 U	270 U	190 U	120 U	95 U	150 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4b
Area 2 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-84	SLB10-2-85	SLB10-2-85	SLB10-2-85	SLB10-2-85	SLB10-2-85	SLB10-2-85
			Field Sample ID	SLB10-2-84-33	SLB10-2-85-06	SLB10-2-85-12	SLB10-2-85-36	SLB10-2-85-60	SLB10-2-85-84	SLB10-2-85-117
			Sample Date	10/13/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
			Depth Interval	12- 33	0- 6	0- 12	12- 36	36- 60	60- 84	84- 117
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	180 U	74 U	53 U	53 U	43 U	45 U	47 U
AROCLOR-1221	NL	NL	µg/kg	180 U	74 U	53 U	53 U	43 U	45 U	47 U
AROCLOR-1232	NL	NL	µg/kg	180 U	74 U	53 U	53 U	43 U	45 U	47 U
AROCLOR-1242	NL	NL	µg/kg	180 U	74 U	53 U	53 U	43 U	45 U	47 U
AROCLOR-1248	NL	NL	µg/kg	180 U	74 U	53 U	53 U	43 U	45 U	47 U
AROCLOR-1254	NL	NL	µg/kg	180 U	74 U	53 U	53 U	43 U	45 U	47 U
AROCLOR-1260	NL	NL	µg/kg	180 U	74 U	53 U	53 U	43 U	45 U	47 U
AROCLOR-1262	NL	NL	µg/kg	180 U	74 U	53 U	53 U	43 U	45 U	47 U
AROCLOR-1268	NL	NL	µg/kg	180 U	74 U	53 U	53 U	43 U	45 U	47 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4b
Area 2 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-86	SLB10-2-86	SLB10-2-86	SLB10-2-87	SLB10-2-87	SLB10-2-87	SLB10-2-87
			Field Sample ID	SLB10-2-86-06	SLB10-2-86-12	SLB10-2-86-24	SLB10-2-87-06	SLB10-2-87-12	SLB10-2-87-36	SLB10-2-87-60
			Sample Date	10/7/2010	10/7/2010	10/7/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
			Depth Interval	0- 6	0- 12	12- 24	0- 6	0- 12	12- 36	36- 60
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	56 U	58 U	46 U	59 U	33 U	47 U	44 U
AROCLOR-1221	NL	NL	µg/kg	56 U	58 U	46 U	59 U	33 U	47 U	44 U
AROCLOR-1232	NL	NL	µg/kg	56 U	58 U	46 U	59 U	33 U	47 U	44 U
AROCLOR-1242	NL	NL	µg/kg	56 U	58 U	46 U	59 U	33 U	47 U	44 U
AROCLOR-1248	NL	NL	µg/kg	56 U	58 U	46 U	59 U	33 U	47 U	44 U
AROCLOR-1254	NL	NL	µg/kg	56 U	58 U	46 U	150	33 U	47 U	44 U
AROCLOR-1260	NL	NL	µg/kg	56 U	58 U	46 U	59 U	33 U	47 U	44 U
AROCLOR-1262	NL	NL	µg/kg	56 U	58 U	46 U	59 U	33 U	47 U	44 U
AROCLOR-1268	NL	NL	µg/kg	56 U	58 U	46 U	59 U	33 U	47 U	44 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	150	0 U	0 U	0 U

Table 3-4b
Area 2 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-87	SLB10-2-87	SLB10-2-87	SLB10-2-88	SLB10-2-88	SLB10-2-89	SLB10-2-89
			Field Sample ID	SLB10-2-87-84	SLB10-2-87-108	SLB10-2-87-120	SLB10-2-88-06	SLB10-2-88-18	SLB10-2-89-06	SLB10-2-89-16
			Sample Date	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/7/2010	10/7/2010
			Depth Interval	60- 84	84- 108	84- 120	0- 6	0- 18	0- 6	0- 16
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	44 U	46 U	56 U	83 U	48 U	75 U	63 U
AROCLOR-1221	NL	NL	µg/kg	44 U	46 U	56 U	83 U	48 U	75 U	63 U
AROCLOR-1232	NL	NL	µg/kg	44 U	46 U	56 U	83 U	48 U	75 U	63 U
AROCLOR-1242	NL	NL	µg/kg	44 U	46 U	56 U	83 U	48 U	75 U	63 U
AROCLOR-1248	NL	NL	µg/kg	44 U	46 U	56 U	83 U	48 U	75 U	63 U
AROCLOR-1254	NL	NL	µg/kg	44 U	46 U	55 J	83 U	48 U	75 U	63 U
AROCLOR-1260	NL	NL	µg/kg	44 U	46 U	56 U	83 U	48 U	75 U	63 U
AROCLOR-1262	NL	NL	µg/kg	44 U	46 U	56 U	83 U	48 U	75 U	63 U
AROCLOR-1268	NL	NL	µg/kg	44 U	46 U	56 U	83 U	48 U	75 U	63 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	55	0 U	0 U	0 U	0 U

Table 3-4b
Area 2 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-90	SLB10-2-90	SLB10-2-90	SLB10-2-90	SLB10-2-90	SLB10-2-90	SLB10-2-91
			Field Sample ID	SLB10-2-90-06	SLB10-2-90-06DP	SLB10-2-90-12	SLB10-2-90-12DP	SLB10-2-90-32	SLB10-2-90-32DP	SLB10-2-91-06
			Sample Date	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/5/2010
			Depth Interval	0- 6	0- 6	0- 12	0- 12	12- 32	12- 32	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	61 U	62 U	66 U	62 U	68 U	68 U	42 U
AROCLOR-1221	NL	NL	µg/kg	61 U	62 U	66 U	62 U	68 U	68 U	42 U
AROCLOR-1232	NL	NL	µg/kg	61 U	62 U	66 U	62 U	68 U	68 U	42 U
AROCLOR-1242	NL	NL	µg/kg	61 U	62 U	66 U	62 U	68 U	68 U	42 U
AROCLOR-1248	NL	NL	µg/kg	61 U	62 U	66 U	62 U	68 U	68 U	42 U
AROCLOR-1254	NL	NL	µg/kg	61 U	62 U	66 U	62 U	68 U	68 U	42 U
AROCLOR-1260	NL	NL	µg/kg	61 U	62 U	66 U	62 U	68 U	68 U	42 U
AROCLOR-1262	NL	NL	µg/kg	61 U	62 U	66 U	62 U	68 U	68 U	42 U
AROCLOR-1268	NL	NL	µg/kg	61 U	62 U	66 U	62 U	68 U	68 U	42 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4b
Area 2 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-91	SLB10-2-91	SLB10-2-92	SLB10-2-92	SLB10-2-92	SLB10-2-93	SLB10-2-93
			Field Sample ID	SLB10-2-91-12	SLB10-2-91-36	SLB10-2-92-06	SLB10-2-92-12	SLB10-2-92-36	SLB10-2-93-06	SLB10-2-93-12
			Sample Date	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
			Depth Interval	0- 12	12- 36	0- 6	0- 12	12- 36	0- 6	0- 12
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	57 U	58 U	42 U	49 U	44 U	41 U	39 U
AROCLOR-1221	NL	NL	µg/kg	57 U	58 U	42 U	49 U	44 U	41 U	39 U
AROCLOR-1232	NL	NL	µg/kg	57 U	58 U	42 U	49 U	44 U	41 U	39 U
AROCLOR-1242	NL	NL	µg/kg	57 U	58 U	42 U	49 U	44 U	41 U	39 U
AROCLOR-1248	NL	NL	µg/kg	57 U	58 U	42 U	49 U	44 U	41 U	39 U
AROCLOR-1254	NL	NL	µg/kg	57 U	58 U	26 J	49 U	44 U	41 U	39 U
AROCLOR-1260	NL	NL	µg/kg	57 U	58 U	42 U	49 U	44 U	41 U	39 U
AROCLOR-1262	NL	NL	µg/kg	57 U	58 U	42 U	49 U	44 U	41 U	39 U
AROCLOR-1268	NL	NL	µg/kg	57 U	58 U	42 U	49 U	44 U	41 U	39 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	26	0 U	0 U	0 U	0 U

Table 3-4b
Area 2 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-93	SLB10-2-94	SLB10-2-94	SLB10-2-94	SLB10-2-94	SLB10-2-94	SLB10-2-94
			Field Sample ID	SLB10-2-93-41	SLB10-2-94-06	SLB10-2-94-12	SLB10-2-94-36	SLB10-2-94-60	SLB10-2-94-84	SLB10-2-94-96
			Sample Date	10/6/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
			Depth Interval	12- 41	0- 6	0- 12	12- 36	36- 60	60- 84	60- 96
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	46 U	71 U	71 U	61 U	41 U	41 U	42 U
AROCLOR-1221	NL	NL	µg/kg	46 U	71 U	71 U	61 U	41 U	41 U	42 U
AROCLOR-1232	NL	NL	µg/kg	46 U	71 U	71 U	61 U	41 U	41 U	42 U
AROCLOR-1242	NL	NL	µg/kg	46 U	71 U	71 U	61 U	41 U	41 U	42 U
AROCLOR-1248	NL	NL	µg/kg	46 U	71 U	71 U	61 U	41 U	41 U	42 U
AROCLOR-1254	NL	NL	µg/kg	46 U	71 U	71 U	61 U	41 U	41 U	42 U
AROCLOR-1260	NL	NL	µg/kg	46 U	71 U	71 U	61 U	41 U	41 U	42 U
AROCLOR-1262	NL	NL	µg/kg	46 U	71 U	71 U	61 U	41 U	41 U	42 U
AROCLOR-1268	NL	NL	µg/kg	46 U	71 U	71 U	61 U	41 U	41 U	42 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4b
Area 2 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-95	SLB10-2-95	SLB10-2-95	SLB10-2-95	SLB10-2-95	SLB10-2-96	SLB10-2-96
			Field Sample ID	SLB10-2-95-06	SLB10-2-95-12	SLB10-2-95-36	SLB10-2-95-60	SLB10-2-95-84	SLB10-2-96-06	SLB10-2-96-12
			Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
			Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	0- 6	0- 12
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	87 U	69 U	66 U	63 U	43 U	53 U	52 U
AROCLOR-1221	NL	NL	µg/kg	87 U	69 U	66 U	63 U	43 U	53 U	52 U
AROCLOR-1232	NL	NL	µg/kg	87 U	69 U	66 U	63 U	43 U	53 U	52 U
AROCLOR-1242	NL	NL	µg/kg	87 U	69 U	66 U	63 U	43 U	53 U	52 U
AROCLOR-1248	NL	NL	µg/kg	87 U	69 U	66 U	63 U	43 U	53 U	52 U
AROCLOR-1254	NL	NL	µg/kg	87 U	69 U	66 U	63 U	43 U	53 U	52 U
AROCLOR-1260	NL	NL	µg/kg	87 U	69 U	66 U	63 U	43 U	53 U	52 U
AROCLOR-1262	NL	NL	µg/kg	87 U	69 U	66 U	63 U	43 U	53 U	52 U
AROCLOR-1268	NL	NL	µg/kg	87 U	69 U	66 U	63 U	43 U	53 U	52 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4b
Area 2 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-96	SLB10-2-96	SLB10-2-96	SLB10-2-97	SLB10-2-97	SLB10-2-97	SLB10-2-97
			Field Sample ID	SLB10-2-96-36	SLB10-2-96-60	SLB10-2-96-84	SLB10-2-97-06	SLB10-2-97-12	SLB10-2-97-36	SLB10-2-97-60
			Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
			Depth Interval	12- 36	36- 60	60- 84	0- 6	0- 12	12- 36	36- 60
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	47 U	47 U	54 U	61 U	71 U	61 U	50 U
AROCLOR-1221	NL	NL	µg/kg	47 U	47 U	54 U	61 U	71 U	61 U	50 U
AROCLOR-1232	NL	NL	µg/kg	47 U	47 U	54 U	61 U	71 U	61 U	50 U
AROCLOR-1242	NL	NL	µg/kg	47 U	47 U	54 U	61 U	71 U	61 U	50 U
AROCLOR-1248	NL	NL	µg/kg	47 U	47 U	54 U	61 U	71 U	61 U	50 U
AROCLOR-1254	NL	NL	µg/kg	47 U	47 U	54 U	61 U	71 U	61 U	50 U
AROCLOR-1260	NL	NL	µg/kg	47 U	47 U	54 U	61 U	71 U	61 U	50 U
AROCLOR-1262	NL	NL	µg/kg	47 U	47 U	54 U	61 U	71 U	61 U	50 U
AROCLOR-1268	NL	NL	µg/kg	47 U	47 U	54 U	61 U	71 U	61 U	50 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4b
Area 2 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-97
			Field Sample ID	SLB10-2-97-75
			Sample Date	10/7/2010
			Depth Interval	60- 75
Chemical	Level I ¹	Level II ²	Unit	
AROCLOR-1016	NL	NL	µg/kg	45 U
AROCLOR-1221	NL	NL	µg/kg	45 U
AROCLOR-1232	NL	NL	µg/kg	45 U
AROCLOR-1242	NL	NL	µg/kg	45 U
AROCLOR-1248	NL	NL	µg/kg	45 U
AROCLOR-1254	NL	NL	µg/kg	45 U
AROCLOR-1260	NL	NL	µg/kg	45 U
AROCLOR-1262	NL	NL	µg/kg	45 U
AROCLOR-1268	NL	NL	µg/kg	45 U
TOTAL PCBs	60	680	µg/kg	0 U

Notes:

Result exceeds SQTs - Level I.

Result exceeds SQTs - Level II.

ID = Identification

J = Estimated Value

NL = Not Listed

PCB = Polychlorinated Biphenyls

SQT = Sediment Quality Targets

U = Not Detected

µg/kg = Microgram per kilogram

Total PCBs = Sum of Detections

¹ Evaluation of Numerical SQTs-St Louis River AOC-Level I

² Evaluation of Numerical SQTs-St Louis River AOC-Level II

Table 3-4c
Area 3 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-02	SLB10-3-02	SLB10-3-02	SLB10-3-02	SLB10-3-02	SLB10-3-03	SLB10-3-03
			Field Sample ID	SLB10-3-02-06	SLB10-3-02-12	SLB10-3-02-36	SLB10-3-02-60	SLB10-3-02-84	SLB10-3-03-06	SLB10-3-03-12
			Sample Date	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010
			Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	0- 6	0- 12
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	70 U	59 U	64 U	46 U	52 U	44 U	53 U
AROCLOR-1221	NL	NL	µg/kg	70 U	59 U	64 U	46 U	52 U	44 U	53 U
AROCLOR-1232	NL	NL	µg/kg	70 U	59 U	64 U	46 U	52 U	44 U	53 U
AROCLOR-1242	NL	NL	µg/kg	70 U	59 U	64 U	46 U	52 U	44 U	53 U
AROCLOR-1248	NL	NL	µg/kg	70 U	59 U	64 U	46 U	52 U	44 U	53 U
AROCLOR-1254	NL	NL	µg/kg	70 U	59 U	64 U	46 U	52 U	44 U	53 U
AROCLOR-1260	NL	NL	µg/kg	70 U	59 U	64 U	46 U	52 U	44 U	53 U
AROCLOR-1262	NL	NL	µg/kg	70 U	59 U	64 U	46 U	52 U	44 U	53 U
AROCLOR-1268	NL	NL	µg/kg	70 U	59 U	64 U	46 U	52 U	44 U	53 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4c
Area 3 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-03	SLB10-3-03	SLB10-3-04	SLB10-3-04	SLB10-3-04	SLB10-3-04	SLB10-3-05
			Field Sample ID	SLB10-3-03-36	SLB10-3-03-56	SLB10-3-04-06	SLB10-3-04-12	SLB10-3-04-36	SLB10-3-04-60	SLB10-3-05-06
			Sample Date	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/15/2010
			Depth Interval	12- 36	36- 56	0- 6	0- 12	12- 36	36- 60	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	49 U	52 U	41 U	38 U	39 U	40 U	60 U
AROCLOR-1221	NL	NL	µg/kg	49 U	52 U	41 U	38 U	39 U	40 U	60 U
AROCLOR-1232	NL	NL	µg/kg	49 U	52 U	41 U	38 U	39 U	40 U	60 U
AROCLOR-1242	NL	NL	µg/kg	49 U	52 U	41 U	38 U	39 U	40 U	60 U
AROCLOR-1248	NL	NL	µg/kg	49 U	52 U	41 U	38 U	39 U	40 U	60 U
AROCLOR-1254	NL	NL	µg/kg	49 U	52 U	41 U	38 U	39 U	40 U	60 U
AROCLOR-1260	NL	NL	µg/kg	49 U	52 U	41 U	38 U	39 U	40 U	60 U
AROCLOR-1262	NL	NL	µg/kg	49 U	52 U	41 U	38 U	39 U	40 U	60 U
AROCLOR-1268	NL	NL	µg/kg	49 U	52 U	41 U	38 U	39 U	40 U	60 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4c
Area 3 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-05	SLB10-3-05	SLB10-3-05	SLB10-3-05	SLB10-3-05	SLB10-3-06	SLB10-3-06		
			Field Sample ID	SLB10-3-05-12	SLB10-3-05-36	SLB10-3-05-60	SLB10-3-05-84	SLB10-3-05-116	SLB10-3-06-06	SLB10-3-06-06DP		
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010		
			Depth Interval	0- 12	12- 36	36- 60	60- 84	84- 116	0- 6	0- 6		
Chemical	Level I ¹	Level II ²	Unit									
AROCLOR-1016	NL	NL	µg/kg	56 U	50 U	46 U	46 U	50 U	57 U	54 U		
AROCLOR-1221	NL	NL	µg/kg	56 U	50 U	46 U	46 U	50 U	57 U	54 U		
AROCLOR-1232	NL	NL	µg/kg	56 U	50 U	46 U	46 U	50 U	57 U	54 U		
AROCLOR-1242	NL	NL	µg/kg	56 U	50 U	46 U	46 U	50 U	57 U	54 U		
AROCLOR-1248	NL	NL	µg/kg	56 U	50 U	46 U	46 U	50 U	57 U	54 U		
AROCLOR-1254	NL	NL	µg/kg	56 U	50 U	46 U	46 U	50 U	57 U	54 U		
AROCLOR-1260	NL	NL	µg/kg	56 U	50 U	46 U	46 U	50 U	57 U	2.7 J		
AROCLOR-1262	NL	NL	µg/kg	56 U	50 U	46 U	46 U	50 U	57 U	54 U		
AROCLOR-1268	NL	NL	µg/kg	56 U	50 U	46 U	46 U	50 U	57 U	54 U		
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	2.7		

Table 3-4c
Area 3 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-06	SLB10-3-06	SLB10-3-06	SLB10-3-07	SLB10-3-07	SLB10-3-07	SLB10-3-08
			Field Sample ID	SLB10-3-06-12	SLB10-3-06-36	SLB10-3-06-48	SLB10-3-07-06	SLB10-3-07-12	SLB10-3-07-33	SLB10-3-08-06
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010
			Depth Interval	0- 12	12- 36	36- 48	0- 6	0- 12	12- 33	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	48 U	50 U	49 U	100 U	61 UJ	52 UJ	57 UJ
AROCLOR-1221	NL	NL	µg/kg	48 U	50 U	49 U	100 U	61 UJ	52 UJ	57 UJ
AROCLOR-1232	NL	NL	µg/kg	48 U	50 U	49 U	100 U	61 UJ	52 UJ	57 UJ
AROCLOR-1242	NL	NL	µg/kg	48 U	50 U	49 U	100 U	61 UJ	52 UJ	57 UJ
AROCLOR-1248	NL	NL	µg/kg	48 U	50 U	49 U	100 U	61 UJ	52 UJ	57 UJ
AROCLOR-1254	NL	NL	µg/kg	48 U	50 U	49 U	100 U	61 UJ	52 UJ	57 UJ
AROCLOR-1260	NL	NL	µg/kg	48 U	50 U	49 U	100 U	61 UJ	52 UJ	57 UJ
AROCLOR-1262	NL	NL	µg/kg	48 U	50 U	49 U	100 U	61 UJ	52 UJ	57 UJ
AROCLOR-1268	NL	NL	µg/kg	48 U	50 U	49 U	100 U	61 UJ	52 UJ	57 UJ
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4c
Area 3 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-08	SLB10-3-08	SLB10-3-08	SLB10-3-08	SLB10-3-08	SLB10-3-08	SLB10-3-09	
			Field Sample ID	SLB10-3-08-06DP	SLB10-3-08-12	SLB10-3-08-36	SLB10-3-08-60	SLB10-3-08-84	SLB10-3-08-104	SLB10-3-09-06	
			Sample Date	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	
			Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	84- 104	0- 6	
Chemical	Level I ¹	Level II ²	Unit								
AROCLOR-1016	NL	NL	µg/kg	54 UJ	51 UJ	51 UJ	53 UJ	51 UJ	54 UJ	61 UJ	
AROCLOR-1221	NL	NL	µg/kg	54 UJ	51 UJ	51 UJ	53 UJ	51 UJ	54 UJ	61 UJ	
AROCLOR-1232	NL	NL	µg/kg	54 UJ	51 UJ	51 UJ	53 UJ	51 UJ	54 UJ	61 UJ	
AROCLOR-1242	NL	NL	µg/kg	54 UJ	51 UJ	51 UJ	53 UJ	51 UJ	54 UJ	61 UJ	
AROCLOR-1248	NL	NL	µg/kg	54 UJ	51 UJ	51 UJ	53 UJ	51 UJ	54 UJ	61 UJ	
AROCLOR-1254	NL	NL	µg/kg	54 UJ	51 UJ	51 UJ	52 J	62 J	65 J	61 UJ	
AROCLOR-1260	NL	NL	µg/kg	54 UJ	51 UJ	51 UJ	53 UJ	51 UJ	54 UJ	61 UJ	
AROCLOR-1262	NL	NL	µg/kg	54 UJ	51 UJ	51 UJ	53 UJ	51 UJ	54 UJ	61 UJ	
AROCLOR-1268	NL	NL	µg/kg	54 UJ	51 UJ	51 UJ	53 UJ	51 UJ	54 UJ	61 UJ	
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	52	62	65	0 U	

Table 3-4c
Area 3 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-09	SLB10-3-09	SLB10-3-09	SLB10-3-09	SLB10-3-09	SLB10-3-09	SLB10-3-10
			Field Sample ID	SLB10-3-09-06DP	SLB10-3-09-12	SLB10-3-09-36	SLB10-3-09-60	SLB10-3-09-84	SLB10-3-09-115	SLB10-3-10-06
			Sample Date	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/15/2010
			Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	84- 115	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	65 UJ	51 UJ	52 UJ	51 UJ	46 UJ	50 UJ	68 U
AROCLOR-1221	NL	NL	µg/kg	65 UJ	51 UJ	52 UJ	51 UJ	46 UJ	50 UJ	68 U
AROCLOR-1232	NL	NL	µg/kg	65 UJ	51 UJ	52 UJ	51 UJ	46 UJ	50 UJ	68 U
AROCLOR-1242	NL	NL	µg/kg	65 UJ	51 UJ	52 UJ	51 UJ	46 UJ	50 UJ	68 U
AROCLOR-1248	NL	NL	µg/kg	65 UJ	51 UJ	52 UJ	51 UJ	46 UJ	50 UJ	68 U
AROCLOR-1254	NL	NL	µg/kg	65 UJ	44 J	39 J	54 J	46 UJ	50 UJ	68 U
AROCLOR-1260	NL	NL	µg/kg	65 UJ	51 UJ	52 UJ	51 UJ	46 UJ	50 UJ	68 U
AROCLOR-1262	NL	NL	µg/kg	65 UJ	51 UJ	52 UJ	51 UJ	46 UJ	50 UJ	68 U
AROCLOR-1268	NL	NL	µg/kg	65 UJ	51 UJ	52 UJ	51 UJ	46 UJ	50 UJ	68 U
TOTAL PCBs	60	680	µg/kg	0 U	44	39	54	0 U	0 U	0 U

Table 3-4c
Area 3 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-10	SLB10-3-10	SLB10-3-10	SLB10-3-10	SLB10-3-11	SLB10-3-11	SLB10-3-11
			Field Sample ID	SLB10-3-10-12	SLB10-3-10-36	SLB10-3-10-60	SLB10-3-10-86	SLB10-3-11-06	SLB10-3-11-06DP	SLB10-3-11-12
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	0- 12	12- 36	36- 60	60- 86	0- 6	0- 6	0- 12
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	46 U	47 U	45 U	44 U	67 U	67 U	54 U
AROCLOR-1221	NL	NL	µg/kg	46 U	47 U	45 U	44 U	67 U	67 U	54 U
AROCLOR-1232	NL	NL	µg/kg	46 U	47 U	45 U	44 U	67 U	67 U	54 U
AROCLOR-1242	NL	NL	µg/kg	46 U	47 U	45 U	44 U	67 U	67 U	54 U
AROCLOR-1248	NL	NL	µg/kg	46 U	47 U	45 U	44 U	67 U	67 U	54 U
AROCLOR-1254	NL	NL	µg/kg	46 U	47 U	45 U	44 U	67 U	67 U	54 U
AROCLOR-1260	NL	NL	µg/kg	46 U	47 U	45 U	44 U	6.9 J	67 U	9.7 J
AROCLOR-1262	NL	NL	µg/kg	46 U	47 U	45 U	44 U	67 U	67 U	54 U
AROCLOR-1268	NL	NL	µg/kg	46 U	47 U	45 U	44 U	67 U	67 U	54 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	6.9	0 U	9.7

Table 3-4c
Area 3 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-11	SLB10-3-11	SLB10-3-12	SLB10-3-12	SLB10-3-12	SLB10-3-13	SLB10-3-13
			Field Sample ID	SLB10-3-11-36	SLB10-3-11-50	SLB10-3-12-06	SLB10-3-12-06DP	SLB10-3-12-10	SLB10-3-13-06	SLB10-3-13-06DP
			Sample Date	10/15/2010	10/15/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010
			Depth Interval	12- 36	36- 50	0- 6	0- 6	0- 10	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	52 U	51 U	45 U	48 U	42 U	44 U	45 U
AROCLOR-1221	NL	NL	µg/kg	52 U	51 U	45 U	48 U	42 U	44 U	45 U
AROCLOR-1232	NL	NL	µg/kg	52 U	51 U	45 U	48 U	42 U	44 U	45 U
AROCLOR-1242	NL	NL	µg/kg	52 U	51 U	45 U	48 U	42 U	44 U	45 U
AROCLOR-1248	NL	NL	µg/kg	52 U	51 U	45 U	48 U	42 U	44 U	45 U
AROCLOR-1254	NL	NL	µg/kg	52 U	51 U	45 U	48 U	42 U	44 U	45 U
AROCLOR-1260	NL	NL	µg/kg	52 U	51 U	2.8 J	48 U	42 U	44 U	45 U
AROCLOR-1262	NL	NL	µg/kg	52 U	51 U	45 U	48 U	42 U	44 U	45 U
AROCLOR-1268	NL	NL	µg/kg	52 U	51 U	45 U	48 U	42 U	44 U	45 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	2.8	0 U	0 U	0 U	0 U

Table 3-4c
Area 3 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-13	SLB10-3-14	SLB10-3-14	SLB10-3-14	SLB10-3-15	SLB10-3-15	SLB10-3-15
			Field Sample ID	SLB10-3-13-12	SLB10-3-14-06	SLB10-3-14-12	SLB10-3-14-42	SLB10-3-15-06	SLB10-3-15-06DP	SLB10-3-15-12
			Sample Date	10/16/2010	10/14/2010	10/14/2010	10/14/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	0- 12	0- 6	0- 12	12- 42	0- 6	0- 6	0- 12
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	40 U	40 U	39 U	46 U	41 U	39 U	36 U
AROCLOR-1221	NL	NL	µg/kg	40 U	40 U	39 U	46 U	41 U	39 U	36 U
AROCLOR-1232	NL	NL	µg/kg	40 U	40 U	39 U	46 U	41 U	39 U	36 U
AROCLOR-1242	NL	NL	µg/kg	40 U	40 U	39 U	46 U	41 U	39 U	36 U
AROCLOR-1248	NL	NL	µg/kg	40 U	40 U	39 U	46 U	41 U	39 U	36 U
AROCLOR-1254	NL	NL	µg/kg	40 U	40 U	39 U	46 U	41 U	39 U	36 U
AROCLOR-1260	NL	NL	µg/kg	40 U	40 U	39 U	46 U	41 U	39 U	36 U
AROCLOR-1262	NL	NL	µg/kg	40 U	40 U	39 U	46 U	41 U	39 U	36 U
AROCLOR-1268	NL	NL	µg/kg	40 U	40 U	39 U	46 U	41 U	39 U	36 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	0 U

Table 3-4c
Area 3 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-15	SLB10-3-16	SLB10-3-16	SLB10-3-16	SLB10-3-16	SLB10-3-17	SLB10-3-17
			Field Sample ID	SLB10-3-15-32	SLB10-3-16-06	SLB10-3-16-12	SLB10-3-16-36	SLB10-3-16-71	SLB10-3-17-06	SLB10-3-17-06DP
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	12- 32	0- 6	0- 12	12- 36	36- 71	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	40 U	59 U	61 U	46 U	65 U	55 U	56 U
AROCLOR-1221	NL	NL	µg/kg	40 U	59 U	61 U	46 U	65 U	55 U	56 U
AROCLOR-1232	NL	NL	µg/kg	40 U	59 U	61 U	46 U	65 U	55 U	56 U
AROCLOR-1242	NL	NL	µg/kg	40 U	59 U	61 U	46 U	65 U	55 U	56 U
AROCLOR-1248	NL	NL	µg/kg	40 U	59 U	61 U	46 U	65 U	55 U	56 U
AROCLOR-1254	NL	NL	µg/kg	40 U	59 U	61 U	46 U	65 U	55 U	56 U
AROCLOR-1260	NL	NL	µg/kg	40 U	59 U	61 U	46 U	65 U	55 U	5.1 J
AROCLOR-1262	NL	NL	µg/kg	40 U	59 U	61 U	46 U	65 U	55 U	56 U
AROCLOR-1268	NL	NL	µg/kg	40 U	59 U	61 U	46 U	65 U	55 U	56 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U	5.1

Table 3-4c
Area 3 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-17	SLB10-3-17	SLB10-3-17	SLB10-3-18	SLB10-3-18	SLB10-3-18	SLB10-3-18
			Field Sample ID	SLB10-3-17-12	SLB10-3-17-36	SLB10-3-17-69	SLB10-3-18-06	SLB10-3-18-06DP	SLB10-3-18-12	SLB10-3-18-36
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	0- 12	12- 36	36- 69	0- 6	0- 6	0- 12	12- 36
Chemical	Level I ¹	Level II ²	Unit							
AROCLOR-1016	NL	NL	µg/kg	50 U	46 U	47 U	39 U	42 U	46 U	45 U
AROCLOR-1221	NL	NL	µg/kg	50 U	46 U	47 U	39 U	42 U	46 U	45 U
AROCLOR-1232	NL	NL	µg/kg	50 U	46 U	47 U	39 U	42 U	46 U	45 U
AROCLOR-1242	NL	NL	µg/kg	50 U	46 U	47 U	39 U	42 U	46 U	45 U
AROCLOR-1248	NL	NL	µg/kg	50 U	46 U	47 U	39 U	42 U	46 U	45 U
AROCLOR-1254	NL	NL	µg/kg	50 U	46 U	47 U	39 U	42 U	28 J	45 U
AROCLOR-1260	NL	NL	µg/kg	50 U	46 U	47 U	3.3 J	3.5 J	32 J	45 U
AROCLOR-1262	NL	NL	µg/kg	50 U	46 U	47 U	39 U	42 U	46 U	45 U
AROCLOR-1268	NL	NL	µg/kg	50 U	46 U	47 U	39 U	42 U	46 U	45 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	3.3	3.5	60	0 U

Table 3-4c
Area 3 Sediment Sample Analytical Results - PCB Aroclors
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-18	SLB10-3-18	SLB10-3-19	SLB10-3-19	SLB10-3-19	SLB10-3-19
			Field Sample ID	SLB10-3-18-60	SLB10-3-18-95	SLB10-3-19-06	SLB10-3-19-12	SLB10-3-19-36	SLB10-3-19-69
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
			Depth Interval	36- 60	60- 95	0- 6	0- 12	12- 36	36- 69
Chemical	Level I ¹	Level II ²	Unit						
AROCLOR-1016	NL	NL	µg/kg	47 U	45 U	50 U	51 U	50 U	48 U
AROCLOR-1221	NL	NL	µg/kg	47 U	45 U	50 U	51 U	50 U	48 U
AROCLOR-1232	NL	NL	µg/kg	47 U	45 U	50 U	51 U	50 U	48 U
AROCLOR-1242	NL	NL	µg/kg	47 U	45 U	50 U	51 U	50 U	48 U
AROCLOR-1248	NL	NL	µg/kg	47 U	45 U	50 U	51 U	50 U	48 U
AROCLOR-1254	NL	NL	µg/kg	47 U	45 U	50 U	51 U	50 U	48 U
AROCLOR-1260	NL	NL	µg/kg	47 U	45 U	50 U	51 U	50 U	48 U
AROCLOR-1262	NL	NL	µg/kg	47 U	45 U	50 U	51 U	50 U	48 U
AROCLOR-1268	NL	NL	µg/kg	47 U	45 U	50 U	51 U	50 U	48 U
TOTAL PCBs	60	680	µg/kg	0 U	0 U	0 U	0 U	0 U	0 U

Notes:

Result exceeds SQTs - Level I.

Result exceeds SQTs - Level II.

ID = Identification

J = Estimated Value

NL = Not Listed

PCB = Polychlorinated Biphenyls

SQT = Sediment Quality Targets

U = Not Detected

µg/kg = Microgram per kilogram

Total PCBs = Sum of Detections

¹ Evaluation of Numerical SQTs-St Louis River AOC-Level I

² Evaluation of Numerical SQTs-St Louis River AOC-Level II

Table 3-5a
Area 1 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-20	SLB10-1-24	SLB10-1-24	SLB10-1-26	SLB10-1-29	SLB10-1-31	
	Field Sample ID		SLB10-1-20-06	SLB10-1-24-06	SLB10-1-24-06DP	SLB10-1-26-06	SLB10-1-29-06	SLB10-1-31-06	
	Sample Date		10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/13/2010	10/16/2010	
	Depth Interval		0- 6	0- 6	0- 6	0- 6	0- 6	0- 6	
Level I ¹	Level II ²	Unit							
PCB-1	NL	NL	pg/g	95.8	102	95	760	2.8 U	67
PCB-10	NL	NL	pg/g	7.7	4.6 U	8.5 J	51	2.8 U	2.8
PCB-100	NL	NL	pg/g	410	4.6 U	104	8.9 U	2.8 U	40.4
PCB-101	NL	NL	pg/g	21200	2650	2620	38000	142	1430
PCB-102	NL	NL	pg/g	410	1.2	104	8.9 U	2.8 U	40.4
PCB-103	NL	NL	pg/g	170	23.9	31 J	1980	2.8 U	13
PCB-104	NL	NL	pg/g	16.9	0.59	3 U	171	2.8 U	2.5 U
PCB-105	NL	NL	pg/g	5320	1700	1300	8.9 U	35	280
PCB-106	NL	NL	pg/g	3.3 U	0.89	3 U	8.9 U	2.8 U	8.2 J
PCB-107	NL	NL	pg/g	3.3 U	4.6 U	0.24	0.71	6.9 J	2.5 U
PCB-108	NL	NL	pg/g	971	57.3	199	4000 J	3.7 J	2.5 U
PCB-109	NL	NL	pg/g	5560	3190	2750	8570	37.5	682
PCB-11	NL	NL	pg/g	158	67 J	70 J	450	2.8 UJ	29 J
PCB-110	NL	NL	pg/g	25100	3500	3210	38600	179	1540
PCB-111	NL	NL	pg/g	190	4.6 U	0.32	8.9 U	2.8 U	15
PCB-112	NL	NL	pg/g	3.3 U	0.71	3 U	138	2.8 U	2.5 U
PCB-113	NL	NL	pg/g	21200	2650	2620	38000	142	1430
PCB-114	NL	NL	pg/g	3.3 U	4.6 U	0.5	1.5	2.8 U	2.5 U
PCB-115	NL	NL	pg/g	3.3 U	4.6 U	3 U	8.9 U	2.8 U	2.5 U
PCB-116	NL	NL	pg/g	25100	3500	3210	38600	179	1540
PCB-117	NL	NL	pg/g	25100	3500	3210	38600	179	1540
PCB-118	NL	NL	pg/g	110 J	41.8	40.3	280 J	98	8.2 J
PCB-119	NL	NL	pg/g	5560	3190	2750	8570	37.5	682
PCB-12	NL	NL	pg/g	86	49.9	48 J	370	2.8 U	21
PCB-120	NL	NL	pg/g	15.3	4.6 U	5.5	99.3	2.8 U	2.5 U
PCB-121	NL	NL	pg/g	6.1	0.32	0.21	0.62	2.8 U	2.5 U
PCB-122	NL	NL	pg/g	220	102	85.3	751	2.8 U	18 J
PCB-123	NL	NL	pg/g	140	4420	6.5	196	2.8 U	810 J
PCB-124	NL	NL	pg/g	971	57.3	199	3980	3.7	2.5 U
PCB-125	NL	NL	pg/g	5560	3190	2750	8570	37.5	682
PCB-126	NL	NL	pg/g	67	10.4	16	1.7	2.8 U	4.7
PCB-127	NL	NL	pg/g	3.3 U	4.6 U	3 U	110 J	2.8 U	2.5 U
PCB-128	NL	NL	pg/g	3900 J	1100	870 J	1.2	32 J	200
PCB-129	NL	NL	pg/g	33100	3900 J	3900	62300	290 J	2200
PCB-13	NL	NL	pg/g	86	49.9	48.5	370	2.8 U	20.7
PCB-130	NL	NL	pg/g	1810	420	393	1.1	17 J	110
PCB-131	NL	NL	pg/g	301	75.9	70 J	1330	2.8 U	16
PCB-132	NL	NL	pg/g	10000 J	2320	2100 J	1.3	88 J	640
PCB-133	NL	NL	pg/g	416	83 J	94 J	0.71	2.8 U	30
PCB-134	NL	NL	pg/g	1400 J	318	310 J	5200 J	12 J	89 J
PCB-135	NL	NL	pg/g	12500	2360	2670	29000 J	120 J	960 J
PCB-136	NL	NL	pg/g	3970	660	756	9800 J	34 J	240
PCB-137	NL	NL	pg/g	1200	600	249	1.9	19 J	45
PCB-138	NL	NL	pg/g	33100	3920	3900	62300	292	2210
PCB-139	NL	NL	pg/g	354	89 J	83 J	8.9 U	3.3 J	17
PCB-14	NL	NL	pg/g	3.3 U	4.6 U	3 U	5.1	2.8 U	2.5 U
PCB-140	NL	NL	pg/g	354	89.2	83.4	0.85	3.3	17.2
PCB-141	NL	NL	pg/g	8540	1560	1700 J	19000 J	62 J	560
PCB-142	NL	NL	pg/g	0.36	0.5	3 U	1000 J	2.8 U	2.5 U
PCB-143	NL	NL	pg/g	1450	318	312	5210	12.5	89.5
PCB-144	NL	NL	pg/g	1500 J	310 J	359	6140	13 J	120
PCB-145	NL	NL	pg/g	0.28	0.39	3 U	8.9 U	2.8 U	2.5 U
PCB-146	NL	NL	pg/g	4400 J	990	1000 J	0.62	52 J	350
PCB-147	NL	NL	pg/g	29200	3000 J	3410	66000 J	270 J	2000
PCB-148	NL	NL	pg/g	51 J	7.4	8.4	430	2.8 U	3.7
PCB-149	NL	NL	pg/g	29200	2960	3410	66300	275	2000
PCB-15	NL	NL	pg/g	490	310	328	1900	11	88
PCB-150	NL	NL	pg/g	74	6.8	7.8	875	2.8 U	3.8
PCB-151	NL	NL	pg/g	12500	2360	2670	29000	123	965
PCB-152	NL	NL	pg/g	80	6.5	7.1	8.9 U	2.8 U	4
PCB-153	NL	NL	pg/g	29000 J	3070	3400 J	2.2	280 J	2100
PCB-154	NL	NL	pg/g	330 J	55 J	64 J	1700	4.4 J	23
PCB-155	NL	NL	pg/g	3.3 U	0.48	0.31	8.9 U	2.8 U	2.5 U
PCB-156	NL	NL	pg/g	2300	800	610	8930	20	160
PCB-157	NL	NL	pg/g	2300	803	612	8930	20.5	163
PCB-158	NL	NL	pg/g	2580	724	691	1.1	24 J	190
PCB-159	NL	NL	pg/g	230	48.9	66 J	1100 J	3.6 J	2.5 U
PCB-16	NL	NL	pg/g	162	335	730 J	889	2.8 U	66
PCB-160	NL	NL	pg/g	1	1.4	0.9	89000 J	2.8 U	2.5 U
PCB-161	NL	NL	pg/g	0.36	0.5	0.32	98.2	2.8 U	2.5 U
PCB-162	NL	NL	pg/g	71	21	19 J	790 J	2.8 U	2.5 U
PCB-163	NL	NL	pg/g	33100	3920	3900	62300	292	2210

Table 3-5a
Area 1 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-20	SLB10-1-24	SLB10-1-24	SLB10-1-26	SLB10-1-29	SLB10-1-31
			Field Sample ID	SLB10-1-20-06	SLB10-1-24-06	SLB10-1-24-06DP	SLB10-1-26-06	SLB10-1-29-06	SLB10-1-31-06
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/13/2010	10/16/2010
			Depth Interval	0- 6	0- 6	0- 6	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit						
PCB-164	NL	NL	pg/g	1860	0.98	502	1.9	0.59	155
PCB-165	NL	NL	pg/g	49	4.6 U	3 U	210	2.8 U	2.5 U
PCB-166	NL	NL	pg/g	3900	1060	871	1.2	32.1	205
PCB-167	NL	NL	pg/g	781	260	210	3700 J	7.6	62
PCB-168	NL	NL	pg/g	29100	3070	3450	2.2	277	2110
PCB-169	NL	NL	pg/g	52.1	9.1	3 U	8.9 U	2.8 U	2.5 U
PCB-17	NL	NL	pg/g	170	292	480 J	249	4.3 J	53
PCB-170	NL	NL	pg/g	11000 J	1900	2100 J	22700	94 J	650
PCB-171	NL	NL	pg/g	2620	584	698	7340	30 J	200
PCB-172	NL	NL	pg/g	1500	350	421	6700 J	19 J	130
PCB-173	NL	NL	pg/g	2620	584	698	7340	30	201
PCB-174	NL	NL	pg/g	16700	2400	2680	41500	130 J	840
PCB-175	NL	NL	pg/g	270	71	89.2	584	3.3 J	29
PCB-176	NL	NL	pg/g	1120	210	245	5900	15 J	80
PCB-177	NL	NL	pg/g	7720	1200	1500 J	16600	75 J	460
PCB-178	NL	NL	pg/g	2100	390	480 J	6010	28 J	170
PCB-179	NL	NL	pg/g	5600 J	776	930 J	13700	59 J	330
PCB-18	NL	NL	pg/g	360	630	1140	2310	8.4 J	120
PCB-180	NL	NL	pg/g	26800	4500	3000	60300	250 J	1700
PCB-181	NL	NL	pg/g	0.25	11.4	0.22	8.9 U	2.8 U	2.5 U
PCB-182	NL	NL	pg/g	0.36	0.5	3 U	8.9 U	2.8 U	2.5 U
PCB-183	NL	NL	pg/g	4800 J	1200	1400 J	11000	66 J	410
PCB-184	NL	NL	pg/g	4.2	4.6 U	3 U	12.7	2.8 U	2.5 U
PCB-185	NL	NL	pg/g	1600	220	320 J	8.9 U	22 J	100
PCB-186	NL	NL	pg/g	0.38	0.52	0.34	8.9 U	2.8 U	2.5 U
PCB-187	NL	NL	pg/g	15500	2350	2900 J	1.1	170 J	950
PCB-188	NL	NL	pg/g	19.4	4.6 U	0.34	143	2.8 U	2.5 U
PCB-189	NL	NL	pg/g	250	59	67	970	3.4	22
PCB-19	NL	NL	pg/g	33.1	65	120	130	2.8 U	10
PCB-190	NL	NL	pg/g	1400	359	330	6210	16 J	120
PCB-191	NL	NL	pg/g	300	73.2	81	1200	2.8 U	25
PCB-192	NL	NL	pg/g	3.3 U	0.36	3 U	0.71	2.8 U	2.5 U
PCB-193	NL	NL	pg/g	26800	4540	3040	60300	248	1690
PCB-194	NL	NL	pg/g	5750	1010	1200 J	13000 J	60 J	330
PCB-195	NL	NL	pg/g	2010	416	493	5650	27 J	140
PCB-196	NL	NL	pg/g	2140	500	590 J	7160	31 J	170
PCB-197	NL	NL	pg/g	190	30	41.6	1.4	2.8 U	10
PCB-198	NL	NL	pg/g	6910	1100	1140	15700	71 J	370
PCB-199	NL	NL	pg/g	6910	1140	1140	15700	71.2	368
PCB-2	NL	NL	pg/g	48.1	63.3	69 J	3.8	2.8 U	21
PCB-20	NL	NL	pg/g	1040	1020	1600 J	4700 J	21 J	190
PCB-200	NL	NL	pg/g	640	138	151	4020	9.4 J	42
PCB-201	NL	NL	pg/g	479	120	137	2900	8.5 J	37
PCB-202	NL	NL	pg/g	781	170	200	3740	12	52
PCB-203	NL	NL	pg/g	2770	680	780 J	8880	41 J	210
PCB-204	NL	NL	pg/g	0.2	4.6 U	0.18	8.9 U	2.8 U	2.5 U
PCB-205	NL	NL	pg/g	198	41	47.6	850	2.8 U	14
PCB-206	NL	NL	pg/g	1100	375	370	4400	20	71
PCB-207	NL	NL	pg/g	140	44.3	46.4	640	2.8 U	9.1
PCB-208	NL	NL	pg/g	227	80.5	83.1	900	4.8	16
PCB-209	NL	NL	pg/g	240	72	67	510	6.4	14
PCB-21	NL	NL	pg/g	420	505	800 J	2100	9.9 J	79
PCB-22	NL	NL	pg/g	306	374	641	1430	6.7 J	59
PCB-23	NL	NL	pg/g	0.33	0.46	0.3	8.9 U	2.8 U	2.5 U
PCB-24	NL	NL	pg/g	0.27	4.6 U	8.2	535	2.8 U	2.5 U
PCB-25	NL	NL	pg/g	120 J	0.66	130 J	418	2.8 U	16
PCB-26	NL	NL	pg/g	224	180	278	760	2.8 U	37
PCB-27	NL	NL	pg/g	35.6	57	85.4	1.2	2.8 U	10
PCB-28	NL	NL	pg/g	1040	1020	1560	4670	21	192
PCB-29	NL	NL	pg/g	224	180	278	760	2.8 U	37.4
PCB-3	NL	NL	pg/g	140	110	93.2	812	3.5	54
PCB-30	NL	NL	pg/g	364	633	1140	2310	8.4	125
PCB-31	NL	NL	pg/g	805	888	1500 J	3200 J	16 J	170
PCB-32	NL	NL	pg/g	210	210	360 J	2.8	3.6 J	42
PCB-33	NL	NL	pg/g	417	505	804	2090	9.9	79.1
PCB-34	NL	NL	pg/g	5.1	0.46	5.7	8.9 U	2.8 U	2.5 U
PCB-35	NL	NL	pg/g	26.4	17.8	21 J	78	2.8 U	3.2
PCB-36	NL	NL	pg/g	22	6.4	15.2	100	2.8 U	2.5 U
PCB-37	NL	NL	pg/g	370	330	538	950	7.5	52
PCB-38	NL	NL	pg/g	0.63	4.6 U	3 U	8.9 U	2.8 U	2.5 U
PCB-39	NL	NL	pg/g	3.3 U	0.75	5.1	8.9 U	2.8 U	2.5 U
PCB-4	NL	NL	pg/g	82.3	140	170	473	2.8 U	39

Table 3-5a
Area 1 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-20	SLB10-1-24	SLB10-1-24	SLB10-1-26	SLB10-1-29	SLB10-1-31	
	Field Sample ID		SLB10-1-20-06	SLB10-1-24-06	SLB10-1-24-06DP	SLB10-1-26-06	SLB10-1-29-06	SLB10-1-31-06	
	Sample Date		10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/13/2010	10/16/2010	
	Depth Interval		0- 6	0- 6	0- 6	0- 6	0- 6	0- 6	
Level I ¹	Level II ²	Unit							
PCB-40	NL	NL	pg/g	735	410	933	2360	8.4 J	86
PCB-41	NL	NL	pg/g	735	415	933	2360	8.4	85.5
PCB-42	NL	NL	pg/g	330	178	431	1600 J	4.1 J	38
PCB-43	NL	NL	pg/g	35.9	28	48.9	1.2	2.8 U	5.9
PCB-44	NL	NL	pg/g	4700 J	1200 J	2000 J	15600	35 J	330 J
PCB-45	NL	NL	pg/g	570	180	372	4280	7.5 J	58
PCB-46	NL	NL	pg/g	59	4.6 U	116	8.9 U	2.8 U	9
PCB-47	NL	NL	pg/g	4710	1200	1980	15600	34.5	328
PCB-48	NL	NL	pg/g	145	122	330	280 J	2.8 U	25
PCB-49	NL	NL	pg/g	1900 J	600	1000 J	5600 J	18 J	160
PCB-5	NL	NL	pg/g	3.3 U	6.2	7	6.5	2.8 U	2.5 U
PCB-50	NL	NL	pg/g	396	140	286	6430	5.8 J	47
PCB-51	NL	NL	pg/g	574	181	372	4280	7.5	58.4
PCB-52	NL	NL	pg/g	8850	2180	2750	14800	47 J	500
PCB-53	NL	NL	pg/g	396	137	286	6430	5.8	47.1
PCB-54	NL	NL	pg/g	33	5.9	8.5	474	2.8 U	3.1
PCB-55	NL	NL	pg/g	0.45	0.62	0.4	8.9 U	2.8 U	2.5 U
PCB-56	NL	NL	pg/g	850 J	480 J	850 J	8.9 U	12 J	89
PCB-57	NL	NL	pg/g	3.3 U	4.6 U	7.8	1.3	2.8 U	2.5 U
PCB-58	NL	NL	pg/g	3.3 U	4.6 U	3 U	231	2.8 U	2.5 U
PCB-59	NL	NL	pg/g	123	57	130 J	460 J	2.8 U	14
PCB-6	NL	NL	pg/g	52	76.3	71.8	379	2.8 U	21
PCB-60	NL	NL	pg/g	360 J	269	529	8.9 U	4.5 J	43
PCB-61	NL	NL	pg/g	7140	1900 J	2960	11000 J	55 J	470 J
PCB-62	NL	NL	pg/g	123	57	125	461	2.8 U	13.6
PCB-63	NL	NL	pg/g	57.9	23	53 J	20000 J	2.8 U	7.1
PCB-64	NL	NL	pg/g	730 J	365	706	8.9 U	6.9 J	77
PCB-65	NL	NL	pg/g	4710	1180	1980	15600	34.5	328
PCB-66	NL	NL	pg/g	1800 J	850 J	1610	4	28 J	190
PCB-67	NL	NL	pg/g	49.4	0.62	43.8	8.9 U	2.8 U	6.3
PCB-68	NL	NL	pg/g	3.3 U	4.6 U	5.9 J	1.2	2.8 U	2.5 U
PCB-69	NL	NL	pg/g	1870	602	1040	5590	18.1	159
PCB-7	NL	NL	pg/g	15	16	14.9	130	2.8 U	7
PCB-70	NL	NL	pg/g	7140	1930	2960	10800	55.1	466
PCB-71	NL	NL	pg/g	735	415	933	2360	8.4	85.5
PCB-72	NL	NL	pg/g	49	5.7	8.9 J	0.89	2.8 U	2.5 U
PCB-73	NL	NL	pg/g	3.3 U	0.87	3 U	1.7	2.8 U	2.5 U
PCB-74	NL	NL	pg/g	7140	1930	2960	10800	55.1	466
PCB-75	NL	NL	pg/g	123	57	125	461	2.8 U	13.6
PCB-76	NL	NL	pg/g	7140	1930	2960	10800	55.1	466
PCB-77	NL	NL	pg/g	280	0.57	190	8.9 U	3.5	22
PCB-78	NL	NL	pg/g	3.3 U	0.66	0.43	77.8	2.8 U	2.5 U
PCB-79	NL	NL	pg/g	0.53	0.73	23	1.4	2.8 U	6.8 J
PCB-8	NL	NL	pg/g	290	430	450 J	1780	2.8 U	120
PCB-80	NL	NL	pg/g	3.3 U	4.6 U	0.4	1.2	2.8 U	2.5 U
PCB-81	NL	NL	pg/g	3.3 U	4.6 U	3 U	1.1	2.8 U	2.5 U
PCB-82	NL	NL	pg/g	1590	550	510 J	0.53	12 J	100
PCB-83	NL	NL	pg/g	8200 J	2310	2100 J	13400	64 J	500
PCB-84	NL	NL	pg/g	2430	763	848	8.9 U	22 J	190 J
PCB-85	NL	NL	pg/g	25000 J	3500 J	3200 J	39000 J	180 J	1500 J
PCB-86	NL	NL	pg/g	5600 J	3190	2700 J	8600 J	38 J	680 J
PCB-87	NL	NL	pg/g	5560	3190	2750	8570	37.5	682
PCB-88	NL	NL	pg/g	1600 J	347	430 J	6600 J	16 J	120 J
PCB-89	NL	NL	pg/g	55.4	23 J	34.6	0.89	2.8 U	4.6 J
PCB-9	NL	NL	pg/g	24.1	4.6 U	27.6	152	2.8 U	9.3
PCB-90	NL	NL	pg/g	21200	2600 J	2620	38000 J	140 J	1400 J
PCB-91	NL	NL	pg/g	1640	347	435	6620	16	124
PCB-92	NL	NL	pg/g	3790	860 J	830 J	0.93	31 J	240 J
PCB-93	NL	NL	pg/g	410	4.6 U	104	2.4	2.8 U	40
PCB-94	NL	NL	pg/g	100	15.2	20.9	8.9 U	2.8 U	7.7
PCB-95	NL	NL	pg/g	14000 J	2300	2400 J	2.4	73 J	730
PCB-96	NL	NL	pg/g	87	15.9	23.9	2000	2.8 U	5.8
PCB-97	NL	NL	pg/g	5560	3190	2750	8570	37.5	682
PCB-98	NL	NL	pg/g	410	4.6 U	104	2.4	2.8 U	40.4
PCB-99	NL	NL	pg/g	8180	2310	2080	13400	64.2	505
TOTAL PCBs	60,000	680,000	pg/g	775589.8	153979.4	165156	1470786.8	6764.5	55068.1
Dioxin-like PCB TEQ	NL	NL	pg/g	0.42244325	0.0940925	0.1140565	0.12477725	0.0090565	0.03391975

Table 3-5a
Area 1 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-33	SLB10-1-38	SLB10-1-40	SLB10-1-44	SLB10-1-47	SLB10-1-49
			Field Sample ID	SLB10-1-33-06	SLB10-1-38-06	SLB10-1-40-06	SLB10-1-44-06	SLB10-1-47-06	SLB10-1-49-06
			Sample Date	10/13/2010	10/15/2010	10/15/2010	10/16/2010	10/15/2010	10/13/2010
			Depth Interval	0- 6	0- 6	0- 6	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit						
PCB-1	NL	NL	pg/g	179	219	2.5 U	8.8	53	19
PCB-10	NL	NL	pg/g	7.3	9.4 J	2.5 U	17.9	3.1 U	3.3 U
PCB-100	NL	NL	pg/g	4 U	164	2.5 U	7.5	3.1 U	3.3 U
PCB-101	NL	NL	pg/g	5860	4440	12.2	137	593	388
PCB-102	NL	NL	pg/g	1.1	164	2.5 U	7.5	8.4	3.3 U
PCB-103	NL	NL	pg/g	0.57	79.9	2.5 U	4	4.5	3.3 U
PCB-104	NL	NL	pg/g	4 U	5.8	2.5 U	3.6	4	3.3 U
PCB-105	NL	NL	pg/g	1900	1600	4.1	35.3	190	110
PCB-106	NL	NL	pg/g	4 U	4.4 U	2.5 U	2.8 U	6.1 U	3.3 U
PCB-107	NL	NL	pg/g	4 U	0.35	2.5 U	2.2	36.3	3.3 U
PCB-108	NL	NL	pg/g	191	4.4 U	2.5 U	15	16.9	3.3 U
PCB-109	NL	NL	pg/g	1920	3410	7.1	30.9	293	102
PCB-11	NL	NL	pg/g	17	19	2.5 UJ	119	133	34 J
PCB-110	NL	NL	pg/g	7050	5220	16.5	162	890	533
PCB-111	NL	NL	pg/g	4 U	110 J	2.5 U	2.8 U	3.1 U	3.3 U
PCB-112	NL	NL	pg/g	4 U	0.69	2.5 U	4.3	4.8	3.3 U
PCB-113	NL	NL	pg/g	5860	4440	12.2	137	593	388
PCB-114	NL	NL	pg/g	84.5	0.75	2.5 U	4.7	5.3	3.3 U
PCB-115	NL	NL	pg/g	4 U	1.4	2.5 U	9	3.1 U	3.3 U
PCB-116	NL	NL	pg/g	7050	5220	16.5	162	890	533
PCB-117	NL	NL	pg/g	7050	5220	16.5	162	890	533
PCB-118	NL	NL	pg/g	4400	32 J	2.5 U	2.8 U	488	280
PCB-119	NL	NL	pg/g	1920	3410	7.1	30.9	293	102
PCB-12	NL	NL	pg/g	100	4.4 U	2.5 U	33.8	3.1 U	8.8 J
PCB-120	NL	NL	pg/g	0.38	0.42	2.5 U	2.8 U	3.1 U	3.3 U
PCB-121	NL	NL	pg/g	4 U	0.31	2.5 U	1.9	3.1 U	3.3 U
PCB-122	NL	NL	pg/g	40 J	89	2.5 U	2.8 U	3.1 U	3.3 U
PCB-123	NL	NL	pg/g	4 U	4300 J	10 J	79 J	6.8	3.3 U
PCB-124	NL	NL	pg/g	191	0.35	2.5 U	2.2	2.5	3.3 U
PCB-125	NL	NL	pg/g	1920	3410	7.1	30.9	293	102
PCB-126	NL	NL	pg/g	0.73	4.4 U	2.5 U	5.1	5.7	3.3 U
PCB-127	NL	NL	pg/g	0.46	4.4 U	2.5 U	2.8 U	3.6	3.3 U
PCB-128	NL	NL	pg/g	1300 J	1200 J	2.5 U	25 J	220 J	75 J
PCB-129	NL	NL	pg/g	8900 J	7140	13 J	237	1900 J	650 J
PCB-13	NL	NL	pg/g	100	5.4	2.5 U	33.8	3.1 U	8.8
PCB-130	NL	NL	pg/g	679	590 J	2.5 U	13 J	56.6	41 J
PCB-131	NL	NL	pg/g	88 J	99 J	2.5 U	1.5	3.1 U	4.6 J
PCB-132	NL	NL	pg/g	3370	3200	4.5 J	73	273	200 J
PCB-133	NL	NL	pg/g	172	180 J	2.5 U	4.4 J	2.5	13 J
PCB-134	NL	NL	pg/g	503	480 J	2.5 U	4.7	73 J	27 J
PCB-135	NL	NL	pg/g	3500	4360	3.9 J	110 J	690 J	250 J
PCB-136	NL	NL	pg/g	1310	1200 J	2.5 U	31.7	170 J	64 J
PCB-137	NL	NL	pg/g	760 J	318	2.5 U	4.8 J	3.1 U	22 J
PCB-138	NL	NL	pg/g	8860	7140	13.5	237	958	650
PCB-139	NL	NL	pg/g	130	120 J	2.5 U	2.6	3.1 U	7.8 J
PCB-14	NL	NL	pg/g	4 U	7.1 J	2.5 U	2.8 U	17.8	3.3 U
PCB-140	NL	NL	pg/g	130	122	2.5 U	2.6	3	7.8
PCB-141	NL	NL	pg/g	2200 J	2650	2.6 J	69.8	370 J	140 J
PCB-142	NL	NL	pg/g	4 U	4.4 U	2.5 U	3	3.4	3.3 U
PCB-143	NL	NL	pg/g	503	475	2.5 U	4.7	38	27.4
PCB-144	NL	NL	pg/g	489	519	2.5 U	2.8	3.1 U	28 J
PCB-145	NL	NL	pg/g	4 U	4.4 U	2.5 U	2.4	3.1 U	3.3 U
PCB-146	NL	NL	pg/g	1700 J	1800 J	2.5 U	39.3	176	120 J
PCB-147	NL	NL	pg/g	7600 J	6300 J	9.8 J	239	1500 J	550 J
PCB-148	NL	NL	pg/g	4 U	28 J	2.5 U	2.1	3.1 U	3.3 U
PCB-149	NL	NL	pg/g	7580	6280	9.8	239	805	551
PCB-15	NL	NL	pg/g	460	440	2.5 U	12	44.6	36
PCB-150	NL	NL	pg/g	0.46	22.8	2.5 U	3.2	3.6	3.3 U
PCB-151	NL	NL	pg/g	3500	4360	3.9	109	365	245
PCB-152	NL	NL	pg/g	4 U	18.2	2.5 U	2.8 U	3.1 U	3.3 U
PCB-153	NL	NL	pg/g	7680	6700 J	9.8 J	227	1700 J	600 J
PCB-154	NL	NL	pg/g	110 J	110 J	2.5 U	1.9	3.1 U	8 J
PCB-155	NL	NL	pg/g	0.42	0.46	2.5 U	2.9	3.1 U	3.3 U
PCB-156	NL	NL	pg/g	960	870	2.5 U	10.5	150	57
PCB-157	NL	NL	pg/g	957	870	2.5 U	10.5	86.5	57
PCB-158	NL	NL	pg/g	935	975	2.5 U	3.5	160 J	58 J
PCB-159	NL	NL	pg/g	124	100 J	2.5 U	2.8 U	5	6.5 J
PCB-16	NL	NL	pg/g	4 U	270 J	2.5 U	16 J	60 J	13 J
PCB-160	NL	NL	pg/g	4 U	4.4 U	2.5 U	2.8 U	3.1 U	3.3 U
PCB-161	NL	NL	pg/g	4 U	4.4 U	2.5 U	2.8 U	3.1 U	3.3 U
PCB-162	NL	NL	pg/g	31 J	28.6	2.5 U	2.8 U	5.9 J	3.3 U
PCB-163	NL	NL	pg/g	8860	7140	13.5	237	958	650

Table 3-5a
Area 1 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-33	SLB10-1-38	SLB10-1-40	SLB10-1-44	SLB10-1-47	SLB10-1-49
			Field Sample ID	SLB10-1-33-06	SLB10-1-38-06	SLB10-1-40-06	SLB10-1-44-06	SLB10-1-47-06	SLB10-1-49-06
			Sample Date	10/13/2010	10/15/2010	10/15/2010	10/16/2010	10/15/2010	10/13/2010
			Depth Interval	0- 6	0- 6	0- 6	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit						
PCB-164	NL	NL	pg/g	0.85	800	2.5 U	5.9	65.7	46.9
PCB-165	NL	NL	pg/g	4 U	0.53	2.5 U	2.8 U	3.7	3.3 U
PCB-166	NL	NL	pg/g	1270	1180	2.5 U	3.6	106	75.3
PCB-167	NL	NL	pg/g	321	318	2.5 U	6	57	21
PCB-168	NL	NL	pg/g	7680	6700	9.8	227	908	601
PCB-169	NL	NL	pg/g	0.61	0.69	2.5 U	2.8 U	3.1 U	3.3 U
PCB-17	NL	NL	pg/g	160 J	210 J	2.5 U	12 J	50 J	13 J
PCB-170	NL	NL	pg/g	3100	3110	3.1 J	62 J	290	210 J
PCB-171	NL	NL	pg/g	1100 J	1000 J	2.5 U	20 J	160 J	60 J
PCB-172	NL	NL	pg/g	634	630 J	2.5 U	4.4	58.9	40 J
PCB-173	NL	NL	pg/g	1090	995	2.5 U	4.8	90.2	59.8
PCB-174	NL	NL	pg/g	4100 J	4310	3.2 J	130	312	250 J
PCB-175	NL	NL	pg/g	110 J	140 J	2.5 U	2.8	3.1	5.2 J
PCB-176	NL	NL	pg/g	450 J	384	2.5 U	2.4	58 J	23 J
PCB-177	NL	NL	pg/g	2400 J	2300 J	2.5 U	56.7	211	140 J
PCB-178	NL	NL	pg/g	790 J	770 J	2.5 U	2.4	130 J	48 J
PCB-179	NL	NL	pg/g	1690	1490	2.5 U	40.8	230 J	89 J
PCB-18	NL	NL	pg/g	379	460 J	2.5 U	20.1	110 J	29 J
PCB-180	NL	NL	pg/g	7600	5210	6.9	203	1400	530 J
PCB-181	NL	NL	pg/g	0.3	4.4 U	2.5 U	2.1	3.1 U	3.3 U
PCB-182	NL	NL	pg/g	4 U	0.49	2.5 U	2.8 U	3.1 U	3.3 U
PCB-183	NL	NL	pg/g	2170	1900 J	2.5 U	36.7	159	120 J
PCB-184	NL	NL	pg/g	0.28	0.31	2.5 U	1.9	3.1 U	3.3 U
PCB-185	NL	NL	pg/g	520 J	604	2.5 U	5.7	93.8	29 J
PCB-186	NL	NL	pg/g	0.46	4.4 U	2.5 U	2.8 U	3.6	3.3 U
PCB-187	NL	NL	pg/g	4400 J	3100	4 J	121	760 J	290 J
PCB-188	NL	NL	pg/g	4 U	5.8	2.5 U	3.2	3.1 U	3.3 U
PCB-189	NL	NL	pg/g	110	107	2.5 U	6.4	7.1	7.5
PCB-19	NL	NL	pg/g	33	43 U	2.5 U	8.3	11	3.8
PCB-190	NL	NL	pg/g	560 J	549	2.5 U	4.6	96	38 J
PCB-191	NL	NL	pg/g	117	120	2.5 U	2.8 U	5.4	7.2 J
PCB-192	NL	NL	pg/g	0.32	0.35	2.5 U	2.2	2.5	3.3 U
PCB-193	NL	NL	pg/g	7600	5210	6.9	203	749	526
PCB-194	NL	NL	pg/g	1970	1600 J	2.5 U	41.7	290 J	120 J
PCB-195	NL	NL	pg/g	864	690	2.5 U	4.6	67.5	47 J
PCB-196	NL	NL	pg/g	998	802	2.5 U	16 J	84.2	55 J
PCB-197	NL	NL	pg/g	67 J	48.1	2.5 U	4.3	9.1 J	3.5 J
PCB-198	NL	NL	pg/g	2100 J	1800 J	2.5 U	48.8	180	120 J
PCB-199	NL	NL	pg/g	2140	1790	2.5 U	48.8	180	120
PCB-2	NL	NL	pg/g	89.8	81 J	2.5 U	11.7	13.2	8.9 J
PCB-20	NL	NL	pg/g	790 J	770 J	4.3 J	30.6	117	65 J
PCB-200	NL	NL	pg/g	310 J	230	2.5 U	4.8	5.4	13 J
PCB-201	NL	NL	pg/g	202	181	2.5 U	3.6	32 J	10 J
PCB-202	NL	NL	pg/g	360	280	2.5 U	5.9 J	50	18
PCB-203	NL	NL	pg/g	1350	1080	2.5 U	23 J	190 J	70 J
PCB-204	NL	NL	pg/g	4 U	0.27	2.5 U	2.8 U	1.9	3.3 U
PCB-205	NL	NL	pg/g	83	76	2.5 U	3.7	4.2	3.3 U
PCB-206	NL	NL	pg/g	559	380	2.5 U	8.8 J	50.6	37
PCB-207	NL	NL	pg/g	82 J	51 J	2.5 U	2.8 U	10 J	4.1 J
PCB-208	NL	NL	pg/g	150	110	2.5 U	2.2	23	11
PCB-209	NL	NL	pg/g	150	153	2.5 U	2.8 U	55	22
PCB-21	NL	NL	pg/g	397	376	2.5 U	8.7	49.2	28 J
PCB-22	NL	NL	pg/g	290 J	280 J	2.5 U	11 J	86 J	21 J
PCB-23	NL	NL	pg/g	0.4	0.44	2.5 U	2.8	3.1 U	3.3 U
PCB-24	NL	NL	pg/g	110 J	4.4 J	2.5 U	2.8 U	3.1 U	7.6 J
PCB-25	NL	NL	pg/g	80 J	89.9	2.5 U	3.2 J	4.5	6.4 J
PCB-26	NL	NL	pg/g	170 J	187	2.5 U	10.2	47 J	13 J
PCB-27	NL	NL	pg/g	37.5	48.2	2.5 U	2.8 U	4	3.5 J
PCB-28	NL	NL	pg/g	794	773	4.3	30.6	117	64.6
PCB-29	NL	NL	pg/g	167	187	2.5 U	10.2	11.5	13.4
PCB-3	NL	NL	pg/g	209	210	2.5 U	21.8	24.5	21
PCB-30	NL	NL	pg/g	379	460	2.5 U	20.1	41.1	29.4
PCB-31	NL	NL	pg/g	776	701	3.4 J	26.9	240 J	54 J
PCB-32	NL	NL	pg/g	143	166	2.5 U	7.7 J	45 J	12 J
PCB-33	NL	NL	pg/g	397	376	2.5 U	8.7	49.2	28.4
PCB-34	NL	NL	pg/g	4 U	5.9 J	2.5 U	2.8 U	3.1 U	3.3 U
PCB-35	NL	NL	pg/g	0.89	24.5	2.5 U	2.8 U	7	3.3 U
PCB-36	NL	NL	pg/g	4 U	4.4 U	2.5 U	2.8 U	3.1 U	3.3 U
PCB-37	NL	NL	pg/g	306	273	2.5 U	10	40.5	24
PCB-38	NL	NL	pg/g	4 U	4.4 U	2.5 U	5.2	5.9	3.3 U
PCB-39	NL	NL	pg/g	0.65	7.1	2.5 U	4.6	5.1	3.3 U
PCB-4	NL	NL	pg/g	96.2	130	2.5 U	19	27	9

Table 3-5a
Area 1 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-33	SLB10-1-38	SLB10-1-40	SLB10-1-44	SLB10-1-47	SLB10-1-49
			Field Sample ID	SLB10-1-33-06	SLB10-1-38-06	SLB10-1-40-06	SLB10-1-44-06	SLB10-1-47-06	SLB10-1-49-06
			Sample Date	10/13/2010	10/15/2010	10/15/2010	10/16/2010	10/15/2010	10/13/2010
			Depth Interval	0- 6	0- 6	0- 6	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit						
PCB-40	NL	NL	pg/g	450	470 J	2.5 U	13 J	47.4	31 J
PCB-41	NL	NL	pg/g	450	467	2.5 U	10.9	47.4	31.1
PCB-42	NL	NL	pg/g	228	211	2.5 U	6.4	48 J	14 J
PCB-43	NL	NL	pg/g	13.4	25	2.5 U	3.9	4.3	3.3 U
PCB-44	NL	NL	pg/g	1220	1550	2.5 UJ	40 J	122	81 J
PCB-45	NL	NL	pg/g	0.97	300 J	2.5 U	11 J	7.6	16 J
PCB-46	NL	NL	pg/g	42.6	49 J	2.5 U	2.8 U	2	3.3 U
PCB-47	NL	NL	pg/g	1220	1550	2.5	51.6	122	81.3
PCB-48	NL	NL	pg/g	119	120 J	2.5 U	6.6	26 J	7.9 J
PCB-49	NL	NL	pg/g	770 J	830 J	2.5 U	20 J	170 J	47 J
PCB-5	NL	NL	pg/g	4 U	3.2	2.5 U	2.8 U	40.6	3.3 U
PCB-50	NL	NL	pg/g	124	250 J	2.5 U	10 J	57 J	16 J
PCB-51	NL	NL	pg/g	4 U	297	2.5 U	6.8	7.6	15.9
PCB-52	NL	NL	pg/g	2600	2710	6.7 J	77	500 J	160 J
PCB-53	NL	NL	pg/g	124	249	2.5 U	9.7	10.9	15.8
PCB-54	NL	NL	pg/g	4 U	15.8	2.5 U	2.8 U	3.1 U	3.3 U
PCB-55	NL	NL	pg/g	4 U	4.4 U	2.5 U	3.7	3.1 U	3.3 U
PCB-56	NL	NL	pg/g	554	320 J	2.5 U	6.9 J	52 J	42 J
PCB-57	NL	NL	pg/g	0.57	16.3	2.5 U	2.8 U	4.5	3.3 U
PCB-58	NL	NL	pg/g	0.38	0.42	2.5 U	2.8 U	3.1 U	3.3 U
PCB-59	NL	NL	pg/g	73 J	79.1	2.5 U	9.5	10.7	6 J
PCB-6	NL	NL	pg/g	62	78 J	2.5 U	15.5	20 J	5.7 J
PCB-60	NL	NL	pg/g	284	210 J	2.5 U	3	32.2	20 J
PCB-61	NL	NL	pg/g	2900 J	2160	2.5 UJ	36 J	10.1	200 J
PCB-62	NL	NL	pg/g	73	79.1	2.5 U	9.5	20 J	6
PCB-63	NL	NL	pg/g	0.46	32 J	2.5 U	3.2	3.6	3.3 U
PCB-64	NL	NL	pg/g	430 J	420 J	2.5 U	10 J	97 J	29 J
PCB-65	NL	NL	pg/g	1220	1550	2.5	51.6	122	81.3
PCB-66	NL	NL	pg/g	1290	880 J	3.8 J	19 J	260 J	99 J
PCB-67	NL	NL	pg/g	4 U	36 J	2.5 U	2.8 U	3.1 U	3.3 U
PCB-68	NL	NL	pg/g	4 U	11.8	2.5 U	3.9	4.3	3.3 U
PCB-69	NL	NL	pg/g	771	830	2.5 U	27.6	77	47.3
PCB-7	NL	NL	pg/g	16 J	19.1	2.5 U	27.9	4.9 J	3.3 U
PCB-70	NL	NL	pg/g	2920	2160	2.5	64.5	31.5	205
PCB-71	NL	NL	pg/g	450	467	2.5 U	10.9	47.4	31.1
PCB-72	NL	NL	pg/g	0.4	16.7	2.5 U	2.8 U	3.1	3.3 U
PCB-73	NL	NL	pg/g	4 U	0.84	2.5 U	5.2	5.9	3.3 U
PCB-74	NL	NL	pg/g	2920	2160	2.5	64.5	31.5	205
PCB-75	NL	NL	pg/g	73	79.1	2.5 U	2.8 U	20 J	6
PCB-76	NL	NL	pg/g	2920	2160	2.5	64.5	31.5	205
PCB-77	NL	NL	pg/g	160	150	2.5 U	3.3	38	11
PCB-78	NL	NL	pg/g	4 U	4.4 U	2.5 U	4	3.1 U	3.3 U
PCB-79	NL	NL	pg/g	0.63	58 J	2.5 U	4.4	5	3.3 U
PCB-8	NL	NL	pg/g	300 J	390 J	2.5 U	17 J	120 J	28 J
PCB-80	NL	NL	pg/g	4 U	0.6	2.5 U	2.8 U	3.1 U	3.3 U
PCB-81	NL	NL	pg/g	0.48	0.53	2.5 U	2.8 U	3.1 U	3.3 U
PCB-82	NL	NL	pg/g	650 J	560	2.5 U	11 J	1.9	36 J
PCB-83	NL	NL	pg/g	3040	2630	5.7 J	57.6	530 J	170 J
PCB-84	NL	NL	pg/g	1110	940 J	2.8 J	29.6	170 J	74 J
PCB-85	NL	NL	pg/g	7050	5200 J	16 J	160 J	890	530 J
PCB-86	NL	NL	pg/g	1920	3410	7.1 J	30.9	340 J	100 J
PCB-87	NL	NL	pg/g	1920	3410	7.1	30.9	293	102
PCB-88	NL	NL	pg/g	480 J	600 J	2.5 U	10 J	110 J	40 J
PCB-89	NL	NL	pg/g	4 U	4.4 U	2.5 U	2.8	3.1 U	3.3 U
PCB-9	NL	NL	pg/g	28.5	33.9	2.5 U	10.8	12.1	3.3 U
PCB-90	NL	NL	pg/g	5860	4400 J	12 J	137	1200 J	390 J
PCB-91	NL	NL	pg/g	481	597	2.5 U	6.5	67.9	40.2
PCB-92	NL	NL	pg/g	1410	1250	2.5 U	2.9	240 J	82 J
PCB-93	NL	NL	pg/g	1.1	160 J	2.5 U	7.5	8.4	3.3 U
PCB-94	NL	NL	pg/g	0.6	41 J	2.5 U	2.8 U	4.7	3.3 U
PCB-95	NL	NL	pg/g	2600 J	2620	7.4 J	106	120 J	200 J
PCB-96	NL	NL	pg/g	19 J	33 J	2.5 U	2.8 U	4.8 J	3.3 U
PCB-97	NL	NL	pg/g	1920	3410	7.1	30.9	293	102
PCB-98	NL	NL	pg/g	4 U	164	2.5 U	7.5	3.1 U	3.3 U
PCB-99	NL	NL	pg/g	3040	2630	5.7	57.6	530 J	175
TOTAL PCBs	60,000	680,000	pg/g	240519.8	219267.6	340.9	5544.3	31327.5	16408.8
Dioxin-like PCB TEQ	NL	NL	pg/g	0.063593	0.06678825	0.0071705	0.027369	0.038106	0.0129365

