ONONDAGA LAKE

HUMAN HEALTH RISK ASSESSMENT

Syracuse, New York

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Volume 1 of 2
(Text, Tables, Figures, and Appendices A through D)

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New York State
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Division of Environmental Remediation
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HUMAN HEALTH RISK ASSESSMENT
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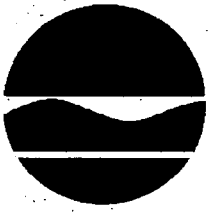

Onondaga Lake Project
Site No. 7-34-030-002
Contract Number C004365, Task Order 1

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Acronyms and Abbreviations

ABS_{GI}	gastrointestinal absorbance
ACJ	Amended Consent Judgment
AF	adherence factor
ATSDR	Agency for Toxic Substances and Disease Registry
BEHP	bis(2-ethylhexyl)phthalate
BMD	benchmark dose
BMDL	benchmark dose limit
BTEX	benzene, toluene, ethylbenzene, and xylenes
CDC	Centers for Disease Control
CDI	chronic daily intake
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CLP	Contract Laboratory Program
COPC	contaminant of potential concern
CSF	carcinogenic slope factor
CSO	combined sewer overflow
CT	central tendency
DAF	dermal absorption factor
DDT	dichlorodiphenyl trichloroethane
DEHP	di(2-ethylhexyl)phthalate
DHHS	Department of Health and Human Services
EPC	exposure point concentration
FI	fraction ingested
FS	feasibility study
GI	gastrointestinal
GLSFATF	Great Lakes Sport Fish Advisory Task Force
HEAST	Health Effects Assessment Summary Tables
HHRA	human health risk assessment
HI	hazard index
HPV	health-protective values
HQ	hazard quotient
IARC	International Agency for Research on Cancer
IRIS	Integrated Risk Information System
LCP	Linden Chemicals and Plastics
LDC	Lakefront Development Corporation
LOAEL	lowest observed adverse effect level
LOEL	lowest observed effect level
LWA	length-weighted average
Metro	Metropolitan Syracuse Sewage Treatment Plant

mgd	million gallons per day
MOE	margin-of-exposure
MRL	minimal risk level
MVUE	minimum variance unbiased estimator
MWB	Metropolitan Water Board
NCEA	National Center for Environmental Assessment
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NOAA	National Oceanic and Atmospheric Administration
NOAEL	no observed adverse effect level
NPL	National Priorities List
NRC	National Research Council
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOL	New York State Department of Law
OCPD	Onondaga County Parks Department
OCWA	Onondaga County Water Authority
ODH	Oregon Department of Health
ODHS	Oregon Department of Human Services
OEHHA	Office of Environmental Health Hazard Assessment [California]
OLMC	Onondaga Lake Management Conference
OLP	Onondaga Lake Partnership
OSWER	Office of Solid Waste and Emergency Response
OU	Operable Unit
PAH	polycyclic aromatic hydrocarbon
PBPK	physiologically based pharmacokinetic
PCB	polychlorinated biphenyl
PCDD/PCDF	polychlorinated dibenzo-*p*-dioxin and polychlorinated dibenzofuran
PRG	preliminary remediation goal
PSA	preliminary site assessment
PWG	Pathology Working Group
RAGS	Risk Assessment Guidance for Superfund
RBC	risk-based concentration
RDI	recommended daily intake
RfC	reference concentration
RfD	reference dose
RI	remedial investigation
RME	reasonable maximum exposure
ROD	Record of Decision
SA	surface area
SDW	Syracuse Department of Water
SQL	sample quantitation limit
SSAF	soil-to-skin adherence factor

SVOC	semivolatile organic compound
SYW	Syracuse West [USGS quadrant sheet]
TAL	Target Analyte List
TCB	trichlorobenzene
TCDD	tetrachlorodibenzo-*p*-dioxin
TCL	Target Compound List
TEC	toxic equivalent concentration
TEF	toxicity equivalence factor
TEQ	toxicity equivalence quotient
TIC	tentatively identified compound
UCL	upper confidence limit
UF	uncertainty factor
UFI	Upstate Freshwater Institute
USDA	United States Department of Agriculture
USDOI	United States Department of Interior
USEPA	United States Environmental Protection Agency
USFDA	United States Food and Drug Administration
USGS	United States Geological Survey
VOC	volatile organic compound
WDOH	Washington Department of Health
WHO	World Health Organization

Glossary

Cancer Slope Factor (CSF). A plausible upper-bound estimate of the probability of a response per unit intake of a chemical over a lifetime. The CSF is used to estimate an upper-bound probabilty of an individual developing cancer as a result of a lifetime of exposure to a particular concentration of a specific potential carcinogen (cancer-causing chemical).

Deterministic Analysis (Deterministic Risk Assessment). Calculation and expression of health risks as a single numerical value or "single point" estimate of risk. In a deterministic risk assessment, uncertainty and variability are discussed separately in a qualitative or semi-quantitative manner.

Exposure Medium. The contaminated environmental medium to which an individual may be exposed, including the transfer of contaminants from one medium to another (e.g., volatilization of chemicals from water into air).

Exposure Pathway. The course (path) a contaminant takes from the source to the exposed individual. An exposure pathway analysis links the sources, locations, and types of environmental contamination with population locations and activity patterns ("receptors") to determine the significant pathways of human exposure. As shown on RAGS Table 1 in Appendix B of this HHRA, an exposure pathway is defined as each unique combination of scenario time frame, medium, exposure medium, exposure point, receptor population, receptor age, and exposure route.

Exposure Point. An exact location of potential contact between a person and a contaminant within an exposure medium.

Exposure Point Concentration (EPC). The value (concentration) that represents an estimate of the contaminant concentration to which an individual may be exposed. For the Onondaga Lake HHRA, the exposure point concentration is either a statistically calculated estimate of the arithmetic mean (generally the 95 percent upper confidence limit [UCL] on the mean) or the maximum detected concentration.

Exposure Route. The manner in which a contaminant comes in contact with a person (receptor); i.e., ingestion, dermal contact, or inhalation.

Hazard Index (HI). The sum of more than one hazard quotient for multiple substances and/or multiple exposure pathways.

Hazard Quotient (HQ). The ratio of a single substance exposure level over a specified period of time to the reference dose (RfD) for the same substance over the same time.

Intake. A measure of exposure expressed as the mass of a contaminant in contact with the exchange medium per unit body weight per time; expressed as mg contaminant per kg body weight per day (mg/kg-day). For dermal pathways, it is the absorbed dose of the contaminant.

Medium. The environmental substance or matrix (fish, water, soil/sediment) that is a potential source of contaminants in the exposure medium. For the Onondaga Lake HHRA (but not necessarily for all risk assessments), the "medium" and the "exposure medium" are the same.

Reasonable Maximum Exposure (RME). The maximum exposure that is reasonably expected to occur at a site, calculated individually for each pathway. The RME is not a "worst case" estimate but combines mean or 50th percentile values for some parameters in the intake equation with higher-end estimates (90th or 95th percentile values) for a few of the more sensitive parameters in the intake equation.

Receptor Age. The description of the exposed individual. For this HHRA, the receptor ages assessed were young child (under six years old), older child (six to less than 18 years old) and adult (including construction worker; all individuals 18 or older).

Receptor Population. The exposed individual relative to the exposure pathway considered. Examples of receptor populations include recreational users, trespassers, construction workers, residents, and the like.

Reference Dose (RfD). An estimate of a daily exposure level for the human population, including sensitive subpopulations, that is likely to be without an appreciable risk of harmful non-cancer health effects during a lifetime. Chronic RfDs (as used in this HHRA) are specifically developed to be protective for long-term exposure to a contaminant.

Scenario Time Frame. The time period (current or future, or both) considered for the exposure pathway.

Upper Confidence Limit (on the Mean) (UCL). A statistical estimate of the likelihood that the "true" mean or average does not exceed the estimate of the mean (average) concentration. For example, the 95 percent UCL on the mean, which is used extensively in this HHRA, is an estimate of the mean, calculated from site data, for which there is a 95 percent likelihood that the calculated value is equal to or greater than the true mean. Expressed another way, there is only a 5 percent chance that the true mean of the sampled medium exceeds the 95 percent UCL.

EXECUTIVE SUMMARY

This document presents the quantitative baseline human health risk assessment (HHRA) for the remedial investigation (RI) and feasibility study (FS) for Onondaga Lake, located in Onondaga County, New York. The objective of the HHRA is to evaluate the potential for adverse human health effects associated with current or potential future exposures to chemicals present in Onondaga Lake surface water, fish, and certain nearshore sediments, wetlands sediments, and dredge spoils area soils, in the absence of any action to control or mitigate those chemicals (i.e., under the no action alternative).

As defined in the Consent Decree, the site includes Onondaga Lake, its outlet, and tributaries that may have been directly affected by Honeywell operations. The tributaries directly affected by Honeywell include Ninemile Creek and its tributaries, Geddes Brook and the West Flume; Tributary 5A; the East Flume; and Harbor Brook (Chapter 1, Figure 1-1). As discussed below, these tributaries are not included in this HHRA since they are being covered as part of other investigations. The New York State Department of Environmental Conservation (NYSDEC) has also required that Wetlands SYW-6 and SYW-12 be included in the site (Chapter 4, Figure 4-1).

In addition to the areas of the site listed above, this HHRA includes an evaluation of limited data that were collected in Wetlands SYW-10 and SYW-19 and an upland area associated with the dredge spoils area located north of the mouth of Ninemile Creek (Chapter 4, Figure 4-1). Human health risks associated with Wetlands SYW-10 and SYW-19 and the dredge spoils area will be further evaluated as part of separate sites and, therefore, the risk analysis associated with these areas in this HHRA is considered preliminary, pending the finalization of the HHRAs associated with these other sites. Specifically, Wetland SYW-10 will be further evaluated as part of the RI/FS for the Geddes Brook/Ninemile Creek site; Wetland SYW-19 will be further evaluated as part of the RI/FS for the Wastebed B/Harbor Brook site; and the dredge spoils area will be further evaluated as a separate site with its own investigation.

The areas and media covered by this HHRA include Onondaga Lake fish, surface water, and sediments and shoreline areas directly abutting the lake – specifically, four New York State-regulated wetland areas (Wetlands SYW-6, 10, 12, and 19), and the dredge spoils area situated on the west side of the lake, north of Ninemile Creek between Wetlands SYW-6 and 10 (collectively, the "Onondaga Lake Study Area"). Other Honeywell sites in the vicinity of Onondaga Lake, including the Wastebed B/Harbor Brook site (including Harbor Brook and the East Flume), Willis Avenue Chlorobenzene site (including Tributary 5A), Willis Avenue Ballfield site, LCP Bridge Street site (including the West Flume), and Geddes Brook/Ninemile Creek site, are the subject of ongoing investigations and have been or will be addressed in separate reports. This HHRA addresses risk associated with contamination within the Onondaga Lake Study Area, without regard to the source of the contamination.

The HHRA, and this executive summary, follow the USEPA Risk Assessment Guidance format and sequence. The HHRA consists of the following chapters and appendices:

- Chapter 1, Introduction – Discusses the general framework and format of the document.

- Chapter 2, Background – Provides background information on the site, such as site history, features, and climate.

- Chapter 3, Identification of Contaminants of Potential Concern – Discusses the available data for all site media (e.g., fish tissue, sediment, water) for each exposure area (e.g., northern basin); discusses the results of the contaminant screening process, and identifies the contaminants that are considered contaminants of potential concern (COPCs) in each site medium after the screening.

- Chapter 4, Exposure Assessment – Presents the exposure setting and exposed populations (receptors); in other words, what types of people may be exposed to contaminants in various site media (e.g., adult construction workers exposed to subsurface contaminants in soil by dermal contact and incidental ingestion). Next, the exposure is quantified (estimates of how much of a contaminated medium to which each receptor may be exposed). Finally, the calculations of the exposure point concentrations (EPCs) of each COPC in each contaminated medium are discussed.

- Chapter 5, Toxicity Assessment – Discusses the chemical-specific cancer risk or non-cancer hazard toxicity data used to calculate the potential adverse health effects from exposure to site contaminants.

- Chapter 6, Risk Characterization – Presents the results of the quantitative risk assessment, including estimates of both cancer risks and non-cancer hazards for each medium and each receptor population.

- Chapter 7, Uncertainty Assessment – Discusses aspects of the HHRA that are likely to overestimate or underestimate site risks.

- Chapter 8, Conclusions.

- Chapter 9, References.

- Appendix A, Summary of Site Data Used in the HHRA – Includes discussion and tabulation of data collected by Honeywell and NYSDEC that are used in this HHRA.

- Appendix B, RAGS Part D Tables.

- Appendix C, USEPA Region 3 and Region 9 Screening Values.
- Appendix D, Comparison of ProUCL and Default Data Distributions for Calculation of Exposure Point Concentrations and Risks.
- Appendix E, Toxicological Profiles for Contaminants of Potential Concern.

1. Introduction

This HHRA was conducted in accordance with the Onondaga Lake RI/FS Work Plan (PTI, 1991) approved by the NYSDEC, as amended, and with applicable guidance documents (see Chapter 1, Section 1.1 for details) from the US Environmental Protection Agency (USEPA). As science and policy evolve over time, some of the guidance documents used in this HHRA were superseded or supplemented during the time this HHRA was being prepared. To the extent practical, the most current USEPA guidance documents and data have been utilized. For example, all of the USEPA screening values were updated in 2002 prior to performing the screening for this HHRA (Appendix C), and the toxicity files on USEPA's Integrated Risk Information System (IRIS) were all accessed in 2002 to verify that current peer-reviewed toxicity data were being used in the HHRA (Chapter 5 and Appendix E). The only known exception to this approach involves the format of the RAGS Part D tables presented in Appendix B. In June 2002, USEPA indicated that the December 2001 revision of RAGS Part D was to be used for all new risk assessments (superseding the January 1998 version of RAGS Part D). However, RAGS Part D is merely a standardized reporting format (utilized by USEPA to generate consistency among risk assessments at different sites and in different regions), and does not affect how risks are calculated. This risk assessment was initiated prior to issuance of the new guidance and, therefore, the 1998 version was used for this HHRA with USEPA's concurrence; however, not utilizing the December 2001 revision has no impact on the findings of this document.

Risk assessments conducted for regulatory purposes, such as this HHRA, are designed to be protective of human health and consistent with requirements for risk assessment provided by USEPA. Two different types of exposure scenarios are presented in this HHRA – the reasonable maximum exposure (RME) scenario, and the central tendency (CT; sometimes referred to as the "typical") scenario. For the RME scenario, two or three of the most sensitive input parameters (typically the intake rate, such as the amount of fish consumed) are set to the 90th or 95th percentile values, while the rest of the inputs to the risk calculation are set to the average or median (50th percentile) value. As such, the RME is not a "worst case" scenario. Although the cumulative impact of the 95th percentile exposure and toxicity assumptions used in the RME scenario may overestimate risks for many site users (receptors), there could be some receptors for whom exposure and risks are underestimated even in the RME scenario.

For the CT scenario, all variables in the risk calculations are set to the average or median values. (The same toxicity values and EPCs are almost always used for both the RME and CT scenarios.) Factors that may overestimate or underestimate risks are discussed in Chapter 7, Uncertainty Assessment, in this HHRA.

2. Background

2.1 Site and Vicinity Description

Onondaga Lake is located in Onondaga County in central New York State, adjacent to the city of Syracuse. The lake covers an area of approximately 4.6 square miles (sq mi) (12 sq kilometers [km]), or 3,000 acres, and has a maximum length of 4.7 mi (7.5 km) and width of 1.2 mi (1.9 km), and has about 11.7 mi (18.8 km) of shoreline (based on PTI, 1991). As shown in Chapter 1, Figure 1-2, Onondaga Lake is divided into a northern basin and a southern basin; this division roughly corresponds to the surface water classifications of the lake and also to the exposure scenarios established for this HHRA (discussed further in Chapter 4).

The southern end of Onondaga Lake borders the city of Syracuse and is a heavily developed urban area. The town of Salina and the village of Liverpool border the north and northeast edges of the lake, respectively, while the town of Geddes and the village of Solvay border the west and southwest edges, respectively. Onondaga Lake is encircled by major roadways: Interstate 90 (I-90) runs along the northwest tip of the lake, Interstate 690 (I-690) runs along the west and southwest edges of the lake, Interstate 81 (I-81) is near the southeast corner of the lake, and New York Route 370 runs along the north and northeast edges (see Chapter 4, Figure 4-1 of this HHRA). More than 75 percent of the shoreline of Onondaga Lake, most of which is classified as parkland, is owned by Onondaga County.

2.2 Climate

The Onondaga Lake region's climate is strongly influenced by its geographic proximity to Lake Ontario (Effler, 1996), which moderates air temperatures. Normal temperatures in the Syracuse area (measured at Hancock International Airport, about 3 mi [4.8 km] east-northeast of Onondaga Lake) range from 23.2°F (−4.9°C) in January to 71.1°F (21.7°C) in July (National Oceanic and Atmospheric Administration [NOAA], 2002). Based on data from the period from 1971 to 2000, the average first occurrence of 32°F (0°C) in the fall is November 15, and the average last occurrence of 32°F (0°C) in the spring is April 8 (NOAA, 2002). Precipitation falls an average of 171 days per year, and during the summer months (i.e., June through August), precipitation falls, on average, 10 to 11 days per month (NOAA, 1993).

2.3 Groundwater and Surface Water

Groundwater within the Onondaga Lake drainage basin generally flows into the tributaries and then flows from the tributaries to the lake, following the topography of the area. Onondaga Lake's water surface is at a lower static head than nearby wells; therefore, the lake does not recharge the aquifer under non-flood conditions (NYSDEC, 1989). Paths of groundwater flow and exchanges with surface water depend on local geologic conditions within each tributary basin. Local groundwater mounding (with groundwater elevations up to approximately 65 ft [20 m] higher than the surrounding water table) occurs under some of the Solvay Wastebeds (Geraghty & Miller, 1982; Blasland & Bouck, 1989). Groundwater discharges to the lake contribute a significant but relatively minor amount of water to the total water budget. However,

as noted in the RI report (TAMS, 2002b), groundwater is a significant source of several COPCs to the lake, including mercury; benzene, toluene, ethylbenzene, and xylenes (BTEX); chlorinated benzenes; and polycyclic aromatic hydrocarbons (PAHs). The groundwater is classified as Class GA (defined as a source of drinking water [6 NYCRR Part 701.15]) by New York State regulations; however, some areas of groundwater in the vicinity of the lake may not currently be appropriate for use as sources of potable water due to natural occurrences of salinity (e.g., brine fields in the area) and contributions from anthropogenic salinity sources, including Honeywell. Contamination of the lake prevents the lake water from being used as a drinking water source.

The surface waters of the lake currently violate NYSDEC standards for clarity (turbidity) and bacterial contamination (coliform), but an Amended Consent Judgment (ACJ) is in place with Onondaga County under which the lake is to meet NYSDEC surface water criteria by 2012, as further discussed in Chapter 2, Section 2.5. As discussed in Chapter 2, Section 2.6, most of the northern two-thirds of the lake is classified as Class B water, and the southern third of the lake is Class C.

2.4 Population and Demographics

The population of Onondaga County grew to 469,000 in 1970; since that time, according to the most recent census data, it has decreased to about 458,000 (US Census Bureau, 2000). Most of the population currently is, and historically has been, concentrated in the Syracuse metropolitan area. This area includes Solvay, Westvale, and Fairmount on the western side of the lake and Galeville, Liverpool, Mattydale, and North Syracuse on the eastern side of the lake (see Chapter 1, Figure 1-1 of this HHRA). Other population centers in the Onondaga Lake drainage basin are the villages of Camillus, Marcellus, Otisco, LaFayette, and East Syracuse, and the Onondaga Nation Territory.

More details on the demographics of the city of Syracuse and Onondaga County are provided in Chapter 4, Exposure Assessment.

2.5 Site History

Historically, Onondaga Lake has received loadings of industrial wastes and wastewater and sewage effluent. Sources of chemicals to Onondaga Lake include the following:

- Multiple industrial sources, including Honeywell.
- Sources related to the population in the area (e.g., sewage and landfills).
- Natural sources (e.g., inorganic constituents occurring naturally in soil or groundwater).

Honeywell's predecessor companies began manufacturing operations in Solvay, New York, in the late 1800s. Operations occurred at three principal plants (Chapter 1, Figure 1-1): the Main Plant, which

manufactured soda ash and related products from 1884 until 1986 and benzene, toluene, and xylenes from 1917 to 1970; the Willis Avenue plant, which manufactured chlorinated benzenes and chlor-alkali products from 1918 until its closure in 1977; and the Bridge Street plant (sold to Linden Chemicals and Plastics [LCP] in 1979), which manufactured chlor-alkali products from 1953 until 1988. Two areas of the former Main Plant (i.e., the Petroleum Storage Area and the Chlorobenzene Hot Spot Area) are being investigated as part of the Willis Avenue site RI/FS.

The Bridge Street and Willis Avenue plants are sources of COPCs, including mercury, BTEX, chlorinated benzenes, PAHs, and polychlorinated biphenyls (PCBs). The Bridge Street plant discharged into the West Flume, which flows to Geddes Brook, which is a tributary to Ninemile Creek, which in turn is a tributary to the lake. A remedy has been selected by NYSDEC for the Bridge Street plant and a remedial design work plan, prepared by Honeywell, is under review.

Honeywell also disposed of Solvay wastes in numerous wastebeds covering more than 3.1 sq mi (8.1 sq km, or 2,000 acres), and disposed of organic wastes in the Semet Residue Ponds in Wastebed A; organic wastes have also been disposed of in Wastebed B near Harbor Brook. An RI/FS has been completed at the Semet Residue Ponds site and an RI/FS is underway at the Wastebed B/Harbor Brook and Willis Avenue Ballfield sites. In addition, Honeywell disposed of large quantities of combined Solvay wastes and mercury and organic wastes into the lake (e.g., via the East Flume; see RI Chapter 4, Section 4.5.1 [TAMS, 2002b]). Further discussion of these sources is provided in the RI report. A discussion of potential contaminant sources from non-Honeywell industrial sites in the area is also provided in the RI.

In the early 1800s, Onondaga Lake was receiving untreated industrial and domestic wastes. Around the turn of the twentieth century, a combined sewer system, a single system that transmits a combination of domestic and industrial flows as well as stormwater originating from various sources, was installed that discharged into tributaries and ultimately the lake.

The first primary sewage treatment facility in the Syracuse area was constructed in 1925 at the southern end of Onondaga Lake. An additional major treatment plant was built in 1940 on Ley Creek. During the 1950s, Onondaga County established a sewer district that encompassed the City of Syracuse and some surrounding suburban areas. A new primary treatment plant, the Onondaga County Metropolitan Syracuse Wastewater Treatment Plant (Metro), was constructed in 1960 with a 50 million gallons per day (mgd) design capacity (Onondaga Lake Management Conference [OLMC], 1993).

The Metro sewage treatment plant, which serves the city of Syracuse and several surrounding towns, is currently permitted (NY-0027081) to discharge an average of 80 mgd through its main outfall to Onondaga Lake. The plant provides tertiary treatment for flows up to 120 mgd. For combined stormwater and industrial/domestic sewage flow up to 220 mgd, the incremental flow above 120 mgd receives primary treatment and seasonal chlorination prior to discharge into the lake through a second outfall.

The sewers contain hydraulic relief structures otherwise known as combined sewer overflows (CSOs), which have historically allowed diluted sewage (due to the mixing of stormwater and sewage) to discharge

to several tributaries of Onondaga Lake during high flow events. In 1985, Phase I of a program to abate CSOs was implemented. The second phase of the CSO abatement program began in 1990. Additional abatement activities associated with the CSOs are underway as discussed below.

In January 1998, an ACJ (88-CV-0066) was executed by NYSDEC, the State Attorney General, Atlantic States Legal Foundation, and Onondaga County. The ACJ evolves from a 1989 Judgment on Consent (88-CV-0066) settling litigation between the State of New York and the county relating to state and federal water pollution control regulations.

The ACJ, which is designed to improve the water quality of Onondaga Lake, specifically includes a listing of over 30 projects to be undertaken by Onondaga County over a 15-year period. Although completion of the entire project is not required until 2012, many of these county projects are scheduled for completion by 2009 (Onondaga County Department of Water Environment Protection [OCDWEP], 2002) .

The projects may be grouped into three categories, including:

- Improvement and upgrading of the county's main sewage treatment plant (Metro).
- Eliminating and/or decreasing the effects of the CSOs on the lake and its tributaries.
- Performance of a lake and tributary monitoring program designed to evaluate the effects of the improvement projects on the water quality of the lake and its tributaries.

2.6 Previous and Ongoing Investigations of Related Sites

Other studies, both historical and ongoing, of sites near Onondaga Lake include:

- An RI has been completed for Honeywell's Semet Residue Ponds (O'Brien & Gere, 1991) site. This RI has been approved by NYSDEC. The RI report contained a risk assessment evaluating potential exposures from the residue ponds, groundwater, and ambient air (the studies of Tributary 5A sediment and surface water have now been incorporated into the Willis Avenue investigation). A Record of Decision (ROD) for the site has been finalized and was issued on March 28, 2002.
- An RI was prepared by NYSDEC for Honeywell's LCP Bridge Street site (Operable Unit [OU]-1]) (NYSDEC/TAMS, 1998a). This RI also included a risk assessment of the facility and nearby tributaries (i.e., the West Flume). In addition, an RI is underway for OU-2 of the LCP Bridge Street site.

- The Willis Avenue RI report, including the HHRA for that site (O'Brien & Gere, 2002), is under review by NYSDEC.

- An RI and HHRA for Geddes Brook/Ninemile Creek were submitted by Honeywell in November 2001 and are being revised by NYSDEC.

- Honeywell has also commenced a preliminary site assessment (PSA) at the Mathews Avenue Landfill site and RI/FSs, including HHRAs, at the Wastebed B/Harbor Brook and Willis Avenue Ballfield sites near the southwestern corner of the lake (see Chapter 1, Figure 1-1). The East Flume (formerly investigated during the Willis Avenue RI) and the lower reach of Harbor Brook are now part of the Wastebed B/Harbor Brook site.

3. Contaminants of Potential Concern

The HHRA uses a screening process to select COPCs that is structured to minimize the likelihood of eliminating contaminants from further analysis that could be of concern. All available contaminant concentration data were reviewed for lake fish (fillets only; limited to species likely to be consumed by humans), and for water and sediments in the northern and southern basins of the lake, for sediments in four adjacent wetlands, and for dredge spoils area soils. Lake sediments at water depths of more than about 6.5 ft (2 m) were not included, as it is unlikely that humans would have much, if any, direct contact with such sediments.

Site concentration data were compared with risk-based concentrations developed by USEPA Regions 3 and 9. For the screening, the highest concentration of a contaminant in a specific medium (e.g., southern basin sediments) was compared to the more conservative of the Region 3 or Region 9 screening criteria. The published screening criteria for carcinogens are set at a cancer risk level of 10^{-6}; these criteria were used as published. However, USEPA Region 2 (along with many other risk assessors) utilizes a hazard index (HI) of 0.1 for screening non-cancer hazards; as the Region 3 and Region 9 screening criteria are based on a HI of 1.0, the published values were divided by 10 prior to use in screening non-carcinogenic effects for this risk assessment.

In addition to mercury (including methylmercury), which was identified in the RI/FS Work Plan (PTI, 1991) as one of the principal COPCs to be evaluated in this HHRA, a total of 60 other contaminants were identified as COPCs (as chemicals or chemical mixtures) in one or more site media and were retained for further analysis in the HHRA and are listed on Table ES-1.

4. Exposure Assessment

Onondaga Lake is surrounded by lands used for industrial, commercial, and recreational purposes. No residential property directly abuts the lake. Recreational visitors to Onondaga Lake are the receptors with the greatest potential for exposure to COPCs. Thus, this HHRA focuses mainly on recreational visitors to

the site, although it also evaluates potential exposures to construction workers who may contact contaminated media during work in these areas. Under current conditions, potential exposures for recreational visitors to the site are limited by the lack of public swimming areas. The New York State Department of Health (NYSDOH) has also issued specific, restrictive fish consumption advisories for Onondaga Lake. This HHRA, however, assesses risk in the absence of institutional controls under both current and future use scenarios. As a result, this baseline HHRA evaluates current and potential future uses under the assumption that there are no restrictions, advisories, or limitations in place. Human health risks associated with Wetlands SYW-10 and SYW-19 and the dredge spoils area will be further evaluated as part of separate sites and, therefore, the risk analysis associated with these areas in this HHRA is considered preliminary, pending the finalization of the HHRAs associated with these other sites. Exposure pathways quantitatively evaluated are shown on Table ES-2 and include the following:

- Consumption of fish from Onondaga Lake.
- Incidental ingestion of and dermal contact with COPCs in nearshore surface sediments in the northern and southern basins of the lake and surface sediments in the four wetlands that are of concern in this HHRA adjacent to the lake.
- Incidental ingestion of and dermal contact with COPCs in surface and subsurface soil in the dredge spoils area located along the shoreline of the lake north of Ninemile Creek.
- Incidental ingestion of and dermal contact with COPCs in Onondaga Lake surface water.

An initial PSA conducted for Onondaga Lake by NYSDEC (NYSDEC, 1989a, as cited in PTI, 1991) concluded that there was little potential for releases of contaminants to air. The data for volatile organic compounds (VOCs) in surface water and near-surface soils and sediments were reviewed as part of this HHRA, and the initial conclusion by NYSDEC is considered to still be appropriate for recreational users and nearby residents. In addition, there are currently no structures on the site nor are any likely to be built, due to regulatory restrictions (e.g., zoning and wetlands) and the nature of the area (e.g., much of the lake shoreline area is owned by or under the jurisdiction of the Onondaga County Parks Department [OCPD], and the wetlands areas are generally unsuitable for construction, even absent regulatory restrictions). Therefore, the inhalation pathway was considered to be incomplete for all media and was not assessed further in this report.

The RME and CT scenarios were evaluated for each of the complete pathways summarized above and listed in Table ES-2. Consumption of fish from the lake was determined to be the pathway with the highest potential for exposure to COPCs.

As site-specific information was not available for all the input parameters for exposure assessment or risk calculation, assumptions based on professional judgment or USEPA-recommended generic default values

were used in the exposure assessment. For example, the RME fish consumption rate of 25 grams per day (g/day) applied in the RME risk calculations is the default 95th percentile recommendation in the USEPA Exposure Factors Handbook (1997a). This fish consumption rate is equivalent to approximately 40 eight-ounce meals from Onondaga Lake per year. The uncertainties associated with the use of this fish consumption rate and other exposure assumptions are discussed in Chapter 7, Uncertainty Assessment.

5. Toxicity Assessment

Risk estimates for all COPCs were based on use of toxicity values, including carcinogenic slope factors (CSFs) to assess potential carcinogenic effects and reference doses (RfDs) to assess potential non-cancer effects, that were derived by USEPA and published on its peer-reviewed IRIS database and the USEPA Health Effects Assessment Summary Tables (HEAST), and were supplemented by additional guidance from USEPA National Center for Environmental Assessment (NCEA), USEPA Region 2, NYSDOH, and NYSDEC. The three COPCs (or COPC groups) responsible for a majority of estimated site risks are PCBs, polychlorinated dibenzo-*p*-dioxins and polychlorinated dibenzofurans (PCDD/PCDFs), and methylmercury.

- PCBs – RME carcinogenic risk estimates for PCBs were based on the CSF of 2 $(mg/kg\text{-}day)^{-1}$, which is the highest of a range of upper-bound CSFs derived from studies in rats. This value is recommended by USEPA for evaluating food chain exposures, sediment or soil ingestion, and dermal contact exposures (if a dermal absorption factor is used) for all Aroclors (except for certain PCB mixtures with very low chlorine content; however, such mixtures were not detected in samples included in this HHRA). CT carcinogenic risk estimates for PCBs were based on the CSF of 1 $(mg/kg\text{-}day)^{-1}$, which is the central estimate CSF cited in IRIS. Non-cancer effects for PCBs were evaluated for the two groups of Aroclors – less chlorinated PCBs (using the toxicity data for Aroclor 1016) and highly chlorinated PCBs (using the toxicity data for Aroclor 1254) – for which USEPA has published RfDs.

- PCDD/PCDFs – Carcinogenic risk estimates for PCDD/PCDFs were based on a toxicity equivalent (TEQ) approach. USEPA does not currently have any quantitative toxicity factors (e.g., oral RfD) for the non-cancer health effects of PCDD/PCDFs; therefore, no quantitative assessment of non-cancer health hazards associated with PCDD/PCDFs is provided in this HHRA. However, a qualitative assessment is provided in Chapter 7, Uncertainty Assessment, along with alternate cancer risks estimates based on the current peer-review draft of USEPA's dioxin reassessment document.

- Methylmercury – USEPA's RfD for methylmercury of 0.0001 mg/kg-day has been applied in estimates of non-cancer hazards for the fish consumption pathway and for Onondaga Lake surface water and sediments in which methylmercury was

detected and for the fraction of total mercury in the wetlands sediments that is assumed to be methylmercury. The USEPA RfD of 0.0003 mg/kg-day has been applied for evaluation of non-cancer hazards of mercury (as inorganic mercury) in other media. Methylmercury/mercury has not been assessed quantitatively for cancer risks in this HHRA as no oral CSFs have been established by USEPA.

6. Risk Characterization

USEPA toxicity values (i.e., CSFs or RfDs) were combined with exposure estimates to derive estimates of potential health risks related to exposure to COPCs in Onondaga Lake media. Cancer risk estimates were compared to a target risk range of 1×10^{-4} to 1×10^{-6}. A 1×10^{-6} excess cancer risk represents an additional one-in-one-million probability that an individual may develop cancer over a 70-year lifetime as a result of the exposure conditions evaluated. Non-cancer effects are expressed as the ratio of the estimated exposure, or intake rate over a specified exposure period, to the RfD derived for a similar exposure period. This ratio is termed a hazard quotient (HQ). HQs for multiple COPCs or pathways are summed to generate an HI for a specific exposure route or receptor. Exposures resulting in an HI less than or equal to 1.0 are unlikely to result in non-cancer health effects. Estimated cancer risks and non-cancer hazards for both RME and CT scenarios for the 31 pathways evaluated in this HHRA are summarized in Table ES-3.

6.1 Cancer Risks

The RME cancer risks for fish ingestion ranged from 2.4×10^{-4} for young children to 7.8×10^{-4} for adults, all of which exceed the upper end of the target risk range (1×10^{-4}). RME cancer risks for older child exposure to Wetland SYW-6 sediments also exceed 1×10^{-4}. With these exceptions, the cancer risk estimates for the other exposure pathways and scenarios, both RME and CT (including the CT scenario for fish ingestion), were less than 1×10^{-4}, although cancer risk estimates exceeded 10^{-6} for many pathways, as summarized on Tables ES-3 and ES-6. The CT cancer risk for the fish consumption pathway scenario for all recreational anglers (adults and children) is about 4.5×10^{-5}, and RME risks to at least one receptor for each of the sediment and dredge spoils exposure areas exceeded 10^{-6}. Cancer risks associated with the fish ingestion pathways were due primarily to exposure to PCBs, PCDD/PCDFs, and, to a lesser extent, arsenic, as shown on Table ES-4.

RME cancer risk estimates associated with several other exposure pathways related to lake sediments and wetland sediments in recreational scenarios were greater than 1×10^{-6}. The highest of these was about 2.6×10^{-4} for older child exposure to Wetland SYW-6 sediments, followed by risks greater than 10^{-5} for one or more recreational receptor's exposure (ingestion and dermal combined) to southern basin sediments and Wetlands SYW-6, 10, 12, and 19 (see Table ES-6). In CT scenarios, the highest excess cancer risk (other than fish consumption) was about 1.4×10^{-5} for the older child recreational exposure to Wetland SYW-6 sediments. All RME and CT risks associated with Onondaga Lake surface water pathways were below the 1×10^{-6} risk level.

6.2 Non-Cancer Hazards

The RME HI for the recreational angler fish consumption pathway was approximately18 for adults, 28 for young children, and 20 for older children. CT HIs ranged from approximately 4.5 for adults to 7.0 for young children. The elevated HIs for the fish consumption pathways were primarily related to PCBs (low and high molecular weight, assessed as Aroclors 1016 and 1254), methylmercury, and, to a lesser extent, arsenic. The COPCs contributing the largest amount of non-cancer hazard for each pathway are summarized on Table ES-5, and include PCBs and methylmercury. All other HIs for pathways other than fish ingestion were less than 1.0, although the cumulative RME HI for an older child who frequently accessed all the contaminated areas (all four wetlands, northern and southern basin sediments, and the dredge spoils area) closely approaches 1.0. However, as discussed in Chapter 7, Uncertainty Assessment, it is not considered likely that an individual would be exposed to all the contaminated media sites at the RME frequency.

The risks to children for the fish consumption pathway (presented above) are based on the assumption that older children consume two-thirds as much fish as adults, and young children (under age six) consume one-third as much fish as adults. As there are only limited data on which this assumption of children's fish ingestion rates could be based, it is possible that the ingestion rates for children may be higher or lower than those used in this HHRA; therefore, risks to children may be higher or lower than those presented in this HHRA and shown on Table ES-3.

Based on the exposure assumptions and toxicity values used in the risk evaluations, these results indicate the potential for adverse non-cancer health effects as a result of long-term exposures via ingestion of lake fish. This conclusion is consistent with the fact that PCB and methylmercury concentrations for some lake fish exceed US Food and Drug Administration (US FDA) action limits.

7. Uncertainty Assessment

As described above, the USEPA risk assessment methodology used in this HHRA is designed to be protective of human health. Thus, site risks may be less than the risks estimated using standard risk assessment methods for most, though not necessarily all, receptors. Several key factors in the risk assessment methods used are likely to result in some overestimates or underestimates of potential risks for most visitors to Onondaga Lake. These include, but are not limited to, the following:

- Application of an assumed RME fish consumption rate of 25 g/day, which is USEPA's default 95th percentile consumption rate and was derived from three key studies. Individual studies have suggested RME fish consumption rates both higher (e.g., up to 170 g/day for subsistence fishers; 32 g/day for Hudson River anglers) and lower (e.g., less than 25 g/day) than the RME fish consumption rate used in this HHRA. In addition, the consumption rate utilized is derived from studies on adults; only limited data were available for estimating fish consumption by children (see Chapter 4, Section 4.2.1 and Chapter 7, Section 7.3.2).

- The assumptions that all freshwater fish consumed come from Onondaga Lake (i.e., application of a fractional intake of one) and that no PCBs or PCDD/PCDFs are lost during cooking. These assumptions may overestimate risk to some receptors. However, as Onondaga Lake is a highly desirable fishing location, and it is not known to what extent persons who consume Onondaga Lake fish adhere to the NYSDOH recommendations to remove the skin and fat and not consume the drippings, it is likely that these assumptions are realistic for at least some of the potentially exposed recreational angler population.

- There is some uncertainty in the USEPA CSF of 2 $(mg/kg\text{-}day)^{-1}$ for PCBs; however, as discussed in Chapter 7, it is not clear whether the uncertainty may lead to an underestimate or overestimate of cancer risks associated with PCBs.

- The application of toxicity values for PCDD/PCDFs that are currently being reassessed by USEPA may underestimate cancer risks from these compounds, if the conclusions of the preliminary reassessment are unchanged after peer-review and finalization of the reassessment.

- The lack of published non-cancer toxicity values for PCDD/PCDFs may underestimate non-cancer hazards from dioxins. The reassessment currently being conducted by USEPA suggests that there are likely non-cancer hazards from these compounds, in addition to cancer risks. Therefore, the absence of non-cancer toxicity values for PCDD/PCDFs precluded their inclusion in the quantitative HHRA and may result in an underestimate of non-cancer hazards in media in which these COPCs are present.

- The lack of peer-reviewed cancer and non-cancer toxicity values for some of the PAH compounds detected in Onondaga Lake sediments, wetlands, and dredge spoils may result in a slight underestimation of risks or hazards.

Derivation of appropriate and protective toxicity values for mercury/methylmercury, PCDD/PCDFs, and PCBs in human populations is the subject of extensive study and debate. The toxicity values derived by USEPA and used in this HHRA represent a protective interpretation of the available toxicological data, and incorporate uncertainty and modifying factors to account for the need to extrapolate from animal studies to humans, among other issues. Chapter 7, Uncertainty Assessment, provides a discussion of the basis for and the reliability of the toxicity values used in this risk assessment. In general, confidence in the methylmercury toxicity data is considered high, and the IRIS value has recently been confirmed by a study conducted by the National Research Council (NRC).

The CSF used for PCDD/PCDFs was published in USEPA's HEAST a number of years ago, and is currently under reassessment. The preliminary dioxin reassessment, which has not yet been peer-reviewed or finalized, suggests that the CSF used in this HHRA may underestimate cancer risks from PCDD/PCDFs.

The potential magnitude of this is discussed quantitatively in Chapter 7. In addition, the preliminary dioxin reassessment also suggests that there are non-cancer toxicity effects from PCDD/PCDFs; the published (final) toxicity data available for this HHRA do not include a means of assessing non-cancer toxicity of dioxins and as such may underestimate non-cancer hazards to receptors in media in which dioxins are present (also discussed in Chapter 7).

Although the CSFs and RfDs used for quantitative assessment of PCBs were taken from USEPA's peer-reviewed IRIS database, there is more uncertainty about the PCB toxicity data than for the methylmercury data. (For example, USEPA characterizes the confidence in the oral RfDs for Aroclors 1016 and 1254 as medium, while the confidence in the oral RfD for methylmercury is high.) A number of factors contribute to the relative uncertainty of the PCB toxicological data, including the fact that Aroclors are a mixture of many (typically 30 or more) individual chlorinated biphenyl compounds ("congeners"); the commercial mixtures studied in the laboratory are altered when released to the environment by physical, biological, and metabolic processes; there are a wide range of observed effects and concentrations at which effects were observed in laboratory studies; as well as the issues associated with most chemicals in extrapolating toxicological data from animal studies.

Although there are incidences of human exposure to PCBs, data from human exposure are only useful on a qualitative basis due to lack of information about the specific composition of the mixture to which persons were exposed, exposure concentrations, and route of exposure, as well as a lack of long-term monitoring data in a number of these cases. Recent studies also suggest that some PCB congeners have dioxin-like effects and may contribute to PCDD/PCDF-related health effects; however, the lack of PCB congener-specific data precluded any assessment of this possibility.

8. Conclusions

The objective of this HHRA was to evaluate the potential for adverse human health effects associated with current or potential future exposures to chemicals present in Onondaga Lake surface water, sediments, fish, certain portions of the adjacent wetlands, and the dredge spoils area in the absence of any action to control or mitigate those chemicals. Under this "no remedial action" scenario, the HHRA principally focused on future lake conditions that further assumed unrestricted recreational use of the lake and the absence of a specific, restrictive fish consumption advisory. A total of 60 COPCs or groups of COPCs (including mercury and methylmercury) were identified for further analysis in the HHRA. Consistent with USEPA guidance, RME and CT scenarios for these COPCs were evaluated for several pathways, including a recreational fish consumption pathway, as summarized below:

- Cancer risks and non-cancer hazards calculated for the consumption of Onondaga Lake fish exceeded the upper end of the target risk levels (Table ES-6), as follows:

- The calculated RME cancer risks (ranging from 2.4×10^{-4} to 7.8×10^{-4}) exceeded the high end of the target risk range (10^{-4}), and exceeded the low end of the target cancer risk (10^{-6}) by more than two orders-of-magnitude. The CT fish ingestion cancer risk (about 4.5×10^{-5} for all recreational receptors) was below the upper end of the target range.

- The RME non-cancer HIs (ranging from about 18 to 28) exceeded the target HI (1.0) by a factor of almost 20 or more. The calculated CT non-cancer HIs (4.5 to 7 for adults and children) also exceeded the target.

- RME cancer risks for 21 of the 28 pathways other than fish ingestion equaled or exceeded the low end of the target risk range of 1×10^{-6}, with the highest of these being about 2.6×10^{-4} for older child exposure to Wetland SYW-6 sediments.

- For the CT cancer risk calculations, the low end of the 10^{-6} target range was equaled or exceeded in 8 of the 28 pathways other than fish ingestion, with a maximum CT risk of about 1.4×10^{-5} for older child exposure to Wetland SYW-6 sediments.

- None of the calculated non-cancer hazards (for both RME and CT scenarios) associated with pathways other than fish ingestion exceeded the target threshold of 1.0. The highest RME hazard other than fish ingestion was about 0.54 for young child exposure to southern basin sediments. The calculated non-cancer CT hazards for all pathways other than fish ingestion were all less than 0.1.

Cumulative risks and hazards were calculated for receptors who may be exposed to COPCs in multiple site media – for example, eating contaminated fish and being exposed to contaminated sediments. The receptors evaluated were adult recreators, young child recreators, older child recreators, and construction workers. For all cumulative risk and hazard calculations including fish ingestion, the cumulative risk or hazard was essentially the same as that associated with the fish ingestion pathway alone. Therefore, to assess the cumulative risks associated with pathways other than fish ingestion (i.e., exposure to lake sediment, wetlands sediment, dredge spoils soil, and lake surface water), the cumulative risk for each receptor was also calculated excluding the fish ingestion pathway, as summarized below:

- Cumulative RME cancer risks for adults (excluding fish ingestion) were calculated as 1×10^{-4}.

- Cumulative RME cancer risks (excluding fish ingestion) were calculated as about 3.5×10^{-5} for young children. In addition, the receptor-specific RME HI was calculated as about 0.8 for the young child.

- Cumulative RME cancer risks (excluding fish ingestion) were calculated as about 3.8×10^{-4} for older children. In addition, the calculated value of the cumulative RME HI, excluding fish ingestion, was 0.98 for the older child recreator.

- Cumulative RME cancer risks (excluding fish ingestion) were calculated as 2×10^{-5} for construction workers. In addition, the receptor-specific RME HI was calculated as about 0.8 for construction workers.

It should be noted that these cumulative estimates are probably unrealistically high, especially for the adult and older child recreational receptors, as the cumulative risk calculation assumes RME exposure frequencies summing to 218 days per year to Onondaga Lake sediments, wetlands, and dredge spoils. Cumulative RME HIs calculated in the same manner (excluding fish ingestion) generally did not exceed 1.0, although some approached 1.0, as indicated above.

Chapter 7, Uncertainty Assessment, of this HHRA provides a discussion of the reliability of the input parameters to the quantitative risk calculations, and provides a qualitative and, in some cases, semi-quantitative assessment of the effect of alternative values in risk calculations. As indicated there, actual cancer risks and non-cancer hazards may vary from those presented in the quantitative risk characterization tables.

Table ES-1. Summary of Contaminant Screening

Contaminant	ATSDR Public Health Assessment COPCs[1]	Fish Tissue (Fillets) (2.1)	Northern Basin Sediments (2.2)	Southern Basin Sediments (2.3)	Northern Basin Wetland SYW-6 (2.4)	Northern Basin Wetland SYW-10 (2.5)	Southern Basin Wetland SYW-12 (2.6)	Southern Basin Wetland SYW-19 (2.7)	Dredge Spoils Area Surface Soils (2.8)	Dredge Spoils Area Soils - All Depths (2.9)	Onondaga Lake Surface Water (2.10)
Metals/Inorganics											
Aluminum				X	X	X	X		X	X	NA-S
Antimony	X - Surface Water, Sediment	X	X	X		X		X			NA-S
Arsenic (inorganic)	X - Sediment	X	X	X	X	X	X	X	X	X	NA-S
Barium			X	X				X			NA-S
Cadmium	X - Sediment, Fish		X	X	X		X	X		X	X
Chromium	X - Sediment	X	X	X	X	X	X	X	X	X	X
Copper	X - Sediment			X			X				
Cyanide		X		X	X		X			X	NA-S
Iron			X	X	X	X	X	X	X	X	
Lead	X - Sediment, Fish			X							
Manganese	X - Surface Water, Sediment	X	X	X	X	X	X	X	X	X	X
Methylmercury		X	X	X	X	X	X	X			X
Mercury (inorganic)	X - Sediment, Fish	X	X	X	X	X	X	X	X	X	X
Nickel	X - Sediment			X							
Selenium		X									NA-S
Thallium			X	X	X	X	X			X	NA-S
Vanadium		X		X							NA-S
Zinc	X - Sediment	X									
VOCs											
Benzene	X - Sediment, Fish		X	X					NA	NA	X
Bromodichloromethane									NA	NA	X
Chlorobenzene	X - Sediment			X					NA	NA	X
Chloroform									NA	NA	X
Methylene Chloride				X					NA	NA	
Toluene	X - Sediment	Not identified as a COPC in any matrix for this HHRA									
Total Xylenes (sum)				X					NA	NA	
SVOCs											
bis(2-ethylhexyl)phthalate	X - Sediment, Fish	X									NA-S
Dibenzofuran				X							NA-S
1,2-Dichlorobenzene											X

Table ES-1. (cont.)

Contaminant	ATSDR Public Health Assessment COPCs[1]	Fish Tissue (Fillets) (2.1)	Northern Basin Sediments (2.2)	Southern Basin Sediments (2.3)	Northern Basin Wetland SYW-6 (2.4)	Northern Basin Wetland SYW-10 (2.5)	Southern Basin Wetland SYW-12 (2.6)	Southern Basin Wetland SYW-19 (2.7)	Dredge Spoils Area Surface Soils (2.8)	Dredge Spoils Area Soils - All Depths (2.9)	Onondaga Lake Surface Water (2.10)
1,3-Dichlorobenzene				X				X			X
1,4-Dichlorobenzene	X - Sediment, Fish			X				X			X
1,2,4-Trichlorobenzene											X
Hexachlorobenzene	X - Sediment, Fish	X	X	X				X	X	X	
PAHs											
Acenaphthylene	X - Sediment			X	X						NA-S
Benz(a)anthracene	X - Sediment		X	X	X	X	X	X		X	NA-S
Benzo(a)pyrene	X - Sediment		X	X	X	X	X	X	X	X	NA-S
Benzo(b)fluoranthene	X - Sediment		X	X	X	X	X	X		X	NA-S
Benzo(g,h,i)perylene	X - Sediment			X	X			X		X	NA-S
Benzo(k)fluoranthene	X - Sediment			X	X			X		X	NA-S
Chrysene	X - Sediment			X							NA-S
Dibenz(a,h)anthracene	X - Sediment		X	X	X	X	X	X		X	NA-S
Fluoranthene	X - Sediment			X							NA-S
Indeno(1,2,3-cd)pyrene	X - Sediment			X	X	X	X	X		X	NA-S
2-Methylnaphthalene	X - Sediment			X	X						NA-S
Naphthalene	X - Sediment		X	X	X					X	NA-S
Phenanthrene	X - Sediment			X	X		X	X		X	NA-S
Pesticides											
Aldrin		X						X	NA	NA	NA-S
delta-BHC		X							NA	NA	NA-S
Chlordanes (total)		X							NA	NA	NA-S
2,4'-DDE		X							NA	NA	NA-S
4,4-DDD		X							NA	NA	NA-S
4,4'-DDE		X							NA	NA	NA-S
4,4'-DDT	X - Fish	X							NA	NA	NA-S
Dieldrin		X		X				X	NA	NA	NA-S
Heptachlor Epoxide		X							NA	NA	NA-S
PCBs											
Aroclor 1016		X									NA-S
Aroclor 1221				X							NA-S

Table ES-1. (cont.)

Contaminant	ATSDR Public Health Assessment COPCs[1]	Fish Tissue (Fillets) (2.1)	Northern Basin Sediments (2.2)	Southern Basin Sediments (2.3)	Northern Basin Wetland SYW-6 (2.4)	Northern Basin Wetland SYW-10 (2.5)	Southern Basin Wetland SYW-12 (2.6)	Southern Basin Wetland SYW-19 (2.7)	Dredge Spoils Area Surface Soils (2.8)	Dredge Spoils Area Soils All Depths (2.9)	Onondaga Lake Surface Water (2.10)
Aroclor 1242		X		X			X	X			NA-S
Aroclor 1248		X		X							NA-S
Aroclor 1254			X	X			X	X		X	NA-S
Aroclor 1260		X		X		X	X	X			NA-S
Aroclor 1254/1260		X									NA-S
Aroclor 1268			X							X	NA-S
Total PCBs (sum)	X - Sediment, Fish	X	X	X		X	X	X		X	NA-S
Dioxins/Furans											
Total PCDD/PCDF TEQ		X	X	X	X	X	NA	X		X	NA

Notes: X - Specified contaminant identified as a contaminant of potential concern (COPC). See Appendix B table referenced in parenthesis.

NA - This analyte or parameter group not analyzed in specified exposure area.

NA-S - This analyte not analyzed in shallow surface water (0-3 m). Data from deeper samples (6-12 m water depth) used to qualitatively evaluate this COPC. See Chapter 5 text.

ATSDR - Agency for Toxic Substances and Disease Registry

Contaminants not listed were not identified as COPCs in any site medium.

[1] Some chemicals identified in the ATSDR Public Health Assessment were eliminated during the screening process: bis(2-ethylhexyl)phthalate, toluene, and zinc in sediment, and benzene and 1,4-dichlorobenzene in fish.

Table ES-2. Selection of Exposure Pathways – Onondaga Lake Human Health Risk Assessment

Scenario Time Frame	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis[a]	Rationale for Selection or Exclusion of Exposure Pathway
Current/ Future	Soil	Soil	Soil	Resident	Adult	Dermal	On-Site	None	Residential populations not evaluated in the RA due to lack of current residential use and unlikely future development for residential use.
						Ingestion	On-Site	None	
						Inhalation	On-Site	None	No structures currently exist and none are likely to be built in the future; concentrations of VOCs are low; PSA indicates inhalation unlikely. See text (Section 4.2.5) for discussion.
					Child	Dermal	On-Site	None	Residential populations not evaluated in the RA due to lack of current residential use and unlikely future development for residential use.
						Ingestion	On-Site	None	
						Inhalation	On-Site	None	No structures currently exist and none are likely to be built in the future; concentrations of VOCs are low; PSA indicates inhalation unlikely. See text (Section 4.2.5) for discussion.
	Sediment	Sediment	Sediment	Resident	Adult	Dermal	On-Site	None	Residential populations not evaluated in the RA due to lack of current residential use and unlikely future development for residential use.
						Ingestion	On-Site	None	
						Inhalation	On-Site	None	No structures currently exist and none are likely to be built in the future; concentrations of VOCs are low; PSA indicates inhalation unlikely. See text (Section 4.2.5) for discussion.
					Child	Dermal	On-Site	None	Residential populations not evaluated in the RA due to lack of current residential use and unlikely future development for residential use.
						Ingestion	On-Site	None	
						Inhalation	On-Site	None	No structures currently exist and none are likely to be built in the future; concentrations of VOCs are low; PSA indicates inhalation unlikely. See text (Section 4.2.5) for discussion.
	Water	Potable water supply	Tap water	Resident	Adult	Dermal	On-Site	None	Residential populations not evaluated in the RA due to lack of current residential use and unlikely future development for residential use.
						Ingestion	On-Site	None	Groundwater and Onondaga Lake water not used for potable water supply.
						Inhalation	On-Site	None	No structures currently exist and none are likely to be built in the future; concentrations of VOCs are low; PSA indicates inhalation unlikely. See text (Section 4.2.5) for discussion.
					Child	Dermal	On-Site	None	Residential populations not evaluated in the RA due to lack of current residential use and unlikely future development for residential use.
						Ingestion	On-Site	None	Groundwater and Onondaga Lake water not used for potable water supply.
						Inhalation	On-Site	None	No structures currently exist and none are likely to be built in the future; concentrations of VOCs are low; PSA indicates inhalation unlikely. See text (Section 4.2.5) for discussion.
	Edible fish	Fish tissue	Fish tissue[b]	Anglers and fish consumers	Adult	Ingestion	On-Site	Quant	Consumption of contaminants in fish identified as a potential pathway and evaluated in the RA.
					Child	Ingestion	On-Site	Quant	Consumption of contaminants in fish identified as a potential pathway and evaluated in the RA.
				Other (subsistence fisher)	Adult	Ingestion	On-Site	Qual	Because a possible subsistence fishing community does exist near the lake, a subsistence fish diet will be addressed qualitatively.
					Child	Ingestion	On-Site	Qual	Because a possible subsistence fishing community does exist near the lake, a subsistence fish diet will be addressed qualitatively.
	Game (flesh)	Edible waterfowl and turtles	Edible flesh	Hunters	Adult and Child	Ingestion	On-Site	None	Although the hunting of waterfowl on Onondaga Lake is legally permitted under New York State law, the hunting season is significantly shorter than the fishing season. There is a state-wide advisory regarding consumption of waterfowl and snapping turtles. However, the absence of available data on contaminant concentrations in waterfowl and the paucity of data on ingestion rates of waterfowl precluded a quantitative analysis of this pathway. See text (Section 4.2.4) for discussion.

Table ES-2. (cont.)

Scenario Time Frame	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis[a]	Rationale for Selection or Exclusion of Exposure Pathway
Current/ Future	Surface sediments	Surface and near-surface sediments on shoreline and in lake to depth of 2.0 meters	Sediments at 0- to 30-cm depths in lake and wetlands	Recreational Visitor	Adult	Dermal	On-Site	Quant	Dermal contact with, and incidental ingestion of, contaminants in lake and wetland (surface and near-surface) sediment by visitors and construction workers identified as a potential pathway and evaluated in the RA.
						Ingestion	On-Site	Quant	
					Child	Dermal	On-Site	Quant	Dermal contact with, and incidental ingestion of, contaminants in lake and wetland sediment (surface and near-surface) by visitors identified as a potential pathway and evaluated in the RA.
						Ingestion	On-Site	Quant	
				Construction Worker (future only)	Adult	Dermal	On-Site	Quant	Dermal contact with, and incidental ingestion of, contaminants in lake and wetland (surface and near-surface) sediment by visitors and construction workers identified as a potential pathway and evaluated in the RA.
						Ingestion	On-Site	Quant	
	Dredge-spoil soil	Surface soil	Soil at 0- to 3.5-ft depth	Recreational Visitor	Adult	Dermal	On-Site	Quant	Dermal contact with, and incidental ingestion of, contaminants in dredge-spoil soil by visitors identified as a potential pathway and evaluated in the RA.
						Ingestion	On-Site	Quant	
					Child	Dermal	On-Site	Quant	Dermal contact with, and incidental ingestion of, contaminants in dredge-spoil soil by visitors identified as a potential pathway and evaluated in the RA.
						Ingestion	On-Site	Quant	
				Construction Worker (future only)	Adult	Dermal	On-Site	Quant	Dermal contact with, and incidental ingestion of, contaminants in surface and near-surface dredge-spoil soil by construction workers identified as a potential pathway and evaluated in the RA.
						Ingestion	On-Site	Quant	
		Surface soil/ subsurface soil	Soil at 0- to 11.7-ft depth	Construction Worker (future only)	Adult	Dermal	On-Site	Quant	Dermal contact with, and incidental ingestion of, contaminants in deeper dredge-spoil soil by construction workers identified as a potential pathway and evaluated in the RA.
						Ingestion	On-Site	Quant	
	Onondaga Lake – Surface Water	Surface water	Surface water in lake	Recreational Visitor	Adult	Dermal	On-Site	Quant	Dermal contact with, and incidental ingestion of, contaminants in lake water by visitors and construction workers identified as a potential pathway and evaluated in the RA.
						Ingestion	On-Site	Quant	
					Child	Dermal	On-Site	Quant	Dermal contact with, and incidental ingestion of, contaminants in lake water by visitors identified as a potential pathway and evaluated in the RA.
						Ingestion	On-Site	Quant	
				Construction Worker (future only)	Adult	Dermal	On-Site	Quant	Dermal contact with, and incidental ingestion of, contaminants in lake water by visitors and construction workers identified as a potential pathway and evaluated in the RA.
						Ingestion	On-Site	Quant	

Notes: See Appendix A for locations of samples used in evaluating potential exposures.

North lake, south lake, and the four wetlands areas are considered separately, due to differences in access and use designation. All ages are assumed to contact lake media (adults and children are evaluated). See text for age discussion.

RA = Risk Assessment.

[a] Quant = Quantitative risk analysis performed. Qual=Qualitative analysis performed. None = Not considered a complete pathway; not evaluated in the RA.

[b] Fish species collected that were considered edible and for which fillets were analyzed include bluegill, smallmouth bass, carp, channel catfish, largemouth bass, northern pike, white perch, and walleye. Consistent with New York's fishing regulations, size was limited to fish of approximately legal size or larger (e.g., 12 inches for smallmouth bass and 15 inches for walleye). Fishing regulations allow "any size" for other species, but individual fish smaller than about 6 inches were excluded, as fish that small are unlikely to be consumed by humans.

Table ES-3. Summary of Cancer Risks and Non-Cancer Hazards

Pathway	Non-Cancer Hazard		Cancer Risk	
	RME	CT	RME	CT
Fish Ingestion - Adult Angler	**18.2**	**4.48**	**7.8E-04**	**4.3E-05**
Fish Ingestion - Young Child	**28.3**	**6.97**	**2.4E-04**	**4.4E-05**
Fish Ingestion - Older Child	**19.8**	**4.86**	**3.4E-04**	**4.6E-05**
Sediments - Northern Basin - Adult Recreational	0.020	0.007	**1.3E-06**	1.4E-07
Sediments - Northern Basin - Young Child Recreational	0.221	0.060	**3.8E-06**	5.7E-07
Sediments - Northern Basin - Older Child Recreational	0.070	0.012	**3.9E-06**	2.5E-07
Sediments - Northern Basin - Construction Worker	0.037	0.013	1.5E-07	3.8E-08
Sediments - Southern Basin - Adult Recreational	0.039	0.007	**1.0E-05**	5.3E-07
Sediments - Southern Basin - Young Child Recreational	0.535	0.047	**3.2E-05**	**2.0E-06**
Sediments - Southern Basin - Older Child Recreational	0.253	0.012	**3.5E-05**	**1.0E-06**
Sediments - Southern Basin - Construction Worker	0.219	0.062	**3.7E-06**	8.3E-07
Sediments - Wetland SYW-6 (North) - Adult Recreational	0.042	0.015	**6.5E-05**	**7.1E-06**
Sediments - Wetland SYW-6 (North) - Older Child Recreational	0.115	0.026	**2.6E-04**	**1.4E-05**
Sediments - Wetland SYW-6 (North) - Construction Worker	0.078	0.029	**7.6E-06**	**1.5E-06**
Sediments - Wetland SYW-10 (North) - Adult Recreational	0.041	0.015	**5.0E-06**	5.4E-07
Sediments - Wetland SYW-10 (North) - Older Child Recreational	0.161	0.026	**1.7E-05**	**1.0E-06**
Sediments - Wetland SYW-10 (North) - Construction Worker	0.076	0.026	6.0E-07	1.4E-07
Sediments - Wetland SYW-12 (South) - Adult Recreational	0.023	0.004	**3.7E-06**	1.9E-07
Sediments - Wetland SYW-12 (South) - Older Child Recreational	0.122	0.007	**1.4E-05**	3.7E-07
Sediments - Wetland SYW-12 (South) - Construction Worker	0.135	0.042	**1.4E-06**	2.7E-07
Sediments - Wetland SYW-19 (South) - Adult Recreational	0.027	0.005	**1.4E-05**	7.7E-07
Sediments - Wetland SYW-19 (South) - Older Child Recreational	0.157	0.009	**4.9E-05**	**1.4E-06**
Sediments - Wetland SYW-19 (South) - Construction Worker	0.156	0.047	**5.4E-06**	**1.2E-06**
Soils - Dredge Spoils (Surface) - Adult Recreational	0.026	0.009	**1.8E-06**	1.9E-07
Soils - Dredge Spoils (Surface) - Older Child Recreational	0.075	0.016	**4.7E-06**	3.5E-07
Soils - Dredge Spoils (Surface) - Construction Worker	0.048	0.018	2.1E-07	6.0E-08
Soils - Dredge Spoils (Subsurface) - Construction Worker	0.126	0.043	**1.1E-06**	2.4E-07
Surface Water - Adult Recreational	0.020	0.007	6.1E-08	7.8E-09
Surface Water - Young Child Recreational	0.037	0.014	2.5E-08	9.9E-09
Surface Water - Older Child Recreational	0.024	0.009	3.0E-08	9.4E-09
Surface Water - Construction Worker	0.002	0.001	4.2E-10	1.1E-10

Notes: Hazard indices (HI) and cancer risks in **bold** exceed target levels (HI > 1, cancer risk > 10^{-6})

CT = central tendency

RME = reasonable maximum exposure

Table ES-4. Summary of COPCs Contributing to Cancer Risks

Pathway	RME Cancer Risk	Principal Chemicals Contributing to Risk [1]
Fish Ingestion - Adult Angler	7.80E-04	PCDD/PCDFs; PCBs (total); arsenic [2]
Fish Ingestion - Young Child	2.43E-04	PCDD/PCDFs; PCBs (total); arsenic [2]
Fish Ingestion - Older Child	3.39E-04	PCDD/PCDFs; PCBs (total); arsenic [2]
Sediments - Northern Basin - Adult Recreational	1.28E-06	Arsenic; benzo(a)pyrene; hexachlorobenzene
Sediments - Northern Basin - Young Child Recreational	3.82E-06	Arsenic; benzo(a)pyrene; hexachlorobenzene
Sediments - Northern Basin - Older Child Recreational	3.94E-06	Arsenic; benzo(a)pyrene; hexachlorobenzene
Sediments - Northern Basin - Construction Worker	1.52E-07	Arsenic; benzo(a)pyrene; hexachlorobenzene
Sediments - Southern Basin - Adult Recreational	1.00E-05	Benzo(a)pyrene; dibenz(a,h)anthracene; PCDD/PCDFs; hexachlorobenzene
Sediments - Southern Basin - Young Child Recreational	3.16E-05	Benzo(a)pyrene; dibenz(a,h)anthracene and other PAHs; PCDD/PCDFs; hexachlorobenzene; arsenic
Sediments - Southern Basin - Older Child Recreational	3.47E-05	Benzo(a)pyrene and other PAHs [3]; PCDD/PCDFs; hexachlorobenzene; arsenic
Sediments - Southern Basin - Construction Worker	3.68E-06	Benzo(a)pyrene; PCDD/PCDFs; dibenz(a,h)anthracene
Sediments - Wetland SYW-6 (North) - Adult Recreational	6.49E-05	Benzo(a)pyrene; dibenz(a,h)anthracene, benz(a)anthracene, benzo(b) and (k)fluoranthene, indeno(1,2,3-cd)pyrene
Sediments - Wetland SYW-6 (North) - Older Child Recreational	2.60E-04	Benzo(a)pyrene; dibenz(a,h)anthracene, arsenic; benzo(b)fluoranthene, indeno(1,2,3-cd)pyrene
Sediments - Wetland SYW-6 (North) - Construction Worker	7.61E-06	Benzo(a)pyrene; dibenz(a,h)anthracene
Sediments - Wetland SYW-10 (North) - Adult Recreational	5.02E-06	Arsenic; benzo(a)pyrene
Sediments - Wetland SYW-10 (North) - Older Child Recreational	1.65E-05	Arsenic; benzo(a)pyrene; dibenz(a,h)anthracene
Sediments - Wetland SYW-10 (North) - Construction Worker	5.97E-07	Arsenic; benzo(a)pyrene
Sediments - Wetland SYW-12 (South) - Adult Recreational	3.69E-06	Benzo(a)pyrene
Sediments - Wetland SYW-12 (South) - Older Child Recreational	1.43E-05	Benzo(a)pyrene; benz(a)anthracene
Sediments - Wetland SYW-12 (South) - Construction Worker	1.36E-06	Benzo(a)pyrene
Sediments - Wetland SYW-19 (South) - Adult Recreational	1.44E-05	Benzo(a)pyrene; PCDD/PCDFs; dibenz(a,h)anthracene
Sediments - Wetland SYW-19 (South) - Older Child Recreational	4.90E-05	Benzo(a)pyrene and other PAHs [4]; PCDD/PCDFs; hexachlorobenzene
Sediments - Wetland SYW-19 (South) - Construction Worker	5.36E-06	Benzo(a)pyrene; PCDD/PCDFs; dibenz(a,h)anthracene
Soils - Dredge Spoils (Surface) - Adult Recreational	1.76E-06	Arsenic; benzo(a)pyrene
Soils - Dredge Spoils (Surface) - Older Child Recreational	4.66E-06	Arsenic; benzo(a)pyrene; hexachlorobenzene
Soils - Dredge Spoils (Surface) - Construction Worker	2.12E-07	Arsenic; benzo(a)pyrene; hexachlorobenzene
Soils - Dredge Spoils (Subsurface) - Construction Worker	1.10E-06	Benzo(a)pyrene; arsenic; dibenz(a,h)anthracene
Surface Water - Adult Recreational	6.13E-08	Benzene; bromodichloromethane
Surface Water - Young Child Recreational	2.49E-08	Benzene; bromodichloromethane
Surface Water - Older Child Recreational	2.99E-08	Benzene; bromodichloromethane
Surface Water - Construction Worker	4.22E-10	Benzene; bromodichloromethane

Notes: COPC – chemical of potential concern
RME – reasonable maximum exposure
MW – molecular weight
(1) Principal chemicals contributing to risk are those accounting for 10 percent or more of risk and for all pathways except fish ingestion contributing risk of 10^{-6} or more.
(2) Principal chemicals for fish ingestion pathway are those accounting for a total of more than 90 percent of risk. Several SVOCs and pesticides also contributed RME risk of 10^{-6} or more.
(3) Other PAHs not listed individually (with RME risks greater than 10^{-6}) include dibenz(a,h)anthracene and benzo(b)fluoranthene.
(4) Other PAHs not listed individually (with RME risks greater than 10^{-6}) include dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, benz(a)anthracene, and benzo(b)fluoranthene.

Table ES-5. Summary of COPCs Contributing to Non-Cancer Hazards

Pathway	RME HI	Principal Chemicals Contributing to Hazard [1]
Fish Ingestion - Adult Angler	18.21	Low and high molecular weight PCBs; mercury (as methylmercury) [2]
Fish Ingestion - Young Child	28.32	Low and high molecular weight PCBs; mercury (as methylmercury) [2]
Fish Ingestion - Older Child	19.76	Low and high molecular weight PCBs; mercury (as methylmercury) [2]
Sediments - Northern Basin - Adult Recreational	0.020	Antimony; arsenic; iron; manganese
Sediments - Northern Basin - Young Child Recreational	0.221	Arsenic; antimony; iron
Sediments - Northern Basin - Older Child Recreational	0.070	Arsenic; Aroclor 1254; Aroclor 1268; cadmium
Sediments - Northern Basin - Construction Worker	0.037	Antimony; iron; arsenic; manganese
Sediments - Southern Basin - Adult Recreational	0.039	Naphthalene
Sediments - Southern Basin - Young Child Recreational	0.535	Naphthalene
Sediments - Southern Basin - Older Child Recreational	0.253	Naphthalene
Sediments - Southern Basin - Construction Worker	0.219	Naphthalene; chromium
Sediments - Wetland SYW-6 (North) - Adult Recreational	0.042	Iron; chromium; cadmium; arsenic
Sediments - Wetland SYW-6 (North) - Older Child Recreational	0.115	Cadmium; arsenic; iron; chromium
Sediments - Wetland SYW-6 (North) - Construction Worker	0.078	Iron; chromium; cadmium; arsenic
Sediments - Wetland SYW-10 (North) - Adult Recreational	0.041	Arsenic; iron; thallium; Aroclor 1260
Sediments - Wetland SYW-10 (North) - Older Child Recreational	0.161	Aroclor 1260; arsenic
Sediments - Wetland SYW-10 (North) - Construction Worker	0.076	Arsenic; iron; thallium; Aroclor 1260
Sediments - Wetland SYW-12 (South) - Adult Recreational	0.023	Cadmium; chromium; Aroclor 1254; iron
Sediments - Wetland SYW-12 (South) - Older Child Recreational	0.122	Cadmium; Aroclor 1254; Aroclor 1260
Sediments - Wetland SYW-12 (South) - Construction Worker	0.135	Cadmium; chromium; Aroclor 1254; iron
Sediments - Wetland SYW-19 (South) - Adult Recreational	0.027	Mercury; Aroclor 1254; Aroclor 1260
Sediments - Wetland SYW-19 (South) - Older Child Recreational	0.157	Aroclor 1254; Aroclor 1260; Aroclor 1242
Sediments - Wetland SYW-19 (South) - Construction Worker	0.156	Mercury; Aroclor 1254; Aroclor 1260
Soils - Dredge Spoils (Surface) - Adult Recreational	0.026	Iron; arsenic; mercury
Soils - Dredge Spoils (Surface) - Older Child Recreational	0.075	Arsenic; iron
Soils - Dredge Spoils (Surface) - Construction Worker	0.048	Iron; arsenic
Soils - Dredge Spoils (Subsurface) - Construction Worker	0.126	Mercury; Aroclor 1268; iron; arsenic
Surface Water - Adult Recreational	0.020	Cadmium; chromium; 1,3-dichlorobenzene
Surface Water - Young Child Recreational	0.037	Cadmium; chromium; 1,3-dichlorobenzene
Surface Water - Older Child Recreational	0.024	Cadmium; chromium; 1,3-dichlorobenzene
Surface Water - Construction Worker	0.002	Cadmium; chromium; 1,3-dichlorobenzene

Notes: COPC – chemical of potential concern
HI – hazard index
HQ – hazard quotient
RME – reasonable maximum exposure
(1) Principal COPCs are those contributing 10 percent of risk or having an individual HQ of more than 0.1 (except for RME fish ingestion).
(2) RME fish ingestion COPCs are those with HQs of more than 1.
Other COPCs with RME HQs greater than 0.1 include antimony, arsenic, cyanide, selenium, and heptachlor epoxide.

Table ES-6. Summary of Cancer Risks and Non-Cancer Hazards Exceeding Target Levels

	Non-Cancer Hazard		Cancer Risk					
	HQ > 1		Risk > 10^{-4}		Risk > 10^{-5}		Risk > 10^{-6}	
Pathway	RME	CT	RME	CT	RME	CT	RME	CT
Fish Ingestion - Adult Angler	X	X	X	--	X	X	X	X
Fish Ingestion - Young Child	X	X	X	--	X	X	X	X
Fish Ingestion - Older Child	X	X	X	--	X	X	X	X
Sediments - Northern Basin - Adult Recreational	--	--	--	--	--	--	X	--
Sediments - Northern Basin - Young Child Recreational	--	--	--	--	--	--	X	--
Sediments - Northern Basin - Older Child Recreational	--	--	--	--	--	--	X	--
Sediments - Northern Basin - Construction Worker	--	--	--	--	--	--	--	--
Sediments - Southern Basin - Adult Recreational	--	--	--	--	X	--	X	--
Sediments - Southern Basin - Young Child Recreational	--	--	--	--	X	--	X	X
Sediments - Southern Basin - Older Child Recreational	--	--	--	--	X	--	X	X
Sediments - Southern Basin - Construction Worker	--	--	--	--	--	--	X	--
Sediments - Wetland SYW-6 (North) - Adult Recreational	--	--	--	--	X	--	X	X
Sediments - Wetland SYW-6 (North) - Older Child Recreational	--	--	X	--	X	X	X	X
Sediments - Wetland SYW-6 (North) - Construction Worker	--	--	--	--	--	--	X	X
Sediments - Wetland SYW-10 (North) - Adult Recreational	--	--	--	--	--	--	X	--
Sediments - Wetland SYW-10 (North) - Older Child Recreational	--	--	--	--	X	--	X	X
Sediments - Wetland SYW-10 (North) - Construction Worker	--	--	--	--	--	--	--	--
Sediments - Wetland SYW-12 (South) - Adult Recreational	--	--	--	--	--	--	X	--
Sediments - Wetland SYW-12 (South) - Older Child Recreational	--	--	--	--	X	--	X	--
Sediments - Wetland SYW-12 (South) - Construction Worker	--	--	--	--	--	--	X	--
Sediments - Wetland SYW-19 (South) - Adult Recreational	--	--	--	--	X	--	X	--
Sediments - Wetland SYW-19 (South) - Older Child Recreational	--	--	--	--	X	--	X	X
Sediments - Wetland SYW-19 (South) - Construction Worker	--	--	--	--	--	--	X	X
Soils - Dredge Spoils (Surface) - Adult Recreational	--	--	--	--	--	--	X	--
Soils - Dredge Spoils (Surface) - Older Child Recreational	--	--	--	--	--	--	X	--
Soils - Dredge Spoils (Surface) - Construction Worker	--	--	--	--	--	--	--	--
Soils - Dredge Spoils (Subsurface) - Construction Worker	--	--	--	--	--	--	X	--
Surface Water - Adult Recreational	--	--	--	--	--	--	--	--
Surface Water - Young Child Recreational	--	--	--	--	--	--	--	--
Surface Water - Older Child Recreational	--	--	--	--	--	--	--	--
Surface Water - Construction Worker	--	--	--	--	--	--	--	--

Notes: **X** - Hazard indices (HI) and cancer risks exceeding specified target levels
-- - Hazard indices (HI) and cancer risks below specified target levels
CT - central tendency
RME - reasonable maximum exposure

1. INTRODUCTION

The objective of the Onondaga Lake baseline human health risk assessment (HHRA) is to quantify human health risks associated with contaminants of potential concern (COPCs) in Onondaga Lake and related areas (wetlands and the dredge spoils area) in the absence of any remedial action (i.e., under the no-action alternative). This HHRA focuses on Onondaga Lake (water, sediments, and fish) and select shoreline areas directly abutting the lake – specifically, four New York State-regulated wetland areas (Wetlands SYW-6, SYW-10, SYW-12, and SYW-19) and the dredge spoils area on the west side of the lake, north of Ninemile Creek between Wetlands SYW-6 and SYW-10.

A draft HHRA report for Onondaga Lake was submitted by Honeywell in May 1998. NYSDEC disapproved this draft document and provided comments to Honeywell in October 1998. After completing additional sampling in 1999 and 2000, Honeywell submitted a revised draft HHRA report in March 2001. This revised report was disapproved by NYSDEC in July 2001. The reasons for disapproval are outlined in the accompanying determination. This HHRA is the NYSDEC/TAMS Consultants, Inc. (TAMS) rewrite of Honeywell's revised draft HHRA report.

Information in this HHRA regarding site history, including historical sources of contamination, is summarized from the accompanying Onondaga Lake Remedial Investigation (RI) report (TAMS, 2002b). NYSDEC/TAMS obtained the information in the RI report (and this HHRA report) from, among other sources, reports and materials prepared by Honeywell and its consultants. While the accuracy of the information provided by Honeywell and its consultants is accepted for purposes of the several reports, it must be noted that pursuant to paragraph 68 of the Consent Decree, discovery in the underlying litigation has been stayed. Consequently, the information furnished by Honeywell and its consultants, as well as information provided by third-party sources, has not been verified through the formal discovery process. The State reserves the right, consistent with and without limitation to its rights under paragraphs 33 and 34 of the Consent Decree and under state and federal law, to correct or amend any information in the RI and risk assessment reports if, without limitation: (a) discovery is conducted, and (b) that discovery reveals information supporting such correction or amendment.

As defined in the Consent Decree, the site includes Onondaga Lake, its outlet, and tributaries that may have been affected by Honeywell operations. The tributaries directly affected by Honeywell are Ninemile Creek and its tributaries, Geddes Brook and the West Flume; Tributary 5A; the East Flume; and Harbor Brook (Figures 1-1 and 1-2). As discussed below, these tributaries are not included in this HHRA since they are being covered as part of other investigations. NYSDEC has also required that Wetlands SYW-6 and SYW-12 be included in the site. Risks associated with Wetlands SYW-10 and SYW-19 and the dredge spoils area will be further evaluated as part of separate sites and therefore the risk analysis associated with these areas in this HHRA is considered preliminary, pending the finalization of the HHRAs associated with these other sites. Specifically, Wetland SYW-10 will be further evaluated as part of the RI/Feasibility Study (FS) for the Geddes Brook/Ninemile Creek site; Wetland SYW-19 will be further evaluated as part of the RI/FS for the Wastebed B/Harbor Brook site; and the dredge spoils area will be further evaluated as a

separate site with its own investigation. This quantitative Onondaga Lake HHRA utilizes the sample data collected to date in these areas.

As this HHRA is focused on Onondaga Lake and its shoreline, the tributaries directly affected by Honeywell are not included in this HHRA since they are being covered as part of other investigations, as noted below:

- Limited sampling was conducted in the West Flume as part of the RI for Onondaga Lake. The West Flume has been investigated further as part of a separate RI for the Honeywell LCP Bridge Street site. Potential human health risks related to exposures to COPCs in the West Flume were evaluated in the RI and HHRA for the LCP Bridge Street facility (NYSDEC/TAMS, 1998a).

- Limited sampling was conducted in Geddes Brook and Ninemile Creek as part of the RI for Onondaga Lake. These tributaries have been investigated further as part of a separate RI for Geddes Brook and Ninemile Creek. The Geddes Brook/Ninemile Creek work plan was submitted by Honeywell in April 1998, and rewritten by NYSDEC. The first phase of sampling was completed in October 1998. The draft HHRA was submitted to NYSDEC in July 2000 (Exponent, 2000a). Based on NYSDEC comments, additional data were collected in 2001 for sediments and floodplain soils in Geddes Brook and Ninemile Creek. The revised draft RI report and risk assessments were submitted to NYSDEC in November 2001, rejected on February 15, 2002, and are currently being rewritten by NYSDEC. Additional floodplain soils sampling was performed by Honeywell in Ninemile Creek in 2002. NYSDEC is scheduled to complete the rewrites by July 31, 2003.

- Risks associated with Harbor Brook and the East Flume are being addressed under a separate investigation for the Wastebed B/Harbor Brook site.

- Risks associated with Tributary 5A are being addressed under a separate investigation for the Willis Avenue site.

This HHRA was conducted in accordance with the Onondaga Lake RI Work Plan (PTI, 1991), approved by NYSDEC, as amended, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and other applicable guidance documents from the US Environmental Protection Agency (USEPA) (see Section 1.1). This HHRA addresses the key aspects of the human health risk assessment task as specified in the Onondaga Lake RI/FS Work Plan (PTI, 1991). The specifics of implementation are not identical to those outlined in the work plan due to subsequent changes in regulations and guidance documents, the acquisition of additional data, and advancements in analytical and risk assessment science.

This HHRA was conducted independently of the public health assessment for Onondaga Lake that was prepared by the New York State Department of Health (NYSDOH) and the Agency for Toxic Substances and Disease Registry (ATSDR) (NYSDOH and ATSDR, 1995). All available sources of data were reviewed; however, data collected by Honeywell during Phase 1 (1992) and Phase 2A (1999 and 2000) of the RI and fish data collected by NYSDEC from 1992 to 2000 were the primary data used in the HHRA. Table 1-1 summarizes the data used in this HHRA.

This HHRA was conducted under USEPA's Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 guidance and protocols and, as such, only quantifies excess (incremental) risk associated with this site. It does not quantify risks associated with other Honeywell Onondaga Lake-related sites nor does it include evaluation of risks associated with non-Honeywell contaminant sources at other upland locations. Therefore, the total risk to individuals resulting from all these sources is likely higher than the risks associated with the Onondaga Lake site, as quantified in this report. Because this HHRA represents baseline conditions, it does not reflect reduced risk associated with any future remedial actions.

1.1 Guidance Documents

The following sources of guidance were used for the HHRA:

- Risk Assessment Guidance for Superfund (RAGS): Volume 1. Human Health Evaluation Manual (Parts A, B, and D) (USEPA, 1989, 1991a,b, 1998).
- Supplemental Guidance to RAGS: Calculating the Concentration Term (USEPA, 1992a).
- Risk Assessment Guidance for Superfund (RAGS): Volume 1. Human Health Evaluation Manual (Part E), Supplemental Guidance for Dermal Risk Assessment (USEPA, 2001a).
- Supplemental Guidance to RAGS: Standard Default Exposure Factors (USEPA, 1991b) and Exposure Factors Handbook (USEPA, 1997a).
- USEPA Region 3 risk-based concentration (RBC) table, April 2002 update (USEPA, 2002a).
- USEPA Region 9 preliminary remediation goals (PRGs) table, October 2002 Update (USEPA, 2002b).
- Guidance for Data Usability in Risk Assessment (USEPA, 1990).

- USEPA Office of Solid Waste and Emergency Response directives (USEPA, 1991c, 1992b) on characterizing risks and uncertainties in quantitative risk assessments.

Other guidance documents utilized for specific aspects of this HHRA are identified where referenced in the text and included in Chapter 9, References.

1.2 Organization

Chapter 2 of this HHRA contains a brief summary of site background information that includes site history, climate, land use, and demographics. Additional site background information is provided in the accompanying RI report (TAMS, 2002b). The subsequent chapters of this HHRA describe the results of the four steps recommended in USEPA guidance for risk assessment, as shown in Figure 1-3: identification of COPCs (Chapter 3), exposure assessment (Chapter 4), toxicity assessment (Chapter 5), and risk characterization (Chapter 6). An uncertainty assessment, which discusses HHRA assumptions and other factors that may over- or underestimate potential site risks, is provided as Chapter 7. The risk assessment results are summarized in Chapter 8, and references for the entire document are provided in Chapter 9. All of the data used in the analyses and detailed discussions of technical issues in the HHRA are provided in the following appendices to the HHRA:

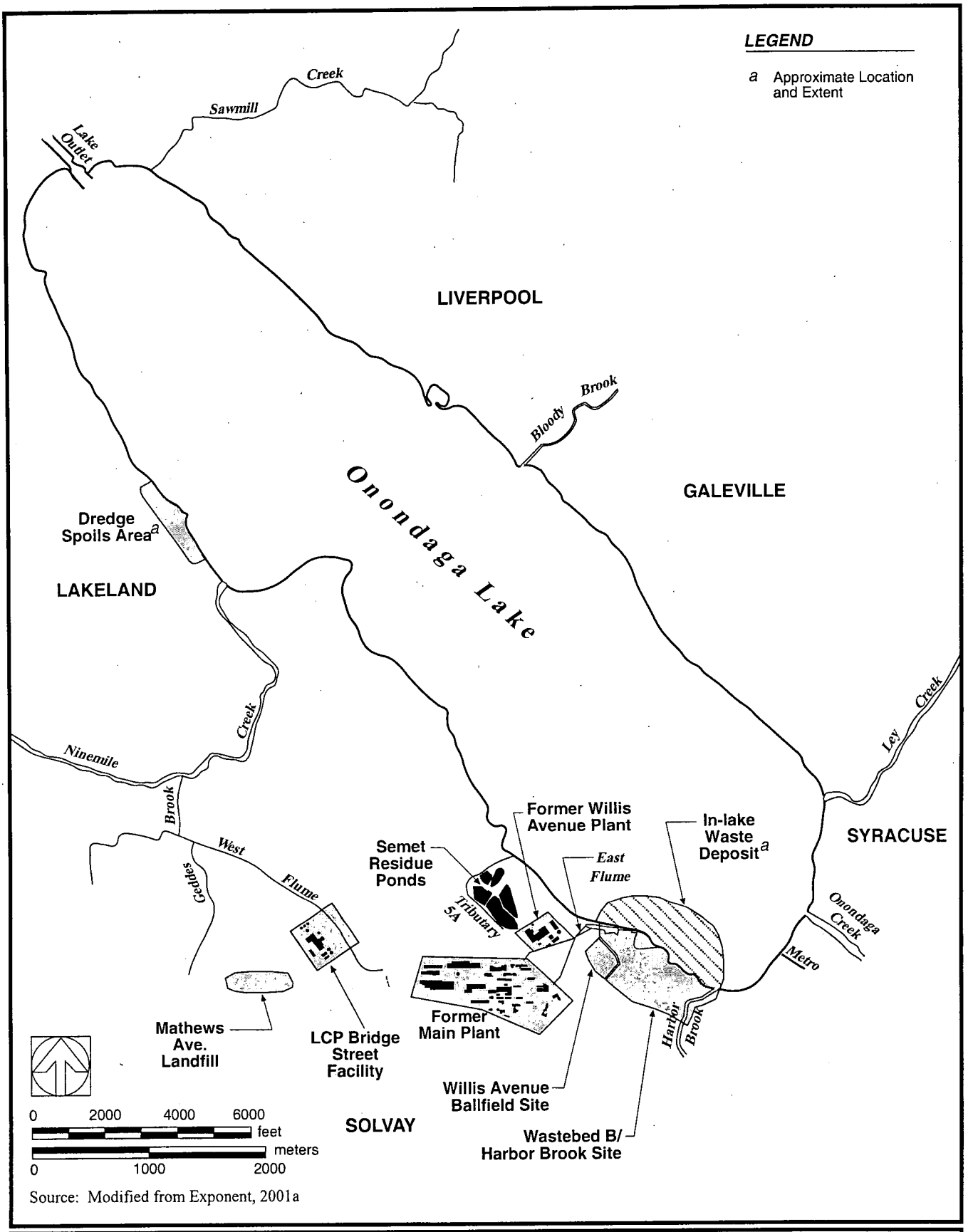
- Appendix A, Summary of Site Data Used in the HHRA, presents the analytical results for recent and historical samples from the Onondaga Lake system used in this HHRA.

- Appendix B, RAGS Part D Tables, presents all the tables (Tables 1 through 10) required by RAGS Part D (USEPA, 1998).

- Appendix C, USEPA Region 3 and Region 9 Screening Values, provides tables of USEPA-derived RBCs used in the selection of COPCs, as well as information from the regions explaining the derivation and use of these criteria.

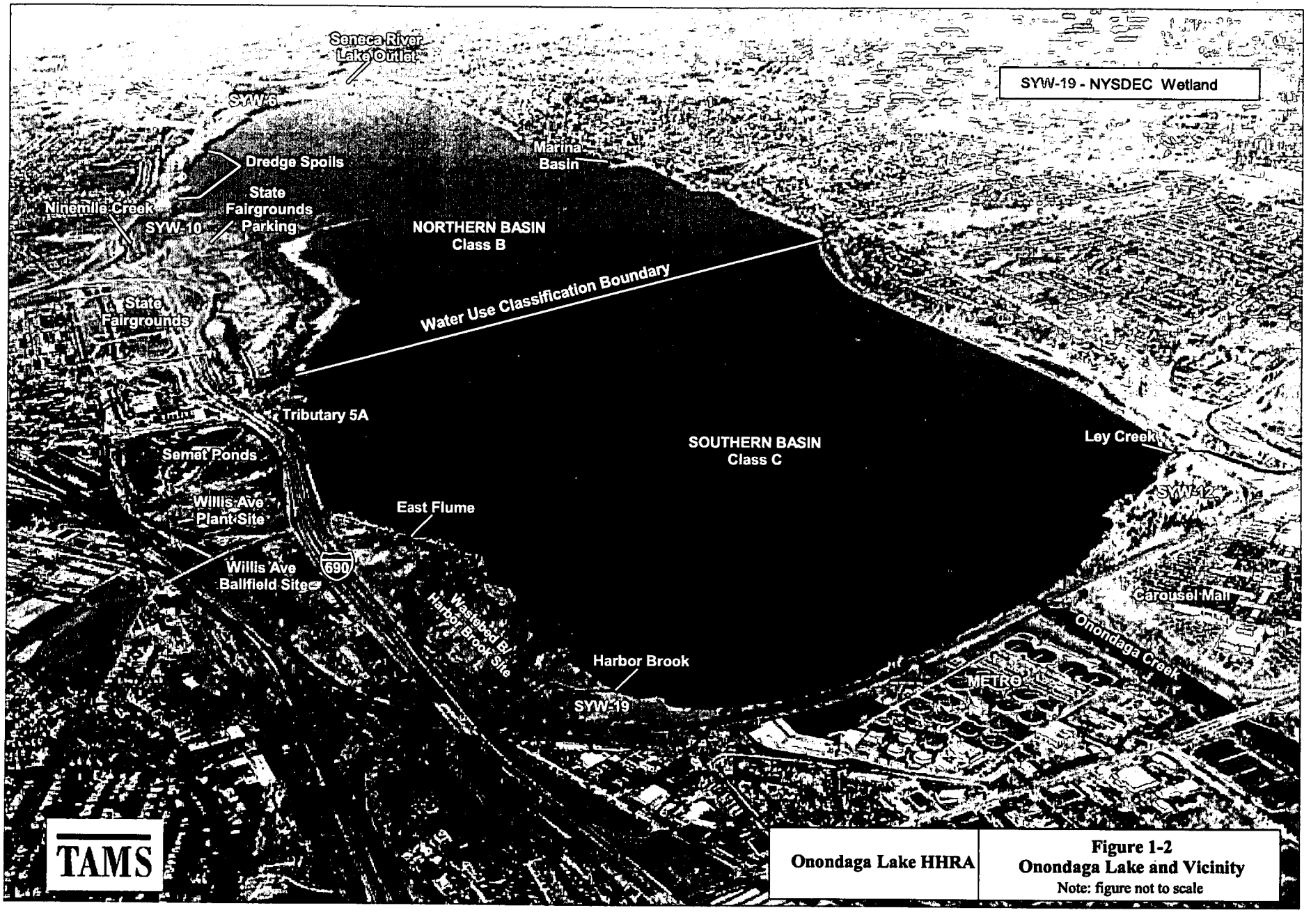
- Appendix D, Comparison of ProUCL and Default Data Distributions for Calculation of Exposure Point Concentrations and Risks, presents a comparison of exposure point concentrations (EPCs) and risks calculated using the default data distribution assumptions (USEPA, 1989) and the recent USEPA statistical software ProUCL 2.1 (USEPA, 2002c).

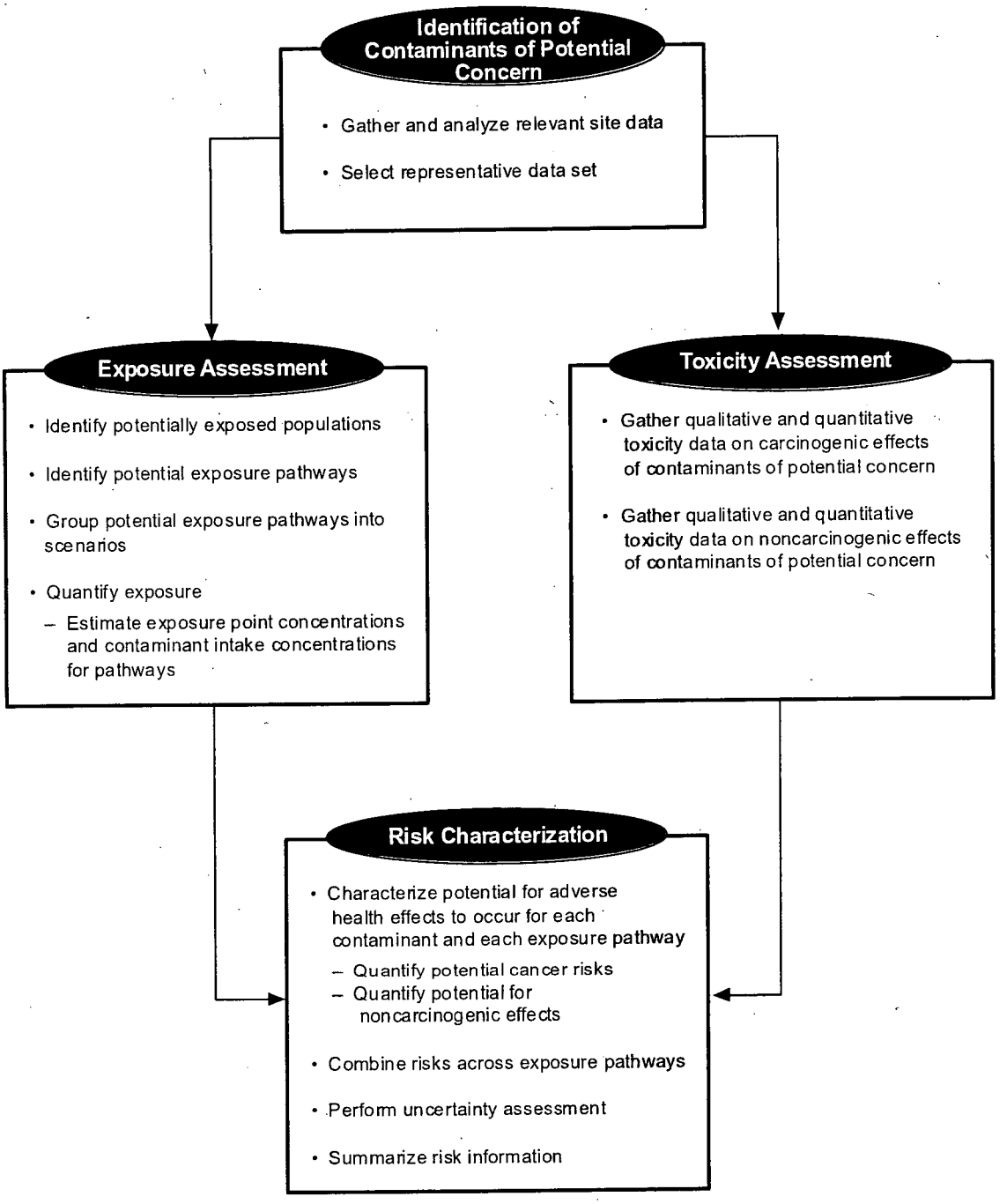
- Appendix E, Toxicity Profiles for Contaminants of Potential Concern, includes the available USEPA Integrated Risk Information System (IRIS) files for the COPCs assessed in this HHRA, as well as additional files from the ATSDR and the USEPA National Center for Environmental Assessment (NCEA).



Source: Modified from Exponent, 2001a

Figure 1-1. Locations of Honeywell Former Facilities and Referenced Disposal Areas near Onondaga Lake


Seneca River
Lake Outlet
SYW-5
SYW-19 - NYSDEC Wetland
Dredge Spoils
Marina
Basin
State
Fairgrounds
Parking
Ninemile Creek
SYW-10
NORTHERN BASIN
Class B
Water Use Classification Boundary
State
Fairgrounds
Tributary 5A
SOUTHERN BASIN
Class C
Ley Creek
Semet Ponds
SYW-12
Willis Ave
Plant Site
East Flume
Willis Ave
Ballfield Site
690
Westbed Bl
Harbor Brook Site
Carousel Mall
Onondaga Creek
Harbor Brook
METRO
SYW-19
TAMS
Onondaga Lake HHRA
Figure 1-2
Onondaga Lake and Vicinity
Note: figure not to scale



Source: U.S. EPA (1989b, 1991a)
Modified from Exponent, 2001a

Figure 1-3. Major Components of the Baseline Human Health Risk Assessment for Onondaga Lake

Table 1-1. Summary of Data Sources Used in the Onondaga Lake Human Health Risk Assessment

Report Title	Sampled Area/Year(s)	Chemical Analyses for Data Used in Human Health Risk Assessment	Data Used in Human Health Risk Assessment
Fish (Fillets)[a]			
Onondaga Lake RI/FS bioaccumulation investigation data report (PTI, 1993a)	Onondaga Lake/1992	Ionic mercury, methylmercury, and PCBs	Fillets of adult carp, channel catfish, white perch, bluegill, smallmouth bass, and walleye collected in 1992; except PTI fish PCB data were not used after further NYSDEC review
Onondaga Lake RI/FS bioaccumulation investigation data report (PTI, 1993a)	Onondaga Lake/1992	TCL organics (VOCs, SVOCs, pesticides/PCBs) and TAL inorganics (23 metals plus cyanide)	Four composite fish fillets of catfish, smallmouth bass, walleye, and white perch collected in 1992
Annual monitoring data for Onondaga Lake fish (NYSDEC, 1992)	Onondaga Lake/1992	Total mercury, pesticides, PCBs, and hexachlorobenzene	Fillets of smallmouth bass, walleye, and white perch collected in 1992
Unpublished analyses of fish collected by NYSDEC	Onondaga Lake/1994	Total mercury, pesticides, PCBs, and hexachlorobenzene	Fillets of smallmouth bass collected in 1994
Unpublished analyses of fish collected by NYSDEC (PTI, 1995)	Onondaga Lake/1995	Total mercury	Fillets of walleye and white perch collected in 1995. Original data not located; NYSDEC data as reported by Exponent, 2001a
Unpublished analyses of fish collected by NYSDEC	Onondaga Lake/1995	Total mercury	Fillets of smallmouth bass collected in 1995
Unpublished analyses of fish collected by NYSDEC	Onondaga Lake/1996	Total mercury, pesticides, PCBs, and hexachlorobenzene	Fillets of smallmouth bass and largemouth bass collected in 1996
Unpublished analyses of fish collected by NYSDEC	Onondaga Lake/1997	Total mercury, dioxins and furans, pesticides, PCBs, and hexachlorobenzene	Fillets of smallmouth bass, largemouth bass, and white perch collected in 1997
Unpublished analyses of fish collected by NYSDEC	Onondaga Lake/1998	Total mercury, pesticides, PCBs, and hexachlorobenzene	Fillets of channel catfish, northern pike, smallmouth bass, largemouth bass, walleye, and white perch collected in 1998
Unpublished analyses of fish collected by NYSDEC	Onondaga Lake/1999	Dioxins and furans, total mercury, pesticides, PCBs, and hexachlorobenzene	Fillets of carp, channel catfish, smallmouth bass, largemouth bass, and white perch collected in 1999
Unpublished analyses of fish collected by NYSDEC	Onondaga Lake/2000	Total mercury, pesticides, PCBs, and hexachlorobenzene	Fillets of smallmouth bass and largemouth bass collected in 2000

Table 1-1. (cont.)

Report Title	Sampled Area/Year(s)	Chemical Analyses for Data Used in Human Health Risk Assessment	Data Used in Human Health Risk Assessment
Onondaga Lake RI/FS supplemental sampling, Phase 2A (Exponent, 2000b)	Onondaga Lake/2000	Total mercury, dioxins and furans, pesticides, PCBs, hexachlorobenzene, and TAL metals	Fillets collected in 2000 in vicinity of Ninemile Creek and Trib 5A/Harbor Brook, species include: bluegill, catfish, and carp
Surface Sediment, Wetland Soil/Sediment, and Dredge Spoils Soil			
Onondaga Lake RI/FS substance distribution investigation data report (PTI, 1993c)	Onondaga Lake, West Flume, Otisco Lake (background)/1992	Metals, total mercury, cyanide, VOCs, SVOCs, PAHs, pesticides, and PCBs	0–2 cm sediment, 0–30 cm sediment (Onondaga Lake), background sediment (Otisco Lake). West Flume data not used in this HHRA.
Onondaga Lake RI/FS supplemental sampling, Phase 2A (Exponent, 2000b)	Onondaga Lake, wetlands and dredge spoils; Otisco Lake (background)/2000	Metals, total and methylmercury, VOCs, SVOCs, pesticides, PCBs, and PCDD/PCDFs	0–30 cm lake sediments; background sediments; 0-30 cm wetland soils; dredge spoils (all depths)
Supplemental Wetland SYW-6 sediment, NYSDEC (TAMS, 2002b)	Wetland SYW-6/2002	Metals and SVOCs	0-15 and 15-30 cm sediment, 5 locations
Surface Water			
Onondaga Lake RI/FS mercury and calcite mass balance investigation data report (PTI, 1993b)	Onondaga Lake, tributaries (East Flume, Harbor Brook, Trib 5A)/ 1992	Metals, total mercury, methylmercury, BTEX, and chlorinated benzenes	0–3 m surface water in lake; tributary data not used in this HHRA
Onondaga Lake RI/FS supplemental water column sampling (Exponent, 1999)	Onondaga Lake/1999	Metals, total and methylmercury, VOCs, and SVOCs	0–3 m surface in lake; mid-lake and near-shore stations

Notes: See Appendix A for data used in the risk assessment.

BTEX - benzene, toluene, ethylbenzene, and xylenes
HHRA - human health risk assessment
NYSDEC - New York State Department of Environmental Conservation
PAH - polycyclic aromatic hydrocarbon
PCB - polychlorinated biphenyl
PCDD - polychlorinated dibenzo-*p*-dioxin
PCDF - polychlorinated dibenzofuran
SVOC - semivolatile organic compound
VOC - volatile organic compound
TAL - target analyte list

[a] Fish fillet data utilized in the HHRA met the following size requirements as specified by New York State fishing regulations: smallmouth bass ≥12 in.; walleye ≥15 in; all other fish ≥6 in; see further discussion in Chapter 4.

2. BACKGROUND

Information about the Onondaga Lake site and its vicinity, climate, groundwater and surface water, population and demographics, history, and the site's potential use and exposures is provided below.

2.1 Site and Vicinity Description

Onondaga Lake is located adjacent to the city of Syracuse in Onondaga County in central New York State. The lake covers an area of approximately 4.6 square miles (sq mi) (12 sq kilometers [km]), or 3,000 acres, and has a maximum length of 4.7 mi (7.5 km) and width of 1.2 mi (1.9 km), and has about 11.7 mi (18.8 km) of shoreline (based on PTI, 1991). The southern end of Onondaga Lake borders the city of Syracuse and is a heavily developed urban area. The town of Salina and the village of Liverpool border the north and northeast edges of the lake, while the town of Geddes and the village of Solvay border the west and southwest edges, respectively. Onondaga Lake is encircled by major roadways: Interstate 90 (I-90) runs along the northwest tip of the lake, Interstate 690 (I-690) runs along the west and southwest edges of the lake, Interstate 81 (I-81) is near the southeast corner of the lake, and New York Route 370 runs along the north and northeast edges (see Chapter 4, Figure 4-1 of this HHRA). More than 75 percent of the shoreline of Onondaga Lake, most of which is classified as parkland, is owned by Onondaga County. As shown in Chapter 1, Figure 1-2 and Chapter 4, Figure 4-1, Onondaga Lake is divided into a northern basin and a southern basin; this division roughly corresponds to the surface water classifications of the lake and also to the exposure scenarios established for this HHRA (discussed further in Chapter 4).

Onondaga Lake is surrounded by industrial, commercial, and recreational areas. Most of the northern half of the shoreline is parkland. Commercial and industrial areas near Onondaga Lake are concentrated around the southern end, in the Syracuse metropolitan area. Residential areas are located along the northeast and west lakeshores, although no residential property directly abuts the lake. A dredge spoils area is located on the western side of the lake just north of the mouth of Ninemile Creek. While I-690 and a railroad line separate the residential area of the village of Lakeland from the dredge spoils area and the lake, a pedestrian bridge over I-690 and the railroad line provides access to the dredge spoils area and the lake in this area (see Chapter 4, Figures 4-1 and 4-2).

There are four state-regulated wetland areas adjacent to the lake on the southern, western, and northwestern edges of the lake. Wetlands SYW-6 and SYW-12 are part of the Onondaga Lake site and are included in this HHRA. Wetlands SYW-10 and SYW-19 and the dredge spoils area, while not considered part of the site, are included in this HHRA based on data collected during the Phase 2A Onondaga Lake investigation in 2000; however, these areas are being further evaluated as part of other investigations (see Chapter 1) and, therefore, risk estimates associated with these areas may change.

2.2 Climate

The climate in the Onondaga Lake area is strongly influenced by its geographic proximity to Lake Ontario (Effler, 1996), which moderates air temperatures. The average monthly temperatures in the

Syracuse region (measured at Hancock International Airport, about 3 mi (4.8 km) east-northeast of Onondaga Lake) range from 23.2°F (−4.6°C) in January to 71.1°F (21.7°C) in July (National Oceanic and Atmospheric Administration [NOAA], 2002). Based on data from the period from 1971 to 2000, the average first occurrence of freezing temperatures (daily low of 32°F [0°C]) in the fall is November 15, and the average last occurrence of freezing temperatures in the spring is April 8 (NOAA, 2002). Precipitation falls an average of 171 days per year, and during the summer months (i.e., June through August), precipitation falls, on average, 10 to 11 days per month (NOAA, 1993).

2.3 Groundwater and Surface Water

Onondaga Lake receives surface water runoff from a drainage basin estimated to cover 248 sq mi (642 sq km) (Effler, 1996). Surface water flows into the lake from Ninemile Creek, Onondaga Creek, Ley Creek, Harbor Brook, Tributary 5A, the East Flume, Bloody Brook, and Sawmill Creek (Chapter 1, Figure 1-1). Water is also added to the lake by the Metropolitan Syracuse Sewage Treatment Plant (Metro), which is located in the southeast corner of the lake, and through intermittent bidirectional flow from the Seneca River at the outlet of the lake (Effler and Driscoll, 1986, as cited in Onondaga Lake Management Conference [OLMC], 1989).

A small amount of water enters the lake through the East Flume, an excavated drainage ditch that receives stormwater from the village of Solvay and process water from General Chemical Corp. and Salt City Energy Venture, L.P. The East Flume historically served as a major point of discharge for Honeywell wastes and wastewater, and now conveys groundwater and runoff from Honeywell properties. As indicated in Chapter 1, the East Flume is being evaluated as part of a separate RI/FS for the Wastebed B/Harbor Brook site.

Ninemile Creek and Onondaga Creek account for most of the inflow to the lake, together comprising approximately 65 percent of the total inflow for the period from 1976 to 1989. During the same period, Metro and Ley Creek accounted for nearly 25 and 10 percent of the total inflow, respectively. Contributions from all other tributaries were less significant. In 1992, when most of the RI field investigations were conducted, Ninemile Creek and Onondaga Creek accounted for 30 and 31 percent of total inflow, respectively, while Metro and Ley Creek accounted for 18 and 7.8 percent, respectively (NYSDEC/TAMS, 1998b).

Groundwater within the Onondaga Lake drainage basin generally flows into the tributaries and then from the tributaries to the lake, following the topography of the area. Onondaga Lake's water surface is at a lower static head than nearby wells; therefore, the lake does not recharge the aquifer under non-flood conditions (NYSDEC, 1989). Paths of groundwater flow and exchanges with surface water depend on local geologic conditions within each tributary basin. Local groundwater mounding (with groundwater elevations up to approximately 65 ft [20 m] higher than the surrounding water table) occurs under some of the Solvay Wastebeds (Geraghty & Miller, 1982; Blasland & Bouck, 1989). Groundwater discharges to the lake contribute a significant but relatively minor amount of water to the total water budget. However, as noted in the RI report (TAMS, 2002b), groundwater is a significant source of several COPCs to the lake, including mercury; benzene, toluene, ethylbenzene, and xylenes (BTEX); chlorinated benzenes; and polycyclic aromatic hydrocarbons (PAHs). The groundwater is classified as Class GA (defined as a source of drinking water [6 NYCRR Part 701.15]) by New York State regulations; however, some areas of groundwater

in the vicinity of the lake may not currently be appropriate for use as sources of potable water due to natural occurrences of salinity (e.g., brine fields in the area) and contributions from anthropogenic salinity sources, including Honeywell. Contamination of the lake prevents the lake water from being used as a drinking water source.

2.4 Population and Demographics

The population of Onondaga County grew to 469,000 in 1970; since that time, according to the most recent census data, it has decreased to about 458,000 (US Census Bureau, 2000). Most of the population currently is, and historically has been, concentrated in the Syracuse metropolitan area (see Chapter 1, Figure 1-1). This area includes Solvay, Westvale, Lakeland, and Fairmount on the western side of the lake and Galeville, Liverpool, Mattydale, and North Syracuse on the eastern side of the lake (Murphy, 1978). Other population centers in the Onondaga Lake drainage basin are the villages of Camillus, Marcellus, Otisco, LaFayette, and East Syracuse. In addition, the Onondaga Nation Territory is located about 6 mi (9.6 km) south of the lake in the towns of Onondaga and LaFayette. The population of the Onondaga Reservation includes about 800 persons who identified themselves on the most recent census as "American Indian or Alaska Native" (US Census Bureau, 2000).

2.5 Site History

Historically, Onondaga Lake has received loadings of industrial wastes and wastewater and sewage effluent. Sources of chemicals to Onondaga Lake include the following:

- Multiple industrial sources, including Honeywell and its predecessors.
- Sources related to the population in the area (e.g., sewage and landfills).
- Natural sources (e.g., inorganic constituents occurring naturally in soil or groundwater).

Honeywell's predecessor companies began manufacturing operations in Solvay, New York, in the late 1800s. Operations occurred at three principal plants (Chapter 1, Figure 1-1): the Main Plant, which manufactured soda ash and related products from 1884 until 1986 and benzene, toluene, and xylenes from 1917 to 1970; the Willis Avenue plant, which manufactured chlorinated benzenes and chlor-alkali products from 1918 until its closure in 1977; and the Bridge Street plant (sold to Linden Chemicals and Plastics [LCP] in 1979), which manufactured chlor-alkali products from 1953 until 1988. Two areas of the former Main Plant (i.e., the Petroleum Storage Area and the Chlorobenzene Hot Spot Area) are being investigated as part of the Willis Avenue site RI/FS.

The Bridge Street and Willis Avenue plants are sources of COPCs including mercury, BTEX, chlorinated benzenes, PAHs, and polychlorinated biphenyls (PCBs). The Bridge Street plant discharged into the West Flume, which flows to Geddes Brook, which is a tributary to Ninemile Creek, which in turn is a tributary to the lake.

The Main Plant and the Willis Avenue plant initially discharged waste directly into the lake and, once the waste buildup was too great, Honeywell began dredging a channel through the waste to allow discharge. This channel became known as the East Flume. Such dredging likely occurred numerous times over a period of decades, with the result that the discharge point progressively moved east. Further information on Honeywell facilities and waste disposal is presented in the Onondaga Lake RI/FS Site History Report (PTI, 1992) and in the RI report (TAMS, 2002b).

Honeywell also disposed of Solvay wastes in numerous wastebeds covering more than 3.1 sq mi (8.1 sq km, or 2,000 acres), and disposed of organic wastes in the Semet Residue Ponds in Wastebed A; organic wastes have also been disposed of in Wastebed B near Harbor Brook. An RI/FS has been completed at the Semet Residue Ponds site and an RI/FS is underway at the Wastebed B/Harbor Brook and Willis Avenue Ballfield sites. In addition, Honeywell disposed of large quantities of combined Solvay wastes and mercury and organic wastes into the lake (e.g., via the East Flume; see RI Chapter 4, Section 4.5.1 [TAMS, 2002b]). Further discussion of these sources is provided in the RI report. A discussion of potential sources of COPCs from non-Honeywell industrial sites in the area is also provided in the RI.

In the early 1800s, Onondaga Lake was receiving untreated industrial and domestic wastes. Around the turn of the twentieth century, a combined sewer system, a single system that transmits a combination of domestic and industrial flows as well as stormwater originating from various sources, was installed that discharged into tributaries and ultimately the lake.

The first primary sewage treatment facility in the Syracuse area was constructed in 1925 at the southern end of Onondaga Lake. An additional major treatment plant was built in 1940 on Ley Creek. During the 1950s, Onondaga County established a sewer district that encompassed the City of Syracuse and some surrounding suburban areas. A new primary treatment plant, the Onondaga County Metropolitan Syracuse Wastewater Treatment Plant (Metro), was constructed in 1960 with a 50 million gallons per day (mgd) design capacity (OLMC, 1993).

The Metro sewage treatment plant, which serves the city of Syracuse and several surrounding towns, is currently permitted (NY-0027081) to discharge an average of 80 mgd through its main outfall to Onondaga Lake. The plant provides tertiary treatment for flows up to 120 mgd. For combined stormwater and industrial/domestic sewage flow up to 220 mgd, the incremental flow above 120 mgd receives primary treatment and seasonal chlorination prior to discharge into the lake through a second outfall.

The sewers contain hydraulic relief structures otherwise known as combined sewer overflows (CSOs), which have historically allowed diluted sewage (due to the mixing of stormwater and sewage) to discharge to several tributaries of Onondaga Lake during high flow events. In 1985, Phase I of a program to abate CSOs was implemented. The second phase of the CSO abatement program began in 1990. Additional abatement activities associated with the CSOs are underway as discussed below.

In January 1998, an Amended Consent Judgment (ACJ) (88-CV-0066) was executed by NYSDEC, the State Attorney General, Atlantic States Legal Foundation, and Onondaga County. The ACJ

evolves from a 1989 Judgment on Consent (88-CV-0066) settling litigation between the State of New York and the county relating to state and federal water pollution control regulations.

The ACJ, which is designed to improve the water quality of Onondaga Lake, specifically includes a listing of over 30 projects to be undertaken by Onondaga County over a 15-year period. Although completion of the entire project is not required until 2012, many of these county projects are scheduled for completion by 2009 (Onondaga County Department of Water Environment Protection [OCDWEP], 2002) .

The projects may be grouped into three categories, including:

- Improvement and upgrading of the county's main sewage treatment plant (Metro).
- Eliminating and/or decreasing the effects of the CSOs on the lake and its tributaries.
- Performance of a lake and tributary monitoring program designed to evaluate the effects of the improvement projects on the water quality of the lake and its tributaries.

2.6 Potential Use and Exposures

Onondaga Lake water is classified as follows:

- Approximately the northern two-thirds of the lake are classified as Class B water. The best usages of Class B waters are "primary and secondary contact recreation and fishing. These waters shall be suitable for fish propagation and survival" (6 NYCRR Part 701.7).
- Approximately the southern third of the lake and the area at the mouth of Ninemile Creek (see Appendix A, Figure A-1) are classified as Class C water. The best usage of Class C waters is "fishing. These waters shall be suitable for fish propagation and survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes" (6 NYCRR Part 701.8).

Recreational fishing and recreational fish harvest are allowed in Onondaga Lake, subject to NYSDEC regulations on minimum fish lengths, fishing seasons, possession limits, etc. The NYSDOH issued an advisory which recommends that the public should eat no walleye (*Stizostedion vitreum*), and to limit consumption of all other species to no more than once per month. The advisory also carries the stipulation that infants, children under the age of 15, and women of childbearing age should eat no fish from the lake (NYSDOH, 2002a). Onondaga Lake and its tributaries do not serve as drinking water sources (Syracuse Department of Water, 2000).

No permitted swimming beaches or sanctioned swimming areas exist at Onondaga Lake due to, in part, elevated bacterial counts and the turbidity of the lake water (Effler, 1996). Boating is allowed in all parts of the lake. In 1990, more than one million people used Onondaga Lake County Park (located along the northern half of the lake) for recreational activities such as boating (Moore, 1991, pers. comm.). The shoreline of the lake is used for water-related recreation and cycling/jogging trails.

The State of New York, Onondaga County, and the city of Syracuse have jointly sponsored the preparation of a land-use master plan to guide future development of the Onondaga Lake area (Reimann-Buechner Partnership, 1991). The primary objective of land-use planning efforts is to enhance the quality of the lake and lakeshore for recreational and commercial uses. Anticipated recreational uses of the lake include fishing without consumption restrictions and swimming.

The proximity of the lake to numerous centers of human activity, as well as the presence of designated recreational areas on its shores, indicate that several receptor populations could potentially have contact with the lake and the adjoining wetlands and dredge spoils area. These receptor groups could include recreational visitors, nearby residents, and workers in the industrial and commercial facilities near the lake. Chapter 4, Exposure Assessment, provides information on exposure scenarios, including estimates of the magnitude, frequency, duration, and routes of exposure for both recreational users of the lake and construction workers.

3. IDENTIFICATION OF CONTAMINANTS OF POTENTIAL CONCERN

The HHRA uses a screening process to select and provide a full evaluation of contaminants of potential concern (COPCs). The available contaminant concentration data were reviewed to identify COPCs in the following site media:

- Fish (fish fillets).
- Lake sediments (divided into two subsets, the northern and southern basins).
- Lake surface water (0 to 3 meter [m] depth).
- Selected wetland sediments (divided into four subsets, one for each of the four adjacent wetland areas).
- Dredge spoils soil (spoils area situated north of Ninemile Creek).

The data used in the HHRA are presented in Appendix A. Sample location maps are also included in Appendix A (Figures A-2 through A-6). Appendix B provides a summary of site data and data analyses. Tables 2.1 through 2.10 in Appendix B have been prepared in the format of RAGS Part D, Table 2, and present the occurrence, distribution, and selection of COPCs in Onondaga Lake and provide the following information, as specified by USEPA (1998):

- Chemicals detected and not detected in each medium.
- Frequency of detection of chemicals in each medium.
- Range of detected concentrations for each chemical in each medium.
- Range of detection limits for the chemicals in each medium.
- Background screening values for metals in sediment from a local, noncontiguous water body (Otisco Lake) were used as a basis for comparison to site concentrations; however, no contaminants were screened out (i.e., determined not to be COPCs) based on this comparison.
- Screening toxicity values (i.e., risk-based criteria [RBCs]), when available, for fish consumption, for exposure to residential soil, and for residential use of drinking water.

Appendix B also presents exposure point concentrations (EPCs) calculated for each COPC in each exposure medium, along with additional supporting documentation consistent with USEPA (1998).

Table 3-1 provides a summary of all COPCs in all site media, based on Tables 2.1 through 2.10 in Appendix B. The following sections describe how site data were used to identify COPCs.

Site data were reviewed to determine a list of contaminants that may be of concern for human health. The methods used to select COPCs were consistent with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and intended to include all contaminants detected at levels of potential health concern. For metals, sediment concentrations in Onondaga Lake were compared with background concentrations in sediment from the reference lake (Otisco Lake). For the comparison, the maximum Onondaga Lake concentration was compared to two times the average of the Otisco Lake concentrations. The Otisco Lake sediment data were used as a basis for comparison with inorganics data (only) in the Onondaga Lake sediment and wetland sediment matrices. However, based on recent USEPA Region 2 guidance (M. Sivak, pers. comm., 2002), background concentrations were not used to screen out any contaminants that exceeded applicable risk-based screening criteria (i.e., USEPA Region 3 RBCs or USEPA Region 9 Preliminary Remediation Goals [PRGs]). Therefore, compounds that exceed risk screening levels but are within the background screening range have been carried through as COPCs, but are flagged on the COPC screening tables (Appendix B, Table 2). Such compounds are discussed further (i.e., the extent to which they pose risk, and the extent to which such risk may be similar to background risk) in Chapter 6, Risk Characterization and Chapter 7, Uncertainty Assessment.

Concentrations of chemicals in all media were compared with human health-based screening criteria derived by USEPA Regions 3 and 9. These screening criteria, along with information on their development and use, are included in Appendix C and were used in this HHRA for:

- Ingestion of fish.
- Ingestion of soil/sediment.
- Ingestion of water.

USEPA Region 3 values for consumption of fish were used in identifying COPCs in fish tissues. The more conservative of either USEPA Region 3 RBCs or USEPA Region 9 PRGs for residential soil and for tapwater were used in screening soil, sediment, and water. The USEPA Region 9 PRGs for soil account for three potential exposure routes: ingestion, inhalation of particles or vapors, and dermal contact. The PRGs for tap water account for ingestion of water and inhalation of volatile organics from water (USEPA, 2002b).

In addition, because the USEPA Region 3 and Region 9 values do not address dermal contact with chemicals detected in water, detected chemicals were also compared with the list of chemicals identified in USEPA guidance (i.e., flagged "Y" in Exhibits B-3 and B-4 in USEPA, 2001a) where dermal exposure has a substantial contribution to exposure. These chemicals were also considered for inclusion as COPCs, even if the detected concentrations in water were below the screening level concentration for ingestion.

Tables 2.1 through 2.10 in Appendix B show the minimum and maximum detected concentrations of chemicals in each environmental medium, detection frequencies, minimum and maximum detection limits, background screening values (two times the mean background concentration for

metals in sediments and soils only), and the applicable health-based screening criteria noted above. The RBCs correspond to either a 1×10^{-6} excess cancer risk (for carcinogens) or a hazard quotient (HQ) of 0.1 (for non-carcinogens), whichever is more stringent (USEPA, 2002a,b). (The USEPA Region 3 and Region 9 screening criteria for non-carcinogens were developed for an HQ of 1.0, so the regional criteria for such chemicals were divided by 10 for use in the Onondaga Lake HHRA for use as conservative screening criteria. The residential soil criterion for lead, 400 mg/kg, was developed as a conservative residential screening criterion by USEPA and was not subject to any further modification.) In addition, Appendix C includes copies of the original sources of USEPA RBCs used in screening COPCs.

Chemical concentrations in fish were compared with RBCs derived using a fish consumption rate of 54 g/day (USEPA, 2002b). This consumption rate is higher than would be expected for most anglers at the lake and provides a conservative means for selecting COPCs in fish from the lake. It is possible that this screening level may underestimate risks if there are users (e.g., subsistence fishers) consuming lake fish at a higher level. However, the actual level of consumption used for the quantitative assessment, in accordance with USEPA's Exposure Factors Handbook (1997a), is based on a lower consumption rate. The use of the higher rate in the screening process is conservative so that chemicals which may be of concern are included in the quantitative assessment; it is not a determination that these contaminants are, in fact, a significant contributor to risk.

Site data for lake and wetland sediments and from the dredge spoils area were compared with USEPA screening criteria for residential soil (USEPA, 2002a,b) as a conservative means to evaluate direct contact with these media. Use of the residential soil screening criteria for COPCs in these media is conservative because these values are based on daily contact with soil in a residential scenario, whereas exposures to lake sediments, wetland sediments, or dredge spoil soils would be restricted to occasional contact during recreational activities, or short durations during construction activities. Such exposures would be expected to occur less frequently than exposures that a child might receive at a residence. Consequently, the total exposure to these sediments or soils would be expected to be less than exposure to soil in a residential scenario.

Contaminant concentrations in Onondaga Lake surface water were compared with screening criteria derived by USEPA, based on assumed levels of exposure resulting from use of water as the source of residential drinking water. This method is conservative because the current classification of Onondaga Lake by NYSDEC (generally, Class B in the north and Class C in the south) does not include drinking water supply as one of the designated best usages. As described above, detected chemicals in water were also compared with the USEPA list of chemicals (USEPA, 2001a) identified as having potential for substantial exposure through dermal contact in water.

Consistent with USEPA guidance (1989), data were also evaluated in light of the following considerations:

- Although USEPA indicates that contaminants can be excluded based on frequency of detection, no detected contaminants were excluded solely on this basis. Contaminants that were not detected in any sample in a particular medium were eliminated from consideration in that medium.

- A chemical can be eliminated from consideration if it is an essential nutrient, present at low concentrations, and toxic only at high doses. Consistent with USEPA guidance (1989), several essential nutrients were not included as COPCs (i.e., calcium, magnesium, potassium, and sodium).

- Risk assessment guidance (USEPA, 1989) states that if common laboratory contaminants (e.g., acetone, methylene chloride, toluene, phthalate esters) are found at less than ten times the maximum concentration detected in any blank, or if other chemicals are found at less than five times the maximum concentration detected in any blank, these chemicals can be eliminated. The data used for the screening and subsequent quantitative uses in the HHRA were validated and contaminants attributable to blank contamination were rejected or negated during validation; thus, the database used for the HHRA was pre-screened to remove the blank contaminants. As a result, no contaminants were excluded during the HHRA process on this basis.

- Only contaminants for which chemical-specific data are available were considered. In other words, analytes that were only analyzed as a class, such as total petroleum hydrocarbons, are not evaluated as potential COPCs in the risk assessment (although individual petroleum hydrocarbon constituents, such as benzene and naphthalene, are included in the assessment). It should be noted that this exclusion does not apply to some contaminants for which isomers or related individual compounds were summed for convenience and consistency in evaluating data (e.g., chlordane isomers were summed for total chlordane, various polychlorinated biphenyl [PCB] Aroclors were summed to derive total PCBs [for use in calculating cancer risk], or highly chlorinated PCBs or less chlorinated PCBs [for calculating non-cancer hazards], and the various polychlorinated dibenzo-*p*-dioxins and furans [PCDD/PCDFs] were summed to derive a total toxic equivalence quotient [TEQ]). These issues are discussed in greater detail in Chapter 5, Toxicity Assessment.

- Unknowns, non-target compounds, and tentatively identified compounds (TICs), such as 1-phenyl-1-(4-methylphenyl)-ethane and 1-phenyl-1-(2,4-dimethylphenyl)-ethane (PTE and PXE, respectively), are not included in the evaluation, as the identification and concentration of these compounds is not certain. The potential impact of exclusion of unknowns, non-target compounds, and TICs on the HHRA is discussed in Chapter 7, Section 7.1.1.

- Due to high concentrations of some target compounds, some samples require dilution and, subsequently, the sample quantitation limits (SQLs; analogous to reporting limits) may be unusually high (higher by a factor of 10 or more compared to the "usual" quantitation limit for that analyte). Data with non-detected values at high SQLs were evaluated and, in accordance with USEPA guidance (Section 5.3.2 in USEPA, 1989), eliminated from further

consideration where their use would result in non-detected values driving the calculated EPC.

After consideration of the issues described above, organic contaminants were identified as COPCs in a medium in which the maximum concentration exceeded the lowest (i.e., most health-protective) screening value, which was usually a USEPA screening criterion. Metals were identified as COPCs if the maximum concentration exceeded the screening value. Metals data were compared to twice the mean of the background concentration (where available); if the site concentration was less than or equal to twice the mean of the background concentration, the metal was flagged "BKG" but was not screened out of the quantitative risk assessment.

Table 3-1 presents the COPCs identified for the various media and includes most, though not all, of the COPCs identified in the Public Health Assessment for Onondaga Lake (NYSDOH and ATSDR, 1995), but is more extensive than that list. The list of COPCs derived through the identification process described here is distinct from the list of substances described in the Consent Decree and updates the COPC list presented in the Onondaga Lake RI/FS Work Plan (PTI, 1991). A summary of the data and results of the screening for COPCs for each medium is also provided in the sections below.

In the medium-specific discussion that follows, quantitative discussions of the number of COPCs determined are based on those that will be carried through in the HHRA as discrete contaminants. In a few cases, due to the manner in which samples were analyzed or data presented, there are COPCs listed in Table 3-1 that are not carried through individually, but are included in a group or class of compounds for subsequent quantitative assessment. These include:

- **PCBs.** Eight specific Aroclors were analyzed for in at least one medium; in addition, the NYSDEC fish fillet data include Aroclor 1254/1260. Cancer risk quantitation is based on total PCBs; for non-cancer hazards, individual Aroclors were categorized as either less chlorinated PCBs (for evaluation using the reference dose [RfD] for Aroclor 1016), or highly chlorinated PCBs (for evaluation based on the RfD for Aroclor 1254). The discussion below includes all the individual Aroclors (1016 through 1268), but does not include Aroclor 1254/1260 or total PCBs. Aroclor 1254/1260 is not included as it is an analytical construct to represent higher molecular weight Aroclors, and total PCBs are not included as they are, by definition, a COPC if any individual Aroclor exceeded screening criteria.

- **Mercury.** Methylmercury and total mercury are considered as separate and discrete analytes in the discussion below. However, some fish fillets were analyzed for several forms of mercury (e.g., total mercury, ionic mercury, and methylmercury). The various forms of mercury analyzed and detected in fish tissue were combined into a single "mercury (as methylmercury)" value (as shown in the Appendix B tables), as the data indicate that virtually all the mercury in fish tissue is in the form of methylmercury (see discussion in Section 3.1, below).

- **PCDD/PCDFs.** The PCDD/PCDF constituents are interpreted as 2,3,7,8-TCDD equivalents (the "Total PCDD/PCDF TEQ") and considered a single contaminant. The TEQ value is derived from the PCDD/PCDF analytical data using the World Health Organization (WHO; 1998) toxicity equivalence factors (TEFs), as described in Chapter 5.

3.1 Fish Tissue

Fish tissue data are presented in Appendix A (Tables A-1A through A-1E), and the screening is summarized in Appendix B, Table 2.1. Data from all fish species commonly consumed (i.e., carp [*Cyprinus carpio*], channel catfish [*Ictalurus punctatus*], white perch [*Morone americana*], bluegill [*Lepomis macrochirus*], largemouth bass [*Micropterus salmoides*], smallmouth bass [*Micropterus dolomieui*], northern pike [*Esox lucius*], and walleye [*Stizostedion vitreum*]) were considered in the risk assessment. All available fish data meeting the following criteria were utilized:

- The fish sample must be in fillet form.

- Fish must be legal size (within 0.5 inch) for those species with legal size requirements (i.e., walleye – legal size 15 inches, with the minimum for inclusion in the HHRA at 14.5 inches; and smallmouth and largemouth bass – legal size 12 inches, with the minimum for inclusion in the HHRA at 11.5 inches).

- For species with no minimum legal size (e.g., bluegill), 6 inches was used as the minimum size, as it is not expected that fish smaller than 6 inches would be filleted for consumption.

- Data from samples collected prior to 1992 were not included in the quantitative risk assessment. These data were excluded for several reasons, including their age (data from more than ten years ago may not be representative of current conditions); inconsistencies in the species and analytical parameters of the older data; and lack of documentation in at least some cases of the field and laboratory quality assurance protocols utilized for generation of the data. The sampling associated with the 1992 RI was a large effort and conducted under a NYSDEC-approved work plan (PTI, 1991), and subsequent data used have been generated either directly by NYSDEC or its contractors or under work plans approved by NYSDEC.

- Honeywell's PCB data (PTI samples) from 1992 were not utilized; further review of these data by NYSDEC indicated potential problems. Specifically, a low bias to the PCBs in fillet data was suspected, due to concerns about a high percentage of non-detects coupled with poor surrogate recovery. A more detailed discussion of this issue is provided in Appendix A (Section A.4.1, discussion of Table A-1C) of this report.

The data sets used in this HHRA for fish tissue are summarized in Table 3-2. The 26 COPCs identified in lake fish tissue include the following:

- Ten inorganics (antimony, arsenic, chromium, cyanide, manganese, methylmercury, total mercury, selenium, vanadium, and zinc).
- Two semivolatile organic compounds (SVOCs) (bis[2-ethylhexyl]phthalate and hexachlorobenzene).
- Nine pesticides (aldrin, delta-BHC, four DDT-related compounds [2,4'-DDE; 4,4'-DDD; 4,4'-DDE; and 4,4'-DDT], dieldrin, sum of chlordanes, and heptachlor epoxide).
- Four PCBs (Aroclors 1016, 1242, 1248, and 1260).
- PCDD/PCDFs.

Lead, which was also detected in fish tissue, will be evaluated qualitatively because it lacks a toxicity value in fish tissue. The screening value for tetraethyl lead was not considered to be appropriate for screening lead in fish tissue; lead is discussed further in Chapter 5, Toxicity Assessment and Chapter 7, Uncertainty Assessment.

It should be noted that the evaluation for volatile organic compounds (VOCs) and SVOCs (including polycyclic aromatic hydrocarbons [PAHs]) in fish fillets was based on a very limited data set; specifically, four composite adult fillets collected and analyzed for Target Compound List (TCL) and Target Analyte List (TAL) constituents in 1992. The samples in the 1992 composites were reported as being collected in the nearshore (littoral) area in the southern part of Onondaga Lake (PTI, 1993a).

The evaluation for TAL inorganics was also based on a limited data set (11 samples), consisting of the four 1992 composite fillets along with seven individual (not composite) fillets collected in 2000. Eleven of the 29 adult fish collected by Honeywell in 2000 as part of the Onondaga Lake Phase 2A investigation were filleted. Seven of these fish were collected in the lake and four were collected in lower Ninemile Creek. All data from the seven lake fish, including PCDD/PCDF data, were included in this HHRA. Data from the four fish collected in lower Ninemile Creek are used in the Geddes Brook/Ninemile Creek HHRA.

Mercury in Fish Fillets

The mercury data were generated by various sources, primarily Exponent/PTI for Honeywell and NYSDEC. The data were entered into the database in the manner in which they were reported; e.g., as methylmercury, ionic mercury, and mercury.

The methylmercury data were generated from fillet samples submitted by Honeywell/PTI specifically for methylmercury analysis. Several (i.e., 16) samples submitted for methylmercury analysis by Honeywell/PTI were also analyzed for ionic mercury, which has been interpreted in this HHRA as

inorganic mercury. Ionic mercury concentrations were all low, averaging about four percent of the methylmercury concentration determined for the same fillet. Although the ionic (inorganic) form of mercury is less toxic than methylmercury, and averages about four percent of the methylmercury in the samples for which data for it exist, the ionic mercury has been included in the calculation of the EPCs for this HHRA. In other words, the ionic mercury data (for the 16 samples for which the data are available) are summed with the methylmercury values to generate the total mercury concentration used for the fish ingestion pathway in this HHRA.

Fish fillets submitted for analysis by NYSDEC were analyzed for mercury, which is interpreted in this HHRA as total mercury (i.e., the analytical result includes mercury in any form – methyl or inorganic). As noted in the literature and supported by the low concentrations of ionic mercury in the Honeywell/PTI fish sample data, the mercury result reported by NYSDEC is considered to be functionally equivalent to methylmercury. Therefore, the total mercury concentration used in the HHRA (Appendix A, Table A-1A) includes both the Honeywell/PTI methylmercury data and the NYSDEC mercury data.

3.2 Onondaga Lake Nearshore Surface Sediments

The HHRA evaluated only nearshore sediment data (within the 0 to 30 cm profile), defined as sediment data located between the shoreline and a water depth of up to 2 m. The nearshore sediments (0 to 30 cm) are the only sediments that could reasonably be expected to be contacted by individuals wading or swimming. As a result, 61 samples from the 1992 data set are evaluated in the HHRA (Appendix A, Figure A-3). In addition, 123 nearshore sediment samples collected by Honeywell/Exponent in 2000 from the 0 to 30 cm profile were included in the HHRA (Appendix A, Figure A-4).

It should be noted that the depth interval of samples used in this HHRA is inconsistent with that currently considered by USEPA for direct contact (i.e., 0 to 6 inches or 0 to 15 cm). The 0 to 2 cm and 0 to 30 cm intervals were used in this HHRA, as there were no 0 to 15 cm data from the 1992 investigation. In order to assess the effect of data from intervals other than 0 to 15 cm, the Phase 2A investigation included a set of samples from multiple intervals (0 to 2 cm, 2 to 15 cm, and 15 to 30 cm) at the same location. Review of these data suggests that there is no clear relationship between contaminant concentration and depth in the 0 to 30 cm interval in the nearshore environment; therefore, all data from less than 30 cm (including the 15 to 30 cm data from the Phase 2A investigation) have been used in the HHRA. All individual (discrete depth intervals) samples were assessed, without averaging over the length of the core, for the purposes of the COPC screening (Appendix B, Table 2). However, for the contaminants identified as COPCs in this chapter, a different approach (a length-weighted average for each sediment sample location) was then utilized in the development of EPCs in Appendix B, Table 3 (see Chapter 4, Exposure Assessment).

Surface sediment data for the northern and southern basins of Onondaga Lake are considered separately here because these parts of the lake have been classified for different uses by New York State (NYCRR Chapter X, Subchapter B, Title 14, Part 895; see also Appendix A, Figure A-1 of this HHRA). This differentiation is also consistent with the actual uses and development patterns along the lake, with the southern basin being more industrialized and the northern basin being less

developed, with more parkland along the edge of the lake. Definitions of the use categories are as follows:

- The waters of the northern basin (approximately the northern two-thirds) of the lake are classified as Class B. The best usages of Class B waters are "primary and secondary contact recreation and fishing. These waters shall be suitable for fish propagation and survival" (6 NYCRR Part 701.7).

- The waters of the southern basin (approximately the southern third) of the lake and an area around the mouth of Ninemile Creek are classified as Class C. The best usage of Class C waters is "fishing. These waters shall be suitable for fish propagation and survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes" (6 NYCRR Part 701.8).

The classification system is used to identify the best uses of surface waters, but does not necessarily mean that the lake currently meets the water quality standards for its best use (NYSDOH and ATSDR, 1995). The water classification regulations for Onondaga lake state that, "[w]hen the waters of that portion of Onondaga Lake which are assigned to class B herein shall have been so improved as to comply with the standards of quality specified for class B, the Water Pollution Control Board at that time will give consideration to reclassification of additional areas of Onondaga Lake to class B" (6 NYCRR Part 895.3). Therefore, for the purposes of this risk assessment, Onondaga Lake is evaluated in its entirety as a Class B water body.

The nearshore sediment sample results were separated according to the sample locations in the northern versus southern basins of the lake, as the different potential uses of the shorelines are expected to result in different exposure potentials, as discussed in Chapter 4. The northern and southern basins of the lake are discussed separately below, with the sample locations in each area shown in Appendix A, Figures A-3 and A-4. The lake sediment data used in this analysis are presented in Appendix A, Tables A-2 and A-3 and summarized in Appendix B, Tables 2.2 and 2.3.

3.2.1 Northern Basin Nearshore Sediments

The 20 contaminants identified as COPCs in the northern basin nearshore sediments, shown in Appendix B, Table 2.2, include:

- Ten inorganics (antimony, arsenic, barium, cadmium, chromium, iron, manganese, mercury, methylmercury [an organometallic compound listed and tabulated with the inorganic compounds in this HHRA], and thallium).

- One VOC (benzene).

- One SVOC (hexachlorobenzene).

- Five PAHs (benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, dibenz[a,h]anthracene, and naphthalene).
- Two PCBs (Aroclors 1254 and 1268).
- PCDD/PCDFs.

Of the metals identified as COPCs, four (arsenic, iron, manganese, and thallium) were present at concentrations that exceeded the risk-based screening criteria but were within the background range (i.e., less than two times the average of the Otisco Lake sediment samples). The extent to which these metals represent site-related risk will be discussed further in Chapter 6, Risk Characterization and Chapter 7, Uncertainty Assessment.

While methylmercury concentrations in northern basin sediments did not exceed screening criteria, it is carried through the risk assessment due to its historical significance in the Onondaga Lake environment.

3.2.2 Southern Basin Nearshore Sediments

The 44 contaminants identified as COPCs in the southern basin nearshore sediments, shown in Appendix B, Table 2.3, include:

- 16 inorganics (aluminum, antimony, arsenic, barium, cadmium, chromium, copper, cyanide, iron, lead, manganese, mercury, methylmercury, nickel, thallium, and vanadium).
- Four VOCs (benzene, chlorobenzene, methylene chloride, and xylenes).
- Four SVOCs (dibenzofuran, 1,3- and 1,4-dichlorobenzene, and hexachlorobenzene).
- 13 PAH compounds (2-methylnaphthalene, acenaphthylene, benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[g,h,i]perylene, benzo[k]fluoranthene, chrysene, dibenz[a,h]anthracene, fluoranthene, indeno[1,2,3-cd]pyrene, naphthalene, and phenanthrene).
- One pesticide (dieldrin).
- Five PCBs (Aroclors 1221, 1242, 1248, 1254, and 1260).
- PCDD/PCDFs.

Of the metals identified as COPCs in the southern basin sediments, one (manganese) was present at a concentration exceeding the risk-based screening criterion, but was at a concentration within the background range (i.e., less than two times the average of the Otisco Lake sediment samples). This

issue (i.e., the extent to which manganese represents site-related risk) will be discussed further Chapter 6, Risk Characterization and Chapter 7, Uncertainty Assessment.

While methylmercury concentrations in southern basin sediments did not exceed screening criteria, it is carried through the risk assessment due to its historical significance in the Onondaga Lake environment.

3.3 Wetland Sediments

There are four New York State-regulated wetlands adjacent to Onondaga Lake that are evaluated in this HHRA: Wetlands SYW-6, SYW-10, SYW-12, and SYW-19. Wetland sediments from 0 to 15 cm and 15 to 30 cm were collected from these four areas by Honeywell/Exponent in 2000 (Appendix A, Figure A-4). Five additional locations in Wetland SYW-6 were sampled by NYSDEC/TAMS in 2002 (also shown on Figure A-4). Two of the wetlands are near the northern basin (Wetlands SYW-6 and SYW-10), and two are near the southern basin (Wetlands SYW-12 and SYW-19). Sediment data for the four wetlands are discussed separately below. The data used in this analysis are presented in Appendix A and summarized in Tables A-4 and A-5.

It should be noted that the sediment samples from the four wetlands were analyzed for "total mercury;" none of these wetland samples were analyzed for methylmercury. Based on data from 29 samples collected at the LCP Bridge Street site and an extensive literature review, it was assumed that 1 percent of the total mercury in the wetlands sediments is methylmercury, and the remaining 99 percent of the total mercury is inorganic mercury, as discussed in greater detail in Chapter 6, Section 6.3.1.1 of the BERA (TAMS, 2002a). The uncertainty associated with this assumption is discussed in Chapter 7, Section 7.5.3.1 of this HHRA.

The two southern basin wetlands, SYW-12 (near Ley Creek) and SYW-19 (near Harbor Brook), were evaluated separately due to the locations and characteristics of the two areas, which suggested that contaminant concentrations and associated risks are likely to differ between the two. The two northern basin wetlands, both of which are on the west side of the lake between Ninemile Creek and the lake outlet, were also evaluated separately, although these were expected to more closely resemble each other due to the general similarity of the area in which they are located.

3.3.1 Northern Basin Wetland SYW-6

The 21 contaminants identified as COPCs in northern basin Wetland SYW-6, listed in Appendix B, Table 2.4, consisted of nine metals (aluminum, arsenic, cadmium, chromium, cyanide, iron, manganese, mercury [inorganic and methylmercury], and thallium), 11 PAHs (acenaphthylene, benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[g,h,i]perylene, benzo[k]fluoranthene, dibenz[a,h]anthracene, indeno[1,2,3-cd]pyrene, 2-methylnaphthalene, naphthalene, phenanthrene), and PCDD/PCDFs.

3.3.2 Northern Basin Wetland SYW-10

The 15 contaminants identified as COPCs in northern basin Wetland SYW-10, listed in Appendix B, Table 2.5, include eight metals (aluminum, antimony, arsenic, chromium, iron, manganese, mercury [inorganic and methylmercury], and thallium), five PAH compounds (benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, dibenz[a,h]anthracene, and indeno[1,2,3-cd]pyrene), PCBs (Aroclor 1260), and PCDD/PCDFs.

3.3.3 Southern Basin Wetland SYW-12

The 19 contaminants identified as COPCs in southern basin Wetland SYW-12 (Ley Creek area), listed in Appendix B, Table 2.6, include ten inorganics (aluminum, arsenic, cadmium, chromium, copper, cyanide, iron, manganese, mercury [inorganic and methylmercury], and thallium); six PAH compounds (benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, dibenz[a,h]anthracene, indeno[1,2,3-cd]pyrene, and phenanthrene); and three PCBs (Aroclors 1242, 1254, and 1260). Wetland SYW-12 sediment samples were not analyzed for PCDD/PCDFs.

3.3.4 Southern Basin Wetland SYW-19

The 25 contaminants identified as COPCs in southern basin Wetland SYW-19 (Harbor Brook/East Flume area), listed in Appendix B, Table 2.7, include eight metals (antimony, arsenic, barium, cadmium, chromium, iron, manganese, and mercury [inorganic and methylmercury]); three SVOCs (1,3-dichlorobenzene, 1,4-dichlorobenzene, and hexachlorobenzene); eight PAH compounds (benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[g,h,i]perylene, benzo[k]fluoranthene, dibenz[a,h]anthracene, indeno[1,2,3-cd]pyrene, and phenanthrene); two pesticides (aldrin and dieldrin); three PCBs (Aroclors 1242, 1254, and 1260); and PCDD/PCDFs.

3.4 Dredge Spoil Soils

The dredge spoils area is located along the western shoreline of Onondaga Lake, north of the mouth of Ninemile Creek, between wetland areas SYW-10 and SYW-6. The spoils, dredged from the Ninemile Creek delta in the late 1960s, rest atop native soils and have been covered with soil of unknown origin. The dredge spoil soils were evaluated for a recreational scenario and a construction worker scenario. The surface soils or cover material from the ground surface to about 3 ft deep were screened for the recreational scenario; all surface and subsurface soils, including the cover material, dredge material, and native material, were combined and screened for the construction worker scenario. The depths for this scenario range from 6.7 to 11.7 ft, based on the available data. These two sets of data are discussed separately below. The data used in these analyses are presented in Appendix A (Tables A-6 and A-7) and summarized in Appendix B (Tables 2.8 and 2.9). The locations of these samples are shown on Figure A-4.

The dredge spoil samples were analyzed for full TAL inorganics and TCL organics, except VOCs and pesticides. A subset of the dredge spoil samples (both surface and deeper) were analyzed for PCDD/PCDFs.

3.4.1 Dredge Spoils – Surface Soils

The eight contaminants identified as COPCs in the dredge spoil surface soils (Appendix B, Table 2.8) consist of six metals (aluminum, arsenic, chromium, iron, manganese, and mercury); one PAH compound (benzo[a]pyrene); and one SVOC (hexachlorobenzene). Dredge spoil samples were analyzed only for total mercury (no methylmercury analyses have been conducted on the dredge spoils to date). All the mercury in the dredge spoil samples is assumed to be inorganic mercury; the uncertainty associated with this assumption and an assessment of potential hazards using assumptions of higher rates of methylation are discussed in Chapter 7, Section 7.5.3.1.

It should be noted that the depth intervals included in the surface soils group for the dredge spoils varied, and in many cases included samples from deeper intervals (intervals extending up to 107 cm below the surface) than would ideally be evaluated for exposure to contaminants in surface soils. However, the nature of the available data necessitated the use of data from deeper samples to evaluate exposure to surface soils.

3.4.2 Dredge Spoils – Surface and Subsurface Soils

The samples used in screening COPCs for the dredge spoil soils from all depths include all surface and subsurface intervals, so all eight of the COPCs identified for the surface soils (discussed in Section 3.4.1) are also COPCs for soils from all depths. In addition to the surface soil COPCs, contaminants identified as COPCs due to their presence in deeper samples include:

- Three inorganics (cadmium, cyanide, and thallium).
- Eight PAHs (benz[a]anthracene, benzo[b]fluoranthene, benzo[g,h,i]perylene, benzo[k]fluoranthene, dibenz[a,h]anthracene, indeno[1,2,3-cd]pyrene, naphthalene, and phenanthrene).
- Two PCBs (Aroclors 1254 and 1268).
- PCDD/PCDFs.

The screening for the dredge spoils surface and subsurface soils is presented in Appendix B, Table 2.9.

3.5 Onondaga Lake Surface Water

Onondaga Lake surface water samples have been analyzed for 11 TAL metals, plus five forms of mercury (methyl-, dimethyl-, ionic, elemental, and total mercury), as shown in Appendix A, Table A-8A. Organic analytes for which the surface water samples were analyzed (Table A-8B) consisted of VOCs and a limited suite of SVOCs, including chlorinated benzenes (dichlorobenzene, trichlorobenzene, and hexachlorobenzene). Surface water samples from 0 to 3 m water depths were not analyzed for other SVOCs (including PAHs), pesticides, PCBs, or PCDD/PCDFs.

Contaminant concentrations in surface water were compared with USEPA Region 3 RBCs and Region 9 PRGs for residential drinking (tap) water consumption, as shown in Appendix B, Table 2.10. Lead was screened against the 15 µg/L "action level" identified in the federal drinking water regulations (40 CFR Part 141). Cadmium and manganese exceeded the risk-based screening concentrations for drinking water and were, therefore, identified as COPCs. Methylmercury and total mercury did not exceed risk-based screening criteria but are included as COPCs for lake surface water, due to their historical significance in the Onondaga Lake environment. Organic compounds detected in lake surface water and identified as COPCs consist of four VOCs (benzene, bromodichloromethane, chlorobenzene, and chloroform) and two SVOCs (1,3- and 1,4-dichlorobenzene).

In addition to the ten COPCs identified based on the criteria discussed above, detected contaminants were also evaluated for the dermal pathway. Based on Exhibits B-3 and B-4 of recent USEPA guidance (2001a), five additional chemicals (chromium, toluene, xylene, 1,2-dichlorobenzene, and 1,2,4-trichlorobenzene) were evaluated as potential COPCs in surface water. However, toluene and xylene were not retained as COPCs due to a combination of infrequent detection (each of these chemicals was detected in only one out of 48 samples) and low concentrations (the one detection of each was less than 0.5 µg/L, and at least two orders-of-magnitude below the ingestion screening criterion). The other three chemicals (chromium, 1,2-dichlorobenzene, and 1,2,4-trichlorobenzene) have been added to the COPC list, for a total of 13 COPCs (as summarized in Table 3-1) in Onondaga Lake surface water.

Table 3-1. Summary of Contaminant Screening

Contaminant	ATSDR Public Health Assessment COPCs[1]	Fish Tissue (Fillets) (2.1)	Northern Basin Sediments (2.2)	Southern Basin Sediments (2.3)	Northern Basin Wetland SYW-6 (2.4)	Northern Basin Wetland SYW-10 (2.5)	Southern Basin Wetland SYW-12 (2.6)	Southern Basin Wetland SYW-19 (2.7)	Dredge Spoils Area Surface Soils (2.8)	Dredge Spoils Area Soils - All Depths (2.9)	Onondaga Lake Surface Water (2.10)
Metals/Inorganics											
Aluminum				X	X	X	X		X	X	NA-S
Antimony	X - Surface Water, Sediment	X	X	X		X		X			NA-S
Arsenic (inorganic)	X - Sediment	X	X	X	X	X	X	X	X	X	NA-S
Barium			X	X				X			NA-S
Cadmium	X - Sediment, Fish		X	X	X		X	X		X	X
Chromium	X - Sediment	X	X	X	X	X	X	X	X	X	X
Copper	X - Sediment			X			X				
Cyanide		X		X	X		X			X	NA-S
Iron			X	X	X	X	X	X	X	X	
Lead	X - Sediment, Fish			X							
Manganese	X - Surface Water, Sediment	X	X	X	X	X	X	X	X	X	X
Methylmercury		X	X	X	X	X	X	X			X
Mercury (inorganic)	X - Sediment, Fish	X	X	X	X	X	X	X	X	X	X
Nickel	X - Sediment			X							
Selenium		X									NA-S
Thallium			X	X	X	X	X			X	NA-S
Vanadium		X		X							NA-S
Zinc	X - Sediment	X									
VOCs											
Benzene	X - Sediment, Fish		X	X					NA	NA	X
Bromodichloromethane									NA	NA	X
Chlorobenzene	X - Sediment			X					NA	NA	X
Chloroform									NA	NA	X
Methylene Chloride				X					NA	NA	
Toluene	X - Sediment				Not identified as a COPC in any matrix for this HHRA						
Total Xylenes (sum)				X					NA	NA	
SVOCs											
bis(2-ethylhexyl)phthalate	X - Sediment, Fish	X									NA-S
Dibenzofuran				X							NA-S
1,2-Dichlorobenzene											X

Table 3-1. (cont.)

Contaminant	ATSDR Public Health Assessment COPCs[1]	Fish Tissue (Fillets) (2.1)	Northern Basin Sediments (2.2)	Southern Basin Sediments (2.3)	Northern Basin Wetland SYW-6 (2.4)	Northern Basin Wetland SYW-10 (2.5)	Southern Basin Wetland SYW-12 (2.6)	Southern Basin Wetland SYW-19 (2.7)	Dredge Spoils Area Surface Soils (2.8)	Dredge Spoils Area Soils - All Depths (2.9)	Onondaga Lake Surface Water (2.10)
1,3-Dichlorobenzene				X				X			X
1,4-Dichlorobenzene	X - Sediment, Fish			X				X			X
1,2,4-Trichlorobenzene											X
Hexachlorobenzene	X - Sediment, Fish	X	X	X				X	X	X	
PAHs											
Acenaphthylene	X - Sediment			X	X						NA-S
Benz(a)anthracene	X - Sediment		X	X	X	X	X	X		X	NA-S
Benzo(a)pyrene	X - Sediment		X	X	X	X	X	X	X	X	NA-S
Benzo(b)fluoranthene	X - Sediment		X	X	X	X	X	X		X	NA-S
Benzo(g,h,i)perylene	X - Sediment			X	X			X		X	NA-S
Benzo(k)fluoranthene	X - Sediment			X	X			X		X	NA-S
Chrysene	X - Sediment			X							NA-S
Dibenz(a,h)anthracene	X - Sediment		X	X	X	X	X	X		X	NA-S
Fluoranthene	X - Sediment			X							NA-S
Indeno(1,2,3-cd)pyrene	X - Sediment			X	X	X	X	X		X	NA-S
2-Methylnaphthalene	X - Sediment			X	X						NA-S
Naphthalene	X - Sediment		X	X	X					X	NA-S
Phenanthrene	X - Sediment			X	X		X	X		X	NA-S
Pesticides											
Aldrin		X						X	NA	NA	NA-S
delta-BHC		X							NA	NA	NA-S
Chlordanes (total)		X							NA	NA	NA-S
2,4'-DDE		X							NA	NA	NA-S
4,4-DDD		X							NA	NA	NA-S
4,4'-DDE		X							NA	NA	NA-S
4,4'-DDT	X - Fish	X							NA	NA	NA-S
Dieldrin		X		X				X	NA	NA	NA-S
Heptachlor Epoxide		X							NA	NA	NA-S
PCBs											
Aroclor 1016		X									NA-S
Aroclor 1221				X							NA-S

Table 3-1. (cont.)

Contaminant	ATSDR Public Health Assessment COPCs[1]	Fish Tissue (Fillets) (2.1)	Northern Basin Sediments (2.2)	Southern Basin Sediments (2.3)	Northern Basin Wetland SYW-6 (2.4)	Northern Basin Wetland SYW-10 (2.5)	Southern Basin Wetland SYW-12 (2.6)	Southern Basin Wetland SYW-19 (2.7)	Dredge Spoils Area Surface Soils (2.8)	Dredge Spoils Area Soils - All Depths (2.9)	Onondaga Lake Surface Water (2.10)
Aroclor 1242		X		X			X	X			NA-S
Aroclor 1248		X		X							NA-S
Aroclor 1254			X	X			X	X		X	NA-S
Aroclor 1260		X		X		X	X	X			NA-S
Aroclor 1254/1260		X									NA-S
Aroclor 1268			X							X	NA-S
Total PCBs (sum)	X - Sediment, Fish	X	X	X		X	X	X		X	NA-S
Dioxins/Furans											
Total PCDD/PCDF TEQ		X	X	X	X	X	NA	X		X	NA

Notes: X - Specified contaminant identified as a contaminant of potential concern (COPC). See Appendix B table referenced in parenthesis.

NA - This analyte or parameter group not analyzed in specified exposure area.

NA-S - This analyte not analyzed in shallow surface water (0-3 m). Data from deeper samples (6-12 m water depth) used to qualitatively evaluate this COPC. See Chapter 5 text.

ATSDR - Agency for Toxic Substances and Disease Registry

Contaminants not listed were not identified as COPCs in any site medium.

[1] Some chemicals identified in the ATSDR Public Health Assessment were eliminated during the screening process: bis(2-ethylhexyl)phthalate, toluene, and zinc in sediment, and benzene and 1,4-dichlorobenzene in fish.

Table 3-2. Summary of Lake Fish Samples (Fillets) Used in the HHRA

Year of Collection	Sampler	Location (Lake/ Trib)	Unique Samples (Fillets) Used in the HHRA	Species	Size Data Avail?	Number of Analyses: Hg[1]	MeHg	Other Inorganics and Organometallic Compounds	PCBs[2]	Pesticides[3]	SVOCs (HCB)	Dioxins/ Furans	Lipids & Moisture	Comment
1992	Honeywell	Lake	20	Carp	Y	2	20	Ionic Hg-2	20[4]	NA	NA	NA	20	No moisture data available
1992	Honeywell	Lake	20	Walleye	Y	3	20	Ionic Hg-3	20[4]	NA	NA	NA	20	No moisture data available
1992	Honeywell	Lake	20	White Perch	Y	3	20	Ionic Hg-3	20[4]	NA	NA	NA	20	No moisture data available
1992	Honeywell	Lake	21	Catfish	Y	3	21	Ionic Hg-3	21[4]	NA	NA	NA	21	No moisture data available
1992	Honeywell	Lake	29	Bluegill	Y	3	29	Ionic Hg-3	28[4]	NA	NA	NA	28	No moisture data available
1992	Honeywell	Lake	27	Smallmouth Bass	Y	2	27	Ionic Hg-2	26[4]	NA	NA	NA	26	No moisture data available
1992 Honeywell Total:			**137**			**16**	**137**	**16 Ionic Hg**	**0**[4]	**0**	**0**	**0**	**135**	
1992	Honeywell	Lake	1	Catfish - Comp	Y	1	NA	TAL Metals	1[4]	1	1	NA	1	Also analyzed for VOCs and full SVOCs
1992	Honeywell	Lake	1	Smallmouth Bass - Comp	Y	1	NA	TAL Metals	1[4]	1	1	NA	1	Also analyzed for VOCs and full SVOCs
1992	Honeywell	Lake	1	Walleye - Comp	Y	1	NA	TAL Metals	1[4]	1	1	NA	1	Also analyzed for VOCs and full SVOCs
1992	Honeywell	Lake	1	White Perch - Comp	Y	1	NA	TAL Metals	1[4]	1	1	NA	1	Also analyzed for VOCs and full SVOCs
1992 Honeywell Comp Total:			**4**	**Composites**		**4**	**0**	**4 TAL Metals**	**0**[4]	**4**	**4**	**0**	**4**	**Four composites for full TCL/ TAL**
1992	NYSDEC	Lake	30	Smallmouth Bass	Y	30	NA	NA	5	5[3]	5	NA	5	Only transnonachlor analyzed
1992	NYSDEC	Lake	10	Walleye	Y	10	NA	NA	5	5[3]	5	NA	5	Only transnonachlor analyzed
1992	NYSDEC	Lake	2	White Perch	Y	2	NA	2-Cd, 2-Pb	NA	NA	NA	NA	NA	No moisture data available
1992 NYSDEC Total:			**42**			**42**	**0**	**2-Cd, 2-Pb**	**10**	**10**	**10**	**0**	**10**	
1994	NYSDEC	Lake	32	Smallmouth Bass	Y	32	NA	NA	10	10[3]	10	NA	10	Only transnonachlor analyzed
1994 NYSDEC Total:			**32**			**32**	**0**	**0**	**10**	**10**	**10**	**0**	**10**	
1995	NYSDEC	Lake	33	Smallmouth Bass	Y	33	NA	NA	NA	NA	NA	NA	NA	Only mercury analysis available
1995	NYSDEC	Lake	19	Walleye	Y	19	NA	NA	NA	NA	NA	NA	NA	Only mercury analysis available
1995	NYSDEC	Lake	20	White Perch	Y	20	NA	NA	NA	NA	NA	NA	NA	Only mercury analysis available
1995 NYSDEC Total:			**72**			**72**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
1996	NYSDEC	Lake	36	Largemouth Bass	Y	36	NA	NA	10	10	10	NA	10	
1996	NYSDEC	Lake	47	Smallmouth Bass	Y	47	NA	NA	10	10	10	NA	10	
1996 NYSDEC Total:			**83**			**83**	**0**	**0**	**20**	**20**	**20**	**0**	**20**	
1997	NYSDEC	Lake	16	Largemouth Bass	Y	16	NA	NA	5	5	5	2	5	
1997	NYSDEC	Lake	43	Smallmouth Bass	Y	43	NA	NA	7	7	7	2	7	
1997	NYSDEC	Lake	12	White Perch	Y	12	NA	NA	5	5	5	4	5	
1997 NYSDEC Total:			**71**			**71**	**0**	**0**	**17**	**17**	**17**	**8**	**17**	

Table 3-2. (cont.)

Year of Collection	Sampler	Location (Lake/ Trib)	Unique Samples (Fillets) Used in the HHRA	Species	Size Data Avail?	Number of Analyses: Hg [1]	MeHg	Other Inorganics and Organometallic Compounds	PCBs [2]	Pesticides [3]	SVOCs (HCB)	Dioxins/ Furans	Lipids & Moisture	Comment
1998	NYSDEC	Lake	5	Channel Catfish	Y	5	NA	NA	5	5	5	NA	5	
1998	NYSDEC	Lake	44	Largemouth Bass	Y	44	NA	NA	5	5	5	NA	5	
1998	NYSDEC	Lake	38	Smallmouth Bass	Y	38	NA	NA	7	7	7	NA	7	
1998	NYSDEC	Lake	5	Walleye	Y	5	NA	NA	5	5	5	NA	5	
1998	NYSDEC	Lake	1	Northern Pike	Y	1	NA	NA	1	1	1	NA	1	
1998	NYSDEC	Lake	19	White Perch	Y	19	NA	NA	5	5	5	NA	5	
1998 NYSDEC Total:			**112**			**112**	**0**	**0**	**28**	**28**	**28**	**0**	**28**	
1999	NYSDEC	Lake	5	Carp	Y	5	NA	NA	5	5	5	5	5	
1999	NYSDEC	Lake	5	Channel Catfish	Y	5	NA	NA	5	5	5	5	5	
1999	NYSDEC	Lake	47	Smallmouth Bass	Y	47	NA	NA	5	5	5	NA	5	
1999	NYSDEC	Lake	37	Largemouth Bass	Y	37	NA	NA	8	8	8	NA	8	
1999	NYSDEC	Lake	5	White Perch	Y	5	NA	NA	5	5	5	5	5	
1999 NYSDEC Total:			**99**			**99**	**0**	**0**	**28**	**28**	**28**	**15**	**28**	
2000	Honeywell	Lake	2	Bluegill	Y	2	NA	TAL metals-2	2	2	2	2	2	HCB by GC/ECD Pesticides are method 8081 list
2000	Honeywell	Lake	2	Catfish	Y	2	NA	TAL metals-2	2	2	2	2	2	SVOC-HCB by GC/ECD
2000	Honeywell	Lake	3	Carp	Y	3	NA	TAL metals-3	3	3	3	3	3	SVOC-HCB by GC/ECD
2000 Honeywell Total:			**7**			**7**	**0**	**7 TAL Metals**	**7**	**7**	**7**	**7**	**7**	
2000	NYSDEC	Lake	43	Largemouth Bass	Y	43	NA	NA	5	5	5	NA	5	
2000	NYSDEC	Lake	26	Smallmouth Bass	Y	26	NA	NA	5	5	5	NA	5	
2000 NYSDEC Total:			**69**			**69**	**0**	**0**	**10**	**10**	**10**	**0**	**10**	
Total Data Used:			**728**			**607**	**137**		**130**	**134**	**134**	**30**	**269**	**Total number of data points of each type used for EPC**

Notes: Sample totals are unique samples only; total does not include duplicates.

Data include only fillets, and only fish of legal size.

Comp - composite fillet. Each composite sample generated from five individuals of the species noted (see PTI, 1993 for details).

NA - not analyzed

[1] For 1992 data only, "mercury" shown in this table is the sum of the methyl and ionic mercury where data for both are available (17 data pairs); 1992 "total" excludes the 119 MeHg only data points.

[2] PCB Aroclor analyses reported varied by organization and year. See Appendix A text.

[3] NYSDEC pesticide list includes: 4,4-DDD, DDE, DDT, dieldrin, endrin, mirex, photomirex, cis- and trans-chlordane, oxychlordane, and transnonachlor, except where noted in comments.

[4] 1992 Honeywell fillet PCB data were excluded from this HHRA, based on recommendation from NYSDEC. See Appendix A text.

4. EXPOSURE ASSESSMENT

Exposure assessment is the process of identifying human populations that could contact site-related contaminants, and estimating the magnitude, frequency, duration, and route(s) of such exposures under current and potential future land use scenarios. In this HHRA, potential site risks are evaluated for current and, as appropriate, future recreational exposure scenarios. In addition, potential exposure to lake and wetland sediments, dredge spoil soils, and surface water were also considered for a construction worker scenario.

Other receptor populations typically considered in a risk assessment (i.e., residents and long-term workers) were not considered here because the site (i.e., the lake and Wetlands SYW-6 and SYW-12) and the additional areas evaluated in this HHRA (i.e., Wetlands SYW-10 and SYW-19 and the dredge spoils area) are undeveloped and, given the nature of the areas, are unlikely to be developed in the future. Potential occupational exposures associated with the Honeywell properties were evaluated in the Semet Residue Ponds (O'Brien & Gere, 1991), LCP Bridge Street (NYSDEC/TAMS, 1998a), and Willis Avenue (O'Brien & Gere, 2002 [under NYSDEC review]) remedial investigations (RIs) and associated HHRAs. In addition, RIs and risk assessments are currently being performed by NYSDEC at the Geddes Brook/Ninemile Creek site and by Honeywell at the Wastebed B/Harbor Brook and Willis Avenue Ballfield sites.

This chapter describes how the exposure scenarios for the Onondaga Lake HHRA were selected as a means of estimating current and future exposures and potential risks, as follows:

- In Section 4.1, the exposure setting is characterized and potentially exposed populations are identified (e.g., recreational visitors).
- In Section 4.2, potential exposure pathways are identified.
- In Section 4.3, quantitation of exposure to various contaminated media, including fish consumption rates, exposure frequency and duration, and incidental ingestion of sediments and soils are addressed.
- In Section 4.4, dermal contact with surface sediments and soils is addressed for the potential receptor populations and scenarios.
- In Section 4.5, incidental ingestion of surface water for the potential receptor populations and scenarios is addressed.
- In Section 4.6, dermal contact with surface water for the potential receptor populations and scenarios is addressed.

- In Section 4.7, the methods for calculating exposure point concentrations (EPCs) are presented.

- In Section 4.8, a brief summary of the chapter is presented.

4.1 Exposure Setting and Receptor Populations

The first step in evaluating exposures at a site is to characterize the site with respect to its physical characteristics, current and potential future land uses, and human populations on or near the site. A summary of this information is provided in Chapter 2 of this HHRA and Chapters 1 and 3 of the RI report (TAMS, 2002b). Additional information on current (Section 4.1.1) and potential future (Section 4.1.2) land and site use is provided below. This information is used to identify possible exposure pathways for potentially exposed populations and to determine appropriate exposure intake variables to quantify exposure.

4.1.1 Current Land and Site Use

Onondaga Lake lies within the jurisdictional boundaries of the city of Syracuse, the towns of Salina and Geddes, and the villages of Solvay and Liverpool in Onondaga County, New York. Onondaga Lake is located in an urban area and is surrounded by industrial, commercial, and recreational areas. Most of the northern half of the shoreline is parkland owned by Onondaga County. The primary land use around the lake is classified as parks and recreation (Reimann-Buechner Partnership, 1991). The areas along the northeast and west lakeshores are zoned as "residential open land" or "residential A," although no residential property directly abuts the lake, as these areas are actually parkland. The residential properties closest to the lake, in Liverpool and Lakeland, are less than 0.1 mile (mi) (150 meters [m]) from the lakeshore but are separated from the lake by parkland and/or highways. There are no residential properties on the wetlands and dredge spoils area evaluated in this HHRA. Commercial and industrial areas near Onondaga Lake are concentrated around the southern end of the lake, in the Syracuse metropolitan area.

With the exception of the parkland, marina, and pedestrian and bicycle paths on the northern end of the lake (see Figure 4-1), all of which are administered by the Onondaga County Parks Department (OCPD), the majority of the lakefront of Onondaga Lake remains undeveloped (Effler, 1996). New development has occurred near the southern shore of Onondaga Lake, along Onondaga Creek and the Barge Canal, as part of the Syracuse Inner Harbor Project, as approximately 42 acres of land, owned by the New York State Canal Corporation, are being developed for recreational and commercial uses by the Lakefront Development Corporation (LDC) (LDC, 2001). The only private property on the lake is owned by commercial interests (e.g., Conrail, Honeywell, Crucible Materials Corporation) (Reimann-Buechner Partnership, 1991). Farming areas and open space are located predominantly in the southern half of the drainage basin. Chapter 3, Figure 3-11 of the RI report presents the covertypes within 0.5 mi (0.8 km) of Onondaga Lake (TAMS, 2002b).

4.1.1.1 Drinking Water

Onondaga Lake is currently neither used nor permitted as a drinking water source. As noted in Chapters 2 and 3, Onondaga Lake is a Class B and Class C water body; the best usages for these classifications include fishing and recreation but not use as a potable water source. The Syracuse Department of Water (SDW) provides drinking water for the entire city of Syracuse and portions of the towns of DeWitt, Onondaga, Camillus, Skaneateles, and Salina and the villages of Jordan and Elbridge. The SDW obtains most of its water from Skaneateles Lake, about 20 mi (32 km) southwest of Syracuse, but supplements its supply during times of drought or other conditions with water from Lake Ontario or Otisco Lake. Water from Lake Ontario is treated and provided by the Metropolitan Water Board (MWB). In addition, in the year 2000, about 5 percent of the SDW's water was obtained from Otisco Lake through the Onondaga County Water Authority (OCWA) (SDW, 2001).

The OCWA provides water for the remainder of Onondaga County not serviced by SDW, in addition to emergency connections to some of the entities served by the SDW (e.g., the city of Syracuse). The OCWA obtains the majority of its water from Lake Ontario (purchased from the MWB) and Otisco Lake, although it obtains some water for a few communities from Skaneateles Lake through the SWD (SDW, 2001).

4.1.1.2 Fishing

The current fish population in Onondaga Lake is vastly improved over conditions in the 1950s, when over 90 percent of the fish in the lake were common carp (*Cyprinus carpio*) (Onondaga Lake Partnership [OLP], 2002). Recent surveys have identified over 50 species of fish in the lake, including sport fish such as bass, walleye (*Stizostedion vitreum*), and northern pike (*Esox lucius*), as well as panfish such as perch, bluegill (*Lepomis macrochirus*), and pumpkinseed (*Lepomis gibbosus*) (OLP, 2002). Onondaga Lake has been recently called one of the "finest July bass lakes" in New York State, and is a "favorite weekend destination for many central New York bass fishermen," according to *Game and Fish Magazine* (http://gameandfish.about.com, accessed May 2002), although the magazine does note that "... anglers who fish it would be well advised to release their catch." There have been bass fishing tournaments on the lake in 2001 and 2002.

Although there are New York State Department of Health (NYSDOH) fish advisories in place for Onondaga Lake (discussed in greater detail in Section 4.2.1, below), fishing is a significant recreational activity and is addressed in this HHRA.

4.1.1.3 Beaches and Swimming

There are no permitted swimming beaches or sanctioned swimming areas, as Onondaga Lake is generally not fit for swimming due to elevated levels of coliform bacteria and turbidity (Effler, 1996); the last public beach on Onondaga Lake was closed in 1940. However, there is evidence of primary contact recreation, such as water skiing, and secondary contact recreation, such as boating and canoeing. Water skiing, boating, and canoeing are allowed in all parts of the lake. Access to nearshore sediment along the

southwestern portion of the lake is restricted by Interstate 690 (I-690), which runs along the southwestern shore of the lake between Honeywell's hazardous waste sites (e.g., Semet Residue Ponds and Willis Avenue) and the lakeshore. As noted in the RI (TAMS, 2002b), the sediments in this area of the lake contain the highest concentrations of contaminants of potential concern (COPCs).

The tributaries directly impacted by Honeywell are Ninemile Creek and its tributaries, Geddes Brook and the West Flume; Tributary 5A; the East Flume; and Harbor Brook. Potential human health risks related to exposures to COPCs in the West Flume were evaluated in the RI and HHRA for the LCP Bridge Street site (NYSDEC/TAMS, 1998a). Geddes Brook and Ninemile Creek are the subject of an ongoing investigation and are being further evaluated in a separate HHRA being rewritten by NYSDEC. Potential human health risks associated with the remaining tributaries (i.e., the East Flume, Harbor Brook, and Tributary 5A) are being addressed by Honeywell (with NYSDEC oversight) in other documents in preparation for other Onondaga Lake subsites. Tributary 5A is being addressed in the HHRA for the Willis Avenue site and both the East Flume and Harbor Brook are being addressed in the HHRA for the Wastebed B/Harbor Brook site.

4.1.1.4 Potential Receptors

Under current conditions, the most likely potential receptors for Onondaga Lake are recreational users (including nearby residents). Recreational visitors or residents could include both children and adults. In addition, it is conceivable that a construction worker might contact dredge spoil soils, lake and wetland sediments, or surface water during work in these areas.

4.1.2 Future Land and Site Use

In recognition of the scope of present and future development opportunities adjoining Onondaga Lake, various local and state agencies jointly sponsored the preparation of a land use master plan that will serve as a guide to lakefront development (Reimann-Buechner Partnership, 1991). Development for recreational and commercial purposes along Onondaga Creek and the Barge Canal in the Syracuse Inner Harbor is ongoing, including the September 2001 opening of the most recent phase of improvements to the Inner Harbor (LDC, 2001). It is anticipated that the existing bicycle/jogging trail will be expanded to encircle the entire lake, although formal planning (and construction) of the section between the State Fairgrounds and Syracuse awaits completion of environmental studies of properties in the area, including the Honeywell sites (J. Eallonardo, 2002, pers. comm.).

The planned recreational uses include swimming and fishing in the lake without health advisories. Planned future amenities include a pleasure boat marina, restaurants, hotels, a freshwater education and research center, retail establishments, and water-oriented recreation and culture parks (Effler, 1996). Anticipated development includes remediation and commercial development of industrial areas at the southern end of the lake, including the Carousel Mall on the southeast shore of the lake, and relocation of "Oil City," an area near the Barge Canal terminal used for storage of petroleum products.

The objectives of the land-use planning efforts for Onondaga Lake are to enhance the quality of the lake and its shore for primarily recreational or commercial uses. Hence, potential future receptors would be recreational visitors to the lake or possibly workers at commercial establishments by the lakefront who might visit the lake occasionally. However, the potential for nearby workers to be exposed to COPCs in the lake is expected to be less than the exposure potential for people who might visit the lake for recreation. Thus, recreational users are considered to be the most likely receptors and have the greatest potential for exposure. Although employees of recreational facilities (e.g., workers at a marina) might be present at the lakefront more frequently, it was not considered likely that an employee's exposure to contaminated media would be greater than those of recreational users.

Under potential future land use conditions, the HHRA assumes that fishing and swimming would occur and that the fish consumption advisory would be lifted. The HHRA also assumes that the lake will still be surrounded by recreational and commercial facilities and that the greatest potential for exposure will result from recreational uses of the lake.

On January 20, 1998, Onondaga County, the State of New York, and other parties entered an Amended Consent Judgment (ACJ) requiring Onondaga County to upgrade the existing sewage treatment plant (Metro) and to reduce the impact of combined sewer overflows (CSOs). This ACJ is designed to achieved full compliance with federal Clean Water Act requirements by December 1, 2012, although, under the current schedule, over three-fourths of the improvements will be completed by 2008 (OLP, 2002).

However, the possibility of the lake serving as a drinking water source in the future is considered highly unlikely. The lake is not classified as a potable water source, due in part to natural and anthropogenic sources of salinity and the combined effects of municipal and industrial pollution. In addition, Skaneateles Lake currently serves as the primary source of drinking water for the city of Syracuse. Although future use of the lake as a drinking water source is highly unlikely, the risk assessment did apply screening values based on consumption of drinking water to identify COPCs. Groundwater is not withdrawn from the lake, wetlands, or dredge spoils area, nor is it used in those areas, so groundwater ingestion was not evaluated as an exposure medium.

4.2 Potential Exposure Pathways

This section identifies potential exposure pathways for COPCs found in environmental media. An exposure pathway is the course a contaminant takes from a source to an exposed receptor. A complete exposure pathway consists of the following four elements:

- A source for the contaminant (i.e., contaminated medium).
- A mechanism of release, retention, or transport of a contaminant in a given medium (e.g., air, water, soil).
- A point of human contact with the medium (i.e., exposure point).

- A route of exposure at the point of contact (e.g., incidental ingestion, dermal contact).

If any one of these elements is missing, the pathway is considered incomplete and does not present a means of exposure. Only those exposure pathways judged to be potentially complete are quantified in this HHRA. RAGS Table 1 in Appendix B shows the conceptual model used to identify the exposure pathways evaluated in this HHRA.

Contaminants of potential concern have been detected in fish tissue, lake and wetland sediments, dredge spoils soil, and surface water in or near Onondaga Lake. As described above, the most likely means for exposure to these COPCs is through recreational use of the lake, wetlands, and dredge spoils area. Under current conditions, exposure to COPCs in these media may be affected by advisories regarding the consumption of fish from the lake, the lack of public swimming beaches on the lake, and limited access to the lakefront in some areas. However, this HHRA quantified the following exposure pathways in the absence of any institutional controls or other restrictions, and therefore uses the same exposure assumptions for current and potential future recreational scenarios:

- Consumption of fish from Onondaga Lake.

- Incidental ingestion of and dermal contact with surface sediments from Onondaga Lake and wetland areas (i.e., the top 30 cm of sediments under water less than 2 m deep in the lake, and from the top 30 cm in wetland sediments) during recreational uses and occupational contact (construction worker).

- Incidental ingestion of and dermal contact with surface soils of dredge spoils (i.e., 0 to 3 ft [about 100 cm]) by visitors or construction workers, or incidental ingestion of and dermal contact with deeper dredge spoil soils (i.e., 0 to 11.7 ft [about 360 cm]) by construction workers.

- Incidental ingestion of and dermal contact with surface water from Onondaga Lake during recreational uses (e.g., wading, boating, or swimming).

The following subsections describe the potentially complete exposure pathways associated with each medium evaluated in the HHRA.

4.2.1 Consumption of Fish Tissue

There is currently a specific, restrictive fish consumption advisory for Onondaga Lake (NYSDOH, 2002a), but no ban on fishing. As discussed previously in this chapter, fishing is a sanctioned and significant recreational activity at Onondaga Lake. The health advisory is based in part on findings of mercury and PCBs in fish tissues at concentrations exceeding US Food and Drug Administration (FDA) tolerance limits.

For example, the average concentration of mercury in the 728 fish tissue samples used in this HHRA, 1.05 mg/kg, exceeds the FDA tolerance limit of 1.0 mg/kg.

The current advisory for Onondaga Lake includes the following recommendations (NYSDOH, 2002a):

- **Walleye** – All persons should eat none (due to mercury contamination).
- **Carp and channel catfish** (*Ictalurus punctatus*) – All persons should eat no more than one meal (8 oz) per month (due to mercury, dioxin, and PCB contamination).
- **All other species** – All persons should eat no more than one meal (8 oz) per month (due to mercury contamination).
- Infants, children under 15 years of age, and women of childbearing age should not eat any fish whatsoever from Onondaga Lake.

However, because this HHRA focuses on future land use conditions and assumes that all fish caught from the lake will be consumed, future recreational visitors were assumed to be the receptor with the most exposure to chemicals in fish.

Although there are no studies by USEPA which specifically evaluate consumption by children of recreationally caught fish, extrapolation or estimates from other data suggest that consumption of fish by children (especially younger children) may be higher – perhaps up to four times higher – than that by adults, on a body-weight normalized basis. For this HHRA, the fish ingestion rates for children were based on those recommended by USEPA Region 2. Rates were also recently used for the Hudson River PCBs site HHRA (TAMS/USEPA, 2000). For the older and young child, fish ingestion rates were estimated to be two-thirds that of an adult for an older child (age six to less than 18) and one-third that of an adult for the younger child (up to six years old). However, given the limited data on fish consumption rates for children, there is a fair amount of uncertainty in this estimated consumption rate. Therefore, the potential for children to consume fish at a greater or lesser rate, and the risks and hazards associated with other consumption rates, are discussed in greater detail in Section 7.3.2 of Chapter 7, Uncertainty Assessment.

The potential existence of a subsistence fishing population was evaluated but there was considered to be insufficient evidence to warrant its inclusion in the HHRA as a complete pathway. Although the Onondaga Nation has a reservation south of Syracuse, its northernmost boundary is about 6 mi (9.6 km) south of the southernmost edge of the lake. The Onondaga Reservation is actually slightly closer to Otisco Lake, the reference lake. Due to the distance from Onondaga Lake, and a lack of any anecdotal accounts of subsistence fishing occurring at the lake, this pathway was not considered complete. However, as there is not firm evidence that subsistence fishing does not occur, the potential risks and hazards associated with consumption rates appropriate for subsistence fishers are presented in Chapter 7, Uncertainty Assessment.

4.2.2 Lake and Wetland Surface Sediments and Dredge Spoil Soils

Exposure to COPCs in surface sediments within Onondaga Lake, wetland sediments, or dredge spoil soils could occur via incidental ingestion of, or dermal contact with, these media. Both of these exposure routes were quantitatively evaluated for each of the sediment and soils data sets for the recreational and construction worker scenarios.

As indicated above, nearshore lake surface sediment is defined here as sediments under water less than 2 m deep. In evaluation of lake and wetland sediments, data from sample profiles from the 0 to 30 cm depth were used; where samples from multiple depths were available, they were length-weighted and a single concentration (a length-weighted average) was developed for each sediment sampling location. (The procedure and a sample calculation are shown in Section 4.7.) For dredge spoil soils, a surface soil evaluation was conducted using the samples of the material placed on the dredge spoil soils; these sample depths (up to about 3 ft) often exceed those generally used to quantify exposure to surface soil. For the construction worker scenario, data from the surface down to a depth of 11.7 ft within dredge spoil soils (including both the samples evaluated for dredge spoil surface soil exposure, as well as the samples from greater depths, including the contaminated spoil material from the Ninemile Creek delta) were used to calculate the EPCs. The soil depth interval evaluated for the construction worker scenario is a function of the depths of the samples (i.e., the available data), which is in turn based on the depth (thickness) of the dredge spoils at specific locations.

In evaluating recreational uses, adults, young children (up to age six), and older children (age 6 to less than 18) were considered, as these groups might come into contact with sediments in the lake. The potential for anyone to contact sediments at areas other than the park areas along the northern half of the lake is currently limited. However, because recreational uses of the lake may increase in the future, potential risks for adults and children (both young and older) who may contact lake sediments were evaluated for both the northern and southern portions of the lake in the HHRA. As access to the wetlands and the dredge spoils area is currently limited and, for the purposes of this study, development of these areas is assumed to be unlikely, only older children and adults (including construction workers) were assumed to be potentially exposed to the wetland sediments or dredge spoils area soils. As there is some potential for workers to access site media during construction activities, construction worker scenarios were evaluated for incidental ingestion of and dermal contact with lake and wetland sediments and for dredge spoil soils.

4.2.3 Surface Water

Potential exposures that could result from incidental ingestion of and dermal contact with chemicals in surface water were evaluated in the HHRA through recreational and construction worker scenarios. In consideration of planned recreational uses of Onondaga Lake described in Section 4.1.2, Future Land and Site Use (and the planned achievement of Clean Water Act public beach criteria for coliform and water clarity), adults and children were evaluated in a swimming scenario for Onondaga Lake. Application of exposure estimates for swimming also provides a protective means to evaluate exposure and risks associated with any other water activities, such as boating, water skiing, and sailboarding.

4.2.4 Consumption of Game

The NYSDOH has issued statewide advisories regarding the consumption of snapping turtles and wild waterfowl (NYSDOH, 2002a). The advisory for snapping turtles recommends that women of childbearing age and children under 15 eat no turtles or turtle soup, and that others who consume snapping turtles should remove the fat, liver, and eggs. The NYSDOH advisory for waterfowl is that mergansers (a subfamily of diving duck) not be eaten by any person, and that other waterfowl species should be skinned and have the fat removed, and no more than two meals per month of wild waterfowl should be eaten.

NYSDOH advisories are based on statewide PCB contamination in snapping turtles and statewide PCB, mirex, chlordane, and DDT contamination in waterfowl (NYSDOH, 2002a). All of these COPCs have been detected in one or more media (e.g., sediments, fish) at Onondaga Lake. However, there are no data on the extent of hunting or consumption of snapping turtles or waterfowl at Onondaga Lake, and there are no site-specific analytical data for turtles or waterfowl to quantify exposure point concentrations. Although the hunting of waterfowl on Onondaga Lake is permitted under New York State law, the hunting season is significantly shorter than the fishing season. In addition, some (but by no means all) of the waterfowl are migratory, and attribution of contamination to Onondaga Lake is difficult. Therefore, the consumption of game is not included in the quantitative HHRA, although there is a potential for increased risk to consumers of snapping turtles and waterfowl, including nearby Native American populations.

4.2.5 Inhalation of Volatile Organic Compounds

An initial preliminary site assessment (PSA) conducted for Onondaga Lake by NYSDEC (NYSDEC, 1989, as cited in PTI, 1991) concluded that there was little potential for releases of contaminants to air. The data for volatile organic compounds (VOCs) in surface water and near-surface soils were reviewed as part of this HHRA, and the initial conclusion by NYSDEC is considered to still be appropriate for recreational users and nearby residents. In addition, there are currently no structures on the site nor are any likely to be built, due to regulatory restrictions (e.g., zoning and wetlands). Therefore, the inhalation pathway was considered to be incomplete for all media and was not assessed further in this report.

4.3 Quantitation of Exposure

In this section, COPC intakes for chronic exposures are estimated for the exposure pathways identified in the previous section. COPC intakes are based on estimates of exposure concentrations at the exposure point (i.e., EPCs) and on the estimated magnitude of exposure to COPC-containing media. Exposure estimates for ingestion, termed chronic daily intakes (CDIs), are defined as the mass of a contaminant taken into the body, per unit of body weight, per unit of time. For dermal contact, exposures are expressed as absorbed dose rather than administered dose.

The averaging time used to determine a CDI depends on the type of toxic effect being assessed. For carcinogenic effects, CDIs are calculated by averaging the total cumulative dose over a lifetime. The

estimate of the average lifespan is assumed to be 70 years, based on USEPA (1991b) guidance.[1] For assessing non-cancer effects, CDIs are calculated by averaging intakes only over the period of exposure. The distinction between these two approaches is based on USEPA's conclusion that the toxicological mechanisms of action are different for carcinogenic and non-carcinogenic processes.

Intakes of COPCs were estimated using algorithms and assumptions consistent with USEPA guidance (e.g., USEPA, 1989) for the potential exposure pathways: consumption of fish, incidental ingestion of and dermal contact with surface sediments in the lake and wetlands and with surface and subsurface dredge spoil soils, and incidental ingestion of and dermal contact with surface water. Both central tendency (CT, also known as typical) and reasonable maximum exposure (RME) estimates were calculated.

In RAGS Part 3, Exhibit 3-2, USEPA defines CT exposure as "a risk descriptor representing the average or typical individual in the population, usually considered to be the arithmetic mean or median of the risk distribution" (USEPA, 2001b). For this HHRA, the CT was calculated using average, or 50th percentile (median), values for exposure factors, as shown on RAGS Tables 4.1 through 4.31 of Appendix B. (The 50th percentile value is the preferred value for the CT scenario; however, for some parameters this value is not reported and the average value is used instead.)

The RME is defined as "the highest exposure that is reasonably expected to occur at a site" (Section 6.1 of USEPA, 1989). The RME provides an estimate of a conservative case (greater than the CT, or typical) that is still within the range of possible exposures; it is not a "worst-case scenario." Normally, only two or three of the variables in the exposure equation are set to high-end (90th or 95th percentile) values; typically, these are contact rate and exposure frequency or duration, for the RME case, while CT (50th percentile, or average) values are used for other variables (e.g., body weight, skin surface area).

A summary of the exposure assumptions used in the exposure assessment and the exposure algorithms and assumptions used to calculate CDIs for all potentially complete exposure pathways (as identified in RAGS Table 1) are provided in RAGS Tables 4.1 through 4.31 (Appendix B). Table 4-1, accompanying this chapter, provides chemical-specific dermal absorption factors.

The following subsections present methods used to quantify exposure via each of the pathways and the methods used to calculate EPCs for CT and RME scenarios for these pathways.

4.3.1 Fish Consumption

Under current land use conditions, fishing is a significant recreational activity on Onondaga Lake. Although specific, restrictive health advisories exist (recommending people limit their consumption of lake fish, or for some subgroups, not consume any) that may limit the extent of consumption of fish from the lake, the extent

[1] USEPA's *Exposure Factors Handbook* (USEPA, 1997a) recommends use of 75 years for the average value for life expectancy; however, the original 70-year value is used in this HHRA for consistency among risk assessments, and the difference (error) between the two values is low.

to which these advisories are adhered to is unknown. The HHRA also focuses on future land use conditions and assumes that fish caught from the lake will be consumed. Hence, current and future recreational visitors were assumed to be the receptors with exposure to COPCs in fish. The algorithm and assumptions used to estimate risks associated with consumption of fishes from Onondaga Lake are presented in Appendix B, RAGS Tables 4.1 through 4.3.

4.3.1.1 Fish Consumption Rates

No fish consumption data specific to Onondaga Lake were available. In accordance with USEPA guidance (1997a), the HHRA uses a fish consumption rate of 8 g/day for the CT, or typical, exposure scenario and 25 g/day for the RME scenario. These values were derived by USEPA (1997a) from the mean and the 95th percentile fish consumption rates identified in surveys of anglers on Lake Michigan (West et al., 1989, 1993), on Lake Ontario (Connelly et al., 1996), and in Maine (Ebert et al., 1993), and are USEPA's recommended default rates for recreational freshwater anglers. Uncertainties associated with the use of these fish consumption rates and an evaluation of alternative rates are presented in Chapter 7, Uncertainty Assessment.

As noted in Section 4.2.1, there are limited data on the consumption of sport-caught fish by children. However, estimates based on limited literature data and other assumptions suggest that consumption rates for young children (under age six) may be as much as four times that of adults on a body weight-normalized basis (see Chapter 7, Table 7-3). For this HHRA, the fish ingestion rates for children were based on those recommended by USEPA Region 2. These rates were also recently used for the Hudson River PCBs Superfund site HHRA (TAMS/USEPA, 2000). For the older and young child, fish ingestion rates were estimated to be two-thirds that of an adult for an older child (age six to less than 18) and one-third that of an adult for a young child (less than six years old). Given the limitations in existing data on rates of consumption by children of recreationally caught fish, exposure estimates applied to children in deriving risk estimates are somewhat uncertain. A more detailed assessment of the various approaches to estimating the fish ingestion rate for children, and the effect of different estimates on the risk to children, is presented in Chapter 7, Uncertainty Assessment.

The potential for Onondaga Lake to serve as a subsistence source of food was also considered. Studies evaluating subsistence-level fish consumption have primarily identified such use among concentrated Native American populations; a consumption rate of 170 g/day is suggested for this subpopulation (USEPA, 1997a). According to the most recent census data (US Census Bureau, 2000), there are about 4,000 persons in Onondaga County, or about 0.9 percent of the population of the county, who identify themselves as Native Americans (the official census category is "American Indian and Alaskan Native;" however, the Alaskan Native component is assumed to be negligible in Onondaga County). The percentage of Native Americans is somewhat higher (about 1.1 percent) in the city of Syracuse.

The Onondaga Reservation, which includes about 800 Native Americans, is located about 6 mi (9.6 km) south of Onondaga Lake. It is important to note that these figures are for individuals identifying themselves as entirely of one race or ethnic group; for Native Americans, the numbers almost double when also

considering persons of multiple race or ethnicity who include Native American as one of the components. Since the demographics of the Onondaga Lake area suggest that the presence of a subsistence fishing subpopulation is at least possible, it will be evaluated quantitatively in Chapter 7, Uncertainty Assessment.

4.3.1.2 Fractional Intake of Fish

A second major component of fish consumption rates is the fractional intake, or the percentage of the fish consumed that may originate from the affected area. Because of the absence of consumption data specific to Onondaga Lake, both the RME and CT estimates calculated in this HHRA incorporate the conservative assumption that all fish consumed are caught at Onondaga Lake (i.e., there is no adjustment for fractional intake – referred to as "fraction ingested" [from contaminated source], or FI, in risk assessment terminology).

The USEPA default fish consumption rates used in the HHRA represent consumption from all freshwater resources fished during the season. Similar to anglers evaluated in the studies from other lakes (see Section 4.3.1.1) used to derive USEPA's 25 g/day intake rate, however, several other desirable fishing locations that are not subject to health advisories are available to anglers who live near Onondaga Lake. Although some anglers may fish in more than one water body (and thus have an FI of less than 1.0), it is equally conceivable that some anglers, especially those who live near the lake (e.g., within walking distance), may fish in Onondaga Lake almost exclusively (and have an FI of 1.0). Chapter 7, Uncertainty Assessment, includes a discussion of risk estimates derived through application of an FI of less than 1.0.

4.3.1.3 Cooking Loss from Fish

The human health risks from exposure to chemicals in fish depend entirely on the amount of chemical actually ingested, rather than the amount present in the aquatic species. Contrary to the default exposure assessment assumptions used in many risk assessments that evaluate the potential hazards associated with fish consumption, most anglers are unlikely to be exposed to the concentrations measured in the raw fillet. There is evidence that preparation and cooking of edible fish tissue can result in loss of lipophilic contaminants such as PCBs and PCDD/PCDFs, although the extent of such loss varies according to the specific study and methods of cooking (grilling, pan-frying, etc.) and preparation (skinning, filleting, etc.).

Cooking methods that result in significant fat loss from fish tissue or allow for the transfer of lipophilic contaminants to cooking oil resulted in the greatest PCB losses. Due to the nature of mercury in fish, no loss of mercury during cooking is expected.

Wilson et al. (1998) recently conducted a review of the literature on loss of contaminants from fish during cooking; literature on cooking loss was also reviewed by USEPA for the Hudson River PCBs site HHRA (TAMS/USEPA, 2000). These reviews, of 12 to 14 studies published between 1972 and 1998, found that mean reductions of PCBs ranged from no loss (a few gains were reported, but these are likely to be within the range of experimental error and were considered to be zero loss) to a 74 percent reduction. Despite the wide range of data reviewed, it is not possible to determine the key factors that control the extent of

cooking loss, especially in view of the wide range of cooking loss values reported in the literature. PCB losses from cooking may depend on the cooking method, length and temperature of cooking, preparation method (extent of skin removal and trimming, etc.), species of fish, lipid content of the individual fish cooked, the initial PCB concentration, whether or not cooking liquids are discarded or consumed, and the experimental design and analytical reporting method.

The "Uniform Sport Fish Consumption Advisory for the Great Lakes Region," issued by the Great Lakes Sport Fish Advisory Task Force (GLSFATF, 1993), includes an assumed 50 percent reduction factor for PCBs in fish fillets. This value may not be conservative, as it assumed that advisories on trimming and cooking fish were adhered to by the public. Based on USEPA's review of the literature, the Hudson River HHRA included only an assumed 20 percent cooking loss (CT only; zero loss was assumed for the RME). Reviewing the results of the cooking loss literature surveys, as well as previous USEPA precedent and comments from NYSDEC and NYSDOL (1998a) on the draft Onondaga Lake HHRA, led to the use of a cooking loss of 33 percent for PCBs for the CT for this Onondaga Lake HHRA. For the RME scenario, no cooking loss adjustments have been applied.

There are a few cooking loss studies that included dioxins and furans (PCDD/PCDFs). Zabik and Zabik (1996) reviewed the degree of cooking loss for a variety of organochlorine compounds in fish tissue, including tetrachlorodibenzo-*p*-dioxin (TCDD). These limited data do confirm what has been indicated in most literature – that there is some loss of the studied compounds during cooking, but the data are not considered sufficiently robust to establish a separate estimate of cooking loss for PCDD/PCDFs. The cooking loss for PCDD/PCDFs has, therefore, been assumed to be the same as the cooking loss for PCBs (i.e., 33 percent for CT, 0 percent for RME).

4.3.1.4 Exposure Frequency and Duration for Fish Consumption

Exposure frequency generally reflects an estimate of the number of times or days per year that an exposure occurs. However, most fish consumption rates, including those described above, reflect a daily average over an entire year. Therefore, an exposure frequency of 365 days/year was applied to this exposure pathway. Exposure duration is an estimate of the number of years that exposure can occur. In this risk assessment, default values for mean and upper-bound exposure durations of nine (50^{th} percentile) and 30 years (90^{th} percentile), respectively (USEPA, 1989, 1991b), were applied for the CT and RME estimates.

4.3.2 Exposure Frequency and Duration and Receptor Characteristics for All Media Except Fish

As described above, the most likely human populations to visit and recreate in the lake are adults and children. Younger children (i.e., under six years old) would not be expected to visit the wetlands or dredge spoil areas, given the limited access; thus, adults and older children (i.e., six to less than 18 years old) were evaluated for these areas. The construction worker scenarios are evaluated for adult workers who may contact any of the site media. In this assessment, visitors or workers are assumed to contact either soils, sediments, or water on a given visit.

Figure 4-1 presents the areas evaluated in the HHRA, including the wetlands and dredge spoils area, and physical features that affect site accessability (e.g., highways, railroad lines, paths, pedestrian bridges). Aerials of three shoreline areas shown on Figure 4-1 are included in Figures 4-2 for the dredge spoils area, 4-3 for the eastern shore/marina area, and 4-4 for the southwest corner of the lake near Harbor Brook.

4.3.2.1 Recreational Scenarios

The HHRA recreational scenarios assume that contact with lake and wetland sediments, as well as the dredge spoils area soils, will occur only during the months of May through September, when the average daily maximum temperature reaches at least 70° F (21° C).

The HHRA assumes that individuals of all ages may contact the nearshore surface sediments of Onondaga Lake, and risk estimates are provided for adults, older children, and young children contacting lake sediments. The HHRA assumes a CT exposure frequency of 32 days/year and a RME frequency of 44 days/year for contact with surface sediment in the northern part of the lake, both based on professional judgment. The average of 32 days would approximate two visits per week during the three summer months (i.e., June, July, and August) and one visit per week during one spring and one fall month (i.e., May and September). The upper-bound value of 44 days approximates three visits per week during the three summer months and one visit per week during the two months in spring and fall. These values (32 days CT and 44 days RME) are applicable to the northern basin lake sediments, the two northern wetlands (Wetlands SYW-6 and SYW-10), and the dredge spoils area (which is located adjacent to Wetland SYW-10 and has similar accessibility characteristics; see Figure 4-2). However, as these exposure estimates are assumptions based on professional judgment, the potential for higher frequency of exposure to these areas is assessed in Chapter 7, Uncertainty Assessment, as an avid recreator scenario.

In the southern part of the lake there are no public parks and, like the northern part of the lake, there are no beaches. Access to the southern part of the lake is restricted by freeways, industrial sites, the Metro plant, and heavy undergrowth (see Figure 4-4). For these reasons, visits to the southern part of the lake are expected to be less frequent than those to the northern part of the lake. The HHRA assumes, for the CT scenario, an average of one visit per month to the southern end of the lake for the three summer months and one spring and one fall month, for a total of five visits per year. For the RME scenario, the HHRA assumes one visit per week for the three summer months and one visit per month for two additional months in spring and fall, for a total of 14 visits per year. These values (five days CT and 14 days RME) are applicable to the southern basin lake sediments and the two southern wetlands, Wetlands SYW-12 and SYW-19.

Based on USEPA (1991b), for the RME case, the HHRA assumes that adults might visit the area over a period of 30 years, while the CT exposure scenario assumes that both adults and older children may visit the lake and associated areas for a shorter period of nine years. Both RME and CT estimates of exposure duration for young children and older children are limited by the age range evaluated (i.e., six years for young children and 12 years for older children [ages 6 to under 18]). Children are assumed to visit the lake as frequently as adults, but have a somewhat higher dose due to their lower body weight (i.e., 15 kg

average for children under 6, and 43 kg average for ages 6 to under 18, in comparison to 70 kg average for adults).

4.3.2.2 Construction Worker Scenario

For the construction worker scenario, workers were assumed to contact soils or sediments for 25 days/year in the RME or 10 days/year in the CT scenario over a two-year construction period, based on the assumption that construction in the area considered (lake, wetlands, or dredge spoils) is likely to consist of smaller projects, such as sewer line or extraction trench installation, rather than a large, lengthier project such as construction of warehouses, factories, or residential units. The worker's body weight is assumed to be 70 kg. Large projects were considered unlikely due to the characteristics of the exposure areas (e.g., wetlands) and foreseeable potential development of the lakeshore area, which focuses on paths, trails, and relatively small park facilities. However, it is not impossible that a larger project such as a marina could be undertaken in areas covered by this HHRA; therefore, potential risks associated with a project of longer duration are discussed in Chapter 7, Uncertainty Assessment.

4.3.3 Incidental Ingestion of Sediments and Soils

RAGS Tables 4.4 through 4.27 (Appendix B) present the exposure factors and algorithms for ingestion of nearshore lake surface sediments, and for wetlands surface sediments and dredge spoil surface and subsurface soils. Potential recreational receptor populations include adults, young children (up to six years old), and older children (6 to less than 18 years old) for lake surface sediments, and adults and older children for surface sediments in wetlands and surface soils in the dredge spoils areas. The construction worker scenario is also evaluated for contact with lake surface sediments, wetland surface sediments, and surface and subsurface soils in the dredge spoils area. The exposure evaluated for these media represents the incidental ingestion of sediments or soils as a result of direct contact with sediments or soils on the hands, followed by hand-to-mouth activity (either inadvertent or associated with eating or smoking).

No data exist in the literature that are specifically applicable to sediment ingestion rates. USEPA default values for ingestion of soils were assumed to represent ingestion rates of sediments from Onondaga Lake and the associated areas considered here (i.e., 100 percent of total daily soil ingestion is attributed to ingestion of sediments evaluated in this HHRA).

The Exposure Factors Handbook (USEPA, 1997a) identifies mean and upper-bound soil ingestion rates for young children of 100 and 400 mg/day, respectively. However, USEPA indicates that the 400 mg/day intake rate is based on short-term exposure and may not be appropriate for evaluating chronic exposure. Therefore, the 200 mg/day intake rate for young children identified in previous USEPA guidance (USEPA, 1991b) and discussed in USEPA (1997a) is used in the RME scenario, and 100 mg/day is used in the CT scenario for young children.

The Exposure Factors Handbook (USEPA, 1997a) does not provide a recommendation for an upper-bound value for soil ingestion by adults and older children. However, previous USEPA guidance

(USEPA, 1991b) identified 100 mg/day as an upper-bound intake rate. Therefore, this value was used as the intake rate for older children and adults in the RME scenario. Consistent with USEPA guidance, the mean value for adults of 50 mg/day was used in the CT recreational scenario for adults and older children (USEPA, 1997a).

A value of 330 mg/day is used for the sediment/soil ingestion rate for construction workers for both RME and CT exposures, as presented in recent soil screening guidance (USEPA, 2001c). This value represents USEPA's recent reassessment of the 480 mg/day ingestion rate (based on Hawley, 1985, as cited in USEPA, 1997a), which had been used previously (e.g., for the LCP Bridge Street site HHRA [NYSDEC/TAMS, 1998a]) for the construction worker ingestion rate.

4.4 Dermal Contact with Surface Sediments and Soils

Dermal exposure and risk calculations are based on the most recent USEPA guidance; i.e., Risk Assessment Guidance for Superfund, Volume I, Part E – Supplemental Guidance for Dermal Risk Assessment (USEPA, 2001a). The exposure assumptions and algorithms for dermal contact with sediments and soils are presented in RAGS Tables 4.4 through 4.27 (Appendix B). Dermal exposure was expressed as an absorbed dose by incorporating a contaminant-specific dermal absorption factor into the exposure equation. Dermal absorption factors reflect the desorption of the contaminant from soil and the absorption of the contaminant across the skin and into the bloodstream (USEPA, 1997a). The dermal absorption factors used in the HHRA are presented in Table 4-1.

Dermal exposures result in an estimate of absorbed dose, not the amount of contaminant that comes in contact with the skin (i.e., intake). Because oral toxicity values (i.e., carcinogenic slope factors and reference doses [CSFs and RfDs]) are usually expressed as intakes, they must be adjusted with oral absorption factors to obtain reference toxicity values expressed as an absorbed dose. In accordance with RAGS Part E, this adjustment is performed only when the oral absorption efficiency is less than 50 percent. No adjustment to the absorbed dose is made for chemicals for which the absorption efficiency is 50 to 100 percent. To calculate an adjusted toxicity value, a CSF is divided by the oral absorption factor, and an RfD is multiplied by the oral absorption factor (USEPA, 1989). Table 4-1 of this HHRA provides the oral absorption factors used for relevant COPCs in this HHRA; adjusted toxicity values are shown in the risk characterization tables presented in Appendix B.

4.4.1 Skin Surface Area Available for Contact

The skin surface area available for contact (referred to as surface area, or SA) reflects the amount of skin exposed to a contaminant in the exposure scenario. For outdoor sediment/soil exposure, USEPA dermal guidance recommends using 5,700 cm^2 for adults, 5,400 cm^2 for older children, and 2,800 cm^2 for young children for residential scenarios (USEPA, 2001a); these skin surface areas will be used for evaluation of recreational exposure in this HHRA. In accordance with USEPA recommendations, the same skin surface area is used for both the RME and CT scenarios.

As the construction of factories or commercial establishments is not anticipated in the areas covered by this HHRA, the USEPA default SA for commercial/industrial workers is not used, and so the adult SA value of 5,700 cm^2 (the same as the recreational scenario) was used for construction worker dermal exposure to sediments/soils.

4.4.2 Soil-to-Skin Adherence Factors

The soil-to-skin adherence factor (AF) refers to the amount of soil that remains deposited on the skin after contact. Adherence factors vary by soil type (e.g., moisture content, particle size), by the body part coming in contact with the soil, and by the activity being conducted while in contact with the soil. Although USEPA (1997a) reports that AFs for sediments are likely to be less than for soils because contact with water may wash the sediment off the skin, effects of particle size and washing are not specifically addressed in the following soil-to-skin AFs.

Based on data presented in USEPA's dermal guidance (USEPA, 1999) that was in effect at the time of the review of the draft Onondaga Lake HHRA and based on discussions among NYSDEC, USEPA Region 2 staff, and Honeywell, consensus AFs for adults of 0.15 mg/cm^2 for CT and 0.3 mg/cm^2 for RME were developed. While these values are slightly different than the current values presented in RAGS Part E as defaults (Exhibit C-3), the AFs used in this HHRA are consistent with the underlying studies cited in RAGS Part E (Exhibit C-2).

Considering data for children playing in wet soil (USEPA, 1999), consensus AFs of 0.2 mg/cm^2 for CT and 2.7 mg/cm^2 for RME were developed for young and older children for the recreational scenario, based on discussions among NYSDEC, USEPA Region 2 staff, and Honeywell. USEPA does not provide any specific guidance (default) AF values for the recreational scenario.

For the construction worker scenario, the AFs for utility workers of 0.9 mg/cm^2, which was the 95th percentile AF, was used for the RME scenario, and 0.2 mg/cm^2, which was the geometric mean AF (USEPA, 2001a; Exhibit 3-3), was used for the CT scenario. As both of these factors were based on data from utility workers, they are considered to be a reasonable representation of data for the type of construction that could occur in the lake, wetlands, or dredge spoils area.

4.5 Incidental Ingestion of Surface Water

RAGS Tables 4.28 through 4.31 present the exposure assumptions and algorithm for incidental ingestion of surface water while swimming or wading in Onondaga Lake (i.e., recreational exposure), or incidental ingestion of surface water while working in the lake (i.e., construction exposure). RAGS (Section 6.6.1 of USEPA, 1989) recommends a value of 50 mL/hour as the amount of water ingested while swimming, which was used to assess ingestion of lake water in the HHRA. Although visitors to the lake may not swim on every visit to the lake, exposure to surface water may also occur during other recreational activities such as water skiing. In addition, since recreational users who are boating in the lake can access surface waters in both the northern and southern portions of the lake, the exposure frequency for surface waters will be

the same in both the northern and southern portions of the lake. Therefore, the exposure frequency for swimming in the lake was assumed to be the same as exposure to northern basin sediments; i.e., 32 days (CT scenario) and 44 days (RME scenario).

The exposure time (event duration) for swimming is assumed to be 2.6 hours for the RME (based on the value presented in Exhibit 6-13 of RAGS Part A [USEPA, 1989]) and one hour for the CT (based on the Exposure Factors Handbook, Table 15-176 [USEPA, 1997a]).

For the construction worker scenario, the worker is assumed to ingest one-quarter the incidental ingestion amount of surface water (i.e., 12 mL/hr) as adults in the recreational scenario (i.e., 50 mL/hr). The exposure time is assumed to be one hour for the RME and one-half hour for the CT, based on professional judgment. Other exposure frequencies and durations for the construction worker are as described above for the recreational scenario.

4.6 Dermal Contact with Surface Water

RAGS Tables 4.28 through 4.31 (Appendix B) present the exposure assumptions and algorithm for calculating the absorbed dose from dermal contact with surface water in the lake. The risk assessment assumes that young children, older children, and adults may swim in Onondaga Lake, fully immersing their bodies. In accordance with RAGS Part E, the 50th percentile skin surface area is used for both the RME and CT exposure assessment. The total body surface areas used for the HHRA are 18,000 cm^2 for adults, 13,000 cm^2 for older children (age 6 to under 18), and 6,600 cm^2 for young children (up to six years old). As discussed in Section 4.4.1, the SA for the construction worker used in this HHRA is 5,700 cm^2.

The permeability constant reflects the rate of movement of the contaminant across the skin. Permeability constants for all the COPCs in surface water were taken from Exhibit B-2 of RAGS Part E (USEPA, 2001a) and are shown in Table 4-1 herein. For inorganic COPCs without experimentally measured permeability constants, the USEPA-recommended default value of 0.001 cm/hour was used. All other exposure assumptions are the same as discussed above for ingestion of surface water.

4.7 Exposure Point Concentrations

The EPC, or the concentration term in the exposure equation, is meant to reflect a representative concentration at the exposure point or points over the exposure period (USEPA, 1989). In evaluating the RME scenario, USEPA guidance specifies the use of the 95 percent upper confidence limit (UCL) on the mean concentration. (USEPA considers the 95 percent UCL to be the best estimate of the average concentration. As the number of data points increases, the 95 percent UCL approaches the arithmetic mean.) In most situations, assuming long-term contact with the maximum concentration in any exposure medium is not reasonable. USEPA's RAGS states that, although the average concentration (estimated by the 95 percent UCL) does not reflect the maximum concentration that could be contacted at any one time, it is regarded as a reasonable estimate of the concentration likely to be contacted over time (USEPA, 1989). It does not, however, represent a worst case or maximum possible exposure.

4.7.1 Sample Data Used for Calculation of Exposure Point Concentrations in Fish

Exposure to COPCs in fish tissue (fish tissue EPCs) was evaluated using data on measured concentrations in fillet samples from all fish of legal size from Onondaga Lake based on data collected from 1992 to 2000. As previously noted, fish species evaluated in the risk assessment include bluegill, carp, channel catfish, largemouth bass (*Micropterus salmoides*), northern pike, smallmouth bass (*Micropterus dolomieui*), walleye, and white perch (*Morone americana*). Although most species evaluated in the assessment have no minimum size limit identified by New York State, only fillets from fish approximately 6 inches long or larger were included in the risk assessment. Because concentrations of contaminants which tend to bioaccumulate (e.g., PCBs) tend to increase with fish size (i.e., in older fish), this provides a conservative means to evaluate risks for anglers who may consume smaller fish. The species evaluated, the legal size limits, and the minimum size included in the risk assessment are as follows:

Species	New York State Minimum Limit (inches)	Minimum Size in Risk Assessment (inches [cm])
Bluegill	No size limit	5.9 (15.1)
Carp	No size limit	18.0 (45.6)
Channel catfish	No size limit	14.2 (36.1)
Largemouth bass	12	11.6 (29.4)
Northern pike	No size limit	35.5 (90.2)
Smallmouth bass	12	11.5 (29.3)
Walleye	15	16.3 (41.3)
White perch	No size limit	6.3 (16.0)

A summary of the fish fillet data used in this HHRA was presented previously (see Chapter 3, Table 3-2). Detailed tables presenting all Honeywell and NYSDEC fish data used in the risk assessment are provided in Appendix A.

4.7.2 Exposure Point Concentration Calculations in Fish – Special Considerations for Mercury and Arsenic

The toxicity of two COPCs in fish tissue, mercury and arsenic, is affected by the specific contaminant form present in fish tissue.

4.7.2.1 Mercury

As noted previously, the predominant form of mercury in fish tissue is organic (methylmercury), and all mercury data in fish are considered to be methylmercury for risk assessment purposes. A more complete discussion of the form and toxicity of mercury in fish tissue is presented in Chapter 5, Toxicity Assessment

and Chapter 7, Uncertainty Assessment. Mercury in other media, such as sediment and water, is assumed to be predominantly in the inorganic form for this risk assessment (this is further discussed in Chapter 5, Section 5.2.1.12 and Chapter 7, Section 7.5.3.1).

4.7.2.2 Arsenic

The toxicity of arsenic varies significantly depending on whether it is in the organic or inorganic form. Based on the review of data on arsenic speciation in fish samples from two freshwater rivers in the northwest (Wilamette and Columbia Rivers) and discussions with environmental officials in this area (from USEPA Region 10, Oregon Health Division and the Washington Department of Health), it has been assumed for this HHRA that 10 percent of the total arsenic found in Onondaga Lake fish samples is in the more toxic inorganic form. The remainder of the arsenic in fish is assumed to be in the form of relatively non-toxic organic compounds such as arsenobetain. Further discussion of this issue, including presentation of the data used to support the assumption used for this HHRA, is provided in Chapter 5, Toxicity Assessment and Section 7.5.3.2 of Chapter 7, Uncertainty Assessment.

4.7.3 Determination of Data Distribution Type

In order to utilize the appropriate equations for calculating the 95 percent UCL (USEPA, 1992a), the type of distribution of the data (normal or lognormal distribution) must be determined. Therefore, as part of data analyses conducted during the HHRA, data distributions in each affected environmental medium were evaluated and distributions of each data set in each medium were determined. In accordance with guidance from NYSDEC and USEPA Region 2 (NYSDEC and NYSDOL, 2000) and USEPA RAGS guidance (USEPA, 1992a), where data sets had fewer than ten samples, UCLs were not calculated and the maximum concentration was used as the EPC for both the RME and CT scenarios. Where data sets were larger than or equal to ten samples, the data distributions were statistically tested for normality or lognormality using the Shapiro-Wilks (for data sets of less than 50) or the D'Agostino (for data sets of 50 or more) tests. (Specific statistical tests were obtained from Gilbert, 1987, consistent with the guidance in USEPA, 1989 [RAGS Part A] and USEPA, 1992a.) Data sets were identified as best fitting either a normal or lognormal distribution (the higher W-statistic for data sets with $n<50$, and the Y-statistic for data sets closer to zero for $n>50$); all data sets were assigned to one of these two distribution types.

Although all data were assigned to either a normal or lognormal distribution in order to utilize the UCL calculation equations (USEPA, 1992a), not all data sets fit neatly into one of these two categories. For these non-parametric data sets, USEPA has developed a software program called ProUCL (version 2.1 was available as this HHRA was written) that first screens (tests) the data set for the data distribution type, and then calculates the UCL using a variety of approaches (USEPA, 2002c). The UCL calculations for normal and lognormal distributions are the same as those in the RAGS guidance, but several non-parametric calculations are performed that can be utilized for the 95 percent UCL where data sets are neither normally nor lognormally distributed.

The issue of the assignment of data distribution type and the effect of alternate procedures for calculation of the 95 percent UCL or other appropriate statistical estimates of the upper bound of the mean concentration are discussed in greater detail in Section 7.2.2 of Chapter 7, Uncertainty Assessment and in Appendix D.

4.7.4 Calculation of Exposure Point Concentrations

RAGS (USEPA 1989) recommends use of the 95 percent UCL of the arithmetic mean concentration to estimate the EPCs for all RME and CT scenarios because USEPA considered it to be the best estimate of the mean. More recently, USEPA has developed additional statistical tools (ProUCL) which include other estimates of the mean, which may include the 97.5 or 99 percent UCL (or some other estimate), depending on the specific characteristics of the data set. As noted above, for this HHRA, the EPC estimates were based on the 95 percent UCL; the potential effect of using (or not using) alternate statistical methods such as those included in the ProUCL software is discussed in Chapter 7, Section 7.2.2 and Appendix D.

For data sets assigned to a lognormal distribution and in accordance with supplemental guidance to RAGS (USEPA, 1992a), the UCL on the mean concentration was calculated using Land's H-statistic as follows:

$$UCL = \exp\left(\bar{y} + \frac{S_y^2}{2} + \frac{S_y \times H}{\sqrt{n-1}}\right)$$

where:

n	=	number of observations.
H	=	H-statistic for a given confidence level, n, and S_y (interpolated from statistics lookup tables in Gilbert, 1987).
exp	=	exponential function.
$\bar{y}$	=	average of the log-transformed data (y = ln[x]).
S_y	=	standard deviation of the log-transformed data.

For normally distributed data sets, the UCL on the mean concentration is calculated using the appropriate equation from the RAGS guidance (USEPA, 1992a):

$$UCL = \bar{X} + t * \frac{s}{\sqrt{n}}$$

where:

$\bar{X}$	=	arithmetic mean of the (untransformed) sample data set for the compound of concern.

s	=	sample standard deviation of the (untransformed) sample data set for the compound of concern.
t	=	the Student's t-statistic for the 95 percent confidence interval for a one-tailed distribution (taken from Gilbert, 1987). The t-statistic is a function of the number of samples collected.
n	=	number of samples in the data set.

The use of the 95 percent UCL of the mean concentration is defined as a value that, when calculated repeatedly for randomly drawn subsets of site data, equals or exceeds the true mean 95 percent of the time. Although the 95 percent UCL of the mean provides a conservative estimate of the true mean, it should not be confused with the 95th percentile of site concentration data (USEPA, 1992a). The 95 percent UCL becomes a less conservative estimate with larger data sets, for which the 95 percent UCL on the mean and the arithmetic average tend to converge. For example, for mercury in fish where there are a large number of data points, the 95 percent UCL is 1.08 mg/kg, and the arithmetic average is 1.05 mg/kg (see Appendix B, RAGS Table 3.1).

The results of the calculation of the EPCs used in the HHRA are presented in Appendix B (RAGS Tables 3.1 through 3.10) for each of the ten exposure points (i.e., fish fillets; northern basin lake sediments; southern basin lake sediments; Wetlands SYW-6, SYW-10, SYW-12, and SYW-19; surface soils from the dredge spoils area; subsurface soils from the dredge spoils area; and lake surface water).

In summary, consistent with guidance from NYSDEC and USEPA Region 2 (NYSDEC and NYSDOL, 2000), the EPC applied for both the RME and CT estimates was the lower of either the maximum value or the UCL value calculated for data sets with more than ten samples. For samples in which a COPC was not detected, a numerical value of one-half the quantitation limit was used in calculations of the average and the 95 percent UCL. In some samples, however, the quantitation limit was unusually high, with the result that one-half the quantitation limit exceeded many, if not all, of the detected values for a particular COPC. In such cases, consistent with USEPA guidance (1989), these high quantitation limits were not used; that is, the data point was excluded for that analyte and the number of samples ("n") was reduced accordingly. Similarly, consistent with USEPA guidance, where the 95 percent UCL on the mean exceeded the maximum value, the maximum value was used in the RME and CT calculations.

As noted in Section 4.7.3 above and discussed in greater detail in Appendix D, some (three of 18) chemical-specific EPC calculations generated from the ProUCL software differed by more than 50 percent from the EPC values used in this HHRA, which were calculated as described in this section. However, as the difference in the EPCs for these chemicals did not significantly change the resultant risk and hazard estimates, the ProUCL software was not used to recalculate all the EPCs.

4.7.5 Calculation of Length-Weighted Averages for Sediment Samples

As noted in Chapter 3, Section 3.2 and in Section 4.2.2, a length-weighted average (LWA) was generated as an intermediate step prior to calculating the EPCs for sediment samples from which multiple (two or

three) depth intervals were analyzed at a given location. This was done to generate a single concentration assumed to be representative of the contaminant concentration for the entire sample (core length) used in the HHRA, which was the upper 30 cm (maximum; not all samples used extended to this depth) at each location. The LWA is different than a straight arithmetic average of the data for a given location in that the LWA apportions (weighs) the concentration more heavily to the larger sample intervals, and less so to the shorter sample intervals.

For example, in a sediment sample location (core) with three sample intervals consisting of 0 to 2, 2 to 15, and 15 to 30 cm, the 0 to 2 cm concentration accounts for 2/30 (0.067) of the LWA; the 2 to 15 cm concentration accounts for 13/30 (0.433) of the LWA; and the 15 to 30 cm concentration accounts for 15/30 (0.500) of the LWA. This calculation assumes a homogenous distribution of contamination throughout each sample interval, and is consistent with how contamination is evaluated in other media. An example of this calculation, using the mercury data from southern basin sediment Station S325 (see Appendix A, Table A-3A), is shown below.

Sample Interval	Fraction of Total	Mercury Concentration	Weighted Concentration
0-2 cm	2/30 (0.067)	0.072 mg/kg	0.0048 mg/kg [0.072 × 0.067]
2-15 cm	13/30 (0.433)	0.17 mg/kg	0.0737 mg/kg [0.17 × 0.433]
15-30 cm	15/30 (0.500)	0.24 mg/kg	0.12 mg/kg [0.24 × 0.500]
Total (0-30 cm)	30/30 (1.0)	–	0.198 mg/kg [0.0048 + 0.0737 + 0.12]

Therefore, the LWA for Station S325 is 0.198 mg/kg.

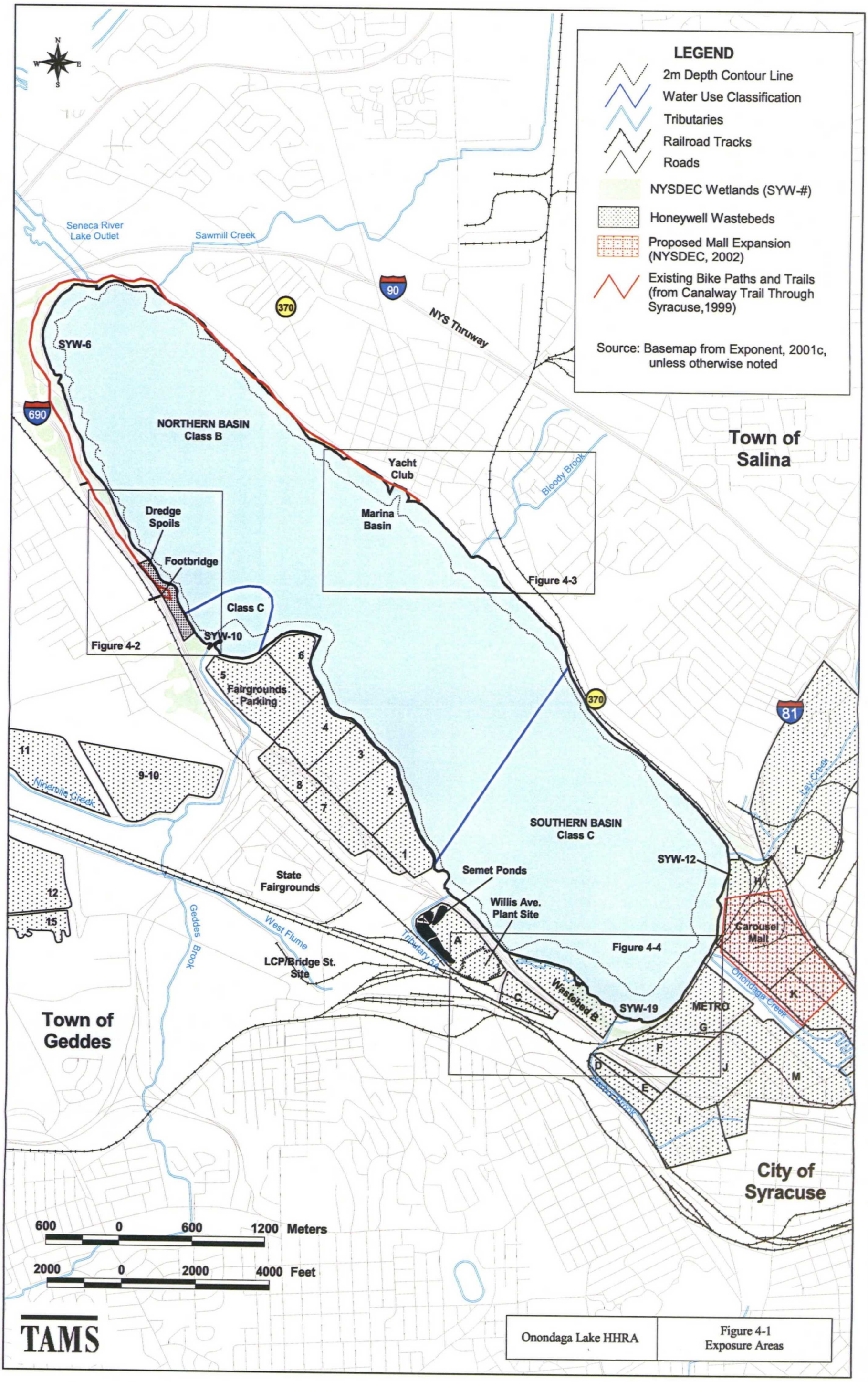
For many sample locations there are only two data points. For many of these, the lengths of the sample intervals are identical – e.g., the two samples are both 15 cm (0 to 15 and 15 to 30 cm intervals); for these samples, the LWA is identical to the arithmetic average of the two concentrations. At a few stations, the two intervals are not identical; for example, at southern basin Station S402, the two intervals were 0 to 2 and 2 to 10 cm. As the total depth of that core was 10 cm, the 0 to 2 cm interval sample weighting factor is 2/10 (0.2), and the 2 to 10 cm sample interval weighting factor is 8/10 (0.8).

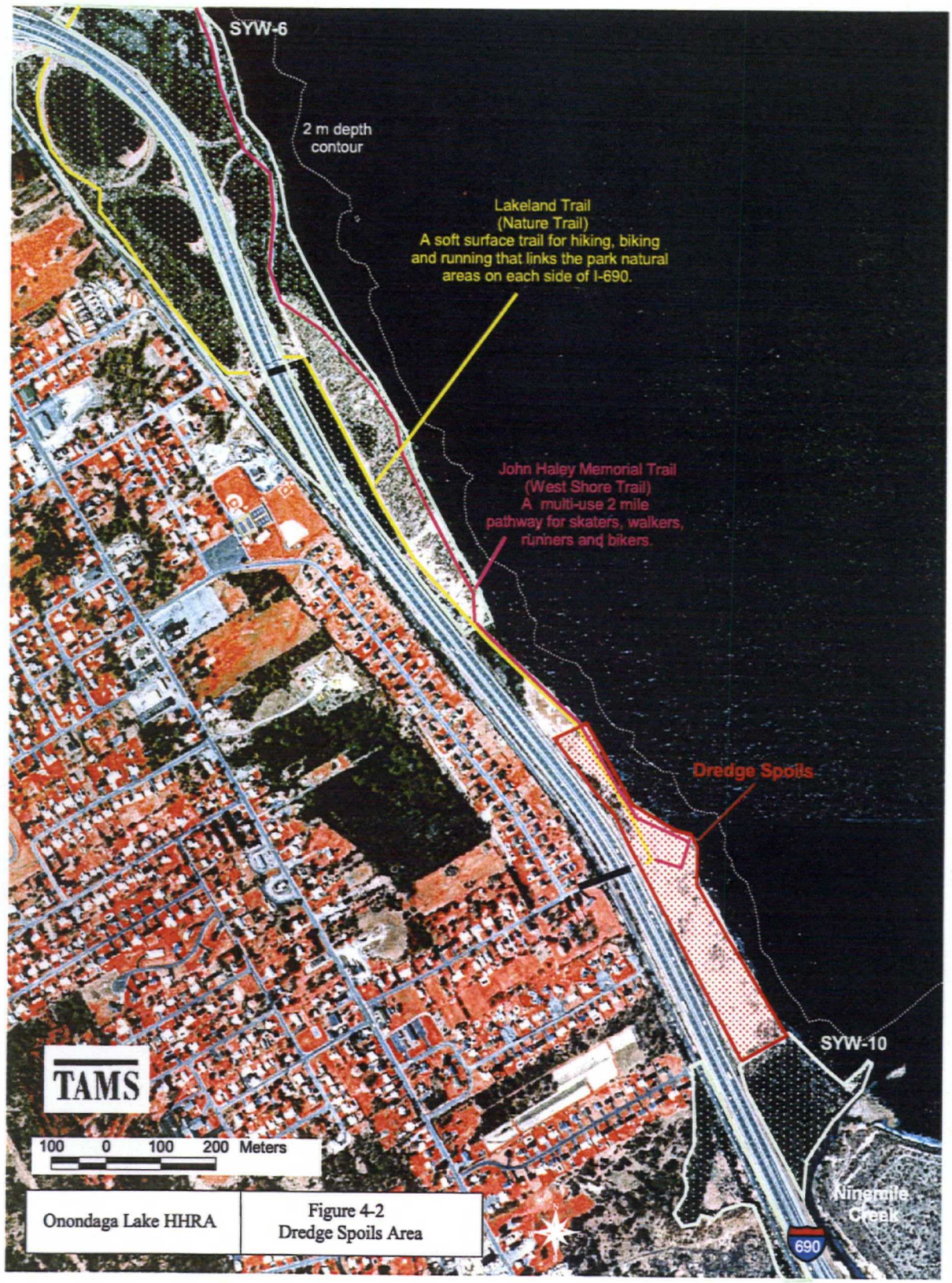
4.8 Summary of Exposure Assessment

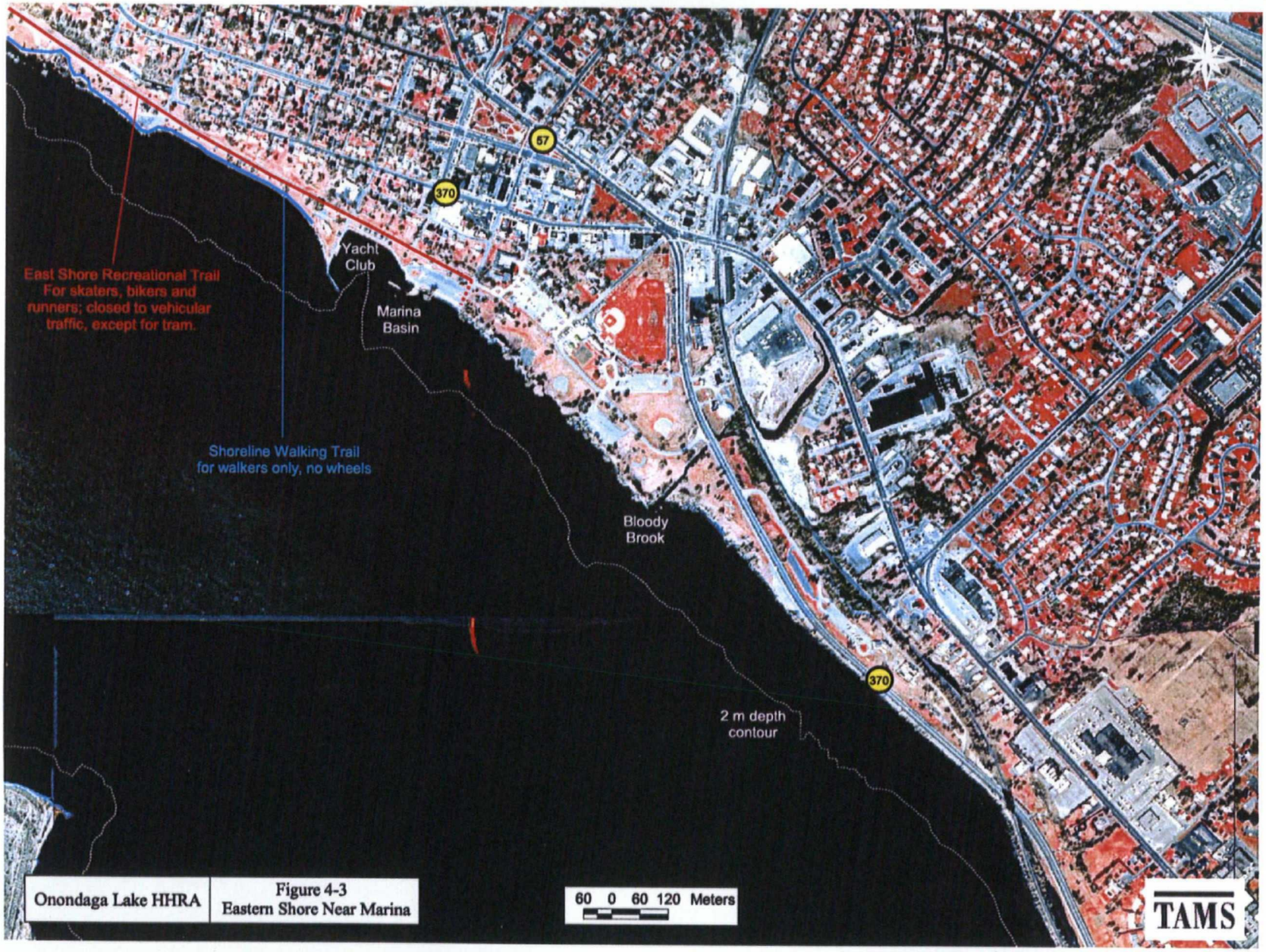
The values used in the exposure assessment are provided in RAGS Tables 4.1 through 4.31 (Appendix B). The results of the exposure assessment for each potential future exposure pathway (estimates of EPCs and CDIs) are provided in the risk characterization in Appendix B, RAGS Tables 7 and 8. The CDIs calculated in this exposure assessment were combined with COPC-specific toxicity values (described in Chapter 5 and Appendix B, RAGS Tables 5 and 6) to characterize potential risks.

Several sources of uncertainty affect the estimates of exposure and, consequently, the final estimates of potential risk. All exposure assessments have uncertainties associated with the sampling and analytical data

(e.g., how well the data represent actual site conditions) and the exposure assumptions (e.g., how well the assumptions reflect actual exposure conditions). Because of these uncertainties, COPC intakes calculated for the RME scenario used reasonable conservative intake variables so that potential exposure is not underestimated. A more detailed discussion of uncertainties associated with this exposure assessment is presented in Chapter 7, Uncertainty Assessment.


LEGEND
2m Depth Contour Line
Water Use Classification
Tributaries
Railroad Tracks
Roads
NYSDEC Wetlands (SYW-#)
Honeywell Wastebeds
Proposed Mall Expansion (NYSDEC, 2002)
Existing Bike Paths and Trails (from Canalway Trail Through Syracuse,1999)
Source: Basemap from Exponent, 2001c, unless otherwise noted
N
W
E
S
Seneca River Lake Outlet
Sawmill Creek
90
NYS Thruway
370
690
SYW-6
NORTHERN BASIN
Class B
Yacht Club
Marina Basin
Bloody Brook
Town of Salina
Figure 4-3
Dredge Spoils
Footbridge
Class C
SYW-10
Figure 4-2
5
6
Fairgrounds Parking
4
3
2
1
8
7
11
9-10
Ninemile Creek
SOUTHERN BASIN
Class C
SYW-12
Semet Ponds
Willis Ave. Plant Site
State Fairgrounds
12
15
Geddes Brook
West Flume
Tributary 5A
LCP/Bridge St. Site
A
Figure 4-4
Carousel Mall
Onondaga Creek
Ley Creek
81
C
Wastebed B
SYW-19
METRO
G
F
J
K
M
D
E
I
Harbor Brook
Town of Geddes
City of Syracuse
600 0 600 1200 Meters
2000 0 2000 4000 Feet
TAMS
Onondaga Lake HHRA
Figure 4-1
Exposure Areas


SYW-6
2 m depth contour
Lakeland Trail
(Nature Trail)
A soft surface trail for hiking, biking and running that links the park natural areas on each side of I-690.
John Haley Memorial Trail
(West Shore Trail)
A multi-use 2 mile pathway for skaters, walkers, runners and bikers.
Dredge Spoils
SYW-10
Ninemile Creek
690
TAMS
100 0 100 200 Meters
Onondaga Lake HHRA
Figure 4-2
Dredge Spoils Area



Onondaga Lake HHRA

Figure 4-3
Eastern Shore Near Marina

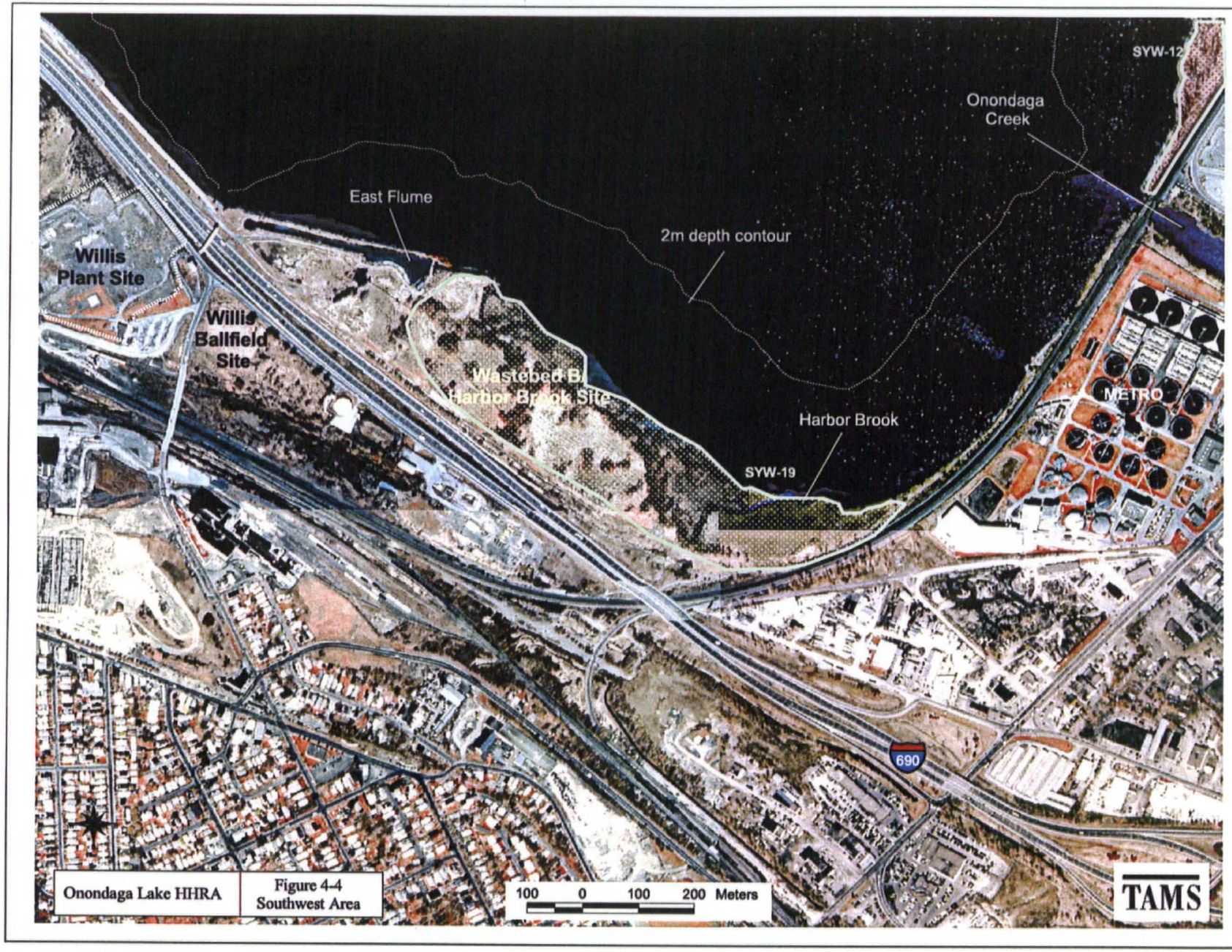

SYW-12
Onondaga Creek
East Flume
2m depth contour
Willis Plant Site
Willis Ballfield Site
Wastebed B/ Harbor Brook Site
METRO
Harbor Brook
SYW-19
690
Onondaga Lake HHRA
Figure 4-4 Southwest Area
100 0 100 200 Meters
TAMS

Table 4-1. Summary of Factors Used to Assess Dermal Exposures via Soil/Sediment and Surface Water

Contaminant of Potential Concern	Dermal Absorption Fraction from Soil (DAF; ABS_D)[a] (unitless)	Dermal to Oral Ratio (USEPA, 2001; Exhibit B-3) Ratio	Assess?	Oral to Dermal Adjustment Factor (USEPA, 2001; Exhibit 4-1)[b] (ABS_{GI}; unitless) Value	Adjust?	Dermal Permeability Constants (USEPA, 2001; Exhibits B-3 & B-4)[b] (K_p; cm/hour)
Inorganic Compounds						
Aluminum	–	–	(No)	–	No *	0.001
Antimony	–	0.035	No	0.15	Yes	0.001
Arsenic	0.03	0.0055	No	0.95	No	0.001
Barium	–	0.075	No	0.07	Yes	0.001
Cadmium	0.001	0.21	Yes	0.025	Yes	0.001
Chromium (as Chromium VI)	–	0.42	Yes	0.025	Yes	0.002
Copper	–	0.0092	No	–	No *	0.001
Cyanide	–	0.012	No	–	No *	–
Iron	–	–	(No)	–	No *	0.001
Lead	–	–	(No)	–	No *	0.0001
Manganese	–	0.0875	No	0.04	Yes	0.001
Mercury (total) (as $HgCl_2$ or soluble salt)	–	0.075	No	0.07	Yes	0.001
Methylmercury	– (ingestion only)	– (no dermal pathway)		– (no dermal pathway)		– (no dermal pathway)
Nickel	–	0.0262	No	0.04	Yes	0.0002
Thallium	–	0.0052	No	1.00	No	0.001
Vanadium	–	0.202	Yes	0.026	Yes	0.001
Volatile Organic Compounds (VOCs)						
Benzene	–	0.15	Yes	> 0.5	No **	0.015
Bromodichloromethane	–	0.08	No	> 0.5	No **	0.0046
Chloroform	–	0.09	No	> 0.5	No **	0.0068
Chlorobenzene	–	0.36	Yes	> 0.5	No **	0.028
Methylene chloride	–	0.04	No	> 0.5	No **	0.0035
Xylene isomers (total)	–	0.65	Yes (m-xyl)	> 0.5	No **	0.053
Semivolatile Organic Compounds (SVOCs)						
Dibenzofuran	0.1	–	Yes	> 0.5	No **	–
1,2-Dichlorobenzene	0.1	0.66	Yes	> 0.5	No **	0.041
1,3-Dichlorobenzene	0.1	0.93	Yes	> 0.5	No **	0.058
1,4-Dichlorobenzene	0.1	0.67	Yes	> 0.5	No **	0.042
Hexachlorobenzene	0.1	4.69	Yes	> 0.5	No **	0.13
1,2,4-Trichlorobenzene	0.1	1.33	Yes	> 0.5	No **	0.066
Polycyclic Aromatic Hydrocarbons (PAHs)						
Acenaphthylene (as generic PAH)	0.13	–	Yes	> 0.58	No	–
Benz[a]anthracene	0.13	12.83	Yes	> 0.58	No	0.47
Benzo[a]pyrene	0.13	21.86	Yes	> 0.58	No	0.70
Benzo[b]fluoranthene	0.13	22.21	Yes	> 0.58	No	0.70
Benzo[k]fluoranthene	0.13	–	Yes	> 0.58	No	–
Benzo[g,h,i]perylene	0.13	–	Yes	> 0.58	No	–
Chrysene	0.13	12.83	Yes	> 0.58	No	0.47
Dibenz[a,h]anthracene	0.13	33.88	Yes	> 0.58	No	1.5
Fluoranthene	0.13	5.12	Yes	> 0.58	No	0.22
Indeno[1,2,3-cd]pyrene	0.13	23.07	Yes	> 0.58	No	1.0
2-Methylnaphthalene (as generic PAH)	0.13	–	Yes	> 0.58	No	–
Naphthalene	0.13	0.66	Yes	> 0.58	No	0.047
Phenanthrene	0.13	2.83	Yes	> 0.58	No	0.14
Pesticides						
Aldrin	–	0.09	No	> 0.5	No **	0.0014
Dieldrin	–	0.71	Yes	> 0.5	No **	0.012
Heptachlor epoxide (as heptachlor)	– (ingestion only)	– (no dermal pathway)		– (no dermal pathway)		– (no dermal pathway)
d-BHC (hexachlorocyclohexane)	– (ingestion only)	– (no dermal pathway)		– (no dermal pathway)		– (no dermal pathway)
Polychlorinated Biphenyls (PCBs)						
Aroclor 1221	0.14	18.44	Yes	> 0.8	No	0.75 mono
Aroclor 1242	0.14	18.44	Yes	> 0.8	No	0.75 mono
Aroclor 1248	0.14	13.78	Yes	> 0.8	No	0.43 hexa
Aroclor 1254	0.14	13.78	Yes	> 0.8	No	0.43 hexa
Aroclor 1260	0.14	13.78	Yes	> 0.8	No	0.43 hexa
Aroclor 1268	0.14	13.78	Yes	> 0.8	No	0.43 hexa
PCDD/PCDFs (TEQ; total as 2378-TCDD)	0.03	20.03	Yes	> 0.5	No	0.81

Notes: Chemicals identified as COPCs for fish ingestion only (see HHRA Chapter 3, Table 3-1) are not evaluated for the dermal exposure pathway.
Dermal permeability constants for Aroclors based on monochlorobiphenyl or hexachlorobiphenyl data, as shown.
Consistent with guidance from USEPA (1999a), where data for dermal absorption from soil are not available, dermal exposure is evaluated qualitatively only.
– No data available for these chemicals.
[a] Dermal absorption factors from RAGS Part E, Exhibit 3-4 (USEPA, 2001).
[b] Dermal absorption factors, oral to dermal adjustment factors, and permeability constants from RAGS Part E (USEPA, 2001).
* As per RAGS Part E (Section 4.2) (USEPA, 2001), a 100% ABS value (and no adjustment) is assumed for inorganics without data in Exhibit 4-1.
** Generic assumption for "all other organic compounds" as shown on RAGS Part E, Exhibit 4-1 (USEPA, 2001).

5. TOXICITY ASSESSMENT

The purpose of a toxicity assessment is to evaluate the potential for contaminants of potential concern (COPCs) to cause adverse health effects in exposed persons and to define the relationship between the extent of exposure to a chemical and the likelihood and severity of any adverse health effects. The standard procedure for a toxicity assessment is to identify toxicity values for carcinogenic and non-carcinogenic effects and to summarize other relevant toxicity information. This chapter provides background on methods used to evaluate toxicity that could result following oral or dermal exposure to COPCs. Appendix E provides detailed toxicity profiles on key COPCs in this risk assessment, and Chapter 7, Uncertainty Assessment, includes a discussion of uncertainties related to the toxicity values utilized (or not utilized) for some of the site COPCs, including:

- Arsenic.
- Chromium.
- Manganese.
- Mercury.
- Methylmercury.
- 4,4'-DDD.
- Polychlorinated biphenyls (PCBs).
- Polychlorinated dibenzo-*p*-dioxins and furans (PCDD/PCDFs).
- Polycyclic aromatic hydrocarbons (PAHs).

5.1 Derivation of Toxicity Values

The derivation of the USEPA toxicity values for the oral and dermal routes are discussed below. As the inhalation pathway is not complete at the Onondaga Lake site (see Chapter 4, Section 4.2.5 and Appendix B, RAGS Table 1), toxicity values for inhalation are not discussed.

5.1.1 USEPA-Derived Oral Toxicity Values

USEPA-derived toxicity values used in risk assessments are termed carcinogenic slope factors (CSFs) and reference doses (RfDs). Carcinogenic slope factors are used to estimate the incremental lifetime risk of developing cancer, corresponding to the chronic daily intakes (CDIs) calculated in the exposure assessment. The potential for non-carcinogenic health effects is typically evaluated by comparing estimated daily intakes with RfDs, which represent daily intakes at which no adverse effects are expected to occur over a lifetime of exposure, including exposure to sensitive subpopulations. Both CSFs and RfDs are specific to the route of exposure (e.g., by ingestion, or oral exposure). Currently, there are no CSFs or RfDs specifically for dermal exposure; therefore, oral absorption factors were used to adjust oral CSFs and RfDs to assess dermal exposure, as described in Section 5.1.2.

As indicated in RAGS (USEPA, 1989a), the primary source for toxicity values is USEPA's Integrated Risk Information System (IRIS). The IRIS database contains USEPA-verified toxicity values, in addition to

up-to-date health risk and USEPA regulatory information for many contaminants commonly detected at hazardous waste sites. USEPA extensively reviews and verifies CSFs and RfDs derived for risk assessment and, once verified and posted in IRIS, these CSFs and RfDs represent agency consensus.

USEPA's Health Effects Assessment Summary Tables (HEAST) (USEPA, 1997b), also provide USEPA-derived toxicity values that may or may not be verified at the time of publication. However, very few of the quantitative toxicological data for this HHRA were obtained from HEAST (see the COPC-specific discussion below).

Additional criteria were obtained through USEPA's National Center for Environmental Assessment (NCEA), either directly or as cited in either the USEPA Region 3 Risk-Based Criteria (RBC) tables or USEPA Region 9 Preliminary Remediation Goals (PRG) tables. Confirmation of these values, as well as additional guidance for toxicity data not available elsewhere, was obtained from NCEA through USEPA Region 2 risk assessment staff. The specific NCEA source of each quantitative toxicity value used is noted in the COPC-specific discussion below, typically as NCEA, 2002a and 2002b. The NCEA documents referenced in these two citations are also available in Appendix E of this HHRA.

The IRIS toxicity profiles, which summarize toxicity information and USEPA's derivation of oral toxicity values for COPCs, are presented for all COPCs addressed in Appendix E. Uncertainties associated with toxicity assessment and with the quantitative toxicity values used in this HHRA are discussed in Chapter 7, Uncertainty Assessment.

Chemical-specific summaries, including identification and discussion of the toxicity values used for Onondaga Lake COPCs, are presented in Section 5.2.

5.1.2 Toxicity Assessment for Dermal Exposure

With the publication of RAGS Part E (USEPA, 2001a), USEPA updated its dermal risk assessment guidance; the guidance in RAGS Part E supersedes the algorithms and parameter values in previous guidance (including both RAGS Part A [USEPA, 1989] and previous dermal guidance documents, such as the Dermal Exposure Assessment: Principles and Applications [USEPA, 1992c]).

RAGS Part E includes dermal absorption fractions from soil (RAGS Exhibit 3-4 [USEPA, 2001a], presented in HHRA Chapter 4, Table 4-1), which are used for calculation of the CDI by the dermal pathway. The current guidance includes a default value for semivolatile organic compounds (SVOCs), but no longer recommends a default dermal absorption fraction for inorganics (metals).

In the absence of dermal toxicity factors, USEPA has developed a procedure for making route-to-route (i.e., oral-to-dermal) extrapolation for systemic effects. This procedure accounts for the fact that oral RfDs and CSFs are generally expressed as the amount of substance administered (per body weight per time unit), while exposure estimates for the dermal route are expressed as an absorbed dose. The procedure uses dose-response relationships from oral administration studies and adjusts for absorption efficiency to

represent the toxicity factor in terms of absorbed dose. Where oral absorption is essentially complete (near 100 percent), the absorbed dose is essentially the same as the administered dose. However, where the gastrointestinal absorption of a particular chemical is low (e.g., 1 percent), the absorbed dose is much smaller than the administered dose, and toxicity factors based on the absorbed dose need to be adjusted to account for the difference between absorbed and administered doses.

In effect, the magnitude of the toxicity factor adjustment is inversely proportional to the absorption fraction in the critical study. As recommended by RAGS Part E (Section 4.2 of USEPA, 2001a), there are two basic criteria for adjusting the oral toxicity factor:

- The toxicity value is based on administered dose (e.g., ingestion [diet] or gavage).
- There are scientifically defensible data showing that the gastrointestinal absorption of the chemical is significantly less than 100 percent (50 percent is used by USEPA as the threshold for this factor).

If both these criteria are not met, then the USEPA guidance suggests that the assumption of complete (100 percent) absorption may be made (i.e., no adjustment to the oral toxicity factor). USEPA also specifically suggests that default assumptions of 100 percent absorption be made for inorganics and organics for which specific values are not available (see RAGS E, Exhibit 4-1 [USEPA, 2001a], summarized in this HHRA in Chapter 4, Table 4-1). Note that the importance of the dermal pathway, relative to ingestion, increases as the gastrointestinal absorbance (ABS_{GI}) value decreases; therefore, the default assumption of 100 percent absorption for chemicals without chemical-specific data may result in an underestimate of risk via the dermal pathway for these chemicals.

A CSF is divided by the oral absorption factor, and an RfD is multiplied by the oral absorption factor to calculate the adjusted toxicity value. The oral absorption values assumed in this HHRA are presented in Chapter 4, Table 4-1; adjusted toxicity values are presented in Appendix B, RAGS Tables 5.1 and 6.1.

5.2 Chemical-Specific Summaries and Toxicity Values for Onondaga Lake Contaminants of Potential Concern

Summary information for all the identified COPCs, as presented in Chapter 3, Table 3-1, for this HHRA is provided below. The summaries are organized in the following parameter groupings:

- Metals and organometallic compounds (Section 5.2.1).
- Volatile organic compounds (VOCs) (Section 5.2.2).
- SVOCs (Section 5.2.3).
- PAHs (Section 5.2.4).
- Pesticides (Section 5.2.5).
- PCBs (Section 5.2.6).
- PCDD/PCDFs (Section 5.2.7).

5.2.1 Metals and Organometallic Compounds

The discussion below provides brief summaries for the metals and organometallic compounds identified as COPCs for this HHRA. The full IRIS summaries and related Agency for Toxic Substances and Disease Registry (ATSDR) and NCEA documents are provided in Appendix E. These metals and organometallic compounds include:

- Aluminum.
- Antimony.
- Arsenic.
- Barium.
- Cadmium.
- Chromium.
- Copper.
- Cyanide.
- Iron.
- Lead.
- Manganese.
- Mercury – General.
- Methylmercury.
- Mercury – Inorganic.
- Nickel.
- Selenium.
- Thallium.
- Vanadium.
- Zinc.

5.2.1.1 Aluminum

Aluminum is an abundant element in the earth's crust, and is a constituent of many commercial drug and cosmetic products (e.g., antacids, buffered aspirin, and anti-perspirants in the form aluminum chlorhydrate). Although low-level exposure to aluminum is not known to be harmful, and aluminum is present at low concentrations in water and many foods, it is not a necessary human nutrient (ATSDR, 1999a,b).

Aluminum was identified as a COPC in soils/sediments. It is not expected to be a significant contaminant in Onondaga Lake surface water. Although there are no data from the 0 to 3 m depth interval, aluminum concentrations in samples from greater depths (6 and 12 m below the lake surface) were below screening criteria. There are no quantitative risk or toxicity factors for aluminum published in IRIS or HEAST. The oral RfD utilized for the Onondaga Lake HHRA, 1 mg/kg-day, is a provisional value from NCEA, as shown on the USEPA Region 3 RBC and Region 9 PRG tables (USEPA, 2002a,b).

5.2.1.2 Antimony

Antimony has been identified as a COPC in both fish tissue and soils/sediments. Although antimony is not expected to be a significant contaminant in surface water, no samples from the 0 to 3 m interval were analyzed. Antimony was detected in two out of four samples from deeper intervals (6 m) at concentrations (about 25 µg/L) exceeding the drinking water screening criterion (Region 3 tap water RBC of 15 µg/L). Antimony is normally present at only very low concentrations in the environment (typically less than 1 mg/kg in soil). It is also present at very low concentrations in foods (about 1 µg/kg or less), with a typical dietary intake of about 5 µg/day (ATSDR, 1992). Antimony is widely used in the production of alloys (including, among many others, pewter and storage battery plates); antimony compounds have a wide variety of uses, including as a flame retardant in textile and plastic products (Sittig, 1991; ATSDR, 1995a).

Generally, the primary exposures to antimony are via skin contact and inhalation of dust and fumes. Oral ingestion may occur, causing headache, nausea, sleeplessness, and dizziness, with liver and kidney degeneration as later manifestations. With some exceptions (antimony trisulfide and antimony pentachloride), antimony compounds are less toxic than antimony (Sittig, 1991). However, the exact form in which antimony occurs at the Onondaga Lake site is unknown.

The oral RfD for antimony published in IRIS is 4×10^{-4} mg/kg-day; due to the limitations of the data on which the RfD is based, confidence in this RfD is considered low (IRIS, 2000a).

5.2.1.3 Arsenic

Arsenic was identified as a COPC in both fish and soils/sediments. Although arsenic is not expected to be a significant contaminant in surface water, no samples from the 0 to 3 m interval were analyzed. Arsenic was detected in one out of four samples from deeper intervals (12 m) at a concentration (1.1 µg/L) just over the detection limit (1 µg/L) and exceeding the Region 3 tap water screening criterion of 0.045 µg/L. Arsenic is a naturally occurring element in the earth's crust and in soil; although natural soil concentrations are usually low, they vary locally. Arsenic compounds have a variety of uses, including agricultural (insecticides, herbicides, larvicides, and pesticides), as a wood preservative, in leather tanning, some specialty paints and enamels, and to prevent sludge formation in lubricating oils (ATSDR, 2001a; Sittig, 1991).

As IRIS publishes a CSF and an oral RfD (IRIS, 2000b), arsenic was evaluated both as a toxic and a carcinogenic chemical. The quantitative data in IRIS are for "Arsenic, inorganic;" however, the specific form of arsenic, especially in fish, is unknown. Organic compounds of arsenic are generally less toxic than inorganic compounds (ATSDR, 2001b).

The oral RfD utilized is 3×10^{-4} mg/kg-day; confidence in this value is described as "medium." The oral CSF is 1.5 $(\text{mg/kg-day})^{-1}$. Arsenic is classified as Group A – known human carcinogen (IRIS, 2000b).

As noted in Chapter 4, Section 4.7.2.2, the toxicity of arsenic varies significantly depending on whether it is in the organic or inorganic form. Some studies suggest that the majority of arsenic (over 90 percent) typically found in fish may be in the less toxic (organic) form. The Oregon Department of Human Services (ODHS), for example, notes that "[m]ost of the arsenic in fish is in the relatively non-toxic form called arsenobetain (fish arsenic)" (ODHS, 2002). Recent data for fish tissue samples that were analyzed for both total arsenic and inorganic arsenic were received from USEPA and reviewed for this HHRA. These data, which are discussed in greater detail in Chapter 7, Section 7.5.3.2, support an estimate of 10 percent as the assumed fraction of arsenic in fish as inorganic arsenic. The arithmetic average of the 42 samples reviewed was 6.4 percent inorganic arsenic, with a 95 percent UCL on the arithmetic mean of 10.7 percent inorganic arsenic. Thus, it has been assumed for this HHRA that 10 percent of the total arsenic found in Onondaga Lake fish samples is in the more toxic inorganic form. The remainder of the arsenic in fish is assumed to be in the form of relatively non-toxic organic compounds such as arsenobetain. The RfD of 3×10^{-4} mg/kg-day is applied to the 10 percent of the arsenic assumed to be inorganic. The organic fraction of the arsenic in fish tissue is assumed to be non-toxic for the purposes of risk quantitation.

5.2.1.4 Barium

Barium was identified as a COPC in northern and southern basin sediments and in Wetland SYW-19 sediments. It is not expected to be a significant contaminant in Onondaga Lake surface water. Although there are no data from the 0 to 3 m depth interval, barium concentrations in samples from greater depths (6 and 12 m below the lake surface) were below screening criteria. Barium is a naturally occurring element in soils, normally in the form of a barium compound, rather than as pure or metallic barium. Barium sulfate is used medically for x-ray testing; other barium compounds are used for the manufacture of some white pigments; chlorine; sodium hydroxide; rubber vulcanizing; papermaking; and in the brick and tile, pyrotechnic, and electronic industries. Barium compounds are present in a wide variety of commercial and household products, including paints, paper, soap, rubber, and linoleum (Sittig, 1991; ATSDR, 1995b).

Toxicological data for barium are present in IRIS ("Barium and Compounds"). The oral RfD is 7×10^{-2} mg/kg-day; confidence in this value is reported as medium (IRIS, 1999).

Barium has also been reviewed for carcinogenicity. Under the 1986 guidelines for carcinogenic risk assessment, barium is classified as Group D – not classifiable as to human carcinogenicity. Under the 1996 guidelines, barium is considered "not likely to be carcinogenic to humans following oral exposure" (IRIS, 1999).

5.2.1.5 Cadmium

Cadmium is a naturally occurring element in soil, typically in the forms of cadmium oxide, cadmium chloride, or cadmium sulfate. Cadmium is corrosion-resistant and is used as a protective coating for metals (e.g., galvanization). It is also used in storage batteries; as a stabilizer in PVC; electronics; and in aircraft and automobile manufacturing. Cadmium compounds are also used as fungicides, insecticides, and nematocides (Sittig, 1991; ATSDR, 1999c).

Although inhalation is typically the primary exposure route for cadmium, long-term ingestion of low concentrations of cadmium leads to accumulation of cadmium in the kidneys and may cause kidney disease (ATSDR, 1999c). Other effects may be lung damage and bone weakness. Adverse effects from skin (dermal) contact with cadmium have not been established.

Cadmium has been identified as a COPC in soil/sediment and in surface water. There are two different oral RfDs for cadmium, depending on the medium of ingestion (IRIS, 1998a). The RfD for "food," 1×10^{-3} mg/kg-day, is used in this HHRA for soil/sediment ingestion; the RfD for "water," 5×10^{-4} mg/kg-day, is used for the surface water ingestion pathway.

Cadmium is classified by USEPA as Group B1 – probable human carcinogen, based on animal data and limited human data. USEPA has concluded that the available data are sufficient only for quantitative carcinogenicity assessment by inhalation (IRIS, 1998a); no oral CSF has been established and, therefore, cadmium will not be assessed quantitatively as a carcinogen for this HHRA.

5.2.1.6 Chromium

Chromium has been identified as a COPC in fish tissue, soil/sediment, and Onondaga Lake surface water. Chromium is a naturally occurring element in soils and rocks. It is typically found in the environment as chromium(III); metallic chromium (chromium[0]) and chromium(VI) are generally produced by industrial processes. Chromium(0) is typically used in making steel alloys. Chromium(III) and (VI) are used for dyes and pigments, leather tanning, wood preserving, and chrome plating (ATSDR, 2001b; Sittig, 1991).

Chromium is considered an essential nutrient, with a recommended daily intake (RDI) of 120 µg/day (0.120 mg/day) (US Food and Drug Administration [US FDA]; 21 CFR 101.9[c][8][iii]), and is found in grains, egg yolks, meats, and nuts. However, ingestion of large quantities of chromium(III) or (VI) may cause health problems.

USEPA has established quantitative toxicity factors for chromium(III) and (VI). The oral RfD for chromium(III) is 1.5 mg/kg-day; confidence in this value is considered low (IRIS, 1998b). The oral RfD for chromium(VI) has been set at 3×10^{-3} mg/kg-day; confidence in this RfD is also low (IRIS, 1998c).

Chromium(VI) has been established as a known human carcinogen (Group A) by inhalation. However, the carcinogenicity of chromium(VI) by ingestion (oral route) has not been determined, and is classified as Group D – not classifiable as to human carcinogenicity (IRIS, 1998c). There is no oral CSF for chromium(VI) in IRIS, HEAST, or other agency source; therefore, ingestion of chromium will not be assessed quantitatively in the Onondaga Lake HHRA for carcinogenicity.

The carcinogenic potential for chromium(III) has been reviewed by USEPA. Chromium(III) has been assigned to Group D – not classified, due to inadequate data (IRIS, 1998b). The classification of chromium(VI) as a known human carcinogen raises concern for the carcinogenic potential of chromium(III)

(IRIS, 1998b); nonetheless, there are no quantitative data for the assessment of chromium(III) for carcinogenicity by the oral route.

5.2.1.7 Copper

Copper has been established as a COPC in soil/sediment; however, it was not identified as a COPC in fish tissue or in surface water. Copper occurs naturally in soils, and is present in plants and animals. It is used to make metal (e.g., pipes, pennies, wire); it is also used in water treatment; to treat some plant diseases; and to preserve wood, leather, and fabrics (ATSDR, 1999d).

Copper is considered an essential nutrient (ATSDR, 1999d), with an RDI of 2.0 mg/day (US FDA; 21 CFR 101.9[c][8][iii]).

An RfD of 3.7×10^{-2} mg/kg-day is reported in the USEPA Region 9 PRG tables (USEPA, 2002b), with a citation of HEAST as the source of the value; essentially the same value (4×10^{-2}) is listed in the Region 3 RBC tables (USEPA, 2002a), with the same attribution to HEAST. However, the HEAST data (USEPA, 1997b) consulted for this HHRA did not contain an oral RfD for copper. NCEA has confirmed an oral RfD of 4×10^{-2} for copper (NCEA, 2002a; see also Appendix E of this HHRA).

The carcinogenic potential for copper has been reviewed by USEPA. Copper has been assigned to Group D – not classified, due to inadequate data; copper is being reassessed under the IRIS program (IRIS, 1998d).

5.2.1.8 Cyanide

Cyanide is a COPC in fish, sediment, and dredge spoils. It is not expected to be a significant contaminant in Onondaga Lake surface water. Although there are no data from the 0 to 3 m depth interval, cyanide was detected in one of four samples from greater depths (6 and 12 m below the lake surface) at a concentration (171 µg/L) below screening criteria for most cyanide salts (e.g, potassium cyanide). Toxicity data are available in IRIS for free cyanide (IRIS, 1997a) and a number of individual cyanide compounds (e.g., sodium cyanide and calcium cyanide [IRIS, 1997b,c]). The cancer potential of these compounds has not been determined (i.e., they have been assigned to Group D), although oral RfDs are available. The exact form in which cyanide exists in the Onondaga Lake environment is unknown. The toxicity data for the three forms of cyanide that were considered most likely to be present (i.e., free cyanide, calcium cyanide, and sodium cyanide) were reviewed; the oral RfDs ranged from 4×10^{-2} mg/kg-day for calcium cyanide and sodium cyanide (IRIS, 1997b,c) to 2×10^{-2} for free cyanide (IRIS, 1997a). The RfD for free cyanide has been selected for use in the quantitative HHRA.

The carcinogenic potential for cyanide has been reviewed by USEPA. Cyanide has been assigned to Group D – not classified, due to inadequate data (IRIS, 1997a), and is not assessed for cancer toxicity in this HHRA.

5.2.1.9 Iron

Iron was identified as a COPC in all the sediment and dredge spoil exposure areas, but not in fish or surface water. Iron occurs naturally, typically as iron(II) (ferrous iron) and iron(III) (ferric iron), in the form of iron oxides. Iron is the fourth most abundant element, comprising about four percent of the earth's crust (Standen, 1967). Iron is considered an essential nutrient, with an RDI of 18 mg/day (US FDA; 21 CFR 101.9[c][8][iii]). However, short-term ingestion of large amounts of iron may cause drowsiness, sluggishness, vomiting, and diarrhea; ingestion of a half-ounce (about 14 g) may cause death in an adult (Sittig, 1991). Excessive long-term ingestion of iron may result in accumulation in the body, especially in the liver, spleen, and lymphatic system.

There is no IRIS toxicological summary for iron, and toxicity data for iron are not present in HEAST. The RfD for iron used for this HHRA, 0.3 mg/kg-day, was developed by NCEA, as reported in the both the Region 3 RBC and Region 9 PRG tables (USEPA, 2002a,b). As there are no data on the cancer potential for iron, it is not assessed for cancer toxicity in this HHRA.

5.2.1.10 Lead

Lead has been identified as a COPC in southern basin sediments, although not in fish or surface water. Historically, lead was used in many products, including paint, gasoline, ceramics, caulking, and solder; however, most of these uses have been dramatically reduced due to bans and restrictions on the use of lead in consumer products (ATSDR, 1999e). Lead is still present in the environment as a result of these uses, and is still used in batteries, ammunition, x-ray shielding, and solder and pipes, although at reduced levels.

Lead can affect most organs and systems of the body, but the greatest concern with regard to lead is its effect on the development of young children. The Centers for Disease Control (CDC) considers a blood level of 10 µg/dL to be elevated. However, no RfD has been established for lead. Based on an uptake model for lead, USEPA has established a residential soil screening level for lead of 400 mg/kg (OSWER directive 9355-4.12, USEPA, 1994). While the absence of an RfD precludes a quantitative assessment, lead was screened qualitatively in this HHRA by comparison with the residential soil screening level.

USEPA (IRIS, 1997d) considers lead to be a Group B2 carcinogen, based on sufficient animal data, but inadequate human data. However, no CSF has been established.

Quantifying lead's cancer risk involves many uncertainties, some of which may be unique to this contaminant. Age, health, nutritional state, body burden, and exposure duration influence the absorption, release, and excretion of lead. In addition, current knowledge of lead pharmacokinetics indicates that an estimate derived by standard procedures would not truly describe the potential risk. Thus, USEPA's Carcinogen Assessment Group recommends that a numerical estimate not be used (IRIS, 1997d).

5.2.1.11 Manganese

Manganese has been identified as a COPC in fish tissue, soil/sediment, and Onondaga Lake surface water. Manganese is a nutrient, as discussed below, and is present at low levels in food, air, and water. Found naturally in the environment, typically as compounds with sulfur, oxygen, chlorine, or other elements, manganese is used in the manufacture of some pesticides and gasoline additives (ATSDR, 2001c).

Manganese is considered an essential nutrient, with an RDI of 2 mg/day (US FDA; 21 CFR 101.9[c][8][iii]).As with most essential nutrients, too much or too little intake of manganese may cause health problems. USEPA has established an oral RfD of 0.14 mg/kg-day for manganese. The IRIS RfD includes manganese from all sources, including diet. The explanatory text in IRIS recommends using a modifying factor of three when calculating risks associated with non-food sources (IRIS, 1997e). IRIS also recommends subtracting dietary exposure (default assumption of 5 mg/day [USEPA Region 3 default {RBC introductory text; FAQ #2, USEPA Region 3; provided in Appendix C of this HHRA}], consistent with the high end of the safe range [2 to 5 mg/day] for persons over ten years old, from the National Research Council [NRC] as cited in ATSDR, 2001c). Thus, the IRIS RfD of 0.14 mg/kg-day has been lowered by a factor of 2 × 3, or 6, to reflect manganese from both food and non-food, or most environmental, sources. Therefore, the RfD for manganese from non-dietary sources utilized in this HHRA is 0.023 mg/kg-day.

USEPA considers the confidence level of the oral RfD to be medium (IRIS, 1997e). The USEPA Region 3 RBC tables list the oral RfD for "Manganese – Food" at 0.14 mg/kg-day, but list an oral RfD of 2×10^{-2} mg/kg-day for "Manganese – Non-Food" (USEPA, 2002a). The Region 9 PRG tables have only a single entry for manganese, "Manganese and Compounds," with an RfD of 2.4×10^{-2} mg/kg-day (USEPA, 2002b). This is essentially the same value as used for non-dietary ingestion of manganese in this HHRA (2.3×10^{-2} mg/kg-day); however, the unmodified IRIS RfD (0.14 mg/kg-day) is used for fish ingestion and incidental ingestion of surface water.

Manganese has been classified in Group D – not classifiable as to human carcinogenicity. USEPA states that "existing studies are inadequate to assess the carcinogenicity of manganese" (IRIS, 1997e).

5.2.1.12 Mercury – General

Mercury is a principal COPC in environmental media in the Onondaga Lake National Priorities List (NPL) site. Historically, mercury has been used in the production of chlorine gas and caustic soda (several of these facilities were present in the Onondaga Lake vicinity, as noted in the remedial investigation [RI] report), and also in thermometers, dental fillings, and batteries (ATSDR, 1994, 1999). Analytical data for mercury are typically for total mercury; that is, the specific form (organic or inorganic, or specific valence state) is unknown. However, it is understood that mercury is present in biota in organic form as methylmercury.

Mercury in other matrices (i.e., soil/sediment and surface water) is evaluated in the form reported (i.e., total mercury, assumed to be inorganic, or methylmercury, assumed to be organic) for matrices for which data

for both forms are available (northern basin sediments, southern basin sediments, and Onondaga Lake surface water). For the four wetland exposure areas (Wetlands SYW-6, 10, 12, and 19) and the dredge spoils area, no analyses for methylmercury were conducted.

For the Onondaga Lake BERA (TAMS, 2002a), it has been assumed, based on a literature review, mercury/methylmercury data from the nearby LCP Bridge Street site, and Onondaga Lake sediment data (see Appendix B, RAGS Tables 3.2 and 3.3), including sediment data from areas that are not included in this HHRA, that 1 percent of the total mercury in wetland sediments is methylmercury, a value considered protective of the ecosystem. The BERA assumed that the mercury in soils – e.g., dredge spoils – is entirely in the inorganic form. The basis for the estimates of the fraction of methylmercury is discussed in greater detail in Chapter 6, Section 6.3.1.1 of the Onondaga Lake BERA (TAMS, 2002a) and summarized in Chapter 7, Section 7.5.3.1 of this HHRA. For the HHRA, differences in the assumed fraction of mercury which is present as methylmercury in wetland sediments has no significant impact on hazard calculations (see discussion in Chapter 7, Section 7.5.3.1 of this HHRA).

5.2.1.13 Methylmercury

Methylmercury has been identified as a COPC in fish, lake and wetland sediments, and surface water. It is a toxic chemical with which a number of adverse health effects have been associated in both human and animal studies. The largest amount of data exist on neurotoxicity, particularly in developing organisms. USEPA considers the central nervous system the most sensitive target organ on which there are data suitable for development of an RfD (Section I.A of IRIS, 2001a). As noted in Chapter 3, Section 3.1, the available data show that the mercury in Onondaga Lake fish samples is 90 percent or more in the form of methylmercury; therefore, the RfD for methylmercury is used in this HHRA for calculation of health risks associated with fish consumption. There are also a limited amount of methylmercury data for the northern and southern basin lake sediments and for surface water; to the extent that data are available, methylmercury is assessed quantitatively for non-cancer hazards in these matrices also.

Estimates of potential risks associated with methylmercury are based on USEPA's current RfD of 1×10^{-4} mg/kg-day (IRIS, 2001a). The current RfD, verified for use in 1995 and reassessed in 2001 by USEPA, is based on protection against adverse effects that may occur following prenatal exposure during gestation. USEPA initially derived the current RfD value from data for Iraqi infants accidentally exposed to alkyl mercury in grain during gestation in 1971 (Marsh et al., 1987, as cited in IRIS, 2001a). In this population, delayed walking was reported in infants whose mothers had elevated hair methylmercury concentrations. USEPA subsequently applied analyses of more recent studies as reported by the NRC (NRC, 2000). NRC (2000) considered three epidemiological longitudinal developmental studies suitable for quantitative risk assessment: the Seychelles Islands; the Faeroe Islands; and New Zealand studies. The Seychelles study has yielded no evidence of impairment related to methylmercury exposure thus far, while the other two studies have found adverse effects for some neuropsychological endpoints. The Faeroe Islands study is the larger of the latter two studies, and was therefore recommended by NRC for use in derivation of an RfD.

USEPA agreed with the NRC's conclusions, and has proposed the same numeric RfD (0.1 µg/kg-day) based on neuropsychological findings from the Faeroe Islands data. USEPA used a benchmark dose (BMD) approach to quantify a dose-effect relationship between methylmercury in cord blood and a neurological endpoint. A BMD limit of 58 µg/L cord blood was estimated based on findings from the Boston Naming Test, a neuropsychological evaluation. A methylmercury intake level associated with a blood level of 58 µg/L was calculated to be 1.0 µg/kg-day. A total uncertainty factor of 10 was then applied, with the resulting RfD (i.e., 0.0001 mg/kg-day), as derived from the Faeroe Islands data, unchanged from the RfD derived from the Iraqi data.

Methylmercury has been classified as Group C – possible human carcinogen, based on inadequate data in humans and limited evidence of carcinogenicity in animal studies (IRIS, 2001a). No oral CSF has been established by USEPA, and, therefore, methylmercury is not assessed quantitatively for cancer risks in this HHRA.

5.2.1.14 Mercury – Inorganic

Inorganic mercury has been identified as a COPC in all matrices except fish. As discussed above, all mercury in fish is assumed to be methylmercury. Published toxicity data are available in IRIS for elemental mercury (Hg[0]) (IRIS, 1997f) and mercuric chloride ($HgCl_2$) (IRIS, 1997g). As elemental mercury has not been observed in water or sediments, and the toxicity data for elemental mercury does not include an oral RfD, the IRIS (1997g) toxicity data for mercuric chloride (i.e., oral RfD of 3×10^{-4} mg/kg-day) has been used for this quantitative HHRA.

USEPA has identified mercuric chloride as a possible human carcinogen (Group C), based on an absence of data in humans and limited evidence of carcinogenicity in animal studies (IRIS, 1997g). No oral CSF for mercuric chloride has been established by USEPA; therefore, it is not assessed quantitatively for cancer risks in this HHRA.

5.2.1.15 Nickel

Nickel was identified as a COPC in the southern basin sediments; it is not a COPC in other Onondaga Lake soil/sediments, fish tissue, or surface water. Nickel is used in alloys with many other metals, including stainless steel; is used as a catalyst; and is used in the manufacture of coins, batteries, enamels, and glass (Sittig, 1991; ATSDR, 1997a).

Although there is no RDI for nickel, it is thought that a small amount of nickel may be necessary for human health (ATSDR, 1997a), and the average dietary intake of nickel is approximately 300 µg/day (Sittig, 1991).

USEPA has established an oral RfD of 2×10^{-2} mg/kg-day for soluble salts of nickel (IRIS, 1998e). Confidence in this value is considered medium. USEPA has not evaluated the soluble salts of nickel for human carcinogenicity, and is reassessing the toxicity data for nickel (IRIS, 1998e).

5.2.1.16 Selenium

Selenium has been identified as a COPC in fish tissue only; it was not identified as a COPC in soil/sediment or surface water. Although there were no surface water samples from the 0 to 3 m depth interval analyzed for selenium, it was not detected in samples from greater depths in the lake (6 and 12 m).

The major commercial use of selenium is in the manufacture of rectifiers. It is also used as a pigment; a vulcanizing agent for rubber; in the electronics and photographic industries; and in anti-dandruff shampoos (Sittig, 1991; ATSDR, 1997b).

Selenium is considered an essential nutrient, with an RDI of 70 µg/day (0.07 mg/day) (US FDA; 21 CFR 101.9[c][8][iii]). However, ingestion of excess selenium may cause brittle hair and deformed nails, and a loss of feeling in the extremities (ATSDR, 1997b). USEPA has established an RfD of 5×10^{-3} mg/kg-day for "Selenium and Compounds;" confidence in this value is considered high (IRIS, 1997h).

The carcinogenic potential for selenium has been reviewed by USEPA. Selenium has been assigned to Group D – not classifiable, due to inadequate data (IRIS, 1997h), and is not assessed for cancer toxicity in this HHRA. However, it is noted that one selenium compound – selenium sulfide – is classified as Group B2 (probable human carcinogen) (IRIS, 1997i).

5.2.1.17 Thallium

Thallium has been identified as a COPC in soil/sediment; it is not a COPC in fish tissue and is not expected to be a significant contaminant in Onondaga Lake surface water. Although there are no data from the 0 to 3 m depth interval, thallium was not detected in samples from greater depths (6 and 12 m below the lake surface). Thallium and its compounds are used in fungicides, rodenticides, and insecticides; in fireworks; in alloys with mercury in electrical switches; in photoelectric cells; optical instruments; electronics and semiconductors; and dyes and pigments, among other uses (Sittig, 1991; ATSDR, 1995c).

There are no generic toxicity data for thallium (e.g., for thallium or thallium and compounds) in IRIS, although there are toxicity data for a number of specific thallium compounds (e.g., thallium chloride, thallium sulfate). The oral RfD for thallium used in this HHRA is 6.6×10^{-5} mg/kg-day, the source for which is cited as IRIS on the USEPA Region 9 PRG tables (USEPA, 2002b). However, as of June 2002, no entry under the heading "Thallium" or "Thallium and Compounds" was found on the IRIS web site. A similar oral RfD value, 7×10^{-5} mg/kg-day, is listed on the Region 3 RBC tables (USEPA, 2002a), although Region 3 cites the source of the value as "other" (i.e., not IRIS, HEAST, or NCEA). These values are also similar to those for several of the thallium compounds for which there are IRIS RfDs; specifically, thallium carbonate (IRIS, 1997j), thallium sulfate (IRIS, 1997k), and thallium chloride (IRIS, 1997l), all of which have a published oral RfD of 8×10^{-5} mg/kg-day.

The IRIS files for all the thallium compounds reviewed list a classification of Group D – not classifiable as to human carcinogenicity, due to lack of data (IRIS, 1997j,k,l).

5.2.1.18 Vanadium

Vanadium has been identified as a COPC in fish tissue and soil/sediment, but is not expected to be a significant contaminant in Onondaga Lake surface water. Although there are no data from the 0 to 3 m depth interval, vanadium was not detected in samples from greater depths (6 and 12 m below the lake surface). Vanadium is a naturally occurring element that is typically found as a compound with oxygen, sodium, sulfur, or chlorine (ATSDR, 1995d). The principal use of vanadium is in metals used in the automotive and aircraft industries; lesser amounts are used in the manufacture of plastics, rubber, and ceramics (Sittig, 1991; ATSDR, 1995d).

Short-term health effects have been noted from the inhalation of vanadium, although the effects of ingestion are not known (ATSDR, 1995d). The only vanadium compound for which there is an IRIS file is vanadium pentoxide (IRIS, 1997m); however, this compound was not considered to be representative of the forms in which vanadium may be present at the Onondaga Lake site. The oral RfD for vanadium used in this HHRA is 7×10^{-3} mg/kg-day, as published in HEAST (USEPA, 1997). This oral RfD is close to the IRIS value for vanadium pentoxide (9×10^{-3} mg/kg-day [IRIS, 1997m]). NCEA indicated that there was no additional guidance available for vanadium (NCEA, 2002c); therefore, the HEAST value is the best available toxicity data.

Vanadium has not been classified with regard to its human cancer-causing potential by USEPA, the International Agency for Research on Cancer (IARC), or the Department of Health and Human Services (DHHS) (ATSDR, 1995d).

5.2.1.19 Zinc

Zinc has been identified as a COPC in fish tissue only; zinc concentrations did not exceed screening criteria in soil/sediment or surface water.

Zinc is considered an essential nutrient, with an RDI of 15 mg/day (US FDA; 21 CFR 101.9[c][8][iii]). Ingestion of levels substantially higher than this amount (in the 100 to 250 mg/day range) may cause anemia, pancreas damage, and decreased HDL ("good") cholesterol (ATSDR, 1995e). USEPA has established an oral RfD for zinc of 0.3 mg/kg-day; zinc is being reassessed in the IRIS program (IRIS, 1998f). Confidence in the oral RfD is considered medium.

The carcinogenic potential of zinc is assessed as Group D – not classifiable, due to inadequate evidence in humans and animals (IRIS, 1998f).

5.2.2 Volatile Organic Compounds

The discussion below provides brief summaries for the VOCs identified as COPCs for this HHRA. While VOCs were identified as COPCs in soil/sediment and in Onondaga Lake surface water, they were not

identified as COPCs in fish tissue. The full IRIS summaries and related ATSDR documents are provided in Appendix E. These VOCs include:

- Benzene.
- Bromodichloromethane.
- Chlorobenzene.
- Chloroform.
- Methylene chloride (dichloromethane).
- Xylenes.

Although dichlorobenzenes and naphthalene are sometimes analyzed and reported as VOCs, for this HHRA those compounds are discussed as SVOCs (with naphthalene in the PAH subset of SVOCs).

5.2.2.1 Benzene

Benzene is a volatile constituent of crude oil and refined gasoline and motor fuels. It is also used extensively in industry (it is one of the 20 most-produced chemicals in the US); as a raw material or chemical intermediate for the production of other chemicals, such as styrene and phenols; and in the manufacture of plastics, resins, detergents, pharmaceuticals, pesticides, and dyes (ATSDR, 1997c; Sittig, 1991).

Short-term effects of ingesting large amounts of benzene include vomiting, stomach irritation, convulsion, increased heart rate, and ultimately death. The principal long-term toxic effects of ingestion or inhalation of benzene are blood-related, causing several forms of leukemia and harmful effects on the bone marrow, resulting in anemia (IRIS, 2001b; ATSDR, 1997c).

There are no non-cancer toxicity data for benzene published in IRIS. However, both the Region 3 RBC and Region 9 PRG tables, citing NCEA as the source, list an oral RfD of 3×10^{-3} mg/kg-day for benzene; this value is used in the quantitative HHRA. The NCEA issue paper (NCEA, 2002a) confirms this value. NCEA staff indicated that although this paper is no longer current, which is defined as being more than three years old, the provisional RfD has been reviewed by NCEA staff and approved for use on the Onondaga Lake project (NCEA, 2002a; see also Appendix E of this HHRA).

Benzene is classified by USEPA as Group A – known human carcinogen for all routes of exposure. The IRIS oral CSF (USEPA, 2001b) is presented as a range from 1.5 to 5.5×10^{-2} $(mg/kg\text{-}day)^{-1}$. The oral slope factor has been derived by USEPA from the inhalation risk factor. The range of oral slope factors is related to uncertainty regarding the absorption of benzene in the body. As some animal studies have shown that absorption to be as high as 100 percent, the high end, or more conservative, of the range of CSFs (i.e., 5.5×10^{-2} $[mg/kg\text{-}day]^{-1}$) was used for the Onondaga Lake HHRA.

5.2.2.2 Bromodichloromethane

Bromodichloromethane is not produced to any significant extent as a commercial product in the US. It is one of a class of chemicals referred to as trihalomethanes, a class which also includes chloroform, and is formed as a byproduct in water disinfected by chlorination (ATSDR, 1999f).

There are no adequate health studies on the effects of bromodichloromethane on humans; however, based on animal studies, the liver, kidneys, and central nervous system are the likely target organs. On the basis of these data, USEPA has established an oral RfD of 2×10^{-2} mg/kg-day for bromodichloromethane (IRIS, 1997n).

Bromodichloromethane is classified by USEPA as Group B2 – probable human carcinogen, based on animal data. The oral CSF is 6.2×10^{-2} $(mg/kg\text{-}day)^{-1}$ (IRIS, 1997n).

5.2.2.3 Chlorobenzene

Chlorobenzene was once a large-production bulk chemical in the US (including at the Honeywell Willis Avenue Chlorobenzene site), although production has dropped significantly since 1960. It was used as an intermediate in the production of other chemicals, including phenol and DDT, and current uses include the manufacture of anilines, dyes, and pesticides, and as a de-greaser for auto parts (Sittig, 1991; ATSDR, 1999g).

There are no adequate health studies on the effects of chlorobenzene on humans. Animal studies suggest that the liver, kidneys, and central nervous system are the organs most likely to be affected by chlorobenzene (ATSDR, 1999g). The oral RfD for chlorobenzene is 2×10^{-2} mg/kg-day (IRIS, 1997o); USEPA indicates that the confidence in this value is medium.

The cancer-causing potential of chlorobenzene has been reviewed by USEPA, but the data were not sufficient; therefore, chlorobenzene was assigned to Group D – not classified as to human carcinogenicity (IRIS, 1997o).

5.2.2.4 Chloroform

Chloroform was once used as an anaesthetic, but that use has been long discontinued due to its toxicity. It is currently used as a solvent (especially for the lacquer industry); in the preparation of pharmaceuticals; and in the manufacture of other products. It is one of a class of chemicals referred to as trihalomethanes, a class which also includes bromodichloromethane, discussed above, and is formed as a byproduct in water disinfected by chlorination (Sittig, 1991; ATSDR, 1997e).

There are no adequate health studies on the effects of chloroform on humans; however, based on animal studies, the liver and kidneys are the likely target organs (ATSDR, 1997e). The oral RfD for chloroform has been established by USEPA at 1×10^{-2} mg/kg-day (IRIS, 2002a).

Chloroform is classified by USEPA as Group B2 – probable human carcinogen, based on sufficient evidence of carcinogenicity in animals (IRIS, 2002a). However, as no oral CSF has been established for chloroform (IRIS, 2002a) and NCEA has no cancer values for chloroform (NCEA, 2002d), it is not assessed quantitatively for cancer risks in this HHRA.

5.2.2.5 Methylene Chloride (Dichloromethane)

Methylene chloride is used as a paint stripper; de-greaser; extraction solvent; in the manufacture of photographic film; and in some pesticides and aerosol products (Sittig, 1991; ATSDR, 2001d).

The effects of long-term ingestion of methylene chloride by humans are not known, but it may cause harmful effects to the liver, blood, and central nervous system (Sittig, 1991). The oral RfD for dichloromethane has been established by USEPA at 6×10^{-2} mg/kg-day (IRIS, 1997p).

Methylene chloride (dichloromethane) is classified by USEPA as Group B2 – probable human carcinogen, based on animal data. The oral CSF for methylene chloride is 7.5×10^{-3} $(mg/kg\text{-}day)^{-1}$ (IRIS, 1997p).

5.2.2.6 Xylenes

Xylenes are three individual isomers (ortho, meta, and para, which are abbreviated as o-, m-, and p-xylene, respectively). While the chemical properties of these three isomers are not identical, they are considered together as group (i.e., as total xylenes or sum of xylenes). Xylene is one of the major bulk chemicals produced in the US (i.e., in the top 30 in terms of production volume). Like benzene, it is found in crude petroleum and refined motor fuels. It is also used as a paint thinner; a constituent in paints and varnishes; a chemical feedstock; a solvent and cleaning agent; and a number of other industrial and manufacturing uses (Sittig, 1991; ATSDR, 1996a).

Long-term exposure to xylene has been associated with liver and kidney damage (Sittig, 1991) and brain and central nervous system effects (ATSDR, 1996a). The oral RfD for xylene is 2.0 mg/kg-day (IRIS, 1998g); USEPA indicates that the confidence in this value is medium.

The cancer-causing potential of xylenes has been reviewed by USEPA but the data were not sufficient; xylene was therefore assigned to Group D – not classifiable as to human carcinogenicity. Xylene is being reassessed under the IRIS program (IRIS, 1998g).

5.2.3 Semivolatile Organic Compounds

The discussion below provides brief summaries for the SVOCs identified as COPCs for this HHRA, with the exception of PAHs, for which information is presented in Section 5.2.4. The full IRIS summaries and related ATSDR documents are presented in Appendix E. These SVOCs include:

- Bis(2-ethylhexyl)phthalate or di(2-ethylhexyl)phthalate.
- Dibenzofuran.
- 1,2-Dichlorobenzene.
- 1,3-Dichlorobenzene.
- 1,4-Dichlorobenzene.
- Hexachlorobenzene.
- 1,2,4-Trichlorobenzene.

5.2.3.1 Bis(2-ethylhexyl)phthalate or Di(2-ethylhexyl)phthalate

Bis(2-ethylhexyl)phthalate (BEHP) and di(2-ethylhexyl)phthalate (DEHP) are different names for the same chemical, with the former being more common in chemical analysis (e.g., data from the Contract Laboratory Program [CLP] program), and the latter in toxicological data (e.g., ATSDR and IRIS), as discussed below. DEHP was identified as a COPC in fish tissue; it was not identified as a COPC in any sediments or dredge spoils. BEHP is not expected to be a COPC in surface water. Although there were no surface water samples from the 0 to 3 m depth interval analyzed for BEHP, it was detected only at low concentrations (2 to 10 µg/L) in four samples collected in 1992 from greater depths in the lake (6 and 12 m).

DEHP is a synthetic chemical used principally as a plasticizer (an additive to plastics to make them more flexible), and may constitute as much as 40 percent of some PVC products (ATSDR, 1993a). It is also used to a lesser extent in inks, pesticides, cosmetics, and vacuum pump oil (Sittig, 1991).

There is little information regarding the harmful effects of DEHP on humans. Based on animal studies (which showed increased liver weight), an oral RfD of 2×10^{-2} mg/kg-day has been established by USEPA (IRIS, 1998h). Confidence in this value is considered by USEPA to be medium.

DEHP is classified by USEPA as Group B2 – probable human carcinogen, based on animal data. The oral CSF established for DEHP is 1.4×10^{-2} $(mg/kg\text{-}day)^{-1}$ (IRIS, 1998h).

5.2.3.2 Dibenzofuran

Dibenzofuran was identified as a COPC only in southern basin sediments; it was not identified as a COPC in other sediments, fish tissue, or dredge spoils and is not expected to be a COPC in surface water. Although there were no surface water samples from the 0 to 3 m depth interval analyzed for dibenzofuran, it was not detected in four samples collected in 1992 from greater depths in the lake (6 and 12 m). Little information is available for dibenzofuran, also known as diphenylene oxide. It is used as an insecticide and in organic synthesis (Sittig, 1991; Hawley, 1981).

No oral RfD has been established for dibenzofuran (IRIS, 2000c); data are considered inadequate for quantitative risk assessment (HEAST, Table 1 [USEPA, 1997]). This chemical is being reassessed under the IRIS program (IRIS, 2000c). The oral RfD used for the HHRA is 4×10^{-3} mg/kg-day; this value was

developed by NCEA, as cited in the USEPA Region 3 RBC and Region 9 PRG tables (USEPA, 2002, 2000b). The NCEA issue paper for dibenzofuran received from USEPA Region 2 confirms this value (NCEA, 2002a; see also Appendix E of this HHRA).

The cancer-causing potential of dibenzofuran has been reviewed by USEPA, but the data were not sufficient; dibenzofuran was assigned to Group D – not classified as to human carcinogenicity (IRIS, 2000c).

5.2.3.3 1,2-Dichlorobenzene

1,2-Dichlorobenzene, also known as ortho- or o-dichlorobenzene, is one of the three dichlorobenzene isomers (the others being 1,3- [meta-] and 1,4- [para-] dichlorobenzene). All three isomers have been identified as COPCs for the Onondaga Lake HHRA. However, due to differences in toxicity and carcinogenicity, each individual dichlorobenzene isomer is discussed separately, rather than being summed and evaluated as total dichlorobenzenes.

1,2-Dichlorobenzene is used as a process solvent for the manufacture of toluene di-isocyanate and as an intermediate in the manufacture of other chemicals, including dyes, herbicides, and de-greasers (Sittig, 1991).

The oral RfD for 1,2-dichlorobenzene is 9×10^{-2} mg/kg-day (IRIS, 2000d); USEPA indicates that the confidence in this value is low. This chemical is currently being reassessed (IRIS, 2000d). NCEA has developed a provisional RfD for 1,2-dichlorobenzene of 3×10^{-1} mg/kg-day; however, as recommended by USEPA Region 2, the IRIS value will be used for the quantitative HHRA. The potential effect on the results of the hazard calculation of using the IRIS value as opposed to the provisional NCEA value is discussed in Chapter 7, Uncertainty Assessment.

The cancer-causing potential of 1,2-dichlorobenzene has been reviewed by USEPA but the data were inadequate; 1,2-dichlorobenzene was assigned to Group D – not classified as to human carcinogenicity. There are no human data for carcinogenicity, and limited animal data are both positive and negative with regard to trends for carcinogenic responses in rodents (IRIS, 2000d).

5.2.3.4 1,3-Dichlorobenzene

Little information on the use of 1,3-dichlorobenzene was found (Sitting, 1991); it may have some commercial use as an insecticide (Hawley, 1981), and may be present as a contaminant in commercial 1,2- and 1,4-dichlorobenzenes.