Table 3-5a
Area 1 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-51	SLB10-1-54	SLB10-1-56	SLB10-1-56	SLB10-1-60	SLB10-1-62	
	Field Sample ID	SLB10-1-51-06	SLB10-1-54-06	SLB10-1-56-06	SLB10-1-56-06DP	SLB10-1-60-06	SLB10-1-62-06		
	Sample Date	10/12/2010	10/15/2010	10/7/2010	10/7/2010	10/14/2010	10/14/2010		
	Depth Interval	0- 6	0- 6	0- 6	0- 6	0- 6	0- 6		
Level I ¹	Level II ²	Unit							
PCB-1	NL	NL	pg/g	28	13 U	96.5	66	130	118
PCB-10	NL	NL	pg/g	3.3 U	13 U	5.1 J	3.3 U	3.8	3.6
PCB-100	NL	NL	pg/g	3.3 U	13 U	4.7 U	53.1	87.2	5.5 U
PCB-101	NL	NL	pg/g	132	52.5	2100	1800	3560	3060
PCB-102	NL	NL	pg/g	3.3 U	13 U	4.7 U	53.1	87.2	5.5 U
PCB-103	NL	NL	pg/g	3.3 U	13 U	0.68	3.3 U	40.5	0.8
PCB-104	NL	NL	pg/g	3.3 U	13 U	4.9	3.6	6.4	6.8
PCB-105	NL	NL	pg/g	34	15	530	450	1100	830
PCB-106	NL	NL	pg/g	3.3 U	13 U	4.7 U	3.3 U	1.1	1.1
PCB-107	NL	NL	pg/g	6.2 J	13 U	103	95 J	5.9 U	143
PCB-108	NL	NL	pg/g	3.3 U	13 U	60 J	48 J	310 J	85 J
PCB-109	NL	NL	pg/g	30.3	27.4	503	452	1960	778
PCB-11	NL	NL	pg/g	3.3 UJ	13 U	20.1	30 J	140 J	99 J
PCB-110	NL	NL	pg/g	189	57	2040	2060	4660	5440
PCB-111	NL	NL	pg/g	3.3 U	13 U	0.51	3.3 U	46 J	5.5 U
PCB-112	NL	NL	pg/g	3.3 U	13 U	0.72	3.3 U	5.9 U	0.85
PCB-113	NL	NL	pg/g	132	52.5	2100	1800	3560	3060
PCB-114	NL	NL	pg/g	3.3 U	13 U	25	19	5.9 U	37.5
PCB-115	NL	NL	pg/g	3.3 U	13 U	1.5	3.3 U	5.9 U	1.8
PCB-116	NL	NL	pg/g	189	57	2040	2060	4660	5440
PCB-117	NL	NL	pg/g	189	57	2040	2060	4660	5440
PCB-118	NL	NL	pg/g	89	13 U	1400	1200	23 J	2100
PCB-119	NL	NL	pg/g	30.3	27.4	503	452	1960	778
PCB-12	NL	NL	pg/g	5.4 J	13 U	48	27 J	54.3	55 J
PCB-120	NL	NL	pg/g	3.3 U	13 U	4.7 U	3.3 U	0.56	0.52
PCB-121	NL	NL	pg/g	3.3 U	13 U	4.7 U	3.3 U	0.41	5.5 U
PCB-122	NL	NL	pg/g	3.3 U	13 U	13 J	12 J	62 J	20.8
PCB-123	NL	NL	pg/g	3.3 U	37 J	19	16	2900 J	25
PCB-124	NL	NL	pg/g	3.3 U	13 U	60.2	48.2	306	85.4
PCB-125	NL	NL	pg/g	30.3	27.4	503	452	1960	778
PCB-126	NL	NL	pg/g	3.3 U	13 U	0.86	3.3 U	1.1	1
PCB-127	NL	NL	pg/g	3.3 U	13 U	0.54	3.3 U	5.9 U	0.63
PCB-128	NL	NL	pg/g	27 J	13 U	470 J	360 J	830 J	760 J
PCB-129	NL	NL	pg/g	220 J	76 J	3850	3200 J	3700 J	4900 J
PCB-13	NL	NL	pg/g	5.4	13 U	48	26.6	54.3	54.7
PCB-130	NL	NL	pg/g	14 J	13 U	250 J	200 J	412	417
PCB-131	NL	NL	pg/g	3.3 U	13 U	4.7 U	23 J	55 J	48.5
PCB-132	NL	NL	pg/g	69 J	23 J	1200 J	960 J	1930	2000 J
PCB-133	NL	NL	pg/g	3.3 U	13 U	99.8	80 J	140 J	150 J
PCB-134	NL	NL	pg/g	9.8 J	13 U	178	140 J	260 J	280 J
PCB-135	NL	NL	pg/g	84 J	29 J	1600 J	1300 J	2500 J	2600 J
PCB-136	NL	NL	pg/g	26 J	13 U	433	350 J	650 J	670 J
PCB-137	NL	NL	pg/g	6.4 J	13 U	240 J	250 J	206	503
PCB-138	NL	NL	pg/g	215	76	3850	3160	3690	4910
PCB-139	NL	NL	pg/g	3.3 U	13 U	54.1	44 J	90.1	88
PCB-14	NL	NL	pg/g	3.3 U	13 U	2.7	3.3 U	3.4	5.5 U
PCB-140	NL	NL	pg/g	3.3 U	13 U	54.1	44	90.1	88
PCB-141	NL	NL	pg/g	3.3 U	15 J	790 J	640 J	1300 J	1300 J
PCB-142	NL	NL	pg/g	3.3 U	13 U	4.7 U	3.3 U	0.64	5.5 U
PCB-143	NL	NL	pg/g	9.8	13 U	178	137	258	282
PCB-144	NL	NL	pg/g	9.3 J	13 U	159	130 J	0.59	170 J
PCB-145	NL	NL	pg/g	3.3 U	13 U	0.4	3.3 U	5.9 U	0.47
PCB-146	NL	NL	pg/g	39 J	16 J	850 J	3.3 U	1200 J	1290
PCB-147	NL	NL	pg/g	200 J	66 J	3430	2800 J	5160	5500 J
PCB-148	NL	NL	pg/g	3.3 U	13 U	4.7 U	3.3 U	29.3	34.3
PCB-149	NL	NL	pg/g	196	65.6	3430	2780	5160	5470
PCB-15	NL	NL	pg/g	34	13 U	360	140	326	302
PCB-150	NL	NL	pg/g	3.3 U	13 U	11 J	9.1 J	17 J	18
PCB-151	NL	NL	pg/g	83.8	29	1590	1330	2470	2570
PCB-152	NL	NL	pg/g	3.3 U	13 U	0.63	5.5 J	11 J	10.8
PCB-153	NL	NL	pg/g	200 J	69 J	3600 J	2900 J	5700 J	4360
PCB-154	NL	NL	pg/g	3.3 U	13 U	75 J	67 J	120 J	135
PCB-155	NL	NL	pg/g	3.3 U	13 U	4.7 U	3.3 U	5.9 U	0.58
PCB-156	NL	NL	pg/g	17	13 U	310	240	560	479
PCB-157	NL	NL	pg/g	17.1	13 U	306	241	556	479
PCB-158	NL	NL	pg/g	16 J	13 U	327	250 J	570 J	523
PCB-159	NL	NL	pg/g	3.3 U	13 U	48 J	33 J	67 J	48.9
PCB-16	NL	NL	pg/g	3.3 U	13 U	1.8	3.3 U	108	5.5 U
PCB-160	NL	NL	pg/g	3.3 U	13 U	4.7 U	3.3 U	5.9 U	5.5 U
PCB-161	NL	NL	pg/g	3.3 U	13 U	0.51	3.3 U	5.9 U	5.5 U
PCB-162	NL	NL	pg/g	3.3 U	13 U	0.58	9.8 J	19.2	5.5 U
PCB-163	NL	NL	pg/g	215	76	3850	3160	3690	4910

Table 3-5a
Area 1 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-51	SLB10-1-54	SLB10-1-56	SLB10-1-56	SLB10-1-60	SLB10-1-62	
	Field Sample ID	SLB10-1-51-06	SLB10-1-54-06	SLB10-1-56-06	SLB10-1-56-06DP	SLB10-1-60-06	SLB10-1-62-06		
	Sample Date	10/12/2010	10/15/2010	10/7/2010	10/7/2010	10/14/2010	10/14/2010		
	Depth Interval	0- 6	0- 6	0- 6	0- 6	0- 6	0- 6		
Level I ¹	Level II ²	Unit							
PCB-164	NL	NL	pg/g	15.8	13 U	1	0.7	454	1.2
PCB-165	NL	NL	pg/g	3.3 U	13 U	0.56	630 J	11 J	5.5 U
PCB-166	NL	NL	pg/g	26.9	13 U	468	355	831	759
PCB-167	NL	NL	pg/g	6.6	13 U	112	88	186	170
PCB-168	NL	NL	pg/g	198	68.5	3630	2870	5660	4360
PCB-169	NL	NL	pg/g	3.3 U	13 U	0.72	3.3 U	5.9 U	0.85
PCB-17	NL	NL	pg/g	4.1 J	13 U	140	49 J	120 J	85.4
PCB-170	NL	NL	pg/g	72 J	18 J	1280	1100 J	1900 J	1900 J
PCB-171	NL	NL	pg/g	23 J	13 U	399	330 J	580 J	597
PCB-172	NL	NL	pg/g	15 J	13 U	250 J	210 J	360 J	352
PCB-173	NL	NL	pg/g	22.9	13 U	399	329	585	600 J
PCB-174	NL	NL	pg/g	96 J	26 J	1660	1300 J	2500 J	2400 J
PCB-175	NL	NL	pg/g	3.3 U	13 U	47 J	35 J	56 J	67.5
PCB-176	NL	NL	pg/g	9.6 J	13 U	150 J	120 J	220 J	239
PCB-177	NL	NL	pg/g	54 J	14 J	961	790 J	1370	1340
PCB-178	NL	NL	pg/g	19 J	13 U	339	270 J	470	490 J
PCB-179	NL	NL	pg/g	38 J	13 U	600 J	490 J	872	920 J
PCB-18	NL	NL	pg/g	9 J	13 J	280 J	110 J	260 J	190 J
PCB-180	NL	NL	pg/g	200 J	52	3170	2600	4700	4600
PCB-181	NL	NL	pg/g	3.3 U	13 U	0.35	3.3 U	8.1	0.41
PCB-182	NL	NL	pg/g	3.3 U	13 U	4.7 U	3.3 U	5.9 U	5.5 U
PCB-183	NL	NL	pg/g	50 J	13 U	700 J	620 J	1120	1120
PCB-184	NL	NL	pg/g	3.3 U	13 U	0.33	3.3 U	5.9 U	5.5 U
PCB-185	NL	NL	pg/g	11 J	13 U	210	120 J	170 J	220 J
PCB-186	NL	NL	pg/g	3.3 U	13 U	0.54	3.3 U	0.67	0.63
PCB-187	NL	NL	pg/g	120 J	33 J	1880	1500 J	2710	2700 J
PCB-188	NL	NL	pg/g	3.3 U	13 U	0.54	3.3 U	0.67	0.63
PCB-189	NL	NL	pg/g	3.3 U	13 U	47	35	68	67.3
PCB-19	NL	NL	pg/g	3.3 U	13 U	78	12	34	22.1
PCB-190	NL	NL	pg/g	12 J	13 U	210	190	313	320
PCB-191	NL	NL	pg/g	3.3 U	13 U	43	38	65.9	64.8
PCB-192	NL	NL	pg/g	3.3 U	13 U	4.7 U	3.3 U	5.9 U	0.44
PCB-193	NL	NL	pg/g	202	51.9	3170	2630	4720	4590
PCB-194	NL	NL	pg/g	55 J	13 U	715	600 J	1110	1140
PCB-195	NL	NL	pg/g	20 J	13 U	310 J	260 J	465	491
PCB-196	NL	NL	pg/g	31 J	13 U	337	300 J	490 J	519
PCB-197	NL	NL	pg/g	3.3 U	13 U	25 J	19 J	31 J	34
PCB-198	NL	NL	pg/g	86 J	13 U	766	680 J	1080	1120
PCB-199	NL	NL	pg/g	85.9	13 U	766	678	1080	1120
PCB-2	NL	NL	pg/g	10 J	13 U	40 J	30 J	64 J	59
PCB-20	NL	NL	pg/g	15 J	16 J	930 J	260 J	510 J	420 J
PCB-200	NL	NL	pg/g	7.4 J	13 U	87.4	79 J	144	148
PCB-201	NL	NL	pg/g	7.2 J	13 U	71 J	70 J	107	110 J
PCB-202	NL	NL	pg/g	20	13 U	126	110	190	193
PCB-203	NL	NL	pg/g	46 J	13 U	453	390 J	700 J	730 J
PCB-204	NL	NL	pg/g	3.3 U	13 U	4.7 U	3.3 U	0.35	5.5 U
PCB-205	NL	NL	pg/g	3.3 U	13 U	31	26	0.79	49.6
PCB-206	NL	NL	pg/g	120	13 U	189	140	290	280
PCB-207	NL	NL	pg/g	9.6 J	13 U	25 J	20 J	39.1	37.5
PCB-208	NL	NL	pg/g	52	13 U	71.6	54	100	110
PCB-209	NL	NL	pg/g	170	13 U	150	110	210	229
PCB-21	NL	NL	pg/g	11 J	13 U	160 J	100 J	227	200 J
PCB-22	NL	NL	pg/g	5.9 J	13 U	290 J	75 J	162	142
PCB-23	NL	NL	pg/g	3.3 U	13 U	0.47	3.3 U	0.59	5.5 U
PCB-24	NL	NL	pg/g	3.3 U	13 U	87 J	26 J	5.9 U	48.3
PCB-25	NL	NL	pg/g	3.3 U	13 U	74.5	27 J	52.7	48.4
PCB-26	NL	NL	pg/g	5.9 J	13 U	160 J	56 J	100 J	102
PCB-27	NL	NL	pg/g	3.3 U	13 U	56 J	13 J	27.2	22.5
PCB-28	NL	NL	pg/g	15.3	16.3	935	265	506	416
PCB-29	NL	NL	pg/g	5.9	13 U	156	55.9	102	102
PCB-3	NL	NL	pg/g	42	13 U	120	87	171	152
PCB-30	NL	NL	pg/g	9	13.2	278	114	256	186
PCB-31	NL	NL	pg/g	14 J	17 J	560 J	210 J	440 J	357
PCB-32	NL	NL	pg/g	3.4 J	13 U	230 J	48 J	110 J	79
PCB-33	NL	NL	pg/g	10.7	13 U	161	103	227	197
PCB-34	NL	NL	pg/g	3.3 U	13 U	4.7 U	3.3 U	5.9 U	0.55
PCB-35	NL	NL	pg/g	3.3 U	13 U	1.1	3.3 U	18.7	17 J
PCB-36	NL	NL	pg/g	3.3 U	13 U	0.44	3.3 U	0.56	0.52
PCB-37	NL	NL	pg/g	6.5	13 U	240	80	185	178
PCB-38	NL	NL	pg/g	3.3 U	13 U	4.7 U	3.3 U	1.1	1
PCB-39	NL	NL	pg/g	3.3 U	13 U	4.7 U	3.3 U	0.97	0.91
PCB-4	NL	NL	pg/g	3.3 U	13 U	37.4	27	129	56.7

Table 3-5a
Area 1 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-51	SLB10-1-54	SLB10-1-56	SLB10-1-56	SLB10-1-60	SLB10-1-62
			Field Sample ID	SLB10-1-51-06	SLB10-1-54-06	SLB10-1-56-06	SLB10-1-56-06DP	SLB10-1-60-06	SLB10-1-62-06
			Sample Date	10/12/2010	10/15/2010	10/7/2010	10/7/2010	10/14/2010	10/14/2010
			Depth Interval	0- 6	0- 6	0- 6	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit						
PCB-40	NL	NL	pg/g	9.7 J	13 U	350 J	96 J	240 J	230 J
PCB-41	NL	NL	pg/g	9.7	13 U	352	95.9	242	233
PCB-42	NL	NL	pg/g	4 J	13 U	174	56 J	110 J	105
PCB-43	NL	NL	pg/g	3.3 U	13 U	4.7 U	3.3 U	9.2	0.77
PCB-44	NL	NL	pg/g	23 J	25 J	785	360 J	830 J	715
PCB-45	NL	NL	pg/g	3.3 U	13 U	230 J	86 J	190 J	180 J
PCB-46	NL	NL	pg/g	3.3 U	13 U	55.1	13 J	27.2	24.7
PCB-47	NL	NL	pg/g	23	25.2 J	785	358	828	715
PCB-48	NL	NL	pg/g	3.3 U	13 U	81.6	21 J	58.5	51 J
PCB-49	NL	NL	pg/g	15 J	13 U	516	240 J	505	440 J
PCB-5	NL	NL	pg/g	3.3 U	13 U	3.4	3.3 U	4.3	5.5 U
PCB-50	NL	NL	pg/g	5.3 J	13 U	198	94 J	180 J	171
PCB-51	NL	NL	pg/g	3.3 U	13 U	228	86.4	188	180 J
PCB-52	NL	NL	pg/g	53 J	29 J	1130	690 J	1500	1140
PCB-53	NL	NL	pg/g	5.3	13 U	198	93.5	185	171
PCB-54	NL	NL	pg/g	3.3 U	13 U	15	9.8	19.5	19
PCB-55	NL	NL	pg/g	3.3 U	13 U	4.7 U	3.3 U	5.9 U	5.5 U
PCB-56	NL	NL	pg/g	11 J	13 U	134	74 J	152	100 J
PCB-57	NL	NL	pg/g	3.3 U	13 U	6.3	3.3 U	0.85	5.5 U
PCB-58	NL	NL	pg/g	3.3 U	13 U	18.2	3.3 U	5.9 U	12 J
PCB-59	NL	NL	pg/g	3.3 U	13 U	74 J	21 J	44	46.1
PCB-6	NL	NL	pg/g	3.3 U	13 U	31 J	23 J	47 J	34 J
PCB-60	NL	NL	pg/g	4.1 J	13 U	86.9	3.3 U	120 J	110 J
PCB-61	NL	NL	pg/g	49 J	31 J	712	370 J	1100 J	1100 J
PCB-62	NL	NL	pg/g	3.3 U	13 U	73.8	20.5	44	46.1
PCB-63	NL	NL	pg/g	3.3 U	13 U	8	6.1 J	15.5	14.6
PCB-64	NL	NL	pg/g	7.9 J	13 U	280 J	95 J	228	200 J
PCB-65	NL	NL	pg/g	23	25.2	785	358	828	715
PCB-66	NL	NL	pg/g	3.3 U	15 J	340 J	180 J	510 J	490
PCB-67	NL	NL	pg/g	3.3 U	13 U	11 J	3.3 U	15.2	16 J
PCB-68	NL	NL	pg/g	3.3 U	13 U	6.6 J	3.3 U	0.82	9.3
PCB-69	NL	NL	pg/g	15	13 U	516	240	505	445
PCB-7	NL	NL	pg/g	3.3 U	13 U	5.9 J	4.6 J	11.1	5.8 J
PCB-70	NL	NL	pg/g	49.5	30.6	712	367	1100	1150
PCB-71	NL	NL	pg/g	9.7	13 U	352	95.9	242	233
PCB-72	NL	NL	pg/g	3.3 U	13 U	11 J	3.3 U	8.9 J	14 J
PCB-73	NL	NL	pg/g	3.3 U	13 U	4.7 U	3.3 U	1.1	5.5 U
PCB-74	NL	NL	pg/g	49.5	30.6	712	367	1100	1150
PCB-75	NL	NL	pg/g	3.3 U	13 U	73.8	20.5	44	46.1
PCB-76	NL	NL	pg/g	49.5	30.6	712	367	1100	1150
PCB-77	NL	NL	pg/g	4.4	13 U	70.4	48	110	94
PCB-78	NL	NL	pg/g	3.3 U	13 U	0.68	3.3 U	5.9 U	0.8
PCB-79	NL	NL	pg/g	3.3 U	13 U	0.75	3.3 U	24 J	15.7
PCB-8	NL	NL	pg/g	3.3 U	13 U	130 J	100 J	243	159
PCB-80	NL	NL	pg/g	3.3 U	13 U	13 J	3.3 U	5.9 U	5.5 U
PCB-81	NL	NL	pg/g	3.3 U	13 U	0.56	3.3 U	5.9 U	5.5 U
PCB-82	NL	NL	pg/g	13 J	13 U	181	150 J	350 J	270 J
PCB-83	NL	NL	pg/g	62 J	25 J	940 J	820 J	1600 J	1270
PCB-84	NL	NL	pg/g	25 J	13 U	262	160 J	436	390 J
PCB-85	NL	NL	pg/g	190 J	57 J	2000 J	2100 J	4660	5440
PCB-86	NL	NL	pg/g	30 J	27 J	500 J	450 J	2000 J	780 J
PCB-87	NL	NL	pg/g	30.3	27.4	503	452	1960	778
PCB-88	NL	NL	pg/g	14 J	13 U	190 J	96 J	274	316
PCB-89	NL	NL	pg/g	3.3 U	13 U	4.7 U	3.3 U	0.59	5.5 U
PCB-9	NL	NL	pg/g	3.3 U	13 U	12.5	8.8 J	22 J	16 J
PCB-90	NL	NL	pg/g	130 J	52 J	2100 J	1800 J	3600 J	3100 J
PCB-91	NL	NL	pg/g	14.3	13 U	193	95.6	274	316
PCB-92	NL	NL	pg/g	28 J	13 U	484	390 J	654	640 J
PCB-93	NL	NL	pg/g	3.3 U	13 U	1.3	53 J	87 J	1.5
PCB-94	NL	NL	pg/g	3.3 U	13 U	4.7 U	3.3 U	18.7	0.83
PCB-95	NL	NL	pg/g	54 J	27 J	620 J	3.3 U	340 J	500 J
PCB-96	NL	NL	pg/g	3.3 U	13 U	14 J	9.7 J	19.9	19
PCB-97	NL	NL	pg/g	30.3	27.4	503	452	1960	778
PCB-98	NL	NL	pg/g	3.3 U	13 U	1.3	53.1	87.2	5.5 U
PCB-99	NL	NL	pg/g	62.4	24.9	937	818	1580	1270
TOTAL PCBs	60,000	680,000	pg/g	5974.9	1799.6	95107.7	73166.3	146496.2	138612.2
Dioxin-like PCB TEQ	NL	NL	pg/g	0.01044075	0.03718	0.025401	0.0254025	0.04510225	0.0367565

Table 3-5a
Area 1 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-62
			Field Sample ID	SLB10-1-62-06DP
			Sample Date	10/14/2010
			Depth Interval	0- 6
Chemical	Level I ¹	Level II ²	Unit	
PCB-1	NL	NL	pg/g	100
PCB-10	NL	NL	pg/g	5 U
PCB-100	NL	NL	pg/g	82.2
PCB-101	NL	NL	pg/g	2510
PCB-102	NL	NL	pg/g	82.2
PCB-103	NL	NL	pg/g	44 J
PCB-104	NL	NL	pg/g	5.4
PCB-105	NL	NL	pg/g	690
PCB-106	NL	NL	pg/g	5 U
PCB-107	NL	NL	pg/g	5 U
PCB-108	NL	NL	pg/g	200 J
PCB-109	NL	NL	pg/g	1260
PCB-11	NL	NL	pg/g	91 J
PCB-110	NL	NL	pg/g	3180
PCB-111	NL	NL	pg/g	5 U
PCB-112	NL	NL	pg/g	5 U
PCB-113	NL	NL	pg/g	2510
PCB-114	NL	NL	pg/g	5 U
PCB-115	NL	NL	pg/g	5 U
PCB-116	NL	NL	pg/g	3180
PCB-117	NL	NL	pg/g	3180
PCB-118	NL	NL	pg/g	15 J
PCB-119	NL	NL	pg/g	1260
PCB-12	NL	NL	pg/g	43 J
PCB-120	NL	NL	pg/g	5 U
PCB-121	NL	NL	pg/g	5 U
PCB-122	NL	NL	pg/g	37 J
PCB-123	NL	NL	pg/g	1800 J
PCB-124	NL	NL	pg/g	202
PCB-125	NL	NL	pg/g	1260
PCB-126	NL	NL	pg/g	11
PCB-127	NL	NL	pg/g	5 U
PCB-128	NL	NL	pg/g	590 J
PCB-129	NL	NL	pg/g	5000 J
PCB-13	NL	NL	pg/g	42.9
PCB-130	NL	NL	pg/g	320 J
PCB-131	NL	NL	pg/g	36 J
PCB-132	NL	NL	pg/g	1500 J
PCB-133	NL	NL	pg/g	120 J
PCB-134	NL	NL	pg/g	220 J
PCB-135	NL	NL	pg/g	1900 J
PCB-136	NL	NL	pg/g	520 J
PCB-137	NL	NL	pg/g	140 J
PCB-138	NL	NL	pg/g	4960
PCB-139	NL	NL	pg/g	67 J
PCB-14	NL	NL	pg/g	5 U
PCB-140	NL	NL	pg/g	67.3
PCB-141	NL	NL	pg/g	1000 J
PCB-142	NL	NL	pg/g	5 U
PCB-143	NL	NL	pg/g	219
PCB-144	NL	NL	pg/g	160 J
PCB-145	NL	NL	pg/g	5 U
PCB-146	NL	NL	pg/g	1000 J
PCB-147	NL	NL	pg/g	4200 J
PCB-148	NL	NL	pg/g	26 J
PCB-149	NL	NL	pg/g	4190
PCB-15	NL	NL	pg/g	260
PCB-150	NL	NL	pg/g	14 J
PCB-151	NL	NL	pg/g	1940
PCB-152	NL	NL	pg/g	9.6 J
PCB-153	NL	NL	pg/g	4500 J
PCB-154	NL	NL	pg/g	120 J
PCB-155	NL	NL	pg/g	5 U
PCB-156	NL	NL	pg/g	390
PCB-157	NL	NL	pg/g	393
PCB-158	NL	NL	pg/g	420 J
PCB-159	NL	NL	pg/g	58 J
PCB-16	NL	NL	pg/g	73 J
PCB-160	NL	NL	pg/g	5 U
PCB-161	NL	NL	pg/g	5 U
PCB-162	NL	NL	pg/g	5 U
PCB-163	NL	NL	pg/g	4960

Table 3-5a
Area 1 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-62
			Field Sample ID	SLB10-1-62-06DP
			Sample Date	10/14/2010
			Depth Interval	0- 6
Chemical	Level I ¹	Level II ²	Unit	
PCB-164	NL	NL	pg/g	355
PCB-165	NL	NL	pg/g	5 U
PCB-166	NL	NL	pg/g	592
PCB-167	NL	NL	pg/g	140
PCB-168	NL	NL	pg/g	4520
PCB-169	NL	NL	pg/g	5 U
PCB-17	NL	NL	pg/g	75 J
PCB-170	NL	NL	pg/g	1600 J
PCB-171	NL	NL	pg/g	460 J
PCB-172	NL	NL	pg/g	310 J
PCB-173	NL	NL	pg/g	465
PCB-174	NL	NL	pg/g	2000 J
PCB-175	NL	NL	pg/g	40 J
PCB-176	NL	NL	pg/g	180 J
PCB-177	NL	NL	pg/g	1100 J
PCB-178	NL	NL	pg/g	400 J
PCB-179	NL	NL	pg/g	720 J
PCB-18	NL	NL	pg/g	160 J
PCB-180	NL	NL	pg/g	3900
PCB-181	NL	NL	pg/g	5 U
PCB-182	NL	NL	pg/g	5 U
PCB-183	NL	NL	pg/g	920 J
PCB-184	NL	NL	pg/g	5 U
PCB-185	NL	NL	pg/g	190 J
PCB-186	NL	NL	pg/g	5 U
PCB-187	NL	NL	pg/g	2300 J
PCB-188	NL	NL	pg/g	5 U
PCB-189	NL	NL	pg/g	55
PCB-19	NL	NL	pg/g	18
PCB-190	NL	NL	pg/g	260
PCB-191	NL	NL	pg/g	52
PCB-192	NL	NL	pg/g	5 U
PCB-193	NL	NL	pg/g	3890
PCB-194	NL	NL	pg/g	960 J
PCB-195	NL	NL	pg/g	400 J
PCB-196	NL	NL	pg/g	430 J
PCB-197	NL	NL	pg/g	25 J
PCB-198	NL	NL	pg/g	920 J
PCB-199	NL	NL	pg/g	923
PCB-2	NL	NL	pg/g	48 J
PCB-20	NL	NL	pg/g	370 J
PCB-200	NL	NL	pg/g	120 J
PCB-201	NL	NL	pg/g	95 J
PCB-202	NL	NL	pg/g	160
PCB-203	NL	NL	pg/g	610 J
PCB-204	NL	NL	pg/g	5 U
PCB-205	NL	NL	pg/g	5 U
PCB-206	NL	NL	pg/g	230
PCB-207	NL	NL	pg/g	34 J
PCB-208	NL	NL	pg/g	86
PCB-209	NL	NL	pg/g	170
PCB-21	NL	NL	pg/g	160 J
PCB-22	NL	NL	pg/g	120 J
PCB-23	NL	NL	pg/g	5 U
PCB-24	NL	NL	pg/g	5 U
PCB-25	NL	NL	pg/g	40 J
PCB-26	NL	NL	pg/g	77 J
PCB-27	NL	NL	pg/g	19 J
PCB-28	NL	NL	pg/g	372
PCB-29	NL	NL	pg/g	77.4
PCB-3	NL	NL	pg/g	140 J
PCB-30	NL	NL	pg/g	161
PCB-31	NL	NL	pg/g	310 J
PCB-32	NL	NL	pg/g	69 J
PCB-33	NL	NL	pg/g	163
PCB-34	NL	NL	pg/g	5 U
PCB-35	NL	NL	pg/g	16 J
PCB-36	NL	NL	pg/g	5 U
PCB-37	NL	NL	pg/g	150
PCB-38	NL	NL	pg/g	5 U
PCB-39	NL	NL	pg/g	5 U
PCB-4	NL	NL	pg/g	49

Table 3-5a
Area 1 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-62
			Field Sample ID	SLB10-1-62-06DP
			Sample Date	10/14/2010
			Depth Interval	0- 6
Chemical	Level I ¹	Level II ²	Unit	
PCB-40	NL	NL	pg/g	190 J
PCB-41	NL	NL	pg/g	186
PCB-42	NL	NL	pg/g	82 J
PCB-43	NL	NL	pg/g	9.1 J
PCB-44	NL	NL	pg/g	580 J
PCB-45	NL	NL	pg/g	150 J
PCB-46	NL	NL	pg/g	20 J
PCB-47	NL	NL	pg/g	576
PCB-48	NL	NL	pg/g	45 J
PCB-49	NL	NL	pg/g	360 J
PCB-5	NL	NL	pg/g	5 U
PCB-50	NL	NL	pg/g	140 J
PCB-51	NL	NL	pg/g	148
PCB-52	NL	NL	pg/g	970 J
PCB-53	NL	NL	pg/g	139
PCB-54	NL	NL	pg/g	15
PCB-55	NL	NL	pg/g	5 U
PCB-56	NL	NL	pg/g	120 J
PCB-57	NL	NL	pg/g	5 U
PCB-58	NL	NL	pg/g	5 U
PCB-59	NL	NL	pg/g	38 J
PCB-6	NL	NL	pg/g	31 J
PCB-60	NL	NL	pg/g	100 J
PCB-61	NL	NL	pg/g	860 J
PCB-62	NL	NL	pg/g	38.2
PCB-63	NL	NL	pg/g	13 J
PCB-64	NL	NL	pg/g	170 J
PCB-65	NL	NL	pg/g	576
PCB-66	NL	NL	pg/g	420 J
PCB-67	NL	NL	pg/g	15 J
PCB-68	NL	NL	pg/g	6.2 J
PCB-69	NL	NL	pg/g	363
PCB-7	NL	NL	pg/g	7.2 J
PCB-70	NL	NL	pg/g	863
PCB-71	NL	NL	pg/g	186
PCB-72	NL	NL	pg/g	5 U
PCB-73	NL	NL	pg/g	5 U
PCB-74	NL	NL	pg/g	863
PCB-75	NL	NL	pg/g	38.2
PCB-76	NL	NL	pg/g	863
<i>PCB-77</i>	NL	NL	pg/g	80
PCB-78	NL	NL	pg/g	5.9 J
PCB-79	NL	NL	pg/g	5 U
PCB-8	NL	NL	pg/g	150 J
PCB-80	NL	NL	pg/g	5 U
<i>PCB-81</i>	NL	NL	pg/g	5 U
PCB-82	NL	NL	pg/g	220 J
PCB-83	NL	NL	pg/g	1100 J
PCB-84	NL	NL	pg/g	340 J
PCB-85	NL	NL	pg/g	3200 J
PCB-86	NL	NL	pg/g	1300 J
PCB-87	NL	NL	pg/g	1260
PCB-88	NL	NL	pg/g	230 J
PCB-89	NL	NL	pg/g	5 U
PCB-9	NL	NL	pg/g	12 J
PCB-90	NL	NL	pg/g	2500 J
PCB-91	NL	NL	pg/g	230
PCB-92	NL	NL	pg/g	530 J
PCB-93	NL	NL	pg/g	82 J
PCB-94	NL	NL	pg/g	20 J
PCB-95	NL	NL	pg/g	590 J
PCB-96	NL	NL	pg/g	16 J
PCB-97	NL	NL	pg/g	1260
PCB-98	NL	NL	pg/g	82.2
PCB-99	NL	NL	pg/g	1080
TOTAL PCBs	60,000	680,000	pg/g	116834
Dioxin-like PCB				
TEQ	NL	NL	pg/g	0.0818025

Notes:

Result exceeds SQTs - Level I.
Result exceeds SQTs - Level II.

Italic = Dioxin-like PCB Congeners

ID = Identification

J = Estimated Value

pg/g = pico gram per gram

NL = Not Listed

PCB = Polychlorinated Biphenyls

pg/g = pico gram per gram

SQT = Sediment Quality Targets

U = Not Detected

Total PCBs = Sum of Detections

¹ Evaluation of Numerical SQTs-St Louis River AOC-Level I

² Evaluation of Numerical SQTs-St Louis River AOC-Level II

Table 3-5b
Area 2 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Level I ¹	Level II ²	Location ID	SLB10-2-65	SLB10-2-69	SLB10-2-71	SLB10-2-74	SLB10-2-74	SLB10-2-76
			Field Sample ID	SLB10-2-65-06	SLB10-2-69-06	SLB10-2-71-06	SLB10-2-74-06	SLB10-2-74-06DP	SLB10-2-76-06
			Sample Date	10/7/2010	10/7/2010	10/7/2010	10/6/2010	10/6/2010	10/13/2010
			Depth Interval	0- 6	0- 6	0- 6	0- 6	0- 6	0- 6
Unit									
PCB-1	NL	NL	pg/g	32.8	59	2.6 U	78	93	48
PCB-10	NL	NL	pg/g	2.7	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-100	NL	NL	pg/g	1.1	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-101	NL	NL	pg/g	1530	1490	11.2	975	1220	754
PCB-102	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-103	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-104	NL	NL	pg/g	0.54	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-105	NL	NL	pg/g	346	560	3.4	210	250	180
PCB-106	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-107	NL	NL	pg/g	100 J	80 J	2.6 U	60 J	65 J	53 J
PCB-108	NL	NL	pg/g	40.2	59 J	1.4	23 J	30 J	19 J
PCB-109	NL	NL	pg/g	358	489	2.6 U	244	323	153
PCB-11	NL	NL	pg/g	28.5	160 J	2.6 UJ	22 J	28 J	8.6 U
PCB-110	NL	NL	pg/g	794	7640	43.9	1150	1410	954
PCB-111	NL	NL	pg/g	0.46	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-112	NL	NL	pg/g	0.64	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-113	NL	NL	pg/g	1530	1490	11.2	975	1220	754
PCB-114	NL	NL	pg/g	16	24	2.6 U	9	12	8.6 U
PCB-115	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-116	NL	NL	pg/g	794	7640	43.9	1150	1410	954
PCB-117	NL	NL	pg/g	794	7640	43.9	1150	1410	954
PCB-118	NL	NL	pg/g	915	1300	8	590	710	500
PCB-119	NL	NL	pg/g	358	489	3	244	323	153
PCB-12	NL	NL	pg/g	24 J	11 U	2.6 U	26 J	33 J	8.6 U
PCB-120	NL	NL	pg/g	0.4	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-121	NL	NL	pg/g	0.29	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-122	NL	NL	pg/g	11.2	16 J	2.6 U	5.5 J	7.5 J	8.6 U
PCB-123	NL	NL	pg/g	12.5	20	2.6 U	3.1 U	8.9	8.6 U
PCB-124	NL	NL	pg/g	40 J	58.8	2.6 U	23.3	29.8	19.4
PCB-125	NL	NL	pg/g	358	489	3	244	323	153
PCB-126	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-127	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-128	NL	NL	pg/g	320 J	470 J	2.6 U	180 J	230 J	140 J
PCB-129	NL	NL	pg/g	2940	3200 J	21 J	1500 J	1900 J	1200 J
PCB-13	NL	NL	pg/g	23.9	11 U	2.6 U	26.2	32.7	8.6 U
PCB-130	NL	NL	pg/g	209	220 J	2.6 U	97 J	130 J	80 J
PCB-131	NL	NL	pg/g	22.1	33 J	2.6 U	3.1 U	16 J	8.6 U
PCB-132	NL	NL	pg/g	960 J	1000 J	5.9 J	480 J	610 J	380 J
PCB-133	NL	NL	pg/g	94.8	48 J	2.6 U	38 J	48 J	29 J
PCB-134	NL	NL	pg/g	140 J	130 J	2.6 U	70 J	93 J	54.6
PCB-135	NL	NL	pg/g	1500 J	1100 J	7.4 J	650 J	850 J	490 J
PCB-136	NL	NL	pg/g	395	300 J	2.6 U	200 J	260 J	140 J
PCB-137	NL	NL	pg/g	224	230 J	2.6 U	120 J	160 J	85 J
PCB-138	NL	NL	pg/g	2940	3230	20.6	1470	1890	1190
PCB-139	NL	NL	pg/g	55 J	44 J	2.6 U	24 J	30 J	17 J
PCB-14	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-140	NL	NL	pg/g	54.5	43.7	2.6 U	23.5	30.1	17
PCB-141	NL	NL	pg/g	580 J	590 J	2.6 U	280 J	370 J	230 J
PCB-142	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-143	NL	NL	pg/g	141	127	2.6 U	70.5	93	54.6
PCB-144	NL	NL	pg/g	120	11 U	2.6 U	59 J	76 J	49 J
PCB-145	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-146	NL	NL	pg/g	807	470 J	4.3 J	330 J	420 J	250 J
PCB-147	NL	NL	pg/g	2880	2300 J	17 J	1400 J	1800 J	1100 J
PCB-148	NL	NL	pg/g	23.9	11 U	2.6 U	9.2 J	3.7 U	8.6 U
PCB-149	NL	NL	pg/g	2880	2310	17.4	1410	1810	1080
PCB-15	NL	NL	pg/g	150	220	2.6 U	140	160	87
PCB-150	NL	NL	pg/g	7.7 J	11 U	2.6 U	3.7 J	5.3 J	8.6 U
PCB-151	NL	NL	pg/g	1470	1060	7.4	654	848	487
PCB-152	NL	NL	pg/g	0.56	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-153	NL	NL	pg/g	2800 J	2400 J	19 J	1400 J	1800 J	1100 J
PCB-154	NL	NL	pg/g	4.2 U	11 U	2.6 U	29 J	38 J	20 J
PCB-155	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-156	NL	NL	pg/g	209	260	2.6 U	110	130	95
PCB-157	NL	NL	pg/g	209	262	2.6 U	106	132	94.7
PCB-158	NL	NL	pg/g	210 J	290 J	2.6 U	100 J	140 J	92 J
PCB-159	NL	NL	pg/g	27 J	20 J	2.6 U	15 J	20 J	9.7 J
PCB-16	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-160	NL	NL	pg/g	1.3	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-161	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-162	NL	NL	pg/g	8.3 J	12 J	2.6 U	4.4 J	5.9 J	8.6 U
PCB-163	NL	NL	pg/g	2940	3230	20.6	1470	1890	1190

Table 3-5b
Area 2 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-65	SLB10-2-69	SLB10-2-71	SLB10-2-74	SLB10-2-74	SLB10-2-76
			Field Sample ID	SLB10-2-65-06	SLB10-2-69-06	SLB10-2-71-06	SLB10-2-74-06	SLB10-2-74-06DP	SLB10-2-76-06
			Sample Date	10/7/2010	10/7/2010	10/7/2010	10/6/2010	10/6/2010	10/13/2010
			Depth Interval	0- 6	0- 6	0- 6	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit						
PCB-164	NL	NL	pg/g	0.89	11 U	2.6 U	3.1 U	3.7 U	1.9
PCB-165	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-166	NL	NL	pg/g	320	474	2.6 U	180	233	137
PCB-167	NL	NL	pg/g	77	97	2.6 U	37	48	34
PCB-168	NL	NL	pg/g	2840	2420	18.8	1370	1770	1130
PCB-169	NL	NL	pg/g	0.64	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-17	NL	NL	pg/g	26.7	72 J	2.6 U	25 J	31 J	19 J
PCB-170	NL	NL	pg/g	1020	690 J	5.9 J	410 J	550 J	390 J
PCB-171	NL	NL	pg/g	315	230 J	2.6 U	130 J	170 J	120 J
PCB-172	NL	NL	pg/g	193	140 J	2.6 U	83 J	100 J	74 J
PCB-173	NL	NL	pg/g	315	226	2.6 U	132	169	121
PCB-174	NL	NL	pg/g	1400 J	1000 J	7.7 J	570 J	750 J	480 J
PCB-175	NL	NL	pg/g	43	11 U	2.6 U	17 J	24 J	11 J
PCB-176	NL	NL	pg/g	140 J	87 J	2.6 U	62 J	79 J	48 J
PCB-177	NL	NL	pg/g	816	510 J	4.5 J	330 J	420 J	290 J
PCB-178	NL	NL	pg/g	290 J	180 J	2.6 U	130 J	160 J	98 J
PCB-179	NL	NL	pg/g	560	340 J	3 J	240 J	310 J	190 J
PCB-18	NL	NL	pg/g	57.6	140 J	2.6 U	57 J	70 J	46 J
PCB-180	NL	NL	pg/g	2470	1700	14	1100	1400	970 J
PCB-181	NL	NL	pg/g	0.31	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-182	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-183	NL	NL	pg/g	540 J	380 J	3.2 J	280 J	330 J	240 J
PCB-184	NL	NL	pg/g	0.29	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-185	NL	NL	pg/g	84	85 J	2.6 U	45 J	66 J	67 J
PCB-186	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-187	NL	NL	pg/g	1650	1100 J	9.9 J	710 J	920 J	570 J
PCB-188	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-189	NL	NL	pg/g	38.7	33	2.6 U	15	19	13
PCB-19	NL	NL	pg/g	4.2 U	11 U	2.6 U	5	6.5	8.6 U
PCB-190	NL	NL	pg/g	173	110	2.6 U	68	79	65 J
PCB-191	NL	NL	pg/g	31.8	26	2.6 U	13	16	12 J
PCB-192	NL	NL	pg/g	0.33	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-193	NL	NL	pg/g	2470	1750	13.9	1070	1380	972
PCB-194	NL	NL	pg/g	640 J	430 J	2.6 U	260 J	310 J	240 J
PCB-195	NL	NL	pg/g	270 J	180 J	2.6 U	110 J	130 J	91 J
PCB-196	NL	NL	pg/g	289	190 J	2.6 U	130 J	160 J	110 J
PCB-197	NL	NL	pg/g	18 J	13 J	2.6 U	9.3 J	12 J	8.6 U
PCB-198	NL	NL	pg/g	651	480 J	3.6 J	290 J	350 J	260 J
PCB-199	NL	NL	pg/g	651	482	3.6	295	348	261
PCB-2	NL	NL	pg/g	18.2	75 J	2.6 U	25 J	30 J	26 J
PCB-20	NL	NL	pg/g	170 J	360 J	3.4 J	88 J	110 J	95 J
PCB-200	NL	NL	pg/g	80.1	62 J	2.6 U	34 J	43 J	29 J
PCB-201	NL	NL	pg/g	68.2	48 J	2.6 U	27 J	21 J	28 J
PCB-202	NL	NL	pg/g	110	93	2.6 U	55	67	47
PCB-203	NL	NL	pg/g	379	300 J	2.6 U	170 J	220 J	150 J
PCB-204	NL	NL	pg/g	4.2	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-205	NL	NL	pg/g	27.3	19	2.6 U	12	3.7 U	11
PCB-206	NL	NL	pg/g	142	350	2.6 U	130	160	150
PCB-207	NL	NL	pg/g	21 J	38 J	2.6 U	17 J	22 J	15 J
PCB-208	NL	NL	pg/g	45	120	2.6 U	64	77	52
PCB-209	NL	NL	pg/g	73	330	2.6 U	220	280	160
PCB-21	NL	NL	pg/g	78 J	210 J	2.6 U	3.1 U	70 J	44 J
PCB-22	NL	NL	pg/g	53 J	170 J	2.6 U	28 J	35 J	29 J
PCB-23	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-24	NL	NL	pg/g	14 J	44 J	2.6 U	11 J	14 J	11 J
PCB-25	NL	NL	pg/g	4.2 U	37 J	2.6 U	17 J	21 J	13 J
PCB-26	NL	NL	pg/g	33.3	69 J	2.6 U	42 J	52 J	28 J
PCB-27	NL	NL	pg/g	7.7 J	13 J	2.6 U	7.4 J	9 J	8.6 U
PCB-28	NL	NL	pg/g	173	360	3.4	88.4	114	94.8
PCB-29	NL	NL	pg/g	33 J	68.7	2.6 U	41.9	52.1	28.4
PCB-3	NL	NL	pg/g	52.2	96	2.6 U	120	140	70
PCB-30	NL	NL	pg/g	58 J	144	2.6 U	57	69.9	46.2
PCB-31	NL	NL	pg/g	130 J	360 J	2.8 J	88 J	110 J	81 J
PCB-32	NL	NL	pg/g	29.2	58 J	2.6 U	20 J	25 J	18 J
PCB-33	NL	NL	pg/g	78.2	209	2.6 U	3.1 U	70	44.1
PCB-34	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-35	NL	NL	pg/g	8.2 J	11 U	2.6 U	10 J	13 J	9.2 J
PCB-36	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	7.9 J	8.6 U
PCB-37	NL	NL	pg/g	88	180	2.6 U	35	44	35
PCB-38	NL	NL	pg/g	0.79	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-39	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-4	NL	NL	pg/g	2.9	26	2.6 U	11	14	8.6 U

Table 3-5b
Area 2 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-65	SLB10-2-69	SLB10-2-71	SLB10-2-74	SLB10-2-74	SLB10-2-76
			Field Sample ID	SLB10-2-65-06	SLB10-2-69-06	SLB10-2-71-06	SLB10-2-74-06	SLB10-2-74-06DP	SLB10-2-76-06
			Sample Date	10/7/2010	10/7/2010	10/7/2010	10/6/2010	10/6/2010	10/13/2010
			Depth Interval	0- 6	0- 6	0- 6	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit						
PCB-40	NL	NL	pg/g	84	150 J	2.6 U	65 J	87 J	50 J
PCB-41	NL	NL	pg/g	84 J	149	2.6 U	65	86.5	49.9
PCB-42	NL	NL	pg/g	38.9	11 U	2.6 U	30 J	39 J	23 J
PCB-43	NL	NL	pg/g	0.58	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-44	NL	NL	pg/g	215	390 J	3.2 J	190 J	240 J	140 J
PCB-45	NL	NL	pg/g	51 J	49 J	2.6 U	3.1 U	53 J	30 J
PCB-46	NL	NL	pg/g	10.1	16 J	2.6 U	3.1 U	3.7 U	8.6 U
PCB-47	NL	NL	pg/g	215	391	3.2	191	243	139
PCB-48	NL	NL	pg/g	19 J	46 J	2.6 U	17 J	22 J	12 J
PCB-49	NL	NL	pg/g	170 J	230 J	2.6 U	150 J	190 J	100 J
PCB-5	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-50	NL	NL	pg/g	60 J	46 J	2.6 U	49 J	64 J	33 J
PCB-51	NL	NL	pg/g	51.1	49	2.6 U	3.1 U	52.7	29.6
PCB-52	NL	NL	pg/g	460 J	560 J	4 J	440 J	560 J	310 J
PCB-53	NL	NL	pg/g	59.5	45.9	2.6 U	48.8	63.5	33.5
PCB-54	NL	NL	pg/g	5.5	11 U	2.6 U	4.6	5.2	8.6 U
PCB-55	NL	NL	pg/g	0.56	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-56	NL	NL	pg/g	120	170 J	2.6 U	62 J	72 J	64 J
PCB-57	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-58	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.5 J	6 J	8.6 U
PCB-59	NL	NL	pg/g	20.1	11 U	2.6 U	14 J	18 J	11 J
PCB-6	NL	NL	pg/g	11 J	24 J	2.6 U	15 J	19 J	8.6 U
PCB-60	NL	NL	pg/g	48 J	110 J	2.6 U	3.1 U	25 J	22 J
PCB-61	NL	NL	pg/g	471	540 J	4.3 J	260 J	390 J	260 J
PCB-62	NL	NL	pg/g	20.1	11 U	2.6 U	13.9	18.1	10.8
PCB-63	NL	NL	pg/g	9.1 J	11 U	2.6 U	3.1 U	4.3 J	8.6 U
PCB-64	NL	NL	pg/g	83 J	120 J	2.6 U	3.1 U	67 J	41 J
PCB-65	NL	NL	pg/g	215	391	3.2	191	243	139
PCB-66	NL	NL	pg/g	260	320 J	2.6 U	110 J	170 J	140 J
PCB-67	NL	NL	pg/g	7.3 J	11 U	2.6 U	3.1 U	5.7 J	8.6 U
PCB-68	NL	NL	pg/g	7	11 U	2.6 U	3.1 U	4.6 J	8.6 U
PCB-69	NL	NL	pg/g	175	226	2.6 U	148	191	104
PCB-7	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-70	NL	NL	pg/g	471	545	4.3	260	393	256
PCB-71	NL	NL	pg/g	84	149	2.6 U	65	86.5	49.9
PCB-72	NL	NL	pg/g	9.5 J	11 U	2.6 U	6.2 J	3.7 U	8.6 U
PCB-73	NL	NL	pg/g	0.79	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-74	NL	NL	pg/g	471	545	4.3	260	393	256
PCB-75	NL	NL	pg/g	20.1	11 U	2.6 U	13.9	18.1	10.8
PCB-76	NL	NL	pg/g	471	545	4.3	260	393	256
PCB-77	NL	NL	pg/g	59	110	2.6 U	26	34	22
PCB-78	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-79	NL	NL	pg/g	4.2 U	12 J	2.6 U	7.3 J	9.6 J	8.6 U
PCB-8	NL	NL	pg/g	53 J	110 J	2.6 U	54 J	61 J	8.6 U
PCB-80	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-81	NL	NL	pg/g	0.5	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-82	NL	NL	pg/g	117	170 J	2.6 U	82 J	100 J	63 J
PCB-83	NL	NL	pg/g	717	730 J	5 J	450 J	550 J	370 J
PCB-84	NL	NL	pg/g	222	170 J	2.6 U	110 J	170 J	110 J
PCB-85	NL	NL	pg/g	794	7600 J	44 J	1100 J	1400 J	950 J
PCB-86	NL	NL	pg/g	358	490 J	3 J	240 J	320 J	150 J
PCB-87	NL	NL	pg/g	358	489	3	244	323	153
PCB-88	NL	NL	pg/g	140 J	91 J	2.6 U	69 J	110 J	58 J
PCB-89	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-9	NL	NL	pg/g	4.2 U	11 U	2.6 U	7 J	8.3 J	8.6 U
PCB-90	NL	NL	pg/g	1530	1500 J	11 J	980 J	1200 J	750 J
PCB-91	NL	NL	pg/g	137	90.7	2.6 U	69.4	108	57.7
PCB-92	NL	NL	pg/g	420 J	260 J	2.6 U	200 J	260 J	170 J
PCB-93	NL	NL	pg/g	1.1	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-94	NL	NL	pg/g	0.62	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-95	NL	NL	pg/g	640 J	120 J	4.4 J	270 J	380 J	180 J
PCB-96	NL	NL	pg/g	6.3 J	11 U	2.6 U	5.3 J	7 J	8.6 U
PCB-97	NL	NL	pg/g	358	489	3	244	323	153
PCB-98	NL	NL	pg/g	4.2 U	11 U	2.6 U	3.1 U	3.7 U	8.6 U
PCB-99	NL	NL	pg/g	717	731	5	451	547	371
TOTAL PCBs	60,000	680,000	pg/g	64905.4	89677.8	524.2	36782.2	47359.7	29911.9
Dioxin-like PCB TEQ	NL	NL	pg/g	0.025798	0.054305	0.007441	0.01659525	0.020217	0.0306915

Table 3-5b
Area 2 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-83	SLB10-2-85	SLB10-2-87	SLB10-2-89	SLB10-2-92	SLB10-2-94
			Field Sample ID	SLB10-2-83-06	SLB10-2-85-06	SLB10-2-87-06	SLB10-2-89-06	SLB10-2-92-06	SLB10-2-94-06
			Sample Date	10/6/2010	10/6/2010	10/6/2010	10/7/2010	10/6/2010	10/7/2010
			Depth Interval	0- 6	0- 6	0- 6	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit						
PCB-1	NL	NL	pg/g	160	38	7	65 U	3.3	32
PCB-10	NL	NL	pg/g	22 U	4.4 U	4.3 U	5.3 U	2.8 U	4.5 U
PCB-100	NL	NL	pg/g	32.5	11.2	4.3 U	1.4	2.8 U	4.5 U
PCB-101	NL	NL	pg/g	3530	1470	198	1680	131	1250
PCB-102	NL	NL	pg/g	32.5	11.2	4.3 U	1.4	2.8 U	4.5 U
PCB-103	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.76	2.8 U	4.5 U
PCB-104	NL	NL	pg/g	22 U	4.4 U	4.3 U	6.2	2.8 U	6.4
PCB-105	NL	NL	pg/g	750	280	46	380	24	250
PCB-106	NL	NL	pg/g	22 U	4.4 U	4.3 U	5.3 U	2.8 U	4.5 U
PCB-107	NL	NL	pg/g	220 J	4.4 U	12 J	98 J	8.1 J	66 J
PCB-108	NL	NL	pg/g	91 J	32 J	5 J	39.8	2.8 J	28 J
PCB-109	NL	NL	pg/g	867	356	42.3	313	31	226
PCB-11	NL	NL	pg/g	120 J	26 J	4.3 U	29.2	2.8 UJ	27 J
PCB-110	NL	NL	pg/g	13600	1490	220	1660	125	4300
PCB-111	NL	NL	pg/g	22 U	4.4 U	4.3 U	5.3 U	2.8 U	4.5 U
PCB-112	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.82	2.8 U	4.5 U
PCB-113	NL	NL	pg/g	3530	1470	198	1680	131	1250
PCB-114	NL	NL	pg/g	38	14	4.3 U	17	2.8 U	15
PCB-115	NL	NL	pg/g	22 U	4.4 U	200 J	1.7	110 J	4.5 U
PCB-116	NL	NL	pg/g	13600	1490	220	1660	125	4300
PCB-117	NL	NL	pg/g	13600	1490	220	1660	125	4300
PCB-118	NL	NL	pg/g	2000	760	120	990	68	660
PCB-119	NL	NL	pg/g	867	356	42.3	313	31	226
PCB-12	NL	NL	pg/g	22 U	22 J	4.3 U	5.3 U	2.8 U	20 J
PCB-120	NL	NL	pg/g	22 U	4.4 U	4.3 U	5.3 U	2.8 U	4.5 U
PCB-121	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.37	2.8 U	4.5 U
PCB-122	NL	NL	pg/g	24 J	7.7 J	4.3 U	12 J	2.8 U	7.1 J
PCB-123	NL	NL	pg/g	26	4.4 U	4.3 U	12.2	2.8 U	10
PCB-124	NL	NL	pg/g	91.2	32	5	39.8	2.8	27.7
PCB-125	NL	NL	pg/g	867	356	42.3	313	31	226
PCB-126	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.97	2.8 U	4.5 U
PCB-127	NL	NL	pg/g	22 U	4.4 U	4.3 U	5.3 U	2.8 U	4.5 U
PCB-128	NL	NL	pg/g	760 J	270 J	51 J	490 J	27 J	300 J
PCB-129	NL	NL	pg/g	6700 J	2600 J	450 J	3870	270 J	2800 J
PCB-13	NL	NL	pg/g	22 U	22.2	4.3 U	6.4	2.8 U	19.7
PCB-130	NL	NL	pg/g	500 J	170 J	31 J	310 J	18 J	190 J
PCB-131	NL	NL	pg/g	22 U	20 J	4.3 U	32.7	2.8 U	4.5 U
PCB-132	NL	NL	pg/g	2300 J	870 J	130 J	1350	85 J	880 J
PCB-133	NL	NL	pg/g	230 J	71 J	18 J	130 J	5.5 J	130 J
PCB-134	NL	NL	pg/g	350 J	130 J	20 J	173	12 J	130 J
PCB-135	NL	NL	pg/g	3500 J	1300 J	210 J	2000 J	130 J	1500 J
PCB-136	NL	NL	pg/g	980 J	370 J	53 J	450 J	37 J	380 J
PCB-137	NL	NL	pg/g	500 J	210 J	37 J	280 J	23 J	210 J
PCB-138	NL	NL	pg/g	6710	2600	455	3870	274	2770
PCB-139	NL	NL	pg/g	130 J	38 J	8.8 J	80 J	2.8 U	61 J
PCB-14	NL	NL	pg/g	22 U	4.4 U	4.3 U	5.3 U	2.8 U	4.5 U
PCB-140	NL	NL	pg/g	133	37.7	8.8	79.8	2.8 U	60.8
PCB-141	NL	NL	pg/g	1300 J	560 J	78 J	750 J	61 J	540 J
PCB-142	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.58	2.8 U	4.5 U
PCB-143	NL	NL	pg/g	348	126	19.6	173	11.9	129
PCB-144	NL	NL	pg/g	260 J	77 J	15 J	140 J	13 J	100 J
PCB-145	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.45	2.8 U	4.5 U
PCB-146	NL	NL	pg/g	1800 J	620 J	130 J	1090	60 J	890 J
PCB-147	NL	NL	pg/g	6900 J	2600 J	430 J	3800 J	260 J	2800 J
PCB-148	NL	NL	pg/g	60 J	4.4 U	4.3 U	0.39	2.8 U	36 J
PCB-149	NL	NL	pg/g	6860	2610	430	3820	260	2780
PCB-15	NL	NL	pg/g	270	130	24	241	2.8 U	110
PCB-150	NL	NL	pg/g	25 J	4.4 U	4.3 U	18 J	2.8 U	15 J
PCB-151	NL	NL	pg/g	3490	1300	211	1950	126	1470
PCB-152	NL	NL	pg/g	22 U	4.4 U	4.3 U	5.3 U	2.8 U	5.1 J
PCB-153	NL	NL	pg/g	6300 J	2400 J	440 J	3740	270 J	2800 J
PCB-154	NL	NL	pg/g	270 J	47 J	20 J	168	3.9 J	150 J
PCB-155	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.55	2.8 U	4.5 U
PCB-156	NL	NL	pg/g	420	170	29	236	16	180
PCB-157	NL	NL	pg/g	419	167	28.8	236	15.9	176
PCB-158	NL	NL	pg/g	500 J	190 J	32 J	311	18 J	4.5 U
PCB-159	NL	NL	pg/g	73 J	30 J	5 J	37.8	3 J	35 J
PCB-16	NL	NL	pg/g	22 U	4.4 U	4.3 U	2	2.8 U	4.5 U
PCB-160	NL	NL	pg/g	22 U	4.4 U	4.3 U	5.3 U	2.8 U	4.5 U
PCB-161	NL	NL	pg/g	22 U	4.4 U	4.3 U	5.3 U	2.8 U	4.5 U
PCB-162	NL	NL	pg/g	22 U	6.6 J	4.3 U	12 J	2.8 U	6.9 J
PCB-163	NL	NL	pg/g	6710	2600	455	3870	274	2770

Table 3-5b
Area 2 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-83	SLB10-2-85	SLB10-2-87	SLB10-2-89	SLB10-2-92	SLB10-2-94
			Field Sample ID	SLB10-2-83-06	SLB10-2-85-06	SLB10-2-87-06	SLB10-2-89-06	SLB10-2-92-06	SLB10-2-94-06
			Sample Date	10/6/2010	10/6/2010	10/6/2010	10/7/2010	10/6/2010	10/7/2010
			Depth Interval	0- 6	0- 6	0- 6	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit						
PCB-164	NL	NL	pg/g	22 U	0.94	4.3 U	1.1	0.6	4.5 U
PCB-165	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.63	2.8 U	4.5 U
PCB-166	NL	NL	pg/g	763	274	51.2	488	26.7	295
PCB-167	NL	NL	pg/g	150	60	11	88	5.7	66
PCB-168	NL	NL	pg/g	6330	2450	439	3740	275	2830
PCB-169	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.82	2.8 U	4.5 U
PCB-17	NL	NL	pg/g	99 J	44 J	5.5 J	80.6	4.6 J	24 J
PCB-170	NL	NL	pg/g	1900 J	790 J	150 J	1200 J	93 J	1100 J
PCB-171	NL	NL	pg/g	620 J	250 J	46 J	380 J	29 J	340 J
PCB-172	NL	NL	pg/g	390 J	150 J	29 J	220 J	17 J	210 J
PCB-173	NL	NL	pg/g	618	253	46.1	376	29.4	340
PCB-174	NL	NL	pg/g	2800 J	1100 J	200 J	1400 J	130 J	1500 J
PCB-175	NL	NL	pg/g	67 J	33 J	6.4 J	42 J	4.3 J	4.5 U
PCB-176	NL	NL	pg/g	290 J	120 J	21 J	168	14 J	140 J
PCB-177	NL	NL	pg/g	1700 J	620 J	120 J	987	68 J	940 J
PCB-178	NL	NL	pg/g	650 J	240 J	50 J	371	25 J	340 J
PCB-179	NL	NL	pg/g	1100 J	470 J	85 J	660 J	51 J	580 J
PCB-18	NL	NL	pg/g	210 J	100 J	11 J	150 J	11 J	49 J
PCB-180	NL	NL	pg/g	4600	1900	360	2820	220	2700
PCB-181	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.39	2.8 U	4.5 U
PCB-182	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.58	2.8 U	4.5 U
PCB-183	NL	NL	pg/g	1000 J	500 J	85 J	636	57 J	590 J
PCB-184	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.37	2.8 U	4.5 U
PCB-185	NL	NL	pg/g	250 J	93 J	13 J	130	9.4 J	130 J
PCB-186	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.61	2.8 U	4.5 U
PCB-187	NL	NL	pg/g	3400 J	1300 J	270 J	1810	150 J	1800 J
PCB-188	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.61	2.8 U	4.5 U
PCB-189	NL	NL	pg/g	69	27	6.2	44.8	3.6	40
PCB-19	NL	NL	pg/g	22 U	10	4.3 U	15.8	2.8 U	4.5 U
PCB-190	NL	NL	pg/g	320	140	27	180	14	180
PCB-191	NL	NL	pg/g	66	26	5.1	37.8	2.8 U	36
PCB-192	NL	NL	pg/g	22 U	4.4 U	4.3 U	5.3 U	2.8 U	4.5 U
PCB-193	NL	NL	pg/g	4620	1920	363	2820	223	2710
PCB-194	NL	NL	pg/g	1000 J	420 J	97 J	700 J	51 J	710 J
PCB-195	NL	NL	pg/g	470 J	190 J	43 J	306	22 J	310 J
PCB-196	NL	NL	pg/g	480 J	210 J	42 J	322	24 J	320 J
PCB-197	NL	NL	pg/g	39 J	15 J	4.3 U	20	2.8 U	23 J
PCB-198	NL	NL	pg/g	1200 J	480 J	100 J	674	51 J	690 J
PCB-199	NL	NL	pg/g	1230	482	104	674	51.1	685
PCB-2	NL	NL	pg/g	73 J	19 J	5.9 J	42 J	2.8 U	19 J
PCB-20	NL	NL	pg/g	380 J	180 J	24 J	260 J	18 J	120 J
PCB-200	NL	NL	pg/g	150 J	59 J	12 J	93 J	7.1 J	86 J
PCB-201	NL	NL	pg/g	40 J	52 J	9.6 J	68.4	5.8 J	70 J
PCB-202	NL	NL	pg/g	220	75	17	130	7.9	120
PCB-203	NL	NL	pg/g	710 J	270 J	59 J	460 J	29 J	420 J
PCB-204	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.32	2.8 U	4.5 U
PCB-205	NL	NL	pg/g	49	20	4.3 U	33	2.8 U	37
PCB-206	NL	NL	pg/g	340	90	32	516	12	160
PCB-207	NL	NL	pg/g	48 J	14 J	4.3 U	48 J	2.8 U	23 J
PCB-208	NL	NL	pg/g	120	29	9.2	208	2.8 U	48
PCB-209	NL	NL	pg/g	230	53	20	809	3.6	91
PCB-21	NL	NL	pg/g	220 J	100 J	12 J	177	11 J	62 J
PCB-22	NL	NL	pg/g	130 J	59 J	4.3 U	124	6.4 J	38 J
PCB-23	NL	NL	pg/g	22 U	4.4 U	4.3 U	5.3 U	2.8 U	4.5 U
PCB-24	NL	NL	pg/g	58 J	24 J	4.3 U	48.6	3.5 J	12 J
PCB-25	NL	NL	pg/g	49 J	21 J	4.3 U	41.7	2.8 U	17 J
PCB-26	NL	NL	pg/g	100 J	39 J	5.9 J	77 J	4.1 J	30 J
PCB-27	NL	NL	pg/g	23 J	11 J	4.3 U	16 J	2.8 U	6 J
PCB-28	NL	NL	pg/g	378	184	24.3	259	18.4	116
PCB-29	NL	NL	pg/g	103	39.4	5.9	76.8	4.2	30.5
PCB-3	NL	NL	pg/g	190	49	13	89	3.9	56
PCB-30	NL	NL	pg/g	209	101	10.9	152	10.7	48.7
PCB-31	NL	NL	pg/g	350 J	150 J	20 J	300 J	15 J	100 J
PCB-32	NL	NL	pg/g	84 J	41 J	5.3 J	78 J	3.8 J	24 J
PCB-33	NL	NL	pg/g	218	105	11.6	177	10.6	62.1
PCB-34	NL	NL	pg/g	22 U	4.4 U	4.3 U	5.3 U	2.8 U	4.5 U
PCB-35	NL	NL	pg/g	22 U	4.4 U	4.3 U	5.3 U	2.8 U	8 J
PCB-36	NL	NL	pg/g	22 U	4.4 U	4.3 U	5.3 U	2.8 U	4.5 U
PCB-37	NL	NL	pg/g	140	61	11	120	6.9	54
PCB-38	NL	NL	pg/g	22 U	4.4 U	4.3 U	1	2.8 U	4.5 U
PCB-39	NL	NL	pg/g	22 U	4.4 U	4.3 U	5.3 U	2.8 U	4.5 U
PCB-4	NL	NL	pg/g	39	20	4.3 U	30	2.8 U	9.9

Table 3-5b
Area 2 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-83	SLB10-2-85	SLB10-2-87	SLB10-2-89	SLB10-2-92	SLB10-2-94
			Field Sample ID	SLB10-2-83-06	SLB10-2-85-06	SLB10-2-87-06	SLB10-2-89-06	SLB10-2-92-06	SLB10-2-94-06
			Sample Date	10/6/2010	10/6/2010	10/6/2010	10/7/2010	10/6/2010	10/7/2010
			Depth Interval	0- 6	0- 6	0- 6	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit						
PCB-40	NL	NL	pg/g	250 J	92 J	13 J	170 J	9.2 J	78 J
PCB-41	NL	NL	pg/g	252	92.1	13	172	9.2	77.5
PCB-42	NL	NL	pg/g	110 J	43 J	5.2 J	87 J	3.7 J	33 J
PCB-43	NL	NL	pg/g	22 U	4.4 U	4.3 U	5.3 U	2.8 U	4.5 U
PCB-44	NL	NL	pg/g	700 J	280 J	53 J	450 J	19 J	280 J
PCB-45	NL	NL	pg/g	200 J	69 J	22 J	163	2.9 J	110 J
PCB-46	NL	NL	pg/g	32 J	12 J	4.3 U	32 J	2.8 U	10 J
PCB-47	NL	NL	pg/g	700	276	52.6	454	19.3	277
PCB-48	NL	NL	pg/g	66 J	24 J	4.3 U	38.1	2.8 U	18 J
PCB-49	NL	NL	pg/g	560 J	200 J	41 J	337	13 J	230 J
PCB-5	NL	NL	pg/g	22 U	4.4 U	4.3 U	3.8	2.8 U	4.5 U
PCB-50	NL	NL	pg/g	220 J	79 J	25 J	174	2.8 J	110 J
PCB-51	NL	NL	pg/g	198	68.9	22.1	160 J	2.9	109
PCB-52	NL	NL	pg/g	1300 J	590 J	85 J	608	42 J	470 J
PCB-53	NL	NL	pg/g	222	78.6	24.6	174	2.8	115
PCB-54	NL	NL	pg/g	30	4.4 U	4.5	18	2.8 U	15
PCB-55	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.71	2.8 U	4.5 U
PCB-56	NL	NL	pg/g	240 J	88 J	15 J	51 J	11 J	70 J
PCB-57	NL	NL	pg/g	22 U	4.4 U	4.3 U	14.8	2.8 U	4.5 U
PCB-58	NL	NL	pg/g	22 U	4.4 U	4.3 U	5.3 U	2.8 U	5.4 J
PCB-59	NL	NL	pg/g	54 J	19 J	4.3 U	39 J	2.8 U	18 J
PCB-6	NL	NL	pg/g	36 J	14 J	4.3 U	27 J	2.8 U	10 J
PCB-60	NL	NL	pg/g	22 U	36 J	6.1	62.4	4.2 J	33 J
PCB-61	NL	NL	pg/g	780 J	430 J	66 J	480	37 J	270 J
PCB-62	NL	NL	pg/g	54.5	19.3	4.3 U	38.5	2.8 U	18.2
PCB-63	NL	NL	pg/g	22 U	4.4 U	4.3 U	5.3 U	2.8 U	4.5 U
PCB-64	NL	NL	pg/g	200 J	76 J	11 J	127	6.9 J	60 J
PCB-65	NL	NL	pg/g	700	276	52.6	454	19.3	277
PCB-66	NL	NL	pg/g	430 J	220 J	35 J	245	20 J	150 J
PCB-67	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.71	2.8 U	4.5 U
PCB-68	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.74	2.8 U	4.5 U
PCB-69	NL	NL	pg/g	556	197	40.8	337	12.7	235
PCB-7	NL	NL	pg/g	22 U	4.4 U	4.3 U	5.3 U	2.8 U	4.5 U
PCB-70	NL	NL	pg/g	783	430	65.7	480	37.3	273
PCB-71	NL	NL	pg/g	252	92.1	13	172	9.2	77.5
PCB-72	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.53	2.8 U	4.5 U
PCB-73	NL	NL	pg/g	22 U	4.4 U	4.3 U	5.3 U	2.8 U	4.5 U
PCB-74	NL	NL	pg/g	783	430	65.7	480	37.3	273
PCB-75	NL	NL	pg/g	54.5	19.3	4.3 U	38.5	2.8 U	18.2
PCB-76	NL	NL	pg/g	783	430	65.7	480	37.3	273
PCB-77	NL	NL	pg/g	90	33	6.7	55.5	3.8	36
PCB-78	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.76	2.8 U	4.5 U
PCB-79	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.84	2.8 U	4.5 U
PCB-8	NL	NL	pg/g	160 J	72 J	9.3 J	110 J	2.8 U	41 J
PCB-80	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.71	2.8 U	4.5 U
PCB-81	NL	NL	pg/g	22 U	4.4 U	4.3 U	5.3 U	2.8 U	4.5 U
PCB-82	NL	NL	pg/g	300 J	100 J	14 J	140 J	9.1 J	83 J
PCB-83	NL	NL	pg/g	1800 J	570 J	93 J	675	49 J	620 J
PCB-84	NL	NL	pg/g	22 U	190 J	26 J	260 J	14 J	120 J
PCB-85	NL	NL	pg/g	14000 J	1500 J	220 J	1700 J	120 J	4300 J
PCB-86	NL	NL	pg/g	870 J	360 J	42 J	313	31 J	230 J
PCB-87	NL	NL	pg/g	867	356	42.3	313	31	226
PCB-88	NL	NL	pg/g	270 J	120 J	28 J	180 J	6.6 J	120 J
PCB-89	NL	NL	pg/g	22 U	4.4 U	4.3 U	0.53	2.8 U	4.5 U
PCB-9	NL	NL	pg/g	22 U	4.4 U	4.3 U	8.4 J	2.8 U	4.5 U
PCB-90	NL	NL	pg/g	3500 J	1500 J	200 J	1700 J	130 J	1300 J
PCB-91	NL	NL	pg/g	270	119	28.1	166	6.6	118
PCB-92	NL	NL	pg/g	920 J	320 J	55 J	420 J	29 J	370 J
PCB-93	NL	NL	pg/g	33 J	11 J	4.3 U	1.4	2.8 U	4.5 U
PCB-94	NL	NL	pg/g	22 U	4.4 U	4.3 U	5.3 U	2.8 U	4.5 U
PCB-95	NL	NL	pg/g	850 J	82 J	55 J	521	56 J	240 J
PCB-96	NL	NL	pg/g	22 U	7.3 J	4.3 U	14 J	2.8 U	10 J
PCB-97	NL	NL	pg/g	867	356	42.3	313	31	226
PCB-98	NL	NL	pg/g	32.5	11.2	4.3 U	1.4	2.8 U	4.5 U
PCB-99	NL	NL	pg/g	1780	575	92.8	675	49.1	615
TOTAL PCBs	60,000	680,000	pg/g	191081.7	59550.8	10245.1	84778.2	5992.9	75846.7
Dioxin-like PCB TEQ	NL	NL	pg/g	0.08941	0.022911	0.013829	0.021786	0.00883	0.0230725

Table 3-5b
Area 2 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-96
			Field Sample ID	SLB10-2-96-06
			Sample Date	10/7/2010
			Depth Interval	0- 6
Chemical	Level I ¹	Level II ²	Unit	
PCB-1	NL	NL	pg/g	3.6 U
PCB-10	NL	NL	pg/g	3.6 U
PCB-100	NL	NL	pg/g	3.6 U
PCB-101	NL	NL	pg/g	59.3
PCB-102	NL	NL	pg/g	3.6 U
PCB-103	NL	NL	pg/g	3.6 U
PCB-104	NL	NL	pg/g	3.6 U
PCB-105	NL	NL	pg/g	11
PCB-106	NL	NL	pg/g	3.6 U
PCB-107	NL	NL	pg/g	3.6 J
PCB-108	NL	NL	pg/g	3.6 U
PCB-109	NL	NL	pg/g	11.7
PCB-11	NL	NL	pg/g	3.6 UJ
PCB-110	NL	NL	pg/g	68.6
PCB-111	NL	NL	pg/g	3.6 U
PCB-112	NL	NL	pg/g	3.6 U
PCB-113	NL	NL	pg/g	59.3
PCB-114	NL	NL	pg/g	3.6 U
PCB-115	NL	NL	pg/g	3.6 U
PCB-116	NL	NL	pg/g	68.6
PCB-117	NL	NL	pg/g	68.6
PCB-118	NL	NL	pg/g	29
PCB-119	NL	NL	pg/g	11.7
PCB-12	NL	NL	pg/g	3.6 U
PCB-120	NL	NL	pg/g	3.6 U
PCB-121	NL	NL	pg/g	3.6 U
PCB-122	NL	NL	pg/g	3.6 U
PCB-123	NL	NL	pg/g	3.6 U
PCB-124	NL	NL	pg/g	3.6 U
PCB-125	NL	NL	pg/g	11.7
PCB-126	NL	NL	pg/g	3.6 U
PCB-127	NL	NL	pg/g	3.6 U
PCB-128	NL	NL	pg/g	11 J
PCB-129	NL	NL	pg/g	110 J
PCB-13	NL	NL	pg/g	3.6 U
PCB-130	NL	NL	pg/g	7.4 J
PCB-131	NL	NL	pg/g	3.6 U
PCB-132	NL	NL	pg/g	32 J
PCB-133	NL	NL	pg/g	4.6 J
PCB-134	NL	NL	pg/g	5.1 J
PCB-135	NL	NL	pg/g	55 J
PCB-136	NL	NL	pg/g	14 J
PCB-137	NL	NL	pg/g	7.9 J
PCB-138	NL	NL	pg/g	109
PCB-139	NL	NL	pg/g	3.6 U
PCB-14	NL	NL	pg/g	3.6 U
PCB-140	NL	NL	pg/g	3.6 U
PCB-141	NL	NL	pg/g	18 J
PCB-142	NL	NL	pg/g	3.6 U
PCB-143	NL	NL	pg/g	5.1
PCB-144	NL	NL	pg/g	4.1 J
PCB-145	NL	NL	pg/g	3.6 U
PCB-146	NL	NL	pg/g	30 J
PCB-147	NL	NL	pg/g	110 J
PCB-148	NL	NL	pg/g	3.6 U
PCB-149	NL	NL	pg/g	110
PCB-15	NL	NL	pg/g	4
PCB-150	NL	NL	pg/g	3.6 U
PCB-151	NL	NL	pg/g	54.7
PCB-152	NL	NL	pg/g	3.6 U
PCB-153	NL	NL	pg/g	100 J
PCB-154	NL	NL	pg/g	3.6 U
PCB-155	NL	NL	pg/g	3.6 U
PCB-156	NL	NL	pg/g	6.8
PCB-157	NL	NL	pg/g	6.8
PCB-158	NL	NL	pg/g	6.5 J
PCB-159	NL	NL	pg/g	3.6 U
PCB-16	NL	NL	pg/g	3.6 U
PCB-160	NL	NL	pg/g	3.6 U
PCB-161	NL	NL	pg/g	3.6 U
PCB-162	NL	NL	pg/g	3.6 U
PCB-163	NL	NL	pg/g	109

Table 3-5b
Area 2 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-96
			Field Sample ID	SLB10-2-96-06
			Sample Date	10/7/2010
			Depth Interval	0- 6
Chemical	Level I ¹	Level II ²	Unit	
PCB-164	NL	NL	pg/g	0.76
PCB-165	NL	NL	pg/g	3.6 U
PCB-166	NL	NL	pg/g	10.8
PCB-167	NL	NL	pg/g	3.6 U
PCB-168	NL	NL	pg/g	105
PCB-169	NL	NL	pg/g	3.6 U
PCB-17	NL	NL	pg/g	3.6 U
PCB-170	NL	NL	pg/g	39 J
PCB-171	NL	NL	pg/g	13 J
PCB-172	NL	NL	pg/g	8 J
PCB-173	NL	NL	pg/g	12.5
PCB-174	NL	NL	pg/g	45 J
PCB-175	NL	NL	pg/g	3.6 U
PCB-176	NL	NL	pg/g	3.6 U
PCB-177	NL	NL	pg/g	33 J
PCB-178	NL	NL	pg/g	13 J
PCB-179	NL	NL	pg/g	22 J
PCB-18	NL	NL	pg/g	3.6 U
PCB-180	NL	NL	pg/g	95
PCB-181	NL	NL	pg/g	3.6 U
PCB-182	NL	NL	pg/g	3.6 U
PCB-183	NL	NL	pg/g	24 J
PCB-184	NL	NL	pg/g	3.6 U
PCB-185	NL	NL	pg/g	8 J
PCB-186	NL	NL	pg/g	3.6 U
PCB-187	NL	NL	pg/g	66 J
PCB-188	NL	NL	pg/g	3.6 U
PCB-189	NL	NL	pg/g	3.6 U
PCB-19	NL	NL	pg/g	3.6 U
PCB-190	NL	NL	pg/g	6.3
PCB-191	NL	NL	pg/g	3.6 U
PCB-192	NL	NL	pg/g	3.6 U
PCB-193	NL	NL	pg/g	94.9
PCB-194	NL	NL	pg/g	23 J
PCB-195	NL	NL	pg/g	11 J
PCB-196	NL	NL	pg/g	13 J
PCB-197	NL	NL	pg/g	3.6 U
PCB-198	NL	NL	pg/g	28 J
PCB-199	NL	NL	pg/g	27.6
PCB-2	NL	NL	pg/g	4.6 J
PCB-20	NL	NL	pg/g	5.7 J
PCB-200	NL	NL	pg/g	3.6 U
PCB-201	NL	NL	pg/g	3.6 U
PCB-202	NL	NL	pg/g	4.7
PCB-203	NL	NL	pg/g	15 J
PCB-204	NL	NL	pg/g	3.6 U
PCB-205	NL	NL	pg/g	3.6 U
PCB-206	NL	NL	pg/g	8.9
PCB-207	NL	NL	pg/g	3.6 U
PCB-208	NL	NL	pg/g	3.6 U
PCB-209	NL	NL	pg/g	7
PCB-21	NL	NL	pg/g	3.6 U
PCB-22	NL	NL	pg/g	3.6 U
PCB-23	NL	NL	pg/g	3.6 U
PCB-24	NL	NL	pg/g	3.6 U
PCB-25	NL	NL	pg/g	3.6 U
PCB-26	NL	NL	pg/g	3.6 U
PCB-27	NL	NL	pg/g	3.6 U
PCB-28	NL	NL	pg/g	5.7
PCB-29	NL	NL	pg/g	3.6 U
PCB-3	NL	NL	pg/g	4.9
PCB-30	NL	NL	pg/g	3.6 U
PCB-31	NL	NL	pg/g	4.7 J
PCB-32	NL	NL	pg/g	3.6 U
PCB-33	NL	NL	pg/g	3.6 U
PCB-34	NL	NL	pg/g	3.6 U
PCB-35	NL	NL	pg/g	3.6 U
PCB-36	NL	NL	pg/g	3.6 U
PCB-37	NL	NL	pg/g	3.6 U
PCB-38	NL	NL	pg/g	3.6 U
PCB-39	NL	NL	pg/g	3.6 U
PCB-4	NL	NL	pg/g	3.6 U

Table 3-5b
Area 2 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-96
			Field Sample ID	SLB10-2-96-06
			Sample Date	10/7/2010
			Depth Interval	0-6
Chemical	Level I ¹	Level II ²	Unit	
PCB-40	NL	NL	pg/g	4.1 J
PCB-41	NL	NL	pg/g	4.1
PCB-42	NL	NL	pg/g	3.6 U
PCB-43	NL	NL	pg/g	3.6 U
PCB-44	NL	NL	pg/g	17 J
PCB-45	NL	NL	pg/g	7.2 J
PCB-46	NL	NL	pg/g	3.6 U
PCB-47	NL	NL	pg/g	17.2
PCB-48	NL	NL	pg/g	3.6 U
PCB-49	NL	NL	pg/g	12 J
PCB-5	NL	NL	pg/g	3.6 U
PCB-50	NL	NL	pg/g	8.1 J
PCB-51	NL	NL	pg/g	7.2
PCB-52	NL	NL	pg/g	26 J
PCB-53	NL	NL	pg/g	8.1
PCB-54	NL	NL	pg/g	3.6 U
PCB-55	NL	NL	pg/g	3.6 U
PCB-56	NL	NL	pg/g	4.3 J
PCB-57	NL	NL	pg/g	3.6 U
PCB-58	NL	NL	pg/g	3.6 U
PCB-59	NL	NL	pg/g	3.6 U
PCB-6	NL	NL	pg/g	3.6 U
PCB-60	NL	NL	pg/g	3.6 U
PCB-61	NL	NL	pg/g	3.6 U
PCB-62	NL	NL	pg/g	3.6 U
PCB-63	NL	NL	pg/g	3.6 U
PCB-64	NL	NL	pg/g	3.6 U
PCB-65	NL	NL	pg/g	17.2
PCB-66	NL	NL	pg/g	3.6 U
PCB-67	NL	NL	pg/g	3.6 U
PCB-68	NL	NL	pg/g	3.6 U
PCB-69	NL	NL	pg/g	12.2
PCB-7	NL	NL	pg/g	3.6 U
PCB-70	NL	NL	pg/g	3.6 U
PCB-71	NL	NL	pg/g	4.1
PCB-72	NL	NL	pg/g	3.6 U
PCB-73	NL	NL	pg/g	3.6 U
PCB-74	NL	NL	pg/g	3.6 U
PCB-75	NL	NL	pg/g	3.6 U
PCB-76	NL	NL	pg/g	3.6 U
<i>PCB-77</i>	NL	NL	pg/g	3.6 U
PCB-78	NL	NL	pg/g	3.6 U
PCB-79	NL	NL	pg/g	3.6 U
PCB-8	NL	NL	pg/g	3.6 U
PCB-80	NL	NL	pg/g	3.6 U
<i>PCB-81</i>	NL	NL	pg/g	3.6 U
PCB-82	NL	NL	pg/g	4.1 J
PCB-83	NL	NL	pg/g	28 J
PCB-84	NL	NL	pg/g	8.6 J
PCB-85	NL	NL	pg/g	69 J
PCB-86	NL	NL	pg/g	12 J
PCB-87	NL	NL	pg/g	11.7
PCB-88	NL	NL	pg/g	7.8 J
PCB-89	NL	NL	pg/g	3.6 U
PCB-9	NL	NL	pg/g	3.6 U
PCB-90	NL	NL	pg/g	59 J
PCB-91	NL	NL	pg/g	7.8
PCB-92	NL	NL	pg/g	16 J
PCB-93	NL	NL	pg/g	3.6 U
PCB-94	NL	NL	pg/g	3.6 U
PCB-95	NL	NL	pg/g	19 J
PCB-96	NL	NL	pg/g	3.6 U
PCB-97	NL	NL	pg/g	11.7
PCB-98	NL	NL	pg/g	3.6 U
PCB-99	NL	NL	pg/g	28.2
TOTAL PCBs	60,000	680,000	pg/g	2518.7
Dioxin-like PCB TEQ	NL	NL	pg/g	0.010474

Notes:

Result exceeds SQTs - Level I.