No oral RfD has been established for 1,3-dichlorobenzene (IRIS, 2000e); the oral RfD is considered not verifiable (HEAST, Table 1 [USEPA, 1997b]). This chemical is being reassessed under the IRIS program (IRIS, 2000e). NCEA has provided a provisional oral RfD of 9×10^{-4} for 1,3-dichlorobenzene for the

Onondaga Lake HHRA (NCEA, 2002a; see also Appendix E of this HHRA), although confidence in this value is considered low. The oral RfD of 9×10^{-4} is used in this HHRA.

The cancer-causing potential of 1,3-dichlorobenzene has been reviewed by USEPA but the data were inadequate (i.e., there were no human data and no animal data, and limited genetic data); 1,3-dichlorobenzene was assigned to Group D – not classifiable as to human carcinogenicity (IRIS, 2000e).

5.2.3.5 1,4-Dichlorobenzene

1,4-Dichlorobenzene is used primarily as an insecticide (i.e., for mothballs) and as an air deodorizer (ATSDR, 1999i; Sittig, 1991).

Long-term ingestion of 1,4-dichlorobenzene may affect the central nervous system and cause liver and possibly blood problems (ATSDR, 1999i; Sittig, 1991). No oral RfD has been established for 1,4-dichlorobenzene (IRIS, 2000f; HEAST, 1997); it is currently being reassessed in the IRIS program (IRIS, 2000f). The oral RfD used for this HHRA is 3×10^{-2} mg/kg-day; this value was developed by NCEA, as cited in the both the USEPA Region 3 RBC and Region 9 PRG tables (USEPA, 2002a,b). Although the study on which the value is based is no longer considered current, NCEA recommends use of the 3×10^{-2} mg/kg-day oral RfD for the Onondaga Lake site (NCEA, 2002a; see also Appendix E of this HHRA).

The IRIS summary for 1,4-dichlorobenzene notes that this chemical has not undergone a full evaluation under the IRIS program for evidence of human carcinogenic potential (IRIS, 2000f); in other words, it is not classified. However, an oral slope factor of 2.4×10^{-2} $(mg/kg\text{-}day)^{-1}$ is present in HEAST (USEPA, 1997), and this value is used in this HHRA for evaluating the cancer risk of 1,4-dichlorobenzene.

5.2.3.6 Hexachlorobenzene

Hexachlorobenzene has been identified as a COPC in fish tissue and in soil/sediment. Hexachlorobenzene was widely used as a pesticide and fungicide for onions and wheat and other grains until 1965. It was also used in the manufacture of fireworks, ammunition, electrodes, dye, and synthetic rubber, and as a wood preservative (Sitting, 1991; ATSDR, 1997d). There are currently no commercial uses of hexachlorobenzene (ATSDR, 1997d).

Accidental ingestion of hexachlorobenzene-contaminated grain (which occurred in Turkey) resulted in liver damage and shortened life spans, and some children fed contaminated breast milk developed a condition called "pink sore" that was usually fatal. Hexachlorobenzene affected the skin, skeletal system, liver, stomach, and nervous system (Sittig, 1991; ATSDR, 1997d).

USEPA has established an oral RfD of 8×10^{-4} mg/kg-day for hexachlorobenzene, based on liver effects in animal studies (IRIS, 1997q); confidence in this value is considered medium.

Hexachlorobenzene is classified by USEPA as Group B2 – probable human carcinogen, based on animal data (liver, thyroid, and kidney tumors). An oral CSF of 1.6 $(mg/kg\text{-}day)^{-1}$ has been established for hexachlorobenzene (IRIS, 1997q).

5.2.3.7 1,2,4-Trichlorobenzene

Onondaga Lake surface water is the only medium in which 1,2,4-trichlorobenzene (1,2,4-TCB) has been identified as a COPC. It is used as a dielectric fluid- and heat-transfer medium; a dye carrier; a herbicide intermediate; a de-greaser; a lubricant; and a termiticide (Sittig, 1991). 1,2,4-TCB is the only trichlorobenzene isomer with any significant reported commercial uses (Sittig, 1991). There is no ATSDR profile for 1,2,4-TCB.

USEPA has established an oral RfD of 1×10^{-2} mg/kg-day for 1,2,4-TCB; confidence in this value is considered medium (IRIS, 1997r). It has been assigned to Group D – not classifiable as to human carcinogenicity, due to inadequate animal data and no human data.

5.2.4 Polycyclic Aromatic Hydrocarbons

A total of 13 different PAH compounds have been identified as COPCs in Onondaga Lake soils and sediments (see Chapter 3, Table 3-1). PAH compounds are not expected to be COPCs in surface water. Although there were no surface water samples from the 0 to 3 m depth interval analyzed for PAHs, no PAHs were detected in four samples collected in 1992 from greater depths in the lake (6 and 12 m). The PAH compounds are among a group of over 100 different chemicals; however, conventional chemical analyses typically identify and quantitate only about 17 of the PAH compounds. PAHs (except naphthalene) do not generally have any commercial uses as individual chemical compounds; however, PAHs are naturally occurring components of crude oil and petroleum products, such as fuel oil.

PAHs are also formed as byproducts of combustion processes, including vehicular exhaust, burning coal, and forest fires; the burning of tobacco; and the charbroiling of meat. Due to atmospheric deposition, PAHs can be deposited in the environment at great distances from the original source. Historically, PAHs – which are a constituent of coal tar – were used in some commercial products such as shampoos. Currently, the major commercial occurrences of PAHs are in roofing tar, creosote, and similar products, in addition to the petroleum products mentioned previously, with some lesser uses in dyes, plastics, and pesticides (ATSDR, 1996b; Sittig, 1991).

Chemical-specific toxicity data (CSFs or RfDs) have not been developed for most of the individual PAH compounds. Of the 13 PAHs identified as COPCs for Onondaga Lake, seven are considered carcinogenic (classified as Group B2 – probable human carcinogen) by USEPA:

- Benz(a)anthracene (IRIS, 1997s).
- Benzo(a)pyrene (IRIS, 1998h).
- Benzo(b)fluoranthene (IRIS, 1997t).

- Benzo(k)fluoranthene (IRIS, 1997u).
- Chrysene (IRIS, 1997v).
- Dibenz(a,h)anthracene (IRIS, 1997w).
- Indeno(1,2,3-cd)pyrene (IRIS, 1997x).

The six other PAHs considered here have been evaluated for toxicity (non-cancer):

- Acenaphthylene.
- Benzo(g,h,i)perylene.
- Fluoranthene.
- 2-Methylnaphthalene.
- Naphthalene.
- Phenanthrene.

These six were either not evaluated for carcinogenicity by USEPA (e.g., 2-methylnaphthalene); not classified due to insufficient evidence (assigned to Group D); or, in the case of naphthalene, considered a possible human carcinogen (Group C), but with insufficient data to confirm its carcinogenicity (IRIS, 2002b).

5.2.4.1 Carcinogenic Polycyclic Aromatic Hydrocarbons

Of the seven carcinogenic (Group B2) PAHs identified as Onondaga Lake COPCs, only one – benzo(a)pyrene – has a published CSF in IRIS (IRIS, 1998i). However, USEPA has published provisional guidance that provides order-of-magnitude estimates of the carcinogenic potency of the other carcinogenic PAHs relative to benzo(a)pyrene (USEPA, 1993a). The carcinogenic PAHs, their relative potency, and the CSFs used in this HHRA are shown below. The oral CSFs listed below are identical to those listed in the most recent USEPA Region 3 RBC tables (USEPA, 2002a).

Carcinogenic PAH	Published CSF	Relative Potency[a]	CSF used for HHRA
Benz(a)anthracene	NA	0.1	0.73 $(mg/kg\text{-}d)^{-1}$
Benzo(a)pyrene	7.3 $(mg/kg\text{-}d)^{-1}$ [b]	1.0	7.3 $(mg/kg\text{-}d)^{-1}$
Benzo(b)fluoranthene	NA	0.1	0.73 $(mg/kg\text{-}d)^{-1}$
Benzo(k)fluoranthene	NA	0.01	0.073 $(mg/kg\text{-}d)^{-1}$
Chrysene	NA	0.001	0.0073 $(mg/kg\text{-}d)^{-1}$
Dibenz(a,h)anthracene	NA	1.0	7.3 $(mg/kg\text{-}d)^{-1}$
Indeno(1,2,3-cd)pyrene	NA	0.1	0.73 $(mg/kg\text{-}d)^{-1}$

Notes: [a] Relative potency factor from Table 8 in *Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons* (USEPA, 1993a).
[b] IRIS, 1998i.

5.2.4.2 Other Polycyclic Aromatic Hydrocarbon Contaminants of Potential Concern

Of the six other PAH compounds identified as COPCs for Onondaga Lake, RfDs are available in IRIS for only two – naphthalene and fluoranthene. However, at the request of TAMS and USEPA Region 2, NCEA provided additional guidance for some of these PAHs. A brief summary of the available toxicological data is presented below for these six compounds:

- Acenaphthylene has no quantitative oral RfD (IRIS, 1997y) for non-cancer toxicity. It has been assigned to Group D – not classifiable as to human carcinogenicity, due to absence of human data and inadequate animal data. Acenaphthylene is not listed in either the USEPA Region 3 RBC or Region 9 PRG tables. However, NCEA indicated that the oral RfD for pyrene (3×10^{-2} mg/kg-day; IRIS, 1997qq) is appropriate to use for the non-cancer risk assessment of acenaphthylene (NCEA, 2002d).

- Benzo(g,h,i)perylene has no quantitative oral RfD (IRIS, 1997z) for non-cancer toxicity. It has been assigned to Group D – not classifiable as to human carcinogenicity, due to absence of human data and inadequate animal data. Benzo(g,h,i)perylene is not listed in either the USEPA Region 3 RBC or Region 9 PRG tables. However, NCEA indicated that the oral RfD for pyrene (3×10^{-2} mg/kg-day) is appropriate to use for the non-cancer risk assessment of benzo(g,h,i)perylene (NCEA, 2002d).

- Fluoranthene has an oral RfD of 4×10^{-2} mg/kg-day mg/kg-day (IRIS, 1997aa), based on animal studies (subchronic toxicity in mice); confidence in this value is considered low. It has been assigned to Group D – not classifiable as to human carcinogenicity, due to absence of human data and inadequate animal data.

- 2-Methylnaphthalene does not have an IRIS substance file and is not listed in HEAST. However, the Region 3 RBC tables list an oral RfD of 2×10^{-2} mg/kg-day, cited as NCEA – provisional, for 2-methylnaphthalene (USEPA, 2002). There is no entry for 2-methylnaphthalene in the Region 9 PRG tables. The NCEA issue paper for 2-methylnaphthalene confirms this value (NCEA, 2002b; see also Appendix E of this HHRA).

- Naphthalene is used in mothballs, insecticides (carbaryl), dyes, resins, and leather tanning agents (ATSDR, 1996c), in addition to being found as noted above in the introductory discussion of PAHs. USEPA has established an oral RfD of 2×10^{-2} mg/kg-day for naphthalene, based on a subchronic toxicity study of rats (IRIS, 2002b). Naphthalene is classified in Group C – possible human carcinogen, based on inadequate data in humans and limited evidence of oral carcinogenicity in animal studies (IRIS, 2002b); no quantitative oral CSF has been established for

naphthalene, although naphthalene is currently being reassessed under the IRIS program.

- Phenanthrene has no quantitative oral RfD (IRIS, 1997bb) for non-cancer toxicity. It has been assigned to Group D – not classifiable as to human carcinogenicity, due to the absence of human data and inadequate animal data. Phenanthrene is not listed in either the Region 3 RBC or Region 9 PRG tables. However, NCEA indicated that the oral RfD for pyrene (3×10^{-2} mg/kg-day) is appropriate to use for the non-cancer risk assessment of phenanthrene (NCEA, 2002d).

5.2.5 Pesticides

The pesticides discussed below are COPCs for Onondaga Lake via the fish ingestion pathway. Only two of the pesticides – the related compounds aldrin and dieldrin – were identified as COPCs in soil or sediment. Pesticide compounds are not expected to be COPCs in surface water. Although there were no surface water samples from the 0 to 3 m depth interval analyzed for pesticides, no pesticides were detected in four samples collected in 1992 from greater depths in the lake (6 and 12 m).

5.2.5.1 Aldrin

Aldrin has been identified as a COPC in fish tissue and in the sediments of Wetland SYW-19 in the southern basin. Aldrin is an insecticide with a structure similar to that of dieldrin, and quickly breaks down to dieldrin in the body and in the environment. From 1950 to 1970, aldrin and dieldrin were popular pesticides for crops like corn and cotton. Because of concerns about damage to the environment and the potential harm to human health, in 1974 USEPA banned all uses of aldrin and dieldrin, except to control termites. In 1987, USEPA banned all uses (ATSDR, 1993b).

USEPA has established an oral RfD of 3×10^{-5} mg/kg-day for aldrin; confidence in this value is considered medium (IRIS, 1997cc). Aldrin is classified as B2 – probable human carcinogen, based on increases in tumors (principally in the liver) in animal studies (IRIS, 1997cc). The oral slope factor for aldrin is 17 $(\text{mg/kg-day})^{-1}$.

5.2.5.2 Delta-Benzene Hexachloride (δ-BHC) (delta-Hexachlorocyclohexane; delta-HCH)

Delta-Hexachlorocyclohexane (delta-HCH) is one of eight stereo-isomers of HCH, four of which are typically reported in pesticide analyses, with the other three being the alpha, beta, and gamma isomers. The gamma isomer, also known as lindane, is the most potent insecticide (most toxic) of the isomers, but all have some degree of toxicity. Technical HCH is a mixture of the various HCH isomers (Sittig, 1991). Lindane has not been produced in the US since 1977, although it is still imported into and formulated in the US. Former uses included insecticide on fruit and vegetable crops including greenhouse vegetables and forest crops including Christmas trees. Lindane is still used in ointments for the treatment of lice and scabies (ATSDR, 1999j).

USEPA has not established an oral RfD for delta-HCH in either the IRIS program (IRIS, 1997dd) or in HEAST. There is an IRIS oral RfD for gamma-HCH (lindane) of 3.4×10^{-4} mg/kg-day (IRIS, 2002c). However, NCEA indicated that the oral RfD for lindane (3.4×10^{-4} mg/kg-day) is appropriate to use for the non-cancer risk assessment of delta-HCH (NCEA, 2002d).

Delta-HCH is considered not classifiable (Group D) with regard to human carcinogenicity. Therefore, no quantitative cancer assessment of delta-HCH is included in this HHRA.

5.2.5.3 Chlordane

Chlordane is a commercial manufactured chemical that was used as a pesticide in the US from 1948 to 1988, sold under trade names such as Octachlor and Velsicol 1068. Until 1983, chlordane was used as a pesticide on crops like corn and citrus and on home lawns and gardens. Because of concern about damage to the environment and harm to human health, USEPA banned all uses of chlordane in 1983, except to control termites. In 1988, USEPA banned all uses (ATSDR, 1995f).

Technical chlordane is not a single chemical, but a mixture of pure chlordane mixed with many related chemicals (e.g., nonachlor). The total chlordane concentration used for this HHRA is a sum of several of these chemicals, as discussed in Chapter 3 and Appendix A.

Chlordane affects the nervous system, the digestive system, and the liver in both people and animals. Headaches, irritability, confusion, weakness, vision problems, vomiting, stomach cramps, diarrhea, and jaundice have occurred in people who breathed air containing high concentrations of chlordane or swallowed small amounts of chlordane. Ingestion of large amounts of chlordane can cause convulsions and death in humans.

The US FDA limits the amount of chlordane and its breakdown products in most fruits and vegetables to less than 300 μg/kg and in animal fat and fish to less than 100 μg/kg (ATSDR, 1995f).

USEPA has established an oral RfD of 5×10^{-4} mg/kg-day for chlordane, based on animal studies showing toxic effects on the liver. Confidence in this value is considered medium (IRIS, 1998j).

Chlordane is classified as Group B2 – probable human carcinogen (USEPA, 1986); it would be considered a "likely carcinogen by all routes of exposure" under the 1996 Proposed Guidelines (IRIS, 1998j). The International Agency for Research on Cancer has determined that chlordane is not classifiable as to its carcinogenicity to humans. Studies of workers who made or used chlordane do not show that exposure to chlordane is related to cancer, but that information is not definitive. Mice fed low levels of chlordane in food developed liver cancer (ATSDR, 1995j). USEPA has established an oral CSF of 3.5×10^{-1} $(\text{mg/kg-day})^{-1}$ for chlordane (IRIS, 1998i), based on liver cancer in animal (i.e., mouse) studies.

5.2.5.4 DDT and Related Compounds – General

DDT and related compounds, for the purpose of this HHRA, consist of a group of four chemicals: 2,4'-DDE; 4,4'-DDD; 4,4'-DDE; and 4,4'-DDT. All four were identified as COPCs in Onondaga Lake fish tissue, but were not identified as COPCs in other site media.

DDT (1,1,1-trichloro-2,2-bis[p-chlorophenyl]ethane; alternately, p,p'-dichlorodiphenyl-trichloroethane) was a manufactured chemical widely used to control insects on agricultural crops and insects that carry diseases such as malaria and typhus. Two similar chemicals that sometimes contaminate DDT products are DDD (1,1-dichloro-2,2-bis[p-chlorophenyl]ethane) and DDE (1,1-dichloro-2,2-bis[chlorophenyl]ethylene). DDD was also used to kill pests, and its use has also been banned. One form of it has been used medically to treat cancer of the adrenal gland. DDE has no commercial use (ATSDR, 1995g).

Because of damage to wildlife and the potential harm to human health, the use of DDT has been banned in the US, except for public health emergencies. DDT is still used in some other countries (ATSDR, 1995g).

5.2.5.5 2,4'-DDE (o,p'-DDE)

2,4'-DDE was identified as a COPC in fish tissue based on its detection at concentrations above the screening criterion, which is the USEPA Region 3 fish ingestion RBC for DDE (isomer unspecified) (USEPA, 2001b). However, absent specific toxicity data for 2,4'-DDE, no quantitative assessment of cancer or non-cancer risks associated with this chemical is included in this HHRA. No IRIS, HEAST, or ATSDR files were found for 2,4'-DDE, and neither the Region 3 RBC nor Region 9 PRG tables include an entry specific to this isomer (USEPA, 2002, 2000b). NCEA has made no recommendation for quantitatively assessing 2,4'-DDE.

5.2.5.6 4,4'-DDD (p,p'-DDD)

4,4'-DDD has been identified as a COPC in fish tissue at the Onondaga Lake site. It is typically detected in association with the related compounds 4,4'-DDT and 4,4'-DDE.

USEPA has not established an oral RfD for 4,4'-DDD (IRIS, 1997ee). However, in accordance with the recommendation from USEPA Region 2, the oral RfD for 4,4'-DDT – 5×10^{-4} mg/kg-day (IRIS, 1997ff) – was previously used for the quantitative assessment of 4,4'-DDD (NYSDEC, October 2, 1998). However, based on the NCEA recommendations received for this HHRA, a provisional RfD of 3×10^{-3} mg/kg-day will be used for this HHRA (NCEA, 2002a; see also Appendix E of this HHRA).

4,4'-DDD is considered as Group B2 – probable human carcinogen by USEPA, based on liver tumors and thyroid tumors in animal studies (IRIS, 1997ee). The oral CSF for 4,4'-DDD is 2.4×10^{-1} mg/kg-day.

5.2.5.7 4,4'-DDE (p,p'-DDE)

4,4'-DDE has been identified as a COPC in fish tissue at the Onondaga Lake site. It is typically detected in association with the related compounds 4,4'-DDT and 4,4'-DDD.

USEPA has not established an oral RfD for 4,4'-DDE (IRIS, 1997gg; HEAST in USEPA,1997). However, based on the NCEA recommendations received for this HHRA, a provisional RfD of 7×10^{-4} mg/kg-day will be used for this HHRA (NCEA, 2002a; see also Appendix E of this HHRA).

4,4'-DDE is considered as Group B2 – probable human carcinogen by USEPA, based on liver tumors and thyroid tumors in animal studies (IRIS, 1997gg). The oral CSF for 4,4'-DDE is 3.4×10^{-1} $(mg/kg\text{-}day)^{-1}$.

5.2.5.8 4,4'-DDT (p,p'-DDT)

4,4'-DDT has been identified as a COPC in fish tissue at the Onondaga Lake site. It is typically detected in association with the related compounds 4,4'-DDT and 4,4'-DDE.

USEPA has established an oral RfD for 4,4'-DDT of 5×10^{-4} mg/kg-day, based on animal studies showing effects on the liver (IRIS, 1997ff). Confidence in this value is considered medium.

4,4'-DDT is considered as Group B2 – probable human carcinogen by USEPA, based on liver tumors in ten animal (i.e., seven mouse and three rat) studies (IRIS, 1997ff). The oral CSF for 4,4'-DDT is 3.4×10^{-1} $(mg/kg\text{-}day)^{-1}$.

5.2.5.9 Dieldrin

Dieldrin has been identified as a COPC in fish tissue and in the sediments of Wetland SYW-19 in the southern basin. Dieldrin is an insecticide with similar structure to that of aldrin, and aldrin quickly breaks down to dieldrin in the body and in the environment. From 1950 to 1970, aldrin and dieldrin were popular pesticides for crops like corn and cotton. Because of concerns about damage to the environment and the potential for harm to human health, USEPA banned all uses of aldrin and dieldrin in 1974, except to control termites. In 1987, USEPA banned all uses (ATSDR, 1993b).

USEPA has established on oral RfD of 5×10^{-5} mg/kg-day for dieldrin; confidence in this value is considered medium (IRIS, 1997hh).

Dieldrin is considered to be Group B2 – probable human carcinogen by USEPA, based on liver tumors in animal (i.e., seven mouse) studies (IRIS, 1997hh). The oral CSF for dieldrin is 16 $(mg/kg\text{-}day)^{-1}$.

5.2.5.10 Heptachlor Epoxide

Heptachlor epoxide, a breakdown product of heptachlor, has been identified as a COPC in fish tissue. The epoxide is more likely to be found in the environment than heptachlor. Heptachlor is a powder that smells like camphor (mothballs). Heptachlor was marketed under trade names including Heptagran, Basaklor, Drinox, Soleptax, Termide, and Velsicol 104. Heptachlor was used extensively in the past for killing insects in homes, buildings, and on food crops, especially corn. Use slowed in the 1970s and stopped in 1988 (ATSDR, 1993c).

USEPA has established an oral RfD of 1.3×10^{-5} mg/kg-day for heptachlor epoxide (IRIS, 1997ii), based on animal studies showing effects on the liver. Confidence in this value is considered low, due to the low quality of the studies from which the RfD was derived.

USEPA classifies heptachlor epoxide as Group B2 – probable human carcinogen, based on animal studies showing liver carcinomas. The oral CSF for heptachlor epoxide is 9.1 $(mg/kg\text{-}day)^{-1}$ (IRIS, 1997ii).

5.2.6 Polychlorinated Biphenyls

Polychlorinated biphenyls as a group, as well as several of the individual Aroclors (i.e., commercial-mixture PCB compounds with different properties, differing among each other principally in the overall level of chlorination of the biphenyl molecules), have been identified as COPCs in fish tissue and soils and sediments at the Onondaga Lake site. Although there were no surface water samples from the 0 to 3 m depth interval analyzed for PCBs, PCBs were not detected in samples from greater depths in the lake (6 and 12 m). The individual Aroclors that were identified as COPCs at Onondaga Lake, as shown in Chapter 3, Table 3-1, include Aroclors 1016, 1221, 1242, 1248, 1254, 1260, and 1268. (Some NYSDEC fish data are reported as Aroclor 1254/1260, as shown in Table 3-1 and Appendix A; this is an analytical/reporting construct and does not represent a unique commercial Aroclor mixture.)

PCBs are mixtures of up to 209 different compounds (referred to as "congeners") that include a biphenyl and from one to ten chlorine atoms; "Aroclors" were commercial products with differing amounts of the individual congeners marketed in the US (similar mixtures were sold elsewhere under different trade names). PCBs have been used as a dielectric fluid in electrical equipment such as transformers and capacitors due to their heat resistance and insulating properties. PCBs were also used in the ballasts of flourescent lights and in hydraulic oils. The manufacture of PCBs was terminated in the US in 1977 due to evidence of harmful health effects (ATSDR, 2001e).

Although there are both non-cancer and cancer toxicity data for PCBs, there are not Aroclor-specific data for all the Aroclors detected at the Onondaga Lake site. There are IRIS files for "Polychlorinated Biphenyls (PCBs)" (IRIS, 1998j); Aroclor 1016 (IRIS, 1997jj); Aroclor 1248 (IRIS, 1997kk); and Aroclor 1254 (IRIS, 1997ll). The available toxicity data, and the manner in which it was applied to the Onondaga Lake HHRA, are discussed below.

5.2.6.1 Cancer Risk

The current USEPA CSFs for PCBs are for PCBs as a class; i.e., they are not Aroclor-specific or congener-specific. PCBs are assigned B2 weight-of-evidence classification, as a probable human carcinogen. The Group B2 classification indicates that there is sufficient evidence of PCB carcinogenicity from animal studies, but the human carcinogenicity data are considered inadequate (IRIS, 1998j).

The IRIS files for the individual Aroclors (1016, 1248, and 1254) all state that they have "...not undergone a complete evaluation under USEPA's IRIS program for evidence of human carcinogenic potential" (IRIS, 1997jj,kk,ll); therefore, the cancer toxicity data for "PCBs" are applied to each of the individual Aroclors that have been identified as COPCs at the Onondaga Lake site.

USEPA uses a three-tiered approach for PCB cancer potency in humans (IRIS, 1998k), as follows:

- **High risk and persistence:** Applicable to food chain exposure; sediment or soil ingestion; dermal exposure, where an absorption factor is applied; and early life exposure.

- **Low risk and persistence:** Applicable to ingestion of water-soluble congeners; inhalation of evaporated congeners; and dermal exposure, if no absorption factor is applied.

- **Lowest risk and persistence:** Applicable only when it is known that the PCB mixture contains less than 0.5 percent congeners with more than four chlorines (pentachloro or more highly chlorinated PCB congeners).

For this HHRA, the exposure pathways (soil/sediment ingestion and dermal contact, and fish ingestion) all meet the criteria for the high risk and persistence tier, so those CSFs were applied for calculating the carcinogenic risks for PCBs. PCBs were not identified as a COPC in Onondaga Lake surface water since they were not detected in lake water.

Literature and analytical data were reviewed to determine if any of the Aroclors that are Onondaga Lake site COPCs met the criterion for lowest risk and persistence, based on the absence of more highly chlorinated PCB congeners. Literature data are in agreement that Aroclors 1242 and higher (i.e., 1248, 1254, 1260, and 1268) are composed of 10 percent or more congeners with more than four chlorines; however, the literature data are less consistent with regard to Aroclors 1016 and 1221 (reported values range from zero to about one percent for these two congeners) (Table 1-4 in TAMS/USEPA, 2000).

More recent (i.e., 1994) congener-specific analysis of Aroclor standards data generated for the Hudson River PCBs Site RI/FS were reviewed; these data show that both Aroclor 1016 and 1221 contain slightly more than 1 percent pentachlorobiphenyl and hexachlorobiphenyl (Table 1-5 in TAMS/USEPA, 2000).

Therefore, it was determined that none of the Onondaga Lake Aroclor mixtures met the criteria for "low risk and persistence."

For each tier, USEPA has developed both an upper-bound slope factor and a central estimate slope factor. For this Onondaga Lake HHRA, the upper-bound CSF (2 $[mg/kg\text{-}day]^{-1}$) is used for the reasonable maximum exposure (RME) and the central estimate CSF (1 $[mg/kg\text{-}day]^{-1}$) is used in the central tendency (CT) risk calculation.

5.2.6.2 Non-Cancer Toxicity

There are IRIS files for "Polychlorinated Biphenyls (PCBs);" Aroclor 1016; Aroclor 1248; and Aroclor 1254. The IRIS file for "PCBs" references the individual IRIS files for Aroclors 1016, 1248, 1254, and 1260 (although the file for Aroclor 1260 was not located).

The IRIS file for Aroclor 1016 lists an oral RfD of 7×10^{-5} mg/kg-day, with a confidence level of medium (IRIS, 1997jj). The file for Aroclor 1248 notes that the health effects data were reviewed and "...determined to be inadequate for the derivation of an oral RfD" (IRIS, 1997kk). The file for Aroclor 1254 presents an oral RfD of 2×10^{-5} mg/kg-day, with a confidence level of medium (IRIS, 1997ll).

Based on the fact that the individual Aroclor mixtures differ only in the relative quantities (percentages) of different PCB congeners, it is reasonable to assume that similar Aroclors will have similar toxicological properties, even in the absence of verifiable Aroclor-specific data. For non-cancer toxicity, the Aroclors have been divided into two groups, as follows:

- The lower molecular weight Aroclor group includes Aroclors 1016, 1221, and 1242, and is characterized for the quantitative HHRA by the oral RfD for Aroclor 1016 (7×10^{-5} mg/kg-day) (IRIS, 1997jj). Aroclor 1232 would also be assigned to this group, except that it was not detected in samples used for this HHRA.

- The higher molecular weight Aroclor group includes Aroclors 1248, 1254, 1260 (including the Aroclor 1254/1260 data), and 1268. The higher molecular weight Aroclor group is characterized in this HHRA by the oral RfD for Aroclor 1254 (2×10^{-5} mg/kg-day) (IRIS, 1997ll). Aroclor 1248 has been assigned to the higher molecular weight Aroclor group for the HHRA, based on its being predominantly (over 50 percent) composed of tetrachloro- and higher chlorinated congeners. This assignment of Aroclor 1248 is also more conservative; i.e., more protective of human health.

5.2.7 PCDD/PCDFs

PCDD/PCDFs have been identified as COPCs in fish tissue, lake and wetland sediments, and dredge spoils. Surface water samples have not been analyzed for PCDD/PCDFs. PCDD/PCDFs are a group of 210 structurally related chlorinated chemicals that are ubiquitous in the environment. There are a total of

135 possible polychlorinated dibenzofurans (PCDFs), and 75 different polychlorinated dibenzo-*p*-dioxins (PCDDs). Sources of PCDD/PCDFs include incineration of municipal and certain industrial wastes, chlorination processes used in pulp and paper manufacturing and water treatment systems, and the production and use of certain chlorinated pesticides (e.g., 2,4,5-T).

Although PCDD/PCDFs are typically present in the environment as a mixture of many individual components, 2,3,7,8-TCDD (tetrachlorodibenzo-*p*-dioxin) has been extensively studied and is thought to be the most toxic congener within this chemical class. USEPA has not developed quantitative toxicity factors for any other specific PCDD/PCDF congeners because of the limited toxicological information available for these compounds (although there is an IRIS file for "Hexachlorodibenzo-*p*-dioxin, Mixture" [IRIS, 1997mm]).[1] Instead, USEPA adopted a toxicity equivalence factor (TEF) approach for quantitatively estimating the toxicity of other congeners that is based on their likely toxicity relative to that of 2,3,7,8-TCDD (USEPA, 2000a). The TEFs were updated by Van den Berg et al. (1998), and these revised TEFs have been utilized in this HHRA (Table 5-1 herein). In the TEF approach, 2,3,7,8-TCDD is assigned a weighting factor, or TEF, of 1. All other PCDD/PCDFs are assigned weighting factors based on their toxicity relative to 2,3,7,8-TCDD. Only PCDDs and PCDFs with four or more chlorine atoms, and only those with chlorine atoms in the 2,3,7,8 positions, are assigned TEFs; no toxicity factor is assigned to the other PCDD or PCDF congeners.

To apply the TEF approach, the concentrations of individual congeners in a PCDD/PCDF mixture are multiplied by their respective TEFs to yield the equivalent concentration of 2,3,7,8-TCDD. For example, a concentration of 0.2 ng/kg of 1,2,3,4,7,8-hexachlorodibenzo-p-dioxin, which has a TEF of 0.1, is considered equivalent to a concentration of 0.02 ng/kg of 2,3,7,8-TCDD. The equivalent concentrations of 2,3,7,8-TCDD for all of the PCDD/PCDF congeners in a given mixture are then summed to yield a total 2,3,7,8-TCDD toxic equivalent (TEQ) that is applied in risk calculations. The 2,3,7,8-TCDD TEFs used in this risk assessment to calculate the 2,3,7,8-TCDD TEQ are listed in Table 5-1 herein. The uncertainties related to the use of the TEF approach are discussed in Chapter 7, Uncertainty Assessment.

USEPA classifies 2,3,7,8-TCDD as a probable human carcinogen (i.e., a Group B2 carcinogen), based on inadequate data in human populations but sufficient evidence in laboratory animals. The numerous epidemiological studies undertaken to assess the potential carcinogenicity of PCDD/PCDFs in humans have generally suffered from a lack of accurate exposure data and potentially confounding exposures to other contaminants. There is no USEPA-verified CSF for 2,3,7,8-TCDD in IRIS; however, an oral CSF of 1.5×10^5 $(mg/kg\text{-}day)^{-1}$ is published in HEAST (USEPA, 1997b), based on the occurrence of tumors in a study of female rats (Kociba et al., 1978) and subsequent USEPA reviews. USEPA recently released the public review draft of its exposure and human health reassessment of 2,3,7,8-TCDD and related compounds (USEPA, 2000); however, the conclusions from the draft reassessment are not used in this

[1] USEPA has developed a CSF for use in estimating risks associated with ingestion and inhalation exposures to mixtures of hexachlorodibenzo-*p*-dioxins (USEPA, 1997a). Risk assessments for PCDD/PCDFs, however, typically use the TEF approach to estimate the carcinogenic risks associated with these compounds.

quantitative HHRA. Risk estimates derived from the data (proposed CSF) in the draft dioxin reassessment document are presented in Chapter 7, Section 7.5.1.3.

USEPA does not currently have any quantitative toxicity factors (e.g., oral RfD) for the non-cancer health effects of PCDD/PCDFs. The most common and clearly demonstrated adverse systemic health effect that has been observed in humans exposed to PCDD/PCDFs through ingestion or dermal contact is a skin lesion known as chloracne. In addition, there is evidence suggesting that PCDD/PCDFs may cause liver damage, loss of appetite, weight loss, and digestive disorders in humans; however, these effects may have occurred as a result of concomitant exposures to chemicals where PCDD/PCDFs were present as trace contaminants. In some animal species, 2,3,7,8-TCDD caused liver damage and wasting following exposure to lethal or near-lethal doses. Animal studies have also provided evidence that PCDD/PCDFs may cause reproductive, developmental, and immune system toxicity (ATSDR, 1989). The USEPA draft dioxin reassessment (USEPA, 2000a) supports the existence of non-cancer health effects from dioxin. Although an RfD for dioxin is not proposed, several approaches to evaluating non-cancer toxicity of PCDD/PCDFs are discussed in the draft reassessment and summarized in Chapter 7, Section 7.5.1.3 of this HHRA.

Table 5-1. WHO TEFs for Human Health Risk Assessment[1]

Congener	TEF Value
Chlorinated dibenzo-p-dioxins	
2,3,7,8-TCDD	1
1,2,3,7,8-PnCDD	1
1,2,3,4,7,8-HxCDD	0.1
1,2,3,6,7,8-HxCDD	0.1
1,2,3,7,8,9-HxCDD	0.1
1,2,3,4,6,7,8-HpCDD	0.01
OCDD	0.0001
Chlorinated dibenzofurans	
2,3,7,8-TCDF	0.1
1,2,3,7,8-PnCDF	0.05
2,3,4,7,8-PnCDF	0.5
1,2,3,4,7,8-HxCDF	0.1
1,2,3,6,7,8-HxCDF	0.1
1,2,3,7,8,9-HxCDF	0.1
2,3,4,6,7,8-HxCDF	0.1
1,2,3,4,6,7,8-HpCDF	0.01
1,2,3,4,7,8,9-HpCDF	0.01
OCDF	0.0001

Notes: [1] WHO TEFs from Van den Berg et al. (1997), as cited in *Assessment of the health risk of dioxins: Re-evaluation of the Tolerable Daily Intake (TDI)* (WHO, 1998).

TEF – Toxicity equivalence factor
WHO – World Health Organization

TCDD – Tetrachlorodibenzo-p-dioxin
PnCDD – Pentachlorodibenzo-p-dioxin
HxCDD – Hexachlorodibenzo-p-dioxin
HpCDD – Heptachlorodibenzo-p-dioxin
OCDD – Octachlorodibenzo-p-dioxin

TCDF – Tetrachlorodibenzofuran
PnCDF – Pentachlorodibenzofuran
HxCDF – Hexachlorodibenzofuran
HpCDF – Heptachlorodibenzofuran
OCDF – Octachlorodibenzofuran

6. RISK CHARACTERIZATION

In risk characterization, quantitative exposure estimates and toxicity factors are combined to calculate numerical estimates of potential health risk. In this chapter, potential cancer risks and non-cancer health hazards are estimated assuming long-term exposure to chemicals detected in site media. Risks are calculated for each completed exposure pathway, as discussed in Chapter 4, Exposure Assessment, and summarized in RAGS Table 1 (Appendix B).

As described in Chapter 4, potential risks are estimated for both current and future recreational scenarios. Exposure parameters such as exposure frequency for both current and future recreational use utilize those assumed for future use, as future recreational use of the lake is expected to be more extensive than current use. Thus, potential risk estimates for the future recreational scenario provide a conservative means for evaluating current potential risks posed by site media. Potential future risks are also estimated for construction workers who may contact lake and wetland sediments, dredge spoils area soils, and surface water.

The risk characterization methods described in RAGS Part A (USEPA, 1989a) and Part E (USEPA, 2001a) are used to calculate reasonable maximum exposure (RME) and central tendency (CT) (also known as typical) excess lifetime cancer risks for carcinogens and hazard indices (HIs) for contaminants with non-cancer health effects. These methods and the results of the risk characterization are described below, and are summarized in Table 6-1. In addition, the tables in Appendix B have been prepared consistent with Tables 7 and 8 of RAGS Part D (USEPA, 1998). These tables show detailed results of the risk calculations for each exposure pathway, including exposure point concentrations (EPCs) and intakes (as chronic daily intakes, or CDIs) calculated for the RME and CT scenarios, toxicity values used in risk estimates, and risk estimates for each COPC in each exposure pathway.

It should be noted that USEPA updated the RAGS guidance document as this HHRA was being prepared (K. Martin, pers. comm., 2002); USEPA indicated that the new guidance document (USEPA, 2001d) should be used for new risk assessments. As this HHRA was at a state of substantial completion at the time, the new (i.e., December 2001) RAGS Part D reporting format is not used in this report (with the concurrence of USEPA Region 2 risk assessment staff). The tables in Appendix B of this HHRA are those in the 1998 RAGS Part D guidance.

As the RAGS-specified tables do not provide a mechanism for summing risk across receptors (e.g., the cumulative risk of a receptor to COPCs in more than one medium – for instance, fish tissue, soil/sediment, and surface water), additional tables have been developed for this purpose and are included in this chapter.

Uncertainties associated with the quantitation of cancer risks and non-cancer human health hazards are discussed in Chapter 7 of this HHRA.

6.1 Cancer Risks

The procedures and results of the calculation of risks associated with carcinogenic COPCs are presented in this section. Only COPCs for which there are USEPA oral cancer slope factors (CSFs) are evaluated quantitatively in this HHRA. The CSFs used for each COPC and their sources are presented and discussed in Chapter 5, Toxicity Assessment, and in RAGS Table 6.1 in Appendix B. The potential effect on the quantitative HHRA for known or suspected carcinogens for which oral CSFs are not available is discussed in Chapter 7, Uncertainty Assessment.

It should be noted that the cancer risks discussed in this document represent excess or incremental cancer risks. In other words, the risks presented in this document are the increased cancer risks due to site-related COPCs.

6.1.1 Methods

Quantifying total excess cancer risk requires calculating risks associated with exposure to individual carcinogens and aggregating risks associated with simultaneous exposure to multiple carcinogenic chemicals. A cancer risk estimate for a single carcinogen is calculated by multiplying the carcinogenic chronic daily intake (CDI) of the contaminant by its CSF. A 1×10^{-6} cancer risk represents a one-in-one-million additional probability that an individual may develop cancer over a 70-year lifetime as a result of the exposure conditions evaluated. Because cancer risks are assumed to be additive, risks associated with simultaneous exposure to more than one carcinogen in a given medium are aggregated to determine a total cancer risk for each exposure pathway. Total cancer risks for each pathway are then summed for reasonable combinations of exposure pathways to determine the total cancer risk for the population of concern.

The findings presented here are compared to levels cited in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), which states that ". . . acceptable exposure levels are generally concentration levels that represent an excess upper bound cancer to an individual of between 10^{-4} to 10^{-6} . . . The 10^{-6} risk level shall be used as the point of departure for determining remediation goals . . ." (40 CFR §300.430[e][2][A][2]). These target risk levels are also often applied by other agencies responsible for protecting human health (NYSDOH and ATSDR, 1995).

6.1.2 Quantitation of Cancer Risks by Pathway

Carcinogenic risk estimates were calculated for children and adults in the RME and CT scenarios as the probability of additional cancers associated with the selected exposure pathways (see Appendix B, RAGS Table 1). Separate risk estimates have been calculated for fish ingestion by both older and young children, in addition to adults, utilizing the ingestion rates discussed in Chapter 4, Section 4.2.1.

Based on the exposure assumptions and toxicity values described above, Tables 6-2 and 6-3 provide a summary of risk estimates for all complete exposure pathways in the RME and CT scenarios. Risks

associated with fish consumption by recreational users (adults, as well as young and older children) exceeded the upper end of the 10^{-6} to 10^{-4} target risk range for the RME scenario, ranging from 2.4×10^{-4} (for young children) to 7.8×10^{-4} for adults. These RME risk estimates were principally related to exposure to polychlorinated biphenyls (PCBs) and polychlorinated dibenzo-*p*-dioxins and furans (PCDD/PCDFs), each of which individually contributed risks greater than 1×10^{-4} for the adult receptor (Appendix B, RAGS Table 8.1).

The principal chemicals contributing to risk for each pathway, defined as contributing individual (chemical-specific) risks of greater than 10^{-6}, or contributing at least 10 percent of the pathway-specific risk, are shown on Table 6-4 for the RME and CT scenarios. Mercury compounds (inorganic mercury and methylmercury) are identified by USEPA as Class C (possible human) carcinogens; however, there are no cancer toxicity data to quantitatively evaluate this endpoint.

The CT cancer risk for fish consumption was calculated slightly below 1×10^{-4}, at about 4.5×10^{-5} for all recreational receptors (adults, young children, and older children), with the same chemicals (i.e., PCBs and PCDD/PCDFs) contributing the bulk of the risk.

As the risks associated with fish ingestion exceeded risks from other pathways for all receptors by a large margin (typically by an order-of-magnitude or more), Tables 6-2 and 6-3 also show the total receptor risk without the fish ingestion pathway included. Cancer risk estimates for other exposure pathways (excluding fish ingestion) for recreational users and construction workers were less than 10^{-4}. However, RME risk estimates (Table 6-2) for exposure to soils and sediments (lake sediments, wetlands, and dredge spoils) exceeded 10^{-6} for all receptors except construction worker exposure to northern basin sediments and Wetland SYW-10. Central tendency risk estimates (Table 6-3) were much lower, typically by about one order-of-magnitude. Central tendency risk estimates equaled or exceeded 10^{-6} for at least one receptor for southern basin sediments, northern wetlands (Wetlands SYW-6 and SYW-10), and one of the southern wetlands (Wetland SYW-19), ranging from 1×10^{-6} (older child exposure to Wetland SYW-10 sediments) to 1.4×10^{-5} (older child exposure to Wetland SYW-6 sediments) (Table 6-3).

Cancer risks associated with the lake sediments and wetland sediments were primarily from exposure to polycyclic aromatic hydrocarbons (PAHs) (particularly benzo[a]pyrene), as well as hexachlorobenzene, arsenic, and PCDD/PCDFs. Risks associated with exposure to the dredge spoils area are primarily related to arsenic, with lesser contributions from benzo(a)pyrene and hexachlorobenzene. PCBs did not generally contribute greatly to the risks associated with exposure to sediments, wetlands, or dredge spoils. Risks associated with dermal contact typically accounted for 50 to 90 percent of the cancer risk for exposure to sediments and soils.

Cancer risks associated with exposure to surface water were substantially below 10^{-6} for all receptors for both RME and CT scenarios (the highest value was 6.1×10^{-8} for the adult recreational RME scenario).

Although the elevated cancer risk estimates for consumption of fish from the lake were due primarily to exposure to PCBs and PCDD/PCDFs, a number of additional chemicals had RME risk estimates in the

fish consumption pathway that were greater than the lower end of the acceptable range identified by USEPA (i.e., 1×10^{-6}) for carcinogens. These included arsenic, bis(2-ethylhexyl)phthalate, hexachlorobenzene, 4,4'-DDE, aldrin, dieldrin, and heptachlor epoxide. Each of these risk estimates was less than 2×10^{-5}, with the highest risk estimates (for adult recreational receptors) being 1.8×10^{-5} for arsenic and 9.3×10^{-6} for dieldrin.

6.1.3 Quantitation of Cancer Risks by Receptor

The highest site risks and hazards are from the fish ingestion pathway; the fish ingestion pathway represents between 47 and 88 percent of the RME cancer risk for recreational receptors (see Table 6-2). Total risk estimates for each recreational receptor for all pathways combined, as shown on Tables 6-2 (RME) and 6-3 (CT), were essentially the same as the risk estimate associated with fish ingestion (e.g., the adult RME risk estimate for fish ingestion is 7.8×10^{-4}; and the total adult RME risk across all pathways is 8.8×10^{-4}). The receptor-specific cumulative risk summary tables include both the total cancer risks (including fish ingestion), and also show the cancer risks associated with just the sediment, soil, and surface water pathways (i.e., excluding fish ingestion).

Although the great majority of the risks were related to fish consumption, the total RME risk estimates were greater than the lower end of the target risk range of 1×10^{-6} for all the recreational and construction worker receptors and pathways (either ingestion or dermal contact) for lake sediments, wetland sediments, and dredge spoils. The highest RME risk estimates, excluding fish consumption, were greater than 1×10^{-4} for the older child (3.8×10^{-4}) and adult (1×10^{-4}), based on exposure to the seven soil/sediment media (i.e., the northern and southern basin sediments, each of the four wetlands, and the near-surface dredge spoils) and the lake water. The RME risk from pathways other than fish ingestion for other receptors ranged from 2×10^{-5} for the construction worker to about 3.5×10^{-5} for the young child recreational receptor.

Although both the ingestion and dermal pathways were significant for all receptors, the dermal pathway contributed the majority of the risk for both the recreational and construction worker scenarios. For the older child recreational receptor, the RME dermal risk (about 3.6×10^{-4}) exceeded the ingestion (other than fish) risk (about 2.3×10^{-5}) by an order-of-magnitude. The ingestion risk was a larger fraction of the total RME risk for the other receptors (adults, young children, and construction workers), as shown on Table 6-2.

Central tendency cancer risks, summarized on Table 6-3, were also driven by fish ingestion, the risk from which was calculated as about 4.5×10^{-5} for all recreational receptors (adults, young children, and older children). Total CT risks associated with other pathways (excluding fish ingestion) were within the 10^{-4} to 10^{-6} range, going from about 2.6×10^{-6} for the young child to about 1.8×10^{-5} for the older child recreator. Both the dermal and ingestion pathways contributed to the overall (non-fish-ingestion) risk, with each pathway contributing cancer risks exceeding 1×10^{-6} for most recreational and construction worker receptors.

Detailed tables illustrating the risks for each pathway, receptor, and COPC are provided in Appendix B, RAGS Tables 9 and 10.

6.2 Non-Cancer Hazards

6.2.1 Methods

Unlike carcinogenic effects, potential adverse health effects that are non-carcinogenic are not expressed as a probability. Instead, these effects are expressed as the ratio of the estimated exposure (intake) over a specified time period to the reference dose (RfD) derived for a similar exposure period (e.g., CDI to chronic RfD). This ratio is termed a hazard quotient (HQ). If the CDI exceeds the RfD (i.e., an HQ of greater than 1.0), there may be concern for non-cancer adverse health effects. Exposures resulting in an HQ of less than 1.0 are not likely to result in adverse health effects.

In initial risk calculations, HQs for individual COPCs are summed for each exposure pathway to derive a hazard index (HI). Hazard indices for each exposure pathway are then summed to determine the total HI for each population of concern. The non-cancer hazards are presented in Tables 6-1 (summary), 6-2 (RME), 6-3 (CT), and 6-5 (COPC summary).

In the event a total HI exceeds 1.0, the HI is segregated by primary target organs because adding HQs of compounds that do not affect the same target organ could overestimate the potential for adverse effects. Consistent with the RAGS Part D guidance (USEPA, 1998), HQs are summed across exposure pathways for specific chemicals that share the same critical effect or primary target organ, as reported in USEPA's Integrated Risk Information System (IRIS), Health Effects Assessment Summary Tables (HEAST), or other sources (see Appendix B, RAGS Table 5.1, and additional discussion in Chapter 5 of this report), to determine a total HI for that target organ or critical effect, as shown in Appendix B, RAGS Table 9.

Table 6-6 shows the classification of COPCs by primary target organs (or systems) for calculating the target organ HI. Some COPCs have more than one target organ and, consequently, the HQs associated with these chemicals are summed under more than one target organ HI. Because the HQs for these chemicals are "double-counted," the sum of the target organ HIs may exceed the total HI.

Although the target organ HIs provide more information about the potential for adverse effects to result from the exposure conditions evaluated in each scenario, it is important to note that all chemicals may have health effects on organs or systems other than the primary organ/system reported in IRIS or HEAST (i.e., other effects may be associated with a chemical, but may only occur at higher doses). Thus, if all the individual target organ HIs are less than 1.0, the potential for adverse effects is less likely to be of concern; however, this result does not provide an absolute measure of certainty that adverse health effects could not occur.

6.2.2 Quantitation of Non-Cancer Hazards by Pathway

Tables 6-2 and 6-3 provide summaries of total HIs calculated for RME and CT scenarios, respectively. The chemicals contributing at least 10 percent of the total HI for each pathway, and each chemical exceeding risk target criteria (cancer risk of 10^{-6} or HI of 1.0), are identified on Tables 6-4 and 6-5, respectively. The fish consumption pathway exceeded an HI of 1.0 for all recreational receptors for both RME and CT scenarios, ranging from a maximum for the young child RME (HI of 28.3) to the adult CT (HI of about 4.5) recreational scenarios for Onondaga Lake. The RME HIs are less than 1.0 for the other pathways evaluated (see Table 6-1).

For the RME scenario associated with recreational use of Onondaga Lake, total HIs of 18.4 (adult) to 28.7 (young child) across all pathways for all media were calculated (Table 6-2). The majority of the hazard (over 95 percent for children and 99 percent for adults) was associated with ingestion of COPCs, predominantly PCBs and methylmercury, in fish. For adults, the elevated HI for the fish consumption pathway was primarily related to the following:

- Methylmercury: HQ of 3.9.
- PCBs (the total HQ for less chlorinated Aroclors [i.e., Aroclors 1016, 1221, and 1242] and more highly chlorinated Aroclors [i.e., Aroclors 1248, 1254, and 1254/1260] combined): HQ of 12.7.

Based on the assumptions and toxicity values used in this HHRA, these results indicate the potential for non-cancer adverse health effects as a result of long-term exposures via ingestion of lake fish. The fact that methylmercury concentrations in Onondaga Lake fish fillets frequently exceed US Food and Drug Administration (US FDA) action levels (49 percent, or 357 out of 728 fillet samples exceed the US FDA action limit of 1 mg/kg for mercury) is consistent with the finding of concern for adverse health effects from consumption of lake fish. Other than fish consumption, no RME pathways had an HI greater than 1.0.

For the CT scenario, the only pathway that exceeded an HI of 1.0 was fish consumption, which was exceeded for all recreational receptors, ranging from 4.5 for adults to about 7 for young children. For adults, the HI CT estimate for the fish consumption pathway (about 4.5) was primarily based on the following HQs:

- Mercury: HQ of 1.2.
- PCBs: HQ of 2.7 (the sum of the HQs for less chlorinated Aroclors [HQ of 0.52] and highly chlorinated Aroclors [HQ of 2.2]).

6.2.3 Quantitation of Non-Cancer Hazards by Receptor

The highest non-cancer hazards at the site are from the fish ingestion pathway, which represents more than 95 percent of the RME non-cancer hazard to recreational receptors. For example, the RME fish ingestion hazard for the young child recreator is 28.3, and the total hazard across all pathways (fish ingestion and exposure to COPCs in sediment and surface water) is 29.1 (see Table 6-2). The receptor-specific cumulative risk summary tables include the risks and hazards associated with just the sediment, soil, and surface water pathways. In addition to the non-cancer hazards for each pathway, Tables 6-2 and 6-3 show the total HI for each receptor: adult recreational; older child recreational; young child recreational; and construction workers.

The HIs for the three recreational receptor groups exceed 1.0 for both RME and CT scenarios, driven almost entirely by the HIs for fish ingestion (HIs of 18 to 28 for RME and 4.5 to 7 for CT in each case). To illustrate the degree of hazard from other pathways, Tables 6-2 and 6-3 also show the hazard to receptors for all media except fish consumption. The total RME HIs for the other pathways to which each receptor may be exposed (i.e., sediments, dredge spoils, and lake water) ranged from about 0.2 for the adult recreator to about 1.0 (the calculated HI is 0.98) for the older child recreator. These HIs may be high-end estimates, as the HIs for the adult and older child recreational receptors were calculated assuming that each of these receptors is exposed to all seven of the soil/sediment media (i.e., the northern and southern basin sediments; each of the four wetlands; and the near-surface dredge spoils) at the RME frequency.

The RME HI for the construction worker is below 1.0 (about 0.83). The HI for the construction worker may be high for the same reasons presented above for the recreational receptors, as it was calculated assuming that the worker is involved in construction projects in each of the seven soil/sediment media. The construction worker scenario assumed that the construction worker consumes no Onondaga Lake fish.

The CT HI for all recreational receptors is driven by fish consumption, which accounts for over 95 percent of the non-cancer HI for recreational receptors. The CT HIs (also shown on Table 6-3), excluding fish consumption, for all receptors (recreational and construction worker) were well below 1.0, ranging from less than 0.1 for the adult recreator to about 0.3 for the construction worker.

6.3 Summary of Risk Characterization

The HHRA focuses on current and potential future recreational uses of and construction worker exposure to Onondaga Lake, including fish consumption and COPCs in surface water, nearshore sediments, wetland sediments, and dredge spoils. The principal findings of the HHRA are as follows:

- PCBs, PCDD/PCDFs, and PAHs were the primary chemicals contributing to cancer risk estimates for Onondaga Lake media. Methylmercury and PCBs were the primary chemicals contributing to non-cancer hazard estimates for Onondaga Lake media.

- Consumption of fish was the only exposure pathway with a total cancer risk estimate greater than the upper end of the 10^{-6} to 10^{-4} target risk range for carcinogens, due primarily to PCBs and PCDD/PCDFs.

- RME cancer risk estimates were greater than the lower end of the acceptable risk range of 1×10^{-6} for at least one pathway and receptor for lake sediments, wetland sediments, and dredge spoils. The highest RME risk estimate, after fish consumption, was about 2.6×10^{-4} for older child exposure to Wetland SYW-6 sediments, with RME risks greater than 1×10^{-5} for both older and young children's ingestion and dermal contact with southern basin lake sediments, adult recreational exposure to Wetland SYW-6 sediments, older child exposure to Wetland SYW-12 sediments, and for adult and older child exposure to Wetland SYW-19 sediments.

- Consumption of fish had total HIs of greater than 1.0 for PCBs and methylmercury in both RME and CT estimates for adults, older children, and young children. No other pathway evaluated in this HHRA had an HI, either RME or CT, of greater than 1.0. The RME HI for young children's exposure to southern basin nearshore sediments (0.54) represents the next highest non-cancer hazard.

- The finding of elevated risk and hazard estimates for methylmercury and PCBs is consistent with the fact that concentrations of these chemicals in fish tissues collected from Onondaga Lake exceeded FDA action limits.

- Estimates for exposure to COPCs in the surface water of the lake were less than the lower end of the target risk range for carcinogens (i.e., 10^{-6}) and had HIs of less than 1.0, indicating little potential risk associated with recreational exposure to COPCs in water.

Table 6-1. Summary of Cancer Risks and Non-Cancer Hazards

Pathway	Non-Cancer Hazard		Cancer Risk	
	RME	CT	RME	CT
Fish Ingestion - Adult Angler	**18.2**	**4.48**	**7.8E-04**	**4.3E-05**
Fish Ingestion - Young Child	**28.3**	**6.97**	**2.4E-04**	**4.4E-05**
Fish Ingestion - Older Child	**19.8**	**4.86**	**3.4E-04**	**4.6E-05**
Sediments - Northern Basin - Adult Recreational	0.020	0.007	**1.3E-06**	1.4E-07
Sediments - Northern Basin - Young Child Recreational	0.221	0.060	**3.8E-06**	5.7E-07
Sediments - Northern Basin - Older Child Recreational	0.070	0.012	**3.9E-06**	2.5E-07
Sediments - Northern Basin - Construction Worker	0.037	0.013	1.5E-07	3.8E-08
Sediments - Southern Basin - Adult Recreational	0.039	0.007	**1.0E-05**	5.3E-07
Sediments - Southern Basin - Young Child Recreational	0.535	0.047	**3.2E-05**	**2.0E-06**
Sediments - Southern Basin - Older Child Recreational	0.253	0.012	**3.5E-05**	**1.0E-06**
Sediments - Southern Basin - Construction Worker	0.219	0.062	**3.7E-06**	8.3E-07
Sediments - Wetland SYW-6 (North) - Adult Recreational	0.042	0.015	**6.5E-05**	**7.1E-06**
Sediments - Wetland SYW-6 (North) - Older Child Recreational	0.115	0.026	**2.6E-04**	**1.4E-05**
Sediments - Wetland SYW-6 (North) - Construction Worker	0.078	0.029	**7.6E-06**	**1.5E-06**
Sediments - Wetland SYW-10 (North) - Adult Recreational	0.041	0.015	**5.0E-06**	5.4E-07
Sediments - Wetland SYW-10 (North) - Older Child Recreational	0.161	0.026	**1.7E-05**	**1.0E-06**
Sediments - Wetland SYW-10 (North) - Construction Worker	0.076	0.026	6.0E-07	1.4E-07
Sediments - Wetland SYW-12 (South) - Adult Recreational	0.023	0.004	**3.7E-06**	1.9E-07
Sediments - Wetland SYW-12 (South) - Older Child Recreational	0.122	0.007	**1.4E-05**	3.7E-07
Sediments - Wetland SYW-12 (South) - Construction Worker	0.135	0.042	**1.4E-06**	2.7E-07
Sediments - Wetland SYW-19 (South) - Adult Recreational	0.027	0.005	**1.4E-05**	7.7E-07
Sediments - Wetland SYW-19 (South) - Older Child Recreational	0.157	0.009	**4.9E-05**	**1.4E-06**
Sediments - Wetland SYW-19 (South) - Construction Worker	0.156	0.047	**5.4E-06**	**1.2E-06**
Soils - Dredge Spoils (Surface) - Adult Recreational	0.026	0.009	**1.8E-06**	1.9E-07
Soils - Dredge Spoils (Surface) - Older Child Recreational	0.075	0.016	**4.7E-06**	3.5E-07
Soils - Dredge Spoils (Surface) - Construction Worker	0.048	0.018	2.1E-07	6.0E-08
Soils - Dredge Spoils (Subsurface) - Construction Worker	0.126	0.043	**1.1E-06**	2.4E-07
Surface Water - Adult Recreational	0.020	0.007	6.1E-08	7.8E-09
Surface Water - Young Child Recreational	0.037	0.014	2.5E-08	9.9E-09
Surface Water - Older Child Recreational	0.024	0.009	3.0E-08	9.4E-09
Surface Water - Construction Worker	0.002	0.001	4.2E-10	1.1E-10

Notes: Hazard indices (HI) and cancer risks in **bold** exceed target levels (HI > 1, cancer risk > 10^{-6})

CT = central tendency

RME = reasonable maximum exposure

Table 6-2. Reasonable Maximum Exposure – Receptor-Specific Risk and Hazard Estimates

6-2a. Adult Recreator

	Cancer Risk - RME			Hazard Quotient - RME		
Medium	**Ingestion**	**Dermal**	**Total**	**Ingestion**	**Dermal**	**Total**
Fish	7.8E-04	NA	7.8E-04	18.2	NA	18.21
Northern Basin Sediments	6.4E-07	6.3E-07	1.3E-06	0.017	0.003	0.020
Southern Basin Sediments	4.1E-06	5.9E-06	1.0E-05	0.023	0.016	0.039
Wetland SYW-6	2.1E-05	4.4E-05	6.5E-05	0.038	0.004	0.042
Wetland SYW-10	2.3E-06	2.7E-06	5.0E-06	0.034	0.008	0.041
Wetland SYW-12	1.3E-06	2.4E-06	3.7E-06	0.017	0.007	0.023
Wetland SYW-19	6.3E-06	8.1E-06	1.4E-05	0.018	0.009	0.027
Dredge Spoils (surface)	1.0E-06	7.2E-07	1.8E-06	0.023	0.003	0.026
Lake Surface Water	6.0E-09	5.5E-08	6.1E-08	0.001	0.019	0.020
Total for Receptor	8.2E-04	6.5E-05	8.8E-04	18.38	0.068	18.44
Receptor Total, Excluding Fish	3.6E-05	6.5E-05	1.0E-04	0.172	0.068	0.239

Note: NA - Not applicable to this pathway or medium.

6-2b. Young Child Recreator

	Cancer Risk - RME			Hazard Quotient - RME		
Medium	**Ingestion**	**Dermal**	**Total**	**Ingestion**	**Dermal**	**Total**
Fish	2.4E-04	NA	2.4E-04	28.3	NA	28.3
Northern Basin Sediments	1.2E-06	2.6E-06	3.8E-06	0.157	0.064	0.221
Southern Basin Sediments	7.7E-06	2.4E-05	3.2E-05	0.215	0.320	0.535
Wetland SYW-6 (1)	NA	NA	NA	NA	NA	NA
Wetland SYW-10 (1)	NA	NA	NA	NA	NA	NA
Wetland SYW-12 (1)	NA	NA	NA	NA	NA	NA
Wetland SYW-19 (1)	NA	NA	NA	NA	NA	NA
Dredge Spoils (surface) (1)	NA	NA	NA	NA	NA	NA
Lake Surface Water	6.0E-09	1.9E-08	2.5E-08	0.005	0.032	0.037
Total for Receptor	2.5E-04	2.7E-05	2.8E-04	28.70	0.416	29.11
Receptor Total, Excluding Fish	8.9E-06	2.7E-05	3.5E-05	0.376	0.416	0.792

Notes: NA - Not applicable to this pathway or medium.
(1) Young children are assumed to not be exposed to these media.

6-2c. Older Child Recreator

	Cancer Risk - RME			Hazard Quotient - RME		
Medium	**Ingestion**	**Dermal**	**Total**	**Ingestion**	**Dermal**	**Total**
Fish	3.4E-04	NA	3.4E-04	19.8	NA	19.8
Northern Basin Sediments	4.2E-07	3.5E-06	3.9E-06	0.027	0.043	0.070
Southern Basin Sediments	2.7E-06	3.3E-05	3.5E-05	0.037	0.216	0.253
Wetland SYW-6	1.3E-05	2.5E-04	2.6E-04	0.062	0.053	0.115
Wetland SYW-10	1.5E-06	1.5E-05	1.7E-05	0.055	0.106	0.161
Wetland SYW-12	8.2E-07	1.3E-05	1.4E-05	0.027	0.095	0.122
Wetland SYW-19	4.1E-06	4.5E-05	4.9E-05	0.029	0.127	0.157
Dredge Spoils (surface)	6.8E-07	4.0E-06	4.7E-06	0.038	0.036	0.075
Lake Surface Water	3.9E-09	2.6E-08	3.0E-08	0.002	0.022	0.024
Total for Receptor	3.6E-04	3.6E-04	7.2E-04	20.04	0.698	20.73
Receptor Total, Excluding Fish	2.4E-05	3.6E-04	3.8E-04	0.278	0.698	0.976

Note: NA - Not applicable to this pathway or medium.

Table 6-2. (cont.)

6-2d. Construction Worker (Adult)

	Cancer Risk - RME			Hazard Quotient - RME		
Medium	**Ingestion**	**Dermal**	**Total**	**Ingestion**	**Dermal**	**Total**
Fish (1)	Fish ingestion not evaluated for construction worker					
Northern Basin Sediments	8.0E-08	7.2E-08	1.5E-07	0.031	0.005	0.037
Southern Basin Sediments	1.6E-06	2.1E-06	3.7E-06	0.136	0.083	0.219
Wetland SYW-6	2.6E-06	5.0E-06	7.6E-06	0.072	0.006	0.078
Wetland SYW-10	2.9E-07	3.1E-07	6.0E-07	0.063	0.013	0.076
Wetland SYW-12	5.0E-07	8.7E-07	1.4E-06	0.098	0.037	0.135
Wetland SYW-19	2.5E-06	2.9E-06	5.4E-06	0.107	0.049	0.156
Dredge Spoils (all depths) (2)	4.6E-07	6.4E-07	1.1E-06	0.10	0.025	0.126
Lake Surface Water	2.1E-11	4.0E-10	4.2E-10	0.00005	0.002	0.002
Total for Receptor	8.0E-06	1.2E-05	2.0E-05	0.61	0.221	0.83

Notes: (1) It has been assumed that the construction worker does not consume recreationally caught fish.
(2) Risks and hazards from dredge spoils are based on the 'deep spoils' pathway only.

RME = reasonable maximum exposure

Table 6-3. Central Tendency Exposure – Receptor-Specific Risk and Hazard Estimates

6-3a. Adult Recreator

	Cancer Risk - CT			Hazard Quotient - CT		
Medium	**Ingestion**	**Dermal**	**Total**	**Ingestion**	**Dermal**	**Total**
Fish	4.3E-05	NA	4.3E-05	4.48	NA	4.48
Northern Basin Sediments	6.9E-08	6.8E-08	1.4E-07	0.006	0.001	0.007
Southern Basin Sediments	2.2E-07	3.1E-07	5.3E-07	0.004	0.003	0.007
Wetland SYW-6	2.2E-06	4.8E-06	7.1E-06	0.014	0.001	0.015
Wetland SYW-10	2.5E-07	2.9E-07	5.4E-07	0.012	0.003	0.015
Wetland SYW-12	6.6E-08	1.3E-07	1.9E-07	0.003	0.001	0.004
Wetland SYW-19	3.4E-07	4.3E-07	7.7E-07	0.003	0.002	0.005
Dredge Spoils (surface)	1.1E-07	7.8E-08	1.9E-07	0.009	0.001	0.009
Lake Surface Water	5.0E-10	7.3E-09	7.8E-09	0.0003	0.007	0.007
Total for Receptor	4.6E-05	6.1E-06	5.2E-05	4.53	0.019	4.55
Receptor Total, Excluding Fish	3.3E-06	6.1E-06	9.5E-06	0.051	0.019	0.070

Note: NA - Not applicable to this pathway or medium.

6-3b. Young Child Recreator

	Cancer Risk - CT			Hazard Quotient - CT		
Medium	**Ingestion**	**Dermal**	**Total**	**Ingestion**	**Dermal**	**Total**
Fish	4.4E-05	NA	4.4E-05	6.97	NA	6.970
Northern Basin Sediments	4.3E-07	1.4E-07	5.7E-07	0.057	0.003	0.060
Southern Basin Sediments	1.4E-06	6.3E-07	2.0E-06	0.038	0.008	0.047
Wetland SYW-6 (1)	NA	NA	NA	NA	NA	NA
Wetland SYW-10 (1)	NA	NA	NA	NA	NA	NA
Wetland SYW-12 (1)	NA	NA	NA	NA	NA	NA
Wetland SYW-19 (1)	NA	NA	NA	NA	NA	NA
Dredge Spoils (surface) (1)	NA	NA	NA	NA	NA	NA
Lake Surface Water	1.6E-09	8.3E-09	9.9E-09	0.001	0.012	0.014
Total for Receptor	4.6E-05	7.8E-07	4.7E-05	7.07	0.024	7.09
Receptor Total, Excluding Fish	1.8E-06	7.8E-07	2.6E-06	0.097	0.024	0.121

Notes: NA - Not applicable to this pathway or medium.
(1) Young children are assumed to not be exposed to these media.

6-3c. Older Child Recreator

	Cancer Risk - CT			Hazard Quotient - CT		
Medium	**Ingestion**	**Dermal**	**Total**	**Ingestion**	**Dermal**	**Total**
Fish	4.6E-05	NA	4.6E-05	4.86	NA	4.863
Northern Basin Sediments	1.1E-07	1.4E-07	2.5E-07	0.010	0.002	0.012
Southern Basin Sediments	3.6E-07	6.4E-07	1.0E-06	0.007	0.006	0.012
Wetland SYW-6	3.7E-06	9.9E-06	1.4E-05	0.023	0.003	0.026
Wetland SYW-10	4.1E-07	6.0E-07	1.0E-06	0.020	0.006	0.026
Wetland SYW-12	1.1E-07	2.6E-07	3.7E-07	0.005	0.003	0.007
Wetland SYW-19	5.5E-07	8.8E-07	1.4E-06	0.005	0.003	0.009
Dredge Spoils (surface)	1.9E-07	1.6E-07	3.5E-07	0.014	0.002	0.016
Lake Surface Water	8.1E-10	8.6E-09	9.4E-09	0.0005	0.008	0.009
Total for Receptor	5.1E-05	1.3E-05	6.4E-05	4.95	0.033	4.98
Receptor Total, Excluding Fish	5.4E-06	1.3E-05	1.8E-05	0.084	0.033	0.117

Note: NA - Not applicable to this pathway or medium.

Table 6-3. (cont.)

6-3d. Construction Worker (Adult)

Medium	Cancer Risk - CT			Hazard Quotient - CT		
	Ingestion	Dermal	Total	Ingestion	Dermal	Total
Fish (1)	Fish ingestion not evaluated for construction worker					
Northern Basin Sediments	3.2E-08	6.3E-09	3.8E-08	0.013	0.0005	0.013
Southern Basin Sediments	6.5E-07	1.8E-07	8.3E-07	0.054	0.007	0.062
Wetland SYW-6	1.0E-06	4.5E-07	1.5E-06	0.029	0.001	0.029
Wetland SYW-10	1.1E-07	2.0E-08	1.4E-07	0.025	0.001	0.026
Wetland SYW-12	1.9E-07	7.5E-08	2.7E-07	0.039	0.003	0.042
Wetland SYW-19	9.9E-07	2.5E-07	1.2E-06	0.042	0.004	0.047
Dredge Spoils (all depths) (2)	1.8E-07	5.6E-08	2.4E-07	0.040	0.002	0.043
Lake Surface Water	4.2E-12	1.1E-10	1.1E-10	0.00001	0.0006	0.001
Total for Receptor	3.2E-06	1.0E-06	4.3E-06	0.24	0.02	0.26

Notes: (1) It has been assumed that the construction worker does not consume recreationally caught fish.
(2) Risks and hazards from dredge spoils are based on the 'deep spoils' pathway only.

CT = central tendency

Table 6-4. Summary of COPCs Contributing to Cancer Risks

Pathway	RME Cancer Risk	Principal Chemicals Contributing to Risk [1]
Fish Ingestion - Adult Angler	7.80E-04	PCDD/PCDFs; PCBs (total); arsenic (inorganic) [2]
Fish Ingestion - Young Child	2.43E-04	PCDD/PCDFs; PCBs (total); arsenic (inorganic) [2]
Fish Ingestion - Older Child	3.39E-04	PCDD/PCDFs; PCBs (total); arsenic (inorganic) [2]
Sediments - Northern Basin - Adult Recreational	1.28E-06	Arsenic; benzo(a)pyrene; hexachlorobenzene
Sediments - Northern Basin - Young Child Recreational	3.82E-06	Arsenic; benzo(a)pyrene; hexachlorobenzene
Sediments - Northern Basin - Older Child Recreational	3.94E-06	Arsenic; benzo(a)pyrene; hexachlorobenzene
Sediments - Northern Basin - Construction Worker	1.52E-07	Arsenic; benzo(a)pyrene; hexachlorobenzene
Sediments - Southern Basin - Adult Recreational	1.00E-05	Benzo(a)pyrene; dibenz(a,h)anthracene; PCDD/PCDFs; hexachlorobenzene
Sediments - Southern Basin - Young Child Recreational	3.16E-05	Benzo(a)pyrene; dibenz(a,h)anthracene and other PAHs; PCDD/PCDFs; hexachlorobenzene; arsenic
Sediments - Southern Basin - Older Child Recreational	3.47E-05	Benzo(a)pyrene and other PAHs [3] ; PCDD/PCDFs; hexachlorobenzene; arsenic
Sediments - Southern Basin - Construction Worker	3.68E-06	Benzo(a)pyrene; PCDD/PCDFs; dibenz(a,h)anthracene
Sediments - Wetland SYW-6 (North) - Adult Recreational	6.49E-05	Benzo(a)pyrene; dibenz(a,h)anthracene, benz(a)anthracene, benzo(b) and (k)fluoranthene, indeno(1,2,3-cd)pyrene
Sediments - Wetland SYW-6 (North) - Older Child Recreational	2.60E-04	Benzo(a)pyrene; dibenz(a,h)anthracene, arsenic; benzo(b)fluoranthene, indeno(1,2,3-cd)pyrene
Sediments - Wetland SYW-6 (North) - Construction Worker	7.61E-06	Benzo(a)pyrene; dibenz(a,h)anthracene
Sediments - Wetland SYW-10 (North) - Adult Recreational	5.02E-06	Arsenic; benzo(a)pyrene
Sediments - Wetland SYW-10 (North) - Older Child Recreational	1.65E-05	Arsenic; benzo(a)pyrene; dibenz(a,h)anthracene
Sediments - Wetland SYW-10 (North) - Construction Worker	5.97E-07	Arsenic; benzo(a)pyrene
Sediments - Wetland SYW-12 (South) - Adult Recreational	3.69E-06	Benzo(a)pyrene
Sediments - Wetland SYW-12 (South) - Older Child Recreational	1.43E-05	Benzo(a)pyrene; benz(a)anthracene
Sediments - Wetland SYW-12 (South) - Construction Worker	1.36E-06	Benzo(a)pyrene
Sediments - Wetland SYW-19 (South) - Adult Recreational	1.44E-05	Benzo(a)pyrene; PCDD/PCDFs; dibenz(a,h)anthracene
Sediments - Wetland SYW-19 (South) - Older Child Recreational	4.90E-05	Benzo(a)pyrene and other PAHs [4]; PCDD/PCDFs; hexachlorobenzene
Sediments - Wetland SYW-19 (South) - Construction Worker	5.36E-06	Benzo(a)pyrene; PCDD/PCDFs; dibenz(a,h)anthracene
Soils - Dredge Spoils (Surface) - Adult Recreational	1.76E-06	Arsenic; benzo(a)pyrene
Soils - Dredge Spoils (Surface) - Older Child Recreational	4.66E-06	Arsenic; benzo(a)pyrene; hexachlorobenzene
Soils - Dredge Spoils (Surface) - Construction Worker	2.12E-07	Arsenic; benzo(a)pyrene; hexachlorobenzene
Soils - Dredge Spoils (Subsurface) - Construction Worker	1.10E-06	Benzo(a)pyrene; arsenic; dibenz(a,h)anthracene
Surface Water - Adult Recreational	6.13E-08	Benzene; bromodichloromethane
Surface Water - Young Child Recreational	2.49E-08	Benzene; bromodichloromethane
Surface Water - Older Child Recreational	2.99E-08	Benzene; bromodichloromethane
Surface Water - Construction Worker	4.22E-10	Benzene; bromodichloromethane

Notes: COPC – chemical of potential concern
RME – reasonable maximum exposure
MW – molecular weight
(1) Principal chemicals contributing to risk are those accounting for 10 percent or more of risk and for all pathways except fish ingestion contributing risk of 10^{-6} or more.
(2) Principal chemicals for fish ingestion pathway are those accounting for a total of more than 90 percent of risk. Several SVOCs and pesticides also contributed RME risk of 10^{-6} or more.
(3) Other PAHs not listed individually (with RME risks greater than 10^{-6}) include dibenz(a,h)anthracene and benzo(b)fluoranthene.
(4) Other PAHs not listed individually (with RME risks greater than 10^{-6}) include dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, benz(a)anthracene, and benzo(b)fluoranthene.

Table 6-4. (cont.)

Pathway	CT Cancer Risk	Principal Chemicals Contributing to Risk [1]
Fish Ingestion - Adult Angler	4.30E-05	PCDD/PCDFs; PCBs; arsenic (inorganic)
Fish Ingestion - Young Child	4.40E-05	PCDD/PCDFs; PCBs; arsenic (inorganic)
Fish Ingestion - Older Child	4.60E-05	PCDD/PCDFs; PCBs; arsenic (inorganic)
Sediments - Northern Basin - Adult Recreational	1.40E-07	Arsenic; benzo(a)pyrene; hexachlorobenzene
Sediments - Northern Basin - Young Child Recreational	5.70E-07	Arsenic; benzo(a)pyrene
Sediments - Northern Basin - Older Child Recreational	2.50E-07	Arsenic; benzo(a)pyrene; hexachlorobenzene
Sediments - Northern Basin - Construction Worker	3.85E-08	Arsenic; benzo(a)pyrene
Sediments - Southern Basin - Adult Recreational	5.30E-07	Benzo(a)pyrene; dibenz(a,h)anthracene; PCDD/PCDFs
Sediments - Southern Basin - Young Child Recreational	2.00E-06	Benzo(a)pyrene; dibenz(a,h)anthracene; PCDD/PCDFs
Sediments - Southern Basin - Older Child Recreational	9.97E-07	Benzo(a)pyrene; dibenz(a,h)anthracene; PCDD/PCDFs
Sediments - Southern Basin - Construction Worker	8.29E-07	Benzo(a)pyrene; PCDD/PCDFs; dibenz(a,h)anthracene
Sediments - Wetland SYW-6 (North) - Adult Recreational	7.08E-06	Benzo(a)pyrene; dibenz(a,h)anthracene
Sediments - Wetland SYW-6 (North) - Older Child Recreational	1.36E-05	Benzo(a)pyrene; dibenz(a,h)anthracene; benzo(b)fluoranthene
Sediments - Wetland SYW-6 (North) - Construction Worker	1.5E-06	Benzo(a)pyrene; dibenz(a,h)anthracene
Sediments - Wetland SYW-10 (North) - Adult Recreational	5.40E-07	Arsenic; benzo(a)pyrene
Sediments - Wetland SYW-10 (North) - Older Child Recreational	1.02E-06	Arsenic; benzo(a)pyrene
Sediments - Wetland SYW-10 (North) - Construction Worker	1.36E-07	Arsenic; benzo(a)pyrene
Sediments - Wetland SYW-12 (South) - Adult Recreational	1.90E-07	Benzo(a)pyrene
Sediments - Wetland SYW-12 (South) - Older Child Recreational	3.70E-07	Benzo(a)pyrene
Sediments - Wetland SYW-12 (South) - Construction Worker	2.70E-07	Benzo(a)pyrene; arsenic
Sediments - Wetland SYW-19 (South) - Adult Recreational	7.71E-07	Benzo(a)pyrene; PCDD/PCDFs
Sediments - Wetland SYW-19 (South) - Older Child Recreational	1.44E-06	Benzo(a)pyrene; PCDD/PCDFs
Sediments - Wetland SYW-19 (South) - Construction Worker	1.25E-06	Benzo(a)pyrene; PCDD/PCDFs
Soils - Dredge Spoils (Surface) - Adult Recreational	1.92E-07	Arsenic; benzo(a)pyrene
Soils - Dredge Spoils (Surface) - Older Child Recreational	3.47E-07	Arsenic; benzo(a)pyrene
Soils - Dredge Spoils (Surface) - Construction Worker	5.96E-08	Arsenic
Soils - Dredge Spoils (Subsurface) - Construction Worker	2.40E-07	Benzo(a)pyrene; arsenic; dibenz(a,h)anthracene
Surface Water - Adult Recreational	7.79E-09	Benzene; bromodichloromethane
Surface Water - Young Child Recreational	9.87E-09	Benzene; bromodichloromethane
Surface Water - Older Child Recreational	9.39E-09	Benzene; bromodichloromethane
Surface Water - Construction Worker	1.11E-10	Benzene; bromodichloromethane

Notes: COPC – chemical of potential concern
CT – central tendency

(1) Principal chemicals contributing to risk are those accounting for 10 percent or more of CT risk, and for all pathways including fish ingestion those contributing risk of 10^{-6} or more.

Table 6-5. Summary of COPCs Contributing to Non-Cancer Hazards

Pathway	RME HI	Principal Chemicals Contributing to Hazard [1]
Fish Ingestion - Adult Angler	18.21	Low and high molecular weight PCBs; mercury (as methylmercury) [2]
Fish Ingestion - Young Child	28.32	Low and high molecular weight PCBs; mercury (as methylmercury) [2]
Fish Ingestion - Older Child	19.76	Low and high molecular weight PCBs; mercury (as methylmercury) [2]
Sediments - Northern Basin - Adult Recreational	0.020	Antimony; arsenic; iron; manganese
Sediments - Northern Basin - Young Child Recreational	0.221	Arsenic; antimony; iron
Sediments - Northern Basin - Older Child Recreational	0.070	Arsenic; Aroclor 1254; Aroclor 1268; cadmium
Sediments - Northern Basin - Construction Worker	0.037	Antimony; iron; arsenic; manganese
Sediments - Southern Basin - Adult Recreational	0.039	Naphthalene
Sediments - Southern Basin - Young Child Recreational	0.535	Naphthalene
Sediments - Southern Basin - Older Child Recreational	0.253	Naphthalene
Sediments - Southern Basin - Construction Worker	0.219	Naphthalene; chromium
Sediments - Wetland SYW-6 (North) - Adult Recreational	0.042	Iron; chromium; cadmium; arsenic
Sediments - Wetland SYW-6 (North) - Older Child Recreational	0.115	Cadmium; arsenic; iron; chromium
Sediments - Wetland SYW-6 (North) - Construction Worker	0.078	Iron; chromium; cadmium; arsenic
Sediments - Wetland SYW-10 (North) - Adult Recreational	0.041	Arsenic; iron; thallium; Aroclor 1260
Sediments - Wetland SYW-10 (North) - Older Child Recreational	0.161	Aroclor 1260; arsenic
Sediments - Wetland SYW-10 (North) - Construction Worker	0.076	Arsenic; iron; thallium; Aroclor 1260
Sediments - Wetland SYW-12 (South) - Adult Recreational	0.023	Cadmium; chromium; Aroclor 1254; iron
Sediments - Wetland SYW-12 (South) - Older Child Recreational	0.122	Cadmium; Aroclor 1254; Aroclor 1260
Sediments - Wetland SYW-12 (South) - Construction Worker	0.135	Cadmium; chromium; Aroclor 1254; iron
Sediments - Wetland SYW-19 (South) - Adult Recreational	0.027	Mercury; Aroclor 1254; Aroclor 1260
Sediments - Wetland SYW-19 (South) - Older Child Recreational	0.157	Aroclor 1254; Aroclor 1260; Aroclor 1242
Sediments - Wetland SYW-19 (South) - Construction Worker	0.156	Mercury; Aroclor 1254; Aroclor 1260
Soils - Dredge Spoils (Surface) - Adult Recreational	0.026	Iron; arsenic; mercury
Soils - Dredge Spoils (Surface) - Older Child Recreational	0.075	Arsenic; iron
Soils - Dredge Spoils (Surface) - Construction Worker	0.048	Iron; arsenic
Soils - Dredge Spoils (Subsurface) - Construction Worker	0.126	Mercury; Aroclor 1268; iron; arsenic
Surface Water - Adult Recreational	0.020	Cadmium; chromium; 1,3-dichlorobenzene
Surface Water - Young Child Recreational	0.037	Cadmium; chromium; 1,3-dichlorobenzene
Surface Water - Older Child Recreational	0.024	Cadmium; chromium; 1,3-dichlorobenzene
Surface Water - Construction Worker	0.002	Cadmium; chromium; 1,3-dichlorobenzene

Notes: COPC – chemical of potential concern
HI – hazard index
HQ – hazard quotient
RME – reasonable maximum exposure
(1) Principal COPCs are those contributing 10 percent of risk or having an individual HQ of more than 0.1 (except for RME fish ingestion).
(2) RME fish ingestion COPCs are those with HQs of more than 1.
Other COPCs with RME HQs greater than 0.1 include antimony, arsenic, cyanide, selenium, and heptachlor epoxide.

Table 6-5. (cont.)

Pathway	CT HI	Principal Chemicals Contributing to Hazard [1]
Fish Ingestion - Adult Angler	4.48	Low and high molecular weight PCBs; mercury (as methylmercury); arsenic; antimony
Fish Ingestion - Young Child	6.97	Low and high molecular weight PCBs; mercury (as methylmercury); arsenic; antimony
Fish Ingestion - Older Child	4.86	Low and high molecular weight PCBs; mercury (as methylmercury); arsenic; antimony
Sediments - Northern Basin - Adult Recreational	0.007	Arsenic; antimony; iron; manganese
Sediments - Northern Basin - Young Child Recreational	0.060	Antimony; iron; arsenic; manganese
Sediments - Northern Basin - Older Child Recreational	0.012	Antimony; arsenic; iron
Sediments - Northern Basin - Construction Worker	0.013	Antimony; iron; arsenic; manganese; chromium
Sediments - Southern Basin - Adult Recreational	0.007	Naphthalene
Sediments - Southern Basin - Young Child Recreational	0.047	Naphthalene
Sediments - Southern Basin - Older Child Recreational	0.012	Naphthalene
Sediments - Southern Basin - Construction Worker	0.062	Naphthalene; chromium; mercury
Sediments - Wetland SYW-6 (North) - Adult Recreational	0.015	Iron; chromium; cadmium; arsenic
Sediments - Wetland SYW-6 (North) - Older Child Recreational	0.026	Iron; cadmium; chromium; arsenic
Sediments - Wetland SYW-6 (North) - Construction Worker	0.029	Iron; chromium; cadmium; thallium
Sediments - Wetland SYW-10 (North) - Adult Recreational	0.015	Arsenic; iron; thallium; Aroclor 1260
Sediments - Wetland SYW-10 (North) - Older Child Recreational	0.026	Arsenic; iron; Aroclor 1260; thallium
Sediments - Wetland SYW-10 (North) - Construction Worker	0.026	Iron; arsenic; thallium
Sediments - Wetland SYW-12 (South) - Adult Recreational	0.004	Cadmium; chromium; Aroclor 1254; iron
Sediments - Wetland SYW-12 (South) - Older Child Recreational	0.007	Cadmium; chromium; Aroclor 1254; iron
Sediments - Wetland SYW-12 (South) - Construction Worker	0.042	Chromium; cadmium; iron
Sediments - Wetland SYW-19 (South) - Adult Recreational	0.005	Mercury (total); Aroclor 1254; Aroclor 1260
Sediments - Wetland SYW-19 (South) - Older Child Recreational	0.009	Mercury (total); Aroclor 1254; Aroclor 1260
Sediments - Wetland SYW-19 (South) - Construction Worker	0.047	Mercury (total); Aroclor 1254; iron; arsenic
Soils - Dredge Spoils (Surface) - Adult Recreational	0.009	Iron; arsenic
Soils - Dredge Spoils (Surface) - Older Child Recreational	0.016	Iron; arsenic
Soils - Dredge Spoils (Surface) - Construction Worker	0.018	Iron; arsenic
Soils - Dredge Spoils (Subsurface) - Construction Worker	0.043	Mercury; iron
Surface Water - Adult Recreational	0.007	1,3-dichlorobenzene; cadmium; chromium
Surface Water - Young Child Recreational	0.014	1,3-dichlorobenzene; cadmium; chromium
Surface Water - Older Child Recreational	0.009	1,3-dichlorobenzene; cadmium; chromium
Surface Water - Construction Worker	0.001	1,3-dichlorobenzene; cadmium; chromium

Notes: COPC – chemical of potential concern
CT – central tendency
HI – hazard index
HQ – hazard quotient
(1) Principal COPCs are those contributing 10 percent of CT risk or having an individual CT HQ of more than 0.1.

Table 6-6. Summary of Target Organs for Non-Cancer Hazards

	Target Organ, System, or Effect											
COPC	**Blood**	**Body Weight**	**Whole Body**	**Kidney**	**Liver**	**CNS**	**NOAEL**	**Skin**	**Immune System**	**Lungs**	**Developmental Neuro-psychological Impairment**	**Reduced Birth Weight**
Metals/Inorganics												
Aluminum								X				
Antimony	X		X									
Arsenic								X				
Barium												
Cadmium				X								
Chromium							X					
Copper				X								
Cyanide	X		X									
Iron	X											
Lead (1)	X		X			X						
Manganese						X						
Methylmercury											X	
Total Mercury (inorganic)									X			
Nickel			X									
Selenium			X									
Thallium							X					
Vanadium (2)												
Zinc	X											
VOCs												
Benzene	X								X			
Bromodichloromethane				X								
Chlorobenzene					X							
Chloroform					X							
Methylene chloride					X							
Total xylenes (sum)						X	X					

Table 6-6. (cont.)

COPC	Target Organ, System, or Effect											
	Blood	Body Weight	Whole Body	Kidney	Liver	CNS	NOAEL	Skin	Immune System	Lungs	Developmental Neuro-psychological Impairment	Reduced Birth Weight
SVOCs												
bis(2-ethylhexyl)phthalate					X							
Dibenzofuran				X								
1,2-Dichlorobenzene							X					
1,3-Dichlorobenzene	X				X							
1,4-Dichlorobenzene	X							X				
1,2,4-Trichlorobenzene				X (3)	X (3)							
Hexachlorobenzene					X							
PAHs												
Acenaphthylene				X (4)								
Benzo(g,h,i)perylene				X (4)								
Fluoranthene	X			X	X							
2-Methylnaphthalene										X		
Naphthalene		X										
Phenanthrene				X (4)								
Pesticides												
Aldrin					X							
delta-BHC				X (5)	X (5)							
Chlordanes (total)					X							
4,4-DDD												
4,4'-DDE												
4,4'-DDT					X							
Dieldrin					X							
Heptachlor epoxide					X							

Table 6-6. (cont.)

COPC	Target Organ, System, or Effect											
	Blood	Body Weight	Whole Body	Kidney	Liver	CNS	NOAEL	Skin	Immune System	Lungs	Developmental Neuro-psychological Impairment	Reduced Birth Weight
PCBs												
Aroclor 1016												X
Aroclor 1221												X (6)
Aroclor 1242												X (6)
Aroclor 1248									X (7)			
Aroclor 1254									X			
Aroclor 1260									X (7)			
Aroclor 1254/1260									X (7)			
Aroclor 1268									X (7)			

Notes: CNS – central nervous system
COPC – chemical of potential concern
NOAEL – no observable adverse effect level
PAH – polycyclic aromatic hydrocarbon
RfD – reference dose
SVOC – semivolatile organic compound
VOC – volatile organic compound

Target organ data were generally taken from the studies used to derive the oral RfD, as cited in IRIS or NCEA documentation. Additional target organ information was obtained from ATSDR toxicology profiles.

(1) Target organs for lead are shown for information only. Lead was not evaluated quantitatively (i.e., no RfD is available).
(2) No specific organ or effect was cited by NCEA or in the HEAST or ATSDR files for vanadium; no relevant IRIS file exists.
(3) Target organ listed as 'adrenal' in IRIS and HEAST. Liver and kidney as target organs from NJDOH fact sheet (NJDOH, 1998).
(4) NCEA identified pyrene as an appropriate surrogate for this compound. Target organ shown is that for pyrene.
(5) NCEA identified gamma-HCH (lindane) as an appropriate surrogate for this compound. Target organs shown are for gamma-HCH.
(6) Based on analogy to Aroclor 1016.
(7) Based on analogy to Aroclor 1254.

7. UNCERTAINTY ASSESSMENT

Because risk characterization serves as a bridge between risk assessment and risk management, it is important that major assumptions, scientific judgments, and estimates of uncertainties be described in the risk assessment. Superfund risk assessment methods are designed to be protective of human health and to address the uncertainties associated with each step in the risk assessment process.

This chapter addresses aspects of this HHRA that are likely to overestimate or underestimate site risks. The risk discussion below is organized according to the three principal areas of uncertainty described in USEPA's (1989) risk assessment guidance (RAGS Part A, Section 8.4):

- Selection of chemical substances included in the characterization. This includes both the initial selection of chemicals for which samples were analyzed, as well as the screening performed to refine the list of substances carried through the quantitative risk assessment.

- Exposure assessment. Uncertainties include both those associated with the data and chemical concentrations (e.g., exposure point concentrations [EPCs]), as well as uncertainties associated with the individual exposures (e.g., exposure frequency, consumption rate).

- Toxicity values. This includes uncertainties associated with the reference doses (RfDs) and cancer slope factors (CSFs) used in the quantitative HHRA, extrapolations from one route to another (e.g., oral to dermal), and the effect of substances which were not included in the quantitative HHRA due to lack of quantitative toxicity data.

7.1 Uncertainties Associated with Selection of Substances

The two areas of uncertainty associated with the selection of substances are the selection of analytical parameters for which samples from each medium (pathway) were analyzed, and the screening of contaminants to reduce the number of chemicals for the quantitative risk characterization.

7.1.1 Selection of Analytical Parameters

The selection of analytical parameters for samples analyzed for the HHRA was based largely on the site history and previous investigations, and focused on data for parameters with a reasonable potential to be present (e.g., mercury/methylmercury, chlorinated benzenes). However, since the full history of each of the exposure areas is not known, many samples were analyzed for a much broader range of contaminants (full organic Target Compound List [TCL] and inorganic Target Analyte List [TAL] contaminants) in order to determine if other analytes are present at concentrations of potential concern.

7.1.1.1 Fish Fillets

Analysis of fish fillets focused on the contaminants that have historically been of concern; specifically, mercury, pesticides, chlorinated benzenes, and polychlorinated biphenyls (PCBs). In recent years, analysis for polychlorinated dibenzo-*p*-dioxins and furans (PCDD/PCDFs) has also been conducted on many of the samples. However, only a few of the fillet samples have been analyzed for the full suite of semivolatile organic compounds (SVOCs) (including polycyclic aromatic hydrocarbons [PAHs]) and TAL metals. Only four adult composite samples have been analyzed for volatile organic compounds (VOCs), as these compounds do not tend to bioaccumulate and the presence of VOCs in fish at high-enough concentrations to be of concern is not expected. The limited data support this assumption, as no VOCs were detected at concentrations exceeding the screening criteria.

With the exception of hexachlorobenzene, only four adult composite samples were analyzed for SVOCs (including PAHs). Since less than ten samples were analyzed for these substances, statistical evaluation of the data set (i.e., calculation of the 95 percent upper confidence limit [UCL] on the mean) was not possible. Therefore, for these compounds, the maximum detected concentration was used as the EPC (consistent with risk assessment guidance [USEPA, 1989]). However, bis(2-ethylhexyl)phthalate is the only SVOC affected, as it was the only SVOC compound (other than hexachlorobenzene) for which a detected concentration exceeded the screening criteria, and was, therefore, the only additional SVOC carried through the assessment as a contaminant of potential concern (COPC) for which the EPC was calculated.

Pesticide data are reasonably comprehensive, as there are at least 38 data points for most of the pesticides and over 100 data points for some (e.g., chlordane; DDT and related compounds; mirex/photomirex).

Despite the fact that a large amount of earlier (i.e., 1992) PCB data were considered to be unusable for this HHRA (see Appendix A), there are over 100 PCB analyses used in this HHRA, covering both low molecular weight (less chlorinated) Aroclors (either Aroclor 1016 or Aroclor 1242) and high molecular weight (highly chlorinated) Aroclors (reported as Aroclor 1254/1260). Although there are only seven fillets for which the full suite of individual Aroclors (including Aroclor 1268) were analyzed, the usable analyses conducted provide a sufficient data set for characterization of PCB concentrations in fillets for the HHRA.

There were 30 fish fillets analyzed for PCDD/PCDFs. Although some of the locations from which these samples were collected were biased toward suspected hot spots or source areas, there were sufficient data that a meaningful 95 percent UCL on the mean could be calculated. It was not necessary to use the maximum detected concentration as the EPC.

With the exception of mercury and methylmercury, analysis for metals was conducted on only seven fillets and four adult composite samples. The limited amount of data for TAL metals does make characterization of the EPCs of these constituents difficult. However, there were sufficient data to perform the statistical tests (determination of data distribution type and calculation of the 95 percent UCL on the mean). Meaningful 95 percent UCLs on the mean were calculated for all the TAL metals that exceeded screening criteria; in no case was it necessary to use the maximum detected concentration as the EPC.

7.1.1.2 Lake Sediments – Northern Basin

Northern basin nearshore shallow surface sediments (all intervals in the 0 to 30 cm range at stations in less than 6.5 feet [ft] [2 meters {m}] of water) were analyzed for full TAL inorganics, VOCs, SVOCs (including PAHs), pesticides, and PCBs. There were typically between 22 and 56 data points for each of these fractions (in isolated cases, there were less for an individual analyte within a fraction, due to slight differences in the target analytes reported by a laboratory or analytical methods). Five northern basin samples used in this HHRA were also analyzed for PCDD/PCDFs, and three samples for methylmercury (in addition to the 56 samples analyzed for total mercury). For these last two parameters, the maximum detected concentration was used as the EPC, as there were an insufficient number of data points for meaningful statistical analysis. The northern basin data set is comprehensive and complete, and little, if any, uncertainty is likely due to the type or quantity of analyses performed.

7.1.1.3 Lake Sediments – Southern Basin

Southern basin nearshore shallow surface sediments (all intervals in the 0 to 30 cm range at stations in less than 2 meters [m] of water) were analyzed for full TAL inorganics, VOCs, SVOCs (including PAHs), pesticides, and PCBs. There were typically between about 80 and 100 data points for each of these fractions (in isolated cases, there were less for an individual analyte within a fraction due to slight differences in TCLs or analytical methods). Eighteen southern basin nearshore samples used in this HHRA were also analyzed for PCDD/PCDFs, and 14 samples from seven locations were analyzed for methylmercury (in addition to the 114 samples analyzed for total mercury). The southern basin data set is comprehensive and complete (with the possible exception of methylmercury data), and little, if any, uncertainty is likely due to the type or quantity of analyses performed. Sufficient data are available for meaningful statistical analyses of all parameters, except methylmercury.

7.1.1.4 Wetland Sediments (SYW-6, 10, 12, and 19)

The wetland samples were analyzed for the full suite of TCL/TAL compounds. PCDD/PCDFs were analyzed in all wetlands except SYW-12, as per the Phase 2A Work Plan (Exponent, 2000). However, since each wetland was evaluated as a separate exposure area and there were only eight samples (and four data points, as the sample data were combined from each pair of samples collected from two depths at each of four locations) from Wetlands SYW-10, 12, and 19, no statistical analysis was performed on the wetlands data (a minimum of ten samples was used as the threshold for conducting statistical analysis of data sets for this HHRA); therefore, the detected maximum value of each COPC was used as the EPC. This may result in an overestimate of the EPC concentration; on the other hand, due to the limited number of samples, it is also possible that areas of higher concentration may have been missed in the sampling program.

Data from additional samples collected from Wetland SYW-6 in May 2002 by NYSDEC/TAMS were also used in this HHRA. This data set consisted of samples, which were analyzed for metals and SVOCs only, from two depths (0 to 15 cm and 15 to 30 cm) at each of five locations. As with the data from the

wetlands sampling performed in 2000, the two samples were composited mathematically to generate a single length-weighted average for each location. This increased the total number of data points for Wetland SYW-6 to nine (five from 2002 and four from 2000), which was still too few to perform meaningful statistical analyses; therefore, the maximum value of these nine length-weighted averages was used as the EPC for each COPC in Wetland SYW-6.

However, inspection of the data indicated that there was one location, and in particular one result (the 15 to 30 cm interval sample at 2002 Station W6-3), in which concentrations of PAHs were significantly higher than in other samples collected from this wetland. To assess the possibility that use of this one high value might overestimate the EPC, statistical analyses of the SYW-6 data set were performed on each of the 18 discrete samples (i.e., using each of the two data points at a given location as separate samples, rather than combing them into a single result at each location). The results of this alternative approach to evaluating the SYW-6 data are presented in Table 7-1A. In general, assessing each of the 18 samples as discrete data points results in EPCs which for most, though not all, COPCs are lower than the corresponding length-weighted maxima. Cancer risks and non-cancer hazards, as presented in Table 7-1B, are on the same order-of-magnitude, though lower, using the discrete sample approach. There is no change as a result of the discrete sample approach in which pathways exceed target risk levels, with the exception of the CT cancer risk for the construction worker, which is 1.5×10^{-6} using the maximum of the nine length-weighted average values, but is less than 10^{-6} (7.4×10^{-7}) when using the EPCs calculated from the UCL of the 18 discrete samples.

The data from the Wetland SYW-6 sample with the high PAH concentrations (2002 sample from Station W6-3) were compared to the data from the nearest sample collected in the Phase 2A investigation (Station S375 in 2000). The data from these two samples, which are from locations about 90 ft (27 m) apart, are compared in Table 7-2. As can be seen from the table, the metals data are comparable (most of the data agree within about 30 percent), but the Station W6-3 PAH data are much higher, typically by factors of about 50 to 100. This discrepancy between the PAH concentrations in relatively close samples suggests either that the high value is an anomaly and may be an outlier or that the distribution of contaminants in Wetland SYW-6 is very heterogenous and there may be other areas of high or even higher concentration that have not been sampled.

Wetland sediment samples were not analyzed for methylmercury. For calculation of EPCs and hazards, it was assumed that 1 percent of the total mercury was in the form of methylmercury (the remaining 99 percent was assumed to be inorganic mercury). The implications of this assumption are discussed in Section 7.5.3.1, below.

7.1.1.5 Dredge Spoils Area Soils

The dredge spoils data did not have a depth distribution corresponding to depth intervals preferred for use in HHRAs (nominally, from 0 to 6 inches [0 to 15 cm] for exposure to receptors other than construction workers). As a result, the depth interval used for assessing human recreational exposure to surface soils included data from samples at greater depths, up to 3.5 ft (107 cm). (Note that for the construction worker

receptor, data from all depths down to approximately 12 ft [3.5 m] were used.) The extent of the effect on the data and the potential direction of bias is unknown. However, most of these samples were collected from the relatively uniform cover material above the more-contaminated spoils; thus, no significant bias is expected.

For metals, SVOCs, and PCBs, only eight samples were collected from the depth interval used for the surface soil assessment; thus, the maximum detected value was used as the EPC for this pathway.

A total of about 40 dredge spoil area samples were analyzed (including the eight near-surface samples). None of the samples were analyzed for VOCs, and pesticide analysis was limited to a reduced suite examined in one deeper sample (Station S438). PCDD/PCDF analysis was conducted on about half the samples (20 in all, including four of the eight near-surface samples).

Dredge spoil samples were not analyzed for methylmercury. For calculation of EPCs and hazards, it was assumed that all (100 percent) of the total mercury was in the form of inorganic mercury. The implications of this assumption are discussed in Section 7.5.3.1, below.

7.1.1.6 Surface Water

The extent of available Onondaga Lake surface water data varies both among and within each analytical fraction.

Metals analysis was performed on 33 to 75 samples for 12 of the 23 TAL metals and methylmercury (not all samples were analyzed for the same suite of metals), and 32 samples were analyzed for dimethylmercury, ionic mercury, and elemental mercury. Although no analyses were conducted on any of the surface water samples (from the 0 to 3 m depth interval) for the other TAL metals, including arsenic, antimony, selenium, and thallium, they were not detected, or were detected at low concentrations, in samples collected from greater depths in the lake (6 to 12 m). Although the lake water is reasonably well characterized for the metals that were analyzed in near-surface (0 to 3 m) samples, it is possible that the calculated risks are underestimated for metals excluded based on data from samples collected from greater depths.

Full VOC analysis was performed on 11 of the 48 surface water samples, with a much greater number of analyses (i.e., 48) performed for the volatile contaminants considered most likely to be present – i.e., benzene, toluene, ethylbenzene, xylenes, and chlorobenzene.

SVOC analysis included 37 to 48 samples analyzed for three dichlorobenzene isomers and three trichlorobenzene isomers, plus five samples analyzed for hexachlorobenzene (not all samples were analyzed for the same suite of parameters, and some of the dichlorobenzene data came from the VOC analysis of some samples). No analyses of samples from the 0 to 3 m depth were performed for other SVOC compounds (including PAHs). However, four samples from the 6 to 12 m interval were analyzed, and the only SVOC COPC detected was bis(2-ethylhexyl)phthalate, and only at low concentrations (i.e., at a

maximum concentration of 10 µg/L, which is less than the Region 3 tap water screening criterion.). Therefore, the presence of other SVOC compounds in surface water is considered unlikely, and the quantitation of risks associated with SVOCs is affected minimally, if at all.

None of the surface water samples from the 0 to 3 m interval were analyzed for pesticides, PCBs, or PCDD/PCDFs; therefore, the extent of risk, if any, posed by the potential presence of these compounds was assessed using data from deeper samples (6 to 12 m). No PCBs or pesticides were detected in these deeper samples and are, therefore, not expected to be present in surface water (0 to 3 m) at significant concentrations. Onondaga Lake water samples have not been analyzed for PCDD/PCDFs.

7.1.2 Contaminant Screening

The contaminant screening, which is presented in Chapter 3, poses potential uncertainty only if chemicals that may present risk are inappropriately screened out of the quantitative risk assessment, or if chemicals that are not site-specific contaminants (e.g., naturally occurring substances whose detection in site samples is not a result of discharge or release of contaminants) are included in the quantitative HHRA. Each of these possibilities is discussed below.

7.1.2.1 Uncertainty Associated with Screening Contaminants

The screening was conservative in that the procedures used for exclusion of a compound from the quantitative assessment were rigorous. A compound was included as a COPC for the quantitative HHRA if there was any indication it could have an impact on risk. For all chemicals detected, the concentration used for screening was the maximum concentration detected, although in the quantitative risk characterization the 95 percent UCL on the mean was used as the EPC, where allowable. Non-carcinogenic chemicals were screened against screening criteria representing a hazard index (HI) of 0.1 (one-tenth of the concentration believed to be associated with the potential for toxic effects).

Inorganics (metals) designated as nutrients (calcium, potassium, sodium, and magnesium) were screened out (flagged "NUT" for "nutrient" on RAGS Tables 2.1 through 2.10) and were not assessed in the quantitative HHRA.

Screening criteria used were developed by USEPA Regions 3 and 9 using the same toxicity data as used in this HHRA (i.e., the Integrated Risk Information System [IRIS], the Health Effects Assessment Summary Tables [HEAST], and the National Center for Environmental Assessment [NCEA]). The USEPA Region 9 soil screening criteria include an estimate of dermal exposure so that those criteria address both of the complete pathways identified for the Onondaga Lake site (ingestion and dermal contact). Because of this, the USEPA Region 9 criteria are generally, though not always, more conservative than the USEPA Region 3 criteria. The USEPA Region 3 and Region 9 screening tables, along with text prepared by each region explaining the applicability and derivation of their screening criteria, are provided in Appendix C. To reduce the chance of screening out a contaminant that may contribute to risk, the more conservative of the USEPA Region 3 or Region 9 criteria were applied for each COPC.

The USEPA Region 3 fish ingestion screening criteria are based on a higher consumption rate than used in this HHRA (54 grams per day [g/day], rather than 25 g/day). Therefore, it is unlikely that any contaminants that may pose significant risk through the fish ingestion pathway were screened out of the assessment.

Surface water concentrations were screened against the USEPA Region 3 and Region 9 tap water criteria, which are based on ingestion of water as drinking water at a rate of 2 liters per day. As the ingestion rates assumed for this quantitative HHRA are based on the much lower ingestion rates for incidental ingestion through recreational or construction activities, the screening for ingestion of contaminants in surface water is unlikely to have eliminated significant contaminants. However, the exposure scenarios envisioned for the complete exposure pathways also include dermal contact with water; this pathway is not addressed in the USEPA Region 3 or Region 9 tap water screening criteria. To reduce the chance of screening out chemicals which might be significant contributors to dermal risk, a second screening was also conducted using the dermal criteria in the draft USEPA RAGS Part E (dermal guidance) document (USEPA, 2001a). Based on this further screening, three additional compounds (1,2-dichlorobenzene, 1,2,4-trichlorobenzene, and chromium) were added as COPCs although their concentrations were below the Region 3 and Region 9 screening criteria. Thus, it is unlikely that compounds that were screened out would add to potential risk.

7.1.2.2 Uncertainty Associated with Naturally Occurring Chemicals in Soil/Sediment

Inclusion of chemicals identified in the HHRA as COPCs that are naturally occurring may overestimate the site-specific component of the risk. This is generally not an issue for organic chemicals, as those that are assessed quantitatively in this HHRA are anthropogenic and thus are not naturally occurring, although the attribution of some relatively ubiquitous contaminants such as PAHs to an individual site may be problematic (see the Remedial Investigation [RI] report for further discussion [TAMS, 2002b]).

Many metals and inorganic substances are naturally occurring constituents of soil. In accordance with recent USEPA guidance (M. Sivak, pers. comm., 2002), no inorganics were eliminated from the HHRA based on their concentrations being similar to those in background samples. Metals that were detected in sediments at concentrations similar to background concentrations (defined as the maximum concentration detected being less than two times the average of the Otisco Lake samples) were flagged as "BKG" on the screening tables (Appendix B, RAGS Tables 2.2 through 2.6). Metals exceeding risk-based screening criteria, but detected at concentrations below the background screening concentration, include the following:

- Manganese (all evaluated media).
- Iron (northern basin nearshore sediments; Wetlands SYW-10 and 19).
- Arsenic (northern basin nearshore sediments; Wetland SYW-6).
- Thallium (northern basin nearshore sediments).
- Aluminum (Wetland SYW-10).

As shown in Chapter 6, Tables 6-4 and 6-5, manganese, iron, and arsenic contributed a significant portion (at least 10 percent) of the cancer risk or non-cancer hazard in some of the media in which they were detected at concentrations below the background concentrations. Although this indicates the possibility that the background levels of metals may result in an overestimate of their effect, it is not significant for non-cancer hazards, as the non-cancer hazards for media were well below 1.0. However, arsenic was a major contributor to cancer risks in the northern basin nearshore sediments and, to a lesser extent, Wetland SYW-6. Calculated RME risks to all recreational receptors exceeded 10^{-6} for the northern basin sediments, and calculated RME and CT cancer risks for SYW-6 exceeded 10^{-6} for construction workers and adult and child recreational receptors. For the northern basin sediments, elimination of arsenic from the cancer risk calculation would reduce the adult recreator RME risk to below 10^{-6} (from 1.3×10^{-6} to 6.5×10^{-7}); cancer risks to young and older children would still exceed 10^{-6} but would decrease from slightly less than 4×10^{-6} to slightly over 2×10^{-6}. If the contribution of arsenic to the cancer risk were removed from the calculation for SYW-6, the RME and CT cancer risks for all the receptors would still be greater than 10^{-6}, although the risk would be slightly lower (for example, the adult recreational RME would decrease from 6.5×10^{-5} to 6.4×10^{-5}).

7.2 Uncertainties Associated with Exposure Point Concentrations

Uncertainties associated with the EPCs used in risk calculations may be related to the quality and quantity of the available data, and to the manner in which the data are then processed to generate the EPCs used in the quantitative HHRA.

7.2.1 Uncertainties Related to Calculation Procedure for Exposure Point Concentrations

As discussed in Chapter 4, Section 4.7, the EPCs for the media evaluated in this HHRA were determined, based on guidance from NYSDEC and USEPA Region 2, as the lower of:

- The 95 percent UCL on the arithmetic mean of the site data (for data sets with ten samples or more).
- The maximum detected concentration (for all data sets with less than ten data points, and for larger data sets where the 95 percent UCL is greater than the maximum detected concentration).

Data sets were identified as best fitting either a normal or lognormal distribution (the higher W-statistic for data sets with $n<50$, and the Y-statistic for data sets closer to zero for $n>50$, as described in Gilbert, 1987). For data best fitting a normal distribution, the 95 percent UCL on the mean was calculated using the Student's t-statistic. For data identified as best fitting a lognormal distribution, the 95 percent UCL on the mean was calculated using Land's H-statistic. The equations for the UCL calculations are presented in Chapter 4, Section 4.7. The use of the 95 percent UCL on the mean for calculating the EPC, which is designed to be protective (i.e., there is less than a 5 percent chance that the true "population" average exceeds the calculated 95 percent UCL on the mean), may overestimate the actual concentrations to which

individuals would be exposed at Onondaga Lake. However, for robust data sets, the 95 percent UCL on the mean (true population mean) and the arithmetic average converge; this is the case for the Onondaga Lake fish fillet mercury data used in this HHRA, where the 95 percent UCL on the mean used as the EPC (1.08 mg/kg) is only very slightly higher than the arithmetic average (1.05 mg/kg).

Use of the maximum detected concentration when it is lower than the 95 percent UCL on the mean, and use of a maximum value for all data sets with fewer than ten samples (as was done here), are also potential sources of overestimation. Conversely, where there are only a few data points from which the EPC is derived, there is no certainty that the available data are representative of the site or that there may be higher – possibly much higher – COPC concentrations in the area. (This is especially true of Wetland SYW-6, as was previously discussed in Section 7.1.1.4.) Therefore, it is also possible that the use of the highest value of a small data set could underestimate EPCs if samples from more-contaminated parts of the area were not collected.

7.2.2 Uncertainties Related to Assigned Data Distribution Types and Resultant Upper Confidence Limit-Based Exposure Point Concentrations

As discussed in Chapter 4, Section 4.7.3, all data sets (for $n \geq 10$) were assigned to either a normal or lognormal distribution using a "best-fit" approach. However, not all data sets meet the criteria to be classified as either normal or lognormal distributions. To address this issue, USEPA has recently developed software (ProUCL 2.1) to calculate UCLs for these non-parametric data sets (USEPA, 2002c).

As much of the data processing for the calculations of the EPCs was substantially underway at the time the USEPA ProUCL 2.1 software became available, several subsets of the HHRA data were reevaluated using the ProUCL software to see how much of a difference, if any, use of the ProUCL software would make on the EPCs and resultant risk and hazard calculations. The discussion below is a summary of the more detailed evaluation presented in Appendix D.

The data sets selected for this evaluation were those for which the risk associated with the analyte exceeded the target risk level (for this purpose, a cancer risk of 10^{-6} or hazard quotient [HQ] greater than 1.0). The previously assigned data distribution was confirmed in the majority of cases (i.e., 11 of 18). In cases where the previously assigned distribution was not confirmed (i.e., ProUCL indicated that the data were neither normal nor lognormal), the EPCs were calculated using the ProUCL methods and compared to the EPCs utilized for the HHRA. The differences between the UCLs calculated by the two methods were generally not large, although for three of the 18 data sets evaluated the ProUCL-calculated value differed from the default value by more than 50 percent. However, even with this difference, the overall effect on calculated risks was small (see Appendix D, Table D-2), as these three chemicals were not significant contributors to the cumulative risk. As the effect on the EPC calculations and subsequent risk characterization was minimal, the EPCs presented in this HHRA are those using the original assignment of normal or lognormal distribution to each data set. The uncertainty associated with use of the best-fit approach to the data distribution and EPC calculations is considered to be small for the Onondaga Lake HHRA.

7.2.3 Effect of Cooking Loss on PCB and PCDD/PCDF Concentrations in Fillets

The RME calculations presented in the HHRA are based on a fish consumption rate of 25 g/day (this consumption rate is discussed below in Section 7.3), with no reduced fractional intake (FI) relating to the amount of fish consumed from the lake (i.e., FI of 1.0) and no loss of PCBs or PCDD/PCDFs due to cooking or trimming. A 33 percent reduction was assumed in the CT scenario, the rationale for which was discussed in Chapter 4, Section 4.3.1.3. While the literature shows that there are a wide range of estimates in the amount of PCB (and PCDD/PCDF) loss in cooking, the assumption of no loss for the RME scenario is certainly a reasonable one. The 33 percent loss assumed for the CT scenario is also reasonable; while there are some studies showing greater losses, others show less. The "health-protective values" (HPVs) established by the Great Lakes Sport Fish Advisory Task Force (GLSFATF) for Great Lakes fish assume a 50 percent loss of organic contaminants through preparation and cooking; however, the Great Lakes advisories are also based on a higher assumed fish consumption rate of 140 g/day (225 8-ounce meals per year) for "unrestricted" consumption (GLSFATF, 1993). In addition, many of the target species in the Great Lakes, such as chinook salmon (*Oncorhynchus tshawytscha*) and lake trout (*Salvelinus namaycush*), are not present in Onondaga Lake, and the percent reductions in organic contaminants vary by species (Table C-1 of USEPA, 2000b).

Recent USEPA guidance (USEPA, 200b) presents some data specific to species evaluated for Onondaga Lake. One older study (Skea et al., 1979, as cited in Appendix C of USEPA, 2000b) showed PCB reductions in smallmouth bass (*Micropterus salmoides*) ranging from 16 to 80 percent. However, most of the more recent data (e.g., a number of studies by Zabik in the mid-1990s) show PCB losses in walleye (*Stizostedion vitreum*) ranging from about 15 to 30 percent for Great Lakes fish. Homolog-specific PCB data for five (unspecified) species showed reductions ranging from 15 to 40 percent, with most of the reductions in the 30 to 35 percent range (Zabik and Zabik, 1996; cited in Table C-1 of USEPA, 2000b). It was also noted that "... smoking lake trout reduced pesticides and total PCBs significantly more than other cooking methods, but this cooking method resulted in the formation of PAHs" (Zabik, 1994, as cited in USEPA, 2000b).

7.3 Uncertainties Related to Fish Consumption Rates

In this section, uncertainties related to assumptions made for the fish ingestion rates used in the exposure assessment are discussed. As ingestion of fish was identified as the most significant risk pathway for exposure to Onondaga Lake COPCs, and because assumed fish ingestion rates are sometimes a controversial issue in risk assessments, the issues associated with the approach taken in this HHRA are discussed in depth below.

In the quantitative risk characterization presented in Chapter 6 of this HHRA, the RME calculations were conducted using a fish consumption rate of 25 g/day for adults, an FI of 1.0, and the assumption that COPC concentrations are not reduced by cooking. The recreationally caught fish ingestion rates were estimated as two-thirds of the adult rate for older children (6 to less than 18 years old) and one-third of the

adult rate for young children (up to age six). In this section, these assumptions are evaluated and their potential effect on the calculated risk is discussed.

7.3.1 Fish Consumption Rates for Adults

A comprehensive review of available data on fish consumption was used by USEPA in developing the RME (and CT) recreational angler fish consumption rates presented in the Exposure Factors Handbook (USEPA, 1997a) and utilized in this HHRA. The fish consumption rate of 25 g/day used in the RME risk calculations was derived by USEPA from the 95th percentile fish consumption rates from surveys of anglers on the Great Lakes and in Maine. This rate is lower than the value previously used by USEPA (i.e., 54 g/day; USEPA, 1991b) and the value used in the Onondaga Lake Public Health Consultation (i.e., 32 g/day; NYSDOH and ATSDR, 1995). Because there are no data specific to Onondaga Lake – and the Onondaga Lake fish advisories preclude generation of a reliable estimate – it cannot be determined how well the data from other freshwater bodies predict consumption rates for Onondaga Lake without advisories in place. As the direction of bias in this uncertainty is unknown, the HHRA may overestimate or underestimate exposure and risks.

USEPA (2000c) used a value of 17.5 g/day for recreational fishers (and 142.5 g/day for subsistence fishers) in setting the water quality criteria that are protective of human health (EPA 822-B-00-004; 2000c). This value is based on the 90th, rather than the 95th, percentile of the study data). Inspection of the data used in the Exposure Factors Handbook suggests that the 90th percentile value of the three studies used to derive the recommended default used in this HHRA would be close to the 17.5 g/day value used in deriving the water quality criteria. Therefore, the difference in these values (i.e., between 25 g/day and 17.5 g/day) represents a different policy based on slightly different use of the data, not uncertainty in the underlying data.

The default adult fish ingestion value (54 g/day) presented in the Standard Default Exposure Factors guidance (USEPA, 1991b) is not considered applicable based on more recent data and guidance (e.g., Connelly [1992] and the Exposure Factors Handbook [USEPA, 1997]).

7.3.2 Fish Consumption Rates for Children

Fish ingestion by children was evaluated quantitatively by using an assumed ingestion rate of two-thirds of the adult rate for older children, and one-third of the adult rate for young children. However, as there are limited data on which to establish age-specific ingestion rates for recreationally caught fish for children, this may underestimate or overestimate the actual ingestion rates for children, and thereby may underestimate or overestimate the risk to children.

This HHRA used fish ingestion rates for children recommended by USEPA Region 2. The ingestion rate for young children was assumed to be one-third of the rate for adults, and the rate for older children/adolescents (6 to less than 18 years old) was assumed to be two-thirds of the rate for adults. These rates were also recently used for the Hudson River PCBs site HHRA (TAMS/USEPA, 2000). It

should also be noted that the Hudson River HHRA used a slightly higher RME value for fish ingestion by adults – 31.9 g/day (based on the 90th percentile of the Connelly et al. [1992] study of New York anglers) – than the 25 g/day used for the adult RME for Onondaga Lake (based on the recommended RME value from the Exposure Factors Handbook [USEPA, 1997a]).

Other ingestion rates for children may also be assumed, depending on the study used and the manner in which the data are processed. For example, based on data provided by NYSDOH (Pao, 1982), which are also presented in summary form in USEPA (1997a), some assumed consumption rates for children, relative to adults, can be calculated (see Table 7-3). However, these consumption rates were not developed quantitatively due to the uncertainty of the underlying data and assumptions, and the calculated rates were presented merely to provide the reader with a sense of the range of potential error or underestimation that may be present by not addressing children's fish consumption as a separate receptor population. Consistent with USEPA policy and conventional practice, children were evaluated as two subgroups: young children (under six years old); and older children (ages 6 to less than 18). However, it should be noted that the limited amount of age-specific fish consumption data that are available do not necessarily correspond to the age ranges used in this HHRA.

An extensive literature survey completed recently by the California EPA, Office of Environmental Health Hazard Assessment (OEHHA) notes that, "... in some cases, although not all, the differences in the rates of fish consumption that have been reported are likely to correspond to differences in body weight" (California EPA, OEHHA, 2001). A linear multiplier recommended by USEPA (USEPA, 1994, as cited in OEHHA, 2001; while the version of the USEPA document cited has been superseded by USEPA, Revision 3, November 2000, the approach referenced is unchanged) "... does not account for the higher caloric requirements of young children, and pregnant and nursing women" (OEHHA, 2001). Table 7-3 presents estimates of age-based consumption of fish. No data relative to pregnant or nursing women were found.

The Great Lakes protocol states that it is "... assumed that the meal size will change proportionally with body weight. Most dieticians consider the best predictor of meal size to be the body mass of the individual" (p. 8 in GLSFATF, 1993). As shown on Tables 7-3B and 7-3C, the data from Rupp (1980) and Javitz (1980) suggest that younger children consume fish (finfish and shellfish from commercial and recreational sources, in grams per day) at an average rate of 10 to 30 percent greater than that of adults on a body weight-normalized basis, although both studies suggest that the consumption rate for older children is actually lower than that for adults. The data from Pao (1982), presented on Table 7-3D, suggest a more dramatic increase in consumption by children based on grams per meal. However, this apparent effect is mitigated by a US Department of Agriculture (USDA) study suggesting that the average number of meals per year of fish consumed by children is lower than that for adults (USDA, 1992, as cited in Table 10-46 of USEPA, 1997a). (The presentation of the USDA data makes it impossible to determine if there are a few children eating a lot of fish, or a lot of children eating a small amount of fish, since the data are presented as "percent of population consuming fish in one day." Regardless, the percentage is lower for children; for example, the percent consuming reported for adults is 10.9 percent, whereas for children [males or females] the corresponding value is 6 percent.)

In general, USEPA, by convention, explicitly or implicitly considers "children" to be "young children;" i.e., 0 to 6 years old (USEPA, 1991b, 1999). However, the peer-reviewed Hudson River HHRA (TAMS/USEPA, 2000) did evaluate consumption of fish by "child" and "adolescent" (in addition to adult) anglers. The age ranges evaluated in the Hudson River HHRA were assumed to be under six years old, and 6 to less than 18 years old (the age range was not stated, but was back-calculated based on the body weights used for each age group), and the body weights (15 kg for the young child, 43 kg for the adolescent) and RME exposure durations were consistent with the age ranges. The RME exposure durations were 6 years for the young child, 12 years for the older child/adolescent, and 23 years for the adult. (Summing these RME exposure durations across the age groups results in a total RME exposure duration of 41 years, which is higher than the normal "default" RME exposure duration of 30 years. However, there were detailed county-specific demographic data developed for the Hudson River HHRA, so site-specific, rather than default, exposure durations were used.)

The relative ingestion rates, using those utilized in the quantitative Onondaga lake HHRA as well as those derived from some of the other studies discussed above, are illustrated on Tables 7-3A through 7-3D. A comparison between the risks and hazards calculated using the Onondaga Lake assumptions and the linear estimate (body weight-normalized) assumptions is presented in Table 7-4. Both the cancer risks and the non-cancer hazards for children based on the linear (body weight-normalized) estimates are only slightly lower than the corresponding risks and hazards based on the baseline assumption.

7.3.3 Subsistence Fishers

Subsistence fishers were not evaluated quantitatively, as there is a lack of data regarding whether or not subsistence fishers (or other high-end consumers) exist in the Onondaga Lake vicinity, and a lack of data on fish ingestion rates for subsistence fishers. Based on limited data, USEPA (1997a) suggests an RME (95^{th} percentile) rate of 170 g/day, and a CT (mean) rate of 70 g/day for subsistence fishers. As other factors in the risk calculation would be the same for these receptors, cancer risks and non-cancer hazards would be related linearly to the differences in consumption rates between the subsistence fisher and the adult angler; so the RME risks and hazards would be greater by a factor of about seven (170 g/day divided by 25 g/day), and the CT risks and hazards would be greater by a factor of about nine (70 divided by 8). RME cancer risks, which already exceed 10^{-4}, would increase further (e.g., the adult subsistence fisher risk would be about 5.3×10^{-3}, compared to 7.8×10^{-4} for the adult recreational fisher), and CT cancer risks, which are about 4.5×10^{-5} for all recreational receptors, would be about 4×10^{-4} for the adult subsistence fisher. Non-cancer hazards would also increase similarly (e.g., the adult subsistence fisher RME HI would be about 124, compared to the adult recreational fisher RME HI of 18.2). However, the very limited data also suggest that the ingestion rates, as well as the species consumed, are highly variable and site- or location-specific (see, for example, Table B-5 and section B.3.2 of Appendix B in USEPA, 2000b).

7.3.4 Fractional Intake

An additional factor considered in the uncertainty associated with this risk assessment is the amount of fish collected and consumed from Onondaga Lake versus from other resources. The fish consumption rates

used in the HHRA represent consumption from all freshwater resources fished during the season. As was the case for anglers evaluated in the studies used to derive these intake rates, however, several desirable fishing locations are available to anglers who live near Onondaga Lake. Thus, the RME fish consumption rates may not be representative of consumption from a single water body such as Onondaga Lake. The CT estimate also utilized an FI rate of 1.0 (i.e., assumed that all of an angler's total recreationally caught fish are from Onondaga Lake), but used the lower ingestion rate of 8 g/day.

The use of 1.0 as the fraction ingested for the CT scenario may lead to an overestimation of risk from fish consumption. An FI value of 0.3 would be consistent with two New York State sport-angler surveys, which evaluated the number of fishing locations for individual anglers (Connelly et al., 1990, 1992). The authors indicated that 63 percent of the respondents listed used at least three fishing locations. Use of the 0.3 FI value in this uncertainty assessment is also similar to the 0.25 FI value used by USEPA (USEPA, 1993b) in assessing upper-bound risks associated with consumption of fish in the Buffalo (New York) River, although empirically Onondaga Lake is a much more attractive fishing location and has been cited in publications as a highly desirable bass fishing spot. If the CT FI was reduced from 1.0 to 0.3, the associated risk would decrease accordingly (e.g., the adult fish ingestion CT HI would decrease from about 4.5 to about 1.3).

7.4 Uncertainties Associated with Exposure Assessment Assumptions

In the paragraphs below, uncertainties related to assumptions made for the exposure assessment are discussed. These include assumptions regarding ingestion (i.e., sediment and water, excluding ingestion of COPCs in fish, which was discussed above); exposure frequency (i.e., how many days per year an individual might be exposed to contaminated media); and similar issues. The identification of receptor populations with regard to the age of the receptors (young child, older child, or adult) is also discussed where appropriate.

For the most part, the rationale and basis for the assumptions made in the exposure assessment were presented in Chapter 4, Section 4.3.2 of this HHRA. This section is not intended to reiterate that material, but rather to assess qualitatively or quantitatively the effect of those assumptions on the risk characterization presented in Chapter 6.

7.4.1 Dermal Absorption Pathway Assumptions

There are a number of factors and assumptions which are particular to the dermal absorption pathway, including:

- Soil-to-skin adherence factors (SSAFs), addressed in Section 7.4.1.1.
- Dermal absorption factors (DAFs), addressed in Section 7.4.1.2.
- Route-to-route extrapolation factors, addressed in Section 7.4.1.3.

The field of dermal risk assessment has undergone significant change in the last few years; accordingly, USEPA guidance for dermal risk assessment has been revised and updated several times (USEPA, 1992c, 1999, 2001a). For the most part, the approach taken in this HHRA, including both the equations and the default assumptions, are consistent with the recently issued RAGS Part E (USEPA, 2001a).

7.4.1.1 Soil-Skin Adherence Factor

The SSAF is a measure of how much of the soil an individual is in contact with remains on the skin, thus serving as a source of contaminants that can be absorbed by the body. The SSAF is a function of both the type of activity in which the individual is engaged and the body part in contact exposed to the soil. A number of studies of SSAFs have been conducted for or reviewed by USEPA. The SSAFs used in this HHRA, referred to as the "consensus" SSAFs, are the result of several discussions among NYSDEC and their consultant TAMS; NYSDOH; USEPA; and consultants for Onondaga Lake National Priorities List (NPL) site Potentially Responsible Parties (PRPs). While these consensus SSAFs were established prior to the release of the current USEPA dermal guidance document, they are generally consistent with that guidance.

The specifics of the rationale for the various SSAFs used in this document are discussed in Chapter 4, Section 4.4.2 and are not repeated here. While the most recent USEPA guidance has been reviewed and utilized in this HHRA, it is noted that there are a wide range of SSAFs reported in the literature. Although extreme cases (e.g., the "kids-in-mud" scenario as reported in USEPA, 2001a and elsewhere) have not been used for establishing the SSAFs used in the quantitative HHRA, they do indicate the range of values that may exist. The values used for the RME assessment were selected to be both protective and reasonable; and the CT values were those thought, based on professional judgment, to most likely represent the typical individual of a given receptor type (e.g., adult or child recreator; construction worker). However, the true SSAF cannot be determined with precision and the values used in this HHRA may overestimate, or underestimate, the adherence of contaminated soil to potential receptor populations.

7.4.1.2 Uncertainties Related to Dermal Absorption Factors

This HHRA has used the relative absorption factors recommended by USEPA (listed in Chapter 4, Table 4-1) for both dermal and oral exposures to reflect the dermal and oral bioavailability of the constituents evaluated (i.e., the extent to which the constituents contacted or ingested are capable of being absorbed and available to act metabolically). Some of those absorption factors may overestimate the risks posed by dermal exposure, although the absence of DAFs for other contaminants (e.g., many of the metals) may underestimate exposure.

Experimental conditions from which the USEPA DAFs absorption factors were determined may differ from those which exist in Onondaga Lake, so the "true" site-specific DAFs may differ from USEPA's experimentally determined factors used in this HHRA. For example, the DAF for PCBs is 0.14 (14 percent), based on a study by Wester et al. (1993) in which dermal absorption was measured following application of freshly spiked PCB soil/sand to the skin of monkeys; the application of PCBs from sand with

a low (less than 0.9 percent) organic carbon content would lead to greater dermal absorption than soils containing a higher fraction of organic carbon. Moreover, the Wester et al. study methodology assumed that dirt would remain pressed to the skin for 24 hours and not be washed off, which is an unrealistic scenario for most people and likely a source of risk overestimation for this factor. On the other hand, most of the experimental determinations of absorption factors have been conducted at loadings higher than those necessary to completely cover skin; consequently, the actual absorption factors "... could be larger than experimentally determined" (p. 3-22 of USEPA, 2001a), and the risks would be underestimated.

A default DAF of 0.1 was used for SVOCs (other than PAHs), based on USEPA's assessment of dermal absorption data for other organic chemicals. However, no default absorption factor was recommended for VOCs or metals other than arsenic or cadmium. VOCs and other metals are not, therefore, included in the dermal pathway in this HHRA. This is further discussed in Section 7.4.1.6, below.

7.4.1.3 Route-to-Route Extrapolation

Nearly all available toxicity data are based on pathways other than dermal absorption – i.e., ingestion or inhalation. Therefore, an assumption or extrapolation from toxicity data from one of the other routes – generally ingestion – must be made in order to assess the dermal absorbed dose, relative to that from the pathway used in the study(ies) from which the toxicity data (RfD or CSF) were derived.

In general, if the gastrointestinal (GI) absorption of a contaminant is relatively high – 50 percent or greater – no adjustment is made to the dermal route. However, studies have shown some substances, mostly metals, to be poorly absorbed from the GI tract. For these chemicals, an adjustment factor is applied to reflect the poor absorption in the oral RfD study. This factor is shown as the "oral to dermal adjustment factor" on RAGS Tables 5.1 and 6.1 (Appendix B).

There is obviously some uncertainty with regard to the route-to-route extrapolation. While no adjustment was made for any organic chemicals (since the GI absorption of organics is typically 50 percent or more, in accordance with RAGS Part E), the toxicity of the dermal absorbed dose may be underestimated to the extent that the GI absorption is less than 100 percent. There is also some uncertainty in the oral-to-dermal adjustment factors used for metals, although the direction of the uncertainty (bias) is unknown.

7.4.1.4 Dermal Absorption of Contaminants from Water

The contaminants absorbed from water are calculated differently than those from soil. For water, a chemical-specific permeability constant (Kp) controls the migration of contaminants from the water across the skin and into the body. While the available Kp values may not be precise, the risks and hazards associated with dermal absorption of contaminants from surface water were not found to be significant (i.e., non-cancer hazards were well below 1.0 [0.01 for RME] and cancer risks were below 10^{-6} [10^{-9}] for all receptors). Therefore, uncertainties associated with this pathway have little or no measurable impact on the overall risks.

7.4.1.5 Skin Surface Area Available for Dermal Contact

The values used in this HHRA are generally those recommended in USEPA RAGS Part E, which are, in turn, based on assumptions about the types of clothing likely to be worn by the receptor, coupled with studies of the surface areas of various body parts. The 50th percentile values of the skin surface areas were used. While the relationship is not strictly linear, a higher percentile of exposed skin area is typically associated with greater body mass; e.g., an individual at the high end of the skin surface area distribution would be expected to also be at the high end of the body mass distribution. Therefore, the ratio of skin surface area to body mass does not vary greatly, so the effect of using the 50th percentile for these variables (as opposed to a 90th percentile value) in the RME calculation is limited.

The assumptions regarding body parts exposed are less certain; some potential activities, such as children playing along the shoreline in the park areas (e.g., northern basin shoreline sediments) could result in close to 100 percent of the skin being in contact with the sediments. On the other hand, other activities such as older children looking for frogs or turtles in the wetlands, might involve much lower fractions of the body being in contact with the sediments (possibly just hands, and maybe feet). There is less uncertainty associated with estimates of the total skin surface area potentially in contact with Onondaga Lake surface water for high-contact recreational activities; for example, activities such as swimming or waterskiing would result in 100 percent of the total skin area being in contact with water.

7.4.1.6 Contaminants of Potential Concern Evaluated in the Dermal Pathway

Due to the general lack of data on dermal and GI absorption, USEPA (RAGS Part E) recommends quantitative analysis of the dermal pathway for only a relatively small number of COPCs (SVOCs, PCBs, PCDD/PCDFs, some pesticides, and two metals). USEPA (2001a) recommends no quantitative assessment of VOCs in soil; the rationale for this is that VOCs tend to volatilize and are accounted for by the inhalation pathway, which was not considered to be a complete pathway for the Onondaga Lake HHRA (see Chapter 4, Section 4.2.5). For inorganics other than arsenic and cadmium, USEPA indicates that absorption of metals is highly dependent upon speciation of the metals; as a result, there are too little data to recommend default absorption factors (USEPA, 2001a). As a result, risks associated with dermal absorption of some chemicals may be underestimated.

7.4.2 Uncertainties Associated with Ingestion of Soil/Sediment and Surface Water

Uncertainties associated with calculated intakes of soil/sediment and surface water are discussed below.

7.4.2.1 Soil/Sediment Ingestion Rates

The fact that USEPA recommendations for soil/sediment ingestion rates have changed over time suggests that there is some uncertainty associated with these estimates. USEPA (1991b) recommended default soil ingestion rates of 100 mg/day and 200 mg/day for adults and young children, respectively; no estimates were provided for older children or construction workers. The more recent Exposure Factors Handbook

(USEPA, 1997a) recommended a 50 mg/day ingestion rate for adults in residential or commercial/industrial settings and 100 mg/day as the mean ingestion rate for children.

Risk estimates in this HHRA used soil/sediment ingestion rates of 100 mg/day (RME) and 50 mg/day (CT) for adults and older children and 200 mg/day and 100 mg/day for young child RME and CT, respectively. (The Exposure Factors Handbook notes that although children might ingest up to 400 mg/day, there were insufficient data to recommend a 95th percentile soil ingestion rate for children.) While not explicitly making a recommendation for construction worker ingestion, the Exposure Factors Handbook does cite a study by Hawley (1985) which suggested a 480 mg/day rate. This rate (480 mg/day) has been used in other Onondaga Lake subsite risk assessment documents (e.g., LCP Bridge Street HHRA [NYSDEC/TAMS, 1998a]); however, USEPA has reevaluated the study on which this rate was based and currently recommends a construction worker ingestion rate of 330 mg/day (Exhibit 5-1 in USEPA, 2001c). It is acknowledged that there is an extremely limited data set for these assumptions, especially for the construction worker scenario; however, the direction of the bias is unknown.

7.4.2.2 Fraction Ingested from Contaminated Site

The soil/sediment ingestion rates used were applied on the assumption that the individuals' total daily intake of soil came from the Onondaga Lake site – in other words, the FI term in the intake equation is assumed to be 1.0. For recreational users of the site, who would be expected to be present at the site for only a limited time on any given day, this assumption is conservative although not unrealistic. While it is likely that, for such users, at least some portion of their total daily intake of soil would come from other sources that are uncontaminated, such as other outdoor areas and/or indoor dust, it is reasonable that incidental soil ingestion is likely to occur at much higher rates during recreational activities than during other, typically more passive, activities. Although Stanek and Calabrese (1992) found that nearly 50 percent of the total daily soil ingestion of 64 preschool children originated from indoor dust, it is not known to what extent the other activities engaged in by those children are representative of activities (and hence ingestion) likely to occur at the shore, wetlands, or the dredge spoils area adjacent to Onondaga Lake. Thus, the assumed FI of 100 percent of soil/sediment ingestion from the contaminated site, as used in this HHRA, may overestimate actual exposures to site soils and sediments via incidental ingestion, although it is possible that the default ingestion rate could underestimate ingestion as well.

7.4.2.3 Surface Water Ingestion Rates

The USEPA default assumption of 50 mL/hour (about 2 ounces/hour) ingestion while swimming was used for assumed high-contact recreational activities such as swimming and waterskiing (Exhibit 6-13 in USEPA, 1989); this value was used for both the RME and CT scenarios. The uncertainty associated with this rate is unknown.

7.4.2.4 Duration of Swimming Events

The total intake of COPCs during an "event" is also dependent of the length (duration) of the event. RAGS Part A cites an average of 2.6 hours per swimming event, based on US Department of Interior (USDOI) data; however, the Exposure Factors Handbook cites other data showing an average of one hour per swimming event. Due to the discrepancy between the two values, the higher number (2.6 hours) was used in the RME calculation, and the lower (1 hour) was used in the CT calculations. These values were used for calculation of COPC intakes resulting from both ingestion of and dermal contact with surface water. Although there is some uncertainty in these values, it is unlikely that many receptors would have a significantly higher exposure than the RME value assumed.

7.4.3 Body Weight

The 50th percentile body weight was used for young children and older children, based on the data in the Exposure Factors Handbook. Although recent data show 71.8 kg (rather than 70 kg) as the 50th percentile body weight for adults, the USEPA default value of 70 kg is used in this HHRA. The 70 kg adult body weight is used both by convention and due to the fact that many of the toxicity values (RfDs and CSFs) are based on the assumption of a 70 kg body weight. The body weight is a less sensitive parameter (varying by less than a factor of two between the 5th percentile and 95th percentile for both male and female adults) than some of the others variables in the risk calculations, so the 50th percentile body weight used for all scenarios does not have a major impact on the uncertainty in this HHRA. The error introduced by this is negligible, and the uncertainty introduced is insignificant in comparison to the uncertainty associated with some of the other parameters (e.g., estimates of exposure frequency or ingestion rates).

7.4.4 Exposure Duration and Frequency

The assumed exposure durations used in this HHRA were 30 years for the adult RME and nine years for the adult CT. These default values were established in the Exposure Factors Handbook (as cited in USEPA RAGS Part A, 1989), based on national demographics (30 years being the 90th percentile value, and nine years the 50th percentile) on the length of time individuals live at a single residence. (More recent studies summarized in the Exposure Factors Handbook [USEPA, 1997a] provided estimates very similar to the default values recommended in 1989 and used in this HHRA.) These default assumptions may underestimate exposure of individuals in situations where exposure may continue even if a person moves but continues to be exposed to the site; for example, a move within Onondaga County. Since some people live in a single location or single area for periods longer than 30 years (e.g., 70 years or more), the cancer risks, although not the non-cancer hazards, would increase proportionally for such persons.

In the HHRA conducted for the Hudson River PCBs site (TAMS/USEPA, 2000), a detailed evaluation of the exposure duration for fish ingestion (based on the number of years an individual fishes in the Hudson River site) was conducted. This evaluation was based on three factors:

- The age an individual begins fishing.
- When the individual stops fishing.
- The length of time the person resides in the five-county area adjacent to the 34-mi (54.7-km) length of Hudson River under consideration.

Despite the fact that a significantly larger area was under consideration, the Hudson River-specific exposure durations were only about one-third greater than the standard defaults assumed for the one-county Onondaga Lake HHRA area. Specifically, the 95th percentile exposure duration for the Hudson River HHRA was about 40 years (compared to the 30-year RME exposure duration for this Onondaga Lake HHRA), and the 50th percentile exposure duration for the Hudson River was 12 years (compared to the nine years used as the CT exposure duration for the Onondaga Lake HHRA). The exposure durations calculated for the Hudson River suggest that the USEPA defaults used for the Onondaga HHRA are reasonable and are not likely to significantly understate the exposure to the vast majority of receptors. However, exposure may be underestimated for those individuals who live in the same residence their entire life, or who change residences but remain near Onondaga Lake.

In accordance with the risk characterization equations provided in RAGS Part A (USEPA, 1989), an averaging time of 25,550 days (70 years × 365 days/year) was used for calculations of cancer risk. The more recent data in the Exposure Factors Handbook (USEPA, 1997a) indicates that the current average life span is 75 years. However, the 70-year (25,550-day) period was used as the averaging time for cancer calculations, as the derivation of CSFs is based on an average lifetime of 70 years. As the averaging time appears in the denominator of the risk calculation, a higher averaging time of 75 years would effectively decrease the calculated cancer risk by about 7 percent.

For non-cancer hazard calculations, the averaging time is equal to the exposure duration multiplied by 365 days/year. As the exposure duration values cancel each other out in the non-cancer hazard calculation (the exposure duration is in the numerator, and the averaging time is in the denominator), there is no uncertainty associated with the non-cancer averaging time.

The exposure frequency is not an uncertainty issue for fish ingestion, as the data used are a daily average ingestion rate, so a duration of 365 days is necessary to balance the equation. Issues related to the uncertainty of the fish ingestion rate were discussed previously in this chapter.

For northern basin sediments, including the two northern basin wetlands, SYW-6 and SYW-10, 44 days/year was used for the RME frequency and 32 for the CT. By comparison, the Hudson River HHRA used an assumed recreational exposure frequency of 26 days for the RME and 13 days for the CT for children, and 13 days for the RME and seven days for the CT for adults. However, acknowledging that there might be a subpopulation of highly exposed recreators for the Hudson River, an "avid recreator" subpopulation was also evaluated. For the Hudson River avid recreator, the assumed exposure frequencies for adults and adolescents were 104 days for the RME and 52 days for the CT (children below the age

of 12 were not assumed to be avid recreators). The exposure frequencies used for the northern basin of Onondaga Lake are within the range used for the Hudson River recreator and are approximately half of the frequencies used for the Hudson River avid recreator, and as such are reasonable for a typical recreator. However, the exposure frequency used in this HHRA may not capture all highly exposed individuals (i.e., avid recreators) and thereby may underestimate risks to such persons.

In order to assess the hypothetical avid recreator, site-specific high-end exposure frequencies have also been estimated using the following assumptions:

- The exposed population is older children (age 6 to 18 years old).
- Exposure occurs only when the daily maximum temperature is 70°F or higher (May 19 to September 21, based on 1971 to 2000 Syracuse weather data) (NOAA, 2002).
- Exposure occurs five days/week during summer vacation (assumed to be ten weeks, from June 23 to September 1).
- Exposure occurs two days/week (i.e., on weekends) during the school year (May 19 to June 23, and September 2 to September 21) for a total of eight weeks.

Based on the assumptions listed above, the avid recreator exposure frequency would be 66 days/year [(5 × 10) + (2 × 8)]. This hypothetical avid recreator exposure (66 days/year) is 50 percent higher than the RME value (44 days/year) assumed for the northern basin sediments. Cancer risks and non-cancer hazards would also increase correspondingly (i.e., by 50 percent) for the avid recreator. However, this would not increase the HI to a value greater than 1.0, nor would it change the cancer risk category for the northern basin sediments or Wetlands SYW-6 or SYW-10.

The exposure frequency for southern basin sediments, including Wetlands SYW-12 and SYW-19, was assumed to be 14 days/year for the RME and five days/year for the CT. This exposure frequency is much lower than that assumed for the northern basin, due to the relative lack of potential points of contact, as the landside borders of the southern basin are dominated by industrial and commercial properties, while the northern basin shores have large amounts of parkland. It was, therefore, considered unlikely that exposures would be as high to the southern basin sediments as to the northern basin sediments, even under future scenarios. However, as with the northern basin sediments, an exposure frequency as high as 66 days per year could be used as the RME, assuming visits to the southern basin using the same assumptions as described above for the northern basin hypothetical avid recreator. Under this hypothetical avid recreator scenario, RME exposure, and, consequently, the associated risks and hazards, would increase by a factor of about 4.7 (66 divided by 14). Under this scenario, the RME cancer risk for the older child exposure to Wetland SYW-19 sediments would increase to over 10^{-4} (from about 4.9×10^{-5} to about 2.3×10^{-4}); other risk and hazard categories would be unchanged. The appropriateness of the professional judgment

estimates of exposure frequency is uncertain for the southern basin, and it is certainly possible that higher or lower estimates might better represent the likelihood of exposure.

For the construction worker scenario, the exposure frequency was assumed to be 25 days (five weeks) for the RME, and ten days (two weeks) for the CT; in each case, the exposure duration was assumed to be two years. These estimates are based on the assumption that the nature of the construction activity will be sewer line installation, utility repair, or similar work, but these exposure frequencies would probably be low for a construction period for erecting a structure (e.g., a warehouse or marina). Due to the fact that much of the lake area includes regulated wetlands or parkland, large-scale construction projects in areas covered by this HHRA (lake sediments, wetlands, and the dredge spoils area) were considered unlikely. However, to the extent that such a larger project may occur, this HHRA may underestimate risks or hazards to construction workers. For example, if a more generic default assumption of 250 days (i.e., the construction worker default in USEPA, 2001c) for a larger construction project is applied, the RME risks and hazards for the construction worker would increase by a factor of 10 (250 days divided by 25 days). This would result in the RME HI for the construction worker increasing to greater than 1.0 for southern basin sediments (HI of 2.2), Wetlands SYW-12 (HI of 1.4) and SYW-19 (HI of 1.6), and the dredge spoils area soils (HI just over 1.0). RME cancer risks would increase to greater than 10^{-6} (from about 6×10^{-7} to about 6×10^{-6}); other risk and hazard categories would be unchanged (i.e., cancer risks would still be less than 10^{-6}, and HIs would still be less than 1.0).