Result exceeds SQTs - Level II.

Italic = Dioxin-like PCB Congeners

ID = Identification

J = Estimated Value

pg/g = pico gram per gram

NL = Not Listed

PCB = Polychlorinated Biphenyls

pg/g = pico gram per gram

SQT = Sediment Quality Targets

U = Not Detected

Total PCBs = Sum of Detections

¹ Evaluation of Numerical SQTs-St Louis River AOC-Level I

² Evaluation of Numerical SQTs-St Louis River AOC-Level II

Table 3-5c
Area 3 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-05	SLB10-3-07	SLB10-3-10
			Field Sample ID	SLB10-3-05-06	SLB10-3-07-06	SLB10-3-10-06
			Sample Date	10/15/2010	10/14/2010	10/15/2010
			Depth Interval	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit			
PCB-1	NL	NL	pg/g	110	8.7	42
PCB-10	NL	NL	pg/g	3.8 U	5.4 U	4.2 U
PCB-100	NL	NL	pg/g	170	1.4	35.2
PCB-101	NL	NL	pg/g	3610	120	1240
PCB-102	NL	NL	pg/g	170	1.4	35.2
PCB-103	NL	NL	pg/g	56.5	5.4 U	13 J
PCB-104	NL	NL	pg/g	0.49	5.4 U	4.2 U
PCB-105	NL	NL	pg/g	1540	37	400
PCB-106	NL	NL	pg/g	0.74	5.4 U	4.2 U
PCB-107	NL	NL	pg/g	0.3	5.4 U	4.2 U
PCB-108	NL	NL	pg/g	430 J	10 J	78 J
PCB-109	NL	NL	pg/g	3380	75.9	768
PCB-11	NL	NL	pg/g	70 J	46 J	4.2 U
PCB-110	NL	NL	pg/g	4770	174	1790
PCB-111	NL	NL	pg/g	54 J	5.4 U	14 J
PCB-112	NL	NL	pg/g	3.8 U	5.4 U	4.2 U
PCB-113	NL	NL	pg/g	3610	120	1240
PCB-114	NL	NL	pg/g	3.8 U	5.4 U	4.2 U
PCB-115	NL	NL	pg/g	3.8 U	5.4 U	4.2 U
PCB-116	NL	NL	pg/g	4770	174	1790
PCB-117	NL	NL	pg/g	4770	174	1790
PCB-118	NL	NL	pg/g	37 J	5.4 U	8.5 J
PCB-119	NL	NL	pg/g	3380	75.9	768
PCB-12	NL	NL	pg/g	69.1	5.9 J	4.2 U
PCB-120	NL	NL	pg/g	0.36	5.4 U	4.2 U
PCB-121	NL	NL	pg/g	0.27	5.4 U	4.2 U
PCB-122	NL	NL	pg/g	73.7	5.4 U	20 J
PCB-123	NL	NL	pg/g	4400 J	98 J	1000 J
PCB-124	NL	NL	pg/g	434	10.3	78.1
PCB-125	NL	NL	pg/g	3380	75.9	768
PCB-126	NL	NL	pg/g	0.7	5.4 U	5.5
PCB-127	NL	NL	pg/g	0.44	5.4 U	4.2 U
PCB-128	NL	NL	pg/g	1080	22 J	290 J
PCB-129	NL	NL	pg/g	4400 J	140 J	2000 J
PCB-13	NL	NL	pg/g	69.1	5.4	4.2 U
PCB-130	NL	NL	pg/g	550 J	9.4 J	140 J
PCB-131	NL	NL	pg/g	84 J	5.4 U	20 J
PCB-132	NL	NL	pg/g	2660	44 J	620 J
PCB-133	NL	NL	pg/g	109	5.4 U	40 J
PCB-134	NL	NL	pg/g	410 J	7.1 J	96 J
PCB-135	NL	NL	pg/g	2890	37 J	630 J
PCB-136	NL	NL	pg/g	990 J	13.5	200 J
PCB-137	NL	NL	pg/g	240 J	6.7 J	69 J
PCB-138	NL	NL	pg/g	4420	138	1960
PCB-139	NL	NL	pg/g	110 J	5.4 U	32 J
PCB-14	NL	NL	pg/g	3.8 U	5.4 U	4.2 U
PCB-140	NL	NL	pg/g	111	0.5	32.2
PCB-141	NL	NL	pg/g	1630	22 J	340 J
PCB-142	NL	NL	pg/g	3.8 U	5.4 U	4.2 U
PCB-143	NL	NL	pg/g	407	7.1	95.8
PCB-144	NL	NL	pg/g	330 J	5.4 U	70 J
PCB-145	NL	NL	pg/g	0.32	5.4 U	4.2 U
PCB-146	NL	NL	pg/g	1300 J	19 J	340 J
PCB-147	NL	NL	pg/g	3600 J	95 J	1400 J
PCB-148	NL	NL	pg/g	9	5.4 U	8.2 J
PCB-149	NL	NL	pg/g	3630	95.3	1440
PCB-15	NL	NL	pg/g	360	5.4 U	180
PCB-150	NL	NL	pg/g	7	5.4 U	4.2 J
PCB-151	NL	NL	pg/g	2890	36.9	625
PCB-152	NL	NL	pg/g	6 J	5.4 U	4.2 U
PCB-153	NL	NL	pg/g	3700 J	99 J	1500 J
PCB-154	NL	NL	pg/g	85 J	5.4 U	27 J
PCB-155	NL	NL	pg/g	3.8 U	5.4 U	4.2 U
PCB-156	NL	NL	pg/g	769	15	190
PCB-157	NL	NL	pg/g	769	14.6	188
PCB-158	NL	NL	pg/g	660 J	12 J	170 J
PCB-159	NL	NL	pg/g	0.61	5.4 U	4.2 U

Table 3-5c
Area 3 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-05	SLB10-3-07	SLB10-3-10
			Field Sample ID	SLB10-3-05-06	SLB10-3-07-06	SLB10-3-10-06
			Sample Date	10/15/2010	10/14/2010	10/15/2010
			Depth Interval	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit			
PCB-16	NL	NL	pg/g	67 J	14 J	130 J
PCB-160	NL	NL	pg/g	3.8 U	5.4 U	4.2 U
PCB-161	NL	NL	pg/g	0.42	5.4 U	4.2 U
PCB-162	NL	NL	pg/g	25 J	5.4 U	4.2 U
PCB-163	NL	NL	pg/g	4420	138	1960
PCB-164	NL	NL	pg/g	632	9.3	156
PCB-165	NL	NL	pg/g	3.8 U	5.4 U	4.2 U
PCB-166	NL	NL	pg/g	1080	21.8	291
PCB-167	NL	NL	pg/g	250	5.4 U	63
PCB-168	NL	NL	pg/g	3670	98.7	1490
PCB-169	NL	NL	pg/g	3.8 U	5.4 U	4.2 U
PCB-17	NL	NL	pg/g	72.4	12 J	110 J
PCB-170	NL	NL	pg/g	2120	20 J	460 J
PCB-171	NL	NL	pg/g	680 J	6.1 J	140 J
PCB-172	NL	NL	pg/g	380 J	5.4 U	4.2 U
PCB-173	NL	NL	pg/g	681	6.1	140
PCB-174	NL	NL	pg/g	2800 J	23 J	580 J
PCB-175	NL	NL	pg/g	77 J	5.4 U	17 J
PCB-176	NL	NL	pg/g	280 J	5.4 U	57 J
PCB-177	NL	NL	pg/g	1400 J	13 J	340 J
PCB-178	NL	NL	pg/g	460	5.4 U	120 J
PCB-179	NL	NL	pg/g	1000	9.1 J	220 J
PCB-18	NL	NL	pg/g	160 J	24 J	210 J
PCB-180	NL	NL	pg/g	2800	46	1100
PCB-181	NL	NL	pg/g	0.28	5.4 U	4.2 U
PCB-182	NL	NL	pg/g	3.8 U	5.4 U	4.2 U
PCB-183	NL	NL	pg/g	1160	11 J	260 J
PCB-184	NL	NL	pg/g	0.27	5.4 U	4.2 U
PCB-185	NL	NL	pg/g	280 J	5.4 U	62 J
PCB-186	NL	NL	pg/g	3.8 U	5.4 U	4.2 U
PCB-187	NL	NL	pg/g	2930	29 J	670 J
PCB-188	NL	NL	pg/g	0.44	5.4 U	4.2 U
PCB-189	NL	NL	pg/g	69.2	5.4 U	18
PCB-19	NL	NL	pg/g	19.9	5.4 U	19
PCB-190	NL	NL	pg/g	320	5.4 U	74
PCB-191	NL	NL	pg/g	66.4	5.4 U	15
PCB-192	NL	NL	pg/g	0.3	5.4 U	4.2 U
PCB-193	NL	NL	pg/g	2770	46.1	1120
PCB-194	NL	NL	pg/g	1130	11 J	270 J
PCB-195	NL	NL	pg/g	470	5.4 U	110 J
PCB-196	NL	NL	pg/g	620 J	5.4 U	130 J
PCB-197	NL	NL	pg/g	36 J	5.4 U	4.2 U
PCB-198	NL	NL	pg/g	1300	12 J	300 J
PCB-199	NL	NL	pg/g	1300	12.5	301
PCB-2	NL	NL	pg/g	71.9	13 J	18 J
PCB-20	NL	NL	pg/g	340 J	30 J	490 J
PCB-200	NL	NL	pg/g	0.66	5.4 U	37 J
PCB-201	NL	NL	pg/g	137	5.4 U	32 J
PCB-202	NL	NL	pg/g	232	5.4 U	55
PCB-203	NL	NL	pg/g	847	7.9 J	180 J
PCB-204	NL	NL	pg/g	3.8 U	5.4 U	4.2 U
PCB-205	NL	NL	pg/g	49.2	5.4 U	13
PCB-206	NL	NL	pg/g	635	9.7	180
PCB-207	NL	NL	pg/g	79.6	5.4 U	20 J
PCB-208	NL	NL	pg/g	231	5.4 U	67
PCB-209	NL	NL	pg/g	900	9	280
PCB-21	NL	NL	pg/g	140 J	19 J	200 J
PCB-22	NL	NL	pg/g	96.8	12 J	160 J
PCB-23	NL	NL	pg/g	3.8 U	5.4 U	4.2 U
PCB-24	NL	NL	pg/g	0.3	5.4 U	4.2 U
PCB-25	NL	NL	pg/g	45.4	5.4 U	79 J
PCB-26	NL	NL	pg/g	110 J	6.3 J	140 J
PCB-27	NL	NL	pg/g	24 J	5.4 U	20 J
PCB-28	NL	NL	pg/g	340	29.8	489
PCB-29	NL	NL	pg/g	110	6.3	141
PCB-3	NL	NL	pg/g	219	25 J	48
PCB-30	NL	NL	pg/g	165	24.5	215

Table 3-5c
Area 3 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-05	SLB10-3-07	SLB10-3-10
			Field Sample ID	SLB10-3-05-06	SLB10-3-07-06	SLB10-3-10-06
			Sample Date	10/15/2010	10/14/2010	10/15/2010
			Depth Interval	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit			
PCB-31	NL	NL	pg/g	279	29 J	380 J
PCB-32	NL	NL	pg/g	78 J	7.1 J	82 J
PCB-33	NL	NL	pg/g	140	18.6	195
PCB-34	NL	NL	pg/g	5	5.4 U	4.2 U
PCB-35	NL	NL	pg/g	32.4	5.4 U	11 J
PCB-36	NL	NL	pg/g	0.36	5.4 U	6.7 J
PCB-37	NL	NL	pg/g	160	9.1	160
PCB-38	NL	NL	pg/g	0.72	5.4 U	4.2 U
PCB-39	NL	NL	pg/g	0.63	5.4 U	4.2 U
PCB-4	NL	NL	pg/g	29	7.6	35
PCB-40	NL	NL	pg/g	372	11 J	230 J
PCB-41	NL	NL	pg/g	372	10.9	231
PCB-42	NL	NL	pg/g	180 J	5.4 U	120 J
PCB-43	NL	NL	pg/g	13 J	5.4 U	15 J
PCB-44	NL	NL	pg/g	924	34 J	510 J
PCB-45	NL	NL	pg/g	96.4	5.4 U	95 J
PCB-46	NL	NL	pg/g	37.2	5.4 U	27 J
PCB-47	NL	NL	pg/g	924	33.6	511
PCB-48	NL	NL	pg/g	70.4	5.4 U	67 J
PCB-49	NL	NL	pg/g	695	17 J	330 J
PCB-5	NL	NL	pg/g	2.8	5.4 U	4.2 U
PCB-50	NL	NL	pg/g	121	5.4 U	80 J
PCB-51	NL	NL	pg/g	96.4	1.3	95.3
PCB-52	NL	NL	pg/g	2230	58 J	720 J
PCB-53	NL	NL	pg/g	121	1.9	80.4
PCB-54	NL	NL	pg/g	0.34	5.4 U	4.7
PCB-55	NL	NL	pg/g	0.51	5.4 U	4.2 U
PCB-56	NL	NL	pg/g	350 J	14 J	200 J
PCB-57	NL	NL	pg/g	3.8 U	5.4 U	4.2 U
PCB-58	NL	NL	pg/g	0.36	5.4 U	4.2 U
PCB-59	NL	NL	pg/g	78	5.4 U	38 J
PCB-6	NL	NL	pg/g	31.9	5.4 U	28 J
PCB-60	NL	NL	pg/g	124	6.3 J	76 J
PCB-61	NL	NL	pg/g	2450	65 J	680 J
PCB-62	NL	NL	pg/g	78	1.8	37.8
PCB-63	NL	NL	pg/g	35 J	5.4 U	13 J
PCB-64	NL	NL	pg/g	391	10 J	170 J
PCB-65	NL	NL	pg/g	924	33.6	511
PCB-66	NL	NL	pg/g	1100 J	27 J	400 J
PCB-67	NL	NL	pg/g	43.9	5.4 U	12 J
PCB-68	NL	NL	pg/g	15.5	5.4 U	4.2 U
PCB-69	NL	NL	pg/g	695	17	325
PCB-7	NL	NL	pg/g	6	5.4 U	4.2 U
PCB-70	NL	NL	pg/g	2450	64.7	676
PCB-71	NL	NL	pg/g	372	10.9	231
PCB-72	NL	NL	pg/g	40 J	5.4 U	8.4 J
PCB-73	NL	NL	pg/g	0.72	5.4 U	4.2 U
PCB-74	NL	NL	pg/g	2450	64.7	676
PCB-75	NL	NL	pg/g	78	1.8	37.8
PCB-76	NL	NL	pg/g	2450	64.7	676
PCB-77	NL	NL	pg/g	125	5.4 U	64
PCB-78	NL	NL	pg/g	17.5	5.4 U	4.3 J
PCB-79	NL	NL	pg/g	3.8 U	5.4 U	4.2 U
PCB-8	NL	NL	pg/g	107	22 J	120 J
PCB-80	NL	NL	pg/g	0.51	5.4 U	4.2 U
PCB-81	NL	NL	pg/g	12 J	5.4 U	4.2 U
PCB-82	NL	NL	pg/g	591	14 J	140 J
PCB-83	NL	NL	pg/g	2940	59 J	680 J
PCB-84	NL	NL	pg/g	1370	26 J	220 J
PCB-85	NL	NL	pg/g	4770	170 J	1800 J
PCB-86	NL	NL	pg/g	3380	76 J	770 J
PCB-87	NL	NL	pg/g	3380	75.9	768
PCB-88	NL	NL	pg/g	710 J	11 J	130 J
PCB-89	NL	NL	pg/g	0.38	5.4 U	4.2 U
PCB-9	NL	NL	pg/g	14.8	5.4 U	7.4 J
PCB-90	NL	NL	pg/g	3600 J	120 J	1200 J
PCB-91	NL	NL	pg/g	710	11.1	125

Table 3-5c
Area 3 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-05	SLB10-3-07	SLB10-3-10
			Field Sample ID	SLB10-3-05-06	SLB10-3-07-06	SLB10-3-10-06
			Sample Date	10/15/2010	10/14/2010	10/15/2010
			Depth Interval	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit			
PCB-92	NL	NL	pg/g	1190	22 J	260 J
PCB-93	NL	NL	pg/g	170	5.4 U	35 J
PCB-94	NL	NL	pg/g	18 J	5.4 U	5.4 J
PCB-95	NL	NL	pg/g	2400 J	35 J	490 J
PCB-96	NL	NL	pg/g	25.6	5.4 U	7.1 J
PCB-97	NL	NL	pg/g	3380	75.9	768
PCB-98	NL	NL	pg/g	170	1.4	35.2
PCB-99	NL	NL	pg/g	2940	58.6	683
TOTAL PCBs	60,000	680,000	pg/g	171017.2	4190.1	55482.4
Dioxin-like PCB TEQ	NL	NL	pg/g	0.0612755	0.016132	0.044403

Table 3-5c
Area 3 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-14	SLB10-3-16	SLB10-3-19
			Field Sample ID	SLB10-3-14-06	SLB10-3-16-06	SLB10-3-19-06
			Sample Date	10/14/2010	10/15/2010	10/15/2010
			Depth Interval	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit			
PCB-1	NL	NL	pg/g	2.4 U	100	14
PCB-10	NL	NL	pg/g	2.4 U	2.7	3 U
PCB-100	NL	NL	pg/g	2.4 U	105	17.3
PCB-101	NL	NL	pg/g	23.1	3690	624
PCB-102	NL	NL	pg/g	2.4 U	105	17.3
PCB-103	NL	NL	pg/g	2.4 U	74.1	12 J
PCB-104	NL	NL	pg/g	2.4 U	4.1 U	3 U
PCB-105	NL	NL	pg/g	7.2	1260	170
PCB-106	NL	NL	pg/g	2.4 U	4.1 U	3 U
PCB-107	NL	NL	pg/g	2.4 U	0.33	3 U
PCB-108	NL	NL	pg/g	2.4 U	400 J	3 U
PCB-109	NL	NL	pg/g	12.5	2870	3 U
PCB-11	NL	NL	pg/g	2.4 U	66 J	24 J
PCB-110	NL	NL	pg/g	31.3	4540	799
PCB-111	NL	NL	pg/g	2.4 U	83.9	11 J
PCB-112	NL	NL	pg/g	2.4 U	0.64	3 U
PCB-113	NL	NL	pg/g	23.1	3690	624
PCB-114	NL	NL	pg/g	2.4 U	0.7	3 U
PCB-115	NL	NL	pg/g	2.4 U	1.3	3 U
PCB-116	NL	NL	pg/g	31.3	4540	799
PCB-117	NL	NL	pg/g	31.3	4540	799
PCB-118	NL	NL	pg/g	2.4 U	23.9	5.8 J
PCB-119	NL	NL	pg/g	12.5	2870	3 U
PCB-12	NL	NL	pg/g	2.4 U	60 J	9.6 J
PCB-120	NL	NL	pg/g	2.4 U	0.39	3 U
PCB-121	NL	NL	pg/g	2.4 U	0.29	3 U
PCB-122	NL	NL	pg/g	2.4 U	59 J	12 J
PCB-123	NL	NL	pg/g	21 J	3700 J	470 J
PCB-124	NL	NL	pg/g	2.4 U	401	3 U
PCB-125	NL	NL	pg/g	12.5	2870	3 U
PCB-126	NL	NL	pg/g	2.4 U	4.1 U	3 U
PCB-127	NL	NL	pg/g	2.4 U	0.47	3 U
PCB-128	NL	NL	pg/g	4.9 J	1000 J	130 J
PCB-129	NL	NL	pg/g	39 J	5400 J	1000 J
PCB-13	NL	NL	pg/g	2.4 U	60.1	9.6
PCB-130	NL	NL	pg/g	2.8 J	600 J	73 J
PCB-131	NL	NL	pg/g	2.4 U	89 J	7.4 J
PCB-132	NL	NL	pg/g	12 J	2790	320 J
PCB-133	NL	NL	pg/g	2.4 U	154	28 J
PCB-134	NL	NL	pg/g	2.4 U	423	47 J
PCB-135	NL	NL	pg/g	15 J	3500 J	430 J
PCB-136	NL	NL	pg/g	4.4 J	1100 J	120 J
PCB-137	NL	NL	pg/g	2.4 U	240 J	35 J
PCB-138	NL	NL	pg/g	39	5440	1000
PCB-139	NL	NL	pg/g	2.4 U	130 J	17 J
PCB-14	NL	NL	pg/g	2.4 U	2.4	3 U
PCB-140	NL	NL	pg/g	2.4 U	135	17.2
PCB-141	NL	NL	pg/g	6.9 J	1730	190 J
PCB-142	NL	NL	pg/g	2.4 U	0.45	3 U
PCB-143	NL	NL	pg/g	2.4 U	423	46.6
PCB-144	NL	NL	pg/g	2.4 U	380	38 J
PCB-145	NL	NL	pg/g	2.4 U	0.35	3 U
PCB-146	NL	NL	pg/g	8.5 J	1600 J	240 J
PCB-147	NL	NL	pg/g	32 J	4960	850 J
PCB-148	NL	NL	pg/g	2.4 U	23	6.7 J
PCB-149	NL	NL	pg/g	32.2	4960	852
PCB-15	NL	NL	pg/g	2.4 U	387	66
PCB-150	NL	NL	pg/g	2.4 U	8.6	3 U
PCB-151	NL	NL	pg/g	14.8	3530	425
PCB-152	NL	NL	pg/g	2.4 U	6.6	3 U
PCB-153	NL	NL	pg/g	35 J	4980	890 J
PCB-154	NL	NL	pg/g	2.4 U	150 J	31 J
PCB-155	NL	NL	pg/g	2.4 U	4.1 U	3 U
PCB-156	NL	NL	pg/g	3.5	730	88
PCB-157	NL	NL	pg/g	3.5	730	87.9
PCB-158	NL	NL	pg/g	3.2 J	650 J	81 J
PCB-159	NL	NL	pg/g	2.4 U	85	12 J

Table 3-5c
Area 3 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-14	SLB10-3-16	SLB10-3-19
			Field Sample ID	SLB10-3-14-06	SLB10-3-16-06	SLB10-3-19-06
			Sample Date	10/14/2010	10/15/2010	10/15/2010
			Depth Interval	0-6	0-6	0-6
Chemical	Level I ¹	Level II ²	Unit			
PCB-16	NL	NL	pg/g	2.4 U	134	23 J
PCB-160	NL	NL	pg/g	2.4 U	4.1 U	3 U
PCB-161	NL	NL	pg/g	2.4 U	0.45	3 U
PCB-162	NL	NL	pg/g	2.4 U	26.9	3.7 J
PCB-163	NL	NL	pg/g	39	5440	1000
PCB-164	NL	NL	pg/g	2.4 U	681	74.2
PCB-165	NL	NL	pg/g	2.4 U	0.49	3 U
PCB-166	NL	NL	pg/g	4.9	1020	128
PCB-167	NL	NL	pg/g	2.4 U	240	31
PCB-168	NL	NL	pg/g	34.9	4980	890
PCB-169	NL	NL	pg/g	2.4 U	0.64	3 U
PCB-17	NL	NL	pg/g	2.4 U	124	22 J
PCB-170	NL	NL	pg/g	9.9 J	2500 J	340 J
PCB-171	NL	NL	pg/g	3.1 J	900	110 J
PCB-172	NL	NL	pg/g	2.4 U	520 J	64 J
PCB-173	NL	NL	pg/g	3.1	900	108
PCB-174	NL	NL	pg/g	13 J	3430	410 J
PCB-175	NL	NL	pg/g	2.4 U	96 J	13 J
PCB-176	NL	NL	pg/g	2.4 U	370 J	42 J
PCB-177	NL	NL	pg/g	7.6 J	1950	260 J
PCB-178	NL	NL	pg/g	3.2 J	640 J	88 J
PCB-179	NL	NL	pg/g	5.9 J	1360	160 J
PCB-18	NL	NL	pg/g	4.2 J	260 J	42 J
PCB-180	NL	NL	pg/g	25	3900	830
PCB-181	NL	NL	pg/g	2.4 U	0.31	3 U
PCB-182	NL	NL	pg/g	2.4 U	0.45	3 U
PCB-183	NL	NL	pg/g	6.1 J	1600 J	190 J
PCB-184	NL	NL	pg/g	2.4 U	0.29	3 U
PCB-185	NL	NL	pg/g	2.4 U	440 J	69 J
PCB-186	NL	NL	pg/g	2.4 U	4.1 U	3 U
PCB-187	NL	NL	pg/g	17 J	3700 J	500 J
PCB-188	NL	NL	pg/g	2.4 U	0.47	3 U
PCB-189	NL	NL	pg/g	2.4 U	90.8	12
PCB-19	NL	NL	pg/g	2.4 U	26	4.3
PCB-190	NL	NL	pg/g	2.4 U	393	58
PCB-191	NL	NL	pg/g	2.4 U	80	11
PCB-192	NL	NL	pg/g	2.4 U	4.1 U	3 U
PCB-193	NL	NL	pg/g	24.5	3900	829
PCB-194	NL	NL	pg/g	6.9 J	1300 J	200 J
PCB-195	NL	NL	pg/g	2.8 J	620 J	85 J
PCB-196	NL	NL	pg/g	3.1 J	740 J	96 J
PCB-197	NL	NL	pg/g	2.4 U	50 J	7.5 J
PCB-198	NL	NL	pg/g	6.5 J	1450	200 J
PCB-199	NL	NL	pg/g	6.5	1450	200
PCB-2	NL	NL	pg/g	2.4 U	61.1	7.7 J
PCB-20	NL	NL	pg/g	11 J	630 J	110 J
PCB-200	NL	NL	pg/g	2.4 U	206	27 J
PCB-201	NL	NL	pg/g	2.4 U	160 J	22 J
PCB-202	NL	NL	pg/g	2.4 U	240	35
PCB-203	NL	NL	pg/g	4.2 J	910	120 J
PCB-204	NL	NL	pg/g	2.4 U	0.25	3 U
PCB-205	NL	NL	pg/g	2.4 U	59.8	3 U
PCB-206	NL	NL	pg/g	3.3	400	65
PCB-207	NL	NL	pg/g	2.4 U	57 J	8.4 J
PCB-208	NL	NL	pg/g	2.4 U	110	19
PCB-209	NL	NL	pg/g	2.4 U	360	41
PCB-21	NL	NL	pg/g	4.5 J	244	43 J
PCB-22	NL	NL	pg/g	3.2 J	188	32 J
PCB-23	NL	NL	pg/g	2.4 U	4.1 U	3 U
PCB-24	NL	NL	pg/g	2.4 U	0.33	3 U
PCB-25	NL	NL	pg/g	2.4 U	66	11 J
PCB-26	NL	NL	pg/g	2.4 U	120 J	20 J
PCB-27	NL	NL	pg/g	2.4 U	31.5	5.1 J
PCB-28	NL	NL	pg/g	10.9	628	110 J
PCB-29	NL	NL	pg/g	2.4 U	125	19.8
PCB-3	NL	NL	pg/g	2.4 U	150	21
PCB-30	NL	NL	pg/g	4.2	260	42

Table 3-5c
Area 3 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-14	SLB10-3-16	SLB10-3-19
			Field Sample ID	SLB10-3-14-06	SLB10-3-16-06	SLB10-3-19-06
			Sample Date	10/14/2010	10/15/2010	10/15/2010
			Depth Interval	0-6	0-6	0-6
Chemical	Level I ¹	Level II ²	Unit			
PCB-31	NL	NL	pg/g	7.8 J	490 J	83 J
PCB-32	NL	NL	pg/g	2.4 U	120	18 J
PCB-33	NL	NL	pg/g	4.5	244	43
PCB-34	NL	NL	pg/g	2.4 U	9.2	3 U
PCB-35	NL	NL	pg/g	2.4 U	21.6	3.3 J
PCB-36	NL	NL	pg/g	2.4 U	21 J	3 U
PCB-37	NL	NL	pg/g	3.2	263	44
PCB-38	NL	NL	pg/g	2.4 U	0.78	3 U
PCB-39	NL	NL	pg/g	2.4 U	9.6 J	3 U
PCB-4	NL	NL	pg/g	2.4 U	43	3 U
PCB-40	NL	NL	pg/g	2.8 J	430 J	58 J
PCB-41	NL	NL	pg/g	2.8	432	57.8 J
PCB-42	NL	NL	pg/g	2.4 U	230 J	28 J
PCB-43	NL	NL	pg/g	2.4 U	19 J	3 U
PCB-44	NL	NL	pg/g	2.4 UJ	1000 J	140 J
PCB-45	NL	NL	pg/g	2.4 U	137	26 J
PCB-46	NL	NL	pg/g	2.4 U	46.9	6.4 J
PCB-47	NL	NL	pg/g	2.4	1010	137
PCB-48	NL	NL	pg/g	2.4 U	105	15 J
PCB-49	NL	NL	pg/g	4.9 J	800 J	99 J
PCB-5	NL	NL	pg/g	2.4 U	4.1 U	3 U
PCB-50	NL	NL	pg/g	2.4 U	140 J	25 J
PCB-51	NL	NL	pg/g	2.4 U	137	25.7
PCB-52	NL	NL	pg/g	11 J	2090	240 J
PCB-53	NL	NL	pg/g	2.4 U	137	25 J
PCB-54	NL	NL	pg/g	2.4 U	0.37	3 U
PCB-55	NL	NL	pg/g	2.4 U	4.1 U	3 U
PCB-56	NL	NL	pg/g	3.3 J	407	73 J
PCB-57	NL	NL	pg/g	2.4 U	18 J	3 U
PCB-58	NL	NL	pg/g	2.4 U	4.1 U	3 U
PCB-59	NL	NL	pg/g	2.4 U	90 J	12 J
PCB-6	NL	NL	pg/g	2.4 U	38 J	6.1 J
PCB-60	NL	NL	pg/g	2.4 U	140 J	23 J
PCB-61	NL	NL	pg/g	12 J	1920	270 J
PCB-62	NL	NL	pg/g	2.4 U	89.8	11.5
PCB-63	NL	NL	pg/g	2.4 U	32 J	4.9 J
PCB-64	NL	NL	pg/g	2.4 U	390 J	52 J
PCB-65	NL	NL	pg/g	2.4	1010	137
PCB-66	NL	NL	pg/g	7 J	990 J	160 J
PCB-67	NL	NL	pg/g	2.4 U	29.5	4.6 J
PCB-68	NL	NL	pg/g	2.4 U	16 J	3 U
PCB-69	NL	NL	pg/g	4.9	796	98.9
PCB-7	NL	NL	pg/g	2.4 U	9.8 J	3 U
PCB-70	NL	NL	pg/g	11.8	1920	266
PCB-71	NL	NL	pg/g	2.8	432	57.8
PCB-72	NL	NL	pg/g	2.4 U	35.5	4.4 J
PCB-73	NL	NL	pg/g	2.4 U	4.1 U	3 U
PCB-74	NL	NL	pg/g	11.8	1920	266
PCB-75	NL	NL	pg/g	2.4 U	89.8	11.5
PCB-76	NL	NL	pg/g	11.8	1920	266
PCB-77	NL	NL	pg/g	2.4 U	160	25
PCB-78	NL	NL	pg/g	2.4 U	21 J	3 U
PCB-79	NL	NL	pg/g	2.4 U	0.66	4.8 J
PCB-8	NL	NL	pg/g	2.4 U	180 J	34 J
PCB-80	NL	NL	pg/g	2.4 U	4.1 U	3 U
PCB-81	NL	NL	pg/g	2.4 U	17 J	3 U
PCB-82	NL	NL	pg/g	2.4 J	495	62 J
PCB-83	NL	NL	pg/g	12 J	2640	320 J
PCB-84	NL	NL	pg/g	3 J	802	100 J
PCB-85	NL	NL	pg/g	31 J	4540	800 J
PCB-86	NL	NL	pg/g	12 J	2900 J	3 U
PCB-87	NL	NL	pg/g	12.5	2870	3 U
PCB-88	NL	NL	pg/g	2.4 U	460 J	59 J
PCB-89	NL	NL	pg/g	2.4 U	4.1 U	3 U
PCB-9	NL	NL	pg/g	2.4 U	15.8	3 U
PCB-90	NL	NL	pg/g	23 J	3690	620 J
PCB-91	NL	NL	pg/g	2.4 U	459	59.4

Table 3-5c
Area 3 Sediment Sample Analytical Results - PCB Congeners
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-14	SLB10-3-16	SLB10-3-19
			Field Sample ID	SLB10-3-14-06	SLB10-3-16-06	SLB10-3-19-06
			Sample Date	10/14/2010	10/15/2010	10/15/2010
			Depth Interval	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit			
PCB-92	NL	NL	pg/g	4.8 J	1200 J	150 J
PCB-93	NL	NL	pg/g	2.4 U	105	17 J
PCB-94	NL	NL	pg/g	2.4 U	11 J	4.2 J
PCB-95	NL	NL	pg/g	8.9 J	2000 J	260 J
PCB-96	NL	NL	pg/g	2.4 U	19.7	3 U
PCB-97	NL	NL	pg/g	12.5	2870	3 U
PCB-98	NL	NL	pg/g	2.4 U	105	17.3
PCB-99	NL	NL	pg/g	12.3	2640	318
TOTAL PCBs	60,000	680,000	pg/g	977.4	181189.5	25055.7
Dioxin-like PCB						
TEQ	NL	NL	pg/g	0.00698	0.068659	0.015156

Notes:

Result exceeds SQTs - Level I.

Result exceeds SQTs - Level II.

Italic = Dioxin-like PCB Congeners

ID = Identification

J = Estimated Value

pg/g = pico gram per gram

NL = Not Listed

PCB = Polychlorinated Biphenyls

pg/g = pico gram per gram

SQT = Sediment Quality Targets

U = Not Detected

Total PCBs = Sum of Detections

¹ Evaluation of Numerical SQTs-St Louis River AOC-Level I

² Evaluation of Numerical SQTs-St Louis River AOC-Level II

Table 3-6a
Area 1 Sediment Sample Analytical Results - TCL Pesticides
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

Chemical	Location ID		SLB10-1-20	SLB10-1-24	SLB10-1-24	SLB10-1-26	SLB10-1-29	SLB10-1-31	SLB10-1-33	SLB10-1-38	
	Field Sample ID		SLB10-1-20-06	SLB10-1-24-06	SLB10-1-24-06DP	SLB10-1-26-06	SLB10-1-29-06	SLB10-1-31-06	SLB10-1-33-06	SLB10-1-38-06	
	Sample Date		10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/13/2010	10/16/2010	10/13/2010	10/15/2010	
	Depth Interval		0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	
Level I ¹	Level II ²	Unit									
1,1,1-TRICHLORO-2,2-BIS (P-METHOXYPHENYL)-ETHANE	NL	NL	µg/kg	29 U	34 U	30 U	40 U	1.9 U	22 U	2.7 U	38 U
4,4'-DDD	4.9	28	µg/kg	5 U	6 U	5 U	7 U	1.4 U	4 U	1.9 U	7 U
4,4'-DDE	3.2	31	µg/kg	5 U	6 U	5 U	7 U	0.82 U	4 U	1.2 U	7 U
4,4'-DDT	4.2	63	µg/kg	5 U	6 U	5 U	7 U	2.3 U	4 U	3.2 U	7 U
ALDRIN	NL	NL	µg/kg	2 U	3 U	3 U	4 U	0.33 U	2 U	0.47 U	3 U
ALPHA-BHC	NL	NL	µg/kg	2 U	3 U	3 U	4 U	0.52 U	2 U	0.74 U	3 U
ALPHA-CHLORDANE	3.2	18	µg/kg	2 U	3 U	3 U	4 U	0.26 U	2 U	0.37 U	3 U
BETA-BHC	NL	NL	µg/kg	2 U	3 U	3 U	4 U	0.69 U	2 U	0.97 U	3 U
CAMPHECHLOR	NL	NL	µg/kg	290 U	340 U	300 U	400 U	98 U	220 U	140 U	380 U
DELTA-BHC	NL	NL	µg/kg	2 U	3 U	3 U	4 U	0.62 U	2 U	0.87 U	3 U
DIELDRIN	1.9	62	µg/kg	5 U	6 U	5 U	7 U	0.62 U	4 U	0.87 U	7 U
ENDOSULFAN I	NL	NL	µg/kg	2 U	3 U	3 U	4 U	0.31 U	2 U	0.43 U	3 U
ENDOSULFAN II	NL	NL	µg/kg	5 U	6 U	5 U	7 U	1.8 U	4 U	2.5 U	7 U
ENDOSULFAN SULFATE	NL	NL	µg/kg	5 U	6 U	5 U	9 NJ	0.62 U	4 U	0.87 U	7 U
ENDRIN	2.2	210	µg/kg	5 U	6 U	5 U	7 U	0.62 U	4 U	0.87 U	7 U
ENDRIN ALDEHYDE	NL	NL	µg/kg	5 U	6 U	5 U	7 U	1.9 U	4 U	2.7 U	7 U
ENDRIN KETONE	NL	NL	µg/kg	5 U	6 U	5 U	7 U	2.4 U	4 U	3.4 U	7 U
GAMMA-BHC (LINDANE)	2.4	5	µg/kg	2 U	3 U	3 U	4 U	0.5 U	2 U	0.7 U	3 U
GAMMA-CHLORDANE	3.2	18	µg/kg	2 U	3 U	3 U	3 J	0.39 U	2 U	0.55 U	3 U
HEPTACHLOR	NL	NL	µg/kg	2 U	3 U	3 U	4 U	0.64 U	2 U	0.89 U	3 U
HEPTACHLOR EPOXIDE	2.5	16	µg/kg	2 U	3 U	3 U	4 U	0.44 U	2 U	0.62 U	3 U

Table 3-6a
Area 1 Sediment Sample Analytical Results - TCL Pesticides
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-40	SLB10-1-44	SLB10-1-47	SLB10-1-49	SLB10-1-51	SLB10-1-54	SLB10-1-56	SLB10-1-56
			Field Sample ID	SLB10-1-40-06	SLB10-1-44-06	SLB10-1-47-06	SLB10-1-49-06	SLB10-1-51-06	SLB10-1-54-06	SLB10-1-56-06	SLB10-1-56-06DP
			Sample Date	10/15/2010	10/16/2010	10/15/2010	10/13/2010	10/12/2010	10/15/2010	10/7/2010	10/7/2010
			Depth Interval	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6
Chemical	Level I ¹	Level II ²	Unit								
1,1,1-TRICHLORO-2,2-BIS (P-METHOXYPHENYL)-ETHANE	NL	NL	µg/kg	21 U	24 U	27 U	26 U	29 U	51 U	37 U	37 U
4,4'-DDD	4.9	28	µg/kg	4 U	4 U	5 U	5.1 U	5.7 U	10 U	7.2 U	7.2 U
4,4'-DDE	3.2	31	µg/kg	4 U	4 U	5 U	5.1 U	5.7 U	10 U	7.2 U	7.2 U
4,4'-DDT	4.2	63	µg/kg	4 U	4 U	5 U	5.1 U	5.7 U	10 U	7.2 U	7.2 U
ALDRIN	NL	NL	µg/kg	2 U	2 U	2 U	2.6 U	2.9 U	5 U	3.7 U	3.7 U
ALPHA-BHC	NL	NL	µg/kg	2 U	2 U	2 U	2.6 U	2.9 U	5 U	3.7 U	3.7 U
ALPHA-CHLORDANE	3.2	18	µg/kg	2 U	2 U	2 U	2.6 U	2.9 U	5 U	3.7 U	3.7 U
BETA-BHC	NL	NL	µg/kg	2 U	2 U	2 U	2.6 U	2.9 U	5 U	3.7 U	3.7 U
CAMPHECHLOR	NL	NL	µg/kg	210 U	240 U	270 U	260 U	290 U	510 U	370 U	370 U
DELTA-BHC	NL	NL	µg/kg	2 U	2 U	2 U	2.6 U	2.9 U	5 U	3.7 U	3.7 U
DIELDRIN	1.9	62	µg/kg	4 U	4 U	5 U	5.1 U	5.7 U	10 U	7.2 U	7.2 U
ENDOSULFAN I	NL	NL	µg/kg	2 U	2 U	2 U	2.6 U	2.9 U	5 U	3.7 U	3.7 U
ENDOSULFAN II	NL	NL	µg/kg	4 U	4 U	5 U	5.1 U	5.7 U	10 U	7.2 U	7.2 U
ENDOSULFAN SULFATE	NL	NL	µg/kg	4 U	4 U	5 U	5.1 U	5.7 U	10 U	7.2 U	7.2 U
ENDRIN	2.2	210	µg/kg	4 U	4 U	5 U	5.1 U	5.7 U	10 U	7.2 U	7.2 U
ENDRIN ALDEHYDE	NL	NL	µg/kg	4 U	4 U	5 U	5.1 U	5.7 U	10 U	7.2 U	7.2 U
ENDRIN KETONE	NL	NL	µg/kg	4 U	4 U	5 U	5.1 U	5.7 U	10 U	7.2 U	7.2 U
GAMMA-BHC (LINDANE)	2.4	5	µg/kg	2 U	2 U	2 U	2.6 U	2.9 U	5 U	3.7 U	3.7 U
GAMMA-CHLORDANE	3.2	18	µg/kg	2 U	2 U	2 U	2.6 U	2.9 U	5 U	3.7 U	3.7 U
HEPTACHLOR	NL	NL	µg/kg	2 U	2 U	2 U	2.6 U	2.9 U	5 U	3.7 U	3.7 U
HEPTACHLOR EPOXIDE	2.5	16	µg/kg	2 U	2 U	2 U	2.6 U	2.9 U	5 U	3.7 U	3.7 U

Table 3-6a
Area 1 Sediment Sample Analytical Results - TCL Pesticides
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-60	SLB10-1-62	SLB10-1-62
			Field Sample ID	SLB10-1-60-06	SLB10-1-62-06	SLB10-1-62-06DP
			Sample Date	10/14/2010	10/14/2010	10/14/2010
			Depth Interval	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit			
1,1,1-TRICHLORO-2,2-BIS (P-METHOXYPHENYL)-ETHANE	NL	NL	µg/kg	4.1 U	3.7 U	3.9 U
4,4'-DDD	4.9	28	µg/kg	2.9 U	2.6 U	2.7 U
4,4'-DDE	3.2	31	µg/kg	1.8 U	1.6 U	1.7 U
4,4'-DDT	4.2	63	µg/kg	4.9 U	4.4 U	4.6 U
ALDRIN	NL	NL	µg/kg	0.71 U	0.64 U	0.67 U
ALPHA-BHC	NL	NL	µg/kg	1.1 U	1 U	1.1 U
ALPHA-CHLORDANE	3.2	18	µg/kg	0.56 U	0.5 U	0.53 U
BETA-BHC	NL	NL	µg/kg	1.5 U	1.3 U	1.4 U
CAMPHECHLOR	NL	NL	µg/kg	210 U	190 U	200 U
DELTA-BHC	NL	NL	µg/kg	1.3 U	1.2 U	1.2 U
DIELDRIN	1.9	62	µg/kg	1.3 U	1.2 U	1.2 U
ENDOSULFAN I	NL	NL	µg/kg	0.66 U	0.59 U	0.62 U
ENDOSULFAN II	NL	NL	µg/kg	3.8 U	3.4 U	3.6 U
ENDOSULFAN SULFATE	NL	NL	µg/kg	1.3 U	1.2 U	1.2 U
ENDRIN	2.2	210	µg/kg	1.3 U	1.2 U	1.2 U
ENDRIN ALDEHYDE	NL	NL	µg/kg	4.1 U	3.7 U	3.9 U
ENDRIN KETONE	NL	NL	µg/kg	5.1 U	4.6 U	4.8 U
GAMMA-BHC (LINDANE)	2.4	5	µg/kg	1.1 U	0.95 U	1 U
GAMMA-CHLORDANE	3.2	18	µg/kg	0.83 U	0.75 U	0.79 U
HEPTACHLOR	NL	NL	µg/kg	1.4 U	1.2 U	1.3 U
HEPTACHLOR EPOXIDE	2.5	16	µg/kg	0.94 U	0.85 U	0.89 U

Notes:

Result exceeds SQTs - Level I.

Result exceeds SQTs - Level II.

ID = Identification

J = Estimated Value

NL = Not Listed

SQT = Sediment Quality Targets

TCL = Target Compound List

U = Not Detected

µg/kg = Microgram per kilogram

¹ Evaluation of Numerical SQTs-St Louis River AOC-Level I

² Evaluation of Numerical SQTs-St Louis River AOC-Level II

Table 3-6b
Area 2 Sediment Sample Analytical Results - TCL Pesticides
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-65	SLB10-2-69	SLB10-2-71	SLB10-2-74	SLB10-2-74	SLB10-2-76	SLB10-2-83	SLB10-2-85
			Field Sample ID	SLB10-2-65-06	SLB10-2-69-06	SLB10-2-71-06	SLB10-2-74-06	SLB10-2-74-06DP	SLB10-2-76-06	SLB10-2-83-06	SLB10-2-85-06
			Sample Date	10/7/2010	10/7/2010	10/7/2010	10/6/2010	10/6/2010	10/13/2010	10/6/2010	10/6/2010
			Depth Interval	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6
Chemical	Level I ¹	Level II ²	Unit								
I,1,1-TRICHLORO-2,2-BIS (P-METHOXYPHENYL)-ETHANE	NL	NL	µg/kg	34 U	84 U	21 U	30 U	30 U	25 U	150 U	35 U
4,4'-DDD	4.9	28	µg/kg	6.5 U	16 U	4 U	5.8 U	5.9 U	4.9 U	29 U	6.9 U
4,4'-DDE	3.2	31	µg/kg	6.5 U	16 U	4 U	5.8 U	5.9 U	4.9 U	29 U	6.9 U
4,4'-DDT	4.2	63	µg/kg	6.5 U	16 U	4 U	5.8 U	5.9 U	4.9 U	29 U	6.9 U
ALDRIN	NL	NL	µg/kg	3.4 U	8.4 U	2.1 U	3 U	3 U	2.5 U	15 U	3.5 U
ALPHA-BHC	NL	NL	µg/kg	3.4 U	8.4 U	2.1 U	3 U	3 U	2.5 U	15 U	3.5 U
ALPHA-CHLORDANE	3.2	18	µg/kg	3.4 U	8.4 U	2.1 U	3 U	3 U	2.5 U	15 U	3.5 U
BETA-BHC	NL	NL	µg/kg	3.4 U	8.4 U	2.1 U	3 U	3 U	2.5 U	15 U	3.5 U
CAMPHECHLOR	NL	NL	µg/kg	340 U	840 U	210 U	300 U	300 U	250 U	1500 U	350 U
DELTA-BHC	NL	NL	µg/kg	3.4 U	8.4 U	2.1 U	3 U	3 U	2.5 U	15 U	3.5 U
DIELDRIN	1.9	62	µg/kg	6.5 U	16 U	4 U	5.8 U	5.9 U	4.9 U	29 U	6.9 U
ENDOSULFAN I	NL	NL	µg/kg	3.4 U	8.4 U	2.1 U	3 U	3 U	2.5 U	15 U	3.5 U
ENDOSULFAN II	NL	NL	µg/kg	6.5 U	16 U	4 U	5.8 U	5.9 U	4.9 U	29 U	6.9 U
ENDOSULFAN SULFATE	NL	NL	µg/kg	6.5 U	16 U	4 U	5.8 U	5.9 U	4.9 U	29 U	6.9 U
ENDRIN	2.2	210	µg/kg	6.5 U	16 U	4 U	5.8 U	5.9 U	4.9 U	29 U	6.9 U
ENDRIN ALDEHYDE	NL	NL	µg/kg	6.5 U	16 U	4 U	5.8 U	5.9 U	4.9 U	29 U	6.9 U
ENDRIN KETONE	NL	NL	µg/kg	6.5 U	16 U	4 U	5.8 U	5.9 U	4.9 U	29 U	6.9 U
GAMMA-BHC (LINDANE)	2.4	5	µg/kg	3.4 U	8.4 U	2.1 U	3 U	3 U	2.5 U	15 U	3.5 U
GAMMA-CHLORDANE	3.2	18	µg/kg	3.4 U	8.4 U	2.1 U	3 U	3 U	2.5 U	15 U	3.5 U
HEPTACHLOR	NL	NL	µg/kg	3.4 U	8.4 U	2.1 U	3 U	3 U	2.5 U	15 U	3.5 U
HEPTACHLOR EPOXIDE	2.5	16	µg/kg	3.4 U	8.4 U	2.1 U	3 U	3 U	2.5 U	15 U	3.5 U

Table 3-6b
Area 2 Sediment Sample Analytical Results - TCL Pesticides
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-87	SLB10-2-89	SLB10-2-92	SLB10-2-94	SLB10-2-96
			Field Sample ID	SLB10-2-87-06	SLB10-2-89-06	SLB10-2-92-06	SLB10-2-94-06	SLB10-2-96-06
			Sample Date	10/6/2010	10/7/2010	10/6/2010	10/7/2010	10/7/2010
			Depth Interval	0- 6	0- 6	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit					
1,1,1-TRICHLORO-2,2-BIS (P-METHOXYPHENYL)-ETHANE	NL	NL	µg/kg	32 U	39 U	21 U	39 U	27 U
4,4'-DDD	4.9	28	µg/kg	6.3 U	7.5 U	4.1 U	7.6 U	5.3 U
4,4'-DDE	3.2	31	µg/kg	6.3 U	7.5 U	4.1 U	7.6 U	5.3 U
4,4'-DDT	4.2	63	µg/kg	6.3 U	7.5 U	4.1 U	7.6 U	5.3 U
ALDRIN	NL	NL	µg/kg	3.2 U	3.9 U	2.1 U	3.9 U	2.7 U
ALPHA-BHC	NL	NL	µg/kg	3.2 U	3.9 U	2.1 U	3.9 U	2.7 U
ALPHA-CHLORDANE	3.2	18	µg/kg	3.2 U	3.9 U	2.1 U	3.9 U	2.7 U
BETA-BHC	NL	NL	µg/kg	3.2 U	3.9 U	2.1 U	3.9 U	2.7 U
CAMPHECHLOR	NL	NL	µg/kg	320 U	390 U	210 U	390 U	270 U
DELTA-BHC	NL	NL	µg/kg	3.2 U	3.9 U	2.1 U	3.9 U	2.7 U
DIELDRIN	1.9	62	µg/kg	6.3 U	7.5 U	4.1 U	7.6 U	5.3 U
ENDOSULFAN I	NL	NL	µg/kg	3.2 U	3.9 U	2.1 U	3.9 U	2.7 U
ENDOSULFAN II	NL	NL	µg/kg	6.3 U	7.5 U	4.1 U	7.6 U	5.3 U
ENDOSULFAN SULFATE	NL	NL	µg/kg	6.3 U	7.5 U	4.1 U	7.6 U	5.3 U
ENDRIN	2.2	210	µg/kg	6.3 U	7.5 U	4.1 U	7.6 U	5.3 U
ENDRIN ALDEHYDE	NL	NL	µg/kg	6.3 U	7.5 U	4.1 U	7.6 U	5.3 U
ENDRIN KETONE	NL	NL	µg/kg	6.3 U	7.5 U	4.1 U	7.6 U	5.3 U
GAMMA-BHC (LINDANE)	2.4	5	µg/kg	3.2 U	3.9 U	2.1 U	3.9 U	2.7 U
GAMMA-CHLORDANE	3.2	18	µg/kg	3.2 U	3.9 U	2.1 U	3.9 U	2.7 U
HEPTACHLOR	NL	NL	µg/kg	3.2 U	3.9 U	2.1 U	3.9 U	2.7 U
HEPTACHLOR EPOXIDE	2.5	16	µg/kg	3.2 U	3.9 U	2.1 U	3.9 U	2.7 U

Notes:

Result exceeds SQTs - Level I.

Result exceeds SQTs - Level II.

ID = Identification

J = Estimated Value

NL = Not Listed

SQT = Sediment Quality Targets

TCL = Target Compound List

U = Not Detected

µg/kg = Microgram per kilogram

¹ Evaluation of Numerical SQTs-St Louis River AOC-Level I

² Evaluation of Numerical SQTs-St Louis River AOC-Level II

Table 3-6c
Area 3 Sediment Sample Analytical Results - TCL Pesticides
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-05	SLB10-3-07	SLB10-3-10	SLB10-3-14	SLB10-3-16	SLB10-3-19
			Field Sample ID	SLB10-3-05-06	SLB10-3-07-06	SLB10-3-10-06	SLB10-3-14-06	SLB10-3-16-06	SLB10-3-19-06
			Sample Date	10/15/2010	10/14/2010	10/15/2010	10/14/2010	10/15/2010	10/15/2010
			Depth Interval	0- 6	0- 6	0- 6	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit						
1,1,1-TRICHLORO-2,2-BIS (P-METHOXYPHENYL)-ETHANE	NL	NL	µg/kg	31 U	3.6 U	32 U	2 U	34 U	24 U
4,4'-DDD	4.9	28	µg/kg	6 U	2.5 U	6 U	1.4 U	6 U	4 U
4,4'-DDE	3.2	31	µg/kg	6 U	1.5 U	6 U	0.84 U	6 U	4 U
4,4'-DDT	4.2	63	µg/kg	6 U	4.3 U	6 U	2.3 U	6 U	4 U
ALDRIN	NL	NL	µg/kg	3 U	0.62 U	3 U	0.34 U	3 U	2 U
ALPHA-BHC	NL	NL	µg/kg	3 U	0.98 U	3 U	0.53 U	3 U	2 U
ALPHA-CHLORDANE	3.2	18	µg/kg	3 U	0.49 U	3 U	0.27 U	3 U	2 U
BETA-BHC	NL	NL	µg/kg	3 U	1.3 U	3 U	0.7 U	3 U	2 U
CAMPHECHLOR	NL	NL	µg/kg	310 U	180 U	320 U	99 U	340 U	240 U
DELTA-BHC	NL	NL	µg/kg	3 U	1.2 U	3 U	0.63 U	3 U	2 U
DIELDRIN	1.9	62	µg/kg	6 U	1.2 U	6 U	0.63 U	6 U	4 U
ENDOSULFAN I	NL	NL	µg/kg	3 U	0.58 U	3 U	0.31 U	3 U	2 U
ENDOSULFAN II	NL	NL	µg/kg	6 U	3.3 U	6 U	1.8 U	6 U	4 U
ENDOSULFAN SULFATE	NL	NL	µg/kg	6 U	1.2 U	6 U	0.63 U	6 U	4 U
ENDRIN	2.2	210	µg/kg	6 U	1.2 U	6 U	0.63 U	6 U	4 U
ENDRIN ALDEHYDE	NL	NL	µg/kg	6 U	3.6 U	6 U	2 U	6 U	4 U
ENDRIN KETONE	NL	NL	µg/kg	6 U	4.4 U	6 U	2.4 U	6 U	4 U
GAMMA-BHC (LINDANE)	2.4	5	µg/kg	3 U	0.93 U	3 U	0.51 U	3 U	2 U
GAMMA-CHLORDANE	3.2	18	µg/kg	3 U	0.73 U	3 U	0.4 U	3 U	2 U
HEPTACHLOR	NL	NL	µg/kg	3 U	1.2 U	3 U	0.65 U	3 U	2 U
HEPTACHLOR EPOXIDE	2.5	16	µg/kg	3 U	0.82 U	3 U	0.45 U	3 U	2 U

Notes:

Result exceeds SQTs - Level I.

Result exceeds SQTs - Level II.

ID = Identification

J = Estimated Value

NL = Not Listed

SQT = Sediment Quality Targets

TCL = Target Compound List

U = Not Detected

µg/kg = Microgram per kilogram

¹ Evaluation of Numerical SQTs-St Louis River AOC-Level I

² Evaluation of Numerical SQTs-St Louis River AOC-Level II

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-20	SLB10-1-20	SLB10-1-21	SLB10-1-21	SLB10-1-21	SLB10-1-22	SLB10-1-22
	Field Sample ID	SLB10-1-20-06	SLB10-1-20-10	SLB10-1-21-06	SLB10-1-21-06DP	SLB10-1-21-14	SLB10-1-22-06	SLB10-1-22-06DP
	Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
	Depth Interval	0- 6	0- 10	0- 6	0- 6	0- 14	0- 6	0- 6
Chemical	Unit							
DRO	mg/kg	71	12 U	86	68	14 U	84 J	71
ORO	mg/kg	160	98	160	130	75	180	130

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-22	SLB10-1-23	SLB10-1-23	SLB10-1-23	SLB10-1-24	SLB10-1-24	SLB10-1-24
	Field Sample ID	SLB10-1-22-19	SLB10-1-23-06	SLB10-1-23-06DP	SLB10-1-23-16	SLB10-1-24-06	SLB10-1-24-06DP	SLB10-1-24-12
	Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
	Depth Interval	0- 19	0- 6	0- 6	0- 16	0- 6	0- 6	0- 12
Chemical	Unit							
DRO	mg/kg	8.4 U	110	190	13 U	26	32	80
ORO	mg/kg	32	230	550	190	43	61	140

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-24	SLB10-1-25	SLB10-1-25	SLB10-1-25	SLB10-1-25	SLB10-1-25	SLB10-1-25
	Field Sample ID	SLB10-1-24-24	SLB10-1-25-06	SLB10-1-25-06DP	SLB10-1-25-12	SLB10-1-25-36	SLB10-1-25-60	SLB10-1-25-84
	Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
	Depth Interval	12- 24	0- 6	0- 6	0- 12	12- 36	36- 60	60- 84
Chemical	Unit							
DRO	mg/kg	32	69	110	110	45	560	620
ORO	mg/kg	48	110	220	210	67	900	760

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-25	SLB10-1-26	SLB10-1-26	SLB10-1-27	SLB10-1-27	SLB10-1-27	SLB10-1-28
	Field Sample ID	SLB10-1-25-116	SLB10-1-26-06	SLB10-1-26-12	SLB10-1-27-06	SLB10-1-27-06DP	SLB10-1-27-17	SLB10-1-28-06
	Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/13/2010
	Depth Interval	84- 116	0- 6	0- 12	0- 6	0- 6	0- 17	0- 6
Chemical	Unit							
DRO	mg/kg	39	66	270	40	34	8.3 U	42
ORO	mg/kg	190	160	750	83	67	21	78

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-28	SLB10-1-28	SLB10-1-28	SLB10-1-28	SLB10-1-28	SLB10-1-28	SLB10-1-29
	Field Sample ID	SLB10-1-28-06DP	SLB10-1-28-12	SLB10-1-28-36	SLB10-1-28-60	SLB10-1-28-84	SLB10-1-28-106	SLB10-1-29-06
	Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010
	Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	84- 106	0- 6
Chemical	Unit							
DRO	mg/kg	42	96	23	10 UJ	8	8.4 UJ	9.2 U
ORO	mg/kg	66	150	30	13 J	10 J	12 U	15

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-29	SLB10-1-29	SLB10-1-29	SLB10-1-29	SLB10-1-30	SLB10-1-30	SLB10-1-30
	Field Sample ID	SLB10-1-29-12	SLB10-1-29-36	SLB10-1-29-60	SLB10-1-29-78	SLB10-1-30-06	SLB10-1-30-06DP	SLB10-1-30-10
	Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/16/2010	10/16/2010	10/16/2010
	Depth Interval	0- 12	12- 36	36- 60	60- 78	0- 6	0- 6	0- 10
Chemical	Unit							
DRO	mg/kg	24	38	8.3 UJ	9.1 UJ	15	13	76
ORO	mg/kg	31	54	9 J	9 J	25	24	100

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-31	SLB10-1-31	SLB10-1-32	SLB10-1-32	SLB10-1-32	SLB10-1-33	SLB10-1-33
	Field Sample ID	SLB10-1-31-06	SLB10-1-31-13	SLB10-1-32-06	SLB10-1-32-06DP	SLB10-1-32-20	SLB10-1-33-06	SLB10-1-33-12
	Sample Date	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/13/2010	10/13/2010
	Depth Interval	0- 6	0- 13	0- 6	0- 6	0- 20	0- 6	0- 12
Chemical	Unit							
DRO	mg/kg	11	22	90	72	59	49	72
ORO	mg/kg	19	21	190	120	87	88	120

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-33	SLB10-1-33	SLB10-1-33	SLB10-1-34	SLB10-1-34	SLB10-1-34	SLB10-1-35
	Field Sample ID	SLB10-1-33-36	SLB10-1-33-60	SLB10-1-33-77	SLB10-1-34-06	SLB10-1-34-06DP	SLB10-1-34-17	SLB10-1-35-06
	Sample Date	10/13/2010	10/13/2010	10/13/2010	10/14/2010	10/14/2010	10/14/2010	10/16/2010
	Depth Interval	12- 36	36- 60	60- 77	0- 6	0- 6	0- 17	0- 6
Chemical	Unit							
DRO	mg/kg	30	10 UJ	11 UJ	84 B	80 B	28	8.8 U
ORO	mg/kg	40	14 J	9 J	99	94	37	130

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-35	SLB10-1-35	SLB10-1-36	SLB10-1-36	SLB10-1-36	SLB10-1-37	SLB10-1-37
	Field Sample ID	SLB10-1-35-06DP	SLB10-1-35-16	SLB10-1-36-06	SLB10-1-36-06DP	SLB10-1-36-15	SLB10-1-37-06	SLB10-1-37-06DP
	Sample Date	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010
	Depth Interval	0- 6	0- 16	0- 6	0- 6	0- 15	0- 6	0- 6
Chemical	Unit							
DRO	mg/kg	200	510	67	51	53	12 U	12 U
ORO	mg/kg	360	610	120	84	86	24	26

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-37	SLB10-1-38	SLB10-1-38	SLB10-1-38	SLB10-1-39	SLB10-1-39	SLB10-1-39
	Field Sample ID	SLB10-1-37-18	SLB10-1-38-06	SLB10-1-38-12	SLB10-1-38-43	SLB10-1-39-06	SLB10-1-39-06DP	SLB10-1-39-12
	Sample Date	10/16/2010	10/15/2010	10/15/2010	10/15/2010	10/13/2010	10/13/2010	10/13/2010
	Depth Interval	0- 18	0- 6	0- 12	12- 43	0- 6	0- 6	0- 12
Chemical	Unit							
DRO	mg/kg	32	90	110	12 U	60	60	120
ORO	mg/kg	26	150	180	45	67	130	210

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-39	SLB10-1-39	SLB10-1-39	SLB10-1-39	SLB10-1-40	SLB10-1-40	SLB10-1-40
	Field Sample ID	SLB10-1-39-36	SLB10-1-39-60	SLB10-1-39-84	SLB10-1-39-115	SLB10-1-40-06	SLB10-1-40-12	SLB10-1-40-36
	Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/15/2010	10/15/2010	10/15/2010
	Depth Interval	12- 36	36- 60	60- 84	84- 115	0- 6	0- 12	12- 36
Chemical	Unit							
DRO	mg/kg	120	150	180	51	13	7.8 U	7.9 U
ORO	mg/kg	210	260	250	52	9 J	6 J	5 J

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-40	SLB10-1-42	SLB10-1-42	SLB10-1-42	SLB10-1-42	SLB10-1-44	SLB10-1-45
	Field Sample ID	SLB10-1-40-52	SLB10-1-42-06	SLB10-1-42-06DP	SLB10-1-42-12	SLB10-1-42-24	SLB10-1-44-06	SLB10-1-45-06
	Sample Date	10/15/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/13/2010
	Depth Interval	36- 52	0- 6	0- 6	0- 12	12- 24	0- 6	0- 6
Chemical	Unit							
DRO	mg/kg	10 U	13	10	19	24	17	11
ORO	mg/kg	31	24	18	21 J	16 J	31	9 J

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-45	SLB10-1-45	SLB10-1-45	SLB10-1-45	SLB10-1-45	SLB10-1-46	SLB10-1-46
	Field Sample ID	SLB10-1-45-12	SLB10-1-45-36	SLB10-1-45-60	SLB10-1-45-84	SLB10-1-45-114	SLB10-1-46-06	SLB10-1-46-06DP
	Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/12/2010	10/12/2010
	Depth Interval	0- 12	12- 36	36- 60	60- 84	84- 114	0- 6	0- 6
Chemical	Unit							
DRO	mg/kg	24	35	48	15	8.5 UJ	110	470
ORO	mg/kg	28	39	61	18	13 U	150	840

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-46	SLB10-1-46	SLB10-1-46	SLB10-1-47	SLB10-1-47	SLB10-1-48	SLB10-1-48
	Field Sample ID	SLB10-1-46-12	SLB10-1-46-36	SLB10-1-46-64	SLB10-1-47-06	SLB10-1-47-10	SLB10-1-48-06	SLB10-1-48-06DP
	Sample Date	10/12/2010	10/12/2010	10/12/2010	10/15/2010	10/15/2010	10/13/2010	10/13/2010
	Depth Interval	0- 12	12- 36	36- 64	0- 6	0- 10	0- 6	0- 6
Chemical	Unit							
DRO	mg/kg	64	10 U	21 U	76	12 U	61	47
ORO	mg/kg	96	15	27 J	110	140	100	74

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-48	SLB10-1-48	SLB10-1-48	SLB10-1-49	SLB10-1-49	SLB10-1-49	SLB10-1-49
	Field Sample ID	SLB10-1-48-12	SLB10-1-48-36	SLB10-1-48-68	SLB10-1-49-06	SLB10-1-49-12	SLB10-1-49-36	SLB10-1-49-53
	Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010
	Depth Interval	0- 12	12- 36	36- 68	0- 6	0- 12	12- 36	36- 53
Chemical	Unit							
DRO	mg/kg	10	9.7 UJ	8.4 UJ	14	17	16	13
ORO	mg/kg	12 J	12 J	8 J	24	25	18	14

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-50	SLB10-1-50	SLB10-1-50	SLB10-1-50	SLB10-1-51	SLB10-1-51	SLB10-1-51
	Field Sample ID	SLB10-1-50-06	SLB10-1-50-06DP	SLB10-1-50-12	SLB10-1-50-36	SLB10-1-51-06	SLB10-1-51-12	SLB10-1-51-36
	Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/12/2010	10/12/2010	10/12/2010
	Depth Interval	0- 6	0- 6	0- 12	12- 36	0- 6	0- 12	12- 36
Chemical	Unit							
DRO	mg/kg	54	33	19	14	34	15	12 U
ORO	mg/kg	77	47	20	16	46	26	29

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-51	SLB10-1-51	SLB10-1-52	SLB10-1-52	SLB10-1-52	SLB10-1-52	SLB10-1-53
	Field Sample ID	SLB10-1-51-60	SLB10-1-51-76	SLB10-1-52-06	SLB10-1-52-06DP	SLB10-1-52-12	SLB10-1-52-24	SLB10-1-53-06
	Sample Date	10/12/2010	10/12/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
	Depth Interval	36- 60	60- 76	0- 6	0- 6	0- 12	12- 24	0- 6
Chemical	Unit							
DRO	mg/kg	8.4 U	8.3 U	91	41	100	160	57
ORO	mg/kg	8 J	12 U	130	61	180	390	66

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-53	SLB10-1-53	SLB10-1-53	SLB10-1-54	SLB10-1-54	SLB10-1-55	SLB10-1-55
	Field Sample ID	SLB10-1-53-06DP	SLB10-1-53-12	SLB10-1-53-26	SLB10-1-54-06	SLB10-1-54-12	SLB10-1-55-06	SLB10-1-55-06DP
	Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/13/2010	10/13/2010
	Depth Interval	0- 6	0- 12	12- 26	0- 6	0- 12	0- 6	0- 6
Chemical	Unit							
DRO	mg/kg	39	40	9	69	31	44	20
ORO	mg/kg	60	40	8 J	180	70	56	24

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-55	SLB10-1-55	SLB10-1-55	SLB10-1-55	SLB10-1-55	SLB10-1-56	SLB10-1-56
	Field Sample ID	SLB10-1-55-12	SLB10-1-55-36	SLB10-1-55-60	SLB10-1-55-84	SLB10-1-55-116	SLB10-1-56-06	SLB10-1-56-06DP
	Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/7/2010	10/7/2010
	Depth Interval	0- 12	12- 36	36- 60	60- 84	84- 116	0- 6	0- 6
Chemical	Unit							
DRO	mg/kg	36	28	42	10	8.3 UJ	29	23
ORO	mg/kg	36	37	53	7 J	12 U	41	31

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-56	SLB10-1-56	SLB10-1-56	SLB10-1-56	SLB10-1-57	SLB10-1-57	SLB10-1-57
	Field Sample ID	SLB10-1-56-12	SLB10-1-56-36	SLB10-1-56-60	SLB10-1-56-86	SLB10-1-57-06	SLB10-1-57-06DP	SLB10-1-57-12
	Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/12/2010	10/12/2010	10/12/2010
	Depth Interval	0- 12	12- 36	36- 60	60- 86	0- 6	0- 6	0- 12
Chemical	Unit							
DRO	mg/kg	18	80	110	42	13 U	14 U	12 U
ORO	mg/kg	37	160	120	39	29	41	92

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-57	SLB10-1-57	SLB10-1-57	SLB10-1-58	SLB10-1-59	SLB10-1-59	SLB10-1-59
	Field Sample ID	SLB10-1-57-36	SLB10-1-57-60	SLB10-1-57-77	SLB10-1-58-20	SLB10-1-59-06	SLB10-1-59-06DP	SLB10-1-59-12
	Sample Date	10/12/2010	10/12/2010	10/12/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010
	Depth Interval	12- 36	36- 60	60- 77	0- 20	0- 6	0- 6	0- 12
Chemical	Unit							
DRO	mg/kg	12 U	24	8.4 UJ	450 B	87 B	93 B	35
ORO	mg/kg	44	24	7 J	440	260	240	100

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-59	SLB10-1-60	SLB10-1-60	SLB10-1-60	SLB10-1-60	SLB10-1-60	SLB10-1-60
	Field Sample ID	SLB10-1-59-25	SLB10-1-60-06	SLB10-1-60-12	SLB10-1-60-36	SLB10-1-60-60	SLB10-1-60-84	SLB10-1-60-106
	Sample Date	10/13/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010
	Depth Interval	12- 25	0- 6	0- 12	12- 36	36- 60	60- 84	84- 106
Chemical	Unit							
DRO	mg/kg	60 B	91 B	58 B	58	57	230	240 B
ORO	mg/kg	130	120	66	89	67	280	240

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-61	SLB10-1-61	SLB10-1-61	SLB10-1-61	SLB10-1-61	SLB10-1-61	SLB10-1-62
	Field Sample ID	SLB10-1-61-06	SLB10-1-61-06DP	SLB10-1-61-12	SLB10-1-61-36	SLB10-1-61-60	SLB10-1-61-79	SLB10-1-62-06
	Sample Date	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010
	Depth Interval	0- 6	0- 6	0- 12	12- 36	36- 60	60- 79	0- 6
Chemical	Unit							
DRO	mg/kg	81 B	58 B	75 B	39 B	99 B	160 B	56 B
ORO	mg/kg	130	68	110	44	160	140	64

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-62	SLB10-1-62	SLB10-1-62	SLB10-1-63	SLB10-1-63	SLB10-1-63	SLB10-1-63
	Field Sample ID	SLB10-1-62-06DP	SLB10-1-62-12	SLB10-1-62-32	SLB10-1-63-06	SLB10-1-63-06DP	SLB10-1-63-12	SLB10-1-63-36
	Sample Date	10/14/2010	10/14/2010	10/14/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
	Depth Interval	0- 6	0- 12	12- 32	0- 6	0- 6	0- 12	12- 36
Chemical	Unit							
DRO	mg/kg	55 B	33	14 U	34	24	39	190
ORO	mg/kg	75	52	95	46	28	22 U	210

Table 3-7a
Area 1 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-63	SLB10-1-63	SLB10-1-64	SLB10-1-64	SLB10-1-64	SLB10-1-64	SLB10-1-64
	Field Sample ID	SLB10-1-63-60	SLB10-1-63-84	SLB10-1-64-06	SLB10-1-64-06DP	SLB10-1-64-12	SLB10-1-64-36	SLB10-1-64-48
	Sample Date	10/7/2010	10/7/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010
	Depth Interval	36- 60	60- 84	0- 6	0- 6	0- 12	12- 36	36- 48
Chemical	Unit							
DRO	mg/kg	73	86 J	11	9	8.4 UJ	16 B	8.2 U
ORO	mg/kg	76	80	14	9 J	12 U	12 UJ	12 UJ

Notes:

DRO = Diesel Range Organic

ID = Identification

J = Estimated Value

mg/kg = Milligram per kilogram

NL = Not Listed

ORO = Oil Range Organic

SQT = Sediment Quality Targets

TPH = Total Petroleum Hydrocarbon

U = Not Detected

Table 3-7b
Area 2 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-65	SLB10-2-65	SLB10-2-65	SLB10-2-65	SLB10-2-65	SLB10-2-66	SLB10-2-66
	Field Sample ID	SLB10-2-65-06	SLB10-2-65-12	SLB10-2-65-36	SLB10-2-65-60	SLB10-2-65-84	SLB10-2-66-06	SLB10-2-66-06DP
	Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/6/2010	10/6/2010
	Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	0- 6	0- 6
Chemical	Unit							
DRO	mg/kg	29 J	28 J	15 J	70 J	47 J	44	28
ORO	mg/kg	50 J	38 J	25 J	78 J	59 J	81	34

Table 3-7b
Area 2 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-66	SLB10-2-66	SLB10-2-66	SLB10-2-66	SLB10-2-67	SLB10-2-67	SLB10-2-67
	Field Sample ID	SLB10-2-66-12	SLB10-2-66-36	SLB10-2-66-60	SLB10-2-66-89	SLB10-2-67-06	SLB10-2-67-12	SLB10-2-67-36
	Sample Date	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
	Depth Interval	0- 12	12- 36	36- 60	60- 89	0- 6	0- 12	12- 36
Chemical	Unit							
DRO	mg/kg	35	39	61	26	21	9 J	12 UJ
ORO	mg/kg	49	49	55	24	40	40	32

Table 3-7b
Area 2 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-67	SLB10-2-67	SLB10-2-67	SLB10-2-68	SLB10-2-68	SLB10-2-69	SLB10-2-69
	Field Sample ID	SLB10-2-67-60	SLB10-2-67-84	SLB10-2-67-102	SLB10-2-68-06	SLB10-2-68-21	SLB10-2-69-06	SLB10-2-69-17
	Sample Date	10/6/2010	10/6/2010	10/6/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
	Depth Interval	36- 60	60- 84	84- 102	0- 6	0- 21	0- 6	0- 17
Chemical	Unit							
DRO	mg/kg	9 J	11 UJ	13 UJ	65 J	75	270 J	140
ORO	mg/kg	46	36	22	210 J	150	540 J	240

Table 3-7b
Area 2 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-70	SLB10-2-70	SLB10-2-70	SLB10-2-71	SLB10-2-71	SLB10-2-71	SLB10-2-71
	Field Sample ID	SLB10-2-70-06	SLB10-2-70-06DP	SLB10-2-70-19	SLB10-2-71-06	SLB10-2-71-12	SLB10-2-71-36	SLB10-2-71-54
	Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
	Depth Interval	0- 6	0- 6	0- 19	0- 6	0- 12	12- 36	36- 54
Chemical	Unit							
DRO	mg/kg	87 J	56 J	180	8.8 UJ	7	11	13
ORO	mg/kg	180 J	130 J	420	17 J	12 U	17	19

Table 3-7b
Area 2 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-72	SLB10-2-72	SLB10-2-72	SLB10-2-73	SLB10-2-73	SLB10-2-73	SLB10-2-74
	Field Sample ID	SLB10-2-72-06	SLB10-2-72-12	SLB10-2-72-24	SLB10-2-73-06	SLB10-2-73-12	SLB10-2-73-31	SLB10-2-74-06
	Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/6/2010
	Depth Interval	0- 6	0- 12	12- 24	0- 6	0- 12	12- 31	0- 6
Chemical	Unit							
DRO	mg/kg	630 J	110	430	83 J	81 J	350 J	75
ORO	mg/kg	940 J	150	780	120 J	94 J	800 J	150

Table 3-7b
Area 2 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-74	SLB10-2-74	SLB10-2-74	SLB10-2-74	SLB10-2-74	SLB10-2-74	SLB10-2-74
	Field Sample ID	SLB10-2-74-06DP	SLB10-2-74-12	SLB10-2-74-36	SLB10-2-74-36DP	SLB10-2-74-60	SLB10-2-74-84	SLB10-2-74-108
	Sample Date	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
	Depth Interval	0- 6	0- 12	12- 36	12- 36	36- 60	60- 84	84- 108
Chemical	Unit							
DRO	mg/kg	64	39	39	36	12 UJ	13	12 UJ
ORO	mg/kg	120	81	77	64	21	44	18 UJ

Table 3-7b
Area 2 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-74	SLB10-2-75	SLB10-2-75	SLB10-2-75	SLB10-2-76	SLB10-2-76	SLB10-2-77
	Field Sample ID	SLB10-2-74-120	SLB10-2-75-06	SLB10-2-75-12	SLB10-2-75-34	SLB10-2-76-06	SLB10-2-76-12	SLB10-2-77-06
	Sample Date	10/6/2010	10/7/2010	10/7/2010	10/7/2010	10/13/2010	10/13/2010	10/7/2010
	Depth Interval	108- 120	0- 6	0- 12	12- 34	0- 6	0- 12	0- 6
Chemical	Unit							
DRO	mg/kg	13 UJ	47 J	40	360	16	66 J	31 J
ORO	mg/kg	29	87 J	54	610	20	86 J	45 J

Table 3-7b
Area 2 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-77	SLB10-2-77	SLB10-2-77	SLB10-2-77	SLB10-2-79	SLB10-2-81	SLB10-2-81
	Field Sample ID	SLB10-2-77-12	SLB10-2-77-36	SLB10-2-77-60	SLB10-2-77-73	SLB10-2-79-12	SLB10-2-81-06	SLB10-2-81-06DP
	Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/13/2010	10/5/2010	10/5/2010
	Depth Interval	0- 12	12- 36	36- 60	60- 73	0- 12	0- 6	0- 6
Chemical	Unit							
DRO	mg/kg	30 J	18 J	14 UJ	21 J	250	15 UJ	19
ORO	mg/kg	33 J	24 J	20 J	28 J	300	56	59

Table 3-7b
Area 2 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-81	SLB10-2-81	SLB10-2-81	SLB10-2-81	SLB10-2-81	SLB10-2-82	SLB10-2-82
	Field Sample ID	SLB10-2-81-12	SLB10-2-81-36	SLB10-2-81-60	SLB10-2-81-84	SLB10-2-81-92	SLB10-2-82-06	SLB10-2-82-06DP
	Sample Date	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/7/2010	10/7/2010
	Depth Interval	0- 12	12- 36	36- 60	60- 84	84- 92	0- 6	0- 6
Chemical	Unit							
DRO	mg/kg	10 UJ	12 UJ	11 UJ	10 UJ	12 UJ	120 J	33 J
ORO	mg/kg	8 J	23	13 J	8 J	17 J	110 J	48 J

Table 3-7b
Area 2 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-82	SLB10-2-82	SLB10-2-83	SLB10-2-83	SLB10-2-83	SLB10-2-83	SLB10-2-84
	Field Sample ID	SLB10-2-82-12	SLB10-2-82-27	SLB10-2-83-06	SLB10-2-83-12	SLB10-2-83-36	SLB10-2-83-60	SLB10-2-84-12
	Sample Date	10/7/2010	10/7/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/13/2010
	Depth Interval	0- 12	12- 27	0- 6	0- 12	12- 36	36- 60	0- 12
Chemical	Unit							
DRO	mg/kg	9.6 UJ	7.8 UJ	270	160	170	85	86
ORO	mg/kg	17 J	5 J	470	230	320	140	75

Table 3-7b
Area 2 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-84	SLB10-2-85	SLB10-2-85	SLB10-2-85	SLB10-2-85	SLB10-2-85	SLB10-2-85
	Field Sample ID	SLB10-2-84-33	SLB10-2-85-06	SLB10-2-85-12	SLB10-2-85-36	SLB10-2-85-60	SLB10-2-85-84	SLB10-2-85-117
	Sample Date	10/13/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
	Depth Interval	12- 33	0- 6	0- 12	12- 36	36- 60	60- 84	84- 117
Chemical	Unit							
DRO	mg/kg	270	37	12	10 UJ	9 UJ	9.1 UJ	9.7 UJ
ORO	mg/kg	490	66	18	16 U	13 U	14 U	15 U

Table 3-7b
Area 2 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-86	SLB10-2-86	SLB10-2-86	SLB10-2-87	SLB10-2-87	SLB10-2-87	SLB10-2-87
	Field Sample ID	SLB10-2-86-06	SLB10-2-86-12	SLB10-2-86-24	SLB10-2-87-06	SLB10-2-87-12	SLB10-2-87-36	SLB10-2-87-60
	Sample Date	10/7/2010	10/7/2010	10/7/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
	Depth Interval	0- 6	0- 12	12- 24	0- 6	0- 12	12- 36	36- 60
Chemical	Unit							
DRO	mg/kg	34 J	59	9	25	10 UJ	9.4 UJ	8.9 UJ
ORO	mg/kg	55 J	50	15 UJ	35	19	14	12 J

Table 3-7b
Area 2 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-87	SLB10-2-87	SLB10-2-87	SLB10-2-88	SLB10-2-88	SLB10-2-89	SLB10-2-89
	Field Sample ID	SLB10-2-87-84	SLB10-2-87-108	SLB10-2-87-120	SLB10-2-88-06	SLB10-2-88-18	SLB10-2-89-06	SLB10-2-89-16
	Sample Date	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/7/2010	10/7/2010
	Depth Interval	60- 84	84- 108	84- 120	0- 6	0- 18	0- 6	0- 16
Chemical	Unit							
DRO	mg/kg	8.7 UJ	13 UJ	11 UJ	230	270	84 J	65
ORO	mg/kg	8 J	10 J	11 J	260	200	120 J	80

Table 3-7b
Area 2 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-90	SLB10-2-90	SLB10-2-90	SLB10-2-90	SLB10-2-90	SLB10-2-90	SLB10-2-91
	Field Sample ID	SLB10-2-90-06	SLB10-2-90-06DP	SLB10-2-90-12	SLB10-2-90-12DP	SLB10-2-90-32	SLB10-2-90-32DP	SLB10-2-91-06
	Sample Date	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/5/2010
	Depth Interval	0- 6	0- 6	0- 12	0- 12	12- 32	12- 32	0- 6
Chemical	Unit							
DRO	mg/kg	180	37	140	30	47	19 J	28
ORO	mg/kg	250	53	180	52	320	52	49

Table 3-7b
Area 2 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-91	SLB10-2-91	SLB10-2-92	SLB10-2-92	SLB10-2-92	SLB10-2-93	SLB10-2-93
	Field Sample ID	SLB10-2-91-12	SLB10-2-91-36	SLB10-2-92-06	SLB10-2-92-12	SLB10-2-92-36	SLB10-2-93-06	SLB10-2-93-12
	Sample Date	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
	Depth Interval	0- 12	12- 36	0- 6	0- 12	12- 36	0- 6	0- 12
Chemical	Unit							
DRO	mg/kg	16	16	16	20	11 UJ	14	22
ORO	mg/kg	41	34	39	20	17 UJ	23	32

Table 3-7b
Area 2 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-93	SLB10-2-94	SLB10-2-94	SLB10-2-94	SLB10-2-94	SLB10-2-94	SLB10-2-94
	Field Sample ID	SLB10-2-93-41	SLB10-2-94-06	SLB10-2-94-12	SLB10-2-94-36	SLB10-2-94-60	SLB10-2-94-84	SLB10-2-94-96
	Sample Date	10/6/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
	Depth Interval	12- 41	0- 6	0- 12	12- 36	36- 60	60- 84	60- 96
Chemical	Unit							
DRO	mg/kg	92	28 J	35 J	30 J	8.1 UJ	8.4 UJ	8.5 UJ
ORO	mg/kg	140	49 J	63 J	52 J	10 J	5 J	5 J

Table 3-7b
Area 2 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-95	SLB10-2-95	SLB10-2-95	SLB10-2-95	SLB10-2-95	SLB10-2-96	SLB10-2-96
	Field Sample ID	SLB10-2-95-06	SLB10-2-95-12	SLB10-2-95-36	SLB10-2-95-60	SLB10-2-95-84	SLB10-2-96-06	SLB10-2-96-12
	Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
	Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	0- 6	0- 12
Chemical	Unit							
DRO	mg/kg	49 J	34 J	42 J	100 J	280 J	26	12
ORO	mg/kg	57 J	38 J	60 J	150 J	300 J	29	16

Table 3-7b
Area 2 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-96	SLB10-2-96	SLB10-2-96	SLB10-2-97	SLB10-2-97	SLB10-2-97	SLB10-2-97
	Field Sample ID	SLB10-2-96-36	SLB10-2-96-60	SLB10-2-96-84	SLB10-2-97-12	SLB10-2-97-36	SLB10-2-97-60	SLB10-2-97-75
	Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
	Depth Interval	12- 36	36- 60	60- 84	0- 12	12- 36	36- 60	60- 75
Chemical	Unit							
DRO	mg/kg	10 UJ	10 UJ	11 UJ	29	95	26	28
ORO	mg/kg	15	15 UJ	17	33	130	27	26 J

Table 3-7b
Area 2 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-97
	Field Sample ID	SLB10-2-97-06
	Sample Date	10/12/2010
	Depth Interval	0- 6
Chemical	Unit	
DRO	mg/kg	26 J
ORO	mg/kg	50 J

Notes:

DRO = Diesel Range Organic

ID = Identification

J = Estimated Value

mg/kg = Milligram per kilogram

NL = Not Listed

ORO = Oil Range Organic

SQT = Sediment Quality Targets

TPH = Total Petroleum Hydrocarbon

U = Not Detected

Table 3-7c
Area 3 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-02	SLB10-3-02	SLB10-3-02	SLB10-3-02	SLB10-3-02	SLB10-3-03	SLB10-3-03
	Field Sample ID	SLB10-3-02-06	SLB10-3-02-12	SLB10-3-02-36	SLB10-3-02-60	SLB10-3-02-84	SLB10-3-03-06	SLB10-3-03-12
	Sample Date	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010
	Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	0- 6	0- 12
Chemical	Unit							
DRO	mg/kg	31	16	15	9.6 UJ	9.8 UJ	9.9 UJ	12
ORO	mg/kg	60	32	25	10 J	15	13 J	41

Table 3-7c
Area 3 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-03	SLB10-3-03	SLB10-3-04	SLB10-3-04	SLB10-3-04	SLB10-3-04	SLB10-3-05
	Field Sample ID	SLB10-3-03-36	SLB10-3-03-56	SLB10-3-04-06	SLB10-3-04-12	SLB10-3-04-36	SLB10-3-04-60	SLB10-3-05-06
	Sample Date	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/15/2010
	Depth Interval	12- 36	36- 56	0- 6	0- 12	12- 36	36- 60	0- 6
Chemical	Unit							
DRO	mg/kg	10 UJ	20	9.2 UJ	8 UJ	8 UJ	14	13 U
ORO	mg/kg	17	58	8 J	6 J	5 J	42	82

Table 3-7c
Area 3 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-05	SLB10-3-05	SLB10-3-05	SLB10-3-05	SLB10-3-05	SLB10-3-06	SLB10-3-06
	Field Sample ID	SLB10-3-05-12	SLB10-3-05-36	SLB10-3-05-60	SLB10-3-05-84	SLB10-3-05-116	SLB10-3-06-06	SLB10-3-06-06DP
	Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
	Depth Interval	0- 12	12- 36	36- 60	60- 84	84- 116	0- 6	0- 6
Chemical	Unit							
DRO	mg/kg	12 U	11 U	9 U	9.4 U	10 U	84	41
ORO	mg/kg	70	18	7 J	8 J	10 J	140	62

Table 3-7c
Area 3 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-06	SLB10-3-06	SLB10-3-06	SLB10-3-07	SLB10-3-07	SLB10-3-07	SLB10-3-08
	Field Sample ID	SLB10-3-06-12	SLB10-3-06-36	SLB10-3-06-48	SLB10-3-07-06	SLB10-3-07-12	SLB10-3-07-33	SLB10-3-08-06
	Sample Date	10/15/2010	10/15/2010	10/15/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010
	Depth Interval	0- 12	12- 36	36- 48	0- 6	0- 12	12- 33	0- 6
Chemical	Unit							
DRO	mg/kg	11 U	11 U	10 U	45	37	37	53
ORO	mg/kg	29	14 J	17	65	60	52	110

Table 3-7c
Area 3 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-08	SLB10-3-08	SLB10-3-08	SLB10-3-08	SLB10-3-08	SLB10-3-08	SLB10-3-09
	Field Sample ID	SLB10-3-08-06DP	SLB10-3-08-12	SLB10-3-08-36	SLB10-3-08-60	SLB10-3-08-84	SLB10-3-08-104	SLB10-3-09-06
	Sample Date	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010
	Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	84- 104	0- 6
Chemical	Unit							
DRO	mg/kg	52	24	59	97	110	170	47
ORO	mg/kg	100	32	92	150	180	220	83

Table 3-7c
Area 3 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-09	SLB10-3-09	SLB10-3-09	SLB10-3-09	SLB10-3-09	SLB10-3-09	SLB10-3-10
	Field Sample ID	SLB10-3-09-06DP	SLB10-3-09-12	SLB10-3-09-36	SLB10-3-09-60	SLB10-3-09-84	SLB10-3-09-115	SLB10-3-10-06
	Sample Date	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/15/2010
	Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	84- 115	0- 6
Chemical	Unit							
DRO	mg/kg	41	67	10 UJ	59	44	50	14 U
ORO	mg/kg	68	100	80	81	56	65	80

Table 3-7c
Area 3 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-10	SLB10-3-10	SLB10-3-10	SLB10-3-10	SLB10-3-11	SLB10-3-11	SLB10-3-11
	Field Sample ID	SLB10-3-10-12	SLB10-3-10-36	SLB10-3-10-60	SLB10-3-10-86	SLB10-3-11-06	SLB10-3-11-06DP	SLB10-3-11-12
	Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
	Depth Interval	6- 12	12- 36	36- 60	60- 86	0- 6	0- 6	0- 12
Chemical	Unit							
DRO	mg/kg	40	100	83	34	14 U	14 U	12 U
ORO	mg/kg	48	130	88	40	86	40	61

Table 3-7c
Area 3 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-11	SLB10-3-11	SLB10-3-12	SLB10-3-12	SLB10-3-12	SLB10-3-13	SLB10-3-13
	Field Sample ID	SLB10-3-11-36	SLB10-3-11-50	SLB10-3-12-06	SLB10-3-12-06DP	SLB10-3-12-10	SLB10-3-13-06	SLB10-3-13-06DP
	Sample Date	10/15/2010	10/15/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010
	Depth Interval	12- 36	36- 50	0- 6	0- 6	6- 10	0- 6	0- 6
Chemical	Unit							
DRO	mg/kg	10 U	9.2 U	12	13	8 J	13	11
ORO	mg/kg	88	73	38	35	15	29	27

Table 3-7c
Area 3 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-13	SLB10-3-14	SLB10-3-14	SLB10-3-14	SLB10-3-15	SLB10-3-15	SLB10-3-15
	Field Sample ID	SLB10-3-13-12	SLB10-3-14-06	SLB10-3-14-12	SLB10-3-14-42	SLB10-3-15-06	SLB10-3-15-06DP	SLB10-3-15-12
	Sample Date	10/16/2010	10/14/2010	10/14/2010	10/14/2010	10/15/2010	10/15/2010	10/15/2010
	Depth Interval	6- 12	0- 6	0- 12	12- 42	0- 6	0- 6	6- 12
Chemical	Unit							
DRO	mg/kg	6 J	9 UJ	13	37	11	19	10
ORO	mg/kg	10 J	7 J	18	39	8 J	19	18 J

Table 3-7c
Area 3 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-15	SLB10-3-16	SLB10-3-16	SLB10-3-16	SLB10-3-16	SLB10-3-17	SLB10-3-17
	Field Sample ID	SLB10-3-15-32	SLB10-3-16-06	SLB10-3-16-12	SLB10-3-16-36	SLB10-3-16-71	SLB10-3-17-06	SLB10-3-17-06DP
	Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
	Depth Interval	12- 32	0- 6	0- 12	12- 36	36- 71	0- 6	0- 6
Chemical	Unit							
DRO	mg/kg	16	56	95	21	11 U	71	61
ORO	mg/kg	22	75	130	19	13 J	97	78

Table 3-7c
Area 3 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-17	SLB10-3-17	SLB10-3-17	SLB10-3-18	SLB10-3-18	SLB10-3-18	SLB10-3-18
	Field Sample ID	SLB10-3-17-12	SLB10-3-17-36	SLB10-3-17-69	SLB10-3-18-06	SLB10-3-18-06DP	SLB10-3-18-12	SLB10-3-18-36
	Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
	Depth Interval	0- 12	12- 36	36- 69	0- 6	0- 6	0- 12	12- 36
Chemical	Unit							
DRO	mg/kg	10 U	9.5 U	11 U	9.1 U	9 U	42	53
ORO	mg/kg	47	19	10 J	13 J	19	65	69

Table 3-7c
Area 3 Sediment Sample Analytical Results - TPH
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-18	SLB10-3-18	SLB10-3-19	SLB10-3-19	SLB10-3-19	SLB10-3-19
	Field Sample ID	SLB10-3-18-60	SLB10-3-18-95	SLB10-3-19-06	SLB10-3-19-12	SLB10-3-19-36	SLB10-3-19-69
	Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
	Depth Interval	36- 60	60- 95	0- 6	0- 12	12- 36	36- 69
Chemical	Unit						
DRO	mg/kg	55	19	24	11 U	10 U	11 U
ORO	mg/kg	63	19	35	22	33	18

Notes:
DRO = Diesel Range Organic
ID = Identification
J = Estimated Value
mg/kg = Milligram per kilogram
NL = Not Listed
ORO = Oil Range Organic
SQT = Sediment Quality Targets
TPH = Total Petroleum Hydrocarbon
U = Not Detected

Table 3-8a
Area 1 Sediment Sample Analytical Results - Dioxin/Furan
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-20	SLB10-1-24	SLB10-1-24	SLB10-1-26	SLB10-1-29	SLB10-1-31	SLB10-1-33
			Field Sample ID	SLB10-1-20-06	SLB10-1-24-06	SLB10-1-24-06DP	SLB10-1-26-06	SLB10-1-29-06	SLB10-1-31-06	SLB10-1-33-06
			Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/13/2010	10/16/2010	10/13/2010
			Depth Interval	0- 6	0- 6	0- 6	0- 6	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit							
1,2,3,4,6,7,8-HpCDD	NL	NL	pg/g	212	115	115	419	9.2	34.3	200
1,2,3,4,6,7,8-HpCDF	NL	NL	pg/g	63.2	38.1	35.7	143	12	11.5	180
1,2,3,4,7,8,9-HpCDF	NL	NL	pg/g	3.3 J	1.7 J	1.36 J	6.33 J	0.13 U	0.0964 U	2.6 J
1,2,3,4,7,8-HxCDD	NL	NL	pg/g	3.68 J	1.43 J	1.62 J	6.8	0.13 J	0.49 J	1.8 J
1,2,3,4,7,8-HxCDF	NL	NL	pg/g	2.67 J	3.29 J	3.01 J	6.17 J	0.06	0.61 J	4.2 J
1,2,3,6,7,8-HxCDD	NL	NL	pg/g	6.35	4.48 J	5.11	16.3	0.55 J	1.28 J	11
1,2,3,6,7,8-HxCDF	NL	NL	pg/g	2.6 J	1.37 J	1.48 J	6.81 J	0.32 J	0.43 J	4.6 J
1,2,3,7,8,9-HxCDD	NL	NL	pg/g	3.66 J	3.09 J	4.15 J	10.1	0.37	0.86 J	7
1,2,3,7,8,9-HxCDF	NL	NL	pg/g	0.0849 U	0.0876 U	0.159 U	0.244 U	0.053 U	0.0944 U	0.22 J
1,2,3,7,8-PeCDD	NL	NL	pg/g	1.21 J	0.91 J	1.27 J	3.22 J	0.13 U	0.121 U	2.2 J
1,2,3,7,8-PeCDF	NL	NL	pg/g	1.27 J	0.75 J	0.77 J	3.03 J	0.093 U	0.159 U	0.82
2,3,4,6,7,8-HxCDF	NL	NL	pg/g	1.88 J	1.09 J	1.23 J	5.07 J	0.12 J	0.17 J	1.5 J
2,3,4,7,8-PeCDF	NL	NL	pg/g	3.93 J	1.18 J	1.28 J	8.26	0.11 U	0.176 U	2 J
2,3,7,8-TCDD	NL	NL	pg/g	0.37 J	0.24 J	0.28 J	1.22 J	0.043 U	0.17 J	1.6
2,3,7,8-TCDF	NL	NL	pg/g	3.81	1.23	1.21	7.32	0.03 U	1.15	6.4
OCDD	NL	NL	pg/g	2790	1390	1330	4180	92	253	1800
OCDF	NL	NL	pg/g	207	88.3	73.1	292	6.5 J	8.35 J	110
Total HpCDD	NL	NL	pg/g	428	233	249	951	27	75	460
Total HpCDF	NL	NL	pg/g	205	109	98.2	389	22	23.3	390
Total HxCDD	NL	NL	pg/g	54.8	39.4	46.1	153	5.6	15.5 J	110
Total HxCDF	NL	NL	pg/g	60.7	31.9	33	175	6.4	9.55 J	130
Total PeCDD	NL	NL	pg/g	7.67	8.77	8.76	23.8	0.5 J	2.98 J	25
Total PeCDF	NL	NL	pg/g	42.8	14	14.4	120	0.86	3.31 J	33
Total TCDD	NL	NL	pg/g	4.15	6.29	6.44	13.1	0.043 U	2.55 J	16
Total TCDF	NL	NL	pg/g	49.8	16.1	15.5	97.2	0.03 U	6.55 J	31
Dioxin TEQ	NL	NL	pg/g	7.635045	3.86991	4.39746	16.9282	0.383625	0.904012	9.51
Dioxin-like PCB TEQ ³	NL	NL	pg/g	0.42244325	0.0940925	0.1140565	0.12477725	0.0090565	0.03391975	0.063593
TCDD-TEQ ⁴	0.85	21.5	pg/g	8.05748825	3.9640025	4.5115165	17.05297725	0.3926815	0.93793175	9.573593

Table 3-8a
Area 1 Sediment Sample Analytical Results - Dioxin/Furan
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-38	SLB10-1-40	SLB10-1-44	SLB10-1-47	SLB10-1-49	SLB10-1-51	SLB10-1-54
			Field Sample ID	SLB10-1-38-06	SLB10-1-40-06	SLB10-1-44-06	SLB10-1-47-06	SLB10-1-49-06	SLB10-1-51-06	SLB10-1-54-06
			Sample Date	10/15/2010	10/15/2010	10/16/2010	10/15/2010	10/13/2010	10/12/2010	10/15/2010
			Depth Interval	0- 6	0- 6	0- 6	0- 6	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit							
1,2,3,4,6,7,8-HpCDD	NL	NL	pg/g	330	0.38 U	26.5	135	48	180	16.1 U
1,2,3,4,6,7,8-HpCDF	NL	NL	pg/g	201	0.48 J	7.06	92.8	46	870	5.85 J
1,2,3,4,7,8,9-HpCDF	NL	NL	pg/g	3.62 J	0.0697 U	0.077 U	1.31 J	0.5	4.5	0.196 U
1,2,3,4,7,8-HxCDD	NL	NL	pg/g	2.62 J	0.0378 U	0.19 J	1.28 J	0.43	2.6 J	0.127 U
1,2,3,4,7,8-HxCDF	NL	NL	pg/g	5.54 J	0.0401 U	0.34 J	2.47 J	1.2 J	9.7	0.181 U
1,2,3,6,7,8-HxCDD	NL	NL	pg/g	15.4	0.0346 U	0.89 J	5.73	2.7 J	17	0.28 J
1,2,3,6,7,8-HxCDF	NL	NL	pg/g	4.5 J	0.0376 U	0.27 J	2.64 J	1.4 J	16	0.164 U
1,2,3,7,8,9-HxCDD	NL	NL	pg/g	6.25	0.0355 U	0.82 J	2.72 J	1.6 J	11	0.3 J
1,2,3,7,8,9-HxCDF	NL	NL	pg/g	0.143 U	0.0415 U	0.0557 U	0.096 U	0.12 U	0.41 J	0.172 U
1,2,3,7,8-PeCDD	NL	NL	pg/g	2.24 J	0.0854 U	0.108 U	1.06 J	0.26 U	3.3 J	0.263 U
1,2,3,7,8-PeCDF	NL	NL	pg/g	1.1 J	0.0414 U	0.0711 U	0.53 J	0.13 U	1.7 J	0.167 U
2,3,4,6,7,8-HxCDF	NL	NL	pg/g	1.94 J	0.0331 U	0.09 J	1.04 J	0.38 J	3.5 J	0.15 U
2,3,4,7,8-PeCDF	NL	NL	pg/g	2.04 J	0.0461 U	0.0812 U	0.97 J	0.14 U	2.9 J	0.188 U
2,3,7,8-TCDD	NL	NL	pg/g	1.84	0.0534 U	0.0573 U	0.58 J	0.39	0.42	0.164 U
2,3,7,8-TCDF	NL	NL	pg/g	5.79	0.0309 U	0.34 J	1.69	0.94	0.77 J	0.125 U
OCDD	NL	NL	pg/g	2910	4.24 U	208	1190	370	1100	43.8 U
OCDF	NL	NL	pg/g	147	0.22 J	6.43 J	54.2	20	280	2.29 J
Total HpCDD	NL	NL	pg/g	962	1.01 U	93.1	493	160	370	14.6 U
Total HpCDF	NL	NL	pg/g	461	0.87 J	15.8	192	100	1600	10.9 J
Total HxCDD	NL	NL	pg/g	161	0.16 J	14.3 J	75.9	35	150	5.68 J
Total HxCDF	NL	NL	pg/g	156	0.0331 U	5.84 J	66.8	38	410	3 J
Total PeCDD	NL	NL	pg/g	25.8	0.0854 U	1.62 J	12.9	5.3	28	2.94 J
Total PeCDF	NL	NL	pg/g	30.6	0.0414 U	1.48 J	13.4	4.5	42	0.42 J
Total TCDD	NL	NL	pg/g	17.5	0.0534 U	0.63 J	8.04	7.2	11	1.37 J
Total TCDF	NL	NL	pg/g	31.5	0.0309 U	2.31 J	11.4	3.7	10	0.43 J
Dioxin TEQ	NL	NL	pg/g	10.85805	0.1057205	0.4255405	4.78082	1.71925	18.8975	0.408649
Dioxin-like PCB TEQ ³	NL	NL	pg/g	0.06678825	0.0071705	0.027369	0.038106	0.0129365	0.01044075	0.03718
TCDD-TEQ ⁴	0.85	21.5	pg/g	10.92483825	0.112891	0.4529095	4.818926	1.7321865	18.90794075	0.445829

Table 3-8a
Area 1 Sediment Sample Analytical Results - Dioxin/Furan
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-1-56	SLB10-1-56	SLB10-1-60	SLB10-1-62	SLB10-1-62
			Field Sample ID	SLB10-1-56-06	SLB10-1-56-06DP	SLB10-1-60-06	SLB10-1-62-06	SLB10-1-62-06DP
			Sample Date	10/7/2010	10/7/2010	10/14/2010	10/14/2010	10/14/2010
			Depth Interval	0- 6	0- 6	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit					
1,2,3,4,6,7,8-HpCDD	NL	NL	pg/g	240	240	326	250	218
1,2,3,4,6,7,8-HpCDF	NL	NL	pg/g	480	290	372	290	257
1,2,3,4,7,8,9-HpCDF	NL	NL	pg/g	4.4 J	3.6 J	4.85 J	3.6 J	2.95 J
1,2,3,4,7,8-HxCDD	NL	NL	pg/g	2.9	2.7	3.98 J	2.4	2.99 J
1,2,3,4,7,8-HxCDF	NL	NL	pg/g	6.2	4.7 J	6.51 J	6.7 J	6.49 J
1,2,3,6,7,8-HxCDD	NL	NL	pg/g	16	14	17.4	15	13
1,2,3,6,7,8-HxCDF	NL	NL	pg/g	9	8.1	9.7	8.7	8.18
1,2,3,7,8,9-HxCDD	NL	NL	pg/g	9.5	8.2	8.42	11	6.99 J
1,2,3,7,8,9-HxCDF	NL	NL	pg/g	0.54	0.34	0.24 J	0.3 J	1 J
1,2,3,7,8-PeCDD	NL	NL	pg/g	2.9	2.9	3.53 J	3.3 J	3.32 J
1,2,3,7,8-PeCDF	NL	NL	pg/g	2.1 J	1.1	1.4 J	0.28 U	0.96 J
2,3,4,6,7,8-HxCDF	NL	NL	pg/g	2.1	1.7 J	2.9 J	2 J	1.77 J
2,3,4,7,8-PeCDF	NL	NL	pg/g	2 J	1.9 J	2.63 J	2.7 J	2.54 J
2,3,7,8-TCDD	NL	NL	pg/g	1.9	1.8	1.96	2	2.03
2,3,7,8-TCDF	NL	NL	pg/g	4.1	3.7	5.66	4.5	5.74
OCDD	NL	NL	pg/g	2100	2000	2960	2100	1800
OCDF	NL	NL	pg/g	190	140	190	130	121
Total HpCDD	NL	NL	pg/g	760	770	1240	880	784
Total HpCDF	NL	NL	pg/g	1000	630	829	660	604
Total HxCDD	NL	NL	pg/g	180	170	231	190	179
Total HxCDF	NL	NL	pg/g	310	230	286	250	235
Total PeCDD	NL	NL	pg/g	39	38	45	39	42.1
Total PeCDF	NL	NL	pg/g	35	32	44	39	46.6
Total TCDD	NL	NL	pg/g	22	23	26.2	27	25.8
Total TCDF	NL	NL	pg/g	22	23	30.7	25	32.7
Dioxin TEQ	NL	NL	pg/g	14.912	12.336	15.7507	13.521	13.4035
Dioxin-like PCB TEQ ³	NL	NL	pg/g	0.025401	0.0254025	0.04510225	0.0367565	0.0818025
TCDD-TEQ ⁴	0.85	21.5	pg/g	14.937401	12.3614025	15.79580225	13.5577565	13.4853025

Notes:

Result exceeds SQTs - Level I.

¹ Evaluation of Numerical SQTs-St Louis River AOC-Level I

Result exceeds SQTs - Level II.

² Evaluation of Numerical SQTs-St Louis River AOC-Level II

ID = Identification

³ Dioxin-like PCB TEQ from Table 3-5a

J = Estimated Value

⁴ Sum of Dioxin TEQ and Dioxin-like PCB TEQ

mg/kg = Milligram per kilogram

NL = Not Listed

pg/g = pico gram per gram

SQT = Sediment Quality Targets

U = Not Detected

Table 3-8b
Area 2 Sediment Sample Analytical Results - Dioxin/Furan
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-65	SLB10-2-69	SLB10-2-71	SLB10-2-74	SLB10-2-74	SLB10-2-76	SLB10-2-83
			Field Sample ID	SLB10-2-65-06	SLB10-2-69-06	SLB10-2-71-06	SLB10-2-74-06	SLB10-2-74-06DP	SLB10-2-76-06	SLB10-2-83-06
			Sample Date	10/7/2010	10/7/2010	10/7/2010	10/6/2010	10/6/2010	10/13/2010	10/6/2010
			Depth Interval	0- 6	0- 6	0- 6	0- 6	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit							
1,2,3,4,6,7,8-HpCDD	NL	NL	pg/g	170	320	2.1 J	310	430	72	410
1,2,3,4,6,7,8-HpCDF	NL	NL	pg/g	240	91	2.7 J	1100	1600	220	610
1,2,3,4,7,8,9-HpCDF	NL	NL	pg/g	2.2 J	4.1 J	0.091 U	7.3	10	1.9 J	5.9 J
1,2,3,4,7,8-HxCDD	NL	NL	pg/g	0.2 U	0.23 U	0.071 U	4.8 J	4.8	0.82	4.9 J
1,2,3,4,7,8-HxCDF	NL	NL	pg/g	3.1 J	4.3 J	0.06	11	16	2.7 J	10 J
1,2,3,6,7,8-HxCDD	NL	NL	pg/g	8.7	10 J	0.068 U	30	41	6.1	24 J
1,2,3,6,7,8-HxCDF	NL	NL	pg/g	5.4	3.6 J	0.08 J	36	50	4.8 J	16 J
1,2,3,7,8,9-HxCDD	NL	NL	pg/g	5.6	9.7 J	0.068 U	19	26	3.3 J	18 J
1,2,3,7,8,9-HxCDF	NL	NL	pg/g	0.15 U	0.27 U	0.059 U	0.93 J	1.4 J	0.21 J	0.48 U
1,2,3,7,8-PeCDD	NL	NL	pg/g	2 J	2.2	0.096 U	6.8	9.3	1.4 J	4.7 J
1,2,3,7,8-PeCDF	NL	NL	pg/g	0.23 U	0.5 U	0.039 U	2.3 J	3.5 J	0.33	1.2 U
2,3,4,6,7,8-HxCDF	NL	NL	pg/g	1.3 J	2.4	0.047 U	4.7 J	6	1.1 J	5.2
2,3,4,7,8-PeCDF	NL	NL	pg/g	1.2	1.8 J	0.045 U	2.9 J	4.4 J	0.89 J	4.5 J
2,3,7,8-TCDD	NL	NL	pg/g	1.5	0.89 J	0.051 U	2.2	3.2	0.56 J	1.9
2,3,7,8-TCDF	NL	NL	pg/g	4.2	3.6	0.02 U	3	4.7	0.9 J	6.6
OCDD	NL	NL	pg/g	1700	3100	22	2600	3300	600	3800
OCDF	NL	NL	pg/g	130	230	1.2 J	420	580	81	270
Total HpCDD	NL	NL	pg/g	410	850	5.1	740	1100	170	920
Total HpCDF	NL	NL	pg/g	490	260	5.1	2300	3300	430	1200
Total HxCDD	NL	NL	pg/g	99	100	1.2	300	440	59	240
Total HxCDF	NL	NL	pg/g	140	85	1.5	720	1200	130	380
Total PeCDD	NL	NL	pg/g	25	16	0.42 J	59	94	14	50
Total PeCDF	NL	NL	pg/g	20	31	0.039 U	60	99	14	58
Total TCDD	NL	NL	pg/g	16	11	0.051 U	24	36	10	18
Total TCDF	NL	NL	pg/g	21	26	0.02 U	17	29	5.7	43
Dioxin TEQ	NL	NL	pg/g	8.27125	7.0845	0.15583	30.553	42.438	6.2106	22.2
Dioxin-like PCB TEQ ³	NL	NL	pg/g	0.025798	0.054305	0.007441	0.01659525	0.020217	0.0306915	0.08941
TCDD-TEQ ⁴	0.85	21.5	pg/g	8.297048	7.138805	0.163271	30.56959525	42.458217	6.2412915	22.28941

Table 3-8b
Area 2 Sediment Sample Analytical Results - Dioxin/Furan
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-2-85	SLB10-2-87	SLB10-2-89	SLB10-2-92	SLB10-2-94	SLB10-2-96
			Field Sample ID	SLB10-2-85-06	SLB10-2-87-06	SLB10-2-89-06	SLB10-2-92-06	SLB10-2-94-06	SLB10-2-96-06
			Sample Date	10/6/2010	10/6/2010	10/7/2010	10/6/2010	10/7/2010	10/7/2010
			Depth Interval	0- 6	0- 6	0- 6	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit						
1,2,3,4,6,7,8-HpCDD	NL	NL	pg/g	120	30	650	13	140	20
1,2,3,4,6,7,8-HpCDF	NL	NL	pg/g	140	56	670	6.7	220	45
1,2,3,4,7,8,9-HpCDF	NL	NL	pg/g	1.2 J	0.48	4.9	0.22	2.4 J	0.37 J
1,2,3,4,7,8-HxCDD	NL	NL	pg/g	1.2 J	0.45 J	4 J	0.094 U	1.7 J	0.23 J
1,2,3,4,7,8-HxCDF	NL	NL	pg/g	2 J	0.9 J	7.2 J	0.15 J	4.1 J	0.54 J
1,2,3,6,7,8-HxCDD	NL	NL	pg/g	6.2	2.3 J	19 J	0.56 J	10	1.3 J
1,2,3,6,7,8-HxCDF	NL	NL	pg/g	3.8 J	1.6 J	8.3 J	0.23 J	6.9	1.8 J
1,2,3,7,8,9-HxCDD	NL	NL	pg/g	3.3	1.6 J	12 J	0.27	6.3	0.87 J
1,2,3,7,8,9-HxCDF	NL	NL	pg/g	0.16 U	0.16 U	0.17 U	0.059 U	0.17 U	0.054 U
1,2,3,7,8-PeCDD	NL	NL	pg/g	1.4 J	0.21 U	3 J	0.13 U	1.8	0.16 U
1,2,3,7,8-PeCDF	NL	NL	pg/g	0.5	0.16 U	0.94 J	0.09 U	0.9 J	0.12 U
2,3,4,6,7,8-HxCDF	NL	NL	pg/g	0.92 J	0.3 J	2.2 J	0.08	1.5 J	0.25 J
2,3,4,7,8-PeCDF	NL	NL	pg/g	0.8	0.19 U	1.9 J	0.099 U	1.6 J	0.13 U
2,3,7,8-TCDD	NL	NL	pg/g	1.1	0.27	1.3	0.5 J	1.1 J	0.066 U
2,3,7,8-TCDF	NL	NL	pg/g	2.5	0.57 J	2.7 J	0.28	3	0.27
OCDD	NL	NL	pg/g	1200	280	3700	140	1300	190
OCDF	NL	NL	pg/g	61	24	380	5.4 J	98	15
Total HpCDD	NL	NL	pg/g	310	81	3100	29	380	50
Total HpCDF	NL	NL	pg/g	290	110	1300	15	490	79
Total HxCDD	NL	NL	pg/g	74	28	350	6.3	110	16
Total HxCDF	NL	NL	pg/g	96	39	290	4	180	23
Total PeCDD	NL	NL	pg/g	20	9.7	39	1.5	29	3.9
Total PeCDF	NL	NL	pg/g	16	4.6	28	0.4	25	1.8
Total TCDD	NL	NL	pg/g	14	10	19	1.8	20	4
Total TCDF	NL	NL	pg/g	13	4.4	14	0.49	18	1
Dioxin TEQ	NL	NL	pg/g	6.0831	1.6322	17.3275	0.78349	8.6703	1.0546
Dioxin-like PCB TEQ ³	NL	NL	pg/g	0.022911	0.013829	0.021786	0.00883	0.0230725	0.010474
TCDD-TEQ ⁴	0.85	21.5	pg/g	6.106011	1.646029	17.349286	0.79232	8.6933725	1.065074

Notes:

Result exceeds SQTs - Level I.

Result exceeds SQTs - Level II.

ID = Identification

J = Estimated Value

mg/kg = Milligram per kilogram

NL = Not Listed

pg/g = pico gram per gram

SQT = Sediment Quality Targets

U = Not Detected

¹ Evaluation of Numerical SQTs-St Louis River AOC-Level I

² Evaluation of Numerical SQTs-St Louis River AOC-Level II

³ Dioxin-like PCB TEQ from Table 3-5b

⁴ Sum of Dioxin TEQ and Dioxin-like PCB TEQ

Table 3-8c
Area 3 Sediment Sample Analytical Results - Dioxin/Furan
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

			Location ID	SLB10-3-05	SLB10-3-07	SLB10-3-10	SLB10-3-14	SLB10-3-16	SLB10-3-19
			Field Sample ID	SLB10-3-05-06	SLB10-3-07-06	SLB10-3-10-06	SLB10-3-14-06	SLB10-3-16-06	SLB10-3-19-06
			Sample Date	10/15/2010	10/14/2010	10/15/2010	10/14/2010	10/15/2010	10/15/2010
			Depth Interval	0- 6	0- 6	0- 6	0- 6	0- 6	0- 6
Chemical	Level I ¹	Level II ²	Unit						
1,2,3,4,6,7,8-HpCDD	NL	NL	pg/g	115	2.69 U	70.2	3.3 U	543	46.7
1,2,3,4,6,7,8-HpCDF	NL	NL	pg/g	297	3.89 J	95.8	4.65 J	519	76.2
1,2,3,4,7,8,9-HpCDF	NL	NL	pg/g	2.63 J	0.137 U	1.2 J	0.158 U	6.75	0.79 J
1,2,3,4,7,8-HxCDD	NL	NL	pg/g	1.48 J	0.0958 U	0.86 J	0.0657 U	3.99 J	0.44 J
1,2,3,4,7,8-HxCDF	NL	NL	pg/g	4.12 J	0.0803 U	2.18 J	0.09 J	8.38	1.68 J
1,2,3,6,7,8-HxCDD	NL	NL	pg/g	9.19	0.0861 U	4.3 J	0.17 J	24.7	3.42 J
1,2,3,6,7,8-HxCDF	NL	NL	pg/g	7.39	0.0767 U	2.97 J	0.14 J	10.7	2.19 J
1,2,3,7,8,9-HxCDD	NL	NL	pg/g	4.43 J	0.0892 U	2.21 J	0.11 J	10.6	1.32 J
1,2,3,7,8,9-HxCDF	NL	NL	pg/g	0.26 J	0.0922 U	0.104 U	0.0628 U	0.28 J	0.085 U
1,2,3,7,8-PeCDD	NL	NL	pg/g	2.85 J	0.36 U	0.9 J	0.0997 U	3.21 J	0.56 J
1,2,3,7,8-PeCDF	NL	NL	pg/g	1.2 J	0.104 U	0.43 J	0.0587 U	1.32 J	0.15 U
2,3,4,6,7,8-HxCDF	NL	NL	pg/g	1.25 J	0.0738 U	0.75 J	0.0479 U	2.5 J	0.5 J
2,3,4,7,8-PeCDF	NL	NL	pg/g	1.85 J	0.114 U	0.79 J	0.0638 U	2.23 J	0.48 J
2,3,7,8-TCDD	NL	NL	pg/g	2.62	0.0866 U	0.45 J	0.0504 U	2.78	0.37 J
2,3,7,8-TCDF	NL	NL	pg/g	7.3	0.35 J	1.34	0.05 J	7.14	1.23
OCDD	NL	NL	pg/g	1030	22 U	625	37.3	4240	436
OCDF	NL	NL	pg/g	115	1.42 J	46.8	2.41 J	315	30.9
Total HpCDD	NL	NL	pg/g	269	7.04	186	8.37	1200	114
Total HpCDF	NL	NL	pg/g	632	8.09	203	8.86	1080	159
Total HxCDD	NL	NL	pg/g	108	6.65 J	47.9	1.67 J	227	34.1
Total HxCDF	NL	NL	pg/g	268	3.28 J	68.8	2.58 J	287	52.4
Total PeCDD	NL	NL	pg/g	37.2	11.8	11.5	0.0997 U	35.6	8.18
Total PeCDF	NL	NL	pg/g	42.1	0.7 J	14.6	0.0587 U	49.1	8.23
Total TCDD	NL	NL	pg/g	29.1	16.3	11.5	0.1 J	22.5	7.27
Total TCDF	NL	NL	pg/g	31.9	1.85	10.1	0.09 J	39.2	7.07
Dioxin TEQ	NL	NL	pg/g	12.224	0.3550485	4.03118	0.1956385	18.318	2.80719
Dioxin-like PCB TEQ ³	NL	NL	pg/g	0.0612755	0.016132	0.044403	0.00698	0.068659	0.015156
TCDD-TEQ ⁴	0.85	21.5	pg/g	12.2852755	0.3711805	4.075583	0.2026185	18.386659	2.822346

Notes:

Result exceeds SQTs - Level I.

Result exceeds SQTs - Level II.

ID = Identification

J = Estimated Value

mg/kg = Milligram per kilogram

NL = Not Listed

pg/g = pico gram per gram

SQT = Sediment Quality Targets

U = Not Detected

¹ Evaluation of Numerical SQTs-St Louis River AOC-Level I

² Evaluation of Numerical SQTs-St Louis River AOC-Level II

³ Dioxin-like PCB TEQ from Table 3-5c

⁴ Sum of Dioxin TEQ and Dioxin-like PCB TEQ

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-20	SLB10-1-20	SLB10-1-21	SLB10-1-21	SLB10-1-21	SLB10-1-22	SLB10-1-22
	Field Sample ID	SLB10-1-20-06	SLB10-1-20-10	SLB10-1-21-06	SLB10-1-21-06DP	SLB10-1-21-14	SLB10-1-22-06	SLB10-1-22-06DP
	Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
	Depth Interval	0- 6	0- 10	0- 6	0- 6	0- 14	0- 6	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	41.3	26.9	7.7	NA	16.3	5.8	NA
SAND	%	53.7	47	81.8	NA	69.8	65	NA
SILT	%	3.3	23	7.9	NA	11.5	24.9	NA
CLAY	%	1.8	3.1	2.6	NA	2.4	4.3	NA
COARSE SAND	%	9.4	5.3	11.8	NA	6.9	6.7	NA
MEDIUM SAND	%	22.8	11.4	41.2	NA	29.7	10.5	NA
FINE SAND	%	21.5	30.3	28.8	NA	33.2	47.8	NA
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	NA	100	100	NA
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	NA	100	100	NA
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	NA	100	100	NA
SIEVE SIZE 1 INCH - % FINER	% passed	100	86.2	100	NA	100	100	NA
SIEVE SIZE 0.75 INCH - % FINER	% passed	89.7	86.2	100	NA	93.2	100	NA
SIEVE SIZE 0.375 INCH - % FINER	% passed	65.6	77.6	97.4	NA	86.8	96.8	NA
SIEVE SIZE #4 - % FINER	% passed	58.7	73.1	92.3	NA	83.7	94.2	NA
SIEVE SIZE #10 - % FINER	% passed	49.3	67.8	80.5	NA	76.8	87.5	NA
SIEVE SIZE #20 - % FINER	% passed	38.4	62.4	60.8	NA	62.8	81.8	NA
SIEVE SIZE #40 - % FINER	% passed	26.5	56.4	39.3	NA	47.1	77	NA
SIEVE SIZE #60 - % FINER	% passed	19	48.3	25.8	NA	37.8	68	NA
SIEVE SIZE #80 - % FINER	% passed	12.4	41.3	19.8	NA	31.2	60.8	NA
SIEVE SIZE #100 - % FINER	% passed	10.4	37.5	17.1	NA	27.3	56.8	NA
SIEVE SIZE #200 - % FINER	% passed	5	26.1	10.5	NA	13.9	29.2	NA
HYDROMETER READING 1 - % FINER	% passed	5.7	10.3	7.2	NA	13.8	12.1	NA
HYDROMETER READING 2 - % FINER	% passed	5.2	7	5.2	NA	8.4	9.3	NA
HYDROMETER READING 3 - % FINER	% passed	3.5	5.3	3.7	NA	5.7	6.5	NA
HYDROMETER READING 4 - % FINER	% passed	2.9	4.2	3.2	NA	4.4	5	NA
HYDROMETER READING 5 - % FINER	% passed	1.8	3.1	2.6	NA	2.4	4.3	NA
HYDROMETER READING 6 - % FINER	% passed	1.1	2	1.6	NA	1.7	2.1	NA
HYDROMETER READING 7 - % FINER	% passed	0.6	0.9	1.1	NA	1.1	0.7	NA
Organic Carbon								
TOTAL ORGANIC CARBON	%	9.81	24.4	5.89	12.9	24.1	4.29 J	5.41 J
BLACK CARBON	mg/kg	54200	NA	NA	NA	NA	NA	NA

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-22	SLB10-1-23	SLB10-1-23	SLB10-1-23	SLB10-1-24	SLB10-1-24	SLB10-1-24
	Field Sample ID	SLB10-1-22-19	SLB10-1-23-06	SLB10-1-23-06DP	SLB10-1-23-16	SLB10-1-24-06	SLB10-1-24-06DP	SLB10-1-24-12
	Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
	Depth Interval	0- 19	0- 6	0- 6	0- 16	0- 6	0- 6	0- 12
Chemical Name	Unit							
Grain Size								
GRAVEL	%	4.3	14.9	NA	1.3	0	NA	0.6
SAND	%	39.5	51.2	NA	53.8	62.8	NA	52.7
SILT	%	49.1	25.2	NA	40.4	34.7	NA	41.9
CLAY	%	7.1	8.7	NA	4.5	2.5	NA	4.8
COARSE SAND	%	0.8	5.8	NA	1.5	0.1	NA	0.5
MEDIUM SAND	%	2.4	12.1	NA	6.1	0.9	NA	1.4
FINE SAND	%	36.3	33.3	NA	46.2	61.8	NA	50.8
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	NA	100	100	NA	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	NA	100	100	NA	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	NA	100	100	NA	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	NA	100	100	NA	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	NA	100	100	NA	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	95.8	94.2	NA	99.4	100	NA	100
SIEVE SIZE #4 - % FINER	% passed	95.7	85.1	NA	98.7	100	NA	99.4
SIEVE SIZE #10 - % FINER	% passed	94.9	79.3	NA	97.2	99.9	NA	98.9
SIEVE SIZE #20 - % FINER	% passed	93.8	74.5	NA	95.7	99.8	NA	98.6
SIEVE SIZE #40 - % FINER	% passed	92.5	67.2	NA	91.1	99	NA	97.5
SIEVE SIZE #60 - % FINER	% passed	88.4	56.3	NA	78.4	92.9	NA	92.7
SIEVE SIZE #80 - % FINER	% passed	84.5	49.1	NA	67.8	82.8	NA	84.9
SIEVE SIZE #100 - % FINER	% passed	82.1	45.4	NA	62.5	75.5	NA	79.7
SIEVE SIZE #200 - % FINER	% passed	56.2	33.9	NA	44.9	37.2	NA	46.7
HYDROMETER READING 1 - % FINER	% passed	22.4	25.9	NA	23.9	9.7	NA	19.5
HYDROMETER READING 2 - % FINER	% passed	14	20.7	NA	15	6.5	NA	11.1
HYDROMETER READING 3 - % FINER	% passed	9.8	14.7	NA	8.5	4.1	NA	7.4
HYDROMETER READING 4 - % FINER	% passed	8.7	11.3	NA	6.1	2.5	NA	5
HYDROMETER READING 5 - % FINER	% passed	7.1	8.7	NA	4.5	2.5	NA	4.8
HYDROMETER READING 6 - % FINER	% passed	6.1	6.1	NA	2.9	1.7	NA	2.4
HYDROMETER READING 7 - % FINER	% passed	4.5	5.3	NA	2.1	0.8	NA	1.2
Organic Carbon								
TOTAL ORGANIC CARBON	%	1.6	10.3	10.9	40.9	4.56	2.8	12.5
BLACK CARBON	mg/kg	NA	NA	NA	NA	34500	42500	NA

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-24	SLB10-1-25	SLB10-1-25	SLB10-1-25	SLB10-1-25	SLB10-1-25	SLB10-1-25
	Field Sample ID	SLB10-1-24-24	SLB10-1-25-06	SLB10-1-25-06DP	SLB10-1-25-12	SLB10-1-25-36	SLB10-1-25-60	SLB10-1-25-84
	Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
	Depth Interval	12- 24	0- 6	0- 6	0- 12	12- 36	36- 60	60- 84
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	0	NA	0	0	0.5	0
SAND	%	80.3	3	NA	5	8.6	7.6	15
SILT	%	18	66.1	NA	61.2	67	66.2	50.6
CLAY	%	1.7	30.9	NA	33.8	24.4	25.7	34.4
COARSE SAND	%	0.3	0	NA	0	0.1	0.1	0
MEDIUM SAND	%	3.6	0.2	NA	0.3	0.1	0.1	0.7
FINE SAND	%	76.4	2.8	NA	4.7	8.4	7.4	14.3
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	NA	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	NA	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	NA	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	NA	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	NA	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	NA	100	100	100	100
SIEVE SIZE #4 - % FINER	% passed	100	100	NA	100	100	99.5	100
SIEVE SIZE #10 - % FINER	% passed	99.7	100	NA	100	99.9	99.4	100
SIEVE SIZE #20 - % FINER	% passed	99.2	99.9	NA	99.9	99.9	99.4	99.7
SIEVE SIZE #40 - % FINER	% passed	96.1	99.8	NA	99.7	99.8	99.3	99.3
SIEVE SIZE #60 - % FINER	% passed	78	99.6	NA	99.6	99.6	98.6	98.5
SIEVE SIZE #80 - % FINER	% passed	49.2	99.3	NA	98.7	98.9	97.3	95.5
SIEVE SIZE #100 - % FINER	% passed	36.9	99.1	NA	97.6	98.2	96.6	94.3
SIEVE SIZE #200 - % FINER	% passed	19.7	97	NA	95	91.4	91.9	85
HYDROMETER READING 1 - % FINER	% passed	10.3	88	NA	87.8	68.1	71.9	72.1
HYDROMETER READING 2 - % FINER	% passed	7.2	71.7	NA	71.9	57.5	61.6	60.3
HYDROMETER READING 3 - % FINER	% passed	4	51.3	NA	53.7	42.3	46.2	47.4
HYDROMETER READING 4 - % FINER	% passed	2.5	39.1	NA	39.8	33.3	34.2	39.1
HYDROMETER READING 5 - % FINER	% passed	1.7	30.9	NA	33.8	24.4	25.7	34.4
HYDROMETER READING 6 - % FINER	% passed	0.8	22.8	NA	23.9	15.4	17.4	23.8
HYDROMETER READING 7 - % FINER	% passed	0.8	14.6	NA	15.9	10.6	10.3	15.5
Organic Carbon								
TOTAL ORGANIC CARBON	%	11.1	4.76	4.87	5.02	4.7	8.96	12.4
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-25	SLB10-1-26	SLB10-1-26	SLB10-1-27	SLB10-1-27	SLB10-1-27	SLB10-1-28
	Field Sample ID	SLB10-1-25-116	SLB10-1-26-06	SLB10-1-26-12	SLB10-1-27-06	SLB10-1-27-06DP	SLB10-1-27-17	SLB10-1-28-06
	Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/13/2010
	Depth Interval	84- 116	0- 6	0- 12	0- 6	0- 6	0- 17	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	4.6	1.8	21.3	0.6	NA	0	0
SAND	%	24.4	41.7	53.1	77.7	NA	84.2	26.9
SILT	%	46.1	41.1	19	17.6	NA	14.2	63.6
CLAY	%	24.9	15.4	6.6	4.1	NA	1.6	9.5
COARSE SAND	%	0.6	5.8	7.8	1.7	NA	1	0
MEDIUM SAND	%	4.4	11.8	14.1	3.5	NA	1.7	0.6
FINE SAND	%	19.4	24.1	31.2	72.5	NA	81.5	26.3
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	NA	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	NA	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	NA	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	90	100	NA	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	85.7	100	NA	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	95.5	99.8	84.1	100	NA	100	100
SIEVE SIZE #4 - % FINER	% passed	95.4	98.2	78.7	99.4	NA	100	100
SIEVE SIZE #10 - % FINER	% passed	94.8	92.4	70.9	97.7	NA	99	100
SIEVE SIZE #20 - % FINER	% passed	93.6	86.8	64.4	96	NA	98.3	99.7
SIEVE SIZE #40 - % FINER	% passed	90.4	80.6	56.8	94.2	NA	97.3	99.4
SIEVE SIZE #60 - % FINER	% passed	86.9	72.2	46.4	83	NA	86.5	98.5
SIEVE SIZE #80 - % FINER	% passed	80.2	66.6	38.9	59.4	NA	61	96.9
SIEVE SIZE #100 - % FINER	% passed	78.6	64.2	35.4	45.6	NA	44.8	95.4
SIEVE SIZE #200 - % FINER	% passed	71	56.5	25.6	21.7	NA	15.8	73.1
HYDROMETER READING 1 - % FINER	% passed	50.9	37.1	19.7	9.3	NA	3.9	32.8
HYDROMETER READING 2 - % FINER	% passed	43.1	31.1	15.3	7	NA	3.2	25.1
HYDROMETER READING 3 - % FINER	% passed	35.3	22.6	10.2	5.3	NA	3.2	18.9
HYDROMETER READING 4 - % FINER	% passed	28.8	19	8.1	4.7	NA	2.4	14.3
HYDROMETER READING 5 - % FINER	% passed	24.9	15.4	6.6	4.1	NA	1.6	9.5
HYDROMETER READING 6 - % FINER	% passed	18.4	13	5.2	3.6	NA	1.5	6.6
HYDROMETER READING 7 - % FINER	% passed	11.9	9.4	3	2.4	NA	1.5	3.6
Organic Carbon								
TOTAL ORGANIC CARBON	%	2.26	9.87	19.9	0.7	0.678	0.37	5.29
BLACK CARBON	mg/kg	NA	67300	NA	NA	NA	NA	NA

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-28	SLB10-1-28	SLB10-1-28	SLB10-1-28	SLB10-1-28	SLB10-1-28	SLB10-1-29
	Field Sample ID	SLB10-1-28-06DP	SLB10-1-28-12	SLB10-1-28-36	SLB10-1-28-60	SLB10-1-28-84	SLB10-1-28-106	SLB10-1-29-06
	Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010
	Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	84- 106	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	NA	0	2.3	0	0	0	0
SAND	%	NA	18.5	18.1	36.3	57.3	38.6	94.5
SILT	%	NA	67	70.2	52.5	35.6	56.5	4.8
CLAY	%	NA	14.5	9.4	11.2	7.2	4.9	0.8
COARSE SAND	%	NA	0	0.2	0	0	0	0
MEDIUM SAND	%	NA	0.1	0.8	2.6	0.4	0	2.5
FINE SAND	%	NA	18.4	17.1	33.7	56.9	38.6	92
SIEVE SIZE 3 INCH - % FINER	% passed	NA	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	NA	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	NA	100	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	NA	100	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	NA	100	100	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	NA	100	98.4	100	100	100	100
SIEVE SIZE #4 - % FINER	% passed	NA	100	97.7	100	100	100	100
SIEVE SIZE #10 - % FINER	% passed	NA	100	97.5	100	100	100	100
SIEVE SIZE #20 - % FINER	% passed	NA	100	97	98.7	99.8	100	99.8
SIEVE SIZE #40 - % FINER	% passed	NA	99.9	96.7	97.4	99.6	100	97.5
SIEVE SIZE #60 - % FINER	% passed	NA	99.3	95.6	93	94.9	99.5	77.6
SIEVE SIZE #80 - % FINER	% passed	NA	97.8	93.9	88.6	82.1	95.8	43
SIEVE SIZE #100 - % FINER	% passed	NA	96.2	92.8	85.8	73	92.1	27.5
SIEVE SIZE #200 - % FINER	% passed	NA	81.5	79.6	63.7	42.7	61.4	5.5
HYDROMETER READING 1 - % FINER	% passed	NA	48.7	40.2	37.2	19.6	18.2	2.8
HYDROMETER READING 2 - % FINER	% passed	NA	37.8	27.9	26.2	13.4	11.6	2.8
HYDROMETER READING 3 - % FINER	% passed	NA	28.5	15.6	18	10.3	7.8	2.1
HYDROMETER READING 4 - % FINER	% passed	NA	25.4	11.5	13.9	7.9	5.9	1.4
HYDROMETER READING 5 - % FINER	% passed	NA	14.5	9.4	11.2	7.2	4.9	0.8
HYDROMETER READING 6 - % FINER	% passed	NA	9.8	5.3	7.1	4.8	4	0.8
HYDROMETER READING 7 - % FINER	% passed	NA	6.7	5.1	5.7	4	3.8	0.7
Organic Carbon								
TOTAL ORGANIC CARBON	%	5.24	14.9	1.51	1.06	0.59	0.259	0.183 J
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	0

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-29	SLB10-1-29	SLB10-1-29	SLB10-1-29	SLB10-1-30	SLB10-1-30	SLB10-1-30
	Field Sample ID	SLB10-1-29-12	SLB10-1-29-36	SLB10-1-29-60	SLB10-1-29-78	SLB10-1-30-06	SLB10-1-30-06DP	SLB10-1-30-10
	Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/16/2010	10/16/2010	10/16/2010
	Depth Interval	0- 12	12- 36	36- 60	60- 78	0- 6	0- 6	0- 10
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	0	0	0	0.5	NA	0.4
SAND	%	85.6	40.8	48.8	28.9	85.4	NA	97.1
SILT	%	9.8	46.8	44.6	63.8	10.9	NA	2.4
CLAY	%	4.6	12.4	6.6	7.3	3.2	NA	0.09
COARSE SAND	%	0	0.3	0	0	0.7	NA	0.5
MEDIUM SAND	%	3.3	3	6.5	1.2	2.5	NA	2
FINE SAND	%	82.3	37.5	42.3	27.7	82.2	NA	94.6
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE #4 - % FINER	% passed	100	100	100	100	99.5	NA	99.6
SIEVE SIZE #10 - % FINER	% passed	100	99.7	100	100	98.8	NA	99.1
SIEVE SIZE #20 - % FINER	% passed	99.2	99.2	98	99.9	98.1	NA	98.5
SIEVE SIZE #40 - % FINER	% passed	96.7	96.7	93.5	98.8	96.3	NA	97.1
SIEVE SIZE #60 - % FINER	% passed	80.4	88.8	78.8	96.5	77.7	NA	69.4
SIEVE SIZE #80 - % FINER	% passed	52.2	81.7	69.4	93.1	43.5	NA	20.6
SIEVE SIZE #100 - % FINER	% passed	38.5	78.4	66	90.8	30.9	NA	9.1
SIEVE SIZE #200 - % FINER	% passed	14.4	59.2	51.2	71.1	14.1	NA	2.5
HYDROMETER READING 1 - % FINER	% passed	9.9	33	25.1	29.6	5.1	NA	1.2
HYDROMETER READING 2 - % FINER	% passed	8.1	26.1	17.8	18.4	4.6	NA	0.7
HYDROMETER READING 3 - % FINER	% passed	7.2	20.8	11.4	13.4	4.1	NA	0.09
HYDROMETER READING 4 - % FINER	% passed	4.6	15.4	8.2	9.3	3.6	NA	0.09
HYDROMETER READING 5 - % FINER	% passed	4.6	12.4	6.6	7.3	3.2	NA	0.09
HYDROMETER READING 6 - % FINER	% passed	3.7	7.8	4.2	5.2	2.2	NA	-0.6
HYDROMETER READING 7 - % FINER	% passed	3.7	6.2	3.4	3.2	1.7	NA	-0.6
Organic Carbon								
TOTAL ORGANIC CARBON	%	0.702	6.28	0.53	1.18	3.61	5.25	0.599 J
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-31	SLB10-1-31	SLB10-1-32	SLB10-1-32	SLB10-1-32	SLB10-1-33	SLB10-1-33
	Field Sample ID	SLB10-1-31-06	SLB10-1-31-13	SLB10-1-32-06	SLB10-1-32-06DP	SLB10-1-32-20	SLB10-1-33-06	SLB10-1-33-12
	Sample Date	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/13/2010	10/13/2010
	Depth Interval	0- 6	0- 13	0- 6	0- 6	0- 20	0- 6	0- 12
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	0	0	NA	0	0	0
SAND	%	97.8	94.1	40.7	NA	35.8	28.5	14.3
SILT	%	2	5.4	53.9	NA	58.2	55.5	65.2
CLAY	%	0.2	0.6	5.4	NA	6	16	20.5
COARSE SAND	%	0	0.1	0.5	NA	1.1	0	0
MEDIUM SAND	%	1.4	0.5	1.5	NA	1.6	0.3	0.1
FINE SAND	%	96.4	93.5	38.7	NA	33.1	28.2	14.2
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	NA	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	NA	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	NA	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	NA	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	NA	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	NA	100	100	100
SIEVE SIZE #4 - % FINER	% passed	100	100	100	NA	100	100	100
SIEVE SIZE #10 - % FINER	% passed	100	99.9	99.5	NA	98.9	100	100
SIEVE SIZE #20 - % FINER	% passed	99.8	99.9	98.8	NA	98	99.9	99.9
SIEVE SIZE #40 - % FINER	% passed	98.6	99.4	98	NA	97.3	99.7	99.9
SIEVE SIZE #60 - % FINER	% passed	83	89.9	94.1	NA	94.2	99.1	99.6
SIEVE SIZE #80 - % FINER	% passed	42.9	57.5	87.8	NA	88.4	96.8	98.4
SIEVE SIZE #100 - % FINER	% passed	24.9	38	84	NA	84.4	93.9	97.2
SIEVE SIZE #200 - % FINER	% passed	2.2	5.9	59.3	NA	64.2	71.5	85.7
HYDROMETER READING 1 - % FINER	% passed	1.3	1.1	18.3	NA	22.7	42.9	65
HYDROMETER READING 2 - % FINER	% passed	1.3	1.1	14	NA	15.9	34.3	52.3
HYDROMETER READING 3 - % FINER	% passed	1.3	0.6	9.7	NA	10	25.8	34.5
HYDROMETER READING 4 - % FINER	% passed	0.8	0.6	7.6	NA	8	19.7	26.9
HYDROMETER READING 5 - % FINER	% passed	0.2	0.6	5.4	NA	6	16	20.5
HYDROMETER READING 6 - % FINER	% passed	-0.5	0	3.2	NA	3.1	11.2	14.2
HYDROMETER READING 7 - % FINER	% passed	-0.6	0	3.2	NA	2	8.7	10.4
Organic Carbon								
TOTAL ORGANIC CARBON	%	1.42	0.718 J	11.6 J	11.4 J	18.9 J	4.84	9.25
BLACK CARBON	mg/kg	13200	NA	NA	NA	NA	26900	NA

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-33	SLB10-1-33	SLB10-1-33	SLB10-1-34	SLB10-1-34	SLB10-1-34	SLB10-1-35
	Field Sample ID	SLB10-1-33-36	SLB10-1-33-60	SLB10-1-33-77	SLB10-1-34-06	SLB10-1-34-06DP	SLB10-1-34-17	SLB10-1-35-06
	Sample Date	10/13/2010	10/13/2010	10/13/2010	10/14/2010	10/14/2010	10/14/2010	10/16/2010
	Depth Interval	12- 36	36- 60	60- 77	0- 6	0- 6	0- 17	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0.6	0	0	0	NA	0	21.9
SAND	%	23	51.3	19	53.6	NA	87.9	69.6
SILT	%	54.3	38.8	67.1	37.8	NA	7.6	8
CLAY	%	22.1	9.9	13.9	8.6	NA	4.5	0.5
COARSE SAND	%	1	0	0	0.3	NA	0	16.6
MEDIUM SAND	%	3.1	4.3	0.9	1.2	NA	1.5	33.5
FINE SAND	%	18.9	47	18.1	52.1	NA	86.4	19.5
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	NA	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	NA	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	NA	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	NA	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	NA	100	92.4
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	100	NA	100	87.4
SIEVE SIZE #4 - % FINER	% passed	99.4	100	100	100	NA	100	78.1
SIEVE SIZE #10 - % FINER	% passed	98.4	100	100	99.7	NA	100	61.5
SIEVE SIZE #20 - % FINER	% passed	97.1	98.6	99.9	99.4	NA	99.7	41.5
SIEVE SIZE #40 - % FINER	% passed	95.3	95.7	99.1	98.5	NA	98.5	28
SIEVE SIZE #60 - % FINER	% passed	93	84.9	96.5	93.9	NA	84	18.4
SIEVE SIZE #80 - % FINER	% passed	89.3	71.3	93.4	85.2	NA	50.6	13
SIEVE SIZE #100 - % FINER	% passed	87.5	66.2	91.9	78.7	NA	35.6	11.4
SIEVE SIZE #200 - % FINER	% passed	76.4	48.7	81	46.4	NA	12.1	8.5
HYDROMETER READING 1 - % FINER	% passed	43	26.5	47.6	25.3	NA	8.6	2.3
HYDROMETER READING 2 - % FINER	% passed	35.3	20.7	35.1	19.7	NA	8.1	1.9
HYDROMETER READING 3 - % FINER	% passed	27.6	14.8	23.9	15.1	NA	6.3	1
HYDROMETER READING 4 - % FINER	% passed	25.4	11.9	18.9	9.6	NA	4.9	0.5
HYDROMETER READING 5 - % FINER	% passed	22.1	9.9	13.9	8.6	NA	4.5	0.5
HYDROMETER READING 6 - % FINER	% passed	17.7	7	10.2	5.8	NA	3.1	0.07
HYDROMETER READING 7 - % FINER	% passed	14.4	6	8.9	4	NA	2.2	-0.4
Organic Carbon								
TOTAL ORGANIC CARBON	%	2.11	1.81	1.78	2.65	5.39	0.975	3.28
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-35	SLB10-1-35	SLB10-1-36	SLB10-1-36	SLB10-1-36	SLB10-1-37	SLB10-1-37
	Field Sample ID	SLB10-1-35-06DP	SLB10-1-35-16	SLB10-1-36-06	SLB10-1-36-06DP	SLB10-1-36-15	SLB10-1-37-06	SLB10-1-37-06DP
	Sample Date	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010
	Depth Interval	0- 6	0- 16	0- 6	0- 6	0- 15	0- 6	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	NA	11	3.2	NA	0	0	NA
SAND	%	NA	71.5	60.7	NA	38.2	81	NA
SILT	%	NA	13.5	34.2	NA	56.7	17.7	NA
CLAY	%	NA	4	1.9	NA	5.1	1.3	NA
COARSE SAND	%	NA	13.8	0.4	NA	0.1	0.3	NA
MEDIUM SAND	%	NA	20.7	1.6	NA	0.4	1.9	NA
FINE SAND	%	NA	37	58.7	NA	37.7	78.8	NA
SIEVE SIZE 3 INCH - % FINER	% passed	NA	100	100	NA	100	100	NA
SIEVE SIZE 2 INCH - % FINER	% passed	NA	100	100	NA	100	100	NA
SIEVE SIZE 1.5 INCH - % FINER	% passed	NA	100	100	NA	100	100	NA
SIEVE SIZE 1 INCH - % FINER	% passed	NA	100	100	NA	100	100	NA
SIEVE SIZE 0.75 INCH - % FINER	% passed	NA	100	100	NA	100	100	NA
SIEVE SIZE 0.375 INCH - % FINER	% passed	NA	96.1	97.4	NA	100	100	NA
SIEVE SIZE #4 - % FINER	% passed	NA	89	96.8	NA	100	100	NA
SIEVE SIZE #10 - % FINER	% passed	NA	75.2	96.4	NA	99.9	99.7	NA
SIEVE SIZE #20 - % FINER	% passed	NA	62.7	96.1	NA	99.8	99.3	NA
SIEVE SIZE #40 - % FINER	% passed	NA	54.5	94.8	NA	99.5	97.8	NA
SIEVE SIZE #60 - % FINER	% passed	NA	44.6	88.4	NA	96.9	89.5	NA
SIEVE SIZE #80 - % FINER	% passed	NA	34.6	79.1	NA	91.6	75.4	NA
SIEVE SIZE #100 - % FINER	% passed	NA	29.8	72.3	NA	87.7	62.4	NA
SIEVE SIZE #200 - % FINER	% passed	NA	17.5	36.1	NA	61.8	19	NA
HYDROMETER READING 1 - % FINER	% passed	NA	11.8	7.4	NA	25.2	2.5	NA
HYDROMETER READING 2 - % FINER	% passed	NA	9.2	6.5	NA	15.7	2.5	NA
HYDROMETER READING 3 - % FINER	% passed	NA	6.6	5.6	NA	9.9	2.5	NA
HYDROMETER READING 4 - % FINER	% passed	NA	5.4	3.7	NA	7	1.3	NA
HYDROMETER READING 5 - % FINER	% passed	NA	4	1.9	NA	5.1	1.3	NA
HYDROMETER READING 6 - % FINER	% passed	NA	2.7	1	NA	3	0	NA
HYDROMETER READING 7 - % FINER	% passed	NA	1.4	0	NA	1	0	NA
Organic Carbon								
TOTAL ORGANIC CARBON	%	3.02	3.98	10.9	12.5	11.1	10.2	6.84
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-37	SLB10-1-38	SLB10-1-38	SLB10-1-38	SLB10-1-39	SLB10-1-39	SLB10-1-39
	Field Sample ID	SLB10-1-37-18	SLB10-1-38-06	SLB10-1-38-12	SLB10-1-38-43	SLB10-1-39-06	SLB10-1-39-06DP	SLB10-1-39-12
	Sample Date	10/16/2010	10/15/2010	10/15/2010	10/15/2010	10/13/2010	10/13/2010	10/13/2010
	Depth Interval	0- 18	0- 6	0- 12	12- 43	0- 6	0- 6	0- 12
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0.2	0	0	0.1	0	NA	0
SAND	%	65.9	26.2	23.2	19.2	5.9	NA	5.5
SILT	%	32.7	60.5	61.9	62.3	67.1	NA	71.9
CLAY	%	1.2	13.3	14.9	18.4	27	NA	22.6
COARSE SAND	%	0.2	0.1	0	0.3	0	NA	0
MEDIUM SAND	%	0.9	0.7	0	0.9	0.1	NA	0.2
FINE SAND	%	64.8	25.4	23.2	18	5.8	NA	5.3
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE #4 - % FINER	% passed	99.8	100	100	99.9	100	NA	100
SIEVE SIZE #10 - % FINER	% passed	99.6	99.9	100	99.6	100	NA	100
SIEVE SIZE #20 - % FINER	% passed	99.5	99.7	100	99.3	100	NA	99.9
SIEVE SIZE #40 - % FINER	% passed	98.7	99.2	100	98.7	99.9	NA	99.8
SIEVE SIZE #60 - % FINER	% passed	91.4	97	98.6	96.3	99.6	NA	99.7
SIEVE SIZE #80 - % FINER	% passed	77.9	92.7	93.9	92.6	99.3	NA	99.4
SIEVE SIZE #100 - % FINER	% passed	68	90	90.8	90.9	99	NA	99.1
SIEVE SIZE #200 - % FINER	% passed	33.9	73.8	76.8	80.7	94.1	NA	94.5
HYDROMETER READING 1 - % FINER	% passed	20.4	40.7	55.4	50.7	65.4	NA	64.8
HYDROMETER READING 2 - % FINER	% passed	9.8	31.9	44.4	39.6	55.3	NA	51.9
HYDROMETER READING 3 - % FINER	% passed	4.4	21	26.2	28.4	41.1	NA	37.3
HYDROMETER READING 4 - % FINER	% passed	2.3	16.6	18.6	22.6	33	NA	28.1
HYDROMETER READING 5 - % FINER	% passed	1.2	13.3	14.9	18.4	27	NA	22.6
HYDROMETER READING 6 - % FINER	% passed	-1.1	9.8	9.1	11.4	18.5	NA	15.3
HYDROMETER READING 7 - % FINER	% passed	-1.1	6.6	7.3	8.6	12.8	NA	9.8
Organic Carbon								
TOTAL ORGANIC CARBON	%	24.3 J	12.6	24.5	8.4	5.02	4.97	4.36
BLACK CARBON	mg/kg	NA	97500	NA	NA	NA	NA	NA