7.5 Uncertainties Related to Available Toxicity Data

The toxicity data discussed in this section are the quantitative values used in the risk characterization presented in Chapter 6 of this HHRA; specifically, the non-cancer RfDs and the CSFs used to calculate risks and hazards. It is important to note that the toxicity data developed by USEPA are designed to be plausible upper-bound estimates; i.e., the values are intended to be protective. From that perspective, some of the toxicity values used may be considered to be "conservative." With that in mind, the three main issues related to the uncertainty of the toxicity data used in this HHRA are:

- Accuracy of toxicity data (RfDs, CSFs) for the COPCs (including chemical "surrogates" approved by NCEA, such as pyrene for some non-cancer PAHs and lindane [gamma-HCH] for delta-HCH).

- Effect of lack of quantitative data for chemicals that have been detected. The issue of chemicals that may be present but were not analyzed, or at least not consistently analyzed, is addressed in Section 7.1.1.

- Toxicity data assumptions for chemicals for which the specific form was not analyzed, including:

  - Fish: Mercury and arsenic forms.
  - All media: Chromium (trivalent and hexavalent) and mercury forms.

It should also be noted that NYSDOH has developed quantitative risk factors for a few chemicals for which USEPA has also published values or, in a few cases, has recommendations for assessment of COPCs for which USEPA does not have published toxicity values. Onondaga Lake-specific COPCs for which NYSDOH has developed toxicity values (i.e., CSFs or RfDs) include the following:

- Cadmium.
- Benzene.
- Benzo(a)pyrene.
- DDE.
- delta-HCH.
- Chlordane.

Although tending to be slightly more conservative, the NYSDOH toxicity values for these chemicals are generally similar to those developed by USEPA and are not for the major COPCs that contribute to the cancer risks or non-cancer hazards in this HHRA. The exception to this is dioxins/furans (PCDD/PCDFs), for which NYSDOH recommends a quantitative assessment for non-cancer effects. A semi-quantitative assessment of potential non-cancer hazards from dioxin-like compounds is presented in Section 7.5.1.3.

7.5.1 Accuracy of Quantitative Cancer and Non-Cancer Toxicity Values

7.5.1.1 Polychlorinated Biphenyls

Issues related to both the cancer and non-cancer toxicity data are discussed below.

Cancer Slope Factor for PCBs

The CSF is an upper-bound estimate of the carcinogenic potency of a chemical used to calculate cancer risk from exposure to carcinogens by relating estimates of lifetime average chemical intake to the incremental risk of an individual developing cancer over that lifetime. IRIS, the online database of USEPA's consensus review of toxicity data, provides both upper-bound and central estimate CSFs for three different tiers of PCB mixtures, as described in Chapter 5, Section 5.2.6.1. These values are based on USEPA's reassessment of the carcinogenic potency toxicity data for PCBs (USEPA, 1996a), and were derived using the proposed revisions to the USEPA Guidelines for Carcinogen Risk Assessment (USEPA, 1996b). A range of potency estimates was determined using studies for a range of mixtures, rather than focusing on the highest-potency mixture. USEPA's reassessment concludes that "uncertainty around the CSF estimate extends in both directions." However, the overall CSFs developed by USEPA represent plausible upper-bound estimates, indicating that there is reasonable confidence that the actual cancer risk will not exceed the cancer risk calculated using the CSF.

Reference Dose for Non-Cancer Hazards of PCBs

The non-cancer hazards for PCBs are based on the low molecular weight (Aroclor 1016) and high molecular weight (Aroclor 1254) oral RfDs in IRIS, as summarized in Chapter 5, Section 5.2.6.2 of this HHRA. The confidence level for both the RfDs is characterized by USEPA in IRIS as medium, indicating a moderate amount of uncertainty with regard to the numerical values. The combined uncertainty and modifying factors used in the development of these factors are 100 for Aroclor 1016 and 300 for Aroclor 1254; these uncertainty factors are lower than those for the majority of the other organic COPCs assessed in this HHRA (see Appendix B, RAGS Table 5.1).

It is noted that there are numerous studies, both human and animal, of the health effects of PCBs, some of which have been published since the last significant revision to the IRIS file. As noted in the Hudson River PCBs Site HHRA (TAMS/USEPA, 2000), USEPA is currently performing an evaluation of these studies as part of the ongoing IRIS process. In addition to carcinogenicity, these recent studies have focused on non-cancer effects including the developmental, neurotoxic, thyroid, immunological, and reproductive effects of PCB exposure.

Assessing both exposure to and effects of PCBs *in utero* to fetuses, to nursing infants, and to the children of exposed individuals (i.e., those with higher-than-normal body burdens of PCBs) is even more complex. PCB transfer from the placenta and from breast milk can result in significant exposures *in utero* and to nursing infants (DeKoning and Karmaus, 2000, as cited in the Hudson River PCBs Site HHRA [TAMS/USEPA, 2000]). However, the means for assessing the effects of such exposure quantitatively do not yet exist. Therefore, fetuses, nursing infants, and children of exposed individuals may constitute an additional highly exposed subpopulation on whom the effects of PCB exposure cannot be quantified.

Dioxin-Like PCBs

Twelve PCB congeners (non-ortho and mono-ortho substituted) have been identified as "dioxin-like PCBs" (Van den Berg, et al., 1998), and toxicity equivalence factors (TEFs) have been calculated for these congeners. As no congener-specific PCB analyses were performed for the Onondaga Lake investigation, the specific cancer potential of these congeners is not assessed. However, the Aroclor CSFs were developed using commercial Aroclors which contain these congeners and, therefore, the cancer potential of these congeners is included in the CSF for PCBs. However, to the extent that the distribution of congeners in the environment differs from that of the commercial Aroclors used to develop the CSFs, the associated risks could be either higher or lower than those presented in this HHRA.

7.5.1.2 Methylmercury Non-Cancer Reference Dose

The methylmercury RfD of 0.0001 mg/kg-day (1×10^{-4} mg/kg-day, or 0.1 µg/kg-day) is published in IRIS, and USEPA notes that confidence in this value is high. The RfD was originally derived in 1995 from data on delayed walking reported in Iraqi infants whose mothers were accidentally exposed to relatively high levels of alkylmercury in grain (Marsh et al., 1987).

In 1999, the National Research Council (NRC) was directed by Congress to review the USEPA-derived RfD and to focus on review of new studies published since USEPA established the RfD. The NRC report, Toxicological Effects of Methylmercury, was published in 2000; the current RfD was derived from the findings of that report and confirms the RfD from IRIS (1×10^{-4} mg/kg-day). A benchmark dose approach (BMD) was used, rather than a no observed adverse effect level/lowest observed adverse effect level (NOAEL/LOAEL) approach, as the response variable for analyzing the neurological effects in children.

The adverse effect of methylmercury at the lowest observed dose is neurotoxicity (i.e., the brain is the most sensitive organ), particularly among developing organisms. Among the extensive array of peer-reviewed data from low-dose exposure to methylmercury, USEPA and NRC identified three longitudinal developmental studies of the human populations consuming mercury-contaminated marine mammals. The three studies determined to be suitable for use in establishing quantitative risk assessment are the Seychelles child development study, ongoing studies of children in the Faeroe Islands, and the study of children in New Zealand. Although the Seychelles study found no evidence of impairment related to methylmercury exposure, the Faeroe and New Zealand studies found dose-related adverse effects on a number of endpoints. In the establishment of the RfD, emphasis was placed on the results of the Faeroe Islands study, as it is the larger of the two studies that identified methylmercury-related developmental neurotoxicity. Supporting evidence from the New Zealand study provides assurance that this focus is the appropriate strategy for protecting public health. In addition, an integrative analysis of all three studies was also performed.

Benchmark dose analyses were performed for a number of endpoints from all three studies (Chapter 7 of NRC, 2000). NRC estimated a CT measure, equivalent to a BMD, across all three studies for all endpoints that were identified as significant in the Faeroe Islands and New Zealand studies, and for all endpoints at 5.5 years of age in the Seychelles study. NRC also determined a lower limit based on a theoretical distribution of BMDs, which is the logical equivalent of a BMDL (benchmark dose limit). NRC also used a hierarchical random-effect model to reduce random variation in the estimate for these same endpoints from all three studies (Table 7-5, pp. 290-294 in NRC, 2000). Additionally, this analysis was used in calculating BMDs and BMDLs for the most sensitive and median endpoints from both the Faeroe Islands and New Zealand studies (Table 7-6, p. 294 in NRC, 2000). This approach also allowed an integrative analysis of data from all three studies.

The IRIS file for methylmercury presents $BMDL_{05}$s (BMDLs at the 5 percent significance level) from a number of endpoints in terms of cord-blood mercury (see Table 2 of IRIS file, included in Appendix E of this HHRA). These tests are all indications of neuropsychological processes involved in a child's ability to learn and process information. The BMDLs for these scores are all within a relatively close range. They were converted using a one-compartment model to an ingested dose of methylmercury that would result in the cord-blood level. The last column shows the corresponding RfD from application of an uncertainty factor (UF) of 10 (discussed in the following paragraph). The calculated RfD values converge at the same point: 0.1 µg/kg-day. USEPA also calculated geometric means from the four endpoints from the Faeroe Islands study; RfDs were 0.1 µg/kg-day based on these calculations. For the New Zealand study, both the median value and the results of the McCarthy Perceived Performance test yielded RfDs of 0.05 µg/kg-day,

and the McCarthy Motor Test yielded an RfD of 0.1 μg/kg-day. Based on the integrative analysis of all three studies, the RfD would be 0.1 μg/kg-day.

Due to the availability of human epidemiological studies, a relatively low composite uncertainty factor (combination of the modifying factor and uncertainty factor) of 10 was applied in the development of the methylmercury RfD. This choice was made to account for the following factors:

- Pharmacokinetic variability and uncertainty in estimating an ingested mercury dose from cord-blood mercury concentration: a factor of 3 was applied.

- Pharmacodynamic variability and uncertainty: a factor of 3 was applied.

Due to the availability of adequate data and peer-reviewed and government-reviewed studies, and the convergence of the RfD values calculated or derived from different studies and different endpoints, confidence in the RfD for methylmercury is considered high and there is little uncertainty associated with it.

7.5.1.3 Dioxins and Furans

Substantial uncertainties exist in the quantitative toxicity assessment for PCDD/PCDFs. These uncertainties result from both the numerical CSFs and TEFs used to calculate risks associated with these compounds, and the absence of numerical toxicity data to quantitatively estimate non-cancer hazards associated with this compound class.

It should be noted that USEPA is conducting an extensive dioxin reassessment; preliminary drafts of some of the documentation generated by that reassessment have been released for review (USEPA, 2000a). While this reassessment has not been completed or peer-reviewed, tentative or preliminary conclusions from it are noted where applicable.

Cancer Slope Factors for Dioxins and Furans

The primary issues of debate focus on the appropriate interpretation of the available data. Regulatory agencies and others in the US and elsewhere have calculated quantitative estimates of TCDD carcinogenicity that span more than three orders of magnitude. These differences arise as a result of alternative assumptions used when interpreting the underlying animal bioassay data, changes that have occurred in standard procedures for interpreting and extrapolating from such data to predict human health risks (e.g., scaling factors for relating animal data to human populations), and, most importantly, assumptions regarding the mechanism of action by which 2,3,7,8-TCDD exerts carcinogenic effects (threshold or non-threshold). The range of CSF values (carcinogenicity estimates) suggest there may be considerable uncertainty associated with the CSF used in this HHRA for PCDD/PCDFs.

As described in Chapter 5, Section 5.2.7, the cancer risks associated with PCDD/PCDFs were assessed by converting the 2,3,7,8-substituted congeners to a TEQ of 2,3,7,8-TCDD through the use of TEFs published by the WHO (van den Berg et al., 1998). A CSF for 2,3,7,8-TCDD was then applied to the resulting TEQs. USEPA does not list a CSF for 2,3,7,8-TCDD on IRIS; the value used in this HHRA is from HEAST (USEPA, 1997). In the past, a wide range of CSFs have been proposed for 2,3,7,8-TCDD based on a rat study by Kociba et al. (1978). For this HHRA, a CSF of 1.5×10^5 $(mg/kg\text{-}day)^{-1}$, which is at the upper end of this range, was used, which is the value listed by USEPA on HEAST.

The TEF system for converting other PCDD/PCDF congeners to a 2,3,7,8-TCDD equivalence (i.e., TEQ) is generally accepted both nationally and internationally by cancer researchers and regulatory agencies.

A reassessment of this study, along with data from three human studies, led USEPA in the draft dioxin reassessment to suggest "the use of 1×10^{-3} per pg/TEQ/kgBW/day as an estimator of upper-bound cancer risk for both background intakes and incremental intakes above background" (p. 105 of USEPA, 2000a). This converts to a CSF of 1.0×10^6 $(mg/kg\text{-}day)^{-1}$. If the final version of the dioxin reassessment confirms this value, the dioxin-related cancer risks presented in this HHRA would increase by a factor of about seven, resulting in an upper-bound RME cancer risk estimate of 3×10^{-3} for the adult fish ingestion pathway.

Non-Cancer Toxicity of Dioxins and Furans

Non-carcinogenic risks from exposure to PCDD/PCDFs were not estimated in this risk assessment because USEPA does not currently recommend an RfD for non-cancer hazards. (The preliminary reassessment being conducted by USEPA does not recommend establishing an RfD for dioxin and related compounds due to the relatively high background compared to effect levels [p. 108 of USEPA, 2000a]. The current estimated average dose to the US population, about 1 picogram per kilogram per day (pg/kg-day), is greater than the RfD/reference concentration (RfC) values that would be calculated given the data reviewed in the reassessment, and, therefore, toxicity-based RfD or RfC values would be uninformative for evaluation of non-cancer health risks [p. 122 of USEPA, 2000a].) Non-cancer risk estimates are presented to address this uncertainty.

Specifically, an HQ can be calculated by comparing the non-carcinogenic RME estimate of PCDD/PCDFs intake from fish (7×10^{-9} mg/kg-day) with the minimum risk level (MRL) published by ATSDR of 1 picogram TCDD TEQ/kg-day, or 1×10^{-9} mg/kg-day (ATSDR, 1999; however, USEPA's dioxin reassessment indicates that there are some questions about the ATSDR MRL, due to concerns with the lower bounds of effects data for non-cancer endpoints [p. 109 of USEPA, 2000a]). The ATSDR MRL is analogous to a USEPA RfD in that it is the level of exposure below which the agency believes is without an appreciable risk for non-cancer health effects. Use of this MRL as an RfD would result in an HQ for PCDD/PCDFs of 7 in the RME adult fish consumption exposure scenario (based on the non-cancer intake of 7×10^{-9} mg/kg-day) and 1.5 in the CT fish consumption scenario (based on the non-cancer CT chronic daily intake [CDI] of 1.5×10^{-9} mg/kg-day), which would indicate that there is concern for adverse non-cancer effects related to exposure to PCDD/PCDFs in fish. These HQs would also correspondingly

increase the total HIs for the recreational angler through fish consumption (summarized in Chapter 6, Table 6-1).

More recently, the WHO has cited intakes in the range of 1 to 4 pg/kg-day (1 to 4 × 10^{-9} mg/kg-day) as a "tolerable daily intake" (WHO, 2000, as cited in USEPA, 2000a). The RME estimate of intake from fish exceeds the high end of the WHO range; the CT intake estimate is within this range, although it exceeds the low end.

The draft dioxin reassessment indicates that USEPA is taking a margin-of-exposure (MOE) approach for non-cancer endpoints to inform risk management decisions. The MOE is the dimensionless ratio of a low-end effect level, such as an LOAEL, in the comparison species, to calculated or observed CDI. Higher MOE values are associated with the assumption of decreased risk, such as the decreased likelihood of adverse health effects occurring. Based on the USEPA estimated average (background) dose to the US population (about 1 pg/kg-day), USEPA indicates that MOEs range from less than 1 to as high as 15, depending on the study, species, and effect monitored (p. 122 of USEPA, 2000a) for establishing the LOAEL or effective dose. NYSDOH staff support the MOE approach and suggested using several studies of reproductive effects in rhesus monkeys to establish a lowest observed effect level (LOEL) of 0.13 ng/kg-day (130 × 10^{-9} mg/kg-day) (NYSDOH, 2002c; 2002, pers. comm., August 5). Using this LOAEL and the RME intake of 7 × 10^{-9} mg/kg-day would result in an MOE of about 20.

Although the available toxicity data show that exposure to dioxin-related compounds may result in a measurable increase in the non-cancer hazards, inclusion of the results discussed immediately above in the quantitative risk estimates would not change the overall conclusions in this HHRA regarding the site because the excess cancer risk estimate for PCDD/PCDFs for the fish consumption pathway was 4.5 × 10^{-4} and the total HI for fish consumption was already above 1.0.

7.5.2 Lack of Quantitative Toxicity Values for Detected Chemicals

7.5.2.1 Use of Surrogate Toxicity Data for Polycyclic Aromatic Hydrocarbons

As discussed in Chapter 5, Section 5.2.4, there are specific toxicity data available for only a few of the PAHs detected in soil/sediment samples used in the Onondaga Lake HHRA. Both cancer and non-cancer toxicity data were extrapolated to other PAH compounds for the quantitative cancer risk and non-cancer hazard calculations.

Cancer Slope Factors for PAHs

Benzo(a)pyrene is the only PAH compound for which a specific CSF has been developed. As noted in Chapter 5, Section 5.2.4.1, the cancer risk associated with other PAH compounds classified as B2 carcinogens has been estimated quantitatively using relative provisional carcinogenic potency factors published in 1993. As these factors were only considered to represent order-of-magnitude accuracy at the time they were first published, and they were provisional and have not been updated or finalized in nearly

ten years, there may be a fair amount of uncertainty associated with the cancer risks associated with these PAHs, although the direction of the uncertainty is unknown.

Dermal contact with PAHs was evaluated in the this risk assessment using the oral CSF and RfD. There is a fair amount of uncertainty on this issue due to uncertainties related to derivation of toxicity values for dermal exposures for chemicals having site-of-contact effects, such as PAHs (USEPA, 1989b). The most recent USEPA dermal guidance recommends that PAHs be assessed quantitatively for systemic effects (non-cancer hazards) and qualitatively for carcinogenicity (RAGS Part E, Section 5.2.3). Therefore, there is a fairly high degree of uncertainty associated with the quantitative estimate of cancer risk associated with dermal contact with carcinogenic PAHs.

Reference Doses for Non-Cancer Effects of PAHs

As with carcinogenic PAHs, USEPA has non-cancer toxicity data for only a few PAH compounds. However, USEPA NCEA has reviewed studies for various PAHs and has provided recommended values for several non-carcinogenic PAHs for which there are no published values in IRIS or HEAST (see Chapter 5, Section 5.2.4.2 in this HHRA). While these values cannot be considered to have the same level of certainty as IRIS values, USEPA has specifically reviewed these values for use in the Onondaga Lake HHRA. Therefore, although there is some uncertainty associated with the non-cancer hazard calculations for these compounds, recent review has confirmed that these values are adequate for quantitative risk assessment.

The USEPA NCEA has only reviewed and approved the RfDs for the non-carcinogenic PAH COPCs. NYSDOH has noted that the carcinogenic PAHs may also have non-cancer health effects, and has suggested that the RfD for pyrene be utilized for assessing non-cancer hazards associated with PAH compounds that are assessed for cancer risks. The potential impact of this was assessed by reviewing the data for the southern basin sediments, a medium with high PAH concentrations. If these carcinogenic PAH compounds were also evaluated for non-cancer toxicity in the quantitative HHRA, the increase in RME hazards associated with these compounds would be insignificant (i.e., HIs for the individual PAHs would increase on the order of 10^{-4} to 10^{-5}). For example, applying the pyrene RfD to the southern basin sediment RME hazard for the young child would increase the calculated HI slightly to 0.54 from 0.535, and the older child RME hazard would increase to 0.256 from 0.253.

7.5.2.2 Surrogate Toxicity Data for Other Contaminants of Potential Concern

USEPA NCEA has indicated that the toxicity data for gamma-BHC (lindane) is appropriate for assessing risks associated with the Onondaga Lake COPC delta-BHC. Lindane is a relatively well studied compound due to its use as a commercial pesticide. As it is unlikely that the related compound delta-BHC is more toxic than lindane, and the calculated risks associated with this compound are not significant (i.e., do not contribute as much as ten percent of the risk or hazard by any pathway), any error or uncertainty introduced by this assumption does not materially affect the conclusions of this HHRA.

7.5.2.3 Contaminants of Potential Concern Without Quantitative Toxicity Data

Concentrations of two chemicals, lead and 2,4'-DDE, exceeded screening level concentrations and these chemicals were, therefore, identified as COPCs in one or more pathways. As sufficient quantitative toxicity data for lead and 2,4'-DDE were not available, these compounds were not included in the quantitative risk calculations. The potential impact of not having toxicity data for them is discussed below.

Lead

An analysis for lead was conducted in all site media. Lead in sediment and dredge spoils was screened against the USEPA residential soil screening criterion of 400 mg/kg, and lead in water was screened against the federal drinking water action level of 15 µg/L (40 CFR, Part 141). No screening values were available for lead in fish tissue. IRIS classifies lead as B2, probable human carcinogen, but no quantitative CSFs or RfDs were available in IRIS.

Lead was detected in 8 of 11 fish tissue samples at a maximum concentration of 0.29 mg/kg (290 µg/kg). Lead was not identified as a COPC in fish tissue, as there were no toxicity data for screening or risk quantitation. While the concentrations of lead detected are low on a qualitative basis (i.e., the maximum detected lead concentration was lower than the maximum detected concentration of almost every other metal in fish tissue; see Appendix B, RAGS Table 2.1), the potential impact of not being able to quantitate risks or hazards associated with lead cannot be determined.

Lead was identified as a COPC in southern basin sediments (lead concentrations were below the screening criteria in other sediment and dredge spoil samples), where it was detected in all 100 samples at a maximum concentration of 2,050 mg/kg. However, the medium-specific EPC (i.e., the 95 percent UCL on the mean) was 235 mg/kg (see Appendix B, RAGS Table 3.3), which is lower than the screening criterion of 400 mg/kg. Considering also that the potential for exposure to the southern basin sediments is lower than the exposure potential assumed by USEPA in deriving the residential screening criterion for lead, it is likely that lead does not contribute significantly to cancer risk or non-cancer hazard in the southern basin (or in other soil/sediment media) of Onondaga Lake.

Lead was detected in 12 of the 48 surface water samples from Onondaga Lake at a maximum concentration of 7.7 µg/L, about half the screening criterion of 15 µg/L (see Appendix B, RAGS Table 2.10). Lead was, therefore, screened out and was not considered a COPC in surface water. The lack of quantitative toxicity data for lead did not affect the calculation of risks for the surface water pathway.

2,4'-DDE

2,4'-DDE was identified as a COPC in fish tissue; samples were not analyzed for 2,4'-DDE in other media (surface water, sediments, or dredge spoil soils). 2,4'-DDE is chemically related to 4,4'-DDE and DDT, and was screened against the USEPA Region 3 fish ingestion criteria for "DDE" – the specific isomer (i.e., 2,4'- or 4,4'-) is not specified for the DDT-related compounds (which also include DDE and DDD).

Analysis for the 2,4' isomers of DDT-related compounds was conducted on 38 of the 134 fish tissue samples (about 28 percent of the total) for which pesticide analysis was conducted. 2,4'-DDE was detected in 7 of the 38 samples in which it was analyzed, at a maximum concentration of 24 µg/kg (Appendix B, RAGS Table 2.1), and the medium-specific EPC (95 percent UCL on the mean) was determined to be 4.1 µg/kg (Appendix B, RAGS Table 3.1); this EPC is substantially lower than the EPCs for the 4,4' isomers of the three DDT-related compounds (ranging from less than half to about one-eighth of the values). The non-cancer HQs associated with the 4,4'-DDT compounds were all less than 0.01 (Appendix B, RAGS Table 7.1); therefore, even assuming similar toxicity for 2,4'-DDE, it would not cause a significant increase in the non-cancer hazard for fish ingestion. For cancer risks, if the CSF for 4,4'-DDE were applied to 2,4'-DDE, the resultant RME risk would be about 2×10^{-8}, using the cancer intakes and CSFs as shown in Appendix B, RAGS Table 8.1. This would not result in a noticeable increase in the RME cancer risk for fish ingestion.

7.5.3 Lack of Analytical Data on the Specific Form of Contaminants of Potential Concern

The toxicity of some chemicals is affected by the form in which it exists, such as the structural or positional isomer (for organics) or the specific compound or valence state (for inorganics). For the Onondaga Lake HHRA, there are not significant uncertainties for most of the organic chemicals which contributed to risks or hazards. For the Onondaga Lake HHRA, the four COPCs for which there are form- and toxicity-related uncertainties are metals and PCBs, specifically:

- Mercury, especially in fish. The non-cancer toxicity varies depending on whether the mercury exists as organic (methylmercury) or inorganic mercury.
- Arsenic in fish. Inorganic arsenic is much more toxic than organic arsenic; however, much, if not most, of the arsenic in fish may be in the organic form.
- Chromium in all media. Hexavalent chromium (Cr^{+6}) is much more toxic than trivalent chromium (Cr^{+3}), although most of the chromium detected in environmental samples is usually in the trivalent form.
- PCBs in all media. Uncertainties exist with regard to analytical reporting and dioxin-like toxicity.

The specific assumptions used in the HHRA for each of these chemicals, and the potential impact of these assumptions on the HHRA, are discussed below.

7.5.3.1 Mercury and Methylmercury

Due to the different oral toxicity of inorganic mercury and methylmercury (methylmercury is considered to be three times as toxic as inorganic mercury, based on the oral RfDs published in IRIS), it was necessary to determine the fraction of mercury in each medium or pathway which was in the inorganic form. For some

media (i.e., fish tissue, lake sediments, and surface water) there are site-specific data for both forms of mercury and the assumptions made are based on the available data. For other media (i.e., wetlands sediments and dredge spoils) there are no site-specific data and therefore estimates of the fraction of the total mercury which is present as methylmercury are based on data from nearby sites, literature reviews, and professional judgment. The basis for the assumptions for each of the five media, as well as the potential impact on risk calculations of other assumptions (i.e., assumptions of either higher or lower percentages of methylmercury) are presented below.

A more detailed discussion of the literature and data used for the assumptions made for both the Onondaga Lake Baseline Ecological Risk Assessment (BERA) and HHRA regarding the methylation of mercury is presented in Chapter 6, Section 6.3.1.1 of the BERA (TAMS, 2002a).

Fish Tissue

For the fish samples, the assumption that all the mercury detected is in the form of methylmercury is likely to cause very little error. There are some site-specific data which support the assumption that the vast majority of the mercury detected in fish samples is methylmercury. Inorganic mercury is also toxic; however, it is less toxic by a factor of three and has an oral RfD corresponding to its lesser toxicity. (If, for example, 10 percent of the mercury in the fish were inorganic, then the assumption that 100 percent of the mercury is methylmercury would overestimate the hazard by about 7 percent. Fish ingestion hazards would still be substantially greater than 1.0.) The predominance of the mercury as organic mercury in fish tissue is attributed to the validated assumption for the Onondaga Lake site that most of the mercury in fish is methylmercury or organic mercury.

Lake Bottom Sediment

For lake sediments, the methylmercury concentration is based on data from the 17 northern and southern basin nearshore sediment samples analyzed for total and methylmercury, in which the detected concentrations of methylmercury were typically two to three orders-of-magnitude lower than the concentrations of total mercury, and averaged about 0.2 percent of the total mercury concentration. This same ratio (methylmercury about 0.2 percent of total mercury) was also observed in 14 samples from the greater depths in Onondaga Lake which were not used to calculate EPCs in the HHRA (as they were collected from depths of 3 m or more). These data are shown on Table 7-5. Although the data sets are consistent with each other, as well as within the range of concentrations expected based on the literature, the methylmercury concentrations, especially in the northern basin (from which only three samples used in the HHRA were collected), are based on a relatively small number of data points and represent a "snapshot," as all the samples were collected during a single sampling event (summer 2000).

For the lake sediments, the actual concentrations of both methylmercury and mercury (evaluated as inorganic mercury) were used quantitatively in the HHRA. For northern and southern basin sediments, hazards associated with both total (as inorganic) mercury and methylmercury were calculated separately, based on the data available. For the northern basin sediments, the EPC for methylmercury (2×10^{-3} mg/kg)

is about 0.1 percent of the EPC for total (assumed inorganic) mercury (1.9 mg/kg). If it were assumed that the methylmercury concentration is 1 percent, rather than about 0.1 percent, of the total mercury value, the methylmercury HQ would not change enough to affect the overall non-cancer hazard to receptors exposed to northern basin sediments. The methylmercury HQ for the most affected receptor – the young child – would increase from about 3×10^{-5} to 3×10^{-4}; the difference would not be noticeable in the total HI of 0.221.

Wetlands Sediment

For the four wetlands evaluated in this HHRA, the total mercury concentration (which was the only analysis conducted) was assumed to be 1 percent methylmercury (and 99 percent inorganic mercury); this is the same assumption made for the BERA. Although no wetland samples were analyzed for methylmercury for the Onondaga Lake HHRA, 29 samples from the nearby LCP Bridge Street site were analyzed for mercury and methylmercury. These LCP Bridge Street site samples include some from regulated Wetland SYW-14 and other samples from near-surface wet or moist soils which are the best available data for estimating methylmercury concentrations in the Onondaga Lake wetlands. The fraction of methylmercury in these 29 samples ranged from 0.003 percent to 2.2 percent (this high value was from a sample described as "lined ditch" and may not be comparable to the wetland sediments), and averaged about 0.25 percent (see BERA Chapter 6, Table 6-3 [TAMS, 2002a]), supporting the assumption that the mercury in the wetlands is principally in the inorganic form.

As discussed in Chapter 6, Section 6.3.1.1, of the Onondaga Lake BERA (TAMS, 2002a), submitted concurrently with this HHRA, the BERA includes an assumption that 1 percent of the mercury in wetland sediments is organic (i.e., methylmercury). This assumption was applied to the wetlands sediments only, as there are specific mercury and methylmercury data for the lake sediments, and the methylation of inorganic to organic mercury was assumed to be negligible in other media such as the dredge spoils area soils. The RfD for methylmercury is three times higher than the RfD used for inorganic mercury; therefore, if 1 percent methylmercury was assumed for the wetlands sediments, mercury-related non-cancer toxicity would increase by a factor of 1.02 (2 percent).

A US Geological Survey (USGS) survey cited in the BERA (Krabbenhoft et al., 1999) indicates that methylation rates ranging from about 1 to 10 percent of total mercury have been detected in sediments of aquatic ecosystems (e.g., from streams and/or wetlands sediments in mixed agricultural/forest areas, abandoned mines, urban areas, etc.) in the US. Although the conditions favorable to a rate this high (e.g., low pH, anaerobic environment) are not considered to be present at Onondaga Lake (see BERA Chapter 6, Section 6.3.1.1), the potential for increased risk from a higher fraction of organic mercury in the wetland sediments was evaluated, as there are no methylmercury data from the four wetland areas included in this HHRA. The construction worker RME exposure to Wetland SYW-19 sediment has the highest HQ associated with exposure to mercury (0.046, the sum of the HQs for inorganic mercury and methylmercury); as shown in Appendix B, RAGS Table 7.23); therefore, this scenario would be most impacted by changes in the assumed form of mercury to which the receptor is exposed.

If the fraction of methylmercury in the Wetland SYW-19 sediments were assumed to be 10 percent instead of 1 percent, the HQ from mercury exposure would increase from 0.046 to about 0.055, and the total HI would increase only slightly, from 0.156 to 0.165. Therefore, even for the most exposed receptor, changes in the assumption of the form of mercury present do not significantly change overall hazard estimates. (If, on the other hand, the actual fraction of methylmercury is zero, then the HQ and HI would both show an insignificant decrease of only 0.001.) It is noted that Wetland SYW-19 is now part of the Wastebed B/Harbor Brook site and additional sampling will be conducted in this wetland during the RI, including analysis of methylmercury in addition to other contaminants. Risks will be recalculated in the Wastebed B/Harbor Brook HHRA based on these new data.

Dredge Spoils Area

For the dredge spoils area, the total mercury (which was the only analysis conducted) was assumed to be inorganic mercury, which is the same assumption made for the BERA. Although there are no site-specific data from a matrix similar to the dredge spoils, the dredge spoil samples were collected above the water table in an oxic environment that is not ordinarily favorable to the methylation process. There are insufficient data in the literature to estimate the percent of methylmercury that may be formed under these conditions, but methylation rates are thought to be substantially lower than in wetlands.

In order to assess the potential impact of methylmercury on the calculated hazards from dredge spoils, the potential hazard to the most impacted receptor (construction worker RME to surface and subsurface dredge spoils) was evaluated using the high-end assumption of 10 percent methylmercury. If 10 percent of the total mercury is assumed to be methylmercury (the remaining 90 percent is inorganic), then the total mercury-related hazard (the sum of the HQs from inorganic mercury and methylmercury) would increase from 0.052 to 0.062, and the total RME HI for the construction worker would increase from 0.126 to 0.136. Therefore, the RME hazard would not change significantly, even under high-end or worst-case assumptions of methylmercury concentration.

Surface Water

There were more extensive data on mercury speciation in the surface water data set used in this HHRA. Of the 75 surface water samples analyzed for total mercury, 32 of the samples were also analyzed for methylmercury, dimethylmercury, and ionic mercury. There were sufficient data to enable the methylmercury in surface water to be evaluated separately from the "total" (interpreted as inorganic) mercury in surface water. Dimethylmercury was not detected in any of the 32 samples in which it was analyzed. Ionic mercury was detected in all 32 samples, although at lower concentrations (ranging from 0.15 to 3.3 ng/L) than either total mercury or methylmercury. Ionic mercury data, where available, were screened separately as inorganic mercury; due to the low concentrations of ionic mercury detected, ionic mercury was screened out (excluded from the quantitative HHRA). Due to the low concentrations detected, the treatment of the ionic mercury has little effect on the results of this HHRA.

7.5.3.2 Arsenic

In the HHRA, it was assumed that 10 percent of the arsenic detected in fish tissue was inorganic arsenic, which is the more toxic form. It is generally understood that most of the arsenic in fish is in the relatively non-toxic organic form called arsenobetain (Oregon Health Department and Washington [State] Department of Health [OHD/WDOH], 1996). Inorganic arsenic, which is considerably more toxic, makes up a small amount of the total arsenic in fish and is most relevant for assessing health impacts from consumption of contaminated fish. However, there are no adequate data or other bases on which to quantify the fraction of arsenic in the inorganic form in Onondaga Lake fish fillets.

In an attempt to quantify or estimate the fraction of inorganic arsenic in fish, staff from the OHD and WDOH were contacted, based on their involvement in the risk assessment for the Columbia River in Oregon and Washington, where arsenic was a contaminant of concern. The consensus was that there is not a good means of making an estimate, as the fraction of arsenic may vary significantly due to a variety of factors, including the fish species, the water body, and characteristics of the individual fish analyzed (K. Kauffman, pers. comm., 2002; J. White, pers. comm., 2002).

Studies show an organic arsenic range of 1 to 25 or 30 percent of the total arsenic (K. Kauffman, pers. comm., 2002), although default assumptions of 1 or 10 percent are typically used (J. White, pers. comm., 2002). Subsequent data obtained by TAMS from USEPA Region 10 (R. Lorenzana, pers. comm., 2002; Tetra Tech, 1996; EVS, 2000) confirmed this range. These data are tabulated on Tables 7-6A and 7-6B and show a range from none detected to about 26 percent inorganic arsenic in the 42 freshwater fish samples in which arsenic was detected, with an arithmetic mean of about 6.4 percent, with an upper-bound 95th percentile of 10.7 percent (calculated using the non-parametric Chebyshev test in the USEPA ProUCL software). These data are useful to support the general observation that only a relatively small fraction of the total arsenic in fish is in the toxic inorganic form.

Although it is difficult to use the West Coast data to generate a quantitative estimate for use in the Onondaga Lake HHRA due to differences in location and water body (river versus lake) and species (the West Coast data are, for the most part from species not present in Onondaga Lake – e.g., salmon, sturgeon), they support the use of the default assumption of 10 percent of the total arsenic detected in fish samples in the inorganic form. While not enough data were obtained to perform a rigorous analysis, inspection of the Columbia River data suggests that the fraction of arsenic existing in the inorganic form may also be species-dependent.

The effect of this uncertainty is not great in terms of affecting the overall risk or hazard estimates for the fish consumption pathway. With the assumption of 10 percent inorganic arsenic, arsenic contributes slightly less than 2 percent of the adult RME cancer risk (1.8×10^{-5}, out of a total ingestion pathway risk of 7.8×10^{-4}). For a worst-case assumption of 100 percent inorganic arsenic, the total RME cancer risk would increase to about 9.4×10^{-4}. On the other hand, the RME cancer risk from arsenic would be reduced to about 7.6×10^{-4}, based on inorganic arsenic percentages of 1 percent. The contribution of arsenic to the non-cancer hazard associated with fish ingestion is lower, with arsenic contributing about 0.5 percent of the adult RME

total non-cancer ingestion hazard (contributing an HQ of about 0.1 to a total adult RME HI of about 18). The total non-cancer adult RME hazard associated with fish ingestion would increase slightly (from 18.2 to 19) if the worst-case assumption of 100 percent inorganic arsenic were made, and decrease slightly (from 18.2 to 18.1) if only 1 percent of the total arsenic were assumed to be inorganic.

7.5.3.3 Chromium

Chromium typically exists in two valence states in the environment: Cr(III) (Cr^{+3}, or trivalent chromium), and Cr(VI) (Cr^{+6}, or hexavalent chromium). Normally the bulk of the chromium is in the less-toxic trivalent form. For example, the USEPA Region 9 soil-screening concentrations are based on the assumption of a six-to-one ratio of Cr(III) to Cr(VI).

As the available data for chromium were reported as "total chromium" (no speciation between Cr[III] and Cr[VI] was performed), this HHRA used the conservative assumption that all chromium detected was in the form of the more-toxic hexavalent form. While chromium did contribute a significant fraction of the non-cancer hazard in Wetlands SYW-6 and SYW-12 and in surface water, the total HI for all receptors in each of these media was very low, as summarized on Table 6-5. Therefore, although the hazard associated with chromium may be overestimated, it does not have a material impact on the conclusions of this HHRA.

7.5.3.4 Polychlorinated Biphenyls

As discussed previously, data for PCBs were reported as Aroclors, with the particular suite of Aroclors reported varying depending on the medium, the sampling organization and analytical laboratory, and when the samples were analyzed. These factors do not contribute materially to the calculation of PCB EPCs or the assignment of appropriate toxicity factors (RfDs or CSFs).

One area of uncertainty regarding PCBs is their potential for dioxin-like toxicity. As with many of the 2,3,7,8-substituted PCDD/PCDF compounds, certain PCB congeners have been found to have, or are assumed to have, dioxin-like toxicity. TEFs have been developed to estimate the dioxin-like toxicity. However, as there were no analyses of PCB congeners conducted on Onondaga Lake samples, no estimate of the dioxin-like toxicity of PCBs is presented in this HHRA.

Table 7-1A. Comparison of Wetland SYW-6 EPC Calculations Based on Length-Weighted Average and Discrete Samples

COPC	Units	Discrete Depth Samples 95% UCL (18 samples)		Length Weighted Averages Maximum (9 LWAs)	Ratio (UCL vs MAX)
Aluminum	mg/kg	6,732	95% UCL-N	10,700 *J*	0.629
Arsenic	mg/kg	4.1	95% UCL-T	6.8 *J*	0.602
Cadmium	mg/kg	5	95% UCL-T	8.6	0.581
Chromium	mg/kg	65.33	95% UCL-T	93.7	0.697
Cyanide	mg/kg	5.40	Max	2.84	1.903
Iron	mg/kg	14,781	95% UCL-T	28,200 *J*	0.524
Manganese	mg/kg	294	95% UCL-T	420 *J*	0.700
Mercury (total)	mg/kg	2.78	95% UCL-T	3.05	0.911
Thallium	mg/kg	0.90	95% UCL-N	1.65 *J*	0.542
2-Methylnaphthalene	µg/kg	1,841	95% UCL-T	3,275 *J*	0.562
Acenaphthylene	µg/kg	1,671	95% UCL-T	3,910 *J*	0.427
Benz(a)anthracene	µg/kg	6,337	95% UCL-T	25,450 *J*	0.249
Benzo(a)pyrene	µg/kg	5,552	95% UCL-T	25,000 *J*	0.222
Benzo(b)fluoranthene	µg/kg	8,909	95% UCL-T	30,800 *J*	0.289
Benzo(g,h,i)perylene	µg/kg	3,257	95% UCL-T	14,700 *J*	0.222
Benzo(k)fluoranthene	µg/kg	2,874	95% UCL-T	11,365 *J*	0.253
Dibenz(a,h)anthracene	µg/kg	2,001	95% UCL-T	4,425 *J*	0.452
Indeno(1,2,3-cd)pyrene	µg/kg	3,233	95% UCL-T	14,700 *J*	0.220
Naphthalene	µg/kg	2,125	95% UCL-T	4,275 *J*	0.497
Phenanthrene	µg/kg	7,552	95% UCL-T	32,500 *J*	0.232
TEQ Total as 2378-TCDD	ng/kg	19.82	Max	11.5	1.723

Notes:

COPC - Chemical of Potential Concern

EPC - Exposure point concentration

LWA - Length-weighted average

Max indicates that the calculated 95th percentile UCL was higher than the maximum detected concentration; the maximum concentration was used as the EPC.

UCL-N indicates that the value is the 95th percentile upper confidence limit on the arithmetic mean, based on data being normal.

UCL-T indicates that the value is the 95th percentile upper confidence limit on the arithmetic mean, based on data being log-normal.

Table 7-1B. Comparison of Risk and Hazard Calculations for Wetland SYW-6 Using Alternate Approaches

	Non-Cancer Hazard					
	RME HI			Central Tendency HI		
Pathway	Original RME	Updated RME (MAX 9 LWA)	Updated RME (UCL 18 samples)	Original CT	Updated CT (MAX 9 LWA)	Updated CT (UCL 18 samples)
Sediments - Wetland SYW-6 (North) - Adult Recreational	0.026	0.045	0.029	0.010	0.016	0.010
Sediments - Wetland SYW-6 (North) - Older Child Recreational	0.079	0.132	0.106	0.016	0.027	0.018
Sediments - Wetland SYW-6 (North) - Construction Worker	0.049	0.080	0.050	0.018	0.031	0.019

	Cancer Risk					
	RME			Central Tendency		
Pathway	Original RME	Updated RME (MAX 9 LWA)	Updated RME (UCL 18 samples)	Original CT	Updated CT (MAX 9 LWA)	Updated CT (UCL 18 samples)
Sediments - Wetland SYW-6 (North) - Adult Recreational	**1.1E-06**	**6.5E-05**	**1.7E-05**	1.2E-07	**7.1E-06**	**1.9E-06**
Sediments - Wetland SYW-6 (North) - Older Child Recreational	**3.2E-06**	**2.6E-04**	**2.5E-04**	2.2E-07	**1.4E-05**	**1.1E-05**
Sediments - Wetland SYW-6 (North) - Construction Worker	1.3E-07	**5.9E-06**	**4.1E-06**	3.4E-08	**1.5E-06**	7.4E-07

Non-cancer Hazard Indices and Cancer Risks in **boldface** exceed target levels (HI > 1, cancer risk > 10-6).
For all data sets where N <10, the maximum concentration is used as the EPC.

Original (RME or CT) is based on the four LWA (length-weighted average) samples (8 samples from 4 locations) collected in 2000.
Updated (RME or CT) is based on nine LWA samples (4 in 2000; 5 in 2002).
Updated UCL based on treating data as 18 discrete samples from nine locations (each interval [0 - 15 and 15 - 30 cm] evaluated as 9 discrete samples; not a LWA).
MAX 9 LWA is the maximum value of nine length-weighted averages (nine sample pairs; 4 in 2000 and 5 in 2002).

Table 7-2. Comparison of 2002 Wetland SYW-6 Sample W6-3 to Nearby Sample Data

COPC	Sample Phase / Field ID / Sample Date / Depth Interval	ONON2A S375 08/12/00 0 to 30 cm LWA	2002 Supplemental W6-3 05/09/02 0 to 30 cm LWA	Ratio of 2002 W6-3 value to 2000 S375 value
Metals				
Aluminum	mg/kg	8,645	6,695 *J*	0.77
Arsenic	mg/kg	2.9	3.7 *J*	1.28
Cadmium	mg/kg	8.6	4 *J*	0.47
Chromium	mg/kg	93.7	67.75 *J*	0.72
Iron	mg/kg	10,235	11,200 *J*	1.09
Lead	mg/kg	168.5		
Manganese	mg/kg	191	222 *J*	1.16
Total Mercury	mg/kg	2.45	3.05 *J*	1.24
PAHs				
2-Methylnaphthalene	µg/kg	120 *U*	3,275 *J*	54.6
Acenaphthylene	µg/kg	120 *U*	3,910 *J*	65.2
Benz(a)anthracene	µg/kg	200	25,450 *J*	127.3
Benzo(a)pyrene	µg/kg	215	25,000 *J*	116.3
Benzo(b)fluoranthene	µg/kg	170	30,800 *J*	181.2
Benzo(g,h,i)perylene	µg/kg	170	14,700 *J*	86.5
Benzo(k)fluoranthene	µg/kg	170	11,365 *J*	66.9
Dibenz(a,h)anthracene	µg/kg	120 *U*	4,425 *J*	73.8
Indeno(1,2,3-cd)pyrene	µg/kg	145	14,700 *J*	101.4
Naphthalene	µg/kg	120 *U*	4,275 *J*	71.3
Phenanthrene	µg/kg	220	32,500 *J*	147.7

Notes:

Where parameter is not detected in one analysis, one-half the reporting limit (U value) is used in calculation of the ratio.

Station S375 is about 90 ft southeast of Station SYW W6-3.

Table 7-3. Age-Adjusted Fish and Shellfish Consumption Based on USEPA Onondaga Lake (Region 2) Default Assumptions and Data from Rupp (1980), Javitz (1980), and Pao (1982)

Table 7-3A. Calculations based on USEPA Region 2 Defaults (as used in this HHRA)

	Body Weight (kg)			Fish Consumption (g/day)		
Age Range	Male	Female	Average	Total	Normalized	Ratio (to adult)
0 to < 6 years old	15.2	14.5	14.9	8.3	0.5612	1.611
6 to <18 years old	44.2	42.5	43.4	16.7	0.3845	1.103
Adult (19 to 74)	78.1	65.4	71.8	25	0.3484	1.000

Onondaga Lake (USEPA Region 2) default assumptions are young child consumption is 1/3 of adult rate; older child is 2/3 of adult.

Table 7-3B. Data from Rupp (1980)

	Body Weight (kg)			Fish Consumption (g/day)		
Age Range	Male	Female	Average	Total	Normalized	Ratio (to adult)
1 to 11 years old	23.9	23.6	23.8	5.8	0.2442	1.109
12 to 18 years old	59.6	54.8	57.2	9.5	0.1660	0.754
Adult (18 to 74)	78.1	65.4	71.8	15.8	0.2202	1.000

Table 7-3C. Data from Javitz (1980)

	Body Weight (kg)			Fish Consumption (g/day)		
Age Range	Male	Female	Average	Total	Normalized	Ratio (to adult)
1 to 9 years old	20.1	19.6	19.8	6.2	0.3124	1.296
10 to 19 years old	56.6	52.2	54.4	10.1	0.1857	0.770
Adult (18 to 74)	78.1	65.4	71.8	17.3	0.2411	1.000

Table 7-3D. Data from Pao (1982)

	Body Weight (kg)			Fish Consumption, mean (g/meal)		
Age Range	Male	Female	Average	Total	Normalized	Ratio (to adult)
1 to 2 years old	NA	NA	12.3	52	4.23	2.31
3 to 5 years old	NA	NA	17.5	57	3.26	1.78
6 to 8 years old	NA	NA	25.2	81	3.21	1.76
Weighted average for children 1 - 8	NA	NA	19.1	64.8	3.39	1.86
9 to 14, M/F average	43.2	43.7	43.4	93.5	2.15	1.18
15 to 18, M/F average	66.5	58.0	62.2	114	1.83	1.00
Adult (19-74)	78.1	65.4	71.8	131	1.83	1.00

Notes:

"Normalized" consumption values are g/consumption per kg body weight per day.

Fish consumption data from Rupp (1980) and Javitz (1980) as reported in OEHHA (2001).

Fish consumption data from Pao as reported in USEPA, 1997 (Table 10-45); based on average (mean) per meal (no data on number of meals per year). Mean values exceed median by about 10 to 25 percent.

Body weight data calculated from average values in the EFH (USEPA, 1997), Tables 7-2 through 7-7.

"Total" adult fish consumption rate in Table 7-3A (25 g/d) is recommended 95th percentile value for recreational anglers (EFH; USEPA, 1997).

Fish consumption rates are average values and include shellfish and finfish from all sources (except 7-3A) and are therefore not directly comparable to ingestion rates used in this HHRA.

Table 7-4. Comparison of Risk and Hazard Estimates Using Alternate Ingestion Rate Assumptions

	Non-Cancer Hazard			
	Reasonable Maximum Exposure		Central Tendency	
Receptor Age	Baseline Assumption	Linear (BW Normalized)	Baseline Assumption	Linear (BW Normalized)
Adult	18.2	--	4.5	--
Young Child	28.3	18.2	7.0	4.5
Older Child	19.8	18.2	4.9	4.5

	Cancer Risk			
	Reasonable Maximum Exposure		Central Tendency	
Receptor Age	Baseline Assumption	Linear (BW Normalized)	Baseline Assumption	Linear (BW Normalized)
Adult	7.8E-04	--	4.3E-05	--
Young Child	2.4E-04	1.6E-04	4.4E-05	2.9E-05
Older Child	3.4E-04	3.1E-04	4.6E-05	4.3E-05

Notes:

Baseline fish ingestion rate assumes that young child consumption rate is 1/3 of adult rate (i.e., 8.3 g/day) and older child ingestion rate is 2/3 of adult rate (16.7 g/day). See Table 7-3A.

Integrated (cumulative) RME cancer risk (30 year duration, based on 6 years as young child, 12 years as older child, and 12 years as adult).

Table 7-5. Comparison of Total Mercury and Methylmercury Concentrations in Onondaga Lake Deeper Sediments

Survey Station	Sample Location	Sampling Date	Upper Depth (cm)	Lower Depth (cm)	Approx. Water Depth of Station (m)	Total Mercury (mg/kg dw)	Methylmercury (µg/kg dw)	MeHg/Hg Percent	Total Organic Carbon (% dry)
S332	off I-690 Storm Drain	8/11/2000	0	15	3	3.0	3.8	0.13%	9.1
S305	off Ninemile Creek	8/12/2000	0	15	4	2.5	3.7	0.15%	5.5
S317	southwest corner	8/11/2000	0	15	4	17.2	8.1	0.05%	8.6
S323	off Ley Creek	8/13/2000	0	15	4	1.6	3.9	0.24%	8.6
S344	off East Flume/SYW-19	8/10/2000	0	15	4	77.7	120.6	0.16%	11.7
S337	off I-690 Storm Drain	8/11/2000	0	15	4.5	15.4	15.3	0.10%	8.1
S315	southwest corner	8/11/2000	0	15	7	9.6	5.5	0.06%	8.0
S342	off East Flume	8/10/2000	0	15	7	0.7	3.2	0.47%	3.6
S365	north of Trib 5A	8/13/2000	0	15	8	0.7	2.1	0.32%	7.7
S302	off Ninemile Creek	8/12/2000	0	15	9	3.0	2.1	0.07%	5.6
S320	off SYW-12/Ley Creek	8/13/2000	0	15	9	6.1	10.2	0.17%	6.8
S303	off Ninemile Creek	8/12/2000	0	15	16.5	3.2	2.3	0.07%	6.3
S355	southern basin	8/10/2000	0	15	16.5	3.0	6.7	0.22%	8.1
S354	southern basin	8/10/2000	0	15	17	3.3	6.8	0.21%	7.3
	Overall Average					10.5	13.9	0.17%	7.5
	3 to 6 m					19.6	25.9	0.14%	8.6
	6 to 9 m					4.0	4.6	0.22%	6.3
	0 to 9 m					12.5	16.2	0.17%	7.6
	> 9 m					3.2	5.3	0.17%	7.2

Table 7-6A. Arsenic Speciation Data, Willamette River Composite Fish Samples

Composite number/species		Arsenic Concentration (mg/kg ww) Total	Inorganic	Percent Inorganic
1 Sucker	Fillet	0.08	0.004	5.0%
2 Sucker	WB-Fillet	0.17	0.036	21.2%
3 Carp	Whole Body	0.16	0.007	4.4%
4 Carp	Whole Body	0.13	0.009	6.9%
5 Carp	Whole Body	0.15	0.005	3.3%
6 Bass	Fillet	0.11	0.003 *U*	1.4%
7 Bass	Fillet	0.08	0.005	6.3%
8 Carp	Fillet	0.12	0.003 *U*	1.3%
9 Carp	WB-Fillet	0.17	0.006	3.5%
10 Pikeminnow	Fillet	0.05 *U*	0.003 *U*	NC
11 Pikeminnow	Fillet	0.05 *U*	0.003 *U*	NC
12 Sucker	Whole Body	0.12	0.016	13.3%
13 Pikeminnow	Whole Body	0.05 *U*	0.003 *U*	NC
14 Carp	Whole Body	0.15	0.003	2.0%
15 Pikeminnow	Whole Body	0.05 *U*	0.003 *U*	NC
Average (nine samples)				**7.6%**

Source:
Human Health Risk Assessment of Chemical Contaminants in Four Fish Species from the Middle Willamette River, Oregon
Prepared for:
Oregon Department of Environmental Quality, Water Quality Division, 811 SW 6th St, Portland, OR 97204
by:
EVS Environmental Consultants, Inc., 200 West Mercer St Suite 403, Seattle, WA 98119
November 21, 2000

Table 7-6B. Arsenic Speciation Data, Columbia River Bi-State Program Fish Samples

Sample ID and Type			Arsenic Concentration (mg/kg ww)		Percent
			Total	Inorganic	Inorganic
CCMP-1	Carp	Composite	0.221	0.001	0.5%
KCMP-1	Chinook Salmon	Composite	1.235	0.023	1.9%
KCMP-2	Chinook Salmon	Composite	0.884	0.001 *U*	0.1%
KCMP-3	Chinook Salmon	Composite	0.760	0.015	2.0%
HCMP-1	Coho Salmon	Composite	0.415	0.001 *U*	0.1%
HCMP-2	Coho Salmon	Composite	0.344	0.007	2.0%
HCMP-3	Coho Salmon	Composite	0.361	0.001 *U*	0.1%
LSCMP1-1	Largescale Sucker	Composite	0.151	0.017	11.3%
LSCMP1-2	Largescale Sucker	Composite	0.133	0.024	18.0%
LSCMP1-3	Largescale Sucker	Composite	0.143	0.038	26.6%
LSCMP2-1	Largescale Sucker	Composite	0.113	0.012	10.6%
LSCMP2-2	Largescale Sucker	Composite	0.181	0.008	4.4%
LSCMP2-3	Largescale Sucker	Composite	0.170	0.004	2.4%
LSCMP3-1	Largescale Sucker	Composite	0.098	0.006	6.1%
LCSMP3-2	Largescale Sucker	Composite	0.178	0.001 *U*	0.3%
LCSMP3-3	Largescale Sucker	Composite	0.168	0.003	1.8%
DCMP-1	Steelhead	Composite	0.677	0.018	2.7%
DCMP-2	Steelhead	Composite	0.753	0.001	0.1%
DCMP-3	Steelhead	Composite	0.703	0.001 *U*	0.1%
SIND-1	Sturgeon	Individual	1.793	0.034	1.9%
SIND-2	Sturgeon	Individual	0.563	0.011	2.0%
SIND-3	Sturgeon	Individual	0.558	0.047	8.4%
SIND-4	Sturgeon	Individual	0.533	0.045	8.4%
SIND-5	Sturgeon	Individual	0.275	0.05	18.2%
SIND-6	Sturgeon	Individual	0.485	0.047	9.7%
SIND-7	Sturgeon	Individual	0.395	0.039	9.9%
SIND-8	Sturgeon	Individual	0.357	0.04	11.2%
SIND-9	Sturgeon	Individual	0.669	0.043	6.4%
SIND-10	Sturgeon	Individual	0.748	0.033	4.4%
SIND-11	Sturgeon	Individual	0.240	0.039	16.3%
SIND-12	Sturgeon	Individual	0.331	0.041	12.4%
Average ('U' set equal to value)			**0.472**	**0.0210**	**6.5%**

1994 Data - Provided by USEPA Region 10 (Dr. R. Lorenzana)
Data in µg/g (equivalent to mg/kg)

Lower Columbia River Bi-State Program
Assessing Human Health Risks from Chemically Contaminated Fish in the Lower Columbia River
prepared by
Tetra Tech, 15400 NE 90th St Suite 100, Redmond, WA 98052
May 1, 1996 - Final Report TC 9968-05

8. CONCLUSIONS

The objective of this HHRA was to evaluate the potential for adverse human health effects associated with current and future exposures to chemicals present in Onondaga Lake surface water, fish, certain nearshore sediments, wetlands sediments, and dredge spoils soils in the absence of any action to control or mitigate those chemicals. Under this "no remedial action" assumption, the HHRA focused on lake conditions, assuming its unrestricted recreational use and the absence of a specific, restrictive fish consumption advisory.

8.1 Exposure Pathways

The potential exposure pathways evaluated, and the rationale for their inclusion or exclusion, are summarized in Appendix B, RAGS Table 1. In addition to fish ingestion, other potential pathways considered to be complete and evaluated quantitatively in this HHRA included:

- Dermal exposure to and ingestion of sediments from nearshore sediments.
- Dermal exposure to and ingestion of sediments from four wetland areas.
- Dermal exposure to and ingestion of soils from the dredge spoils area adjacent to the lake.
- Dermal contact with and ingestion of lake surface water.

The likely exposure scenarios were based on recreational use (which includes trespassers on, for example, Wetland SYW-19 on Honeywell property) and relatively short-term construction projects such as utility work to assess potential construction worker exposure. Residential and industrial/commercial exposures were not evaluated, based on current and reasonably foreseeable future site uses. Similarly, risks associated with the ingestion of groundwater or surface water as a potable water source were not addressed. As noted in Chapter 4, Section 4.2.5, an initial preliminary site assessment (PSA) conducted for Onondaga Lake by NYSDEC (NYSDEC, 1989a, as cited in PTI, 1991) concluded that there was little potential for releases of contaminants to air. The data for volatile organic compounds (VOCs) in surface water and near-surface soils were reviewed as part of this HHRA, and the initial conclusion by NYSDEC is considered to still be appropriate for recreational users and nearby residents.

In addition, there are currently no structures on the site nor are any likely to be built, due to regulatory restrictions (e.g., zoning and wetlands) and the nature of the area (e.g., much of the lake shoreline area is owned by or under the jurisdiction of the Onondaga County Parks Department [OCPD], and the wetlands areas are generally unsuitable for construction, even absent regulatory restrictions). Therefore, the inhalation pathway was considered to be incomplete for all media and was not assessed further in this report.

8.2 Contaminant Screening and Identification of Contaminants of Potential Concern

Contaminants of potential concern (COPCs) were identified after screening all contaminants detected in site media against risk-based screening criteria. This process is discussed in Chapter 3 and presented in Appendix B, RAGS Tables 2.1 through 2.10. As a result of this screening, a total of about 60 COPCs or groups of COPCs were retained for further analysis in the HHRA.

After the screening of COPCs, exposure point concentrations (EPCs) were calculated for each COPC in each medium. The EPC is a statistically derived number representing a value that has a 95 percent likelihood of not being less than the "true" arithmetic average for that medium (the 95 percent upper confidence limit [UCL] on the mean). Where the statistically calculated UCL exceeds the maximum concentration actually detected in that medium, or where there are less than ten data points (a data set that is assumed to be the minimum for which statistical calculations are valid), the maximum detected concentration is used as the EPC. The EPC calculations are presented in Appendix B, RAGS Tables 3.1 through 3.10.

In order to assess exposure to COPCs, which is referred to as "intake" or "dermally absorbed dose" in risk assessment terminology, other assumptions must be made about human behavior, such as how much recreationally caught fish an individual might eat, how often an individual might be exposed to contaminated sediments, and similar factors. Consistent with USEPA guidance, reasonable maximum exposure (RME) and central tendency (CT; sometimes referred to as "typical") exposure scenarios were evaluated for a future fish consumption pathway, assuming an RME consumption rate of 25 grams per day (approximately 40 eight-ounce meals of fish per year) from the lake. The various assumptions used in calculating the intake (exposure) of various receptors (recreational users and construction workers) are presented in Appendix B, RAGS Tables 4.1 through 4.31. As some of the values used are assumptions or based on professional judgment, there is a degree of uncertainty associated with such values. A qualitative discussion of the relative uncertainty of many of these values is presented in Chapter 7, Uncertainty Assessment, along with a discussion of the potential effect of such uncertainty on the quantitative results of the HHRA.

8.3 Toxicity Assessment

USEPA sources were researched to obtain toxicity data for the approximately 60 COPCs and the 31 identified exposure pathways in Onondaga Lake. Toxicity data (reference doses [RfDs] for non-cancer effects, and cancer slope factors [CSFs] for carcinogens) used in the calculations are discussed in Chapter 5, Toxicity Assessment, and presented in Appendix B, RAGS Tables 5 and 6 for the chemicals assessed quantitatively. Most of the toxicity data used in this quantitative HHRA are from USEPA's peer-reviewed database, the Integrated Risk Information System (IRIS). All of the other toxicity data are from USEPA sources (e.g., Health Effects Assessment Summary Tables [HEAST], National Center for Environmental Assessment [NCEA]) and have been reviewed and approved by USEPA for use in this risk assessment.

8.4 Risk Characterization

The results of the risk calculations are presented in Chapter 6, Risk Characterization and Appendix B, RAGS Tables 7 through 10. The highest cancer risks and non-cancer hazards are associated with the ingestion of fish from Onondaga Lake. Cancer risks and non-cancer hazards were also calculated for the sediment, dredge spoil, and surface water pathways. Total cancer risks and non-cancer hazards were also calculated for each receptor; e.g., the cumulative (total) risk or hazard from exposure to multiple contaminated media (i.e., fish, sediments, dredge spoils, and surface water).

8.4.1 Fish Ingestion

RME cancer risk estimates for recreationally caught fish ingestion by adults and children exceeded the upper end of USEPA's acceptable risk range (i.e., RME risk estimates exceeded 10^{-4}, ranging from 2.4×10^{-4} to 7.8×10^{-4}), primarily due to total polychlorinated biphenyls (PCBs), polychlorinated dibenzo-*p*-dioxins and furans (PCDD/PCDFs), and, to a lesser extent, arsenic. CT cancer risks were about 4.5×10^{-5} for all recreational receptors.

For non-cancer hazards, the RME hazard index (HI) was calculated to be 18 for adults and 28 and 20 for young and older children, respectively. Non-cancer health hazards are primarily due to PCBs and methylmercury, while total CT HIs ranged from 4.5 for adults to 7.0 for young children for the fish consumption pathway.

Fish ingestion was not explicitly evaluated for the construction worker.

8.4.2 Sediment/Soil Pathways

Seven sediment and soil pathways were evaluated, including northern and southern basin sediments; sediments in the four wetlands areas; and the dredge spoils area soils.

None of the RME and CT HIs for soil or sediment pathways for the receptors evaluated (adults, young children, and older children) exceeded the target level of 1.0. The highest HI was about 0.5, for young child exposure to southern basin sediments.

RME cancer risks exceeded 10^{-4} for Wetland SYW-6 for the older child recreational scenario. RME risks did not exceed 10^{-4} for any of the other sediment or soil pathways; however, cancer risks exceeded 10^{-6} for at least two receptors in each of the seven sediment/soil media.

None of the CT cancer risks associated with the sediment and soil exceeded 10^{-4}. The CT risk for the older child exposure to Wetland SYW-6 sediments was the highest CT risk at 1.4×10^{-5}, and adult exposure to Wetland SYW-6 sediments was the second highest CT risk at 7.1×10^{-6}. CT risks to one or two receptors also exceeded 10^{-6} for the southern basin sediments, Wetland SYW-10, and Wetland SYW-19.

None of the CT risks associated with exposure to northern basin sediments, Wetland SYW-12 sediments, or dredge spoils area soils exceeded 10^{-6}.

8.4.3 Surface Water Pathway

No unacceptable cancer risks or non-cancer hazards were associated with exposure to COPCs in Onondaga Lake surface water under the scenarios evaluated in this HHRA. CT and RME HIs for all receptors were less than 0.04, and all RME and CT cancer risks were less than 10^{-7} for all receptors.

8.4.4 Receptor-Specific Risks and Hazards Across Pathways

As evident from the pathway-specific discussion above (Sections 8.4.1 through 8.4.3), the highest site risks and hazards are from the fish ingestion pathway. The fish ingestion pathway represents more than 95 percent of the RME non-cancer hazard for recreational receptors, and between 47 and 88 percent of the RME cancer risk to recreational receptors. For example, the RME fish ingestion hazard for the young child recreator is 28.3, and the total hazard across all pathways (fish ingestion and exposure to COPCs in sediment and surface water) is 29.1 (see Chapter 6, Table 6-2). The receptor-specific cumulative risk summary tables include the risks and hazards associated with just the sediment, soil, and surface water pathways.

The total HI for the older child recreators for all pathways other than fish ingestion adds up to 0.98 for the RME scenario, although, as noted in Chapter 7, this may overestimate the older child's exposure, as it may be unrealistic to assume that an older child is exposed to all possible media at the RME frequency.

RME cancer risks for pathways other than fish ingestion were generally below 10^{-4}; however, the total RME risks for the older child recreator (assuming RME exposure to all possible media) were about 3.8×10^{-4} without fish ingestion and 7.2×10^{-4} with fish ingestion. RME total cancer risks for the other receptors (for pathways other than fish ingestion) were in the range of 2×10^{-5} to 1×10^{-4}, with many of the pathway-specific receptor risks exceeding 10^{-6}.

8.5 Uncertainty Assessment

USEPA's risk assessment methods are designed to be protective of human health. Thus, when the uncertainties associated with use of these methods are accounted for, "true" site risks for most receptors are likely to be less than the RME risks presented for this HHRA. However, as indicated in the uncertainty assessment (Chapter 7), many of the aspects of the exposure assumptions applied here are based on professional judgment, default values, or estimates; therefore, the actual risks to any particular individual could be higher or lower than those presented in this HHRA.

Chapter 7, Uncertainty Assessment, provides a discussion of alternative values that were considered, but not applied, for this HHRA. For example, several studies (or extrapolation of data from them) suggest that the fish consumption rate of young children is higher, on a body weight-normalized basis, than that of adults.

For this HHRA, it was assumed that older children (age six to 18) consumed two-thirds as much recreationally caught fish as adults, and that young children (under age six) consumed one-third as much as adults. However, there are limited quantitative data from which develop a child-specific ingestion rate; therefore, the risks/hazards to children could be higher or lower than those presented in this HHRA to the extent that children consume Onondaga Lake fish at rates higher or lower than those assumed. Similarly, the potential susceptibility of children to developmental and other effects that may not have been explicitly assessed in the development of toxicity data used to quantify risk may also result in children being at greater risk than the quantitative estimates presented in this report.

For non-cancer hazards related to systemic toxicants such as methylmercury, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) states that "acceptable exposure levels shall represent concentration levels to which the human population . . . may be exposed without adverse effect" [40 CFR 300.430 (e)(2)]. The non-cancer HQ is based on the assumption that there is a level of exposure to a COPC (i.e., RfD) below which it is unlikely that even sensitive populations will experience adverse health effects. If the HQ exceeds unity (1.0), there is the potential for non-cancer effects, and the greater the value is above unity, the greater the level of concern. However, the HQ (or sum of HQs, or HI) is not a statistical probability (e.g., an HQ or HI of 0.1 does not mean there is a one-in-ten chance of adverse health effects). Similarly, the level of concern does not increase linearly as the RfD is approached or exceeded.

Other uncertainties discussed in Chapter 7, most of which could result in either an overestimate or underestimate of risks and hazards, include:

- Adequacy of the data – discusses the quality, nature, and quantity of the data (numbers of samples and contaminants analyzed) for characterization of the exposure media

- Calculation of EPCs – discusses the mathematical and statistical procedures utilized for estimate COPC concentrations to which individuals (receptors) may be exposed, and what effect different ways of processing the data may change the calculations of risk and hazard.

- Exposure assumptions – the other exposure assumptions (e.g., frequency of exposure, duration of exposure, sediment and surface water ingestion rates, etc.) are discussed with regard to the extent to which they are both reasonable and protective of human health.

- Toxicity data – discusses the availability and reliability of the toxicity values used for calculating risks and hazards for all the major COPCs identified at the site.

8.6 Summary of Risks and Hazards Exceeding Target Levels

For cancer risks, the target risk levels range from an upper bound of risks to an individual of 1×10^{-4} to 1×10^{-6}, with 10^{-6} as the point of departure for determination of remedial goals (as specified in the NCP, 40 § CFR 300.430[e][2][A][2]). For non-cancer hazards, the target hazard level is an HQ of 1.0 or less, the level below which adverse health effects are considered to be unlikely.

Table 8-1 provides a list of all 31 complete pathways and the risks and hazard levels exceeded for each pathway. Cancer risk exceedances are noted on the table for three risk levels of 10^{-4}, 10^{-5}, and 10^{-6}. Table 8-2 provides a summary of receptor-cumulative cancer risk or non-cancer hazard exceedances for each of the four receptor populations (adults, young children, older children, and construction workers). As the cancer risk and non-cancer hazards associated with fish ingestion are so high as to mask the risks and hazards associated with other contaminated site media (sediments, dredge spoils soils, and surface water), the receptor risks and hazards are shown both including and excluding the fish ingestion pathway.

Cancer risks and non-cancer hazards calculated for the RME scenario for consumption of Onondaga Lake fish exceeded the upper end of the target risk levels (see Executive Summary, Table ES-6). For the RME scenario, the calculated cancer risk to adults and children (ranging from 2.4×10^{-4} to 7.8×10^{-4}) exceeded the high end of the target risk range (10^{-4}), and exceeded the low end of the target cancer risk (10^{-6}) by more than two orders-of-magnitude. The non-cancer HIs (ranging from 18 to 28) exceeded the target RME non-cancer HI (1.0) by a factor of almost 20 or more. The calculated CT non-cancer HIs (4.5 to 7 for adults and children) also exceeded the target, although the CT fish ingestion cancer risk (about 4.5×10^{-5} for all recreational receptors) was below the upper end of the target range. RME cancer risks for 21 of the 28 pathways other than fish ingestion equaled or exceeded the low end of the target risk range of 1×10^{-6}, with the highest of these being about 2.6×10^{-4} for older child exposure to Wetland SYW-6 sediments. For the CT cancer risk calculations, the low end of the 10^{-6} target range was equaled or exceeded in eight of the 28 pathways other than fish ingestion, with a maximum CT risk of about 1.4×10^{-5} for older child exposure to Wetland SYW-6 sediments.

Cumulative risks and hazards were calculated for receptors who may be exposed to COPCs in multiple site media – for example, eating contaminated fish and being exposed to contaminated sediments. The receptors evaluated were adult recreators, young child recreators, older child recreators, and construction workers. For all cumulative risk and hazard calculations including fish ingestion, the cumulative risk or hazard was essentially the same as that associated with the fish ingestion pathway alone. Therefore, to assess the cumulative risks associated with pathways other than fish ingestion (i.e., exposure to lake sediment, wetlands sediment, dredge spoils soil, and lake surface water), the cumulative risk for each receptor was also calculated excluding the fish ingestion pathway.

Cumulative RME cancer risks for adults (excluding fish ingestion) were calculated as 1×10^{-4}; about 3.5×10^{-5} for younger children; about 3.8×10^{-4} for older children; and 2×10^{-5} for construction workers. It should be noted that these estimates may be more conservative than under typical exposure scenarios, especially for the adult and older child recreational receptors, as the cumulative risk calculation assumes

RME frequencies to each of the exposure media (i.e., sediments, wetlands, and dredge spoils soils). Cumulative RME HIs calculated in the same manner (excluding fish ingestion) generally did not exceed 1.0, although some approached 1.0; i.e, the calculated value is 0.98 for the older child recreator and 0.79 for the young child, and 0.83 for the construction worker.

Table 8-1. Summary of Cancer Risks and Non-Cancer Hazards Exceeding Target Levels

	Non-Cancer Hazard		Cancer Risk					
	HQ > 1		Risk > 10^{-4}		Risk > 10^{-5}		Risk > 10^{-6}	
Pathway	RME	CT	RME	CT	RME	CT	RME	CT
Fish Ingestion - Adult Angler	X	X	X	--	X	X	X	X
Fish Ingestion - Young Child	X	X	X	--	X	X	X	X
Fish Ingestion - Older Child	X	X	X	--	X	X	X	X
Sediments - Northern Basin - Adult Recreational	--	--	--	--	--	--	X	--
Sediments - Northern Basin - Young Child Recreational	--	--	--	--	--	--	X	--
Sediments - Northern Basin - Older Child Recreational	--	--	--	--	--	--	X	--
Sediments - Northern Basin - Construction Worker	--	--	--	--	--	--	--	--
Sediments - Southern Basin - Adult Recreational	--	--	--	--	X	--	X	--
Sediments - Southern Basin - Young Child Recreational	--	--	--	--	X	--	X	X
Sediments - Southern Basin - Older Child Recreational	--	--	--	--	X	--	X	X
Sediments - Southern Basin - Construction Worker	--	--	--	--	--	--	X	--
Sediments - Wetland SYW-6 (North) - Adult Recreational	--	--	--	--	X	--	X	X
Sediments - Wetland SYW-6 (North) - Older Child Recreational	--	--	X	--	X	X	X	X
Sediments - Wetland SYW-6 (North) - Construction Worker	--	--	--	--	--	--	X	X
Sediments - Wetland SYW-10 (North) - Adult Recreational	--	--	--	--	--	--	X	--
Sediments - Wetland SYW-10 (North) - Older Child Recreational	--	--	--	--	X	--	X	X
Sediments - Wetland SYW-10 (North) - Construction Worker	--	--	--	--	--	--	--	--
Sediments - Wetland SYW-12 (South) - Adult Recreational	--	--	--	--	--	--	X	--
Sediments - Wetland SYW-12 (South) - Older Child Recreational	--	--	--	--	X	--	X	--
Sediments - Wetland SYW-12 (South) - Construction Worker	--	--	--	--	--	--	X	--
Sediments - Wetland SYW-19 (South) - Adult Recreational	--	--	--	--	X	--	X	--
Sediments - Wetland SYW-19 (South) - Older Child Recreational	--	--	--	--	X	--	X	X
Sediments - Wetland SYW-19 (South) - Construction Worker	--	--	--	--	--	--	X	X
Soils - Dredge Spoils (Surface) - Adult Recreational	--	--	--	--	--	--	X	--
Soils - Dredge Spoils (Surface) - Older Child Recreational	--	--	--	--	--	--	X	--
Soils - Dredge Spoils (Surface) - Construction Worker	--	--	--	--	--	--	--	--
Soils - Dredge Spoils (Subsurface) - Construction Worker	--	--	--	--	--	--	X	--
Surface Water - Adult Recreational	--	--	--	--	--	--	--	--
Surface Water - Young Child Recreational	--	--	--	--	--	--	--	--
Surface Water - Older Child Recreational	--	--	--	--	--	--	--	--
Surface Water - Construction Worker	--	--	--	--	--	--	--	--

Notes: **X** - Hazard indices (HI) and cancer risks exceed specified target levels
-- - Hazard indices (HI) and cancer risks below specified target levels
CT - central tendency
RME - reasonable maximum exposure

Table 8-2. Receptor-Specific Risk and Hazard Estimates Exceeding Target Levels

	Non-Cancer Hazard		Cancer Risk					
	HQ > 1		Risk > 10^{-4}		Risk > 10^{-5}		Risk > 10^{-6}	
Receptor	RME	CT	RME	CT	RME	CT	RME	CT
Adult Recreator								
Total for Receptor (including fish)	X	X	X	--	X	X	X	X
Receptor Total, Excluding Fish	--	--	X	--	X	--	X	X
Young Child Recreator								
Total for Receptor (including fish)	X	X	X	--	X	X	X	X
Receptor Total, Excluding Fish	--	--	--	--	X	--	X	X
Older Child Recreator								
Total for Receptor (including fish)	X	X	X	--	X	X	X	X
Receptor Total, Excluding Fish	--	--	X	--	X	X	X	X
Construction Worker (Adult)								
Total for Receptor [1,2]	--	--	--	--	X	--	X	X

Notes: [1] It has been assumed that the construction worker does not consume recreationally caught fish.
[2] Risks and hazards from dredge spoils include "deep spoils" (subsurface soils) pathway only.
CT = central tendency
HQ = hazard quotient
RME = reasonable maximum exposure

9. REFERENCES

Agency for Toxic Substances and Disease Registry (ATSDR). 1989. Toxicological profile for 2,3,7,8-tetrachlorodibenzo-*p*-dioxin. PB/89/214522/AS. US Public Health Service, Agency for Toxic Substances and Disease Registry, Atlanta, GA.

ATSDR. 1992. Public Health Statement for Antimony.

ATSDR. 1993a. 'ToxFAQ®' for Di(ethylhexyl)phthalate.

ATSDR. 1993b. 'ToxFAQ®' for Aldrin and Dieldrin.

ATSDR. 1993c. 'ToxFAQ®' for Heptachlor/Heptachlor Epoxide.

ATSDR. 1994. Toxicological profile for mercury (update). US Public Health Service, Agency for Toxic Substances and Disease Registry, Atlanta, GA.

ATSDR. 1995a. 'ToxFAQ®' for Antimony.

ATSDR. 1995b. 'ToxFAQ®' for Barium.

ATSDR. 1995c. 'ToxFAQ®' for Thallium.

ATSDR. 1995d. 'ToxFAQ®' for Vanadium.

ATSDR. 1995e. 'ToxFAQ®' for Zinc.

ATSDR. 1995f. 'ToxFAQ®' for Chlordane.

ATSDR. 1995g. 'ToxFAQ®' for DDT, DDE, and DDD.

ATSDR. 1995h. 'ToxFAQ®' for Chlorodibenzofurans (CDFs).

ATSDR. 1996a. 'ToxFAQ®' for Xylene.

ATSDR. 1996b. 'ToxFAQ®' for Polycyclic Aromatic Hydrocarbons.

ATSDR. 1996c. 'ToxFAQ®' for Naphthalene.

ATSDR. 1997. Toxicological profile for polychlorinated biphenyls – update. PB98-101173. Agency for Toxic Substances and Disease Registry, Atlanta, Georgia, and US Department of Health and Human Services, Public Health Service.

ATSDR. 1997a. 'ToxFAQ®' for Nickel.

ATSDR. 1997b. 'ToxFAQ®' for Selenium.

ATSDR. 1997c. 'ToxFAQ®' for Benzene.

ATSDR. 1997d. 'ToxFAQ®' for Hexachlorobenzene.

ATSDR. 1997e. 'ToxFAQ®' for Chloroform.

ATSDR. 1999. 'ToxFAQ®' for Mercury.

ATSDR. 1999a. 'ToxFAQ®' for Aluminum.

ATSDR. 1999b. Public Health Statement for Aluminum.

ATSDR. 1999c. 'ToxFAQ®' for Cadmium.

ATSDR. 1999d. 'ToxFAQ®' for Copper.

ATSDR. 1999e. 'ToxFAQ®' for Lead.

ATSDR. 1999f. 'ToxFAQ®' for Bromodichloromethane.

ATSDR. 1999g. 'ToxFAQ®' for Chlorobenzene.

ATSDR. 1999h. 'ToxFAQ®' for Chloroform.

ATSDR. 1999i. 'ToxFAQ®' for 1,4-Dichlorobenzene.

ATSDR. 1999j. 'ToxFAQ®' for Hexachlorocyclohexanes.

ATSDR. 1999k. 'ToxFAQ®' for Chlorinated Dibenzo-p-Dioxins (CDDs).

ATSDR. 2000. Minimal risk level for methylmercury (final). Agency for Toxic Substances and Disease Registry website.

ATSDR. 2001a. 'ToxFAQ®' for Arsenic.

ATSDR. 2001b. 'ToxFAQ®' for Chromium.

ATSDR. 2001c. 'ToxFAQ®' for Manganese.

ATSDR. 2001d. 'ToxFAQ®' for Methylene Chloride.

ATSDR. 2001e. 'ToxFAQ®' for Polychlorinated Biphenyls (PCBs).

Blasland & Bouck. 1989. Hydrogeologic assessment of the Allied waste beds in the Syracuse area. Volume 1 of 2. Prepared for AlliedSignal Inc., Syracuse, NY. Blasland & Bouck Engineers, P.C., Syracuse, NY.

Calabrese, E.J., R. Barnes, E.J. Stanek, H. Pastides, C.E. Gilbert, P. Veneman, X.R. Wang, A. Lasztity, and P.T. Kostecki. 1989. How much soil do young children ingest: An epidemiologic study. Regul. Toxicol. Pharmacol. (2):123–137.

California EPA, Office of Environmental Health Hazard Assessment (OEHHA). 2001. Chemicals in Fish: Consumption of Fish and Shellfish in California and the United States. October.

Connelly, N.A., T.L. Brown, and B.A. Knuth. 1990. New York statewide angler survey, 1988. New York State Department of Environmental Conservation, Albany, NY.

Connelly, N.A., B.A. Knuth, and C.A. Bisogni. 1992. Effects of the health advisory and advisory changes on fishing habits and fish consumption in New York sport fisheries. Report for the New York Sea Grant Institute Project No. R/FHD-2-PD. Human Dimensions Research Unit, Cornell University, Ithaca, NY.

Connelly, N.A., B.A. Knuth, and T.L. Brown. 1996. Sportfish consumption patterns of Lake Ontario anglers and the relationship to health advisories. N. Am. J. Fish. Manage. 16:90–101.

Eallonardo, John, Director of Planning, Onondaga County Parks Department (OCPD). 2002. Personal communication via telephone with A. Burton, TAMS Consultants, Inc. October 1.

Ebert, E.S., N.W. Harrington, K.J. Boyle, J.W. Knight, and R.E. Keenan. 1993. Estimating consumption of freshwater fish among Maine anglers. N. Am. J. Fish. Manage. 13:737–745.

Effler, S.W. and C.T. Driscoll. 1986. A chloride budget for Onondaga Lake, New York, USA. Water Air Soil Pollut. 27:29–44, as cited in OLMC, 1989.

Effler, S.W. (ed). 1996. Limnological and engineering analysis of a polluted urban lake. Springer-Verlag, New York, NY.

EVS Environment Consultants, Inc. 2000. Prepared for Oregon Department of Environmental Quality, Portland, OR. Human Health Risk Assessment of Chemical Contaminants in Four Fish Species from the Middle Willamette River, Oregon. November.

Exponent. 2000. Onondaga Lake Remedial Investigation/Feasibility Study. Supplemental Data Phase 2A Work Plan and Dredged Material Disposal Area Addendum. Prepared for Honeywell, East Syracuse, NY. Exponent, Bellevue, WA. June.

Exponent. 2001a. Onondaga Lake Remedial Investigation/Feasibility Study. Revised Draft Human Health Risk Assessment. Prepared for Honeywell, East Syracuse, NY. Exponent, Bellevue, WA. March.

Exponent. 2001b. Geddes Brook/Ninemile Creek Remedial Investigation/Feasibility Study. Revised Draft Human Health Risk Assessment. Under Revision. Prepared for Honeywell, East Syracuse, NY. Exponent, Bellevue, WA. November.

Game and Fish Magazine. 2002. Web site http://gameandfish.about.com/library/weekly/aa073601b.htm. Accessed May and June.

Geraghty & Miller. 1982. Ground-water quality conditions at the former Willis Avenue plant. Geraghty & Miller, Inc., Syosset, NY.

Gilbert, R.O. 1987. Statistical Methods for Environmental Pollution Monitoring. Van Nostrand Reinhold. New York.

Great Lakes Sport Fish Advisory Task Force (GLSFATF). 1993. Protocol for a Uniform Great Lakes Sport Fish Advisory. September.

Hawley, Gessner G. (ed.). 1981. The Condensed Chemical Dictionary, Tenth Edition. Van Nostrand Reinhold Company, New York

Integrated Risk Information System (IRIS). USEPA. 1997a. IRIS substance file for Free Cyanide.

IRIS. 1997b. IRIS substance file for Calcium Cyanide.

IRIS. 1997c. IRIS substance file for Sodium Cyanide.

IRIS. 1997d. IRIS substance file for Lead.

IRIS. 1997e. IRIS substance file for Manganese.

IRIS. 1997f. IRIS substance file for Mercury – Elemental.

IRIS. 1997g. IRIS substance file for Mercuric Chloride.

IRIS. 1997h. IRIS substance file for Selenium.

IRIS. 1997i. IRIS substance file for Selenium Sulfide.

IRIS. 1997j. IRIS substance file for Thallium Chloride.

IRIS. 1997k. IRIS substance file for Thallium Sulfate.

IRIS. 1997l. IRIS substance file for Thallium Carbonate.

IRIS. 1997m. IRIS substance file for Vanadium Pentoxide.

IRIS. 1997n. IRIS substance file for Bromodichloromethane.

IRIS. 1997o. IRIS substance file for Chlorobenzene.

IRIS. 1997p. IRIS substance file for Dichloromethane.

IRIS. 1997q. IRIS substance file for Hexachlorobenzene.

IRIS. 1997r. IRIS substance file for 1,2,4-Trichlorobenzene.

IRIS. 1997s. IRIS substance file for Benz[a]anthracene.

IRIS. 1997t. IRIS substance file for Benzo[b]fluoranthene.

IRIS. 1997u. IRIS substance file for Benzo[k]fluoranthene.

IRIS. 1997v. IRIS substance file for Chrysene.

IRIS. 1997w. IRIS substance file for Dibenz[a,h]anthracene.

IRIS. 1997x. IRIS substance file for Indeno[1,2,3-cd]pyrene.

IRIS. 1997y. IRIS substance file for Acenaphthylene.

IRIS. 1997z. IRIS substance file for Benzo[g,h,i]perylene.

IRIS. 1997aa. IRIS substance file for Fluoranthene.

IRIS. 1997bb. IRIS substance file for Phenanthrene.

IRIS. 1997cc. IRIS substance file for Aldrin.

IRIS. 1997dd. IRIS substance file for delta-Hexachlorocyclohexane (delta-HCH).

IRIS. 1997ee. IRIS substance file for p,p '-Dichlorodiphenyl Dichloroethane (DDD).

IRIS. 1997ff. IRIS substance file for p,p'-Dichlordiphenyldichloroethylene (DDE).

IRIS. 1997gg. IRIS substance file for p,p'-Dichlorodiphenyltrichloroethane (DDT).

IRIS. 1997hh. IRIS substance file for Dieldrin.

IRIS. 1997ii. IRIS substance file for Heptachlor Epoxide.

IRIS. 1997jj. IRIS substance file for Aroclor 1016.

IRIS. 1997kk. IRIS substance file for Aroclor 1248.

IRIS. 1997ll. IRIS substance file for Aroclor 1254.

IRIS. 1997mm. IRIS substance file for alpha-Hexachlorocyclohexane.

IRIS. 1997nn. IRIS substance file for beta-Hexachlorocyclohexane.

IRIS. 1997oo. IRIS substance file for epsilon-Hexachlorocyclohexane.

IRIS. 1997pp. IRIS substance file for technical Hexachlorocyclohexane.

IRIS. 1997qq. IRIS substance file for Pyrene.

IRIS. 1998a. IRIS substance file for Cadmium.

IRIS. 1998b. IRIS substance file for Chromium(III).

IRIS. 1998c. IRIS substance file for Chromium(VI).

IRIS. 1998d. IRIS substance file for Copper.

IRIS. 1998e. IRIS substance file for Nickel (Soluble Salts).

IRIS. 1998f. IRIS substance file for Zinc.

IRIS. 1998g. IRIS substance file for Xylene.

IRIS. 1998h. IRIS substance file for Di(ethylhexyl)phthalate.

IRIS. 1998i. IRIS substance file for Benzo[a]pyrene.

IRIS. 1998j. IRIS substance file for Chlordane.

IRIS. 1998k. IRIS substance file for Polychlorinated biphenyls (PCBs).

IRIS. 1999. IRIS substance file for Barium.

IRIS. 2000a. IRIS substance file for Antimony.

IRIS. 2000b. IRIS substance file for Arsenic.

IRIS. 2000c. IRIS substance file for Dibenzofuran.

IRIS. 2000d. IRIS substance file for 1,2-Dichlorobenzene.

IRIS. 2000e. IRIS substance file for 1,3-Dichlorobenzene.

IRIS. 2000f. IRIS substance file for 1,4-Dichlorobenzene.

IRIS. 2001a. IRIS substance file for Methyl Mercury.

IRIS. 2001b. IRIS substance file for Benzene.

IRIS. 2002a. IRIS substance file for Chloroform.

IRIS. 2002b. IRIS substance file for Naphthalene.

IRIS. 2002c. IRIS substance file for gamma-Hexachlorocyclohexane (gamma-HCH).

Javitz, H. 1980. Seafood consumption data analysis. SRI International. Final report prepared for USEPA Office of Water Regulations and Standards. EPA Contract 68-01-3887.

Kauffman, Ken, Oregon Health Division (OHD). 2002. Personal communication via telephone with A. Burton, TAMS Consultants, Inc., July 24.

Kociba, R.J., D.G. Keyes, J.E. Beyer, R.M. Carreon, C.E. Wade, D.A. Dittenber, R.P. Kalnins, L.E. Frauson, C.N. Park, S.D. Barnard, R.A. Hummel, and C.G. Humiston. 1978. Results of a two-year chronic toxicity and oncogenicity study of 2,3,7,8-tetrachlorodibenzo-p-dioxin in rats. Toxicol. Appl. Pharmacol. 46:279–303.

Krabbenhoft, D.P., J.G. Wiener, W.G. Brumbaugh, M.L. Olson, J.F. DeWild, and T. J. Sabin. 1999. A National Pilot Study of Mercury Contamination of Aquatic Ecosystems along Multiple Gradients. USGS Toxic Substances Hydrology Program. Proceedings of the Technical Meetings. Charleston, SC. Water Res. Invest. Report. 99-4018 B. pp. 147-160.

Lakefront Development Corporation. 2001. Sidewalk Talk: The Syracuse Lakefront: A Sidewalk Community. Syracuse, New York. Fall.

Lorenzana, Roseanne, Ph.D., Science Liaison, USEPA Region 10. 2002. Personal communication with A. Burton, TAMS Consultants, Inc., August 5.

Marsh, D.O., T.W. Clarkson, G. Myers, C. Cox, E. Cernichiari, M.A. Tanner, W. Lednar, C. Shamlaye, O. Choisy, C. Horareau, and M. Berlin. 1995. The Seychelles study of fetal methylmercury exposure and child development: Introduction. Neurotoxicology 16:583–596.

Martin, Karen L., USEPA, Office of Solid Waste and Emergency Response, Community Involvement and Outreach. 2002. Personal communication via e-mail with A. Burton, TAMS Consultants, Inc., regarding RAGS Part D Update. June 10.

McBride, Dave, Washington Department of Health (WDOH). Personal communication via telephone with A. Burton, TAMS Consultants, Inc., July 24.

Moore, C. 1991. Personal communication via telephone conversation with T. Michelson, PTI Environmental Services, Bellevue, WA. Onondaga County Department of Parks and Recreation, Liverpool, NY. March 25.

Murphy, C.B. 1978. Onondaga Lake. In: Lakes of Western New York State. J. Bloomfield (ed). Academic Press, New York, NY. pp. 223–365.

National Center for Environmental Assessment (NCEA). 2002a. Dr. Harlal Choudhury/Director to Mike Sivak, USEPA Region 2: Requested toxicity information on Benzene, Copper, DDD, DDE, Dibenzofuran, 1,3-Dichlorobenzene, and 1,4-Dichlorobenzene (Onondaga Lake). June 28.

NCEA. 2002b. Dr. Harlal Choudhury/Director to Mike Sivak, USEPA Region 2: Requested toxicity information on 2-Methylnaphthalene (Onondaga Lake). July 2.

NCEA. 2002c. Personal communication via e-mail with M. Sivak, USEPA Region 2, transmitting the NCEA, 2002a files. NCEA e-mail addresses vanadium guidance. June 28.

NCEA. 2002d. A. Parker e-mail to M. Sivak, USEPA Region 2. Forwarded to A. Burton at TAMS Consultants, Inc. by M. Sivak on June 29, 2002. NCEA e-mail addresses chloroform. June 28.

National Oceanic and Atmospheric Administration (NOAA). 1993. Local climatological data; 1993 annual summary with comparative data, Syracuse, New York. National Oceanic and Atmospheric Administration, Asheville, NC.

NOAA. 2002. National Weather Service. Binghamton Field Office. Unofficial climate data for Syracuse. Web site: www.erh.noaa.gov/er/bgm/cli/syrcli. Accessed October.

National Research Council (NRC). 2000. Toxicological effects of methylmercury. National Research Council, Washington, DC.

New York State Department of Environmental Conservation (NYSDEC). 1989. Engineering Investigations at Inactive Hazardous Waste Sites: Phase II Investigation, Mercury Sediments – Onondaga Lake, Onondaga County. New York State Department of Environmental Conservation, Division of Hazardous Waste Remediation, Albany, NY.

NYSDEC. 1992. Annual monitoring data for Onondaga Lake fish. New York State Department of Environmental Conservation, Albany, NY.

NYSDEC. 2000. Geddes Brook/Ninemile Creek Remedial Investigation and Feasibility Study: Work Plan. Prepared by New York State Department of Environmental Conservation, Division of Environmental Remediation, Albany, NY, based on the original version prepared by Exponent, Bellevue, WA for Honeywell, Solvay, NY.

NYSDEC and New York State Department of Law (NYSDOL). 1998a. Comments dated October 2, 1998, on the Onondaga Lake RI/FS: Draft Human Health Risk Assessment Report. New York State Department of Environmental Conservation and New York State Department of Law, Albany, NY.

NYSDEC and NYSDOL. 1998b. Comments dated December 31, 1998, on the Onondaga Lake RI/FS: Draft Human Health Risk Assessment Report. New York State Department of Environmental Conservation and New York State Department of Law, Albany, NY.

NYSDEC and NYSDOL. 2000. Comments dated November 17, 2000, on the Geddes Brook/Ninemile Creek RI/FS: Draft Remedial Investigation Report. New York State Department of Environmental Conservation and New York State Department of Law, Albany, NY.

NYSDEC and TAMS Consultants, Inc. (TAMS). 1998a. New York State Revision of the Remedial Investigation Report and HHRA, LCP Bridge Street Site, Solvay, New York. New York State Department of Environmental Conservation, Albany, NY, and TAMS Consultants, New York, NY.

NYSDEC/TAMS. 1998b. New York State's Revision of the Onondaga Lake Mercury Modeling Report. Prepared for New York State Department of Environmental Conservation, Superfund Standby Program, Albany, NY. TAMS Consultants, Inc., Bloomfield, NJ.

New York State Department of Health (NYSDOH). 2002a. Health Advisories – Chemicals in Sportfish and Game 2001-2002, July 2, 2001. Web site: http://www.health.state.ny.us/nysdoh/environ/fish/htm. Accessed May.

NYSDOH. 2002b. Personal communication from Dr. Tom Johnson, NYSDOH, to A. Burton, TAMS Consultants, Inc., regarding NYSDOH toxicity data and risk assessment. August.

NYSDOH and ATSDR. 1995. Public health assessment: Onondaga Lake. Prepared by the New York State Department of Health, Albany, NY, under a cooperative agreement with the US Department of Health and Human Services, Agency for Toxic Substances and Disease Registry, Atlanta, GA.

New York State Department of Transportation (NYSDOT). No date. Onondaga Lake vicinity map, Centralized Local Accident Surveillance System (CLASS) files. 1:25,000 scale quadrangle. New York State Department of Transportation, Albany, NY.

O'Brien & Gere. 1991. Remedial Investigation: Semet Residue Ponds, Geddes, New York. Draft Report. Prepared for Allied-Signal, Inc. O'Brien & Gere Engineers, Inc., Syracuse, NY.

O'Brien & Gere. 1996a. Laboratory reports for AlliedSignal, Inc., Solvay, New York. Volume 1 of 1, Metals – Solids, and Volume 1 of 4, Organic Analyses. O'Brien & Gere Laboratories, Inc.

O'Brien & Gere. 1996b. Laboratory reports for AlliedSignal, Inc., Solvay, New York. Volume 1 of 1, Metals – Waters, and Volume 1 of 7, Organic Analyses. O'Brien & Gere Laboratories, Inc.

O'Brien & Gere. 2002. Willis Avenue Chlorobenzene Site: Remedial Investigation, Geddes, New York. Under Review. Prepared for AlliedSignal, Inc., Solvay, NY. O'Brien & Gere, Syracuse, NY.

Onondaga County Department of Water Environment Protection (OCDWEP). 2002. Web site: http://www.lake.onondaga.ny.us/ol14.htm. Accessed November 22.

Onondaga County Parks Department (OCPD). 2002. Map of Onondaga Lake Park. Web site: http://www.ongov.net/parks. Accessed September.

Onondaga Lake Management Conference (OLMC). 1989. State of Onondaga Lake Report. Preliminary Draft. Onondaga Lake Management Conference, Syracuse, NY.

OLMC. 1993. Onondaga Lake: a plan for action. Onondaga Lake Management Conference, Syracuse, NY.

Onondaga Lake Partnership (OLP). 2002. Web site: http://www.onlakepartners.org/outreach.faq.htm. Accessed May.

Oregon Department of Human Services (DHS), Oregon Public Health Services (OPHS), CEHS Environmental Services and Consultation (ESC). 2002. Health Analysis of Chemical Contaminants in the Lower Columbia River; Section 3.4, Arsenic. Web site: http://www.ohd.hr.state.or.us/esc/lcolmriv/arsenic.htm. Accessed July 23.

Oregon Health Division (OHD) and Washington Department of Health (WDOH). 1996. Health Analysis of Chemical Contaminants in Lower Columbia River Fish. April. Web site: http://www.ohd.hr.state.or.us/programs.htm. Accessed July 24, 2002.

Pao, E.M., K.H. Fleming, P.M. Guenther, S.J. Mickel. 1982. Foods commonly eaten by individuals: amount per day and per eating occasion. US Department of Agriculture. Home Economics Report No. 44.

PTI Environmental Services (PTI). 1991. Onondaga Lake RI/FS Work Plan. Prepared for AlliedSignal, Inc., Solvay, NY. PTI Environmental Services, Bellevue, WA.

PTI. 1992. Onondaga Lake RI/FS Site History Report. Prepared for AlliedSignal, Inc., Solvay, NY. PTI Environmental Services, Waltham, MA.

PTI. 1993a. Onondaga Lake RI/FS Bioaccumulation Investigation Data Report. Prepared for AlliedSignal, Inc., Solvay, NY. PTI Environmental Services, Waltham, MA.

PTI. 1993b. Onondaga Lake RI/FS Mercury and Calcite Mass Balance Investigation Data Report. Prepared for AlliedSignal, Inc., Solvay, NY. PTI Environmental Services, Waltham, MA.

PTI. 1993c. Onondaga Lake RI/FS Substance Distribution Investigation Data Report. Prepared for AlliedSignal, Inc., Solvay, NY. PTI Environmental Services, Waltham, MA.

PTI. 1994. Supplemental Sediment Sampling at Onondaga Lake-East Flume. Prepared for AlliedSignal, Inc., Solvay, NY. PTI Environmental Services, Waltham, MA.

PTI. 1995a. Unpublished Fish Data Collected by New York State Department of Environmental Conservation in 1994. PTI Environmental Services, Bellevue, WA.

PTI. 1995b. Unpublished Fish Data Collected by New York State Department of Environmental Conservation in 1995. PTI Environmental Services, Bellevue, WA.

Reimann-Buechner Partnership. 1991. Onondaga Lake Development Plan.

Rupp, E.M., et al. 1980. Age dependent values of dietary intake for assessing human exposures to environmental pollutants, and Some results of recent surveys of fish and shellfish consumption by age and region of US residents. Health Physics 39:151-175.

Sittig, Marshall. 1991. Handbook of Toxic and Hazardous Chemicals and Carcinogens, Volumes 1 and 2, Third Edition. Noyes Publications, Park Ridge, NJ.

Standen, Anthony (executive editor). 1967. Kirk-Othmer Encyclopedia of Chemical Technology, Volume 12, Second Edition. Interscience Publishers division of John Wiley and Sons, New York.

Stanek, E.J. and E. Calabrese. 1992. Soil ingestion in children: Outdoor soil or indoor dust? J. Soil Contam. 1(1):1–28.

Syracuse Department of Water (SDW), City of Syracuse. 2000. Water newsletter home page. Web site: www.syracuse.ny.us/syrmayor/Services/Departments/waterreport.html. Accessed May.

SDW. 2001. Drinking Water Quality Report for 2000. Web site: http://www.syracuse.ny.us/deptWater/. Accessed May 7, 2002.

TAMS Consultants, Inc. (TAMS)/USEPA. 2000. Human Health Risk Assessment for the Hudson River PCBs Site. Prepared by TAMS and Gradient for USEPA and US Army Corps of Engineers. TAMS Consultants, Inc., Bloomfield, NJ.

TAMS. 2002a. Onondaga Lake Baseline Ecological Risk Assessment. Original document prepared by Exponent, Bellevue, Washington, for Honeywell, East Syracuse, New York. Revision prepared by TAMS, New York, New York and YEC, Valley Cottage, New York, for New York State Department of Environmental Conservation, Albany, New York. December.

TAMS. 2002b. Onondaga Lake Remedial Investigation Report. Original document prepared by Exponent, Bellevue, Washington, for Honeywell, East Syracuse, New York. Revision prepared by TAMS, New York, New York and YEC, Valley Cottage, New York, for New York State Department of Environmental Conservation, Albany, New York. December.

Tetra Tech. 1996. Assessing Human Heath Risks from Chemically Contaminated Fish in the Lower Columbia River. Final Report TC 9968-05. May.

US Census Bureau. 2000. United States Census Bureau home page. Web site: http://www.census.gov/. Accessed October 2002.

US Environmental Protection Agency (USEPA). 1989. Risk Assessment Guidance for Superfund. Volume 1: Human Health Evaluation Manual (Part A). Interim Final Report. EPA 540/1-89/002. US Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, DC.

USEPA. 1990. Guidance for Data Usability in Risk Assessment. US Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, DC.

USEPA. 1991a. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual (Part B, Development of Risk-based Preliminary Remediation Goals). Interim Report. US Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, DC.

USEPA. 1991b. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual Supplemental Guidance. Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03. US Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, DC.

USEPA. 1991c. Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions. Memorandum from Don R. Clay, Assistant Administrator, to Regional Offices. OSWER Directive 9355.0-30. US Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, DC.

USEPA. 1992a. Supplemental Guidance to Rags: Calculating the Concentration Term. US Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, DC.

USEPA. 1992b. Internal memorandum dated February 26, 1992, from F.H. Habicht II, Deputy Administrator to Assistant and Regional Administrators, regarding guidance on risk characterization for risk managers and risk assessors. US Environmental Protection Agency, Washington, DC.

USEPA. 1992c. Dermal Exposure Assessment: Principles and Applications. EPA/600/8-91/011B. Interim Report. US Environmental Protection Agency, Office of Health and Environmental Assessment, Washington, DC.

USEPA. 1993a. Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons. ECAO-CIN-842. US Environmental Protection Agency, Office of Health and Environmental Assessment, Environmental Criteria and Assessment Office, Research Triangle Park, NC.

USEPA. 1993b. Baseline Human Health Risk Assessment: Buffalo River, New York, Area of Concern. Assessment and Remediation of Contaminated Sediments (ARCS) Program. EPA 905-R93-008. US Environmental Protection Agency, Great Lakes National Program Office, Chicago, IL.

USEPA. 1994. Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities. US Environmental Protection Agency, Office of Solid Waste and Emergency Response Directive 9355.4-12.

USEPA. 1996a. PCBs: Cancer dose-response assessment and application to environmental mixtures. EPA/600/P-96/001F. US Environmental Protection Agency, Office of Research and Development, National Center for Environmental Assessment, Washington, DC.

USEPA. 1996b. Proposed Guidelines for Carcinogen Risk Assessment. EPA/600/P-92/003C. USEPA Office of Research and Development, Washington DC. April.

USEPA. 1997a. Exposure Factors Handbook. EPA/600/P-95/002F. US Environmental Protection Agency, Office of Research and Development, Washington, DC.

USEPA. 1997b. Health Effects Assessment Summary Tables. EPA 540/R-93/058. US Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, DC.

USEPA. 1997c. An SAB Report: Review of the EPA Draft Mercury Study Report to Congress. EPA-SAB-EC-98-001. US Environmental Protection Agency, Science Advisory Board, Washington, DC.

USEPA. 1998. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments). Interim Report. EPA 540-R-97-033. US Environmental Protection Agency, Office of Emergency Response and Remedial Response, Washington, DC.

USEPA. 1999. Risk Assessment Guidance for Superfund Supplemental Guidance: Dermal Risk Assessment. Interim Guidance (Internal Draft). US Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, DC.

USEPA. 2000a. Exposure and Human Health Reassessment of 2,3,7,8-Tetrachlorodibenzo-*p*-Dioxin (TCDD) and Related Compounds, Part III: Integrated Risk Summary and Risk Characterization for 2,3,7,8-Tetrachlorodibenzo-*p*-Dioxin (TCDD) and Related Compounds, EPA/600/P-00/001Bg, September 2000 – Preliminary Review Draft.

USEPA. 2000b. Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories, Volume 2 – Risk Assessment and Fish Consumption Limits. Third Edition. EPA-823-B-00-008. US Environmental Protection Agency, Office of Water. November.

USEPA. 2000c. Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (2000). EPA-822-B-004. US Environmental Protection Agency, Office of Water, Office of Science and Technology. October.

USEPA. 2001a. RAGS Volume I: Human Health Evaluation Manual, Part E – Supplemental Guidance for Dermal Risk Assessment for Public Comment. Interim Draft. USEPA Office of Emergency and Remedial Response. EPA/540/R/99/005. September.

USEPA. 2001b. Risk Assessment Guidance for Superfund (RAGS) 3, Part A – Process for Conducting Probabilistic Risk Assessment. Exhibit 3-2, Definitions for Chapter 3. December 31.

USEPA. 2001c. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites, March 2001, Peer Review Draft; OSWER 9355.4-24.

USEPA. 2001d. RAGS Volume I – Human Health Evaluation Manual, Part D – Standardized Planning, Reporting and Review of Superfund Risk Assessments. Final. December.

USEPA. 2002a. USEPA Region 3 Risk-Based Concentration (RBC) Table. US Environmental Protection Agency Region 3, Philadelphia, PA. Web site: http://www.epa.gov/reg3hwmd/risk/index.htm. Accessed April.

USEPA. 2002b. USEPA Region 9 Preliminary Remediation Goals (PRGs) Table. US Environmental Protection Agency Region 9, San Francisco, CA. Web site: http:/www.epa.gov/ region09. Accessed October.

USEPA. 2002c. ProUCL Version 2.1. Software and User's Guide. Prepared for USEPA Region 3 by Lockheed-Martin Environmental Systems and distributed by USEPA National Exposure Research Laboratory, Las Vegas, NV. July.

Van den Berg, M., L. Birnbaum, A.T.C. Bosveld, B. Brunstrom, P. Cook, M. Feeley, J.P. Giesy, A. Hanberg, R. Hasegawa, S.W. Kennedy, T. Kubiak, J.C. Larsen, F.X. van Leeuwen, A.K. Liem, C. Nolt, R.E. Peterson, L. Poellinger, S. Safe, D. Schrenk, D. Tillitt, M. Tysklind, M. Younes, F. Waern, and T. Zacharewski. 1998. Toxic equivalency factors (TEFs) for PCBs, PCDDs, PCDFs for humans and wildlife. Environ. Health Perspect. 106:775–792.

West, P.C., J.M. Fly, R. Marans, and F. Larkin. 1989. Michigan Sport Anglers Fish Consumption Survey Report to the Michigan Toxic Substance Control Commission. Michigan Department of Management and Budget Contract No. 87-20141.

West, P.C., J.M. Fly, R. Marans, F. Larkin, and D. Rosenblatt. 1993. 1991–92 Michigan Sport Anglers Fish Consumption Study. Technical Report No. 6. Prepared for the Michigan Department of Natural Resources, Ann Arbor, MI. University of Michigan, School of Natural Resources.

Wester, R.C., H.I. Maibach, L. Sedik, and J. Melendres. 1993. Percutaneous absorption of PCBs from soil: *In vivo* rhesus monkey, *in vitro* human skin, and binding to powdered human *stratum corneum*. J. Toxicol. Environ. Health 39:375–382.

White, Jim, Ph.D., Washington Department of Health (WDOH). 2002. Personal communication via telephone with A. Burton, TAMS Consultants, Inc. August 1.

Wilson, N.D., N.M. Shear, D.J. Paustenbach, and P.S. Price. 1998. The effects of cooking practices on the concentration of DDT and PCB compounds in the edible tissue of fish. J. Exp. Anal. Environ. Epidemiol. 8(3):423–436.

World Health Organization (WHO). 1998. Assessment of the health risk of dioxins: re-evaluation of the Tolerable Daily Intake (TDI). WHO Consultation. Geneva, Switzerland. May.

Zabik, M.E. and M.J. Zabik. 1996. Influence of processing on environmental contaminants in food. Food Technol. May:225–229.

Appendix A

Summary of Site Data Used in the HHRA

APPENDIX A. SUMMARY OF SITE DATA USED IN THE HHRA

A.1 List and Numbering of Tables

Appendix A consists of eight numbered tables (i.e., Tables A-1 through A-8). In many cases, each numbered table consists of several separate tables (e.g., Table A-1A, Table A-1B). The tables provided in this appendix are listed below.

Table A-1 – Onondaga Lake Fish Tissue (Fillet) Data
- 1A – Onondaga Lake Fish Fillets – Mercury Data
- 1B – Onondaga Lake Fish Fillets – Pesticide and Hexachlorobenzene Data
- 1C – Onondaga Lake Fish Fillets – PCB Data
- 1D – Onondaga Lake Fish Fillets – PCDD/PCDF Data
- 1E – Onondaga Lake Fish Fillets – TAL/TCL Data

Table A-2 – Northern Basin Nearshore Sediment Data
- 2A – Northern Basin Nearshore Sediments – Inorganic and Organometallic Data
- 2B – Northern Basin Nearshore Sediments – Volatile Organic Compound Data
- 2C – Northern Basin Nearshore Sediments – Semivolatile Organic Compound Data
- 2D – Northern Basin Nearshore Sediments – Pesticide Data
- 2E – Northern Basin Nearshore Sediments – PCB Data
- 2F – Northern Basin Nearshore Sediments – PCDD/PCDF Data

Table A-3 – Southern Basin Nearshore Sediment Data
- 3A – Southern Basin Nearshore Sediments – Inorganic and Organometallic Data
- 3B – Southern Basin Nearshore Sediments – Volatile Organic Compound Data
- 3C – Southern Basin Nearshore Sediments – Semivolatile Organic Compound Data
- 3D – Southern Basin Nearshore Sediments – Pesticide Data
- 3E – Southern Basin Nearshore Sediments – PCB Data
- 3F – Southern Basin Nearshore Sediments – PCDD/PCDF Data

Table A-4 – Northern Basin Wetland Sediment Sample Data
- 4A – Northern Basin Wetland SYW-6 Sediment Sample Data (All Parameters)
- 4B – Northern Basin Wetland SYW-10 Sediment Sample Data (All Parameters)

Table A-5 – Southern Basin Wetland Sediment Sample Data
- 5A – Southern Basin Wetland SYW-12 Sediment Sample Data (All Parameters)
- 5B – Southern Basin Wetland SYW-19 Sediment Sample Data (All Parameters)

Table A-6 – Dredge Spoils Surface Soil Data

Table A-7 – Dredge Spoils Soil Data – All Depths

Table A-8 – Onondaga Lake Surface Water Data
8A – Onondaga Lake Surface Water – Inorganic and Organometallic Data
8B – Onondaga Lake Surface Water – Organic Data

A.2 Key to Table Headings

Following is a clarification of the table column headings and identification of entries for each.

Survey: Identifies the investigation from which the samples were collected and data generated. The surveys from which data were generated and included in this appendix are:

- NYSDEC-1992 – NYSDEC fish data from 1992.
- O-FACCUM – Honeywell fish data from 1992.
- O-LOADING – Honeywell surface water data from 1992.
- O-WCPROC – Honeywell surface water data from 1992.
- O-SEDCHEM – Honeywell sediment data from 1992.
- NYSDEC-1994 – NYSDEC fish data from 1994.
- ONONMET – NYSDEC fish data from 1994.
- O-STATE – NYSDEC fish data from 1995.
- O-LAKE96 – Honeywell surface water data from 1996.
- ONLK96HG – NYSDEC fish data from 1996 (mercury).
- ONONDA96 – NYSDEC fish data from 1996 (organics).
- ONONHG97 – NYSDEC fish data from 1997 (mercury).
- ONONDA97 – NYSDEC fish data from 1997 (organics).
- ONONHG98 – NYSDEC fish data from 1998 (mercury).
- ONONDA98 – NYSDEC fish data from 1998 (organics).
- NYSDEC-1999 – NYSDEC fish data from 1999 (PCDD/PCDFs).
- ONON99HG – NYSDEC fish data from 1999 (mercury).
- ONONDAGAOCL9 – NYSDEC fish data from 1999 (organics).
- O-WCSUP – Honeywell surface water chemistry data from 1999.
- ONON2A – Honeywell Phase 2A data from 2000.
- NYSDEC-2000 – NYSDEC fish data from 2000.
- NYSDEC-2002 – NYSDEC supplemental Wetland SYW-6 sampling from 2002.

Sample Number: Field sample number as assigned by the sampling organization.

Survey Station: Sample location, as shown on Figures A-2 through A-6.

Date: Date that the sample was collected.

Duplicates: An entry in this column indicates that the sample was analyzed in replicate. Duplicates are identified by the letter "D," followed by a sequential identifier (e.g., D1, D2, etc.). For calculating exposure point concentrations (EPCs), replicates were averaged to generate a single value for each sample that had multiple analyses. However, the individual samples are reported in the Appendix A tables.

Depth: The depth interval from which the sample was collected (measured from ground surface or top of the sediment/water interface). Surface water sample data depth is measured from the top of the water surface. Sediment and soil depths and intervals are typically reported in centimeters (cm), and water depths are typically reported in meters (m).

Concentration: Units are self-explanatory. All non-aqueous data are reported in mg/kg (parts per million [ppm]), µg/kg (parts per billion [ppb]), or ng/kg (parts per trillion [ppt]) (some data are in ng/g, which is also equivalent to µg/kg and ppb) on a dry-weight (dw) basis, unless noted otherwise. Water sample data are reported in µg/L (ppb), unless noted otherwise. Fish data are reported on a wet-weight (ww) basis, unless otherwise noted.

Data Qualifiers: With rare exceptions, the only data qualifiers retained on the Appendix A tables are U (not detected at reported quantitation limit); J (estimated value); UJ (not detected; detection/quantitation limit is estimated); and R (rejected – unusable datum). A few tables have specific additional qualifiers; see individual tables for definitions where applicable.

A.3 Notes on Specific Analyses

The manner in which some analytes were analyzed or reported varied. These include the following:

A.3.1 Xylenes

Depending on the data set, xylenes (a volatile organic compound [VOC]) were reported either as individual isomers (o, m, and p-xylene, or some combination thereof) or total xylenes. For the human health risk assessment (HHRA), all xylene data have been converted to total xylenes. The total xylene result is the sum of all detected isomers. Where xylenes were not detected, a single detection limit was used to calculate the one-half detection limit value (e.g., if the xylene data were reported as o-xylene, m-xylene, and p-xylene, each individually not detected at 10 U, one-half of 10 [i.e., 5] was subsequently used as the value for total xylene exposure point calculation in RAGS Table 3).

A.3.2 Polychlorinated Biphenyls

The approach used for the HHRA with regard to calculation of total polychlorinated biphenyl (PCB) concentrations for use in exposure point concentrations is as follows:

- **Scenario 1** – Two or more Aroclors detected. Total PCBs are equal to the sum of all detected Aroclors.

- **Scenario 2** – Exactly one Aroclor detected. Total PCBs are equal to the sum of the detected Aroclor concentration, plus one-half the detection limit of one other Aroclor (all Aroclors except 1221 have the same detection limit; however, as Aroclor 1221 was never detected, it does not matter which Aroclor is used).

- **Scenario 3** – No Aroclors detected. Total PCBs are equal to the detection limit of each of two Aroclors (nominally, one "low molecular weight" Aroclor, such as 1016 or 1242, and one "high molecular weight" Aroclor, such as 1260). This value is used as the "quantitation limit" for the subsequent calculation of the exposure point concentration in RAGS Table 3.

This approach has the added advantage of integrating the NYSDEC and Honeywell (SW-846 or CLP-type) Aroclor analyses; the CLP-type has seven Aroclors reported, whereas NYSDEC only reports two (typically, 1016 as a surrogate for low molecular weight and 1254/1260 [combined] for high molecular weight).

The total PCB calculation described above was used to generate a total PCB concentration for calculation of an EPC for cancer risk calculations. A similar approach was used to generate low molecular weight and high molecular weight PCB totals for calculation of non-cancer risks. As noted in HHRA Chapter 5, Aroclors 1221, 1016, and 1242 were considered low molecular weight Aroclors, and Aroclors 1248, 1254, 1260 (including NYSDEC fish data reported as combined Aroclor 1254/1260), and 1268 are considered high molecular weight Aroclors for the purpose of calculating EPCs for evaluating non-cancer hazards from PCBs.

A.3.3 Chlordane

Chlordane data are most often reported as alpha-chlordane and gamma-chlordane. NYSDEC data (fish samples only) typically include results for other individual chemical constituents of technical chlordane, including cis- and trans-nonachlor. All detected chlordane constituents were summed to calculate a "total chlordane" value for use in calculating exposure point concentrations. Non-detected isomers and constituents were treated in the same manner as for xylenes; i.e., only a single non-detected value was utilized where no chlordane constituents were detected. Where one or more chlordane compounds were detected, the non-detected ones were not included in the calculation of a chlordane value (i.e., the non-detected constituents were counted as zero).

The various isomers and components of chlordane summed as total chlordane are (to the extent that data for the constituent exist in any particular data set):

- Chlordane.
- Alpha chlordane (same as cis-chlordane).
- Gamma chlordane (same as trans-chlordane).
- Oxychlordane.
- Nonachlor (and cis- and/or trans-nonachlor).

Heptachlor is not included in the "total chlordane" sum. While heptachlor is reportedly a constituent of technical chlordane, heptachlor and heptachlor epoxide are separate Target Compound List (TCL) pesticides and have their own toxicity and screening values, and therefore are treated as separate contaminants.

A.3.4 Hexachlorobenzene

The Phase 2A (2000) investigation data set includes hexachlorobenzene (HCB) analyzed by two methods – the conventional SW-846 GC/MS Method 8270, and some samples analyzed by GC/ECD (by modifying the GC/ECD pesticide method to include HCB as a target analyte). The GC/ECD database has a much lower detection limit than the GC/MS data, but where HCB was detected in both the GC/MS and GC/ECD analysis, the agreement between the two results often was not very good. The procedure for establishing a single result from the two analyses is discussed below.

HCB analyses were performed by both GC/ECD and GC/MS in 142 samples (including field duplicates). Of these, 125 are considered "valid" results (17 GC/ECD analyses were rejected during data validation). Of these 125, the vast majority (all but 23) fall into two categories:

1) HCB was not detected in either the GC/ECD or the GC/MS analysis (43 pairs); or

2) HCB was not detected in the GC/MS analysis, and was detected in the GC/ECD analysis, but at a concentration below the GC/MS detection limit (59 pairs).

Both categories are considered to be consistent, and the GC/ECD result (either the detected GC/ECD value or the lower GC/ECD detection limit) will be used for these 102 sample results.

There are two other categories of data pairs in which the consistency of the data is less evident. These are:

1) 10 pairs in which HCB was detected in samples analyzed by both methods; and

2) 13 pairs in which HCB was detected by GC/ECD analysis at a concentration higher than the detection limit of the GC/MS analysis, in which HCB was not detected. Each of these categories is discussed below.

In the 10 pairs of samples in which HCB was detected in both the GC/ECD and the GC/MS analysis, the agreement between the two data sets is not very good. In most, but not all, of the analyses (8 out of 10 pairs), the GC/ECD result was higher than the GC/MS result. As there are insufficient data to warrant using one data set to the exclusion of the other, for this category a straight arithmetic average of the two detections was used to generate a concentration for use in the HHRA (e.g., for contaminant screening and exposure point concentration calculation).

There are also 13 pairs of samples in which HCB was detected in the GC/ECD analysis at a concentration higher than the reporting limit for the GC/MS analysis. The ratio of the detected value to the non-detect quantitation limit varies, from less than 2.0 (seven of the 13 pairs); between 2.0 and 2.5 (three of the 13 pairs); and between 4.0 and 5.0 (three of the 13 pairs). This anomaly was not addressed in Honeywell's RI report (Exponent, 2001). As there is no scientific basis to indicate

which of the data sets (GC/MS or GC/ECD) most likely represents the "true" environmental concentration of HCB, both data sets have been included in the HHRA, in the manner described above. It should be noted that in this (special) case, the non-detected (i.e., "U") value is used "as-is;" i.e., it is not divided in half prior to averaging with the detected result. For example, if the two laboratory-reported values were 100 µg/kg and 60 µg/kg U, the final value used in the HHRA would be 80 µg/kg.

A.3.5 Polychlorinated Dibenzo-*p*-Dioxins and Furans and Associated Toxicity Equivalent Quotients

All non-detected polychlorinated dibenzo-*p*-dioxins and furans (PCDD/PCDFs) that have a toxicity equivalence factor (TEF) were summed at one-half the quantitation limit in calculating the toxicity equivalent quotients (TEQ); this approach is based on the sample TEQ calculation as presented in USEPA (1996). The TEFs used are the World Health Organization (WHO) human health-based TEFs (Van den Berg et al., 1998). Values are shown separately for the contributions from furans and dioxins; the "total" TEQ includes the combined contributions from both furans and dioxins. (Only the total TEQ is used in the HHRA; the dioxin TEQ and furan TEQ are shown for information only.)

A.3.6 Mercury (Ionic/Methyl/Dimethyl/Elemental/Total Mercury)

The treatment of mercury varies by matrix and the available data. For biota samples, mercury data are reported as methylmercury; however, in other matrices, mercury is evaluated as total mercury. Details of the available mercury data and how the data were evaluated are discussed in greater detail under the table-specific discussions which follow.

A.4 Notes on Specific Tables

Specific issues and their resolution – e.g., table-specific data qualifier issues; investigation information; etc. – are discussed below.

A.4.1 Table A-1 – Onondaga Lake Fish Tissue (Fillet) Data

The data sets used for Table A-1, taken together, comprise the most comprehensive data set available for any matrix in Onondaga Lake. Some data have been generated since the 1970s or earlier; however, only data from the first major contamination study conducted by Honeywell in 1992 and fish data collected by both NYSDEC and Honeywell from 1992 through 2000 have been included for quantitative assessment in the HHRA. The seven fish fillet samples collected and analyzed by Honeywell in 2000 (Phase 2A) have been incorporated into this HHRA. These samples include five fish from the reach of the lake between Tributary 5A and Harbor Brook, and two fish from the lake near the mouth of Ninemile Creek. The four fish fillets collected in the lower reach of Ninemile Creek in 2000 as part of the Onondaga Lake Phase 2A investigation are included in the HHRA for Geddes Brook/Ninemile Creek, and not this Onondaga Lake HHRA. Sample locations for the Honeywell fish stations are shown on Figure A-2.

Table A-1A – Onondaga Lake Fish Fillets – Mercury Data. Data were generated during the initial RI sampling event by Honeywell/PTI in 1992, the Honeywell/Exponent Phase 2A RI sampling in 2000, and the annual NYSDEC sampling. Honeywell data were generated for methylmercury (all samples) and ionic mercury in a subset (about one-tenth) of the Honeywell samples; a total mercury value was then calculated by summing the methyl- and ionic mercury values (obviously, in most cases, the methylmercury value was identical to the total mercury result). NYSDEC data are reported as mercury. As the Onondaga Lake data and the scientific literature suggest, 90 percent or more of the mercury in fish tissue consists of methylmercury. Therefore, all mercury data in fish tissue (fillets only) are treated as methylmercury. All mercury data from all sampling events (from 1992 through 2000) from all parties (NYSDEC and Honeywell) are included in the quantitative evaluation. Approximately 20 samples collected and analyzed by Honeywell/PTI in 1992 were analyzed for ionic mercury, and the ionic mercury is used in their calculation of total mercury. As is evident from the table, the inclusion (or exclusion) of ionic mercury does not have a significant impact on the total mercury value.

Table A-1B – Onondaga Lake Fish Fillets – Pesticide and Hexachlorobenzene Data. General issues regarding the chlordane and HCB data were discussed above in the parameter-specific discussion.

Table A-1C – Onondaga Lake Fish Fillets – PCB Data. As part of the NYSDEC's rewrite of the Honeywell-generated risk assessments, the quality of the historical data, including the 1992 data set, was revisited. As a result of this re-evaluation of the fish data, NYSDEC decided to exclude the 1992 Honeywell/PTI PCB data set, because the Honeywell/PTI data set may have significantly underestimated the actual total PCB concentration in Onondaga Lake fish fillets. This determination is based on a review of the Onondaga Lake RI/FS Bioaccumulation Investigation Data Report (1993) prepared by PTI for Honeywell. The report describes the sampling and analysis for the 1992 fish collection and includes the analytical data and the quality assurance reviews.

The report indicates that PCBs were not detected in 973 of 1,232 (79 percent) of the samples. Of those samples in which PCBs were not detected, 793 (82 percent) were qualified for various factors of non-compliance with data quality objectives including the possibility of false negatives. Surrogate recovery was poor, averaging around 43 percent. NYSDEC's data quality review indicated that the Honeywell 1992 data set consistently underestimated fish PCB concentrations, based on the laboratory's failure to meet data quality objectives (specifically, poor surrogate spike recovery) and the high percentage of samples that were reported as not detected for PCBs.

Due to these problems with the 1992 Honeywell/PTI PCB fish sample data, NYSDEC has decided not to rely on this data set for the Onondaga Lake risk assessments. For fish PCB data, the risk assessments rely on the data collected by Honeywell/Exponent in 2000 and NYSDEC from 1992 through 2000.

Table A-1D – Onondaga Lake Fish Fillets – PCDD/PCDF Data. Calculation of the TEQ is discussed above; selection of samples for inclusion in the HHRA is discussed in the text. There are no additional table-specific issues for this table.

Table A-1E – Onondaga Lake Fish Fillets – TAL/TCL Data. These data for four 1992 fillet composites, one for each of four species, were analyzed for Target Analyte List (TAL) inorganics and TCL organics (VOCs, semi-volatile organic compounds [SVOCs], and pesticides/PCBs). The age and size information are averages. The fish used to generate these fillet composites were caught in the littoral zone (nearshore) of the southern part of the lake. The TAL inorganic data from the seven fillets collected by Honeywell in the lake in 2000 are also included.

A.4.2 Table A-2 – Northern Basin Nearshore Sediment Data

Data included in this table consist of sediment chemistry data generated from Honeywell's samples collected in 1992 (survey "O-SEDCHEM") and from Honeywell's Phase 2A sampling in 2000 (survey "ONON2A"). The sample locations for the 1992 survey are shown on Figure A-3, and the sample locations for the 2000 survey are shown on Figure A-4. Table A-2 includes sediment data from a variety of depth intervals, but none that exceed 30 cm. The sample intervals from the 1992 data set are typically 0 to 2 cm and 0 to 30 cm. The 2000 data set includes 0 to 2 cm; 2 to 15 cm; 0 to 15 cm; and 15 to 30-cm data. While data from the 15 to 30-cm interval are deeper than the typical 15-cm (six-inch) depth used for risk assessments, they have been utilized to maintain a consistent data set among the investigations. For calculation of exposure point concentrations, the values are averaged for a specific location (averages are length-weighted as appropriate; for example, in generating a 0- to 30-cm result from samples collected at 0 to 2 cm, 2 to 15 cm, and 15 to 30 cm).

Table A-2A – Northern Basin Nearshore Sediments – Inorganic and Organometallic Data. The inorganic data set is comprised of 24 discrete samples from either 0 to 2 or 0 to 30-cm samples from the 1992 investigation. Exclusive of duplicates, the Phase 2A inorganic data include five samples from 0 to 2 cm; five from 2 to 15 cm (or, in one case, 2 to 14 cm); 10 from 0 to 15 cm, and 14 from 15 to 30 cm. The Phase 2A samples represent a total of 15 discrete sample locations. All of the samples (except Phase 2A samples from Station S372 collected on 8/2/00) were analyzed for full TAL inorganics (23 metals plus cyanide); half (12) of the 1992 samples were analyzed for the full TAL; and the remainder were analyzed for a subset consisting of about nine metals. Only four samples (Phase 2A samples from S372) were analyzed for methylmercury.

Table A-2B – Northern Basin Nearshore Sediments – Volatile Organic Compound Data. The 1992 data set analyzed for VOCs is the same as that analyzed for metals. As with the metals, only about half of the 1992 samples were analyzed for the full suite of TCL VOCs; the remainder were analyzed for benzene and related compounds only. Phase 2A VOC data consist of 11 samples (plus duplicates) from five locations, all of which were analyzed for full TCL VOCs.

Table A-2C – Northern Basin Nearshore Sediments – Semivolatile Organic Compound Data. The 1992 sample set analyzed for SVOCs is the same as that analyzed for metals and VOCs. About half of the 1992 samples were analyzed for full TCL SVOCs; the remainder were analyzed for a reduced suite of parameters, primarily various chlorobenzenes. (It should be noted that the 1992 data set included analysis for some specific tri- and tetra-chlorobenzenes for which Phase 2A samples were not analyzed.) The Phase 2A data set includes 32 samples (excluding duplicates) from 14 locations that were analyzed for full TCL SVOCs.

Table A-2D – Northern Basin Nearshore Sediments – Pesticide Data. The 1992 data set consists of 12 samples analyzed for TCL pesticides. The Phase 2A data set for pesticides is the same as the data set for SVOCs (32 samples from 14 locations). A significant portion (about 27 percent of the Phase 2A data, representing about 21 percent of the total northern basin sediment pesticide data set) of the pesticide data were rejected by Honeywell's data validator.

Table A-2E – Northern Basin Nearshore Sediments – PCB Data. The 1992 data set consists of 24 samples analyzed for TCL Aroclors (Aroclor 1016 through 1260). The Phase 2A data set includes 34 samples (plus duplicates) analyzed for TCL Aroclors, plus Aroclor 1268 (although Aroclor 1268 was not detected in any of the northern basin sediment samples).

Table A-2F – Northern Basin Nearshore Sediments – PCDD/PCDF Data. The northern basin sediment dioxin and furan data set is comprised of seven samples (plus three duplicates) from three locations collected during the Phase 2A investigation. (No northern basin sediments were analyzed for PCDD/PCDF compounds as part of the 1992 investigation.) The TEQ from furans, dioxins, and the total 2,3,7,8-TCDD TEQ is calculated for all samples and shown on Table A-2F. The WHO TEFs were used to calculate the TEQ.

A.4.3 Table A-3 – Southern Basin Nearshore Sediment Data

Data included in this table consist of sediment chemistry data generated from the Honeywell samples collected in 1992 (survey O-SEDCHEM) and from Honeywell's Phase 2A sampling in 2000 (survey ONON2A). The sample locations for the 1992 survey are shown on Figure A-3, and the sample locations for the 2000 survey are shown on Figure A-4. The 1992 data were from depths of 0 to 30 cm or from 0 to 2 cm. The 2000 data were from various depths in the 0 to 30-cm interval, as discussed below.

Table A-3A – Southern Basin Nearshore Sediments – Inorganic and Organometallic Data. This data set includes 14 samples which were analyzed for both mercury (total) and methylmercury (no samples were analyzed for methylmercury only). The 1992 data set consists of 37 analyses, comprised of 11 samples from 0 to 30 cm and 26 analyses from 0 to 2 cm. Three samples were analyzed in triplicate, so the total number of environmental samples is 31 (nine from 0 to 2 cm and 22 from 0 to 30 cm). Full TAL metals analysis (23 metals) was performed on 18 of the 37 (nine of these were also analyzed for cyanide). The remaining samples were analyzed for a reduced suite of nine metals, consisting of cadmium, calcium, chromium, lead, magnesium, mercury, nickel, and zinc.

The 2000 Phase 2A data are comprised of 84 analyses. Of these, 14 were analyzed for mercury (total) and methylmercury only, and consist of eight "PR" samples from four locations (a 0 to 2-cm sample, and a deeper sample varying from 2 to 8 cm to 2 to 15 cm) and six sediment samples at one nearshore porewater station (three co-located pairs [Station S402, samples PC0046 – 0053] from 0 to 4 cm and 4 to 8 cm; these were considered to be from a single location for the purpose of the HHRA).

The 70 other samples (which included only one identified field duplicate pair) were all analyzed for full TAL inorganics (23 metals, plus cyanide). These samples consist of five samples from 0 to 2 cm (including one duplicate pair); one from 0 to 5 cm; 30 from 0 to 15 cm; two from 2 to 15 cm; and 32 from 15 to 30 cm.

Table A-3B – Southern Basin Nearshore Sediments – Volatile Organic Compound Data. This data set is similar to that for Table A-3A. The 1992 data consist of 41 samples (10 at 0 to 2 cm, including a triplicate) and 31 0 to 30-cm samples (including two triplicates). Ten samples from 0 to 2 cm and 11 from the 0 to 30-cm interval were analyzed for full TCL VOCs; the remaining samples were analyzed for a limited suite of VOCs comprised of benzene, toluene, ethylbenzene, and xylenes (BTEX) and chlorinated benzenes. One sample (S3, 0 to 2 cm) was analyzed only for mixed tetrachlorobenzenes.

Due to the presence of high concentrations of benzene-related compounds, detection limits were elevated by a factor of 50 or more in many of the samples analyzed for VOCs (three of the 21 1992 samples, and 36 of the 70 Phase 2A samples). The manner in which the elevated detection limit data were utilized in calculating exposure point concentrations is discussed in the introductory text of Chapter 3 of this HHRA.

Table A-3C – Southern Basin Nearshore Sediments – Semivolatile Organic Compound Data. The data set in general is the same as for Table A-3A. However, the 1992 data include one additional sample (a 0 to 2-cm sample collected in 9/92), for a total of 38 samples analyzed for SVOCs; the SVOC parameters included in the 1992 data set vary within the data set and do not fully coincide with the parameters reported in the Phase 2A data.

The Phase 2A data include full SVOC analysis on the 70 samples analyzed for metals (as discussed for Table A-3A, above). The 14 samples analyzed for methylmercury were not analyzed for SVOCs. The Phase 2A samples were analyzed for HCB by both GC/MS and GC/ECD (except for one sample, SF0142), although seven of the GC/ECD HCB results were rejected as not usable, and no value is reported or included on Table A-3C.

There are several PAHs with high concentrations and as a result detection limits were elevated in some of the samples analyzed for SVOCs. The use of these samples in calculating exposure point concentrations is discussed in the introductory text of Chapter 3 of this HHRA.

Table A-3D – Southern Basin Nearshore Sediments – Pesticide Data. The sample set for pesticide data is similar to that for other organic analytes (i.e., Tables A-3B and A-3C); however, the 1992 data set for pesticides is limited to 18 samples, which correspond to the 18 1992 samples that were analyzed for the full suite of VOCs. None of the 1992 data were rejected during data validation. Detection limits for most pesticides in the 1992 data are about 5 µg/kg.

The pesticide data set for 2000 (Phase 2A) consists of 69 samples (the same as analyzed for HCB). A significant portion (about 31 percent of the Phase 2A data, representing about 25 percent of the complete southern basin sediment pesticide data set) of the pesticide data were rejected by Honeywell's data validator; for some pesticides, only about 40 valid data points exist. There are,

however, no detection limit issues for the pesticide data; detection limits are typically lower than those for the 1992 data (typically about 1 µg/kg for all pesticides except toxaphene).

Table A-3E – Southern Basin Nearshore Sediments – PCB Data. The sample data set for PCBs is similar to that for the other organic fractions; however, the Phase 2A data set is somewhat larger, comprised of 78 samples (including one duplicate). The PCBs reported in the Phase 2A data include Aroclor 1268 (which is a higher molecular weight Aroclor not included in the standard CLP or SW-846 PCB analyte list).

The 1992 data set consists of 37 samples, all of which were analyzed for the seven typical Aroclors (Aroclors 1016 through 1260).

Table A-3F – Southern Basin Nearshore Sediments – PCDD/PCDF Data. The PCDD/PCDF data set consists of 18 samples (nine pairs of 0 to 15-cm and 15 to 30-cm intervals) collected between July 20 and August 10, 2000 during the Phase 2A investigation. No identified field duplicates are included in the 18 southern basin nearshore analyses reported.

A.4.4 Table A-4 – Northern Basin Wetland Sediment Sample Data

The two lake-connected wetlands (SYW-6 and SYW-10) adjacent to the northern basin are tabulated separately. Data included in Table A-4A (SYW-6) consist of samples collected by Honeywell/Exponent in August 2000 as part of the Phase 2A investigation and by NYSDEC/TAMS in May 2002 as part of the supplemental sampling of Wetland SYW-6. All samples in Table A-4B (SYW-10) were collected during the Phase 2A investigation in 2000. The sample locations for these data are shown on Figure A-4.

The northern basin wetland sediment samples were not analyzed for methylmercury; mercury data included in these tables are for "total mercury." As described in Chapter 5, Section 5.2.1.12 of the HHRA, it has been assumed that the total mercury shown on Table A-4 consists of 1 percent methylmercury and 99 percent inorganic mercury.

Table A-4A – Northern Basin Wetland SYW-6 Sediment Sample Data (All Parameters). The data consist of 18 samples from nine locations (two depth intervals at each location) analyzed for inorganics and SVOCs (including HCB) and eight samples from four locations analyzed for pesticides, PCBs, and PCDD/PCDFs. Eight samples were collected from four locations in Wetland SYW-6 in 2000 and 10 samples were collected in 2002 at five locations adjacent to 2000 Station S375 (see Figure A-4). Samples from Wetland SYW-6 were not analyzed for VOCs and the 2002 samples were only analyzed for inorganics and SVOCs. Analysis was also performed for other parameters such as TOC and grain size, but those data are not used in the HHRA.

Table A-4B – Northern Basin Wetland SYW-10 Sediment Sample Data (All Parameters). The data consist of eight samples, plus a field duplicate (S379 D2), analyzed for inorganics, VOCs, SVOCs (including HCB), pesticides, PCBs, and PCDD/PCDFs. Analysis was also performed for other parameters such as TOC and grain size, but those data are not used in the HHRA.

A.4.5 Table A-5 – Southern Basin Wetland Sediment Sample Data

The two southern basin wetlands (SYW-12 and SYW-19) are tabulated separately. Due to differences in the degree and type of chemical contamination in these wetlands, they are assessed separately in the HHRA (see discussion in text). All included samples were collected in August 2000 as part of the Phase 2A investigation. The sample locations for these data are shown on Figure A-4.

The southern basin wetland sediment samples were not analyzed for methylmercury; mercury data included in these tables are for "total mercury." As described in Chapter 5, Section 5.2.1.12 of the HHRA, it has been assumed that the total mercury shown on Table A-5 consists of 1 percent methylmercury and 99 percent inorganic mercury.

Table A-5A – Southern Basin Wetland SYW-12 Sediment Sample Data (All Parameters). The data consist of eight samples analyzed for inorganics, VOCs, SVOCs (including HCB), pesticides, and PCBs. Wetland SYW-12 samples were not analyzed for PCDD/PCDFs. Analysis was also performed for other parameters such as TOC and grain size, but those data are not used in the HHRA.

Table A-5B – Southern Basin Wetland SYW-19 Sediment Sample Data (All Parameters). The data consist of eight samples, plus a field duplicate (S385 D2), analyzed for inorganics, VOCs, SVOCs (including HCB), pesticides, PCBs, and PCDD/PCDFs. Analysis was also performed for other parameters such as TOC and grain size, but those data are not used in the HHRA.

A.4.6 Table A-6 – Dredge Spoils Surface Soil Data

This table presents data included in the evaluation of surface soil exposures such as to trespassers. As discussed in greater detail in the text, the sample depths included in this data set vary, based on the available sample data. The data consist of eight samples, all of which were analyzed for inorganics, SVOCs, and PCBs. Four of the eight samples were also analyzed for PCDD/PCDFs. Dredge spoils surface soils were not analyzed for VOCs or pesticides. The sample locations for these data are shown on Figure A-4. Dredge spoils samples were analyzed for "total mercury" but were not analyzed for methylmercury. For the HHRA, all mercury detected in the dredge spoils samples is assumed to be inorganic mercury.

A.4.7 Table A-7 – Dredge Spoils Soil Data – All Depths

This table presents all the dredge spoil exposure area data, including the data presented previously in Table A-6. These data are used for the construction or utility worker exposure scenario. As discussed in greater detail in the HHRA text, the sample depths included in this data set vary, based on the available sample data; samples from borings with maximum depths up to nearly 12 ft below grade (357 cm) are included in this table. The data consist of 40 samples (plus three field duplicates) from eight borings. All the dredge spoils area samples were analyzed for inorganics, SVOCs (except two samples from S433), and PCBs (except one sample from S433). About half of the samples (19 samples from four borings, plus two field duplicates) were also analyzed for PCDD/PCDFs. Dredge

spoils soils were not analyzed for VOCs, and only one sample (S438 0-61 D1) was analyzed for pesticides.

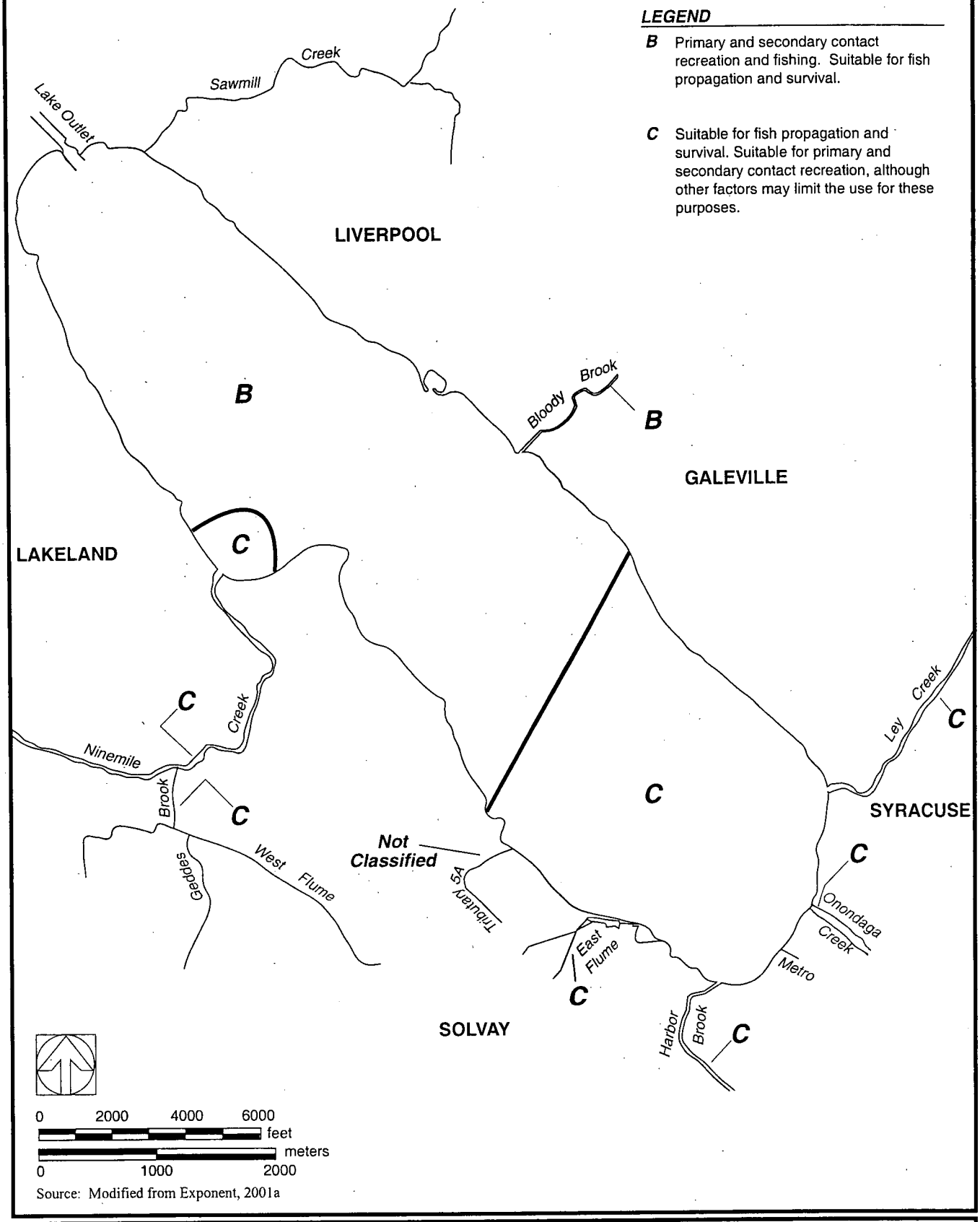
A.4.8 Table A-8 – Onondaga Lake Surface Water Data

Water samples from multiple depths have been collected from Onondaga Lake. These sample locations are shown on Figure A-6. However, as discussed in the text of the HHRA, only water samples collected from the top 3 m (about 10 ft) of the lake were utilized in the HHRA, and only those data are included in the tabulation presented in this appendix. Based on these criteria, one nearshore sample location (S402) from the porewater study in 2000 was also included (this was a surface water sample collected from just above the sediment/water interface).

Table A-8A – Onondaga Lake Surface Water Inorganic and Organometallic Data. This data set includes a total of 79 water samples (excluding duplicates). It includes data from 1992 (41 samples, plus duplicates); 1996 (four samples); 1999 (33 samples); and 2000 (one sample). The analyses varied between events and within events. The 1992 data set includes the largest suite of inorganic analytes, as it has 32 to 37 analyses for each of five different forms of mercury (methylmercury, dimethyl mercury, elemental mercury, ionic mercury, and total mercury) and 11 other metals (cadmium, calcium, chromium, copper, iron, lead, magnesium, manganese, nickel, sodium, and zinc). The four 1996 samples were analyzed for total mercury and methylmercury only. The 1999 data set includes 11 analyses for chromium, lead, and nickel; 24 for iron; and 33 for manganese, total mercury (total), and methylmercury. The 2000 sample was analyzed for iron, manganese, total mercury, and methylmercury.