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-39	SLB10-1-39	SLB10-1-39	SLB10-1-39	SLB10-1-40	SLB10-1-40	SLB10-1-40
	Field Sample ID	SLB10-1-39-36	SLB10-1-39-60	SLB10-1-39-84	SLB10-1-39-115	SLB10-1-40-06	SLB10-1-40-12	SLB10-1-40-36
	Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/15/2010	10/15/2010	10/15/2010
	Depth Interval	12- 36	36- 60	60- 84	84- 115	0- 6	0- 12	12- 36
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	0	0	4.6	48.9	0	0
SAND	%	4.7	13.1	9.6	5.2	56.6	100	98.8
SILT	%	72.9	59.8	68.5	70.8	-5.2	-0.08	1.1
CLAY	%	22.4	27.1	21.9	19.4	-0.3	0.1	0.1
COARSE SAND	%	0	0	0	0	1.5	0	0
MEDIUM SAND	%	0	0	0.1	0.2	3	4	3.5
FINE SAND	%	4.7	13.1	9.5	5	52.1	96	95.3
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	83.7	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	62.1	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	95.4	54.3	100	100
SIEVE SIZE #4 - % FINER	% passed	100	100	100	95.4	51.1	100	100
SIEVE SIZE #10 - % FINER	% passed	100	100	100	95.4	49.6	100	100
SIEVE SIZE #20 - % FINER	% passed	100	100	99.9	95.3	49.2	99.9	99.8
SIEVE SIZE #40 - % FINER	% passed	100	100	99.9	95.2	46.6	96	96.5
SIEVE SIZE #60 - % FINER	% passed	100	99.6	99.6	95.1	29	69.5	71.7
SIEVE SIZE #80 - % FINER	% passed	99.8	97.9	98.4	94.8	3.4	22.3	24.7
SIEVE SIZE #100 - % FINER	% passed	99.6	96.5	97.4	94.6	-2.9	7.9	9.8
SIEVE SIZE #200 - % FINER	% passed	95.3	86.9	90.4	90.2	-5.5	0.04	1.2
HYDROMETER READING 1 - % FINER	% passed	66.9	68.4	73.9	55.4	-0.3	0.2	0.2
HYDROMETER READING 2 - % FINER	% passed	55	57.7	57.2	43	-0.3	0.2	0.2
HYDROMETER READING 3 - % FINER	% passed	38	43.4	42.2	30.7	-0.3	0.2	0.2
HYDROMETER READING 4 - % FINER	% passed	29.5	34.5	32.2	24.9	-0.3	0.2	0.2
HYDROMETER READING 5 - % FINER	% passed	22.4	27.1	21.9	19.4	-0.3	0.1	0.1
HYDROMETER READING 6 - % FINER	% passed	15.6	18.1	13.6	15.3	-0.7	0.1	0.1
HYDROMETER READING 7 - % FINER	% passed	10.8	11.3	10.6	11.4	-0.7	0.1	0.1
Organic Carbon								
TOTAL ORGANIC CARBON	%	4.58	21.2	18.3	20.4	0.1 U	0.05 U	0.05 U
BLACK CARBON	mg/kg	NA	NA	NA	NA	1000 U	NA	NA

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-40	SLB10-1-42	SLB10-1-42	SLB10-1-42	SLB10-1-42	SLB10-1-44	SLB10-1-45
	Field Sample ID	SLB10-1-40-52	SLB10-1-42-06	SLB10-1-42-06DP	SLB10-1-42-12	SLB10-1-42-24	SLB10-1-44-06	SLB10-1-45-06
	Sample Date	10/15/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/13/2010
	Depth Interval	36- 52	0- 6	0- 6	0- 12	12- 24	0- 6	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0.3	1	NA	0	0.5	0.3	0
SAND	%	44.7	65.4	NA	51.5	53.7	86.4	14
SILT	%	48.5	32.9	NA	48.1	43.9	13.8	82.4
CLAY	%	6.5	0.7	NA	0.4	1.9	-0.5	3.6
COARSE SAND	%	0.5	4	NA	0	2.1	0.4	0
MEDIUM SAND	%	1.2	12	NA	1.2	4.5	2.8	4.6
FINE SAND	%	43	49.4	NA	50.3	47.1	83.2	9.4
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	NA	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	NA	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	NA	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	NA	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	NA	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	NA	100	100	100	100
SIEVE SIZE #4 - % FINER	% passed	99.7	99	NA	100	99.5	99.7	100
SIEVE SIZE #10 - % FINER	% passed	99.2	95	NA	100	97.4	99.3	100
SIEVE SIZE #20 - % FINER	% passed	98.9	89.6	NA	100	95.5	98.6	97.4
SIEVE SIZE #40 - % FINER	% passed	98	83	NA	98.8	92.9	96.5	95.4
SIEVE SIZE #60 - % FINER	% passed	93.2	75.8	NA	89.6	87.5	90.1	94.2
SIEVE SIZE #80 - % FINER	% passed	80.9	68.6	NA	77.7	80.2	81.9	92.9
SIEVE SIZE #100 - % FINER	% passed	73.6	63.2	NA	71	74.8	75.3	92.3
SIEVE SIZE #200 - % FINER	% passed	55	33.6	NA	48.5	45.8	13.3	86
HYDROMETER READING 1 - % FINER	% passed	25.6	9.1	NA	27.2	25.2	2	32.1
HYDROMETER READING 2 - % FINER	% passed	17.2	6.9	NA	13.8	17.2	1.3	18.8
HYDROMETER READING 3 - % FINER	% passed	11.9	4.1	NA	7.1	9.1	0.7	10.3
HYDROMETER READING 4 - % FINER	% passed	8.6	1.9	NA	2.6	5.1	-0.5	6.9
HYDROMETER READING 5 - % FINER	% passed	6.5	0.7	NA	0.4	1.9	-0.5	3.6
HYDROMETER READING 6 - % FINER	% passed	4.2	0.09	NA	-2	-0.7	-0.6	1.7
HYDROMETER READING 7 - % FINER	% passed	2.1	-0.6	NA	-2.2	-0.8	-0.6	1.7
Organic Carbon								
TOTAL ORGANIC CARBON	%	2.85	2.55	2.13	23.5	22.3	2.25	3.17
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	15400	NA

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-45	SLB10-1-45	SLB10-1-45	SLB10-1-45	SLB10-1-45	SLB10-1-46	SLB10-1-46
	Field Sample ID	SLB10-1-45-12	SLB10-1-45-36	SLB10-1-45-60	SLB10-1-45-84	SLB10-1-45-114	SLB10-1-46-06	SLB10-1-46-06DP
	Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/12/2010	10/12/2010
	Depth Interval	0- 12	12- 36	36- 60	60- 84	84- 114	0- 6	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	0.4	0	1	0	0	NA
SAND	%	24.5	18.4	11.9	25.6	66.3	5.1	NA
SILT	%	74.6	74.6	72.7	62.7	28.6	63.7	NA
CLAY	%	0.9	6.6	15.4	10.7	5.1	31.2	NA
COARSE SAND	%	0.4	0	0	1	0.1	0.1	NA
MEDIUM SAND	%	2.4	1.3	0	1.5	7.6	0.1	NA
FINE SAND	%	21.7	17.1	11.9	23.1	58.6	4.9	NA
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE #4 - % FINER	% passed	100	99.6	100	99	100	100	NA
SIEVE SIZE #10 - % FINER	% passed	99.6	99.6	100	98	99.9	99.9	NA
SIEVE SIZE #20 - % FINER	% passed	98.4	98.9	100	97.7	98.4	99.8	NA
SIEVE SIZE #40 - % FINER	% passed	97.2	98.3	100	96.5	92.3	99.8	NA
SIEVE SIZE #60 - % FINER	% passed	95.2	97.4	99.5	94.5	81.8	99.2	NA
SIEVE SIZE #80 - % FINER	% passed	92.7	95.7	98	92.1	75.9	98.3	NA
SIEVE SIZE #100 - % FINER	% passed	90.9	94.1	96.9	90	71.4	98	NA
SIEVE SIZE #200 - % FINER	% passed	75.5	81.2	88.1	73.4	33.7	94.9	NA
HYDROMETER READING 1 - % FINER	% passed	36.8	55.3	65.2	38.2	14.6	73.1	NA
HYDROMETER READING 2 - % FINER	% passed	22.2	39.6	49.2	28.3	12.2	63.4	NA
HYDROMETER READING 3 - % FINER	% passed	7.4	22.3	31.5	19.5	8.2	47.3	NA
HYDROMETER READING 4 - % FINER	% passed	2.6	12.3	23.4	14.4	6.7	37.6	NA
HYDROMETER READING 5 - % FINER	% passed	0.9	6.6	15.4	10.7	5.1	31.2	NA
HYDROMETER READING 6 - % FINER	% passed	-0.8	2.2	8.8	8.1	3.5	22.8	NA
HYDROMETER READING 7 - % FINER	% passed	-0.8	2.2	7.2	5.7	2.7	14.8	NA
Organic Carbon								
TOTAL ORGANIC CARBON	%	8.5	13.2	5.2	3.16	0.304	7.36	7.27
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-46	SLB10-1-46	SLB10-1-46	SLB10-1-47	SLB10-1-47	SLB10-1-48	SLB10-1-48
	Field Sample ID	SLB10-1-46-12	SLB10-1-46-36	SLB10-1-46-64	SLB10-1-47-06	SLB10-1-47-10	SLB10-1-48-06	SLB10-1-48-06DP
	Sample Date	10/12/2010	10/12/2010	10/12/2010	10/15/2010	10/15/2010	10/13/2010	10/13/2010
	Depth Interval	0- 12	12- 36	36- 64	0- 6	0- 10	0- 6	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	0	0.6	0.6	1.2	0	NA
SAND	%	8.3	7.5	12.4	55.9	54.1	42.8	NA
SILT	%	68.3	81.5	61.7	38.4	42	42.3	NA
CLAY	%	23.4	11	25.3	5.1	2.7	14.9	NA
COARSE SAND	%	0.1	0	0.6	0.9	33.1	0	NA
MEDIUM SAND	%	0.1	0.3	4.1	1.8	1.6	1.3	NA
FINE SAND	%	8.1	7.2	7.7	53.2	19.4	41.5	NA
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE #4 - % FINER	% passed	100	100	99.4	99.4	98.8	100	NA
SIEVE SIZE #10 - % FINER	% passed	99.9	100	98.8	98.5	65.7	100	NA
SIEVE SIZE #20 - % FINER	% passed	99.9	100	97.1	97.8	65.7	99.6	NA
SIEVE SIZE #40 - % FINER	% passed	99.8	99.7	94.7	96.7	64.1	98.7	NA
SIEVE SIZE #60 - % FINER	% passed	99.2	99.6	93.5	92.4	60.2	93.9	NA
SIEVE SIZE #80 - % FINER	% passed	97.4	99.3	91.1	85.2	56.7	84.2	NA
SIEVE SIZE #100 - % FINER	% passed	96.7	99.1	90.6	79.5	55.1	77.2	NA
SIEVE SIZE #200 - % FINER	% passed	91.7	92.5	87	43.5	44.7	57.2	NA
HYDROMETER READING 1 - % FINER	% passed	62.7	40.9	59.9	10.1	11.8	32.9	NA
HYDROMETER READING 2 - % FINER	% passed	55.5	30.1	44.4	8.6	7.2	27.3	NA
HYDROMETER READING 3 - % FINER	% passed	41	20.7	38.2	6.5	7.2	22.7	NA
HYDROMETER READING 4 - % FINER	% passed	29.4	16.6	32	5.8	2.7	19.4	NA
HYDROMETER READING 5 - % FINER	% passed	23.4	11	25.3	5.1	2.7	14.9	NA
HYDROMETER READING 6 - % FINER	% passed	16.2	8.3	16	3.7	2.7	10.2	NA
HYDROMETER READING 7 - % FINER	% passed	10.4	5.6	9.8	3	-1.9	5.8	NA
Organic Carbon								
TOTAL ORGANIC CARBON	%	5.6	1.67	12.4	2.31	23.3	4.48	6.54
BLACK CARBON	mg/kg	NA	NA	NA	9620	NA	NA	NA

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-48	SLB10-1-48	SLB10-1-48	SLB10-1-49	SLB10-1-49	SLB10-1-49	SLB10-1-49
	Field Sample ID	SLB10-1-48-12	SLB10-1-48-36	SLB10-1-48-68	SLB10-1-49-06	SLB10-1-49-12	SLB10-1-49-36	SLB10-1-49-53
	Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010
	Depth Interval	0- 12	12- 36	36- 68	0- 6	0- 12	12- 36	36- 53
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0.1	1.4	0	0.1	0	0	0
SAND	%	65.5	71.1	64.7	38.9	45.7	30.1	37.9
SILT	%	26.3	20.9	27.8	50.7	43	60.6	50.3
CLAY	%	8.1	6.6	7.5	10.3	11.3	9.3	11.8
COARSE SAND	%	0.2	0.2	0	1.7	0.8	1.3	0.7
MEDIUM SAND	%	1.4	1.2	0.5	10.2	13.6	10.8	5.9
FINE SAND	%	63.9	69.7	64.2	27	31.3	18	31.3
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	98.9	100	100	100	100	100
SIEVE SIZE #4 - % FINER	% passed	99.9	98.6	100	99.9	100	100	100
SIEVE SIZE #10 - % FINER	% passed	99.7	98.4	100	98.2	99.2	98.7	99.3
SIEVE SIZE #20 - % FINER	% passed	99.4	98	99.9	94.1	94.5	95.4	97.8
SIEVE SIZE #40 - % FINER	% passed	98.3	97.2	99.5	88	85.6	87.9	93.4
SIEVE SIZE #60 - % FINER	% passed	89.9	90.6	89.4	80.8	77.4	87.9	83.5
SIEVE SIZE #80 - % FINER	% passed	70.7	72.6	67.3	76.5	69.7	81.1	77.6
SIEVE SIZE #100 - % FINER	% passed	55.6	57.8	56.1	74.3	67.5	79.7	76.1
SIEVE SIZE #200 - % FINER	% passed	34.4	27.5	35.3	61	54.3	69.9	62.1
HYDROMETER READING 1 - % FINER	% passed	19	16.3	16.5	32.7	33.8	30.6	33
HYDROMETER READING 2 - % FINER	% passed	16	13.7	12	23.7	25.7	22.3	25.6
HYDROMETER READING 3 - % FINER	% passed	12	10.2	10.2	16.9	18.6	15.9	18.2
HYDROMETER READING 4 - % FINER	% passed	9.7	8.4	8.4	13.5	15.5	12.2	15.1
HYDROMETER READING 5 - % FINER	% passed	8.1	6.6	7.5	10.3	11.3	9.3	11.8
HYDROMETER READING 6 - % FINER	% passed	5.8	5.7	5.6	7.9	9.3	7.5	9.6
HYDROMETER READING 7 - % FINER	% passed	3.5	3.9	3.9	4.7	6.1	5.5	6.3
Organic Carbon								
TOTAL ORGANIC CARBON	%	0.607	1.6	0.064	2.23	1.78	1.05	1.28
BLACK CARBON	mg/kg	NA	NA	NA	8440	NA	NA	NA

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-50	SLB10-1-50	SLB10-1-50	SLB10-1-50	SLB10-1-51	SLB10-1-51	SLB10-1-51
	Field Sample ID	SLB10-1-50-06	SLB10-1-50-06DP	SLB10-1-50-12	SLB10-1-50-36	SLB10-1-51-06	SLB10-1-51-12	SLB10-1-51-36
	Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/12/2010	10/12/2010	10/12/2010
	Depth Interval	0- 6	0- 6	0- 12	12- 36	0- 6	0- 12	12- 36
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	NA	0.1	0	0	0.3	1.8
SAND	%	78.3	NA	65	9.9	63.9	51.5	39.6
SILT	%	14.3	NA	28.3	70.1	27.8	39.2	49.7
CLAY	%	7.4	NA	6.6	20	8.3	9	8.9
COARSE SAND	%	0	NA	0.2	0.2	0.1	0.3	1.1
MEDIUM SAND	%	3.5	NA	1.5	0.7	4.1	1.7	2.6
FINE SAND	%	74.8	NA	63.3	9	59.7	49.5	35.9
SIEVE SIZE 3 INCH - % FINER	% passed	100	NA	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	NA	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	NA	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	NA	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	NA	100	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	NA	100	100	100	100	100
SIEVE SIZE #4 - % FINER	% passed	100	NA	99.9	100	100	99.7	98.2
SIEVE SIZE #10 - % FINER	% passed	100	NA	99.7	99.8	99.9	99.4	97.1
SIEVE SIZE #20 - % FINER	% passed	99.1	NA	99.2	99.6	99	98.9	96.5
SIEVE SIZE #40 - % FINER	% passed	96.5	NA	98.2	99.1	95.8	97.7	94.5
SIEVE SIZE #60 - % FINER	% passed	75.8	NA	88.4	98.3	83.9	90.5	88
SIEVE SIZE #80 - % FINER	% passed	49	NA	71.1	97.5	71.2	80.8	81.7
SIEVE SIZE #100 - % FINER	% passed	39.2	NA	61.7	96.9	64.1	74.9	78.5
SIEVE SIZE #200 - % FINER	% passed	21.7	NA	34.9	90.1	36.1	48.2	58.6
HYDROMETER READING 1 - % FINER	% passed	15.5	NA	19	54	20.2	22.4	25.6
HYDROMETER READING 2 - % FINER	% passed	13.4	NA	13.6	44.6	16.2	17.6	18.9
HYDROMETER READING 3 - % FINER	% passed	12.4	NA	11.3	35	14.2	13.8	13.9
HYDROMETER READING 4 - % FINER	% passed	9.3	NA	8.9	27.5	11.2	11.8	10.6
HYDROMETER READING 5 - % FINER	% passed	7.4	NA	6.6	20	8.3	9	8.9
HYDROMETER READING 6 - % FINER	% passed	5.2	NA	5	12.3	6.1	5.9	5.3
HYDROMETER READING 7 - % FINER	% passed	3.3	NA	4.2	8.5	4.1	4	3.6
Organic Carbon								
TOTAL ORGANIC CARBON	%	3.44	3.76	2.35	10.2	1.42	1.78	6.59
BLACK CARBON	mg/kg	NA	NA	NA	NA	2780	NA	NA

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-51	SLB10-1-51	SLB10-1-52	SLB10-1-52	SLB10-1-52	SLB10-1-52	SLB10-1-53
	Field Sample ID	SLB10-1-51-60	SLB10-1-51-76	SLB10-1-52-06	SLB10-1-52-06DP	SLB10-1-52-12	SLB10-1-52-24	SLB10-1-53-06
	Sample Date	10/12/2010	10/12/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
	Depth Interval	36- 60	60- 76	0- 6	0- 6	0- 12	12- 24	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	0	7.2	NA	2.9	16.8	1.1
SAND	%	16.5	27.7	48.1	NA	64.8	26.8	45.2
SILT	%	64.4	64.3	42.4	NA	32.1	51.2	42.7
CLAY	%	19.1	8	2.3	NA	0.2	5.2	11
COARSE SAND	%	0.1	0.1	2.3	NA	2.3	9.3	1.4
MEDIUM SAND	%	0.5	2.9	1.6	NA	2.6	9.8	2.6
FINE SAND	%	15.9	24.7	44.2	NA	59.9	7.7	41.2
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	NA	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	NA	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	NA	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	NA	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	NA	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	95.4	NA	98.1	94.3	99.5
SIEVE SIZE #4 - % FINER	% passed	100	100	92.8	NA	97.1	83.2	98.9
SIEVE SIZE #10 - % FINER	% passed	99.9	99.9	90.5	NA	94.8	73.9	97.5
SIEVE SIZE #20 - % FINER	% passed	99.7	99.5	89.8	NA	93.8	68.2	96.4
SIEVE SIZE #40 - % FINER	% passed	99.4	97	88.9	NA	92.2	64.1	94.9
SIEVE SIZE #60 - % FINER	% passed	99.1	93.8	86.9	NA	90.2	61.7	93
SIEVE SIZE #80 - % FINER	% passed	98.5	91.8	84.1	NA	88.5	61.1	88.5
SIEVE SIZE #100 - % FINER	% passed	97.6	90.4	82.3	NA	65.8	60.6	85.1
SIEVE SIZE #200 - % FINER	% passed	83.5	72.3	44.7	NA	32.3	56.4	53.7
HYDROMETER READING 1 - % FINER	% passed	50.5	31.9	5.3	NA	4.4	16	24.7
HYDROMETER READING 2 - % FINER	% passed	40.5	19.9	4.5	NA	1.4	10.8	20.8
HYDROMETER READING 3 - % FINER	% passed	30.5	13.4	3.8	NA	1.4	8.2	17.9
HYDROMETER READING 4 - % FINER	% passed	24.8	10.1	2.3	NA	0.2	5.6	12.9
HYDROMETER READING 5 - % FINER	% passed	19.1	8	2.3	NA	0.2	5.2	11
HYDROMETER READING 6 - % FINER	% passed	13.1	5.6	0.9	NA	0.2	2.6	7
HYDROMETER READING 7 - % FINER	% passed	8.8	3.4	0.9	NA	0.2	2.6	5.1
Organic Carbon								
TOTAL ORGANIC CARBON	%	1.88	0.539	5.79	6.64	5.41	21.1	7.46
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-53	SLB10-1-53	SLB10-1-53	SLB10-1-54	SLB10-1-54	SLB10-1-55	SLB10-1-55
	Field Sample ID	SLB10-1-53-06DP	SLB10-1-53-12	SLB10-1-53-26	SLB10-1-54-06	SLB10-1-54-12	SLB10-1-55-06	SLB10-1-55-06DP
	Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/13/2010	10/13/2010
	Depth Interval	0- 6	0- 12	12- 26	0- 6	0- 12	0- 6	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	NA	3.4	0	14.7	7.8	0.4	NA
SAND	%	NA	63.1	57.5	66.2	33.4	48.5	NA
SILT	%	NA	28.5	40.7	15.4	38.8	40.7	NA
CLAY	%	NA	5	1.8	3.7	20	10.4	NA
COARSE SAND	%	NA	2.3	0	19.5	10.1	0.6	NA
MEDIUM SAND	%	NA	3.1	1.5	4.5	1.3	6.8	NA
FINE SAND	%	NA	57.7	56	42.2	22	41.1	NA
SIEVE SIZE 3 INCH - % FINER	% passed	NA	100	100	100	100	100	NA
SIEVE SIZE 2 INCH - % FINER	% passed	NA	100	100	100	100	100	NA
SIEVE SIZE 1.5 INCH - % FINER	% passed	NA	100	100	100	100	100	NA
SIEVE SIZE 1 INCH - % FINER	% passed	NA	100	100	100	100	100	NA
SIEVE SIZE 0.75 INCH - % FINER	% passed	NA	100	100	100	100	100	NA
SIEVE SIZE 0.375 INCH - % FINER	% passed	NA	98.9	100	93	100	100	NA
SIEVE SIZE #4 - % FINER	% passed	NA	96.6	100	85.3	92.2	99.6	NA
SIEVE SIZE #10 - % FINER	% passed	NA	94.3	100	65.8	82.1	99	NA
SIEVE SIZE #20 - % FINER	% passed	NA	93.2	99.9	64.6	82.1	97.4	NA
SIEVE SIZE #40 - % FINER	% passed	NA	91.2	98.5	61.3	80.8	92.2	NA
SIEVE SIZE #60 - % FINER	% passed	NA	81.7	91.4	49.2	76.8	75.9	NA
SIEVE SIZE #80 - % FINER	% passed	NA	66.7	81.7	38.3	71.8	68.1	NA
SIEVE SIZE #100 - % FINER	% passed	NA	59.1	76.8	33	69.1	65.2	NA
SIEVE SIZE #200 - % FINER	% passed	NA	33.5	42.5	19.1	58.8	51.1	NA
HYDROMETER READING 1 - % FINER	% passed	NA	12.9	7.3	10.5	43.7	26.4	NA
HYDROMETER READING 2 - % FINER	% passed	NA	12.9	4.6	10.5	34.7	21.8	NA
HYDROMETER READING 3 - % FINER	% passed	NA	7.7	3.7	7.1	31.7	16.1	NA
HYDROMETER READING 4 - % FINER	% passed	NA	7.7	2.8	5.4	26	12.7	NA
HYDROMETER READING 5 - % FINER	% passed	NA	5	1.8	3.7	20	10.4	NA
HYDROMETER READING 6 - % FINER	% passed	NA	2.5	0.9	2	13.7	8	NA
HYDROMETER READING 7 - % FINER	% passed	NA	2.5	0.9	0.3	7.7	4.8	NA
Organic Carbon								
TOTAL ORGANIC CARBON	%	4.48	7.8	0.277	8.68	11.7	3.79	8.27
BLACK CARBON	mg/kg	NA	NA	NA	7270	NA	NA	NA

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-55	SLB10-1-55	SLB10-1-55	SLB10-1-55	SLB10-1-55	SLB10-1-56	SLB10-1-56
	Field Sample ID	SLB10-1-55-12	SLB10-1-55-36	SLB10-1-55-60	SLB10-1-55-84	SLB10-1-55-116	SLB10-1-56-06	SLB10-1-56-06DP
	Sample Date	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/7/2010	10/7/2010
	Depth Interval	0- 12	12- 36	36- 60	60- 84	84- 116	0- 6	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	2.7	0.7	0	0	0	0	NA
SAND	%	31	19.4	40.3	31.7	22.2	12.8	NA
SILT	%	51.3	57.4	50.6	58.3	67.8	62.3	NA
CLAY	%	15	22.5	9	10	10	24.9	NA
COARSE SAND	%	1.1	0.7	0	0	0	0	NA
MEDIUM SAND	%	2.7	1.9	7.4	0.5	0	0.5	NA
FINE SAND	%	27.2	16.8	32.9	31.2	22.2	12.3	NA
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE #4 - % FINER	% passed	97.3	99.3	100	100	100	100	NA
SIEVE SIZE #10 - % FINER	% passed	96.2	98.6	100	100	100	100	NA
SIEVE SIZE #20 - % FINER	% passed	95.5	98.1	97.7	99.7	100	99.8	NA
SIEVE SIZE #40 - % FINER	% passed	93.5	96.7	92.6	99.5	100	99.5	NA
SIEVE SIZE #60 - % FINER	% passed	87.8	92.5	88.3	99.4	99.6	98.9	NA
SIEVE SIZE #80 - % FINER	% passed	83.6	90.2	85.5	98.8	98.4	98.3	NA
SIEVE SIZE #100 - % FINER	% passed	81.5	89.2	83.9	97.2	96.7	97.8	NA
SIEVE SIZE #200 - % FINER	% passed	66.3	79.9	59.7	68.3	77.8	87.2	NA
HYDROMETER READING 1 - % FINER	% passed	33.6	50.7	26.2	29.6	38.4	54.5	NA
HYDROMETER READING 2 - % FINER	% passed	28.6	41.8	14.8	20.9	25.3	48	NA
HYDROMETER READING 3 - % FINER	% passed	23.7	34.4	14.8	13.3	15.5	36.3	NA
HYDROMETER READING 4 - % FINER	% passed	18.7	27	14.8	11.1	12.2	29.8	NA
HYDROMETER READING 5 - % FINER	% passed	15	22.5	9	10	10	24.9	NA
HYDROMETER READING 6 - % FINER	% passed	11.1	16.3	8.6	7.6	7.6	19.5	NA
HYDROMETER READING 7 - % FINER	% passed	7.6	10.6	6.2	5.6	5.6	13	NA
Organic Carbon								
TOTAL ORGANIC CARBON	%	4.56	4.31	0.48	2.33	0.153	4.94	4.89
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	14900	14300

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-56	SLB10-1-56	SLB10-1-56	SLB10-1-56	SLB10-1-57	SLB10-1-57	SLB10-1-57
	Field Sample ID	SLB10-1-56-12	SLB10-1-56-36	SLB10-1-56-60	SLB10-1-56-86	SLB10-1-57-06	SLB10-1-57-06DP	SLB10-1-57-12
	Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/12/2010	10/12/2010	10/12/2010
	Depth Interval	0- 12	12- 36	36- 60	60- 86	0- 6	0- 6	0- 12
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0.4	0	0	0	0.9	NA	0
SAND	%	6.8	6.9	4.3	4.3	27.8	NA	33.1
SILT	%	65.5	63.5	62	60.7	55.3	NA	49.1
CLAY	%	27.3	29.6	33.7	35	16	NA	17.8
COARSE SAND	%	0.2	0	0.1	0.2	2	NA	0.8
MEDIUM SAND	%	0.1	0	0.1	0.2	4.2	NA	1.9
FINE SAND	%	6.5	6.9	4.1	3.9	21.6	NA	30.4
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE #4 - % FINER	% passed	99.6	100	100	100	99.1	NA	100
SIEVE SIZE #10 - % FINER	% passed	99.4	100	99.9	99.8	97.1	NA	99.2
SIEVE SIZE #20 - % FINER	% passed	99.4	100	99.9	99.8	94.8	NA	98.1
SIEVE SIZE #40 - % FINER	% passed	99.3	100	99.8	99.6	92.9	NA	97.3
SIEVE SIZE #60 - % FINER	% passed	99.1	99.8	99.7	99.4	91.7	NA	95.9
SIEVE SIZE #80 - % FINER	% passed	98.8	99.1	99.4	99.1	89.6	NA	92.2
SIEVE SIZE #100 - % FINER	% passed	98.5	98.5	99.2	98.9	88.2	NA	89
SIEVE SIZE #200 - % FINER	% passed	92.8	93.1	95.7	95.7	71.3	NA	66.9
HYDROMETER READING 1 - % FINER	% passed	69.1	76.5	80.6	81.8	42.7	NA	37.6
HYDROMETER READING 2 - % FINER	% passed	58.3	65.7	70.2	69	37.1	NA	32.7
HYDROMETER READING 3 - % FINER	% passed	42.8	47.8	52.9	52.1	25.8	NA	26.5
HYDROMETER READING 4 - % FINER	% passed	33.5	36.8	42.4	43.6	21.6	NA	22.8
HYDROMETER READING 5 - % FINER	% passed	27.3	29.6	33.7	35	16	NA	17.8
HYDROMETER READING 6 - % FINER	% passed	19.5	20.7	25.1	24.4	11.5	NA	12.6
HYDROMETER READING 7 - % FINER	% passed	13.3	13.6	16.6	16.1	8.7	NA	8.9
Organic Carbon								
TOTAL ORGANIC CARBON	%	4.83	9.38	9.58	6.6	2.96	2.81	4.89
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-57	SLB10-1-57	SLB10-1-57	SLB10-1-58	SLB10-1-59	SLB10-1-59	SLB10-1-59
	Field Sample ID	SLB10-1-57-36	SLB10-1-57-60	SLB10-1-57-77	SLB10-1-58-20	SLB10-1-59-06	SLB10-1-59-06DP	SLB10-1-59-12
	Sample Date	10/12/2010	10/12/2010	10/12/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010
	Depth Interval	12- 36	36- 60	60- 77	0- 20	0- 6	0- 6	0- 12
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0.4	0	0	5.8	0	NA	0
SAND	%	32.6	44.4	35.3	34.8	41.7	NA	25
SILT	%	49.3	46.3	59.6	26.5	47.1	NA	54.8
CLAY	%	17.7	9.3	5.2	32.9	11.2	NA	20.2
COARSE SAND	%	0.1	0	0	3.3	12.8	NA	5.1
MEDIUM SAND	%	0.3	1	0.3	22.2	4.9	NA	11.7
FINE SAND	%	32.2	43.4	35	9.3	24	NA	8.2
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	96.1	100	NA	100
SIEVE SIZE #4 - % FINER	% passed	99.6	100	100	94.2	100	NA	100
SIEVE SIZE #10 - % FINER	% passed	99.5	100	100	90.9	87.2	NA	94.9
SIEVE SIZE #20 - % FINER	% passed	99.4	99.6	99.9	77.2	86.7	NA	88.7
SIEVE SIZE #40 - % FINER	% passed	99.2	99	99.7	68.7	82.3	NA	83.2
SIEVE SIZE #60 - % FINER	% passed	98.1	96.6	99.5	64.7	77.9	NA	80.2
SIEVE SIZE #80 - % FINER	% passed	92.5	90.2	98.2	62.7	73.5	NA	78.5
SIEVE SIZE #100 - % FINER	% passed	89.6	85.9	95.5	62	70.6	NA	77.9
SIEVE SIZE #200 - % FINER	% passed	67	55.6	64.7	59.4	58.3	NA	75
HYDROMETER READING 1 - % FINER	% passed	38.7	25.6	27.1	52.6	28.5	NA	62.9
HYDROMETER READING 2 - % FINER	% passed	32.5	21.5	17.1	46.6	22	NA	40.7
HYDROMETER READING 3 - % FINER	% passed	27.6	15.4	11.1	42.1	19.8	NA	36.7
HYDROMETER READING 4 - % FINER	% passed	20.2	11.4	7.2	37.6	15.5	NA	30.6
HYDROMETER READING 5 - % FINER	% passed	17.7	9.3	5.2	32.9	11.2	NA	20.2
HYDROMETER READING 6 - % FINER	% passed	13.8	6.1	3	24.2	4.7	NA	12.4
HYDROMETER READING 7 - % FINER	% passed	10.1	4.2	2.2	15.2	2.5	NA	6.4
Organic Carbon								
TOTAL ORGANIC CARBON	%	3.52	1.55	0.798	20.8	17.3	16.5	14.6
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-59	SLB10-1-60	SLB10-1-60	SLB10-1-60	SLB10-1-60	SLB10-1-60	SLB10-1-60
	Field Sample ID	SLB10-1-59-25	SLB10-1-60-06	SLB10-1-60-12	SLB10-1-60-36	SLB10-1-60-60	SLB10-1-60-84	SLB10-1-60-106
	Sample Date	10/13/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010
	Depth Interval	12- 25	0- 6	0- 12	12- 36	36- 60	60- 84	84- 106
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	0	0	0	0	5.6	2.6
SAND	%	38.7	6.5	10	16.8	17.4	31.8	34.6
SILT	%	48.3	68.6	67	58.5	55.4	46.7	54.6
CLAY	%	13	24.9	23	24.7	27.2	15.9	8.2
COARSE SAND	%	14.8	0	0	0.2	0.4	2.3	1.7
MEDIUM SAND	%	16.7	0.3	1	1.5	1.8	7	5
FINE SAND	%	7.2	6.2	9	15.1	15.2	22.5	27.9
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	100	100	96.5	98.2
SIEVE SIZE #4 - % FINER	% passed	100	100	100	100	100	94.4	97.4
SIEVE SIZE #10 - % FINER	% passed	85.2	100	100	99.8	99.6	92.1	95.7
SIEVE SIZE #20 - % FINER	% passed	75.1	100	99.7	99.5	99.2	88.9	93.8
SIEVE SIZE #40 - % FINER	% passed	68.5	99.7	99	98.3	97.8	85.1	90.7
SIEVE SIZE #60 - % FINER	% passed	65.3	98.9	97.5	95.7	95.3	80.3	85
SIEVE SIZE #80 - % FINER	% passed	63.8	98	96.1	93.2	93.2	74.9	78.7
SIEVE SIZE #100 - % FINER	% passed	63.3	97.4	95.5	91.8	92	72.9	76
SIEVE SIZE #200 - % FINER	% passed	61.3	93.5	90	83.2	82.6	62.6	62.8
HYDROMETER READING 1 - % FINER	% passed	54.3	57.4	55.8	58.1	58.9	40.2	48.4
HYDROMETER READING 2 - % FINER	% passed	28.4	47.7	47.2	51.1	52.2	34.1	38.8
HYDROMETER READING 3 - % FINER	% passed	24.1	37.9	38.6	38.9	41	24.4	16.5
HYDROMETER READING 4 - % FINER	% passed	21.9	31.4	29.9	31.9	32.1	18.4	9.8
HYDROMETER READING 5 - % FINER	% passed	13	24.9	23	24.7	27.2	15.9	8.2
HYDROMETER READING 6 - % FINER	% passed	6.8	16.8	15.8	17.7	18.3	9.9	4.8
HYDROMETER READING 7 - % FINER	% passed	2.5	11.9	10.6	10.5	11.2	6.3	3.2
Organic Carbon								
TOTAL ORGANIC CARBON	%	23.7	6.21	6.79	12.7	14.1	4.86	8.21
BLACK CARBON	mg/kg	NA	19300	NA	NA	NA	NA	NA

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-61	SLB10-1-61	SLB10-1-61	SLB10-1-61	SLB10-1-61	SLB10-1-61	SLB10-1-62
	Field Sample ID	SLB10-1-61-06	SLB10-1-61-06DP	SLB10-1-61-12	SLB10-1-61-36	SLB10-1-61-60	SLB10-1-61-79	SLB10-1-62-06
	Sample Date	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010
	Depth Interval	0- 6	0- 6	0- 12	12- 36	36- 60	60- 79	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	NA	0	0	2.5	31.6	0
SAND	%	3.6	NA	4.9	6.5	44.7	30.3	3.4
SILT	%	76.8	NA	70.7	65.4	45.7	33.1	75.5
CLAY	%	19.6	NA	24.4	28.1	7.1	5	21.1
COARSE SAND	%	0	NA	0.2	0.3	1.7	1.4	0.3
MEDIUM SAND	%	0.1	NA	0.1	0.1	2.7	3.4	0
FINE SAND	%	3.5	NA	4.6	6.1	40.3	25.5	3.1
SIEVE SIZE 3 INCH - % FINER	% passed	100	NA	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	NA	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	NA	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	NA	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	NA	100	100	100	73.9	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	NA	100	100	98.7	69.9	100
SIEVE SIZE #4 - % FINER	% passed	100	NA	100	100	97.5	68.4	100
SIEVE SIZE #10 - % FINER	% passed	100	NA	99.8	99.7	95.8	67	99.7
SIEVE SIZE #20 - % FINER	% passed	100	NA	99.8	99.7	94.7	65.9	99.7
SIEVE SIZE #40 - % FINER	% passed	99.9	NA	99.7	99.6	93.1	63.6	99.7
SIEVE SIZE #60 - % FINER	% passed	99.7	NA	99.3	98.8	85.7	56.1	99.5
SIEVE SIZE #80 - % FINER	% passed	99.2	NA	98.5	97.3	72.8	47.4	99.1
SIEVE SIZE #100 - % FINER	% passed	98.9	NA	98.1	96.7	67.2	44.4	98.9
SIEVE SIZE #200 - % FINER	% passed	96.4	NA	95.1	93.5	52.8	38.1	96.6
HYDROMETER READING 1 - % FINER	% passed	65.7	NA	61.7	69.4	34.2	20.9	63.8
HYDROMETER READING 2 - % FINER	% passed	51.4	NA	48.3	59	26.4	16.2	47.9
HYDROMETER READING 3 - % FINER	% passed	37.1	NA	36.3	47	15.3	11.4	36.9
HYDROMETER READING 4 - % FINER	% passed	29.2	NA	30.3	35	9.1	6.6	27.4
HYDROMETER READING 5 - % FINER	% passed	19.6	NA	24.4	28.1	7.1	5	21.1
HYDROMETER READING 6 - % FINER	% passed	16.4	NA	16.9	19.5	4.2	3.4	14.8
HYDROMETER READING 7 - % FINER	% passed	11.7	NA	10.9	12.6	3.2	1.7	10
Organic Carbon								
TOTAL ORGANIC CARBON	%	4.41	7.13	6.92	10.6	20.5	15.4	5.83
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	18500

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-62	SLB10-1-62	SLB10-1-62	SLB10-1-63	SLB10-1-63	SLB10-1-63	SLB10-1-63
	Field Sample ID	SLB10-1-62-06DP	SLB10-1-62-12	SLB10-1-62-32	SLB10-1-63-06	SLB10-1-63-06DP	SLB10-1-63-12	SLB10-1-63-36
	Sample Date	10/14/2010	10/14/2010	10/14/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
	Depth Interval	0- 6	0- 12	12- 32	0- 6	0- 6	0- 12	12- 36
Chemical Name	Unit							
Grain Size								
GRAVEL	%	NA	0	0	0.7	NA	0	0
SAND	%	NA	6.1	29.8	13.5	NA	20.3	37.4
SILT	%	NA	75.4	52.8	61.1	NA	55.9	43.1
CLAY	%	NA	18.5	17.4	24.7	NA	23.8	19.5
COARSE SAND	%	NA	0	0	0.1	NA	0	0
MEDIUM SAND	%	NA	0.6	1.2	0.3	NA	0.5	1
FINE SAND	%	NA	5.5	28.6	13.1	NA	19.8	36.4
SIEVE SIZE 3 INCH - % FINER	% passed	NA	100	100	100	NA	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	NA	100	100	100	NA	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	NA	100	100	100	NA	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	NA	100	100	100	NA	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	NA	100	100	100	NA	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	NA	100	100	99.3	NA	100	100
SIEVE SIZE #4 - % FINER	% passed	NA	100	100	99.3	NA	100	100
SIEVE SIZE #10 - % FINER	% passed	NA	100	100	99.2	NA	100	100
SIEVE SIZE #20 - % FINER	% passed	NA	99.7	99.6	99.1	NA	99.8	99.5
SIEVE SIZE #40 - % FINER	% passed	NA	99.4	98.8	98.9	NA	99.5	99
SIEVE SIZE #60 - % FINER	% passed	NA	99	93.5	98.5	NA	98.2	96.4
SIEVE SIZE #80 - % FINER	% passed	NA	98.3	81.1	97.9	NA	93.6	84.5
SIEVE SIZE #100 - % FINER	% passed	NA	97.7	76.7	97.1	NA	92.1	80.3
SIEVE SIZE #200 - % FINER	% passed	NA	93.9	70.2	85.8	NA	79.7	62.6
HYDROMETER READING 1 - % FINER	% passed	NA	68.9	54	63.8	NA	50.3	44.4
HYDROMETER READING 2 - % FINER	% passed	NA	50.4	42.9	56.4	NA	44.4	38.9
HYDROMETER READING 3 - % FINER	% passed	NA	33.7	28.7	41.6	NA	34.1	29.2
HYDROMETER READING 4 - % FINER	% passed	NA	26.3	22.1	32.1	NA	28.2	23.7
HYDROMETER READING 5 - % FINER	% passed	NA	18.5	17.4	24.7	NA	23.8	19.5
HYDROMETER READING 6 - % FINER	% passed	NA	13	12.6	18.5	NA	17.6	13.8
HYDROMETER READING 7 - % FINER	% passed	NA	9.3	9.5	13	NA	12	8.5
Organic Carbon								
TOTAL ORGANIC CARBON	%	5.95	5.33	5.11	4.97	5.03	5.98	5.81
BLACK CARBON	mg/kg	19000	NA	NA	NA	NA	NA	NA

Table 3-9a
Area 1 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-1-63	SLB10-1-63	SLB10-1-64	SLB10-1-64	SLB10-1-64	SLB10-1-64	SLB10-1-64
	Field Sample ID	SLB10-1-63-60	SLB10-1-63-84	SLB10-1-64-06	SLB10-1-64-06DP	SLB10-1-64-12	SLB10-1-64-36	SLB10-1-64-48
	Sample Date	10/7/2010	10/7/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010	10/13/2010
	Depth Interval	36- 60	60- 84	0- 6	0- 6	0- 12	12- 36	36- 48
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0.1	0	6.2	NA	0	0	0
SAND	%	52.4	35.7	92.1	NA	98.6	98.5	98.6
SILT	%	35.2	45.8	1.6	NA	0.8	1.4	1.4
CLAY	%	12.3	18.5	0.09	NA	0.6	0.09	0.08
COARSE SAND	%	0.3	0	0.8	NA	0.1	0	0
MEDIUM SAND	%	1.1	0.6	2.2	NA	1.2	1.7	0.6
FINE SAND	%	51	35.1	89.1	NA	97.4	96.8	98
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	NA	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	NA	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	NA	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	NA	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	NA	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	97.2	NA	100	100	100
SIEVE SIZE #4 - % FINER	% passed	99.9	100	93.8	NA	100	100	100
SIEVE SIZE #10 - % FINER	% passed	99.6	100	93	NA	99.9	100	100
SIEVE SIZE #20 - % FINER	% passed	99.3	99.9	92.6	NA	99.8	99.9	100
SIEVE SIZE #40 - % FINER	% passed	98.5	99.4	90.8	NA	98.7	98.3	99.4
SIEVE SIZE #60 - % FINER	% passed	95.6	97.4	67.3	NA	79.9	75.5	77
SIEVE SIZE #80 - % FINER	% passed	76.6	86.5	19.3	NA	26	22	21.1
SIEVE SIZE #100 - % FINER	% passed	69.8	82.5	7.2	NA	9.3	7.4	7.1
SIEVE SIZE #200 - % FINER	% passed	47.5	64.3	1.7	NA	1.4	1.5	1.4
HYDROMETER READING 1 - % FINER	% passed	25.9	40.2	0.6	NA	0.6	0.09	0.08
HYDROMETER READING 2 - % FINER	% passed	22.5	34.5	0.6	NA	0.6	0.09	0.08
HYDROMETER READING 3 - % FINER	% passed	16.9	25.9	0.6	NA	0.6	0.09	0.08
HYDROMETER READING 4 - % FINER	% passed	14.7	21.6	0.09	NA	0.6	0.09	0.08
HYDROMETER READING 5 - % FINER	% passed	12.3	18.5	0.09	NA	0.6	0.09	0.08
HYDROMETER READING 6 - % FINER	% passed	8.9	14.3	0	NA	0.5	0	-0.4
HYDROMETER READING 7 - % FINER	% passed	6.9	8.8	-0.4	NA	0.08	0	-0.4
Organic Carbon								
TOTAL ORGANIC CARBON	%	4.92	3.95	2.18	0.176 J	0.055	0.05 U	0.05 U
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	NA

Notes:
 % = Percent
 ID = Identification
 mg/kg - milligram per kilogram

Table 3-9b
Area 2 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-65	SLB10-2-65	SLB10-2-65	SLB10-2-65	SLB10-2-65	SLB10-2-66	SLB10-2-66
	Field Sample ID	SLB10-2-65-06	SLB10-2-65-12	SLB10-2-65-36	SLB10-2-65-60	SLB10-2-65-84	SLB10-2-66-06	SLB10-2-66-06DP
	Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/6/2010	10/6/2010
	Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	0- 6	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0.1	0	0	0	0.5	0	NA
SAND	%	10.4	4.6	5	1.5	4.3	0.7	NA
SILT	%	74.1	82.8	91.2	77.9	78.6	72.3	NA
CLAY	%	15.4	12.6	3.8	20.6	16.6	27	NA
COARSE SAND	%	0.2	0.3	0.3	0.2	0.4	0	NA
MEDIUM SAND	%	1.2	0.1	0.1	0.2	0.1	0.2	NA
FINE SAND	%	9	4.2	4.6	1.1	3.8	0.5	NA
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	100	99.6	100	NA
SIEVE SIZE #4 - % FINER	% passed	99.9	100	100	100	99.5	100	NA
SIEVE SIZE #10 - % FINER	% passed	99.7	99.7	99.7	99.8	99.1	100	NA
SIEVE SIZE #20 - % FINER	% passed	99.1	99.7	99.7	99.8	99.1	99.9	NA
SIEVE SIZE #40 - % FINER	% passed	98.5	99.6	99.6	99.6	99	99.8	NA
SIEVE SIZE #60 - % FINER	% passed	97.8	99.4	99.4	99.4	98.7	99.7	NA
SIEVE SIZE #80 - % FINER	% passed	97.3	99.2	99.3	99.3	98.4	99.7	NA
SIEVE SIZE #100 - % FINER	% passed	97	99	99.2	99.2	98.1	99.7	NA
SIEVE SIZE #200 - % FINER	% passed	89.5	95.4	95	98.5	95.2	99.3	NA
HYDROMETER READING 1 - % FINER	% passed	40.3	53.3	38.4	76.4	61.7	66.6	NA
HYDROMETER READING 2 - % FINER	% passed	32.7	38.5	20	61	48.9	55.3	NA
HYDROMETER READING 3 - % FINER	% passed	24	25	8.6	37.8	34.5	44	NA
HYDROMETER READING 4 - % FINER	% passed	19.7	16.9	6.1	26.8	24.8	34.1	NA
HYDROMETER READING 5 - % FINER	% passed	15.4	12.6	3.8	20.6	16.6	27	NA
HYDROMETER READING 6 - % FINER	% passed	11	8.3	2.5	12.6	9.9	18.6	NA
HYDROMETER READING 7 - % FINER	% passed	6.7	4	1.2	7.7	4.8	14.3	NA
Organic Carbon								
TOTAL ORGANIC CARBON	%	3.7	4.4	2.56	3.94	7.38	4.75	7.88
BLACK CARBON	mg/kg	4120	NA	NA	NA	NA	NA	NA

Table 3-9b
Area 2 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-66	SLB10-2-66	SLB10-2-66	SLB10-2-66	SLB10-2-67	SLB10-2-67	SLB10-2-67
	Field Sample ID	SLB10-2-66-12	SLB10-2-66-36	SLB10-2-66-60	SLB10-2-66-89	SLB10-2-67-06	SLB10-2-67-12	SLB10-2-67-36
	Sample Date	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
	Depth Interval	0- 12	12- 36	36- 60	60- 89	0- 6	0- 12	12- 36
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	0	1.4	0	0.7	0	0
SAND	%	0.8	0.5	3.5	42.6	6	12.1	2.8
SILT	%	68.1	64.8	50.8	43.1	74.3	66.3	79.6
CLAY	%	31.1	34.7	44.3	14.3	19	21.6	17.6
COARSE SAND	%	0	0	0.2	0.1	0.1	0.1	0.1
MEDIUM SAND	%	0.3	0.2	1.1	1.1	0.1	0.4	0.4
FINE SAND	%	0.5	0.3	2.2	41.4	5.8	11.6	2.3
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE #4 - % FINER	% passed	100	100	98.6	100	99.3	100	100
SIEVE SIZE #10 - % FINER	% passed	100	100	98.4	99.9	99.2	99.9	99.9
SIEVE SIZE #20 - % FINER	% passed	99.9	99.9	98	99.7	99.2	99.8	99.8
SIEVE SIZE #40 - % FINER	% passed	99.7	99.8	97.3	98.8	99.1	99.5	99.5
SIEVE SIZE #60 - % FINER	% passed	99.6	99.7	96.6	87.6	98.9	99.1	99.3
SIEVE SIZE #80 - % FINER	% passed	99.6	99.7	96.2	75.7	98.7	98	99.1
SIEVE SIZE #100 - % FINER	% passed	99.5	99.6	96	71.2	98.5	96.8	99
SIEVE SIZE #200 - % FINER	% passed	99.2	99.5	95.1	57.4	93.3	87.9	97.2
HYDROMETER READING 1 - % FINER	% passed	78.2	84.3	95.5	29.3	56.1	53.5	51.6
HYDROMETER READING 2 - % FINER	% passed	67.4	76	86.9	25.1	45.3	44	42.3
HYDROMETER READING 3 - % FINER	% passed	52.9	56.7	69.9	20.9	32.9	34.6	31.6
HYDROMETER READING 4 - % FINER	% passed	38.4	45.7	58.5	16.8	22.1	27.5	23.9
HYDROMETER READING 5 - % FINER	% passed	31.1	34.7	44.3	14.3	19	21.6	17.6
HYDROMETER READING 6 - % FINER	% passed	20.2	23.6	27.2	9.3	14.4	14.3	11.4
HYDROMETER READING 7 - % FINER	% passed	14.8	14	15.9	6	9.5	9.6	8
Organic Carbon								
TOTAL ORGANIC CARBON	%	3.98	8.25	8.39	1.66	3.49	3.27	4.36
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-9b
Area 2 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-67	SLB10-2-67	SLB10-2-67	SLB10-2-68	SLB10-2-68	SLB10-2-69	SLB10-2-69
	Field Sample ID	SLB10-2-67-60	SLB10-2-67-84	SLB10-2-67-102	SLB10-2-68-06	SLB10-2-68-21	SLB10-2-69-06	SLB10-2-69-17
	Sample Date	10/6/2010	10/6/2010	10/6/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
	Depth Interval	36- 60	60- 84	84- 102	0- 6	0- 21	0- 6	0- 17
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	0	0	0.1	0.4	0	3.6
SAND	%	1.9	1.1	1.2	92.8	65.2	12.8	33.9
SILT	%	78.5	86	82.1	5.7	27.1	59.7	42
CLAY	%	19.6	12.9	16.7	1.4	7.3	27.5	20.5
COARSE SAND	%	0	0	0	0.4	0.2	1	0.9
MEDIUM SAND	%	0.5	0.2	0.4	2	2.8	0.8	9.9
FINE SAND	%	1.4	0.9	0.8	90.4	62.2	11	23.1
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	100	99
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	100	99.8	100	97.2
SIEVE SIZE #4 - % FINER	% passed	100	100	100	99.9	99.6	100	96.4
SIEVE SIZE #10 - % FINER	% passed	100	100	100	99.5	99.4	99	95.5
SIEVE SIZE #20 - % FINER	% passed	99.8	99.9	99.8	98.8	98.8	98.9	92.8
SIEVE SIZE #40 - % FINER	% passed	99.5	99.8	99.6	97.5	96.6	98.2	85.6
SIEVE SIZE #60 - % FINER	% passed	99.2	99.7	99.5	79.4	84.3	96.5	81.2
SIEVE SIZE #80 - % FINER	% passed	99.1	99.7	99.4	34.6	53.4	94.9	74.1
SIEVE SIZE #100 - % FINER	% passed	99.1	99.7	99.3	20.9	46.4	93.7	72.4
SIEVE SIZE #200 - % FINER	% passed	98.1	98.9	98.8	7.1	34.4	87.2	62.5
HYDROMETER READING 1 - % FINER	% passed	64.1	57.3	56.9	5.2	17.3	58.2	49
HYDROMETER READING 2 - % FINER	% passed	49.8	39.3	44	3.9	14.2	50.7	34.8
HYDROMETER READING 3 - % FINER	% passed	33.9	24	32.7	2.6	11.9	43.2	32.4
HYDROMETER READING 4 - % FINER	% passed	24.4	17.1	23.2	2.6	9.6	31.9	25.2
HYDROMETER READING 5 - % FINER	% passed	19.6	12.9	16.7	1.4	7.3	27.5	20.5
HYDROMETER READING 6 - % FINER	% passed	13	8.6	10.3	0.7	5	19.4	17.9
HYDROMETER READING 7 - % FINER	% passed	8.2	7.2	5.1	0	3.4	11.3	10.9
Organic Carbon								
TOTAL ORGANIC CARBON	%	4.44	3.96	3.93	1.48	1.31	24.1	32.7
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	24300	NA

Table 3-9b
Area 2 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-70	SLB10-2-70	SLB10-2-70	SLB10-2-71	SLB10-2-71	SLB10-2-71	SLB10-2-71
	Field Sample ID	SLB10-2-70-06	SLB10-2-70-06DP	SLB10-2-70-19	SLB10-2-71-06	SLB10-2-71-12	SLB10-2-71-36	SLB10-2-71-54
	Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
	Depth Interval	0- 6	0- 6	0- 19	0- 6	0- 12	12- 36	36- 54
Chemical Name	Unit							
Grain Size								
GRAVEL	%	21.8	NA	13.1	3.3	8.3	2.3	0.2
SAND	%	30.4	NA	38.6	83.4	80.1	50	5.6
SILT	%	40.6	NA	41.5	13.1	8.3	46.1	84.7
CLAY	%	7.2	NA	6.8	0.2	3.3	1.6	9.5
COARSE SAND	%	11	NA	6.4	3.2	7.2	1.9	0.2
MEDIUM SAND	%	8.5	NA	17.1	19.9	33.6	6.9	0.7
FINE SAND	%	10.9	NA	15.1	60.3	39.3	41.2	4.7
SIEVE SIZE 3 INCH - % FINER	% passed	100	NA	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	NA	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	NA	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	NA	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	93.2	NA	100	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	90.6	NA	92.8	98.2	97.3	100	100
SIEVE SIZE #4 - % FINER	% passed	78.2	NA	86.9	96.7	91.7	97.7	99.8
SIEVE SIZE #10 - % FINER	% passed	67.2	NA	80.5	93.5	84.5	95.8	99.6
SIEVE SIZE #20 - % FINER	% passed	62.8	NA	72	87.6	69.3	93	99.3
SIEVE SIZE #40 - % FINER	% passed	58.7	NA	63.4	73.6	50.9	88.9	98.9
SIEVE SIZE #60 - % FINER	% passed	55.3	NA	59.7	49.1	34.8	83.6	98.7
SIEVE SIZE #80 - % FINER	% passed	53.1	NA	55.3	34.1	22.5	75.2	98.4
SIEVE SIZE #100 - % FINER	% passed	52	NA	54.3	28.7	19.7	72.3	98.3
SIEVE SIZE #200 - % FINER	% passed	47.8	NA	48.3	13.3	11.6	47.7	94.2
HYDROMETER READING 1 - % FINER	% passed	26	NA	22.5	2.5	4.2	7.5	50.3
HYDROMETER READING 2 - % FINER	% passed	19	NA	17.7	1.1	4.2	4.3	29.3
HYDROMETER READING 3 - % FINER	% passed	14.3	NA	12.8	1.1	3.8	2.3	15
HYDROMETER READING 4 - % FINER	% passed	9.6	NA	9.2	0.4	3.3	1.7	10.6
HYDROMETER READING 5 - % FINER	% passed	7.2	NA	6.8	0.2	3.3	1.6	9.5
HYDROMETER READING 6 - % FINER	% passed	3.7	NA	4.2	0.1	2.7	1	7.2
HYDROMETER READING 7 - % FINER	% passed	0	NA	1.8	-0.7	2.2	0.3	5
Organic Carbon								
TOTAL ORGANIC CARBON	%	22.4	19.4	21.8	0.111	0.697	0.345	1.35 J
BLACK CARBON	mg/kg	NA	NA	NA	0	NA	NA	NA

Table 3-9b
Area 2 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-72	SLB10-2-72	SLB10-2-72	SLB10-2-73	SLB10-2-73	SLB10-2-73	SLB10-2-74
	Field Sample ID	SLB10-2-72-06	SLB10-2-72-12	SLB10-2-72-24	SLB10-2-73-06	SLB10-2-73-12	SLB10-2-73-31	SLB10-2-74-06
	Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/6/2010
	Depth Interval	0- 6	0- 12	12- 24	0- 6	0- 12	12- 31	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	55	35.8	41.1	0	0.8	7.4	2.6
SAND	%	34.4	32.2	24.7	4.5	4.4	32.9	24.1
SILT	%	5	21.3	18.3	74.7	61.6	41.3	55.9
CLAY	%	5.6	10.7	15.9	20.8	33.2	18.4	17.4
COARSE SAND	%	9.9	6.6	3.9	0.2	0.2	11.3	0.2
MEDIUM SAND	%	13.8	10	8	0.2	0.7	10.6	0.5
FINE SAND	%	10.7	15.6	12.8	4.1	3.5	11	23.4
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	95.5	93.5	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	64.9	87.5	71.7	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	58.2	87.2	65.5	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	53.4	74.7	62.9	100	99.5	96.5	100
SIEVE SIZE #4 - % FINER	% passed	45	64.2	58.9	100	99.2	92.6	97.4
SIEVE SIZE #10 - % FINER	% passed	35.1	57.6	55	99.8	99	81.3	97.2
SIEVE SIZE #20 - % FINER	% passed	30.2	53	51.6	99.8	98.9	76.9	97.1
SIEVE SIZE #40 - % FINER	% passed	21.3	47.6	47	99.6	98.3	70.7	96.7
SIEVE SIZE #60 - % FINER	% passed	18	43.9	42.5	99.3	97.8	66.4	95.8
SIEVE SIZE #80 - % FINER	% passed	14.4	37.7	39.2	99	97.4	64.2	93.7
SIEVE SIZE #100 - % FINER	% passed	13.6	36.5	38.1	98.8	97.1	63.3	91.6
SIEVE SIZE #200 - % FINER	% passed	10.6	32	34.2	95.5	94.8	59.7	73.3
HYDROMETER READING 1 - % FINER	% passed	10.2	16.9	23.5	58.7	65.7	36.8	42.8
HYDROMETER READING 2 - % FINER	% passed	10.2	14.8	22.3	48.5	57.9	32	36.2
HYDROMETER READING 3 - % FINER	% passed	10.2	14.8	21	33.5	46.3	27.5	28.2
HYDROMETER READING 4 - % FINER	% passed	5.8	12.8	18.5	27.1	37.1	21.4	20.3
HYDROMETER READING 5 - % FINER	% passed	5.6	10.7	15.9	20.8	33.2	18.4	17.4
HYDROMETER READING 6 - % FINER	% passed	0.9	6.6	10.8	15.5	23.8	10.8	13.4
HYDROMETER READING 7 - % FINER	% passed	-0.9	4.6	8.3	10.4	13.1	6	9.5
Organic Carbon								
TOTAL ORGANIC CARBON	%	37.5	29.5	27.2	5.48	8.53	30.3	2.61
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	5380

Table 3-9b
Area 2 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-74	SLB10-2-74	SLB10-2-74	SLB10-2-74	SLB10-2-74	SLB10-2-74	SLB10-2-74
	Field Sample ID	SLB10-2-74-06DP	SLB10-2-74-12	SLB10-2-74-36	SLB10-2-74-36DP	SLB10-2-74-60	SLB10-2-74-84	SLB10-2-74-108
	Sample Date	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
	Depth Interval	0- 6	0- 12	12- 36	12- 36	36- 60	60- 84	84- 108
Chemical Name	Unit							
Grain Size								
GRAVEL	%	NA	0	1.9	NA	0.2	0	0
SAND	%	NA	17.8	16	NA	2.3	0.7	0.5
SILT	%	NA	60.9	60.3	NA	76.1	75.9	74.3
CLAY	%	NA	21.3	21.8	NA	21.4	23.4	25.2
COARSE SAND	%	NA	0.1	2.3	NA	0.2	0	0
MEDIUM SAND	%	NA	0.8	1	NA	0.4	0.4	0.2
FINE SAND	%	NA	16.9	12.7	NA	1.7	0.3	0.3
SIEVE SIZE 3 INCH - % FINER	% passed	NA	100	100	NA	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	NA	100	100	NA	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	NA	100	100	NA	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	NA	100	100	NA	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	NA	100	100	NA	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	NA	100	100	NA	100	100	100
SIEVE SIZE #4 - % FINER	% passed	NA	100	98.1	NA	99.8	100	100
SIEVE SIZE #10 - % FINER	% passed	NA	99.9	95.8	NA	99.6	100	100
SIEVE SIZE #20 - % FINER	% passed	NA	99.5	95.6	NA	99.4	99.8	100
SIEVE SIZE #40 - % FINER	% passed	NA	99.1	94.8	NA	99.2	99.6	99.8
SIEVE SIZE #60 - % FINER	% passed	NA	98.5	93.7	NA	99	99.5	99.6
SIEVE SIZE #80 - % FINER	% passed	NA	97.3	92	NA	98.9	99.5	99.6
SIEVE SIZE #100 - % FINER	% passed	NA	96.1	90.7	NA	98.8	99.5	99.6
SIEVE SIZE #200 - % FINER	% passed	NA	82.2	82.1	NA	97.5	99.3	99.5
HYDROMETER READING 1 - % FINER	% passed	NA	47.6	49.6	NA	59.1	73	76.2
HYDROMETER READING 2 - % FINER	% passed	NA	37.6	42	NA	47.7	59.1	61.4
HYDROMETER READING 3 - % FINER	% passed	NA	31.4	32.8	NA	34.4	40.6	45
HYDROMETER READING 4 - % FINER	% passed	NA	24	26.6	NA	26.3	29.8	31.8
HYDROMETER READING 5 - % FINER	% passed	NA	21.3	21.8	NA	21.4	23.4	25.2
HYDROMETER READING 6 - % FINER	% passed	NA	15.1	15.6	NA	14.9	15.7	15.1
HYDROMETER READING 7 - % FINER	% passed	NA	11.4	11	NA	10	11	11.8
Organic Carbon								
TOTAL ORGANIC CARBON	%	3.18	5.18	5.04	5.02	4.24	7.13	3.61
BLACK CARBON	mg/kg	5960	NA	NA	NA	NA	NA	NA

Table 3-9b
Area 2 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-74	SLB10-2-75	SLB10-2-75	SLB10-2-75	SLB10-2-76	SLB10-2-76	SLB10-2-77
	Field Sample ID	SLB10-2-74-120	SLB10-2-75-06	SLB10-2-75-12	SLB10-2-75-34	SLB10-2-76-06	SLB10-2-76-12	SLB10-2-77-06
	Sample Date	10/6/2010	10/7/2010	10/7/2010	10/7/2010	10/13/2010	10/13/2010	10/7/2010
	Depth Interval	108- 120	0- 6	0- 12	12- 34	0- 6	0- 12	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	0.3	0	6.8	0.5	32.9	0
SAND	%	4.7	6.5	4.6	18.7	37	4	5
SILT	%	69.2	75	69	39.3	45.7	35.9	76.5
CLAY	%	26.1	18.2	26.4	35.2	16.8	27.2	18.5
COARSE SAND	%	0.1	0.5	0	6.3	1.9	1.7	0
MEDIUM SAND	%	0.8	0.1	0.1	2.7	5.1	0.6	0.1
FINE SAND	%	3.8	5.9	4.5	9.7	30	1.7	4.9
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	95.1	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	88.4	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	99.7	100	97.9	100	71.2	100
SIEVE SIZE #4 - % FINER	% passed	100	99.7	100	93.2	99.5	67.1	100
SIEVE SIZE #10 - % FINER	% passed	99.9	99.2	100	86.9	97.6	65.4	100
SIEVE SIZE #20 - % FINER	% passed	99.9	99.1	99.9	86	95.9	65.2	100
SIEVE SIZE #40 - % FINER	% passed	99.1	99.1	99.9	84.2	92.5	64.8	99.9
SIEVE SIZE #60 - % FINER	% passed	98.3	98.8	99.7	82.1	86.6	64.5	99.8
SIEVE SIZE #80 - % FINER	% passed	97.7	98.6	99.5	80.5	80.9	64.3	99.7
SIEVE SIZE #100 - % FINER	% passed	97.3	98.4	99.3	79.5	77.9	64.2	99.6
SIEVE SIZE #200 - % FINER	% passed	95.3	93.2	95.4	74.5	62.5	63.1	95
HYDROMETER READING 1 - % FINER	% passed	69.5	49.2	59.2	61	42.1	46.4	46.6
HYDROMETER READING 2 - % FINER	% passed	57.4	40.5	52.9	54.8	31.7	42.9	38
HYDROMETER READING 3 - % FINER	% passed	45.1	31.7	42.8	47.1	23.7	39.4	30.7
HYDROMETER READING 4 - % FINER	% passed	34.8	23	32.8	39.3	19.1	34.2	23.4
HYDROMETER READING 5 - % FINER	% passed	26.1	18.2	26.4	35.2	16.8	27.2	18.5
HYDROMETER READING 6 - % FINER	% passed	15.8	11.3	18.1	27.1	10.9	20.1	12.4
HYDROMETER READING 7 - % FINER	% passed	10.6	6.6	10	15.2	8.6	13.1	8.8
Organic Carbon								
TOTAL ORGANIC CARBON	%	4.65	7.44	7.08	20.6	2.44	12.6	3.76
BLACK CARBON	mg/kg	NA	NA	NA	NA	4020	NA	NA

Table 3-9b
Area 2 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-77	SLB10-2-77	SLB10-2-77	SLB10-2-77	SLB10-2-79	SLB10-2-81	SLB10-2-81
	Field Sample ID	SLB10-2-77-12	SLB10-2-77-36	SLB10-2-77-60	SLB10-2-77-73	SLB10-2-79-12	SLB10-2-81-06	SLB10-2-81-06DP
	Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/13/2010	10/5/2010	10/5/2010
	Depth Interval	0- 12	12- 36	36- 60	60- 73	0- 12	0- 6	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	1.3	0.1	0	0	39	0.2	0.4
SAND	%	12.8	14.2	3.7	2.6	50.8	14.6	15.3
SILT	%	67.5	73.6	80.1	78.9	-1.5	64.4	64.8
CLAY	%	18.4	12.1	16.2	18.5	11.7	20.8	19.5
COARSE SAND	%	0.5	0	0	0	17.6	0.5	0.8
MEDIUM SAND	%	1.6	0.8	0.8	0.6	19.7	2.5	2
FINE SAND	%	10.7	13.4	2.9	2	13.5	11.6	12.5
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	82.9	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	100	69.3	100	100
SIEVE SIZE #4 - % FINER	% passed	98.7	99.9	100	100	61	99.8	99.6
SIEVE SIZE #10 - % FINER	% passed	98.2	99.9	100	100	43.4	99.3	98.8
SIEVE SIZE #20 - % FINER	% passed	97.8	99.7	99.9	99.9	32.8	98.4	98.2
SIEVE SIZE #40 - % FINER	% passed	96.6	99.1	99.2	99.4	23.7	96.8	96.8
SIEVE SIZE #60 - % FINER	% passed	95.6	98.4	98.5	99	18.1	95.2	95.4
SIEVE SIZE #80 - % FINER	% passed	95	97.9	98.1	98.7	15.2	93.7	93.8
SIEVE SIZE #100 - % FINER	% passed	94.5	97.5	97.9	98.5	14.1	92.8	92.8
SIEVE SIZE #200 - % FINER	% passed	85.9	85.7	96.3	97.4	10.2	85.2	84.3
HYDROMETER READING 1 - % FINER	% passed	46.9	34.1	45.8	51.3	19.8	51.9	47.2
HYDROMETER READING 2 - % FINER	% passed	39.8	24.9	35.9	40.4	17.1	42.5	39.9
HYDROMETER READING 3 - % FINER	% passed	29.9	17.6	28.5	30.6	14.4	33.2	29.7
HYDROMETER READING 4 - % FINER	% passed	22.6	13.9	21.1	23.3	14.4	27	23.8
HYDROMETER READING 5 - % FINER	% passed	18.4	12.1	16.2	18.5	11.7	20.8	19.5
HYDROMETER READING 6 - % FINER	% passed	13	7.5	11.3	11.2	5.9	14.5	12.2
HYDROMETER READING 7 - % FINER	% passed	7.3	4.6	7.6	8.7	0.9	11.2	7.5
Organic Carbon								
TOTAL ORGANIC CARBON	%	5.22	3.49	5.82	7.34	35.3	3.86	3.73
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-9b
Area 2 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-81	SLB10-2-81	SLB10-2-81	SLB10-2-81	SLB10-2-81	SLB10-2-82	SLB10-2-82
	Field Sample ID	SLB10-2-81-12	SLB10-2-81-36	SLB10-2-81-60	SLB10-2-81-84	SLB10-2-81-92	SLB10-2-82-06	SLB10-2-82-06DP
	Sample Date	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/7/2010	10/7/2010
	Depth Interval	0- 12	12- 36	36- 60	60- 84	84- 92	0- 6	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	0	0	0	0	2.7	NA
SAND	%	10.6	6.9	3.4	3.4	4.3	37.9	NA
SILT	%	70.7	76.7	71.9	81.6	75.7	31	NA
CLAY	%	18.7	16.4	24.7	15	20	28.4	NA
COARSE SAND	%	0.1	0.1	0	0	0	0.8	NA
MEDIUM SAND	%	1.1	1.3	0.5	0.3	0.9	2.6	NA
FINE SAND	%	9.4	5.5	2.9	3.1	3.4	34.5	NA
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	100	100	97.6	NA
SIEVE SIZE #4 - % FINER	% passed	100	100	100	100	100	97.3	NA
SIEVE SIZE #10 - % FINER	% passed	99.9	99.9	100	100	100	96.5	NA
SIEVE SIZE #20 - % FINER	% passed	99.7	99.6	99.9	99.9	99.9	95.5	NA
SIEVE SIZE #40 - % FINER	% passed	98.8	98.6	99.5	99.7	99.1	93.9	NA
SIEVE SIZE #60 - % FINER	% passed	97.9	97.4	99.1	99.4	98.3	84.9	NA
SIEVE SIZE #80 - % FINER	% passed	97.3	96.7	98.8	99.2	97.8	74.1	NA
SIEVE SIZE #100 - % FINER	% passed	97.1	96.4	98.8	99.2	97.6	70.1	NA
SIEVE SIZE #200 - % FINER	% passed	89.4	93.1	96.6	96.6	95.7	59.4	NA
HYDROMETER READING 1 - % FINER	% passed	50.5	53.3	67.2	58.8	64.9	42.5	NA
HYDROMETER READING 2 - % FINER	% passed	39.9	39.2	55.1	42.9	49.6	39.7	NA
HYDROMETER READING 3 - % FINER	% passed	29.3	28.7	41.3	29.6	34	34	NA
HYDROMETER READING 4 - % FINER	% passed	23.2	21.7	30.7	21.7	25.6	31.2	NA
HYDROMETER READING 5 - % FINER	% passed	18.7	16.4	24.7	15	20	28.4	NA
HYDROMETER READING 6 - % FINER	% passed	12.4	9.4	15.6	9.7	11.6	25.6	NA
HYDROMETER READING 7 - % FINER	% passed	9.1	5.3	9.1	5.3	7	19.7	NA
Organic Carbon								
TOTAL ORGANIC CARBON	%	3.8	3.49	3.06	1.55	4.23	6.21	5.41 J
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-9b
Area 2 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-82	SLB10-2-82	SLB10-2-83	SLB10-2-83	SLB10-2-83	SLB10-2-83	SLB10-2-84
	Field Sample ID	SLB10-2-82-12	SLB10-2-82-27	SLB10-2-83-06	SLB10-2-83-12	SLB10-2-83-36	SLB10-2-83-60	SLB10-2-84-12
	Sample Date	10/7/2010	10/7/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/13/2010
	Depth Interval	0- 12	12- 27	0- 6	0- 12	12- 36	36- 60	0- 12
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0.8	0	0	0	0	0	9.7
SAND	%	62.4	93.7	62.1	39.7	39.5	21.3	14.1
SILT	%	14.9	6	37.2	46.3	34.4	18.1	48.9
CLAY	%	21.9	0.2	0.7	14	26.1	60.6	27.3
COARSE SAND	%	1.1	0.1	39.8	19.5	20.4	8.4	4.7
MEDIUM SAND	%	4.2	5.1	5.1	6.1	4.8	2.4	4.9
FINE SAND	%	57.1	88.5	17.2	14.1	14.3	10.5	4.5
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE #4 - % FINER	% passed	99.2	100	100	100	100	100	90.3
SIEVE SIZE #10 - % FINER	% passed	98.1	99.9	60.2	80.5	79.6	91.6	85.6
SIEVE SIZE #20 - % FINER	% passed	97.3	99.6	58.3	77.6	77.5	90.9	83.3
SIEVE SIZE #40 - % FINER	% passed	93.9	94.8	55.1	74.4	74.8	89.2	80.7
SIEVE SIZE #60 - % FINER	% passed	73.8	61.6	50.4	70.6	71.5	86.9	79.1
SIEVE SIZE #80 - % FINER	% passed	56.6	32.7	46.8	67.7	68.8	85	78.5
SIEVE SIZE #100 - % FINER	% passed	50.2	23.1	44.9	66.2	67.3	83.9	78.2
SIEVE SIZE #200 - % FINER	% passed	36.8	6.3	37.9	60.3	60.5	78.7	76.2
HYDROMETER READING 1 - % FINER	% passed	29.2	1	13.9	29.9	46	83.3	40.5
HYDROMETER READING 2 - % FINER	% passed	28	1	13.9	23.1	40.3	79.5	37.9
HYDROMETER READING 3 - % FINER	% passed	25.7	0.3	13.9	23.1	37.5	73.8	35.2
HYDROMETER READING 4 - % FINER	% passed	24.5	0.2	9.5	18.5	31.8	66.3	32.6
HYDROMETER READING 5 - % FINER	% passed	21.9	0.2	0.7	14	26.1	60.6	27.3
HYDROMETER READING 6 - % FINER	% passed	16.7	0	0.7	9.4	17.6	41.8	21.6
HYDROMETER READING 7 - % FINER	% passed	11.9	-0.1	-3.7	4.9	9	24.8	14.1
Organic Carbon								
TOTAL ORGANIC CARBON	%	1.38	0.136	30.3	30.8	2.43	14.6	22.5
BLACK CARBON	mg/kg	NA	NA	27100	NA	NA	NA	NA

Table 3-9b
Area 2 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-84	SLB10-2-85	SLB10-2-85	SLB10-2-85	SLB10-2-85	SLB10-2-85	SLB10-2-85
	Field Sample ID	SLB10-2-84-33	SLB10-2-85-06	SLB10-2-85-12	SLB10-2-85-36	SLB10-2-85-60	SLB10-2-85-84	SLB10-2-85-117
	Sample Date	10/13/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
	Depth Interval	12- 33	0- 6	0- 12	12- 36	36- 60	60- 84	84- 117
Chemical Name	Unit							
Grain Size								
GRAVEL	%	1.9	1.5	0	0	0	0	0
SAND	%	15.8	31.5	11.5	3.4	13.5	5.8	3.4
SILT	%	67	55.5	73.8	79.9	71.9	78.8	77.5
CLAY	%	15.3	11.5	14.7	16.7	14.6	15.4	19.1
COARSE SAND	%	1	1.2	0	0	0	0	0
MEDIUM SAND	%	6.7	2.9	1.1	0.3	0.2	0	0.2
FINE SAND	%	8.1	27.4	10.4	3.1	13.3	5.8	3.2
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	99.3	100	100	100	100	100
SIEVE SIZE #4 - % FINER	% passed	98.1	98.5	100	100	100	100	100
SIEVE SIZE #10 - % FINER	% passed	97.1	97.3	100	100	100	100	100
SIEVE SIZE #20 - % FINER	% passed	94.5	96	99.5	99.9	99.9	100	99.9
SIEVE SIZE #40 - % FINER	% passed	90.4	94.4	98.9	99.7	99.8	100	99.8
SIEVE SIZE #60 - % FINER	% passed	87.4	93.7	98.6	99.6	99.8	100	99.8
SIEVE SIZE #80 - % FINER	% passed	85.9	91.5	97.9	99.4	99.6	100	99.7
SIEVE SIZE #100 - % FINER	% passed	85.3	89.8	97.6	99.3	99.4	100	99.7
SIEVE SIZE #200 - % FINER	% passed	82.3	67	88.5	96.6	86.5	94.2	96.6
HYDROMETER READING 1 - % FINER	% passed	35.4	34	40.8	57.3	42.8	51.7	59.8
HYDROMETER READING 2 - % FINER	% passed	23.9	25.8	32.1	40.8	31.7	39.3	43.8
HYDROMETER READING 3 - % FINER	% passed	23.9	19.7	23.4	28.7	22.3	25.9	32.2
HYDROMETER READING 4 - % FINER	% passed	18.2	15.6	18.6	22.2	18	19.3	23.5
HYDROMETER READING 5 - % FINER	% passed	15.3	11.5	14.7	16.7	14.6	15.4	19.1
HYDROMETER READING 6 - % FINER	% passed	9.1	7.4	8.9	11.2	9.5	10.7	10.4
HYDROMETER READING 7 - % FINER	% passed	3.8	5.3	6	6.8	7	6.8	7.5
Organic Carbon								
TOTAL ORGANIC CARBON	%	30	2.82	2.79	2.87	1.45	1.72	1.91
BLACK CARBON	mg/kg	NA	2960	NA	NA	NA	NA	NA