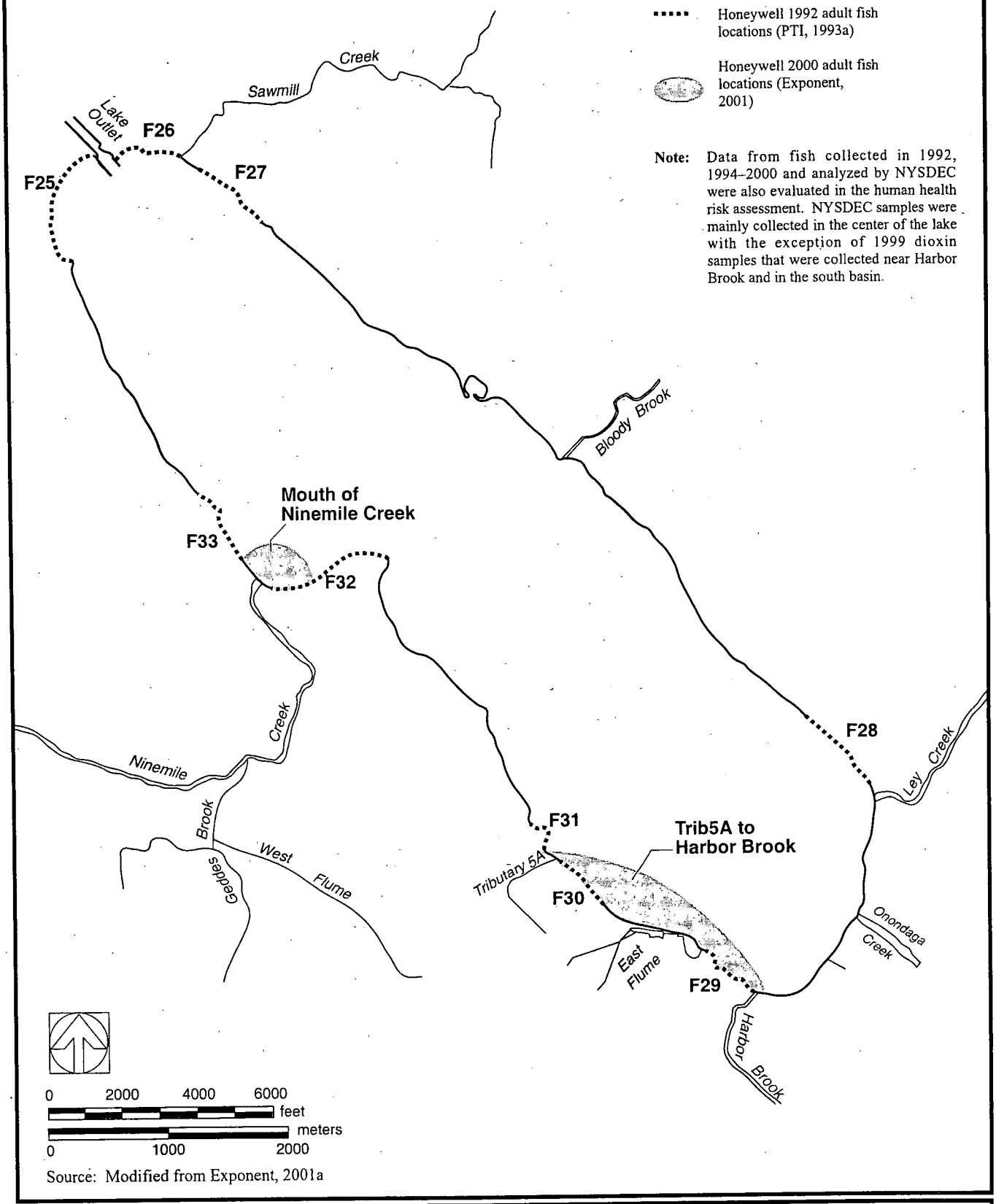
Table A-8B – Onondaga Lake Surface Water Organic Data. Surface water organic data in this table include both VOCs and SVOCs; there are no surface water data in the top 3 m for pesticides, PCBs, or dioxins/furans. This data set is comprised of 37 samples from 1992 (which were analyzed for benzene and related compounds, including chlorobenzenes) and 11 samples from 1999 (plus one duplicate), which were analyzed for TCL VOCs and SVOCs. None of the lake surface water samples collected in 2000 were analyzed for organics. The 1992 samples were collected at the surface (depth reported as 0 m) and depths of 1 m (16 samples) and 3 m (16 samples). The 1999 lake surface water samples were collected from depths of 0 and 1 m.

Figures



Source: Modified from Exponent, 2001a

Figure A-1. New York State Water Quality Classifications within and around Onondaga Lake



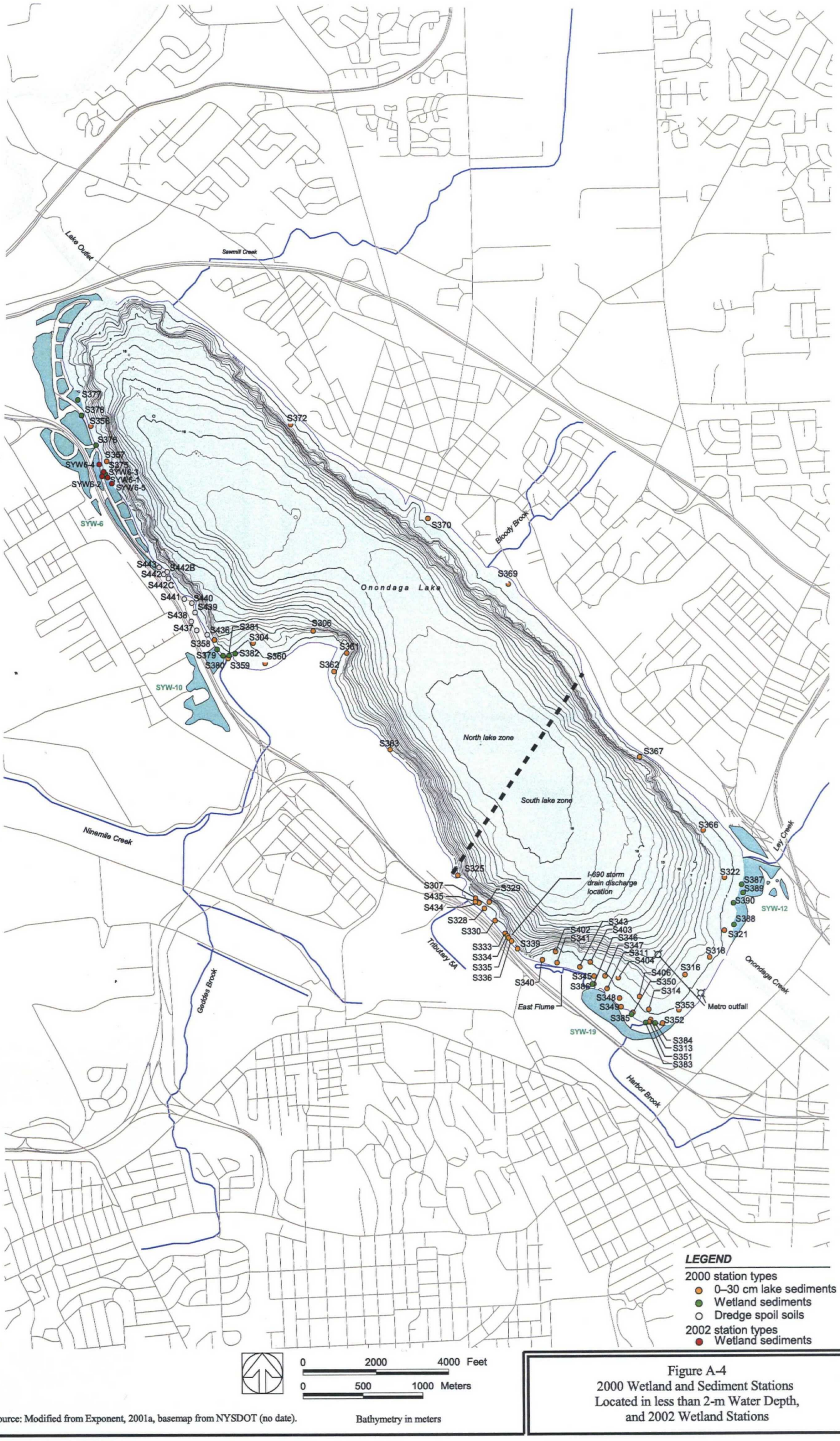
Source: Modified from Exponent, 2001a

Figure A-2. Collection Locations for Fish Samples Analyzed in the Onondaga Lake Human Health Risk Assessment

Source: Exponent, 2001a, basemap from NYSDOT (no date).

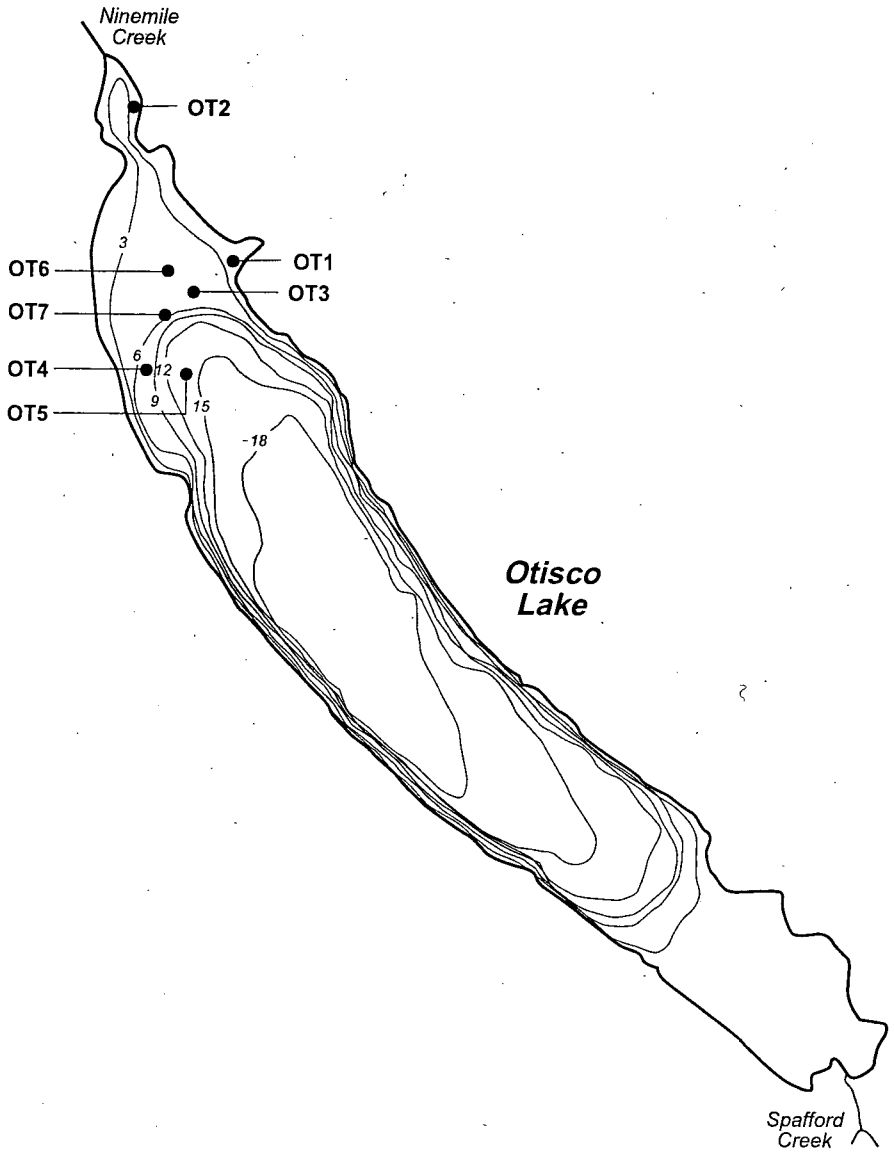
Bathymetry in meters

Figure A-3. 1992 Sediment stations located in less than 2-m water depth



Source: Modified from Exponent, 2001a, basemap from NYSDOT (no date).

Figure A-4
2000 Wetland and Sediment Stations
Located in less than 2-m Water Depth,
and 2002 Wetland Stations



Contours in meters

0 2000 4000 6000 feet

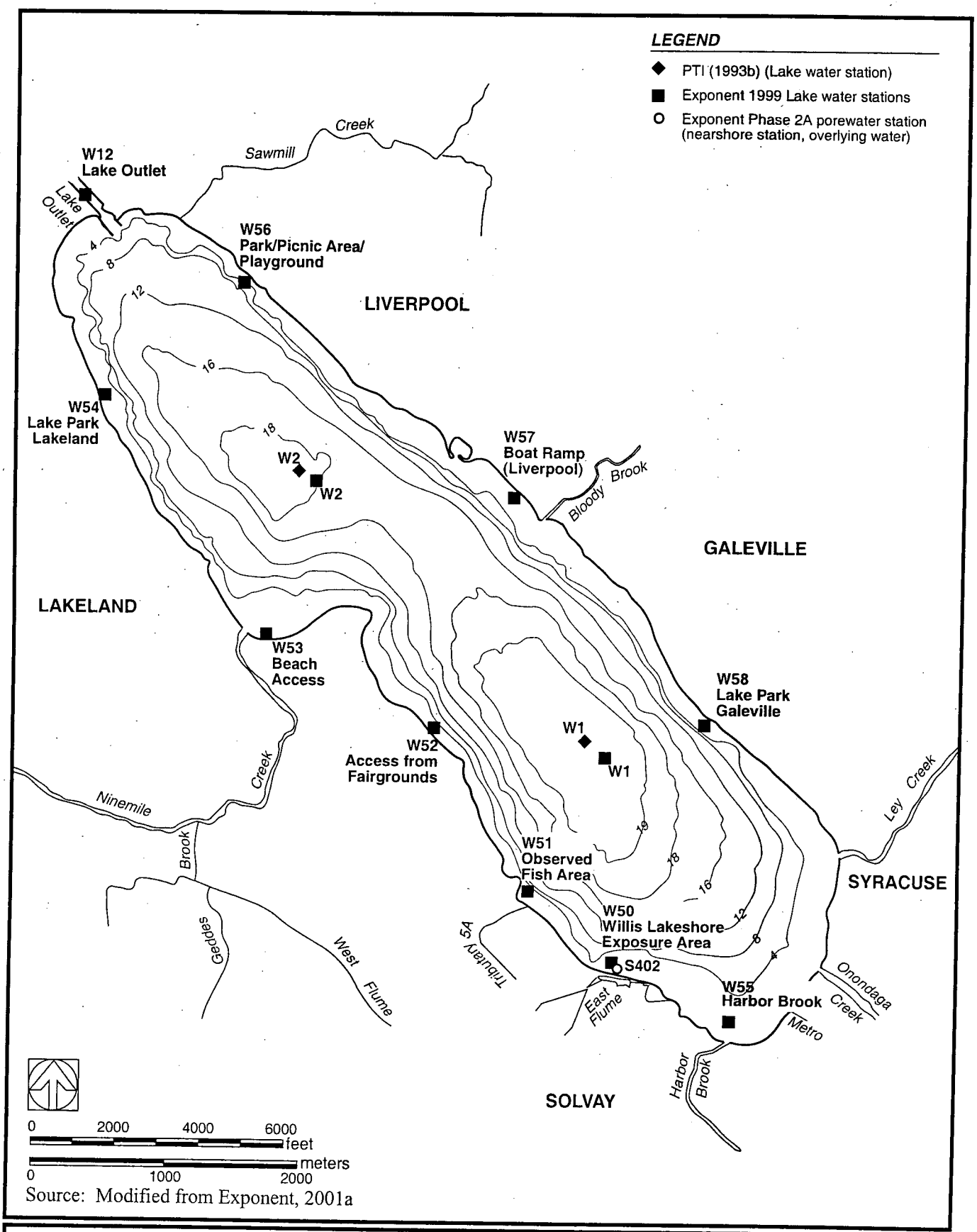
0 1000 2000 meters

Source: Exponent, 2001a

LEGEND

● Station location

Figure A-5. Locations of surface sediment stations in Otisco Lake



Source: Modified from Exponent, 2001a

Figure A-6. Approximate Locations of Lake Water Stations Evaluated in the Onondaga Lake Human Health Risk Assessment

Table A-1A. Onondaga Lake Fish Fillets – Mercury Data

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
NYSDEC-1992	1964	SO12	7/6/1992	SMB		11.6	5		0.66	0.66
NYSDEC-1992	1995	SO12	7/7/1992	SMB		11.6	5		0.60	0.60
NYSDEC-1992	1996	SO12	7/7/1992	SMB		11.6	4		0.40	0.40
NYSDEC-1992	1997	SO12	7/7/1992	SMB		11.7	5		0.74	0.74
NYSDEC-1992	1998	SO12	7/7/1992	SMB		11.7	5		0.70	0.70
NYSDEC-1992	1965	SO12	7/6/1992	SMB		11.8	5		0.54	0.54
NYSDEC-1992	1999	SO12	7/7/1992	SMB		11.9	5		1.21	1.21
NYSDEC-1992	2000	SO12	7/7/1992	SMB		11.9	5		0.54	0.54
NYSDEC-1992	2001	SO12	7/7/1992	SMB		11.9	5		0.75	0.75
NYSDEC-1992	2002	SO12	7/7/1992	SMB		11.9	5		0.88	0.88
NYSDEC-1992	1966	SO12	7/6/1992	SMB		12.2	NA		0.77	0.77
NYSDEC-1992	2003	SO12	7/7/1992	SMB		12.2	5		0.78	0.78
NYSDEC-1992	1967	SO12	7/6/1992	SMB		12.3	5		0.79	0.79
NYSDEC-1992	1968	SO12	7/6/1992	SMB		12.4	5		0.86	0.86
NYSDEC-1992	2004	SO12	7/7/1992	SMB		12.4	5		0.76	0.76
NYSDEC-1992	2005	SO12	7/7/1992	SMB		12.4	6		0.96	0.96
NYSDEC-1992	1969	SO12	7/6/1992	SMB		12.5	5		0.65	0.65
NYSDEC-1992	1970	SO12	7/6/1992	SMB		12.6	5		0.70	0.70
NYSDEC-1992	1971	SO12	7/6/1992	SMB		12.6	5		0.86	0.86
NYSDEC-1992	2006	SO12	7/7/1992	SMB		13.0	5		0.70	0.70
NYSDEC-1992	2007	SO12	7/7/1992	SMB		13.0	6		0.82	0.82
NYSDEC-1992	1972	SO12	7/6/1992	SMB		13.3	6		1.01	1.01
NYSDEC-1992	1973	SO12	7/6/1992	SMB		13.6	6		0.73	0.73
NYSDEC-1992	1974	SO12	7/6/1992	SMB		13.6	6		0.93	0.93
NYSDEC-1992	1975	SO12	7/6/1992	SMB		13.8	6		0.63	0.63
NYSDEC-1992	1977	SO12	7/6/1992	SMB		13.9	6		1.06	1.06
NYSDEC-1992	1978	SO12	7/6/1992	SMB		14.8	NA		2.88	2.88
NYSDEC-1992	1980	SO12	7/6/1992	SMB		16.3	7		0.66	0.66
NYSDEC-1992	2008	SO12	7/7/1992	SMB		17.2	9		2.10	2.10
NYSDEC-1992	2011	SO12	7/7/1992	SMB		17.9	10		2.62	2.62
NYSDEC-1992	2012	SO12	7/7/1992	WALLEYE		17.1	4		1.13	1.13
NYSDEC-1992	2013	SO12	7/7/1992	WALLEYE		18.1	9		1.50	1.50

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
NYSDEC-1992	2014	SO12	7/7/1992	WALLEYE		18.8	5		2.11	2.11
NYSDEC-1992	2013	SO12	7/7/1992	WALLEYE		18.1	9		1.50	1.50
NYSDEC-1992	2014	SO12	7/7/1992	WALLEYE		18.8	5		2.11	2.11
NYSDEC-1992	2015	SO12	7/7/1992	WALLEYE		19.5	5		2.29	2.29
NYSDEC-1992	2016	SO12	7/7/1992	WALLEYE		20.0	6		2.42	2.42
NYSDEC-1992	2017	SO12	7/7/1992	WALLEYE		20.7	6		1.15	1.15
NYSDEC-1992	2018	SO12	7/7/1992	WALLEYE		21.3	7		1.19	1.19
NYSDEC-1992	2019	SO12	7/7/1992	WALLEYE		21.7	6		3.39	3.39
NYSDEC-1992	2020	SO12	7/7/1992	WALLEYE		22.5	9		2.69	2.69
NYSDEC-1992	2021	SO12	7/7/1992	WALLEYE		26.2	8		5.07	5.07
NYSDEC-1992	2023	SO12	7/12/1992	WPERCH		9.1	NA		0.19	0.19
NYSDEC-1992	2024	SO12	7/12/1992	WPERCH		7.7	NA		0.70	0.70
O-FACCUM	FB0034	F25	8/5/1992	BLUEGILL		6.3	4	0.22 *J*		0.22 *J*
O-FACCUM	FB0035	F25	8/5/1992	BLUEGILL		6.9	4	0.86 *J*		0.86 *J*
O-FACCUM	FB0036	F27	8/5/1992	BLUEGILL		7.3	4	0.22 *J*		0.22 *J*
O-FACCUM	FB0037	F27	8/5/1992	BLUEGILL		6.7	4	0.15 *J*		0.15 *J*
O-FACCUM	FB0051	F26	8/5/1992	BLUEGILL		6.7	5	0.21 *J*		0.21 *J*
O-FACCUM	FB0055	F25	8/6/1992	BLUEGILL		7.1	5	0.16		0.16
O-FACCUM	FB0056	F25	8/6/1992	BLUEGILL		7.3	5	0.13 *J*		0.13 *J*
O-FACCUM	FB0057	F25	8/6/1992	BLUEGILL		6.9	5	0.20 *J*		0.20 *J*
O-FACCUM	FB0058	F25	8/6/1992	BLUEGILL		5.9	5	0.05	0.06 [1]	0.06
O-FACCUM	FB0059	F25	8/6/1992	BLUEGILL		6.7	5	0.38 *J*		0.38 *J*
O-FACCUM	FB0104	F33	8/12/1992	BLUEGILL		6.0	4	0.05		0.05
O-FACCUM	FB0105	F33	8/12/1992	BLUEGILL		6.8	5	0.28 *J*		0.28 *J*
O-FACCUM	FB0106	F33	8/12/1992	BLUEGILL		6.8	4	0.26 *J*	0.267 [1]	0.27 *J*
O-FACCUM	FB0107	F33	8/12/1992	BLUEGILL		6.7	5	0.21 *J*		0.21 *J*
O-FACCUM	FB0119	F30	8/12/1992	BLUEGILL		7.1	5	0.16	0.17 [1]	0.17
O-FACCUM	FB0120	F30	8/12/1992	BLUEGILL		6.1	4	0.25 *J*		0.25 *J*
O-FACCUM	FB0121	F30	8/12/1992	BLUEGILL		6.8	4	0.47 *J*		0.47 *J*
O-FACCUM	FB0131	F32	8/14/1992	BLUEGILL		5.9	4	0.11		0.11
O-FACCUM	FB0142	F32	8/18/1992	BLUEGILL		7.3	7	0.84 *J*		0.84 *J*
O-FACCUM	FB0143	F32	8/18/1992	BLUEGILL		7.3	7	0.92 *J*		0.92 *J*

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
O-FACCUM	FB0144	F32	8/18/1992	BLUEGILL		6.4	4	0.14		0.14
O-FACCUM	FB0145	F32	8/18/1992	BLUEGILL		NA	NA	0.34 *J*		0.34 *J*
O-FACCUM	FB0187	F30	9/4/1992	BLUEGILL		NA	NA	0.23		0.23
O-FACCUM	FB0188	F30	9/4/1992	BLUEGILL		6.2	5	0.51 *J*		0.51 *J*
O-FACCUM	FB0189	F30	9/4/1992	BLUEGILL		7.4	5	0.53 *J*		0.53 *J*
O-FACCUM	FB0190	F30	9/4/1992	BLUEGILL		7.2	4	0.42		0.42
O-FACCUM	FB0199	F30	9/8/1992	BLUEGILL		6.9	4	0.32		0.32
O-FACCUM	FB0200	F30	9/8/1992	BLUEGILL		6.6	4	0.28 *J*		0.28 *J*
O-FACCUM	FB0219	F30	9/16/1992	BLUEGILL		7.2	5	0.34		0.34
O-FACCUM	FB0019	F25	8/4/1992	CARP		20.7	7	0.04		0.04
O-FACCUM	FB0062	F27	8/6/1992	CARP		21.7	NA	0.17 *J*	0.182 [1]	0.18 *J*
O-FACCUM	FB0109	F30	8/12/1992	CARP		20.8	8	0.40 *J*		0.40 *J*
O-FACCUM	FB0147	F32	8/18/1992	CARP		20.4	7	0.28		0.28
O-FACCUM	FB0167	F30+	8/22/1992	CARP		21.6	8	0.23 *J*	0.259 [1]	0.26 *J*
O-FACCUM	FB0168	F30+	8/22/1992	CARP		23.2	9	0.48 *J*		0.48 *J*
O-FACCUM	FB0169	F30+	8/22/1992	CARP		23.1	9	0.70 *J*		0.70 *J*
O-FACCUM	FB0170	F30+	8/22/1992	CARP		23.2	8	0.55		0.55
O-FACCUM	FB0171	F30+	8/22/1992	CARP		23.1	9	0.72		0.72
O-FACCUM	FB0172	F30+	8/22/1992	CARP		21.8	8	0.35		0.35
O-FACCUM	FB0173	F30+	8/22/1992	CARP		20.6	7	0.63		0.63
O-FACCUM	FB0174	F30+	8/22/1992	CARP		23.1	9	0.80 *J*		0.80 *J*
O-FACCUM	FB0175	F25	8/23/1992	CARP		22.8	NA	0.52 *J*		0.52 *J*
O-FACCUM	FB0179	F25	9/2/1992	CARP		20.9	NA	0.33		0.33
O-FACCUM	FB0180	F25	9/2/1992	CARP		21.9	9	0.50		0.50
O-FACCUM	FB0196	F25	9/4/1992	CARP		22.5	7	0.29 *J*		0.29 *J*
O-FACCUM	FB0203	F25	9/9/1992	CARP		22.0	8	0.31 *J*		0.31 *J*
O-FACCUM	FB0204	F25	9/11/1992	CARP		19.9	7	0.19 *J*		0.19 *J*
O-FACCUM	FB0217	F25	9/15/1992	CARP		23.2	9	0.09 *J*		0.09 *J*
O-FACCUM	FB0223	F25	9/16/1992	CARP		19.8	7	0.29		0.29
O-FACCUM	FB0278	SOUTHEND	10/6/1992	CATFISH		16.8	11.0		0.89	0.89
O-FACCUM	FB0072	F25	8/7/1992	CATFISH		17.5	10	0.56		0.56
O-FACCUM	FB0101	F28	8/11/1992	CATFISH		17.0	10	0.77 *J*	0.792 [1]	0.79 *J*

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
O-FACCUM	FB0102	F25	8/12/1992	CATFISH		15.7	10	1.03 *J*		1.03 *J*
O-FACCUM	FB0108	F30	8/12/1992	CATFISH		17.4	12	0.53 *J*		0.53 *J*
O-FACCUM	FB0128	F30	8/12/1992	CATFISH		16.5	10	0.74 *J*		0.74 *J*
O-FACCUM	FB0141	F25	8/17/1992	CATFISH		15.9	8	0.81	0.82 [1]	0.82
O-FACCUM	FB0177	F25	9/2/1992	CATFISH		14.2	7	0.86 *J*		0.86 *J*
O-FACCUM	FB0178	F25	9/2/1992	CATFISH		16.8	NA	0.47 *J*		0.47 *J*
O-FACCUM	FB0201	F25	9/9/1992	CATFISH		16.1	6	0.68 *J*		0.68 *J*
O-FACCUM	FB0202	F25	9/9/1992	CATFISH		15.2	10	0.86		0.86
O-FACCUM	FB0220	F25	9/16/1992	CATFISH		14.6	8	0.63 *J*		0.63 *J*
O-FACCUM	FB0221	F25	9/16/1992	CATFISH		14.6	5	0.75 *J*		0.75 *J*
O-FACCUM	FB0222	F25	9/16/1992	CATFISH		14.6	8	1.05		1.05
O-FACCUM	FB0283	F28	10/7/1992	CATFISH		17.3	NA	0.64 *J*		0.64 *J*
O-FACCUM	FB0284	F28	10/7/1992	CATFISH		16.4	NA	0.78		0.78
O-FACCUM	FB0285	F28	10/7/1992	CATFISH		20.7	8	0.68		0.68
O-FACCUM	FB0291	F28	10/9/1992	CATFISH		15.9	NA	0.92		0.92
O-FACCUM	FB0292	F28	10/9/1992	CATFISH		19.3	12	0.82 *J*		0.82 *J*
O-FACCUM	FB0293	F28	10/9/1992	CATFISH		18.2	11	0.34 *J*	0.354 [1]	0.35 *J*
O-FACCUM	FB0294	F28	10/9/1992	CATFISH		18.1	11	0.66		0.66
O-FACCUM	FB0295	F28	10/9/1992	CATFISH		20.1	11	0.30		0.30
O-FACCUM	FB0017	F25	8/4/1992	SMB		11.5	4	0.46		0.46
O-FACCUM	FB0042	F26	8/5/1992	SMB		11.6	5	0.26 *J*		0.26 *J*
O-FACCUM	FB0040	F26	8/5/1992	SMB		11.7	5	0.70 *J*		0.70 *J*
O-FACCUM	FB0127	F30	8/12/1992	SMB		11.9	4	0.89 *J*		0.89 *J*
O-FACCUM	FB0198	F30	9/8/1992	SMB		11.9	NA	0.91		0.91
O-FACCUM	FB0276	SOUTHEND	10/6/1992	SMB		12.2	5.0		1.40	1.40
O-FACCUM	FB0033	F33	8/4/1992	SMB		12.6	5	0.94 *J*		0.94 *J*
O-FACCUM	FB0028	F33	8/4/1992	SMB		12.8	4	0.56		0.56
O-FACCUM	FB0043	F26	8/5/1992	SMB		12.8	6	0.49		0.49
O-FACCUM	FB0090	F28	8/11/1992	SMB		12.8	NA	0.70		0.70
O-FACCUM	FB0205	F30	9/11/1992	SMB		12.9	5	0.80 *J*		0.80 *J*
O-FACCUM	FB0206	F30	9/11/1992	SMB		13.0	NA	1.72		1.72
O-FACCUM	FB0018	F25	8/4/1992	SMB		13.1	6	0.90 *J*		0.90 *J*

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
O-FACCUM	FB0081	F30	8/10/1992	SMB		13.1	5	0.68		0.68
O-FACCUM	FB0031	F33	8/4/1992	SMB		13.5	6	0.71	0.72 [1]	0.72
O-FACCUM	FB0130	F30	8/13/1992	SMB		13.6	6	1.18 *J*		1.18 *J*
O-FACCUM	FB0016	F25	8/4/1992	SMB		13.8	6	0.91		0.91
O-FACCUM	FB0029	F33	8/4/1992	SMB		13.8	6	0.88		0.88
O-FACCUM	FB0133	F32	8/14/1992	SMB		13.8	6	0.63 *J*		0.63 *J*
O-FACCUM	FB0134	F32	8/14/1992	SMB		13.8	6	1.06 *J*		1.06 *J*
O-FACCUM	FB0027	F33	8/4/1992	SMB		14.0	7	1.20 *J*		1.20 *J*
O-FACCUM	FB0032	F33	8/4/1992	SMB		14.0	6	0.53		0.53
O-FACCUM	FB0030	F33	8/4/1992	SMB		14.2	7	0.64 *J*		0.64 *J*
O-FACCUM	FB0132	F32	8/14/1992	SMB		14.6	7	0.33		0.33
O-FACCUM	FB0038	F26	8/5/1992	SMB		15.6	9	0.67 *J*		0.67 *J*
O-FACCUM	FB0039	F26	8/5/1992	SMB		15.7	7	1.11	1.150 [1]	1.15
O-FACCUM	FB0044	F26	8/5/1992	SMB		16.1	9	0.89		0.89
O-FACCUM	FB0129	F25	8/13/1992	SMB				0.72 *J*		0.72 *J*
O-FACCUM	FB0277	SOUTHEND	10/6/1992	WALLEYE		17.8	5.0		1.10	1.10
O-FACCUM	FB0088	F28	8/11/1992	WALLEYE		19.8	6	2.26	2.284 [1]	2.28
O-FACCUM	FB0089	F28	8/11/1992	WALLEYE		19.3	5	0.30		0.30
O-FACCUM	FB0161	F25	8/19/1992	WALLEYE		18.8	5	1.90		1.90
O-FACCUM	FB0193	F25	9/4/1992	WALLEYE		19.6	5	3.17 *J*		3.17 *J*
O-FACCUM	FB0194	F25	9/4/1992	WALLEYE		19.4	5	2.49		2.49
O-FACCUM	FB0195	F25	9/4/1992	WALLEYE		18.4	6	1.59	1.6 [1]	1.60
O-FACCUM	FB0208	F25	9/11/1992	WALLEYE		17.4	5	1.13		1.13
O-FACCUM	FB0213	F25	9/14/1992	WALLEYE		20.2	5	1.43 *J*		1.43 *J*
O-FACCUM	FB0214	F25	9/14/1992	WALLEYE		17.3	5	2.12		2.12
O-FACCUM	FB0224	F25	9/16/1992	WALLEYE		18.5	6	1.31		1.31
O-FACCUM	FB0279	F28	10/7/1992	WALLEYE		23.0	8	1.53		1.53
O-FACCUM	FB0280	F28	10/7/1992	WALLEYE		20.1	6	1.96		1.96
O-FACCUM	FB0281	F28	10/7/1992	WALLEYE		21.3	7	2.32 *J*		2.32 *J*
O-FACCUM	FB0282	F28	10/7/1992	WALLEYE		16.4	4	0.33 *J*		0.33 *J*
O-FACCUM	FB0286	F28	10/9/1992	WALLEYE		18.1	5	1.01 *J*		1.01 *J*
O-FACCUM	FB0287	F28	10/9/1992	WALLEYE		22.2	6	2.41 *J*		2.41 *J*

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
O-FACCUM	FB0288	F28	10/9/1992	WALLEYE		18.7	5	0.69 *J*		0.69 *J*
O-FACCUM	FB0289	F28	10/9/1992	WALLEYE		18.4	5	1.20		1.20
O-FACCUM	FB0290	F28	10/9/1992	WALLEYE		16.7	4	0.58 *J*	0.590 [1]	0.59 *J*
O-FACCUM	FB0296	F25	10/10/1992	WALLEYE		18.6	NA	1.09		1.09
O-FACCUM	FB0275	SOUTHEND	10/6/1992	WPERCH		8.1	4.0		1.20	1.20
O-FACCUM	FB0020	F25	8/4/1992	WPERCH		8.1	3	1.11 *J*		1.11 *J*
O-FACCUM	FB0021	F25	8/4/1992	WPERCH		8.3	4	0.68 *J*		0.68 *J*
O-FACCUM	FB0022	F25	8/4/1992	WPERCH		8.9	4	0.93		0.93
O-FACCUM	FB0023	F25	8/4/1992	WPERCH		8.0	4	0.97 *J*	0.979 [1]	0.98 *J*
O-FACCUM	FB0024	F25	8/4/1992	WPERCH		8.2	5	0.35 *J*		0.35 *J*
O-FACCUM	FB0025	F25	8/4/1992	WPERCH		8.9	5	0.20		0.20
O-FACCUM	FB0026	F25	8/4/1992	WPERCH		8.5	4	1.07 *J*		1.07 *J*
O-FACCUM	FB0047	F26	8/5/1992	WPERCH		9.2	4	1.48		1.48
O-FACCUM	FB0048	F26	8/5/1992	WPERCH		8.9	4	1.23		1.23
O-FACCUM	FB0049	F26	8/5/1992	WPERCH		8.9	5	0.63		0.63
O-FACCUM	FB0079	F30	8/10/1992	WPERCH		8.6	6	1.05 *J*		1.05 *J*
O-FACCUM	FB0085	F28	8/11/1992	WPERCH		7.9	5	0.91 *J*	0.928 [1]	0.93 *J*
O-FACCUM	FB0086	F28	8/11/1992	WPERCH		8.1	6	1.61 *J*		1.61 *J*
O-FACCUM	FB0087	F28	8/11/1992	WPERCH		8.7	NA	1.19 *J*		1.19 *J*
O-FACCUM	FB0110	F30	8/12/1992	WPERCH		8.9	4	1.43 *J*	1.468 [1]	1.47 *J*
O-FACCUM	FB0111	F30	8/12/1992	WPERCH		8.1	6	0.73		0.73
O-FACCUM	FB0112	F30	8/12/1992	WPERCH		9.1	5	1.83		1.83
O-FACCUM	FB0113	F30	8/12/1992	WPERCH		8.3	5	2.04 *J*		2.04 *J*
O-FACCUM	FB0215	F28	9/14/1992	WPERCH		8.3	4	1.58 *J*		1.58 *J*
O-FACCUM	FB0216	F28	9/14/1992	WPERCH		8.2	4	1.62		1.62
ONONMET	2294	SO12	7/5/1994	SMB		12.0	3		0.67	0.67
ONONMET	2315	SO12	7/7/1994	SMB		12.0	NA		0.80	0.80
ONONMET	2324	SO12	7/13/1994	SMB		14.0	6		0.78	0.78
ONONMET	2326	SO12	7/13/1994	SMB		14.0	6		0.99	0.99
ONONMET	2312	SO12	7/7/1994	SMB		11.5	3		0.62	0.62
ONONMET	2313	SO12	7/7/1994	SMB		11.5	3		0.61	0.61
ONONMET	2314	SO12	7/7/1994	SMB		11.6	3		0.62	0.62

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
ONONMET	2292	SO12	7/5/1994	SMB		11.7	4		0.63	0.63
ONONMET	2293	SO12	7/5/1994	SMB		11.8	4		0.63	0.63
ONONMET	2295	SO12	7/5/1994	SMB		12.1	4		0.65	0.65
ONONMET	2316	SO12	7/7/1994	SMB		12.2	5		0.66	0.66
ONONMET	2322	SO12	7/13/1994	SMB		12.8	8		0.84	0.84
ONONMET	2296	SO12	7/5/1994	SMB		13.1	4		0.77	0.77
ONONMET	2317	SO12	7/7/1994	SMB		13.6	5		0.72	0.72
ONONMET	2323	SO12	7/13/1994	SMB		13.9	5		0.95	0.95
ONONMET	2328	SO12	7/13/1994	SMB		14.1	6		1.00	1.00
ONONMET	2297	SO12	7/5/1994	SMB		14.2	5		0.77	0.77
ONONMET	2329	SO12	7/13/1994	SMB		14.2	5		0.89	0.89
ONONMET	2331	SO12	7/13/1994	SMB		14.2	6		0.87	0.87
ONONMET	2332	SO12	7/13/1994	SMB		14.3	5		0.93	0.93
ONONMET	2318	SO12	7/7/1994	SMB		14.4	5		0.84	0.84
ONONMET	2333	SO12	7/13/1994	SMB		14.4	7		0.82	0.82
ONONMET	2319	SO12	7/7/1994	SMB		14.6	5		0.80	0.80
ONONMET	2335	SO12	7/13/1994	SMB		14.6	6		0.87	0.87
ONONMET	2336	SO12	7/13/1994	SMB		14.7	7		1.01	1.01
ONONMET	2337	SO12	7/13/1994	SMB		14.7	7		1.04	1.04
ONONMET	2339	SO12	7/13/1994	SMB		15.4	7		1.20	1.20
ONONMET	2298	SO12	7/5/1994	SMB		15.9	7		0.93	0.93
ONONMET	2340	SO12	7/13/1994	SMB		16.1	8		1.43	1.43
ONONMET	2321	SO12	7/7/1994	SMB		17.4	8		2.30	2.30
ONONMET	2341	SO12	7/13/1994	SMB		18.6	7		1.10	1.10
ONONMET	2343	SO12	7/13/1994	SMB		19.2	8		1.01	1.01
O-STATE	ST00238	LAKE	7/10/1995	SMB		11.6	4		0.58	0.58
O-STATE	ST00183	LAKE	7/11/1995	SMB		11.8	4		0.99	0.99
O-STATE	ST00230	LAKE	7/10/1995	SMB		11.9	4		0.72	0.72
O-STATE	ST00227	LAKE	7/10/1995	SMB		12.1	4		0.65	0.65
O-STATE	ST00198	LAKE	7/12/1995	SMB		12.3	3		0.83	0.83
O-STATE	ST00180	LAKE	7/11/1995	SMB		12.4	4		0.85	0.85
O-STATE	ST00189	LAKE	7/11/1995	SMB		12.4	5		0.97	0.97

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
O-STATE	ST00184	LAKE	7/11/1995	SMB		12.6	4		0.85	0.85
O-STATE	ST00200	LAKE	7/12/1995	SMB		12.6	3		1.12	1.12
O-STATE	ST00228	LAKE	7/10/1995	SMB		12.7	4		0.96	0.96
O-STATE	ST00152	LAKE	7/12/1995	SMB		13.3	3		0.84	0.84
O-STATE	ST00176	LAKE	7/11/1995	SMB		13.8	4		0.84	0.84
O-STATE	ST00237	LAKE	7/10/1995	SMB		13.9	6		1.20	1.20
O-STATE	ST00197	LAKE	7/12/1995	SMB		13.9	5		0.99	0.99
O-STATE	ST00185	LAKE	7/11/1995	SMB		14.2	6		0.86	0.86
O-STATE	ST00300	LAKE	7/11/1995	SMB		14.2	3		1.71	1.71
O-STATE	ST00223	LAKE	7/10/1995	SMB		14.9	4		0.83	0.83
O-STATE	ST00186	LAKE	7/11/1995	SMB		15.0	7		1.09	1.09
O-STATE	ST00181	LAKE	7/11/1995	SMB		15.1	6		1.27	1.27
O-STATE	ST00298	LAKE	7/11/1995	SMB		15.4	4		1.06	1.06
O-STATE	ST00187	LAKE	7/11/1995	SMB		15.6	7		1.05	1.05
O-STATE	ST00195	LAKE	7/12/1995	SMB		15.6	7		1.72	1.72
O-STATE	ST00229	LAKE	7/10/1995	SMB		15.7	6		1.24	1.24
O-STATE	ST00226	LAKE	7/10/1995	SMB		15.7	6		1.57	1.57
O-STATE	ST00235	LAKE	7/10/1995	SMB		15.7	6		1.47	1.47
O-STATE	ST00233	LAKE	7/10/1995	SMB		15.8	6		1.23	1.23
O-STATE	ST00296	LAKE	7/11/1995	SMB		15.9	8		1.17	1.17
O-STATE	ST00194	LAKE	7/12/1995	SMB		16.0	6		0.70	0.70
O-STATE	ST00299	LAKE	7/11/1995	SMB		16.0	5		1.25	1.25
O-STATE	ST00190	LAKE	7/11/1995	SMB		16.8	6		1.59	1.59
O-STATE	ST00297	LAKE	7/11/1995	SMB		17.3	9		1.56	1.56
O-STATE	ST00295	LAKE	7/11/1995	SMB		18.0	7		1.95	1.95
O-STATE	ST00224	LAKE	7/10/1995	SMB		19.5	6		1.30	1.30
O-STATE	ST00290	LAKE	7/11/1995	WALLEYE		16.5	4		1.66	1.66
O-STATE	ST00155	LAKE	7/12/1995	WALLEYE		16.6	3		0.78	0.78
O-STATE	ST00249	LAKE	7/11/1995	WALLEYE		17.0	3		1.36	1.36
O-STATE	ST00250	LAKE	7/11/1995	WALLEYE		17.3	3		1.68	1.68
O-STATE	ST00243	LAKE	7/11/1995	WALLEYE		17.3	3		1.15	1.15
O-STATE	ST00222	LAKE	7/10/1995	WALLEYE		17.6	4		1.25	1.25

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
O-STATE	ST00239	LAKE	7/11/1995	WALLEYE		17.7	4		1.85	1.85
O-STATE	ST00245	LAKE	7/11/1995	WALLEYE		18.1	5		1.65	1.65
O-STATE	ST00244	LAKE	7/11/1995	WALLEYE		18.3	4		1.18	1.18
O-STATE	ST00247	LAKE	7/11/1995	WALLEYE		18.3	5		1.37	1.37
O-STATE	ST00248	LAKE	7/11/1995	WALLEYE		18.5	5		2.11	2.11
O-STATE	ST00241	LAKE	7/11/1995	WALLEYE		18.9	4		1.89	1.89
O-STATE	ST00242	LAKE	7/11/1995	WALLEYE		18.9	4		1.46	1.46
O-STATE	ST00246	LAKE	7/11/1995	WALLEYE		18.9	5		1.98	1.98
O-STATE	ST00289	LAKE	7/11/1995	WALLEYE		19.6	5		3.18	3.18
O-STATE	ST00240	LAKE	7/11/1995	WALLEYE		19.7	5		2.26	2.26
O-STATE	ST00221	LAKE	7/10/1995	WALLEYE		21.7	6		2.18	2.18
O-STATE	ST00291	LAKE	7/11/1995	WALLEYE		22.1	6		3.33	3.33
O-STATE	ST00220	LAKE	7/10/1995	WALLEYE		22.7	7		1.95	1.95
O-STATE	ST00292	LAKE	7/11/1995	WPERCH		6.7	2		0.48	0.48
O-STATE	ST00214	LAKE	7/10/1995	WPERCH		8.0	5		1.07	1.07
O-STATE	ST00215	LAKE	7/10/1995	WPERCH		8.4	4		0.97	0.97
O-STATE	ST00218	LAKE	7/10/1995	WPERCH		8.5	4		0.95	0.95
O-STATE	ST00294	LAKE	7/11/1995	WPERCH		8.7	3		0.81	0.81
O-STATE	ST00202	LAKE	7/10/1995	WPERCH		8.7	4		1.52	1.52
O-STATE	ST00210	LAKE	7/10/1995	WPERCH		8.9	4		0.62	0.62
O-STATE	ST00211	LAKE	7/10/1995	WPERCH		8.9	5		1.37	1.37
O-STATE	ST00293	LAKE	7/11/1995	WPERCH		9.1	3		1.06	1.06
O-STATE	ST00206	LAKE	7/10/1995	WPERCH		9.1	5		0.83	0.83
O-STATE	ST00219	LAKE	7/10/1995	WPERCH		9.1	5		0.67	0.67
O-STATE	ST00201	LAKE	7/10/1995	WPERCH		9.3	7		1.24	1.24
O-STATE	ST00213	LAKE	7/10/1995	WPERCH		9.3	4		1.37	1.37
O-STATE	ST00209	LAKE	7/10/1995	WPERCH		9.4	6		1.35	1.35
O-STATE	ST00205	LAKE	7/10/1995	WPERCH		9.5	5		0.98	0.98
O-STATE	ST00207	LAKE	7/10/1995	WPERCH		9.5	5		1.36	1.36
O-STATE	ST00217	LAKE	7/10/1995	WPERCH		9.5	6		1.63	1.63
O-STATE	ST00204	LAKE	7/10/1995	WPERCH		9.6	4		1.56	1.56
O-STATE	ST00216	LAKE	7/10/1995	WPERCH		9.6	7		1.29	1.29

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
O-STATE	ST00212	LAKE	7/10/1995	WPERCH		10.6	5		1.23	1.23
ONLK96HG	NYCD326	SO7	7/1/1996	LMB		12.0	3		0.63	0.63
ONLK96HG	NYCD340	SO7	7/2/1996	LMB		12.0	3		0.53	0.53
ONLK96HG	NYCD651	SO7	7/2/1996	LMB		12.0	4		0.57	0.57
ONLK96HG	NYCD338	SO7	7/2/1996	LMB		15.0	6		0.37	0.37
ONLK96HG	NYCD694	SO7	7/2/1996	LMB		15.0	5		0.76	0.76
ONLK96HG	NYCD342	SO7	7/2/1996	LMB		11.6	3		0.51	0.51
ONLK96HG	NYCD394	SO7	7/1/1996	LMB		11.8	3		0.69	0.69
ONLK96HG	NYCD393	SO7	7/1/1996	LMB		11.9	4		0.62	0.62
ONLK96HG	NYCD691	SO7	7/2/1996	LMB		11.9	4		0.68	0.68
ONLK96HG	NYCD953	SO7	7/2/1996	LMB		11.9	3		0.59	0.59
ONLK96HG	NYCD345	SO7	7/2/1996	LMB	D1	12.1	3		0.71	0.71
ONLK96HG	NYCD345	SO7	7/2/1996	LMB	D2	12.1	3		0.70	0.70
ONLK96HG	NYCD345-AVG	SO7	7/2/1996	LMB		12.1	3		0.71	0.71
ONLK96HG	NYCD327	SO7	7/1/1996	LMB		12.2	3		0.73	0.73
ONLK96HG	NYCD391	SO7	7/1/1996	LMB		12.2	4		0.63	0.63
ONLK96HG	NYCD699	SO7	7/2/1996	LMB		12.2	3		0.64	0.64
ONLK96HG	NYCD695	SO7	7/2/1996	LMB		12.3	4		0.56	0.56
ONLK96HG	NYCD348	SO7	7/2/1996	LMB		12.4	4		0.72	0.72
ONLK96HG	NYCD952	SO7	7/2/1996	LMB		12.4	3		0.69	0.69
ONLK96HG	NYCD692	SO7	7/2/1996	LMB		12.5	4		0.71	0.71
ONLK96HG	NYCD693	SO7	7/2/1996	LMB	D1	12.6	4		0.72	0.72
ONLK96HG	NYCD693-AVG	SO7	7/2/1996	LMB	D2	12.6	4		0.71	0.71
ONLK96HG	NYCD693	SO7	7/2/1996	LMB		12.6	4		0.71	0.71
ONLK96HG	NYCD956	SO7	7/2/1996	LMB		12.6	4		0.59	0.59
ONLK96HG	NYCD344	SO7	7/2/1996	LMB		12.8	4		0.62	0.62
ONLK96HG	NYCD350	SO7	7/2/1996	LMB		12.8	4		0.78	0.78
ONLK96HG	NYCD675	SO7	7/2/1996	LMB		12.8	3		0.86	0.86
ONLK96HG	NYCD336	SO7	7/2/1996	LMB		13.1	3		0.68	0.68
ONLK96HG	NYCD333	SO7	7/1/1996	LMB		13.2	3		0.48	0.48
ONLK96HG	NYCD396	SO7	7/1/1996	LMB		13.3	5		1.33	1.33
ONLK96HG	NYCD674	SO7	7/2/1996	LMB		13.5	5		0.31	0.31

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
ONLK96HG	NYCD951	SO7	7/2/1996	LMB		13.9	6		0.67	0.67
ONLK96HG	NYCD696	SO7	7/2/1996	LMB		14.1	5		0.76	0.76
ONLK96HG	NYCD698	SO7	7/2/1996	LMB		14.1	4		0.62	0.62
ONLK96HG	NYCD349	SO7	7/2/1996	LMB		14.4	6		0.80	0.80
ONLK96HG	NYCD392	SO7	7/1/1996	LMB		14.6	9		1.18	1.18
ONLK96HG	NYCD334	SO7	7/2/1996	LMB		14.7	5		0.85	0.85
ONLK96HG	NYCD960	SO7	7/2/1996	LMB		14.7	3		0.64	0.64
ONLK96HG	NYCD335	SO7	7/2/1996	LMB		15.5	7		0.83	0.83
ONLK96HG	NYCD337	SO7	7/2/1996	LMB		15.5	6		0.85	0.85
ONLK96HG	NYCD670	SO7	7/1/1996	SMB		12.0	2		0.75	0.75
ONLK96HG	NYCD360	SO7	6/27/1996	SMB		13.0	3		0.80	0.80
ONLK96HG	NYCD357	SO7	6/27/1996	SMB		14.0	4		1.15	1.15
ONLK96HG	NYCD370	SO7	7/2/1996	SMB		16.0	6		1.09	1.09
ONLK96HG	NYCD908	SO7	7/8/1996	SMB		17.0	8		1.73	1.73
ONLK96HG	NYCD671	SO7	7/1/1996	SMB		11.7	2		0.94	0.94
ONLK96HG	NYCD380	SO7	7/2/1996	SMB		11.8	3		0.89	0.89
ONLK96HG	NYCD352	SO7	6/27/1996	SMB	D1	12.1	4		0.74	0.74
ONLK96HG	NYCD352	SO7	6/27/1996	SMB	D2	12.1	4		0.74	0.74
ONLK96HG	NYCD352-AVG	SO7	6/27/1996	SMB		12.1	4		0.74	0.74
ONLK96HG	NYCD668	SO7	7/1/1996	SMB		12.1	2		0.58	0.58
ONLK96HG	NYCD378	SO7	7/2/1996	SMB		12.5	3		0.88	0.88
ONLK96HG	NYCD361	SO7	6/27/1996	SMB		13.2	4		0.71	0.71
ONLK96HG	NYCD373	SO7	7/2/1996	SMB		13.2	3		1.00	1.00
ONLK96HG	NYCD377	SO7	7/2/1996	SMB		13.3	3		0.87	0.87
ONLK96HG	NYCD359	SO7	6/27/1996	SMB		13.4	4		0.95	0.95
ONLK96HG	NYCD374	SO7	7/2/1996	SMB		13.4	4		1.01	1.01
ONLK96HG	NYCD354	SO7	6/27/1996	SMB		13.8	4		0.88	0.88
ONLK96HG	NYCD379	SO7	7/2/1996	SMB		13.8	5		1.00	1.00
ONLK96HG	NYCD669	SO7	7/1/1996	SMB		13.8	3		1.24	1.24
ONLK96HG	NYCD363	SO7	6/27/1996	SMB		13.9	3		0.86	0.86
ONLK96HG	NYCD375	SO7	7/2/1996	SMB		13.9	4		1.16	1.16
ONLK96HG	NYCD381	SO7	7/2/1996	SMB		13.9	3		0.67	0.67

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
ONLK96HG	NYCD364	SO7	6/27/1996	SMB		14.2	4		1.10	1.10
ONLK96HG	NYCD382	SO7	7/2/1996	SMB	D1	14.2	3		0.69	0.69
ONLK96HG	NYCD382	SO7	7/2/1996	SMB	D2	14.2	3		0.69	0.69
ONLK96HG	NYCD382-AVG	SO7	7/2/1996	SMB		14.2	3		0.69	0.69
ONLK96HG	NYCD385	SO7	7/2/1996	SMB		14.2	3		0.75	0.75
ONLK96HG	NYCD910	SO7	7/8/1996	SMB		14.3	4		0.88	0.88
ONLK96HG	NYCD911	SO7	7/8/1996	SMB		14.4	4		1.14	1.14
ONLK96HG	NYCD369	SO7	7/2/1996	SMB		14.5	4		0.90	0.90
ONLK96HG	NYCD356	SO7	6/27/1996	SMB		14.6	4		0.72	0.72
ONLK96HG	NYCD372	SO7	7/2/1996	SMB		14.7	4		1.34	1.34
ONLK96HG	NYCD371	SO7	7/2/1996	SMB		15.2	6		1.31	1.31
ONLK96HG	NYCD358	SO7	6/27/1996	SMB		15.3	5		1.07	1.07
ONLK96HG	NYCD904	SO7	7/8/1996	SMB		15.3	5		0.95	0.95
ONLK96HG	NYCD907	SO7	7/8/1996	SMB		15.3	4		1.04	1.04
ONLK96HG	NYCD362	SO7	6/27/1996	SMB		15.5	4		1.19	1.19
ONLK96HG	NYCD366	SO7	7/2/1996	SMB		15.5	5		1.12	1.12
ONLK96HG	NYCD667	SO7	7/1/1996	SMB		15.5	5		1.28	1.28
ONLK96HG	NYCD906	SO7	7/8/1996	SMB		15.6	5		1.35	1.35
ONLK96HG	NYCD909	SO7	7/8/1996	SMB		16.3	8		0.85	0.85
ONLK96HG	NYCD353	SO7	6/27/1996	SMB		16.4	6		1.07	1.07
ONLK96HG	NYCD905	SO7	7/8/1996	SMB		16.4	7		0.81	0.81
ONLK96HG	NYCD351	SO7	6/27/1996	SMB		16.5	7		1.30	1.30
ONLK96HG	NYCD365	SO7	7/2/1996	SMB		16.6	6		1.17	1.17
ONLK96HG	NYCD368	SO7	7/2/1996	SMB		16.7	6		1.32	1.32
ONLK96HG	NYCD903	SO7	7/8/1996	SMB		17.2	7		1.26	1.26
ONLK96HG	NYCD902	SO7	7/8/1996	SMB		17.3	6		1.40	1.40
ONLK96HG	NYCD355	SO7	6/27/1996	SMB		17.6	7		1.65	1.65
ONLK96HG	NYCD367	SO7	7/2/1996	SMB	D1	17.8	8		1.23	1.23
ONLK96HG	NYCD367	SO7	7/2/1996	SMB	D2	17.8	8		1.06	1.06
ONLK96HG	NYCD367-AVG	SO7	7/2/1996	SMB		17.8	8		1.15	1.15
ONOHG97	7T4564	SO7	6/30/1997	LMB		11.6	5		0.83	0.83
ONOHG97	7T4574	SO7	6/30/1997	LMB		11.7	4		0.85	0.85

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
ONOHG97	7T4571	SO7	6/30/1997	LMB		11.9	5		0.70	0.70
ONOHG97	7T4565	SO7	6/30/1997	LMB		12.0	5		0.82	0.82
ONOHG97	7T4573	SO7	6/30/1997	LMB		12.0	6		1.01	1.01
ONOHG97	7T4563	SO7	6/30/1997	LMB		12.5	6		0.78	0.78
ONOHG97	7T4572	SO7	6/30/1997	LMB		12.8	8		0.83	0.83
ONOHG97	7T4558	SO7	6/30/1997	LMB		13.3	8		0.45	0.45
ONOHG97	7T4562	SO7	6/30/1997	LMB		13.9	7		0.90	0.90
ONOHG97	7T4559	SO7	6/30/1997	LMB		14.6	10		1.01	1.01
ONOHG97	7T4575	SO7	6/30/1997	LMB		15.3	12		1.21	1.21
ONOHG97	7T4560	SO7	6/30/1997	LMB		15.5	9		1.01	1.01
ONOHG97	7T4566	SO7	6/30/1997	LMB		15.7	9		0.92	0.92
ONOHG97	7T4556	SO7	6/30/1997	LMB		17.1	NA		1.27	1.27
ONOHG97	7T4557	SO7	6/30/1997	LMB		18.1	NA		1.48	1.48
ONOHG97	7T4561	SO7	6/30/1997	LMB		18.3	12		1.39	1.39
ONOHG97	7T4681	SO7	6/30/1997	SMB		11.5	3		0.89	0.89
ONOHG97	7T2890	SO7	7/1/1997	SMB		11.7	3		0.92	0.92
ONOHG97	7T4679	SO7	6/30/1997	SMB		11.7	3		1.00	1.00
ONOHG97	7T4137	SO7	7/1/1997	SMB		11.8	5		0.87	0.87
ONOHG97	7T4273	SO7	7/1/1997	SMB		12.0	4		0.84	0.84
ONOHG97	7T2889	SO7	7/1/1997	SMB		12.2	3		0.83	0.83
ONOHG97	7T4142	SO7	7/3/1997	SMB		12.2	4		1.21	1.21
ONOHG97	7T4678	SO7	6/30/1997	SMB		12.6	3		1.09	1.09
ONOHG97	7T2888	SO7	7/1/1997	SMB		12.7	4		0.96	0.96
ONOHG97	7T4680	SO7	6/30/1997	SMB		12.8	4		1.26	1.26
ONOHG97	7T4689	SO7	6/30/1997	SMB		12.9	3		1.01	1.01
ONOHG97	7T4691	SO7	6/30/1997	SMB		12.9	3		0.98	0.98
ONOHG97	7T4144	SO7	7/3/1997	SMB		13.0	9		1.34	1.34
ONOHG97	7T4271	SO7	7/1/1997	SMB		13.0	4		1.08	1.08
ONOHG97	7T4270	SO7	7/1/1997	SMB		13.2	4		1.01	1.01
ONOHG97	7T2892	SO7	7/1/1997	SMB		13.3	4		0.91	0.91
ONOHG97	7T4145	SO7	7/3/1997	SMB		13.4	8		1.01	1.01
ONOHG97	7T4268	SO7	7/1/1997	SMB		13.6	4		1.13	1.13

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
ONOHG97	7T4275	SO7	7/1/1997	SMB		13.6	5		0.85	0.85
ONOHG97	7T4693	SO7	6/30/1997	SMB		13.7	4		1.39	1.39
ONOHG97	7T2893	SO7	7/1/1997	SMB	D1	13.8	5		1.07	1.07
ONOHG97	7T2893	SO7	7/1/1997	SMB	D2	13.8	5		0.96	0.96
ONOHG97	7T2893-AVG	SO7	7/1/1997	SMB		13.8	5		1.02	1.02
ONOHG97	7T2897	SO7	7/1/1997	SMB		13.8	4		0.82	0.82
ONOHG97	7T4682	SO7	6/30/1997	SMB		13.8	4		1.12	1.12
ONOHG97	7T4272	SO7	7/1/1997	SMB		13.9	5		1.36	1.36
ONOHG97	7T4690	SO7	6/30/1997	SMB		13.9	4		1.00	1.00
ONOHG97	7T4683	SO7	6/30/1997	SMB		14.0	4		1.15	1.15
ONOHG97	7T4146	SO7	7/3/1997	SMB		14.1	8		1.22	1.22
ONOHG97	7T4685	SO7	6/30/1997	SMB		14.3	5		1.14	1.14
ONOHG97	7T4677	SO7	6/30/1997	SMB		14.5	5		1.40	1.40
ONOHG97	7T4688	SO7	6/30/1997	SMB		14.6	4		0.97	0.97
ONOHG97	7T4139	SO7	7/1/1997	SMB	D1	14.8	8		1.08	1.08
ONOHG97	7T4139	SO7	7/1/1997	SMB	D2	14.8	8		1.30	1.30
ONOHG97	7T4139-AVG	SO7	7/1/1997	SMB		14.8	8		1.19	1.19
ONOHG97	7T4266	SO7	7/1/1997	SMB		15.3	4		1.27	1.27
ONOHG97	7T4684	SO7	6/30/1997	SMB		15.4	5		1.19	1.19
ONOHG97	7T4140	SO7	7/1/1997	SMB		15.5	10		1.47	1.47
ONOHG97	7T4141	SO7	7/1/1997	SMB		15.5	7		1.52	1.52
ONOHG97	7T4136	SO7	7/1/1997	SMB		15.6	9		1.22	1.22
ONOHG97	7T4692	SO7	6/30/1997	SMB	D1	15.7	5		1.02	1.02
ONOHG97	7T4692	SO7	6/30/1997	SMB	D2	15.7	5		1.09	1.09
ONOHG97	7T4692-AVG	SO7	6/30/1997	SMB		15.7	5		1.06	1.06
ONOHG97	7T4138	SO7	7/1/1997	SMB		15.9	7		1.34	1.34
ONOHG97	7T2896	SO7	7/1/1997	SMB		16.0	6		1.09	1.09
ONOHG97	7T2891	SO7	7/1/1997	SMB		16.9	6		1.33	1.33
ONOHG97	7T2894	SO7	7/1/1997	SMB		17.4	8		1.80	1.80
ONOHG97	7T2895	SO7	7/1/1997	SMB		17.4	7		1.62	1.62
ONOHG97	7T4676	SO7	6/30/1997	SMB		17.6	8		1.42	1.42
ONOHG97	7T4652	SO7	6/30/1997	WPERCH		10.0	5		1.20	1.20

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
ONOHG97	7T4655	SO7	6/30/1997	WPERCH		10.0	5		1.63	1.63
ONOHG97	7T4698	SO7	6/30/1997	WPERCH		10.3	7		1.36	1.36
ONOHG97	7T4654	SO7	6/30/1997	WPERCH		10.4	6		1.35	1.35
ONOHG97	7T4651	SO7	6/30/1997	WPERCH		10.5	7		1.27	1.27
ONOHG97	7T4653	SO7	6/30/1997	WPERCH		10.5	6		1.34	1.34
ONOHG97	7T4700	SO7	6/30/1997	WPERCH		10.5	6		1.38	1.38
ONOHG97	7T4695	SO7	6/30/1997	WPERCH		10.9	6		1.87	1.87
ONOHG97	7T4697	SO7	6/30/1997	WPERCH		11.1	7		1.51	1.51
ONOHG97	7T4699	SO7	6/30/1997	WPERCH		11.6	8		1.61	1.61
ONOHG97	7T4696	SO7	6/30/1997	WPERCH		11.9	8		2.02	2.02
ONOHG97	7T4694	SO7	6/30/1997	WPERCH		12.1	8		1.64	1.64
ONON98HG	774638	SO7	7/28/1998	CATFISH		14.8	NA		0.36	0.36
ONON98HG	774640	SO7	7/28/1998	CATFISH		14.8	NA		0.61	0.61
ONON98HG	774639	SO7	7/28/1998	CATFISH		17.6	NA		0.34	0.34
ONON98HG	774637	SO7	7/28/1998	CATFISH		17.8	NA		0.79	0.79
ONON98HG	774636	SO7	7/28/1998	CATFISH		18.2	NA		0.72	0.72
ONON98HG	130846	SO7	6/18/1998	LMB		13.0	6		0.90	0.90
ONON98HG	130859	SO7	6/18/1998	LMB		13.0	7		0.84	0.84
ONON98HG	130557	SO7	6/22/1998	LMB		15.0	8		1.21	1.21
ONON98HG	130866	SO7	6/18/1998	LMB		11.6	5		0.62	0.62
ONON98HG	130860	SO7	6/18/1998	LMB		11.7	5		0.70	0.70
ONON98HG	130556	SO7	6/22/1998	LMB		12.1	7		1.15	1.15
ONON98HG	130797	SO7	6/17/1998	LMB		12.2	5		0.94	0.94
ONON98HG	130842	SO7	6/18/1998	LMB		12.2	5		0.82	0.82
ONON98HG	130864	SO7	6/18/1998	LMB		12.4	5		0.72	0.72
ONON98HG	130816	SO7	6/17/1998	LMB		12.5	4		0.91	0.91
ONON98HG	130805	SO7	6/17/1998	LMB		12.6	4		0.69	0.69
ONON98HG	130559	SO7	6/22/1998	LMB		13.1	7		0.82	0.82
ONON98HG	130844	SO7	6/18/1998	LMB		13.1	5		0.87	0.87
ONON98HG	130800	SO7	6/17/1998	LMB		13.3	6		1.15	1.15
ONON98HG	130862	SO7	6/18/1998	LMB		13.3	6		0.93	0.93
ONON98HG	130812	SO7	6/17/1998	LMB		13.5	6		0.89	0.89

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
ONON98HG	130814	SO7	6/17/1998	LMB		13.5	4		0.95	0.95
ONON98HG	130840	SO7	6/18/1998	LMB		13.5	6		0.71	0.71
ONON98HG	130841	SO7	6/18/1998	LMB		13.6	6		0.95	0.95
ONON98HG	130843	SO7	6/18/1998	LMB		13.6	7		1.18	1.18
ONON98HG	130802	SO7	6/17/1998	LMB		13.7	5		1.02	1.02
ONON98HG	130873	SO7	6/18/1998	LMB		13.7	5		0.73	0.73
ONON98HG	130845	SO7	6/18/1998	LMB		13.8	5		0.95	0.95
ONON98HG	130558	SO7	6/22/1998	LMB		13.9	7		0.89	0.89
ONON98HG	130850	SO7	6/18/1998	LMB		13.9	5		1.08	1.08
ONON98HG	130849	SO7	6/18/1998	LMB		14.1	6		0.88	0.88
ONON98HG	130855	SO7	6/18/1998	LMB		14.1	7		1.14	1.14
ONON98HG	130861	SO7	6/18/1998	LMB		14.1	7		1.35	1.35
ONON98HG	130798	SO7	6/17/1998	LMB		14.2	5		0.88	0.88
ONON98HG	130810	SO7	6/17/1998	LMB		14.2	5		0.88	0.88
ONON98HG	130848	SO7	6/18/1998	LMB		14.2	6		1.36	1.36
ONON98HG	130801	SO7	6/17/1998	LMB		14.5	6		1.12	1.12
ONON98HG	130811	SO7	6/17/1998	LMB		14.5	4		1.24	1.24
ONON98HG	130839	SO7	6/18/1998	LMB		14.5	7		0.91	0.91
ONON98HG	130806	SO7	6/17/1998	LMB		14.8	4		1.21	1.21
ONON98HG	130804	SO7	6/17/1998	LMB		14.9	5		1.14	1.14
ONON98HG	130807	SO7	6/17/1998	LMB		14.9	5		1.12	1.12
ONON98HG	130803	SO7	6/17/1998	LMB		15.6	6		0.86	0.86
ONON98HG	130808	SO7	6/17/1998	LMB		15.6	5		1.04	1.04
ONON98HG	130554	SO7	6/22/1998	LMB		15.7	9		1.15	1.15
ONON98HG	130555	SO7	6/22/1998	LMB		16.1	10		1.06	1.06
ONON98HG	130799	SO7	6/17/1998	LMB		16.1	8		1.05	1.05
ONON98HG	774635	SO7	7/28/1998	LMB		16.4	8		1.24	1.24
ONON98HG	130809	SO7	6/17/1998	LMB		16.9	6		1.20	1.20
ONON98HG	130567	SO7	6/22/1998	NPIKE		35.5	7		1.27	1.27
ONON98HG	130868	SO7	6/18/1998	SMB		12.0	4		0.87	0.87
ONON98HG	130883	SO7	6/18/1998	SMB		13.0	5		0.95	0.95
ONON98HG	130564	SO7	6/22/1998	SMB		14.0	7		1.18	1.18

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
ONON98HG	130828	SO7	6/17/1998	SMB		11.6	4		0.59	0.59
ONON98HG	130870	SO7	6/18/1998	SMB		11.7	4		0.76	0.76
ONON98HG	130875	SO7	6/18/1998	SMB		11.7	5		0.68	0.68
ONON98HG	130887	SO7	6/18/1998	SMB		11.9	NA		0.65	0.65
ONON98HG	130877	SO7	6/18/1998	SMB		12.2	4		0.82	0.82
ONON98HG	130878	SO7	6/18/1998	SMB		12.6	5		0.95	0.95
ONON98HG	130822	SO7	6/17/1998	SMB		12.9	5		0.92	0.92
ONON98HG	130826	SO7	6/17/1998	SMB		12.9	4		0.77	0.77
ONON98HG	130852	SO7	6/18/1998	SMB		13.3	4		0.91	0.91
ONON98HG	130563	SO7	6/22/1998	SMB		13.4	7		1.43	1.43
ONON98HG	130565	SO7	6/22/1998	SMB		13.6	6		0.93	0.93
ONON98HG	130824	SO7	6/17/1998	SMB		13.6	5		1.00	1.00
ONON98HG	130876	SO7	6/18/1998	SMB		13.7	6		0.90	0.90
ONON98HG	130825	SO7	6/17/1998	SMB		13.8	6		0.95	0.95
ONON98HG	130817	SO7	6/17/1998	SMB		14.1	5		1.35	1.35
ONON98HG	130851	SO7	6/18/1998	SMB		14.1	6		0.81	0.81
ONON98HG	130856	SO7	6/18/1998	SMB		14.1	6		0.69	0.69
ONON98HG	130854	SO7	6/18/1998	SMB		14.2	6		0.98	0.98
ONON98HG	130872	SO7	6/18/1998	SMB		14.2	5		0.86	0.86
ONON98HG	130823	SO7	6/17/1998	SMB		14.4	7		1.43	1.43
ONON98HG	130566	SO7	6/22/1998	SMB		14.6	7		1.31	1.31
ONON98HG	130871	SO7	6/18/1998	SMB		14.6	5		1.02	1.02
ONON98HG	130874	SO7	6/18/1998	SMB		14.7	4		0.49	0.49
ONON98HG	130562	SO7	6/22/1998	SMB		15.1	7		1.06	1.06
ONON98HG	130821	SO7	6/17/1998	SMB		15.1	5		1.15	1.15
ONON98HG	130820	SO7	6/17/1998	SMB		15.2	6		1.12	1.12
ONON98HG	130881	SO7	6/18/1998	SMB		15.2	5		0.81	0.81
ONON98HG	130560	SO7	6/22/1998	SMB		15.4	8		1.26	1.26
ONON98HG	130853	SO7	6/18/1998	SMB		15.5	5		1.13	1.13
ONON98HG	130882	SO7	6/18/1998	SMB		15.5	4		0.53	0.53
ONON98HG	130857	SO7	6/18/1998	SMB		15.7	6		1.46	1.46
ONON98HG	130819	SO7	6/17/1998	SMB		15.9	7		1.26	1.26

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
ONON98HG	130561	SO7	6/22/1998	SMB		16.1	8		1.26	1.26
ONON98HG	130818	SO7	6/17/1998	SMB		16.6	7		0.92	0.92
ONON98HG	130880	SO7	6/18/1998	SMB		17.3	6		1.58	1.58
ONON98HG	130889	SO7	6/18/1998	WALLEYE		16.8	NA		1.02	1.02
ONON98HG	130553	SO7	6/22/1998	WALLEYE		18.8	5		1.54	1.54
ONON98HG	130795	SO7	6/17/1998	WALLEYE		22.9	8		2.50	2.50
ONON98HG	130796	SO7	6/17/1998	WALLEYE		23.3	5		2.16	2.16
ONON98HG	130794	SO7	6/17/1998	WALLEYE		23.7	8		2.37	2.37
ONON98HG	130836	SO7	6/17/1998	WPERCH		6.3	2		0.77	0.77
ONON98HG	130551	SO7	6/18/1998	WPERCH		6.4	NA		0.76	0.76
ONON98HG	130900	SO7	6/18/1998	WPERCH		6.4	NA		0.66	0.66
ONON98HG	130833	SO7	6/17/1998	WPERCH		6.5	3		0.67	0.67
ONON98HG	130895	SO7	6/18/1998	WPERCH		6.5	NA		0.77	0.77
ONON98HG	130837	SO7	6/17/1998	WPERCH		6.6	2		0.65	0.65
ONON98HG	130898	SO7	6/18/1998	WPERCH		6.6	NA		0.68	0.68
ONON98HG	130834	SO7	6/17/1998	WPERCH		6.7	3		0.90	0.90
ONON98HG	130835	SO7	6/17/1998	WPERCH		6.7	2		0.67	0.67
ONON98HG	130838	SO7	6/17/1998	WPERCH		6.7	2		0.69	0.69
ONON98HG	130897	SO7	6/18/1998	WPERCH		6.7	NA		0.68	0.68
ONON98HG	130899	SO7	6/18/1998	WPERCH		6.7	NA		0.82	0.82
ONON98HG	130552	SO7	6/18/1998	WPERCH		6.8	NA		0.17	0.17
ONON98HG	130896	SO7	6/18/1998	WPERCH		6.9	NA		0.73	0.73
ONON98HG	130894	SO7	6/18/1998	WPERCH		7.0	NA		0.78	0.78
ONON98HG	130890	SO7	6/18/1998	WPERCH		7.2	NA		0.16	0.16
ONON98HG	130892	SO7	6/18/1998	WPERCH		7.2	NA		0.30	0.30
ONON98HG	130893	SO7	6/18/1998	WPERCH		7.2	NA		0.25	0.25
ONON98HG	130891	SO7	6/18/1998	WPERCH		8.7	NA		0.67	0.67
ONON99HG	138741	SO7	7/7/1999	CARP		18.0	NA		0.36	0.36
ONON99HG	138743	SO7	7/7/1999	CARP		23.2	NA		1.14	1.14
ONON99HG	138742	SO7	7/7/1999	CARP		24.8	NA		0.54	0.54
ONON99HG	138709	SO7	6/24/1999	CARP		26.3	NA		0.74	0.74
ONON99HG	138744	SO7	7/7/1999	CARP		26.4	NA		0.36	0.36

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
ONON99HG	138773	SO7	7/16/1999	CATFISH		17.6	NA		0.44	0.44
ONON99HG	138708	SO7	6/24/1999	CATFISH		18.1	NA		1.02	1.02
ONON99HG	138745	SO7	7/7/1999	CATFISH		18.3	NA		1.31	1.31
ONON99HG	138784	SO7	7/16/1999	CATFISH		18.9	NA		0.49	0.49
ONON99HG	138783	SO7	7/16/1999	CATFISH		21.5	NA		0.37	0.37
ONON99HG	138739	SO7	6/30/1999	LMB		13.0	4		1.18	1.18
ONON99HG	138751	SO7	7/7/1999	LMB		14.0	4		1.67	1.67
ONON99HG	138760	SO7	7/7/1999	LMB		14.0	5		1.41	1.41
ONON99HG	138728	SO7	6/30/1999	LMB		16.0	6		1.20	1.20
ONON99HG	138752	SO7	7/7/1999	LMB		12.4	4		1.38	1.38
ONON99HG	138753	SO7	7/7/1999	LMB		12.5	4		1.65	1.65
ONON99HG	138738	SO7	6/30/1999	LMB		12.6	4		1.24	1.24
ONON99HG	138759	SO7	7/7/1999	LMB		12.7	4		1.47	1.47
ONON99HG	138607	SO7	6/24/1999	LMB		13.1	5		1.01	1.01
ONON99HG	138613	SO7	6/24/1999	LMB		13.2	4		1.40	1.40
ONON99HG	138757	SO7	7/7/1999	LMB		13.3	4		1.55	1.55
ONON99HG	138605	SO7	6/24/1999	LMB		13.5	4		1.27	1.27
ONON99HG	138762	SO7	7/7/1999	LMB		13.6	6		1.35	1.35
ONON99HG	138612	SO7	6/24/1999	LMB		13.7	4		1.04	1.04
ONON99HG	138786	SO7	7/14/1999	LMB		13.8	6		0.60	0.60
ONON99HG	138731	SO7	6/30/1999	LMB		14.2	4		1.29	1.29
ONON99HG	138737	SO7	6/30/1999	LMB		14.2	4		1.55	1.55
ONON99HG	138610	SO7	6/24/1999	LMB		14.3	6		1.23	1.23
ONON99HG	138736	SO7	6/30/1999	LMB		14.4	5		1.36	1.36
ONON99HG	138758	SO7	7/7/1999	LMB		14.4	4		1.71	1.71
ONON99HG	138733	SO7	6/30/1999	LMB		14.6	5		1.49	1.49
ONON99HG	138730	SO7	6/30/1999	LMB		14.7	5		1.56	1.56
ONON99HG	138734	SO7	6/30/1999	LMB		14.9	5		1.30	1.30
ONON99HG	138603	SO7	6/24/1999	LMB		15.1	8		1.31	1.31
ONON99HG	138735	SO7	6/30/1999	LMB		15.2	6		1.40	1.40
ONON99HG	138729	SO7	6/30/1999	LMB		15.4	6		1.25	1.25
ONON99HG	138611	SO7	6/24/1999	LMB		15.6	6		1.62	1.62

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
ONON99HG	138609	SO7	6/24/1999	LMB		15.9	5		1.22	1.22
ONON99HG	138755	SO7	7/7/1999	LMB		15.9	6		1.96	1.96
ONON99HG	138608	SO7	6/24/1999	LMB		16.3	7		1.35	1.35
ONON99HG	138602	SO7	6/24/1999	LMB		16.6	8		1.52	1.52
ONON99HG	138785	SO7	7/14/1999	LMB		16.6	7		1.70	1.70
ONON99HG	138604	SO7	6/24/1999	LMB		17.3	7		1.47	1.47
ONON99HG	138727	SO7	6/30/1999	LMB		17.3	7		2.02	2.02
ONON99HG	138726	SO7	6/30/1999	LMB		17.8	7		1.66	1.66
ONON99HG	138606	SO7	6/24/1999	LMB		18.3	9		1.58	1.58
ONON99HG	138601	SO7	6/24/1999	LMB		18.5	8		1.53	1.53
ONON99HG	138621	SO7	6/24/1999	SMB		15.0	5		1.51	1.51
ONON99HG	138713	SO7	6/30/1999	SMB		16.0	10		2.38	2.38
ONON99HG	138706	SO7	6/24/1999	SMB		11.5	4		0.93	0.93
ONON99HG	138772	SO7	7/7/1999	SMB		11.7	3		1.04	1.04
ONON99HG	138723	SO7	6/30/1999	SMB		11.8	4		1.03	1.03
ONON99HG	138770	SO7	7/7/1999	SMB		12.3	4		1.16	1.16
ONON99HG	138704	SO7	6/24/1999	SMB		12.5	4		1.01	1.01
ONON99HG	138725	SO7	6/30/1999	SMB		12.7	5		1.01	1.01
ONON99HG	138702	SO7	6/24/1999	SMB		12.8	4		1.07	1.07
ONON99HG	138778	SO7	7/14/1999	SMB		13.1	4		1.32	1.32
ONON99HG	138622	SO7	6/24/1999	SMB		13.2	4		1.38	1.38
ONON99HG	138624	SO7	6/24/1999	SMB		13.4	4		1.03	1.03
ONON99HG	138779	SO7	7/14/1999	SMB		13.9	5		1.47	1.47
ONON99HG	138777	SO7	7/14/1999	SMB		14.1	4		1.21	1.21
ONON99HG	138701	SO7	6/24/1999	SMB		14.2	5		1.43	1.43
ONON99HG	138774	SO7	7/14/1999	SMB		14.3	4		1.61	1.61
ONON99HG	138769	SO7	7/7/1999	SMB		14.5	6		1.40	1.40
ONON99HG	138722	SO7	6/30/1999	SMB		14.6	7		1.37	1.37
ONON99HG	138775	SO7	7/14/1999	SMB		14.6	5		1.92	1.92
ONON99HG	138714	SO7	6/30/1999	SMB		15.1	6		1.07	1.07
ONON99HG	138710	SO7	6/30/1999	SMB		15.3	6		1.14	1.14
ONON99HG	138765	SO7	7/7/1999	SMB		15.4	6		1.99	1.99

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
ONON99HG	138711	SO7	6/30/1999	SMB		15.6	6		1.55	1.55
ONON99HG	138771	SO7	7/7/1999	SMB		15.8	5		1.91	1.91
ONON99HG	138617	SO7	6/24/1999	SMB		15.9	5		2.43	2.43
ONON99HG	138768	SO7	7/7/1999	SMB		15.9	6		1.74	1.74
ONON99HG	138781	SO7	7/14/1999	SMB		16.1	6		2.18	2.18
ONON99HG	138620	SO7	6/24/1999	SMB		16.3	5		1.62	1.62
ONON99HG	138724	SO7	6/30/1999	SMB		16.4	6		1.85	1.85
ONON99HG	138618	SO7	6/24/1999	SMB		16.5	6		1.70	1.70
ONON99HG	138619	SO7	6/24/1999	SMB		16.5	6		1.26	1.26
ONON99HG	138776	SO7	7/14/1999	SMB		16.5	5		1.99	1.99
ONON99HG	138766	SO7	7/7/1999	SMB		16.6	5		1.87	1.87
ONON99HG	138717	SO7	6/30/1999	SMB		16.7	8		1.68	1.68
ONON99HG	138718	SO7	6/30/1999	SMB		16.8	6		1.93	1.93
ONON99HG	138780	SO7	7/14/1999	SMB		16.9	8		1.93	1.93
ONON99HG	138782	SO7	7/14/1999	SMB		16.9	6		2.13	2.13
ONON99HG	138720	SO7	6/30/1999	SMB		17.2	9		1.88	1.88
ONON99HG	138716	SO7	6/30/1999	SMB		17.3	9		1.95	1.95
ONON99HG	138615	SO7	6/24/1999	SMB		17.4	6		1.99	1.99
ONON99HG	138712	SO7	6/30/1999	SMB		17.5	9		1.66	1.66
ONON99HG	138721	SO7	6/30/1999	SMB		17.5	7		2.48	2.48
ONON99HG	138767	SO7	7/7/1999	SMB		17.5	7		1.85	1.85
ONON99HG	138719	SO7	6/30/1999	SMB		17.7	8		2.27	2.27
ONON99HG	138715	SO7	6/30/1999	SMB		18.1	8		1.88	1.88
ONON99HG	138616	SO7	6/24/1999	SMB		18.7	6		2.12	2.12
ONON99HG	138623	SO7	6/24/1999	SMB		21.9	6		1.13	1.13
ONON99HG	138750	SO7	7/7/1999	WPERCH		6.5	NA		0.80	0.80
ONON99HG	138747	SO7	7/7/1999	WPERCH		6.8	NA		0.66	0.66
ONON99HG	138749	SO7	7/7/1999	WPERCH		7.4	NA		1.00	1.00
ONON99HG	128748	SO7	7/7/1999	WPERCH		8.0	NA		1.00	1.00
ONON99HG	138746	SO7	7/7/1999	WPERCH		8.0	NA		0.83	0.83
ONON2A	WB0034F	5AHB	9/22/2000	BLUEGILL		7.4	3		0.44	0.44
ONON2A	WB0035F	5AHB	9/22/2000	BLUEGILL		6.9	4		0.23	0.23

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
ONON2A	WB0043F	5AHB	9/20/2000	CARP		22.2	7		0.43	0.43
ONON2A	WB0044F	5AHB	9/20/2000	CARP		23.7	8		0.38	0.38
ONON2A	WB0045F	5AHB	9/20/2000	CARP		22.6	7		0.46	0.46
ONON2A	WB0036F	MNMC	9/22/2000	CATFISH		21.1	12		0.66	0.66
ONON2A	WB0037F	MNMC	9/22/2000	CATFISH		19.8	9		0.54	0.54
NYSDEC-2000	9650532	LAKE	6/19/2000	LMB		11.7	3		0.68	0.68
NYSDEC-2000	9650576	LAKE	6/14/2000	LMB		11.9	3		0.98	0.98
NYSDEC-2000	9650577	LAKE	6/14/2000	LMB		11.9	4		0.93	0.93
NYSDEC-2000	9650533	LAKE	6/19/2000	LMB		12.0	3		0.73	0.73
NYSDEC-2000	9650580	LAKE	6/14/2000	LMB		12.0	4		1.03	1.03
NYSDEC-2000	9650578	LAKE	6/14/2000	LMB		12.1	4		0.72	0.72
NYSDEC-2000	9650531	LAKE	6/19/2000	LMB		12.2	4		0.69	0.69
NYSDEC-2000	9650575	LAKE	6/14/2000	LMB		12.4	4		0.71	0.71
NYSDEC-2000	9650536	LAKE	6/19/2000	LMB		12.4	4		0.71	0.71
NYSDEC-2000	9650563	LAKE	6/14/2000	LMB		12.4	4		0.91	0.91
NYSDEC-2000	9650552	LAKE	6/19/2000	LMB		12.6	4		0.90	0.90
NYSDEC-2000	9650566	LAKE	6/14/2000	LMB		12.8	4		1.18	1.18
NYSDEC-2000	9650539	LAKE	6/19/2000	LMB		12.8	4		0.74	0.74
NYSDEC-2000	9650538	LAKE	6/19/2000	LMB		13.0	4		1.18	1.18
NYSDEC-2000	9650570	LAKE	6/14/2000	LMB		13.0	4		1.49	1.49
NYSDEC-2000	9650545	LAKE	6/19/2000	LMB		13.2	4		0.93	0.93
NYSDEC-2000	9650561	LAKE	6/14/2000	LMB		13.2	4		1.43	1.43
NYSDEC-2000	9650527	LAKE	6/19/2000	LMB		13.2	5		1.26	1.26
NYSDEC-2000	9650567	LAKE	6/14/2000	LMB		13.4	4		1.07	1.07
NYSDEC-2000	9650547	LAKE	6/19/2000	LMB		13.4	4		0.92	0.92
NYSDEC-2000	9650568	LAKE	6/14/2000	LMB		13.5	4		1.06	1.06
NYSDEC-2000	9650534	LAKE	6/19/2000	LMB		13.6	4		1.23	1.23
NYSDEC-2000	9650541	LAKE	6/19/2000	LMB		13.8	4		1.02	1.02
NYSDEC-2000	9650529	LAKE	6/19/2000	LMB		14.0	4		1.00	1.00
NYSDEC-2000	9650530	LAKE	6/19/2000	LMB		14.0	4		1.37	1.37
NYSDEC-2000	9650549	LAKE	6/19/2000	LMB		14.0	4		1.02	1.02
NYSDEC-2000	9650571	LAKE	6/14/2000	LMB		14.1	4		1.22	1.22

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
NYSDEC-2000	9650535	LAKE	6/19/2000	LMB		14.1	4		1.50	1.50
NYSDEC-2000	9650528	LAKE	6/19/2000	LMB		14.2	4		1.21	1.21
NYSDEC-2000	9650540	LAKE	6/19/2000	LMB		14.2	4		1.14	1.14
NYSDEC-2000	9650542	LAKE	6/19/2000	LMB		14.2	4		0.81	0.81
NYSDEC-2000	9650572	LAKE	6/14/2000	LMB		14.3	4		1.30	1.30
NYSDEC-2000	9650565	LAKE	6/14/2000	LMB		14.3	4		1.17	1.17
NYSDEC-2000	9650551	LAKE	6/19/2000	LMB		14.3	5		0.91	0.91
NYSDEC-2000	9650544	LAKE	6/19/2000	LMB		15.0	5		1.10	1.10
NYSDEC-2000	9650546	LAKE	6/19/2000	LMB		15.0	5		1.02	1.02
NYSDEC-2000	9650573	LAKE	6/14/2000	LMB		15.4	5		1.89	1.89
NYSDEC-2000	9650543	LAKE	6/19/2000	LMB		15.6	5		0.93	0.93
NYSDEC-2000	9650564	LAKE	6/14/2000	LMB		15.7	5		1.35	1.35
NYSDEC-2000	9650526	LAKE	6/19/2000	LMB		15.7	5		1.42	1.42
NYSDEC-2000	9650548	LAKE	6/19/2000	LMB		15.7	5		1.28	1.28
NYSDEC-2000	9650553	LAKE	6/19/2000	LMB		16.3	5		1.44	1.44
NYSDEC-2000	9650553	LAKE	6/19/2000	LMB		16.3	5		1.46	1.46
NYSDEC-2000	138800	LAKE	6/19/2000	SMB		11.5	4		0.60	0.60
NYSDEC-2000	9650517	LAKE	6/14/2000	SMB		11.7	3		0.68	0.68
NYSDEC-2000	9650505	LAKE	6/14/2000	SMB		11.9	3		0.66	0.66
NYSDEC-2000	9650512	LAKE	6/14/2000	SMB		12.0	4		0.68	0.68
NYSDEC-2000	9650558	LAKE	6/19/2000	SMB		12.0	4		0.85	0.85
NYSDEC-2000	138789	LAKE	6/19/2000	SMB		12.0	4		0.83	0.83
NYSDEC-2000	9650511	LAKE	6/14/2000	SMB		12.3	4		0.90	0.90
NYSDEC-2000	138796	LAKE	6/19/2000	SMB		12.5	6		0.88	0.88
NYSDEC-2000	9650515	LAKE	6/14/2000	SMB		12.8	5		0.95	0.95
NYSDEC-2000	9650555	LAKE	6/19/2000	SMB		12.9	5		0.62	0.62
NYSDEC-2000	138795	LAKE	6/19/2000	SMB		12.9	4		0.58	0.58
NYSDEC-2000	9650523	LAKE	6/14/2000	SMB		13.6	4		1.14	1.14
NYSDEC-2000	138794	LAKE	6/19/2000	SMB		13.7	5		0.77	0.77
NYSDEC-2000	9650519	LAKE	6/14/2000	SMB		13.8	5		1.01	1.01
NYSDEC-2000	9650560	LAKE	6/19/2000	SMB		14.2	6		1.12	1.12
NYSDEC-2000	138793	LAKE	6/19/2000	SMB		14.2	5		1.11	1.11

Table A-1A. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Duplicates	Length (in)	Age (yrs)	Methyl-mercury (mg/kg-ww)	Total Mercury (mg/kg-ww)	Mercury Concentration Used in Risk Assessment (mg/kg-ww)
NYSDEC-2000	9650509	LAKE	6/14/2000	SMB		14.2	5		1.00	1.00
NYSDEC-2000	138792	LAKE	6/19/2000	SMB		14.5	5		0.99	0.99
NYSDEC-2000	138792	LAKE	6/19/2000	SMB		14.5	5		1.03	1.03
NYSDEC-2000	138790	LAKE	6/19/2000	SMB		14.6	5		0.97	0.97
NYSDEC-2000	9650557	LAKE	6/19/2000	SMB		14.7	5		1.05	1.05
NYSDEC-2000	9650502	LAKE	6/14/2000	SMB		14.8	5		1.06	1.06
NYSDEC-2000	9650556	LAKE	6/19/2000	SMB		14.8	6		1.12	1.12
NYSDEC-2000	9650559	LAKE	6/19/2000	SMB		14.9	5		1.26	1.26
NYSDEC-2000	138787	LAKE	6/19/2000	SMB		15.7	8		1.48	1.48
NYSDEC-2000	138799	LAKE	6/19/2000	SMB		15.9	5		1.53	1.53

Notes:

[1] Total mercury was calculated by adding ionic mercury to methylmercury concentrations

[2] 1995 data for WALLEYE and WPERCH are directly from Honeywell's Lake HHRA, Appendix A (Exponent, 2001)

LMB = largemouth bass

NPIKE = northern pike

SMB = smallmouth bass

WPERCH = white perch

J - estimated

U - undetected at reported concentration

Table A-1B. Onondaga Lake Fish Fillets – Pesticide and Hexachlorobenzene Data

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Hexachloro-benzene (µg/kg-ww)	Aldrin (µg/kg-ww)	Endosulfan I (µg/kg-ww)	Endosulfan II (µg/kg-ww)	Endosulfan sulfate (µg/kg-ww)
NYSDEC-1992	F1977	SO12	07/06/92	SMB	13.9	6	3				
NYSDEC-1992	F1980	SO12	07/06/92	SMB	16.3	7	3				
NYSDEC-1992	F2007	SO12	07/07/92	SMB	13.0	6	2				
NYSDEC-1992	F2009	SO12	07/07/92	SMB	17.2	9	7				
NYSDEC-1992	F2011	SO12	07/07/92	SMB	17.9	10	2				
NYSDEC-1992	F2013	SO12	07/07/92	WALLEYE	18.1		7				
NYSDEC-1992	F2018	SO12	07/07/92	WALLEYE	21.3		10				
NYSDEC-1992	F2019	SO12	07/07/92	WALLEYE	21.7		9				
NYSDEC-1992	F2020	SO12	07/07/92	WALLEYE	22.5		22				
NYSDEC-1992	F2021	SO12	07/07/92	WALLEYE	26.2		25				
NYSDEC-1994	F2298	SO12	07/05/94	SMB	15.9	7	10				
NYSDEC-1994	F2320	SO12	07/07/94	SMB	17.4	8	3				
NYSDEC-1994	F2322	SO12	07/13/94	SMB	12.8	8	2 *U*				
NYSDEC-1994	F2325	SO12	07/13/94	SMB	14.0	6	2				
NYSDEC-1994	F2327	SO12	07/13/94	SMB	14.1	6	6				
NYSDEC-1994	F2330	SO12	07/13/94	SMB	14.2	6	4				
NYSDEC-1994	F2334	SO12	07/13/94	SMB	14.6	6	4				
NYSDEC-1994	F2338	SO12	07/13/94	SMB	15.4	7	10				
NYSDEC-1994	F2340	SO12	07/13/94	SMB	16.1	8	6				
NYSDEC-1994	F2342	SO12	07/13/94	SMB	19.2	8	5				
ONONDA96	396	SO7	7/1/1996	LMB	13.3	5	2 *U*				
ONONDA96	674	SO7	7/2/1996	LMB	13.5	5	2 *U*				
ONONDA96	951	SO7	7/2/1996	LMB	13.9	6	2 *U*				
ONONDA96	349	SO7	7/2/1996	LMB	14.4	6	2 *U*				
ONONDA96	392	SO7	7/1/1996	LMB	14.6	9	2 *U*				
ONONDA96	334	SO7	7/2/1996	LMB	14.7	5	2 *U*				
ONONDA96	338	SO7	7/2/1996	LMB	15.0	6	2 *U*				
ONONDA96	694	SO7	7/2/1996	LMB	15.0	5	2				
ONONDA96	335	SO7	7/2/1996	LMB	15.5	7	2 *U*				
ONONDA96	337	SO7	7/2/1996	LMB	15.5	6	2 *U*				

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	alpha-BHC (µg/kg-ww)	beta-BHC (µg/kg-ww)	delta-BHC (µg/kg-ww)	gamma-BHC (Lindane) (µg/kg-ww)	Dieldrin (µg/kg-ww)	Endrin (µg/kg-ww)
NYSDEC-1992	F1977	SO12	07/06/92	SMB	13.9	6					19	
NYSDEC-1992	F1980	SO12	07/06/92	SMB	16.3	7					5 *U*	
NYSDEC-1992	F2007	SO12	07/07/92	SMB	13.0	6					5 *U*	
NYSDEC-1992	F2009	SO12	07/07/92	SMB	17.2	9					5 *U*	
NYSDEC-1992	F2011	SO12	07/07/92	SMB	17.9	10					5 *U*	
NYSDEC-1992	F2013	SO12	07/07/92	WALLEYE	18.1						5 *U*	
NYSDEC-1992	F2018	SO12	07/07/92	WALLEYE	21.3						6	
NYSDEC-1992	F2019	SO12	07/07/92	WALLEYE	21.7						5	
NYSDEC-1992	F2020	SO12	07/07/92	WALLEYE	22.5						11	
NYSDEC-1992	F2021	SO12	07/07/92	WALLEYE	26.2				1 *U*		9	
NYSDEC-1994	F2298	SO12	07/05/94	SMB	15.9	7					7	5 *U*
NYSDEC-1994	F2320	SO12	07/07/94	SMB	17.4	8					5 *U*	5 *U*
NYSDEC-1994	F2322	SO12	07/13/94	SMB	12.8	8					5 *U*	5 *U*
NYSDEC-1994	F2325	SO12	07/13/94	SMB	14.0	6					5 *U*	5 *U*
NYSDEC-1994	F2327	SO12	07/13/94	SMB	14.1	6					5 *U*	5 *U*
NYSDEC-1994	F2330	SO12	07/13/94	SMB	14.2	6					5 *U*	5 *U*
NYSDEC-1994	F2334	SO12	07/13/94	SMB	14.6	6					5 *U*	5 *U*
NYSDEC-1994	F2338	SO12	07/13/94	SMB	15.4	7					5 *U*	5 *U*
NYSDEC-1994	F2340	SO12	07/13/94	SMB	16.1	8					5 *U*	5 *U*
NYSDEC-1994	F2342	SO12	07/13/94	SMB	19.2	8					5 *U*	5 *U*
ONONDA96	396	SO7	7/1/1996	LMB	13.3	5					5 *U*	5 *U*
ONONDA96	674	SO7	7/2/1996	LMB	13.5	5					5 *U*	5 *U*
ONONDA96	951	SO7	7/2/1996	LMB	13.9	6					5 *U*	5 *U*
ONONDA96	349	SO7	7/2/1996	LMB	14.4	6					5 *U*	5 *U*
ONONDA96	392	SO7	7/1/1996	LMB	14.6	9					5 *U*	5 *U*
ONONDA96	334	SO7	7/2/1996	LMB	14.7	5					5 *U*	5 *U*
ONONDA96	338	SO7	7/2/1996	LMB	15.0	6					5 *U*	5 *U*
ONONDA96	694	SO7	7/2/1996	LMB	15.0	5					5 *U*	5 *U*
ONONDA96	335	SO7	7/2/1996	LMB	15.5	7					5 *U*	5 *U*
ONONDA96	337	SO7	7/2/1996	LMB	15.5	6					5 *U*	5 *U*

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Endrin aldehyde (µg/kg-ww)	Endrin ketone (µg/kg-ww)	Heptachlor (µg/kg-ww)	Heptachlor epoxide (µg/kg-ww)	Mirex (µg/kg-ww)	Photomirex (µg/kg-ww)
NYSDEC-1992	F1977	SO12	07/06/92	SMB	13.9	6						
NYSDEC-1992	F1980	SO12	07/06/92	SMB	16.3	7						
NYSDEC-1992	F2007	SO12	07/07/92	SMB	13.0	6						
NYSDEC-1992	F2009	SO12	07/07/92	SMB	17.2	9						
NYSDEC-1992	F2011	SO12	07/07/92	SMB	17.9	10						
NYSDEC-1992	F2013	SO12	07/07/92	WALLEYE	18.1							
NYSDEC-1992	F2018	SO12	07/07/92	WALLEYE	21.3							
NYSDEC-1992	F2019	SO12	07/07/92	WALLEYE	21.7							
NYSDEC-1992	F2020	SO12	07/07/92	WALLEYE	22.5							
NYSDEC-1992	F2021	SO12	07/07/92	WALLEYE	26.2							
NYSDEC-1994	F2298	SO12	07/05/94	SMB	15.9	7					2 *U*	5 *U*
NYSDEC-1994	F2320	SO12	07/07/94	SMB	17.4	8					2 *U*	5 *U*
NYSDEC-1994	F2322	SO12	07/13/94	SMB	12.8	8					2 *U*	5 *U*
NYSDEC-1994	F2325	SO12	07/13/94	SMB	14.0	6					2 *U*	5 *U*
NYSDEC-1994	F2327	SO12	07/13/94	SMB	14.1	6					2 *U*	5 *U*
NYSDEC-1994	F2330	SO12	07/13/94	SMB	14.2	6					2 *U*	5 *U*
NYSDEC-1994	F2334	SO12	07/13/94	SMB	14.6	6					2 *U*	5 *U*
NYSDEC-1994	F2338	SO12	07/13/94	SMB	15.4	7					2 *U*	5 *U*
NYSDEC-1994	F2340	SO12	07/13/94	SMB	16.1	8					2 *U*	5 *U*
NYSDEC-1994	F2342	SO12	07/13/94	SMB	19.2	8					2 *U*	5 *U*
ONONDA96	396	SO7	7/1/1996	LMB	13.3	5					2 *U*	5 *U*
ONONDA96	674	SO7	7/2/1996	LMB	13.5	5					2 *U*	5 *U*
ONONDA96	951	SO7	7/2/1996	LMB	13.9	6					2 *U*	5 *U*
ONONDA96	349	SO7	7/2/1996	LMB	14.4	6					2 *U*	5 *U*
ONONDA96	392	SO7	7/1/1996	LMB	14.6	9					2 *U*	5 *U*
ONONDA96	334	SO7	7/2/1996	LMB	14.7	5					2 *U*	5 *U*
ONONDA96	338	SO7	7/2/1996	LMB	15.0	6					2 *U*	5 *U*
ONONDA96	694	SO7	7/2/1996	LMB	15.0	5					2 *U*	5 *U*
ONONDA96	335	SO7	7/2/1996	LMB	15.5	7					2 *U*	5 *U*
ONONDA96	337	SO7	7/2/1996	LMB	15.5	6					2 *U*	5 *U*

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Methoxy-chlor (µg/kg-ww)	2,4'-DDD (µg/kg-ww)	2,4'-DDE (µg/kg-ww)	2,4'-DDT (µg/kg-ww)	4,4'-DDD (µg/kg-ww)	4,4'-DDE (µg/kg-ww)
NYSDEC-1992	F1977	SO12	07/06/92	SMB	13.9	6		6			6	15
NYSDEC-1992	F1980	SO12	07/06/92	SMB	16.3	7		7			7	13
NYSDEC-1992	F2007	SO12	07/07/92	SMB	13.0	6		6			6	10
NYSDEC-1992	F2009	SO12	07/07/92	SMB	17.2	9		9			17	28
NYSDEC-1992	F2011	SO12	07/07/92	SMB	17.9	10		10			15	28
NYSDEC-1992	F2013	SO12	07/07/92	WALLEYE	18.1			9			12	21
NYSDEC-1992	F2018	SO12	07/07/92	WALLEYE	21.3			7			20	33
NYSDEC-1992	F2019	SO12	07/07/92	WALLEYE	21.7			6			11	15
NYSDEC-1992	F2020	SO12	07/07/92	WALLEYE	22.5			9			47	104
NYSDEC-1992	F2021	SO12	07/07/92	WALLEYE	26.2			8			32	48
NYSDEC-1994	F2298	SO12	07/05/94	SMB	15.9	7		7			25	54
NYSDEC-1994	F2320	SO12	07/07/94	SMB	17.4	8		8			17	52
NYSDEC-1994	F2322	SO12	07/13/94	SMB	12.8	8		8			4	10
NYSDEC-1994	F2325	SO12	07/13/94	SMB	14.0	6		6			8	15
NYSDEC-1994	F2327	SO12	07/13/94	SMB	14.1	6		6			13	21
NYSDEC-1994	F2330	SO12	07/13/94	SMB	14.2	6		6			7	13
NYSDEC-1994	F2334	SO12	07/13/94	SMB	14.6	6		6			9	15
NYSDEC-1994	F2338	SO12	07/13/94	SMB	15.4	7		7			18	28
NYSDEC-1994	F2340	SO12	07/13/94	SMB	16.1	8		8			24	46
NYSDEC-1994	F2342	SO12	07/13/94	SMB	19.2	8		8			10	21
ONONDA96	396	SO7	7/1/1996	LMB	13.3	5					2 *U*	2 *U*
ONONDA96	674	SO7	7/2/1996	LMB	13.5	5					2 *U*	6
ONONDA96	951	SO7	7/2/1996	LMB	13.9	6					2	4
ONONDA96	349	SO7	7/2/1996	LMB	14.4	6					2	8
ONONDA96	392	SO7	7/1/1996	LMB	14.6	9					2 *U*	2 *U*
ONONDA96	334	SO7	7/2/1996	LMB	14.7	5					2 *U*	2
ONONDA96	338	SO7	7/2/1996	LMB	15.0	6					2 *U*	2
ONONDA96	694	SO7	7/2/1996	LMB	15.0	5					2	3
ONONDA96	335	SO7	7/2/1996	LMB	15.5	7					2	4
ONONDA96	337	SO7	7/2/1996	LMB	15.5	6					2 *U*	2

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	4,4'-DDT (µg/kg-ww)	Toxaphene (µg/kg-ww)	Total Chlordane Constituents: alpha (cis) - Chlordane (µg/kg-ww)	Total Chlordane Constituents: gamma (trans)- Chlordane (µg/kg-ww)
NYSDEC-1992	F1977	SO12	07/06/92	SMB	13.9	6	5			
NYSDEC-1992	F1980	SO12	07/06/92	SMB	16.3	7	5			
NYSDEC-1992	F2007	SO12	07/07/92	SMB	13.0	6	4			
NYSDEC-1992	F2009	SO12	07/07/92	SMB	17.2	9	9			
NYSDEC-1992	F2011	SO12	07/07/92	SMB	17.9	10	7			
NYSDEC-1992	F2013	SO12	07/07/92	WALLEYE	18.1		6			
NYSDEC-1992	F2018	SO12	07/07/92	WALLEYE	21.3		9			
NYSDEC-1992	F2019	SO12	07/07/92	WALLEYE	21.7		5			
NYSDEC-1992	F2020	SO12	07/07/92	WALLEYE	22.5		27			
NYSDEC-1992	F2021	SO12	07/07/92	WALLEYE	26.2		16			
NYSDEC-1994	F2298	SO12	07/05/94	SMB	15.9	7	16			
NYSDEC-1994	F2320	SO12	07/07/94	SMB	17.4	8	13			
NYSDEC-1994	F2322	SO12	07/13/94	SMB	12.8	8	3			
NYSDEC-1994	F2325	SO12	07/13/94	SMB	14.0	6	5			
NYSDEC-1994	F2327	SO12	07/13/94	SMB	14.1	6	8			
NYSDEC-1994	F2330	SO12	07/13/94	SMB	14.2	6	5			
NYSDEC-1994	F2334	SO12	07/13/94	SMB	14.6	6	6			
NYSDEC-1994	F2338	SO12	07/13/94	SMB	15.4	7	11			
NYSDEC-1994	F2340	SO12	07/13/94	SMB	16.1	8	15			
NYSDEC-1994	F2342	SO12	07/13/94	SMB	19.2	8	8			
ONONDA96	396	SO7	7/1/1996	LMB	13.3	5	2 *U*		5 *U*	5 *U*
ONONDA96	674	SO7	7/2/1996	LMB	13.5	5	2 *U*		5 *U*	5 *U*
ONONDA96	951	SO7	7/2/1996	LMB	13.9	6	2 *U*		5 *U*	5 *U*
ONONDA96	349	SO7	7/2/1996	LMB	14.4	6	2 *U*		5 *U*	5 *U*
ONONDA96	392	SO7	7/1/1996	LMB	14.6	9	2 *U*		5 *U*	5 *U*
ONONDA96	334	SO7	7/2/1996	LMB	14.7	5	2 *U*		5 *U*	5 *U*
ONONDA96	338	SO7	7/2/1996	LMB	15.0	6	2 *U*		5 *U*	5 *U*
ONONDA96	694	SO7	7/2/1996	LMB	15.0	5	2		5 *U*	5 *U*
ONONDA96	335	SO7	7/2/1996	LMB	15.5	7	2 *U*		5 *U*	5 *U*
ONONDA96	337	SO7	7/2/1996	LMB	15.5	6	2 *U*		5 *U*	5 *U*

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Total Chlordane Constituents: cis-Nonachlor (µg/kg-ww)	Trans-nonachlor (µg/kg-ww)	Oxy-chlordane (µg/kg-ww)	Total Chlordane[2] (µg/kg-ww)
NYSDEC-1992	F1977	SO12	07/06/92	SMB	13.9	6				
NYSDEC-1992	F1980	SO12	07/06/92	SMB	16.3	7				
NYSDEC-1992	F2007	SO12	07/07/92	SMB	13.0	6				
NYSDEC-1992	F2009	SO12	07/07/92	SMB	17.2	9				
NYSDEC-1992	F2011	SO12	07/07/92	SMB	17.9	10				
NYSDEC-1992	F2013	SO12	07/07/92	WALLEYE	18.1					
NYSDEC-1992	F2018	SO12	07/07/92	WALLEYE	21.3					
NYSDEC-1992	F2019	SO12	07/07/92	WALLEYE	21.7					
NYSDEC-1992	F2020	SO12	07/07/92	WALLEYE	22.5					
NYSDEC-1992	F2021	SO12	07/07/92	WALLEYE	26.2					
NYSDEC-1994	F2298	SO12	07/05/94	SMB	15.9	7				26
NYSDEC-1994	F2320	SO12	07/07/94	SMB	17.4	8				20
NYSDEC-1994	F2322	SO12	07/13/94	SMB	12.8	8				5 *U*
NYSDEC-1994	F2325	SO12	07/13/94	SMB	14.0	6				5 *U*
NYSDEC-1994	F2327	SO12	07/13/94	SMB	14.1	6				26
NYSDEC-1994	F2330	SO12	07/13/94	SMB	14.2	6				15
NYSDEC-1994	F2334	SO12	07/13/94	SMB	14.6	6				7.5
NYSDEC-1994	F2338	SO12	07/13/94	SMB	15.4	7				21
NYSDEC-1994	F2340	SO12	07/13/94	SMB	16.1	8				22
NYSDEC-1994	F2342	SO12	07/13/94	SMB	19.2	8				7.5
ONONDA96	396	SO7	7/1/1996	LMB	13.3	5		5 *U*	10 *U*	5 *U*
ONONDA96	674	SO7	7/2/1996	LMB	13.5	5		5 *U*	10 *U*	5 *U*
ONONDA96	951	SO7	7/2/1996	LMB	13.9	6		5 *U*	10 *U*	5 *U*
ONONDA96	349	SO7	7/2/1996	LMB	14.4	6		5 *U*	10 *U*	5 *U*
ONONDA96	392	SO7	7/1/1996	LMB	14.6	9		5 *U*	10 *U*	5 *U*
ONONDA96	334	SO7	7/2/1996	LMB	14.7	5		5 *U*	10 *U*	5 *U*
ONONDA96	338	SO7	7/2/1996	LMB	15.0	6		5 *U*	10 *U*	5 *U*
ONONDA96	694	SO7	7/2/1996	LMB	15.0	5		5 *U*	10 *U*	5 *U*
ONONDA96	335	SO7	7/2/1996	LMB	15.5	7		5 *U*	10 *U*	5 *U*
ONONDA96	337	SO7	7/2/1996	LMB	15.5	6		5 *U*	10 *U*	5 *U*

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Hexachloro-benzene (µg/kg-ww)	Aldrin (µg/kg-ww)	Endosulfan I (µg/kg-ww)	Endosulfan II (µg/kg-ww)	Endosulfan sulfate (µg/kg-ww)
ONONDA96	335	SO7	7/2/1996	LMB	15.5	7	2 *U*				
ONONDA96	337	SO7	7/2/1996	LMB	15.5	6	2 *U*				
ONONDA96	909	SO7	7/8/1996	SMB	16.3	8	4 *U*				
ONONDA96	353	SO7	6/27/1996	SMB	16.4	6	3				
ONONDA96	905	SO7	7/8/1996	SMB	16.4	7	3 *U*				
ONONDA96	351	SO7	6/27/1996	SMB	16.5	7	4				
ONONDA96	365	SO7	7/2/1996	SMB	16.6	6	3				
ONONDA96	908	SO7	7/8/1996	SMB	17.0	8	2				
ONONDA96	903	SO7	7/8/1996	SMB	17.2	7	6				
ONONDA96	902	SO7	7/8/1996	SMB	17.3	6	3				
ONONDA96	355	SO7	6/27/1996	SMB	17.6	7	3				
ONONDA96	367	SO7	7/2/1996	SMB	17.8	8	3				
ONONDA97	4559	SO7	6/30/1997	LMB	14.6	10	4 *U*				
ONONDA97	4575	SO7	6/30/1997	LMB	15.3	12	9				
ONONDA97	4560	SO7	6/30/1997	LMB	15.5	9	2 *U*				
ONONDA97	4566	SO7	6/30/1997	LMB	15.7	9	2				
ONONDA97	4561	SO7	6/30/1997	LMB	18.3	12	2				
ONONDA97	4144	SO7	7/3/1997	SMB	13.0	9	2 *U*				
ONONDA97	4145	SO7	7/3/1997	SMB	13.4	8	2 *U*				
ONONDA97	4146	SO7	7/3/1997	SMB	14.1	8	2 *U*				
ONONDA97	4140	SO7	7/1/1997	SMB	15.5	10	2				
ONONDA97	4136	SO7	7/1/1997	SMB	15.6	9	4				
ONONDA97	2894	SO7	7/1/1997	SMB	17.4	8	3				
ONONDA97	4676	SO7	6/30/1997	SMB	17.6	8	2				
ONONDA97	4653	SO7	6/30/1997	WPERCH	10.5	6	2				
ONONDA97	4654	SO7	6/30/1997	WPERCH	10.4	6	6 *U*				
ONONDA97	4694	SO7	6/30/1997	WPERCH	12.1	8	12				
ONONDA97	4696	SO7	6/30/1997	WPERCH	11.9	8	19				
ONONDA97	4699	SO7	6/30/1997	WPERCH	11.6	8	5 *U*				
ONONDA98	774640	SO7	7/28/1998	CATFISH	14.8	NA	2 *U*				
ONONDA98	774638	SO7	7/28/1998	CATFISH	14.8	NA	2				
ONONDA98	774639	SO7	7/28/1998	CATFISH	17.6	NA	3 *U*				

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	alpha-BHC (µg/kg-ww)	beta-BHC (µg/kg-ww)	delta-BHC (µg/kg-ww)	gamma-BHC (Lindane) (µg/kg-ww)	Dieldrin (µg/kg-ww)	Endrin (µg/kg-ww)
ONONDA96	335	SO7	7/2/1996	LMB	15.5	7					5 *U*	5 *U*
ONONDA96	337	SO7	7/2/1996	LMB	15.5	6					5 *U*	5 *U*
ONONDA96	909	SO7	7/8/1996	SMB	16.3	8					5 *U*	5
ONONDA96	353	SO7	6/27/1996	SMB	16.4	6					5 *U*	5 *U*
ONONDA96	905	SO7	7/8/1996	SMB	16.4	7					5 *U*	5 *U*
ONONDA96	351	SO7	6/27/1996	SMB	16.5	7					5 *U*	5 *U*
ONONDA96	365	SO7	7/2/1996	SMB	16.6	6					5 *U*	5 *U*
ONONDA96	908	SO7	7/8/1996	SMB	17.0	8					5 *U*	5 *U*
ONONDA96	903	SO7	7/8/1996	SMB	17.2	7					5 *U*	5 *U*
ONONDA96	902	SO7	7/8/1996	SMB	17.3	6					5 *U*	5 *U*
ONONDA96	355	SO7	6/27/1996	SMB	17.6	7					5 *U*	5 *U*
ONONDA96	367	SO7	7/2/1996	SMB	17.8	8					5 *U*	5 *U*
ONONDA97	4559	SO7	6/30/1997	LMB	14.6	10					5 *U*	5 *U*
ONONDA97	4575	SO7	6/30/1997	LMB	15.3	12					5 *U*	5 *U*
ONONDA97	4560	SO7	6/30/1997	LMB	15.5	9					5 *U*	5 *U*
ONONDA97	4566	SO7	6/30/1997	LMB	15.7	9					5 *U*	5 *U*
ONONDA97	4561	SO7	6/30/1997	LMB	18.3	12					5 *U*	5 *U*
ONONDA97	4144	SO7	7/3/1997	SMB	13.0	9					5 *U*	5 *U*
ONONDA97	4145	SO7	7/3/1997	SMB	13.4	8					5 *U*	5 *U*
ONONDA97	4146	SO7	7/3/1997	SMB	14.1	8					5 *U*	5
ONONDA97	4140	SO7	7/1/1997	SMB	15.5	10					5 *U*	5 *U*
ONONDA97	4136	SO7	7/1/1997	SMB	15.6	9					5 *U*	5 *U*
ONONDA97	2894	SO7	7/1/1997	SMB	17.4	8					5 *U*	5 *U*
ONONDA97	4676	SO7	6/30/1997	SMB	17.6	8					5 *U*	5 *U*
ONONDA97	4653	SO7	6/30/1997	WPERCH	10.5	6					5 *U*	5 *U*
ONONDA97	4654	SO7	6/30/1997	WPERCH	10.4	6					5 *U*	5 *U*
ONONDA97	4694	SO7	6/30/1997	WPERCH	12.1	8					5 *U*	5 *U*
ONONDA97	4696	SO7	6/30/1997	WPERCH	11.9	8					5 *U*	5 *U*
ONONDA97	4699	SO7	6/30/1997	WPERCH	11.6	8					5 *U*	5 *U*
ONONDA98	774640	SO7	7/28/1998	CATFISH	14.8	NA					5 *U*	5 *U*
ONONDA98	774638	SO7	7/28/1998	CATFISH	14.8	NA					5 *U*	5 *U*
ONONDA98	774639	SO7	7/28/1998	CATFISH	17.6	NA					5 *U*	5 *U*

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Endrin aldehyde (µg/kg-ww)	Endrin ketone (µg/kg-ww)	Heptachlor (µg/kg-ww)	Heptachlor epoxide (µg/kg-ww)	Mirex (µg/kg-ww)	Photomirex (µg/kg-ww)
ONONDA96	335	SO7	7/2/1996	LMB	15.5	7					2 *U*	5 *U*
ONONDA96	337	SO7	7/2/1996	LMB	15.5	6					2 *U*	5 *U*
ONONDA96	909	SO7	7/8/1996	SMB	16.3	8					2 *U*	5 *U*
ONONDA96	353	SO7	6/27/1996	SMB	16.4	6					2 *U*	5 *U*
ONONDA96	905	SO7	7/8/1996	SMB	16.4	7					2 *U*	5 *U*
ONONDA96	351	SO7	6/27/1996	SMB	16.5	7					2 *U*	5 *U*
ONONDA96	365	SO7	7/2/1996	SMB	16.6	6					2 *U*	5 *U*
ONONDA96	908	SO7	7/8/1996	SMB	17.0	8					2 *U*	5 *U*
ONONDA96	903	SO7	7/8/1996	SMB	17.2	7					2 *U*	5 *U*
ONONDA96	902	SO7	7/8/1996	SMB	17.3	6					2 *U*	5 *U*
ONONDA96	355	SO7	6/27/1996	SMB	17.6	7					2 *U*	5 *U*
ONONDA96	367	SO7	7/2/1996	SMB	17.8	8					2 *U*	5 *U*
ONONDA97	4559	SO7	6/30/1997	LMB	14.6	10					2 *U*	5 *U*
ONONDA97	4575	SO7	6/30/1997	LMB	15.3	12					2 *U*	5 *U*
ONONDA97	4560	SO7	6/30/1997	LMB	15.5	9					2 *U*	5 *U*
ONONDA97	4566	SO7	6/30/1997	LMB	15.7	9					2 *U*	5 *U*
ONONDA97	4561	SO7	6/30/1997	LMB	18.3	12					2 *U*	5 *U*
ONONDA97	4144	SO7	7/3/1997	SMB	13.0	9					2 *U*	5 *U*
ONONDA97	4145	SO7	7/3/1997	SMB	13.4	8					2 *U*	5 *U*
ONONDA97	4146	SO7	7/3/1997	SMB	14.1	8					2 *U*	5
ONONDA97	4140	SO7	7/1/1997	SMB	15.5	10					2 *U*	5 *U*
ONONDA97	4136	SO7	7/1/1997	SMB	15.6	9					2 *U*	5 *U*
ONONDA97	2894	SO7	7/1/1997	SMB	17.4	8					2 *U*	5 *U*
ONONDA97	4676	SO7	6/30/1997	SMB	17.6	8					2 *U*	5 *U*
ONONDA97	4653	SO7	6/30/1997	WPERCH	10.5	6					2 *U*	5 *U*
ONONDA97	4654	SO7	6/30/1997	WPERCH	10.4	6					2 *U*	5 *U*
ONONDA97	4694	SO7	6/30/1997	WPERCH	12.1	8					2 *U*	5 *U*
ONONDA97	4696	SO7	6/30/1997	WPERCH	11.9	8					2 *U*	5 *U*
ONONDA97	4699	SO7	6/30/1997	WPERCH	11.6	8					2 *U*	5 *U*
ONONDA98	774640	SO7	7/28/1998	CATFISH	14.8	NA					2 *U*	5
ONONDA98	774638	SO7	7/28/1998	CATFISH	14.8	NA					2 *U*	5 *U*
ONONDA98	774639	SO7	7/28/1998	CATFISH	17.6	NA					2 *U*	5 *U*

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Methoxy-chlor (µg/kg-ww)	2,4'-DDD (µg/kg-ww)	2,4'-DDE (µg/kg-ww)	2,4'-DDT (µg/kg-ww)	4,4'-DDD (µg/kg-ww)	4,4'-DDE (µg/kg-ww)
ONONDA96	335	SO7	7/2/1996	LMB	15.5	7					2	4
ONONDA96	337	SO7	7/2/1996	LMB	15.5	6					2 *U*	2
ONONDA96	909	SO7	7/8/1996	SMB	16.3	8					7 *U*	18 *U*
ONONDA96	353	SO7	6/27/1996	SMB	16.4	6					2	6
ONONDA96	905	SO7	7/8/1996	SMB	16.4	7					7	25
ONONDA96	351	SO7	6/27/1996	SMB	16.5	7					6	16
ONONDA96	365	SO7	7/2/1996	SMB	16.6	6					4	10
ONONDA96	908	SO7	7/8/1996	SMB	17.0	8					3	10
ONONDA96	903	SO7	7/8/1996	SMB	17.2	7					11	25
ONONDA96	902	SO7	7/8/1996	SMB	17.3	6					4	9
ONONDA96	355	SO7	6/27/1996	SMB	17.6	7					5	11
ONONDA96	367	SO7	7/2/1996	SMB	17.8	8					6	17
ONONDA97	4559	SO7	6/30/1997	LMB	14.6	10					5 *U*	14
ONONDA97	4575	SO7	6/30/1997	LMB	15.3	12					14	39
ONONDA97	4560	SO7	6/30/1997	LMB	15.5	9					2	4
ONONDA97	4566	SO7	6/30/1997	LMB	15.7	9					4	11
ONONDA97	4561	SO7	6/30/1997	LMB	18.3	12					2	6
ONONDA97	4144	SO7	7/3/1997	SMB	13.0	9					3	6
ONONDA97	4145	SO7	7/3/1997	SMB	13.4	8					3 *U*	8
ONONDA97	4146	SO7	7/3/1997	SMB	14.1	8					2	2
ONONDA97	4140	SO7	7/1/1997	SMB	15.5	10					5	11
ONONDA97	4136	SO7	7/1/1997	SMB	15.6	9					5	10
ONONDA97	2894	SO7	7/1/1997	SMB	17.4	8					7	24
ONONDA97	4676	SO7	6/30/1997	SMB	17.6	8					4	11
ONONDA97	4653	SO7	6/30/1997	WPERCH	10.5	6					4	13
ONONDA97	4654	SO7	6/30/1997	WPERCH	10.4	6					11	27
ONONDA97	4694	SO7	6/30/1997	WPERCH	12.1	8					11	20
ONONDA97	4696	SO7	6/30/1997	WPERCH	11.9	8					14	21
ONONDA97	4699	SO7	6/30/1997	WPERCH	11.6	8					5	8
ONONDA98	774640	SO7	7/28/1998	CATFISH	14.8	NA					24	59
ONONDA98	774638	SO7	7/28/1998	CATFISH	14.8	NA					52	115
ONONDA98	774639	SO7	7/28/1998	CATFISH	17.6	NA					16	46

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	4,4'-DDT (µg/kg-ww)	Toxaphene (µg/kg-ww)	Total Chlordane Constituents: alpha (cis) - Chlordane (µg/kg-ww)	Total Chlordane Constituents: gamma (trans)- Chlordane (µg/kg-ww)
ONONDA96	335	SO7	7/2/1996	LMB	15.5	7	2 *U*		5 *U*	5 *U*
ONONDA96	337	SO7	7/2/1996	LMB	15.5	6	2 *U*		5 *U*	5 *U*
ONONDA96	909	SO7	7/8/1996	SMB	16.3	8	2 *U*		5 *U*	5 *U*
ONONDA96	353	SO7	6/27/1996	SMB	16.4	6	2		5 *U*	5 *U*
ONONDA96	905	SO7	7/8/1996	SMB	16.4	7	3		5 *U*	5 *U*
ONONDA96	351	SO7	6/27/1996	SMB	16.5	7	3 *U*		5 *U*	5 *U*
ONONDA96	365	SO7	7/2/1996	SMB	16.6	6	2		5 *U*	5
ONONDA96	908	SO7	7/8/1996	SMB	17.0	8	2		5 *U*	5 *U*
ONONDA96	903	SO7	7/8/1996	SMB	17.2	7	5		5 *U*	7 *U*
ONONDA96	902	SO7	7/8/1996	SMB	17.3	6	2		5 *U*	5
ONONDA96	355	SO7	6/27/1996	SMB	17.6	7	3		5 *U*	5 *U*
ONONDA96	367	SO7	7/2/1996	SMB	17.8	8	3		5 *U*	5 *U*
ONONDA97	4559	SO7	6/30/1997	LMB	14.6	10	5 *U*		5 *U*	5 *U*
ONONDA97	4575	SO7	6/30/1997	LMB	15.3	12	14		5 *U*	5 *U*
ONONDA97	4560	SO7	6/30/1997	LMB	15.5	9	2		5 *U*	5 *U*
ONONDA97	4566	SO7	6/30/1997	LMB	15.7	9	4		5 *U*	5 *U*
ONONDA97	4561	SO7	6/30/1997	LMB	18.3	12	2		5 *U*	5 *U*
ONONDA97	4144	SO7	7/3/1997	SMB	13.0	9	3		5 *U*	5 *U*
ONONDA97	4145	SO7	7/3/1997	SMB	13.4	8	4 *U*		5 *U*	5 *U*
ONONDA97	4146	SO7	7/3/1997	SMB	14.1	8	2 *U*		5 *U*	5 *U*
ONONDA97	4140	SO7	7/1/1997	SMB	15.5	10	4		5 *U*	5 *U*
ONONDA97	4136	SO7	7/1/1997	SMB	15.6	9	4		5 *U*	5 *U*
ONONDA97	2894	SO7	7/1/1997	SMB	17.4	8	7		5 *U*	5 *U*
ONONDA97	4676	SO7	6/30/1997	SMB	17.6	8	2		5 *U*	5 *U*
ONONDA97	4653	SO7	6/30/1997	WPERCH	10.5	6	4		5 *U*	5 *U*
ONONDA97	4654	SO7	6/30/1997	WPERCH	10.4	6	10		5 *U*	5 *U*
ONONDA97	4694	SO7	6/30/1997	WPERCH	12.1	8	8		5	5 *U*
ONONDA97	4696	SO7	6/30/1997	WPERCH	11.9	8	10		6 *U*	5 *U*
ONONDA97	4699	SO7	6/30/1997	WPERCH	11.6	8	4		5 *U*	5 *U*
ONONDA98	774640	SO7	7/28/1998	CATFISH	14.8	NA	5 *U*		6	5
ONONDA98	774638	SO7	7/28/1998	CATFISH	14.8	NA	14		13	13
ONONDA98	774639	SO7	7/28/1998	CATFISH	17.6	NA	7		5	5 *U*

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Total Chlordane Constituents: cis-Nonachlor (µg/kg-ww)	Trans-nonachlor (µg/kg-ww)	Oxy-chlordane (µg/kg-ww)	Total Chlordane[2] (µg/kg-ww)
ONONDA96	335	SO7	7/2/1996	LMB	15.5	7		5 *U*	10 *U*	5 *U*
ONONDA96	337	SO7	7/2/1996	LMB	15.5	6		5 *U*	10 *U*	5 *U*
ONONDA96	909	SO7	7/8/1996	SMB	16.3	8		5 *U*	10 *U*	5 *U*
ONONDA96	353	SO7	6/27/1996	SMB	16.4	6		5 *U*	10 *U*	5 *U*
ONONDA96	905	SO7	7/8/1996	SMB	16.4	7		5 *U*	10 *U*	5 *U*
ONONDA96	351	SO7	6/27/1996	SMB	16.5	7		5 *U*	10 *U*	5 *U*
ONONDA96	365	SO7	7/2/1996	SMB	16.6	6		5 *U*	10 *U*	5
ONONDA96	908	SO7	7/8/1996	SMB	17.0	8		5 *U*	10 *U*	5 *U*
ONONDA96	903	SO7	7/8/1996	SMB	17.2	7		5 *U*	10 *U*	7 *U*
ONONDA96	902	SO7	7/8/1996	SMB	17.3	6		5	10 *U*	10
ONONDA96	355	SO7	6/27/1996	SMB	17.6	7		5 *U*	10 *U*	5 *U*
ONONDA96	367	SO7	7/2/1996	SMB	17.8	8		5 *U*	10 *U*	5 *U*
ONONDA97	4559	SO7	6/30/1997	LMB	14.6	10		5 *U*	10 *U*	5 *U*
ONONDA97	4575	SO7	6/30/1997	LMB	15.3	12		5 *U*	10 *U*	5 *U*
ONONDA97	4560	SO7	6/30/1997	LMB	15.5	9		5 *U*	10 *U*	5 *U*
ONONDA97	4566	SO7	6/30/1997	LMB	15.7	9		5 *U*	10 *U*	5 *U*
ONONDA97	4561	SO7	6/30/1997	LMB	18.3	12		5 *U*	10 *U*	5 *U*
ONONDA97	4144	SO7	7/3/1997	SMB	13.0	9		5 *U*	10 *U*	5 *U*
ONONDA97	4145	SO7	7/3/1997	SMB	13.4	8		5 *U*	10 *U*	5 *U*
ONONDA97	4146	SO7	7/3/1997	SMB	14.1	8		5 *U*	10 *U*	5 *U*
ONONDA97	4140	SO7	7/1/1997	SMB	15.5	10		5 *U*	10 *U*	5 *U*
ONONDA97	4136	SO7	7/1/1997	SMB	15.6	9		5 *U*	10 *U*	5 *U*
ONONDA97	2894	SO7	7/1/1997	SMB	17.4	8		5 *U*	10 *U*	5 *U*
ONONDA97	4676	SO7	6/30/1997	SMB	17.6	8		5	10 *U*	5
ONONDA97	4653	SO7	6/30/1997	WPERCH	10.5	6		5 *U*	10 *U*	5 *U*
ONONDA97	4654	SO7	6/30/1997	WPERCH	10.4	6		5 *U*	10 *U*	5 *U*
ONONDA97	4694	SO7	6/30/1997	WPERCH	12.1	8		5 *U*	10 *U*	5
ONONDA97	4696	SO7	6/30/1997	WPERCH	11.9	8		5 *U*	10 *U*	5 *U*
ONONDA97	4699	SO7	6/30/1997	WPERCH	11.6	8		5 *U*	10 *U*	5 *U*
ONONDA98	774640	SO7	7/28/1998	CATFISH	14.8	NA		7	10 *U*	18
ONONDA98	774638	SO7	7/28/1998	CATFISH	14.8	NA		13	10 *U*	39
ONONDA98	774639	SO7	7/28/1998	CATFISH	17.6	NA		11	10 *U*	16

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Hexachloro-benzene (µg/kg-ww)	Aldrin (µg/kg-ww)	Endosulfan I (µg/kg-ww)	Endosulfan II (µg/kg-ww)	Endosulfan sulfate (µg/kg-ww)
ONONDA98	774637	SO7	7/28/1998	CATFISH	17.8	NA	4 *U*				
ONONDA98	774636	SO7	7/28/1998	CATFISH	18.2	NA	56				
ONONDA98	130557	SO7	6/22/1998	LMB	15.0	8	3				
ONONDA98	130554	SO7	6/22/1998	LMB	15.7	9	2				
ONONDA98	130799	SO7	6/17/1998	LMB	16.1	8	3				
ONONDA98	130555	SO7	6/22/1998	LMB	16.1	10	2				
ONONDA98	774635	SO7	7/28/1998	LMB	16.4	8	2				
ONONDA98	130567	SO7	6/22/1998	NPIKE	35.5	7	17 *U*				
ONONDA98	130563	SO7	6/22/1998	SMB	13.4	7	5				
ONONDA98	130823	SO7	6/17/1998	SMB	14.4	7	3				
ONONDA98	130562	SO7	6/22/1998	SMB	15.1	7	12				
ONONDA98	130560	SO7	6/22/1998	SMB	15.4	8	9				
ONONDA98	130819	SO7	6/17/1998	SMB	15.9	7	19				
ONONDA98	130561	SO7	6/22/1998	SMB	16.1	8	2				
ONONDA98	130818	SO7	6/17/1998	SMB	16.6	7	6				
ONONDA98	130889	SO7	6/18/1998	WALLEYE	16.8	NA	4				
ONONDA98	130553	SO7	6/22/1998	WALLEYE	18.8	5	15 *U*				
ONONDA98	130795	SO7	6/17/1998	WALLEYE	22.9	8	10				
ONONDA98	130796	SO7	6/17/1998	WALLEYE	23.3	5	13				
ONONDA98	130794	SO7	6/17/1998	WALLEYE	23.7	8	22				
ONONDA98	130833	SO7	6/17/1998	WPERCH	6.5	3	6				
ONONDA98	130837	SO7	6/17/1998	WPERCH	6.6	2	11				
ONONDA98	130838	SO7	6/17/1998	WPERCH	6.7	2	16				
ONONDA98	130834	SO7	6/17/1998	WPERCH	6.7	3	2				
ONONDA98	130835	SO7	6/17/1998	WPERCH	6.7	2	10				
ONONDAGAOCL9	138741	SO7	7/7/1999	CARP	18.0	NA	26	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138743	SO7	7/7/1999	CARP	23.2	NA	39	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138742	SO7	7/7/1999	CARP	24.8	NA	131	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138709	SO7	6/24/1999	CARP	26.3	NA	69	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138744	SO7	7/7/1999	CARP	26.4	NA	22	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138773	SO7	7/16/1999	CATFISH	17.6	NA	3	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138708	SO7	6/24/1999	CATFISH	18.1	NA	5	5 *U*	5 *U*	5 *U*	5 U

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	alpha-BHC (µg/kg-ww)	beta-BHC (µg/kg-ww)	delta-BHC (µg/kg-ww)	gamma-BHC (Lindane) (µg/kg-ww)	Dieldrin (µg/kg-ww)	Endrin (µg/kg-ww)
ONONDA98	774637	SO7	7/28/1998	CATFISH	17.8	NA					10 *U*	5 *U*
ONONDA98	774636	SO7	7/28/1998	CATFISH	18.2	NA					12	5 *U*
ONONDA98	130557	SO7	6/22/1998	LMB	15.0	8					5	5 *U*
ONONDA98	130554	SO7	6/22/1998	LMB	15.7	9					5 *U*	5 *U*
ONONDA98	130799	SO7	6/17/1998	LMB	16.1	8					5 *U*	5 *U*
ONONDA98	130555	SO7	6/22/1998	LMB	16.1	10					5 *U*	5 *U*
ONONDA98	774635	SO7	7/28/1998	LMB	16.4	8					5	5 *U*
ONONDA98	130567	SO7	6/22/1998	NPIKE	35.5	7					6 *U*	5 *U*
ONONDA98	130563	SO7	6/22/1998	SMB	13.4	7					5	5 *U*
ONONDA98	130823	SO7	6/17/1998	SMB	14.4	7					5 *U*	5 *U*
ONONDA98	130562	SO7	6/22/1998	SMB	15.1	7					5 *U*	5 *U*
ONONDA98	130560	SO7	6/22/1998	SMB	15.4	8					8 *U*	5 *U*
ONONDA98	130819	SO7	6/17/1998	SMB	15.9	7					5 *U*	5 *U*
ONONDA98	130561	SO7	6/22/1998	SMB	16.1	8					5 *U*	5 *U*
ONONDA98	130818	SO7	6/17/1998	SMB	16.6	7					5 *U*	5 *U*
ONONDA98	130889	SO7	6/18/1998	WALLEYE	16.8	NA					5 *U*	5 *U*
ONONDA98	130553	SO7	6/22/1998	WALLEYE	18.8	5					5 *U*	5 *U*
ONONDA98	130795	SO7	6/17/1998	WALLEYE	22.9	8					5	5 *U*
ONONDA98	130796	SO7	6/17/1998	WALLEYE	23.3	5					6 *U*	5 *U*
ONONDA98	130794	SO7	6/17/1998	WALLEYE	23.7	8					6 *U*	5 *U*
ONONDA98	130833	SO7	6/17/1998	WPERCH	6.5	3					5 *U*	5 *U*
ONONDA98	130837	SO7	6/17/1998	WPERCH	6.6	2					6	5 *U*
ONONDA98	130838	SO7	6/17/1998	WPERCH	6.7	2					6 *U*	5 *U*
ONONDA98	130834	SO7	6/17/1998	WPERCH	6.7	3					5	5 *U*
ONONDA98	130835	SO7	6/17/1998	WPERCH	6.7	2					7	5 *U*
ONONDAGAOCL9	138741	SO7	7/7/1999	CARP	18.0	NA	5 *U*	5 *U*	5 *U*	5 *U*	5	5 *U*
ONONDAGAOCL9	138743	SO7	7/7/1999	CARP	23.2	NA	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONONDAGAOCL9	138742	SO7	7/7/1999	CARP	24.8	NA	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONONDAGAOCL9	138709	SO7	6/24/1999	CARP	26.3	NA	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONONDAGAOCL9	138744	SO7	7/7/1999	CARP	26.4	NA	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONONDAGAOCL9	138773	SO7	7/16/1999	CATFISH	17.6	NA	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONONDAGAOCL9	138708	SO7	6/24/1999	CATFISH	18.1	NA	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Endrin aldehyde (µg/kg-ww)	Endrin ketone (µg/kg-ww)	Heptachlor (µg/kg-ww)	Heptachlor epoxide (µg/kg-ww)	Mirex (µg/kg-ww)	Photomirex (µg/kg-ww)
ONONDA98	774637	SO7	7/28/1998	CATFISH	17.8	NA					2 *U*	5 *U*
ONONDA98	774636	SO7	7/28/1998	CATFISH	18.2	NA					2 *U*	5 *U*
ONONDA98	130557	SO7	6/22/1998	LMB	15.0	8					2 *U*	5 *U*
ONONDA98	130554	SO7	6/22/1998	LMB	15.7	9					2 *U*	5 *U*
ONONDA98	130799	SO7	6/17/1998	LMB	16.1	8					2 *U*	5 *U*
ONONDA98	130555	SO7	6/22/1998	LMB	16.1	10					2 *U*	5 *U*
ONONDA98	774635	SO7	7/28/1998	LMB	16.4	8					2	5 *U*
ONONDA98	130567	SO7	6/22/1998	NPIKE	35.5	7					2 *U*	5 *U*
ONONDA98	130563	SO7	6/22/1998	SMB	13.4	7					2 *U*	5 *U*
ONONDA98	130823	SO7	6/17/1998	SMB	14.4	7					2 *U*	5 *U*
ONONDA98	130562	SO7	6/22/1998	SMB	15.1	7					2 *U*	5 *U*
ONONDA98	130560	SO7	6/22/1998	SMB	15.4	8					2 *U*	5 *U*
ONONDA98	130819	SO7	6/17/1998	SMB	15.9	7					2 *U*	5 *U*
ONONDA98	130561	SO7	6/22/1998	SMB	16.1	8					2 *U*	5 *U*
ONONDA98	130818	SO7	6/17/1998	SMB	16.6	7					2 *U*	5 *U*
ONONDA98	130889	SO7	6/18/1998	WALLEYE	16.8	NA					2 *U*	5 *U*
ONONDA98	130553	SO7	6/22/1998	WALLEYE	18.8	5					2 *U*	5 *U*
ONONDA98	130795	SO7	6/17/1998	WALLEYE	22.9	8					2 *U*	5 *U*
ONONDA98	130796	SO7	6/17/1998	WALLEYE	23.3	5					2 *U*	5 *U*
ONONDA98	130794	SO7	6/17/1998	WALLEYE	23.7	8					2 *U*	5 *U*
ONONDA98	130833	SO7	6/17/1998	WPERCH	6.5	3					2 *U*	5 *U*
ONONDA98	130837	SO7	6/17/1998	WPERCH	6.6	2					2 *U*	5 *U*
ONONDA98	130838	SO7	6/17/1998	WPERCH	6.7	2					2 *U*	5 *U*
ONONDA98	130834	SO7	6/17/1998	WPERCH	6.7	3					2 *U*	5 *U*
ONONDA98	130835	SO7	6/17/1998	WPERCH	6.7	2					2 *U*	5 *U*
ONONDAGAOCL9	138741	SO7	7/7/1999	CARP	18.0	NA	5 *U*		5 U	5 *U*	2 *U*	5 *U*
ONONDAGAOCL9	138743	SO7	7/7/1999	CARP	23.2	NA	5 *U*		5 U	5 *U*	2 *U*	5 *U*
ONONDAGAOCL9	138742	SO7	7/7/1999	CARP	24.8	NA	5 *U*		5 U	5 *U*	2 *U*	5 *U*
ONONDAGAOCL9	138709	SO7	6/24/1999	CARP	26.3	NA	5 *U*		5 U	5 *U*	2 *U*	5 *U*
ONONDAGAOCL9	138744	SO7	7/7/1999	CARP	26.4	NA	5 *U*		5 U	5 *U*	2 *U*	5 *U*
ONONDAGAOCL9	138773	SO7	7/16/1999	CATFISH	17.6	NA	5 *U*		5 U	5 *U*	2	5 *U*
ONONDAGAOCL9	138708	SO7	6/24/1999	CATFISH	18.1	NA	5 *U*		5 U	5 *U*	2	5 *U*

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Methoxy-chlor (µg/kg-ww)	2,4'-DDD (µg/kg-ww)	2,4'-DDE (µg/kg-ww)	2,4'-DDT (µg/kg-ww)	4,4'-DDD (µg/kg-ww)	4,4'-DDE (µg/kg-ww)
ONONDA98	774637	SO7	7/28/1998	CATFISH	17.8	NA					15	60
ONONDA98	774636	SO7	7/28/1998	CATFISH	18.2	NA					37	102
ONONDA98	130557	SO7	6/22/1998	LMB	15.0	8					2	3
ONONDA98	130554	SO7	6/22/1998	LMB	15.7	9					3	8
ONONDA98	130799	SO7	6/17/1998	LMB	16.1	8					4	8
ONONDA98	130555	SO7	6/22/1998	LMB	16.1	10					2	3
ONONDA98	774635	SO7	7/28/1998	LMB	16.4	8					2	9
ONONDA98	130567	SO7	6/22/1998	NPIKE	35.5	7					16	27
ONONDA98	130563	SO7	6/22/1998	SMB	13.4	7					7	18
ONONDA98	130823	SO7	6/17/1998	SMB	14.4	7					4	8
ONONDA98	130562	SO7	6/22/1998	SMB	15.1	7					12	20
ONONDA98	130560	SO7	6/22/1998	SMB	15.4	8					9	17
ONONDA98	130819	SO7	6/17/1998	SMB	15.9	7					16	28
ONONDA98	130561	SO7	6/22/1998	SMB	16.1	8					8	16
ONONDA98	130818	SO7	6/17/1998	SMB	16.6	7					10	21
ONONDA98	130889	SO7	6/18/1998	WALLEYE	16.8	NA					5	14
ONONDA98	130553	SO7	6/22/1998	WALLEYE	18.8	5					9 *U*	12
ONONDA98	130795	SO7	6/17/1998	WALLEYE	22.9	8					11	37
ONONDA98	130796	SO7	6/17/1998	WALLEYE	23.3	5					7	9
ONONDA98	130794	SO7	6/17/1998	WALLEYE	23.7	8					16	37
ONONDA98	130833	SO7	6/17/1998	WPERCH	6.5	3					4	6
ONONDA98	130837	SO7	6/17/1998	WPERCH	6.6	2					8	11
ONONDA98	130838	SO7	6/17/1998	WPERCH	6.7	2					14	18
ONONDA98	130834	SO7	6/17/1998	WPERCH	6.7	3					2	3
ONONDA98	130835	SO7	6/17/1998	WPERCH	6.7	2					7	9
ONONDAGAOCL9	138741	SO7	7/7/1999	CARP	18.0	NA		5 *U*	5	5 *U*	3	6
ONONDAGAOCL9	138743	SO7	7/7/1999	CARP	23.2	NA		5 *U*	7 *U*	5 *U*	12	117
ONONDAGAOCL9	138742	SO7	7/7/1999	CARP	24.8	NA		5 *U*	24	5 *U*	44	190
ONONDAGAOCL9	138709	SO7	6/24/1999	CARP	26.3	NA		5 *U*	10 *U*	5 *U*	19	71
ONONDAGAOCL9	138744	SO7	7/7/1999	CARP	26.4	NA		5 *U*	5 *U*	5 *U*	14	55
ONONDAGAOCL9	138773	SO7	7/16/1999	CATFISH	17.6	NA		5 *U*	5 *U*	5 *U*	2	14
ONONDAGAOCL9	138708	SO7	6/24/1999	CATFISH	18.1	NA		5 *U*	5 *U*	5 *U*	4	15

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	4,4'-DDT (µg/kg-ww)	Toxaphene (µg/kg-ww)	Total Chlordane Constituents: alpha (cis) - Chlordane (µg/kg-ww)	Total Chlordane Constituents: gamma (trans)- Chlordane (µg/kg-ww)
ONONDA98	774637	SO7	7/28/1998	CATFISH	17.8	NA	4		5	5
ONONDA98	774636	SO7	7/28/1998	CATFISH	18.2	NA	7		9 *U*	5 *U*
ONONDA98	130557	SO7	6/22/1998	LMB	15.0	8	2		5 *U*	5 *U*
ONONDA98	130554	SO7	6/22/1998	LMB	15.7	9	2 *U*		5 *U*	5 *U*
ONONDA98	130799	SO7	6/17/1998	LMB	16.1	8	2		5 *U*	5 *U*
ONONDA98	130555	SO7	6/22/1998	LMB	16.1	10	2 *U*		5 *U*	5 *U*
ONONDA98	774635	SO7	7/28/1998	LMB	16.4	8	2		5	5 *U*
ONONDA98	130567	SO7	6/22/1998	NPIKE	35.5	7	3 *U*		5 *U*	5 *U*
ONONDA98	130563	SO7	6/22/1998	SMB	13.4	7	4		5 *U*	5 *U*
ONONDA98	130823	SO7	6/17/1998	SMB	14.4	7	2		5 *U*	5 *U*
ONONDA98	130562	SO7	6/22/1998	SMB	15.1	7	5		5 *U*	5 *U*
ONONDA98	130560	SO7	6/22/1998	SMB	15.4	8	3		5 *U*	5 *U*
ONONDA98	130819	SO7	6/17/1998	SMB	15.9	7	7		5 *U*	5 *U*
ONONDA98	130561	SO7	6/22/1998	SMB	16.1	8	4		5 *U*	5 *U*
ONONDA98	130818	SO7	6/17/1998	SMB	16.6	7	4		5	5 *U*
ONONDA98	130889	SO7	6/18/1998	WALLEYE	16.8	NA	2		5 *U*	5 *U*
ONONDA98	130553	SO7	6/22/1998	WALLEYE	18.8	5	3 *U*		5 *U*	5 *U*
ONONDA98	130795	SO7	6/17/1998	WALLEYE	22.9	8	10		5 *U*	5 *U*
ONONDA98	130796	SO7	6/17/1998	WALLEYE	23.3	5	3		5 *U*	5 *U*
ONONDA98	130794	SO7	6/17/1998	WALLEYE	23.7	8	8		6	5 *U*
ONONDA98	130833	SO7	6/17/1998	WPERCH	6.5	3	3 *U*		5 *U*	5 *U*
ONONDA98	130837	SO7	6/17/1998	WPERCH	6.6	2	5		5	5 *U*
ONONDA98	130838	SO7	6/17/1998	WPERCH	6.7	2	7		5 *U*	5 *U*
ONONDA98	130834	SO7	6/17/1998	WPERCH	6.7	3	2		5 *U*	5 *U*
ONONDA98	130835	SO7	6/17/1998	WPERCH	6.7	2	4		5 *U*	5 *U*
ONONDAGAOCL9	138741	SO7	7/7/1999	CARP	18.0	NA	6		5	5
ONONDAGAOCL9	138743	SO7	7/7/1999	CARP	23.2	NA	49		5 *U*	5 *U*
ONONDAGAOCL9	138742	SO7	7/7/1999	CARP	24.8	NA	82		13 *U*	8 *U*
ONONDAGAOCL9	138709	SO7	6/24/1999	CARP	26.3	NA	52		5 *U*	5 *U*
ONONDAGAOCL9	138744	SO7	7/7/1999	CARP	26.4	NA	32		5	5 *U*
ONONDAGAOCL9	138773	SO7	7/16/1999	CATFISH	17.6	NA	9		5	5 *U*
ONONDAGAOCL9	138708	SO7	6/24/1999	CATFISH	18.1	NA	17		5 *U*	5 *U*

Table A-1B. (cont.)

							Total Chlordane Constituents			
Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	cis-Nonachlor (µg/kg-ww)	Trans-nonachlor (µg/kg-ww)	Oxy-chlordane (µg/kg-ww)	Total Chlordane[2] (µg/kg-ww)
ONONDA98	774637	SO7	7/28/1998	CATFISH	17.8	NA		5	10 *U*	15
ONONDA98	774636	SO7	7/28/1998	CATFISH	18.2	NA		6 *U*	10 *U*	5 *U*
ONONDA98	130557	SO7	6/22/1998	LMB	15.0	8		5 *U*	10 *U*	5 *U*
ONONDA98	130554	SO7	6/22/1998	LMB	15.7	9		5 *U*	10 *U*	5 *U*
ONONDA98	130799	SO7	6/17/1998	LMB	16.1	8		5 *U*	10 *U*	5 *U*
ONONDA98	130555	SO7	6/22/1998	LMB	16.1	10		5 *U*	10 *U*	5 *U*
ONONDA98	774635	SO7	7/28/1998	LMB	16.4	8		5	10 *U*	10 *U*
ONONDA98	130567	SO7	6/22/1998	NPIKE	35.5	7		5 *U*	10 *U*	5 *U*
ONONDA98	130563	SO7	6/22/1998	SMB	13.4	7		5 *U*	10 *U*	5 *U*
ONONDA98	130823	SO7	6/17/1998	SMB	14.4	7		5 *U*	10 *U*	5 *U*
ONONDA98	130562	SO7	6/22/1998	SMB	15.1	7		5 *U*	10 *U*	5 *U*
ONONDA98	130560	SO7	6/22/1998	SMB	15.4	8		5 *U*	10 *U*	5 *U*
ONONDA98	130819	SO7	6/17/1998	SMB	15.9	7		6 *U*	10 *U*	5 *U*
ONONDA98	130561	SO7	6/22/1998	SMB	16.1	8		5 *U*	10 *U*	5 *U*
ONONDA98	130818	SO7	6/17/1998	SMB	16.6	7		5	10 *U*	10
ONONDA98	130889	SO7	6/18/1998	WALLEYE	16.8	NA		5 *U*	10 *U*	5 *U*
ONONDA98	130553	SO7	6/22/1998	WALLEYE	18.8	5		5 *U*	10 *U*	5 *U*
ONONDA98	130795	SO7	6/17/1998	WALLEYE	22.9	8		5 *U*	10 *U*	5 *U*
ONONDA98	130796	SO7	6/17/1998	WALLEYE	23.3	5		5 *U*	10 *U*	5 *U*
ONONDA98	130794	SO7	6/17/1998	WALLEYE	23.7	8		5	10 *U*	11
ONONDA98	130833	SO7	6/17/1998	WPERCH	6.5	3		5 *U*	10 *U*	5 *U*
ONONDA98	130837	SO7	6/17/1998	WPERCH	6.6	2		5 *U*	10 *U*	5
ONONDA98	130838	SO7	6/17/1998	WPERCH	6.7	2		5 *U*	10 *U*	5 *U*
ONONDA98	130834	SO7	6/17/1998	WPERCH	6.7	3		5 *U*	10 *U*	5 *U*
ONONDA98	130835	SO7	6/17/1998	WPERCH	6.7	2		5 *U*	10 *U*	5 *U*
ONONDAGAOCL9	138741	SO7	7/7/1999	CARP	18.0	NA	5	5	6	26
ONONDAGAOCL9	138743	SO7	7/7/1999	CARP	23.2	NA	5 *U*	5 *U*	17	17
ONONDAGAOCL9	138742	SO7	7/7/1999	CARP	24.8	NA	13	13 *U*	48	61
ONONDAGAOCL9	138709	SO7	6/24/1999	CARP	26.3	NA	7 *U*	5 *U*	28	28
ONONDAGAOCL9	138744	SO7	7/7/1999	CARP	26.4	NA	5 *U*	5	18	28
ONONDAGAOCL9	138773	SO7	7/16/1999	CATFISH	17.6	NA	5 *U*	5 *U*	5	10
ONONDAGAOCL9	138708	SO7	6/24/1999	CATFISH	18.1	NA	5 *U*	5 *U*	5 *U*	5 *U*

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Hexachloro-benzene (µg/kg-ww)	Aldrin (µg/kg-ww)	Endosulfan I (µg/kg-ww)	Endosulfan II (µg/kg-ww)	Endosulfan sulfate (µg/kg-ww)
ONONDAGAOCL9	138745	SO7	7/7/1999	CATFISH	18.3	NA	10	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138784	SO7	7/16/1999	CATFISH	18.9	NA	24	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138783	SO7	7/16/1999	CATFISH	21.5	NA	14	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138762	SO7	7/7/1999	LMB	13.6	6	2	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138603	SO7	6/24/1999	LMB	15.1	8	2	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138735	SO7	6/30/1999	LMB	15.2	6	3 *U*	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138728	SO7	6/30/1999	LMB	16.0	6	2	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138604	SO7	6/24/1999	LMB	17.3	7	8	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138726	SO7	6/30/1999	LMB	17.8	7	3	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138606	SO7	6/24/1999	LMB	18.3	9	2	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138601	SO7	6/24/1999	LMB	18.5	8	3	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138717	SO7	6/30/1999	SMB	16.7	8	4	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138716	SO7	6/30/1999	SMB	17.3	9	2	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138721	SO7	6/30/1999	SMB	17.5	7	2	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138712	SO7	6/30/1999	SMB	17.5	9	3 *U*	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138719	SO7	6/30/1999	SMB	17.7	8	3 *U*	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138750	SO7	7/7/1999	WPERCH	6.5	NA	17	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138747	SO7	7/7/1999	WPERCH	6.8	NA	19	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138749	SO7	7/7/1999	WPERCH	7.4	NA	10	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	128748	SO7	7/7/1999	WPERCH	8.0	NA	13	5 *U*	5 *U*	5 *U*	5 U
ONONDAGAOCL9	138746	SO7	7/7/1999	WPERCH	8.0	NA	37	5 *U*	5 *U*	5 *U*	5 U
ONON2A	WB0034F	Lake	9/22/2000	BLUEGILL	7.4	3	8.7 [1]	2 *U*	1 *U*	1 *U*	2 U
ONON2A	WB0035F	Lake	9/22/2000	BLUEGILL	6.9	4	2.7 [1]	1 *U*	1 *U*	1 *U*	1 U
ONON2A	WB0036F	Lake	9/22/2000	CATFISH	21.1	12	12 [1]	1 *U*	2 *U*	10 *U*	4 U
ONON2A	WB0037F	Lake	9/22/2000	CATFISH	19.8	9	52 [1]	10 *U*	10 *U*	10 *U*	10 U
ONON2A	WB0043F	Lake	9/20/2000	CARP	22.2	7	29 [1]	1 *U*	1 *U*	10 *U*	10 U
ONON2A	WB0044F	Lake	9/20/2000	CARP	23.7	8	20 [1]	3	1 *U*	10 *U*	3 U
ONON2A	WB0045F	Lake	9/20/2000	CARP	22.6	7	170 [1]	10 *U*	10 *U*	10 *U*	10 U
NYSDEC-2000	9650573	Lake	6/14/2000	LMB	15.4	5	8	5 *U*	5 *U*		5 U
NYSDEC-2000	9650543	Lake	6/19/2000	LMB	15.6	5	2 *U*	5 *U*	5 *U*		5 U
NYSDEC-2000	9650564	Lake	6/14/2000	LMB	15.7	5	2 *U*	5 *U*	5 *U*		5 U
NYSDEC-2000	9650526	Lake	6/19/2000	LMB	15.7	5	6	5 *U*	5 *U*		5 U

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	alpha-BHC (µg/kg-ww)	beta-BHC (µg/kg-ww)	delta-BHC (µg/kg-ww)	gamma-BHC (Lindane) (µg/kg-ww)	Dieldrin (µg/kg-ww)	Endrin (µg/kg-ww)
ONONDAGAOCL9	138745	SO7	7/7/1999	CATFISH	18.3	NA	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONONDAGAOCL9	138784	SO7	7/16/1999	CATFISH	18.9	NA	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONONDAGAOCL9	138783	SO7	7/16/1999	CATFISH	21.5	NA	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONONDAGAOCL9	138762	SO7	7/7/1999	LMB	13.6	6	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONONDAGAOCL9	138603	SO7	6/24/1999	LMB	15.1	8	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONONDAGAOCL9	138735	SO7	6/30/1999	LMB	15.2	6	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONONDAGAOCL9	138728	SO7	6/30/1999	LMB	16.0	6	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONONDAGAOCL9	138604	SO7	6/24/1999	LMB	17.3	7	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONONDAGAOCL9	138726	SO7	6/30/1999	LMB	17.8	7	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONONDAGAOCL9	138606	SO7	6/24/1999	LMB	18.3	9	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONONDAGAOCL9	138601	SO7	6/24/1999	LMB	18.5	8	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONONDAGAOCL9	138717	SO7	6/30/1999	SMB	16.7	8	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONONDAGAOCL9	138716	SO7	6/30/1999	SMB	17.3	9	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONONDAGAOCL9	138721	SO7	6/30/1999	SMB	17.5	7	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONONDAGAOCL9	138712	SO7	6/30/1999	SMB	17.5	9	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONONDAGAOCL9	138719	SO7	6/30/1999	SMB	17.7	8	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONONDAGAOCL9	138750	SO7	7/7/1999	WPERCH	6.5	NA	5 *U*	5 *U*	5 *U*	5 *U*	5	5 *U*
ONONDAGAOCL9	138747	SO7	7/7/1999	WPERCH	6.8	NA	5 *U*	5 *U*	5 *U*	5 *U*	5	5 *U*
ONONDAGAOCL9	138749	SO7	7/7/1999	WPERCH	7.4	NA	5 *U*	5 *U*	5 *U*	5 *U*	5	5 *U*
ONONDAGAOCL9	128748	SO7	7/7/1999	WPERCH	8.0	NA	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONONDAGAOCL9	138746	SO7	7/7/1999	WPERCH	8.0	NA	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONON2A	WB0034F	Lake	9/22/2000	BLUEGILL	7.4	3	1 *U*	1 *U*	1 *U*	1 *U*	5.9	3.6
ONON2A	WB0035F	Lake	9/22/2000	BLUEGILL	6.9	4	1 *U*	2 *U*	1 *U*	1 *U*	3.7	1.6
ONON2A	WB0036F	Lake	9/22/2000	CATFISH	21.1	12	1 *U*	1 *U*	1 *U*	1 *U*	14	6.2 *J*
ONON2A	WB0037F	Lake	9/22/2000	CATFISH	19.8	9	10 *U*	10 *U*	10 *U*	10 *U*	42 *J*	21 *J*
ONON2A	WB0043F	Lake	9/20/2000	CARP	22.2	7	1 *U*	1 *U*	1 *U*	1 *U*	7.4 *J*	7.2 *J*
ONON2A	WB0044F	Lake	9/20/2000	CARP	23.7	8	1 *U*	1 *U*	1 *U*	1.5	14	6.5
ONON2A	WB0045F	Lake	9/20/2000	CARP	22.6	7	10 *U*	10 *U*	10 *U*	10 *U*	13	10 *J*
NYSDEC-2000	9650573	Lake	6/14/2000	LMB	15.4	5	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
NYSDEC-2000	9650543	Lake	6/19/2000	LMB	15.6	5	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
NYSDEC-2000	9650564	Lake	6/14/2000	LMB	15.7	5	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
NYSDEC-2000	9650526	Lake	6/19/2000	LMB	15.7	5	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Endrin aldehyde (µg/kg-ww)	Endrin ketone (µg/kg-ww)	Heptachlor (µg/kg-ww)	Heptachlor epoxide (µg/kg-ww)	Mirex (µg/kg-ww)	Photomirex (µg/kg-ww)
ONONDAGAOCL9	138745	SO7	7/7/1999	CATFISH	18.3	NA	5 *U*		5 U	5 *U*	2 *U*	5 *U*
ONONDAGAOCL9	138784	SO7	7/16/1999	CATFISH	18.9	NA	5 *U*		5 U	5 *U*	2 *U*	5 *U*
ONONDAGAOCL9	138783	SO7	7/16/1999	CATFISH	21.5	NA	5 *U*		5 U	5 *U*	2 *U*	5 *U*
ONONDAGAOCL9	138762	SO7	7/7/1999	LMB	13.6	6	5 *U*		5 U	5 *U*	2 *U*	5
ONONDAGAOCL9	138603	SO7	6/24/1999	LMB	15.1	8	5 *U*		5 U	5 *U*	2 *U*	5 *U*
ONONDAGAOCL9	138735	SO7	6/30/1999	LMB	15.2	6	5 *U*		5 U	9	2 *U*	5 *U*
ONONDAGAOCL9	138728	SO7	6/30/1999	LMB	16.0	6	5 *U*		5 U	5	2 *U*	5 *U*
ONONDAGAOCL9	138604	SO7	6/24/1999	LMB	17.3	7	5 *U*		5 U	5	2 *U*	5 *U*
ONONDAGAOCL9	138726	SO7	6/30/1999	LMB	17.8	7	5 *U*		5 U	10	2 *U*	5 *U*
ONONDAGAOCL9	138606	SO7	6/24/1999	LMB	18.3	9	5 *U*		5 U	5	2 *U*	5 *U*
ONONDAGAOCL9	138601	SO7	6/24/1999	LMB	18.5	8	5 *U*		5 U	9 *U*	2 *U*	5 *U*
ONONDAGAOCL9	138717	SO7	6/30/1999	SMB	16.7	8	5 *U*		5 U	5 *U*	2 *U*	5 *U*
ONONDAGAOCL9	138716	SO7	6/30/1999	SMB	17.3	9	5 *U*		5 U	5 *U*	2 *U*	5 *U*
ONONDAGAOCL9	138721	SO7	6/30/1999	SMB	17.5	7	5 *U*		5 U	5	2 *U*	5 *U*
ONONDAGAOCL9	138712	SO7	6/30/1999	SMB	17.5	9	5 *U*		5 U	5 *U*	2 *U*	5 *U*
ONONDAGAOCL9	138719	SO7	6/30/1999	SMB	17.7	8	5 *U*		5 U	5 *U*	2 *U*	5 *U*
ONONDAGAOCL9	138750	SO7	7/7/1999	WPERCH	6.5	NA	5 *U*		5 U	5 *U*	2 *U*	5 *U*
ONONDAGAOCL9	138747	SO7	7/7/1999	WPERCH	6.8	NA	5 *U*		5 U	5 *U*	2 *U*	5 *U*
ONONDAGAOCL9	138749	SO7	7/7/1999	WPERCH	7.4	NA	5 *U*		5 U	5 *U*	2 *U*	5 *U*
ONONDAGAOCL9	128748	SO7	7/7/1999	WPERCH	8.0	NA	5 *U*		5 U	5 *U*	2 *U*	5 *U*
ONONDAGAOCL9	138746	SO7	7/7/1999	WPERCH	8.0	NA	5 *U*		5 U	5 *U*	2 *U*	5 *U*
ONON2A	WB0034F	Lake	9/22/2000	BLUEGILL	7.4	3	1.5 *U*	1.5 *U*	1 U	9 *U*		
ONON2A	WB0035F	Lake	9/22/2000	BLUEGILL	6.9	4	1 *U*	1 *U*	1 U	4 *U*		
ONON2A	WB0036F	Lake	9/22/2000	CATFISH	21.1	12	1 *U*	1 *U*	1 U	20 *U*		
ONON2A	WB0037F	Lake	9/22/2000	CATFISH	19.8	9	10 *U*	10 *U*	10 U	10 *U*		
ONON2A	WB0043F	Lake	9/20/2000	CARP	22.2	7	1 *U*	1 *U*	1 U	6 *U*		
ONON2A	WB0044F	Lake	9/20/2000	CARP	23.7	8	5 *U*	2 *U*	1 U	15 *U*		
ONON2A	WB0045F	Lake	9/20/2000	CARP	22.6	7	25 *U*	10 *U*	10 U	20 *U*		
NYSDEC-2000	9650573	Lake	6/14/2000	LMB	15.4	5	5 *U*		5 U	5 *U*	2 *U*	5 *U*
NYSDEC-2000	9650543	Lake	6/19/2000	LMB	15.6	5	5 *U*		5 U	5 *U*	2 *U*	5 *U*
NYSDEC-2000	9650564	Lake	6/14/2000	LMB	15.7	5	5 *U*		5 U	5 *U*	2 *U*	5 *U*
NYSDEC-2000	9650526	Lake	6/19/2000	LMB	15.7	5	5 *U*		5 U	7	2 *U*	5 *U*

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Methoxy-chlor (µg/kg-ww)	2,4'-DDD (µg/kg-ww)	2,4'-DDE (µg/kg-ww)	2,4'-DDT (µg/kg-ww)	4,4'-DDD (µg/kg-ww)	4,4'-DDE (µg/kg-ww)
ONONDAGAOCL9	138745	SO7	7/7/1999	CATFISH	18.3	NA		5	5	5 *U*	14	37
ONONDAGAOCL9	138784	SO7	7/16/1999	CATFISH	18.9	NA		5 *U*	5 *U*	5 *U*	13	26
ONONDAGAOCL9	138783	SO7	7/16/1999	CATFISH	21.5	NA		5 *U*	5 *U*	5 *U*	12	41
ONONDAGAOCL9	138762	SO7	7/7/1999	LMB	13.6	6		5 *U*	5 *U*	5 *U*	2	9
ONONDAGAOCL9	138603	SO7	6/24/1999	LMB	15.1	8		5 *U*	5 *U*	5 *U*	5	21
ONONDAGAOCL9	138735	SO7	6/30/1999	LMB	15.2	6		5 *U*	5 *U*	5 *U*	5	20
ONONDAGAOCL9	138728	SO7	6/30/1999	LMB	16.0	6		5 *U*	5 *U*	5 *U*	4	18
ONONDAGAOCL9	138604	SO7	6/24/1999	LMB	17.3	7		5 *U*	5 *U*	5 *U*	12	52
ONONDAGAOCL9	138726	SO7	6/30/1999	LMB	17.8	7		5 *U*	5 *U*	5 *U*	7	33
ONONDAGAOCL9	138606	SO7	6/24/1999	LMB	18.3	9		5 *U*	5 *U*	5 *U*	4	16
ONONDAGAOCL9	138601	SO7	6/24/1999	LMB	18.5	8		5 *U*	5 *U*	5 *U*	6	20
ONONDAGAOCL9	138717	SO7	6/30/1999	SMB	16.7	8		5 *U*	5 *U*	5 *U*	10	34
ONONDAGAOCL9	138716	SO7	6/30/1999	SMB	17.3	9		5 *U*	5 *U*	5 *U*	4	12
ONONDAGAOCL9	138721	SO7	6/30/1999	SMB	17.5	7		5 *U*	5 *U*	5 *U*	2	8
ONONDAGAOCL9	138712	SO7	6/30/1999	SMB	17.5	9		5 *U*	5 *U*	5 *U*	8	29
ONONDAGAOCL9	138719	SO7	6/30/1999	SMB	17.7	8		5 *U*	5 *U*	5 *U*	6	19
ONONDAGAOCL9	138750	SO7	7/7/1999	WPERCH	6.5	NA		5 *U*	5	5 *U*	8	14
ONONDAGAOCL9	138747	SO7	7/7/1999	WPERCH	6.8	NA		5	5	5 *U*	10	9
ONONDAGAOCL9	138749	SO7	7/7/1999	WPERCH	7.4	NA		5 *U*	5 *U*	5 *U*	5	8
ONONDAGAOCL9	128748	SO7	7/7/1999	WPERCH	8.0	NA		5 *U*	9	5 *U*	14	37
ONONDAGAOCL9	138746	SO7	7/7/1999	WPERCH	8.0	NA		5 *U*	9	5 *U*	16	18
ONON2A	WB0034F	Lake	9/22/2000	BLUEGILL	7.4	3	1 *U*				3.8	16
ONON2A	WB0035F	Lake	9/22/2000	BLUEGILL	6.9	4	1 *U*				1.4	7.6
ONON2A	WB0036F	Lake	9/22/2000	CATFISH	21.1	12	1 *U*				21	80
ONON2A	WB0037F	Lake	9/22/2000	CATFISH	19.8	9	10 *U*				52	140
ONON2A	WB0043F	Lake	9/20/2000	CARP	22.2	7	1 *U*				14	43
ONON2A	WB0044F	Lake	9/20/2000	CARP	23.7	8	10 *U*				34	100
ONON2A	WB0045F	Lake	9/20/2000	CARP	22.6	7	10 *U*				34	100
NYSDEC-2000	9650573	Lake	6/14/2000	LMB	15.4	5		5 *U*	5 *U*	5 *U*	4	8
NYSDEC-2000	9650543	Lake	6/19/2000	LMB	15.6	5		5 *U*	5 *U*	5 *U*	2 *U*	5
NYSDEC-2000	9650564	Lake	6/14/2000	LMB	15.7	5		5 *U*	5 *U*	5 *U*	2 *U*	3
NYSDEC-2000	9650526	Lake	6/19/2000	LMB	15.7	5		5 *U*	5 *U*	5 *U*	5	13

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	4,4'-DDT (µg/kg-ww)	Toxaphene (µg/kg-ww)	Total Chlordane Constituents: alpha (cis) - Chlordane (µg/kg-ww)	Total Chlordane Constituents: gamma (trans)- Chlordane (µg/kg-ww)
ONONDAGAOCL9	138745	SO7	7/7/1999	CATFISH	18.3	NA	32		5	5 *U*
ONONDAGAOCL9	138784	SO7	7/16/1999	CATFISH	18.9	NA	15		5 *U*	5 *U*
ONONDAGAOCL9	138783	SO7	7/16/1999	CATFISH	21.5	NA	7		5	5 *U*
ONONDAGAOCL9	138762	SO7	7/7/1999	LMB	13.6	6	7 *U*		5 *U*	5 *U*
ONONDAGAOCL9	138603	SO7	6/24/1999	LMB	15.1	8	12		5 *U*	5 *U*
ONONDAGAOCL9	138735	SO7	6/30/1999	LMB	15.2	6	11		5 *U*	5 *U*
ONONDAGAOCL9	138728	SO7	6/30/1999	LMB	16.0	6	6		5 *U*	5 *U*
ONONDAGAOCL9	138604	SO7	6/24/1999	LMB	17.3	7	20		5 *U*	5 *U*
ONONDAGAOCL9	138726	SO7	6/30/1999	LMB	17.8	7	12		5 *U*	5 *U*
ONONDAGAOCL9	138606	SO7	6/24/1999	LMB	18.3	9	7		5 *U*	5 *U*
ONONDAGAOCL9	138601	SO7	6/24/1999	LMB	18.5	8	9		5 *U*	5 *U*
ONONDAGAOCL9	138717	SO7	6/30/1999	SMB	16.7	8	21		5 *U*	5 *U*
ONONDAGAOCL9	138716	SO7	6/30/1999	SMB	17.3	9	8		5 *U*	5 *U*
ONONDAGAOCL9	138721	SO7	6/30/1999	SMB	17.5	7	8		5 *U*	5 *U*
ONONDAGAOCL9	138712	SO7	6/30/1999	SMB	17.5	9	15		5 *U*	5 *U*
ONONDAGAOCL9	138719	SO7	6/30/1999	SMB	17.7	8	12		5 *U*	5 *U*
ONONDAGAOCL9	138750	SO7	7/7/1999	WPERCH	6.5	NA	18		5	5 *U*
ONONDAGAOCL9	138747	SO7	7/7/1999	WPERCH	6.8	NA	11		5	5 *U*
ONONDAGAOCL9	138749	SO7	7/7/1999	WPERCH	7.4	NA	11		5	5 *U*
ONONDAGAOCL9	128748	SO7	7/7/1999	WPERCH	8.0	NA	24		6 *U*	5 *U*
ONONDAGAOCL9	138746	SO7	7/7/1999	WPERCH	8.0	NA	36		6 *U*	5 *U*
ONON2A	WB0034F	Lake	9/22/2000	BLUEGILL	7.4	3	4.4 *J*	500 *U*	1 *U*	1 *U*
ONON2A	WB0035F	Lake	9/22/2000	BLUEGILL	6.9	4	1.6 *J*	50 *U*	1 *U*	1 *U*
ONON2A	WB0036F	Lake	9/22/2000	CATFISH	21.1	12	7.4 *J*	1,000 *U*	1 *U*	1.1 *J*
ONON2A	WB0037F	Lake	9/22/2000	CATFISH	19.8	9	16 *J*	2,000 *U*	10 *U*	10 *U*
ONON2A	WB0043F	Lake	9/20/2000	CARP	22.2	7	6.1 *J*	500 *U*	2.6 *J*	1.4 *J*
ONON2A	WB0044F	Lake	9/20/2000	CARP	23.7	8	5.3	500 *U*	6.9	4.4
ONON2A	WB0045F	Lake	9/20/2000	CARP	22.6	7	7.6 *J*	500 *U*	10 *U*	10 *U*
NYSDEC-2000	9650573	Lake	6/14/2000	LMB	15.4	5	4		5 *U*	5 *U*
NYSDEC-2000	9650543	Lake	6/19/2000	LMB	15.6	5	2		5 *U*	5 *U*
NYSDEC-2000	9650564	Lake	6/14/2000	LMB	15.7	5	2		5 *U*	5 *U*
NYSDEC-2000	9650526	Lake	6/19/2000	LMB	15.7	5	6		5 *U*	5 *U*

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Total Chlordane Constituents: cis-Nonachlor (µg/kg-ww)	Total Chlordane Constituents: Trans-nonachlor (µg/kg-ww)	Total Chlordane Constituents: Oxy-chlordane (µg/kg-ww)	Total Chlordane[2] (µg/kg-ww)
ONONDAGAOCL9	138745	SO7	7/7/1999	CATFISH	18.3	NA	5	5 *U*	25	35
ONONDAGAOCL9	138784	SO7	7/16/1999	CATFISH	18.9	NA	5 *U*	5 *U*	21	21
ONONDAGAOCL9	138783	SO7	7/16/1999	CATFISH	21.5	NA	5 *U*	5 *U*	23	28
ONONDAGAOCL9	138762	SO7	7/7/1999	LMB	13.6	6	5 *U*	5 *U*	7 *U*	5 *U*
ONONDAGAOCL9	138603	SO7	6/24/1999	LMB	15.1	8	5 *U*	5 *U*	6	6
ONONDAGAOCL9	138735	SO7	6/30/1999	LMB	15.2	6	5 *U*	5 *U*	11	11
ONONDAGAOCL9	138728	SO7	6/30/1999	LMB	16.0	6	5 *U*	5 *U*	6	6
ONONDAGAOCL9	138604	SO7	6/24/1999	LMB	17.3	7	5 *U*	5 *U*	13	13
ONONDAGAOCL9	138726	SO7	6/30/1999	LMB	17.8	7	5 *U*	5 *U*	12	12
ONONDAGAOCL9	138606	SO7	6/24/1999	LMB	18.3	9	5 *U*	5 *U*	6	6
ONONDAGAOCL9	138601	SO7	6/24/1999	LMB	18.5	8	5 *U*	5 *U*	10	10
ONONDAGAOCL9	138717	SO7	6/30/1999	SMB	16.7	8	5 *U*	5 *U*	13	13
ONONDAGAOCL9	138716	SO7	6/30/1999	SMB	17.3	9	5 *U*	5 *U*	5	5
ONONDAGAOCL9	138721	SO7	6/30/1999	SMB	17.5	7	5 *U*	5 *U*	5	5
ONONDAGAOCL9	138712	SO7	6/30/1999	SMB	17.5	9	5 *U*	5 *U*	10 *U*	5 *U*
ONONDAGAOCL9	138719	SO7	6/30/1999	SMB	17.7	8	5 *U*	5 *U*	7	7
ONONDAGAOCL9	138750	SO7	7/7/1999	WPERCH	6.5	NA	5	5	18	33
ONONDAGAOCL9	138747	SO7	7/7/1999	WPERCH	6.8	NA	5	5 *U*	14	24
ONONDAGAOCL9	138749	SO7	7/7/1999	WPERCH	7.4	NA	5 *U*	5 *U*	9	14
ONONDAGAOCL9	128748	SO7	7/7/1999	WPERCH	8.0	NA	5 *U*	5 *U*	29	29
ONONDAGAOCL9	138746	SO7	7/7/1999	WPERCH	8.0	NA	6 *U*	5 *U*	29	29
ONON2A	WB0034F	Lake	9/22/2000	BLUEGILL	7.4	3				1 *U*
ONON2A	WB0035F	Lake	9/22/2000	BLUEGILL	6.9	4				1 *U*
ONON2A	WB0036F	Lake	9/22/2000	CATFISH	21.1	12				1.1
ONON2A	WB0037F	Lake	9/22/2000	CATFISH	19.8	9				10 *U*
ONON2A	WB0043F	Lake	9/20/2000	CARP	22.2	7				4
ONON2A	WB0044F	Lake	9/20/2000	CARP	23.7	8				11.3
ONON2A	WB0045F	Lake	9/20/2000	CARP	22.6	7				10 *U*
NYSDEC-2000	9650573	Lake	6/14/2000	LMB	15.4	5	5 *U*	5 *U*	5 *U*	5 *U*
NYSDEC-2000	9650543	Lake	6/19/2000	LMB	15.6	5	5 *U*	5 *U*	5 *U*	5 *U*
NYSDEC-2000	9650564	Lake	6/14/2000	LMB	15.7	5	5 *U*	5 *U*	5 *U*	5 *U*
NYSDEC-2000	9650526	Lake	6/19/2000	LMB	15.7	5	5 *U*	5 *U*	5	5

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Hexachloro-benzene (µg/kg-ww)	Aldrin (µg/kg-ww)	Endosulfan I (µg/kg-ww)	Endosulfan II (µg/kg-ww)	Endosulfan sulfate (µg/kg-ww)
NYSDEC-2000	9650553	Lake	6/19/2000	LMB	16.3	5	2	5 *U*	5 *U*		5 U
NYSDEC-2000	138796	Lake	6/19/2000	SMB	12.5	6	2	5 *U*	5 *U*		5 U
NYSDEC-2000	9650560	Lake	6/19/2000	SMB	14.2	6	4	5 *U*	5 *U*		5 U
NYSDEC-2000	9650557	Lake	6/19/2000	SMB	14.7	5	4	5 *U*	5 *U*		5 U
NYSDEC-2000	9650556	Lake	6/19/2000	SMB	14.8	6	4	5 *U*	5 *U*		5 U
NYSDEC-2000	138787	Lake	6/19/2000	SMB	15.7	8	6	5 *U*	5 *U*		5 U

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	alpha-BHC (µg/kg-ww)	beta-BHC (µg/kg-ww)	delta-BHC (µg/kg-ww)	gamma-BHC (Lindane) (µg/kg-ww)	Dieldrin (µg/kg-ww)	Endrin (µg/kg-ww)
NYSDEC-2000	9650553	Lake	6/19/2000	LMB	16.3	5	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
NYSDEC-2000	138796	Lake	6/19/2000	SMB	12.5	6	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
NYSDEC-2000	9650560	Lake	6/19/2000	SMB	14.2	6	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
NYSDEC-2000	9650557	Lake	6/19/2000	SMB	14.7	5	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
NYSDEC-2000	9650556	Lake	6/19/2000	SMB	14.8	6	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
NYSDEC-2000	138787	Lake	6/19/2000	SMB	15.7	8	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Endrin aldehyde (µg/kg-ww)	Endrin ketone (µg/kg-ww)	Heptachlor (µg/kg-ww)	Heptachlor epoxide (µg/kg-ww)	Mirex (µg/kg-ww)	Photomirex (µg/kg-ww)
NYSDEC-2000	9650553	Lake	6/19/2000	LMB	16.3	5	5 *U*		5 U	5 *U*	2 *U*	5 *U*
NYSDEC-2000	138796	Lake	6/19/2000	SMB	12.5	6	5 *U*		5 U	5 *U*	2 *U*	5 *U*
NYSDEC-2000	9650560	Lake	6/19/2000	SMB	14.2	6	5 *U*		5 U	5 *U*	2 *U*	5 *U*
NYSDEC-2000	9650557	Lake	6/19/2000	SMB	14.7	5	5 *U*		5 U	5 *U*	2 *U*	5 *U*
NYSDEC-2000	9650556	Lake	6/19/2000	SMB	14.8	6	5 *U*		5 U	5 *U*	2 *U*	5 *U*
NYSDEC-2000	138787	Lake	6/19/2000	SMB	15.7	8	5 *U*		5 U	5 *U*	2 *U*	5 *U*

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Methoxy-chlor (µg/kg-ww)	2,4'-DDD (µg/kg-ww)	2,4'-DDE (µg/kg-ww)	2,4'-DDT (µg/kg-ww)	4,4'-DDD (µg/kg-ww)	4,4'-DDE (µg/kg-ww)
NYSDEC-2000	9650553	Lake	6/19/2000	LMB	16.3	5		5 *U*	5 *U*	5 *U*	2 *U*	4
NYSDEC-2000	138796	Lake	6/19/2000	SMB	12.5	6		5 *U*	5 *U*	5 *U*	2	8
NYSDEC-2000	9650560	Lake	6/19/2000	SMB	14.2	6		5 *U*	5 *U*	5 *U*	2	6
NYSDEC-2000	9650557	Lake	6/19/2000	SMB	14.7	5		5 *U*	5 *U*	5 *U*	4	10
NYSDEC-2000	9650556	Lake	6/19/2000	SMB	14.8	6		5 *U*	5 *U*	5 *U*	3	10
NYSDEC-2000	138787	Lake	6/19/2000	SMB	15.7	8		5 *U*	5 *U*	5 *U*	7	26

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	4,4'-DDT (µg/kg-ww)	Toxaphene (µg/kg-ww)	Total Chlordane Constituents: alpha (cis) - Chlordane (µg/kg-ww)	Total Chlordane Constituents: gamma (trans)- Chlordane (µg/kg-ww)
NYSDEC-2000	9650553	Lake	6/19/2000	LMB	16.3	5	2		5 *U*	5 *U*
NYSDEC-2000	138796	Lake	6/19/2000	SMB	12.5	6	2		5 *U*	5 *U*
NYSDEC-2000	9650560	Lake	6/19/2000	SMB	14.2	6	4		5 *U*	5 *U*
NYSDEC-2000	9650557	Lake	6/19/2000	SMB	14.7	5	5		5 *U*	5 *U*
NYSDEC-2000	9650556	Lake	6/19/2000	SMB	14.8	6	4		5 *U*	5 *U*
NYSDEC-2000	138787	Lake	6/19/2000	SMB	15.7	8	9		5 *U*	5 *U*

Table A-1B. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Total Chlordane Constituents: cis-Nonachlor (µg/kg-ww)	Trans-nonachlor (µg/kg-ww)	Oxy-chlordane (µg/kg-ww)	Total Chlordane[2] (µg/kg-ww)
NYSDEC-2000	9650553	Lake	6/19/2000	LMB	16.3	5	5 *U*	5 *U*	5 *U*	5 *U*
NYSDEC-2000	138796	Lake	6/19/2000	SMB	12.5	6	5 *U*	5 *U*	5 *U*	5 *U*
NYSDEC-2000	9650560	Lake	6/19/2000	SMB	14.2	6	5 *U*	5 *U*	5 *U*	5 *U*
NYSDEC-2000	9650557	Lake	6/19/2000	SMB	14.7	5	5 *U*	5 *U*	5	5
NYSDEC-2000	9650556	Lake	6/19/2000	SMB	14.8	6	5 *U*	5 *U*	5 *U*	5 *U*
NYSDEC-2000	138787	Lake	6/19/2000	SMB	15.7	8	5 *U*	5	10	15

Notes:

[1] Honeywell 2000 data for hexachlorobenzene were analyzed using the GC/ECD method

[2] Total Chlordane is a calculated quantity, not a direct measurement

[3] Chlordane data reported as "cis" and "trans" converted to "alpha" and "gamma"

LMB - largemouth bass
NPIKE - northern pike
SMB - smallmouth bass
WPERCH - white perch

Table A-1C. Onondaga Lake Fish Fillets – PCB Data

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Aroclor 1016 (µg/kg-ww)	Aroclor 1221 (µg/kg-ww)	Aroclor 1232 (µg/kg-ww)	Aroclor 1242 (µg/kg-ww)	Aroclor 1248 (µg/kg-ww)	Aroclor 1254 (µg/kg-ww)	Aroclor 1260 (µg/kg-ww)
NYSDEC-1992	1977	SO12	7/6/1992	SMB	13.9	6	279						
NYSDEC-1992	2011	SO12	7/7/1992	SMB	17.9	10	465						
NYSDEC-1992	2009	SO12	7/7/1992	SMB	17.2	9	485						
NYSDEC-1992	1980	SO12	7/6/1992	SMB	16.3	7	317						
NYSDEC-1992	2007	SO12	7/7/1992	SMB	13.0	6	134						
NYSDEC-1992	2013	SO12	7/7/1992	WALLEYE	18.1	9	369						
NYSDEC-1992	2021	SO12	7/7/1992	WALLEYE	26.2	8	1,011						
NYSDEC-1992	2018	SO12	7/7/1992	WALLEYE	21.3	7	468						
NYSDEC-1992	2020	SO12	7/7/1992	WALLEYE	22.5	9	1,607						
NYSDEC-1992	2019	SO12	7/7/1992	WALLEYE	21.7	6	443						
NYSDEC-1994	F2322	SO12	07/13/94	SMB	12.8	8							
NYSDEC-1994	F2325	SO12	07/13/94	SMB	14.0	6							
NYSDEC-1994	F2327	SO12	07/13/94	SMB	14.1	6							
NYSDEC-1994	F2330	SO12	07/13/94	SMB	14.2	6							
NYSDEC-1994	F2334	SO12	07/13/94	SMB	14.6	6							
NYSDEC-1994	F2338	SO12	07/13/94	SMB	15.4	7							
NYSDEC-1994	F2298	SO12	07/05/94	SMB	15.9	7							
NYSDEC-1994	F2340	SO12	07/13/94	SMB	16.1	8							
NYSDEC-1994	F2320	SO12	07/07/94	SMB	17.4	8							
NYSDEC-1994	F2342	SO12	07/13/94	SMB	19.2	8							
ONON96	NYCD334	SO7	7/2/1996	LMB	14.7	5	20 *U*						
ONON96	NYCD335	SO7	7/2/1996	LMB	15.5	7	39						
ONON96	NYCD337	SO7	7/2/1996	LMB	15.5	6	33						
ONON96	NYCD338	SO7	7/2/1996	LMB	15	6	20 *U*						
ONON96	NYCD349	SO7	7/2/1996	LMB	14.4	6	49						
ONON96	NYCD392	SO7	7/1/1996	LMB	14.6	9	32						
ONON96	NYCD396	SO7	7/1/1996	LMB	13.3	5	28						
ONON96	NYCD674	SO7	7/2/1996	LMB	13.5	5	20 *U*						
ONON96	NYCD694	SO7	7/2/1996	LMB	15	5	20 *U*						
ONON96	NYCD951	SO7	7/2/1996	LMB	13.9	6	20 *U*						
ONON96	NYCD353	SO7	6/27/1996	SMB	16.4	6	1,006						
ONON96	NYCD351	SO7	6/27/1996	SMB	16.5	7	1,060						
ONON96	NYCD355	SO7	6/27/1996	SMB	17.6	7	134						

Table A-1C. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Aroclor 1268 (µg/kg-ww)	Aroclors 1254 & 1260 (µg/kg-ww)	Sum PCBs (µg/kg-ww)	Sum Low Molecular Weight PCBs (µg/kg-ww)	Sum High Molecular Weight PCBs (µg/kg-ww)
NYSDEC-1992	1977	SO12	7/6/1992	SMB	13.9	6		370	649	279	370
NYSDEC-1992	2011	SO12	7/7/1992	SMB	17.9	10		548	1,013	465	548
NYSDEC-1992	2009	SO12	7/7/1992	SMB	17.2	9		655	1,140	485	655
NYSDEC-1992	1980	SO12	7/6/1992	SMB	16.3	7		403	720	317	403
NYSDEC-1992	2007	SO12	7/7/1992	SMB	13.0	6		220	354	134	220
NYSDEC-1992	2013	SO12	7/7/1992	WALLEYE	18.1	9		306	675	369	306
NYSDEC-1992	2021	SO12	7/7/1992	WALLEYE	26.2	8		945	1,956	1,011	945
NYSDEC-1992	2018	SO12	7/7/1992	WALLEYE	21.3	7		466	934	468	466
NYSDEC-1992	2020	SO12	7/7/1992	WALLEYE	22.5	9		1,531	3,138	1,607	1,531
NYSDEC-1992	2019	SO12	7/7/1992	WALLEYE	21.7	6		319	762	443	319
NYSDEC-1994	F2322	SO12	07/13/94	SMB	12.8	8		158	158		158
NYSDEC-1994	F2325	SO12	07/13/94	SMB	14.0	6		377	377		377
NYSDEC-1994	F2327	SO12	07/13/94	SMB	14.1	6		568	568		568
NYSDEC-1994	F2330	SO12	07/13/94	SMB	14.2	6		390	390		390
NYSDEC-1994	F2334	SO12	07/13/94	SMB	14.6	6		460	460		460
NYSDEC-1994	F2338	SO12	07/13/94	SMB	15.4	7		797	797		797
NYSDEC-1994	F2298	SO12	07/05/94	SMB	15.9	7		987	987		987
NYSDEC-1994	F2340	SO12	07/13/94	SMB	16.1	8		1,197	1,197		1,197
NYSDEC-1994	F2320	SO12	07/07/94	SMB	17.4	8		1,128	1,128		1,128
NYSDEC-1994	F2342	SO12	07/13/94	SMB	19.2	8		632	632		632
ONON96	NYCD334	SO7	7/2/1996	LMB	14.7	5		20 *U*	40 *U*	20 U	20 U
ONON96	NYCD335	SO7	7/2/1996	LMB	15.5	7		46	85	39	46
ONON96	NYCD337	SO7	7/2/1996	LMB	15.5	6		39	72	33	39
ONON96	NYCD338	SO7	7/2/1996	LMB	15	6		20 *U*	40 *U*	20 U	20 U
ONON96	NYCD349	SO7	7/2/1996	LMB	14.4	6		60	109	49	60
ONON96	NYCD392	SO7	7/1/1996	LMB	14.6	9		43	75	32	43
ONON96	NYCD396	SO7	7/1/1996	LMB	13.3	5		49	77	28	49
ONON96	NYCD674	SO7	7/2/1996	LMB	13.5	5		20	30	20 U	20
ONON96	NYCD694	SO7	7/2/1996	LMB	15	5		29	39	20 U	29
ONON96	NYCD951	SO7	7/2/1996	LMB	13.9	6		23	33	20 U	23
ONON96	NYCD353	SO7	6/27/1996	SMB	16.4	6		142	1,148	1,006	142
ONON96	NYCD351	SO7	6/27/1996	SMB	16.5	7		249	1,309	1,060	249
ONON96	NYCD355	SO7	6/27/1996	SMB	17.6	7		222	356	134	222

Table A-1C. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Aroclor 1016 (µg/kg-ww)	Aroclor 1221 (µg/kg-ww)	Aroclor 1232 (µg/kg-ww)	Aroclor 1242 (µg/kg-ww)	Aroclor 1248 (µg/kg-ww)	Aroclor 1254 (µg/kg-ww)	Aroclor 1260 (µg/kg-ww)
ONON96	NYCD367	SO7	7/2/1996	SMB	11.6	4	109						
ONON96	NYCD365	SO7	7/2/1996	SMB	16.6	6	113						
ONON96	NYCD902	SO7	7/8/1996	SMB	13.8	5	108						
ONON96	NYCD903	SO7	7/8/1996	SMB	13.8	7	292						
ONON96	NYCD905	SO7	7/8/1996	SMB	14.5	6	63						
ONON96	NYCD908	SO7	7/8/1996	SMB	15	7	68						
ONON96	NYCD909	SO7	7/8/1996	SMB	15.1	6	106						
ONON97	4559	SO7	6/30/1997	LMB	14.6	10	109						
ONON97	4575	SO7	6/30/1997	LMB	15.3	12	337						
ONON97	4560	SO7	6/30/1997	LMB	15.5	9	29						
ONON97	4566	SO7	6/30/1997	LMB	15.7	9	95						
ONON97	4561	SO7	6/30/1997	LMB	18.3	12	22						
ONON97	4676	SO7	6/30/1997	SMB	17.6	8	49						
ONON97	4140	SO7	7/1/1997	SMB	15.5	10	104						
ONON97	4136	SO7	7/1/1997	SMB	15.6	9	127						
ONON97	2894	SO7	7/1/1997	SMB	17.4	8	139						
ONON97	4144	SO7	7/3/1997	SMB	13	9	96						
ONON97	4145	SO7	7/3/1997	SMB	13.4	8	72						
ONON97	4146	SO7	7/3/1997	SMB	14.1	8	54						
ONON97	4654	SO7	6/30/1997	WPERCH	10.4	6	253						
ONON97	4653	SO7	6/30/1997	WPERCH	10.5	6	62						
ONON97	4699	SO7	6/30/1997	WPERCH	11.6	8	111						
ONON97	4696	SO7	6/30/1997	WPERCH	11.9	8	438						
ONON97	4694	SO7	6/30/1997	WPERCH	12.1	8	308						
ONON98	774638	SO7	7/28/1998	CATFISH	14.8	NA	573						
ONON98	774640	SO7	7/28/1998	CATFISH	14.8	NA	311						
ONON98	774639	SO7	7/28/1998	CATFISH	17.6	NA	342						
ONON98	774637	SO7	7/28/1998	CATFISH	17.8	NA	152						
ONON98	774636	SO7	7/28/1998	CATFISH	18.2	NA	765						
ONON98	130799	SO7	6/17/1998	LMB	16.1	8	114						
ONON98	130557	SO7	6/22/1998	LMB	15	8	50						
ONON98	130554	SO7	6/22/1998	LMB	15.7	9	63						

Table A-1C. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Aroclor 1268 (µg/kg-ww)	Aroclors 1254 & 1260 (µg/kg-ww)	Sum PCBs (µg/kg-ww)	Sum Low Molecular Weight PCBs (µg/kg-ww)	Sum High Molecular Weight PCBs (µg/kg-ww)
ONON96	NYCD367	SO7	7/2/1996	SMB	11.6	4		167	276	109	167
ONON96	NYCD365	SO7	7/2/1996	SMB	16.6	6		172	285	113	172
ONON96	NYCD902	SO7	7/8/1996	SMB	13.8	5		165	273	108	165
ONON96	NYCD903	SO7	7/8/1996	SMB	13.8	7		397	689	292	397
ONON96	NYCD905	SO7	7/8/1996	SMB	14.5	6		114	177	63	114
ONON96	NYCD908	SO7	7/8/1996	SMB	15	7		191	259	68	191
ONON96	NYCD909	SO7	7/8/1996	SMB	15.1	6		141	247	106	141
ONON97	4559	SO7	6/30/1997	LMB	14.6	10		248	357	109	248
ONON97	4575	SO7	6/30/1997	LMB	15.3	12		793	1,130	337	793
ONON97	4560	SO7	6/30/1997	LMB	15.5	9		66	95	29	66
ONON97	4566	SO7	6/30/1997	LMB	15.7	9		213	308	95	213
ONON97	4561	SO7	6/30/1997	LMB	18.3	12		75	97	22	75
ONON97	4676	SO7	6/30/1997	SMB	17.6	8		145	194	49	145
ONON97	4140	SO7	7/1/1997	SMB	15.5	10		291	395	104	291
ONON97	4136	SO7	7/1/1997	SMB	15.6	9		228	355	127	228
ONON97	2894	SO7	7/1/1997	SMB	17.4	8		468	607	139	468
ONON97	4144	SO7	7/3/1997	SMB	13	9		177	273	96	177
ONON97	4145	SO7	7/3/1997	SMB	13.4	8		236	308	72	236
ONON97	4146	SO7	7/3/1997	SMB	14.1	8		30	84	54	30
ONON97	4654	SO7	6/30/1997	WPERCH	10.4	6		798	1,051	253	798
ONON97	4653	SO7	6/30/1997	WPERCH	10.5	6		342	404	62	342
ONON97	4699	SO7	6/30/1997	WPERCH	11.6	8		303	414	111	303
ONON97	4696	SO7	6/30/1997	WPERCH	11.9	8		710	1,148	438	710
ONON97	4694	SO7	6/30/1997	WPERCH	12.1	8		521	829	308	521
ONON98	774638	SO7	7/28/1998	CATFISH	14.8	NA		1,220	1,793	573	1,220
ONON98	774640	SO7	7/28/1998	CATFISH	14.8	NA		1,001	1,312	311	1,001
ONON98	774639	SO7	7/28/1998	CATFISH	17.6	NA		867	1,209	342	867
ONON98	774637	SO7	7/28/1998	CATFISH	17.8	NA		947	1,099	152	947
ONON98	774636	SO7	7/28/1998	CATFISH	18.2	NA		1,651	2,416	765	1,651
ONON98	130799	SO7	6/17/1998	LMB	16.1	8		293	407	114	293
ONON98	130557	SO7	6/22/1998	LMB	15	8		86	136	50	86
ONON98	130554	SO7	6/22/1998	LMB	15.7	9		135	198	63	135

Table A-1C. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Aroclor 1016 (µg/kg-ww)	Aroclor 1221 (µg/kg-ww)	Aroclor 1232 (µg/kg-ww)	Aroclor 1242 (µg/kg-ww)	Aroclor 1248 (µg/kg-ww)	Aroclor 1254 (µg/kg-ww)	Aroclor 1260 (µg/kg-ww)
ONON98	130555	SO7	6/22/1998	LMB	16.1	10	43						
ONON98	774635	SO7	7/28/1998	LMB	16.4	8	53						
ONON98	130567	SO7	6/22/1998	NPIKE	35.5	7	414						
ONON98	130823	SO7	6/17/1998	SMB	14.4	7	185						
ONON98	130819	SO7	6/17/1998	SMB	15.9	7	656						
ONON98	130818	SO7	6/17/1998	SMB	16.6	7	272						
ONON98	130563	SO7	6/22/1998	SMB	13.4	7	196						
ONON98	130562	SO7	6/22/1998	SMB	15.1	7	389						
ONON98	130560	SO7	6/22/1998	SMB	15.4	8	236						
ONON98	130561	SO7	6/22/1998	SMB	16.1	8	162						
ONON98	130795	SO7	6/17/1998	WALLEYE	22.9	8	421						
ONON98	130796	SO7	6/17/1998	WALLEYE	23.3	5	353						
ONON98	130794	SO7	6/17/1998	WALLEYE	23.7	8	547						
ONON98	130889	SO7	6/18/1998	WALLEYE	16.8	NA	113						
ONON98	130553	SO7	6/22/1998	WALLEYE	18.8	5	257						
ONON98	130833	SO7	6/17/1998	WPERCH	6.5	3	163						
ONON98	130837	SO7	6/17/1998	WPERCH	6.6	2	318						
ONON98	130834	SO7	6/17/1998	WPERCH	6.7	3	60						
ONON98	130835	SO7	6/17/1998	WPERCH	6.7	2	290						
ONON98	130838	SO7	6/17/1998	WPERCH	6.7	2	574						
ONON99	F138709	SO7	6/24/1999	CARP	26.3	NA				914			
ONON99	F138741	SO7	7/7/1999	CARP	18	NA				301			
ONON99	F138743	SO7	7/7/1999	CARP	23.2	NA				615			
ONON99	F138742	SO7	7/7/1999	CARP	24.8	NA				1,980			
ONON99	F138744	SO7	7/7/1999	CARP	26.4	NA				609			
ONON99	F138708	SO7	6/24/1999	CATFISH	18.1	NA				182			
ONON99	F138745	SO7	7/7/1999	CATFISH	18.3	NA				359			
ONON99	F138773	SO7	7/16/1999	CATFISH	17.6	NA				90			
ONON99	F138784	SO7	7/16/1999	CATFISH	18.9	NA				560			
ONON99	F138783	SO7	7/16/1999	CATFISH	21.5	NA				356			
ONON99	F138762	SO7	7/7/1999	LMB	13.6	6				220			
ONON99	F138603	SO7	6/24/1999	LMB	15.1	8				189			

Table A-1C. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Aroclor 1268 (µg/kg-ww)	Aroclors 1254 & 1260 (µg/kg-ww)	Sum PCBs (µg/kg-ww)	Sum Low Molecular Weight PCBs (µg/kg-ww)	Sum High Molecular Weight PCBs (µg/kg-ww)
ONON98	130555	SO7	6/22/1998	LMB	16.1	10		72	115	43	72
ONON98	774635	SO7	7/28/1998	LMB	16.4	8		126	179	53	126
ONON98	130567	SO7	6/22/1998	NPIKE	35.5	7		492	906	414	492
ONON98	130823	SO7	6/17/1998	SMB	14.4	7		262	447	185	262
ONON98	130819	SO7	6/17/1998	SMB	15.9	7		826	1,482	656	826
ONON98	130818	SO7	6/17/1998	SMB	16.6	7		522	794	272	522
ONON98	130563	SO7	6/22/1998	SMB	13.4	7		403	599	196	403
ONON98	130562	SO7	6/22/1998	SMB	15.1	7		529	918	389	529
ONON98	130560	SO7	6/22/1998	SMB	15.4	8		338	574	236	338
ONON98	130561	SO7	6/22/1998	SMB	16.1	8		302	464	162	302
ONON98	130795	SO7	6/17/1998	WALLEYE	22.9	8		963	1,384	421	963
ONON98	130796	SO7	6/17/1998	WALLEYE	23.3	5		295	648	353	295
ONON98	130794	SO7	6/17/1998	WALLEYE	23.7	8		769	1,316	547	769
ONON98	130889	SO7	6/18/1998	WALLEYE	16.8	NA		150	263	113	150
ONON98	130553	SO7	6/22/1998	WALLEYE	18.8	5		296	553	257	296
ONON98	130833	SO7	6/17/1998	WPERCH	6.5	3		179	342	163	179
ONON98	130837	SO7	6/17/1998	WPERCH	6.6	2		396	714	318	396
ONON98	130834	SO7	6/17/1998	WPERCH	6.7	3		89	149	60	89
ONON98	130835	SO7	6/17/1998	WPERCH	6.7	2		360	650	290	360
ONON98	130838	SO7	6/17/1998	WPERCH	6.7	2		740	1,314	574	740
ONON99	F138709	SO7	6/24/1999	CARP	26.3	NA		1,116	2,030	914	1,116
ONON99	F138741	SO7	7/7/1999	CARP	18	NA		155	456	301	155
ONON99	F138743	SO7	7/7/1999	CARP	23.2	NA		1,091	1,706	615	1,091
ONON99	F138742	SO7	7/7/1999	CARP	24.8	NA		1,923	3,903	1,980	1,923
ONON99	F138744	SO7	7/7/1999	CARP	26.4	NA		754	1,363	609	754
ONON99	F138708	SO7	6/24/1999	CATFISH	18.1	NA		403	585	182	403
ONON99	F138745	SO7	7/7/1999	CATFISH	18.3	NA		692	1,051	359	692
ONON99	F138773	SO7	7/16/1999	CATFISH	17.6	NA		222	312	90	222
ONON99	F138784	SO7	7/16/1999	CATFISH	18.9	NA		370	930	560	370
ONON99	F138783	SO7	7/16/1999	CATFISH	21.5	NA		395	751	356	395
ONON99	F138762	SO7	7/7/1999	LMB	13.6	6		334	554	220	334
ONON99	F138603	SO7	6/24/1999	LMB	15.1	8		274	463	189	274

Table A-1C. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Aroclor 1016 (µg/kg-ww)	Aroclor 1221 (µg/kg-ww)	Aroclor 1232 (µg/kg-ww)	Aroclor 1242 (µg/kg-ww)	Aroclor 1248 (µg/kg-ww)	Aroclor 1254 (µg/kg-ww)	Aroclor 1260 (µg/kg-ww)
ONON99	F138735	SO7	6/30/1999	LMB	15.2	6				242			
ONON99	F138728	SO7	6/30/1999	LMB	16	6				130			
ONON99	F138604	SO7	6/24/1999	LMB	17.3	7				450			
ONON99	F138726	SO7	6/30/1999	LMB	17.8	7				254			
ONON99	F138606	SO7	6/24/1999	LMB	18.3	9				141			
ONON99	F138601	SO7	6/24/1999	LMB	18.5	8				235			
ONON99	F138717	SO7	6/30/1999	SMB	16.7	8				346			
ONON99	F138716	SO7	6/30/1999	SMB	17.3	9				106			
ONON99	F138712	SO7	6/30/1999	SMB	17.5	9				300			
ONON99	F138721	SO7	6/30/1999	SMB	17.5	7				99			
ONON99	F138719	SO7	6/30/1999	SMB	17.7	8				206			
ONON99	F138750	SO7	7/7/1999	WPERCH	6.5	NA				666			
ONON99	F138747	SO7	7/7/1999	WPERCH	6.8	NA				503			
ONON99	F138749	SO7	7/7/1999	WPERCH	7.4	NA				329			
ONON99	F128748	SO7	7/7/1999	WPERCH	8	NA				822			
ONON99	F138746	SO7	7/7/1999	WPERCH	8	NA				976			
ONON2A	WB0034F	5AHB	9/22/2000	BLUEGILL	7.4	3	10 *UJ*	20 *UJ*	10 *UJ*	10 *UJ*	210 *J*	10 *UJ*	140 *J*
ONON2A	WB0035F	5AHB	9/22/2000	BLUEGILL	6.9	4	10 *UJ*	20 *UJ*	10 *UJ*	10 *UJ*	61 *J*	10 *UJ*	72 *J*
ONON2A	WB0036F	MNMC	9/22/2000	CATFISH	21.1	12	10 *UJ*	20 *UJ*	10 *UJ*	10 *UJ*	270 *J*	10 *UJ*	270 *J*
ONON2A	WB0037F	MNMC	9/22/2000	CATFISH	19.8	9	100 *UJ*	200 *UJ*	100 *UJ*	100 *UJ*	1100 *J*	100 *UJ*	720 *J*
ONON2A	WB0043F	5AHB	9/20/2000	CARP	22.2	7	10 *UJ*	20 *UJ*	10 *UJ*	10 *UJ*	570 *J*	10 *UJ*	230 *J*
ONON2A	WB0044F	5AHB	9/20/2000	CARP	23.7	8	10 *UJ*	20 *UJ*	10 *UJ*	10 *UJ*	440 *J*	10 *UJ*	140 *J*
ONON2A	WB0045F	5AHB	9/20/2000	CARP	22.6	7	10 *UJ*	20 *UJ*	10 *UJ*	10 *UJ*	640 *J*	10 *UJ*	330 *J*
NYSDEC-2000	9650553	LAKE	6/19/2000	LMB	16.3	5				59			
NYSDEC-2000	9650526	LAKE	6/19/2000	LMB	15.7	5				182			
NYSDEC-2000	9650564	LAKE	6/14/2000	LMB	15.7	5				44			
NYSDEC-2000	9650543	LAKE	6/19/2000	LMB	15.6	5				47			
NYSDEC-2000	9650573	LAKE	6/14/2000	LMB	15.4	5				126			
NYSDEC-2000	138796	LAKE	6/19/2000	SMB	12.5	6				95			
NYSDEC-2000	138787	LAKE	6/19/2000	SMB	15.7	8				287			
NYSDEC-2000	9650560	LAKE	6/19/2000	SMB	14.2	6				117			
NYSDEC-2000	9650557	LAKE	6/19/2000	SMB	14.7	5				150			
NYSDEC-2000	9650556	LAKE	6/19/2000	SMB	14.8	6				126			

Table A-1C. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Aroclor 1268 (µg/kg-ww)	Aroclors 1254 & 1260 (µg/kg-ww)	Sum PCBs (µg/kg-ww)	Sum Low Molecular Weight PCBs (µg/kg-ww)	Sum High Molecular Weight PCBs (µg/kg-ww)
ONON99	F138735	SO7	6/30/1999	LMB	15.2	6		316	558	242	316
ONON99	F138728	SO7	6/30/1999	LMB	16	6		177	307	130	177
ONON99	F138604	SO7	6/24/1999	LMB	17.3	7		433	883	450	433
ONON99	F138726	SO7	6/30/1999	LMB	17.8	7		354	608	254	354
ONON99	F138606	SO7	6/24/1999	LMB	18.3	9		205	346	141	205
ONON99	F138601	SO7	6/24/1999	LMB	18.5	8		255	490	235	255
ONON99	F138717	SO7	6/30/1999	SMB	16.7	8		430	776	346	430
ONON99	F138716	SO7	6/30/1999	SMB	17.3	9		169	275	106	169
ONON99	F138712	SO7	6/30/1999	SMB	17.5	9		329	629	300	329
ONON99	F138721	SO7	6/30/1999	SMB	17.5	7		174	273	99	174
ONON99	F138719	SO7	6/30/1999	SMB	17.7	8		252	458	206	252
ONON99	F138750	SO7	7/7/1999	WPERCH	6.5	NA		420	1,086	666	420
ONON99	F138747	SO7	7/7/1999	WPERCH	6.8	NA		281	784	503	281
ONON99	F138749	SO7	7/7/1999	WPERCH	7.4	NA		223	552	329	223
ONON99	F128748	SO7	7/7/1999	WPERCH	8	NA		559	1,381	822	559
ONON99	F138746	SO7	7/7/1999	WPERCH	8	NA		556	1,532	976	556
ONON2A	WB0034F	5AHB	9/22/2000	BLUEGILL	7.4	3	10 *UJ*		350	20 *UJ*	350 *J*
ONON2A	WB0035F	5AHB	9/22/2000	BLUEGILL	6.9	4	10 *UJ*		133	20 *UJ*	133 *J*
ONON2A	WB0036F	MNMC	9/22/2000	CATFISH	21.1	12	10 *UJ*		540	20 *UJ*	540 *J*
ONON2A	WB0037F	MNMC	9/22/2000	CATFISH	19.8	9	100 *UJ*		1,820	200 *UJ*	1,820 *J*
ONON2A	WB0043F	5AHB	9/20/2000	CARP	22.2	7	10 *UJ*		800	20 *UJ*	800 *J*
ONON2A	WB0044F	5AHB	9/20/2000	CARP	23.7	8	10 *UJ*		580	20 *UJ*	580 *J*
ONON2A	WB0045F	5AHB	9/20/2000	CARP	22.6	7	10 *UJ*		970	20 *UJ*	970 *J*
NYSDEC-2000	9650553	LAKE	6/19/2000	LMB	16.3	5		75	134	59	75
NYSDEC-2000	9650526	LAKE	6/19/2000	LMB	15.7	5		235	417	182	235
NYSDEC-2000	9650564	LAKE	6/14/2000	LMB	15.7	5		67	111	44	67
NYSDEC-2000	9650543	LAKE	6/19/2000	LMB	15.6	5		63	110	47	63
NYSDEC-2000	9650573	LAKE	6/14/2000	LMB	15.4	5		159	285	126	159
NYSDEC-2000	138796	LAKE	6/19/2000	SMB	12.5	6		201	296	95	201
NYSDEC-2000	138787	LAKE	6/19/2000	SMB	15.7	8		489	776	287	489
NYSDEC-2000	9650560	LAKE	6/19/2000	SMB	14.2	6		212	329	117	212
NYSDEC-2000	9650557	LAKE	6/19/2000	SMB	14.7	5		241	391	150	241
NYSDEC-2000	9650556	LAKE	6/19/2000	SMB	14.8	6		186	312	126	186

Table A-1C. (cont.)

Survey	Sample Number	Survey Station	Date	Species	Length (in)	Age (yrs)	Aroclor 1016 (µg/kg-ww)	Aroclor 1221 (µg/kg-ww)	Aroclor 1232 (µg/kg-ww)	Aroclor 1242 (µg/kg-ww)	Aroclor 1248 (µg/kg-ww)	Aroclor 1254 (µg/kg-ww)	Aroclor 1260 (µg/kg-ww)

Notes:

LMB - largemouth bass
NPIKE - Northern pike
SMB - smallmouth bass
WPERCH - white perch
Honeywell's 1992 PCB fish data have been excluded from this HHRA; see text
J - estimated
U - not detected at reported quantitation limit

Table A-1D. Onondaga Lake Fish Fillets – PCDD/PCDF Data

	Survey:	NYSDEC-1997	NYSDEC-1997	NYSDEC-1997	NYSDEC-1997	NYSDEC-1997	NYSDEC-1997
	Species:	LMB	LMB	SMB	SMB	WPERCH	WPERCH
	Classification:	Fish	Fish	Fish	Fish	Fish	Fish
	Sample Type:	Fillet	Fillet	Fillet	Fillet	Fillet	Fillet
	Sample Number:	F4566	F4575	F2894	F4146	F4653	F4654
	Survey Station:	SO7	SO7	SO7	SO7	SO7	SO7
	Date:	6/30/1997	6/30/1997	7/1/1997	7/3/1997	6/30/1997	6/30/1997
	Length (in):	15.7	15.3	17.4	14.1	10.5	10.4
	Age (yrs):	9	12	8	8	6	6
Chemical	**Units**						
1,2,3,4,6,7,8-Heptachlorodibenzodioxin	ng/kg-ww	34 *U*	130 *U*	33 *U*	6.80 *U*	6.80 *U*	3.90 *U*
1,2,3,4,7,8-Hexachlorodibenzodioxin	ng/kg-ww	6.3 *U*	17 *U*	6.10 *U*	3.50 *U*	1.90 *U*	2.20 *U*
1,2,3,6,7,8-Hexachlorodibenzodioxin	ng/kg-ww	5.3 *U*	14 *U*	5.10 *U*	3.00 *U*	1.70 *U*	0.40
1,2,3,7,8,9-Hexachlorodibenzodioxin	ng/kg-ww	5.2 *U*	14 *U*	5 *U*	3.20 *U*	1.80 *U*	2.10 *U*
1,2,3,7,8-Pentachlorodibenzodioxin	ng/kg-ww	1.4 *U*	3 *U*	1.10 *U*	1.90 *U*	1.10 *U*	0.82
2,3,7,8-Tetrachlorodibenzodioxin	ng/kg-ww	0.14	0.54	0.29	0.27	0.26	0.35
Octachlorodibenzodioxin	ng/kg-ww	241 *U*	300 *U*	170 *U*	23.00 *U*	32.00 *U*	7.60 *U*
Total heptachlorodibenzodioxins	ng/kg-ww	34 *U*	130 *U*	33 *U*	6.80 *U*	6.80 *U*	3.90 *U*
Total hexachlorodibenzodioxins	ng/kg-ww						
Total pentachlorodibenzodioxins	ng/kg-ww	1.40 *U*	3.30 *U*	1.10 *U*	1.90 *U*	1.10 *U*	0.82
Total tetrachlorodibenzodioxins	ng/kg-ww	0.14	0.54	0.29	0.27	0.26	0.35
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg-ww	1.80 *U*	4.50 *U*	1.50 *U*	2.70 *U*	1.20 *U*	1.80 *U*
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg-ww	2.60 *U*	6.50 *U*	2.20 *U*	4.00 *U*	1.80 *U*	2.60 *U*
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg-ww	1.20 *U*	2.80 *U*	0.99 *U*	1.80 *U*	0.92 *U*	0.18
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg-ww	1.00 *U*	2.50 *U*	0.88 *U*	1.60 *U*	0.80 *U*	1.10 *U*
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg-ww	1.50 *U*	3.60 *U*	1.30 *U*	2.30 *U*	1.20 *U*	1.70 *U*
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg-ww	0.75 *U*	0.42	0.62 *U*	1.20 *U*	0.65 *U*	0.45
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg-ww	1.40	3.20 *U*	1.20 *U*	2.00 *U*	1.00 *U*	1.40 *U*
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg-ww	0.29	1.50	0.52	0.92	0.71	2.50
2,3,7,8-Tetrachlorodibenzofuran	ng/kg-ww	0.75	1.90	0.67	1.50	1.10	5.00
Octachlorodibenzofuran	ng/kg-ww	3.60 *U*	10.00 *U*	3.00 *U*	6.40 *U*	2.00 *U*	3.00 *U*
Total heptachlorodibenzofurans	ng/kg-ww						
Total hexachlorodibenzofurans	ng/kg-ww						
Total pentachlorodibenzofurans	ng/kg-ww						
Total tetrachlorodibenzofurans	ng/kg-ww	0.75	1.90	0.67	1.50	1.10	5.00
TEQ – Dioxins [1] (ND=1/2)	ng/kg-ww	1.86	5.11	1.82	1.74	1.116	1.44
TEQ – Furans [1] (ND=1/2)	ng/kg-ww	0.59	1.62	0.58	1.06	0.692	2.02
TEQ – Total [1] (ND=1/2)	ng/kg-ww	2.45	6.73	2.40	2.80	1.808	3.47

Table A-1D. (cont.)

	Survey:	NYSDEC-1997	NYSDEC-1997	NYSDEC-1999	NYSDEC-1999	NYSDEC-1999	NYSDEC-1999
	Species:	WPERCH	WPERCH	CARP	CARP	CARP	CARP
	Classification:	Fish	Fish	Fish	Fish	Fish	Fish
	Sample Type:	Fillet	Fillet	Fillet	Fillet	Fillet	Fillet
	Sample Number:	F4694	F4699	138741	138742	138743	138744
	Survey Station:	SO7	SO7	HB Mouth	HB Mouth	HB Mouth	HB Mouth
	Date:	6/30/1997	6/30/1997	7/7/1999	7/7/1999	7/7/1999	7/7/1999
	Length (in):	12.1	11.6	18.3	24.8	23.2	26.4
	Age (yrs):	8	8	NA	NA	NA	NA
Chemical	**Units**						
1,2,3,4,6,7,8-Heptachlorodibenzodioxin	ng/kg-ww	1.90 *U*	5.80 *U*	0.47	2.66	1.10	2.39
1,2,3,4,7,8-Hexachlorodibenzodioxin	ng/kg-ww	1.20 *U*	1.80 *U*	0.23	1.02	0.80	0.87
1,2,3,6,7,8-Hexachlorodibenzodioxin	ng/kg-ww	0.38	1.60 *U*	0.61	2.96	2.08	3.15
1,2,3,7,8,9-Hexachlorodibenzodioxin	ng/kg-ww	1.10 *U*	1.70 *U*	0.10 *U*	0.48	0.10 *U*	0.50
1,2,3,7,8-Pentachlorodibenzodioxin	ng/kg-ww	0.73	1.10 *U*	0.89	3.30	4.74	4.02
2,3,7,8-Tetrachlorodibenzodioxin	ng/kg-ww	0.49	0.92 *U*	0.51	2.87	3.07	2.53
Octachlorodibenzodioxin	ng/kg-ww	5.50 *U*	24.00 *U*	0.75	1.85	1.07	1.64
Total heptachlorodibenzodioxins	ng/kg-ww	1.90 *U*	5.80 *U*				
Total hexachlorodibenzodioxins	ng/kg-ww						
Total pentachlorodibenzodioxins	ng/kg-ww	0.73	1.10 *U*				
Total tetrachlorodibenzodioxins	ng/kg-ww	0.49	0.92 *U*				
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg-ww	0.99 *U*	1.40 *U*	0.10 *U*	0.63	0.48	0.71
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg-ww	1.50 *U*	2.00 *U*	0.10 *U*	0.20 *U*	0.10 *U*	0.10 *U*
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg-ww	0.21	1.00 *U*	1.80	3.70	5.09	6.25
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg-ww	0.11	0.87 *U*	0.52	1.40	1.73	2.58
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg-ww	0.86 *U*	1.30 *U*	0.10 *U*	0.20 *U*	0.10 *U*	0.10 *U*
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg-ww	0.66	0.63 *U*	3.13	4.74	5.83	6.25
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg-ww	0.76 *U*	1.10 *U*	0.14	0.76	0.53	0.75
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg-ww	2.40	0.79	11.80	30.30	70.80	61.00
2,3,7,8-Tetrachlorodibenzofuran	ng/kg-ww	8.70	1.70	19.80	9.93	14.30	12.10
Octachlorodibenzofuran	ng/kg-ww	1.80 *U*	2.60 *U*	0.24	0.20 *U*	0.10 *U*	0.10 *U*
Total heptachlorodibenzofurans	ng/kg-ww						
Total hexachlorodibenzofurans	ng/kg-ww						
Total pentachlorodibenzofurans	ng/kg-ww						
Total tetrachlorodibenzofurans	ng/kg-ww	8.70	1.70				
TEQ - Dioxins [1] (ND=1/2)	ng/kg-ww	1.38	1.30	1.50	6.64	8.11	7.03
TEQ - Furans [1] (ND=1/2)	ng/kg-ww	2.23	0.81	8.29	16.98	37.87	32.99
TEQ - Total [1] (ND=1/2)	ng/kg-ww	3.61	2.11	9.78	23.63	45.98	40.02

Table A-1D. (cont.)

	Survey:	NYSDEC-1999	NYSDEC-1999	NYSDEC-1999	NYSDEC-1999	NYSDEC-1999	NYSDEC-1999
	Species:	CATFISH	W PERCH	W PERCH	W PERCH	W PERCH	W PERCH
	Classification:	Fish	Fish	Fish	Fish	Fish	Fish
	Sample Type:	Fillet	Fillet	Fillet	Fillet	Fillet	Fillet
	Sample Number:	138745	138746	138747	138748	138749	138750
	Survey Station:	HB Mouth	HB Mouth	HB Mouth	HB Mouth	HB Mouth	HB Mouth
	Date:	7/7/1999	7/7/1999	7/7/1999	7/7/1999	7/7/1999	7/7/1999
	Length (in):	18.3	8.0	6.8	8.0	7.4	6.5
	Age (yrs):	NA	NA	NA	NA	NA	NA
Chemical	**Units**						
1,2,3,4,6,7,8-Heptachlorodibenzodioxin	ng/kg-ww	0.41	0.44	0.73	0.24	0.42	0.90
1,2,3,4,7,8-Hexachlorodibenzodioxin	ng/kg-ww	0.18	0.15	0.19 *U*	0.10 *U*	0.16	0.60 *U*
1,2,3,6,7,8-Hexachlorodibenzodioxin	ng/kg-ww	0.68	0.55	0.53	0.30	0.61	0.60 *U*
1,2,3,7,8,9-Hexachlorodibenzodioxin	ng/kg-ww	0.17	0.10 *U*	0.76	0.10 *U*	0.10 *U*	0.60 *U*
1,2,3,7,8-Pentachlorodibenzodioxin	ng/kg-ww	1.26	1.26	1.19	0.50	1.51	0.60 *U*
2,3,7,8-Tetrachlorodibenzodioxin	ng/kg-ww	1.30	1.35	1.04	0.57	1.19	1.06 *U*
Octachlorodibenzodioxin	ng/kg-ww	0.62	0.68	0.97	0.65	0.65	1.00
Total heptachlorodibenzodioxins	ng/kg-ww						
Total hexachlorodibenzodioxins	ng/kg-ww						
Total pentachlorodibenzodioxins	ng/kg-ww						
Total tetrachlorodibenzodioxins	ng/kg-ww						
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg-ww	0.86	0.33	0.49	0.10 *U*	0.29	1.35
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg-ww	0.10 *U*	0.10 *U*	0.12 *U*	0.10 *U*	0.01 *U*	0.60 *U*
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg-ww	0.45	1.30	0.92	0.27	1.49	0.75
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg-ww	0.23	0.45	0.25	0.10 *U*	0.48	0.60 *U*
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg-ww	0.10 *U*	0.10 *U*	0.10 *U*	0.10 *U*	0.10 *U*	0.60 *U*
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg-ww	0.38	3.31	1.78	0.74	4.03	0.84
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg-ww	0.24	0.13	0.16	0.10 *U*	0.20	0.60 *U*
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg-ww	7.44	11.60	5.90	3.40	14.60	1.98
2,3,7,8-Tetrachlorodibenzofuran	ng/kg-ww	0.52	40.10	17.30	14.40	34.60	12.50
Octachlorodibenzofuran	ng/kg-ww	0.27	0.14	0.26	0.13	0.12	0.58
Total heptachlorodibenzofurans	ng/kg-ww						
Total hexachlorodibenzofurans	ng/kg-ww						
Total pentachlorodibenzofurans	ng/kg-ww						
Total tetrachlorodibenzofurans	ng/kg-ww						
TEQ - Dioxins [1] (ND=1/2)	ng/kg-ww	2.67	2.69	2.38	1.10	2.79	0.93
TEQ - Furans [1] (ND=1/2)	ng/kg-ww	3.90	10.17	4.91	3.22	11.19	2.46
TEQ - Total [1] (ND=1/2)	ng/kg-ww	6.56	12.86	7.29	4.32	13.97	3.39

Table A-1D. (cont.)

	Survey:	NYSDEC-1999	NYSDEC-1999	NYSDEC-1999	NYSDEC-1999	NYSDEC-1999	ONON2A	ONON2A
	Species:	CATFISH	CATFISH	CATFISH	CATFISH	CARP	BLUEGILL	BLUEGILL
	Classification:	Fish	Fish	Fish	Fish	Fish	Fish	Fish
	Sample Type:	Fillet	Fillet	Fillet	Fillet	Fillet	Fillet	Fillet
	Sample Number:	138773	138783	138784	138708	138709	WB0034F	WB0035F
	Survey Station:	South End	South End	South End	South End	South End	5AHB	5AHB
	Date:	7/16/1999	7/21/1999	7/21/1999	6/24/1999	6/24/1999	9/22/2000	9/22/2000
	Length (in):	17.6	21.5	18.9	18.1	26.3	7.4	6.9
	Age (yrs):	NA	NA	NA	NA	NA	3	4
Chemical	**Units**							
1,2,3,4,6,7,8-Heptachlorodibenzodioxin	ng/kg-ww	0.20 *U*	0.27	0.42	0.24	1.78	0.10 *U*	0.11 *U*
1,2,3,4,7,8-Hexachlorodibenzodioxin	ng/kg-ww	0.20 *U*	0.10 *U*	0.11	0.10 *U*	0.86	0.10 *U*	0.10 *U*
1,2,3,6,7,8-Hexachlorodibenzodioxin	ng/kg-ww	0.20 *U*	0.54	0.58	0.34	2.34	0.11 *J*	0.10 *U*
1,2,3,7,8,9-Hexachlorodibenzodioxin	ng/kg-ww	0.20 *U*	0.11	0.14	0.12	0.51	0.10 *U*	0.10 *U*
1,2,3,7,8-Pentachlorodibenzodioxin	ng/kg-ww	0.26	0.64	0.64	0.50	4.18	0.10 *U*	0.10 *U*
2,3,7,8-Tetrachlorodibenzodioxin	ng/kg-ww	0.20 *U*	0.72	0.54	0.38	2.45	0.33 *J*	0.17 *U*
Octachlorodibenzodioxin	ng/kg-ww	0.39	0.62	0.71	0.40	1.13	0.43 *U*	0.40 *U*
Total heptachlorodibenzodioxins	ng/kg-ww						0.10 *U*	0.11 *U*
Total hexachlorodibenzodioxins	ng/kg-ww						0.10 *U*	0.10 *U*
Total pentachlorodibenzodioxins	ng/kg-ww						0.10 *U*	0.10 *U*
Total tetrachlorodibenzodioxins	ng/kg-ww						0.33 *J*	0.17 *U*
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg-ww	0.42	2.32	3.26	0.87	0.46	0.10 *U*	0.10 *U*
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg-ww	0.20 *U*	0.10 *U*	0.18 *U*	0.10 *U*	0.20 *U*	0.10 *U*	0.10 *U*
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg-ww	0.20 *U*	0.18	0.50	0.26	7.15	0.10 *U*	0.10 *U*
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg-ww	0.20 *U*	0.17	0.29	0.15	2.95	0.10 *U*	0.10 *U*
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg-ww	0.20 *U*	0.10 *U*	0.10 *U*	0.10 *U*	0.20 *U*	0.10 *U*	0.10 *U*
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg-ww	0.20 *U*	0.43	0.91	0.26	7.57	0.31 *J*	0.10 *U*
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg-ww	0.20 *U*	0.15	0.23	0.13	1.10	0.10 *U*	0.10 *U*
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg-ww	1.53	2.85	4.88	2.92	59.70	0.14 *J*	0.11 *J*
2,3,7,8-Tetrachlorodibenzofuran	ng/kg-ww	0.16	1.30	1.71	0.66	7.84	0.90 *J*	0.22 *J*
Octachlorodibenzofuran	ng/kg-ww	0.20 *U*	0.47	0.10 *U*	0.10 *U*	0.20 *U*	0.10 *U*	0.13 *U*
Total heptachlorodibenzofurans	ng/kg-ww						0.10 *U*	0.10 *U*
Total hexachlorodibenzofurans	ng/kg-ww						0.10 *U*	0.10 *U*
Total pentachlorodibenzofurans	ng/kg-ww						0.31 *J*	0.10 *U*
Total tetrachlorodibenzofurans	ng/kg-ww						0.84 *J*	0.24 *J*
TEQ - Dioxins [1] (ND=1/2)	ng/kg-ww	0.39	1.43	1.26	0.93	7.02	0.40	0.15
TEQ - Furans [1] (ND=1/2)	ng/kg-ww	0.83	1.65	2.80	1.61	32.15	0.20	0.10
TEQ - Total [1] (ND=1/2)	ng/kg-ww	1.22	3.09	4.06	2.53	39.17	0.60	0.25

Table A-1D. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Species:	CATFISH	CATFISH	CARP	CARP	CARP
	Classification:	Fish	Fish	Fish	Fish	Fish
	Sample Type:	Fillet	Fillet	Fillet	Fillet	Fillet
	Sample Number:	WB0036F	WB0037F	WB0043F	WB0044F	WB0045F
	Survey Station:	MNMC	MNMC	5AHB	5AHB	5AHB
	Date:	9/22/2000	9/22/2000	9/20/2000	9/20/2000	9/20/2000
	Length (in):	21.1	19.8	22.2	23.7	22.6
	Age (yrs):	12	9	7	8	7
Chemical	**Units**					
1,2,3,4,6,7,8-Heptachlorodibenzodioxin	ng/kg-ww	0.18 *J*	0.26 *J*	1.48 *J*	5.23	2.87
1,2,3,4,7,8-Hexachlorodibenzodioxin	ng/kg-ww	0.10 *U*	0.10 *U*	0.28 *J*	0.51 *J*	1.05 *J*
1,2,3,6,7,8-Hexachlorodibenzodioxin	ng/kg-ww	0.39 *J*	0.61 *J*	0.79 *J*	1.81 *J*	3.23
1,2,3,7,8,9-Hexachlorodibenzodioxin	ng/kg-ww	0.12 *J*	0.13 *J*	0.25 *J*	0.55 *J*	0.58 *J*
1,2,3,7,8-Pentachlorodibenzodioxin	ng/kg-ww	0.49 *J*	1.03	0.92 *J*	1.16	3.48
2,3,7,8-Tetrachlorodibenzodioxin	ng/kg-ww	0.59 *J*	0.94 *J*	0.59 *J*	0.74 *J*	2.03
Octachlorodibenzodioxin	ng/kg-ww	0.64 *U*	0.44 *U*	1.40 *U*	5.18	2.12 *J*
Total heptachlorodibenzodioxins	ng/kg-ww	0.50 *J*	0.10 *U*	1.48 *J*	6.37	2.87
Total hexachlorodibenzodioxins	ng/kg-ww	0.39 *J*	0.10 *U*	1.53 *J*	1.06 *J*	4.86
Total pentachlorodibenzodioxins	ng/kg-ww	0.49 *J*	1.03	0.92 *J*	1.16	3.48
Total tetrachlorodibenzodioxins	ng/kg-ww	0.59 *J*	0.94 *J*	0.59 *J*	0.10 *U*	2.03
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg-ww	0.11 *J*	0.10 *U*	0.24 *J*	0.71 *J*	1.08 *J*
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg-ww	0.10 *U*	0.10 *U*	0.10 *U*	0.10 *U*	0.31 *J*
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg-ww	0.13 *J*	0.35 *J*	0.89 *J*	0.81 *J*	11.30
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg-ww	0.10 *U*	0.16 *J*	0.44 *J*	0.54 *J*	3.84
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg-ww	0.10 *U*	0.10 *U*	0.10 *U*	0.10 *U*	0.20 *J*
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg-ww	0.16 *J*	0.87 *J*	1.04	1.41	15.30
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg-ww	0.10 *U*	0.21 *J*	0.23 *J*	0.37 *J*	0.97 *J*
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg-ww	1.61	4.07	6.03	3.58	59.20
2,3,7,8-Tetrachlorodibenzofuran	ng/kg-ww	0.45 *J*	1.55	2.44	10.00	32.50
Octachlorodibenzofuran	ng/kg-ww	0.10 *U*	0.10 *U*	0.10 *U*	0.19 *U*	0.12 *U*
Total heptachlorodibenzofurans	ng/kg-ww	0.10 *U*	0.10 *U*	0.24 *J*	0.94 *J*	1.21 *J*
Total hexachlorodibenzofurans	ng/kg-ww	0.13 *J*	0.35 *J*	1.34 *J*	2.02 *J*	17.00
Total pentachlorodibenzofurans	ng/kg-ww	1.61	4.94	7.07	7.65	77.40
Total tetrachlorodibenzofurans	ng/kg-ww	0.42 *J*	1.48	2.62	13.0	33.90
TEQ - Dioxins [1] (ND=1/2)	ng/kg-ww	1.14	2.052	1.66	2.24	6.03
TEQ - Furans [1] (ND=1/2)	ng/kg-ww	0.89	2.310	3.48	3.05	35.26
TEQ - Total [1] (ND=1/2)	ng/kg-ww	2.03	4.362	5.13	5.28	41.29

Table A-1D. (cont.)

Notes:

[1] Calculated using WHO TEFs
LMB - largemouth bass
SMB - smallmouth bass
WPERCH - white perch
J - estimated
U - not detected at reported quantitation limit

Table A-1E. Onondaga Lake Fish Fillet Samples TAL/TCL Data

	Survey:	O-FACCUM	O-FACCUM	O-FACCUM	O-FACCUM	ONON2A [1]	ONON2A [1]	ONON2A [1]
	Sample Number:	FB0275	FB0276	FB0277	FB0278	WB0043F	WB0044F	WB0045F
	Date Collected:	9/92 - 10/92	9/92 - 10/92	9/92 - 10/92	9/92 - 10/92	9/20/2000	9/20/2000	9/20/2000
	Station:	SEND	SEND	SEND	SEND	5AHB	5AHB	5AHB
	Species:	WPERCH	SMBASS	WALLEYE	CATFISH	CARP	CARP	CARP
	Average Length (in):	8.1	12.2	16.3	16.8	22.2	23.7	22.6
	Average Age (yrs):	4	5	5	11	7	8	7
Chemical	**Units**							
Inorganics								
Aluminum	mg/kg-ww	9.3 *U*	6.2 *U*	4.9 *U*	5.3 *U*	5.5	4.86 *U*	5.9
Antimony	mg/kg-ww	2.1	2.2 *U*	1.9 *U*	1.8	0.05 *U*	0.05 *U*	0.05 *U*
Arsenic	mg/kg-ww	0.14 *UJ*	0.14 *UJ*	0.15 *UJ*	0.21 *UJ*	0.5 *U*	1	1.05
Barium	mg/kg-ww	0.19 *U*	0.20 *U*	0.18 *U*	0.15 *U*	0.13	0.2	0.1
Beryllium	mg/kg-ww	0.19 *U*	0.20 *U*	0.18 *U*	0.15 *U*	0.02 *U*	0.03	0.02
Cadmium	mg/kg-ww	0.19 *U*	0.20 *U*	0.18 *U*	0.15 *U*	0.05 *U*	0.05 *U*	0.05 *U*
Calcium	mg/kg-ww	922	1,080	900	79	1,380 *J*	1,300 *J*	880 *J*
Chromium	mg/kg-ww	0.57	0.73	0.54	0.29 *U*	0.97 *U*	0.97 *U*	0.97 *U*
Cobalt	mg/kg-ww	0.37 *U*	0.4 *U*	0.35 *U*	0.29 *U*	0.03	0.02 *U*	0.02 *U*
Copper	mg/kg-ww	0.71 *U*	2 *U*	0.35 *U*	1.5	3.1	3	2.3
Cyanide	mg/kg-ww	1.0	0.5 *U*	0.41 *U*	0.49 *U*	0.41 *U*	1.7	0.41 *U*
Iron	mg/kg-ww	11.1 *U*	9.3 *U*	6.9 *U*	7.2 *U*	44	19.8	26
Lead	mg/kg-ww	0.29	0.14 *U*	0.17	0.21 *U*	0.02	0.02 *U*	0.03
Magnesium	mg/kg-ww	242	275	275	169	992	738	862
Manganese	mg/kg-ww	0.36	0.20 *U*	0.25 *U*	0.18	0.58	0.77	0.45
Nickel	mg/kg-ww	1.5 *U*	1.6 *U*	1.4 *U*	1.2 *U*	0.3	0.7	0.45
Potassium	mg/kg-ww	3,150	3,900	3,930	2,720	14,600	9,880	12,100
Selenium	mg/kg-ww	0.86 *J*	0.14 *UJ*	0.19 *UJ*	0.21 *UJ*	2.2	1.1	1.7
Silver	mg/kg-ww	0.37 *UJ*	0.40 *UJ*	0.35 *UJ*	0.29 *UJ*	0.02 *U*	0.02 *U*	0.02 *U*
Sodium	mg/kg-ww	437	689	472	355	1,760	1,120	1,220
Thallium	mg/kg-ww	0.14 *U*	0.14 *U*	0.15 *U*	0.21 *U*	0.02 *U*	0.02 *U*	0.02 *U*
Mercury	µg/kg-ww	1,200	1,400	1,100	890	428	381	461
Vanadium	mg/kg-ww	0.37 *U*	0.40 *U*	0.35 *U*	0.29 *U*	0.73	0.45	0.525
Zinc	mg/kg-ww	16.6	8.4 *U*	6.2 *U*	5.5 *U*	47.8 *J*	54.2 *J*	73.8 *J*

Table A-1E. (cont.)

Survey:	O-FACCUM	O-FACCUM	O-FACCUM	O-FACCUM	ONON2A [1]	ONON2A [1]	ONON2A [1]
Sample Number:	FB0275	FB0276	FB0277	FB0278	WB0043F	WB0044F	WB0045F
Date Collected:	9/92 - 10/92	9/92 - 10/92	9/92 - 10/92	9/92 - 10/92	9/20/2000	9/20/2000	9/20/2000
Station:	SEND	SEND	SEND	SEND	5AHB	5AHB	5AHB
Species:	WPERCH	SMBASS	WALLEYE	CATFISH	CARP	CARP	CARP
Average Length (in):	8.1	12.2	16.3	16.8	22.2	23.7	22.6
Average Age (yrs):	4	5	5	11	7	8	7
Chemical	**Units**						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		
1,1,2,2-Tetrachloroethane	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		
1,1,2-Trichloroethane	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		
1,1-Dichloroethane	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		
1,1-Dichloroethene	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		
1,2-Dichloroethane	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		
1,2-Dichloroethene (Total)	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		
1,2-Dichloropropane	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		
2-Hexanone	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		
2-Butanone	µg/kg-ww	10 *UJ*	8 *J*	6 *J*	10 *UJ*		
4-Methyl-2-pentanone	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		
Acetone	µg/kg-ww	160 *J*	180 *J*	70 *J*	50 *J*		
Benzene	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		
Bromodichloromethane	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		
Bromoform	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		
Bromomethane	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		
Carbon disulfide	µg/kg-ww	10 *UJ*	10 *UJ*	10 *UJ*	10 *UJ*		
Carbon tetrachloride	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		
Chlorobenzene	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		
Chloroethane	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		
Chloroform	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		
Chloromethane	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		
cis-1,3-Dichloropropene	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		
trans-1,3-Dichloropropene	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		
Dibromochloromethane	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		
Ethylbenzene	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*		

Table A-1E. (cont.)

	Survey:	O-FACCUM	O-FACCUM	O-FACCUM	O-FACCUM	ONON2A [1]	ONON2A [1]	ONON2A [1]
	Sample Number:	FB0275	FB0276	FB0277	FB0278	WB0043F	WB0044F	WB0045F
	Date Collected:	9/92 - 10/92	9/92 - 10/92	9/92 - 10/92	9/92 - 10/92	9/20/2000	9/20/2000	9/20/2000
	Station:	SEND	SEND	SEND	SEND	5AHB	5AHB	5AHB
	Species:	WPERCH	SMBASS	WALLEYE	CATFISH	CARP	CARP	CARP
	Average Length (in):	8.1	12.2	16.3	16.8	22.2	23.7	22.6
	Average Age (yrs):	4	5	5	11	7	8	7
Chemical	**Units**							
Methylene chloride	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*			
Styrene	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*			
Tetrachloroethene	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*			
Toluene	µg/kg-ww	10 *U*	5 *J*	10 *U*	10 *U*			
Trichloroethene	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*			
Vinyl chloride	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*			
Xylene (Total)	µg/kg-ww	10 *U*	10 *U*	10 *U*	10 *U*			
Semivolatile Organic Compounds								
2,2'-Oxybis(1-chloropropane)	µg/kg-ww	160 *UJ*	160 *UJ*	150 *UJ*	150 *UJ*			
2,4,5-Trichlorophenol	µg/kg-ww	*R*	*R*	*R*	*R*			
2,4,6-Trichlorophenol	µg/kg-ww	*R*	*R*	*R*	*R*			
2,4-Dichlorophenol	µg/kg-ww	*R*	*R*	*R*	*R*			
2,4-Dimethylphenol	µg/kg-ww	*R*	*R*	*R*	*R*			
2,4-Dinitrophenol	µg/kg-ww	*R*	*R*	*R*	*R*			
2,4-Dinitrotoluene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
2,6-Dinitrotoluene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
2-Chloronaphthalene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
2-Chlorophenol	µg/kg-ww	*R*	*R*	*R*	*R*			
2-Methyl-4,6-dinitrophenol	µg/kg-ww	*R*	*R*	*R*	*R*			
2-Methylphenol	µg/kg-ww	*R*	*R*	*R*	*R*			
4-Methylphenol	µg/kg-ww	*R*	*R*	*R*	*R*			
2-Nitroaniline	µg/kg-ww	400 *U*	390 *U*	390 *U*	390 *U*			
3-Nitroaniline	µg/kg-ww	400 *U*	390 *U*	390 *U*	390 *U*			
4-Nitroaniline	µg/kg-ww	400 *U*	390 *U*	390 *U*	390 *U*			
2-Nitrophenol	µg/kg-ww	*R*	*R*	*R*	*R*			
4-Nitrophenol	µg/kg-ww	*R*	*R*	*R*	*R*			
3,3-Dichlorobenzidine	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *UJ*			

Table A-1E. (cont.)

	Survey:	O-FACCUM	O-FACCUM	O-FACCUM	O-FACCUM	ONON2A [1]	ONON2A [1]	ONON2A [1]
	Sample Number:	FB0275	FB0276	FB0277	FB0278	WB0043F	WB0044F	WB0045F
	Date Collected:	9/92 - 10/92	9/92 - 10/92	9/92 - 10/92	9/92 - 10/92	9/20/2000	9/20/2000	9/20/2000
	Station:	SEND	SEND	SEND	SEND	5AHB	5AHB	5AHB
	Species:	WPERCH	SMBASS	WALLEYE	CATFISH	CARP	CARP	CARP
	Average Length (in):	8.1	12.2	16.3	16.8	22.2	23.7	22.6
	Average Age (yrs):	4	5	5	11	7	8	7
Chemical	**Units**							
4-Bromophenyl-phenyl ether	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
4-Chloro-3-methylphenol	µg/kg-ww	*R*	*R*	*R*	*R*			
4-Chloroaniline	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
4-Chlorophenyl-phenyl ether	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
Bis(2-chloroethoxy)methane	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
Bis(2-chloroethyl)ether	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
Bis(2-ethylhexyl)phthalate	µg/kg-ww	430 *U*	2,300	420 *U*	150 *JU*			
Butylbenzylphthalate	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *UJ*			
Carbazole	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
Dibenzofuran	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
Diethylphthalate	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
Dimethylphthalate	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
Di-n-butylphthalate	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
Di-n-octylphthalate	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *UJ*			
Hexachlorobenzene	µg/kg-ww	160 *U*	160 *U*	150 *U*	47			
Hexachlorobutadiene	µg/kg-ww	160 *UJ*	160 *UJ*	150 *UJ*	150 *UJ*			
Hexachlorocyclopentadiene	µg/kg-ww	160 *UJ*	160 *UJ*	150 *UJ*	150 *UJ*			
Hexachloroethane	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
Isophorone	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
Isopropanol	µg/kg-ww	*R*	*R*	*R*	*R*			
Nitrobenzene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
N-Nitroso-di-n-propylamine	µg/kg-ww	160 *UJ*	160 *UJ*	150 *UJ*	150 *UJ*			
N-Nitrosodiphenylamine	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
1,2,4-Trichlorobenzene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
1,2-Dichlorobenzene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
1,3-Dichlorobenzene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
1,4-Dichlorobenzene	µg/kg-ww	41	160 *U*	37	58			

Table A-1E. (cont.)

	Survey:	O-FACCUM	O-FACCUM	O-FACCUM	O-FACCUM	ONON2A [1]	ONON2A [1]	ONON2A [1]
	Sample Number:	FB0275	FB0276	FB0277	FB0278	WB0043F	WB0044F	WB0045F
	Date Collected:	9/92 - 10/92	9/92 - 10/92	9/92 - 10/92	9/92 - 10/92	9/20/2000	9/20/2000	9/20/2000
	Station:	SEND	SEND	SEND	SEND	5AHB	5AHB	5AHB
	Species:	WPERCH	SMBASS	WALLEYE	CATFISH	CARP	CARP	CARP
	Average Length (in):	8.1	12.2	16.3	16.8	22.2	23.7	22.6
	Average Age (yrs):	4	5	5	11	7	8	7
Chemical	**Units**							
Pentachlorophenol	µg/kg-ww	*R*	*R*	*R*	*R*			
Phenol	µg/kg-ww	*R*	*R*	*R*	*R*			
Polycyclic Aromatic Hydrocarbons								
1-Methylnaphthalene	µg/kg-ww	890	1,300	520	2,300			
2-Methylnaphthalene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
Acenaphthene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
Acenaphthylene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
Anthracene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
Benzo(a)anthracene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *UJ*			
Benzo(a)pyrene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *UJ*			
Benzo(b)fluoranthene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *UJ*			
Benzo(g,h,i)perylene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *UJ*			
Benzo(k)fluoranthene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *UJ*			
Chrysene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *UJ*			
Dibenz(a,h)anthracene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *UJ*			
Fluoranthene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
Fluorene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
Indeno(1,2,3-cd)pyrene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *UJ*			
Naphthalene	µg/kg-ww	160 *U*	160 *U*	150 *U*	61			
Phenanthrene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *U*			
Pyrene	µg/kg-ww	160 *U*	160 *U*	150 *U*	150 *UJ*			
Pesticides								
4,4'-DDD	µg/kg-ww	53 *J*	13 *J*	22 *J*	170 *J*			
4,4'-DDE	µg/kg-ww	81 *J*	43	54 *J*	400 *J*			
4,4'-DDT	µg/kg-ww	8.7 *J*	3.2 *U*	3.2 *U*	18 *J*			
Aldrin	µg/kg-ww	1.7 *U*	1.6 *U*	1.6 *U*	1.6 *U*			
alpha (cis) -Chlordane	µg/kg-ww	16 *J*	1.6 *U*	8.4 *J*	33 *J*			

Table A-1E. (cont.)

	Survey:	O-FACCUM	O-FACCUM	O-FACCUM	O-FACCUM	ONON2A [1]	ONON2A [1]	ONON2A [1]
	Sample Number:	FB0275	FB0276	FB0277	FB0278	WB0043F	WB0044F	WB0045F
	Date Collected:	9/92 - 10/92	9/92 - 10/92	9/92 - 10/92	9/92 - 10/92	9/20/2000	9/20/2000	9/20/2000
	Station:	SEND	SEND	SEND	SEND	5AHB	5AHB	5AHB
	Species:	WPERCH	SMBASS	WALLEYE	CATFISH	CARP	CARP	CARP
	Average Length (in):	8.1	12.2	16.3	16.8	22.2	23.7	22.6
	Average Age (yrs):	4	5	5	11	7	8	7
Chemical	**Units**							
gamma (trans) -Chlordane	µg/kg-ww	1.7 *U*	1.6 *U*	1.6 *U*	1.6 *U*			
Endosulfan I	µg/kg-ww	7.5 *J*	3.5 *J*	4.6 *J*	1.6 *U*			
Endosulfan II	µg/kg-ww	3.3 *U*	3.2 *U*	3.2 *U*	3.1 *U*			
Endosulfan sulfate	µg/kg-ww	3.3 *U*	4.2 *J*	3.2 *U*	3.1 *U*			
alpha-BHC	µg/kg-ww	1.7 *U*	1.6 *U*	1.6 *U*	1.6 *U*			
beta-BHC	µg/kg-ww	1.7 *U*	1.6 *U*	1.6 *U*	1.6 *U*			
delta-BHC	µg/kg-ww	2.8 *J*	1.6 *U*	2.4 *J*	1.7 *J*			
gamma-BHC (Lindane)	µg/kg-ww	1.7 *U*	1.6 *U*	1.6 *U*	1.6 *U*			
Dieldrin	µg/kg-ww	3.3 *U*	3.2 *U*	7 *J*	3.1 *U*			
Endrin	µg/kg-ww	12 *J*	8.5 *J*	6.5	32 *J*			
Endrin aldehyde	µg/kg-ww	3.3 *U*	3.2 *U*	3.2 *U*	3.1 *U*			
Endrin ketone	µg/kg-ww	3.3 *U*	3.2 *U*	3.2 *U*	3.1 *U*			
Heptachlor	µg/kg-ww	1.7 *U*	1.6 *U*	1.6 *U*	1.6 *U*			
Heptachlor epoxide	µg/kg-ww	4 *J*	1.6 *U*	1.6 *U*	1.6 *U*			
Methoxychlor	µg/kg-ww	17 *U*	16 *U*	16 *U*	16 *U*			
Toxaphene	µg/kg-ww	170 *U*	160 *U*	160 *U*	160 *U*			

Table A-1E. (cont.)

	Survey:	ONON2A [1]	ONON2A [1]	ONON2A [1]	ONON2A [1]
	Sample Number:	WF0034F	WF0035F	WF0036F	WB0037F
	Date Collected:	9/22/2000	9/22/2000	9/22/2000	9/22/2000
	Station:	5AHB	5AHB	MNMC	MNMC
	Species:	BLUEGILL	BLUEGILL	CATFISH	CATFISH
	Average Length (in):	7.4	6.9	21.1	19.8
	Average Age (yrs):	3	4	12	9
Chemical	**Units**				
Inorganics					
Aluminum	mg/kg-ww	4.89 *U*	4.84 *U*	5.3	4.88 *U*
Antimony	mg/kg-ww	0.05 *U*	0.05 *U*	0.05 *U*	0.05 *U*
Arsenic	mg/kg-ww	0.49 *U*	0.48 *U*	0.5 *U*	0.49 *U*
Barium	mg/kg-ww	0.78	0.74	0.04	0.08
Beryllium	mg/kg-ww	0.02 *U*	0.02 *U*	0.02 *U*	0.02
Cadmium	mg/kg-ww	0.05 *U*	0.05 *U*	0.05 *U*	0.05 *U*
Calcium	mg/kg-ww	16,500 *J*	24,400 *J*	389 *J*	1,060 *J*
Chromium	mg/kg-ww	0.98 *U*	0.97 *U*	0.99 *U*	0.98 *U*
Cobalt	mg/kg-ww	0.1	0.2	0.02 *U*	0.08
Copper	mg/kg-ww	1.3	1.3	3.1	2
Cyanide	mg/kg-ww	0.92 *U*	14.3	0.41 *U*	0.41 *U*
Iron	mg/kg-ww	11.4	18.3	13.8	15
Lead	mg/kg-ww	0.05	0.08	0.02	0.07
Magnesium	mg/kg-ww	1,430	1,610	1,030	989
Manganese	mg/kg-ww	1.88	5.51	0.44	0.51
Nickel	mg/kg-ww	0.9	1.9	0.6	0.3
Potassium	mg/kg-ww	16,400	15,600	17,700	14,200
Selenium	mg/kg-ww	1.5	1.6	1.2	1.4
Silver	mg/kg-ww	0.02 *U*	0.02 *U*	0.02 *U*	0.02 *U*
Sodium	mg/kg-ww	2,980	2,870	2,270	2,230
Thallium	mg/kg-ww	0.02 *U*	0.02 *U*	0.02 *U*	0.02 *U*
Mercury	µg/kg-ww	439	230	661	541
Vanadium	mg/kg-ww	0.58	0.47	0.79	0.97
Zinc	mg/kg-ww	35.1 *J*	53.7 *J*	23.7 *J*	20.1 *J*

Table A-1E. (cont.)

Notes: *J* - estimated

U - undetected at reported concentrations

WPERCH = white perch

SMBASS = smallmouth bass

Each composite was generated from five individuals of the same species

[1] Other data for these samples (including mercury, pesticides, hexachlorobenzene, PCBs, and PCDDs/PCDFs) are found on Tables A1-A, A1-B, A1-C, and A1-D.

Table A-2A. Northern Basin Nearshore Sediments – Inorganic and Organometallic Data

Survey	Survey Station	Sample Number	Duplicates	Date	Depth (cm)	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)
O-SEDCHM	S53	S00020		5/9/1992	0 - 30	5,160 *J*	9.0	8.0	708	0.54 *U*
O-SEDCHM	S53	S00529		7/27/1992	0 - 2	3,560	8.7 *UJ*	5.1 *J*	636	0.40 *U*
O-SEDCHM	S61	S00589		8/7/1992	0 - 2					
O-SEDCHM	S62	S00517		7/24/1992	0 - 2					
O-SEDCHM	S66	S00067		5/11/1992	0 - 30	1,020	5.7 *J*	0.92 *J*	87.3	0.30 *U*
O-SEDCHM	S66	S00601		8/10/1992	0 - 2	1,030	2.8 *UJ*	0.72	84.7	0.26 *U*
O-SEDCHM	S67	S00513		7/23/1992	0 - 2					
O-SEDCHM	S74	S00510		7/22/1992	0 - 2					
O-SEDCHM	S75	S00507		7/21/1992	0 - 2					
O-SEDCHM	S76	S00508		7/22/1992	0 - 2					
O-SEDCHM	S81	S00023		5/9/1992	0 - 30	1,730 *J*	8.1	2.1	55.7	0.20 *U*
O-SEDCHM	S81	S00520		7/24/1992	0 - 2	4,150	6.4 *J*	2.8 *J*	51.7	0.35 *U*
O-SEDCHM	S82	S00504		7/21/1992	0 - 2					
O-SEDCHM	S87	S00511		7/22/1992	0 - 2					
O-SEDCHM	S93	S00032		5/9/1992	0 - 30	609 *J*	9.2	0.32	82.7	0.35 *U*
O-SEDCHM	S93	S00550		7/31/1992	0 - 2	262	3.8 *UJ*	0.72 *J*	79.8	0.35 *U*
O-SEDCHM	S94	S00512		7/22/1992	0 - 2					
O-SEDCHM	S100	S00059		5/11/1992	0 - 30	735	7.2 *J*	0.48 *J*	86.6	0.31 *U*
O-SEDCHM	S100	S00608		8/11/1992	0 - 2	159	3.0 *UJ*	0.45 *J*	92.2	0.27 *U*
O-SEDCHM	S105	S00552		7/31/1992	0 - 2					
O-SEDCHM	S110	S00501		7/20/1992	0 - 2					
O-SEDCHM	S113	S00029		5/9/1992	0 - 30	427 *J*	7.1	0.42	105	0.26 *U*
O-SEDCHM	S113	S00577		8/5/1992	0 - 2	635	3.7 *UJ*	1.1	72.4	0.34 *U*
O-SEDCHM	P73	S00048		5/10/1992	0–30					
ONON2A	S304	SF0052		8/9/2000	0 - 15	5,780 *J*	0.34 *UJ*	4.8 *J*	80.7 *J*	0.36
ONON2A	S304	SF0053		8/9/2000	15 - 30	6,210 *J*	0.29 *UJ*	5.8 *J*	65.7 *J*	0.37
ONON2A	S306	VC0212		7/21/2000	0 - 15	4,970	0.30 *UJ*	2.5	96.2 *J*	0.34
ONON2A	S306	VC0213		7/21/2000	15 - 30	5,340	0.34 *UJ*	1.3	72.9 *J*	0.33
ONON2A	S356	SF0001		8/16/2000	0 - 15	1,430	0.33 *U*	0.38 *U*	112 *J*	0.13
ONON2A	S356	SF0002		8/16/2000	15 - 30	1,060	0.43	0.60	99.1	0.15
ONON2A	S357	SF0003		8/16/2000	0 - 2	1,180	0.45 *U*	1.1	117	0.15
ONON2A	S357	SF0004		8/16/2000	2 - 15	1,360	0.35 *U*	0.84	111	0.14
ONON2A	S357	SF0005		8/16/2000	15 - 30	1,840	0.36 *U*	0.41 *U*	99.5	0.14

Table A-2A. (cont.)

Survey	Survey Station	Sample Number	Duplicates	Date	Depth (cm)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)
O-SEDCHM	S53	S00020		5/9/1992	0 - 30	1.1 *U*	255,000	6.6	2.4	12.7
O-SEDCHM	S53	S00529		7/27/1992	0 - 2	0.97	303,000	17.7	3	12
O-SEDCHM	S61	S00589		8/7/1992	0 - 2	3.1 *J*	208,000 *J*	80.1 *J*		35.7 *J*
O-SEDCHM	S62	S00517		7/24/1992	0 - 2	2.4	292,000	43.5 *J*		13.4 *J*
O-SEDCHM	S66	S00067		5/11/1992	0 - 30	1.4	294,000	23 *J*	1.2	14 *J*
O-SEDCHM	S66	S00601		8/10/1992	0 - 2	1.3	231,000	22.6	1.1	13
O-SEDCHM	S67	S00513		7/23/1992	0 - 2	0.9	236,000	33.2 *J*		12.2 *J*
O-SEDCHM	S74	S00510		7/22/1992	0 - 2	0.79	74,200	13.6 *J*		4.7 *J*
O-SEDCHM	S75	S00507		7/21/1992	0 - 2	0.87	182,000	12.2 *J*		14.5 *J*
O-SEDCHM	S76	S00508		7/22/1992	0 - 2	1.4	76,700	11.2 *J*		9.9 *J*
O-SEDCHM	S81	S00023		5/9/1992	0 - 30	0.4 *U*	237,000	5.9	1.6	13.4
O-SEDCHM	S81	S00520		7/24/1992	0 - 2	0.35 *U*	109,000	10.5	4.2	21.4
O-SEDCHM	S82	S00504		7/21/1992	0 - 2	0.57	196,000	6.9 *J*		16.2 *J*
O-SEDCHM	S87	S00511		7/22/1992	0 - 2	1.6	313,000	37.8 *J*		11.9 *J*
O-SEDCHM	S93	S00032		5/9/1992	0 - 30	0.69 *U*	290,000	6.1	0.69 *U*	2.9
O-SEDCHM	S93	S00550		7/31/1992	0 - 2	0.73	255,000	25.1	0.94	8.8
O-SEDCHM	S94	S00512		7/22/1992	0 - 2	0.95	342,000	19.5 *J*		8.6 *J*
O-SEDCHM	S100	S00059		5/11/1992	0 - 30	0.63 *U*	326,000	3.0	0.63 *U*	1.9
O-SEDCHM	S100	S00608		8/11/1992	0 - 2	1.0	305,000	27.1	0.56	9.3 *U*
O-SEDCHM	S105	S00552		7/31/1992	0 - 2	4.6	330,000	76.9 *J*		27.8
O-SEDCHM	S110	S00501		7/20/1992	0 - 2	4.0	261,000	73.9 *J*		30.8 *J*
O-SEDCHM	S113	S00029		5/9/1992	0 - 30	0.52 *U*	339,000	6.5	0.52 *U*	3.8
O-SEDCHM	S113	S00577		8/5/1992	0 - 2	0.35	234,000	16.7	1.3	11.4 *U*
O-SEDCHM	P73	S00048		5/10/1992	0–30	0.56 *UJ*	317,000 *J*	3.4 *J*		2.5 *J*
ONON2A	S304	SF0052		8/9/2000	0 - 15	0.22	259,000 *J*	18.8 *J*	3.6 *J*	38.3 *J*
ONON2A	S304	SF0053		8/9/2000	15 - 30	0.35	147,000 *J*	69.2 *J*	8.9 *J*	41 *J*
ONON2A	S306	VC0212		7/21/2000	0 - 15	0.82	251,000	17.7 *J*	4.2	12 *J*
ONON2A	S306	VC0213		7/21/2000	15 - 30	0.05 *U*	157,000	9.0 *J*	2.4	6.7 *J*
ONON2A	S356	SF0001		8/16/2000	0 - 15	0.26	345,000	8.9	0.41	6.0 *J*
ONON2A	S356	SF0002		8/16/2000	15 - 30	0.051 *U*	320,000	2.3 *J*	0.18 *U*	2.1
ONON2A	S357	SF0003		8/16/2000	0 - 2	2.6	351,000	37.1 *J*	0.63	24.1
ONON2A	S357	SF0004		8/16/2000	2 - 15	0.96	366,000	16.2 *J*	0.61	9.7
ONON2A	S357	SF0005		8/16/2000	15 - 30	0.052 *U*	336,000	3.3 *J*	0.46	2.6

Table A-2A. (cont.)

Survey	Survey Station	Sample Number	Duplicates	Date	Depth (cm)	Cyanide (mg/kg)	Iron (mg/kg)	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)
O-SEDCHM	S53	S00020		5/9/1992	0 - 30		5,440	7.6	28,800	244
O-SEDCHM	S53	S00529		7/27/1992	0 - 2	7.9 *UJ*	4,090	11	17,300	319
O-SEDCHM	S61	S00589		8/7/1992	0 - 2			17.7 *J*	3,150	
O-SEDCHM	S62	S00517		7/24/1992	0 - 2			9.2	3,600	
O-SEDCHM	S66	S00067		5/11/1992	0 - 30		2,800	9.7 *J*	3,000	312 *J*
O-SEDCHM	S66	S00601		8/10/1992	0 - 2	1.0	2,040	9.1	3,280	182 *J*
O-SEDCHM	S67	S00513		7/23/1992	0 - 2			12.2	14,900	
O-SEDCHM	S74	S00510		7/22/1992	0 - 2			5.3	3,090	
O-SEDCHM	S75	S00507		7/21/1992	0 - 2			10.1	5,660	
O-SEDCHM	S76	S00508		7/22/1992	0 - 2			11.6	5,330	
O-SEDCHM	S81	S00023		5/9/1992	0 - 30		4,270	24.5	4,190	202
O-SEDCHM	S81	S00520		7/24/1992	0 - 2	0.78 *UJ*	10,300	29.2	11,000	338
O-SEDCHM	S82	S00504		7/21/1992	0 - 2			21.4	7,160	
O-SEDCHM	S87	S00511		7/22/1992	0 - 2			10.4	2,560	
O-SEDCHM	S93	S00032		5/9/1992	0 - 30		1,890	1.5	3,260	143
O-SEDCHM	S93	S00550		7/31/1992	0 - 2	5.9 *UJ*	1,370	6.9	3,210	260
O-SEDCHM	S94	S00512		7/22/1992	0 - 2			8.4	2,720	
O-SEDCHM	S100	S00059		5/11/1992	0 - 30		1,760	1.0	3,110	104
O-SEDCHM	S100	S00608		8/11/1992	0 - 2	1.6 *U*	874	2.4	2,340	445 *J*
O-SEDCHM	S105	S00552		7/31/1992	0 - 2			19.5 *J*	2,630	
O-SEDCHM	S110	S00501		7/20/1992	0 - 2			6.8	2,640	
O-SEDCHM	S113	S00029		5/9/1992	0 - 30		1,520	2.5	2,950	144
O-SEDCHM	S113	S00577		8/5/1992	0 - 2	1.4 *U*	2,520	15.7	2,950	284 *J*
O-SEDCHM	P73	S00048		5/10/1992	0–30			0.83 *J*	1,640 *J*	
ONON2A	S304	SF0052		8/9/2000	0 - 15	0.91 *U*	9,730 *J*	45.7 *J*	11,300 *J*	355 *J*
ONON2A	S304	SF0053		8/9/2000	15 - 30	0.77 *U*	11,500 *J*	48.3 *J*	11,100 *J*	365 *J*
ONON2A	S306	VC0212		7/21/2000	0 - 15	0.79 *U*	9,520	7.7	13,400	342
ONON2A	S306	VC0213		7/21/2000	15 - 30	0.90 *U*	9,160	3.0	12,700	233
ONON2A	S356	SF0001		8/16/2000	0 - 15	0.86 *U*	1,870	4.2	3,050	326
ONON2A	S356	SF0002		8/16/2000	15 - 30	0.92 *U*	1,400	0.50	2,930	154
ONON2A	S357	SF0003		8/16/2000	0 - 2	1.2 *U*	2,240	11.6	2,840	418
ONON2A	S357	SF0004		8/16/2000	2 - 15	0.93 *U*	2,430	4.5	3,040	263
ONON2A	S357	SF0005		8/16/2000	15 - 30	0.94 *U*	2,710	0.85	3,250	144

Table A-2A. (cont.)

Survey	Survey Station	Sample Number	Duplicates	Date	Depth (cm)	Methylmercury (µg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)
O-SEDCHM	S53	S00020		5/9/1992	0 - 30		0.5 *UJ*	6.9	121 *U*	0.97 *J*
O-SEDCHM	S53	S00529		7/27/1992	0 - 2		0.21 *J*	10.8	145	0.32 *UJ*
O-SEDCHM	S61	S00589		8/7/1992	0 - 2		0.94	9.2		
O-SEDCHM	S62	S00517		7/24/1992	0 - 2		0.94	20 *J*		
O-SEDCHM	S66	S00067		5/11/1992	0 - 30		0.37	4.2	119	0.27 *UJ*
O-SEDCHM	S66	S00601		8/10/1992	0 - 2		0.21	4.3	143	0.15 *UJ*
O-SEDCHM	S67	S00513		7/23/1992	0 - 2		0.92	18.2 *J*		
O-SEDCHM	S74	S00510		7/22/1992	0 - 2		0.84	5.7 *J*		
O-SEDCHM	S75	S00507		7/21/1992	0 - 2		2.8	11.9 *J*		
O-SEDCHM	S76	S00508		7/22/1992	0 - 2		1.9	11.2 *J*		
O-SEDCHM	S81	S00023		5/9/1992	0 - 30		0.98 *J*	4.1	241	0.38 *UJ*
O-SEDCHM	S81	S00520		7/24/1992	0 - 2		1.3 *J*	11.6	578	0.79 *J*
O-SEDCHM	S82	S00504		7/21/1992	0 - 2		1.1	10.9 *J*		
O-SEDCHM	S87	S00511		7/22/1992	0 - 2		1.0	5.4 *J*		
O-SEDCHM	S93	S00032		5/9/1992	0 - 30		0.25 *UJ*	2.4 *U*	161	0.19 *UJ*
O-SEDCHM	S93	S00550		7/31/1992	0 - 2		0.39 *J*	4.0	87.7	0.28 *UJ*
O-SEDCHM	S94	S00512		7/22/1992	0 - 2		0.96	3.9 *J*		
O-SEDCHM	S100	S00059		5/11/1992	0 - 30		0.28 *U*	3.6	182	0.38 *J*
O-SEDCHM	S100	S00608		8/11/1992	0 - 2		0.36	3.9	211	0.39
O-SEDCHM	S105	S00552		7/31/1992	0 - 2		1.6	7.6		
O-SEDCHM	S110	S00501		7/20/1992	0 - 2		2.2	8.6 *J*		
O-SEDCHM	S113	S00029		5/9/1992	0 - 30		0.18 *J*	2.7	89.7	0.30 *UJ*
O-SEDCHM	S113	S00577		8/5/1992	0 - 2		0.17	4.8	110	0.19 *UJ*
O-SEDCHM	P73	S00048		5/10/1992	0–30		0.11 *UJ*	3.1 *J*		
ONON2A	S304	SF0052		8/9/2000	0 - 15		2.2	19.7 *J*	1,450 *J*	1.2 *J*
ONON2A	S304	SF0053		8/9/2000	15 - 30		3.2	36.4 *J*	1,590 *J*	1.1 *J*
ONON2A	S306	VC0212		7/21/2000	0 - 15		0.69	15.1 *J*	1,330 *J*	1.2
ONON2A	S306	VC0213		7/21/2000	15 - 30		0.051 *U*	8.2 *J*	1,430 *J*	0.82
ONON2A	S356	SF0001		8/16/2000	0 - 15		0.16 *J*	3.2	369	0.73
ONON2A	S356	SF0002		8/16/2000	15 - 30		0.052 *UJ*	2.1	184	0.68 *U*
ONON2A	S357	SF0003		8/16/2000	0 - 2		1.2 *J*	6.1	577	0.87 *U*
ONON2A	S357	SF0004		8/16/2000	2 - 15		0.49 *J*	4.3	354	0.87
ONON2A	S357	SF0005		8/16/2000	15 - 30		0.053 *UJ*	3.0	517	1.1

Table A-2A. (cont.)

Survey	Survey Station	Sample Number	Duplicates	Date	Depth (cm)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
O-SEDCHM	S53	S00020		5/9/1992	0 - 30	1.1 *UJ*	5,970	0.73 *J*	5.2	15.8
O-SEDCHM	S53	S00529		7/27/1992	0 - 2	1.2 *J*	3,520	0.41 *J*	4.3	34.2 *J*
O-SEDCHM	S61	S00589		8/7/1992	0 - 2					74.9 *J*
O-SEDCHM	S62	S00517		7/24/1992	0 - 2					85.7 *J*
O-SEDCHM	S66	S00067		5/11/1992	0 - 30	1.7 *J*	782 *U*	0.27 *UJ*	1.2 *U*	40.6 *UJ*
O-SEDCHM	S66	S00601		8/10/1992	0 - 2	2.7 *J*	466	0.15 *U*	0.51 *U*	38.7
O-SEDCHM	S67	S00513		7/23/1992	0 - 2					50.1 *J*
O-SEDCHM	S74	S00510		7/22/1992	0 - 2					21.9 *J*
O-SEDCHM	S75	S00507		7/21/1992	0 - 2					65.7 *J*
O-SEDCHM	S76	S00508		7/22/1992	0 - 2					46.6 *J*
O-SEDCHM	S81	S00023		5/9/1992	0 - 30	0.5 *J*	970	0.38 *U*	1.0	36.6
O-SEDCHM	S81	S00520		7/24/1992	0 - 2	0.69 *UJ*	394	0.63 *J*	6.9	62 *J*
O-SEDCHM	S82	S00504		7/21/1992	0 - 2					49.9 *J*
O-SEDCHM	S87	S00511		7/22/1992	0 - 2					34.1 *J*
O-SEDCHM	S93	S00032		5/9/1992	0 - 30	0.69 *U*	923	0.19 *U*	1.4 *U*	10.1
O-SEDCHM	S93	S00550		7/31/1992	0 - 2	1.2 *J*	457	0.28 *UJ*	0.69 *U*	24.6 *J*
O-SEDCHM	S94	S00512		7/22/1992	0 - 2					24 *J*
O-SEDCHM	S100	S00059		5/11/1992	0 - 30	0.91	768	0.35 *UJ*	1.3 *U*	6.8 *J*
O-SEDCHM	S100	S00608		8/11/1992	0 - 2	1.3 *J*	544	0.29 *U*	0.54 *U*	31.4
O-SEDCHM	S105	S00552		7/31/1992	0 - 2					77 *J*
O-SEDCHM	S110	S00501		7/20/1992	0 - 2					74.5 *J*
O-SEDCHM	S113	S00029		5/9/1992	0 - 30	0.91	612	0.30 *U*	1 *U*	14
O-SEDCHM	S113	S00577		8/5/1992	0 - 2	0.68 *UJ*	457	0.19	1.8	38.9
O-SEDCHM	P73	S00048		5/10/1992	0–30					8.4 *UJ*
ONON2A	S304	SF0052		8/9/2000	0 - 15	0.14 *U*	1,430 *J*	0.89 *U*	11.4 *J*	89.1 *J*
ONON2A	S304	SF0053		8/9/2000	15 - 30	0.11 *U*	1,020 *J*	0.75 *U*	16.9 *J*	68.2 *J*
ONON2A	S306	VC0212		7/21/2000	0 - 15	0.12 *U*	2,130 *J*	0.78 *U*	9.6	68.4 *J*
ONON2A	S306	VC0213		7/21/2000	15 - 30	0.13 *U*	2,870 *J*	0.88 *U*	9.8	38.8 *J*
ONON2A	S356	SF0001		8/16/2000	0 - 15	0.13 *U*	854 *J*	0.84 *U*	2.3	33.4
ONON2A	S356	SF0002		8/16/2000	15 - 30	0.14 *U*	857 *J*	0.9 *U*	1.7	8.2
ONON2A	S357	SF0003		8/16/2000	0 - 2	0.36	1,240 *J*	1.2 *U*	2.4	77.1
ONON2A	S357	SF0004		8/16/2000	2 - 15	0.14 *U*	1,100 *J*	0.91 *U*	2.3	34.2
ONON2A	S357	SF0005		8/16/2000	15 - 30	0.14 *U*	1,360 *J*	0.92 *U*	2.9	36.3

Table A-2A. (cont.)

Survey	Survey Station	Sample Number	Duplicates	Date	Depth (cm)	Aluminum (mg/kg-dw)	Antimony (mg/kg-dw)	Arsenic (mg/kg-dw)	Barium (mg/kg-dw)	Beryllium (mg/kg)
ONON2A	S358	SF0006		8/16/2000	0–15	1,590	0.30 *U*	0.35 *U*	101	0.12
ONON2A	S358	SF0007		8/16/2000	15–30	1,090	0.30 *U*	0.34 *U*	102	0.11
ONON2A	S359	SF0008		8/16/2000	0 - 15	5,700	0.28 *U*	5.3	61.6	0.39
ONON2A	S359	SF0009		8/16/2000	15 - 30	6,360	0.24 *U*	4.7	67.8	0.33
ONON2A	S360	SF0010	D1	8/16/2000	0 - 2	6,450	0.39 *U*	3.2	82.3	0.34
ONON2A	S360	SF0066	D2	8/16/2000	0 - 2	6,480	0.39 *U*	3.3	83.7	0.35
ONON2A	S360	SF0011	D1	8/16/2000	2 - 15	5,820	0.37 *U*	3.2	76.7	0.31
ONON2A	S360	SF0164	D2	8/16/2000	2 - 15	3,930	0.36 *U*	2.6	76.9	0.24
ONON2A	S360	SF0012	D1	8/16/2000	15 - 30	3,230	0.34 *U*	2.3	76.9	0.21
ONON2A	S360	SF0169	D2	8/16/2000	15 - 30	2,800	0.33 *U*	2	75.9	0.19
ONON2A	S361	SF0014		8/15/2000	15 - 30	2,920	0.49	0.95	54.1	0.20
ONON2A	S361	SF0013	D1	8/15/2000	0 - 15	2,280	0.36 *U*	1.9	72.8	0.18
ONON2A	S361	SF0163	D2	8/15/2000	0 - 15	2,490	0.35 *U*	1.8	72.3	0.18
ONON2A	S362	SF0015		8/15/2000	0 - 15	1,190	0.32	0.97	70.9	0.12
ONON2A	S362	SF0016		8/15/2000	15 - 30	822	0.34 *U*	1.7	88.7	0.12
ONON2A	S363	SF0017		8/15/2000	0 - 2	1,350	0.33 *U*	1.7	114 *J*	0.17
ONON2A	S363	SF0018	D1	8/15/2000	2 - 15	2,810	0.35 *U*	3	85.3	0.24
ONON2A	S363	SF0175	D2	8/15/2000	2 - 15	3,040	0.36 *U*	2.6	110	0.24
ONON2A	S363	SF0019		8/15/2000	15 - 30	5,400	0.67 *U*	7	38.2	0.40
ONON2A	S369	SF0031		8/15/2000	0 - 15	1,470	0.34 *U*	0.43	107	0.12
ONON2A	S369	SF0032		8/15/2000	15 - 30	1,290	0.35 *U*	0.4 *U*	107	0.11
ONON2A	S370	SF0033		8/17/2000	0 - 2	1,000 *J*	0.33 *U*	0.71	70.1	0.15
ONON2A	S370	SF0034		8/17/2000	2 - 15	747 *J*	0.3 *U*	0.76	67	0.13
ONON2A	S370	SF0035		8/17/2000	15 - 30	1,170 *J*	0.29 *U*	0.68	73	0.12
ONON2A	S372	BC0027		8/2/2000	0 - 2					
ONON2A	S372	BC0028	D1	8/2/2000	2 - 14					
ONON2A	S372	BC0032	D2	8/2/2000	2 - 14					
ONON2A	S372	SF0039	D1	8/17/2000	15 - 30	2,360	0.35	1.6	86	0.20
ONON2A	S372	SF0165	D2	8/17/2000	15 - 30	1,590	0.39	1.8	97	0.15
ONON2A	S372	SF0050		8/11/2000	0 - 15	752	0.41 *J*	0.87	112 *J*	0.14

Table A-2A. (cont.)

Survey	Survey Station	Sample Number	Duplicates	Date	Depth (cm)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)
ONON2A	S358	SF0006		8/16/2000	0–15	0.044 *U*	349,000	3.2 *J*	0.29	1.8
ONON2A	S358	SF0007		8/16/2000	15–30	0.044 *U*	348,000	2.5 *J*	0.28	1.7
ONON2A	S359	SF0008		8/16/2000	0 - 15	0.083	178,000	11.4 *J*	3.3	14.8
ONON2A	S359	SF0009		8/16/2000	15 - 30	0.083	180,000	21.9 *J*	3.3	18.1
ONON2A	S360	SF0010	D1	8/16/2000	0 - 2	0.33	221,000	24.1 *J*	2.8	28.8
ONON2A	S360	SF0066	D2	8/16/2000	0 - 2	0.34	236,000	26.6 *J*	3.0	30.7
ONON2A	S360	SF0011	D1	8/16/2000	2 - 15	0.35	272,000	21.6 *J*	2.1	28.4
ONON2A	S360	SF0164	D2	8/16/2000	2 - 15	0.35	323,000	14.9 *J*	0.97	18.4
ONON2A	S360	SF0012	D1	8/16/2000	15 - 30	0.11	335,000	9.8 *J*	0.72	16.1
ONON2A	S360	SF0169	D2	8/16/2000	15 - 30	0.082	309,000	8.4 *J*	0.56	15.3
ONON2A	S361	SF0014		8/15/2000	15 - 30	0.058 *U*	163,000	6.1	1.6	6.3
ONON2A	S361	SF0013	D1	8/15/2000	0 - 15	0.30	230,000	11.1	1.3	11.7
ONON2A	S361	SF0163	D2	8/15/2000	0 - 15	0.27	215,000	10.6	1.1	11.7
ONON2A	S362	SF0015		8/15/2000	0 - 15	0.047 *U*	234,000	4.2	0.52	3.9
ONON2A	S362	SF0016		8/15/2000	15 - 30	0.096	318,000	3.4	0.41	6.6
ONON2A	S363	SF0017		8/15/2000	0 - 2	0.22	392,000	12.8	0.66	5.6 *J*
ONON2A	S363	SF0018	D1	8/15/2000	2 - 15	1.2	301,000	36.5	1.8	20.2
ONON2A	S363	SF0175	D2	8/15/2000	2 - 15	1.4	326,000	44	1.9	24
ONON2A	S363	SF0019		8/15/2000	15 - 30	0.099 *U*	247,000	14.8	1.1	11
ONON2A	S369	SF0031		8/15/2000	0 - 15	0.18	338,000	7.6	0.20	4.2
ONON2A	S369	SF0032		8/15/2000	15 - 30	0.051 *U*	352,000	2.8	0.17 *U*	1.8
ONON2A	S370	SF0033		8/17/2000	0 - 2	1.7	207,000	54.9	0.74	18.9
ONON2A	S370	SF0034		8/17/2000	2 - 15	1.8	196,000	54.6	0.53	18.4
ONON2A	S370	SF0035		8/17/2000	15 - 30	0.84	246,000	10.6	0.34	8.2
ONON2A	S372	BC0027		8/2/2000	0 - 2					
ONON2A	S372	BC0028	D1	8/2/2000	2 - 14					
ONON2A	S372	BC0032	D2	8/2/2000	2 - 14					
ONON2A	S372	SF0039	D1	8/17/2000	15 - 30	1.1	290,000	12.4	1.5	10.2
ONON2A	S372	SF0165	D2	8/17/2000	15 - 30	1.7	326,000	14	1.4	11.7
ONON2A	S372	SF0050		8/11/2000	0 - 15	3.7	349,000	81.6	0.83	34.3

Table A-2A. (cont.)

Survey	Survey Station	Sample Number	Duplicates	Date	Depth (cm)	Cyanide (mg/kg)	Iron (mg/kg)	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)
ONON2A	S358	SF0006		8/16/2000	0–15	0.79 *U*	2,080	0.74	3,390	196
ONON2A	S358	SF0007		8/16/2000	15–30	0.78 *U*	1,720	0.74	3,240	146
ONON2A	S359	SF0008		8/16/2000	0 - 15	0.73 *U*	14,000	17.1	18,200	305
ONON2A	S359	SF0009		8/16/2000	15 - 30	0.64 *U*	13,100	19	11,800	325
ONON2A	S360	SF0010	D1	8/16/2000	0 - 2	1.0 *U*	10,400	38.3	8,690	280
ONON2A	S360	SF0066	D2	8/16/2000	0 - 2	1.0 *U*	11,000	41.4	9,000	289
ONON2A	S360	SF0011	D1	8/16/2000	2 - 15	0.98 *U*	9,530	31.6	8,220	324
ONON2A	S360	SF0164	D2	8/16/2000	2 - 15	0.95 *U*	7,010	20.4	5,950	334
ONON2A	S360	SF0012	D1	8/16/2000	15 - 30	0.88 *U*	4,440	16.3	4,780	309
ONON2A	S360	SF0169	D2	8/16/2000	15 - 30	0.87 *U*	4,160	12.2	4,810	299
ONON2A	S361	SF0014		8/15/2000	15 - 30	1.0 *U*	6,860	2.4 *J*	7,190	177 *J*
ONON2A	S361	SF0013	D1	8/15/2000	0 - 15	0.95 *U*	4,660	30.1 *J*	5,040	249 *J*
ONON2A	S361	SF0163	D2	8/15/2000	0 - 15	0.91 *U*	4,610	21.7	4,850	235
ONON2A	S362	SF0015		8/15/2000	0 - 15	0.83 *U*	2,290	2.6 *J*	4,230	197 *J*
ONON2A	S362	SF0016		8/15/2000	15 - 30	0.89 *U*	1,680	8.5 *J*	2,250	224 *J*
ONON2A	S363	SF0017		8/15/2000	0 - 2	0.87 *U*	2,040	7.3	4,230	299
ONON2A	S363	SF0018	D1	8/15/2000	2 - 15	0.93 *U*	3,520	16.1 *J*	9,560	174 *J*
ONON2A	S363	SF0175	D2	8/15/2000	2 - 15	0.96 *U*	3,670	18.5	8,380	184
ONON2A	S363	SF0019		8/15/2000	15 - 30	1.8 *U*	6,220	7.9 *J*	30,300	410 *J*
ONON2A	S369	SF0031		8/15/2000	0 - 15	0.91 *U*	2,500	3.1	3,320	193
ONON2A	S369	SF0032		8/15/2000	15 - 30	0.91 *U*	2,020	0.60	3,250	140
ONON2A	S370	SF0033		8/17/2000	0 - 2	0.88 *U*	2,240	11.1	2,880	197
ONON2A	S370	SF0034		8/17/2000	2 - 15	0.78 *U*	1,890	12.6	2,460	181
ONON2A	S370	SF0035		8/17/2000	15 - 30	0.78 *U*	2,210	4.6	2,980	160
ONON2A	S372	BC0027		8/2/2000	0 - 2					
ONON2A	S372	BC0028	D1	8/2/2000	2 - 14					
ONON2A	S372	BC0032	D2	8/2/2000	2 - 14					
ONON2A	S372	SF0039	D1	8/17/2000	15 - 30	0.82 *U*	4,660	4.8 *J*	5,390	248
ONON2A	S372	SF0165	D2	8/17/2000	15 - 30	0.90 *U*	3,680	5.6 *J*	4,430	271
ONON2A	S372	SF0050		8/11/2000	0 - 15	1.1 *U*	2,530	12.6 *J*	3,310	337

Table A-2A. (cont.)

Survey	Survey Station	Sample Number	Duplicates	Date	Depth (cm)	Methylmercury (µg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)
ONON2A	S358	SF0006		8/16/2000	0–15		0.045 *UJ*	3.0	386	1.2 *U*
ONON2A	S358	SF0007		8/16/2000	15–30		0.044 *UJ*	2.5	245	1.2 *U*
ONON2A	S359	SF0008		8/16/2000	0 - 15		1.9 *J*	12.6	1,760	0.74
ONON2A	S359	SF0009		8/16/2000	15 - 30		3.2 *J*	13.4	2,050	0.47 *U*
ONON2A	S360	SF0010	D1	8/16/2000	0 - 2		11.5 *J*	13.6	2,090	0.76 *U*
ONON2A	S360	SF0066	D2	8/16/2000	0 - 2		9.5 *J*	15.5	2,090	0.94
ONON2A	S360	SF0011	D1	8/16/2000	2 - 15		5.6 *J*	13.6	1,710	0.73 *U*
ONON2A	S360	SF0164	D2	8/16/2000	2 - 15		1.8 *J*	8	1,060	0.70 *U*
ONON2A	S360	SF0012	D1	8/16/2000	15 - 30		0.10 *J*	5.4	823	0.77
ONON2A	S360	SF0169	D2	8/16/2000	15 - 30		0.081 *J*	5.6	687	0.64 *U*
ONON2A	S361	SF0014		8/15/2000	15 - 30		0.058 *U*	5.8	742	0.76 *U*
ONON2A	S361	SF0013	D1	8/15/2000	0 - 15		0.31	8.3	426	0.70 *U*
ONON2A	S361	SF0163	D2	8/15/2000	0 - 15		0.40	8.0	569	0.68
ONON2A	S362	SF0015		8/15/2000	0 - 15		0.086	3.8	210	0.62 *U*
ONON2A	S362	SF0016		8/15/2000	15 - 30		0.051 *U*	3.1	167	0.73
ONON2A	S363	SF0017		8/15/2000	0 - 2		0.61 *J*	5.9	62.3	1.3 *U*
ONON2A	S363	SF0018	D1	8/15/2000	2 - 15		0.18	17.5	159	0.69 *U*
ONON2A	S363	SF0175	D2	8/15/2000	2 - 15		0.24	20.6	221	0.71 *U*
ONON2A	S363	SF0019		8/15/2000	15 - 30		0.10 *U*	10.6	143	1.3 *U*
ONON2A	S369	SF0031		8/15/2000	0 - 15		0.055	3.0	422	0.93
ONON2A	S369	SF0032		8/15/2000	15 - 30		0.061	2.8	339	0.67 *U*
ONON2A	S370	SF0033		8/17/2000	0 - 2		0.61 *J*	5.9	225	0.65 *U*
ONON2A	S370	SF0034		8/17/2000	2 - 15		0.55 *J*	6.9	110	0.57 *U*
ONON2A	S370	SF0035		8/17/2000	15 - 30		0.044 *UJ*	5.4	253	0.57 *U*
ONON2A	S372	BC0027		8/2/2000	0 - 2	3.32	1.3			
ONON2A	S372	BC0028	D1	8/2/2000	2 - 14	1.65	1.2 *J*			
ONON2A	S372	BC0032	D2	8/2/2000	2 - 14	1.89	1.3			
ONON2A	S372	SF0039	D1	8/17/2000	15 - 30		0.082 *J*	7.9	619	1.2
ONON2A	S372	SF0165	D2	8/17/2000	15 - 30		0.051 *U*	8.6	326	1.2
ONON2A	S372	SF0050		8/11/2000	0 - 15	2.937	1.6	7.6	125	0.96

Table A-2A. (cont.)