Table 3-9b
Area 2 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-86	SLB10-2-86	SLB10-2-86	SLB10-2-87	SLB10-2-87	SLB10-2-87	SLB10-2-87
	Field Sample ID	SLB10-2-86-06	SLB10-2-86-12	SLB10-2-86-24	SLB10-2-87-06	SLB10-2-87-12	SLB10-2-87-36	SLB10-2-87-60
	Sample Date	10/7/2010	10/7/2010	10/7/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
	Depth Interval	0- 6	0- 12	12- 24	0- 6	0- 12	12- 36	36- 60
Chemical Name	Unit							
Grain Size								
GRAVEL	%	3.7	0	0	1.9	0	0	0
SAND	%	54.9	20.9	4	32	16.9	19.2	32.7
SILT	%	35.5	59.6	67.2	52.1	75.5	75.4	59.2
CLAY	%	5.9	19.5	28.8	14	7.6	5.4	8.1
COARSE SAND	%	1.9	1.3	0	0.7	0	0	0
MEDIUM SAND	%	8.8	2.8	0.4	1.9	1.8	1.1	0.1
FINE SAND	%	44.2	16.8	3.6	29.4	15.1	18.1	32.6
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	98.1	100	100	98.7	100	100	100
SIEVE SIZE #4 - % FINER	% passed	96.3	100	100	98.1	100	100	100
SIEVE SIZE #10 - % FINER	% passed	94.4	98.7	100	97.4	100	100	100
SIEVE SIZE #20 - % FINER	% passed	91	97.9	99.9	97.3	99.2	99.7	100
SIEVE SIZE #40 - % FINER	% passed	85.6	95.9	99.6	95.5	98.2	98.9	99.9
SIEVE SIZE #60 - % FINER	% passed	77.6	93	99.2	91.5	96.9	97.9	99.7
SIEVE SIZE #80 - % FINER	% passed	70.6	90.4	99	84.4	95.8	97.1	98.8
SIEVE SIZE #100 - % FINER	% passed	66.3	88.7	98.8	81.2	95.2	96.5	96.3
SIEVE SIZE #200 - % FINER	% passed	41.4	79.1	96	66.1	83.1	80.8	67.3
HYDROMETER READING 1 - % FINER	% passed	17.4	47.5	66.2	37.3	33.7	26.3	26.8
HYDROMETER READING 2 - % FINER	% passed	13.6	38.7	57.4	30.3	22.8	16.2	19.9
HYDROMETER READING 3 - % FINER	% passed	9.7	29.9	45	23.3	14.3	9.3	13.1
HYDROMETER READING 4 - % FINER	% passed	7.8	25.3	35.9	18.6	10.1	7	10
HYDROMETER READING 5 - % FINER	% passed	5.9	19.5	28.8	14	7.6	5.4	8.1
HYDROMETER READING 6 - % FINER	% passed	4	14.6	17.6	9.3	5.1	3.1	5
HYDROMETER READING 7 - % FINER	% passed	2.1	8.8	12.1	5.8	3.4	2.3	3.1
Organic Carbon								
TOTAL ORGANIC CARBON	%	13.9	11.4	0.925	2.1	2.76	1.66	1.21
BLACK CARBON	mg/kg	NA	NA	NA	1470	NA	NA	NA

Table 3-9b
Area 2 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-87	SLB10-2-87	SLB10-2-87	SLB10-2-88	SLB10-2-88	SLB10-2-89	SLB10-2-89
	Field Sample ID	SLB10-2-87-84	SLB10-2-87-108	SLB10-2-87-120	SLB10-2-88-06	SLB10-2-88-18	SLB10-2-89-06	SLB10-2-89-16
	Sample Date	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/7/2010	10/7/2010
	Depth Interval	60- 84	84- 108	84- 120	0- 6	0- 18	0- 6	0- 16
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	0	0	0	60.6	0.4	4.7
SAND	%	32.3	14.5	2.4	30.7	26.5	15.3	35.4
SILT	%	60.8	70.8	69.6	52.6	6.7	61.6	41.4
CLAY	%	6.9	14.7	28	16.7	6.2	22.7	18.5
COARSE SAND	%	0	0	0	1.4	9	1.6	3.3
MEDIUM SAND	%	0.5	0.1	0.5	5.8	8.3	0.9	8.6
FINE SAND	%	31.8	14.4	1.9	23.5	9.2	12.8	23.5
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	89.9	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	76.9	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	100	52.2	100	97.2
SIEVE SIZE #4 - % FINER	% passed	100	100	100	100	39.4	99.6	95.3
SIEVE SIZE #10 - % FINER	% passed	100	100	100	98.6	30.4	98	92
SIEVE SIZE #20 - % FINER	% passed	99.8	100	99.9	96	25.3	97.9	88
SIEVE SIZE #40 - % FINER	% passed	99.5	99.9	99.5	92.8	22.1	97.1	83.4
SIEVE SIZE #60 - % FINER	% passed	99	99.6	99.2	86.5	18.5	94.1	77.1
SIEVE SIZE #80 - % FINER	% passed	98.2	99.2	98.9	80.8	16.4	91.6	71.9
SIEVE SIZE #100 - % FINER	% passed	96.6	98.7	98.7	78.5	15.6	90.4	69.6
SIEVE SIZE #200 - % FINER	% passed	67.7	85.5	97.6	69.3	12.9	84.3	59.9
HYDROMETER READING 1 - % FINER	% passed	27.5	45.7	75.3	51.2	11.7	58.4	42.9
HYDROMETER READING 2 - % FINER	% passed	18.5	35.9	63.5	43.9	11.1	49.9	35.5
HYDROMETER READING 3 - % FINER	% passed	11.7	24.5	48.7	33	9.2	36.2	28.2
HYDROMETER READING 4 - % FINER	% passed	8.2	18.8	36.9	22.1	6.8	27.8	20.9
HYDROMETER READING 5 - % FINER	% passed	6.9	14.7	28	16.7	6.2	22.7	18.5
HYDROMETER READING 6 - % FINER	% passed	4.1	9.8	17.7	11.2	4.4	15.4	12.2
HYDROMETER READING 7 - % FINER	% passed	2.8	6.5	11.8	7.6	2.5	11.8	8.7
Organic Carbon								
TOTAL ORGANIC CARBON	%	0.994	1.52	4.01	10.9	23.8	9.33	14.6
BLACK CARBON	mg/kg	NA	NA	NA	11200	56700	8970	NA

Table 3-9b
Area 2 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-90	SLB10-2-90	SLB10-2-90	SLB10-2-90	SLB10-2-90	SLB10-2-90	SLB10-2-91
	Field Sample ID	SLB10-2-90-06	SLB10-2-90-06DP	SLB10-2-90-12	SLB10-2-90-12DP	SLB10-2-90-32	SLB10-2-90-32DP	SLB10-2-91-06
	Sample Date	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/5/2010
	Depth Interval	0- 6	0- 6	0- 12	0- 12	12- 32	12- 32	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	3.2	NA	0.6	0	3.4	0.3	0.1
SAND	%	49.6	NA	22.7	26.3	16	5.8	69
SILT	%	35.5	NA	57.3	56.3	54.9	82.8	29
CLAY	%	11.7	NA	19.4	17.4	25.7	11.1	1.9
COARSE SAND	%	3.2	NA	1.1	0.7	5.1	0.5	1.1
MEDIUM SAND	%	8.1	NA	3.4	2.7	2.6	1	11.2
FINE SAND	%	38.3	NA	18.2	22.9	8.3	4.3	56.7
SIEVE SIZE 3 INCH - % FINER	% passed	100	NA	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	NA	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	NA	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	NA	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	NA	100	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	98.9	NA	100	100	100	100	100
SIEVE SIZE #4 - % FINER	% passed	96.8	NA	99.4	100	96.6	99.7	99.9
SIEVE SIZE #10 - % FINER	% passed	93.6	NA	98.3	99.3	91.5	99.2	98.8
SIEVE SIZE #20 - % FINER	% passed	90.3	NA	96.9	98.3	90.9	98.8	96.3
SIEVE SIZE #40 - % FINER	% passed	85.5	NA	94.9	96.6	88.9	98.2	87.6
SIEVE SIZE #60 - % FINER	% passed	79.5	NA	92.6	94.3	87.6	97.9	67.4
SIEVE SIZE #80 - % FINER	% passed	65.7	NA	86.6	87.8	85.2	97	54.3
SIEVE SIZE #100 - % FINER	% passed	62.5	NA	85.1	86	84.6	96.7	49.7
SIEVE SIZE #200 - % FINER	% passed	47.2	NA	76.7	73.7	80.6	93.9	30.9
HYDROMETER READING 1 - % FINER	% passed	36.5	NA	55.1	47.4	66.8	43.5	7.6
HYDROMETER READING 2 - % FINER	% passed	29.4	NA	44.9	39.3	47.2	30.6	4.4
HYDROMETER READING 3 - % FINER	% passed	20.6	NA	33.4	29	39.4	19.5	3.4
HYDROMETER READING 4 - % FINER	% passed	14.3	NA	24.5	22.1	31.6	14	1.9
HYDROMETER READING 5 - % FINER	% passed	11.7	NA	19.4	17.4	25.7	11.1	1.9
HYDROMETER READING 6 - % FINER	% passed	8.1	NA	11.7	12.8	16	6.6	0.3
HYDROMETER READING 7 - % FINER	% passed	6.4	NA	6.6	7.1	8.1	4.8	0
Organic Carbon								
TOTAL ORGANIC CARBON	%	19.4	19.7	14.5	11.9	6.46	3.08	4.14
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-9b
Area 2 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-91	SLB10-2-91	SLB10-2-92	SLB10-2-92	SLB10-2-92	SLB10-2-93	SLB10-2-93
	Field Sample ID	SLB10-2-91-12	SLB10-2-91-36	SLB10-2-92-06	SLB10-2-92-12	SLB10-2-92-36	SLB10-2-93-06	SLB10-2-93-12
	Sample Date	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010	10/6/2010
	Depth Interval	0- 12	12- 36	0- 6	0- 12	12- 36	0- 6	0- 12
Chemical Name	Unit							
Grain Size								
GRAVEL	%	3.8	0	0	0	0	0.2	0.3
SAND	%	53.3	9	64.9	65.5	9.8	90.8	82.7
SILT	%	39.9	76.4	32.9	32.1	84.2	8.5	16
CLAY	%	3	14.6	2.2	2.4	6	0.5	1
COARSE SAND	%	0.8	0.3	0.1	0.1	0.1	0.1	0.1
MEDIUM SAND	%	4.4	1.6	0.9	1.1	0.4	2.8	1.4
FINE SAND	%	48.1	7.1	63.9	64.3	9.3	87.9	81.2
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	97.3	100	100	100	100	100	100
SIEVE SIZE #4 - % FINER	% passed	96.2	100	100	100	100	99.8	99.7
SIEVE SIZE #10 - % FINER	% passed	95.4	99.7	99.9	99.9	99.9	99.7	99.6
SIEVE SIZE #20 - % FINER	% passed	94.7	99.5	99.6	99.6	99.8	99.4	99.4
SIEVE SIZE #40 - % FINER	% passed	91	98.1	99	98.8	99.5	96.9	98.2
SIEVE SIZE #60 - % FINER	% passed	77.3	96.4	96.3	95.5	99	73.3	80.6
SIEVE SIZE #80 - % FINER	% passed	64.5	95.2	87.9	87.3	98.4	33.2	55.2
SIEVE SIZE #100 - % FINER	% passed	59.8	94.6	79.9	79	97.8	24.5	44.2
SIEVE SIZE #200 - % FINER	% passed	42.9	91	35.1	34.5	90.2	9	17
HYDROMETER READING 1 - % FINER	% passed	11.9	55.1	11.6	9.2	42	2.4	4.5
HYDROMETER READING 2 - % FINER	% passed	8.2	42.6	6.4	4.7	26.9	1.4	3
HYDROMETER READING 3 - % FINER	% passed	5.2	27	5.4	3.9	15.3	1.4	2
HYDROMETER READING 4 - % FINER	% passed	3.7	20.8	4.3	3.2	9.5	1.4	1.5
HYDROMETER READING 5 - % FINER	% passed	3	14.6	2.2	2.4	6	0.5	1
HYDROMETER READING 6 - % FINER	% passed	1.5	9.4	1.2	1.6	3.7	0.5	0.5
HYDROMETER READING 7 - % FINER	% passed	0	5.2	0.2	0.9	1.4	0.08	0
Organic Carbon								
TOTAL ORGANIC CARBON	%	7.9	5.25	0.484	3.42	1.04	0.607	2.03
BLACK CARBON	mg/kg	NA	NA	0	NA	NA	NA	NA

Table 3-9b
Area 2 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-93	SLB10-2-94	SLB10-2-94	SLB10-2-94	SLB10-2-94	SLB10-2-94	SLB10-2-94
	Field Sample ID	SLB10-2-93-41	SLB10-2-94-06	SLB10-2-94-12	SLB10-2-94-36	SLB10-2-94-60	SLB10-2-94-84	SLB10-2-94-96
	Sample Date	10/6/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
	Depth Interval	12- 41	0- 6	0- 12	12- 36	36- 60	60- 84	84- 96
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	6.8	18.2	10.1	0.3	0	0
SAND	%	45.9	25.4	13.6	29.1	24.6	29.8	17.8
SILT	%	49.2	53.9	57.7	50.3	67.4	62.2	73.1
CLAY	%	4.8	13.9	10.5	10.5	7.7	8	9.1
COARSE SAND	%	0.3	1.7	1.6	2.6	0.1	0	0.1
MEDIUM SAND	%	1.8	2.7	1.3	3.5	4.2	0.1	0.1
FINE SAND	%	43.8	21	10.7	23	20.3	29.7	17.6
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	86	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	95.4	86	93.6	100	100	100
SIEVE SIZE #4 - % FINER	% passed	100	93.2	81.8	89.9	99.7	100	100
SIEVE SIZE #10 - % FINER	% passed	99.7	91.5	80.2	87.3	99.6	100	99.9
SIEVE SIZE #20 - % FINER	% passed	99.4	91.2	80.1	86.6	99.2	100	99.8
SIEVE SIZE #40 - % FINER	% passed	97.9	88.8	78.9	83.8	95.4	99.9	99.8
SIEVE SIZE #60 - % FINER	% passed	89.8	79.3	73.8	76.9	88.6	99.7	99.7
SIEVE SIZE #80 - % FINER	% passed	80.1	73.7	71.3	72.3	85.5	99.2	99.3
SIEVE SIZE #100 - % FINER	% passed	75.4	72.1	70.6	70.4	84.6	97.8	98.4
SIEVE SIZE #200 - % FINER	% passed	54.1	67.8	68.2	60.8	75.1	70.2	82.2
HYDROMETER READING 1 - % FINER	% passed	19.4	49.7	62.3	45.9	29.7	27.9	33.7
HYDROMETER READING 2 - % FINER	% passed	13.2	39.3	52.2	33.3	18.3	18.1	21
HYDROMETER READING 3 - % FINER	% passed	9	26	20.8	14.2	12	11.3	14.1
HYDROMETER READING 4 - % FINER	% passed	6.2	18.6	13.4	11.7	8.7	9.1	11.2
HYDROMETER READING 5 - % FINER	% passed	4.8	13.9	10.5	10.5	7.6	8	9.1
HYDROMETER READING 6 - % FINER	% passed	3.5	10.6	7.4	9	5.4	5.6	7
HYDROMETER READING 7 - % FINER	% passed	2.1	7.4	4.3	6.3	5.2	4.4	5.8
Organic Carbon								
TOTAL ORGANIC CARBON	%	10.8	4.88	13.6	5.3	0.708	1.11	5.72
BLACK CARBON	mg/kg	NA	5230	NA	NA	NA	NA	NA

Table 3-9b
Area 2 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-95	SLB10-2-95	SLB10-2-95	SLB10-2-95	SLB10-2-95	SLB10-2-96	SLB10-2-96
	Field Sample ID	SLB10-2-95-06	SLB10-2-95-12	SLB10-2-95-36	SLB10-2-95-60	SLB10-2-95-84	SLB10-2-96-06	SLB10-2-96-12
	Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
	Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	0- 6	0- 12
Chemical Name	Unit							
Grain Size								
GRAVEL	%	5.2	0.5	0	0	1.3	0.4	0.2
SAND	%	13.3	8.2	5.9	8.5	46.6	35.7	12.8
SILT	%	57.3	69.2	69	62	36.9	54	72.3
CLAY	%	24.2	22.1	25.1	29.5	15.2	9.9	14.7
COARSE SAND	%	1.5	0	0	0	0.8	1.3	0.4
MEDIUM SAND	%	2.3	0.4	0.3	0.7	3.9	2	0.6
FINE SAND	%	9.5	7.8	5.6	7.8	41.9	32.4	11.8
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	98.6	100	100	100	100	100	100
SIEVE SIZE #4 - % FINER	% passed	94.8	99.5	100	100	98.7	99.6	99.8
SIEVE SIZE #10 - % FINER	% passed	93.3	99.5	100	100	97.9	98.3	99.4
SIEVE SIZE #20 - % FINER	% passed	92.3	99.3	99.9	99.9	97	97.6	99.3
SIEVE SIZE #40 - % FINER	% passed	91	99.1	99.7	99.3	94	96.3	98.8
SIEVE SIZE #60 - % FINER	% passed	89.7	98.7	99.3	97.9	79.6	91.8	98.5
SIEVE SIZE #80 - % FINER	% passed	88.6	98.2	98.7	96.5	68.2	85.3	98.2
SIEVE SIZE #100 - % FINER	% passed	87.9	97.7	98.2	95.7	64	81.4	98
SIEVE SIZE #200 - % FINER	% passed	81.5	91.3	94.1	91.5	52.1	63.9	87
HYDROMETER READING 1 - % FINER	% passed	51	58.2	61.9	68.4	33.6	31.2	43.9
HYDROMETER READING 2 - % FINER	% passed	43.9	45.3	52.7	56.7	29.9	24.1	31.4
HYDROMETER READING 3 - % FINER	% passed	35.5	35	42.2	44.9	22.6	17	23
HYDROMETER READING 4 - % FINER	% passed	29.8	27.3	31.7	35.4	18.7	12.2	17.5
HYDROMETER READING 5 - % FINER	% passed	24.2	22.1	25.1	29.5	15.2	9.9	14.7
HYDROMETER READING 6 - % FINER	% passed	18.5	17	18.6	19	11.3	7.1	9
HYDROMETER READING 7 - % FINER	% passed	12.7	11.8	13.3	11.7	5.7	4.5	6.4
Organic Carbon								
TOTAL ORGANIC CARBON	%	3.94	3.56	3.89	3.86	5.16	2.06	1.58
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	3020	NA

Table 3-9b
Area 2 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-96	SLB10-2-96	SLB10-2-96	SLB10-2-97	SLB10-2-97	SLB10-2-97	SLB10-2-97
	Field Sample ID	SLB10-2-96-36	SLB10-2-96-60	SLB10-2-96-84	SLB10-2-97-06	SLB10-2-97-12	SLB10-2-97-36	SLB10-2-97-60
	Sample Date	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010	10/7/2010
	Depth Interval	12- 36	36- 60	60- 84	0- 6	0- 12	12- 36	36- 60
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	0	3.3	0	0.5	0	0
SAND	%	9.5	6.8	4.1	18.4	9.6	8.4	4.8
SILT	%	74.3	80	69.2	57.5	63.7	65.3	74.4
CLAY	%	16.2	13.2	23.4	24.1	26.2	26.3	20.8
COARSE SAND	%	0.1	0	0.4	0	0.1	0	0
MEDIUM SAND	%	0.3	0.1	0.5	0.4	0.1	0.2	0.1
FINE SAND	%	9.1	6.7	3.2	18	9.4	8.2	4.7
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	96.9	100	99.7	100	100
SIEVE SIZE #4 - % FINER	% passed	100	100	96.7	100	99.5	100	100
SIEVE SIZE #10 - % FINER	% passed	99.9	100	96.3	100	99.4	100	100
SIEVE SIZE #20 - % FINER	% passed	99.9	100	96.3	99.9	99.4	100	100
SIEVE SIZE #40 - % FINER	% passed	99.6	99.9	95.8	99.6	99.3	99.8	99.9
SIEVE SIZE #60 - % FINER	% passed	99.5	99.9	95.2	97.7	98.4	99.1	99.6
SIEVE SIZE #80 - % FINER	% passed	99.4	99.9	94.8	95.5	97.2	98.1	99.2
SIEVE SIZE #100 - % FINER	% passed	99.4	99.9	94.7	93.6	96.5	97.6	99
SIEVE SIZE #200 - % FINER	% passed	90.5	93.2	92.6	81.6	89.9	91.6	95.2
HYDROMETER READING 1 - % FINER	% passed	48.3	53.3	58.6	71.4	65	66.4	61
HYDROMETER READING 2 - % FINER	% passed	34.3	38.1	47.4	47.9	54.9	55.2	46.6
HYDROMETER READING 3 - % FINER	% passed	24.6	25.7	36.2	34.4	41.4	40.8	32.3
HYDROMETER READING 4 - % FINER	% passed	20.4	20.2	29.8	29.4	31.3	31.3	23.6
HYDROMETER READING 5 - % FINER	% passed	16.2	13.2	23.4	24.1	26.2	26.3	20.8
HYDROMETER READING 6 - % FINER	% passed	10.6	9.1	13.8	17.1	17.7	18.4	13.6
HYDROMETER READING 7 - % FINER	% passed	7.8	5	9	13.4	12.8	12.1	9.4
Organic Carbon								
TOTAL ORGANIC CARBON	%	1.52	2.91	4.22	3.31	3.9	3.93	2.44
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-9b
Area 2 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-2-97
	Field Sample ID	SLB10-2-97-75
	Sample Date	10/7/2010
	Depth Interval	60- 75
Chemical Name	Unit	
Grain Size		
GRAVEL	%	0
SAND	%	28.6
SILT	%	59.7
CLAY	%	11.7
COARSE SAND	%	0
MEDIUM SAND	%	0.3
FINE SAND	%	28.3
SIEVE SIZE 3 INCH - % FINER	% passed	100
SIEVE SIZE 2 INCH - % FINER	% passed	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100
SIEVE SIZE 1 INCH - % FINER	% passed	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100
SIEVE SIZE #4 - % FINER	% passed	100
SIEVE SIZE #10 - % FINER	% passed	100
SIEVE SIZE #20 - % FINER	% passed	99.9
SIEVE SIZE #40 - % FINER	% passed	99.7
SIEVE SIZE #60 - % FINER	% passed	99.3
SIEVE SIZE #80 - % FINER	% passed	92.2
SIEVE SIZE #100 - % FINER	% passed	87.2
SIEVE SIZE #200 - % FINER	% passed	71.4
HYDROMETER READING 1 - % FINER	% passed	35.9
HYDROMETER READING 2 - % FINER	% passed	25.5
HYDROMETER READING 3 - % FINER	% passed	18.6
HYDROMETER READING 4 - % FINER	% passed	14
HYDROMETER READING 5 - % FINER	% passed	11.7
HYDROMETER READING 6 - % FINER	% passed	8
HYDROMETER READING 7 - % FINER	% passed	5.9
Organic Carbon		
TOTAL ORGANIC CARBON	%	1.59
BLACK CARBON	mg/kg	NA

Notes:
% = Percent
ID = Identification
mg/kg - milligram per kilogram

Table 3-9c
Area 3 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-02	SLB10-3-02	SLB10-3-02	SLB10-3-02	SLB10-3-02	SLB10-3-03	SLB10-3-03
	Field Sample ID	SLB10-3-02-06	SLB10-3-02-12	SLB10-3-02-36	SLB10-3-02-60	SLB10-3-02-84	SLB10-3-03-06	SLB10-3-03-12
	Sample Date	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010
	Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	0- 6	0- 12
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0.7	0	0	0	0.1	0.2	0
SAND	%	2.6	1.3	1.4	11.9	9.3	69.5	19
SILT	%	71.6	79.2	66.7	76	79.6	27.3	74.3
CLAY	%	25.1	19.5	31.9	12.1	11	3	6.7
COARSE SAND	%	0.3	0	0	0	0.1	0.2	0.2
MEDIUM SAND	%	0.2	0.2	0.1	0.4	0.4	1	1.5
FINE SAND	%	2.1	1.1	1.3	11.5	8.8	68.3	17.3
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE #4 - % FINER	% passed	99.3	100	100	100	99.9	99.8	100
SIEVE SIZE #10 - % FINER	% passed	99	100	100	100	99.8	99.6	99.8
SIEVE SIZE #20 - % FINER	% passed	99	100	100	99.9	99.6	99.3	99.4
SIEVE SIZE #40 - % FINER	% passed	98.8	99.8	99.9	99.6	99.4	98.6	98.3
SIEVE SIZE #60 - % FINER	% passed	98.4	99.6	99.8	99	99	96.5	97.1
SIEVE SIZE #80 - % FINER	% passed	98.1	99.4	99.7	98.5	98.7	86	95.2
SIEVE SIZE #100 - % FINER	% passed	98	99.4	99.7	98.2	98.4	74.9	93.6
SIEVE SIZE #200 - % FINER	% passed	96.7	98.7	98.6	88.1	90.6	30.3	81
HYDROMETER READING 1 - % FINER	% passed	74.3	76.6	79.8	45	45.1	12.8	39.2
HYDROMETER READING 2 - % FINER	% passed	62.8	60.7	67.8	29.7	29.4	9.2	26.6
HYDROMETER READING 3 - % FINER	% passed	43.2	41.7	51.3	19.2	18.8	6.5	16.1
HYDROMETER READING 4 - % FINER	% passed	31.7	27.5	40.9	15.7	14.9	4.8	9.8
HYDROMETER READING 5 - % FINER	% passed	25.1	19.5	31.9	12.1	11	3	6.7
HYDROMETER READING 6 - % FINER	% passed	16.7	11.4	22.7	7.4	8.3	2.1	3.3
HYDROMETER READING 7 - % FINER	% passed	9.8	6.3	15	4.7	3.9	0.9	1.2
Organic Carbon								
TOTAL ORGANIC CARBON	%	3.51	2.88	2.99	1.29	2.47	0.898	2.6
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-9c
Area 3 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-03	SLB10-3-03	SLB10-3-04	SLB10-3-04	SLB10-3-04	SLB10-3-04	SLB10-3-05
	Field Sample ID	SLB10-3-03-36	SLB10-3-03-56	SLB10-3-04-06	SLB10-3-04-12	SLB10-3-04-36	SLB10-3-04-60	SLB10-3-05-06
	Sample Date	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/5/2010	10/15/2010
	Depth Interval	12- 36	36- 56	0- 6	0- 12	12- 36	36- 60	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	0.2	0	0	0	0.3	0
SAND	%	12.2	26.1	87.4	77.3	76.2	73.2	2.9
SILT	%	80.8	69.1	11.5	20.3	22.8	24	62
CLAY	%	7	4.6	1.1	2.4	1	2.5	35.1
COARSE SAND	%	0.6	1.2	0.3	0	0	0.6	0
MEDIUM SAND	%	1.3	1.5	2.2	0.8	0.5	3.2	0.1
FINE SAND	%	10.3	23.4	84.9	76.5	75.7	69.4	2.8
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE #4 - % FINER	% passed	100	99.8	100	100	100	99.7	100
SIEVE SIZE #10 - % FINER	% passed	99.4	98.6	99.7	100	100	99.1	100
SIEVE SIZE #20 - % FINER	% passed	98.8	98.2	99.3	99.9	99.9	98.4	100
SIEVE SIZE #40 - % FINER	% passed	98.1	97.1	97.5	99.2	99.5	95.9	99.9
SIEVE SIZE #60 - % FINER	% passed	97.3	95.6	75.9	84.9	86.5	75.4	99.7
SIEVE SIZE #80 - % FINER	% passed	96.7	94.3	51.8	69.4	67.5	56.9	99.5
SIEVE SIZE #100 - % FINER	% passed	96.3	93.1	41	62.2	58.8	49.9	99.4
SIEVE SIZE #200 - % FINER	% passed	87.8	73.7	12.6	22.7	23.8	26.5	97.1
HYDROMETER READING 1 - % FINER	% passed	38.5	26.5	2.8	4.5	4.7	8.4	72.7
HYDROMETER READING 2 - % FINER	% passed	25.4	15.5	2.8	3.8	3.2	5.4	62.6
HYDROMETER READING 3 - % FINER	% passed	14.9	10	2.8	3.8	3.2	4.7	50.1
HYDROMETER READING 4 - % FINER	% passed	10.9	7.3	2.8	3.1	2.5	3.2	41.3
HYDROMETER READING 5 - % FINER	% passed	7	4.6	1.1	2.4	1	2.5	35.1
HYDROMETER READING 6 - % FINER	% passed	4.2	3.2	0.3	1	1	1.7	24.8
HYDROMETER READING 7 - % FINER	% passed	4.2	1.6	0	0.7	0.7	0.9	16.1
Organic Carbon								
TOTAL ORGANIC CARBON	%	2.5	3.77	0.169	0.082	0.285	0.749	3.88
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	11200

Table 3-9c
Area 3 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-05	SLB10-3-05	SLB10-3-05	SLB10-3-05	SLB10-3-05	SLB10-3-06	SLB10-3-06
	Field Sample ID	SLB10-3-05-12	SLB10-3-05-36	SLB10-3-05-60	SLB10-3-05-84	SLB10-3-05-116	SLB10-3-06-06	SLB10-3-06-06DP
	Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
	Depth Interval	0- 12	12- 36	36- 60	60- 84	84- 116	0- 6	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	0	0	0	0	0.2	NA
SAND	%	3.7	5.1	2.7	2.9	1.7	25	NA
SILT	%	69.2	73	80.5	82.3	79.6	59.4	NA
CLAY	%	27.1	21.9	16.8	14.8	18.7	15.4	NA
COARSE SAND	%	0	0	0.1	0	0	0	NA
MEDIUM SAND	%	0.2	0.3	0.2	0	0.4	0.5	NA
FINE SAND	%	3.5	4.8	2.4	2.9	1.3	24.5	NA
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE #4 - % FINER	% passed	100	100	100	100	100	99.8	NA
SIEVE SIZE #10 - % FINER	% passed	100	100	99.9	100	100	99.8	NA
SIEVE SIZE #20 - % FINER	% passed	99.9	99.8	99.8	100	99.7	99.7	NA
SIEVE SIZE #40 - % FINER	% passed	99.8	99.7	99.7	100	99.6	99.3	NA
SIEVE SIZE #60 - % FINER	% passed	99.6	99.4	99.5	99.9	99.5	98	NA
SIEVE SIZE #80 - % FINER	% passed	99.4	98.6	99.2	99.9	99.5	95.3	NA
SIEVE SIZE #100 - % FINER	% passed	99.3	98.2	99.1	99.9	99.5	92.9	NA
SIEVE SIZE #200 - % FINER	% passed	96.3	94.9	97.3	97.1	98.3	74.8	NA
HYDROMETER READING 1 - % FINER	% passed	63.9	57.2	52.9	51.3	63	40.1	NA
HYDROMETER READING 2 - % FINER	% passed	53	45.4	40.2	37.5	49.2	32.5	NA
HYDROMETER READING 3 - % FINER	% passed	39	32.7	28.6	23.7	32.5	23	NA
HYDROMETER READING 4 - % FINER	% passed	32.5	26.8	21.7	18.8	24.6	19.2	NA
HYDROMETER READING 5 - % FINER	% passed	27.1	21.9	16.8	14.8	18.7	15.4	NA
HYDROMETER READING 6 - % FINER	% passed	19.5	15	10.9	10.7	12.8	10.6	NA
HYDROMETER READING 7 - % FINER	% passed	11.9	9.9	6.9	7.3	8.7	7.8	NA
Organic Carbon								
TOTAL ORGANIC CARBON	%	2.92	1.82	1.16	1.45	2.43	1.79	2.02
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-9c
Area 3 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-06	SLB10-3-06	SLB10-3-06	SLB10-3-07	SLB10-3-07	SLB10-3-07	SLB10-3-08
	Field Sample ID	SLB10-3-06-12	SLB10-3-06-36	SLB10-3-06-48	SLB10-3-07-06	SLB10-3-07-12	SLB10-3-07-33	SLB10-3-08-06
	Sample Date	10/15/2010	10/15/2010	10/15/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010
	Depth Interval	0- 12	12- 36	36- 48	0- 6	0- 12	12- 33	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	0	0.2	8.6	0	0	0
SAND	%	33.3	10.1	11.1	7.8	7.6	18.4	22.2
SILT	%	64.4	72.1	75.3	62.7	66.8	60.3	58.3
CLAY	%	2.3	17.8	13.4	20.9	25.6	21.3	19.5
COARSE SAND	%	0	0	0.2	1.1	0	0	0
MEDIUM SAND	%	0.9	0.7	0.4	1.9	1	1.1	0.7
FINE SAND	%	32.4	9.4	10.5	4.8	6.6	17.3	21.5
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	93.3	100	100	100
SIEVE SIZE #4 - % FINER	% passed	100	100	99.8	91.4	100	100	100
SIEVE SIZE #10 - % FINER	% passed	100	100	99.6	90.3	100	100	100
SIEVE SIZE #20 - % FINER	% passed	99.8	99.7	99.5	89.5	99.7	99.7	99.9
SIEVE SIZE #40 - % FINER	% passed	99.1	99.3	99.2	88.4	99	98.9	99.3
SIEVE SIZE #60 - % FINER	% passed	98.2	98.7	98.6	87.2	98.2	96	97.1
SIEVE SIZE #80 - % FINER	% passed	97	97.6	97.7	86.1	97.3	92.4	94.7
SIEVE SIZE #100 - % FINER	% passed	95.7	96.8	97.2	85.4	96.7	90.9	93.2
SIEVE SIZE #200 - % FINER	% passed	66.7	89.9	88.7	83.6	92.4	81.6	77.8
HYDROMETER READING 1 - % FINER	% passed	20.8	50.5	46.1	63	80.6	56.4	44.7
HYDROMETER READING 2 - % FINER	% passed	11.6	39.3	34.5	52.5	62.4	47.3	36.3
HYDROMETER READING 3 - % FINER	% passed	5.4	28.1	23	38.6	45.9	33.6	26.1
HYDROMETER READING 4 - % FINER	% passed	3.9	21.5	16.3	31.4	33.2	27.6	23.3
HYDROMETER READING 5 - % FINER	% passed	2.3	17.8	13.4	20.9	25.6	21.3	19.5
HYDROMETER READING 6 - % FINER	% passed	1.5	12.2	6.6	13.9	14.6	13.7	14.8
HYDROMETER READING 7 - % FINER	% passed	0.6	8.3	4.6	8.7	9.1	9.1	10.2
Organic Carbon								
TOTAL ORGANIC CARBON	%	1.36	3.22	1.77	6.06	17.8	2.96	1.33
BLACK CARBON	mg/kg	NA	NA	NA	5950	NA	NA	NA

Table 3-9c
Area 3 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-08	SLB10-3-08	SLB10-3-08	SLB10-3-08	SLB10-3-08	SLB10-3-08	SLB10-3-09
	Field Sample ID	SLB10-3-08-06DP	SLB10-3-08-12	SLB10-3-08-36	SLB10-3-08-60	SLB10-3-08-84	SLB10-3-08-104	SLB10-3-09-06
	Sample Date	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010
	Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	84- 104	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	NA	0	0	6.2	0	0	0
SAND	%	NA	18.5	17.3	10.2	11.7	8	18
SILT	%	NA	65.9	64.8	55	58.5	62.3	59.5
CLAY	%	NA	15.6	17.9	28.6	29.8	29.7	22.5
COARSE SAND	%	NA	0	0	0	0	0	0
MEDIUM SAND	%	NA	0.3	0.3	0.2	0.3	0.1	0.7
FINE SAND	%	NA	18.2	17	10	11.4	7.9	17.3
SIEVE SIZE 3 INCH - % FINER	% passed	NA	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	NA	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	NA	100	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	NA	100	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	NA	100	100	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	NA	100	100	93.8	100	100	100
SIEVE SIZE #4 - % FINER	% passed	NA	100	100	93.8	100	100	100
SIEVE SIZE #10 - % FINER	% passed	NA	100	100	93.8	100	100	100
SIEVE SIZE #20 - % FINER	% passed	NA	99.9	99.8	93.7	100	100	99.8
SIEVE SIZE #40 - % FINER	% passed	NA	99.7	99.7	93.6	99.7	99.9	99.3
SIEVE SIZE #60 - % FINER	% passed	NA	99	99.4	93.3	99.1	99.7	96.5
SIEVE SIZE #80 - % FINER	% passed	NA	97.7	98.4	91.9	99.1	99	92.8
SIEVE SIZE #100 - % FINER	% passed	NA	96.6	97.4	91.2	98.1	98.6	91.1
SIEVE SIZE #200 - % FINER	% passed	NA	81.5	82.7	83.6	88.3	92	82
HYDROMETER READING 1 - % FINER	% passed	NA	40.9	46.2	61.3	62.5	71.2	61.6
HYDROMETER READING 2 - % FINER	% passed	NA	32.1	35.6	55.4	54.7	60.9	50.3
HYDROMETER READING 3 - % FINER	% passed	NA	23.3	27.3	40.5	42.3	43.6	35.3
HYDROMETER READING 4 - % FINER	% passed	NA	18.9	22.6	34.5	36.1	36.6	27.8
HYDROMETER READING 5 - % FINER	% passed	NA	15.6	17.9	28.6	29.8	29.7	22.5
HYDROMETER READING 6 - % FINER	% passed	NA	11.2	13.2	19.6	20.5	22.8	17.5
HYDROMETER READING 7 - % FINER	% passed	NA	7.9	8.4	13.7	14.3	14.1	12.5
Organic Carbon								
TOTAL ORGANIC CARBON	%	1.64	2.54	1.36	2.27	2.58	5.61	1.87
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-9c
Area 3 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-09	SLB10-3-09	SLB10-3-09	SLB10-3-09	SLB10-3-09	SLB10-3-09	SLB10-3-10
	Field Sample ID	SLB10-3-09-06DP	SLB10-3-09-12	SLB10-3-09-36	SLB10-3-09-60	SLB10-3-09-84	SLB10-3-09-115	SLB10-3-10-06
	Sample Date	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/14/2010	10/15/2010
	Depth Interval	0- 6	0- 12	12- 36	36- 60	60- 84	84- 115	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	NA	0	0	0	0	0	0.9
SAND	%	NA	29.1	23.3	32.8	39.8	24.4	24.1
SILT	%	NA	49.6	50.3	46	43.7	49.9	59.8
CLAY	%	NA	21.3	26.4	21.2	16.5	25.7	15.2
COARSE SAND	%	NA	0	0	0	0	0	1
MEDIUM SAND	%	NA	0.9	0.4	1.3	2	0.3	2.7
FINE SAND	%	NA	28.2	22.9	31.5	37.8	24.1	20.4
SIEVE SIZE 3 INCH - % FINER	% passed	NA	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	NA	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	NA	100	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	NA	100	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	NA	100	100	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	NA	100	100	100	100	100	100
SIEVE SIZE #4 - % FINER	% passed	NA	100	100	100	100	100	99.1
SIEVE SIZE #10 - % FINER	% passed	NA	100	100	100	100	100	98.1
SIEVE SIZE #20 - % FINER	% passed	NA	99.7	99.9	99.5	99.4	100	97.3
SIEVE SIZE #40 - % FINER	% passed	NA	99.1	99.6	98.7	98	99.7	95.4
SIEVE SIZE #60 - % FINER	% passed	NA	95.4	97.5	94	90.4	97.7	90.9
SIEVE SIZE #80 - % FINER	% passed	NA	89.2	93	86.7	81.3	93.3	86.5
SIEVE SIZE #100 - % FINER	% passed	NA	85.8	90.2	82.9	76.7	90.4	84.7
SIEVE SIZE #200 - % FINER	% passed	NA	70.9	76.7	67.2	60.2	75.6	75
HYDROMETER READING 1 - % FINER	% passed	NA	49.4	55.6	46.1	41.5	52.5	43.6
HYDROMETER READING 2 - % FINER	% passed	NA	42.4	47.9	40.8	34	44.5	33.5
HYDROMETER READING 3 - % FINER	% passed	NA	32.5	35.6	31.7	25.2	36.4	24.3
HYDROMETER READING 4 - % FINER	% passed	NA	26.9	32.6	25.1	19	31.1	19.3
HYDROMETER READING 5 - % FINER	% passed	NA	21.3	26.4	21.2	16.5	25.7	15.2
HYDROMETER READING 6 - % FINER	% passed	NA	15.7	17.2	14.6	10.2	17.7	11.3
HYDROMETER READING 7 - % FINER	% passed	NA	10.1	11	9.4	6.5	12.3	8.1
Organic Carbon								
TOTAL ORGANIC CARBON	%	1.92	1.74	2.84	2.29	2.34	1.88	3.12
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	6540

Table 3-9c
Area 3 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-10	SLB10-3-10	SLB10-3-10	SLB10-3-10	SLB10-3-11	SLB10-3-11	SLB10-3-11
	Field Sample ID	SLB10-3-10-12	SLB10-3-10-36	SLB10-3-10-60	SLB10-3-10-86	SLB10-3-11-06	SLB10-3-11-06DP	SLB10-3-11-12
	Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
	Depth Interval	0- 12	12- 36	36- 60	60- 86	0- 6	0- 6	0- 12
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	0	0	0	0.4	NA	1.8
SAND	%	29.9	29	23.3	28.8	24.9	NA	31.2
SILT	%	55.2	57	52.3	62.7	54.5	NA	43.6
CLAY	%	14.9	14	24.4	8.5	20.2	NA	23.4
COARSE SAND	%	0.1	0.1	0.3	0.2	0.3	NA	0.6
MEDIUM SAND	%	0.9	0.5	0.8	0.6	3.9	NA	2.4
FINE SAND	%	28.9	28.4	22.2	28	20.7	NA	28.2
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	100	100	NA	98.6
SIEVE SIZE #4 - % FINER	% passed	100	100	100	100	99.6	NA	98.2
SIEVE SIZE #10 - % FINER	% passed	99.9	99.9	99.7	99.8	99.3	NA	97.6
SIEVE SIZE #20 - % FINER	% passed	99.6	99.8	99.4	99.5	98.2	NA	97
SIEVE SIZE #40 - % FINER	% passed	99	99.4	98.9	99.2	95.4	NA	95.2
SIEVE SIZE #60 - % FINER	% passed	96.7	97.4	97.3	98	89.3	NA	88.3
SIEVE SIZE #80 - % FINER	% passed	91.5	92.5	93.6	94.5	84	NA	80.5
SIEVE SIZE #100 - % FINER	% passed	88.2	89.4	91.3	91.8	82.3	NA	77.3
SIEVE SIZE #200 - % FINER	% passed	70.1	71	76.7	71.2	74.7	NA	67
HYDROMETER READING 1 - % FINER	% passed	44.3	42.7	52.1	34.7	49.9	NA	49.8
HYDROMETER READING 2 - % FINER	% passed	34.5	33.8	45.7	24	41.4	NA	41
HYDROMETER READING 3 - % FINER	% passed	22.7	24.8	33.1	14.7	30.8	NA	32.2
HYDROMETER READING 4 - % FINER	% passed	18.8	16.9	28.7	10.1	24.4	NA	26
HYDROMETER READING 5 - % FINER	% passed	14.9	14	24.4	8.5	20.2	NA	23.4
HYDROMETER READING 6 - % FINER	% passed	9.8	9.8	16.9	5.4	14.9	NA	16.3
HYDROMETER READING 7 - % FINER	% passed	7	6.9	11.6	3.8	9.4	NA	12.8
Organic Carbon								
TOTAL ORGANIC CARBON	%	3.21	5.16	2.34	2.32	2.85	2.87	3.96
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-9c
Area 3 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-11	SLB10-3-11	SLB10-3-12	SLB10-3-12	SLB10-3-12	SLB10-3-13	SLB10-3-13
	Field Sample ID	SLB10-3-11-36	SLB10-3-11-50	SLB10-3-12-06	SLB10-3-12-06DP	SLB10-3-12-10	SLB10-3-13-06	SLB10-3-13-06DP
	Sample Date	10/15/2010	10/15/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010	10/16/2010
	Depth Interval	12- 36	36- 50	0- 6	0- 6	0- 10	0- 6	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0.2	0.2	0.2	NA	0.1	0.3	NA
SAND	%	34.1	36.4	63	NA	46.7	89.3	NA
SILT	%	43.5	40.1	35.9	NA	36.4	9.1	NA
CLAY	%	22.2	23.3	0.9	NA	16.8	1.3	NA
COARSE SAND	%	0.3	0.5	0.6	NA	0.2	0.6	NA
MEDIUM SAND	%	1.5	1.9	0.7	NA	1.2	7.4	NA
FINE SAND	%	32.3	34	61.7	NA	45.3	81.3	NA
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	NA	100	100	NA
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	NA	100	100	NA
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	NA	100	100	NA
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	NA	100	100	NA
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	NA	100	100	NA
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	NA	100	100	NA
SIEVE SIZE #4 - % FINER	% passed	99.8	99.8	99.8	NA	99.9	99.7	NA
SIEVE SIZE #10 - % FINER	% passed	99.5	99.3	99.2	NA	99.7	99.1	NA
SIEVE SIZE #20 - % FINER	% passed	99.1	99	99.1	NA	99.6	98	NA
SIEVE SIZE #40 - % FINER	% passed	98	97.4	98.5	NA	98.5	91.7	NA
SIEVE SIZE #60 - % FINER	% passed	92.1	89.6	93.4	NA	91.6	71.9	NA
SIEVE SIZE #80 - % FINER	% passed	81.9	79.7	73.9	NA	76.1	33.2	NA
SIEVE SIZE #100 - % FINER	% passed	77.2	75.5	61.7	NA	68.7	20.2	NA
SIEVE SIZE #200 - % FINER	% passed	65.7	63.4	36.8	NA	53.2	10.4	NA
HYDROMETER READING 1 - % FINER	% passed	49	48	9.1	NA	29.1	5.9	NA
HYDROMETER READING 2 - % FINER	% passed	41.5	41.3	5.8	NA	25.4	4.2	NA
HYDROMETER READING 3 - % FINER	% passed	32.3	32.8	2.6	NA	21.1	3	NA
HYDROMETER READING 4 - % FINER	% passed	25.6	27.1	1.8	NA	18.2	1.9	NA
HYDROMETER READING 5 - % FINER	% passed	22.2	23.3	0.9	NA	16.8	1.3	NA
HYDROMETER READING 6 - % FINER	% passed	16.4	17.6	0.8	NA	13.7	0.7	NA
HYDROMETER READING 7 - % FINER	% passed	12.2	11.9	0	NA	10.1	0	NA
Organic Carbon								
TOTAL ORGANIC CARBON	%	2.31	3.72	1.24 J	1.45 J	1.04 J	0.641	0.7
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	NA

Table 3-9c
Area 3 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-13	SLB10-3-14	SLB10-3-14	SLB10-3-14	SLB10-3-15	SLB10-3-15	SLB10-3-15
	Field Sample ID	SLB10-3-13-12	SLB10-3-14-06	SLB10-3-14-12	SLB10-3-14-42	SLB10-3-15-06	SLB10-3-15-06DP	SLB10-3-15-12
	Sample Date	10/16/2010	10/14/2010	10/14/2010	10/14/2010	10/15/2010	10/15/2010	10/15/2010
	Depth Interval	0- 12	0- 6	0- 12	12- 42	0- 6	0- 6	0- 12
Chemical Name	Unit							
Grain Size								
GRAVEL	%	2.4	0.3	0	0	18.7	NA	2.1
SAND	%	92.9	97.6	96.6	28.1	77.4	NA	81.5
SILT	%	4.6	1.6	2.9	61.5	4.3	NA	15.7
CLAY	%	0.09	0.4	0.5	10.4	-0.4	NA	0.7
COARSE SAND	%	0.4	0.7	0	0	0.8	NA	0.2
MEDIUM SAND	%	4.5	6.5	4.7	0.3	0.9	NA	0.3
FINE SAND	%	88	90.4	91.9	27.8	75.6	NA	81
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	NA	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	100	86.4	NA	98
SIEVE SIZE #4 - % FINER	% passed	97.6	99.7	100	100	81.3	NA	97.9
SIEVE SIZE #10 - % FINER	% passed	97.2	99	100	100	80.5	NA	97.7
SIEVE SIZE #20 - % FINER	% passed	96.6	97.1	98.5	99.9	80.3	NA	97.6
SIEVE SIZE #40 - % FINER	% passed	92.7	92.5	95.3	99.7	79.6	NA	97.4
SIEVE SIZE #60 - % FINER	% passed	73.7	75.8	79	99	70	NA	95.1
SIEVE SIZE #80 - % FINER	% passed	29.8	47.8	47.5	94.4	51.8	NA	83.6
SIEVE SIZE #100 - % FINER	% passed	14.4	30.3	26.7	89.7	39.8	NA	71.8
SIEVE SIZE #200 - % FINER	% passed	4.7	2	3.4	71.9	4	NA	16.4
HYDROMETER READING 1 - % FINER	% passed	2.3	0.9	1	43.7	0.6	NA	2.4
HYDROMETER READING 2 - % FINER	% passed	1.8	0.9	1	30.2	0.6	NA	1.2
HYDROMETER READING 3 - % FINER	% passed	1.2	0.9	1	18.8	0.6	NA	0.7
HYDROMETER READING 4 - % FINER	% passed	0.7	0.4	1	14.5	0.08	NA	0.7
HYDROMETER READING 5 - % FINER	% passed	0.09	0.4	0.5	10.4	-0.4	NA	0.7
HYDROMETER READING 6 - % FINER	% passed	-0.6	-0.07	-0.08	6.2	-0.5	NA	0.6
HYDROMETER READING 7 - % FINER	% passed	-0.6	-0.07	-0.08	5	-0.5	NA	0
Organic Carbon								
TOTAL ORGANIC CARBON	%	0.293 J	0	0.156	2.98	0.186	0.312	0.388
BLACK CARBON	mg/kg	NA	0	NA	NA	NA	NA	NA

Table 3-9c
Area 3 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-15	SLB10-3-16	SLB10-3-16	SLB10-3-16	SLB10-3-16	SLB10-3-17	SLB10-3-17
	Field Sample ID	SLB10-3-15-32	SLB10-3-16-06	SLB10-3-16-12	SLB10-3-16-36	SLB10-3-16-71	SLB10-3-17-06	SLB10-3-17-06DP
	Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
	Depth Interval	12- 32	0- 6	0- 12	12- 36	36- 71	0- 6	0- 6
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	0.7	0	0	0.6	0	NA
SAND	%	52.5	13.2	8.7	17.5	15.6	21.5	NA
SILT	%	42.4	58.8	59.2	63.9	64.3	54.6	NA
CLAY	%	5.1	27.3	32.1	18.6	19.5	23.9	NA
COARSE SAND	%	0	0.5	0	0	0.8	0.1	NA
MEDIUM SAND	%	0.6	0.3	0.3	0.4	3.5	0.4	NA
FINE SAND	%	51.9	12.4	8.4	17.1	11.3	21	NA
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	100	100	100	NA
SIEVE SIZE #4 - % FINER	% passed	100	99.3	100	100	99.4	100	NA
SIEVE SIZE #10 - % FINER	% passed	100	98.8	100	100	98.6	99.9	NA
SIEVE SIZE #20 - % FINER	% passed	99.8	98.7	99.9	99.9	96.9	99.8	NA
SIEVE SIZE #40 - % FINER	% passed	99.4	98.5	99.7	99.6	95.1	99.5	NA
SIEVE SIZE #60 - % FINER	% passed	98.4	98.1	99.3	99.3	94.4	98.4	NA
SIEVE SIZE #80 - % FINER	% passed	95.5	97.5	97.9	97.8	92.1	92.9	NA
SIEVE SIZE #100 - % FINER	% passed	91.3	96.9	97.4	96.9	91.6	90.6	NA
SIEVE SIZE #200 - % FINER	% passed	47.5	86.1	91.3	82.5	83.8	78.5	NA
HYDROMETER READING 1 - % FINER	% passed	17.6	59.7	64.1	48.5	41.9	53.9	NA
HYDROMETER READING 2 - % FINER	% passed	12.3	51.4	57	37	33.4	46.7	NA
HYDROMETER READING 3 - % FINER	% passed	9	38.9	46.3	27.4	26.9	35.4	NA
HYDROMETER READING 4 - % FINER	% passed	6.4	32.6	36.9	22.1	22.7	30.1	NA
HYDROMETER READING 5 - % FINER	% passed	5.1	27.3	32.1	18.6	19.5	23.9	NA
HYDROMETER READING 6 - % FINER	% passed	3.7	20	24.8	14.1	13.9	17.5	NA
HYDROMETER READING 7 - % FINER	% passed	3	13.7	17.7	9.7	7.5	11.5	NA
Organic Carbon								
TOTAL ORGANIC CARBON	%	0.607	3.66	4.77	1.8	3.65	3.25	3.42
BLACK CARBON	mg/kg	NA	9720	NA	NA	NA	NA	NA

Table 3-9c
Area 3 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-17	SLB10-3-17	SLB10-3-17	SLB10-3-18	SLB10-3-18	SLB10-3-18	SLB10-3-18
	Field Sample ID	SLB10-3-17-12	SLB10-3-17-36	SLB10-3-17-69	SLB10-3-18-06	SLB10-3-18-06DP	SLB10-3-18-12	SLB10-3-18-36
	Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
	Depth Interval	0- 12	12- 36	36- 69	0- 6	0- 6	0- 12	12- 36
Chemical Name	Unit							
Grain Size								
GRAVEL	%	0	0	0	0	NA	0	0
SAND	%	34.6	31.4	6.9	80.1	NA	52.4	45.3
SILT	%	53.4	54.8	80.6	16.2	NA	34.6	43.3
CLAY	%	12	13.8	12.5	3.7	NA	13	11.4
COARSE SAND	%	0	0	0	0	NA	0	0
MEDIUM SAND	%	0.2	0.3	0.4	0.6	NA	0.5	0.7
FINE SAND	%	34.4	31.1	6.5	79.5	NA	51.9	44.6
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	NA	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	NA	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	NA	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	NA	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	NA	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	100	100	NA	100	100
SIEVE SIZE #4 - % FINER	% passed	100	100	100	100	NA	100	100
SIEVE SIZE #10 - % FINER	% passed	100	100	100	100	NA	100	100
SIEVE SIZE #20 - % FINER	% passed	100	99.9	100	99.9	NA	99.9	99.7
SIEVE SIZE #40 - % FINER	% passed	99.8	99.7	99.6	99.4	NA	99.5	99.3
SIEVE SIZE #60 - % FINER	% passed	98.6	98.4	99.2	85.1	NA	95.3	96.2
SIEVE SIZE #80 - % FINER	% passed	94.7	94.7	98.9	58.8	NA	78.8	84.5
SIEVE SIZE #100 - % FINER	% passed	89.8	90.2	98.6	46.2	NA	72.8	80.3
SIEVE SIZE #200 - % FINER	% passed	65.4	68.6	93.1	19.9	NA	47.6	54.7
HYDROMETER READING 1 - % FINER	% passed	36.1	38.9	52.1	10.2	NA	28.4	31.5
HYDROMETER READING 2 - % FINER	% passed	27.3	30	37.6	7.8	NA	23.5	21.9
HYDROMETER READING 3 - % FINER	% passed	19.3	21.9	24.1	6	NA	18.7	17
HYDROMETER READING 4 - % FINER	% passed	15.3	17	18.3	4.9	NA	15.5	13.8
HYDROMETER READING 5 - % FINER	% passed	12	13.8	12.5	3.7	NA	13	11.4
HYDROMETER READING 6 - % FINER	% passed	8.8	8.9	7.7	2.5	NA	10.6	9
HYDROMETER READING 7 - % FINER	% passed	5.5	5.5	4.8	1.2	NA	7.4	5.6
Organic Carbon								
TOTAL ORGANIC CARBON	%	1.41	1.21	1.82	0.534	0.396	1.55	1.61
BLACK CARBON	mg/kg	NA	NA	NA	NA	NA	NA	NA

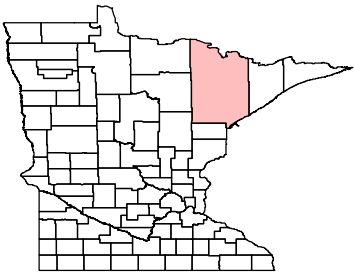
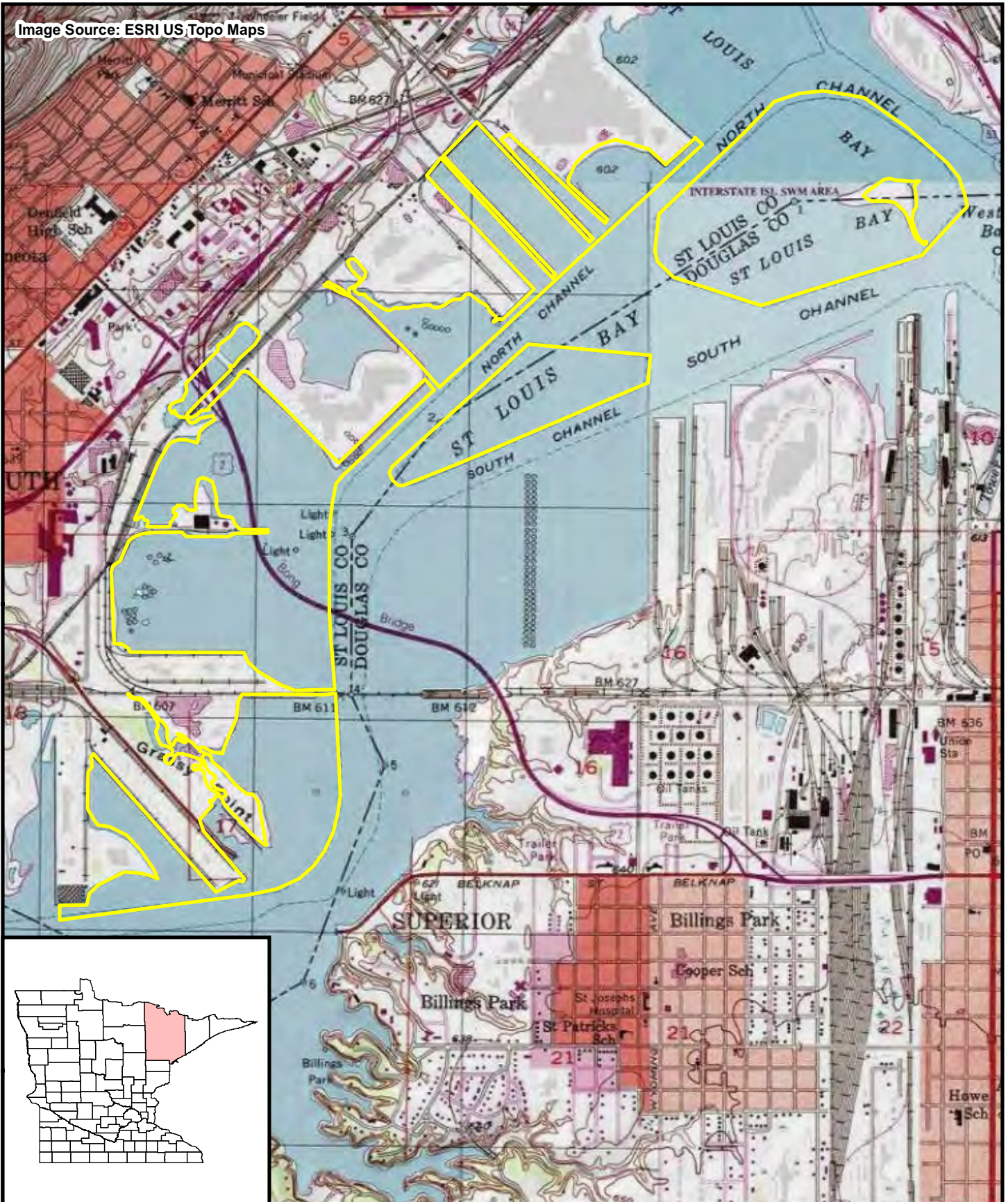
Table 3-9c
Area 3 Sediment Sample Analytical Results - Physical Properties
St. Louis Bay-St. Louis River AOC
Duluth, St. Louis County, Minnesota

	Location ID	SLB10-3-18	SLB10-3-18	SLB10-3-19	SLB10-3-19	SLB10-3-19	SLB10-3-19
	Field Sample ID	SLB10-3-18-60	SLB10-3-18-95	SLB10-3-19-06	SLB10-3-19-12	SLB10-3-19-36	SLB10-3-19-69
	Sample Date	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010	10/15/2010
	Depth Interval	36- 60	60- 95	0- 6	0- 12	12- 36	36- 69
Chemical Name	Unit						
Grain Size							
GRAVEL	%	0	0	3	2.1	0	0
SAND	%	33.8	11.7	48.1	59.7	15.8	26.6
SILT	%	50.7	71.9	40.5	28.4	60.3	57.9
CLAY	%	15.5	16.4	8.4	9.8	23.9	15.5
COARSE SAND	%	0	0	0.1	0.4	0	0
MEDIUM SAND	%	0.9	0.6	0.5	0.9	0.5	0.5
FINE SAND	%	32.9	11.1	47.5	58.4	15.3	26.1
SIEVE SIZE 3 INCH - % FINER	% passed	100	100	100	100	100	100
SIEVE SIZE 2 INCH - % FINER	% passed	100	100	100	100	100	100
SIEVE SIZE 1.5 INCH - % FINER	% passed	100	100	100	100	100	100
SIEVE SIZE 1 INCH - % FINER	% passed	100	100	100	100	100	100
SIEVE SIZE 0.75 INCH - % FINER	% passed	100	100	100	100	100	100
SIEVE SIZE 0.375 INCH - % FINER	% passed	100	100	97	100	100	100
SIEVE SIZE #4 - % FINER	% passed	100	100	97	97.9	100	100
SIEVE SIZE #10 - % FINER	% passed	100	100	96.9	97.5	100	100
SIEVE SIZE #20 - % FINER	% passed	99.5	99.6	96.6	97	99.7	99.9
SIEVE SIZE #40 - % FINER	% passed	99.1	99.4	96.4	96.6	99.5	99.5
SIEVE SIZE #60 - % FINER	% passed	98	99.4	94.6	95.4	99.2	97.1
SIEVE SIZE #80 - % FINER	% passed	92.4	99.1	87.4	83.3	97	90
SIEVE SIZE #100 - % FINER	% passed	89.8	98.8	81.3	74.6	95.8	85.9
SIEVE SIZE #200 - % FINER	% passed	66.2	88.3	48.9	38.2	84.2	73.4
HYDROMETER READING 1 - % FINER	% passed	36.2	47.7	24.3	20.7	54.5	39.7
HYDROMETER READING 2 - % FINER	% passed	29	33.5	19	18.1	44.6	31.1
HYDROMETER READING 3 - % FINER	% passed	22.7	25.5	13.8	15.4	32.8	22.4
HYDROMETER READING 4 - % FINER	% passed	19.1	19.4	11.5	11.8	28.8	18.1
HYDROMETER READING 5 - % FINER	% passed	15.5	16.4	8.4	9.8	23.9	15.5
HYDROMETER READING 6 - % FINER	% passed	12.8	11.1	6	8.1	18.8	10.4
HYDROMETER READING 7 - % FINER	% passed	8.1	8.3	3.9	6.3	12.8	7.6
Organic Carbon							
TOTAL ORGANIC CARBON	%	2.29	1.52	1.57	1.61	2.92	1.77
BLACK CARBON	mg/kg	NA	NA	3500	NA	NA	NA

Notes:
 % = Percent
 ID = Identification
 mg/kg - milligram per kilogram

FIGURES

Image Source: ESRI US Topo Maps



FILE:D:\St.Louis_Bay\mxd\SAR\STLB_SAR_F1-1_Site_Location.mxd 12/20/2011 12:42:51 PM wjojdakon

Legend

 Project Area

0 3,000
 Feet



Prepared for:
U.S. EPA REGION V

Contract No.: EP-S5-06-04
TDD: S05-0008-1004-031
DCN: 1024-2A-ATMN



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Figure 1-1
Site Location Map
St. Louis Bay
Duluth, St. Louis County, Minnesota

Imagery Source: ESRI Bing Maps



Legend

- ▭ Focus Area 1
- ▭ Focus Area 2
- ▭ Focus Area 3

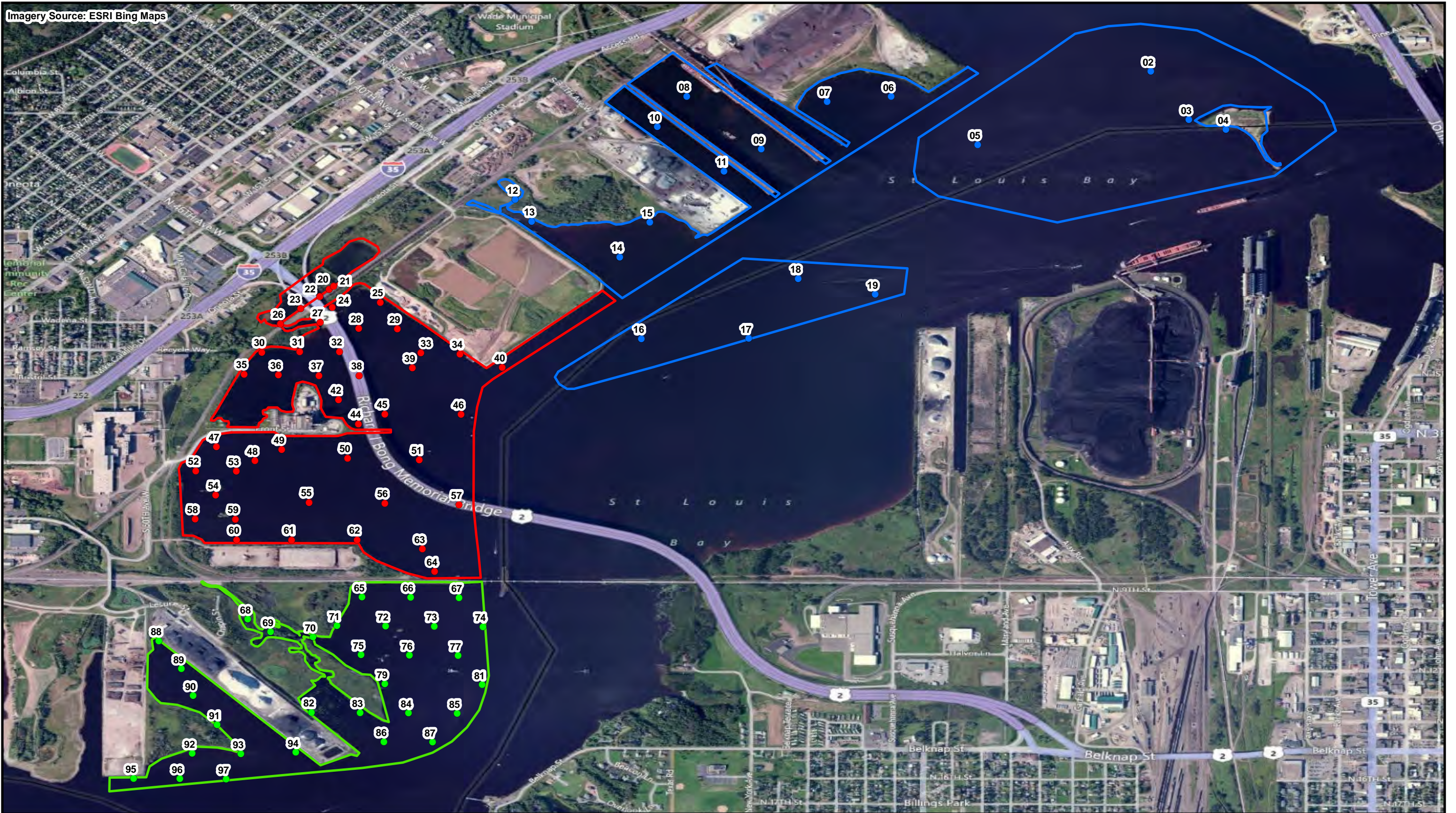


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Figure 1-2
 Site Features Map
 St. Louis Bay
 Duluth, St. Louis County, Minnesota



Legend

- Area 1 Sampling Locations
- Area 2 Sampling Locations
- Area 3 Sampling Locations
- ▭ Focus Area 1
- ▭ Focus Area 2
- ▭ Focus Area 3



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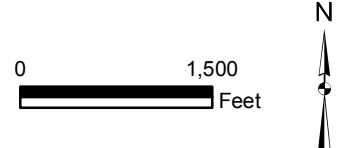


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Figure 2-1
 Sampling Location Map
 St. Louis Bay
 Duluth, St. Louis County, Minnesota



- Legend**
- Focus Area 1
 - Focus Area 2
 - Focus Area 3
 - Level I & II Exceedances
 - Level I Exceedances Only
 - No Exceedances



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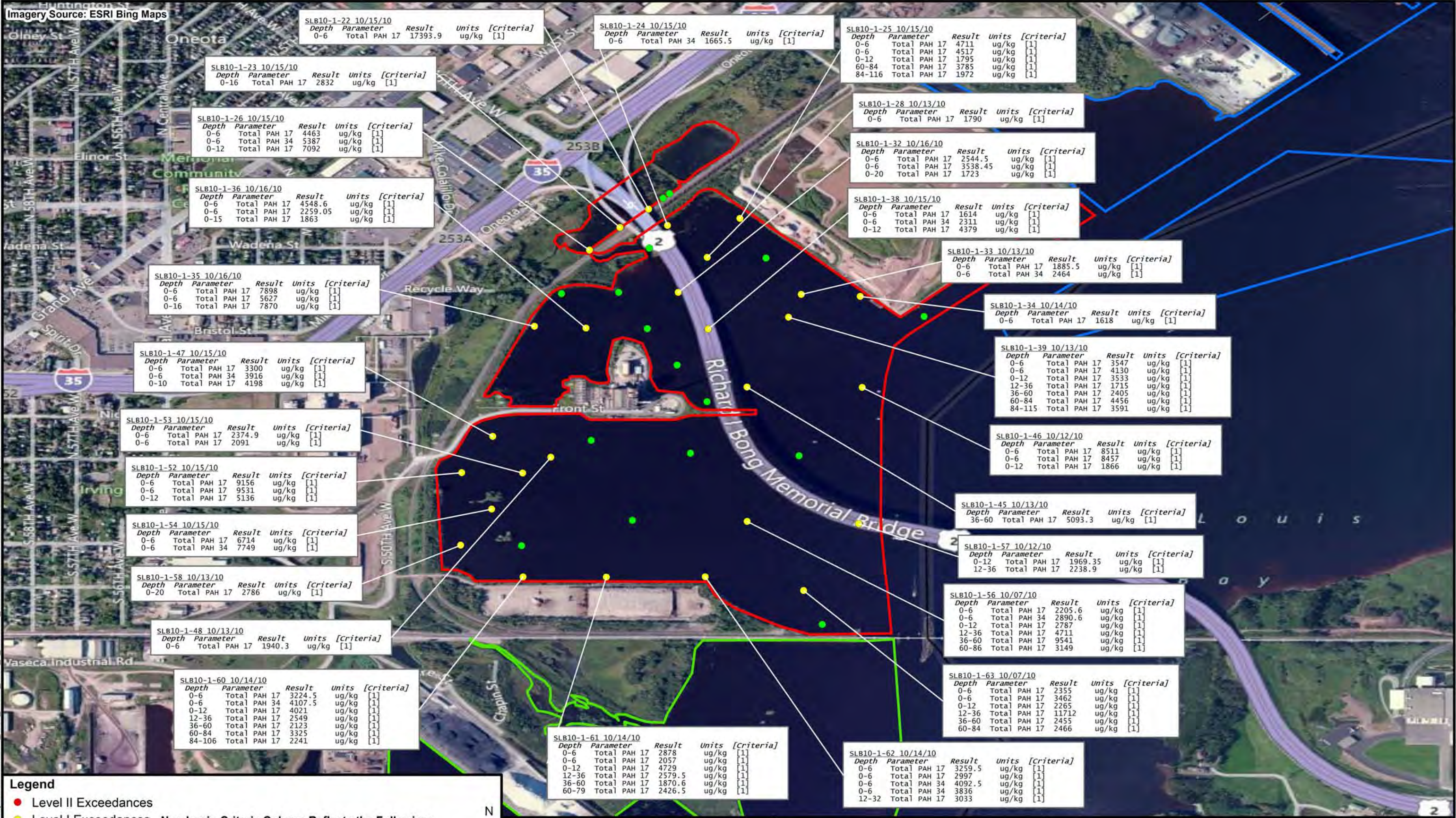


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Figure 3-1
 Sampling Results Exceeding the St. Louis River AOC
 Sediment Quality Targets
 St. Louis Bay
 Duluth, St. Louis County, Minnesota

Imagery Source: ESRI Bing Maps

FILE: D:\SI_Louis_Bay\mxd\SAR\STLB_Area_1_Exceeds_PAHs.mxd 2/3/2012 3:39:49 PM mjlacm



SLB10-1-22 10/15/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 17	17393.9	ug/kg	[1]

SLB10-1-23 10/15/10	Depth	Parameter	Result	Units	[Criteria]
	0-16	Total PAH 17	2832	ug/kg	[1]

SLB10-1-26 10/15/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 17	4463	ug/kg	[1]
	0-6	Total PAH 34	5387	ug/kg	[1]
	0-12	Total PAH 17	7092	ug/kg	[1]

SLB10-1-36 10/16/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 17	4548.6	ug/kg	[1]
	0-6	Total PAH 17	2259.05	ug/kg	[1]
	0-15	Total PAH 17	1863	ug/kg	[1]

SLB10-1-35 10/16/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 17	7898	ug/kg	[1]
	0-6	Total PAH 17	5627	ug/kg	[1]
	0-16	Total PAH 17	7870	ug/kg	[1]

SLB10-1-47 10/15/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 17	3300	ug/kg	[1]
	0-6	Total PAH 34	3916	ug/kg	[1]
	0-10	Total PAH 17	4198	ug/kg	[1]

SLB10-1-53 10/15/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 17	2374.9	ug/kg	[1]
	0-6	Total PAH 17	2091	ug/kg	[1]

SLB10-1-52 10/15/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 17	9156	ug/kg	[1]
	0-6	Total PAH 17	9531	ug/kg	[1]
	0-12	Total PAH 17	5136	ug/kg	[1]

SLB10-1-54 10/15/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 17	6714	ug/kg	[1]
	0-6	Total PAH 34	7749	ug/kg	[1]

SLB10-1-58 10/13/10	Depth	Parameter	Result	Units	[Criteria]
	0-20	Total PAH 17	2786	ug/kg	[1]

SLB10-1-48 10/13/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 17	1940.3	ug/kg	[1]

SLB10-1-60 10/14/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 17	3224.5	ug/kg	[1]
	0-6	Total PAH 34	4107.5	ug/kg	[1]
	0-12	Total PAH 17	4021	ug/kg	[1]
	12-36	Total PAH 17	2549	ug/kg	[1]
	36-60	Total PAH 17	2123	ug/kg	[1]
	60-84	Total PAH 17	3325	ug/kg	[1]
	84-106	Total PAH 17	2241	ug/kg	[1]

SLB10-1-24 10/15/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 34	1665.5	ug/kg	[1]

SLB10-1-25 10/15/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 17	4711	ug/kg	[1]
	0-6	Total PAH 17	4517	ug/kg	[1]
	0-12	Total PAH 17	1795	ug/kg	[1]
	60-84	Total PAH 17	3785	ug/kg	[1]
	84-116	Total PAH 17	1972	ug/kg	[1]

SLB10-1-28 10/13/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 17	1790	ug/kg	[1]

SLB10-1-32 10/16/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 17	2544.5	ug/kg	[1]
	0-6	Total PAH 17	3538.45	ug/kg	[1]
	0-20	Total PAH 17	1723	ug/kg	[1]

SLB10-1-38 10/15/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 17	1614	ug/kg	[1]
	0-6	Total PAH 34	2311	ug/kg	[1]
	0-12	Total PAH 17	4379	ug/kg	[1]

SLB10-1-33 10/13/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 17	1885.5	ug/kg	[1]
	0-6	Total PAH 34	2464	ug/kg	[1]

SLB10-1-34 10/14/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 17	1618	ug/kg	[1]

SLB10-1-39 10/13/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 17	3547	ug/kg	[1]
	0-6	Total PAH 17	4130	ug/kg	[1]
	0-12	Total PAH 17	3533	ug/kg	[1]
	12-36	Total PAH 17	1715	ug/kg	[1]
	36-60	Total PAH 17	2405	ug/kg	[1]
	60-84	Total PAH 17	4456	ug/kg	[1]
	84-115	Total PAH 17	3591	ug/kg	[1]

SLB10-1-46 10/12/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 17	8511	ug/kg	[1]
	0-6	Total PAH 17	8457	ug/kg	[1]
	0-12	Total PAH 17	1866	ug/kg	[1]

SLB10-1-45 10/13/10	Depth	Parameter	Result	Units	[Criteria]
	36-60	Total PAH 17	5093.3	ug/kg	[1]

SLB10-1-57 10/12/10	Depth	Parameter	Result	Units	[Criteria]
	0-12	Total PAH 17	1969.35	ug/kg	[1]
	12-36	Total PAH 17	2238.9	ug/kg	[1]

SLB10-1-56 10/07/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 17	2205.6	ug/kg	[1]
	0-6	Total PAH 34	2890.6	ug/kg	[1]
	0-12	Total PAH 17	2787	ug/kg	[1]
	12-36	Total PAH 17	4711	ug/kg	[1]
	36-60	Total PAH 17	9541	ug/kg	[1]
	60-86	Total PAH 17	3149	ug/kg	[1]

SLB10-1-63 10/07/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 17	2355	ug/kg	[1]
	0-6	Total PAH 17	3462	ug/kg	[1]
	0-12	Total PAH 17	2265	ug/kg	[1]
	12-36	Total PAH 17	11712	ug/kg	[1]
	36-60	Total PAH 17	2455	ug/kg	[1]
	60-84	Total PAH 17	2466	ug/kg	[1]

SLB10-1-61 10/14/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 17	2878	ug/kg	[1]
	0-6	Total PAH 17	2057	ug/kg	[1]
	0-12	Total PAH 17	4729	ug/kg	[1]
	12-36	Total PAH 17	2579.5	ug/kg	[1]
	36-60	Total PAH 17	1870.6	ug/kg	[1]
	60-79	Total PAH 17	2426.5	ug/kg	[1]

SLB10-1-62 10/14/10	Depth	Parameter	Result	Units	[Criteria]
	0-6	Total PAH 17	3259.5	ug/kg	[1]
	0-6	Total PAH 17	2997	ug/kg	[1]
	0-6	Total PAH 34	4092.5	ug/kg	[1]
	0-6	Total PAH 34	3836	ug/kg	[1]
	12-32	Total PAH 17	3033	ug/kg	[1]

Legend


- Level II Exceedances
- Level I Exceedances
- No Exceedances
- ▭ Focus Area 1
- ▭ Focus Area 2
- ▭ Focus Area 3

Number in Criteria Column Reflects the Following:


- 1 - Result Exceeds St. Louis River AOC SQT Level I Criteria
- 2 - Result Exceeds St. Louis River AOC SQT Level II Criteria

All Level II Exceeds are **Bold and Red**

0 1,000 Feet



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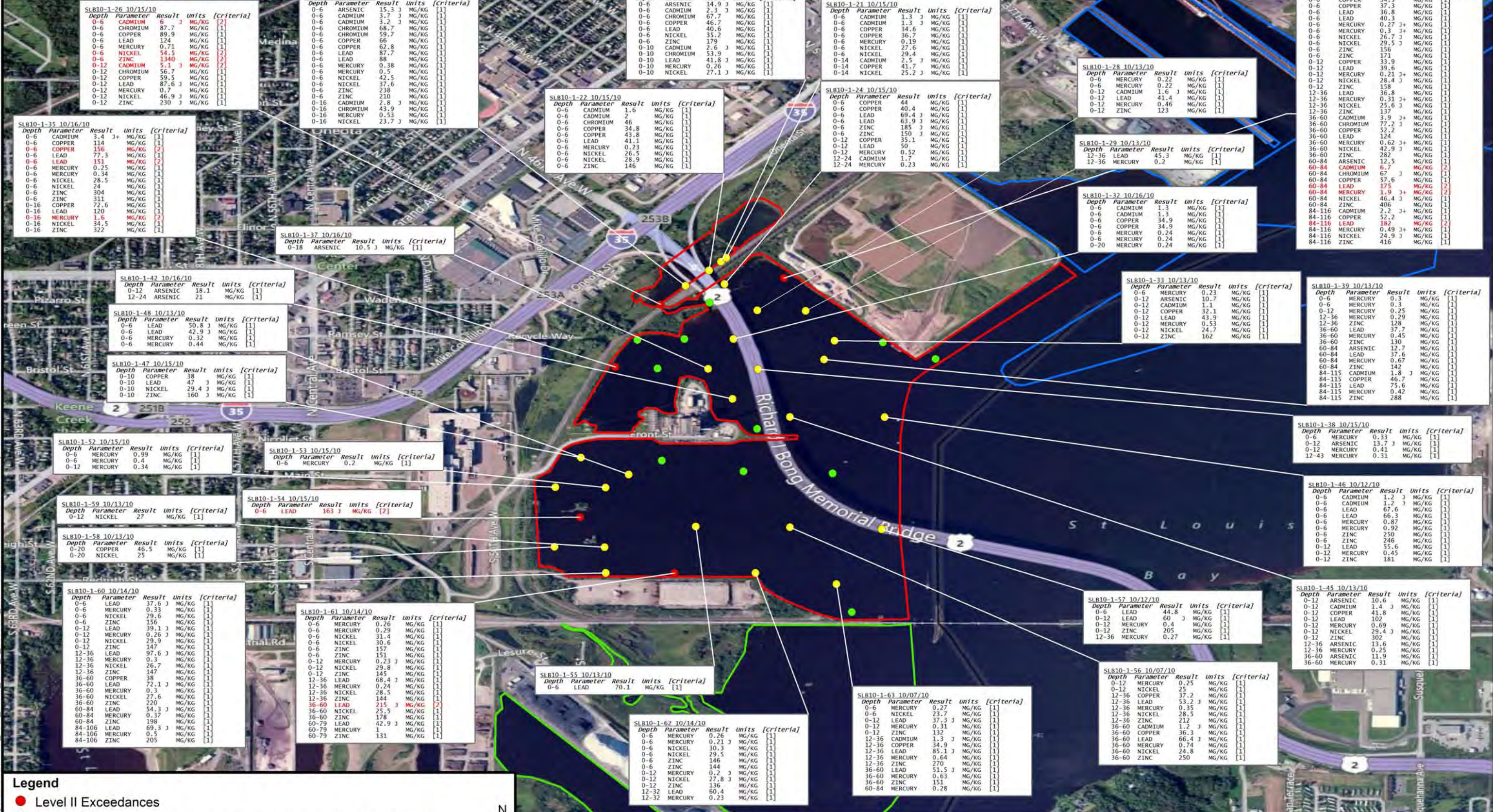


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Figure 3-2a
Sampling Results Exceeding the St. Louis River AOC Sediment Quality Targets for Area 1 – Total PAHs
St. Louis Bay
Duluth, St. Louis County, Minnesota

FILE: D:\St_Louis_Bay\mxd\ISAR\STLB_SAR_F3-2b_Area_1_Exceeds_Metals.mxd 2/3/2012 3:42:08 PM mlajam

Imagery Source: ESRI Bing Maps



Imagery Source: ESRI Bing Maps

SLB10-1-22 10/15/10

Depth	Parameter	Result	Units	[Criteria]
0-6	Total PCBs	81	ug/kg	[1]
0-6	Total PCBs	87	ug/kg	[1]

SLB10-1-23 10/15/10

Depth	Parameter	Result	Units	[Criteria]
0-6	Total PCBs	180	ug/kg	[1]
0-6	Total PCBs	170	ug/kg	[1]
0-16	Total PCBs	240	ug/kg	[1]

SLB10-1-26 10/15/10

Depth	Parameter	Result	Units	[Criteria]
0-6	Total PCB Congeners	1470790	pg/g	[2]
0-12	Total PCBs	75	ug/kg	[1]

SLB10-1-30 10/16/10

Depth	Parameter	Result	Units	[Criteria]
0-6	Total PCBs	250	ug/kg	[1]

SLB10-1-54 10/15/10

Depth	Parameter	Result	Units	[Criteria]
0-12	Total PCBs	590	ug/kg	[1]

SLB10-1-60 10/14/10

Depth	Parameter	Result	Units	[Criteria]
0-6	Total PCB Congeners	146496	pg/g	[1]

SLB10-1-20 10/15/10

Depth	Parameter	Result	Units	[Criteria]
0-6	Total PCB Congeners	775590	pg/g	[2]

SLB10-1-24 10/15/10

Depth	Parameter	Result	Units	[Criteria]
0-6	Total PCB Congeners	153979	pg/g	[1]
0-6	Total PCB Congeners	165156	pg/g	[1]

SLB10-1-25 10/15/10

Depth	Parameter	Result	Units	[Criteria]
12-36	Total PCBs	73	ug/Kg	[1]
36-60	Total PCBs	990	ug/Kg	[2]
60-84	Total PCBs	132	ug/Kg	[1]

SLB10-1-32 10/16/10

Depth	Parameter	Result	Units	[Criteria]
0-20	Total PCBs	83	ug/kg	[1]

SLB10-1-33 10/13/10

Depth	Parameter	Result	Units	[Criteria]
0-6	Total PCB Congeners	240520	pg/g	[1]

SLB10-1-38 10/15/10

Depth	Parameter	Result	Units	[Criteria]
0-6	Total PCB Congeners	219268	pg/g	[1]

SLB10-1-56 10/07/10

Depth	Parameter	Result	Units	[Criteria]
0-6	Total PCB Congeners	95107.7	pg/g	[1]
0-6	Total PCB Congeners	73166.3	pg/g	[1]

SLB10-1-62 10/14/10

Depth	Parameter	Result	Units	[Criteria]
0-6	Total PCB Congeners	138612	pg/g	[1]
0-6	Total PCB Congeners	116834	pg/g	[1]
0-12	Total PCBs	72	ug/Kg	[1]

SLB10-1-61 10/14/10

Depth	Parameter	Result	Units	[Criteria]
36-60	Total PCBs	92	ug/kg	[1]
60-79	Total PCBs	88	ug/kg	[1]

Legend

- Level II Exceedances
- Level I Exceedances
- No Exceedances
- ▭ Focus Area 1
- ▭ Focus Area 2
- ▭ Focus Area 3

Number in Criteria Column Reflects the Following:
 1 - Result Exceeds St. Louis River AOC SQT Level I Criteria
 2 - Result Exceeds St. Louis River AOC SQT Level II Criteria
 All Level II Exceeds are **Bold and Red**



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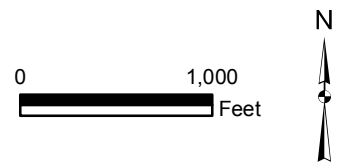
Figure 3-2c
 Sampling Results Exceeding the St. Louis River AOC
 Sediment Quality Targets for Area 1 – Total PCBs
 St. Louis Bay
 Duluth, St. Louis County, Minnesota

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FILE: D:\St_Louis_Bay\mxd\SAR\STLB_SAR_F3-2d_Area_1_Exceeds_Pest.mxd 12/20/2011 12:47:59 PM wjldakon

- Legend**
- Level I & II Exceedances
 - Level I Exceedances Only
 - No Exceedances
 - ▭ Focus Area 1
 - ▭ Focus Area 2
 - ▭ Focus Area 3



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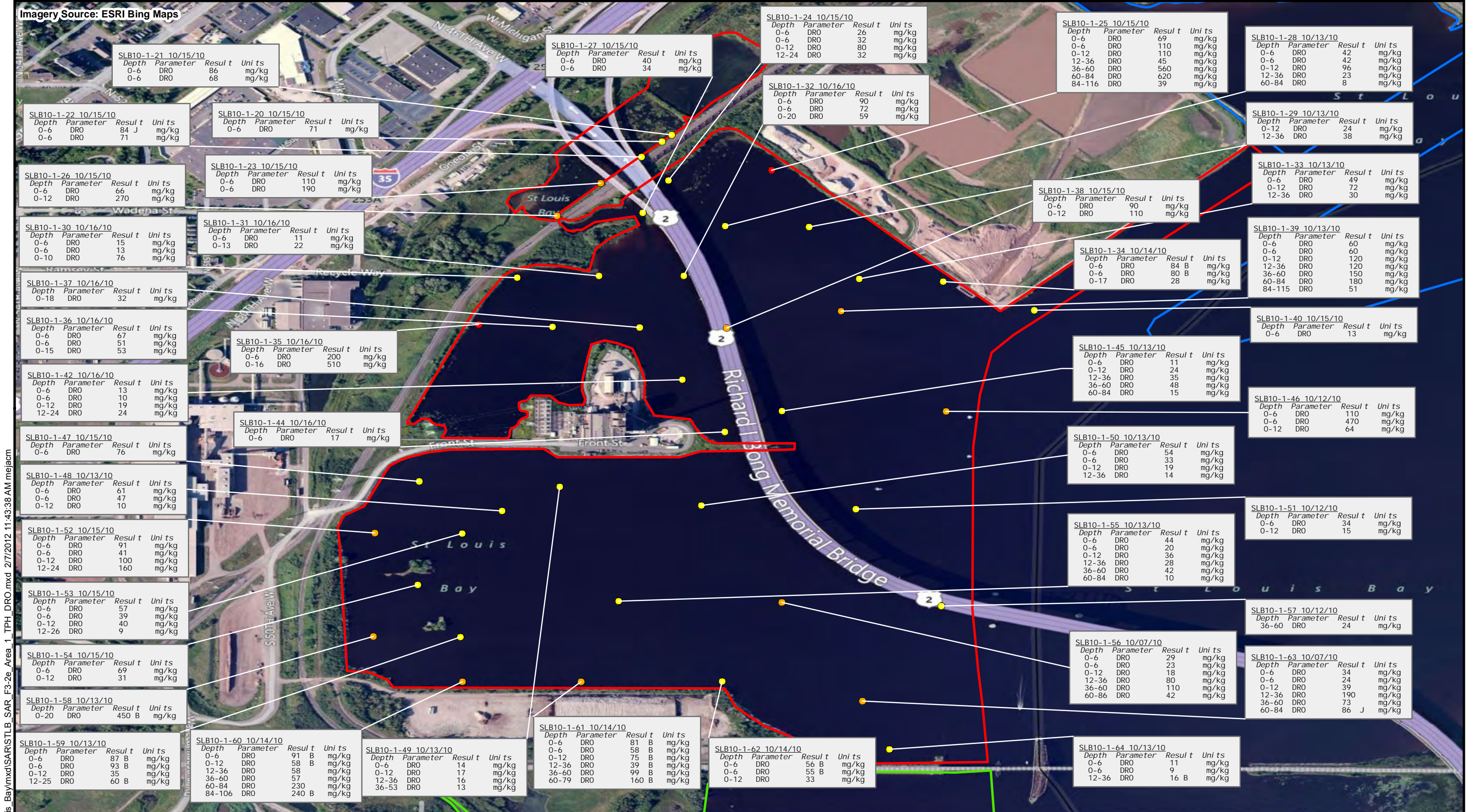


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Figure 3-2d
 Sampling Results Exceeding the St. Louis River AOC
 Sediment Quality Targets for Area 1 – TCL Pesticides
 St. Louis Bay
 Duluth, St. Louis County, Minnesota

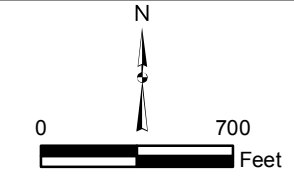
Imagery Source: ESRI Bing Maps

FILE: D:\St_Louis_Bay\mxd\SAR\STLB_SAR_F3-2e_Area_1_TPH_DRO.mxd 2/7/2012 11:43:38 AM mejacm



Legend

TPH DRO (ug/kg)	● 100 - 500	■ Focus Area 1
● Non-Detect	● > 500	■ Focus Area 2
● 0 - 100	■ Focus Area 3	



Prepared For:
US EPA Region V
 Contract No.: EP-S5-06-04
 TDD: S05-0008-1004-031
 DCN: 1024-2A-ATMN



Prepared By:
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Figure 3-2e
 Sampling Results For Area 1 - TPH DRO
 St. Louis Bay
 Duluth, St. Louis County, Minnesota

SLB10-1-21 10/15/10

Depth	Parameter	Result	Units
0-6	DRO	86	mg/kg
0-6	DRO	68	mg/kg

SLB10-1-27 10/15/10

Depth	Parameter	Result	Units
0-6	DRO	40	mg/kg
0-6	DRO	34	mg/kg

SLB10-1-24 10/15/10

Depth	Parameter	Result	Units
0-6	DRO	26	mg/kg
0-6	DRO	32	mg/kg
0-12	DRO	80	mg/kg
12-24	DRO	32	mg/kg

SLB10-1-25 10/15/10

Depth	Parameter	Result	Units
0-6	DRO	69	mg/kg
0-6	DRO	110	mg/kg
0-12	DRO	110	mg/kg
12-36	DRO	45	mg/kg
36-60	DRO	560	mg/kg
60-84	DRO	620	mg/kg
84-116	DRO	39	mg/kg

SLB10-1-28 10/13/10

Depth	Parameter	Result	Units
0-6	DRO	42	mg/kg
0-6	DRO	42	mg/kg
0-12	DRO	96	mg/kg
12-36	DRO	23	mg/kg
60-84	DRO	8	mg/kg

SLB10-1-22 10/15/10

Depth	Parameter	Result	Units
0-6	DRO	84	mg/kg
0-6	DRO	71	mg/kg

SLB10-1-20 10/15/10

Depth	Parameter	Result	Units
0-6	DRO	71	mg/kg

SLB10-1-32 10/16/10

Depth	Parameter	Result	Units
0-6	DRO	90	mg/kg
0-6	DRO	72	mg/kg
0-20	DRO	59	mg/kg

SLB10-1-29 10/13/10

Depth	Parameter	Result	Units
0-12	DRO	24	mg/kg
12-36	DRO	38	mg/kg

SLB10-1-26 10/15/10

Depth	Parameter	Result	Units
0-6	DRO	66	mg/kg
0-12	DRO	270	mg/kg

SLB10-1-23 10/15/10

Depth	Parameter	Result	Units
0-6	DRO	110	mg/kg
0-6	DRO	190	mg/kg

SLB10-1-38 10/15/10

Depth	Parameter	Result	Units
0-6	DRO	90	mg/kg
0-12	DRO	110	mg/kg

SLB10-1-33 10/13/10

Depth	Parameter	Result	Units
0-6	DRO	49	mg/kg
0-12	DRO	72	mg/kg
12-36	DRO	30	mg/kg

SLB10-1-30 10/16/10

Depth	Parameter	Result	Units
0-6	DRO	15	mg/kg
0-6	DRO	13	mg/kg
0-10	DRO	76	mg/kg

SLB10-1-31 10/16/10

Depth	Parameter	Result	Units
0-6	DRO	11	mg/kg
0-13	DRO	22	mg/kg

SLB10-1-34 10/14/10

Depth	Parameter	Result	Units
0-6	DRO	84 B	mg/kg
0-6	DRO	80 B	mg/kg
0-17	DRO	28	mg/kg

SLB10-1-39 10/13/10

Depth	Parameter	Result	Units
0-6	DRO	60	mg/kg
0-6	DRO	60	mg/kg
0-12	DRO	120	mg/kg
12-36	DRO	120	mg/kg
36-60	DRO	150	mg/kg
60-84	DRO	180	mg/kg
84-115	DRO	51	mg/kg

SLB10-1-37 10/16/10

Depth	Parameter	Result	Units
0-18	DRO	32	mg/kg

SLB10-1-35 10/16/10

Depth	Parameter	Result	Units
0-6	DRO	200	mg/kg
0-16	DRO	510	mg/kg

SLB10-1-45 10/13/10

Depth	Parameter	Result	Units
0-6	DRO	11	mg/kg
0-12	DRO	24	mg/kg
12-36	DRO	35	mg/kg
36-60	DRO	48	mg/kg
60-84	DRO	15	mg/kg

SLB10-1-40 10/15/10

Depth	Parameter	Result	Units
0-6	DRO	13	mg/kg

SLB10-1-36 10/16/10

Depth	Parameter	Result	Units
0-6	DRO	67	mg/kg
0-6	DRO	51	mg/kg
0-15	DRO	53	mg/kg

SLB10-1-44 10/16/10

Depth	Parameter	Result	Units
0-6	DRO	17	mg/kg

SLB10-1-50 10/13/10

Depth	Parameter	Result	Units
0-6	DRO	54	mg/kg
0-6	DRO	33	mg/kg
0-12	DRO	19	mg/kg
12-36	DRO	14	mg/kg

SLB10-1-46 10/12/10

Depth	Parameter	Result	Units
0-6	DRO	110	mg/kg
0-6	DRO	470	mg/kg
0-12	DRO	64	mg/kg

SLB10-1-47 10/15/10

Depth	Parameter	Result	Units
0-6	DRO	76	mg/kg

SLB10-1-48 10/13/10

Depth	Parameter	Result	Units
0-6	DRO	61	mg/kg
0-6	DRO	47	mg/kg
0-12	DRO	10	mg/kg

SLB10-1-55 10/13/10

Depth	Parameter	Result	Units
0-6	DRO	44	mg/kg
0-6	DRO	20	mg/kg
0-12	DRO	36	mg/kg
12-36	DRO	28	mg/kg
36-60	DRO	42	mg/kg
60-84	DRO	10	mg/kg

SLB10-1-51 10/12/10

Depth	Parameter	Result	Units
0-6	DRO	34	mg/kg
0-12	DRO	15	mg/kg

SLB10-1-52 10/15/10

Depth	Parameter	Result	Units
0-6	DRO	91	mg/kg
0-6	DRO	41	mg/kg
0-12	DRO	100	mg/kg
12-24	DRO	160	mg/kg

SLB10-1-53 10/15/10

Depth	Parameter	Result	Units
0-6	DRO	57	mg/kg
0-6	DRO	39	mg/kg
0-12	DRO	40	mg/kg
12-26	DRO	9	mg/kg

SLB10-1-56 10/07/10

Depth	Parameter	Result	Units
0-6	DRO	29	mg/kg
0-6	DRO	23	mg/kg
0-12	DRO	18	mg/kg
12-36	DRO	80	mg/kg
36-60	DRO	110	mg/kg
60-86	DRO	42	mg/kg

SLB10-1-57 10/12/10

Depth	Parameter	Result	Units
36-60	DRO	24	mg/kg

SLB10-1-54 10/15/10

Depth	Parameter	Result	Units
0-6	DRO	69	mg/kg
0-12	DRO	31	mg/kg

SLB10-1-60 10/14/10

Depth	Parameter	Result	Units
0-6	DRO	91 B	mg/kg
0-12	DRO	58 B	mg/kg
12-36	DRO	58	mg/kg
36-60	DRO	57	mg/kg
60-84	DRO	230	mg/kg
84-106	DRO	240 B	mg/kg

SLB10-1-49 10/13/10

Depth	Parameter	Result	Units
0-6	DRO	14	mg/kg
0-12	DRO	17	mg/kg
12-36	DRO	16	mg/kg
36-53	DRO	13	mg/kg

SLB10-1-61 10/14/10

Depth	Parameter	Result	Units
0-6	DRO	81 B	mg/kg
0-6	DRO	58 B	mg/kg
0-12	DRO	75 B	mg/kg
12-36	DRO	39 B	mg/kg
36-60	DRO	99 B	mg/kg
60-79	DRO	160 B	mg/kg

SLB10-1-62 10/14/10

Depth	Parameter	Result	Units
0-6	DRO	56 B	mg/kg
0-6	DRO	55 B	mg/kg
0-12	DRO	33	mg/kg

SLB10-1-63 10/07/10

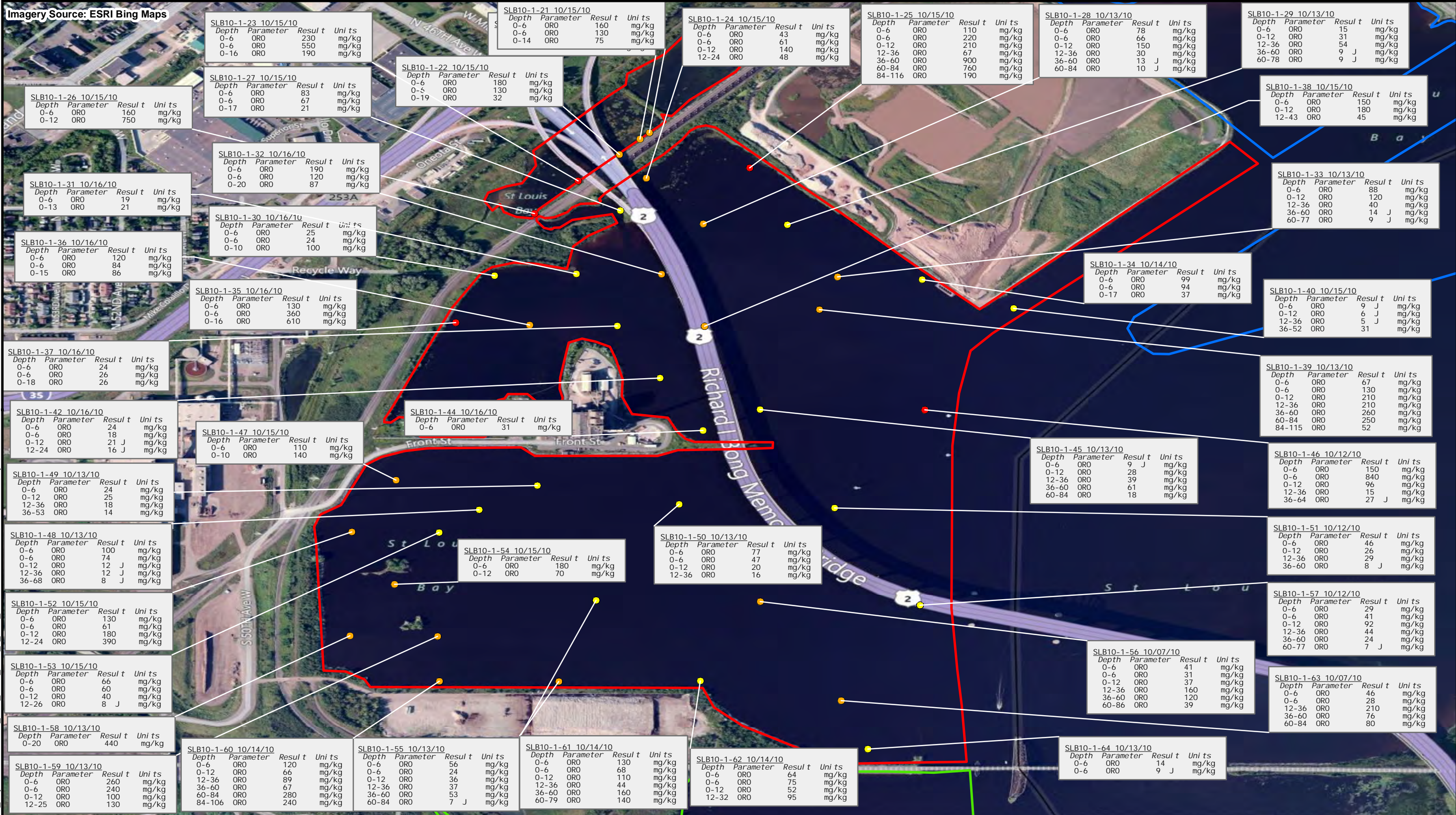
Depth	Parameter	Result	Units
0-6	DRO	34	mg/kg
0-6	DRO	24	mg/kg
0-12	DRO	39	mg/kg
12-36	DRO	190	mg/kg
36-60	DRO	73	mg/kg
60-84	DRO	86 J	mg/kg

SLB10-1-59 10/13/10

Depth	Parameter	Result	Units
0-6	DRO	87 B	mg/kg
0-6	DRO	93 B	mg/kg
0-12	DRO	35	mg/kg
12-25	DRO	60 B	mg/kg

FILE: D:\St_Louis_Bay\mxd\SAR\STLB_SAR_F3-2f_Area_1_TPH_ORO.mxd 2/7/2012 11:51:59 AM mejlacm

Imagery Source: ESRI Bing Maps



Legend

TPH ORO (ug/kg)

- 100 - 500
- > 500
- 0 - 100

Focus Area 1
 Focus Area 2
 Focus Area 3

● Non-Detect
● 0 - 100

0 700
 Feet

Prepared For:
US EPA Region V
 Contract No.: EP-S5-06-04
 TDD: S05-0008-1004-031
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Prepared By:
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Figure 3-2f
 Sampling Results For Area 1 - TPH ORO
 St. Louis Bay
 Duluth, St. Louis County, Minnesota

Imagery Source: ESRI Bing Maps



FILE: D:\SL_Louis_Bay\mxd\SAR\STLB_SAR_F3-2g_Area_1_TCDDTEQ.mxd 2/2/2012 5:02:33 PM mejaacm

Legend

- Level II Exceedances
- Level I Exceedances
- No Exceedances
- ▭ Focus Area 1
- ▭ Focus Area 2
- ▭ Focus Area 3

Number in Criteria Column Reflects the Following:
 1 - Result Exceeds St. Louis River AOC SQT Level I Criteria
 2 - Result Exceeds St. Louis River AOC SQT Level II Criteria
 All Level II Exceeds are **Bold and Red**

0 1,000 Feet

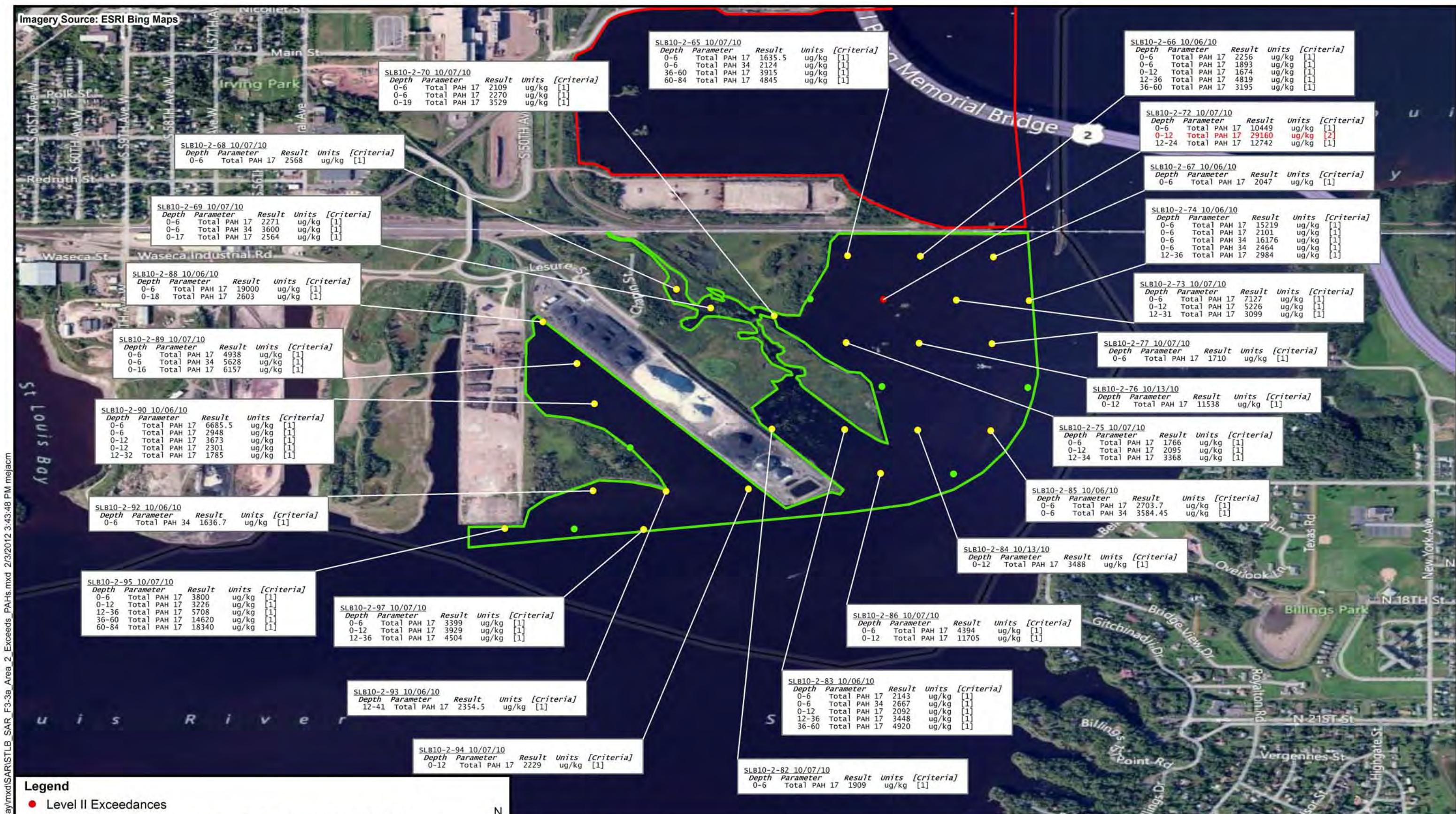


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Figure 3-2g
 Sampling Results Exceeding the St. Louis River AOC
 Sediment Quality Targets for Area 1 – TCDD/TEQ Results
 St. Louis Bay
 Duluth, St. Louis County, Minnesota



FILE: D:\St_Louis_Bay\mxd\SAR\STLB_SAR_F3-3a_Area_2_Exceeds_PAHs.mxd 2/3/2012 3:43:48 PM mlejarc


Legend

- Level II Exceedances
- Level I Exceedances
- No Exceedances
- ▭ Focus Area 1
- ▭ Focus Area 2
- ▭ Focus Area 3

0 1,000 Feet



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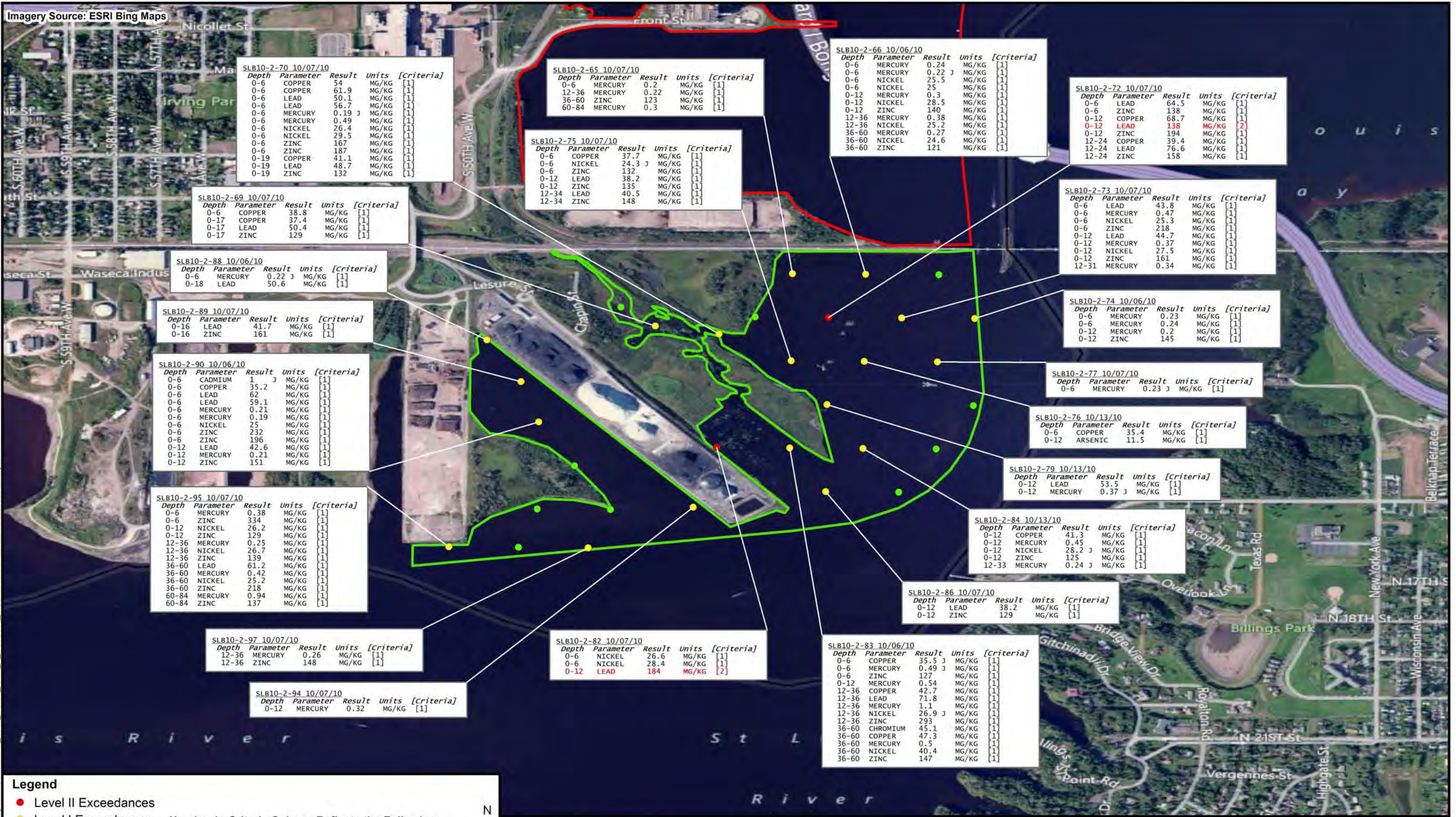


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 Chicago, Illinois 60606

Figure 3-3a
 Sampling Results Exceeding the St. Louis River AOC Sediment Quality Targets for Area 2 – Total PAHs
 St. Louis Bay
 Duluth, St. Louis County, Minnesota

Imagery Source: ESRI Bing Maps

FILE: D:\St_Louis_Bay\mxd\SAR\STLB_SAR_F3-3b_Area_2_Exceeds_Metals.mxd 2/3/2012 3:45:36 PM mjlacm



SLB10-2-70 10/07/10

Depth	Parameter	Result	Units	[Criteria]
0-6	COPPER	54	MG/KG	[1]
0-6	COPPER	61.9	MG/KG	[1]
0-6	LEAD	50.1	MG/KG	[1]
0-6	LEAD	56.7	MG/KG	[1]
0-6	MERCURY	0.19	MG/KG	[1]
0-6	MERCURY	0.49	MG/KG	[1]
0-6	NICKEL	26.4	MG/KG	[1]
0-6	NICKEL	29.5	MG/KG	[1]
0-6	ZINC	167	MG/KG	[1]
0-6	ZINC	187	MG/KG	[1]
0-19	COPPER	41.1	MG/KG	[1]
0-19	LEAD	48.7	MG/KG	[1]
0-19	ZINC	132	MG/KG	[1]

SLB10-2-65 10/07/10

Depth	Parameter	Result	Units	[Criteria]
0-6	COPPER	54	MG/KG	[1]
0-6	MERCURY	0.2	MG/KG	[1]
12-36	MERCURY	0.22	MG/KG	[1]
36-60	ZINC	123	MG/KG	[1]
60-84	MERCURY	0.3	MG/KG	[1]

SLB10-2-75 10/07/10

Depth	Parameter	Result	Units	[Criteria]
0-6	COPPER	37.7	MG/KG	[1]
0-6	NICKEL	24.3	MG/KG	[1]
0-6	ZINC	132	MG/KG	[1]
0-12	LEAD	38.2	MG/KG	[1]
0-12	ZINC	135	MG/KG	[1]
12-34	LEAD	40.5	MG/KG	[1]
12-34	ZINC	148	MG/KG	[1]

SLB10-2-66 10/06/10

Depth	Parameter	Result	Units	[Criteria]
0-6	MERCURY	0.24	MG/KG	[1]
0-6	MERCURY	0.22	MG/KG	[1]
0-6	NICKEL	25.5	MG/KG	[1]
0-6	NICKEL	25	MG/KG	[1]
0-12	MERCURY	0.3	MG/KG	[1]
0-12	NICKEL	28.5	MG/KG	[1]
0-12	ZINC	140	MG/KG	[1]
12-36	MERCURY	0.38	MG/KG	[1]
12-36	NICKEL	25.2	MG/KG	[1]
36-60	MERCURY	0.27	MG/KG	[1]
36-60	NICKEL	24.6	MG/KG	[1]
36-60	ZINC	121	MG/KG	[1]

SLB10-2-72 10/07/10

Depth	Parameter	Result	Units	[Criteria]
0-6	LEAD	64.5	MG/KG	[1]
0-6	ZINC	138	MG/KG	[1]
0-12	COPPER	68.7	MG/KG	[1]
0-12	LEAD	138	MG/KG	[2]
0-12	ZINC	194	MG/KG	[1]
12-24	COPPER	39.4	MG/KG	[1]
12-24	LEAD	76.6	MG/KG	[1]
12-24	ZINC	158	MG/KG	[1]

SLB10-2-73 10/07/10

Depth	Parameter	Result	Units	[Criteria]
0-6	LEAD	43.8	MG/KG	[1]
0-6	MERCURY	0.47	MG/KG	[1]
0-6	NICKEL	25.3	MG/KG	[1]
0-6	ZINC	218	MG/KG	[1]
0-12	LEAD	44.7	MG/KG	[1]
0-12	MERCURY	0.37	MG/KG	[1]
0-12	NICKEL	27.5	MG/KG	[1]
0-12	ZINC	161	MG/KG	[1]
12-31	MERCURY	0.34	MG/KG	[1]

SLB10-2-74 10/06/10

Depth	Parameter	Result	Units	[Criteria]
0-6	MERCURY	0.23	MG/KG	[1]
0-6	MERCURY	0.24	MG/KG	[1]
0-12	MERCURY	0.2	MG/KG	[1]
0-12	ZINC	145	MG/KG	[1]

SLB10-2-77 10/07/10

Depth	Parameter	Result	Units	[Criteria]
0-6	MERCURY	0.23	MG/KG	[1]

SLB10-2-76 10/13/10

Depth	Parameter	Result	Units	[Criteria]
0-6	COPPER	35.4	MG/KG	[1]
0-12	ARSENIC	11.5	MG/KG	[1]

SLB10-2-79 10/13/10

Depth	Parameter	Result	Units	[Criteria]
0-12	LEAD	53.5	MG/KG	[1]
0-12	MERCURY	0.37	MG/KG	[1]

SLB10-2-84 10/13/10

Depth	Parameter	Result	Units	[Criteria]
0-12	COPPER	41.3	MG/KG	[1]
0-12	MERCURY	0.45	MG/KG	[1]
0-12	NICKEL	28.2	MG/KG	[1]
0-12	ZINC	125	MG/KG	[1]
12-33	MERCURY	0.24	MG/KG	[1]

SLB10-2-86 10/07/10

Depth	Parameter	Result	Units	[Criteria]
0-12	LEAD	38.2	MG/KG	[1]
0-12	ZINC	129	MG/KG	[1]

SLB10-2-83 10/06/10

Depth	Parameter	Result	Units	[Criteria]
0-6	COPPER	35.5	MG/KG	[1]
0-6	MERCURY	0.49	MG/KG	[1]
0-6	ZINC	127	MG/KG	[1]
0-12	MERCURY	0.54	MG/KG	[1]
12-36	COPPER	42.7	MG/KG	[1]
12-36	LEAD	71.8	MG/KG	[1]
12-36	MERCURY	1.1	MG/KG	[1]
12-36	NICKEL	26.9	MG/KG	[1]
12-36	ZINC	293	MG/KG	[1]
36-60	CHROMIUM	45.1	MG/KG	[1]
36-60	COPPER	47.3	MG/KG	[1]
36-60	MERCURY	0.5	MG/KG	[1]
36-60	NICKEL	40.4	MG/KG	[1]
36-60	ZINC	147	MG/KG	[1]

SLB10-2-82 10/07/10

Depth	Parameter	Result	Units	[Criteria]
0-6	NICKEL	26.6	MG/KG	[1]
0-6	NICKEL	28.4	MG/KG	[1]
0-12	LEAD	184	MG/KG	[2]

SLB10-2-97 10/07/10

Depth	Parameter	Result	Units	[Criteria]
12-36	MERCURY	0.26	MG/KG	[1]
12-36	ZINC	148	MG/KG	[1]

SLB10-2-94 10/07/10

Depth	Parameter	Result	Units	[Criteria]
0-12	MERCURY	0.32	MG/KG	[1]

SLB10-2-88 10/06/10

Depth	Parameter	Result	Units	[Criteria]
0-6	MERCURY	0.22	MG/KG	[1]
0-18	LEAD	50.6	MG/KG	[1]

SLB10-2-89 10/07/10

Depth	Parameter	Result	Units	[Criteria]
0-16	LEAD	41.7	MG/KG	[1]
0-16	ZINC	161	MG/KG	[1]

SLB10-2-90 10/06/10

Depth	Parameter	Result	Units	[Criteria]
0-6	CADMIUM	1	MG/KG	[1]
0-6	COPPER	35.2	MG/KG	[1]
0-6	LEAD	62	MG/KG	[1]
0-6	LEAD	59.1	MG/KG	[1]
0-6	MERCURY	0.21	MG/KG	[1]
0-6	MERCURY	0.19	MG/KG	[1]
0-6	NICKEL	25	MG/KG	[1]
0-6	ZINC	232	MG/KG	[1]
0-6	ZINC	196	MG/KG	[1]
0-12	LEAD	42.6	MG/KG	[1]
0-12	MERCURY	0.21	MG/KG	[1]
0-12	ZINC	151	MG/KG	[1]

SLB10-2-95 10/07/10

Depth	Parameter	Result	Units	[Criteria]
0-6	MERCURY	0.38	MG/KG	[1]
0-6	ZINC	334	MG/KG	[1]
0-12	NICKEL	26.2	MG/KG	[1]
0-12	ZINC	129	MG/KG	[1]
12-36	MERCURY	0.25	MG/KG	[1]
12-36	NICKEL	26.7	MG/KG	[1]
12-36	ZINC	139	MG/KG	[1]
36-60	LEAD	61.2	MG/KG	[1]
36-60	MERCURY	0.42	MG/KG	[1]
36-60	NICKEL	25.2	MG/KG	[1]
36-60	ZINC	218	MG/KG	[1]
60-84	MERCURY	0.94	MG/KG	[1]
60-84	ZINC	137	MG/KG	[1]

- Legend**
- Level II Exceedances
 - Level I Exceedances
 - No Exceedances
 - ▭ Focus Area 1
 - ▭ Focus Area 2
 - ▭ Focus Area 3

Number in Criteria Column Reflects the Following:
 1 - Result Exceeds St. Louis River AOC SQT Level I Criteria
 2 - Result Exceeds St. Louis River AOC SQT Level II Criteria
 All Level II Exceeds are **Bold and Red**



Prepared For:
US EPA Region V
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Prepared By:
WESTON SOLUTIONS, INC.
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 Chicago, Illinois 60606

Figure 3-3b
 Sampling Results Exceeding the St. Louis River AOC
 Sediment Quality Targets for Area 2 – TAL Metals
 St. Louis Bay
 Duluth, St. Louis County, Minnesota

Imagery Source: ESRI Bing Maps



FILE: D:\SL_Louis_Bay\mxd\SAR\STLB_SAR_F3-3c_Area_2_Exceeds_PCB.mxd 2/2/2012 4:05:15 PM mejaacm

Legend

- Level II Exceedances
- Level I Exceedances
- No Exceedances
- ▭ Focus Area 1
- ▭ Focus Area 2
- ▭ Focus Area 3

Number in Criteria Column Reflects the Following:
 1 - Result Exceeds St. Louis River AOC SQT Level I Criteria
 2 - Result Exceeds St. Louis River AOC SQT Level II Criteria
 All Level II Exceeds are **Bold and Red**

0 1,000 Feet



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Prepared By:
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 20 N. Wacker Drive, Suite 1210
 Chicago, Illinois 60606

Figure 3-3c
 Sampling Results Exceeding the St. Louis River AOC
 Sediment Quality Targets for Area 2 – Total PCBs
 St. Louis Bay
 Duluth, St. Louis County, Minnesota

Imagery Source: ESRI Bing Maps



FILE: D:\St. Louis Bay\mxd\SAR\STLB_SAR_F3-3d Area 2 Exceeds Pest.mxd 12/20/2011 12:57:29 PM wjldakon

Legend

- Level I & II Exceedances □ Focus Area 1
- Level I Exceedances Only □ Focus Area 2
- No Exceedances □ Focus Area 3



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US EPA Region V
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 DCN: 1024-2A-ATMN



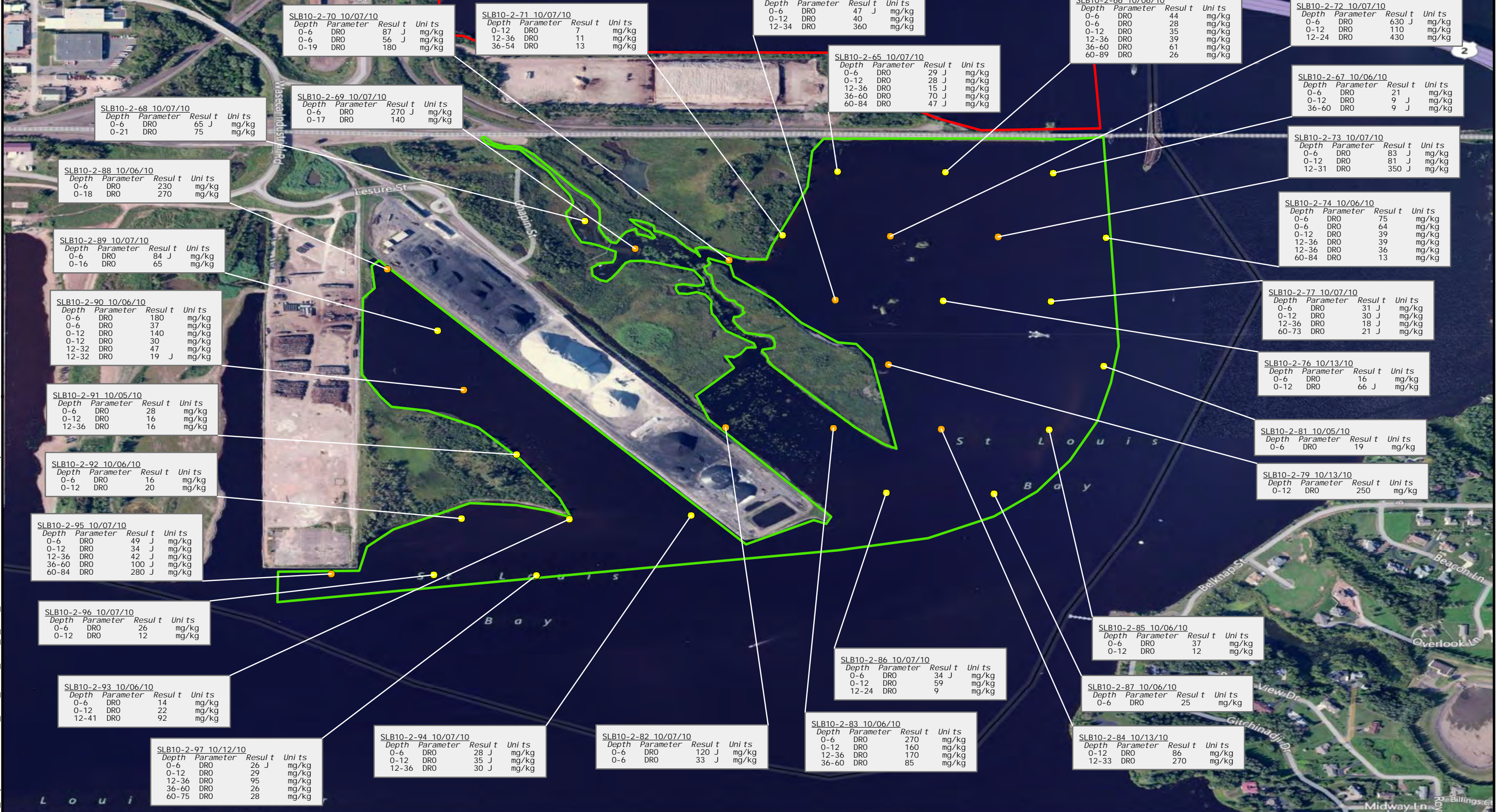
Prepared By:
WESTON SOLUTIONS, INC.
 20 N. Wacker Drive, Suite 1210
 Chicago, Illinois 60606

Figure 3-3d

Sampling Results Exceeding the St. Louis River AOC
 Sediment Quality Targets for Area 2 – TCL Pesticides
 St. Louis Bay
 Duluth, St. Louis County, Minnesota

FILE: D:\St. Louis_Bay\mxd\SAR\STLB_Area_2_IPH_DRO.mxd 2/7/2012 12:03:25 PM me/ajcm

Imagery Source: ESRI Bing Maps



Legend

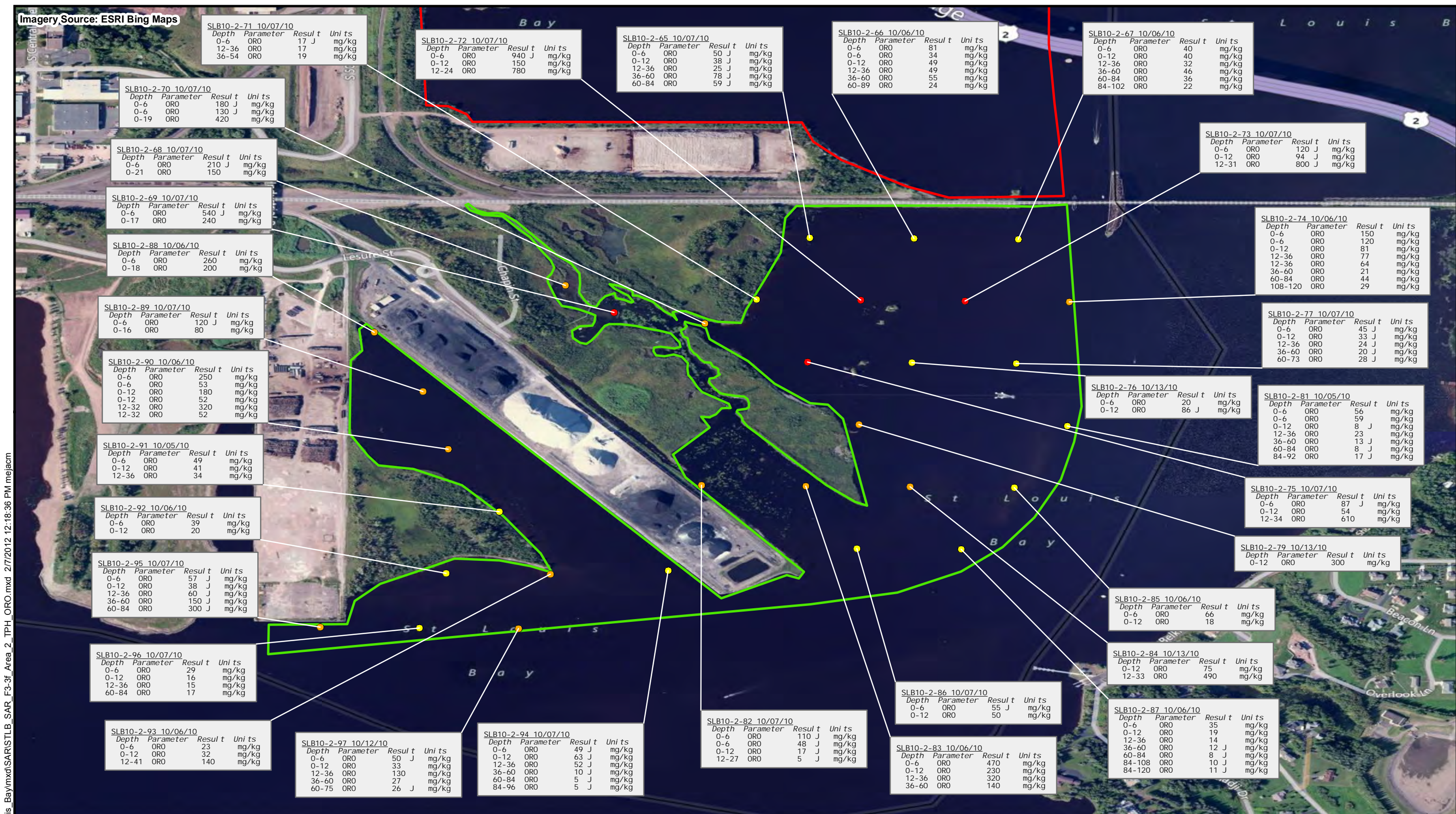
- TPH DRO (ug/kg)
- 100 - 500
- > 500
- 0 - 100
- Focus Area 1
- Focus Area 2
- Focus Area 3

0 700 Feet

Prepared For:
US EPA Region V
 Contract No.: EP-S5-06-04
 TDD: S05-0008-1004-031
 DCN: 1024-2A-ATMN

Prepared By:
WESTON SOLUTIONS, INC.
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 Chicago, Illinois 60606

Figure 3-3e
 Sampling Results For Area 2 - TPH DRO
 St. Louis Bay
 Duluth, St. Louis County, Minnesota



FILE: D:\St_Louis_Bay\mxd\SAR\STLB_SAR_F3-3f_Area_2_TPH_ORO.mxd 2/7/2012 12:18:36 PM meajacm

Legend


TPH ORO (ug/kg)

- 100 - 500
- > 500
- 0 - 100
- Focus Area 1
- Focus Area 2
- Focus Area 3

0 700 Feet



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 Contract No.: EP-S5-06-04
 TDD: S05-0008-1004-031
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 Chicago, Illinois 60606

Figure 3-3f
 Sampling Results For Area 2 - TPH ORO
 St. Louis Bay
 Duluth, St. Louis County, Minnesota

SLB10-2-71 10/07/10

Depth	Parameter	Result	Units
0-6	ORO	17	J mg/kg
12-36	ORO	17	mg/kg
36-54	ORO	19	mg/kg

SLB10-2-72 10/07/10

Depth	Parameter	Result	Units
0-6	ORO	940	J mg/kg
0-12	ORO	150	mg/kg
12-24	ORO	780	mg/kg

SLB10-2-65 10/07/10

Depth	Parameter	Result	Units
0-6	ORO	50	J mg/kg
0-12	ORO	38	J mg/kg
12-36	ORO	25	J mg/kg
36-60	ORO	78	J mg/kg
60-84	ORO	59	J mg/kg

SLB10-2-66 10/06/10

Depth	Parameter	Result	Units
0-6	ORO	81	mg/kg
0-6	ORO	34	mg/kg
0-12	ORO	49	mg/kg
12-36	ORO	49	mg/kg
36-60	ORO	55	mg/kg
60-89	ORO	24	mg/kg

SLB10-2-67 10/06/10

Depth	Parameter	Result	Units
0-6	ORO	40	mg/kg
0-12	ORO	40	mg/kg
12-36	ORO	32	mg/kg
36-60	ORO	46	mg/kg
60-84	ORO	36	mg/kg
84-102	ORO	22	mg/kg

SLB10-2-73 10/07/10

Depth	Parameter	Result	Units
0-6	ORO	120	J mg/kg
0-12	ORO	94	J mg/kg
12-31	ORO	800	J mg/kg

SLB10-2-74 10/06/10

Depth	Parameter	Result	Units
0-6	ORO	150	mg/kg
0-6	ORO	120	mg/kg
0-12	ORO	81	mg/kg
12-36	ORO	77	mg/kg
12-36	ORO	64	mg/kg
36-60	ORO	21	mg/kg
60-84	ORO	44	mg/kg
108-120	ORO	29	mg/kg

SLB10-2-77 10/07/10

Depth	Parameter	Result	Units
0-6	ORO	45	J mg/kg
0-12	ORO	33	J mg/kg
12-36	ORO	24	J mg/kg
36-60	ORO	20	J mg/kg
60-73	ORO	28	J mg/kg

SLB10-2-76 10/13/10

Depth	Parameter	Result	Units
0-6	ORO	20	mg/kg
0-12	ORO	86	J mg/kg

SLB10-2-81 10/05/10

Depth	Parameter	Result	Units
0-6	ORO	56	mg/kg
0-6	ORO	59	mg/kg
0-12	ORO	8	J mg/kg
12-36	ORO	23	mg/kg
36-60	ORO	13	J mg/kg
60-84	ORO	8	J mg/kg
84-92	ORO	17	J mg/kg

SLB10-2-75 10/07/10

Depth	Parameter	Result	Units
0-6	ORO	87	J mg/kg
0-12	ORO	54	mg/kg
12-34	ORO	610	mg/kg

SLB10-2-79 10/13/10

Depth	Parameter	Result	Units
0-12	ORO	300	mg/kg

SLB10-2-85 10/06/10

Depth	Parameter	Result	Units
0-6	ORO	66	mg/kg
0-12	ORO	18	mg/kg

SLB10-2-84 10/13/10

Depth	Parameter	Result	Units
0-12	ORO	75	mg/kg
12-33	ORO	490	mg/kg

SLB10-2-86 10/07/10

Depth	Parameter	Result	Units
0-6	ORO	55	J mg/kg
0-12	ORO	50	mg/kg

SLB10-2-87 10/06/10

Depth	Parameter	Result	Units
0-6	ORO	35	mg/kg
0-12	ORO	19	mg/kg
12-36	ORO	14	mg/kg
36-60	ORO	12	J mg/kg
60-84	ORO	8	J mg/kg
84-108	ORO	10	J mg/kg
84-120	ORO	11	J mg/kg

SLB10-2-82 10/07/10

Depth	Parameter	Result	Units
0-6	ORO	110	J mg/kg
0-6	ORO	48	J mg/kg
0-12	ORO	17	J mg/kg
12-27	ORO	5	J mg/kg

SLB10-2-83 10/06/10

Depth	Parameter	Result	Units
0-6	ORO	470	mg/kg
0-12	ORO	230	mg/kg
12-36	ORO	320	mg/kg
36-60	ORO	140	mg/kg

SLB10-2-96 10/07/10

Depth	Parameter	Result	Units
0-6	ORO	29	mg/kg
0-12	ORO	16	mg/kg
12-36	ORO	15	mg/kg
60-84	ORO	17	mg/kg

SLB10-2-95 10/07/10

Depth	Parameter	Result	Units
0-6	ORO	57	J mg/kg
0-12	ORO	38	J mg/kg
12-36	ORO	60	J mg/kg
36-60	ORO	150	J mg/kg
60-84	ORO	300	J mg/kg

SLB10-2-91 10/05/10

Depth	Parameter	Result	Units
0-6	ORO	49	mg/kg
0-12	ORO	41	mg/kg
12-36	ORO	34	mg/kg

SLB10-2-90 10/06/10

Depth	Parameter	Result	Units
0-6	ORO	250	mg/kg
0-6	ORO	53	mg/kg
0-12	ORO	180	mg/kg
0-12	ORO	52	mg/kg
12-32	ORO	320	mg/kg
12-32	ORO	52	mg/kg

SLB10-2-89 10/07/10

Depth	Parameter	Result	Units
0-6	ORO	120	J mg/kg
0-16	ORO	80	mg/kg

SLB10-2-88 10/06/10

Depth	Parameter	Result	Units
0-6	ORO	260	mg/kg
0-18	ORO	200	mg/kg

SLB10-2-69 10/07/10

Depth	Parameter	Result	Units
0-6	ORO	540	J mg/kg
0-17	ORO	240	mg/kg

SLB10-2-68 10/07/10

Depth	Parameter	Result	Units
0-6	ORO	210	J mg/kg
0-21	ORO	150	mg/kg

SLB10-2-70 10/07/10

Depth	Parameter	Result	Units
0-6	ORO	180	J mg/kg
0-6	ORO	130	mg/kg
0-19	ORO	420	mg/kg

SLB10-2-97 10/12/10

Depth	Parameter	Result	Units
0-6	ORO	50	J mg/kg
0-12	ORO	33	mg/kg
12-36	ORO	130	mg/kg
36-60	ORO	27	mg/kg
60-75	ORO	26	J mg/kg

SLB10-2-94 10/07/10

Depth	Parameter	Result	Units
0-6	ORO	49	J mg/kg
0-12	ORO	63	J mg/kg
12-36	ORO	52	J mg/kg
36-60	ORO	10	J mg/kg
60-84	ORO	5	J mg/kg
84-96	ORO	5	J mg/kg

Imagery Source: ESRI Bing Maps



FILE: D:\SL_Louis_Bay\mxd\SAR\STLB_SAR_F3-3g_Area_2_TCDDTEQ.mxd 2/2/2012 4:58:22 PM mjlacm

Legend

- Level II Exceedances
- Level I Exceedances
- No Exceedances
- Focus Area 1
- Focus Area 2
- Focus Area 3

Number in Criteria Column Reflects the Following:
 1 - Result Exceeds St. Louis River AOC SQT Level I Criteria
 2 - Result Exceeds St. Louis River AOC SQT Level II Criteria
 All Level II Exceeds are **Bold and Red**



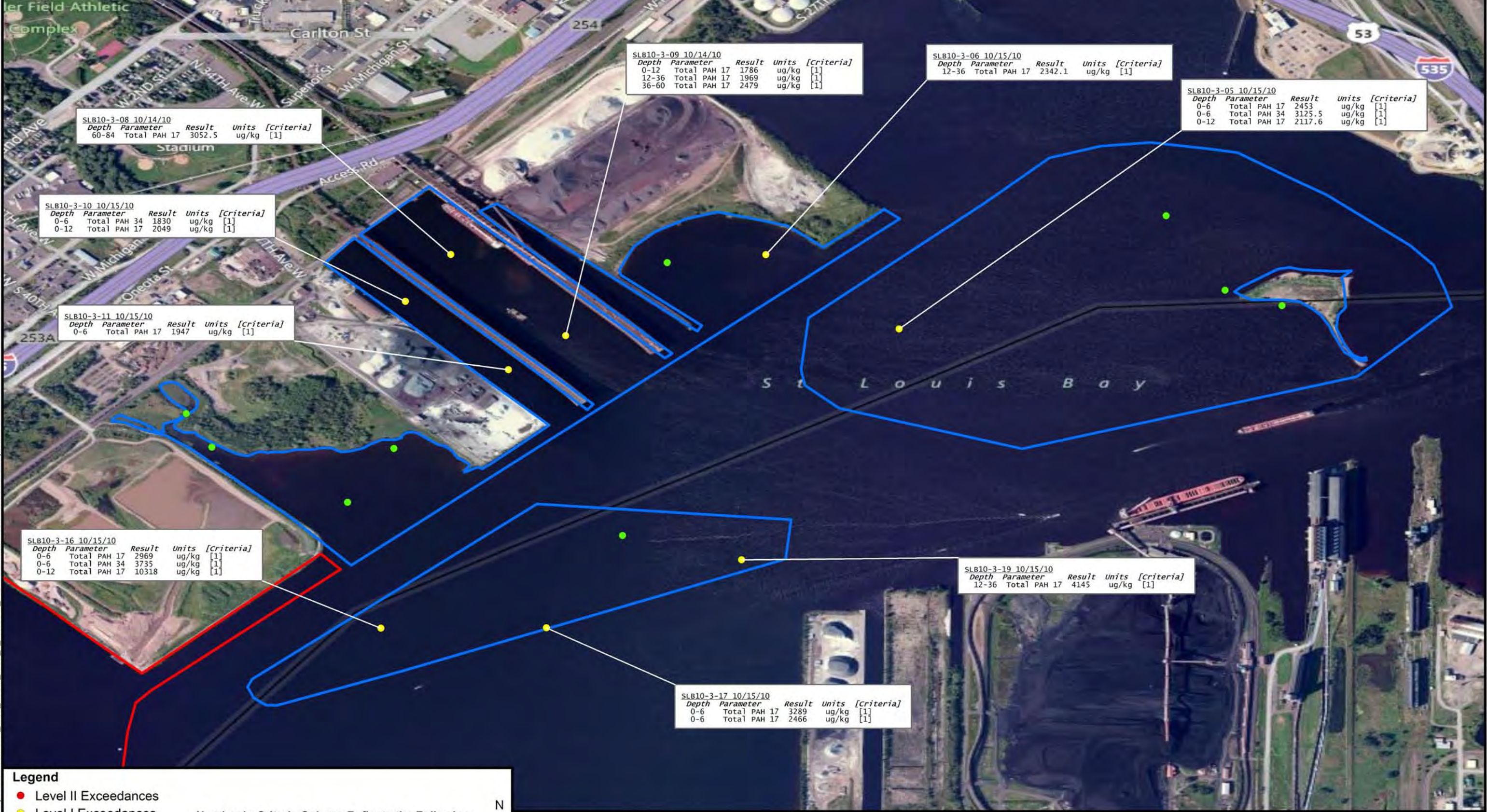
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Figure 3-3g
 Sampling Results Exceeding the St. Louis River AOC
 Sediment Quality Targets for Area 2 – TCDD/TEQ Results
 St. Louis Bay
 Duluth, St. Louis County, Minnesota

Imagery Source: ESRI Bing Maps



FILE: D:\St_Louis_Bay\mxd\SAR\STL_B_SAR_F3-4a_Area_3_Exceeds_PAHs.mxd 2/2/2012 1:48:20 PM mejacm



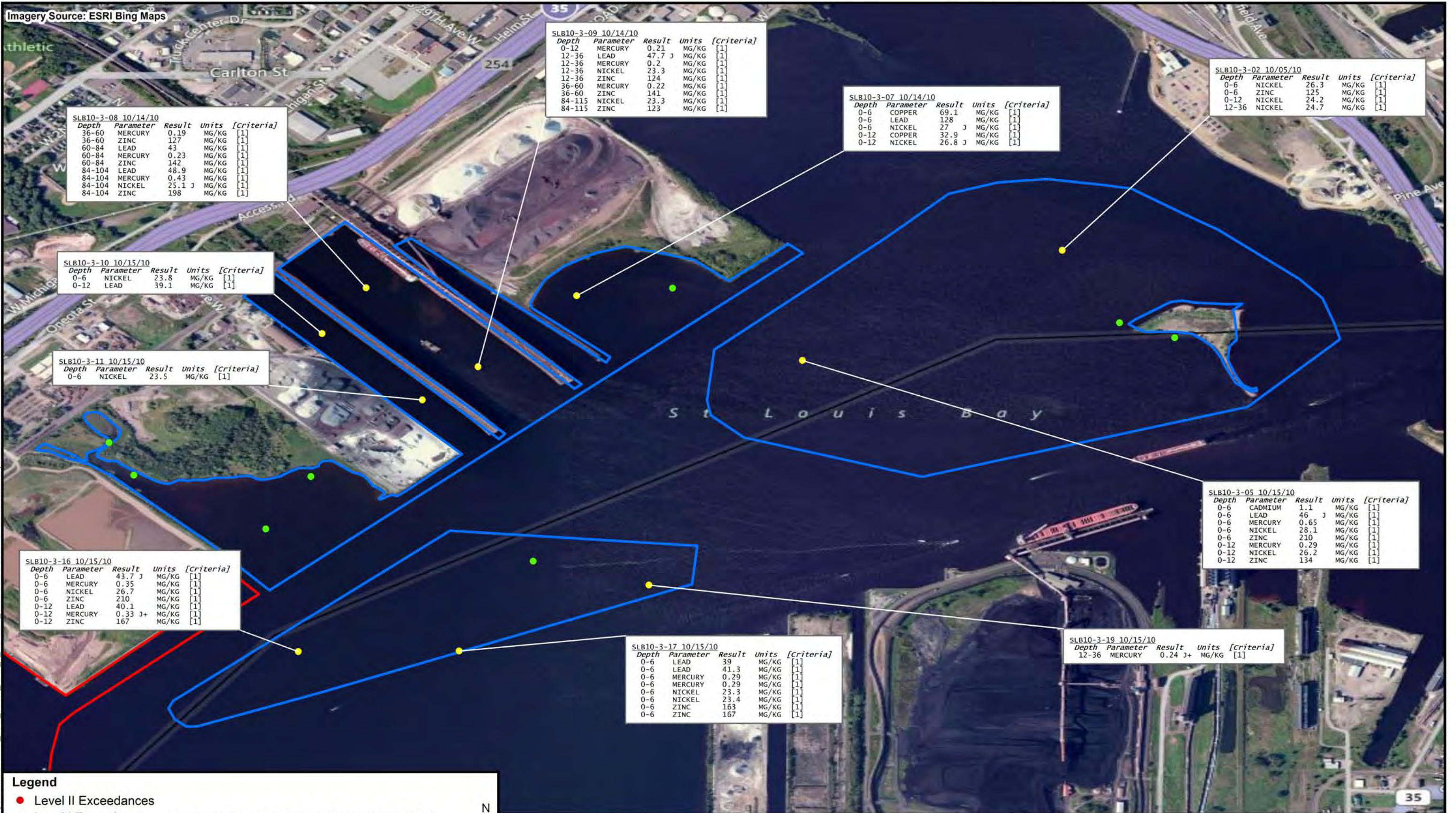
Prepared For:
US EPA Region V
 Contract No.: EP-S5-06-04
 TDD: S05-0008-1004-031
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Figure 3-4a
 Sampling Results Exceeding the St. Louis River AOC
 Sediment Quality Targets for Area 3 – Total PAHs
 St. Louis Bay
 Duluth, St. Louis County, Minnesota

Imagery Source: ESRI Bing Maps



SLB10-3-09 10/14/10

Depth	Parameter	Result	Units	[Criteria]
0-12	MERCURY	0.21	MG/KG	[1]
12-36	LEAD	47.7 J	MG/KG	[1]
12-36	MERCURY	0.2	MG/KG	[1]
12-36	NICKEL	23.3	MG/KG	[1]
12-36	ZINC	124	MG/KG	[1]
36-60	MERCURY	0.22	MG/KG	[1]
36-60	ZINC	141	MG/KG	[1]
84-115	NICKEL	23.3	MG/KG	[1]
84-115	ZINC	123	MG/KG	[1]

SLB10-3-02 10/05/10

Depth	Parameter	Result	Units	[Criteria]
0-6	NICKEL	26.3	MG/KG	[1]
0-6	ZINC	125	MG/KG	[1]
0-12	NICKEL	24.2	MG/KG	[1]
12-36	NICKEL	24.7	MG/KG	[1]

SLB10-3-07 10/14/10

Depth	Parameter	Result	Units	[Criteria]
0-6	COPPER	69.1	MG/KG	[1]
0-6	LEAD	128	MG/KG	[1]
0-6	NICKEL	27 J	MG/KG	[1]
0-12	COPPER	32.9	MG/KG	[1]
0-12	NICKEL	26.8 J	MG/KG	[1]

SLB10-3-08 10/14/10

Depth	Parameter	Result	Units	[Criteria]
36-60	MERCURY	0.19	MG/KG	[1]
36-60	ZINC	127	MG/KG	[1]
60-84	LEAD	43	MG/KG	[1]
60-84	MERCURY	0.23	MG/KG	[1]
60-84	ZINC	142	MG/KG	[1]
84-104	LEAD	48.9	MG/KG	[1]
84-104	MERCURY	0.43	MG/KG	[1]
84-104	NICKEL	25.1 J	MG/KG	[1]
84-104	ZINC	198	MG/KG	[1]

SLB10-3-10 10/15/10

Depth	Parameter	Result	Units	[Criteria]
0-6	NICKEL	23.8	MG/KG	[1]
0-12	LEAD	39.1	MG/KG	[1]

SLB10-3-11 10/15/10

Depth	Parameter	Result	Units	[Criteria]
0-6	NICKEL	23.5	MG/KG	[1]

SLB10-3-05 10/15/10

Depth	Parameter	Result	Units	[Criteria]
0-6	CADMIUM	1.1	MG/KG	[1]
0-6	LEAD	46 J	MG/KG	[1]
0-6	MERCURY	0.65	MG/KG	[1]
0-6	NICKEL	28.1	MG/KG	[1]
0-6	ZINC	210	MG/KG	[1]
0-12	MERCURY	0.29	MG/KG	[1]
0-12	NICKEL	26.2	MG/KG	[1]
0-12	ZINC	134	MG/KG	[1]

SLB10-3-16 10/15/10

Depth	Parameter	Result	Units	[Criteria]
0-6	LEAD	43.7 J	MG/KG	[1]
0-6	MERCURY	0.35	MG/KG	[1]
0-6	NICKEL	26.7	MG/KG	[1]
0-6	ZINC	210	MG/KG	[1]
0-12	LEAD	40.1	MG/KG	[1]
0-12	MERCURY	0.33 J+	MG/KG	[1]
0-12	ZINC	167	MG/KG	[1]

SLB10-3-17 10/15/10

Depth	Parameter	Result	Units	[Criteria]
0-6	LEAD	39	MG/KG	[1]
0-6	LEAD	41.3	MG/KG	[1]
0-6	MERCURY	0.29	MG/KG	[1]
0-6	MERCURY	0.29	MG/KG	[1]
0-6	NICKEL	23.3	MG/KG	[1]
0-6	NICKEL	23.4	MG/KG	[1]
0-6	ZINC	163	MG/KG	[1]
0-6	ZINC	167	MG/KG	[1]

SLB10-3-19 10/15/10

Depth	Parameter	Result	Units	[Criteria]
12-36	MERCURY	0.24 J+	MG/KG	[1]

Legend

- Level II Exceedances
- Level I Exceedances
- No Exceedances
- ▭ Focus Area 1
- ▭ Focus Area 2
- ▭ Focus Area 3

Number in Criteria Column Reflects the Following:
 1 - Result Exceeds St. Louis River AOC SQT Level I Criteria
 2 - Result Exceeds St. Louis River AOC SQT Level II Criteria
 All Level II Exceeds are **Bold and Red**



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Figure 3-4b
 Sampling Results Exceeding the St. Louis River AOC
 Sediment Quality Targets for Area 3 – TAL Metals
 St. Louis Bay
 Duluth, St. Louis County, Minnesota

Imagery Source: ESRI Bing Maps

SLB10-3-08	10/14/10	Depth	Parameter	Result	Units	[Criteria]
60-84	Total PCBs	62	ug/Kg	[1]		
84-104	Total PCBs	65	ug/Kg	[1]		

SLB10-3-05	10/15/10	Depth	Parameter	Result	Units	[Criteria]
0-6	Total PCB Congeners	171017	pg/g	[1]		

SLB10-3-16	10/15/10	Depth	Parameter	Result	Units	[Criteria]
0-6	Total PCB Congeners	181190	pg/g	[1]		

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Legend

- Level II Exceedances
- Level I Exceedances
- No Exceedances
- ▭ Focus Area 1
- ▭ Focus Area 2
- ▭ Focus Area 3

Number in Criteria Column Reflects the Following:
 1 - Result Exceeds St. Louis River AOC SQT Level I Criteria
 2 - Result Exceeds St. Louis River AOC SQT Level II Criteria
 All Level II Exceeds are **Bold and Red**

0 1,000 Feet



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Figure 3-4c
 Sampling Results Exceeding the St. Louis River AOC Sediment Quality Targets for Area 3 – Total PCBs
 St. Louis Bay
 Duluth, St. Louis County, Minnesota

Imagery Source: ESRI Bing Maps



FILE: D:\St_Louis_Bay\mxd\IAR\STLB_SAR_F3-4d_Area_3_Exceeds_Pest.mxd 12/20/2011 1:06:21 PM wojdakon

Legend

- Level I & II Exceedances □ Focus Area 1
- Level I Exceedances Only □ Focus Area 2
- No Exceedances □ Focus Area 3



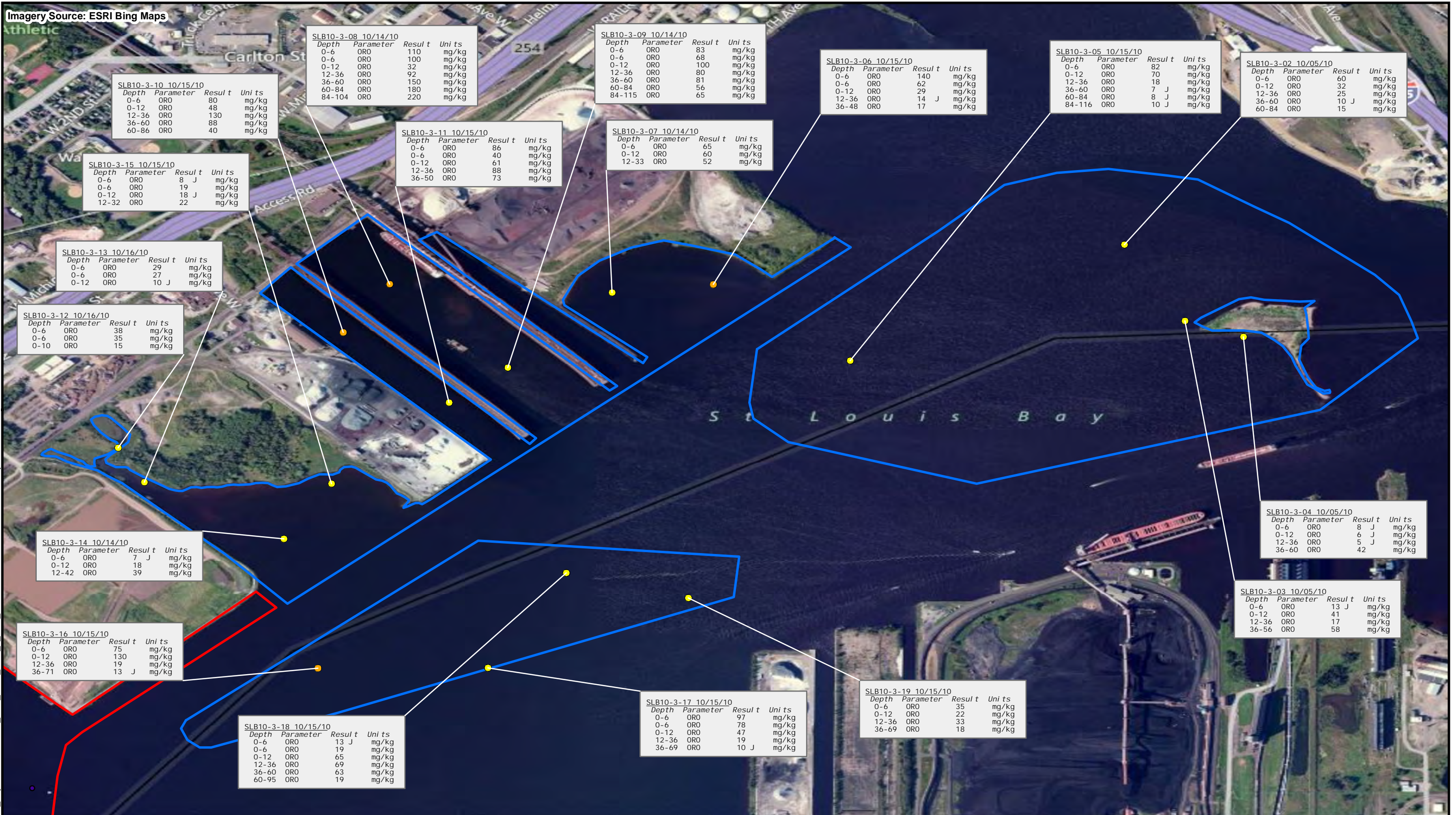
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Figure 3-4d
 Sampling Results Exceeding the St. Louis River AOC
 Sediment Quality Targets for Area 3 – TCL Pesticides
 St. Louis Bay
 Duluth, St. Louis County, Minnesota

Imagery Source: ESRI Bing Maps



FILE: D:\St_Louis_Bay\mxd\SAR\STLB_SAR_F3-4f_Area_3_TPH_ORO.mxd 2/7/2012 12:23:51 PM mejacm

Legend


TPH ORO (ug/kg)

- 100 - 500
- Non-Detect
- 0 - 100
- Focus Area 1
- Focus Area 2
- Focus Area 3

0 950 Feet



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Figure 3-4f
 Sampling Results For Area 3 - TPH ORO
 St. Louis Bay
 Duluth, St. Louis County, Minnesota

SLB10-3-10 10/15/10

Depth	Parameter	Result	Units
0-6	ORO	80	mg/kg
0-12	ORO	48	mg/kg
12-36	ORO	130	mg/kg
36-60	ORO	88	mg/kg
60-86	ORO	40	mg/kg

SLB10-3-08 10/14/10

Depth	Parameter	Result	Units
0-6	ORO	110	mg/kg
0-6	ORO	100	mg/kg
0-12	ORO	32	mg/kg
12-36	ORO	92	mg/kg
36-60	ORO	150	mg/kg
60-84	ORO	180	mg/kg
84-104	ORO	220	mg/kg

SLB10-3-09 10/14/10

Depth	Parameter	Result	Units
0-6	ORO	83	mg/kg
0-6	ORO	68	mg/kg
0-12	ORO	100	mg/kg
12-36	ORO	80	mg/kg
36-60	ORO	81	mg/kg
60-84	ORO	56	mg/kg
84-115	ORO	65	mg/kg

SLB10-3-06 10/15/10

Depth	Parameter	Result	Units
0-6	ORO	140	mg/kg
0-6	ORO	62	mg/kg
0-12	ORO	29	mg/kg
12-36	ORO	14 J	mg/kg
36-48	ORO	17	mg/kg

SLB10-3-05 10/15/10

Depth	Parameter	Result	Units
0-6	ORO	82	mg/kg
0-12	ORO	70	mg/kg
12-36	ORO	18	mg/kg
36-60	ORO	7 J	mg/kg
60-84	ORO	8 J	mg/kg
84-116	ORO	10 J	mg/kg

SLB10-3-02 10/05/10

Depth	Parameter	Result	Units
0-6	ORO	60	mg/kg
0-12	ORO	32	mg/kg
12-36	ORO	25	mg/kg
36-60	ORO	10 J	mg/kg
60-84	ORO	15	mg/kg

SLB10-3-11 10/15/10

Depth	Parameter	Result	Units
0-6	ORO	86	mg/kg
0-6	ORO	40	mg/kg
0-12	ORO	61	mg/kg
12-36	ORO	88	mg/kg
36-50	ORO	73	mg/kg

SLB10-3-07 10/14/10

Depth	Parameter	Result	Units
0-6	ORO	65	mg/kg
0-12	ORO	60	mg/kg
12-33	ORO	52	mg/kg

SLB10-3-15 10/15/10

Depth	Parameter	Result	Units
0-6	ORO	8 J	mg/kg
0-6	ORO	19	mg/kg
0-12	ORO	18 J	mg/kg
12-32	ORO	22	mg/kg

SLB10-3-13 10/16/10

Depth	Parameter	Result	Units
0-6	ORO	29	mg/kg
0-6	ORO	27	mg/kg
0-12	ORO	10 J	mg/kg

SLB10-3-12 10/16/10

Depth	Parameter	Result	Units
0-6	ORO	38	mg/kg
0-6	ORO	35	mg/kg
0-10	ORO	15	mg/kg

SLB10-3-14 10/14/10

Depth	Parameter	Result	Units
0-6	ORO	7 J	mg/kg
0-12	ORO	18	mg/kg
12-42	ORO	39	mg/kg

SLB10-3-04 10/05/10

Depth	Parameter	Result	Units
0-6	ORO	8 J	mg/kg
0-12	ORO	6 J	mg/kg
12-36	ORO	5 J	mg/kg
36-60	ORO	42	mg/kg

SLB10-3-03 10/05/10

Depth	Parameter	Result	Units
0-6	ORO	13 J	mg/kg
0-12	ORO	41	mg/kg
12-36	ORO	17	mg/kg
36-56	ORO	58	mg/kg

SLB10-3-16 10/15/10

Depth	Parameter	Result	Units
0-6	ORO	75	mg/kg
0-12	ORO	130	mg/kg
12-36	ORO	19	mg/kg
36-71	ORO	13 J	mg/kg

SLB10-3-18 10/15/10

Depth	Parameter	Result	Units
0-6	ORO	13 J	mg/kg
0-6	ORO	19	mg/kg
0-12	ORO	65	mg/kg
12-36	ORO	69	mg/kg
36-60	ORO	63	mg/kg
60-95	ORO	19	mg/kg

SLB10-3-17 10/15/10

Depth	Parameter	Result	Units
0-6	ORO	97	mg/kg
0-6	ORO	78	mg/kg
0-12	ORO	47	mg/kg
12-36	ORO	19	mg/kg
36-69	ORO	10 J	mg/kg

SLB10-3-19 10/15/10

Depth	Parameter	Result	Units
0-6	ORO	35	mg/kg
0-6	ORO	22	mg/kg
0-12	ORO	33	mg/kg
36-69	ORO	18	mg/kg

Imagery Source: ESRI Bing Maps



FILE: D:\St_Louis_Bay\mxd\SAR\STLB_SAR_F3-4g_Area_3_TCDD_TEQ.mxd 2/2/2012 4:57:39 PM mejaem

Legend

- Level II Exceedances
- Level I Exceedances
- No Exceedances
- ▭ Focus Area 1
- ▭ Focus Area 2
- ▭ Focus Area 3

Number in Criteria Column Reflects the Following:
 1 - Result Exceeds St. Louis River AOC SQT Level I Criteria
 2 - Result Exceeds St. Louis River AOC SQT Level II Criteria
 All Level II Exceeds are **Bold and Red**



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 Chicago, Illinois 60606

Figure 3-4g
 Sampling Results Exceeding the St. Louis River AOC
 Sediment Quality Targets for Area 3 – TCDD/TEQ Results
 St. Louis Bay
 Duluth, St. Louis County, Minnesota

**APPENDIX A
PHOTOGRAPHIC LOG**



Site: St. Louis Bay Site

Photograph No.: 1

Direction: Southeast

Subject: St. Louis River Overview

Date: 10/20/10

Photographer: Tim Walls



Site: St. Louis Bay Site

Photograph No.: 2

Direction: South

Subject: St. Louis River Overview

Date: 10/20/10

Photographer: Tim Walls



Site: St. Louis Bay Site

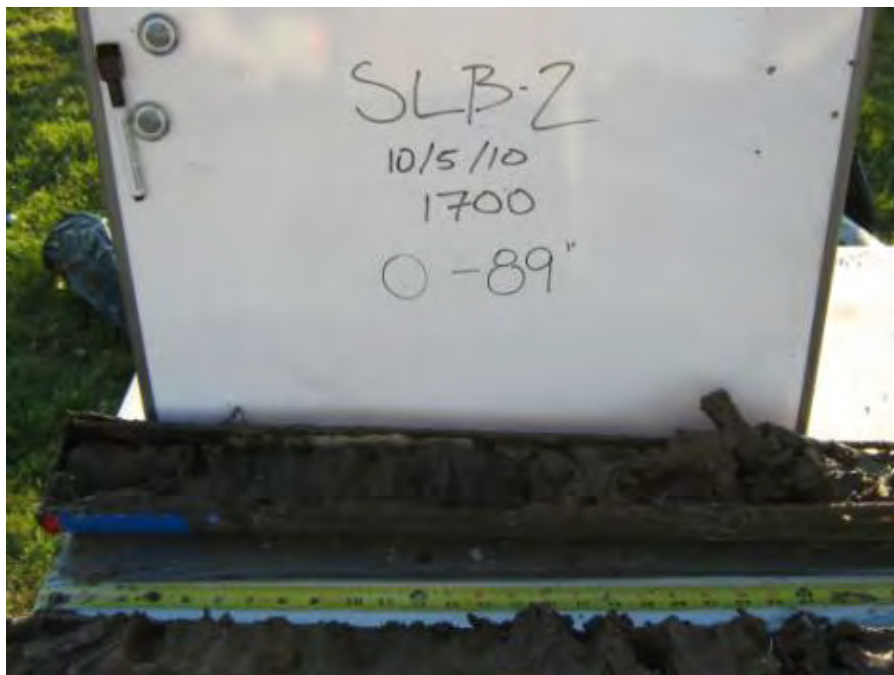
Photograph No.: 3

Direction: Not Applicable (NA)

Subject: St. Louis Bay Sample Core Location SLB-2.