Survey	Survey Station	Sample Number	Duplicates	Date	Depth (cm)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
ONON2A	S358	SF0006		8/16/2000	0–15	0.12 *U*	1,370 *J*	0.77 *U*	2.4	10.8
ONON2A	S358	SF0007		8/16/2000	15–30	0.12 *U*	2,040 *J*	0.76 *U*	1.7	9.2
ONON2A	S359	SF0008		8/16/2000	0 - 15	0.11 *U*	1,050 *J*	0.71 *U*	12.3	51.8
ONON2A	S359	SF0009		8/16/2000	15 - 30	0.096 *U*	2,070 *J*	0.63 *U*	14.5	62.6
ONON2A	S360	SF0010	D1	8/16/2000	0 - 2	0.15 *U*	1,430 *J*	1.0 *U*	12.4	76.7
ONON2A	S360	SF0066	D2	8/16/2000	0 - 2	0.16 *U*	1,770 *J*	1.0 *U*	12.5	85.1
ONON2A	S360	SF0011	D1	8/16/2000	2 - 15	0.15 *U*	7,590 *J*	0.96 *U*	10.7	122
ONON2A	S360	SF0164	D2	8/16/2000	2 - 15	0.14 *U*	10,100 *J*	0.93 *U*	7.0	57.0
ONON2A	S360	SF0012	D1	8/16/2000	15 - 30	0.13 *U*	10,500 *J*	0.86 *U*	5.2	35.3
ONON2A	S360	SF0169	D2	8/16/2000	15 - 30	0.13 *U*	10,800 *J*	0.85 *U*	4.5	34.1
ONON2A	S361	SF0014		8/15/2000	15 - 30	0.15 *U*	6,290	1.0 *U*	5.5	24.4
ONON2A	S361	SF0013	D1	8/15/2000	0 - 15	0.14 *U*	2,450	0.93 *U*	4.3	52.1
ONON2A	S361	SF0163	D2	8/15/2000	0 - 15	0.14 *U*	2,270	0.89 *U*	4.8	53.2
ONON2A	S362	SF0015		8/15/2000	0 - 15	0.12 *U*	6,560	0.82 *U*	2.2	17.4
ONON2A	S362	SF0016		8/15/2000	15 - 30	0.13 *U*	16,000	0.88 *U*	1.6	49.8
ONON2A	S363	SF0017		8/15/2000	0 - 2	0.13 *U*	2,070 *J*	0.85 *U*	3.6	38.2
ONON2A	S363	SF0018	D1	8/15/2000	2 - 15	0.48	5,800	0.91 *U*	6.3	100
ONON2A	S363	SF0175	D2	8/15/2000	2 - 15	0.52	6,100	0.94 *U*	6.6	125
ONON2A	S363	SF0019		8/15/2000	15 - 30	0.27 *U*	11,500	1.7 *U*	8.1	38.1
ONON2A	S369	SF0031		8/15/2000	0 - 15	0.14 *U*	1,770	0.89 *U*	2.6	22.3
ONON2A	S369	SF0032		8/15/2000	15 - 30	0.14 *U*	2,880	0.89 *U*	2.0	21.4
ONON2A	S370	SF0033		8/17/2000	0 - 2	0.33	744 *J*	0.86 *U*	2.3	51.7
ONON2A	S370	SF0034		8/17/2000	2 - 15	0.26	933 *J*	0.76 *U*	1.8	55.7
ONON2A	S370	SF0035		8/17/2000	15 - 30	0.12 *U*	1,860 *J*	0.76 *U*	2.0	34.5
ONON2A	S372	BC0027		8/2/2000	0 - 2					
ONON2A	S372	BC0028	D1	8/2/2000	2 - 14					
ONON2A	S372	BC0032	D2	8/2/2000	2 - 14					
ONON2A	S372	SF0039	D1	8/17/2000	15 - 30	0.12 *U*	1,260	0.81 *U*	5.1	36.7 *J*
ONON2A	S372	SF0165	D2	8/17/2000	15 - 30	0.13 *U*	1,370	0.88 *U*	3.8	44.4 *J*
ONON2A	S372	SF0050		8/11/2000	0 - 15	0.58	1,040 *J*	1.0 *U*	1.8	84

Notes: *J* - estimated
U - not detected at reported quantitation limit

Table A-2B. Northern Basin Nearshore Sediments – Volatile Organic Compound Data

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Acetone (µg/kg)	Benzene (µg/kg)	Bromodichloro-methane (µg/kg)	Bromoform (µg/kg)	Bromo-methane (µg/kg)	2-Butanone (µg/kg)	Carbon disulfide (µg/kg)
O-SEDCHM	S00529	S53	7/27/1992		0 - 2	79 *J*	150 *J*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
O-SEDCHM	S00020	S53	5/9/1992		0 - 30	160 *J*	900	63 *U*	63 *U*	63 *U*	45 *J*	63 *U*
O-SEDCHM	S00589	S61	8/7/1992		0 - 2		9 *U*					
O-SEDCHM	S00517	S62	7/24/1992		0 - 2		9 *UJ*					
O-SEDCHM	S00601	S66	8/10/1992		0 - 2	96 *J*	17 *U*	17 *U*	17 *U*	17 *U*	17 *UJ*	17 *U*
O-SEDCHM	S00067	S66	5/11/1992		0 - 30	160	16 *U*	16 *U*	16 *U*	16 *U*	200	16 *U*
O-SEDCHM	S00513	S67	7/23/1992		0 - 2		11 *UJ*					
O-SEDCHM	S00510	S74	7/22/1992		0 - 2		7 *UJ*					
O-SEDCHM	S00507	S75	7/21/1992		0 - 2		9 *UJ*					
O-SEDCHM	S00508	S76	7/22/1992		0 - 2		8 *UJ*					
O-SEDCHM	S00520	S81	7/24/1992		0 - 2		10 *UJ*					
O-SEDCHM	S00023	S81	5/9/1992		0 - 30	65 *J*	55	19 *U*	19 *U*	19 *U*	19 *U*	19 *U*
O-SEDCHM	S00504	S82	7/21/1992		0 - 2		10 *UJ*					
O-SEDCHM	S00511	S87	7/22/1992		0 - 2		8 *UJ*					
O-SEDCHM	S00550	S93	7/31/1992		0 - 2	77	17 *U*	17 *U*	17 *U*	17 *UJ*	17 *UJ*	17 *U*
O-SEDCHM	S00032	S93	5/9/1992		0 - 30	140	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*
O-SEDCHM	S00512	S94	7/22/1992		0 - 2		10 *UJ*					
O-SEDCHM	S00608	S100	8/11/1992		0 - 2	34 *J*	20 *U*	20 *U*	20 *U*	20 *U*	20 *UJ*	20 *U*
O-SEDCHM	S00059	S100	5/11/1992		0 - 30	31 *UJ*	22 *U*	22 *U*	22 *U*	22 *U*	51 *J*	22 *U*
O-SEDCHM	S00552	S105	7/31/1992		0 - 2		9 *U*					
O-SEDCHM	S00501	S110	7/20/1992		0 - 2		9 *U*					
O-SEDCHM	S00577	S113	8/5/1992		0 - 2	71	17 *U*	17 *U*	17 *U*	17 *UJ*	17 *U*	17 *UJ*
O-SEDCHM	S00029	S113	5/9/1992		0 - 30	110 *J*	20 *U*	20 *U*	20 *U*	20 *U*	20 *U*	20 *U*
O-SEDCHM	S00048	P73	5/10/1992		0 - 30							
ONON2A	SF0052	S304	8/9/2000		0 - 15	23	8.7 *U*	8.7 *U*	8.7 *U*	8.7 *U*	5.2	17 *U*
ONON2A	SF0053	S304	8/9/2000		15 - 30	55 *U*	3.9	8.5 *U*	8.5 *U*	8.5 *U*	17	2.7
ONON2A	SF0008	S359	8/16/2000		0 - 15	30 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	15 *U*	15 *U*
ONON2A	SF0009	S359	8/16/2000		15 - 30	30 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	15 *U*	15 *U*
ONON2A	SF0013	S361	8/15/2000	D1	0 - 15	20 *U*	9 *U*	9 *U*	9 *U*	9 *U*	18 *U*	18 *U*
ONON2A	SF0163	S361	8/15/2000	D2	0 - 15	20 *U*	9 *U*	9 *U*	9 *U*	9 *U*	2.9	18 *U*
ONON2A	SF0014	S361	8/15/2000		15 - 30	22 *U*	9.6 *U*	9.6 *U*	9.6 *U*	9.6 *U*	5.2	17
ONON2A	SF0015	S362	8/15/2000		0 - 15	20 *U*	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*	18 *U*	2.1
ONON2A	SF0016	S362	8/15/2000		15 - 30	210	5.1	8.8 *U*	8.8 *U*	8.8 *U*	60	4.2
ONON2A	SF0017	S363	8/15/2000		0 - 2	80 *U*	170	39 *U*	39 *U*	39 *U*	10	78 *U*
ONON2A	SF0018	S363	8/15/2000	D1	2 - 15	5,000 *UJ*	1,200	1,200 *U*	1,200 *U*	1,200 *UJ*	2,500 *UJ*	2,500 *U*
ONON2A	SF0175	S363	8/15/2000	D2	2 - 15	4,900 *UJ*	950	1,200 *U*	1,200 *U*	1,200 *UJ*	2,500 *UJ*	2,500 *U*
ONON2A	SF0019	S363	8/15/2000		15 - 30	7,400 *UJ*	1,400	1,800 *U*	1,800 *U*	1,800 *UJ*	3,700 *UJ*	3,700 *U*

Table A-2B. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Carbon tetrachloride (µg/kg)	Chlorobenzene (µg/kg)	Chloroethane (µg/kg)	Chloroform (µg/kg)	Chloro-methane (µg/kg)	Dibromochloro-methane (µg/kg)	1,1-Dichloro-ethane (µg/kg)	1,2-Dichloro-ethane (µg/kg)
O-SEDCHM	S00529	S53	7/27/1992		0 - 2	21 *UJ*	10 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
O-SEDCHM	S00020	S53	5/9/1992		0 - 30	63 *U*	63 *U*	63 *U*	63 *U*	63 *U*	63 *U*	63 *U*	63 *U*
O-SEDCHM	S00589	S61	8/7/1992		0 - 2		9 *U*						
O-SEDCHM	S00517	S62	7/24/1992		0 - 2		9 *UJ*						
O-SEDCHM	S00601	S66	8/10/1992		0 - 2	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*
O-SEDCHM	S00067	S66	5/11/1992		0 - 30	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*
O-SEDCHM	S00513	S67	7/23/1992		0 - 2		11 *UJ*						
O-SEDCHM	S00510	S74	7/22/1992		0 - 2		7 *UJ*						
O-SEDCHM	S00507	S75	7/21/1992		0 - 2		9 *UJ*						
O-SEDCHM	S00508	S76	7/22/1992		0 - 2		8 *UJ*						
O-SEDCHM	S00520	S81	7/24/1992		0 - 2		10 *UJ*						
O-SEDCHM	S00023	S81	5/9/1992		0 - 30	19 *U*	19 *U*	19 *U*	19 *U*	19 *U*	19 *U*	19 *U*	19 *U*
O-SEDCHM	S00504	S82	7/21/1992		0 - 2		10 *UJ*						
O-SEDCHM	S00511	S87	7/22/1992		0 - 2		8 *UJ*						
O-SEDCHM	S00550	S93	7/31/1992		0 - 2	17 *U*	17 *U*	17 *UJ*	17 *U*	17 *UJ*	17 *U*	17 *U*	17 *U*
O-SEDCHM	S00032	S93	5/9/1992		0 - 30	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*
O-SEDCHM	S00512	S94	7/22/1992		0 - 2		10 *UJ*						
O-SEDCHM	S00608	S100	8/11/1992		0 - 2	20 *U*	20 *U*	20 *U*	20 *U*	20 *U*	20 *U*	20 *U*	20 *U*
O-SEDCHM	S00059	S100	5/11/1992		0 - 30	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*
O-SEDCHM	S00552	S105	7/31/1992		0 - 2		9 *U*						
O-SEDCHM	S00501	S110	7/20/1992		0 - 2		9 *U*						
O-SEDCHM	S00577	S113	8/5/1992		0 - 2	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*
O-SEDCHM	S00029	S113	5/9/1992		0 - 30	20 *U*	20 *U*	20 *U*	20 *U*	20 *U*	20 *U*	20 *U*	20 *U*
O-SEDCHM	S00048	P73	5/10/1992		0 - 30		9 *U*						
ONON2A	SF0052	S304	8/9/2000		0 - 15	8.7 *U*	8.7 *U*	8.7 *U*	8.7 *U*	8.7 *U*	8.7 *U*	8.7 *U*	8.7 *U*
ONON2A	SF0053	S304	8/9/2000		15 - 30	8.5 *U*	20	8.5 *U*	8.5 *U*	8.5 *UJ*	8.5 *U*	8.5 *U*	8.5 *U*
ONON2A	SF0008	S359	8/16/2000		0 - 15	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*
ONON2A	SF0009	S359	8/16/2000		15 - 30	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*
ONON2A	SF0013	S361	8/15/2000	D1	0 - 15	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*
ONON2A	SF0163	S361	8/15/2000	D2	0 - 15	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*
ONON2A	SF0014	S361	8/15/2000		15 - 30	9.6 *U*	9.6 *U*	9.6 *U*	9.6 *U*	9.6 *U*	9.6 *U*	9.6 *U*	9.6 *U*
ONON2A	SF0015	S362	8/15/2000		0 - 15	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*
ONON2A	SF0016	S362	8/15/2000		15 - 30	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*
ONON2A	SF0017	S363	8/15/2000		0 - 2	39 *U*	39 *U*	39 *U*	39 *U*	39 *U*	39 *U*	39 *U*	39 *U*
ONON2A	SF0018	S363	8/15/2000	D1	2 - 15	1,200 *U*	1,200 *U*	1,200 *U*	1,200 *U*	1,200 *U*	1,200 *U*	1,200 *U*	1,200 *U*
ONON2A	SF0175	S363	8/15/2000	D2	2 - 15	1,200 *U*	1,200 *U*	1,200 *U*	1,200 *U*	1,200 *U*	1,200 *U*	1,200 *U*	1,200 *U*
ONON2A	SF0019	S363	8/15/2000		15 - 30	1,800 *U*	1,800 *U*	1,800 *U*	1,800 *U*	1,800 *U*	1,800 *U*	1,800 *U*	1,800 *U*

Table A-2B. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	1,1-Dichloroethene (µg/kg)	cis-1,2-Dichloroethene (µg/kg)	trans-1,2-Dichloroethene (µg/kg)	1,2-Dichloropropane (µg/kg)	trans-1,3-Dichloropropene (µg/kg)	Ethylbenzene (µg/kg)	2-Hexanone (µg/kg)	Methylene chloride (µg/kg)
O-SEDCHM	S00529	S53	7/27/1992		0 - 2	21 *UJ*				21 *UJ*	16 *J*	21 *UJ*	21 *JU*
O-SEDCHM	S00020	S53	5/9/1992		0 - 30	63 *U*			63 *U*	63 *U*	63 *U*	63 *U*	63 *JU*
O-SEDCHM	S00589	S61	8/7/1992		0 - 2						9 *U*		
O-SEDCHM	S00517	S62	7/24/1992		0 - 2						9 *UJ*		
O-SEDCHM	S00601	S66	8/10/1992		0 - 2	17 *U*			17 *U*	17 *U*	17 *U*	17 *U*	17 *U*
O-SEDCHM	S00067	S66	5/11/1992		0 - 30	16 *U*			16 *U*	16 *U*	16 *U*	16 *U*	16 *U*
O-SEDCHM	S00513	S67	7/23/1992		0 - 2						11 *UJ*		
O-SEDCHM	S00510	S74	7/22/1992		0 - 2						7 *UJ*		
O-SEDCHM	S00507	S75	7/21/1992		0 - 2						9 *UJ*		
O-SEDCHM	S00508	S76	7/22/1992		0 - 2						8 *UJ*		
O-SEDCHM	S00520	S81	7/24/1992		0 - 2						10 *UJ*		
O-SEDCHM	S00023	S81	5/9/1992		0 - 30	19 *U*			19 *U*	19 *U*	19 *U*	19 *U*	19 *JU*
O-SEDCHM	S00504	S82	7/21/1992		0 - 2						10 *UJ*		
O-SEDCHM	S00511	S87	7/22/1992		0 - 2						8 *UJ*		
O-SEDCHM	S00550	S93	7/31/1992		0 - 2	17 *U*			17 *U*	17 *U*	17 *U*	17 *UJ*	17 *JU*
O-SEDCHM	S00032	S93	5/9/1992		0 - 30	17 *U*			17 *U*	17 *U*	17 *U*	17 *U*	17 *U*
O-SEDCHM	S00512	S94	7/22/1992		0 - 2						10 *UJ*		
O-SEDCHM	S00608	S100	8/11/1992		0 - 2	20 *U*			20 *U*	20 *U*	20 *U*	20 *U*	20 *U*
O-SEDCHM	S00059	S100	5/11/1992		0 - 30	22 *U*			22 *U*	22 *U*	22 *U*	22 *U*	22 *U*
O-SEDCHM	S00552	S105	7/31/1992		0 - 2						9 *U*		
O-SEDCHM	S00501	S110	7/20/1992		0 - 2						9 *U*		
O-SEDCHM	S00577	S113	8/5/1992		0 - 2	17 *U*			17 *U*	17 *U*	17 *U*	17 *U*	17 *U*
O-SEDCHM	S00029	S113	5/9/1992		0 - 30	20 *U*			20 *U*	20 *U*	20 *U*	20 *U*	20 *JU*
O-SEDCHM	S00048	P73	5/10/1992		0 - 30								
ONON2A	SF0052	S304	8/9/2000		0 - 15	8.7 *U*	8.7 *U*	8.7 *U*	8.7 *U*	8.7 *U*	8.7 *U*	17 *U*	8.7 *U*
ONON2A	SF0053	S304	8/9/2000		15 - 30	8.5 *U*	8.5 *U*	8.5 *U*	8.5 *U*	8.5 *U*	24	17 *U*	8.5 *U*
ONON2A	SF0008	S359	8/16/2000		0 - 15	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	15 *U*	7.4 *U*
ONON2A	SF0009	S359	8/16/2000		15 - 30	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	15 *U*	7.4 *U*
ONON2A	SF0013	S361	8/15/2000	D1	0 - 15	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*	18 *U*	9 *U*
ONON2A	SF0163	S361	8/15/2000	D2	0 - 15	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*	18 *U*	9 *U*
ONON2A	SF0014	S361	8/15/2000		15 - 30	9.6 *U*	9.6 *U*	9.6 *U*	9.6 *U*	9.6 *U*	9.6 *U*	19 *U*	9.6 *U*
ONON2A	SF0015	S362	8/15/2000		0 - 15	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*	18 *U*	8.8 *U*
ONON2A	SF0016	S362	8/15/2000		15 - 30	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*	18 *U*	8.8 *U*
ONON2A	SF0017	S363	8/15/2000		0 - 2	39 *U*	39 *U*	39 *U*	39 *U*	39 *U*	190	78 *U*	39 *U*
ONON2A	SF0018	S363	8/15/2000	D1	2 - 15	1,200 *U*	1,200 *U*	1,200 *U*	1,200 *U*	1,200 *U*	1,100	2,500 *UJ*	1,200 *U*
ONON2A	SF0175	S363	8/15/2000	D2	2 - 15	1,200 *U*	1,200 *U*	1,200 *U*	1,200 *U*	1,200 *U*	1,100	2,500 *UJ*	1,200 *U*
ONON2A	SF0019	S363	8/15/2000		15 - 30	1,800 *U*	1,800 *U*	1,800 *U*	1,800 *U*	1,800 *U*	770	3,700 *UJ*	1,800 *U*

Table A-2B. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	4-Methyl-2-pentanone (µg/kg)	Styrene (µg/kg)	1,1,2,2-Tetrachloroethane (µg/kg)	Tetrachloroethene (µg/kg)	Toluene (µg/kg)	1,1,1-Trichloroethane (µg/kg)	1,1,2-Trichloroethane (µg/kg)	Trichloroethene (µg/kg)	Vinyl chloride (µg/kg)
O-SEDCHM	S00529	S53	7/27/1992		0 - 2	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	3 *J*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
O-SEDCHM	S00020	S53	5/9/1992		0 - 30	63 *U*	63 *U*	63 *U*	63 *U*	260	63 *U*	63 *U*	63 *U*	63 *U*
O-SEDCHM	S00589	S61	8/7/1992		0 - 2					9 *U*				
O-SEDCHM	S00517	S62	7/24/1992		0 - 2					9 *UJ*				
O-SEDCHM	S00601	S66	8/10/1992		0 - 2	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*
O-SEDCHM	S00067	S66	5/11/1992		0 - 30	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*
O-SEDCHM	S00513	S67	7/23/1992		0 - 2					12 *J*				
O-SEDCHM	S00510	S74	7/22/1992		0 - 2					9 *J*				
O-SEDCHM	S00507	S75	7/21/1992		0 - 2					9 *UJ*				
O-SEDCHM	S00508	S76	7/22/1992		0 - 2					8 *UJ*				
O-SEDCHM	S00520	S81	7/24/1992		0 - 2					10 *UJ*				
O-SEDCHM	S00023	S81	5/9/1992		0 - 30	19 *U*	19 *U*	19 *U*	19 *U*	30	19 *U*	19 *U*	19 *U*	19 *U*
O-SEDCHM	S00504	S82	7/21/1992		0 - 2					10 *UJ*				
O-SEDCHM	S00511	S87	7/22/1992		0 - 2					13 *J*				
O-SEDCHM	S00550	S93	7/31/1992		0 - 2	17 *UJ*	17 *U*	17 *U*	17 *U*	12 *J*	17 *U*	17 *U*	17 *U*	17 *UJ*
O-SEDCHM	S00032	S93	5/9/1992		0 - 30	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*
O-SEDCHM	S00512	S94	7/22/1992		0 - 2					8 *J*				
O-SEDCHM	S00608	S100	8/11/1992		0 - 2	20 *U*	20 *U*	20 *U*	20 *U*	20 *U*	20 *U*	20 *U*	20 *U*	20 *U*
O-SEDCHM	S00059	S100	5/11/1992		0 - 30	22 *U*	22 *U*	22 *U*	22 *U*	3 *J*	22 *U*	22 *U*	22 *U*	22 *U*
O-SEDCHM	S00552	S105	7/31/1992		0 - 2					9 *U*				
O-SEDCHM	S00501	S110	7/20/1992		0 - 2					9 *U*				
O-SEDCHM	S00577	S113	8/5/1992		0 - 2	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*
O-SEDCHM	S00029	S113	5/9/1992		0 - 30	20 *U*	20 *U*	20 *U*	20 *U*	20 *U*	20 *U*	20 *U*	20 *U*	20 *U*
O-SEDCHM	S00048	P73	5/10/1992		0 - 30									
ONON2A	SF0052	S304	8/9/2000		0 - 15	17 *U*	8.7 *U*	8.7 *U*	8.7 *U*	8.7 *U*	8.7 *U*	8.7 *U*	8.7 *U*	8.7 *U*
ONON2A	SF0053	S304	8/9/2000		15 - 30	17 *U*	8.5 *U*	8.5 *U*	8.5 *U*	8.5 *U*	8.5 *U*	8.5 *U*	8.5 *U*	8.5 *U*
ONON2A	SF0008	S359	8/16/2000		0 - 15	15 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*
ONON2A	SF0009	S359	8/16/2000		15 - 30	15 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*	7.4 *U*
ONON2A	SF0013	S361	8/15/2000	D1	0 - 15	18 *U*	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*
ONON2A	SF0163	S361	8/15/2000	D2	0 - 15	18 *U*	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*
ONON2A	SF0014	S361	8/15/2000		15 - 30	19 *U*	9.6 *U*	9.6 *U*	9.6 *U*	9.6 *U*	9.6 *U*	9.6 *U*	9.6 *U*	9.6 *U*
ONON2A	SF0015	S362	8/15/2000		0 - 15	18 *U*	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*
ONON2A	SF0016	S362	8/15/2000		15 - 30	18 *U*	8.8 *U*	8.8 *U*	8.8 *U*	5.7	8.8 *U*	8.8 *U*	8.8 *U*	8.8 *U*
ONON2A	SF0017	S363	8/15/2000		0 - 2	78 *U*	39 *U*	39 *U*	39 *U*	1,300	39 *U*	39 *U*	39 *U*	39 *U*
ONON2A	SF0018	S363	8/15/2000	D1	2 - 15	2,500 *UJ*	1,200 *U*	1,200 *UJ*	1,200 *U*	8,100	1,200 *U*	1,200 *U*	1,200 *U*	1,200 *U*
ONON2A	SF0175	S363	8/15/2000	D2	2 - 15	2,500 *UJ*	1,200 *U*	1,200 *UJ*	1,200 *U*	7,900	1,200 *U*	1,200 *U*	1,200 *U*	1,200 *U*
ONON2A	SF0019	S363	8/15/2000		15 - 30	3,700 *UJ*	1,800 *U*	1,800 *UJ*	1,800 *U*	7,100	1,800 *U*	1,800 *U*	1,800 *U*	1,800 *U*

Table A-2B. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	o-Xylene (µg/kg)	m-, p-Xylene (µg/kg)	Xylenes (total) (µg/kg)	Sum of Xylenes[1] (µg/kg)	Tetrachloro-benzenes (mixed) (µg/kg)	1,2-Dichloro-ethene (total) (µg/kg)	Pentachloro-benzene (µg/kg)
O-SEDCHM	S00529	S53	7/27/1992		0 - 2			14 *J*	14 *J*		21 *UJ*	
O-SEDCHM	S00020	S53	5/9/1992		0 - 30			45 *J*	45 *J*		63 *U*	
O-SEDCHM	S00589	S61	8/7/1992		0 - 2			9 *U*	9 *U*	5.9 *U*		5.9 *U*
O-SEDCHM	S00517	S62	7/24/1992		0 - 2			9 *UJ*	9 *UJ*	5.7 *UJ*		5.7 *UJ*
O-SEDCHM	S00601	S66	8/10/1992		0 - 2			17 *U*	17 *U*		17 *U*	
O-SEDCHM	S00067	S66	5/11/1992		0 - 30			16 *U*	16 *U*		16 *U*	
O-SEDCHM	S00513	S67	7/23/1992		0 - 2			11 *UJ*	11 *UJ*			
O-SEDCHM	S00510	S74	7/22/1992		0 - 2			7 *UJ*	7 *UJ*	4.8 *U*		4.8 *U*
O-SEDCHM	S00507	S75	7/21/1992		0 - 2			9 *UJ*	9 *UJ*	4 *UJ*		6 *U*
O-SEDCHM	S00508	S76	7/22/1992		0 - 2			8 *UJ*	8 *UJ*	5.4 *U*		5.4 *U*
O-SEDCHM	S00520	S81	7/24/1992		0 - 2			10 *UJ*	10 *UJ*			
O-SEDCHM	S00023	S81	5/9/1992		0 - 30			19 *U*	19 *U*		19 *U*	
O-SEDCHM	S00504	S82	7/21/1992		0 - 2			10 *UJ*	10 *UJ*	6.2 *UJ*		6.2 *UJ*
O-SEDCHM	S00511	S87	7/22/1992		0 - 2			8 *UJ*	8 *UJ*			
O-SEDCHM	S00550	S93	7/31/1992		0 - 2			17 *U*	17 *U*		17 *U*	
O-SEDCHM	S00032	S93	5/9/1992		0 - 30			22	22		17 *U*	
O-SEDCHM	S00512	S94	7/22/1992		0 - 2			10 *UJ*	10 *UJ*			
O-SEDCHM	S00608	S100	8/11/1992		0 - 2			20 *U*	20 *U*		20 *U*	
O-SEDCHM	S00059	S100	5/11/1992		0 - 30			22 *U*	22 *U*		22 *U*	
O-SEDCHM	S00552	S105	7/31/1992		0 - 2			9 *U*	9 *U*			
O-SEDCHM	S00501	S110	7/20/1992		0 - 2			9 *U*	9 *U*			
O-SEDCHM	S00577	S113	8/5/1992		0 - 2			17 *U*	17 *U*		17 *U*	
O-SEDCHM	S00029	S113	5/9/1992		0 - 30			20 *U*	20 *U*		20 *U*	
O-SEDCHM	S00048	P73	5/10/1992		0 - 30							
ONON2A	SF0052	S304	8/9/2000		0 - 15	8.7 *U*	8.7 *U*		8.7 *U*			
ONON2A	SF0053	S304	8/9/2000		15 - 30	13	36		49			
ONON2A	SF0008	S359	8/16/2000		0 - 15	7.4 *U*	7.4 *U*		7.4 *U*			
ONON2A	SF0009	S359	8/16/2000		15 - 30	7.4 *U*	7.4 *U*		7.4 *U*			
ONON2A	SF0013	S361	8/15/2000	D1	0 - 15	9 *U*	9 *U*		9 *U*			
ONON2A	SF0163	S361	8/15/2000	D2	0 - 15	9 *U*	9 *U*		9 *U*			
ONON2A	SF0014	S361	8/15/2000		15 - 30	9.6 *U*	9.6 *U*		9.6 *U*			
ONON2A	SF0015	S362	8/15/2000		0 - 15	8.8 *U*	8.8 *U*		8.8 *U*			
ONON2A	SF0016	S362	8/15/2000		15 - 30	8.8 *U*	8.8 *U*		8.8 *U*			
ONON2A	SF0017	S363	8/15/2000		0 - 2	1,000	2,900		3,900			
ONON2A	SF0018	S363	8/15/2000	D1	2 - 15	5,800	22,000		27,800			
ONON2A	SF0175	S363	8/15/2000	D2	2 - 15	5,900	24,000		29,900			
ONON2A	SF0019	S363	8/15/2000		15 - 30	3,800	15,000		18,800			

Notes: [1] Sum of the xylenes is a calculated quantity, not a direct measurement

J - estimated *U* - not detected at reported quantitation limit

Table A-2C. Northern Basin Nearshore Sediments – Semivolatile Organic Compound Data

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	1,2,3,4-Tetrachloro-benzene (µg/kg)	1,2,3-Trichloro-benzene (µg/kg)	1,2,4-Trichloro-benzene (µg/kg)	1,3,5-Trichloro-benzene (µg/kg)	Trichloro-benzenes (sum of) [2] (µg/kg)	1,2-Dichloro-benzene (µg/kg)	1,3-Dichloro-benzene (µg/kg)
O-SEDCHM	S00020	S53	5/9/1992		0 - 30			120 *U*			120 *U*	120 *U*
O-SEDCHM	S00529	S53	7/27/1992		0 - 2		10 *UJ*	10 *UJ*	10 *UJ*	10 *UJ*	10 *UJ*	10 *UJ*
O-SEDCHM	S00589	S61	8/7/1992		0 - 2	5.9 *U*	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*
O-SEDCHM	S00517	S62	7/24/1992		0 - 2	5.7 *UJ*	9 *UJ*	9 *UJ*	9 *UJ*	9 *UJ*	9 *UJ*	9 *UJ*
O-SEDCHM	S00067	S66	5/11/1992		0 - 30			74 *UJ*			74 *UJ*	74 *UJ*
O-SEDCHM	S00601	S66	8/10/1992		0 - 2			140 *U*			140 *U*	140 *U*
O-SEDCHM	S00513	S67	7/23/1992		0 - 2		11 *UJ*	11 *UJ*	11 *UJ*	11 *UJ*	11 *UJ*	11 *UJ*
O-SEDCHM	S00510	S74	7/22/1992		0 - 2	4.8 *U*	7 *UJ*	7 *UJ*	7 *UJ*	7 *UJ*	7 *UJ*	7 *UJ*
O-SEDCHM	S00507	S75	7/21/1992		0 - 2	6 *U*	9 *UJ*	9 *UJ*	9 *UJ*	9 *UJ*	9 *UJ*	9 *UJ*
O-SEDCHM	S00508	S76	7/22/1992		0 - 2	5.4 *U*	8 *UJ*	8 *UJ*	8 *UJ*	8 *UJ*	8 *UJ*	8 *UJ*
O-SEDCHM	S00023	S81	5/9/1992		0 - 30			85 *U*			85 *U*	85 *U*
O-SEDCHM	S00520	S81	7/24/1992		0 - 2		10 *UJ*	10 *UJ*	10 *UJ*	10 *UJ*	10 *UJ*	10 *UJ*
O-SEDCHM	S00504	S82	7/21/1992		0 - 2	6.2 *UJ*	10 *UJ*	10 *UJ*	10 *UJ*	10 *UJ*	10 *UJ*	10 *UJ*
O-SEDCHM	S00511	S87	7/22/1992		0 - 2		8 *UJ*	8 *UJ*	8 *UJ*	8 *UJ*	8 *UJ*	8 *UJ*
O-SEDCHM	S00032	S93	5/9/1992		0 - 30			79 *U*			79 *U*	79 *U*
O-SEDCHM	S00550	S93	7/31/1992		0 - 2			75 *U*			75 *U*	75 *U*
O-SEDCHM	S00512	S94	7/22/1992		0 - 2		10 *UJ*	10 *UJ*	10 *UJ*	10 *UJ*	10 *UJ*	10 *UJ*
O-SEDCHM	S00059	S100	5/11/1992		0 - 30			91 *UJ*			20 *J*	91 *UJ*
O-SEDCHM	S00608	S100	8/11/1992		0 - 2			86 *U*			86 *U*	86 *U*
O-SEDCHM	S00552	S105	7/31/1992		0 - 2		9 *U*	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*
O-SEDCHM	S00501	S110	7/20/1992		0 - 2		9 *U*	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*
O-SEDCHM	S00029	S113	5/9/1992		0 - 30			77 *U*			77 *U*	77 *U*
O-SEDCHM	S00577	S113	8/5/1992		0 - 2			76 *U*			76 *U*	76 *U*
O-SEDCHM	S00048	P73	5/10/1992		0 - 30	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*	9 *U*
ONON2A	SF0006	S358	8/16/2000		0 - 15			55 *U*			55 *U*	55 *U*
ONON2A	SF0007	S358	8/16/2000		15 - 30			55 *UJ*			55 *UJ*	55 *UJ*
ONON2A	SF0052	S304	8/9/2000		0 - 15			54 *U*			54 *U*	81 *J*
ONON2A	SF0053	S304	8/9/2000		15 - 30			48 *U*			48 *U*	120 *J*
ONON2A	VC0212	S306	7/21/2000		0 - 15			52 *UJ*			52 *UJ*	52 *UJ*
ONON2A	VC0213	S306	7/21/2000		15 - 30			59 *UJ*			59 *UJ*	59 *UJ*
ONON2A	SF0001	S356	8/16/2000		0 - 15			56 *U*			56 *U*	56 *U*
ONON2A	SF0002	S356	8/16/2000		15 - 30			60 *U*			60 *U*	60 *U*
ONON2A	SF0003	S357	8/16/2000		0 - 2			72 *U*			72 *U*	72 *U*
ONON2A	SF0004	S357	8/16/2000		2 - 15			59 *U*			59 *U*	59 *U*

Table A-2C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	1,4-Dichloro-benzene (µg/kg)	Dichloro-benzenes (sum of) [2] (µg/kg)	2,2'-Oxybis (1-chloropropane) (µg/kg)	2,4,5-Trichloro-phenol (µg/kg)	2,4,6-Trichloro-phenol (µg/kg)	2,4-Dichloro-phenol (µg/kg)	2,4-Dimethyl-phenol (µg/kg)
O-SEDCHM	S00020	S53	5/9/1992		0 - 30	120 *U*	120 *U*	120 *U*	*R*	*R*	*R*	*R*
O-SEDCHM	S00529	S53	7/27/1992		0 - 2	10 *UJ*	190 *U*	190 *U*	480 *U*	190 *U*	190 *U*	190 *U*
O-SEDCHM	S00589	S61	8/7/1992		0 - 2	9 *U*	9 *U*					
O-SEDCHM	S00517	S62	7/24/1992		0 - 2	9 *UJ*	9 *UJ*					
O-SEDCHM	S00067	S66	5/11/1992		0 - 30	74 *UJ*	74 *UJ*	74 *UJ*	190 *UJ*	74 *UJ*	74 *UJ*	74 *UJ*
O-SEDCHM	S00601	S66	8/10/1992		0 - 2	140 *U*	140 *U*	140 *U*	350 *U*	140 *U*	140 *U*	140 *U*
O-SEDCHM	S00513	S67	7/23/1992		0 - 2	11 *UJ*	11 *UJ*					
O-SEDCHM	S00510	S74	7/22/1992		0 - 2	7 *UJ*	7 *UJ*					
O-SEDCHM	S00507	S75	7/21/1992		0 - 2	9 *UJ*	9 *UJ*					
O-SEDCHM	S00508	S76	7/22/1992		0 - 2	8 *UJ*	8 *UJ*					
O-SEDCHM	S00023	S81	5/9/1992		0 - 30	85 *U*	85 *U*	85 *U*	210 *U*	85 *U*	85 *U*	85 *U*
O-SEDCHM	S00520	S81	7/24/1992		0 - 2	10 *UJ*	10 *UJ*	150 *U*	390 *U*	150 *U*	150 *U*	150 *U*
O-SEDCHM	S00504	S82	7/21/1992		0 - 2	10 *UJ*	10 *UJ*					
O-SEDCHM	S00511	S87	7/22/1992		0 - 2	8 *UJ*	8 *UJ*					
O-SEDCHM	S00032	S93	5/9/1992		0 - 30	79 *U*	79 *U*	79 *U*	200 *U*	79 *U*	79 *U*	79 *U*
O-SEDCHM	S00550	S93	7/31/1992		0 - 2	75 *U*	75 *U*	75 *U*	190 *U*	75 *U*	75 *U*	75 *U*
O-SEDCHM	S00512	S94	7/22/1992		0 - 2	10 *UJ*	10 *UJ*					
O-SEDCHM	S00059	S100	5/11/1992		0 - 30	91 *UJ*	20 *J*	91 *UJ*	230 *UJ*	91 *UJ*	91 *UJ*	91 *UJ*
O-SEDCHM	S00608	S100	8/11/1992		0 - 2	86 *U*	86 *U*	86 *U*	220 *U*	86 *U*	86 *U*	86 *U*
O-SEDCHM	S00552	S105	7/31/1992		0 - 2	9 *U*	9 *U*					
O-SEDCHM	S00501	S110	7/20/1992		0 - 2	9 *U*	9 *U*					
O-SEDCHM	S00029	S113	5/9/1992		0 - 30	77 *U*	77 *U*	77 *U*	190 *U*	77 *U*	77 *U*	77 *U*
O-SEDCHM	S00577	S113	8/5/1992		0 - 2	76 *U*	76 *U*	76 *U*	190 *U*	76 *U*	76 *U*	76 *U*
O-SEDCHM	S00048	P73	5/10/1992		0 - 30	9 *U*	9 *U*					
ONON2A	SF0006	S358	8/16/2000		0 - 15	55 *U*		55 *U*	280 *U*	280 *U*	280 *U*	280 *U*
ONON2A	SF0007	S358	8/16/2000		15 - 30	55 *UJ*		55 *UJ*	280 *UJ*	280 *UJ*	280 *UJ*	280 *UJ*
ONON2A	SF0052	S304	8/9/2000		0 - 15	54 *U*		54 *U*	280 *U*	280 *U*	280 *U*	280 *U*
ONON2A	SF0053	S304	8/9/2000		15 - 30	48 *U*		48 *U*	250 *U*	250 *U*	250 *U*	250 *U*
ONON2A	VC0212	S306	7/21/2000		0 - 15	52 *UJ*		52 *UJ*	270 *UJ*	270 *UJ*	270 *UJ*	270 *UJ*
ONON2A	VC0213	S306	7/21/2000		15 - 30	59 *UJ*		59 *UJ*	310 *UJ*	310 *UJ*	310 *UJ*	310 *UJ*
ONON2A	SF0001	S356	8/16/2000		0 - 15	56 *U*		56 *U*	290 *UJ*	290 *UJ*	290 *UJ*	290 *UJ*
ONON2A	SF0002	S356	8/16/2000		15 - 30	60 *U*		60 *U*	310 *U*	310 *U*	310 *U*	310 *U*
ONON2A	SF0003	S357	8/16/2000		0 - 2	72 *U*		72 *U*	370 *U*	370 *U*	370 *U*	370 *U*
ONON2A	SF0004	S357	8/16/2000		2 - 15	59 *U*		59 *U*	300 *U*	300 *U*	300 *U*	300 *U*

Table A-2C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	2,4-Dinitro-phenol (µg/kg)	2,4-Dinitro-toluene (µg/kg)	2,6-Dinitro-toluene (µg/kg)	2-Chloro-naphthalene (µg/kg)	2-Chloro-phenol (µg/kg)	2-Methyl-4,6-dinitrophenol (µg/kg)	2-Methyl-naphthalene (µg/kg)	2-Methyl-phenol (µg/kg)
O-SEDCHM	S00020	S53	5/9/1992		0 - 30	*R*	120 *U*	120 *U*	120 *U*	*R*	*R*	120 *U*	30 *J*
O-SEDCHM	S00529	S53	7/27/1992		0 - 2	480 *U*	190 *U*	190 *U*	190 *U*	190 *U*	480 *U*	190 *U*	190 *U*
O-SEDCHM	S00589	S61	8/7/1992		0 - 2								
O-SEDCHM	S00517	S62	7/24/1992		0 - 2								
O-SEDCHM	S00067	S66	5/11/1992		0 - 30	190 *UJ*	74 *UJ*	74 *UJ*	74 *UJ*	74 *UJ*	190 *UJ*	74 *UJ*	74 *UJ*
O-SEDCHM	S00601	S66	8/10/1992		0 - 2	350 *U*	140 *U*	140 *U*	140 *U*	140 *U*	350 *U*	160	140 *U*
O-SEDCHM	S00513	S67	7/23/1992		0 - 2								
O-SEDCHM	S00510	S74	7/22/1992		0 - 2								
O-SEDCHM	S00507	S75	7/21/1992		0 - 2								
O-SEDCHM	S00508	S76	7/22/1992		0 - 2								
O-SEDCHM	S00023	S81	5/9/1992		0 - 30	210 *U*	85 *U*	85 *U*	85 *U*	85 *U*	210 *U*	85 *U*	85 *U*
O-SEDCHM	S00520	S81	7/24/1992		0 - 2	390 *U*	150 *U*	150 *U*	150 *U*	150 *U*	390 *U*	150 *U*	150 *U*
O-SEDCHM	S00504	S82	7/21/1992		0 - 2								
O-SEDCHM	S00511	S87	7/22/1992		0 - 2								
O-SEDCHM	S00032	S93	5/9/1992		0 - 30	200 *U*	79 *U*	79 *U*	79 *U*	79 *U*	200 *U*	79 *U*	79 *U*
O-SEDCHM	S00550	S93	7/31/1992		0 - 2	190 *U*	75 *U*	75 *U*	75 *U*	75 *U*	190 *U*	75 *U*	75 *U*
O-SEDCHM	S00512	S94	7/22/1992		0 - 2								
O-SEDCHM	S00059	S100	5/11/1992		0 - 30	230 *UJ*	91 *UJ*	91 *UJ*	91 *UJ*	91 *UJ*	230 *UJ*	91 *UJ*	91 *UJ*
O-SEDCHM	S00608	S100	8/11/1992		0 - 2	220 *U*	86 *U*	86 *U*	86 *U*	86 *U*	220 *U*	86 *U*	86 *U*
O-SEDCHM	S00552	S105	7/31/1992		0 - 2								
O-SEDCHM	S00501	S110	7/20/1992		0 - 2								
O-SEDCHM	S00029	S113	5/9/1992		0 - 30	190 *U*	77 *U*	77 *U*	77 *U*	77 *U*	190 *U*	77 *U*	77 *U*
O-SEDCHM	S00577	S113	8/5/1992		0 - 2	190 *U*	76 *U*	76 *U*	76 *U*	76 *U*	190 *U*	76 *U*	76 *U*
O-SEDCHM	S00048	P73	5/10/1992		0 - 30								
ONON2A	SF0006	S358	8/16/2000		0 - 15	1,400 *U*	280 *U*	280 *U*	55 *U*	55 *U*	1,400 *U*	55 *U*	55 *U*
ONON2A	SF0007	S358	8/16/2000		15 - 30	1,400 *UJ*	280 *UJ*	280 *UJ*	55 *UJ*	55 *UJ*	1,400 *UJ*	55 *UJ*	55 *UJ*
ONON2A	SF0052	S304	8/9/2000		0 - 15	1,400 *UJ*	280 *U*	280 *U*	54 *U*	54 *U*	1,400 *U*	54 *U*	54 *U*
ONON2A	SF0053	S304	8/9/2000		15 - 30	1,200 *UJ*	250 *U*	250 *U*	48 *U*	48 *U*	1,200 *U*	48 *U*	48 *U*
ONON2A	VC0212	S306	7/21/2000		0 - 15	1,300 *UJ*	270 *UJ*	270 *UJ*	52 *UJ*	52 *UJ*	1,300 *UJ*	52 *UJ*	52 *UJ*
ONON2A	VC0213	S306	7/21/2000		15 - 30	1,500 *UJ*	310 *UJ*	310 *UJ*	59 *UJ*	59 *UJ*	1,500 *UJ*	59 *UJ*	59 *UJ*
ONON2A	SF0001	S356	8/16/2000		0 - 15	1,400 *UJ*	290 *U*	290 *U*	56 *U*	56 *UJ*	1,400 *UJ*	56 *U*	56 *UJ*
ONON2A	SF0002	S356	8/16/2000		15 - 30	1,500 *U*	310 *U*	310 *U*	60 *U*	60 *U*	1,500 *U*	60 *U*	60 *U*
ONON2A	SF0003	S357	8/16/2000		0 - 2	2,000 *U*	370 *U*	370 *U*	72 *U*	72 *U*	2,000 *U*	72 *U*	72 *U*
ONON2A	SF0004	S357	8/16/2000		2 - 15	1,500 *U*	300 *U*	300 *U*	59 *U*	59 *U*	1,500 *U*	59 *U*	59 *U*

Table A-2C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	2-Nitro-aniline (µg/kg)	2-Nitro-phenol (µg/kg)	3,3-Dichloro-benzidine (µg/kg)	3-Nitro-aniline (µg/kg)	4-Bromo-phenyl-phenyl ether (µg/kg)	4-Chloro-3-methyl phenol (µg/kg)	4-Chloro-aniline (µg/kg)
O-SEDCHM	S00020	S53	5/9/1992		0 - 30	310 *U*	*R*	120 *U*	310 *U*	120 *U*	*R*	120 *U*
O-SEDCHM	S00529	S53	7/27/1992		0 - 2	480 *U*	190 *U*	190 *U*	480 *U*	190 *U*	190 *U*	190 *U*
O-SEDCHM	S00589	S61	8/7/1992		0 - 2							
O-SEDCHM	S00517	S62	7/24/1992		0 - 2							
O-SEDCHM	S00067	S66	5/11/1992		0 - 30	190 *UJ*	74 *UJ*	74 *UJ*	190 *UJ*	74 *UJ*	74 *UJ*	74 *UJ*
O-SEDCHM	S00601	S66	8/10/1992		0 - 2	350 *U*	140 *U*	140 *U*	350 *U*	140 *U*	140 *U*	140 *U*
O-SEDCHM	S00513	S67	7/23/1992		0 - 2							
O-SEDCHM	S00510	S74	7/22/1992		0 - 2							
O-SEDCHM	S00507	S75	7/21/1992		0 - 2							
O-SEDCHM	S00508	S76	7/22/1992		0 - 2							
O-SEDCHM	S00023	S81	5/9/1992		0 - 30	210 *U*	85 *U*	85 *U*	210 *U*	85 *U*	85 *U*	85 *U*
O-SEDCHM	S00520	S81	7/24/1992		0 - 2	390 *U*	150 *U*	150 *U*	390 *U*	150 *U*	150 *U*	150 *U*
O-SEDCHM	S00504	S82	7/21/1992		0 - 2							
O-SEDCHM	S00511	S87	7/22/1992		0 - 2							
O-SEDCHM	S00032	S93	5/9/1992		0 - 30	200 *U*	79 *U*	79 *U*	200 *U*	79 *U*	79 *U*	79 *U*
O-SEDCHM	S00550	S93	7/31/1992		0 - 2	190 *U*	75 *U*	75 *U*	190 *U*	75 *U*	75 *U*	75 *U*
O-SEDCHM	S00512	S94	7/22/1992		0 - 2							
O-SEDCHM	S00059	S100	5/11/1992		0 - 30	230 *UJ*	91 *UJ*	91 *UJ*	230 *UJ*	91 *UJ*	91 *UJ*	91 *UJ*
O-SEDCHM	S00608	S100	8/11/1992		0 - 2	220 *U*	86 *U*	86 *U*	220 *U*	86 *U*	86 *U*	86 *U*
O-SEDCHM	S00552	S105	7/31/1992		0 - 2							
O-SEDCHM	S00501	S110	7/20/1992		0 - 2							
O-SEDCHM	S00029	S113	5/9/1992		0 - 30	190 *U*	77 *U*	77 *U*	190 *U*	77 *U*	77 *U*	77 *U*
O-SEDCHM	S00577	S113	8/5/1992		0 - 2	190 *U*	76 *U*	76 *U*	190 *U*	76 *U*	76 *U*	76 *U*
O-SEDCHM	S00048	P73	5/10/1992		0 - 30							
ONON2A	SF0006	S358	8/16/2000		0 - 15	110 *U*	280 *U*	55 *U*	1,400 *U*	55 *U*	280 *U*	55 *U*
ONON2A	SF0007	S358	8/16/2000		15 - 30	110 *UJ*	280 *UJ*	55 *UJ*	1,400 *UJ*	55 *UJ*	280 *UJ*	55 *UJ*
ONON2A	SF0052	S304	8/9/2000		0 - 15	110 *U*	280 *U*	54 *U*	1,400 *U*	54 *U*	280 *U*	54 *U*
ONON2A	SF0053	S304	8/9/2000		15 - 30	97 *U*	250 *U*	48 *U*	1,200 *U*	48 *U*	250 *U*	48 *U*
ONON2A	VC0212	S306	7/21/2000		0 - 15	110 *UJ*	270 *UJ*	52 *UJ*	1,300 *UJ*	52 *UJ*	270 *UJ*	52 *UJ*
ONON2A	VC0213	S306	7/21/2000		15 - 30	120 *UJ*	310 *UJ*	59 *UJ*	1,500 *UJ*	59 *UJ*	310 *UJ*	59 *UJ*
ONON2A	SF0001	S356	8/16/2000		0 - 15	110 *U*	290 *UJ*	56 *U*	1,400 *U*	56 *U*	290 *UJ*	56 *U*
ONON2A	SF0002	S356	8/16/2000		15 - 30	120 *U*	310 *U*	60 *U*	1,500 *U*	60 *U*	310 *U*	60 *U*
ONON2A	SF0003	S357	8/16/2000		0 - 2	150 *U*	370 *U*	72 *U*	2,000 *U*	72 *U*	370 *U*	72 *U*
ONON2A	SF0004	S357	8/16/2000		2 - 15	120 *U*	300 *U*	59 *U*	1,500 *U*	59 *U*	300 *U*	59 *U*

Table A-2C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	4-Chloro-phenyl-phenyl ether (µg/kg)	4-Methyl-phenol (µg/kg)	4-Nitro-aniline (µg/kg)	4-Nitro-phenol (µg/kg)	Acenaph-thene (µg/kg)	Acenaph-thylene (µg/kg)	Anthracene (µg/kg)	Benz(a) anthracene (µg/kg)	Benzo(a) pyrene (µg/kg)
O-SEDCHM	S00020	S53	5/9/1992		0 - 30	120 *U*	250 *J*	310 *U*	*R*	120 *U*	120 *U*	120 *U*	120 *U*	120 *U*
O-SEDCHM	S00529	S53	7/27/1992		0 - 2	190 *U*	190 *U*	480 *U*	480 *U*	190 *U*	190 *U*	190 *U*	49 *J*	190 *U*
O-SEDCHM	S00589	S61	8/7/1992		0 - 2					730	770 *J*	130 *J*	350 *J*	280
O-SEDCHM	S00517	S62	7/24/1992		0 - 2					290 *U*	580 *UJ*	16 *J*	40 *J*	44
O-SEDCHM	S00067	S66	5/11/1992		0 - 30	74 *UJ*	74 *UJ*	190 *UJ*	190 *UJ*	74 *UJ*	74 *UJ*	43 *J*	84 *J*	99 *J*
O-SEDCHM	S00601	S66	8/10/1992		0 - 2	140 *U*	140 *U*	350 *U*	350 *U*	460	34 *J*	750	1,500	1,300
O-SEDCHM	S00513	S67	7/23/1992		0 - 2					440 *J*	780 *UJ*	38 *J*	110 *J*	83 *J*
O-SEDCHM	S00510	S74	7/22/1992		0 - 2					240 *UJ*	470 *UJ*	24 *UJ*	40 *J*	24 *UJ*
O-SEDCHM	S00507	S75	7/21/1992		0 - 2					300 *UJ*	610 *UJ*	30 *J*	93 *J*	100 *J*
O-SEDCHM	S00508	S76	7/22/1992		0 - 2					270 *UJ*	540 *UJ*	13 *J*	36 *J*	45 *J*
O-SEDCHM	S00023	S81	5/9/1992		0 - 30	85 *U*	85 *U*	210 *U*	210 *U*	85 *U*	85 *U*	25 *J*	54 *J*	66 *J*
O-SEDCHM	S00520	S81	7/24/1992		0 - 2	150 *U*	150 *U*	390 *U*	390 *U*	150 *U*	150 *U*	35 *J*	170	200
O-SEDCHM	S00504	S82	7/21/1992		0 - 2					310 *U*	630 *UJ*	40 *J*	140 *J*	94 *J*
O-SEDCHM	S00511	S87	7/22/1992		0 - 2					290 *UJ*	590 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*
O-SEDCHM	S00032	S93	5/9/1992		0 - 30	79 *U*	79 *U*	200 *U*	200 *U*	79 *U*	79 *U*	79 *U*	79 *U*	79 *U*
O-SEDCHM	S00550	S93	7/31/1992		0 - 2	75 *U*	75 *U*	190 *U*	190 *U*	75 *U*	75 *U*	75 *U*	75 *U*	75 *U*
O-SEDCHM	S00512	S94	7/22/1992		0 - 2					320 *UJ*	640 *UJ*	32 *UJ*	22 *J*	27 *J*
O-SEDCHM	S00059	S100	5/11/1992		0 - 30	91 *UJ*	91 *UJ*	230 *UJ*	230 *UJ*	91 *UJ*	91 *UJ*	91 *UJ*	91 *UJ*	91 *UJ*
O-SEDCHM	S00608	S100	8/11/1992		0 - 2	86 *U*	82 *J*	220 *U*	220 *U*	86 *U*	86 *U*	86 *U*	86 *U*	86 *U*
O-SEDCHM	S00552	S105	7/31/1992		0 - 2					630 *J*	610 *UJ*	30 *UJ*	30 *UJ*	21 *J*
O-SEDCHM	S00501	S110	7/20/1992		0 - 2					650 *U*	1,300 *UJ*	76 *J*	120 *J*	130
O-SEDCHM	S00029	S113	5/9/1992		0 - 30	77 *U*	77 *U*	190 *U*	190 *U*	77 *U*	77 *U*	77 *U*	17 *J*	19 *J*
O-SEDCHM	S00577	S113	8/5/1992		0 - 2	76 *U*	76 *U*	190 *U*	190 *U*	41 *J*	82	230	490	480
O-SEDCHM	S00048	P73	5/10/1992		0 - 30									
ONON2A	SF0006	S358	8/16/2000		0 - 15	55 *U*	55 *U*	1,400 *U*	1,400 *U*	55 *U*	55 *U*	55 *U*	55 *U*	55 *U*
ONON2A	SF0007	S358	8/16/2000		15 - 30	55 *UJ*	55 *UJ*	1,400 *UJ*	1,400 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*
ONON2A	SF0052	S304	8/9/2000		0 - 15	54 *U*	54 *U*	1,400 *U*	1,400 *U*	54 *U*	54 *U*	54 *U*	130 *J*	130 *J*
ONON2A	SF0053	S304	8/9/2000		15 - 30	48 *U*	48 *U*	1,200 *U*	1,200 *U*	48 *U*	48 *U*	75 *J*	220 *J*	190 *J*
ONON2A	VC0212	S306	7/21/2000		0 - 15	52 *UJ*	52 *UJ*	1,300 *UJ*	1,300 *UJ*	52 *UJ*	52 *UJ*	52 *UJ*	52 *UJ*	52 *UJ*
ONON2A	VC0213	S306	7/21/2000		15 - 30	59 *UJ*	59 *UJ*	1,500 *UJ*	1,500 *UJ*	59 *UJ*	59 *UJ*	59 *UJ*	59 *UJ*	59 *UJ*
ONON2A	SF0001	S356	8/16/2000		0 - 15	56 *U*	56 *UJ*	1,400 *U*	1,400 *UJ*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*
ONON2A	SF0002	S356	8/16/2000		15 - 30	60 *U*	60 *U*	1,500 *U*	1,500 *U*	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*
ONON2A	SF0003	S357	8/16/2000		0 - 2	72 *U*	840	2,000 *U*	2,000 *U*	72 *U*	72 *U*	72 *U*	72 *U*	72 *U*
ONON2A	SF0004	S357	8/16/2000		2 - 15	59 *U*	660	1,500 *U*	1,500 *U*	59 *U*	59 *U*	59 *U*	120	110

Table A-2C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Benzo(b) fluoranthene (µg/kg)	Benzo(g,h,i) perylene (µg/kg)	Benzo(k) fluoranthene (µg/kg)	Benzyl Alcohol (µg/kg)	Bis(2-chloroethoxy) methane (µg/kg)	Bis(2-chloroethyl) ether (µg/kg)	Bis(2-ethylhexyl) phthalate (µg/kg)	Butylbenzyl phthalate (µg/kg)
O-SEDCHM	S00020	S53	5/9/1992		0 - 30	32 *J*	120 *U*	120 *U*		120 *U*	120 *U*	120 *U*	120 *U*
O-SEDCHM	S00529	S53	7/27/1992		0 - 2	190 *U*	190 *U*	190 *U*		190 *U*	190 *U*	190 *U*	190 *U*
O-SEDCHM	S00589	S61	8/7/1992		0 - 2	350 *J*	520	250					
O-SEDCHM	S00517	S62	7/24/1992		0 - 2	47 *J*	150	28 *J*					
O-SEDCHM	S00067	S66	5/11/1992		0 - 30	170 *J*	55 *J*	74 *UJ*		74 *UJ*	74 *UJ*	23 *J*	74 *UJ*
O-SEDCHM	S00601	S66	8/10/1992		0 - 2	1,600	460	140 *U*		140 *U*	140 *U*	100 *J*	140 *U*
O-SEDCHM	S00513	S67	7/23/1992		0 - 2	260 *J*	390 *J*	39 *UJ*					
O-SEDCHM	S00510	S74	7/22/1992		0 - 2	190 *J*	47 *UJ*	12 *J*					
O-SEDCHM	S00507	S75	7/21/1992		0 - 2	130 *J*	190 *J*	88 *J*					
O-SEDCHM	S00508	S76	7/22/1992		0 - 2	60 *J*	94 *J*	38 *J*					
O-SEDCHM	S00023	S81	5/9/1992		0 - 30	73 *J*	45 *J*	55 *J*		85 *U*	85 *U*	69 *J*	85 *U*
O-SEDCHM	S00520	S81	7/24/1992		0 - 2	330	110 *J*	150 *U*		150 *U*	150 *U*	170 *U*	150 *U*
O-SEDCHM	S00504	S82	7/21/1992		0 - 2	350 *J*	63 *U*	31 *U*					
O-SEDCHM	S00511	S87	7/22/1992		0 - 2	59 *UJ*	59 *UJ*	29 *UJ*					
O-SEDCHM	S00032	S93	5/9/1992		0 - 30	79 *U*	79 *U*	79 *U*		79 *U*	79 *U*	79 *U*	79 *U*
O-SEDCHM	S00550	S93	7/31/1992		0 - 2	75 *U*	75 *U*	75 *U*		75 *U*	75 *U*	23 *J*	75 *U*
O-SEDCHM	S00512	S94	7/22/1992		0 - 2	44 *J*	64 *UJ*	27 *J*					
O-SEDCHM	S00059	S100	5/11/1992		0 - 30	91 *UJ*	91 *UJ*	91 *UJ*		91 *UJ*	91 *UJ*	91 *UJ*	91 *UJ*
O-SEDCHM	S00608	S100	8/11/1992		0 - 2	86 *U*	86 *U*	86 *U*		86 *U*	86 *U*	22 *J*	86 *U*
O-SEDCHM	S00552	S105	7/31/1992		0 - 2	41 *J*	210 *J*	36 *J*					
O-SEDCHM	S00501	S110	7/20/1992		0 - 2	200 *J*	290	65 *U*					
O-SEDCHM	S00029	S113	5/9/1992		0 - 30	31 *J*	77 *U*	77 *U*		77 *U*	77 *U*	77 *U*	77 *U*
O-SEDCHM	S00577	S113	8/5/1992		0 - 2	550	130	76 *U*		76 *U*	76 *U*	26 *J*	76 *U*
O-SEDCHM	S00048	P73	5/10/1992		0 - 30								
ONON2A	SF0006	S358	8/16/2000		0 - 15	55 *U*	55 *U*	55 *U*	280 *U*	55 *U*	55 *U*		55 *U*
ONON2A	SF0007	S358	8/16/2000		15 - 30	55 *UJ*	55 *UJ*	55 *UJ*	280 *UJ*	55 *UJ*	55 *UJ*		55 *UJ*
ONON2A	SF0052	S304	8/9/2000		0 - 15	130 *J*	96 *J*	120 *J*	280 *U*	54 *U*	54 *U*	160 *J*	54 *U*
ONON2A	SF0053	S304	8/9/2000		15 - 30	170 *J*	130 *J*	190 *J*	250 *U*	48 *U*	48 *U*	150 *J*	48 *U*
ONON2A	VC0212	S306	7/21/2000		0 - 15	52 *UJ*	52 *UJ*	52 *UJ*	270 *UJ*	52 *UJ*	52 *UJ*	52 *UJ*	52 *UJ*
ONON2A	VC0213	S306	7/21/2000		15 - 30	59 *UJ*	59 *UJ*	59 *UJ*	310 *UJ*	59 *UJ*	59 *UJ*	59 *UJ*	59 *UJ*
ONON2A	SF0001	S356	8/16/2000		0 - 15	56 *U*	56 *U*	56 *U*	290 *UJ*	56 *U*	56 *U*	56 *U*	56 *U*
ONON2A	SF0002	S356	8/16/2000		15 - 30	60 *U*	60 *U*	60 *U*	310 *U*	60 *U*	60 *U*	1,300	60 *U*
ONON2A	SF0003	S357	8/16/2000		0 - 2	72 *U*	72 *U*	72 *U*	370 *U*	72 *U*	72 *U*	72 *U*	72 *U*
ONON2A	SF0004	S357	8/16/2000		2 - 15	85	59 *U*	83	300 *U*	59 *U*	59 *U*	59 *U*	59 *U*

Table A-2C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Carbazole (µg/kg)	Chrysene (µg/kg)	Dibenz(a,h) anthracene (µg/kg)	Dibenzofuran (µg/kg)	Diethyl phthalate (µg/kg)	Dimethyl phthalate (µg/kg)	Di-n-butyl phthalate (µg/kg)	Di-n-octyl phthalate (µg/kg)
O-SEDCHM	S00020	S53	5/9/1992		0 - 30	120 *U*	120 *U*	120 *U*	120 *U*	120 *U*	120 *U*	120 *U*	120 *U*
O-SEDCHM	S00529	S53	7/27/1992		0 - 2	190 *U*	58 *J*	190 *U*	190 *U*	190 *U*	190 *U*	190 *U*	190 *U*
O-SEDCHM	S00589	S61	8/7/1992		0 - 2		540 *J*	98 *J*					
O-SEDCHM	S00517	S62	7/24/1992		0 - 2		71	20 *J*					
O-SEDCHM	S00067	S66	5/11/1992		0 - 30	74 *UJ*	98 *J*	22 *J*	74 *UJ*	74 *UJ*	74 *UJ*	74 *UJ*	74 *UJ*
O-SEDCHM	S00601	S66	8/10/1992		0 - 2	470	1,200	180	340	140 *U*	140 *U*	140 *U*	140 *U*
O-SEDCHM	S00513	S67	7/23/1992		0 - 2		220 *J*	78 *UJ*					
O-SEDCHM	S00510	S74	7/22/1992		0 - 2		24 *UJ*	47 *UJ*					
O-SEDCHM	S00507	S75	7/21/1992		0 - 2		170 *J*	48 *J*					
O-SEDCHM	S00508	S76	7/22/1992		0 - 2		71 *J*	23 *J*					
O-SEDCHM	S00023	S81	5/9/1992		0 - 30	85 *U*	88	19 *J*	85 *U*	85 *U*	85 *U*	85 *U*	85 *U*
O-SEDCHM	S00520	S81	7/24/1992		0 - 2	150 *U*	230	150 *U*	150 *U*	150 *U*	150 *U*	150 *U*	150 *U*
O-SEDCHM	S00504	S82	7/21/1992		0 - 2		270 *J*	63 *U*					
O-SEDCHM	S00511	S87	7/22/1992		0 - 2		29 *UJ*	59 *UJ*					
O-SEDCHM	S00032	S93	5/9/1992		0 - 30	79 *U*	79 *U*	79 *U*	79 *U*	79 *U*	79 *U*	79 *U*	79 *U*
O-SEDCHM	S00550	S93	7/31/1992		0 - 2	75 *U*	75 *U*	75 *U*	75 *U*	75 *U*	75 *U*	75 *U*	75 *U*
O-SEDCHM	S00512	S94	7/22/1992		0 - 2		40 *J*	19 *J*					
O-SEDCHM	S00059	S100	5/11/1992		0 - 30	91 *UJ*	91 *UJ*	91 *UJ*	91 *UJ*	91 *UJ*	91 *UJ*	91 *UJ*	91 *UJ*
O-SEDCHM	S00608	S100	8/11/1992		0 - 2	86 *U*	86 *U*	86 *U*	86 *U*	86 *U*	86 *U*	86 *U*	86 *U*
O-SEDCHM	S00552	S105	7/31/1992		0 - 2		30 *UJ*	61 *UJ*					
O-SEDCHM	S00501	S110	7/20/1992		0 - 2		170 *J*	71 *J*					
O-SEDCHM	S00029	S113	5/9/1992		0 - 30	77 *U*	21 *J*	77 *U*	77 *U*	77 *U*	77 *U*	77 *U*	77 *U*
O-SEDCHM	S00577	S113	8/5/1992		0 - 2	20 *J*	500	62 *J*	18 *J*	76 *U*	76 *U*	76 *U*	76 *U*
O-SEDCHM	S00048	P73	5/10/1992		0 - 30								
ONON2A	SF0006	S358	8/16/2000		0 - 15	55 *U*	55 *U*	55 *U*	55 *U*	55 *U*	55 *U*	55 *U*	55 *U*
ONON2A	SF0007	S358	8/16/2000		15 - 30	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*
ONON2A	SF0052	S304	8/9/2000		0 - 15	54 *U*	160 *J*	54 *U*	54 *U*	54 *U*	54 *U*	54 *U*	54 *U*
ONON2A	SF0053	S304	8/9/2000		15 - 30	48 *U*	240 *J*	48 *U*	48 *U*	48 *U*	48 *U*	48 *U*	48 *U*
ONON2A	VC0212	S306	7/21/2000		0 - 15	52 *UJ*	52 *UJ*	52 *UJ*	52 *UJ*	52 *UJ*	52 *UJ*	52 *UJ*	52 *UJ*
ONON2A	VC0213	S306	7/21/2000		15 - 30	59 *UJ*	59 *UJ*	59 *UJ*	59 *UJ*	59 *UJ*	59 *UJ*	59 *UJ*	59 *UJ*
ONON2A	SF0001	S356	8/16/2000		0 - 15	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*
ONON2A	SF0002	S356	8/16/2000		15 - 30	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*
ONON2A	SF0003	S357	8/16/2000		0 - 2	72 *U*	72 *U*	72 *U*	72 *U*	72 *U*	72 *U*	72 *U*	72 *U*
ONON2A	SF0004	S357	8/16/2000		2 - 15	59 *U*	110	59 *U*	59 *U*	59 *U*	59 *U*	59 *U*	59 *U*

Table A-2C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Fluoranthene (µg/kg)	Fluorene (µg/kg)	Hexachlorobenzene (GC/ECD) (µg/kg)	Hexachlorobenzene (GC/MS) (µg/kg)	Final HCB Value (µg/kg)
O-SEDCHM	S00020	S53	5/9/1992		0 - 30	99 *J*	120 *U*		120 *U*	120 *U*
O-SEDCHM	S00529	S53	7/27/1992		0 - 2	70 *J*	190 *U*		190 *U*	190 *U*
O-SEDCHM	S00589	S61	8/7/1992		0 - 2	1,000 *UJ*	120 *J*		12	12 *J*
O-SEDCHM	S00517	S62	7/24/1992		0 - 2	180 *J*	58 *U*		5.7 *UJ*	5.7 *UJ*
O-SEDCHM	S00067	S66	5/11/1992		0 - 30	220 *J*	23 *J*		74 *UJ*	74 *UJ*
O-SEDCHM	S00601	S66	8/10/1992		0 - 2	2,300	480		140 *U*	140 *U*
O-SEDCHM	S00513	S67	7/23/1992		0 - 2	380 *J*	44 *J*			
O-SEDCHM	S00510	S74	7/22/1992		0 - 2	47 *UJ*	47 *UJ*		4.8 *U*	4.8 *U*
O-SEDCHM	S00507	S75	7/21/1992		0 - 2	550 *J*	35 *J*		28	28 *J*
O-SEDCHM	S00508	S76	7/22/1992		0 - 2	190 *J*	54 *UJ*		5.8	5.8 *J*
O-SEDCHM	S00023	S81	5/9/1992		0 - 30	130	85 *U*		85 *U*	85 *U*
O-SEDCHM	S00520	S81	7/24/1992		0 - 2	400	150 *U*		150 *U*	150 *U*
O-SEDCHM	S00504	S82	7/21/1992		0 - 2	630 *J*	55 *J*		11 *J*	11 *J*
O-SEDCHM	S00511	S87	7/22/1992		0 - 2	59 *UJ*	59 *UJ*			
O-SEDCHM	S00032	S93	5/9/1992		0 - 30	79 *U*	79 *U*		79 *U*	79 *U*
O-SEDCHM	S00550	S93	7/31/1992		0 - 2	75 *U*	75 *U*		75 *U*	75 *U*
O-SEDCHM	S00512	S94	7/22/1992		0 - 2	98 *J*	45 *J*			
O-SEDCHM	S00059	S100	5/11/1992		0 - 30	91 *UJ*	91 *UJ*		91 *UJ*	91 *UJ*
O-SEDCHM	S00608	S100	8/11/1992		0 - 2	86 *U*	86 *U*		86 *U*	86 *U*
O-SEDCHM	S00552	S105	7/31/1992		0 - 2	590 *J*	61 *UJ*			
O-SEDCHM	S00501	S110	7/20/1992		0 - 2	590 *J*	83 *J*			
O-SEDCHM	S00029	S113	5/9/1992		0 - 30	23 *J*	77 *U*		77 *U*	77 *U*
O-SEDCHM	S00577	S113	8/5/1992		0 - 2	600	82		76 *U*	76 *U*
O-SEDCHM	S00048	P73	5/10/1992		0 - 30				2.9 *U*	2.9 *U*
ONON2A	SF0006	S358	8/16/2000		0 - 15	55 *U*	55 *U*	1.06 *UJ*	55 *U*	1.06 *UJ*
ONON2A	SF0007	S358	8/16/2000		15 - 30	55 *UJ*	55 *UJ*	1.04 *UJ*	55 *UJ*	1.04 *UJ*
ONON2A	SF0052	S304	8/9/2000		0 - 15	270 *J*	54 *U*	1,370	140 *J*	755 *J*
ONON2A	SF0053	S304	8/9/2000		15 - 30	450 *J*	48 *U*	521	300 *J*	410.5 *J*
ONON2A	VC0212	S306	7/21/2000		0 - 15	52 *UJ*	52 *UJ*	27.6 *J*	52 *UJ*	27.6 *J*
ONON2A	VC0213	S306	7/21/2000		15 - 30	59 *UJ*	59 *UJ*	1 *UJ*	59 *UJ*	1 *U*
ONON2A	SF0001	S356	8/16/2000		0 - 15	56 *U*	56 *U*	1.06 *U*	56 *U*	1.06 *U*
ONON2A	SF0002	S356	8/16/2000		15 - 30	60 *U*	60 *U*	1.08 *U*	60 *U*	1.08 *U*
ONON2A	SF0003	S357	8/16/2000		0 - 2	72 *U*	72 *U*	1.06 *U*	72 *U*	1.06 *U*
ONON2A	SF0004	S357	8/16/2000		2 - 15	190	59 *U*	1.05 *U*	59 *U*	1.05 *U*

Table A-2C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Hexachloro butadiene (µg/kg)	Hexachloro-cyclopentadiene (µg/kg)	Hexachloro-ethane (µg/kg)	Indeno (1,2,3-cd) pyrene (µg/kg)	Isophorone (µg/kg)	Naphthalene (µg/kg)	Nitrobenzene (µg/kg)
O-SEDCHM	S00020	S53	5/9/1992		0 - 30	120 *U*	120 *U*	120 *U*	120 *U*	120 *U*	60 *J*	120 *U*
O-SEDCHM	S00529	S53	7/27/1992		0 - 2	190 *U*	190 *U*	190 *U*	190 *U*	190 *U*	340	190 *U*
O-SEDCHM	S00589	S61	8/7/1992		0 - 2				59 *U*		600	
O-SEDCHM	S00517	S62	7/24/1992		0 - 2				33		290 *U*	
O-SEDCHM	S00067	S66	5/11/1992		0 - 30	74 *UJ*	74 *UJ*	74 *UJ*	52 *J*	74 *UJ*	74 *UJ*	74 *UJ*
O-SEDCHM	S00601	S66	8/10/1992		0 - 2	140 *U*	140 *U*	140 *U*	540	140 *U*	370	140 *U*
O-SEDCHM	S00513	S67	7/23/1992		0 - 2				47 *J*		390 *UJ*	
O-SEDCHM	S00510	S74	7/22/1992		0 - 2				24 *UJ*		240 *UJ*	
O-SEDCHM	S00507	S75	7/21/1992		0 - 2				84 *J*		300 *UJ*	
O-SEDCHM	S00508	S76	7/22/1992		0 - 2				39 *J*		270 *UJ*	
O-SEDCHM	S00023	S81	5/9/1992		0 - 30	85 *U*	85 *U*	85 *U*	46 *J*	85 *U*	85 *U*	85 *U*
O-SEDCHM	S00520	S81	7/24/1992		0 - 2	150 *U*	150 *U*	150 *U*	110 *J*	150 *U*	150 *U*	150 *U*
O-SEDCHM	S00504	S82	7/21/1992		0 - 2				56		310 *U*	
O-SEDCHM	S00511	S87	7/22/1992		0 - 2				29 *UJ*		290 *UJ*	
O-SEDCHM	S00032	S93	5/9/1992		0 - 30	79 *U*	79 *U*	79 *U*	79 *U*	79 *U*	79 *U*	79 *U*
O-SEDCHM	S00550	S93	7/31/1992		0 - 2	75 *U*	75 *U*	75 *U*	75 *U*	75 *U*	75 *U*	75 *U*
O-SEDCHM	S00512	S94	7/22/1992		0 - 2				16 *J*		320 *UJ*	
O-SEDCHM	S00059	S100	5/11/1992		0 - 30	91 *UJ*	91 *UJ*	91 *UJ*	91 *UJ*	91 *UJ*	35 *J*	91 *UJ*
O-SEDCHM	S00608	S100	8/11/1992		0 - 2	86 *U*	86 *U*	86 *U*	86 *U*	86 *U*	86 *U*	86 *U*
O-SEDCHM	S00552	S105	7/31/1992		0 - 2				30 *UJ*		300 *UJ*	
O-SEDCHM	S00501	S110	7/20/1992		0 - 2				82		650 *U*	
O-SEDCHM	S00029	S113	5/9/1992		0 - 30	77 *U*	77 *U*	77 *U*	77 *U*	77 *U*	77 *U*	77 *U*
O-SEDCHM	S00577	S113	8/5/1992		0 - 2	76 *U*	76 *U*	76 *U*	150	76 *U*	76 *U*	76 *U*
O-SEDCHM	S00048	P73	5/10/1992		0 - 30							
ONON2A	SF0006	S358	8/16/2000		0 - 15	55 *U*	280 *U*	55 *U*	55 *U*	55 *U*	55 *U*	55 *U*
ONON2A	SF0007	S358	8/16/2000		15 - 30	55 *UJ*	280 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*
ONON2A	SF0052	S304	8/9/2000		0 - 15	54 *U*	280 *UJ*	54 *U*	91 *J*	54 *U*	54 *U*	54 *U*
ONON2A	SF0053	S304	8/9/2000		15 - 30	48 *U*	250 *UJ*	48 *U*	130 *J*	48 *U*	48 *U*	48 *U*
ONON2A	VC0212	S306	7/21/2000		0 - 15	52 *UJ*	270 *UJ*	52 *UJ*	52 *UJ*	52 *UJ*	52 *UJ*	52 *UJ*
ONON2A	VC0213	S306	7/21/2000		15 - 30	59 *UJ*	310 *UJ*	59 *UJ*	59 *UJ*	59 *UJ*	59 *UJ*	59 *UJ*
ONON2A	SF0001	S356	8/16/2000		0 - 15	56 *U*	290 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*
ONON2A	SF0002	S356	8/16/2000		15 - 30	60 *U*	310 *U*	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*
ONON2A	SF0003	S357	8/16/2000		0 - 2	72 *U*	370 *U*	72 *U*	72 *U*	72 *U*	72 *U*	72 *U*
ONON2A	SF0004	S357	8/16/2000		2 - 15	59 *U*	300 *U*	59 *U*	59 *U*	59 *U*	59 *U*	59 *U*

Table A-2C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	N-Nitroso dimethylamine (µg/kg)	N-Nitroso-di-n-propylamine (µg/kg)	N-Nitroso diphenylamine (µg/kg)	Pentachloro-benzene (µg/kg)	Pentachloro-phenol (µg/kg)	Phenanthrene (µg/kg)	Phenol (µg/kg)	Pyrene (µg/kg)
O-SEDCHM	S00020	S53	5/9/1992		0 - 30		120 *U*	120 *U*		*R*	77 *J*	87 *J*	42 *J*
O-SEDCHM	S00529	S53	7/27/1992		0 - 2		190 *U*	190 *U*		480 *U*	190 *U*	45 *J*	75 *J*
O-SEDCHM	S00589	S61	8/7/1992		0 - 2				5.9 *U*		480 *J*		870 *J*
O-SEDCHM	S00517	S62	7/24/1992		0 - 2				5.7 *UJ*		35		66 *J*
O-SEDCHM	S00067	S66	5/11/1992		0 - 30		74 *UJ*	74 *UJ*		190 *UJ*	130 *J*	74 *UJ*	160 *J*
O-SEDCHM	S00601	S66	8/10/1992		0 - 2		140 *U*	140 *U*		350 *U*	2,300	140 *U*	2,200
O-SEDCHM	S00513	S67	7/23/1992		0 - 2						90 *J*		230 *J*
O-SEDCHM	S00510	S74	7/22/1992		0 - 2				4.8 *U*		24 *UJ*		38 *J*
O-SEDCHM	S00507	S75	7/21/1992		0 - 2				6 *U*		93 *J*		240 *J*
O-SEDCHM	S00508	S76	7/22/1992		0 - 2				5.4 *U*		32 *J*		100 *J*
O-SEDCHM	S00023	S81	5/9/1992		0 - 30		85 *U*	85 *U*		210 *U*	83 *J*	85 *U*	100
O-SEDCHM	S00520	S81	7/24/1992		0 - 2		150 *U*	150 *U*		390 *U*	180	150 *U*	380
O-SEDCHM	S00504	S82	7/21/1992		0 - 2				6.2 *UJ*		180 *J*		400 *J*
O-SEDCHM	S00511	S87	7/22/1992		0 - 2						29 *UJ*		29 *UJ*
O-SEDCHM	S00032	S93	5/9/1992		0 - 30		79 *U*	79 *U*		200 *U*	79 *U*	79 *U*	79 *U*
O-SEDCHM	S00550	S93	7/31/1992		0 - 2		75 *U*	75 *U*		190 *U*	75 *U*	75 *U*	75 *U*
O-SEDCHM	S00512	S94	7/22/1992		0 - 2						32 *UJ*		31 *J*
O-SEDCHM	S00059	S100	5/11/1992		0 - 30		91 *UJ*	91 *UJ*		230 *UJ*	91 *UJ*	91 *UJ*	91 *UJ*
O-SEDCHM	S00608	S100	8/11/1992		0 - 2		86 *U*	86 *U*		220 *U*	86 *U*	45 *J*	86 *U*
O-SEDCHM	S00552	S105	7/31/1992		0 - 2						30 *UJ*		30 *UJ*
O-SEDCHM	S00501	S110	7/20/1992		0 - 2						260		430 *J*
O-SEDCHM	S00029	S113	5/9/1992		0 - 30		77 *U*	77 *U*		190 *U*	77 *U*	77 *U*	25 *J*
O-SEDCHM	S00577	S113	8/5/1992		0 - 2		76 *U*	76 *U*		190 *U*	370	76 *U*	750
O-SEDCHM	S00048	P73	5/10/1992		0 - 30								
ONON2A	SF0006	S358	8/16/2000		0 - 15	55 *U*	55 *U*	55 *U*		1,400 *U*	55 *U*	55 *U*	55 *U*
ONON2A	SF0007	S358	8/16/2000		15 - 30	55 *UJ*	55 *UJ*	55 *UJ*		1,400 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*
ONON2A	SF0052	S304	8/9/2000		0 - 15	280 *U*	54 *U*	54 *U*		1,400 *U*	160 *J*	54 *U*	290 *J*
ONON2A	SF0053	S304	8/9/2000		15 - 30	250 *U*	48 *U*	48 *U*		1,200 *U*	330 *J*	48 *U*	420 *J*
ONON2A	VC0212	S306	7/21/2000		0 - 15	270 *UJ*	52 *UJ*	52 *UJ*		1,300 *UJ*	52 *UJ*	52 *UJ*	52 *UJ*
ONON2A	VC0213	S306	7/21/2000		15 - 30	310 *UJ*	59 *UJ*	59 *UJ*		1,500 *UJ*	59 *UJ*	59 *UJ*	59 *UJ*
ONON2A	SF0001	S356	8/16/2000		0 - 15	290 *U*	56 *U*	56 *U*		1,400 *UJ*	56 *U*	56 *UJ*	56 *U*
ONON2A	SF0002	S356	8/16/2000		15 - 30	310 *U*	60 *U*	60 *U*		1,500 *U*	60 *U*	60 *U*	60 *U*
ONON2A	SF0003	S357	8/16/2000		0 - 2	370 *U*	72 *U*	72 *U*		2,000 *U*	72 *U*	72 *U*	72 *U*
ONON2A	SF0004	S357	8/16/2000		2 - 15	300 *U*	59 *U*	59 *U*		1,500 *U*	60	59 *U*	170

Table A-2C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	1,2,3,4-Tetrachloro-benzene (µg/kg)	1,2,3-Trichloro-benzene (µg/kg)	1,2,4-Trichloro-benzene (µg/kg)	1,3,5-Trichloro-benzene (µg/kg)	Trichloro-benzenes [2] (ug/kg)	1,2-Dichloro-benzene (µg/kg)	1,3-Dichloro-benzene (µg/kg)
ONON2A	SF0005	S357	8/16/2000		15 - 30			57 *UJ*			57 *UJ*	57 *UJ*
ONON2A	SF0008	S359	8/16/2000		0 - 15			49 *UJ*			49 *UJ*	49 *UJ*
ONON2A	SF0009	S359	8/16/2000		15 - 30			48 *U*			48 *U*	48 *U*
ONON2A	SF0010	S360	8/16/2000	D1	0 - 2			59 *UJ*			59 *UJ*	59 *UJ*
ONON2A	SF0066	S360	8/16/2000	D2	0 - 2			58 *UJ*			58 *UJ*	58 *UJ*
ONON2A	SF0012	S360	8/16/2000	D1	15 - 30			56 *U*			56 *U*	56 *U*
ONON2A	SF0169	S360	8/16/2000	D2	15 - 30			56 *UJ*			56 *UJ*	56 *UJ*
ONON2A	SF0011	S360	8/16/2000	D1	2 - 15			61 *U*			61 *U*	61 *U*
ONON2A	SF0164	S360	8/16/2000	D2	2 - 15			58 *UJ*			58 *UJ*	58 *UJ*
ONON2A	SF0013	S361	8/15/2000	D1	0 - 15			56 *U*			56 *U*	56 *U*
ONON2A	SF0163	S361	8/15/2000	D2	0 - 15			56 *U*			56 *U*	56 *U*
ONON2A	SF0014	S361	8/15/2000		15 - 30			74 *UJ*			74 *UJ*	74 *UJ*
ONON2A	SF0015	S362	8/15/2000		0 - 15			53 *U*			53 *U*	53 *U*
ONON2A	SF0016	S362	8/15/2000		15 - 30			58 *U*			58 *U*	58 *U*
ONON2A	SF0017	S363	8/15/2000		0 - 2			51 *UJ*			51 *UJ*	51 *UJ*
ONON2A	SF0019	S363	8/15/2000		15 - 30			300 *U*			300 *U*	300 *U*
ONON2A	SF0018	S363	8/15/2000	D1	2 - 15			680 *U*			680 *U*	680 *U*
ONON2A	SF0175	S363	8/15/2000	D2	2 - 15			68 *U*			68 *U*	68 *U*
ONON2A	SF0031	S369	8/15/2000		0 - 15			57 *U*			57 *U*	57 *U*
ONON2A	SF0032	S369	8/15/2000		15 - 30			59 *U*			59 *U*	59 *U*
ONON2A	SF0033	S370	8/17/2000		0 - 2			55 *UJ*			55 *UJ*	55 *UJ*
ONON2A	SF0034	S370	8/17/2000		2 - 15			51 *UJ*			51 *UJ*	51 *UJ*
ONON2A	SF0035	S370	8/17/2000		15 - 30			55 *UJ*			55 *UJ*	55 *UJ*
ONON2A	SF0050	S372	8/11/2000		0 - 15			57 *U*			57 *U*	57 *U*
ONON2A	SF0039	S372	8/17/2000	D1	15 - 30			55 *UJ*			55 *UJ*	55 *UJ*
ONON2A	SF0165	S372	8/17/2000	D2	15 - 30			54 *UJ*			54 *UJ*	54 *UJ*

Table A-2C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	1,4-Dichlorobenzene (µg/kg)	Dichlorobenzenes (sum of)[2] (µg/kg)	2,2'-Oxybis(1-chloropropane) (µg/kg)	2,4,5-Trichlorophenol (µg/kg)	2,4,6-Trichlorophenol (µg/kg)	2,4-Dichlorophenol (µg/kg)	2,4-Dimethylphenol (µg/kg)
ONON2A	SF0005	S357	8/16/2000		15 - 30	57 *UJ*		57 *UJ*	290 *UJ*	290 *UJ*	290 *UJ*	290 *UJ*
ONON2A	SF0008	S359	8/16/2000		0 - 15	49 *UJ*		49 *UJ*	250 *UJ*	250 *UJ*	250 *UJ*	250 *UJ*
ONON2A	SF0009	S359	8/16/2000		15 - 30	48 *U*		48 *U*	250 *U*	250 *U*	250 *U*	250 *U*
ONON2A	SF0010	S360	8/16/2000	D1	0 - 2	59 *UJ*		59 *UJ*	300 *UJ*	300 *UJ*	300 *UJ*	300 *UJ*
ONON2A	SF0066	S360	8/16/2000	D2	0 - 2	58 *UJ*		58 *UJ*	300 *UJ*	300 *UJ*	300 *UJ*	300 *UJ*
ONON2A	SF0012	S360	8/16/2000	D1	15 - 30	56 *U*		56 *U*	290 *UJ*	290 *UJ*	290 *UJ*	290 *UJ*
ONON2A	SF0169	S360	8/16/2000	D2	15 - 30	56 *UJ*		56 *UJ*	290 *UJ*	290 *UJ*	290 *UJ*	290 *UJ*
ONON2A	SF0011	S360	8/16/2000	D1	2 - 15	61 *U*		61 *U*	310 *U*	310 *U*	310 *U*	310 *U*
ONON2A	SF0164	S360	8/16/2000	D2	2 - 15	58 *UJ*		58 *UJ*	300 *UJ*	300 *UJ*	300 *UJ*	300 *UJ*
ONON2A	SF0013	S361	8/15/2000	D1	0 - 15	56 *U*		56 *U*	290 *U*	290 *U*	290 *U*	290 *U*
ONON2A	SF0163	S361	8/15/2000	D2	0 - 15	56 *U*		56 *U*	290 *U*	290 *U*	290 *U*	290 *U*
ONON2A	SF0014	S361	8/15/2000		15 - 30	74 *UJ*		74 *UJ*	380 *UJ*	380 *UJ*	380 *UJ*	380 *UJ*
ONON2A	SF0015	S362	8/15/2000		0 - 15	53 *U*		53 *U*	270 *U*	270 *U*	270 *U*	270 *U*
ONON2A	SF0016	S362	8/15/2000		15 - 30	58 *U*		58 *U*	300 *UJ*	300 *UJ*	300 *UJ*	300 *UJ*
ONON2A	SF0017	S363	8/15/2000		0 - 2	51 *UJ*		51 *UJ*	260 *UJ*	260 *UJ*	260 *UJ*	260 *UJ*
ONON2A	SF0019	S363	8/15/2000		15 - 30	300 *U*		300 *U*	1,500 *U*	1,500 *U*	1,500 *U*	1,500 *U*
ONON2A	SF0018	S363	8/15/2000	D1	2 - 15	680 *U*		680 *U*	3,500 *U*	3,500 *U*	3,500 *U*	3,500 *U*
ONON2A	SF0175	S363	8/15/2000	D2	2 - 15	68 *U*		68 *U*	350 *U*	350 *U*	350 *U*	350 *U*
ONON2A	SF0031	S369	8/15/2000		0 - 15	57 *U*		57 *U*	290 *U*	290 *U*	290 *U*	290 *U*
ONON2A	SF0032	S369	8/15/2000		15 - 30	59 *U*		59 *U*	300 *U*	300 *U*	300 *U*	300 *U*
ONON2A	SF0033	S370	8/17/2000		0 - 2	55 *UJ*		55 *UJ*	280 *UJ*	280 *UJ*	280 *UJ*	280 *UJ*
ONON2A	SF0034	S370	8/17/2000		2 - 15	51 *UJ*		51 *UJ*	260 *UJ*	260 *UJ*	260 *UJ*	260 *UJ*
ONON2A	SF0035	S370	8/17/2000		15 - 30	55 *UJ*		55 *UJ*	290 *UJ*	290 *UJ*	290 *UJ*	290 *UJ*
ONON2A	SF0050	S372	8/11/2000		0 - 15	57 *U*		57 *U*	290 *U*	290 *U*	290 *U*	290 *U*
ONON2A	SF0039	S372	8/17/2000	D1	15 - 30	55 *UJ*		55 *UJ*	280 *UJ*	280 *UJ*	280 *UJ*	280 *UJ*
ONON2A	SF0165	S372	8/17/2000	D2	15 - 30	54 *UJ*		54 *UJ*	280 *UJ*	280 *UJ*	280 *UJ*	280 *UJ*

Table A-2C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	2,4-Dinitro-phenol (µg/kg)	2,4-Dinitro-toluene (µg/kg)	2,6-Dinitro-toluene (µg/kg)	2-Chloro-naphthalene (µg/kg)	2-Chloro-phenol (µg/kg)	2-Methyl-4,6-dinitrophenol (µg/kg)	2-Methyl-naphthalene (µg/kg)	2-Methyl-phenol (µg/kg)
ONON2A	SF0005	S357	8/16/2000		15 - 30	1,500 *UJ*	290 *UJ*	290 *UJ*	57 *UJ*	57 *UJ*	1,500 *UJ*	57 *UJ*	57 *UJ*
ONON2A	SF0008	S359	8/16/2000		0 - 15	1,300 *UJ*	250 *UJ*	250 *UJ*	49 *UJ*	49 *UJ*	1,300 *UJ*	49 *UJ*	49 *UJ*
ONON2A	SF0009	S359	8/16/2000		15 - 30	1,200 *U*	250 *U*	250 *U*	48 *U*	48 *U*	1,200 *U*	48 *U*	48 *U*
ONON2A	SF0010	S360	8/16/2000	D1	0 - 2	1,500 *UJ*	300 *UJ*	300 *UJ*	59 *UJ*	59 *UJ*	1,500 *UJ*	59 *UJ*	59 *UJ*
ONON2A	SF0066	S360	8/16/2000	D2	0 - 2	1,500 *UJ*	300 *UJ*	300 *UJ*	58 *UJ*	58 *UJ*	1,500 *UJ*	58 *UJ*	58 *UJ*
ONON2A	SF0012	S360	8/16/2000	D1	15 - 30	1,400 *UJ*	290 *U*	290 *U*	56 *U*	56 *UJ*	1,400 *UJ*	56 *U*	410 *J*
ONON2A	SF0169	S360	8/16/2000	D2	15 - 30	1,400 *UJ*	290 *UJ*	290 *UJ*	56 *UJ*	56 *UJ*	1,400 *UJ*	56 *UJ*	320 *J*
ONON2A	SF0011	S360	8/16/2000	D1	2 - 15	1,600 *U*	310 *U*	310 *U*	61 *U*	61 *U*	1,600 *U*	61 *U*	220
ONON2A	SF0164	S360	8/16/2000	D2	2 - 15	1,500 *UJ*	300 *UJ*	300 *UJ*	58 *UJ*	58 *UJ*	1,500 *UJ*	58 *UJ*	250 *J*
ONON2A	SF0013	S361	8/15/2000	D1	0 - 15	1,400 *UJ*	290 *U*	290 *U*	56 *U*	56 *U*	1,400 *U*	56 *U*	56 *U*
ONON2A	SF0163	S361	8/15/2000	D2	0 - 15	1,400 *U*	290 *U*	290 *U*	56 *U*	56 *U*	1,400 *U*	56 *U*	56 *U*
ONON2A	SF0014	S361	8/15/2000		15 - 30	2,000 *UJ*	380 *UJ*	380 *UJ*	74 *UJ*	74 *UJ*	2,000 *UJ*	74 *UJ*	74 *UJ*
ONON2A	SF0015	S362	8/15/2000		0 - 15	1,400 *UJ*	270 *U*	270 *U*	53 *U*	53 *U*	1,400 *U*	53 *U*	53 *U*
ONON2A	SF0016	S362	8/15/2000		15 - 30	1,500 *UJ*	300 *U*	300 *U*	58 *U*	58 *UJ*	1,500 *UJ*	58 *U*	120 *J*
ONON2A	SF0017	S363	8/15/2000		0 - 2	1,300 *UJ*	260 *UJ*	260 *UJ*	51 *UJ*	51 *UJ*	1,300 *UJ*	51 *UJ*	51 *UJ*
ONON2A	SF0019	S363	8/15/2000		15 - 30	7,600 *UJ*	1,500 *U*	1,500 *U*	300 *U*	300 *U*	7,600 *U*	300 *U*	300 *U*
ONON2A	SF0018	S363	8/15/2000	D1	2 - 15	18,000 *U*	3,500 *U*	3,500 *U*	680 *U*	680 *U*	18,000 *U*	680 *U*	680 *U*
ONON2A	SF0175	S363	8/15/2000	D2	2 - 15	1,700 *U*	350 *U*	350 *U*	68 *U*	68 *U*	1,700 *U*	68 *U*	68 *U*
ONON2A	SF0031	S369	8/15/2000		0 - 15	1,500 *U*	290 *U*	290 *U*	57 *U*	57 *U*	1,500 *U*	57 *U*	57 *U*
ONON2A	SF0032	S369	8/15/2000		15 - 30	1,500 *U*	300 *U*	300 *U*	59 *U*	59 *U*	1,500 *U*	59 *U*	59 *U*
ONON2A	SF0033	S370	8/17/2000		0 - 2	1,400 *UJ*	280 *UJ*	280 *UJ*	55 *UJ*	55 *UJ*	1,400 *UJ*	55 *UJ*	55 *UJ*
ONON2A	SF0034	S370	8/17/2000		2 - 15	1,300 *UJ*	260 *UJ*	260 *UJ*	51 *UJ*	51 *UJ*	1,300 *UJ*	51 *UJ*	51 *UJ*
ONON2A	SF0035	S370	8/17/2000		15 - 30	1,400 *UJ*	290 *UJ*	290 *UJ*	55 *UJ*	55 *UJ*	1,400 *UJ*	55 *UJ*	55 *UJ*
ONON2A	SF0050	S372	8/11/2000		0 - 15	1,500 *UJ*	290 *U*	290 *U*	57 *U*	57 *U*	1,500 *U*	57 *U*	57 *U*
ONON2A	SF0039	S372	8/17/2000	D1	15 - 30	1,400 *UJ*	280 *UJ*	280 *UJ*	55 *UJ*	55 *UJ*	1,400 *UJ*	55 *UJ*	55 *UJ*
ONON2A	SF0165	S372	8/17/2000	D2	15 - 30	1,400 *UJ*	280 *UJ*	280 *UJ*	54 *UJ*	54 *UJ*	1,400 *UJ*	54 *UJ*	54 *UJ*

Table A-2C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	2-Nitro-aniline (µg/kg)	2-Nitro-phenol (µg/kg)	3,3-Dichloro-benzidine (µg/kg)	3-Nitroaniline (µg/kg)	4-Bromo-phenyl-phenyl ether (µg/kg)	4-Chloro-3-methyl phenol (µg/kg)	4-Chloro-aniline (µg/kg)
ONON2A	SF0005	S357	8/16/2000		15 - 30	120 *UJ*	290 *UJ*	57 *UJ*	1,500 *UJ*	57 *UJ*	290 *UJ*	57 *UJ*
ONON2A	SF0008	S359	8/16/2000		0 - 15	100 *UJ*	250 *UJ*	49 *UJ*	1,300 *UJ*	49 *UJ*	250 *UJ*	49 *UJ*
ONON2A	SF0009	S359	8/16/2000		15 - 30	97 *U*	250 *U*	48 *U*	1,200 *U*	48 *U*	250 *U*	48 *U*
ONON2A	SF0010	S360	8/16/2000	D1	0 - 2	120 *UJ*	300 *UJ*	59 *UJ*	1,500 *UJ*	59 *UJ*	300 *UJ*	59 *UJ*
ONON2A	SF0066	S360	8/16/2000	D2	0 - 2	120 *UJ*	300 *UJ*	58 *UJ*	1,500 *UJ*	58 *UJ*	300 *UJ*	58 *UJ*
ONON2A	SF0012	S360	8/16/2000	D1	15 - 30	110 *U*	290 *UJ*	56 *U*	1,400 *U*	56 *U*	290 *UJ*	56 *U*
ONON2A	SF0169	S360	8/16/2000	D2	15 - 30	110 *UJ*	290 *UJ*	56 *UJ*	1,400 *UJ*	56 *UJ*	290 *UJ*	56 *UJ*
ONON2A	SF0011	S360	8/16/2000	D1	2 - 15	120 *U*	310 *U*	61 *U*	1,600 *U*	61 *U*	310 *U*	61 *U*
ONON2A	SF0164	S360	8/16/2000	D2	2 - 15	120 *UJ*	300 *UJ*	58 *UJ*	1,500 *UJ*	58 *UJ*	300 *UJ*	58 *UJ*
ONON2A	SF0013	S361	8/15/2000	D1	0 - 15	110 *U*	290 *U*	56 *U*	1,400 *U*	56 *U*	290 *U*	56 *U*
ONON2A	SF0163	S361	8/15/2000	D2	0 - 15	110 *U*	290 *U*	56 *U*	1,400 *U*	56 *U*	290 *U*	56 *U*
ONON2A	SF0014	S361	8/15/2000		15 - 30	150 *UJ*	380 *UJ*	74 *UJ*	2,000 *UJ*	74 *UJ*	380 *UJ*	74 *UJ*
ONON2A	SF0015	S362	8/15/2000		0 - 15	110 *U*	270 *U*	53 *U*	1,400 *U*	53 *U*	270 *U*	53 *U*
ONON2A	SF0016	S362	8/15/2000		15 - 30	120 *U*	300 *UJ*	58 *U*	1,500 *U*	58 *U*	300 *UJ*	58 *U*
ONON2A	SF0017	S363	8/15/2000		0 - 2	100 *UJ*	260 *UJ*	51 *UJ*	1,300 *UJ*	51 *UJ*	260 *UJ*	51 *UJ*
ONON2A	SF0019	S363	8/15/2000		15 - 30	600 *U*	1,500 *U*	300 *U*	7,600 *U*	300 *U*	1,500 *U*	300 *U*
ONON2A	SF0018	S363	8/15/2000	D1	2 - 15	1,400 *U*	3,500 *U*	680 *U*	18,000 *U*	680 *U*	3,500 *U*	680 *U*
ONON2A	SF0175	S363	8/15/2000	D2	2 - 15	140 *U*	350 *U*	68 *U*	1,700 *U*	68 *U*	350 *U*	68 *U*
ONON2A	SF0031	S369	8/15/2000		0 - 15	120 *U*	290 *U*	57 *U*	1,500 *U*	57 *U*	290 *U*	57 *U*
ONON2A	SF0032	S369	8/15/2000		15 - 30	120 *U*	300 *U*	59 *U*	1,500 *U*	59 *U*	300 *U*	59 *U*
ONON2A	SF0033	S370	8/17/2000		0 - 2	110 *UJ*	280 *UJ*	55 *UJ*	1,400 *UJ*	55 *UJ*	280 *UJ*	55 *UJ*
ONON2A	SF0034	S370	8/17/2000		2 - 15	100 *UJ*	260 *UJ*	51 *UJ*	1,300 *UJ*	51 *UJ*	260 *UJ*	51 *UJ*
ONON2A	SF0035	S370	8/17/2000		15 - 30	110 *UJ*	290 *UJ*	55 *UJ*	1,400 *UJ*	55 *UJ*	290 *UJ*	55 *UJ*
ONON2A	SF0050	S372	8/11/2000		0 - 15	120 *U*	290 *U*	57 *UJ*	1,500 *U*	57 *U*	290 *U*	57 *UJ*
ONON2A	SF0039	S372	8/17/2000	D1	15 - 30	110 *UJ*	280 *UJ*	55 *UJ*	1,400 *UJ*	55 *UJ*	280 *UJ*	55 *UJ*
ONON2A	SF0165	S372	8/17/2000	D2	15 - 30	110 *UJ*	280 *UJ*	54 *UJ*	1,400 *UJ*	54 *UJ*	280 *UJ*	54 *UJ*

Table A-2C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	4-Chloro-phenyl-phenyl ether (µg/kg)	4-Methyl-phenol (µg/kg)	4-Nitro-aniline (µg/kg)	4-Nitro-phenol (µg/kg)	Acenaph-thene (µg/kg)	Acenaph-thylene (µg/kg)	Anthracene (µg/kg)	Benz(a)ant hracene (µg/kg)	Benzo(a) pyrene (µg/kg)
ONON2A	SF0005	S357	8/16/2000		15 - 30	57 *UJ*	57 *UJ*	1,500 *UJ*	1,500 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*
ONON2A	SF0008	S359	8/16/2000		0 - 15	49 *UJ*	49 *UJ*	1,300 *UJ*	1,300 *UJ*	49 *UJ*	49 *UJ*	93 *J*	230 *J*	200 *J*
ONON2A	SF0009	S359	8/16/2000		15 - 30	48 *U*	77	1,200 *U*	1,200 *U*	48 *U*	48 *U*	92	230	230
ONON2A	SF0010	S360	8/16/2000	D1	0 - 2	59 *UJ*	59 *UJ*	1,500 *UJ*	1,500 *UJ*	59 *UJ*	59 *UJ*	59 *UJ*	110 *J*	130 *J*
ONON2A	SF0066	S360	8/16/2000	D2	0 - 2	58 *UJ*	58 *UJ*	1,500 *UJ*	1,500 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	110 *J*	120 *J*
ONON2A	SF0012	S360	8/16/2000	D1	15 - 30	56 *U*	2,100 *J*	1,400 *U*	1,400 *UJ*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*
ONON2A	SF0169	S360	8/16/2000	D2	15 - 30	56 *UJ*	1,600 *J*	1,400 *UJ*	1,400 *UJ*	56 *UJ*	56 *UJ*	56 *UJ*	56 *UJ*	56 *UJ*
ONON2A	SF0011	S360	8/16/2000	D1	2 - 15	61 *U*	1,000	1,600 *U*	1,600 *U*	61 *U*	61 *U*	61 *U*	78	95
ONON2A	SF0164	S360	8/16/2000	D2	2 - 15	58 *UJ*	1,100 *J*	1,500 *UJ*	1,500 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*
ONON2A	SF0013	S361	8/15/2000	D1	0 - 15	56 *U*	56 *U*	1,400 *U*	1,400 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*
ONON2A	SF0163	S361	8/15/2000	D2	0 - 15	56 *U*	56 *U*	1,400 *U*	1,400 *U*	56 *U*	56 *U*	56 *U*	59	56 *U*
ONON2A	SF0014	S361	8/15/2000		15 - 30	74 *UJ*	74 *UJ*	2,000 *UJ*	2,000 *UJ*	74 *UJ*	74 *UJ*	74 *UJ*	74 *UJ*	74 *UJ*
ONON2A	SF0015	S362	8/15/2000		0 - 15	53 *U*	53 *U*	1,400 *U*	1,400 *U*	53 *U*	53 *U*	53 *U*	53 *U*	53 *U*
ONON2A	SF0016	S362	8/15/2000		15 - 30	58 *U*	610 *J*	1,500 *U*	1,500 *UJ*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*
ONON2A	SF0017	S363	8/15/2000		0 - 2	51 *UJ*	51 *UJ*	1,300 *UJ*	1,300 *UJ*	51 *UJ*	51 *UJ*	51 *UJ*	51 *UJ*	51 *UJ*
ONON2A	SF0019	S363	8/15/2000		15 - 30	300 *U*	300	7,600 *U*	7,600 *U*	300 *U*	300 *U*	300 *U*	300 *U*	300 *U*
ONON2A	SF0018	S363	8/15/2000	D1	2 - 15	680 *U*	680 *U*	18,000 *U*	18,000 *U*	680 *U*	680 *U*	680 *U*	680 *U*	680 *U*
ONON2A	SF0175	S363	8/15/2000	D2	2 - 15	68 *U*	68 *U*	1,700 *U*	1,700 *U*	68 *U*	68 *U*	68 *U*	68 *U*	68 *U*
ONON2A	SF0031	S369	8/15/2000		0 - 15	57 *U*	57 *U*	1,500 *U*	1,500 *U*	57 *U*	57 *U*	57 *U*	57 *U*	57 *U*
ONON2A	SF0032	S369	8/15/2000		15 - 30	59 *U*	59 *U*	1,500 *U*	1,500 *U*	59 *U*	59 *U*	59 *U*	59 *U*	59 *U*
ONON2A	SF0033	S370	8/17/2000		0 - 2	55 *UJ*	55 *UJ*	1,400 *UJ*	1,400 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	58 *J*
ONON2A	SF0034	S370	8/17/2000		2 - 15	51 *UJ*	51 *UJ*	1,300 *UJ*	1,300 *UJ*	51 *UJ*	51 *UJ*	51 *UJ*	51 *UJ*	51 *UJ*
ONON2A	SF0035	S370	8/17/2000		15 - 30	55 *UJ*	55 *UJ*	1,400 *UJ*	1,400 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*
ONON2A	SF0050	S372	8/11/2000		0 - 15	57 *U*	57 *U*	1,500 *U*	1,500 *U*	57 *U*	57 *U*	57 *U*	57 *U*	57 *U*
ONON2A	SF0039	S372	8/17/2000	D1	15 - 30	55 *UJ*	55 *UJ*	1,400 *UJ*	1,400 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*
ONON2A	SF0165	S372	8/17/2000	D2	15 - 30	54 *UJ*	54 *UJ*	1,400 *UJ*	1,400 *UJ*	54 *UJ*	54 *UJ*	54 *UJ*	54 *UJ*	54 *UJ*

Table A-2C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Benzo(b) fluoranthene (µg/kg)	Benzo(g,h,i) perylene (µg/kg)	Benzo(k) fluoranthene (µg/kg)	Benzyl Alcohol (µg/kg)	Bis(2-chloroethoxy) methane (µg/kg)	Bis(2-chloroethyl) ether (µg/kg)	Bis(2-ethyl hexyl) phthalate (µg/kg)	Butylbenzyl phthalate (µg/kg)
ONON2A	SF0005	S357	8/16/2000		15 - 30	57 *UJ*	57 *UJ*	57 *UJ*	290 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*
ONON2A	SF0008	S359	8/16/2000		0 - 15	170 *J*	110 *J*	170 *J*	250 *UJ*	49 *UJ*	49 *UJ*	49 *UJ*	49 *UJ*
ONON2A	SF0009	S359	8/16/2000		15 - 30	200	150	200	250 *U*	48 *U*	48 *U*	77 *U*	48 *U*
ONON2A	SF0010	S360	8/16/2000	D1	0 - 2	120 *J*	85 *J*	120 *J*	300 *UJ*	59 *UJ*	59 *UJ*	120 *UJ*	59 *UJ*
ONON2A	SF0066	S360	8/16/2000	D2	0 - 2	120 *J*	89 *J*	110 *J*	300 *UJ*	58 *UJ*	58 *UJ*	100 *UJ*	58 *UJ*
ONON2A	SF0012	S360	8/16/2000	D1	15 - 30	56 *U*	56 *U*	56 *U*	290 *UJ*	56 *U*	56 *U*	56 *U*	56 *U*
ONON2A	SF0169	S360	8/16/2000	D2	15 - 30	56 *UJ*	56 *UJ*	56 *UJ*	290 *UJ*	56 *UJ*	56 *UJ*	56 *UJ*	56 *UJ*
ONON2A	SF0011	S360	8/16/2000	D1	2 - 15	89	66	93	310 *U*	61 *U*	61 *U*	100 *U*	61 *U*
ONON2A	SF0164	S360	8/16/2000	D2	2 - 15	58 *UJ*	58 *UJ*	58 *UJ*	300 *UJ*	58 *UJ*	58 *UJ*	110 *UJ*	58 *UJ*
ONON2A	SF0013	S361	8/15/2000	D1	0 - 15	56 *U*	56 *U*	56 *U*	290 *U*	56 *U*	56 *U*	56 *U*	56 *U*
ONON2A	SF0163	S361	8/15/2000	D2	0 - 15	56 *U*	56 *U*	56 *U*	290 *U*	56 *U*	56 *U*	56 *U*	56 *U*
ONON2A	SF0014	S361	8/15/2000		15 - 30	74 *UJ*	74 *UJ*	74 *UJ*	380 *UJ*	74 *UJ*	74 *UJ*	74 *UJ*	74 *UJ*
ONON2A	SF0015	S362	8/15/2000		0 - 15	53 *U*	53 *U*	53 *U*	270 *U*	53 *U*	53 *U*	53 *U*	53 *U*
ONON2A	SF0016	S362	8/15/2000		15 - 30	58 *U*	58 *U*	58 *U*	300 *UJ*	58 *U*	58 *U*	58 *U*	58 *U*
ONON2A	SF0017	S363	8/15/2000		0 - 2	51 *UJ*	51 *UJ*	51 *UJ*	260 *UJ*	51 *UJ*	51 *UJ*	74 *UJ*	51 *UJ*
ONON2A	SF0019	S363	8/15/2000		15 - 30	300 *U*	300 *U*	300 *U*	1,500 *U*	300 *U*	300 *U*	300 *U*	300 *U*
ONON2A	SF0018	S363	8/15/2000	D1	2 - 15	680 *U*	680 *U*	680 *U*	3,500 *U*	680 *U*	680 *U*	680 *U*	680 *U*
ONON2A	SF0175	S363	8/15/2000	D2	2 - 15	68 *U*	68 *U*	68 *U*	350 *U*	68 *U*	68 *U*	68 *U*	68 *U*
ONON2A	SF0031	S369	8/15/2000		0 - 15	57 *U*	57 *U*	57 *U*	290 *U*	57 *U*	57 *U*	57 *U*	57 *U*
ONON2A	SF0032	S369	8/15/2000		15 - 30	59 *U*	59 *U*	59 *U*	300 *U*	59 *U*	59 *U*	59 *U*	59 *U*
ONON2A	SF0033	S370	8/17/2000		0 - 2	55 *UJ*	55 *UJ*	55 *UJ*	280 *UJ*	55 *UJ*	55 *UJ*	62 *J*	55 *UJ*
ONON2A	SF0034	S370	8/17/2000		2 - 15	51 *UJ*	51 *UJ*	51 *UJ*	260 *UJ*	51 *UJ*	51 *UJ*	55 *J*	51 *UJ*
ONON2A	SF0035	S370	8/17/2000		15 - 30	55 *UJ*	55 *UJ*	55 *UJ*	290 *UJ*	55 *UJ*	55 *UJ*	57 *J*	55 *UJ*
ONON2A	SF0050	S372	8/11/2000		0 - 15	57 *U*	57 *U*	57 *U*	290 *U*	57 *U*	57 *U*	100	57 *U*
ONON2A	SF0039	S372	8/17/2000	D1	15 - 30	55 *UJ*	55 *UJ*	55 *UJ*	280 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*
ONON2A	SF0165	S372	8/17/2000	D2	15 - 30	54 *UJ*	54 *UJ*	54 *UJ*	280 *UJ*	54 *UJ*	54 *UJ*	64 *J*	54 *UJ*

Table A-2C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Carbazole (µg/kg)	Chrysene (µg/kg)	Dibenz(a,h) anthracene (µg/kg)	Dibenzofuran (µg/kg)	Diethyl phthalate (µg/kg)	Dimethyl phthalate (µg/kg)	Di-n-butyl phthalate (µg/kg)	Di-n-octyl phthalate (µg/kg)
ONON2A	SF0005	S357	8/16/2000		15 - 30	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*
ONON2A	SF0008	S359	8/16/2000		0 - 15	56 *J*	270 *J*	49 *UJ*	49 *UJ*	49 *UJ*	49 *UJ*	49 *UJ*	49 *UJ*
ONON2A	SF0009	S359	8/16/2000		15 - 30	48 *U*	250	53	48 *U*	48 *U*	48 *U*	48 *U*	48 *U*
ONON2A	SF0010	S360	8/16/2000	D1	0 - 2	59 *UJ*	150 *J*	59 *UJ*	59 *UJ*	59 *UJ*	59 *UJ*	59 *UJ*	59 *UJ*
ONON2A	SF0066	S360	8/16/2000	D2	0 - 2	58 *UJ*	140 *J*	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*
ONON2A	SF0012	S360	8/16/2000	D1	15 - 30	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*
ONON2A	SF0169	S360	8/16/2000	D2	15 - 30	56 *UJ*	56 *UJ*	56 *UJ*	56 *UJ*	56 *UJ*	56 *UJ*	56 *UJ*	56 *UJ*
ONON2A	SF0011	S360	8/16/2000	D1	2 - 15	61 *U*	110	61 *U*	61 *U*	61 *U*	61 *U*	61 *U*	61 *U*
ONON2A	SF0164	S360	8/16/2000	D2	2 - 15	58 *UJ*	60 *J*	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*
ONON2A	SF0013	S361	8/15/2000	D1	0 - 15	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*
ONON2A	SF0163	S361	8/15/2000	D2	0 - 15	56 *U*	63	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*
ONON2A	SF0014	S361	8/15/2000		15 - 30	74 *UJ*	74 *UJ*	74 *UJ*	74 *UJ*	74 *UJ*	74 *UJ*	74 *UJ*	74 *UJ*
ONON2A	SF0015	S362	8/15/2000		0 - 15	53 *U*	53 *U*	53 *U*	53 *U*	53 *U*	53 *U*	53 *U*	53 *U*
ONON2A	SF0016	S362	8/15/2000		15 - 30	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*
ONON2A	SF0017	S363	8/15/2000		0 - 2	51 *UJ*	51 *UJ*	51 *UJ*	51 *UJ*	51 *UJ*	51 *UJ*	51 *UJ*	51 *UJ*
ONON2A	SF0019	S363	8/15/2000		15 - 30	300 *U*	300 *U*	300 *U*	300 *U*	300 *U*	300 *U*	300 *U*	300 *U*
ONON2A	SF0018	S363	8/15/2000	D1	2 - 15	680 *U*	680 *U*	680 *U*	680 *U*	680 *U*	680 *U*	680 *U*	680 *U*
ONON2A	SF0175	S363	8/15/2000	D2	2 - 15	68 *U*	68 *U*	68 *U*	68 *U*	68 *U*	68 *U*	68 *U*	68 *U*
ONON2A	SF0031	S369	8/15/2000		0 - 15	57 *U*	57 *U*	57 *U*	57 *U*	57 *U*	57 *U*	74 *U*	57 *U*
ONON2A	SF0032	S369	8/15/2000		15 - 30	59 *U*	59 *U*	59 *U*	59 *U*	59 *U*	59 *U*	59 *U*	59 *U*
ONON2A	SF0033	S370	8/17/2000		0 - 2	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*
ONON2A	SF0034	S370	8/17/2000		2 - 15	51 *UJ*	51 *UJ*	51 *UJ*	51 *UJ*	51 *UJ*	51 *UJ*	51 *UJ*	51 *UJ*
ONON2A	SF0035	S370	8/17/2000		15 - 30	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*
ONON2A	SF0050	S372	8/11/2000		0 - 15	57 *U*	57 *U*	57 *U*	57 *U*	57 *U*	57 *U*	57 *U*	57 *U*
ONON2A	SF0039	S372	8/17/2000	D1	15 - 30	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*
ONON2A	SF0165	S372	8/17/2000	D2	15 - 30	54 *UJ*	54 *UJ*	54 *UJ*	54 *UJ*	54 *UJ*	54 *UJ*	54 *UJ*	54 *UJ*

Table A-2C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Fluoranthene (µg/kg)	Fluorene (µg/kg)	Hexachlorobenzene (GC/ECD) (µg/kg)	Hexachlorobenzene (GC/MS) (µg/kg)	Final HCB Value (µg/kg)
ONON2A	SF0005	S357	8/16/2000		15 - 30	57 *UJ*	57 *UJ*	1.09 *UJ*	57 *UJ*	1.09 *UJ*
ONON2A	SF0008	S359	8/16/2000		0 - 15	610 *J*	49 *UJ*	10 *J*	49 *UJ*	10 *J*
ONON2A	SF0009	S359	8/16/2000		15 - 30	510	48 *U*	8.42 *J*	48 *U*	8.42 *J*
ONON2A	SF0010	S360	8/16/2000	D1	0 - 2	260 *J*	59 *UJ*	247 *J*	59 *UJ*	153 [1]
ONON2A	SF0066	S360	8/16/2000	D2	0 - 2	250 *J*	58 *UJ*	16.6 *J*	58 *UJ*	16.6 *J*
ONON2A	SF0012	S360	8/16/2000	D1	15 - 30	80	56 *U*	1.08 *UJ*	56 *U*	1.08 *UJ*
ONON2A	SF0169	S360	8/16/2000	D2	15 - 30	56 *UJ*	56 *UJ*	1.07 *UJ*	56 *UJ*	1.07 *UJ*
ONON2A	SF0011	S360	8/16/2000	D1	2 - 15	190	61 *U*	64.2 *J*	61 *U*	62.6 [1]
ONON2A	SF0164	S360	8/16/2000	D2	2 - 15	100 *J*	58 *UJ*	3.52 *J*	58 *UJ*	3.52 *J*
ONON2A	SF0013	S361	8/15/2000	D1	0 - 15	56 *U*	56 *U*	1.09 *UJ*	56 *U*	1.09 *UJ*
ONON2A	SF0163	S361	8/15/2000	D2	0 - 15	90	56 *U*	1.04 *U*	56 *U*	1.04 *U*
ONON2A	SF0014	S361	8/15/2000		15 - 30	74 *UJ*	74 *UJ*	1.02 *UJ*	74 *UJ*	1.02 *UJ*
ONON2A	SF0015	S362	8/15/2000		0 - 15	53 *U*	53 *U*	1.07 *UJ*	53 *U*	1.07 *UJ*
ONON2A	SF0016	S362	8/15/2000		15 - 30	58 *U*	58 *U*	1.05 *UJ*	58 *U*	1.05 *UJ*
ONON2A	SF0017	S363	8/15/2000		0 - 2	51 *UJ*	51 *UJ*	4.33	51 *UJ*	4.33 *J*
ONON2A	SF0019	S363	8/15/2000		15 - 30	300 *U*	300 *U*	1.08 *UJ*	300 *U*	1.08 *UJ*
ONON2A	SF0018	S363	8/15/2000	D1	2 - 15	680 *U*	680 *U*	1.08 *UJ*	680 *U*	1.08 *UJ*
ONON2A	SF0175	S363	8/15/2000	D2	2 - 15	93	68 *U*	1.08 *U*	68 *U*	1.08 *U*
ONON2A	SF0031	S369	8/15/2000		0 - 15	57 *U*	57 *U*	1.07 *U*	57 *U*	1.07 *U*
ONON2A	SF0032	S369	8/15/2000		15 - 30	59 *U*	59 *U*	1.07 *U*	59 *U*	1.07 *U*
ONON2A	SF0033	S370	8/17/2000		0 - 2	72 *J*	55 *UJ*	*R*	55 *UJ*	55 *UJ*
ONON2A	SF0034	S370	8/17/2000		2 - 15	73 *J*	51 *UJ*	1.1 *UJ*	51 *UJ*	1.1 *UJ*
ONON2A	SF0035	S370	8/17/2000		15 - 30	55 *UJ*	55 *UJ*	*R*	55 *UJ*	55 *UJ*
ONON2A	SF0050	S372	8/11/2000		0 - 15	57 *U*	57 *U*	1.06 *UJ*	57 *U*	1.06 *UJ*
ONON2A	SF0039	S372	8/17/2000	D1	15 - 30	55 *UJ*	55 *UJ*	*R*	55 *UJ*	55 *UJ*
ONON2A	SF0165	S372	8/17/2000	D2	15 - 30	54 *UJ*	54 *UJ*	*R*	54 *UJ*	54 *UJ*

Table A-2C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Hexachloro butadiene (µg/kg)	Hexachloro-cyclopentadiene (µg/kg)	Hexachloro-ethane (µg/kg)	Indeno(1,2,3-cd) pyrene (µg/kg)	Isophorone (µg/kg)	Naphthalene (µg/kg)	Nitrobenzene (µg/kg)
ONON2A	SF0005	S357	8/16/2000		15 - 30	57 *UJ*	290 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*
ONON2A	SF0008	S359	8/16/2000		0 - 15	49 *UJ*	250 *UJ*	49 *UJ*	100 *J*	49 *UJ*	49 *UJ*	49 *UJ*
ONON2A	SF0009	S359	8/16/2000		15 - 30	48 *U*	250 *U*	48 *U*	140	48 *U*	48 *U*	48 *U*
ONON2A	SF0010	S360	8/16/2000	D1	0 - 2	59 *UJ*	300 *UJ*	59 *UJ*	80 *J*	59 *UJ*	59 *UJ*	59 *UJ*
ONON2A	SF0066	S360	8/16/2000	D2	0 - 2	58 *UJ*	300 *UJ*	58 *UJ*	82 *J*	58 *UJ*	58 *UJ*	58 *UJ*
ONON2A	SF0012	S360	8/16/2000	D1	15 - 30	56 *U*	290 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*
ONON2A	SF0169	S360	8/16/2000	D2	15 - 30	56 *UJ*	290 *UJ*	56 *UJ*	56 *UJ*	56 *UJ*	56 *UJ*	56 *UJ*
ONON2A	SF0011	S360	8/16/2000	D1	2 - 15	61 *U*	310 *U*	61 *U*	61 *U*	61 *U*	61 *U*	61 *U*
ONON2A	SF0164	S360	8/16/2000	D2	2 - 15	58 *UJ*	300 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*
ONON2A	SF0013	S361	8/15/2000	D1	0 - 15	56 *U*	290 *UJ*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*
ONON2A	SF0163	S361	8/15/2000	D2	0 - 15	56 *U*	290 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*
ONON2A	SF0014	S361	8/15/2000		15 - 30	74 *UJ*	380 *UJ*	74 *UJ*	74 *UJ*	74 *UJ*	74 *UJ*	74 *UJ*
ONON2A	SF0015	S362	8/15/2000		0 - 15	53 *U*	270 *UJ*	53 *U*	53 *U*	53 *U*	53 *U*	53 *U*
ONON2A	SF0016	S362	8/15/2000		15 - 30	58 *U*	300 *UJ*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*
ONON2A	SF0017	S363	8/15/2000		0 - 2	51 *UJ*	260 *UJ*	51 *UJ*	51 *UJ*	51 *UJ*	3,100 *J*	51 *UJ*
ONON2A	SF0019	S363	8/15/2000		15 - 30	300 *U*	1,500 *UJ*	300 *U*	300 *U*	300 *U*	14,000	300 *U*
ONON2A	SF0018	S363	8/15/2000	D1	2 - 15	680 *U*	3,500 *U*	680 *U*	680 *U*	680 *U*	22,000	680 *U*
ONON2A	SF0175	S363	8/15/2000	D2	2 - 15	68 *U*	350 *U*	68 *U*	68 *U*	68 *U*	68 *U*	68 *U*
ONON2A	SF0031	S369	8/15/2000		0 - 15	57 *U*	290 *U*	57 *U*	57 *U*	57 *U*	57 *U*	57 *U*
ONON2A	SF0032	S369	8/15/2000		15 - 30	59 *U*	300 *U*	59 *U*	59 *U*	59 *U*	59 *U*	59 *U*
ONON2A	SF0033	S370	8/17/2000		0 - 2	55 *UJ*	280 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*
ONON2A	SF0034	S370	8/17/2000		2 - 15	51 *UJ*	260 *UJ*	51 *UJ*	51 *UJ*	51 *UJ*	51 *UJ*	51 *UJ*
ONON2A	SF0035	S370	8/17/2000		15 - 30	55 *UJ*	290 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*
ONON2A	SF0050	S372	8/11/2000		0 - 15	57 *U*	290 *U*	57 *U*	57 *U*	57 *U*	57 *U*	57 *U*
ONON2A	SF0039	S372	8/17/2000	D1	15 - 30	55 *UJ*	280 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*
ONON2A	SF0165	S372	8/17/2000	D2	15 - 30	54 *UJ*	280 *UJ*	54 *UJ*	54 *UJ*	54 *UJ*	54 *UJ*	54 *UJ*

Table A-2C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	N-Nitroso dimethylamine (µg/kg)	N-nitroso-di-n-propylamine (µg/kg)	N-Nitroso diphenylamine (µg/kg)	Pentachloro-benzene (µg/kg)	Pentachloro-phenol (µg/kg)	Phenanthrene (µg/kg)	Phenol (µg/kg)	Pyrene (µg/kg)
ONON2A	SF0005	S357	8/16/2000		15 - 30	290 *UJ*	57 *UJ*	57 *UJ*		1,500 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*
ONON2A	SF0008	S359	8/16/2000		0 - 15	250 *UJ*	49 *UJ*	49 *UJ*		1,300 *UJ*	450 *J*	49 *UJ*	480 *J*
ONON2A	SF0009	S359	8/16/2000		15 - 30	250 *U*	48 *U*	48 *U*		1,200 *U*	320	48 *U*	390
ONON2A	SF0010	S360	8/16/2000	D1	0 - 2	300 *UJ*	59 *UJ*	59 *UJ*		1,500 *UJ*	110 *J*	59 *UJ*	200 *J*
ONON2A	SF0066	S360	8/16/2000	D2	0 - 2	300 *UJ*	58 *UJ*	58 *UJ*		1,500 *UJ*	93 *J*	58 *UJ*	200 *J*
ONON2A	SF0012	S360	8/16/2000	D1	15 - 30	290 *U*	56 *U*	56 *U*		1,400 *UJ*	56 *U*	1100 *J*	73
ONON2A	SF0169	S360	8/16/2000	D2	15 - 30	290 *UJ*	56 *UJ*	56 *UJ*		1,400 *UJ*	56 *UJ*	890 *J*	56 *UJ*
ONON2A	SF0011	S360	8/16/2000	D1	2 - 15	310 *U*	61 *U*	61 *U*		1,600 *U*	61 *U*	540	150
ONON2A	SF0164	S360	8/16/2000	D2	2 - 15	300 *UJ*	58 *UJ*	58 *UJ*		1,500 *UJ*	58 *UJ*	630 *J*	87 *J*
ONON2A	SF0013	S361	8/15/2000	D1	0 - 15	290 *U*	56 *U*	56 *U*		1,400 *U*	56 *U*	56 *U*	56 *U*
ONON2A	SF0163	S361	8/15/2000	D2	0 - 15	290 *U*	56 *U*	56 *U*		1,400 *U*	56 *U*	56 *U*	100
ONON2A	SF0014	S361	8/15/2000		15 - 30	380 *UJ*	74 *UJ*	74 *UJ*		2,000 *UJ*	74 *UJ*	74 *UJ*	74 *UJ*
ONON2A	SF0015	S362	8/15/2000		0 - 15	270 *U*	53 *U*	53 *U*		1,400 *U*	53 *U*	53 *U*	53 *U*
ONON2A	SF0016	S362	8/15/2000		15 - 30	300 *U*	58 *U*	58 *U*		1,500 *UJ*	58 *U*	390 *J*	58 *U*
ONON2A	SF0017	S363	8/15/2000		0 - 2	260 *UJ*	51 *UJ*	51 *UJ*		1,300 *UJ*	51 *UJ*	510 *J*	51 *UJ*
ONON2A	SF0019	S363	8/15/2000		15 - 30	1,500 *U*	300 *U*	300 *U*		7,600 *U*	300 *U*	470	300 *U*
ONON2A	SF0018	S363	8/15/2000	D1	2 - 15	3,500 *U*	680 *U*	680 *U*		18,000 *U*	680 *U*	680 *U*	680 *U*
ONON2A	SF0175	S363	8/15/2000	D2	2 - 15	350 *U*	68 *U*	68 *U*		1,700 *U*	68 *U*	68 *U*	110
ONON2A	SF0031	S369	8/15/2000		0 - 15	290 *U*	57 *U*	57 *U*		1,500 *U*	57 *U*	57 *U*	57 *U*
ONON2A	SF0032	S369	8/15/2000		15 - 30	300 *U*	59 *U*	59 *U*		1,500 *U*	59 *U*	59 *U*	59 *U*
ONON2A	SF0033	S370	8/17/2000		0 - 2	280 *UJ*	55 *UJ*	55 *UJ*		1,400 *UJ*	55 *UJ*	55 *UJ*	64 *J*
ONON2A	SF0034	S370	8/17/2000		2 - 15	260 *UJ*	51 *UJ*	51 *UJ*		1,300 *UJ*	51 *UJ*	51 *UJ*	71 *J*
ONON2A	SF0035	S370	8/17/2000		15 - 30	290 *UJ*	55 *UJ*	55 *UJ*		1,400 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*
ONON2A	SF0050	S372	8/11/2000		0 - 15	290 *U*	57 *U*	57 *U*		1,500 *U*	57 *U*	57 *U*	57 *U*
ONON2A	SF0039	S372	8/17/2000	D1	15 - 30	280 *UJ*	55 *UJ*	55 *UJ*		1,400 *UJ*	55 *UJ*	55 *UJ*	55 *UJ*
ONON2A	SF0165	S372	8/17/2000	D2	15 - 30	280 *UJ*	54 *UJ*	54 *UJ*		1,400 *UJ*	54 *UJ*	54 *UJ*	54 *UJ*

Notes:

[1]When HCB results for the two methods were inconsistent, the average was taken

[2] Dichlorobenzene and trichlorobenzene are calculated parameters

J - estimated

U - not detected at reported quantitation limit

R - rejected datum

Table A-2D. Northern Basin Nearshore Sediments – Pesticide Data

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	4,4'-DDD (µg/kg)	4,4'-DDE (µg/kg)	4,4'-DDT (µg/kg)	Aldrin (µg/kg)	alpha-BHC (µg/kg)	beta-BHC (µg/kg)	delta-BHC (µg/kg)	gamma-BHC (Lindane) (µg/kg)	Dieldrin (µg/kg)	Endosulfan I (µg/kg)	Endosulfan II (µg/kg)
O-SEDCHM	S00020	S53	5/9/1992		0 - 30	9.1 *U*	9.1 *U*	9.1 *U*	4.7 *U*	4.7 *U*	4.7 *U*	4.7 *U*	4.7 *U*	9.1 *U*	4.7 *U*	9.1 *U*
O-SEDCHM	S00529	S53	7/27/1992		0 - 2	7.2 *U*	7.2 *U*	7.2 *U*	3.7 *U*	3.7 *U*	3.7 *U*	3.7 *U*	3.7 *U*	7.2 *U*	3.7 *U*	7.2 *U*
O-SEDCHM	S00067	S66	5/11/1992		0 - 30	5.4 *U*	5.4 *U*	5.4 *U*	2.8 *U*	2.8 *U*	2.8 *U*	2.8 *U*	2.8 *U*	5.4 *U*	2.8 *U*	5.4 *U*
O-SEDCHM	S00601	S66	8/10/1992		0 - 2	5.2 *U*	5.2 *U*	5.2 *U*	2.7 *U*	2.7 *U*	2.7 *U*	2.7 *U*	2.7 *U*	5.2 *U*	2.7 *U*	5.2 *U*
O-SEDCHM	S00023	S81	5/9/1992		0 - 30	6.2 *U*	6.2 *U*	6.2 *U*	3.2 *U*	3.2 *U*	3.2 *U*	3.2 *U*	3.2 *U*	6.2 *U*	3.2 *U*	6.2 *U*
O-SEDCHM	S00520	S81	7/24/1992		0 - 2	6.6 *U*	6.6 *U*	6.6 *U*	3.4 *U*	3.4 *U*	3.4 *U*	3.4 *U*	3.4 *U*	6.6 *U*	3.4 *U*	6.6 *U*
O-SEDCHM	S00032	S93	5/9/1992		0 - 30	5.9 *U*	5.9 *U*	5.9 *U*	3 *U*	3 *U*	3 *U*	3 *U*	3 *U*	5.9 *U*	3 *U*	5.9 *U*
O-SEDCHM	S00550	S93	7/31/1992		0 - 2	5.6 *U*	5.6 *U*	5.6 *U*	2.9 *U*	2.9 *U*	2.9 *U*	2.9 *U*	2.9 *U*	5.6 *U*	2.9 *U*	5.6 *U*
O-SEDCHM	S00059	S100	5/11/1992		0 - 30	6.9 *U*	6.9 *U*	6.9 *U*	3.5 *U*	3.5 *U*	3.5 *U*	3.5 *U*	3.5 *U*	6.9 *U*	3.5 *U*	6.9 *U*
O-SEDCHM	S00608	S100	8/11/1992		0 - 2	6.4 *U*	6.4 *U*	6.4 *U*	3.3 *U*	3.3 *U*	3.3 *U*	3.3 *U*	3.3 *U*	6.4 *U*	3.3 *U*	6.4 *U*
O-SEDCHM	S00029	S113	5/9/1992		0 - 30	5.6 *U*	5.6 *U*	5.6 *U*	2.9 *U*	2.9 *U*	2.9 *U*	2.9 *U*	2.9 *U*	5.6 *U*	2.9 *U*	5.6 *U*
O-SEDCHM	S00577	S113	8/5/1992		0 - 2	5.6 *U*	5.6 *U*	5.6 *U*	2.9 *U*	2.9 *U*	2.9 *U*	2.9 *U*	2.9 *U*	5.6 *U*	2.9 *U*	5.6 *U*
ONON2A	SF0052	S304	8/9/2000		0 - 15	1.06 *UJ*	1.06 *UJ*	1.48 *J*	1.06 *U*	1.06 *UJ*	1.06 *UJ*	*R*	1.06 *UJ*	1.27 *J*	1.06 *UJ*	1.06 *UJ*
ONON2A	SF0053	S304	8/9/2000		15 - 30	1 *UJ*	1 *UJ*	2.69 *J*	1 *U*	1 *UJ*	1 *UJ*	*R*	1 *UJ*	1 *U*	1 *UJ*	1 *UJ*
ONON2A	VC0212	S306	7/21/2000		0 - 15	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*
ONON2A	VC0213	S306	7/21/2000		15 - 30	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*
ONON2A	SF0001	S356	8/16/2000		0 - 15	*R*	1.06 *UJ*	*R*	1.06 *U*	1.06 *UJ*	1.06 *UJ*	*R*	*R*	1.06 *U*	1.06 *UJ*	*R*
ONON2A	SF0002	S356	8/16/2000		15 - 30	*R*	1.08 *UJ*	*R*	1.08 *U*	1.08 *UJ*	1.08 *UJ*	*R*	*R*	1.08 *U*	1.08 *UJ*	*R*
ONON2A	SF0003	S357	8/16/2000		0 - 2	*R*	1.06 *UJ*	*R*	1.06 *U*	1.06 *UJ*	1.06 *UJ*	*R*	*R*	1.06 *U*	1.06 *UJ*	*R*
ONON2A	SF0004	S357	8/16/2000		2 - 15	*R*	1.05 *UJ*	*R*	1.05 *U*	1.05 *UJ*	1.05 *UJ*	*R*	*R*	1.05 *U*	1.05 *UJ*	*R*
ONON2A	SF0005	S357	8/16/2000		15 - 30	*R*	1.09 *UJ*	*R*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*	*R*	*R*	1.09 *UJ*	1.09 *UJ*	*R*
ONON2A	SF0006	S358	8/16/2000		0 - 15	*R*	1.06 *UJ*	*R*	1.06 *UJ*	1.06 *UJ*	1.06 *UJ*	*R*	*R*	1.06 *UJ*	1.06 *UJ*	*R*
ONON2A	SF0007	S358	8/16/2000		15 - 30	*R*	1.61 *J*	*R*	1.04 *U*	1.04 *UJ*	1.04 *UJ*	*R*	*R*	1.04 *UJ*	1.04 *UJ*	*R*
ONON2A	SF0008	S359	8/16/2000		0 - 15	*R*	1.08 *UJ*	1.3 *J*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	*R*	*R*	1.34 *J*	1.08 *UJ*	*R*
ONON2A	SF0009	S359	8/16/2000		15 - 30	*R*	*R*	30.6 *J*	1.06 *UJ*	1.06 *UJ*	1.06 *UJ*	*R*	*R*	24.3 *J*	1.06 *UJ*	*R*
ONON2A	SF0010	S360	8/16/2000	D1	0 - 2	*R*	*R*	6.59 *J*	1.1 *UJ*	1.1 *UJ*	1.1 *UJ*	*R*	*R*	4.85 *J*	1.1 *UJ*	*R*
ONON2A	SF0066	S360	8/16/2000	D2	0 - 2	*R*	1.06 *UJ*	1.71 *J*	1.06 *UJ*	1.06 *UJ*	1.06 *UJ*	*R*	*R*	1.06 *UJ*	1.06 *UJ*	*R*
ONON2A	SF0012	S360	8/16/2000	D1	15 - 30	*R*	1.08 *UJ*	*R*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	*R*	*R*	1.08 *UJ*	1.08 *UJ*	*R*
ONON2A	SF0169	S360	8/16/2000	D2	15 - 30	*R*	1.07 *UJ*	*R*	1.07 *UJ*	1.07 *UJ*	1.07 *UJ*	*R*	*R*	1.07 *UJ*	1.07 *UJ*	*R*
ONON2A	SF0011	S360	8/16/2000	D1	2 - 15	*R*	1.09 *UJ*	1.62 *J*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*	*R*	*R*	1.09 *UJ*	1.09 *UJ*	*R*
ONON2A	SF0164	S360	8/16/2000	D2	2 - 15	*R*	1.08 *UJ*	*R*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	*R*	*R*	1.08 *UJ*	1.08 *UJ*	*R*
ONON2A	SF0013	S361	8/15/2000	D1	0 - 15	*R*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*	*R*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*	*R*
ONON2A	SF0163	S361	8/15/2000	D2	0 - 15	1.04 *UJ*	1.04 *UJ*	1.04 *UJ*	1.04 *U*	1.04 *UJ*	1.04 *U*	*R*	1.04 *UJ*	1.04 *U*	1.04 *UJ*	*R*

Table A-2D. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Endosulfan sulfate (µg/kg)	Endrin aldehyde (µg/kg)	Endrin ketone (µg/kg)	Endrin (µg/kg)	Heptachlor epoxide (µg/kg)	Heptachlor (µg/kg)	Methoxychlor (µg/kg)	Toxaphene (µg/kg)	alpha (cis) Chlordane (µg/kg)	gamma (trans)-Chlordane (µg/kg)	Total Chlordane[1] (µg/kg)
O-SEDCHM	S00020	S53	5/9/1992		0 - 30	9.1 *U*	9.1 *U*	9.1 *U*	9.1 *U*	4.7 *U*	4.7 *U*	47 *U*	470 *U*	4.7 *U*	4.7 *U*	4.7 *U*
O-SEDCHM	S00529	S53	7/27/1992		0 - 2	7.2 *U*	7.2 *U*	7.2 *U*	7.2 *U*	3.7 *U*	3.7 *U*	37 *U*	370 *U*	3.7 *U*	3.7 *U*	3.7 *U*
O-SEDCHM	S00067	S66	5/11/1992		0 - 30	5.4 *U*	5.4 *U*	5.4 *U*	5.4 *U*	2.8 *U*	2.8 *U*	28 *U*	280 *U*	2.8 *U*	2.8 *U*	2.8 *U*
O-SEDCHM	S00601	S66	8/10/1992		0 - 2	5.2 *U*	5.2 *U*	5.2 *U*	5.2 *U*	2.7 *U*	2.7 *U*	27 *U*	270 *U*	2.7 *U*	2.7 *U*	2.7 *U*
O-SEDCHM	S00023	S81	5/9/1992		0 - 30	6.2 *U*	6.2 *U*	6.2 *U*	6.2 *U*	3.2 *U*	3.2 *U*	32 *U*	320 *U*	3.2 *U*	3.2 *U*	3.2 *U*
O-SEDCHM	S00520	S81	7/24/1992		0 - 2	6.6 *U*	6.6 *U*	6.6 *U*	6.6 *U*	3.4 *U*	3.4 *U*	34 *U*	340 *U*	3.4 *U*	3.4 *U*	3.4 *U*
O-SEDCHM	S00032	S93	5/9/1992		0 - 30	5.9 *U*	5.9 *U*	5.9 *U*	5.9 *U*	3 *U*	3 *U*	30 *U*	300 *U*	3 *U*	3 *U*	3 *U*
O-SEDCHM	S00550	S93	7/31/1992		0 - 2	5.6 *U*	5.6 *U*	5.6 *U*	5.6 *U*	2.9 *U*	2.9 *U*	29 *U*	290 *U*	2.9 *U*	2.9 *U*	2.9 *U*
O-SEDCHM	S00059	S100	5/11/1992		0 - 30	6.9 *U*	6.9 *U*	6.9 *U*	6.9 *U*	3.5 *U*	3.5 *U*	35 *U*	350 *U*	3.5 *U*	3.5 *U*	3.5 *U*
O-SEDCHM	S00608	S100	8/11/1992		0 - 2	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*	3.3 *U*	3.3 *U*	33 *U*	330 *U*	3.3 *U*	3.3 *U*	3.3 *U*
O-SEDCHM	S00029	S113	5/9/1992		0 - 30	5.6 *U*	5.6 *U*	5.6 *U*	5.6 *U*	2.9 *U*	2.9 *U*	29 *U*	290 *U*	2.9 *U*	2.9 *U*	2.9 *U*
O-SEDCHM	S00577	S113	8/5/1992		0 - 2	5.6 *U*	5.6 *U*	5.6 *U*	5.6 *U*	2.9 *U*	2.9 *U*	29 *U*	290 *U*	2.9 *U*	2.9 *U*	2.9 *U*
ONON2A	SF0052	S304	8/9/2000		0 - 15	1.06 *UJ*	1.06 *UJ*	1.06 *UJ*	1.1 *U*	1.06 *U*	1.06 *U*	1.06 *UJ*	106 *U*	1.06 *UJ*	1.06 *U*	1.06 *UJ*
ONON2A	SF0053	S304	8/9/2000		15 - 30	1 *UJ*	1 *UJ*	1 *UJ*	1 *U*	1 *U*	1 *U*	1 *UJ*	100 *U*	1 *UJ*	1 *U*	1 *UJ*
ONON2A	VC0212	S306	7/21/2000		0 - 15	1 *UJ*	1 *UJ*	1 *UJ*	*R*	1 *UJ*	1 *UJ*	1 *UJ*	100 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*
ONON2A	VC0213	S306	7/21/2000		15 - 30	1.15 *J*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	100 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*
ONON2A	SF0001	S356	8/16/2000		0 - 15	*R*	3.35 *J*	1.06 *UJ*	1.1 *UJ*	1.06 *U*	1.06 *U*	1.06 *UJ*	106 *UJ*	1.06 *UJ*	1.06 *U*	1.06 *UJ*
ONON2A	SF0002	S356	8/16/2000		15 - 30	*R*	1.37 *J*	1.08 *UJ*	1.1 *UJ*	1.08 *U*	1.08 *U*	1.08 *UJ*	108 *UJ*	1.08 *UJ*	1.08 *U*	1.08 *UJ*
ONON2A	SF0003	S357	8/16/2000		0 - 2	*R*	1.53 *J*	1.06 *UJ*	1.1 *UJ*	*R*	1.06 *U*	1.06 *UJ*	106 *UJ*	1.06 *UJ*	1.06 *U*	1.06 *UJ*
ONON2A	SF0004	S357	8/16/2000		2 - 15	*R*	1.05 *UJ*	1.05 *UJ*	1.1 *UJ*	1.05 *U*	1.05 *U*	1.05 *UJ*	105 *UJ*	1.05 *UJ*	1.05 *U*	1.05 *UJ*
ONON2A	SF0005	S357	8/16/2000		15 - 30	*R*	1.09 *UJ*	1.09 *UJ*	1.1 *UJ*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*	109 *UJ*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*
ONON2A	SF0006	S358	8/16/2000		0 - 15	*R*	1.06 *UJ*	1.06 *UJ*	1.1 *UJ*	1.06 *UJ*	1.06 *UJ*	1.06 *UJ*	106 *UJ*	1.06 *UJ*	1.06 *UJ*	1.06 *UJ*
ONON2A	SF0007	S358	8/16/2000		15 - 30	*R*	1.04 *UJ*	1.04 *UJ*	1 *UJ*	1.04 *UJ*	1.04 *UJ*	1.04 *UJ*	104 *UJ*	1.04 *UJ*	1.04 *UJ*	1.04 *UJ*
ONON2A	SF0008	S359	8/16/2000		0 - 15	*R*	1.08 *UJ*	1.08 *UJ*	1.1 *UJ*	1.75 *J*	1.08 *UJ*	1.08 *UJ*	108 *UJ*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*
ONON2A	SF0009	S359	8/16/2000		15 - 30	*R*	1.06 *UJ*	1.06 *UJ*	1.1 *UJ*	*R*	1.06 *UJ*	1.06 *UJ*	106 *UJ*	1.06 *UJ*	*R*	1.06 *UJ*
ONON2A	SF0010	S360	8/16/2000	D1	0 - 2	*R*	1.1 *UJ*	1.1 *UJ*	1.1 *UJ*	2.91 *J*	1.1 *UJ*	1.1 *UJ*	110 *UJ*	1.1 *UJ*	1.1 *UJ*	1.1 *UJ*
ONON2A	SF0066	S360	8/16/2000	D2	0 - 2	*R*	1.06 *UJ*	1.06 *UJ*	1.1 *UJ*	1.69 *J*	1.06 *UJ*	1.06 *UJ*	106 *UJ*	1.06 *UJ*	1.06 *UJ*	1.06 *UJ*
ONON2A	SF0012	S360	8/16/2000	D1	15 - 30	*R*	1.08 *UJ*	1.08 *UJ*	1.1 *UJ*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	108 *UJ*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*
ONON2A	SF0169	S360	8/16/2000	D2	15 - 30	*R*	1.07 *UJ*	1.07 *UJ*	1.1 *UJ*	1.07 *UJ*	1.07 *UJ*	1.07 *UJ*	107 *UJ*	1.07 *UJ*	1.07 *UJ*	1.07 *UJ*
ONON2A	SF0011	S360	8/16/2000	D1	2 - 15	*R*	1.09 *UJ*	1.09 *UJ*	1.1 *UJ*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*	109 *UJ*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*
ONON2A	SF0164	S360	8/16/2000	D2	2 - 15	*R*	1.08 *UJ*	1.08 *UJ*	1.1 *UJ*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	108 *UJ*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*
ONON2A	SF0013	S361	8/15/2000	D1	0 - 15	*R*	1.09 *UJ*	1.09 *UJ*	1.1 *UJ*	1.09 *J*	1.09 *UJ*	1.09 *UJ*	109 *UJ*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*
ONON2A	SF0163	S361	8/15/2000	D2	0 - 15	*R*	1.04 *UJ*	1.04 *UJ*	1 *UJ*	1.04 *U*	1.04 *U*	1.04 *UJ*	104 *UJ*	1.04 *UJ*	1.04 *U*	1.04 *UJ*

Table A-2D. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	4,4'-DDD (µg/kg)	4,4'-DDE (µg/kg)	4,4'-DDT (µg/kg)	Aldrin (µg/kg)	alpha-BHC (µg/kg)	beta-BHC (µg/kg)	delta-BHC (µg/kg)	gamma-BHC (Lindane) (µg/kg)	Dieldrin (µg/kg)	Endosulfan I (µg/kg)	Endosulfan II (µg/kg)
ONON2A	SF0014	S361	8/15/2000		15 - 30	*R*	1.02 *UJ*	1.02 *UJ*	1.02 *UJ*	1.02 *UJ*	1.02 *UJ*	*R*	1.02 *UJ*	1.02 *UJ*	1.02 *UJ*	*R*
ONON2A	SF0015	S362	8/15/2000		0 - 15	*R*	1.07 *UJ*	1.72 *J*	1.07 *UJ*	1.07 *UJ*	1.07 *UJ*	*R*	1.07 *UJ*	1.07 *UJ*	1.07 *UJ*	*R*
ONON2A	SF0016	S362	8/15/2000		15 - 30	*R*	1.05 *UJ*	1.05 *UJ*	1.05 *UJ*	1.05 *UJ*	1.05 *UJ*	*R*	1.05 *UJ*	1.05 *UJ*	1.05 *UJ*	*R*
ONON2A	SF0017	S363	8/15/2000		0 - 2	1.1 *UJ*	1.1 *UJ*	1.1 *UJ*	1.1 *U*	1.1 *UJ*	1.1 *U*	*R*	1.1 *UJ*	1.1 *U*	1.1 *UJ*	*R*
ONON2A	SF0019	S363	8/15/2000		15 - 30	*R*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	*R*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	*R*
ONON2A	SF0018	S363	8/15/2000	D1	2 - 15	*R*	1.08 *UJ*	1.21 *J*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	*R*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	*R*
ONON2A	SF0175	S363	8/15/2000	D2	2 - 15	1.08 *UJ*	1.08 *UJ*	1.42 *J*	1.08 *U*	1.08 *UJ*	1.08 *U*	*R*	1.08 *UJ*	1.08 *U*	1.08 *UJ*	*R*
ONON2A	SF0031	S369	8/15/2000		0 - 15	1.07 *UJ*	1.07 *UJ*	1.07 *UJ*	1.07 *U*	1.07 *UJ*	1.07 *U*	*R*	1.07 *UJ*	1.07 *U*	1.07 *UJ*	*R*
ONON2A	SF0032	S369	8/15/2000		15 - 30	1.07 *UJ*	1.07 *UJ*	2.1 *J*	1.07 *U*	1.07 *UJ*	1.07 *U*	*R*	1.07 *UJ*	1.07 *U*	1.07 *UJ*	*R*
ONON2A	SF0033	S370	8/17/2000		0 - 2	*R*	1.42 *J*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0034	S370	8/17/2000		2 - 15	*R*	1.2 *J*	*R*	1.1 *UJ*	1.1 *UJ*	1.1 *UJ*	*R*	1.1 *UJ*	1.1 *UJ*	1.1 *UJ*	*R*
ONON2A	SF0035	S370	8/17/2000		15 - 30	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0050	S372	8/11/2000		0 - 15	1.06 *UJ*	1.14 *J*	*R*	1.06 *UJ*	1.06 *UJ*	1.06 *UJ*	*R*	*R*	1.06 *UJ*	1.06 *UJ*	*R*
ONON2A	SF0039	S372	8/17/2000	D1	15 - 30	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0165	S372	8/17/2000	D2	15 - 30	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*

Table A-2D. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Endosulfan sulfate (µg/kg)	Endrin aldehyde (µg/kg)	Endrin ketone (µg/kg)	Endrin (µg/kg)	Heptachlor epoxide (µg/kg)	Heptachlor (µg/kg)	Methoxychlor (µg/kg)	Toxaphene (µg/kg)	alpha (cis) Chlordane (µg/kg)	gamma (trans)-Chlordane (µg/kg)	Total Chlordane[1] (µg/kg)
ONON2A	SF0014	S361	8/15/2000		15 - 30	*R*	1.02 *UJ*	1.02 *UJ*	1 *UJ*	1.02 *UJ*	1.02 *UJ*	1.02 *UJ*	102 *UJ*	1.02 *UJ*	1.02 *UJ*	1.02 *UJ*
ONON2A	SF0015	S362	8/15/2000		0 - 15	*R*	1.07 *UJ*	1.07 *UJ*	1.1 *UJ*	1.07 *UJ*	1.07 *UJ*	1.07 *UJ*	107 *UJ*	1.07 *UJ*	1.07 *UJ*	1.07 *UJ*
ONON2A	SF0016	S362	8/15/2000		15 - 30	*R*	1.05 *UJ*	1.05 *UJ*	1.1 *UJ*	1.05 *UJ*	1.05 *UJ*	1.05 *UJ*	105 *UJ*	1.05 *UJ*	1.05 *UJ*	1.05 *UJ*
ONON2A	SF0017	S363	8/15/2000		0 - 2	*R*	1.1 *UJ*	1.1 *UJ*	1.1 *UJ*	1.1 *U*	1.1 *U*	1.1 *UJ*	110 *UJ*	1.1 *UJ*	1.1 *U*	1.1 *UJ*
ONON2A	SF0019	S363	8/15/2000		15 - 30	*R*	1.08 *UJ*	1.08 *UJ*	1.1 *UJ*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	108 *UJ*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*
ONON2A	SF0018	S363	8/15/2000	D1	2 - 15	*R*	1.08 *UJ*	1.08 *UJ*	1.2 *J*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	108 *UJ*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*
ONON2A	SF0175	S363	8/15/2000	D2	2 - 15	*R*	1.08 *UJ*	1.08 *UJ*	1.1 *UJ*	1.08 *U*	1.08 *U*	1.08 *UJ*	108 *UJ*	1.08 *UJ*	1.08 *U*	1.08 *UJ*
ONON2A	SF0031	S369	8/15/2000		0 - 15	*R*	1.07 *UJ*	1.07 *UJ*	1.1 *UJ*	1.07 *U*	1.07 *U*	1.07 *UJ*	107 *UJ*	1.07 *UJ*	1.07 *U*	1.07 *UJ*
ONON2A	SF0032	S369	8/15/2000		15 - 30	*R*	1.07 *UJ*	1.07 *UJ*	1.1 *UJ*	1.07 *U*	1.07 *U*	1.07 *UJ*	107 *UJ*	1.07 *UJ*	1.07 *U*	1.07 *UJ*
ONON2A	SF0033	S370	8/17/2000		0 - 2	*R*	2.13 *J*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0034	S370	8/17/2000		2 - 15	*R*	1.1 *UJ*	1.1 *UJ*	1.1 *UJ*	1.1 *UJ*	1.1 *UJ*	1.1 *UJ*	110 *UJ*	1.1 *UJ*	1.1 *UJ*	1.1 *UJ*
ONON2A	SF0035	S370	8/17/2000		15 - 30	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0050	S372	8/11/2000		0 - 15	*R*	1.19 *J*	1.06 *UJ*	1.1 *UJ*	1.06 *UJ*	1.06 *UJ*	1.06 *UJ*	106 *UJ*	1.06 *UJ*	1.06 *UJ*	1.06 *UJ*
ONON2A	SF0039	S372	8/17/2000	D1	15 - 30	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0165	S372	8/17/2000	D2	15 - 30	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*