Date: 10/5/10

Photographer: Jon Colomb



Site: St. Louis Bay Site

Photograph No.: 4

Direction: NA

Subject: St. Louis Bay Sample Core Location SLB-2; note wood fragments.

Date: 10/5/10

Photographer: Jon Colomb



Site: St. Louis Bay Site

Photograph No.: 5

Direction: NA

Subject: St. Louis Bay Sample Core Location SLB-88; note coal fragments.

Date: 10/6/10

Photographer: Jon Colomb



Site: St. Louis Bay Site

Photograph No.: 6

Direction: NA

Subject: St. Louis Bay Sample Core Location SLB-93.

Date: 10/6/10

Photographer: Jon Colomb



Site: St. Louis Bay Site

Photograph No.: 7

Direction: NA

Subject: St. Louis Bay Sample Core Location SLB-83; note wood fragments.

Date: 10/6/10

Photographer: Jon Colomb



Site: St. Louis Bay Site

Photograph No.: 8

Direction: NA

Subject: St. Louis Bay Sample Core Location SLB-83; note wood fragments.

Date: 10/6/10

Photographer: Jon Colomb



Site: St. Louis Bay Site

Photograph No.: 9

Direction: NA

Subject: St. Louis Bay Sample Core Location SLB-95.

Date: 10/7/10

Photographer: Jon Colomb



Site: St. Louis Bay Site

Photograph No.: 10

Direction: NA

Subject: St. Louis Bay Sample Core Location SLB-95.

Date: 10/7/10

Photographer: Jon Colomb



Site: St. Louis Bay Site

Photograph No.: 11

Direction: NA

Subject: St. Louis Bay Sample Core Location SLB-42.

Date: 10/16/10

Photographer: Jon Colomb



Site: St. Louis Bay Site

Photograph No.: 12

Direction: NA

Subject: St. Louis Bay Sample Core Location SLB-68.

Date: 10/16/10

Photographer: Jon Colomb

APPENDIX B
SEDIMENT COLLECTION FIELD DATA SHEETS

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: ~~SLB-01~~ ~~SLB-02~~ SLB-2

Water Depth: 5'9" Total Core Recovery (sediment depth): 90"

Sample Date: 10/5/10 Sample Time: 1700

Sample Collected By: _____

Sample Observations (color, texture, odor, etc)

Overall: Fine silt; dark brown; no odor; change in moisture 0-89"
0 to 0.5 foot: Fine silt; dark brown; no odor; saturated.
0.5 to 1 feet: Fine silt; dark brown; no odor; wet.
1 to 3 feet: Fine silt; trace sand; dark brown; no odor; wet
3 to 5 feet: Fine silt; dark brown; no odor; damp;
5 to 7 feet: Fine silt; dark brown; no odor; damp; bio material

Sample Type: PONAR 0-6" VIBRACORE OTHER
Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPHORO² TOC² Grain Size² % Moisture¹
Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46°45.09874' N 92°06.842271' W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-3

Water Depth: 2'9" Total Core Recovery (sediment depth): 54"

Sample Date: 10/5/10 Sample Time: 1136

Sample Collected By: Jonathan Colantoni

Sample Observations (color, texture, odor, etc)

Overall: Silt w/ layers of woody bio material; no odor; dark brown
0 to 0.5 foot: Fine silt → clay; saturated; layers of bio material ~ 1/2" apart; dark brown; no odor
0.5 to 1 feet: Fine silt; layers of bio material ~ 1/2" apart; dark brown; no odor
1 to 3 feet: Fine silt; layers of bio material throughout; dark brown; no odor
3 to 5 feet: Fine silt; trace sand (fine grained); interspersed bio material; dark brown; no odor
5 to 7 feet: N/A

Sample Type: PONAR VIBRACORE OTHER
Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPH ORO² TOC² Grain Size² % Moisture¹
Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46°44.9665'N 92°06.7377'W

Other Comments: Clay present in material.

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-4

Water Depth: 2'9" Total Core Recovery (sediment depth): 74"

Sample Date: 10/5/10 Sample Time: 1050

Sample Collected By: Jonathan Colomb

Sample Observations (color, texture, odor, etc)

Overall: Silty sand; fine grained; uniform dark brown to ~ 54"

0 to 0.5 foot: Silty sand; no odor; fine grained

0.5 to 1 feet: "

1 to 3 feet: "

3 to 5 feet: Silty sand grading to medium grained sand ~ 54"; some large ~ 3/4" rounded

5 to 7 feet: Medium grained sand dark brown.

Sample Type: PONAR VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²

TPH ORO² FOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46° 44.939251' N 92° 06.636854'

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-5

Water Depth: 519" Total Core Recovery (sediment depth): 117"

Sample Date: 10/15/10 Sample Time: 1515

Sample Collected By: Tim Walls

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ tr sand; dark brown; no odor; wet
0 to 0.5 foot: silt w/ tr sand; dark brown; no odor; saturated
0.5 to 1 feet: silt w/ tr sand; dark brown; no odor; saturated
1 to 3 feet: Silt w/ tr sand; dark brown; no odor; wet
3 to 5 feet: silt w/ tr sand; dark brown; no odor; damp
5 to 7 feet: silt w/ tr sand; dark brown; no odor; damp; organic
7 to 116": silt w/ tr sand; dark brown; no odor; damp; organic

Sample Type: PONAR 0-6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: 46°44.897795'N 92°07.316359'W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-0

Water Depth: 2' **Total Core Recovery (sediment depth):** 48"

Sample Date: 10-15-2010 **Sample Time:** 1012

Sample Collected By: Tim Walls

Sample Observations (color, texture, odor, etc)

Overall: Silt-dand bun, soft, wet, trace mg. sand, trace organics

0 to 0.5 foot: A-A

0.5 to 1 feet: ↓

1 to 3 feet: _____

3 to ~~8~~⁴ feet: A-A

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER Handdrive

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
 TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
 PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-7

Water Depth: 1.5' **Total Core Recovery (sediment depth):** 33"

Sample Date: 10-14-2010 **Sample Time:** 1010

Sample Collected By: Tim Walls

Sample Observations (color, texture, odor, etc)

Overall: Silt w/ tr sand's no odor, dark brown, sediment

0 to 0.5 foot: Silt w/ tr sand, no odor, dark brown, sediment

0.5 to 1 feet: Silt w/ tr sand, no odor dark brown, sediment

1 to ^{33"} feet: Silt w/ tr sand, no odor, dark brown, met

3 to 5 feet: Nature F to M sand @ 33"

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER *Handrive*

Analysis (all): TAL Metals PAH (17 List)¹ PCB aroclor TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture²

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO SLB10-3-07-06DP

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-8

Water Depth: 12'9" Total Core Recovery (sediment depth): 106"

Sample Date: 10/14/10 Sample Time: 1130

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ to sandy dark brown; slight odor; soft
0 to 0.5 foot: Fine silt w/ to sand; dark brown; no odor; soft
0.5 to 1 feet: Fine silt w/ to sand; dark brown; no odor; somewhat
1 to 3 feet: Fine silt w/ to sand; wood shavings; dark brown; slight odor; wet
3 to 5 feet: Fine silt w/ to sand; wood shavings; dark brown; slight odor; wet
5 to 7 feet: Fine silt w/ to sand; dark brown; no odor; damp
7 to 104": Fine silt w/ to sand; dark brown; no odor; damp

Sample Type: PONAR 0-6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46°45.030072' N 92°08.112137' W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLP-119

Water Depth: 17'2" Total Core Recovery (sediment depth): 113" / 115"

Sample Date: 10/14/10 Sample Time: 1207

Sample Collected By: T. walls

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ to sand; dark brown; slight odor; saturated
0 to 0.5 foot: Fine silt; w/ trace sand; dark brown; no odor; saturated
0.5 to 1 feet: Fine silt w/ to sand; dark brown; no odor; saturated
1 to 3 feet: Fine silt w/ to sand; dark brown; slight odor; saturated
3 to 5 feet: Fine silt w/ to sand; dark brown; slight odor; saturated
5 to 7 feet: Fine silt w/ to sand; dark brown; slight odor; saturated
7 to 115": Fine silt w/ to sand; dark brown; slight odor; saturated

Sample Type: PONAR 0-6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46°44.886052' N 92°07.908153' W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-10

Water Depth: 19' Total Core Recovery (sediment depth): 88"

Sample Date: 10/15/10 Sample Time: 1400

Sample Collected By: _____

Sample Observations (color, texture, odor, etc)

Overall: Silt w/ fr sand; dark brown, saturated; faint odor
0 to 0.5 foot: Silt w/ fr sand; organics; faint odor; saturated
0.5 to 1 feet: Silt w/ fr sand; organics; faint odor; saturated
1 to 3 feet: Silt w/ fr sand; saturated; faint odor; dark brown
3 to 5 feet: Silt w/ fr sand & fr organics; faint odor; dark brown
5 to 7 feet: Silt w/ fr sand & fr organics; faint odor; dark brown
Fine sand @ 83"

Sample Type: PONAR 0-6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: 46°44.946735'N 92°08.193645'W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-11

Water Depth: 25' 9" **Total Core Recovery (sediment depth):** 53'

Sample Date: 10/15/10 **Sample Time:** 1438

Sample Collected By: _____

Sample Observations (color, texture, odor, etc)

Overall: Silt - brown, saturated, trace sand, no odor

0 to 0.5 foot: _____

0.5 to 1 feet: _____

1 to 3 feet: _____

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR 06'' VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: 46° 44.825532' N 92° 08.009598' W

Other Comments: _____

Field Data Collection Form
SL Howard's Bay
Superior, Douglas County, Wisconsin

Sample Location ID: SLB-12

Water Depth: 24' Total Core Recovery (sediment depth): 10M

Sample Date: 10-16-10 Sample Time: 1145

Sample Collected By: _____

Sample Observations (color, texture, odor, etc)

Overall: Silty clay and med. grained sand, sat., brown, no odor

0 to ^{4M} 0.5 foot: Brown, silty clay

^{4M to 10M} 0.5 to 1 feet: brown - medium-grained sand

1 to 3 feet: _____

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (34 List)¹ PCB Aroclor¹ TPH DRO²
TPH ORO² Mercury¹ Tri-butyl tin² Grain Size²
TCL Pesticides¹ PAH (17 List) AVS/SEM¹ TOC²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-14

Water Depth: 2' Total Core Recovery (sediment depth): 42"

Sample Date: 10-14-2010 Sample Time: 1050

Sample Collected By: Tim Walls

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ to sand; dark brown; no odor; wet

0 to 0.5 foot: F → M sand w/ silt; dark brown; no odor; wet

0.5 to 1 feet: F → M sand w/ silt; dark brown; no odor; damp

1 to 3 feet: clayey silt w/ to sand; dark brown; no odor; damp

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER Handrive

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB areol¹ TPH/DRO²

TPH/DRO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no – new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-15

Water Depth: 2' **Total Core Recovery (sediment depth):** 32"

Sample Date: 10-15-2010 **Sample Time:** 0940

Sample Collected By: Tim Walls

Sample Observations (color, texture, odor, etc)

Overall: Silty Sand - brn, saturated, some silt, no odor

0 to 0.5 foot: A.A.

0.5 to 1 feet: A.A.

1 to 3 feet: A.A.

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER Handrise

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / (NO) N 5237276.815 E -350387.795
5177073.80 E -565918.02

If no - new coordinates: _____ ↗

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-16

Water Depth: 7'1" Total Core Recovery (sediment depth): 73"

Sample Date: 10/15/10 Sample Time: 0912

Sample Collected By: TM Walls

Sample Observations (color, texture, odor, etc)

Overall: Silt w/ tr sand, dark brown, no odor, wet

0 to 0.5 foot: Silt w/ tr sand; dark brown; no odor; damp

0.5 to 1 feet: Silt w/ tr sand; dark brown; no odor; wet

1 to 3 feet: Silt w/ tr sand; dark brown; no odor; wet

3 to 5 feet: Silt w/ tr sand; dark brown; no odor; wet

5 to ~~7~~^{71"} feet: Silt w/ tr sand; dark brown; no odor; organic white material (less shell like) @ ~55"

Sample Type: PONAR 0-6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES NO

Photos: YES / ~~NO~~

Coordinates same as projected: YES / NO

If no - new coordinates: 46°44.366540'N 92°08.236057'W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-17

Water Depth: 6'1" Total Core Recovery (sediment depth): 6'9"

Sample Date: 10/15/10 Sample Time: 0940

Sample Collected By: T Walls

Sample Observations (color, texture, odor, etc)

Overall: Silt w/ fr sand; dark brown; no odor; wet

0 to 0.5 foot: Silt w/ fr sand; dark brown; no odor; saturated

0.5 to 1 feet: Silt w/ fr sand; dark brown; no odor; wet

1 to 3 feet: Silt w/ fr sand; dark brown; no odor; damp

^{65"}
3 to ~~4~~ feet: Silt w/ fr sand; dark brown; no odor; organics; damp

5 to 7 feet: _____

Sample Type: PONAR 0-6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²

TPH ORG² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: 46°44.367429'N 92°07.942464'W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-18

Water Depth: 4'3" Total Core Recovery (sediment depth): 96"

Sample Date: 10/15/10 Sample Time: 1107

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: Silt w/ to sand, wet, dark brown, no odor

0 to 0.5 foot: Silt w/ to sand, wet, dark brown, no odor

0.5 to 1 feet: silt w/ to sand, wet, dark brown, no odor

1 to 3 feet: silt w/ to sand, wet, dark brown, no odor

3 to 5 feet: Silt w/ to sand, wet, dark brown, no odor

5 to 7 feet: silt w/ to sand, wet, dark brown, no odor

7 to 95" silt w/ to sand, wet, dark brown, no odor

Sample Type: PONAR-6 VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO SLB 10-3-18-06 DP

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: 46°44.531143' N 92°07.807240' W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-19

Water Depth: 519" Total Core Recovery (sediment depth): 73"

Sample Date: 10/15/10 Sample Time: 1032

Sample Collected By: Tim Walls

Sample Observations (color, texture, odor, etc)

Overall: silt w/ hr sand; dark brown; no odor; wet

0 to 0.5 foot: cobbles @ 6"; fine silt; hr sand; dark brown; no odor; somewhat

0.5 to 1 feet: silt w/ hr sand; dark brown; no odor; wet

1 to 3 feet: silt w/ hr sand and hr organics; no odor; wet

3 to ~~4~~^{6.9"} feet: silt w/ sand; fine sand @ 53"; damp; no odor

5 to 7 feet: _____

Sample Type: PONAR 0-6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRQ²

EPHORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: 46°44.487887'N 92°07.596105'W

Other Comments: Moved location, previously in Nav. Channel

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-20

Water Depth: < 4' Total Core Recovery (sediment depth): 10"

Sample Date: 10-15-10 Sample Time: 0940

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: Silty sand - black, saturated, fine-grained, some odor

0 to 0.5 foot: A.A.

0.5 to ^{10"} 1 foot: A.A.

1 to 3 feet: _____

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER hand-drive

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-21

Water Depth: < 4 Total Core Recovery (sediment depth): 14"

Sample Date: 10-15-10 Sample Time: 0915

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: Silty Sand - dark brown → black, saturated, some coal fragments, no odor

0 to 0.5 foot: A.A.

0.5 to ^{14"}1 feet: A.A.

1 to 3 feet: _____

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER hand drive

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

**Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota**

Sample Location ID: SLB-22

Water Depth: < 4' **Total Core Recovery (sediment depth):** 18"

Sample Date: 10-15-10 **Sample Time:** 0950

Sample Collected By: _____

Sample Observations (color, texture, odor, etc)

Overall: Sand - brown, saturated, fine to medium-grained, no odor

0 to ~~0.5~~^{18"} foot: A-A

0.5 to 1 feet: _____

1 to 3 feet: _____

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER hand drive

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-23

Water Depth: < 4 Total Core Recovery (sediment depth): 16"

Sample Date: 10-15-10 Sample Time: 1010

Sample Collected By: _____

Sample Observations (color, texture, odor, etc)

Overall: Sand - black, saturated, fine to med. grained, no odor

0 to 0.5 foot: A.A.

0.5 to ^{16"}1 foot: A.A.

1 to 3 feet: _____

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER hand drive

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-24

Water Depth: 24 Total Core Recovery (sediment depth): 24"

Sample Date: 10-15-10 Sample Time: 1100

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: Sand- black, moist, no odor
0 to 0.5 foot: Sand- black, moist, fine-grained, no odor
0.5 to 1 feet: A-A
^{14"} 1 to ~~3~~^{24"} feet: Sand- black, moist, medium-grained, no odor.
3 to 5 feet: _____
5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER hand drive
Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPH ORO² TOC² Grain Size² % Moisture¹
Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab ²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____
Photos: YES / NO _____
Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-25

Water Depth: 15' 6" Total Core Recovery (sediment depth): 112"

Sample Date: 10/15/10 Sample Time: 0830

Sample Collected By: Brandon Flaada / Tim Walls

Sample Observations (color, texture, odor, etc)

Overall: Sandy silt, dark-brown, saturated, some organic layers, no odor
0 to 0.5 foot: silt w/ trace sand, dark-brown, saturated, no odor
0.5 to 1 feet: silt w/ trace sand, dark-brown, saturated, no odor
1 to 3 feet: sandy silt, dark-brown, saturated, no odor
3 to 5 feet: sandy silt, dark-brown, saturated, no odor
5 to ^{116"} feet: sandy silt, dark-brown, saturated, organic layers 5-7 ft, no odor

Sample Type: PONAR 0-6" VIBRACORE OTHER
Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPH ORO² TOC² Grain Size² % Moisture¹
Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO SLB 10-1-25-06 DP

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46° 44.465618' N 92° 08.951160' W

Other Comments:

Field Data Collection Form
SL Howard's Bay
Superior, Douglas County, Wisconsin

Sample Location ID: SLB-26

Water Depth: < 4 Total Core Recovery (sediment depth): 12"

Sample Date: 10-15-10 Sample Time: 1020

Sample Collected By: _____

Sample Observations (color, texture, odor, etc)

Overall: ^{Sand} Silt - dark brown to black, saturated, no odor

0 to 0.5 foot: A-A.

0.5 to 1 feet: A-A.

1 to 3 feet: _____

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER *hand down*

Analysis (all): TAL Metals¹ PAH (34 List)¹ PCB Aroclor¹ TPH DRO²
TPH ORO² Mercury¹ Tri-butyl tin² Grain Size²
TCL Pesticides¹ PAH (17 List) AVS/SEM¹ TOC²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SUB-27

Water Depth: < 4' Total Core Recovery (sediment depth): 17"

Sample Date: 10-15-10 Sample Time: 1040

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: Sand-brown, saturated, fig. sand, some silt, no odor

0 to 0.5 foot: A.A.

0.5 to 1 feet: A.A.

1 to ^{17"}3 feet: A.A.

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER *hand driven*

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-28

Water Depth: 3' 1" Total Core Recovery (sediment depth): 112"

Sample Date: 10/13/10 Sample Time: 1600

Sample Collected By: _____

Sample Observations (color, texture, odor, etc)

Overall: _____

0 to 0.5 foot: _____

0.5 to 1 feet: _____

1 to 3 feet: _____

3 to 5 feet: _____

5 to 7 feet: _____

<u>Sample Type:</u>	<u>PONAR 0-6"</u>	<u>VIBRACORE</u>	OTHER
<u>Analysis (all):</u>	TAL Metals ¹	PAH (17 List) ¹	PCB aroclor ¹ TPH DRO ²
	TPH ORO ²	TOC ²	Grain Size ² % Moisture ¹
<u>Analysis (10%):</u>	TCL Pesticides ¹	TCL SVOCs ¹	Dioxins ¹ PCB congeners ¹
	PAH (34 List) ¹	Black Carbon ²	

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: 46°44.394734'N 92°09.010206'W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-29

Water Depth: 3' 1" Total Core Recovery (sediment depth): 81"

Sample Date: 10/13/10 Sample Time: 1524

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ sand; dark brown; no odor; wet

0 to 0.5 foot: Fine → medium sand; dark brown; no odor; wet

0.5 to 1 feet: silt w/ fr sand; dark brown; no odor; wet

1 to 3 feet: silt w/ fr sand and organics; dark brown; no odor; saturated
sand lens @ 29"; possible shell @ 16"

3 to 5 feet: interbedded silt and fr sand layers; dark brown; no odor; wet

5 to ~~7~~ feet: Fine silt w/ fr sand; dark brown; no odor; damp

Sample Type: PONAR 0-6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 Dist)¹ PCB arylchlor¹ TPH DRO²

TPHORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46°44.393450'N 92°08.903704'W

Other Comments: _____

Field Data Collection Form
SL Howard's Bay
Superior, Douglas County, Wisconsin

Sample Location ID: SLB-30

Water Depth: < 4' Total Core Recovery (sediment depth): 10"

Sample Date: 10-16-10 Sample Time: 1033

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: F. to m. sand, black, basalt, no odor

0 to 0.5 foot: _____

0.5 to 1 feet: _____

1 to 3 feet: _____

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type:	<u>RONAR</u>	VIBRACORE	OTHER
Analysis (all):	TAL Metals ¹	PAH (34 List) ¹	PCB Aroclor ¹ TPH DRO ²
	TPH ORO ²	Mercury ¹	Tri-butyl tin ² Grain Size ²
	TCL Pesticides ¹	PAH (17 List)	AVS/SEM ¹ TOC ²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

**Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota**

Sample Location ID: SLB-31

Water Depth: 24' **Total Core Recovery (sediment depth):** 13

Sample Date: 10-16-10 **Sample Time:** 1020

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: Sand - dark brown, moist, fine to medium-grained, no odor

0 to 0.5 foot: A. A.

0.5 to 1^{13"} feet: A. A.

1 to 3 feet: _____

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER hand-drum

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
SL Howard's Bay
Superior, Douglas County, Wisconsin

Sample Location ID: SLB-32

Water Depth: 24" Total Core Recovery (sediment depth): 20"

Sample Date: 10-16-10 Sample Time: 1010

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: F → M sand, dark brown to black, s. sat., no odor.

0 to 0.5 foot: A-A

0.5 to ^{20"} feet: A-A

1 to 3 feet: _____

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER hand-drum

Analysis (all): TAL Metals¹ PAH (34 List)¹ PCB Aroclor¹ TPH DRO²

TPH ORO² Mercury¹ Tri-butyl tin² Grain Size²

TCL Pesticides¹ PAH (17 List) AVS/SEM¹ TOC²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-33

Water Depth: 3'4" Total Core Recovery (sediment depth): 80"

Sample Date: 10/13/10 Sample Time: 1450

Sample Collected By: _____

Sample Observations (color, texture, odor, etc)

Overall: _____

0 to 0.5 foot: _____

0.5 to 1 feet: _____

1 to 3 feet: _____

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR 0-6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: 46°44.327719'N 92°08.839931'W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-34

Water Depth: 17'3" Total Core Recovery (sediment depth): 17"

Sample Date: 10/14/10 Sample Time: 1015

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: F → M sand; dark brown; wet; no odor

0 to 0.5 foot: silty sand; dark brown; wet; no odor

0.5 to 1 feet: F → M sand; dark brown; wet; no odor
17"

1 to ~~2~~ feet: F → M sand; dark brown; wet; no odor

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR 0-6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17-List)¹ PCB aroclor¹ TPH DRO²
TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: 46°44.324125'N 92°08.733015'W

Other Comments: _____

Field Data Collection Form
SL Howard's Bay
Superior, Douglas County, Wisconsin

Sample Location ID: SLB-35

Water Depth: < 4' Total Core Recovery (sediment depth): 16"

Sample Date: 10-16-10 Sample Time: 1040

Sample Collected By: T. Wall

Sample Observations (color, texture, odor, etc)

Overall: Sandy silt, black, sat., petroleum-odor and sheen

0 to 0.5 foot: U/A

0.5 to ^{16"} 1 foot: A/A

1 to 3 feet: _____

3 to 5 feet: _____

5 to 7 feet: _____

<u>Sample Type:</u>	PONAR	VIBRACORE	<u>OTHER</u> hand drive
<u>Analysis (all):</u>	TAL Metals ¹	PAH (34 List) ¹	PCB Aroclor ¹ TPH DRO ²
	TPH ORO ²	Mercury ¹	Tri-butyl tin ² Grain Size ²
	TCL Pesticides ¹	PAH (17 List)	AVS/SEM ¹ TOC ²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

**Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota**

Sample Location ID: SLB-30

Water Depth: 24' **Total Core Recovery (sediment depth):** 15''

Sample Date: 10-16-10 **Sample Time:** 1010

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: Silty sand - black, s. stiff, very moist, some silt, very fine sand
poorly sorted, slight decay, organic odor

0 to ^{15''}0.5 foot: A, A

0.5 to 1 feet: _____

1 to 3 feet: _____

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER *hand down*

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-38

Water Depth: 4' Total Core Recovery (sediment depth): 43"

Sample Date: 10-19-2010 Sample Time: 1059

Sample Collected By: Tim Wally

Sample Observations (color, texture, odor, etc)

Overall: Sand - dark brown, saturated, no odor / Sandy silt (11-43")
0 to 0.5 foot: A.A - Sand
0.5 to 1 feet: A.A - Sand.
1 to ^{3.5'} 3 feet: Sandy silt - dark brown, saturated, some m.g. sand, no odor
3 to 5 feet: _____
5 to 7 feet: _____

Sample Type:

PONAR

VIBRACORE

OTHER

Analysis (all):

TAL Metals¹

PAH (17 List)¹

PCB aroclor¹ TPH DRO²

TPH ORO²

TOC²

Grain Size² % Moisture¹

Analysis (10%):

TCL Pesticides¹

TCL SVOCs¹

Dioxins¹ PCB congeners¹

PAH (34 List)¹

Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate:

YES / NO _____

Photos:

YES / NO _____

Coordinates same as projected:

YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-39

Water Depth: 15'2" Total Core Recovery (sediment depth): 109"

Sample Date: 10/13/10 Sample Time: 1415

Sample Collected By: T. Wallis

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ tr sand; saturated; dark brown; no odor
0 to 0.5 foot: Fine silt w/ tr sand; saturated; dark brown; no odor
0.5 to 1 feet: Fine silt w/ tr sand; saturated; dark brown; no odor
1 to 3 feet: Fine silt w/ tr sand; saturated; dark brown; no odor
3 to 5 feet: Fine silt w/ tr sand; dark brown; no odor; saturated
5 to 7 feet: Fine silt w/ tr sand; dark brown; no odor; saturated
7 to 115" Clayey silt w/ tr sand; light brown; no odor; damp

Sample Type: PONAR 0.6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPHORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO SLB10-7-39-06DP

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46°44.286319'N 92°08.862841'W

Other Comments:

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-40

Water Depth: 2' Total Core Recovery (sediment depth): 52"

Sample Date: 10-15-2010 Sample Time: ~~0710~~ 0906

Sample Collected By: Tim Walls

Sample Observations (color, texture, odor, etc)

Overall: Sand-brown, saturated. fine-to-med. grained, silty sand 48"-52"
0 to 0.5 foot: A, A - Sand
0.5 to 1 feet: A, A - Sand
1 to 3 feet: A - A - sand
3 to ^{52'}5 feet: Silty sand 48" - 52"
5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER Hand drive
Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPH ORO² TOC² Grain Size² % Moisture¹
Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab ²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____
Photos: YES / NO _____
Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
SL Howard's Bay
Superior, Douglas County, Wisconsin

Sample Location ID: SLB-42

Water Depth: 24' Total Core Recovery (sediment depth): 24"

Sample Date: 10-16-10 Sample Time: 0931

Sample Collected By: T. Wallis

Sample Observations (color, texture, odor, etc)

Overall: Fine to med. sand, dark brown to black, sat., no odor

0 to 0.5 foot: A : A

0.5 to 1 feet: A : A

1 to 3 feet: _____

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type:	PONAR	VIBRACORE	<u>OTHER</u>
Analysis (all):	TAL Metals ¹	PAH (34 List) ¹	PCB Aroclor ¹ TPH DRO ²
	TPH ORO ²	Mercury ¹	Tri-butyl tin ² Grain Size ²
	TCL Pesticides ¹	PAH (17 List)	AVS/SEM ¹ TOC ²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-45

Water Depth: 3'6" Total Core Recovery (sediment depth): 104"

Sample Date: 10/13/10 Sample Time: 1120

Sample Collected By: _____

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ trace sand; dark brown; no odor; saturated

0 to 0.5 foot: Fine silt w/ trace sand; dark gray; no odor; saturated

0.5 to 1 feet: Fine silt w/ trace sand; dark gray; no odor; saturated

1 to 3 feet: Fine silt w/ trace sand; dark gray; no odor; saturated

3 to 5 feet: Fine silt w/ trace sand; dark gray; no odor; saturated

5 to 7 feet: Fine silt w/ trace sand; dark brown; wood chips @ 75"; no odor; wet
7 to 114 Fine → medium sand banding @ 84.5"; Fine silt w/ trace sand; no odor; dark brown; damp; remainder

Sample Type: PONAR 0-6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB arochlor¹ TPH-DRO²

TPH-ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46°44.159617'N 92°08.938248'W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-46

Water Depth: 7' 9" Total Core Recovery (sediment depth): 66"

Sample Date: 10/12/10 Sample Time: 1620

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ to sand; dark brown; no odor; organics
0 to 0.5 foot: Fine silt w/ to sand; dark brown; no odor; silted
0.5 to 1 feet: Fine silt w/ to sand; dark brown; no odor; silted
1 to 3 feet: Fine silt w/ to sand to organics; dark brown; no odor; wet
3 to 5 feet: Fine silt w/ to sand; organics; dark brown; no odor; wet
5 to ^{64"} feet: Fine silt w/ to sand; organics; dark brown; no odor; dry

<u>Sample Type:</u>	PONAR	<u>VIBRACORE</u>	OTHER
<u>Analysis (all):</u>	<u>TAL Metals¹</u>	<u>PAH (17 List)¹</u>	<u>PCB aroclor¹</u> <u>TPH DRG²</u>
	<u>TPH ORO²</u>	<u>TOC²</u>	<u>Grain Size²</u> <u>% Moisture¹</u>
<u>Analysis (10%):</u>	TCL Pesticides ¹	TCL SVOCs ¹	Dioxins ¹ PCB congeners ¹
	PAH (34 List) ¹	Black Carbon ²	

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46° 44.158933 N 92° 09.729610 W

Other Comments:

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-47

Water Depth: 5' Total Core Recovery (sediment depth): 10"

Sample Date: 10-15-2010 Sample Time: 1545

Sample Collected By: Tim Walls

Sample Observations (color, texture, odor, etc)

Overall: Silt - dark brn, saturated, trace sand, some wood, no odor

0 to 0.5 foot: A.A.

0.5 to ^{10"}1 foot: A.A.

1 to 3 feet: _____

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: N ~~5475999.991~~ E ~~564443.622~~

5236433.384 -352023.320

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-48

Water Depth: 6' Total Core Recovery (sediment depth): 68"

Sample Date: 10/13/10 Sample Time: 0950

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: Silty sand - brown, loose, v. moist, no odor, m.g. to c.g.

0 to 0.5 foot: A.A.

0.5 to 1 feet: A.A.

1 to 3 feet: A.A.

3 to ^{5.6'} 5 feet: A.A.

5 to 7 feet: _____

<u>Sample Type:</u>	<u>PONAR 0-6"</u>	<u>VIBRACORE</u>	OTHER
<u>Analysis (all):</u>	TAL Metals ¹	PAH (17 List) ¹	PCB aroclor ¹ TPH DRO ²
	TPH ORO ²	TOC ²	Grain Size ² % Moisture ¹
<u>Analysis (10%):</u>	TCL Pesticides ¹	TCL SVOCs ¹	Dioxins ¹ PCB congeners ¹
	PAH (34 List) ¹	Black Carbon ²	

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: 46°44.063757'N 92°09.293974'W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-48

Water Depth: 6' Total Core Recovery (sediment depth): 66"

Sample Date: 10/13/10 Sample Time: 0950

Sample Collected By: _____

Sample Observations (color, texture, odor, etc)

Overall: _____
0 to 0.5 foot: _____
0.5 to 1 feet: _____
1 to 3 feet: _____
3 to 5 feet: _____
5 to 7 feet: _____

Sample Type: PONAR 0-6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: 46°44.063757'N 92°09.293974'W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-49

Water Depth: 6'3" Total Core Recovery (sediment depth): 5'3"

Sample Date: 10/13/10 Sample Time: 0920

Sample Collected By: _____

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ tr sand, dark brown, saturated, no odor

0 to 0.5 foot: Fine silt w/ tr sand; dark brown; saturated; no odor

0.5 to 1 feet: Fine silt w/ tr sand; dark brown; saturated; no odor

1 to 3 feet: Fine silt w/ tr sand; dark brown; wet; no odor

3 to ^{5'3"} feet: Fine silt w/ tr sand; dark brown; wet; no odor

5 to 7 feet: _____

Sample Type: PONAR 0-6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46°44.06311'N 92°09.220438'W

Other Comments: changed location due to past ship-wreck

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-50

Water Depth: 5'10" Total Core Recovery (sediment depth): 83"

Sample Date: 10/13/10 Sample Time: 0845

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ trace sand; dark brown; no odor.

0 to 0.5 foot: Fine silt w/ tr sand; dark brown; no odor

0.5 to 1 feet: Fine silt w/ tr sand; dark brown; no odor.

1 to 3 feet: Clayey silt w/ tr sand + tr organics; dark brown; no odor.

3 to 5 feet: Nature @ 36"

5 to 7 feet: _____

Sample Type: PONAR 0-6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List) PCB arochlor¹ TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46°44.037512' N 92°09.040535' W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-51

Water Depth: 6' 1" Total Core Recovery (sediment depth): 88"

Sample Date: 10/12/10 Sample Time: 1654

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ tr sand; dark brown no odor

0 to 0.5 foot: Fine silt w/ tr sand; wood chips; dark brown; no odor; saturated

0.5 to 1 feet: Fine silt w/ tr sand; wood chips; dark brown; no odor; saturated

1 to 3 feet: Fine silt w/ tr sand; organics; dark brown; damp; wet

3 to 5 feet: Fine silt w/ tr sand; light brown; no odor; wet

5 to 7 feet: Clayey silt w/ tr sand; light brown; no odor; wet
Native F → M sand @ 76"

Sample Type: PONAR VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46° 44.034872' N 92° 08.843947' W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-53

Water Depth: 6' Total Core Recovery (sediment depth): 26"

Sample Date: 10-15-2010 Sample Time: 1516

Sample Collected By: Tim Walls

Sample Observations (color, texture, odor, etc)

Overall: (0-9") Silt - brown, saturated, trace sand, wood chunk (ca-26") Sandy silt.

0 to 0.5 foot: Silt - brown, saturated, trace sand, some wood.

^{9"}
0.5 to 1 feet: Sandy Silt - dark brown, wet, no odor

1 to ~~3~~^{26"} feet: A.A.

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-54

Water Depth: 5' Total Core Recovery (sediment depth): 12"

Sample Date: 10-15-2010 Sample Time: 1405

Sample Collected By: Tim Wells

Sample Observations (color, texture, odor, etc)

Overall: Silt - brown, saturated, some organics & wood, no odor

0 to 0.5 foot: A.A.

0.5 to 1 feet: A.A.

1 to 3 feet: _____

3 to 5 feet: _____

5 to 7 feet: _____

<u>Sample Type:</u>	<u>PONAR</u>	<u>VIBRACORE</u>	OTHER
<u>Analysis (all):</u>	TAL Metals ¹	PAH (17 List) ¹	PCB aroclor ¹ TPH DRO ²
	TPH ORO ²	TOC ²	Grain Size ² % Moisture ¹
<u>Analysis (10%):</u>	TCL Pesticides ¹	TCL SVOCs ¹	Dioxins ¹ PCB congeners ¹
	PAH (34 List) ¹	Black Carbon ²	

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

**Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota**

Sample Location ID: SLB-55

Water Depth: >4' **Total Core Recovery (sediment depth):** 116"

Sample Date: 10-13-10 **Sample Time:** 0805

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: Silt with 2ft layer of wood to sandy silt.

0 to 0.5 foot: Silt - brown, soft, saturated, no odor

0.5 to 1 feet: A.A.

1 to ^{3.6'} 3 feet: A.A.

^{3.6'} 3 to ^{4.5'} 5 feet: Fibrous wood - dark brown, s. stiff, saturated, no odor.

5 to ^{9.6'} 7 feet: Sandy silt - light brown, s. stiff, v. moist, some fine-grained sand, no odor

Sample Type:	<input checked="" type="radio"/> <u>PONAR</u>	<input checked="" type="radio"/> <u>VIBRACORE</u>	<input type="radio"/> OTHER
Analysis (all):	TAL Metals ¹	PAH (17 List) ¹	PCB aroclor ¹ TPH DRO ²
	TPH ORO ²	TOC ²	Grain Size ² % Moisture ¹
Analysis (10%):	TCL Pesticides ¹	TCL SVOCs ¹	Dioxins ¹ PCB congeners ¹
	PAH (34 List) ¹	Black Carbon ²	

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-56

Water Depth: 11'10" Total Core Recovery (sediment depth): 90"

Sample Date: 10/7/10 Sample Time: 1650

Sample Collected By: _____

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ tr sand, dark brown, wet, no odor
0 to 0.5 foot: Fine silt w/ tr sand + organics, dark brown, saturated, no odor
0.5 to 1 feet: Fine silt w/ tr sand, dark brown, saturated, no odor, organic banding
1 to 3 feet: Fine silt w/ tr sand, dark brown, saturated, organic banding
3 to 5 feet: Fine silt w/ tr sand + organics, dark brown, ^{wet} ~~saturated~~, no odor
5 to ~~36"~~ feet: Fine silt → clayey silt w/ tr sand, dark brown, no odor

Sample Type: PONAR VIBRACORE OTHER
Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB arochlor¹ TPH DRO²
TPHORO² TOC² Grain Size² % Moisture¹
Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46°43.916075' N 92°08.938045' W

Other Comments: _____

**Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota**

Sample Location ID: SLB-57

Water Depth: 7' 1" **Total Core Recovery (sediment depth):** 77'

Sample Date: 10/12/10 **Sample Time:** 1726

Sample Collected By: T. Walker

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ to sand; dark brown; organics; no odor
 0 to 0.5 foot: Fine silt w/ to sand; dark brown; organics no odor; saturated
 0.5 to 1 feet: Fine silt w/ to sand; dark brown; organics; no odor; wet
 1 to 3 feet: Fine silt w/ to sand; dark brown; no odor; damp
 3 to 5 feet: Fine silt w/ to sand; dark brown; no odor; damp
 5 to 7 feet: Fine silt (compacted) w/ to sand; dark brown; no odor; damp

Sample Type: PONAR VIBRACORE OTHER
Analysis (all): TAL Metals PAH (17 List)¹ PCB arochlor TPH DRO²
 TPH ORO² TOC² Grain Size² % Moisture¹
Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
 PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46° 43.735532' N 92° 08.735532' W
911674' N

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB 58

Water Depth: 3.0' **Total Core Recovery (sediment depth):** _____

Sample Date: 10-13-10 **Sample Time:** 1705

Sample Collected By: TIM WALLS

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ sand, organics, wood; saturated; dark brown, no odor

0 to ~~0.5~~^{20"} foot: Fine silt w/ sand, organics, wood; saturated; dark brown, no odor

0.5 to 1 feet: _____

1 to 3 feet: _____

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
 PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB 59

Water Depth: 5.9' **Total Core Recovery (sediment depth):** 25"

Sample Date: 10-13-10 **Sample Time:** 1635

Sample Collected By: TIM WALLS

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ tr sand, organics, dark brown, no odor

0 to 0.5 foot: Fine silt w/ tr sand, organics, dark brown, no odor

0.5 to 1 feet: Fine silt w/ tr sand, organics, dark brown, no odor
 25"

1 to 8 feet: Fine silt w/ tr sand, organics, dark brown, no odor

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type:	<u>PONAR</u>	<u>VIBRACORE</u>	OTHER
Analysis (all):	<u>TAL Metals¹</u>	<u>PAH (17 List)¹</u>	<u>PCB aroclor¹</u> <u>TPH DRQ²</u>
	<u>TPH ORO²</u>	<u>TOC²</u>	<u>Grain Size²</u> <u>% Moisture¹</u>
Analysis (10%):	TCL Pesticides ¹	TCL SVOCs ¹	Dioxins ¹ PCB congeners ¹
	PAH (34 List) ¹	Black Carbon ²	

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-60

Water Depth: 15'4" Total Core Recovery (sediment depth): 112"

Sample Date: 10/14/10 Sample Time: 0820

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: Fin silt w/ tr sand, organics, slight odor, dark brown, saturated
0 to 0.5 foot: Fin silt w/ tr sand, organics, slight odor, dark brown, saturated
0.5 to 1 feet: Fin silt w/ tr sand, organics, slight odor, dark brown, saturated
1 to 3 feet: Fin silt w/ tr sand, organics, strong odor, dark brown, saturated
3 to 5 feet: Fin silt w/ tr sand, organics, strong odor, dark brown, saturated
5 to 7 feet: Fin silt w/ tr sand, organics, slight odor, dark brown, saturated
7 to 106": Fin silt w/ sand, organics, slight odor

Sample Type: PONAR 0-6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPHDRO²
TPHORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46°43.815288'N 92°09.344211'W

Other Comments: _____

Field Data Collection Form
SL Howard's Bay
Superior, Douglas County, Wisconsin

Sample Location ID: SLB-61

Water Depth: ~~24~~ 24' Total Core Recovery (sediment depth): 79"

Sample Date: 10-14-10 Sample Time: 0901

Sample Collected By: T. Walk

Sample Observations (color, texture, odor, etc)

Overall: Silt - dark brown, firm, trace sand, slight odor

0 to 0.5 foot: AA.

0.5 to 1 feet: AA.

1 to 3 feet: AA.

3 to 6 feet: Silt - black, firm, trace sand, saturated, slight odor.

6 to 79" feet: Sand - black, firm, m. grained, wet, strong odor.

Sample Type: PONAR VIBRACORE OTHER ~~hard down~~

Analysis (all):	TAL Metals ¹	PAH (34 List) ¹	PCB Aroclor ¹ TPH DRO ²
	TPH ORO ²	Mercury ¹	Tri-butyl tin ² Grain Size ²
	TCL Pesticides ¹	PAH (17 List)	AVS/SEM ¹ TOC ²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: N 46°43.815031 N 92°09.193198

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-62

Water Depth: 20' 5" Total Core Recovery (sediment depth): 32"

Sample Date: 10/14/10 Sample Time: 0940

Sample Collected By: T. Wells

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ trace sand; dark brown; no odor; saturated

0 to 0.5 foot: Fine silt w/ tr sand; dark brown; no odor; saturated

0.5 to 1 feet: Fine silt w/ tr sand; dark brown; no odor; saturated

1 to 3 feet: Fine silt w/ tr sand; dark brown; no odor; saturated

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR 0-6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB arylor TPH DRO²

TPH ORO² TOC Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46°43.815465' N 92°09.017980' W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-63

Water Depth: 12' 1" Total Core Recovery (sediment depth): 99"

Sample Date: 10/7/10 Sample Time: 1610

Sample Collected By: _____

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ trace sand; dark brown; no odor; saturated
0 to 0.5 foot: Fine silt w/ trace sand; dark brown; no odor; saturated
0.5 to 1 feet: Fine silt w/ trace sand; dark brown; no odor; saturated
1 to 3 feet: Fine silt w/ trace sand and organics; dark brown; no odor
3 to 5 feet: Fine silt w/ trace sand and organics; dark brown; no odor
5 to ^{84"} feet: Fine → medium sand; sand less brown; F → M nature @ 84"

Sample Type: PONAR VIBRACORE OTHER
Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB arochlor¹ TPH DRO²
TPH ORO² TOC² Grain Size² % Moisture¹
Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab ²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46° 43.790667' N 92° 08.835571' W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB 64

Water Depth: 1-2' Total Core Recovery (sediment depth): 49"

Sample Date: 10-13-10 Sample Time: 1540

Sample Collected By: TIM WALLS

Sample Observations (color, texture, odor, etc)

Overall: F → M sand; light brown; no odor; saturated

0 to 0.5 foot: F → M sand; light brown; no odor; saturated

0.5 to 1 feet: F → M sand; light brown; no odor; saturated

1 to 3 feet: F → M sand; light brown; no odor; saturated

3 to ^{49"}~~X~~ feet: F → M sand; light brown; no odor; saturated

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB arochlor TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / ~~NO~~ SLB10-1-64-001DP

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-65

Water Depth: 3 Total Core Recovery (sediment depth): 81"

Sample Date: 10/7/10 Sample Time: 0810

Sample Collected By: _____

Sample Observations (color, texture, odor, etc)

Overall: Fine silt; organics; trace sand; gradings moisture 0"-84"
0 to 0.5 foot: Fine silt w/ trace sand, saturated; dark brown; no odor.
0.5 to 1 feet: Fine silt w/ trace sand; saturated; dark brown; no odor.
1 to 3 feet: Fine silt w/ organics; wet; trace sand; dark brown; no odor.
3 to 5 feet: Fine silt w/ organics; damp; trace sand; dark brown; no odor.
5 to 7 feet: Clayey sand; damp; organics; dark brown.

Sample Type: PONAR 0.6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPHORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46°43.660625' N 92°08.997199' W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-66

Water Depth: 8'3" Total Core Recovery (sediment depth): 94"

Sample Date: 10/6/10 Sample Time: 1535

Sample Collected By: _____

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ organics; dark brown; no odor; sandy @ 82"
0 to 0.5 foot: Fine silt; dark brown; no odor; saturated
0.5 to 1 feet: Fine silt; dark brown; no odor; saturated
1 to 3 feet: Fine silt; dark brown; no odor; saturated
3 to 5 feet: Fine silt w/ organics; trace fine sand; wet; no odor; dark brown
5 to 7 feet: Fine silt w/ organics; trace fine sand; wet; no odor; dark brown
Fine → medium sand @ ~82" - 89"

Sample Type: PONAR 0-6" VIBRACORE OTHER
Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPH ORO² TOC² Grain Size² % Moisture¹
Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46°43.657738'N 92°08.869154'W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-67

Water Depth: 5'11" Total Core Recovery (sediment depth): 101"

Sample Date: 10/6/10 Sample Time: 1500

Sample Collected By: Jon Oslomb

Sample Observations (color, texture, odor, etc)

Overall: Fine silt, dark brown, no odor, moisture gradation 0-10%
0 to 0.5 foot: Fine silt, trace fine sand, saturated, no odor, dark brown
0.5 to 1 feet: Fine silt, dark brown, no odor, wet,
1 to 3 feet: Fine silt, dark brown, wood chips @ 16"-19", no odor
3 to 5 feet: Fine silt, dark brown, no odor, damp.
5 to 7 feet: Fine silt, dark brown, no odor, damp, trace organics
7 to 8'7": Fine clayey silt, dark brown, no odor, damp trace organics

Sample Type: PONAR 0-6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46°43.652220'N 92°08.736771'W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB 08

Water Depth: 2' **Total Core Recovery (sediment depth):** _____

Sample Date: 10-7-10 **Sample Time:** 1015

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ trace sand and organics; dark brown; no odor
 0 to 0.5 foot: Fine silt w/ tr sand & organics; dark brown; no odor; saturated
 0.5 to ^{17"} feet: Fine silt w/ tr sand & organics; dark brown; no odor; wood chips
 1 to 3 feet: _____
 3 to 5 feet: _____
 5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPH ORO² TOC² Grain Size³ % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
 PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SUB-89

Water Depth: 3' Total Core Recovery (sediment depth): _____

Sample Date: 10-7-10 Sample Time: 1055

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ trace sand; dark brown; no odor

0 to 0.5 foot: Fine → medium sand; light brown; no odor

0.5 to ^{21"} feet: Fine silt w/ trace sand; dark brown; no odor

1 to 3 feet: _____

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / ~~NO~~

Coordinates same as projected: YES / NO

If no – new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-70

Water Depth: 2' Total Core Recovery (sediment depth): _____

Sample Date: 10-7-10 Sample Time: 1205

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ trace sand and wood chips; dark brown; no odor
0 to 0.5 foot: Fine silt w/ trace sand and wood chips; dark brown; no odor
0.5 to 1 feet: Fine silt w/ trace sand and wood chips; dark brown; saturated
1 to 3 feet: _____
3 to 5 feet: _____
5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER Push

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB areacor¹ TPH DRO²
TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SUB-71

Water Depth: 1' **Total Core Recovery (sediment depth):** _____

Sample Date: 10-7-10 **Sample Time:** 1245

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: Grading F to M sand to clayey silt, dark brown, no odor
 0 to 0.5 foot: F to M sand, wet, dark brown, no odor
 0.5 to 1 feet: F to M sand, wet, dark brown, no odor
 1 to 3 feet: F to M sand (-1' - 2'), fine silt w/ to sand, dark brown, no odor
 3 to ^{54"} feet: Clayey silt, saturated, dark brown, no odor
 5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH/DRO²
TPH/ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
 PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-73

Water Depth: 4' Total Core Recovery (sediment depth): 31"

Sample Date: 10-7-2010 Sample Time: 1120

Sample Collected By: Tom Walls

Sample Observations (color, texture, odor, etc)

Overall: Silt = dark brown, saturated, soft, some wood fragments

0 to 0.5 foot: Silt - dark brown, soft, saturated, no odor

0.5 to 1 feet: A-A

1 to ³¹3 feet: Silt & Wood - dark brown, soft to stiff, saturated, no odor

3 to 5 feet: _____

5 to 7 feet: _____

<u>Sample Type:</u>	<u>PONAR</u>	<u>VIBRACORE</u>	OTHER
<u>Analysis (all):</u>	TAL Metals ¹	PAH (17 List) ¹	PCB aroclor ¹ TPH DRO ²
	TPH ORO ²	TOC ²	Grain Size ² % Moisture ¹
<u>Analysis (10%):</u>	TCL Pesticides ¹	TCL SVOCs ¹	Dioxins ¹ PCB congeners ¹
	PAH (34 List) ¹	Black Carbon ²	

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-74, SLB-74 DUP

Water Depth: 4' Total Core Recovery (sediment depth): 113" DUP-109"

Sample Date: 10/6/10 Sample Time: 1400

Sample Collected By: _____

Sample Observations (color, texture, odor, etc)

Overall: Fine silt, dark brown, no odor, grading moisture 0"-120"
0 to 0.5 foot: Fine silt, dark brown, trace fine sand, saturated.
0.5 to 1 feet: Fine silt, trace fine sand, dark brown, saturated.
1 to 3 feet: Fine silt, dark brown, organic layers, wet, wood chips
3 to 5 feet: Fine silt, dark brown, trace organics, wet, no odor
5 to 7 feet: Fine silt, dark brown, trace organics, wet, no odor
7 to 9 feet: Clayey silt, dark brown, trace organics, damp, no odor

Sample Type: PONAR 0-6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO 109"-CR

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: 46°43.575371'N 92°08.672190'W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-75

Water Depth: 4' Total Core Recovery (sediment depth): _____

Sample Date: 10-7-2010 Sample Time: 1555

Sample Collected By: Tim Wells

Sample Observations (color, texture, odor, etc)

Overall: Fine silt; trace sand; dark brown; saturated; no odor

0 to 0.5 foot: Fine silt; trace sand; dark brown; saturated; no odor

0.5 to 1 feet: Fine silt; trace sand; dark brown; saturated; no odor

1 to ^{34"} feet: Fine silt; trace sand; dark brown; saturated; organics; no odor

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER
Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB arochlor TPH DRO²
TPH ORO² TOC² Grain Size³ % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no -- new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: 76 → SLB-76

Water Depth: 6.4 Total Core Recovery (sediment depth): _____

Sample Date: 10-13-10 Sample Time: 10:30A

Sample Collected By: ~~XXXX~~ Tim WALLS

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ trace sand; dark brown; wood chunks; no odor; saturated
0 to 0.5 foot: Fine silt w/ trace sand; dark brown; wood chunks; no odor; saturated
0.5 to 1 feet: Fine silt w/ trace sand; dark brown; wood chunks; no odor; saturated
1 to 3 feet: _____
3 to 5 feet: _____
5 to 7 feet: _____

Sample Type: ~~POINAR~~ VIBRACORE OTHER
Analysis (all): ~~TAL Metals¹~~ PAH (17 List)¹ PCB arochlor¹ TPH DRO²
TPHORO² TOC² Grain Size² % Moisture¹
Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: Ponar sample was unattainable due to wood scraps on bottom

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-77

Water Depth: 5'8" Total Core Recovery (sediment depth): 72"

Sample Date: 10/7/10 Sample Time: 0850

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ trace sand; dark brown; no odor; saturated
0 to 0.5 foot: Fine silt w/ tr sand; dark brown; no odor; saturated
0.5 to 1 feet: Fine silt w/ tr sand; dark brown; no odor; wet
1 to 3 feet: Fine silt w/ tr sand; dark brown; no odor; wet
3 to 5 feet: Fine silt w/ organics; tr fine sand; dark brown; no odor
5 to ~~X~~ ^{73"} feet: Clayey silt w/ organics; tr sand; dark brown; no odor

Sample Type: PONAR 0-6" VIBRACORE OTHER
Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPH ORO² TOC² Grain Size² % Moisture²
Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46°43.496583' N 92°08.726456' W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-79

Water Depth: ~~1.5'~~ 1.5' Total Core Recovery (sediment depth): _____

Sample Date: 10-13-2010 Sample Time: 1215

Sample Collected By: Tim Walls

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ trace sand, wood chunks, dark brown, no odor
0 to 0.5 foot: Fine silt w/ trace sand, wood chunks, dark brown, no odor
0.5 to 1 feet: Fine silt w/ trace sand, wood chunks, dark brown, no odor
1 to 3 feet: _____
3 to 5 feet: _____
5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER
Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
 TPH ORO TOC² Grain Size² % Moisture¹
Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: Ponar sample was unattainable
due to wood scraps on bottom

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-81

Water Depth: 5'1" Total Core Recovery (sediment depth): 99"

Sample Date: 10/5/10 Sample Time: 1440

Sample Collected By: _____

Sample Observations (color, texture, odor, etc)

Overall: Fine silt; dark brown; no odor; ~~and~~ moisture decreases from 0"-92"

0 to 0.5 foot: Fine silt; dark brown; no odor; saturated

0.5 to 1 feet: Fine silt; dark brown; no odor; wet

1 to 3 feet: Fine silt; dark brown; no odor; wet

3 to 5 feet: Fine silt; trace sand; dark brown; no odor; damp

5 to 7 feet: Fine silt; dark brown; no odor; damp

Sample Type: PONAR VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor² TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO Ponar only 0-6" SLB10-2-21-06DP

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: 46°43.417582'N 92°08.672787'W

Other Comments: Weedy bottom, penetration 9'

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-82

Water Depth: 1' Total Core Recovery (sediment depth): _____

Sample Date: 10-7-2010 Sample Time: 1000

Sample Collected By: Tim Walls

Sample Observations (color, texture, odor, etc)

Overall: Fine to medium sand; light brown; no odor

0 to 0.5 foot: Fine silt w/ sand; light brown; no odor

0.5 to 1 feet: Fine to medium sand; light brown no odor

1 to ~~3~~ feet: → 27" Fine to medium sand; light brown; no odor *organic matter*

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER *Hand drive*

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB arochlor TPH PRO²

TPH ORO³ TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES NO

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-83

Water Depth: 4' **Total Core Recovery (sediment depth):** 100'

Sample Date: 10-6-2010 **Sample Time:** 1600

Sample Collected By: Tim Walls

Sample Observations (color, texture, odor, etc)

Overall: Silt w/ organics, dark brown, no odor, saturated
 0 to 0.5 foot: Fine silt w/ organics, dark brown, no odor, saturated
 0.5 to 1 feet: Fine silt w/ organics, dark brown, no odor, saturated
 1 to 3 feet: Fine silt w/ organics, dark brown, no odor, saturated
 3 to 5 feet: Fine silt w/ organics, dark brown, no odor, saturated, clayey silt @ ~ 53"
 5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
 TPHORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides TCL SVOCs¹ Dioxins¹ PCB congeners¹
 PAH (34 List)¹ Black Carbon²

¹CLP Lab ²WESTON Procured Lab

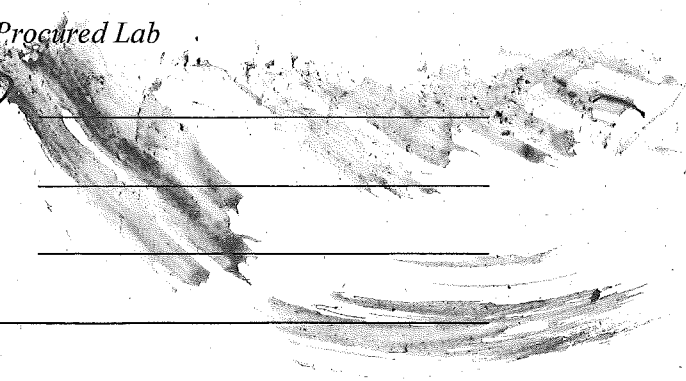
Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: _____

Other Comments: _____



Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-84

Water Depth: 1.5' Total Core Recovery (sediment depth): _____

Sample Date: 10-13-2010 Sample Time: 1245

Sample Collected By: Tim Walls

Sample Observations (color, texture, odor, etc)

Overall: Fine silt; trace sand; saturated; wood chunks; no odor
0 to 0.5 foot: Fine silt; trace sand; saturated; wood chunks; no odor
0.5 to 1 feet: Fine silt; trace sand; saturated; wood chunks; no odor
1 to 3 feet: Fine silt; trace sand; organic; saturated; wood chips; odor; date brown
3 to 5 feet: _____
5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER Handrive

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
 TPHORO² TOC³ Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab ²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: Ponar grab sample was unattainable due to wood scrap on bottom

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-85

Water Depth: 4'6" Total Core Recovery (sediment depth): 110"

Sample Date: 10/6/10 Sample Time: 0845

Sample Collected By: Jonathan Colant

Sample Observations (color, texture, odor, etc)

Overall: Silt, fine; no odor; dark brown; grades in moisture content 0% - 11%

0 to 0.5 foot: Fine silt; saturated; dark brown; no odor; trace organics (wood debris)

0.5 to 1 feet: Fine silt; saturated; dark brown; no odor; trace organics

1 to 3 feet: Fine silt; trace sand; wet; dark brown; no odor; trace organics

3 to 5 feet: Fine silt; dark brown; damp; no odor

5 to 7 feet: Fine silt; dark brown; damp; no odor

7-9 Fine silt; dark brown; damp; no odor

Sample Type: PONAR 0-6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46°43.337001'N 92°08.740653'W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-86

Water Depth: 3' Total Core Recovery (sediment depth): _____

Sample Date: 10-7-2010 Sample Time: 0920

Sample Collected By: Tim Walls

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ trace sand; dark brown; no odor

0 to 0.5 foot: Fine silt w/ trace sand; dark brown; no odor saturated

0.5 to 1 feet: Fine silt w/ trace sand; dark brown; no odor damp

1 to ~~3~~^{24"} feet: Fine silt w/ trace sand; dark brown; no odor; damp

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER Hand drive

Analysis (all): TAL Metals PAH (17 List)¹ PCB arochlor¹ TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-87

Water Depth: 3'11" **Total Core Recovery (sediment depth):** 113

Sample Date: 10/6/10 **Sample Time:** 0930

Sample Collected By: _____

Sample Observations (color, texture, odor, etc)

Overall: Silt w/ trace fine sand; no odor; dark brown; clayey silt @ 96"
 0 to 0.5 foot: Fine silt; saturated; no odor; dark brown.
 0.5 to 1 feet: Fine silt; wet; no odor; dark brown
 1 to 3 feet: Fine silt w/ trace sand; no odor; dark brown
 3 to 5 feet: Fine silt w/ trace sand; no odor; dark brown
 5 to 7 feet: Top 1' is fine grained sand; no odor dark brown; fine silt w/
 7 to 9 feet clayey silt w/ trace fine sand; no odor dark brown

Sample Type: PONAR 0-6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
 TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
 PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46°43.258001'N 92°08.801603'W

Other Comments: _____

9 to 10 feet Clayey silt w/ trace fine sand; no odor; dark brown

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-88

Water Depth: 15' Total Core Recovery (sediment depth): _____

Sample Date: 10-6-2010 Sample Time: 1315

Sample Collected By: Shauna Ross

Sample Observations (color, texture, odor, etc)

Overall: Silt w/ large cobbles of coal, ranging 1/2" - 5" width, no odor

0 to 0.5 foot: Silt w/ cobbles of coal, no odor, dark brown

0.5 to 1 feet: Silt w/ cobbles of coal, no odor, dark brown

1 to 3 feet: _____

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type:

PONAR VIBRACORE OTHER
 TAL Metals¹ PAH (17 List)¹ PCB arochlor TPH DRO²
 TPH ORO² TOC² Grain Size² % Moisture

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-89

Water Depth: 19'8" Total Core Recovery (sediment depth): 21'6"

Sample Date: 10/7/10 Sample Time: 1125

Sample Collected By: _____

Sample Observations (color, texture, odor, etc)

Overall: Silt - black, very soft, saturated, organic odor

0 to 0.5 foot: A.A.

0.5 to 1 feet: A.A.

1 to ~~3~~^{16"} feet: A.A.

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR 2-6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: 46°43.462969'N 92°09.490602'W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-90

Water Depth: 2' **Total Core Recovery (sediment depth):** 32"

Sample Date: 10-6-10 **Sample Time:** 0935

Sample Collected By: Shawna Ross

Sample Observations (color, texture, odor, etc)

Overall: Fine silt; dark brown; layered organics; no odor
 0 to 0.5 foot: Fine silt; saturated; trace sand; dark brown; trace organics
 0.5 to 1 feet: Fine silt; wet; trace sand; dark brown; layered organics
 1 to 3 feet: Fine silt; damp; organics; dark brown; no odor 12-32"
 3 to 5 feet: _____
 5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER Hand Procedures
Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPHORO² TOC² Grain Size² % Moisture¹
Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
 PAH (34 List)¹ Black Carbon²

¹CLP Lab ²WESTON Procured Lab

Field duplicate/replicate: YES / NO
Photos: YES / NO
Coordinates same as projected: YES / NO

If no - new coordinates: Collected in GPS

Other Comments: Lots of organics 20" - 32"

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-91

Water Depth: 1' Total Core Recovery (sediment depth): 32"

Sample Date: 10-6-2010 Sample Time: 0900

Sample Collected By: Shauna Ross

Sample Observations (color, texture, odor, etc)

Overall: Fine silt; organics; dark brown; no odor

0 to 0.5 foot: Fine silt w/ organics; saturated; dark brown; no odor

0.5 to 1 feet: Fine silt w/ organics; wet; dark brown; no odor

1 to 3 feet: Fine silt w/ trace organics; damp; dark brown; no odor

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²

TPH ORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-92

Water Depth: 1' Total Core Recovery (sediment depth): _____

Sample Date: 10-6-2010 Sample Time: 1430

Sample Collected By: Shauna Ross

Sample Observations (color, texture, odor, etc)

Overall: Sandy silt; dark brown; no odor; damp

0 to 0.5 foot: Sandy silt; dark brown; no odor; damp

0.5 to 1 feet: Sandy silt; dark brown; no odor; damp

1 to 3 feet: Sandy silt; dark brown; no odor; damp

3 to 5 feet: _____

5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER handdrive
Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB arochlor TPH DRO²
TPH ORC² TOC² Grain Size² % Moisture²

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-93

Water Depth: 1' Total Core Recovery (sediment depth): _____

Sample Date: 10-6-2010 Sample Time: 1015

Sample Collected By: Shauna Ross

Sample Observations (color, texture, odor, etc)

Overall: Silty sand; layers of black organics; no odor; native @ 41"
0 to 0.5 foot: Silty sand; satwated; dark brown; no odor
0.5 to 1 feet: Silty sand; saturated; black organic banding; no odor
1 to 3 feet: Silty sand ^{grading into} silt w/ trace sand; black organic banding; no odor
3 to 5 feet: Silt w/ trace sand to 41"; fine to medium grain sand to 46"; clay w/ silt to 50"
5 to 7 feet: _____

Sample Type: PONAR VIBRACORE OTHER Hand push
Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPH ORO² TOC² Grain Size² % Moisture¹
Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: In with GPS data

Other Comments: Native @ 41"

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-94

Water Depth: 26'3" Total Core Recovery (sediment depth): ~~26'3"~~ 96"

Sample Date: 10/7/10 Sample Time: 1205

Sample Collected By: Jonathan Colwell

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ trace sand; dark brown; organics; no odor
0 to 0.5 foot: Fine silt w/ trace sand; dark brown; Cole cobbles; no odor; ^{sat. w/ water}
0.5 to 1 feet: Fine silt w/ trace sand; saturated; dark brown; Cole cobbles; no odor
1 to 3 feet: Fine silt w/ trace sand; organics; dark brown; wet; no odor
3 to 5 feet: ~~Fine silt~~ 3-4' fine → medium sand; light brown; damp; no odor
4-5 Fine silt w/ trace sand; light brown; damp; no odor
5 to 7 feet: Fine silt; trace sand; light brown; damp; no odor
7-8' Fine silt w/ trace sand; light brown; damp; no odor

Sample Type: PONAR 0.6" VIBRACORE OTHER
Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²
TPH LO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹
PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46°43.237977'N 92°09.182020'W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-95

Water Depth: 17'9" Total Core Recovery (sediment depth): 1st core 19"/2nd 86"

Sample Date: 10/7/10 Sample Time: 0935

Sample Collected By: T. Walls

Sample Observations (color, texture, odor, etc)

Overall: Fine silt; trace sand; dark brown; no odor; saturated

0 to 0.5 foot: Fine silt; trace sand; dark brown; no odor; saturated

0.5 to 1 feet: Fine silt w/ tr sand; dark brown; no odor; wet

1 to 3 feet: Fine silt w/ tr sand; dark brown; no odor; wet

3 to 5 feet: Fine silt w/ tr sand; dark brown; no odor; damp

5 to 7 feet: Fine → medium sand; light brown; damp; no odor

Sample Type: PONAR 0.6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²

TPH LORO² TOC Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO _____

Photos: YES / NO _____

Coordinates same as projected: YES / NO _____

If no - new coordinates: ~~46° 43' 45.5" N 92° 09' 06.6" W~~ 46° 43.169192' N 92° 09.620566' W

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-96

Water Depth: 3'5" Total Core Recovery (sediment depth): 88"

Sample Date: 10/2/10 Sample Time: 1430

Sample Collected By: Jonathan Colow

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ tr sand, dark brown, no odor, wet

0 to 0.5 foot: Fine silt w/ tr sand, dark brown, no odor, wet

0.5 to 1 feet: Fine silt w/ tr sand + organics, dark brown no odor, damp

1 to 3 feet: Fine silt w/ tr sand + organics, dark brown, no odor, damp

3 to 5 feet: Fine silt w/ tr sand, dark brown, no odor, damp

5 to 7 feet: clayey silt w/ tr sand + organics, dark brown, no odor, damp

Sample Type: PONAR 0-6" VIBRACORE OTHER

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB aroclor¹ TPH DRO²

TPHORO² TOC² Grain Size² % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO 46°43.167184'N 22°09.497125'W

If no - new coordinates: _____

Other Comments: _____

Field Data Collection Form
St. Louis Bay
Duluth, St. Louis County, Minnesota

Sample Location ID: SLB-97

Water Depth: 21'8" Total Core Recovery (sediment depth): 98"

Sample Date: 10/7/10 Sample Time: 1510

Sample Collected By: _____

Sample Observations (color, texture, odor, etc)

Overall: Fine silt w/ fr sand; native F→M sand @ 75"

0 to 0.5 foot: Fine silt w/ fr sand; wood chips; dark brown; no odor

0.5 to 1 feet: Fine silt w/ fr sand; wood chips; dark brown; no odor

1 to 3 feet: Fine silt w/ fr sand + fr organics; dark brown; no odor

3 to 5 feet: Fine silt w/ fr sand; dark brown; no odor

5 to ^{75"} feet: Fine silt w/ fr sand; dark brown; no odor

Sample Type: PONAR 0-6" VIBRACORE OTHER _____

Analysis (all): TAL Metals¹ PAH (17 List)¹ PCB congeners TPH DRO²

TPH ORO² TQC² Grain Size % Moisture¹

Analysis (10%): TCL Pesticides¹ TCL SVOCs¹ Dioxins¹ PCB congeners¹

PAH (34 List)¹ Black Carbon²

¹CLP Lab

²WESTON Procured Lab

Field duplicate/replicate: YES / NO

Photos: YES / NO

Coordinates same as projected: YES / NO

If no - new coordinates: 46°43.163148'N 92°09.364333'W

Other Comments: _____