Notes: [1] Total chlordane is a calculated quantity, not a direct measurement

J - estimated

U - not detected at reported quantitation limit

R - rejected datum

Table A-2E. Northern Basin Nearshore Sediments – PCB Data

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Aroclor 1016 (µg/kg)	Aroclor 1221 (µg/kg)	Aroclor 1232 (µg/kg)	Aroclor 1242 (µg/kg)	Aroclor 1248 (µg/kg)	Aroclor 1254 (µg/kg)	Aroclor 1260 (µg/kg)	Aroclor 1268 (µg/kg)	Sum of PCBs (µg/kg)
O-SEDCHM	S00020	S53	5/9/1992		0 - 30	91 *U*	180 *U*	91 *U*	91 *U*	91 *U*	91 *U*	91 *U*		182 *U*
O-SEDCHM	S00529	S53	7/27/1992		0 - 2	72 *U*	150 *U*	72 *U*	72 *U*	72 *U*	72 *U*	72 *U*		144 *U*
O-SEDCHM	S00589	S61	8/7/1992		0 - 2	59 *UJ*	59 *UJ*	59 *UJ*	59 *UJ*	70	59 *UJ*	52 *J*		122
O-SEDCHM	S00517	S62	7/24/1992		0 - 2	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*		114 *U*
O-SEDCHM	S00067	S66	5/11/1992		0 - 30	54 *U*	110 *U*	54 *U*	54 *U*	54 *U*	54 *U*	54 *U*		108 *U*
O-SEDCHM	S00601	S66	8/10/1992		0 - 2	52 *U*	100 *U*	52 *U*	52 *U*	52 *U*	52 *U*	52 *U*		104 *U*
O-SEDCHM	S00513	S67	7/23/1992		0 - 2	78 *U*	78 *U*	78 *U*	78 *U*	78 *U*	78 *U*	78 *U*		156 *U*
O-SEDCHM	S00510	S74	7/22/1992		0 - 2	48 *U*	48 *U*	48 *U*	48 *U*	48 *U*	48 *U*	48 *U*		96 *U*
O-SEDCHM	S00507	S75	7/21/1992		0 - 2	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*		120 *U*
O-SEDCHM	S00508	S76	7/22/1992		0 - 2	54 *U*	54 *U*	54 *U*	54 *U*	54 *U*	54 *U*	54 *U*		108 *U*
O-SEDCHM	S00023	S81	5/9/1992		0 - 30	62 *U*	130 *U*	62 *U*	62 *U*	62 *U*	62 *U*	62 *U*		124 *U*
O-SEDCHM	S00520	S81	7/24/1992		0 - 2	66 *U*	130 *U*	66 *U*	66 *U*	66 *U*	66 *U*	66 *U*		132 *U*
O-SEDCHM	S00504	S82	7/21/1992		0 - 2	62 *U*	62 *U*	62 *U*	62 *U*	62 *U*	62 *U*	62 *U*		124 *U*
O-SEDCHM	S00511	S87	7/22/1992		0 - 2	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*		120 *U*
O-SEDCHM	S00032	S93	5/9/1992		0 - 30	59 *U*	120 *U*	59 *U*	59 *U*	59 *U*	59 *U*	59 *U*		118 *U*
O-SEDCHM	S00550	S93	7/31/1992		0 - 2	56 *U*	110 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*		112 *U*
O-SEDCHM	S00512	S94	7/22/1992		0 - 2	64 *UJ*	64 *UJ*	64 *UJ*	64 *UJ*	64 *UJ*	64 *UJ*	64 *UJ*		128 *U*
O-SEDCHM	S00059	S100	5/11/1992		0 - 30	69 *U*	140 *U*	69 *U*	69 *U*	69 *U*	69 *U*	69 *U*		138 *U*
O-SEDCHM	S00608	S100	8/11/1992		0 - 2	64 *U*	130 *U*	64 *U*	64 *U*	64 *U*	64 *U*	64 *U*		128 *U*
O-SEDCHM	S00552	S105	7/31/1992		0 - 2	61 *U*	61 *U*	61 *U*	61 *U*	61 *U*	61 *U*	61 *U*		122 *U*
O-SEDCHM	S00501	S110	7/20/1992		0 - 2	64 *U*	64 *U*	64 *U*	64 *U*	64 *U*	64 *U*	64 *U*		128 *U*
O-SEDCHM	S00029	S113	5/9/1992		0 - 30	56 *U*	110 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*		112 *U*
O-SEDCHM	S00577	S113	8/5/1992		0 - 2	56 *U*	110 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*		112 *U*
O-SEDCHM	S00048	P73	5/10/1992		0–30	29 *U*	29 *U*	29 *U*	29 *U*	29 *U*	29 *U*	29 *U*		58 *U*
ONON2A	SF0052	S304	8/9/2000		0 - 15	52.9 *U*	52.9 *U*	52.9 *U*	16.1 *J*	52.9 *U*	10.8 *J*	52.9 *U*	52.9 *U*	27
ONON2A	SF0053	S304	8/9/2000		15 - 30	50.1 *U*	50.1 *U*	50.1 *U*	85.7 *J*	50.1 *U*	92.2 *J*	50.1 *U*	58 *J*	236
ONON2A	VC0212	S306	7/21/2000		0 - 15	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	100 *U*
ONON2A	VC0213	S306	7/21/2000		15 - 30	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	100 *U*
ONON2A	SF0001	S356	8/16/2000		0 - 15	52.8 *U*	52.8 *U*	52.8 *U*	52.8 *U*	52.8 *U*	52.8 *U*	52.8 *U*	52.8 *U*	106 *U*
ONON2A	SF0002	S356	8/16/2000		15 - 30	54.2 *U*	54.2 *U*	54.2 *U*	14.2 *J*	54.2 *U*	54.2 *U*	54.2 *U*	54.2 *U*	41
ONON2A	SF0003	S357	8/16/2000		0 - 2	52.8 *U*	52.8 *U*	52.8 *U*	52.8 *U*	52.8 *U*	52.8 *U*	52.8 *U*	52.8 *U*	106 *U*
ONON2A	SF0004	S357	8/16/2000		2 - 15	52.6 *U*	52.6 *U*	52.6 *U*	52.6 *U*	52.6 *U*	52.6 *U*	52.6 *U*	52.6 *U*	105 *U*
ONON2A	SF0005	S357	8/16/2000		15 - 30	54.3 *U*	54.3 *U*	54.3 *U*	54.3 *U*	54.3 *U*	54.3 *U*	54.3 *U*	54.3 *U*	109 *U*
ONON2A	SF0006	S358	8/16/2000		0–15	52.9 *U*	52.9 *U*	52.9 *U*	52.9 *U*	52.9 *U*	52.9 *U*	52.9 *U*	52.9 *U*	106 *U*

Table A-2E. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Aroclor 1016 (µg/kg)	Aroclor 1221 (µg/kg)	Aroclor 1232 (µg/kg)	Aroclor 1242 (µg/kg)	Aroclor 1248 (µg/kg)	Aroclor 1254 (µg/kg)	Aroclor 1260 (µg/kg)	Aroclor 1268 (µg/kg)	Sum of PCBs (µg/kg)
ONON2A	SF0007	S358	8/16/2000		15–30	52.1 *U*	52.1 *U*	52.1 *U*	52.1 *U*	52.1 *U*	52.1 *U*	52.1 *U*	52.1 *U*	104 *U*
ONON2A	SF0008	S359	8/16/2000		0 - 15	53.8 *U*	53.8 *U*	53.8 *U*	53.8 *U*	53.8 *U*	37.1 *J*	53.8 *U*	53.8 *U*	64
ONON2A	SF0009	S359	8/16/2000		15 - 30	53.1 *U*	53.1 *U*	53.1 *U*	33.9 *J*	53.1 *U*	1200	143	53.1 *U*	1377
ONON2A	SF0010	S360	8/16/2000	D1	0 - 2	54.9 *U*	54.9 *U*	54.9 *U*	17.3 *J*	54.9 *U*	142 *J*	35.4 *J*	54.9 *U*	195
ONON2A	SF0066	S360	8/16/2000	D2	0 - 2	52.9 *U*	52.9 *U*	52.9 *U*	29 *J*	52.9 *U*	38.4 *J*	52.9 *U*	75.6 *J*	143
ONON2A	SF0012	S360	8/16/2000	D1	15 - 30	53.9 *U*	53.9 *U*	53.9 *U*	53.9 *U*	53.9 *U*	53.9 *U*	53.9 *U*	53.9 *U*	108 *U*
ONON2A	SF0169	S360	8/16/2000	D2	15 - 30	53.3 *U*	53.3 *U*	53.3 *U*	53.3 *U*	53.3 *U*	53.3 *U*	53.3 *U*	53.3 *U*	107 *U*
ONON2A	SF0011	S360	8/16/2000	D1	2 - 15	54.7 *U*	54.7 *U*	54.7 *U*	11.8 *J*	54.7 *U*	26 *J*	54.7 *U*	313 *J*	351
ONON2A	SF0164	S360	8/16/2000	D2	2 - 15	54.1 *U*	54.1 *U*	54.1 *U*	54.1 *U*	54.1 *U*	12.7 *J*	54.1 *U*	54.1 *U*	40
ONON2A	SF0013	S361	8/15/2000	D1	0 - 15	54.4 *U*	54.4 *U*	54.4 *U*	54.4 *U*	54.4 *U*	54.4 *U*	54.4 *U*	54.4 *U*	109 *U*
ONON2A	SF0163	S361	8/15/2000	D2	0 - 15	51.9 *U*	51.9 *U*	51.9 *U*	51.9 *U*	51.9 *U*	51.9 *U*	51.9 *U*	51.9 *U*	104 *U*
ONON2A	SF0014	S361	8/15/2000		15 - 30	50.9 *U*	50.9 *U*	50.9 *U*	50.9 *U*	50.9 *U*	50.9 *U*	23.4 *J*	50.9 *U*	49
ONON2A	SF0015	S362	8/15/2000		0 - 15	53.3 *U*	53.3 *U*	53.3 *U*	53.3 *U*	53.3 *U*	53.3 *U*	78 *J*	53.3 *U*	105
ONON2A	SF0016	S362	8/15/2000		15 - 30	52.3 *U*	52.3 *U*	52.3 *U*	52.3 *U*	52.3 *U*	52.3 *U*	52.3 *U*	52.3 *U*	105 *U*
ONON2A	SF0017	S363	8/15/2000		0 - 2	54.9 *U*	54.9 *U*	54.9 *U*	54.9 *U*	54.9 *U*	54.9 *U*	54.9 *U*	54.9 *U*	110 *U*
ONON2A	SF0019	S363	8/15/2000		15 - 30	54.3 *U*	54.3 *U*	54.3 *U*	54.3 *U*	54.3 *U*	54.3 *U*	54.3 *U*	54.3 *U*	109 *U*
ONON2A	SF0018	S363	8/15/2000	D1	2 - 15	54 *UJ*	54 *UJ*	54 *UJ*	21 *J*	54 *UJ*	15.5 *J*	54 *UJ*	54 *UJ*	37
ONON2A	SF0175	S363	8/15/2000	D2	2 - 15	54 *U*	54 *U*	54 *U*	18.1 *J*	54 *U*	20.2 *J*	14.6 *J*	54 *U*	53
ONON2A	SF0031	S369	8/15/2000		0 - 15	53.4 *U*	53.4 *U*	53.4 *U*	53.4 *U*	53.4 *U*	53.4 *U*	53.4 *U*	53.4 *U*	107 *U*
ONON2A	SF0032	S369	8/15/2000		15 - 30	53.5 *U*	53.5 *U*	53.5 *U*	53.5 *U*	53.5 *U*	53.5 *U*	89.3 *J*	53.5 *U*	116
ONON2A	SF0033	S370	8/17/2000		0 - 2	53.6 *U*	53.6 *U*	53.6 *U*	53.6 *U*	53.6 *U*	53.6 *U*	53.6 *U*	53.6 *U*	107 *U*
ONON2A	SF0034	S370	8/17/2000		2 - 15	54.9 *U*	54.9 *U*	54.9 *U*	54.9 *U*	54.9 *U*	54.9 *U*	54.9 *U*	54.9 *U*	110 *U*
ONON2A	SF0035	S370	8/17/2000		15 - 30	52 *U*	52 *U*	52 *U*	52 *U*	52 *U*	52 *U*	52 *U*	52 *U*	104 *U*
ONON2A	SF0050	S372	8/11/2000		0 - 15	53 *U*	53 *U*	53 *U*	53 *U*	53 *U*	53 *U*	53 *U*	53 *U*	106 *U*
ONON2A	BC0027	S372	8/2/2000		0 - 2	53.1 *U*	53.1 *U*	53.1 *U*	13.4 *J*	53.1 *U*	25.1 *J*	53.1 *U*	53.1 *U*	39
ONON2A	SF0039	S372	8/17/2000	D1	15 - 30	54.1 *U*	54.1 *U*	54.1 *U*	54.1 *U*	54.1 *U*	54.1 *U*	54.1 *U*	54.1 *U*	108 *U*
ONON2A	SF0165	S372	8/17/2000	D2	15 - 30	52.9 *U*	52.9 *U*	52.9 *U*	52.9 *U*	52.9 *U*	52.9 *U*	52.9 *U*	52.9 *U*	106 *U*
ONON2A	BC0028	S372	8/2/2000	D1	2 - 14	50.5 *U*	50.5 *U*	50.5 *U*	50.5 *U*	50.5 *U*	50.5 *U*	50.5 *U*	50.5 *U*	101 *U*
ONON2A	BC0032	S372	8/2/2000	D2	2 - 14	51 *U*	51 *U*	51 *U*	51 *U*	51 *U*	51 *U*	51 *U*	51 *U*	102 *U*

Notes: *J* - estimated

U - not detected at reported quantitation limit

Table A-2F. Northern Basin Nearshore Sediments – PCDD/PCDF Data

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	SF0008	SF0009	SF0010	SF0066	SF0012	SF0169	SF0011	SF0164
	Survey Station:	S359	S359	S360	S360	S360	S360	S360	S360
	Date:	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000
	Duplicates:			D1	D2	D1	D2	D1	D2
	Depth (cm):	0 - 15	15 - 30	0 - 2	0 - 2	15 - 30	15 - 30	2 - 15	2 - 15
Chemical	**Units**								
TEQ - Total [1]	ng/kg	1.40	1.06	9.45	7.29	0.40	0.33	3.55	2.05
TEQ - Dioxins [1]	ng/kg	0.36	0.35	1.88	1.40	0.10	0.12	0.56	0.51
TEQ - Furans [1]	ng/kg	1.04	0.72	7.57	5.89	0.29	0.22	2.99	1.54
2,3,7,8-Tetrachlorodibenzodioxin	ng/kg	0.10 *U*	0.091 *U*	0.586 *J*	0.10 *U*	0.09 *U*	0.10 *U*	0.09 *U*	0.10 *U*
1,2,3,7,8-Pentachlorodibenzodioxin	ng/kg	0.129 *J*	0.111 *J*	0.583 *J*	0.667 *J*	0.09 *U*	0.10 *U*	0.09 *U*	0.152 *J*
1,2,3,4,7,8-Hexachlorodibenzodioxin	ng/kg	0.154 *J*	0.128 *J*	0.563 *J*	0.476 *J*	0.09 *U*	0.10 *U*	0.319 *J*	0.145 *J*
1,2,3,6,7,8-Hexachlorodibenzodioxin	ng/kg	0.454 *J*	0.428 *J*	1.84 *J*	1.81 *J*	0.09 *U*	0.1 *U*	1.24 *J*	0.997 *J*
1,2,3,7,8,9-Hexachlorodibenzodioxin	ng/kg	0.293 *J*	0.282 *J*	1.42 *J*	1.24 *J*	0.09 *U*	0.10 *U*	0.863 *J*	0.575 *J*
1,2,3,4,6,7,8-Heptachlorodibenzodioxin	ng/kg	8.06	9.45	30.1	30.4	0.25 *U*	0.25 *U*	21.3	13.1
Octachlorodibenzodioxin	ng/kg	71.6	105	232	240	1.69 *J*	1.2 *U*	167	100
Total Tetrachlorodibenzodioxins	ng/kg	1.16	0.60 *J*	14.3	12.7	0.224 *J*	0.246 *J*	5.86	3.53
Total Pentachlorodibenzodioxins	ng/kg	0.10 *U*	0.219 *J*	2.66	3.84	0.111 *J*	0.10 *U*	1.31	0.426 *J*
Total Hexachlorodibenzodioxins	ng/kg	2.32 *J*	2.28	15.6	14.9	0.091 *J*	0.1 *U*	8.63	5.86
Total Heptachlorodibenzodioxins	ng/kg	16.6	17.8	59.6	62.3	0.09 *U*	0.10 *U*	42.1	28.5
2,3,7,8-Tetrachlorodibenzofuran	ng/kg	3.47	2.54	18	19.2	0.888 *J*	0.742 *J*	11.2	6.71
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg	0.988 *J*	0.693 *J*	9.36	6.76	0.175 *J*	0.136 *J*	3.3	1.56
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg	0.575 *J*	0.432 *J*	3.65	3.7	0.291 *J*	0.209 *J*	1.92	0.922 *J*
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg	2.25 *J*	1.26 *J*	22.4	11	0.46 *U*	0.23 *U*	4.46	1.85 *J*
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg	0.581 *J*	0.333 *J*	7.07	3.49	0.128 *J*	0.10 *U*	1.46 *J*	0.543 *J*
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg	0.10 *U*	0.091 *U*	0.456 *J*	0.272 *J*	0.09 *U*	0.10 *U*	0.14 *U*	0.23 *U*
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg	0.13 *J*	0.145 *J*	1.1 *J*	0.962 *J*	0.09 *U*	0.10 *U*	0.543 *J*	0.289 *J*
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg	3.89	2.47	25.2	16.4	0.483 *J*	0.333 *J*	7.41	3.95
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg	1.38 *J*	0.684 *J*	11	4.3	0.119 *J*	0.1 *U*	1.56 *J*	0.697 *J*
Octachlorodibenzofuran	ng/kg	11.5	8.01	126	65.6	1.2 *U*	0.56 *U*	23.6	10.8
Total Tetrachlorodibenzofurans	ng/kg	11.3	8.76	72.2	91.4	4.27	5.01	47	23.4
Total Pentachlorodibenzofurans	ng/kg	3.48	2.0	37.1	31.9	1.62	1.09	18.4	7.93
Total Hexachlorodibenzofurans	ng/kg	6.8	4.08	51.5	31.6	0.09 *U*	0.10 *U*	14.9	4.8
Total Heptachlorodibenzofurans	ng/kg	9.03	6.73	59.9	36.2	0.602 *J*	0.10 *U*	17.5	9.29

Notes: [1] Calculated using WHO TEFs

J - estimated

U - not detected at reported quantitation limit

Table A-3A. Southern Basin Nearshore Sediments – Inorganic and Organometallic Data

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)
O-SEDCHM	S00014	P1	5/8/1992		0-30	2,560	3.5	6.8	274	0.27	3.2	186,000	66.9	4.2
O-SEDCHM	S00004	P6	5/7/1992		0-30	1,530	2.3	2.0	38.5	0.19 *U*	0.37 *U*	107,000	6.8	2.2
O-SEDCHM	S00001	P10	5/7/1992		0-30	2,510	3.4 *U*	2.4	134	0.34 *U*	4.4	179,000	61.8	3.2
O-SEDCHM	S00062	P16	5/11/1992	1	0-30	6,180	7.0 *UJ*	6.1 *J*	164	0.37	12.7	152,000	136	7.3
O-SEDCHM	S00065	P16	5/11/1992	2	0-30	8,040	4.8 *J*	5.7 *J*	181	0.5	14.4	158,000	146 *J*	8.2
O-SEDCHM	S00066	P16	5/11/1992	3	0-30	5,600	6.9 *J*	4.6 *J*	147	0.36	10.8	151,000	114 *J*	6.9
O-SEDCHM	S00017	P20	5/8/1992		0-30	2,830	4.7	6.8	561	0.28 *U*	1.2	317,000	15.7	1.9
O-SEDCHM	S00007	P36	5/8/1992		0-30	805	2.5 *U*	2.5	109	0.25 *U*	0.51 *U*	315,000	48.7	9.0
O-SEDCHM	S00051	P46	5/10/1992		0-30	655	6.7 *J*	1.3 *J*	97	0.26 *U*	1.9	323,000	37.2	0.79
O-SEDCHM	S00556	S1	8/2/1992	1	0-2	2,480	2.3 *UJ*	2.6 *J*	106	0.21 *U*	0.78	153,000	31.7	4.4
O-SEDCHM	S00557	S1	8/2/1992	2	0-2	2,320	5.8 *UJ*	2.9 *J*	147	0.2 *U*	0.97	140,000	27.2	4.4
O-SEDCHM	S00558	S1	8/2/1992	3	0-2	2,900	3.5 *UJ*	3 *J*	185	0.24	0.8	174,000	30.4	5.9
O-SEDCHM	S00546	S2	7/30/1992		0-2						7	297,000	139 *J*	
O-SEDCHM	S00340	S3	10/1/1992		0-30						5.4	244,000	95.8 *J*	
O-SEDCHM	S00613	S3	8/12/1992		0-2						4	195,000	84.2	
O-SEDCHM	S00547	S5	7/30/1992		0-2						5.6	154,000	85.1 *J*	
O-SEDCHM	S00582	S6	8/6/1992		0-2	690	1.9 *UJ*	0.63	27	0.17 *U*	1.1	51,000	19.5	1.6
O-SEDCHM	S00555	S7	8/2/1992		0-2						1.1 *J*	68,800 *J*	18.7 *J*	
O-SEDCHM	S00572	S10	8/4/1992		0-2	1,730	6.4 *J*	1.6 *J*	97.1	0.23 *U*	3.4	145,000	47.7	3
O-SEDCHM	S00162	S11	7/10/1992		0-30						8.2	184,000	107	
O-SEDCHM	S00567	S11	8/3/1992		0-2						0.47 *J*	89,100 *J*	5.9 *J*	
O-SEDCHM	S00565	S13	8/3/1992		0-2						3 *J*	108,000 *J*	33 *J*	
O-SEDCHM	S00542	S14	7/30/1992		0-2						1.4	289,000	29.6 *J*	
O-SEDCHM	S00566	S16	8/3/1992		0-2	943	4 *J*	1.4 *J*	78.2	0.24 *U*	1.2	204,000	33.4	1.7
O-SEDCHM	S00562	S17	8/3/1992	1	0-2						9.3 *J*	443,000 *J*	118 *J*	
O-SEDCHM	S00563	S17	8/3/1992	2	0-2						1 *J*	272,000 *J*	13.8 *J*	
O-SEDCHM	S00564	S17	8/3/1992	3	0-2						1.1 *J*	261,000 *J*	15.6 *J*	
O-SEDCHM	S00560	S20	8/2/1992		0-2	2,980	5.6 *UJ*	5.4 *J*	890	0.36 *U*	0.36 *U*	282,000	16.2	2.6
O-SEDCHM	S00540	S21	7/30/1992		0-2						1.4	276,000	26.3 *J*	
O-SEDCHM	S00580	S26	8/6/1992		0-2						0.54 *UJ*	331,000 *J*	23.9 *J*	
O-SEDCHM	S00533	S28	7/28/1992		0-2						3	185,000	1,990 *J*	
O-SEDCHM	S00573	S34	8/4/1992		0-2						2.1 *J*	220,000 *J*	81.5 *J*	
O-SEDCHM	S00535	S35	7/28/1992		0-2						1.1	305,000	181 *J*	
O-SEDCHM	S00532	S36	7/27/1992		0-2	2,220	3.2 *UJ*	11.2 *J*	342	0.36	0.94	231,000	690	87.9
O-SEDCHM	S00521	S37	7/24/1992		0-2						0.64	272,000	195 *J*	
O-SEDCHM	S00570	S46	8/4/1992		0-2	2,790	3.3 *J*	1.5 *J*	85.3	0.6	1	214,000	22	1.8

Table A-3A. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Copper (mg/kg)	Cyanide (mg/kg)	Iron (mg/kg)	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Methylmercury (µg/kg)
O-SEDCHM	S00014	P1	5/8/1992		0-30	69.5		6,580	174	8,080	186	
O-SEDCHM	S00004	P6	5/7/1992		0-30	20.6		4,700	1,170	12,200	164	
O-SEDCHM	S00001	P10	5/7/1992		0-30	63.5		7,360	81.3	6,490	256	
O-SEDCHM	S00062	P16	5/11/1992	1	0-30	132		16,700	205 *J*	10,800	345	
O-SEDCHM	S00065	P16	5/11/1992	2	0-30	143 *J*		20,000	243 *J*	13,200	420 *J*	
O-SEDCHM	S00066	P16	5/11/1992	3	0-30	111 *J*		15,600	192 *J*	10,800	367 *J*	
O-SEDCHM	S00017	P20	5/8/1992		0-30	39.3		3,030	28.1	10,900	157	
O-SEDCHM	S00007	P36	5/8/1992		0-30	18.0		5,860	121	3,230	201	
O-SEDCHM	S00051	P46	5/10/1992		0-30	14.1		2,390	7.0	3,370	340	
O-SEDCHM	S00556	S1	8/2/1992	1	0-2	71.2	1.2 *UJ*	6,340	90.1	9,700	175	
O-SEDCHM	S00557	S1	8/2/1992	2	0-2	40.2	1.3 *UJ*	6,120	68.5	17,700	170	
O-SEDCHM	S00558	S1	8/2/1992	3	0-2	41.1	1.6 *UJ*	7,270	76.3	12,000	190	
O-SEDCHM	S00546	S2	7/30/1992		0-2	143			159 *J*	10,500		
O-SEDCHM	S00340	S3	10/1/1992		0-30	63 *J*			153	5,800		
O-SEDCHM	S00613	S3	8/12/1992		0-2	62.9			121 *J*	7,900		
O-SEDCHM	S00547	S5	7/30/1992		0-2	83.8			167 *J*	7,530		
O-SEDCHM	S00582	S6	8/6/1992		0-2	57.3	1.1 *U*	2,470	56	5,280	93.3 *J*	
O-SEDCHM	S00555	S7	8/2/1992		0-2	50.5 *J*			70.1 *J*	5,700		
O-SEDCHM	S00572	S10	8/4/1992		0-2	51.2	1.3 *UJ*	5,220	59.5	4,840	217	
O-SEDCHM	S00162	S11	7/10/1992		0-30	105			144	9,750		
O-SEDCHM	S00567	S11	8/3/1992		0-2	8.6 *J*			15.4 *J*	3,850		
O-SEDCHM	S00565	S13	8/3/1992		0-2	82.6 *J*			107 *J*	9,180		
O-SEDCHM	S00542	S14	7/30/1992		0-2	29.2			99.9 *J*	10,700		
O-SEDCHM	S00566	S16	8/3/1992		0-2	35.1	1.4 *UJ*	3,430	26.9	3,570	240	
O-SEDCHM	S00562	S17	8/3/1992	1	0-2	59 *J*			16.5 *J*	3,560		
O-SEDCHM	S00563	S17	8/3/1992	2	0-2	10.8 *UJ*			14.2 *J*	3,340		
O-SEDCHM	S00564	S17	8/3/1992	3	0-2	13.4 *UJ*			16.4 *J*	3,590		
O-SEDCHM	S00560	S20	8/2/1992		0-2	30.7	2.4 *J*	3,590	51	14,600	216	
O-SEDCHM	S00540	S21	7/30/1992		0-2	36.3			116 *J*	9,390		
O-SEDCHM	S00580	S26	8/6/1992		0-2	6.8 *J*			4.7 *J*	2,840		
O-SEDCHM	S00533	S28	7/28/1992		0-2	173			238 *J*	5,630		
O-SEDCHM	S00573	S34	8/4/1992		0-2	35.3 *J*			12.5 *J*	3,100		
O-SEDCHM	S00535	S35	7/28/1992		0-2	47.4			61.9 *J*	3,660		
O-SEDCHM	S00532	S36	7/27/1992		0-2	139	5.4 *UJ*	34,200	251	3,430	508	
O-SEDCHM	S00521	S37	7/24/1992		0-2	19.6			38.7 *J*	2,500		
O-SEDCHM	S00570	S46	8/4/1992		0-2	9.6	1.3 *J*	2,840	11.2	6,390	265	

Table A-3A. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
O-SEDCHM	S00014	P1	5/8/1992		0-30	23.2	33	278	0.68 *UJ*	3.4	1040	0.65 *J*	4.6	113
O-SEDCHM	S00004	P6	5/7/1992		0-30	0.42	4.4	199	0.16 *U*	0.37 *U*	821	0.16 *U*	2.5	55.8
O-SEDCHM	S00001	P10	5/7/1992		0-30	2.00	16.4	287	0.71 *UJ*	0.91	721	0.55 *J*	5	159
O-SEDCHM	S00062	P16	5/11/1992	1	0-30	1.4	37.1	484	0.63	4	934	0.35 *U*	12.5	330 *J*
O-SEDCHM	S00065	P16	5/11/1992	2	0-30	1.3	43.2	827	0.47 *J*	3.7 *J*	1120 *U*	0.36 *J*	17.1	350 *J*
O-SEDCHM	S00066	P16	5/11/1992	3	0-30	0.99	33.2	511	0.44 *J*	2.8 *J*	1090 *U*	0.38 *J*	12.5	284 *J*
O-SEDCHM	S00017	P20	5/8/1992		0-30	3.00	13.8	254	0.39 *U*	0.56	3560	0.47	2	33.1
O-SEDCHM	S00007	P36	5/8/1992		0-30	0.14 *U*	14	99.8	0.29 *UJ*	0.7	5540	0.21 *UJ*	7.2	56.1
O-SEDCHM	S00051	P46	5/10/1992		0-30	0.38	5.0	132	0.28 *U*	1.2	3640	0.28 *UJ*	1 *U*	30 *J*
O-SEDCHM	S00556	S1	8/2/1992	1	0-2	4.7 *J*	14.8	282	0.32 *J*	0.53 *J*	368	0.44 *J*	5.1	87.7 *J*
O-SEDCHM	S00557	S1	8/2/1992	2	0-2	4.6 *J*	14.9	269	0.34 *J*	0.71 *J*	361	0.51	5.2	86.8 *J*
O-SEDCHM	S00558	S1	8/2/1992	3	0-2	5.6 *J*	16.7	326	0.44 *J*	0.65 *J*	464	0.53 *J*	6.5	109 *J*
O-SEDCHM	S00546	S2	7/30/1992		0-2	18.1	76.4							276 *J*
O-SEDCHM	S00340	S3	10/1/1992		0-30	27.2	39.6 *J*							133 *J*
O-SEDCHM	S00613	S3	8/12/1992		0-2	18.4	47.9							186 *J*
O-SEDCHM	S00547	S5	7/30/1992		0-2	11.1	25.4							194 *J*
O-SEDCHM	S00582	S6	8/6/1992		0-2	1.1	7.3	93.5	0.25 *J*	0.34 *UJ*	163	0.11 *U*	1.2	42.9
O-SEDCHM	S00555	S7	8/2/1992		0-2	3.2	7.4							77.2 *J*
O-SEDCHM	S00572	S10	8/4/1992		0-2	1.7 *J*	11.7	184	0.27 *UJ*	0.95 *J*	404	0.51	2.6	120 *J*
O-SEDCHM	S00162	S11	7/10/1992		0-30	3.7	31.1							302
O-SEDCHM	S00567	S11	8/3/1992		0-2	0.54	4.2							26.3 *J*
O-SEDCHM	S00565	S13	8/3/1992		0-2	1.1	20.9							218 *J*
O-SEDCHM	S00542	S14	7/30/1992		0-2	31.7	30							62.3 *J*
O-SEDCHM	S00566	S16	8/3/1992		0-2	0.25 *J*	4.5	114	0.26 *J*	0.84 *J*	408	0.22 *UJ*	0.51	65 *J*
O-SEDCHM	S00562	S17	8/3/1992	1	0-2	0.18	17.8							165 *J*
O-SEDCHM	S00563	S17	8/3/1992	2	0-2	0.15	5.9							43.4 *J*
O-SEDCHM	S00564	S17	8/3/1992	3	0-2	0.18	6.3							56.1 *J*
O-SEDCHM	S00560	S20	8/2/1992		0-2	11.4 *J*	19.9	188	0.31 *UJ*	0.88 *J*	2090	0.65 *J*	2.9	135 *J*
O-SEDCHM	S00540	S21	7/30/1992		0-2	24.9	30							92.6 *J*
O-SEDCHM	S00580	S26	8/6/1992		0-2	0.23	6.2							28.6 *J*
O-SEDCHM	S00533	S28	7/28/1992		0-2	5.2	650							185 *J*
O-SEDCHM	S00573	S34	8/4/1992		0-2	0.15	7.1							54.7 *J*
O-SEDCHM	S00535	S35	7/28/1992		0-2	1.0	39							93.6 *J*
O-SEDCHM	S00532	S36	7/27/1992		0-2	1.3 *J*	215	116	0.42 *J*	0.94 *J*	1020	0.45 *J*	101	167 *J*
O-SEDCHM	S00521	S37	7/24/1992		0-2	0.49	33.8							42.5 *J*
O-SEDCHM	S00570	S46	8/4/1992		0-2	0.39 *J*	6.2	160	0.36 *J*	0.68 *J*	595	0.28 *J*	0.4 *U*	31 *J*

Table A-3A. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Aluminum mg/kg	Antimony mg/kg	Arsenic mg/kg	Barium mg/kg	Beryllium mg/kg	Cadmium mg/kg	Calcium mg/kg	Chromium mg/kg	Cobalt mg/kg
O-SEDCHM	S00519	S47	7/24/1992		0-2						1.5	259,000	112 *J*	
ONON2A	VC0196	S307	7/18/2000		0-15	967	0.29 *UJ*	7	116	0.14	0.41	287,000	399	22.6 *J*
ONON2A	VC0197	S307	7/18/2000		15-30	963	0.29 *UJ*	0.6	95.7	0.094	0.043 *U*	325,000	29	2.8 *J*
ONON2A	VC0207	S311	7/20/2000		0-15	5,450	0.5 *UJ*	9.8	271	0.43	0.39	289,000	26.7	2.6
ONON2A	VC0208	S311	7/20/2000		15-30	4,980	0.47 *UJ*	9.5	714	0.42	1.1	328,000	26.2	2.4
ONON2A	VC0187	S313	7/18/2000		0-15	4,940	0.31 *UJ*	5	201	0.39	2.7	192,000	81.5	4 *J*
ONON2A	VC0188	S313	7/18/2000		15-30	5,000	0.25 *J*	3.6	73.3	0.28	1.3	181,000	52.5	5 *J*
ONON2A	SF0072	S314	8/10/2000		0-15	4,690	1.3 *J*	13.5	395	0.47	4.3	278,000	141	5.7
ONON2A	SF0073	S314	8/10/2000		15-30	3,800	1.1 *J*	17.3	391	0.5	4.6	284,000	148	4.3
ONON2A	SF0076	S316	8/10/2000		0-15	1,800	0.25 *UJ*	1.2	24.2	0.12	0.077	45,300	6.3	1.7
ONON2A	SF0077	S316	8/10/2000		15-30	3,350	0.24 *UJ*	1.6	36	0.19	0.036 *U*	56,000	6.4	2.4
ONON2A	VC0189	S318	7/14/2000		0-15	1,360	0.24 *UJ*	1.1	38.5 *J*	0.053	2.2	47,400	23.7	1.4
ONON2A	VC0190	S318	7/14/2000		15-30	1,430	0.24 *UJ*	0.98	27.8 *J*	0.053	2.9	49,000	25.7	1.5
ONON2A	SF0086	S321	8/4/2000		0-15	1,630	0.3 *J*	0.93	52.1	0.15	1.6	112,000	26.2 *J*	1.4
ONON2A	SF0087	S321	8/4/2000		15-30	1,060	0.25 *UJ*	0.58	30.2	0.089	0.42	72,100	5.6 *J*	0.87
ONON2A	SF0088	S322	8/10/2000		0-15	14,500	0.87 *J*	8.6	214	0.79	14.9	91,800	134	9.2
ONON2A	SF0089	S322	8/10/2000		15-30	17,200	1.3 *J*	10.2	248	0.93	18.4	80,600	159	10.9
ONON2A	SF0094	S325	7/14/2000		0-2	2,850	0.46 *UJ*	3.1	210	0.22	0.44	316,000	229	21.8
ONON2A	SF0095	S325	7/14/2000		2-15	2,640	0.48 *J*	2.7	199	0.2	0.34	301,000	193	18.5
ONON2A	SF0096	S325	7/14/2000		15-30	3,110	0.57 *J*	3.2	209	0.24	0.54	315,000	363	39.6
ONON2A	SF0101	S328	7/15/2000		0-15	1,660	0.31 *UJ*	3.2	131 *J*	0.12	1.1	336,000	356	24.4
ONON2A	SF0102	S328	7/15/2000		15-30	1,320	0.36 *UJ*	0.41 *U*	107 *J*	0.03	0.052 *U*	371,000	4.2	0.23
ONON2A	SF0103	S329	7/16/2000		0-15	791	0.39 *J*	0.42 *U*	99	0.17	0.21	315,000	46.9	1
ONON2A	SF0104	S329	7/16/2000		15-30	962	0.33 *UJ*	0.51	95.4	0.17	0.049	335,000	3.2	0.9
ONON2A	SF0105	S330	7/16/2000		0-15	1,100	0.32 *J*	1.3	98.7	0.19	0.19	355,000	83.6	7.1
ONON2A	SF0106	S330	7/16/2000		15-30	821	0.33 *UJ*	0.52	97.5	0.17	0.068	322,000	10.3	1.3
ONON2A	SF0134	S333	8/2/2000		0-15	3,690	3.4 *J*	47.3 *J*	95.2	0.45	1.1	252,000	216	15.2
ONON2A	SF0135	S333	8/2/2000		15-30	3,170	3.5 *J*	39.7 *J*	86.7	0.42	0.94	269,000	84.8	3.5
ONON2A	SF0153	S334	8/2/2000		0-15	3,670	3.5 *J*	18 *J*	917	0.4	1.1	232,000	813	30.7
ONON2A	SF0154	S334	8/2/2000		15-30	6,300	2.9 *J*	23.3 *J*	404	0.63	0.44	213,000	331	7
ONON2A	SF0115	S335	8/2/2000		0-15	3,930	2.9 *J*	20.6 *J*	685	0.41	1	267,000	538	32.5
ONON2A	SF0116	S335	8/2/2000		15-30	5,120	2.6 *J*	25.3 *J*	540	0.54	0.6	228,000	284	9.3
ONON2A	SF0117	S336	8/3/2000		0-15	2,080	0.51 *J*	5.7	204 *J*	0.19 *J*	0.23 *J*	225,000	190	21.9 *J*
ONON2A	SF0118	S336	8/3/2000		15-30	3,440	7.4 *J*	20.5	2,990 *J*	0.35 *J*	5.1 *J*	166,000	3,040	105 *J*
ONON2A	SF0124	S339	8/3/2000		0-15	2,730	1.5 *J*	15.1	1,430 *J*	0.31 *J*	2.3 *J*	205,000	2,370	96.2 *J*
ONON2A	SF0125	S339	8/3/2000		15-30	3,350	2.2 *J*	13.7	975 *J*	0.34 *J*	1.7 *J*	237,000	1,920	59.6 *J*

Table A-3A. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Copper mg/kg	Cyanide mg/kg	Iron mg/kg	Lead mg/kg	Magnesium mg/kg	Manganese mg/kg	Methylmercury µg/kg
O-SEDCHM	S00519	S47	7/24/1992		0-2	25.2 *J*			10.9	3,940		
ONON2A	VC0196	S307	7/18/2000		0-15	68.1	0.75 *U*	34,100	126	2,530	414	
ONON2A	VC0197	S307	7/18/2000		15-30	3.6	0.77 *U*	2,490	6.5	2,840	141	
ONON2A	VC0207	S311	7/20/2000		0-15	38.3	2.8	7,530	24.3	26,900	410	
ONON2A	VC0208	S311	7/20/2000		15-30	40.3	5.6	6,050	42.2	22,200	289	
ONON2A	VC0187	S313	7/18/2000		0-15	66.5	0.82 *U*	10,500	223	8,840	199	
ONON2A	VC0188	S313	7/18/2000		15-30	102	0.65 *U*	11,000	351	15,500	188	
ONON2A	SF0072	S314	8/10/2000		0-15	106	1.1 *U*	12,900	363	7,530	259 *J*	
ONON2A	SF0073	S314	8/10/2000		15-30	85	1.1 *U*	13,000	199	7,330	261 *J*	
ONON2A	SF0076	S316	8/10/2000		0-15	30.2	0.66 *U*	5,460	50.3	6,080	107 *J*	
ONON2A	SF0077	S316	8/10/2000		15-30	7.6	0.64 *U*	7,030	14	6,990	156 *J*	
ONON2A	VC0189	S318	7/14/2000		0-15	45.9 *J*	0.64 *U*	4,160	52.5 *J*	4,220 *J*	116	
ONON2A	VC0190	S318	7/14/2000		15-30	72.7 *J*	0.63 *U*	4,200	29.8 *J*	4,510 *J*	121	
ONON2A	SF0086	S321	8/4/2000		0-15	30.4	0.7 *U*	3,830	28	5,280	180	
ONON2A	SF0087	S321	8/4/2000		15-30	4.7	0.65 *U*	2,370	4.8	4,870	138	
ONON2A	SF0088	S322	8/10/2000		0-15	153	1 *U*	25,300	285	16,200	431 *J*	
ONON2A	SF0089	S322	8/10/2000		15-30	193	1 *U*	29,700	351	19,300	470 *J*	
ONON2A	SF0094	S325	7/14/2000		0-2	33.1	1.2 *U*	11,800	32.3	5,460	844	
ONON2A	SF0095	S325	7/14/2000		2-15	30.4	1.2 *U*	10,500	28.9	5,190	638	
ONON2A	SF0096	S325	7/14/2000		15-30	44.5	1.2 *U*	14,400	37	5,740	748	
ONON2A	SF0101	S328	7/15/2000		0-15	43.5 *J*	0.83 *U*	9,130	49.2 *J*	5,290 *J*	286	
ONON2A	SF0102	S328	7/15/2000		15-30	2.8 *J*	0.93 *U*	2,060	0.8 *J*	3,450 *J*	137	
ONON2A	SF0103	S329	7/16/2000		0-15	5.1	0.95 *U*	1,780	4.5	2,700	276	
ONON2A	SF0104	S329	7/16/2000		15-30	1.6	0.87 *U*	2,130	0.39	2,920	162	
ONON2A	SF0105	S330	7/16/2000		0-15	8.1	0.81 *U*	3,750	13.1	3,560	217	
ONON2A	SF0106	S330	7/16/2000		15-30	3	0.86 *U*	1,820	1.6	2,840	140	
ONON2A	SF0134	S333	8/2/2000		0-15	189	1.8 *U*	22,200	89.8	4,420	221	
ONON2A	SF0135	S333	8/2/2000		15-30	103	1.7 *U*	20,700	102	3,040	183	
ONON2A	SF0153	S334	8/2/2000		0-15	237	1.2	35,200	393	4,360	326	
ONON2A	SF0154	S334	8/2/2000		15-30	237	1.6	31,600	148	8,660	263	
ONON2A	SF0115	S335	8/2/2000		0-15	194	1.7 *U*	27,700	200	5,410	291	
ONON2A	SF0116	S335	8/2/2000		15-30	185	0.77 *U*	28,300	141	7,230	233	
ONON2A	SF0117	S336	8/3/2000		0-15	42.7 *J*	0.57 *U*	12,900	75.7 *J*	13,300	297	
ONON2A	SF0118	S336	8/3/2000		15-30	446 *J*	0.9 *U*	42,000	2,050 *J*	5,070	850	
ONON2A	SF0124	S339	8/3/2000		0-15	366 *J*	1.8	35,800	613 *J*	3,840	784	
ONON2A	SF0125	S339	8/3/2000		15-30	363 *J*	1.8	31,700	455 *J*	6,110	730	

Table A-3A. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Mercury mg/kg	Nickel mg/kg	Potassium mg/kg	Selenium mg/kg	Silver mg/kg	Sodium mg/kg	Thallium mg/kg	Vanadium mg/kg	Zinc mg/kg
O-SEDCHM	S00519	S47	7/24/1992		0-2	0.49	40.2 *J*							79.4 *J*
ONON2A	VC0196	S307	7/18/2000		0-15	0.41	132	94.9 *J*	1.6	0.11 *U*	4,740	0.74 *U*	27.4	57
ONON2A	VC0197	S307	7/18/2000		15-30	0.077	12.8	174 *J*	1.2	0.11 *U*	7,020	0.75 *U*	3.3	27.6
ONON2A	VC0207	S311	7/20/2000		0-15	16 *J*	23	129	0.97 *U*	0.2 *U*	3,240	1.3 *U*	10.1 *J*	66.9
ONON2A	VC0208	S311	7/20/2000		15-30	0.75 *J*	32.9	116	1.1	0.35	4,210	1.2 *U*	8.7 *J*	64.5
ONON2A	VC0187	S313	7/18/2000		0-15	8.8	35.3	1,170 *J*	1.2	1	1,770	0.8 *U*	14.7	190
ONON2A	VC0188	S313	7/18/2000		15-30	4.7	23.5	1,020 *J*	0.82	0.47	1,160	0.64 *U*	17.7	134
ONON2A	SF0072	S314	8/10/2000		0-15	41.6	59	769	0.9	2.8	2,200 *J*	1.1 *U*	13.7 *J*	186
ONON2A	SF0073	S314	8/10/2000		15-30	38.3	50.6	341	0.89	2	2,500 *J*	1.1 *U*	14 *J*	170
ONON2A	SF0076	S316	8/10/2000		0-15	0.35	4.6	355	0.49 *U*	0.11	383 *J*	0.64 *U*	5.4 *J*	53.2
ONON2A	SF0077	S316	8/10/2000		15-30	0.036 *U*	6.3	723	0.47 *U*	0.14	1,030 *J*	0.62 *U*	7.3 *J*	25.1
ONON2A	VC0189	S318	7/14/2000		0-15	0.91 *J*	8.9	251	0.48 *U*	0.36	1,570	0.63 *U*	4.1	83.8
ONON2A	VC0190	S318	7/14/2000		15-30	1.2 *J*	9.4	275	0.47 *U*	3.4	1,930	0.62 *U*	4.3	127
ONON2A	SF0086	S321	8/4/2000		0-15	0.21 *J*	6.3	391	0.52 *U*	0.2	614 *J*	0.69 *U*	3.7	87.9
ONON2A	SF0087	S321	8/4/2000		15-30	0.092 *J*	2.4	221	0.48 *U*	0.098 *U*	966 *J*	0.64 *U*	2.6	25.3
ONON2A	SF0088	S322	8/10/2000		0-15	1	50.9	3,480	0.76 *U*	5.2	1,250 *J*	1.1	29.4 *J*	383
ONON2A	SF0089	S322	8/10/2000		15-30	1.1	62.7	3,820	0.74 *U*	6.2	2,520 *J*	1.2	34.6 *J*	426
ONON2A	SF0094	S325	7/14/2000		0-2	0.072	107	721	1.8	0.18 *U*	1,550	1.2 *U*	23.4	136
ONON2A	SF0095	S325	7/14/2000		2-15	0.17	97.2	660	1.9	0.18 *U*	1,380	1.2 *U*	22	120
ONON2A	SF0096	S325	7/14/2000		15-30	0.24	179	740	2.4	0.18 *U*	1,880	1.2 *U*	34	144
ONON2A	SF0101	S328	7/15/2000		0-15	0.72 *J*	111	533	1.2 *U*	0.12 *U*	6,300	0.81 *U*	25.9	98.5
ONON2A	SF0102	S328	7/15/2000		15-30	0.053 *UJ*	2.6	311	0.89	0.14 *U*	9,000	0.92 *U*	2.2	23.1
ONON2A	SF0103	S329	7/16/2000		0-15	0.11	5.3	200	0.71 *U*	0.14 *U*	5,170	0.94 *U*	2.1	21.8
ONON2A	SF0104	S329	7/16/2000		15-30	0.049 *U*	3	168	0.83	0.13 *U*	7,390	0.85 *U*	1.6	16.5
ONON2A	SF0105	S330	7/16/2000		0-15	0.43	22.4	239	1.2 *U*	0.12 *U*	3,170	0.79 *U*	5.3	30.8
ONON2A	SF0106	S330	7/16/2000		15-30	0.14	3.8	175	0.83	0.13 *U*	4,510	0.84 *U*	1.9	13.8
ONON2A	SF0134	S333	8/2/2000		0-15	1.6	61.1	449	3.4	0.36	3,440	0.87 *U*	33.3	116 *J*
ONON2A	SF0135	S333	8/2/2000		15-30	1.1	27	388	2.9	0.25	7,280	0.83 *U*	19.8	131 *J*
ONON2A	SF0153	S334	8/2/2000		0-15	4.2	206	736	3.8	0.47	2,170	0.77 *U*	55.3	187 *J*
ONON2A	SF0154	S334	8/2/2000		15-30	6.5	88.1	1,510	3	0.23	2,970	0.76 *U*	32.3	108 *J*
ONON2A	SF0115	S335	8/2/2000		0-15	2.1	159	1,090	3.4	0.53	4,210	0.92	63.5	185 *J*
ONON2A	SF0116	S335	8/2/2000		15-30	3.5	77.2	1,570	2.6	0.27	6,300	0.76 *U*	26.3	122 *J*
ONON2A	SF0117	S336	8/3/2000		0-15	7.7	71.4 *J*	812	0.9 *J*	0.085 *U*	1,940 *J*	0.56 *UJ*	43.2 *J*	137 *J*
ONON2A	SF0118	S336	8/3/2000		15-30	14.1	1,060 *J*	1,210	3.9 *J*	1.2	10,800 *J*	0.88 *UJ*	174 *J*	2,260 *J*
ONON2A	SF0124	S339	8/3/2000		0-15	6.4	1,080 *J*	594	3 *J*	0.99	7,300 *J*	0.92 *UJ*	168 *J*	234 *J*
ONON2A	SF0125	S339	8/3/2000		15-30	3	863 *J*	793	2.7 *J*	0.75	13,300 *J*	1 *UJ*	122 *J*	196 *J*

Table A-3A. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Aluminum mg/kg	Antimony mg/kg	Arsenic mg/kg	Barium mg/kg	Beryllium mg/kg	Cadmium mg/kg	Calcium mg/kg	Chromium mg/kg	Cobalt mg/kg
ONON2A	SF0123	S340	8/15/2000	1	0-2	1,630 *J*	0.36 *UJ*	17.1 *J*	229 *J*	0.15 *J*	0.15 *J*	304,000 *J*	58.3 *J*	7.1 *J*
ONON2A	SF0123_R	S340	8/15/2000	2	0-2	3,020 *J*	0.53 *J*	18.7 *J*	1,640 *J*	0.27 *J*	0.26 *J*	317,000 *J*	13.7 *J*	2.2 *J*
ONON2A	SF0126	S340	8/3/2000		0-15	2,770	0.46 *J*	8.5	952 *J*	0.26 *J*	0.13 *J*	260,000	12.5	1.4 *J*
ONON2A	SF0127	S340	8/3/2000		15-30	3,760	0.38 *UJ*	8.7	2,750 *J*	0.31 *J*	0.066 *J*	266,000	42.5	1.8 *J*
ONON2A	SF0128	S341	8/4/2000		0-15	6,390	0.78 *J*	9.4	1,010	0.53	0.19	297,000	10.2 *J*	3.1
ONON2A	SF0129	S341	8/4/2000		15-30	7,430	0.53 *J*	8.4	22,600	0.57	0.071 *U*	257,000	10.8 *J*	7.8
ONON2A	SF0132	S343	8/4/2000		0-15	3,350	0.59 *J*	7.3	1,090	0.44	0.88	329,000	20.7 *J*	2.7
ONON2A	SF0133	S343	8/4/2000		15-30	3,010	0.36 *J*	4.4	558	0.28	1.2	331,000	14.3 *J*	1.7
ONON2A	SF0136	S345	8/4/2000		0-15	8,230	0.68 *J*	11.8	2,070	0.65	0.35	276,000	19.2 *J*	4
ONON2A	SF0137	S345	8/4/2000		15-30	6,700	0.92 *J*	11.5	1,350	0.52	0.62	287,000	18 *J*	3.4
ONON2A	SF0138	S346	8/4/2000		0-15	3,080	0.46 *J*	4.8	776	0.32	0.91	318,000	18 *J*	2.2
ONON2A	SF0139	S346	8/4/2000		15-30	2,410	0.34 *J*	3.9	1,410	0.24	2.3	324,000	18.2 *J*	1.8
ONON2A	SF0140	S347	8/4/2000		0-15	6,200	0.54 *J*	10.4	1,360	0.54	0.62	282,000	18.4 *J*	4.4
ONON2A	SF0141	S347	8/4/2000		15-30	8,770	0.88 *J*	12.1	1,540	0.71	0.37	280,000	15 *J*	4.3
ONON2A	SF0142	S348	8/5/2000		0-15	4,000	0.59 *J*	7.4	284	0.36	0.86	339,000	19.4 *J*	2.1
ONON2A	SF0143	S348	8/5/2000		15-30	2,840	0.47 *UJ*	5.8	242	0.27	0.64	322,000	13.6 *J*	1.2
ONON2A	SF0144	S349	8/5/2000		0-15	3,980	0.39 *UJ*	6.9	783 *J*	0.37	1.4	309,000	44.1	3.5
ONON2A	SF0145	S349	8/5/2000		15-30	5,590	0.42 *UJ*	8.5	436 *J*	0.54	3	274,000	60.9	6.3
ONON2A	SF0146	S350	8/5/2000		0-15	4,590	0.58 *J*	7.1	1,230 *J*	0.38	0.72	313,000	36.2	3.2
ONON2A	SF0147	S350	8/5/2000		15-30	3,260	0.45 *J*	5.5	496 *J*	0.29	0.67	334,000	20.6	1.9
ONON2A	SF0149	S351	8/5/2000		0-15	2,520	0.27 *UJ*	3.4	109 *J*	0.33	0.82	326,000	47.5	5.1
ONON2A	SF0150	S351	8/5/2000		15-30	4,880	0.36 *UJ*	6.1	308 *J*	0.43	1.7	248,000	68	5.5
ONON2A	SF0173	S351	8/15/2000		0-2	5,760	0.9	5.9	405	0.44	1.1	281,000	57.9	5.5
ONON2A	SF0151	S352	8/10/2000		0-15	5,590	1.2	5.2	242	0.41	2.6	143,000	87.3	6.5
ONON2A	SF0152	S352	8/10/2000		15-30	7,210	0.8 *J*	7.4	344	0.47	4.4	216,000	108	5.7
ONON2A	SF0113	S353	7/27/2000		0-15	3,100	0.46 *J*	3.5	188	0.37	2.2	151,000	60.7	5.4
ONON2A	SF0114	S353	7/27/2000		15-30	2,560	0.48 *J*	2.5	115	0.25	2.4	90,500	49.8	4.2
ONON2A	SF0024	S366	8/15/2000		0-15	2,210	0.36 *U*	0.62	111	0.18	0.14	336,000	10.7	0.84
ONON2A	SF0025	S366	8/15/2000		15-30	1,980	0.36 *U*	0.42 *U*	107	0.15	0.053 *U*	340,000	3.7	0.61
ONON2A	SF0026	S367	8/15/2000		0-2	1,790	0.35 *U*	0.93	110 *J*	0.22	2.5	311,000	71.1	1.9
ONON2A	SF0027	S367	8/15/2000		2-15	2,660	0.36 *U*	0.69	106	0.21	1.1	329,000	37.1	1.3
ONON2A	SF0028	S367	8/15/2000		15-30	3,270	0.38 *U*	0.7	95.9	0.18	0.057 *U*	324,000	4.9	0.54
ONON2A	SF0170	S434	8/9/2000		0-15	1,000 *J*	0.34 *UJ*	0.62	98 *J*	0.11	0.049 *U*	332,000 *J*	26.5 *J*	2.9 *J*
ONON2A	SF0171	S434	8/9/2000		15-30	1,600 *J*	0.36 *UJ*	0.63	94.1 *J*	0.13	0.053 *U*	320,000 *J*	3.8 *J*	0.39
ONON2A	SF0172	S435	8/9/2000		0-5	1,950 *J*	0.83 *J*	9.9 *J*	188 *J*	0.18	0.23	219,000 *J*	159 *J*	14.7 *J*
ONON2A	PC0046	S402	7/21/2000	CL1	0-4									

Table A-3A. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Copper mg/kg	Cyanide mg/kg	Iron mg/kg	Lead mg/kg	Magnesium mg/kg	Manganese mg/kg	Methylmercury µg/kg
ONON2A	SF0123	S340	8/15/2000	1	0-2	13.4 *J*	0.94 *UJ*	3,770 *J*	16.1 *J*	5,260 *J*	305 *J*	
ONON2A	SF0123_R	S340	8/15/2000	2	0-2	28.6 *J*	2 *J*	4,370 *J*	23.6 *J*	12,400 *J*	241 *J*	
ONON2A	SF0126	S340	8/3/2000		0-15	42.2 *J*	3.8	5,670	21.5 *J*	12,400	160	
ONON2A	SF0127	S340	8/3/2000		15-30	41.9 *J*	3.7	3,900	26.1 *J*	14,500	182	
ONON2A	SF0128	S341	8/4/2000		0-15	37 *J*	1.3	5,780	30.9	15,800	250	
ONON2A	SF0129	S341	8/4/2000		15-30	22.9 *J*	3.3	5,730	14.1	24,900	313	
ONON2A	SF0132	S343	8/4/2000		0-15	132 *J*	0.94	4,840	34.5	9,940	208	
ONON2A	SF0133	S343	8/4/2000		15-30	62.4 *J*	2	3,810	29.5	11,300	191	
ONON2A	SF0136	S345	8/4/2000		0-15	50.8 *J*	6.4	8,970	20	30,900	340	
ONON2A	SF0137	S345	8/4/2000		15-30	52.2 *J*	12	7,270	22.8	39,800	414	
ONON2A	SF0138	S346	8/4/2000		0-15	58.2 *J*	0.77 *U*	4,390	36.3	7,410	231	
ONON2A	SF0139	S346	8/4/2000		15-30	94 *J*	1.2	4,010	46.6	7,690	185	
ONON2A	SF0140	S347	8/4/2000		0-15	27.6 *J*	0.91 *U*	7,600	21.1	17,900	405	
ONON2A	SF0141	S347	8/4/2000		15-30	31.1 *J*	5	8,430	19.1	26,200	242	
ONON2A	SF0142	S348	8/5/2000		0-15	27.8	1.4 *U*	5,130	91.7	24,900	327 *J*	
ONON2A	SF0143	S348	8/5/2000		15-30	28	1.3	3,090	47.1	22,100	173 *J*	
ONON2A	SF0144	S349	8/5/2000		0-15	50.1 *J*	1 *U*	7,500	50.4	13,100 *J*	246	
ONON2A	SF0145	S349	8/5/2000		15-30	66.9 *J*	1.1 *U*	8,620	83.7	16,300 *J*	260	
ONON2A	SF0146	S350	8/5/2000		0-15	41 *J*	1.3 *U*	7,760	78.1	26,900 *J*	348	
ONON2A	SF0147	S350	8/5/2000		15-30	35.2 *J*	1.2 *U*	6,380	49.6	19,000 *J*	198	
ONON2A	SF0149	S351	8/5/2000		0-15	31.5 *J*	0.72 *U*	6,750	88.6	12,500 *J*	232	
ONON2A	SF0150	S351	8/5/2000		15-30	181 *J*	0.96 *U*	10,400	107	25,200 *J*	281	
ONON2A	SF0173	S351	8/15/2000		0-2	64.1	1.2 *U*	10,600	124	9,600	299	
ONON2A	SF0151	S352	8/10/2000		0-15	86.7	0.96 *U*	12,500	750	11,200	186	
ONON2A	SF0152	S352	8/10/2000		15-30	110	0.9 *U*	11,300	845	12,800	210 *J*	
ONON2A	SF0113	S353	7/27/2000		0-15	71.2	0.73 *U*	11,500	101	5,200	175	
ONON2A	SF0114	S353	7/27/2000		15-30	55	0.65 *U*	8,050	104	5,800	138	
ONON2A	SF0024	S366	8/15/2000		0-15	6	0.94 *U*	3,650	4	3,610	228	
ONON2A	SF0025	S366	8/15/2000		15-30	2.6	0.94 *U*	3,380	0.85	3,520	184	
ONON2A	SF0026	S367	8/15/2000		0-2	34.3 *J*	0.92 *U*	4,350	17.5	3,550	364	
ONON2A	SF0027	S367	8/15/2000		2-15	18.4	0.95 *U*	4,600	8.3	4,510	279	
ONON2A	SF0028	S367	8/15/2000		15-30	3.9	1 *U*	4,440	1.4	3,960	170	
ONON2A	SF0170	S434	8/9/2000		0-15	4.6 *J*	0.88 *U*	2,470 *J*	3.8 *J*	3,120 *J*	151 *J*	
ONON2A	SF0171	S434	8/9/2000		15-30	2.5 *J*	0.94 *U*	2,410 *J*	0.88 *J*	3,390 *J*	114 *J*	
ONON2A	SF0172	S435	8/9/2000		0-5	56.7 *J*	0.82 *U*	9,590 *J*	38.7 *J*	4,710 *J*	155 *J*	
ONON2A	PC0046	S402	7/21/2000	CL1	0-4							1.12

Table A-3A. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Mercury mg/kg	Nickel mg/kg	Potassium mg/kg	Selenium mg/kg	Silver mg/kg	Sodium mg/kg	Thallium mg/kg	Vanadium mg/kg	Zinc mg/kg
ONON2A	SF0123	S340	8/15/2000	1	0-2	1 *J*	20.6 *J*	469 *J*	0.87 *J*	0.14 *UJ*	2,030 *J*	0.92 *UJ*	9.2 *J*	54.7 *J*
ONON2A	SF0123_R	S340	8/15/2000	2	0-2	2.6 *J*	8.2 *J*	40.1 *J*	1.6 *J*	0.19 *J*	5,690 *J*	0.96 *UJ*	7.1 *J*	44.9 *J*
ONON2A	SF0126	S340	8/3/2000		0-15	2.5	9.7 *J*	168	0.87 *J*	0.49	7,020 *J*	0.79 *UJ*	6.2 *J*	39.9 *J*
ONON2A	SF0127	S340	8/3/2000		15-30	2.2	7.8 *J*	260	0.8 *J*	0.23	10,300 *J*	0.99 *UJ*	7.2 *J*	43.7 *J*
ONON2A	SF0128	S341	8/4/2000		0-15	2.5	14.9	712 *J*	1.6	0.44	4,730 *J*	0.88	12.9	47
ONON2A	SF0129	S341	8/4/2000		15-30	0.74	10	318 *J*	1.3	0.19 *U*	10,200 *J*	1.2 *U*	13.6	22.7
ONON2A	SF0132	S343	8/4/2000		0-15	2.8	27.2	90.4 *J*	1.2	0.39	3,360 *J*	0.85 *U*	7.5	47.8
ONON2A	SF0133	S343	8/4/2000		15-30	1.9	18.8	153 *J*	0.97	0.32	4,210 *J*	0.88 *U*	5.9	38.5
ONON2A	SF0136	S345	8/4/2000		0-15	0.59	25.3	313 *J*	0.9 *U*	0.18 *U*	2,530 *J*	1.2 *U*	15.2	30.6
ONON2A	SF0137	S345	8/4/2000		15-30	0.39	22.5	213 *J*	1.6	0.24 *U*	5,360 *J*	1.6 *U*	11.7	51.9
ONON2A	SF0138	S346	8/4/2000		0-15	1.8	20.4	411 *J*	1.1 *U*	0.29	2,880 *J*	0.76 *U*	6.4	53.7
ONON2A	SF0139	S346	8/4/2000		15-30	1.7	21.5	88.2 *J*	1.2 *U*	0.38	3,420 *J*	0.81 *U*	4.6	57.9
ONON2A	SF0140	S347	8/4/2000		0-15	1.4	19.5	357 *J*	1.5	0.16	2,090 *J*	0.89 *U*	11.5	63.3
ONON2A	SF0141	S347	8/4/2000		15-30	1.5	20	851 *J*	0.98	0.17 *U*	3,180 *J*	1.1 *U*	14.9	92.5
ONON2A	SF0142	S348	8/5/2000		0-15	3.1 *J*	20.8	14.6 *U*	1.1 *U*	0.28	4,030 *J*	1.4 *U*	7.4 *J*	53.7
ONON2A	SF0143	S348	8/5/2000		15-30	2.1 *J*	16	12.7 *U*	0.92 *U*	0.26	5,510 *J*	1.2 *U*	5.3	30 *J*
ONON2A	SF0144	S349	8/5/2000		0-15	2 *J*	23.2	167	1.1	0.41	11,600	1 *U*	9.3	100 *J*
ONON2A	SF0145	S349	8/5/2000		15-30	1.8 *J*	26.4	159	2	1	13,700	1.1 *U*	10.7	144 *J*
ONON2A	SF0146	S350	8/5/2000		0-15	10.1 *J*	63.3	13.6 *U*	0.99 *U*	0.2 *U*	6,460	1.3 *U*	7.9	65.2 *J*
ONON2A	SF0147	S350	8/5/2000		15-30	13.9 *J*	25.1	11.9 *U*	1.4	0.18 *U*	8,630	1.1 *U*	5.6	50.6 *J*
ONON2A	SF0149	S351	8/5/2000		0-15	6.1 *J*	25.5	899	1.2	0.61	888	0.7 *U*	7.3	87.8 *J*
ONON2A	SF0150	S351	8/5/2000		15-30	11.8 *J*	32.6	916	1.3	0.96	1,730	0.94 *U*	14.5	162 *J*
ONON2A	SF0173	S351	8/15/2000		0-2	12.2	27.5	1,290	1.2	1.4	2,010	1.2 *U*	16.3	160
ONON2A	SF0151	S352	8/10/2000		0-15	18.2	32.4	1,170	0.78	1.8	4,120 *J*	0.97	14.2	218 *J*
ONON2A	SF0152	S352	8/10/2000		15-30	37	41.1	1,570	0.67 *U*	2.7	10,100	1.3	15.9	241
ONON2A	SF0113	S353	7/27/2000		0-15	11.7	32.4	471	0.54 *U*	0.51	2,100	0.71 *U*	6.7	162
ONON2A	SF0114	S353	7/27/2000		15-30	2	24.3	437	0.64	0.45	3,420	0.64 *U*	6.2	134
ONON2A	SF0024	S366	8/15/2000		0-15	0.053 *U*	4.2	659	0.93	0.14 *U*	3,690	0.92 *U*	3.7	27.7
ONON2A	SF0025	S366	8/15/2000		15-30	0.054 *U*	4.1	521	0.7 *U*	0.14 *U*	7,030	0.92 *U*	3.1	21.2
ONON2A	SF0026	S367	8/15/2000		0-2	0.7 *J*	8.8	507	1	0.52	1,060 *J*	0.9 *U*	3.9	80.8
ONON2A	SF0027	S367	8/15/2000		2-15	0.33	6.5	851	0.73	0.14 *U*	1,230	0.93 *U*	4.5	57.7
ONON2A	SF0028	S367	8/15/2000		15-30	0.091	4.2	1,060	0.93	0.15 *U*	1,990	0.99 *U*	5	20.6
ONON2A	SF0170	S434	8/9/2000		0-15	0.056	9.1 *J*	160 *J*	1.2 *J*	0.13 *U*	4,490 *J*	0.87 *U*	4.3 *J*	24.3 *J*
ONON2A	SF0171	S434	8/9/2000		15-30	0.053 *U*	3 *J*	351 *J*	1.1 *J*	0.14 *U*	9,140 *J*	0.92 *U*	2.6 *J*	12.4 *J*
ONON2A	SF0172	S435	8/9/2000		0-5	0.18	72.6 *J*	48.3 *J*	5.4 *J*	1.7 *J*	4,460 *J*	0.81 *U*	22.8 *J*	50.5 *J*
ONON2A	PC0046	S402	7/21/2000	CL1	0-4	3.89								

Table A-3A. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Aluminum mg/kg	Antimony mg/kg	Arsenic mg/kg	Barium mg/kg	Beryllium mg/kg	Cadmium mg/kg	Calcium mg/kg	Chromium mg/kg	Cobalt mg/kg
ONON2A	PC0047	S402	7/21/2000	CL1	4-8									
ONON2A	PC0049	S402	7/21/2000	CL2	0-4									
ONON2A	PC0050	S402	7/21/2000	CL2	4-8									
ONON2A	PC0052	S402	7/21/2000	CL3	0-4									
ONON2A	PC0053	S402	7/21/2000	CL3	4-8									
ONON2A	BC0009	S402	7/30/2000		0-2									
ONON2A	BC0010	S402	7/30/2000		2-10									
ONON2A	BC0013	S403	7/30/2000		0-2									
ONON2A	BC0014	S403	7/30/2000		2-14									
ONON2A	BC0015	S404	7/31/2000		0-2									
ONON2A	BC0016	S404	7/31/2000		2-8									
ONON2A	BC0019	S406	7/31/2000		0-2									
ONON2A	BC0020	S406	7/31/2000		2-15									

Table A-3A. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Copper mg/kg	Cyanide mg/kg	Iron mg/kg	Lead mg/kg	Magnesium mg/kg	Manganese mg/kg	Methylmercury µg/kg
ONON2A	PC0047	S402	7/21/2000	CL1	4-8							1
ONON2A	PC0049	S402	7/21/2000	CL2	0-4							1.99
ONON2A	PC0050	S402	7/21/2000	CL2	4-8							0.608
ONON2A	PC0052	S402	7/21/2000	CL3	0-4							0.438
ONON2A	PC0053	S402	7/21/2000	CL3	4-8							0.886
ONON2A	BC0009	S402	7/30/2000		0-2							16.2
ONON2A	BC0010	S402	7/30/2000		2-10							17.6
ONON2A	BC0013	S403	7/30/2000		0-2							3.49
ONON2A	BC0014	S403	7/30/2000		2-14							0.68
ONON2A	BC0015	S404	7/31/2000		0-2							8.7
ONON2A	BC0016	S404	7/31/2000		2-8							12
ONON2A	BC0019	S406	7/31/2000		0-2							41.7
ONON2A	BC0020	S406	7/31/2000		2-15							19.5

Table A-3A. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Mercury mg/kg	Nickel mg/kg	Potassium mg/kg	Selenium mg/kg	Silver mg/kg	Sodium mg/kg	Thallium mg/kg	Vanadium mg/kg	Zinc mg/kg
ONON2A	PC0047	S402	7/21/2000	CL1	4-8	2.45								
ONON2A	PC0049	S402	7/21/2000	CL2	0-4	5.24								
ONON2A	PC0050	S402	7/21/2000	CL2	4-8	1.65								
ONON2A	PC0052	S402	7/21/2000	CL3	0-4	3.64 *J*								
ONON2A	PC0053	S402	7/21/2000	CL3	4-8	2.01								
ONON2A	BC0009	S402	7/30/2000		0-2	1.8								
ONON2A	BC0010	S402	7/30/2000		2-10	1.6								
ONON2A	BC0013	S403	7/30/2000		0-2	1								
ONON2A	BC0014	S403	7/30/2000		2-14	0.97								
ONON2A	BC0015	S404	7/31/2000		0-2	22.4								
ONON2A	BC0016	S404	7/31/2000		2-8	25.7								
ONON2A	BC0019	S406	7/31/2000		0-2	40.4								
ONON2A	BC0020	S406	7/31/2000		2-15	64.8								

Notes: *J* - estimated

U - not detected at reported quantitation limit

CL-1, CL-2, and CL-3 are co-located borings. Although they are not true field replicates, they were collected with the intent of assessing the spatial heterogeneity of samples collected at essentially the same location. As such, these three samples (CL-1, 2, and 3) were treated in the same manner as field replicates for the purposes of the HHRA.

Table A-3B. Southern Basin Nearshore Sediments – Volatile Organic Compound Data

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	1,1,1-Trichloro-ethane (µg/kg)	1,1,2,2-Tetrachloro-ethane (µg/kg)	1,1,2-Trichloro-ethane (µg/kg)	1,1-Dichloro-ethane (µg/kg)	1,1-Dichloro-ethene (µg/kg)	1,2-Dichloro-ethane (µg/kg)	1,2-Dichloro-ethene (Total) (µg/kg)	1,2-Dichloro-propane (µg/kg)
O-SEDCHM	S00014	P1	5/8/1992		0 - 30	5,300 *U*	5,300 *U*	5,300 *U*	5,300 *U*	5,300 *U*	5,300 *U*	5,300 *U*	5,300 *U*
O-SEDCHM	S00001	P10	5/7/1992		0 - 30	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*
O-SEDCHM	S00062	P16	5/11/1992	1	0 - 30	110 *U*	110 *U*	110 *U*	110 *U*	110 *U*	110 *U*	110 *U*	110 *U*
O-SEDCHM	S00065	P16	5/11/1992	2	0 - 30	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*
O-SEDCHM	S00066	P16	5/11/1992	3	0 - 30	52 *U*	52 *U*	52 *U*	52 *U*	52 *U*	52 *U*	52 *U*	52 *U*
O-SEDCHM	S00017	P20	5/8/1992		0 - 30	5,900 *U*	5,900 *U*	5,900 *U*	5,900 *U*	5,900 *U*	5,900 *U*	5,900 *U*	5,900 *U*
O-SEDCHM	S00007	P36	5/8/1992		0 - 30	13 *U*	13 *U*	13 *U*	13 *U*	13 *U*	13 *U*	13 *U*	13 *U*
O-SEDCHM	S00051	P46	5/10/1992		0 - 30	76 *U*	76 *U*	76 *U*	76 *U*	76 *U*	76 *U*	76 *U*	76 *U*
O-SEDCHM	S00004	P6	5/7/1992		0 - 30	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*
O-SEDCHM	S00556	S1	8/2/1992	1	0 - 2	1,700 *U*	1,700 *U*	1,700 *U*	1,700 *U*	1,700 *U*	1,700 *U*	1,700 *U*	1,700 *U*
O-SEDCHM	S00557	S1	8/2/1992	2	0 - 2	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*
O-SEDCHM	S00558	S1	8/2/1992	3	0 - 2	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*
O-SEDCHM	S00546	S2	7/30/1992		0 - 2								
O-SEDCHM	S00613	S3	8/12/1992		0 - 2								
O-SEDCHM	S00653	S3	9/17/1992		0 - 2								
O-SEDCHM	S00340	S3	10/1/1992		0 - 30								
O-SEDCHM	S00547	S5	7/30/1992		0 - 2								
O-SEDCHM	S00582	S6	8/6/1992		0 - 2	14 *U*	14 *U*	14 *U*	14 *U*	14 *U*	14 *U*	14 *U*	14 *U*
O-SEDCHM	S00555	S7	8/2/1992		0 - 2								
O-SEDCHM	S00572	S10	8/4/1992		0 - 2	17 *U*	17 *UJ*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*	17 *U*
O-SEDCHM	S00567	S11	8/3/1992		0 - 2								
O-SEDCHM	S00162	S11	7/10/1992		0 - 30								
O-SEDCHM	S00565	S13	8/3/1992		0 - 2								
O-SEDCHM	S00542	S14	7/30/1992		0 - 2								
O-SEDCHM	S00566	S16	8/3/1992		0 - 2	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*
O-SEDCHM	S00562	S17	8/3/1992	1	0 - 2								
O-SEDCHM	S00563	S17	8/3/1992	2	0 - 2								
O-SEDCHM	S00564	S17	8/3/1992	3	0 - 2								
O-SEDCHM	S00560	S20	8/2/1992		0 - 2	3,000 *U*	3,000 *U*	3,000 *U*	3,000 *U*	3,000 *U*	3,000 *U*	3,000 *U*	3,000 *U*
O-SEDCHM	S00540	S21	7/30/1992		0 - 2								
O-SEDCHM	S00580	S26	8/6/1992		0 - 2								
O-SEDCHM	S00533	S28	7/28/1992		0 - 2								
O-SEDCHM	S00573	S34	8/4/1992		0 - 2								
O-SEDCHM	S00535	S35	7/28/1992		0 - 2								
O-SEDCHM	S00532	S36	7/27/1992		0 - 2	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*
O-SEDCHM	S00521	S37	7/24/1992		0 - 2								

Table A-3B. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	2-Butanone (µg/kg)	2-Hexanone (µg/kg)	4-Methyl-2-pentanone (µg/kg)	Acetone (µg/kg)	Benzene (µg/kg)	Bromodichloro-methane (µg/kg)	Bromoform (µg/kg)	Bromomethane (µg/kg)
O-SEDCHM	S00014	P1	5/8/1992		0 - 30	5,300 *U*	5,300 *U*	5,300 *U*	5,300 *U*	5,900	5,300 *U*	5,300 *U*	5,300 *U*
O-SEDCHM	S00001	P10	5/7/1992		0 - 30	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*
O-SEDCHM	S00062	P16	5/11/1992	1	0 - 30	220 *J*	110 *U*	110 *U*	220 *UJ*	18 *J*	110 *U*	110 *U*	110 *U*
O-SEDCHM	S00065	P16	5/11/1992	2	0 - 30	330	58 *U*	58 *U*	780	53 *J*	58 *U*	58 *U*	58 *U*
O-SEDCHM	S00066	P16	5/11/1992	3	0 - 30	420	52 *U*	52 *U*	630	40 *J*	52 *U*	52 *U*	52 *U*
O-SEDCHM	S00017	P20	5/8/1992		0 - 30	5,900 *U*	5,900 *U*	5,900 *U*	5,900 *U*	5,000 *J*	5,900 *U*	5,900 *U*	5,900 *U*
O-SEDCHM	S00007	P36	5/8/1992		0 - 30	13 *U*	13 *U*	13 *U*	54	13 *U*	13 *U*	13 *U*	13 *U*
O-SEDCHM	S00051	P46	5/10/1992		0 - 30	280	76 *U*	76 *U*	230 *J*	76 *U*	76 *U*	76 *U*	76 *U*
O-SEDCHM	S00004	P6	5/7/1992		0 - 30	11 *U*	11 *U*	11 *U*	41	11 *U*	11 *U*	11 *U*	11 *U*
O-SEDCHM	S00556	S1	8/2/1992	1	0 - 2	1,700 *U*	1,700 *U*	1,700 *U*	1,700 *U*	1,900	1,700 *U*	1,700 *U*	1,700 *U*
O-SEDCHM	S00557	S1	8/2/1992	2	0 - 2	29 *J*	15 *U*	15 *U*	170	15 *U*	15 *U*	15 *U*	15 *UJ*
O-SEDCHM	S00558	S1	8/2/1992	3	0 - 2	32 *J*	18 *U*	18 *U*	230	18 *U*	18 *U*	18 *U*	18 *UJ*
O-SEDCHM	S00546	S2	7/30/1992		0 - 2					330 *J*			
O-SEDCHM	S00613	S3	8/12/1992		0 - 2								
O-SEDCHM	S00653	S3	9/17/1992		0 - 2					51			
O-SEDCHM	S00340	S3	10/1/1992		0 - 30					800 *J*			
O-SEDCHM	S00547	S5	7/30/1992		0 - 2					11 *UJ*			
O-SEDCHM	S00582	S6	8/6/1992		0 - 2	14 *U*	14 *U*	14 *U*	37	14 *U*	14 *U*	14 *U*	14 *UJ*
O-SEDCHM	S00555	S7	8/2/1992		0 - 2					7 *UJ*			
O-SEDCHM	S00572	S10	8/4/1992		0 - 2	28 *J*	17 *UJ*	17 *UJ*	120	17 *U*	17 *U*	17 *U*	17 *UJ*
O-SEDCHM	S00567	S11	8/3/1992		0 - 2					7 *U*			
O-SEDCHM	S00162	S11	7/10/1992		0 - 30					1,500 *U*			
O-SEDCHM	S00565	S13	8/3/1992		0 - 2					50 *UJ*			
O-SEDCHM	S00542	S14	7/30/1992		0 - 2					2,700 *U*			
O-SEDCHM	S00566	S16	8/3/1992		0 - 2	16 *U*	16 *U*	16 *U*	34	16 *U*	16 *U*	16 *U*	16 *UJ*
O-SEDCHM	S00562	S17	8/3/1992	1	0 - 2					11 *UJ*			
O-SEDCHM	S00563	S17	8/3/1992	2	0 - 2					10 *UJ*			
O-SEDCHM	S00564	S17	8/3/1992	3	0 - 2					10 *UJ*			
O-SEDCHM	S00560	S20	8/2/1992		0 - 2	2,900 *J*	3,000 *U*	3,000 *U*	3,000 *U*	750 *J*	3000 *U*	3,000 *U*	3,000 *U*
O-SEDCHM	S00540	S21	7/30/1992		0 - 2					1,100 *U*			
O-SEDCHM	S00580	S26	8/6/1992		0 - 2					8 *U*			
O-SEDCHM	S00533	S28	7/28/1992		0 - 2					5,700			
O-SEDCHM	S00573	S34	8/4/1992		0 - 2					8 *UJ*			
O-SEDCHM	S00535	S35	7/28/1992		0 - 2					10 *UJ*			
O-SEDCHM	S00532	S36	7/27/1992		0 - 2	18 *UJ*	18 *UJ*	18 *UJ*	40 *J*	8 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*
O-SEDCHM	S00521	S37	7/24/1992		0 - 2					10 *UJ*			

Table A-3B. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Carbon disulfide (µg/kg)	Carbon tetrachloride (µg/kg)	Chlorobenzene (µg/kg)	Chloroethane (µg/kg)	Chloroform (µg/kg)	Chloromethane (µg/kg)	Cis-1,2-dichloro-ethene (µg/kg)	Cis-1,3-dichloro-propene (µg/kg)
O-SEDCHM	S00014	P1	5/8/1992		0 - 30	5,300 *U*	5,300 *U*	46,000	5,300 *U*	5,300 *U*	5,300 *U*		5,300 *U*
O-SEDCHM	S00001	P10	5/7/1992		0 - 30	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*		15 *U*
O-SEDCHM	S00062	P16	5/11/1992	1	0 - 30	110 *U*	110 *U*	150	110 *U*	110 *U*	110 *U*		110 *U*
O-SEDCHM	S00065	P16	5/11/1992	2	0 - 30	58 *U*	58 *U*	220	58 *U*	58 *U*	58 *U*		58 *U*
O-SEDCHM	S00066	P16	5/11/1992	3	0 - 30	14 *J*	52 *U*	180	52 *U*	52 *U*	52 *U*		52 *U*
O-SEDCHM	S00017	P20	5/8/1992		0 - 30	5,900 *U*	5,900 *U*	4,800 *J*	5,900 *U*	5,900 *U*	5,900 *U*		5,900 *U*
O-SEDCHM	S00007	P36	5/8/1992		0 - 30	13 *U*	13 *U*	13 *U*	13 *U*	13 *U*	13 *U*		13 *U*
O-SEDCHM	S00051	P46	5/10/1992		0 - 30	76 *U*	76 *U*	76 *U*	76 *U*	76 *U*	76 *U*		76 *U*
O-SEDCHM	S00004	P6	5/7/1992		0 - 30	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*		11 *U*
O-SEDCHM	S00556	S1	8/2/1992	1	0 - 2	1,700 *U*	1,700 *U*	30,000	1,700 *U*	1,700 *U*	1,700 *U*		1,700 *U*
O-SEDCHM	S00557	S1	8/2/1992	2	0 - 2	15 *U*	15 *U*	6 *J*	15 *U*	15 *U*	15 *U*		15 *U*
O-SEDCHM	S00558	S1	8/2/1992	3	0 - 2	18 *U*	18 *U*	10 *J*	18 *U*	18 *U*	18 *U*		18 *U*
O-SEDCHM	S00546	S2	7/30/1992		0 - 2			3,300					
O-SEDCHM	S00613	S3	8/12/1992		0 - 2								
O-SEDCHM	S00653	S3	9/17/1992		0 - 2			1,100					
O-SEDCHM	S00340	S3	10/1/1992		0 - 30			20,000					
O-SEDCHM	S00547	S5	7/30/1992		0 - 2			210 *J*					
O-SEDCHM	S00582	S6	8/6/1992		0 - 2	14 *UJ*	14 *U*	14 *U*	14 *U*	14 *U*	14 *U*		14 *U*
O-SEDCHM	S00555	S7	8/2/1992		0 - 2			7 *UJ*					
O-SEDCHM	S00572	S10	8/4/1992		0 - 2	17 *UJ*	17 *U*	7 *J*	17 *U*	17 *U*	17 *U*		17 *U*
O-SEDCHM	S00567	S11	8/3/1992		0 - 2			7 *U*					
O-SEDCHM	S00162	S11	7/10/1992		0 - 30			1,300 *J*					
O-SEDCHM	S00565	S13	8/3/1992		0 - 2			50 *UJ*					
O-SEDCHM	S00542	S14	7/30/1992		0 - 2			3,900					
O-SEDCHM	S00566	S16	8/3/1992		0 - 2	16 *UJ*	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*		16 *U*
O-SEDCHM	S00562	S17	8/3/1992	1	0 - 2			11 *UJ*					
O-SEDCHM	S00563	S17	8/3/1992	2	0 - 2			10 *UJ*					
O-SEDCHM	S00564	S17	8/3/1992	3	0 - 2			10 *UJ*					
O-SEDCHM	S00560	S20	8/2/1992		0 - 2	3,000 *U*	3,000 *U*	1,100 *J*	3,000 *U*	3,000 *U*	3,000 *U*		3,000 *U*
O-SEDCHM	S00540	S21	7/30/1992		0 - 2			3,300					
O-SEDCHM	S00580	S26	8/6/1992		0 - 2			8 *U*					
O-SEDCHM	S00533	S28	7/28/1992		0 - 2			30,000					
O-SEDCHM	S00573	S34	8/4/1992		0 - 2			8 *UJ*					
O-SEDCHM	S00535	S35	7/28/1992		0 - 2			18 *J*					
O-SEDCHM	S00532	S36	7/27/1992		0 - 2	18 *UJ*	18 *UJ*	8 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*		18 *UJ*
O-SEDCHM	S00521	S37	7/24/1992		0 - 2			10 *UJ*					

Table A-3B. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Dibromochloro-methane (µg/kg)	Ethylbenzene (µg/kg)	Methylene chloride (µg/kg)	Styrene (µg/kg)	Tetrachloro-ethene (µg/kg)	Toluene (µg/kg)	trans-1,2-Dichloroethene (µg/kg)	trans-1,3-Dichloropropene (µg/kg)
O-SEDCHM	S00014	P1	5/8/1992		0 - 30	5,300 *U*	5,200 *J*	5,300 *U*	5,300 *U*	5,300 *U*	8,600		5,300 *U*
O-SEDCHM	S00001	P10	5/7/1992		0 - 30	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*		15 *U*
O-SEDCHM	S00062	P16	5/11/1992	1	0 - 30	110 *U*	110 *U*	110 *U*	110 *U*	110 *U*	26 *J*		110 *U*
O-SEDCHM	S00065	P16	5/11/1992	2	0 - 30	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	54 *J*		58 *U*
O-SEDCHM	S00066	P16	5/11/1992	3	0 - 30	52 *U*	52 *U*	52 *U*	52 *U*	52 *U*	61		52 *U*
O-SEDCHM	S00017	P20	5/8/1992		0 - 30	5,900 *U*	9,100	5,900 *U*	5,900 *U*	5,900 *U*	12,000		5,900 *U*
O-SEDCHM	S00007	P36	5/8/1992		0 - 30	13 *U*	13 *U*	13 *U*	13 *U*	13 *U*	13 *U*		13 *U*
O-SEDCHM	S00051	P46	5/10/1992		0 - 30	76 *U*	76 *U*	76 *U*	76 *U*	76 *U*	38 *J*		76 *U*
O-SEDCHM	S00004	P6	5/7/1992		0 - 30	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*		11 *U*
O-SEDCHM	S00556	S1	8/2/1992	1	0 - 2	1,700 *U*	1,700 *U*	1,700 *U*	1,700 *U*	1,700 *U*	1,300 *J*		1,700 *U*
O-SEDCHM	S00557	S1	8/2/1992	2	0 - 2	15 *U*	15 *U*	22 *U*	15 *U*	15 *U*	15 *U*		15 *U*
O-SEDCHM	S00558	S1	8/2/1992	3	0 - 2	18 *U*	18 *U*	25 *U*	18 *U*	18 *U*	21		18 *U*
O-SEDCHM	S00546	S2	7/30/1992		0 - 2		1,200 *U*				790 *J*		
O-SEDCHM	S00613	S3	8/12/1992		0 - 2								
O-SEDCHM	S00653	S3	9/17/1992		0 - 2		26 *U*				17 *J*		
O-SEDCHM	S00340	S3	10/1/1992		0 - 30		1,700 *U*				530 *J*		
O-SEDCHM	S00547	S5	7/30/1992		0 - 2		11 *UJ*				22 *J*		
O-SEDCHM	S00582	S6	8/6/1992		0 - 2	14 *U*	14 *U*	15 *U*	14 *U*	14 *U*	14 *U*		14 *U*
O-SEDCHM	S00555	S7	8/2/1992		0 - 2		7 *UJ*				27 *J*		
O-SEDCHM	S00572	S10	8/4/1992		0 - 2	17 *U*	17 *UJ*	17 *U*	17 *UJ*	17 *UJ*	17 *UJ*		17 *U*
O-SEDCHM	S00567	S11	8/3/1992		0 - 2		7 *U*				230		
O-SEDCHM	S00162	S11	7/10/1992		0 - 30		1,500 *U*				1,500 *U*		
O-SEDCHM	S00565	S13	8/3/1992		0 - 2		50 *UJ*				130 *J*		
O-SEDCHM	S00542	S14	7/30/1992		0 - 2		2700 *U*				4,200		
O-SEDCHM	S00566	S16	8/3/1992		0 - 2	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*		16 *U*
O-SEDCHM	S00562	S17	8/3/1992	1	0 - 2		11 *UJ*				34 *J*		
O-SEDCHM	S00563	S17	8/3/1992	2	0 - 2		10 *UJ*				70 *J*		
O-SEDCHM	S00564	S17	8/3/1992	3	0 - 2		10 *UJ*				34 *J*		
O-SEDCHM	S00560	S20	8/2/1992		0 - 2	3,000 *U*	1,300 *J*	3,000 *U*	3,000 *U*	3,000 *U*	1,400 *J*		3,000 *U*
O-SEDCHM	S00540	S21	7/30/1992		0 - 2		1,100 *U*				380 *J*		
O-SEDCHM	S00580	S26	8/6/1992		0 - 2		8 *U*				3 *J*		
O-SEDCHM	S00533	S28	7/28/1992		0 - 2		1,400 *U*				810 *J*		
O-SEDCHM	S00573	S34	8/4/1992		0 - 2		8 *UJ*				210 *J*		
O-SEDCHM	S00535	S35	7/28/1992		0 - 2		10 *UJ*				9 *J*		
O-SEDCHM	S00532	S36	7/27/1992		0 - 2	18 *UJ*	8 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	27 *J*		18 *UJ*
O-SEDCHM	S00521	S37	7/24/1992		0 - 2		10 *UJ*				10 *UJ*		

Table A-3B. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Trichloroethene (µg/kg)	Tetrachloro-benzene (mixed) (µg/kg)	Vinyl chloride (µg/kg)	Xylene (m,p) (µg/kg)	Xylene (o) (µg/kg)	Xylene (Total) (µg/kg)	Sum of Xylenes [1] (µg/kg)	Pentachloro benzene (µg/kg)
O-SEDCHM	S00014	P1	5/8/1992		0 - 30	5,300 *U*		5,300 *U*			73,000	73,000	
O-SEDCHM	S00001	P10	5/7/1992		0 - 30	15 *U*		15 *U*			15 *U*	15 *U*	
O-SEDCHM	S00062	P16	5/11/1992	1	0 - 30	110 *U*		110 *U*			170	170	
O-SEDCHM	S00065	P16	5/11/1992	2	0 - 30	58 *U*		58 *U*			560	560	
O-SEDCHM	S00066	P16	5/11/1992	3	0 - 30	52 *U*		52 *U*			480	480	
O-SEDCHM	S00017	P20	5/8/1992		0 - 30	5,900 *U*		5,900 *U*			110,000	110,000	
O-SEDCHM	S00007	P36	5/8/1992		0 - 30	13 *U*		13 *U*			13 *U*	13 *U*	
O-SEDCHM	S00051	P46	5/10/1992		0 - 30	76 *U*		76 *U*			76 *U*	76 *U*	
O-SEDCHM	S00004	P6	5/7/1992		0 - 30	11 *U*		11 *U*			11 *U*	11 *U*	
O-SEDCHM	S00556	S1	8/2/1992	1	0 - 2	1,700 *U*		1,700 *U*			1,800	1,800	
O-SEDCHM	S00557	S1	8/2/1992	2	0 - 2	15 *U*		15 *U*			15 *U*	15 *U*	
O-SEDCHM	S00558	S1	8/2/1992	3	0 - 2	18 *U*		18 *U*			18 *U*	18 *U*	
O-SEDCHM	S00546	S2	7/30/1992		0 - 2		60 *U*				1,200 *U*	1,200 *U*	19
O-SEDCHM	S00613	S3	8/12/1992		0 - 2		90 *J*						34 *J*
O-SEDCHM	S00653	S3	9/17/1992		0 - 2						26 *U*	26 *U*	
O-SEDCHM	S00340	S3	10/1/1992		0 - 30		22,000 *UJ*				3,300	3,300	7,100 *UJ*
O-SEDCHM	S00547	S5	7/30/1992		0 - 2		49 *U*				11 *UJ*	11 *UJ*	17 *U*
O-SEDCHM	S00582	S6	8/6/1992		0 - 2	14 *U*		14 *U*			14 *U*	14 *U*	
O-SEDCHM	S00555	S7	8/2/1992		0 - 2		13				7 *UJ*	7 *UJ*	3.2 *J*
O-SEDCHM	S00572	S10	8/4/1992		0 - 2	17 *U*		17 *U*			17 *UJ*	17 *UJ*	
O-SEDCHM	S00567	S11	8/3/1992		0 - 2		4.9 *U*				7 *U*	7 *U*	4.9 *U*
O-SEDCHM	S00162	S11	7/10/1992		0 - 30		4.1 *UJ*				1,500 *U*	1,500 *U*	4.1 *U*
O-SEDCHM	S00565	S13	8/3/1992		0 - 2		7.2 *U*				480 *J*	480 *J*	7.2 *U*
O-SEDCHM	S00542	S14	7/30/1992		0 - 2		250				2,800	2,800	39
O-SEDCHM	S00566	S16	8/3/1992		0 - 2	16 *U*		16 *U*			16 *U*	16 *U*	
O-SEDCHM	S00562	S17	8/3/1992	1	0 - 2		6.4 *UJ*				11 *UJ*	11 *UJ*	6.4 *UJ*
O-SEDCHM	S00563	S17	8/3/1992	2	0 - 2		6.9 *UJ*				10 *UJ*	10 *UJ*	6.9 *UJ*
O-SEDCHM	S00564	S17	8/3/1992	3	0 - 2		6.8 *U*				10 *UJ*	10 *UJ*	6.8 *U*
O-SEDCHM	S00560	S20	8/2/1992		0 - 2	3,000 *U*		3000 *U*			13,000	13,000	
O-SEDCHM	S00540	S21	7/30/1992		0 - 2		1,000				1,100 *U*	1,100 *U*	330
O-SEDCHM	S00580	S26	8/6/1992		0 - 2		5.6 *U*				8 *U*	8 *U*	5.6 *U*
O-SEDCHM	S00533	S28	7/28/1992		0 - 2		8.1 *U*				1,400 *U*	1,400 *U*	4.8 *U*
O-SEDCHM	S00573	S34	8/4/1992		0 - 2		5.8 *U*				8 *UJ*	8 *UJ*	5.8 *U*
O-SEDCHM	S00535	S35	7/28/1992		0 - 2		6.4 *U*				10 *UJ*	10 *UJ*	6.4 *U*
O-SEDCHM	S00532	S36	7/27/1992		0 - 2	18 *UJ*		18 *UJ*			8 *UJ*	8 *UJ*	
O-SEDCHM	S00521	S37	7/24/1992		0 - 2		6.6 *UJ*				10 *UJ*	10 *UJ*	6.6 *UJ*

Table A-3B. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	1,1,1-Trichloro-ethane (µg/kg)	1,1,2,2-Tetrachloro-ethane (µg/kg)	1,1,2-Trichloro-ethane (µg/kg)	1,1-Dichloro-ethane (µg/kg)	1,1-Dichloro-ethene (µg/kg)	1,2-Dichloro-ethane (µg/kg)	1,2-Dichloro-ethene (Total) (µg/kg)	1,2-Dichloro-propane (µg/kg)
O-SEDCHM	S00570	S46	8/4/1992		0 - 2	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*
O-SEDCHM	S00519	S47	7/24/1992		0 - 2								
ONON2A	VC0196	S307	7/18/2000		0 - 15	7.6 *U*	7.6 *U*	7.6 *U*	7.6 *U*	7.6 *U*	7.6 *U*		7.6 *U*
ONON2A	VC0197	S307	7/18/2000		15 - 30	7.7 *U*	7.7 *U*	7.7 *U*	7.7 *U*	7.7 *U*	7.7 *U*		7.7 *U*
ONON2A	VC0207	S311	7/20/2000		0 - 15	1,700 *U*	1,700 *U*	1,700 *U*	1,700 *U*	1,700 *U*	1,700 *U*		1,700 *U*
ONON2A	VC0208	S311	7/20/2000		15 - 30	1,500 *U*	1,500 *U*	1,500 *U*	1,500 *U*	1,500 *U*	1,500 *U*		1,500 *U*
ONON2A	VC0187	S313	7/18/2000		0 - 15	2.7 *J*	8.4 *UJ*	8.4 *UJ*	8.4 *UJ*	8.4 *UJ*	8.4 *UJ*		8.4 *UJ*
ONON2A	VC0188	S313	7/18/2000		15 - 30	6.2 *U*	6.2 *U*	6.2 *U*	6.2 *U*	6.2 *U*	6.2 *U*		6.2 *U*
ONON2A	SF0072	S314	8/10/2000		0 - 15	1,400 *U*	1,400 *U*	1,400 *U*	1,400 *U*	1,400 *U*	1,400 *U*		1,400 *U*
ONON2A	SF0073	S314	8/10/2000		15 - 30	1,500 *U*	1,500 *U*	1,500 *U*	1,500 *U*	1,500 *U*	1,500 *U*		1,500 *U*
ONON2A	SF0076	S316	8/10/2000		0 - 15	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*		6.4 *U*
ONON2A	SF0077	S316	8/10/2000		15 - 30	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*		6.4 *U*
ONON2A	VC0189	S318	7/14/2000		0 - 15	6.2 *U*	6.2 *U*	6.2 *U*	6.2 *U*	6.2 *U*	6.2 *U*		6.2 *U*
ONON2A	VC0190	S318	7/14/2000		15 - 30	6.3 *U*	6.3 *U*	6.3 *U*	6.3 *U*	6.3 *U*	6.3 *U*		6.3 *U*
ONON2A	SF0086	S321	8/4/2000		0 - 15	7 *U*	7 *U*	7 *U*	7 *U*	7 *U*	7 *U*		7 *U*
ONON2A	SF0087	S321	8/4/2000		15 - 30	6.9 *U*	6.9 *U*	6.9 *U*	6.9 *U*	6.9 *U*	6.9 *U*		6.9 *U*
ONON2A	SF0088	S322	8/10/2000		0 - 15	52 *U*	52 *U*	52 *U*	52 *U*	52 *U*	52 *U*		52 *U*
ONON2A	SF0089	S322	8/10/2000		15 - 30	48 *U*	48 *U*	48 *U*	48 *U*	48 *U*	48 *U*		48 *U*
ONON2A	SF0094	S325	7/14/2000		0 - 2	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*		5 *U*
ONON2A	SF0095	S325	7/14/2000		2 - 15	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*		5 *U*
ONON2A	SF0096	S325	7/14/2000		15 - 30	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*		5 *U*
ONON2A	SF0101	S328	7/15/2000		0 - 15	3 *U*	3 *UJ*	3 *U*	3 *U*	3 *U*	3 *U*		3 *U*
ONON2A	SF0102	S328	7/15/2000		15 - 30	4 *U*	4 *UJ*	4 *U*	4 *U*	4 *U*	4 *U*		4 *U*
ONON2A	SF0103	S329	7/16/2000		0 - 15	4 *U*	4 *UJ*	4 *U*	4 *U*	4 *U*	4 *U*		4 *U*
ONON2A	SF0104	S329	7/16/2000		15 - 30	4 *U*	4 *U*	4 *U*	4 *U*	4 *U*	4 *U*		4 *U*
ONON2A	SF0105	S330	7/16/2000		0 - 15	4 *U*	4 *U*	4 *U*	4 *U*	4 *U*	4 *U*		4 *U*
ONON2A	SF0106	S330	7/16/2000		15 - 30	4 *U*	4 *U*	4 *U*	4 *U*	4 *U*	4 *U*		4 *U*
ONON2A	SF0134	S333	8/2/2000		0 - 15	2,600 *UJ*	2,600 *UJ*	2,600 *UJ*	2,600 *UJ*	2,600 *UJ*	2,600 *UJ*		2,600 *UJ*
ONON2A	SF0135	S333	8/2/2000		15 - 30	4,900 *U*	4,900 *U*	4,900 *U*	4,900 *U*	4,900 *U*	4,900 *U*		4,900 *U*
ONON2A	SF0153	S334	8/2/2000		0 - 15	2,200 *U*	2,200 *U*	2,200 *U*	2,200 *U*	2,200 *U*	2,200 *U*		2,200 *U*
ONON2A	SF0154	S334	8/2/2000		15 - 30	2,200 *U*	2,200 *U*	2,200 *U*	2,200 *U*	2,200 *U*	2,200 *U*		2,200 *U*
ONON2A	SF0115	S335	8/2/2000		0 - 15	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*		4,600 *UJ*
ONON2A	SF0116	S335	8/2/2000		15 - 30	20,000 *U*	20,000 *U*	20,000 *U*	20,000 *U*	20,000 *U*	20,000 *U*		20,000 *U*
ONON2A	SF0117	S336	8/3/2000		0 - 15	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*		1,600 *U*
ONON2A	SF0118	S336	8/3/2000		15 - 30	22,000 *UJ*	22,000 *UJ*	22,000 *UJ*	22,000 *UJ*	22,000 *UJ*	22,000 *UJ*		22,000 *UJ*
ONON2A	SF0124	S339	8/3/2000		0 - 15	2,900 *U*	2,900 *U*	2,900 *U*	2,900 *U*	2,900 *U*	2,900 *U*		2,900 *U*
ONON2A	SF0125	S339	8/3/2000		15 - 30	2,700 *U*	2,700 *U*	2,700 *U*	2,700 *U*	2,700 *U*	2,700 *U*		2,700 *U*

Table A-3B. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	2-Butanone (µg/kg)	2-Hexanone (µg/kg)	4-Methyl-2-pentanone (µg/kg)	Acetone (µg/kg)	Benzene (µg/kg)	Bromodichloro-methane (µg/kg)	Bromoform (µg/kg)	Bromomethane (µg/kg)
O-SEDCHM	S00570	S46	8/4/1992		0 - 2	15 *U*	15 *U*	15 *U*	73	15 *U*	15 *U*	15 *U*	15 *UJ*
O-SEDCHM	S00519	S47	7/24/1992		0 - 2					11 *UJ*			
ONON2A	VC0196	S307	7/18/2000		0 - 15	15 *U*	15 *U*	15 *U*	30 *U*	7.6 *U*	7.6 *U*	7.6 *U*	7.6 *UJ*
ONON2A	VC0197	S307	7/18/2000		15 - 30	2	15 *U*	15 *U*	31 *U*	150	7.7 *U*	7.7 *U*	7.7 *UJ*
ONON2A	VC0207	S311	7/20/2000		0 - 15	3,300 *U*	3,300 *UJ*	3,300 *U*	6,600 *U*	800	1,700 *U*	1,700 *U*	1,700 *U*
ONON2A	VC0208	S311	7/20/2000		15 - 30	3,000 *U*	3,000 *UJ*	3,000 *U*	6,000 *U*	920	1,500 *U*	1,500 *U*	1,500 *U*
ONON2A	VC0187	S313	7/18/2000		0 - 15	11 *J*	17 *UJ*	17 *UJ*	54 *J*	79 *J*	8.4 *UJ*	8.4 *UJ*	8.4 *UJ*
ONON2A	VC0188	S313	7/18/2000		15 - 30	12 *U*	12 *U*	12 *U*	25 *U*	25	6.2 *U*	6.2 *U*	6.2 *UJ*
ONON2A	SF0072	S314	8/10/2000		0 - 15	2,700 *U*	2,700 *U*	2,700 *U*	5,400 *U*	2,600	1,400 *U*	1,400 *U*	1,400 *U*
ONON2A	SF0073	S314	8/10/2000		15 - 30	2,900 *U*	2,900 *U*	2,900 *U*	5,900 *U*	3,500	1,500 *U*	1,500 *U*	1,500 *U*
ONON2A	SF0076	S316	8/10/2000		0 - 15	13 *U*	13 *U*	13 *U*	28 *UJ*	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*
ONON2A	SF0077	S316	8/10/2000		15 - 30	13 *U*	13 *U*	13 *U*	26 *UJ*	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*
ONON2A	VC0189	S318	7/14/2000		0 - 15	12 *U*	12 *U*	12 *U*	25 *U*	2	6.2 *U*	6.2 *U*	6.2 *UJ*
ONON2A	VC0190	S318	7/14/2000		15 - 30	9.3	13 *U*	13 *U*	19 *J*	18	6.3 *U*	6.3 *U*	6.3 *UJ*
ONON2A	SF0086	S321	8/4/2000		0 - 15	14 *U*	14 *U*	14 *U*	24 *UJ*	7 *U*	7 *U*	7 *U*	7 *U*
ONON2A	SF0087	S321	8/4/2000		15 - 30	14 *U*	14 *U*	14 *U*	24 *UJ*	6.9 *U*	6.9 *U*	6.9 *U*	6.9 *U*
ONON2A	SF0088	S322	8/10/2000		0 - 15	94	100 *U*	100 *U*	290	25	52 *U*	52 *U*	52 *U*
ONON2A	SF0089	S322	8/10/2000		15 - 30	73	97 *U*	97 *U*	210	31	48 *U*	48 *U*	48 *U*
ONON2A	SF0094	S325	7/14/2000		0 - 2	4	11 *U*	11 *U*	17	5 *U*	5 *U*	5 *U*	11 *U*
ONON2A	SF0095	S325	7/14/2000		2 - 15	7 *J*	9 *U*	9 *U*	41	6	5 *U*	5 *U*	9 *U*
ONON2A	SF0096	S325	7/14/2000		15 - 30	14 *J*	9 *U*	9 *U*	60	5 *U*	5 *U*	5 *U*	9 *U*
ONON2A	SF0101	S328	7/15/2000		0 - 15	2 *J*	7 *U*	7 *U*	8 *J*	3 *U*	3 *U*	3 *U*	7 *U*
ONON2A	SF0102	S328	7/15/2000		15 - 30	14 *U*	7 *U*	7 *U*	14 *U*	4 *U*	4 *U*	4 *U*	7 *U*
ONON2A	SF0103	S329	7/16/2000		0 - 15	15 *U*	8 *U*	8 *U*	15 *U*	4 *U*	4 *U*	4 *U*	8 *U*
ONON2A	SF0104	S329	7/16/2000		15 - 30	15 *U*	7 *U*	7 *U*	15 *U*	4 *U*	4 *U*	4 *U*	7 *U*
ONON2A	SF0105	S330	7/16/2000		0 - 15	14 *U*	7 *U*	7 *U*	14 *U*	11	4 *U*	4 *U*	7 *U*
ONON2A	SF0106	S330	7/16/2000		15 - 30	14 *U*	7 *U*	7 *U*	9 *J*	170	4 *U*	4 *U*	7 *U*
ONON2A	SF0134	S333	8/2/2000		0 - 15	*R*	5,100 *UJ*	5,100 *UJ*	*R*	4,300 *J*	2,600 *UJ*	2,600 *UJ*	5,100 *UJ*
ONON2A	SF0135	S333	8/2/2000		15 - 30	*R*	9,800 *U*	9,800 *U*	*R*	12,000	4,900 *U*	4,900 *U*	9,800 *U*
ONON2A	SF0153	S334	8/2/2000		0 - 15	*R*	4,500 *U*	4,500 *U*	*R*	4,700	2,200 *U*	2,200 *U*	4,500 *U*
ONON2A	SF0154	S334	8/2/2000		15 - 30	*R*	4,500 *U*	4,500 *U*	*R*	19,000	2,200 *U*	2,200 *U*	4,500 *U*
ONON2A	SF0115	S335	8/2/2000		0 - 15	*R*	9,300 *UJ*	9,300 *UJ*	*R*	42,000 *J*	4,600 *UJ*	4,600 *UJ*	9,300 *UJ*
ONON2A	SF0116	S335	8/2/2000		15 - 30	*R*	40,000 *U*	40,000 *U*	*R*	180,000	20,000 *U*	20,000 *U*	40,000 *U*
ONON2A	SF0117	S336	8/3/2000		0 - 15	*R*	3,100 *U*	3,100 *U*	*R*	250 *J*	1,600 *UJ*	1,600 *UJ*	3,100 *U*
ONON2A	SF0118	S336	8/3/2000		15 - 30	*R*	45,000 *UJ*	45,000 *UJ*	*R*	6,800 *J*	22,000 *UJ*	22,000 *UJ*	45,000 *UJ*
ONON2A	SF0124	S339	8/3/2000		0 - 15	*R*	5,800 *UJ*	5,800 *U*	*R*	4,200	2,900 *U*	2,900 *U*	5,800 *U*
ONON2A	SF0125	S339	8/3/2000		15 - 30	*R*	5,400 *U*	5,400 *U*	*R*	4,000	2,700 *U*	2,700 *U*	5,400 *U*

Table A-3B. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Carbon disulfide (µg/kg)	Carbon tetrachloride (µg/kg)	Chlorobenzene (µg/kg)	Chloroethane (µg/kg)	Chloroform (µg/kg)	Chloromethane (µg/kg)	Cis-1,2-dichloro-ethene (µg/kg)	Cis-1,3-dichloro-propene (µg/kg)
O-SEDCHM	S00570	S46	8/4/1992		0 - 2	15 *UJ*	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*		15 *U*
O-SEDCHM	S00519	S47	7/24/1992		0 - 2			11 *UJ*					
ONON2A	VC0196	S307	7/18/2000		0 - 15	15 *U*	7.6 *U*	6.2	7.6 *U*	7.6 *U*	7.6 *U*	7.6 *U*	7.6 *U*
ONON2A	VC0197	S307	7/18/2000		15 - 30	15 *U*	7.7 *U*	1.7	7.7 *U*	7.7 *U*	7.7 *U*	7.7 *U*	7.7 *U*
ONON2A	VC0207	S311	7/20/2000		0 - 15	3,300 *U*	*R*	1,800	1,700 *U*	1,700 *U*	1,700 *U*	1,700 *U*	1,700 *U*
ONON2A	VC0208	S311	7/20/2000		15 - 30	3,000 *U*	*R*	1,700	1,500 *U*	1,500 *U*	1,500 *U*	1,500 *U*	1,500 *U*
ONON2A	VC0187	S313	7/18/2000		0 - 15	13 *J*	8.4 *UJ*	19,000	8.4 *UJ*	8.4 *UJ*	8.4 *UJ*	2.4 *J*	8.4 *UJ*
ONON2A	VC0188	S313	7/18/2000		15 - 30	17	6.2 *U*	470	6.2 *U*	6.2 *U*	6.2 *U*	6.2 *U*	6.2 *U*
ONON2A	SF0072	S314	8/10/2000		0 - 15	2,700 *U*	1,400 *U*	110,000	1,400 *U*	1,400 *U*	1,400 *U*	1,400 *U*	1,400 *U*
ONON2A	SF0073	S314	8/10/2000		15 - 30	2,900 *U*	1,500 *U*	100,000	1,500 *U*	1,500 *U*	1,500 *U*	1,500 *U*	1,500 *U*
ONON2A	SF0076	S316	8/10/2000		0 - 15	13 *U*	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*
ONON2A	SF0077	S316	8/10/2000		15 - 30	13 *U*	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*
ONON2A	VC0189	S318	7/14/2000		0 - 15	12 *U*	6.2 *U*	14	6.2 *U*	6.2 *U*	6.2 *U*	6.2 *U*	6.2 *U*
ONON2A	VC0190	S318	7/14/2000		15 - 30	2.9	6.3 *U*	41	6.3 *U*	6.3 *U*	6.3 *U*	6.3 *U*	6.3 *U*
ONON2A	SF0086	S321	8/4/2000		0 - 15	14 *U*	7 *U*	7 *U*	7 *U*	7 *U*	7 *U*	7 *U*	7 *U*
ONON2A	SF0087	S321	8/4/2000		15 - 30	14 *U*	6.9 *U*	6.9 *U*	6.9 *U*	6.9 *U*	6.9 *U*	6.9 *U*	6.9 *U*
ONON2A	SF0088	S322	8/10/2000		0 - 15	100 *U*	52 *U*	230	52 *U*	52 *U*	52 *U*	52 *U*	52 *U*
ONON2A	SF0089	S322	8/10/2000		15 - 30	97 *U*	48 *U*	250	48 *U*	48 *U*	48 *U*	48 *U*	48 *U*
ONON2A	SF0094	S325	7/14/2000		0 - 2	5 *UJ*	*R*	5 *U*	11 *U*	5 *U*	11 *U*	5 *U*	5 *U*
ONON2A	SF0095	S325	7/14/2000		2 - 15	5 *U*	5 *U*	5 *U*	9 *U*	5 *U*	9 *U*	5 *U*	5 *U*
ONON2A	SF0096	S325	7/14/2000		15 - 30	1 *J*	5 *U*	5 *U*	9 *U*	5 *U*	9 *U*	5 *U*	5 *U*
ONON2A	SF0101	S328	7/15/2000		0 - 15	0.7 *J*	3 *U*	3 *U*	7 *U*	3 *U*	7 *U*	3 *U*	3 *U*
ONON2A	SF0102	S328	7/15/2000		15 - 30	4 *U*	4 *U*	4 *U*	7 *U*	4 *U*	7 *U*	4 *U*	4 *U*
ONON2A	SF0103	S329	7/16/2000		0 - 15	4 *U*	4 *U*	4 *U*	8 *U*	4 *U*	8 *U*	4 *U*	4 *U*
ONON2A	SF0104	S329	7/16/2000		15 - 30	3 *J*	*R*	4 *U*	7 *U*	4 *U*	7 *U*	4 *U*	4 *U*
ONON2A	SF0105	S330	7/16/2000		0 - 15	4 *U*	4 *U*	150	7 *U*	4 *U*	7 *U*	4 *U*	4 *U*
ONON2A	SF0106	S330	7/16/2000		15 - 30	2 *J*	4 *U*	200	7 *U*	4 *U*	7 *U*	4 *U*	4 *U*
ONON2A	SF0134	S333	8/2/2000		0 - 15	2,600 *UJ*	2,600 *UJ*	430 *J*	5,100 *UJ*	2,600 *UJ*	5,100 *UJ*	2,600 *UJ*	2,600 *UJ*
ONON2A	SF0135	S333	8/2/2000		15 - 30	4,900 *UJ*	4,900 *U*	590 *J*	9,800 *UJ*	4,900 *U*	9,800 *U*	4,900 *U*	4,900 *U*
ONON2A	SF0153	S334	8/2/2000		0 - 15	2,200 *UJ*	2,200 *U*	1,900 *J*	4,500 *UJ*	2,200 *U*	4,500 *U*	2,200 *U*	2,200 *U*
ONON2A	SF0154	S334	8/2/2000		15 - 30	2,200 *UJ*	2,200 *U*	5,200	4,500 *UJ*	2,200 *U*	4,500 *U*	2,200 *U*	2,200 *U*
ONON2A	SF0115	S335	8/2/2000		0 - 15	4,600 *UJ*	4,600 *UJ*	90,000 *J*	9,300 *UJ*	4,600 *UJ*	9,300 *UJ*	4,600 *UJ*	4,600 *UJ*
ONON2A	SF0116	S335	8/2/2000		15 - 30	20,000 *UJ*	20,000 *U*	270,000	40,000 *UJ*	20,000 *U*	40,000 *U*	20,000 *U*	20,000 *U*
ONON2A	SF0117	S336	8/3/2000		0 - 15	1,600 *UJ*	1,600 *UJ*	8,900	3,100 *U*	1,600 *U*	3,100 *U*	1,600 *U*	1,600 *U*
ONON2A	SF0118	S336	8/3/2000		15 - 30	22,000 *UJ*	22,000 *UJ*	290,000 *J*	45,000 *UJ*	22,000 *UJ*	45,000 *UJ*	22,000 *UJ*	22,000 *UJ*
ONON2A	SF0124	S339	8/3/2000		0 - 15	2,900 *UJ*	2,900 *U*	48,000	5,800 *UJ*	2,900 *U*	5,800 *U*	2,900 *U*	2,900 *U*
ONON2A	SF0125	S339	8/3/2000		15 - 30	2,700 *U*	2,700 *U*	43,000	5,400 *UJ*	2,700 *U*	5,400 *U*	2,700 *U*	2,700 *U*

Table A-3B. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Dibromochloro-methane (µg/kg)	Ethylbenzene (µg/kg)	Methylene chloride (µg/kg)	Styrene (µg/kg)	Tetrachloro-ethene (µg/kg)	Toluene (µg/kg)	trans-1,2-Dichloroethene (µg/kg)	trans-1,3-Dichloropropene (µg/kg)
O-SEDCHM	S00570	S46	8/4/1992		0 - 2	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*		15 *U*
O-SEDCHM	S00519	S47	7/24/1992		0 - 2		11 *UJ*				11 *UJ*		
ONON2A	VC0196	S307	7/18/2000		0 - 15	7.6 *U*	7.6 *U*	7.6 *U*	7.6 *U*	7.6 *U*	7.6 *U*	7.6 *U*	7.6 *U*
ONON2A	VC0197	S307	7/18/2000		15 - 30	7.7 *U*	7.7 *U*	7.7 *U*	7.7 *U*	7.7 *U*	7.7 *U*	7.7 *U*	7.7 *U*
ONON2A	VC0207	S311	7/20/2000		0 - 15	1,700 *U*	1,400	1,700 *U*	1,700 *U*	1,700 *U*	3,700	1,700 *U*	1,700 *U*
ONON2A	VC0208	S311	7/20/2000		15 - 30	1,500 *U*	1,200	1,500 *U*	1,500 *U*	1,500 *U*	3,600	1,500 *U*	1,500 *U*
ONON2A	VC0187	S313	7/18/2000		0 - 15	8.4 *UJ*	66 *J*	8.4 *UJ*	8.4 *UJ*	3 *J*	100 *J*	8.4 *U*	8.4 *UJ*
ONON2A	VC0188	S313	7/18/2000		15 - 30	6.2 *U*	12	6.2 *U*	6.2 *U*	6.2 *U*	20	6.2 *U*	6.2 *U*
ONON2A	SF0072	S314	8/10/2000		0 - 15	1,400 *U*	4,300	1,400 *U*	1,400 *U*	1,400 *U*	570	1,400 *U*	1,400 *U*
ONON2A	SF0073	S314	8/10/2000		15 - 30	1,500 *U*	5,600	1,500 *U*	1,500 *U*	1,500 *U*	10,000	1,500 *U*	1,500 *U*
ONON2A	SF0076	S316	8/10/2000		0 - 15	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*
ONON2A	SF0077	S316	8/10/2000		15 - 30	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*	6.4 *U*
ONON2A	VC0189	S318	7/14/2000		0 - 15	6.2 *U*	6.2 *U*	6.2 *U*	6.2 *U*	6.2 *U*	6.2 *U*	6.2 *U*	6.2 *U*
ONON2A	VC0190	S318	7/14/2000		15 - 30	6.3 *U*	6.3 *U*	6.3 *U*	6.3 *U*	6.3 *U*	6.3 *U*	6.3 *U*	6.3 *U*
ONON2A	SF0086	S321	8/4/2000		0 - 15	7 *U*	7 *U*	7 *U*	7 *U*	7 *U*	7 *U*	7 *U*	7 *U*
ONON2A	SF0087	S321	8/4/2000		15 - 30	6.9 *U*	6.9 *U*	6.9 *U*	6.9 *U*	6.9 *U*	6.9 *U*	6.9 *U*	6.9 *U*
ONON2A	SF0088	S322	8/10/2000		0 - 15	52 *U*	330	52 *U*	52 *U*	52 *U*	52 *U*	52 *U*	52 *U*
ONON2A	SF0089	S322	8/10/2000		15 - 30	48 *U*	480	48 *U*	48 *U*	48 *U*	48 *U*	48 *U*	48 *U*
ONON2A	SF0094	S325	7/14/2000		0 - 2	5 *U*	5 *U*	11 *U*	5 *U*	5 *U*	5 *U*	5 *U*	5 *U*
ONON2A	SF0095	S325	7/14/2000		2 - 15	5 *R*	1 *J*	9 *U*	5 *U*	5 *U*	5 *U*	5 *U*	*R*
ONON2A	SF0096	S325	7/14/2000		15 - 30	5 *R*	5 *U*	9 *U*	5 *U*	5 *U*	5 *U*	5 *U*	*R*
ONON2A	SF0101	S328	7/15/2000		0 - 15	3 *U*	3 *U*	7 *U*	3 *U*	3 *U*	3 *U*	3 *U*	3 *U*
ONON2A	SF0102	S328	7/15/2000		15 - 30	4 *U*	4 *U*	7 *U*	4 *U*	4 *U*	4 *U*	4 *U*	4 *U*
ONON2A	SF0103	S329	7/16/2000		0 - 15	4 *U*	4 *U*	8 *U*	4 *U*	4 *U*	4 *U*	4 *U*	4 *U*
ONON2A	SF0104	S329	7/16/2000		15 - 30	4 *U*	4 *U*	7 *U*	4 *U*	4 *U*	4 *U*	4 *U*	4 *U*
ONON2A	SF0105	S330	7/16/2000		0 - 15	*R*	4 *U*	7 *U*	4 *U*	4 *U*	4 *U*	4 *U*	*R*
ONON2A	SF0106	S330	7/16/2000		15 - 30	*R*	4 *U*	7 *U*	4 *U*	4 *U*	4 *U*	4 *U*	*R*
ONON2A	SF0134	S333	8/2/2000		0 - 15	2,600 *UJ*	1,200 *J*	5,100 *UJ*	2,600 *UJ*	2,600 *UJ*	550 *J*	2,600 *U*	2,600 *UJ*
ONON2A	SF0135	S333	8/2/2000		15 - 30	4,900 *U*	2,300 *J*	9,800 *U*	4,900 *U*	4,900 *U*	670 *J*	4,900 *U*	*R*
ONON2A	SF0153	S334	8/2/2000		0 - 15	2,200 *U*	620 *J*	4,500 *U*	2,200 *U*	2,200 *U*	680 *J*	2,200 *U*	*R*
ONON2A	SF0154	S334	8/2/2000		15 - 30	2,200 *U*	1,100 *J*	4,500 *U*	110 *J*	2,200 *U*	1,900 *J*	2,200 *U*	*R*
ONON2A	SF0115	S335	8/2/2000		0 - 15	4,600 *UJ*	330 *J*	9,300 *UJ*	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	*R*
ONON2A	SF0116	S335	8/2/2000		15 - 30	20,000 *U*	890 *J*	40,000 *U*	20,000 *U*	20,000 *U*	2,300 *J*	20,000 *U*	*R*
ONON2A	SF0117	S336	8/3/2000		0 - 15	1,600 *UJ*	1,600 *U*	3,100 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*
ONON2A	SF0118	S336	8/3/2000		15 - 30	22,000 *UJ*	22,000 *UJ*	45,000 *UJ*	22,000 *UJ*	22,000 *UJ*	22,000 *UJ*	22,000 *U*	22,000 *UJ*
ONON2A	SF0124	S339	8/3/2000		0 - 15	2,900 *U*	360	5,800 *U*	2,900 *U*	2,900 *U*	2,900 *U*	2,900 *U*	*R*
ONON2A	SF0125	S339	8/3/2000		15 - 30	2,700 *U*	600	5,400 *U*	2,700 *U*	2,700 *U*	770	2,700 *U*	*R*

Table A-3B. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Trichloroethene (µg/kg)	Tetrachloro-benzene (mixed) (µg/kg)	Vinyl chloride (µg/kg)	Xylene (m,p) (µg/kg)	Xylene (o) (µg/kg)	Xylene (Total) (µg/kg)	Sum of Xylenes [1] (µg/kg)	Pentachloro benzene (µg/kg)
O-SEDCHM	S00570	S46	8/4/1992		0 - 2	15 *U*		15 *U*			15 *U*	15 *U*	
O-SEDCHM	S00519	S47	7/24/1992		0 - 2		7.7 *UJ*				11 *UJ*	11 *UJ*	7.7 *UJ*
ONON2A	VC0196	S307	7/18/2000		0 - 15	7.6 *U*		7.6 *U*	2.1	7.6 *U*		2.1	
ONON2A	VC0197	S307	7/18/2000		15 - 30	7.7 *U*		7.7 *U*	7.7 *U*	7.7 *U*		7.7 *U*	
ONON2A	VC0207	S311	7/20/2000		0 - 15	1,700 *U*		1,700 *U*	25,000	8,000		33,000	
ONON2A	VC0208	S311	7/20/2000		15 - 30	1,500 *U*		1,500 *U*	22,000	6,700		28,700	
ONON2A	VC0187	S313	7/18/2000		0 - 15	1.7 *J*		8.4 *UJ*	490 *J*	240 *J*		730 *J*	
ONON2A	VC0188	S313	7/18/2000		15 - 30	6.2 *U*		6.2 *U*	45	73		118	
ONON2A	SF0072	S314	8/10/2000		0 - 15	1,400 *U*		1,400 *U*	21,000	12,000		33,000	
ONON2A	SF0073	S314	8/10/2000		15 - 30	1,500 *U*		1,500 *U*	49,000	16,000		65,000	
ONON2A	SF0076	S316	8/10/2000		0 - 15	6.4 *U*		6.4 *U*	6.4 *U*	6.4 *U*		6.4 *U*	
ONON2A	SF0077	S316	8/10/2000		15 - 30	6.4 *U*		6.4 *U*	6.4 *U*	6.4 *U*		6.4 *U*	
ONON2A	VC0189	S318	7/14/2000		0 - 15	6.2 *U*		6.2 *U*	6.2 *U*	6.2 *U*		6.2 *U*	
ONON2A	VC0190	S318	7/14/2000		15 - 30	6.3 *U*		6.3 *U*	6.3 *U*	6.3 *U*		6.3 *U*	
ONON2A	SF0086	S321	8/4/2000		0 - 15	7 *U*		7 *U*	7 *U*	7 *U*		7 *U*	
ONON2A	SF0087	S321	8/4/2000		15 - 30	6.9 *U*		6.9 *U*	6.9 *U*	6.9 *U*		6.9 *U*	
ONON2A	SF0088	S322	8/10/2000		0 - 15	52 *U*		52 *U*	460	310		770	
ONON2A	SF0089	S322	8/10/2000		15 - 30	48 *U*		48 *U*	680	440		1,120	
ONON2A	SF0094	S325	7/14/2000		0 - 2	5 *U*		11 *U*			5 *U*	5 *U*	
ONON2A	SF0095	S325	7/14/2000		2 - 15	5 *U*		9 *U*			14	14	
ONON2A	SF0096	S325	7/14/2000		15 - 30	5 *U*		9 *U*			12	12	
ONON2A	SF0101	S328	7/15/2000		0 - 15	3 *U*		7 *U*			3 *U*	3 *U*	
ONON2A	SF0102	S328	7/15/2000		15 - 30	4 *U*		7 *U*			4 *U*	4 *U*	
ONON2A	SF0103	S329	7/16/2000		0 - 15	4 *U*		8 *U*			4 *U*	4 *U*	
ONON2A	SF0104	S329	7/16/2000		15 - 30	4 *U*		7 *U*			4 *U*	4 *U*	
ONON2A	SF0105	S330	7/16/2000		0 - 15	4 *U*		7 *U*			4 *U*	4 *U*	
ONON2A	SF0106	S330	7/16/2000		15 - 30	4 *U*		7 *U*			4 *U*	4 *U*	
ONON2A	SF0134	S333	8/2/2000		0 - 15	2,600 *UJ*		5,100 *UJ*			3,500 *J*	3,500 *J*	
ONON2A	SF0135	S333	8/2/2000		15 - 30	4,900 *U*		9,800 *U*			6,600	6,600	
ONON2A	SF0153	S334	8/2/2000		0 - 15	2,200 *U*		4,500 *U*			6,200	6,200	
ONON2A	SF0154	S334	8/2/2000		15 - 30	2,200 *U*		4,500 *U*			16,000	16,000	
ONON2A	SF0115	S335	8/2/2000		0 - 15	4,600 *UJ*		9,300 *UJ*			570 *J*	570 *J*	
ONON2A	SF0116	S335	8/2/2000		15 - 30	20,000 *U*		40,000 *U*			8,300 *J*	8,300 *J*	
ONON2A	SF0117	S336	8/3/2000		0 - 15	1,600 *U*		3,100 *U*			1,600 *U*	1,600 *U*	
ONON2A	SF0118	S336	8/3/2000		15 - 30	22,000 *UJ*		45,000 *UJ*			22,000 *UJ*	22,000 *UJ*	
ONON2A	SF0124	S339	8/3/2000		0 - 15	2,900 *U*		5,800 *U*			1,800	1,800	
ONON2A	SF0125	S339	8/3/2000		15 - 30	2,700 *U*		5,400 *U*			4,000	4,000	

Table A-3B. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	1,1,1-Trichloro-ethane (µg/kg)	1,1,2,2-Tetrachloro-ethane (µg/kg)	1,1,2-Trichloro-ethane (µg/kg)	1,1-Dichloro-ethane (µg/kg)	1,1-Dichloro-ethene (µg/kg)	1,2-Dichloro-ethane (µg/kg)	1,2-Dichloro-ethene (Total) (µg/kg)	1,2-Dichloro-propane (µg/kg)
ONON2A	SF0123	S340	8/15/2000	1	0 - 2	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*	11 *J*		17 *UJ*
ONON2A	SF0123_R	S340	8/15/2000	2	0 - 2	530 *UJ*	530 *UJ*	530 *UJ*	530 *UJ*	530 *UJ*	530 *UJ*		530 *UJ*
ONON2A	SF0126	S340	8/3/2000		0 - 15	4,700 *UJ*	4,700 *UJ*	4,700 *UJ*	4,700 *UJ*	4,700 *UJ*	4,700 *UJ*		4,700 *UJ*
ONON2A	SF0127	S340	8/3/2000		15 - 30	5,600 *UJ*	5,600 *UJ*	5,600 *UJ*	5,600 *UJ*	5,600 *UJ*	5,600 *UJ*		5,600 *UJ*
ONON2A	SF0128	S341	8/4/2000		0 - 15	2,600 *UJ*	2,600 *U*	2,600 *U*	2,600 *U*	2,600 *UJ*	2,600 *UJ*		2,600 *UJ*
ONON2A	SF0129	S341	8/4/2000		15 - 30	3,200 *UJ*	3,200 *UJ*	3,200 *UJ*	3,200 *UJ*	3,200 *UJ*	3,200 *UJ*		3,200 *UJ*
ONON2A	SF0132	S343	8/4/2000		0 - 15	2,200 *UJ*	2,200 *UJ*	2,200 *UJ*	2,200 *UJ*	2,200 *UJ*	2,200 *UJ*		2,200 *UJ*
ONON2A	SF0133	S343	8/4/2000		15 - 30	2,200 *UJ*	2,200 *UJ*	2,200 *UJ*	2,200 *UJ*	2,200 *UJ*	2,200 *UJ*		2,200 *UJ*
ONON2A	SF0136	S345	8/4/2000		0 - 15	7,400 *UJ*	7,400 *UJ*	7,400 *UJ*	7,400 *UJ*	7,400 *UJ*	7,400 *UJ*		7,400 *UJ*
ONON2A	SF0137	S345	8/4/2000		15 - 30	8,100 *UJ*	8,100 *UJ*	8,100 *UJ*	8,100 *UJ*	8,100 *UJ*	8,100 *UJ*		8,100 *UJ*
ONON2A	SF0138	S346	8/4/2000		0 - 15	4,300 *UJ*	4,300 *UJ*	4,300 *UJ*	4,300 *UJ*	4,300 *UJ*	4,300 *UJ*		4,300 *UJ*
ONON2A	SF0139	S346	8/4/2000		15 - 30	2,300 *U*	2,300 *U*	2,300 *U*	2,300 *U*	2,300 *U*	2,300 *U*		2,300 *U*
ONON2A	SF0140	S347	8/4/2000		0 - 15	2,600 *UJ*	2,600 *UJ*	2,600 *UJ*	2,600 *UJ*	2,600 *UJ*	2,600 *UJ*		2,600 *UJ*
ONON2A	SF0141	S347	8/4/2000		15 - 30	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*		11,000 *UJ*
ONON2A	SF0142	S348	8/5/2000		0 - 15	3,600 *UJ*	3,600 *UJ*	3,600 *UJ*	3,600 *UJ*	3,600 *UJ*	3,600 *UJ*		3,600 *UJ*
ONON2A	SF0143	S348	8/5/2000		15 - 30	3,000 *UJ*	3,000 *UJ*	3,000 *UJ*	3,000 *UJ*	3,000 *UJ*	3,000 *UJ*		3,000 *UJ*
ONON2A	SF0144	S349	8/5/2000		0 - 15	2,600 *UJ*	2,600 *UJ*	2,600 *UJ*	2,600 *UJ*	2,600 *UJ*	2,600 *UJ*		2,600 *UJ*
ONON2A	SF0145	S349	8/5/2000		15 - 30	2,800 *UJ*	2,800 *UJ*	2,800 *UJ*	2,800 *UJ*	2,800 *UJ*	2,800 *UJ*		2,800 *UJ*
ONON2A	SF0146	S350	8/5/2000		0 - 15	3,100 *U*	3,100 *U*	3,100 *U*	3,100 *U*	3,100 *U*	3,100 *U*		3,100 *U*
ONON2A	SF0147	S350	8/5/2000		15 - 30	2,800 *UJ*	2,800 *UJ*	2,800 *UJ*	2,800 *UJ*	2,800 *UJ*	2,800 *UJ*		2,800 *UJ*
ONON2A	SF0149	S351	8/5/2000		0 - 15	26 *U*	26 *U*	26 *U*	26 *U*	26 *U*	26 *U*		26 *U*
ONON2A	SF0150	S351	8/5/2000		15 - 30	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*		15 *U*
ONON2A	SF0173	S351	8/15/2000		0 - 2	6 *U*	6 *U*	6 *U*	6 *U*	6 *U*	6 *U*		6 *U*
ONON2A	SF0151	S352	8/10/2000		0 - 15	440 *U*	440 *U*	440 *U*	440 *U*	440 *U*	440 *U*		440 *U*
ONON2A	SF0152	S352	8/10/2000		15 - 30	910 *U*	910 *U*	910 *U*	910 *U*	910 *U*	910 *U*		910 *U*
ONON2A	SF0113	S353	7/27/2000		0 - 15	4 *U*	4 *U*	4 *U*	4 *U*	4 *U*	4 *U*		4 *U*
ONON2A	SF0114	S353	7/27/2000		15 - 30	3 *UJ*	3 *UJ*	3 *UJ*	3 *UJ*	3 *UJ*	3 *UJ*		3 *UJ*
ONON2A	SF0170	S434	8/9/2000		0 - 15	4 *U*	4 *U*	4 *U*	4 *U*	4 *U*	4 *U*		4 *U*
ONON2A	SF0171	S434	8/9/2000		15 - 30	4 *U*	4 *U*	4 *U*	4 *U*	4 *U*	4 *U*		4 *U*
ONON2A	SF0172	S435	8/9/2000		0 - 5	3,200 *UJ*	3,200 *UJ*	3,200 *UJ*	3,200 *UJ*	3,200 *UJ*	3,200 *UJ*		3,200 *UJ*

Table A-3B. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	2-Butanone (µg/kg)	2-Hexanone (µg/kg)	4-Methyl-2-pentanone (µg/kg)	Acetone (µg/kg)	Benzene (µg/kg)	Bromodichloro-methane (µg/kg)	Bromoform (µg/kg)	Bromomethane (µg/kg)
ONON2A	SF0123	S340	8/15/2000	1	0 - 2	33 *J*	33 *UJ*	33 *UJ*	170 *UJ*	12 *J*	17 *UJ*	17 *UJ*	33 *UJ*
ONON2A	SF0123_R	S340	8/15/2000	2	0 - 2	*R*	1,100 *UJ*	1,100 *UJ*	*R*	320 *J*	530 *UJ*	530 *UJ*	1,100 *UJ*
ONON2A	SF0126	S340	8/3/2000		0 - 15	*R*	9,400 *UJ*	9,400 *UJ*	*R*	2,500 *J*	4,700 *UJ*	4,700 *UJ*	9,400 *UJ*
ONON2A	SF0127	S340	8/3/2000		15 - 30	*R*	11,000 *UJ*	11,000 *UJ*	*R*	430 *J*	5,600 *UJ*	5,600 *UJ*	11,000 *UJ*
ONON2A	SF0128	S341	8/4/2000		0 - 15	*R*	5,100 *U*	5,100 *U*	*R*	2,200 *J*	2,600 *UJ*	2,600 *UJ*	5,100 *UJ*
ONON2A	SF0129	S341	8/4/2000		15 - 30	13,000 *UJ*	6,400 *UJ*	6,400 *UJ*	8000 *J*	6,900 *J*	3,200 *UJ*	3,200 *UJ*	6,400 *UJ*
ONON2A	SF0132	S343	8/4/2000		0 - 15	8,600 *UJ*	4,300 *UJ*	4,300 *UJ*	*R*	1,200 *J*	2,200 *UJ*	2,200 *UJ*	4,300 *UJ*
ONON2A	SF0133	S343	8/4/2000		15 - 30	8,600 *UJ*	4,300 *UJ*	4,300 *UJ*	*R*	470 *J*	2,200 *UJ*	2,200 *UJ*	4,300 *UJ*
ONON2A	SF0136	S345	8/4/2000		0 - 15	*R*	15,000 *UJ*	15,000 *UJ*	*R*	1,500 *J*	7,400 *UJ*	7,400 *UJ*	15,000 *UJ*
ONON2A	SF0137	S345	8/4/2000		15 - 30	32,000 *UJ*	16,000 *UJ*	16,000 *UJ*	*R*	2,900 *J*	8,100 *UJ*	8,100 *UJ*	16,000 *UJ*
ONON2A	SF0138	S346	8/4/2000		0 - 15	*R*	8,600 *UJ*	8,600 *UJ*	*R*	760 *J*	4,300 *UJ*	4,300 *UJ*	8,600 *UJ*
ONON2A	SF0139	S346	8/4/2000		15 - 30	*R*	4,500 *U*	4,500 *U*	*R*	790 *J*	2,300 *U*	2,300 *UJ*	4,500 *U*
ONON2A	SF0140	S347	8/4/2000		0 - 15	10,000 *UJ*	5,200 *UJ*	5,200 *UJ*	*R*	400 *J*	2,600 *UJ*	2,600 *UJ*	5,200 *UJ*
ONON2A	SF0141	S347	8/4/2000		15 - 30	45,000 *UJ*	23,000 *UJ*	23,000 *UJ*	*R*	2,000 *J*	11,000 *UJ*	11,000 *UJ*	23,000 *UJ*
ONON2A	SF0142	S348	8/5/2000		0 - 15	*R*	7,100 *UJ*	7,100 *UJ*	*R*	3,600 *UJ*	3,600 *UJ*	3,600 *UJ*	7,100 *UJ*
ONON2A	SF0143	S348	8/5/2000		15 - 30	*R*	6,100 *UJ*	6,100 *UJ*	*R*	390 *J*	3,000 *UJ*	3,000 *UJ*	6,100 *UJ*
ONON2A	SF0144	S349	8/5/2000		0 - 15	*R*	5,100 *UJ*	5,100 *UJ*	*R*	1,600 *J*	2,600 *UJ*	2,600 *UJ*	5,100 *UJ*
ONON2A	SF0145	S349	8/5/2000		15 - 30	*R*	5,600 *UJ*	5,600 *UJ*	*R*	4,200 *J*	2,800 *UJ*	2,800 *UJ*	5,600 *UJ*
ONON2A	SF0146	S350	8/5/2000		0 - 15	*R*	6,200 *U*	6,200 *U*	*R*	120	3,100 *U*	3,100 *U*	6,200 *U*
ONON2A	SF0147	S350	8/5/2000		15 - 30	*R*	5,700 *UJ*	5,700 *UJ*	*R*	170 *J*	2,800 *UJ*	2,800 *UJ*	5,700 *UJ*
ONON2A	SF0149	S351	8/5/2000		0 - 15	34	52 *U*	52 *U*	170	190	26 *U*	26 *U*	52 *U*
ONON2A	SF0150	S351	8/5/2000		15 - 30	31 *J*	29 *UJ*	29 *U*	130	360	15 *U*	15 *U*	29 *U*
ONON2A	SF0173	S351	8/15/2000		0 - 2	3 *J*	13 *UJ*	13 *UJ*	78 *UJ*	18	6 *U*	6 *UJ*	13 *U*
ONON2A	SF0151	S352	8/10/2000		0 - 15	*R*	880 *U*	880 *U*	*R*	110 *J*	440 *U*	440 *U*	880 *U*
ONON2A	SF0152	S352	8/10/2000		15 - 30	*R*	1,800 *U*	1,800 *U*	*R*	330 *J*	910 *U*	910 *U*	1,800 *U*
ONON2A	SF0113	S353	7/27/2000		0 - 15	16 *U*	8 *U*	8 *U*	16 *U*	23	4 *U*	4 *U*	8 *U*
ONON2A	SF0114	S353	7/27/2000		15 - 30	11 *J*	7 *UJ*	7 *UJ*	49 *UJ*	17 *J*	3 *UJ*	3 *UJ*	7 *UJ*
ONON2A	SF0170	S434	8/9/2000		0 - 15	3 *J*	8 *U*	8 *U*	40 *U*	5	4 *U*	4 *U*	8 *U*
ONON2A	SF0171	S434	8/9/2000		15 - 30	3 *J*	9 *U*	9 *U*	42 *U*	78	4 *U*	4 *U*	9 *U*
ONON2A	SF0172	S435	8/9/2000		0 - 5	*R*	6,500 *UJ*	6,500 *UJ*	*R*	30,000 *J*	3,200 *UJ*	3,200 *UJ*	6,500 *UJ*

Table A-3B. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Carbon disulfide (µg/kg)	Carbon tetrachloride (µg/kg)	Chlorobenzene (µg/kg)	Chloroethane (µg/kg)	Chloroform (µg/kg)	Chloromethane (µg/kg)	Cis-1,2-dichloro-ethene (µg/kg)	Cis-1,3-dichloro-propene (µg/kg)
ONON2A	SF0123	S340	8/15/2000	1	0 - 2	15 *J*	17 *UJ*	140 *J*	33 *UJ*	17 *UJ*	33 *UJ*	17 *UJ*	17 *UJ*
ONON2A	SF0123_R	S340	8/15/2000	2	0 - 2	530 *UJ*	530 *UJ*	2,400 *J*	1,100 *UJ*	530 *UJ*	1,100 *UJ*	530 *UJ*	530 *UJ*
ONON2A	SF0126	S340	8/3/2000		0 - 15	4,700 *UJ*	4,700 *UJ*	3,600 *J*	9,400 *UJ*	4,700 *UJ*	9,400 *UJ*	4,700 *UJ*	4,700 *UJ*
ONON2A	SF0127	S340	8/3/2000		15 - 30	5,600 *UJ*	5,600 *UJ*	5,200 *J*	11,000 *UJ*	5,600 *UJ*	11,000 *UJ*	5,600 *UJ*	5,600 *UJ*
ONON2A	SF0128	S341	8/4/2000		0 - 15	2,600 *UJ*	2,600 *UJ*	1,000 *J*	5,100 *U*	2,600 *UJ*	5,100 *UJ*	2,600 *U*	2,600 *U*
ONON2A	SF0129	S341	8/4/2000		15 - 30	3,200 *UJ*	3,200 *UJ*	1,000 *J*	6,400 *UJ*	3,200 *UJ*	6,400 *UJ*	3,200 *UJ*	3,200 *UJ*
ONON2A	SF0132	S343	8/4/2000		0 - 15	2,200 *UJ*	2,200 *UJ*	9,000 *J*	4,300 *UJ*	2,200 *UJ*	4,300 *UJ*	2,200 *UJ*	2,200 *UJ*
ONON2A	SF0133	S343	8/4/2000		15 - 30	1,200 *J*	2,200 *UJ*	4,300 *J*	4,300 *UJ*	2,200 *UJ*	4,300 *UJ*	2,200 *UJ*	2,200 *UJ*
ONON2A	SF0136	S345	8/4/2000		0 - 15	7,400 *UJ*	7,400 *UJ*	3,700 *J*	15,000 *UJ*	7,400 *UJ*	15,000 *UJ*	7,400 *UJ*	7,400 *UJ*
ONON2A	SF0137	S345	8/4/2000		15 - 30	4,400 *J*	8,100 *UJ*	4,000 *J*	16,000 *UJ*	8,100 *UJ*	16,000 *UJ*	8,100 *UJ*	8,100 *UJ*
ONON2A	SF0138	S346	8/4/2000		0 - 15	4,300 *UJ*	4,300 *UJ*	5,000 *J*	8,600 *UJ*	4,300 *UJ*	8,600 *UJ*	4,300 *UJ*	4,300 *UJ*
ONON2A	SF0139	S346	8/4/2000		15 - 30	2,300 *U*	2,300 *U*	3,400	4,500 *U*	2,300 *U*	4,500 *U*	2,300 *U*	2,300 *U*
ONON2A	SF0140	S347	8/4/2000		0 - 15	2,600 *UJ*	2,600 *UJ*	10,000 *J*	5,200 *UJ*	2,600 *UJ*	5,200 *UJ*	2,600 *UJ*	2,600 *UJ*
ONON2A	SF0141	S347	8/4/2000		15 - 30	11,000 *UJ*	11,000 *UJ*	90,000 *J*	23,000 *UJ*	11,000 *UJ*	23,000 *UJ*	11,000 *UJ*	11,000 *UJ*
ONON2A	SF0142	S348	8/5/2000		0 - 15	3,600 *UJ*	3,600 *UJ*	3,600 *J*	7,100 *UJ*	3,600 *UJ*	7,100 *UJ*	3,600 *UJ*	3,600 *UJ*
ONON2A	SF0143	S348	8/5/2000		15 - 30	3,000 *UJ*	3,000 *UJ*	9,400 *J*	6,100 *UJ*	3,000 *UJ*	6,100 *UJ*	3,000 *UJ*	3,000 *UJ*
ONON2A	SF0144	S349	8/5/2000		0 - 15	2,600 *UJ*	2,600 *UJ*	220 *J*	5,100 *UJ*	2,600 *UJ*	5,100 *UJ*	2,600 *UJ*	2,600 *UJ*
ONON2A	SF0145	S349	8/5/2000		15 - 30	2,800 *UJ*	2,800 *UJ*	410 *J*	5,600 *UJ*	2,800 *UJ*	5,600 *UJ*	2,800 *UJ*	2,800 *UJ*
ONON2A	SF0146	S350	8/5/2000		0 - 15	3,100 *U*	3,100 *U*	2,400	6,200 *U*	3,100 *U*	6,200 *U*	3,100 *U*	3,100 *U*
ONON2A	SF0147	S350	8/5/2000		15 - 30	2,800 *UJ*	2,800 *UJ*	2,800 *J*	5,700 *UJ*	2,800 *UJ*	5,700 *UJ*	2,800 *UJ*	2,800 *UJ*
ONON2A	SF0149	S351	8/5/2000		0 - 15	10	26 *U*	2,000	52 *U*	26 *U*	52 *U*	26 *U*	26 *U*
ONON2A	SF0150	S351	8/5/2000		15 - 30	6 *J*	15 *U*	1,700 *J*	29 *U*	15 *U*	29 *U*	15 *U*	15 *U*
ONON2A	SF0173	S351	8/15/2000		0 - 2	13 *U*	6 *U*	350 *J*	13 *U*	6 *U*	13 *U*	1	6 *U*
ONON2A	SF0151	S352	8/10/2000		0 - 15	440 *U*	440 *U*	9,900	880 *UJ*	440 *U*	880 *U*	440 *U*	440 *U*
ONON2A	SF0152	S352	8/10/2000		15 - 30	910 *U*	910 *U*	27,000	1,800 *UJ*	910 *U*	1,800 *U*	910 *U*	910 *U*
ONON2A	SF0113	S353	7/27/2000		0 - 15	2 *J*	4 *U*	210	8 *U*	4 *U*	8 *U*	4 *U*	4 *U*
ONON2A	SF0114	S353	7/27/2000		15 - 30	9 *J*	3 *UJ*	180 *J*	7 *UJ*	3 *UJ*	7 *UJ*	3 *UJ*	3 *UJ*
ONON2A	SF0170	S434	8/9/2000		0 - 15	4 *U*	4 *U*	5	8 *U*	4 *U*	8 *U*	4 *U*	4 *U*
ONON2A	SF0171	S434	8/9/2000		15 - 30	10	4 *U*	21	9 *U*	4 *U*	9 *U*	4 *U*	4 *U*
ONON2A	SF0172	S435	8/9/2000		0 - 5	3,200 *UJ*	3,200 *UJ*	2,900 *J*	6,500 *UJ*	3,200 *UJ*	6,500 *UJ*	3,200 *UJ*	3,200 *UJ*

Table A-3B. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Dibromochloro-methane (µg/kg)	Ethylbenzene (µg/kg)	Methylene chloride (µg/kg)	Styrene (µg/kg)	Tetrachloro-ethene (µg/kg)	Toluene (µg/kg)	trans-1,2-Dichloroethene (µg/kg)	trans-1,3-Dichloropropene (µg/kg)
ONON2A	SF0123	S340	8/15/2000	1	0 - 2	17 *UJ*	17 *J*	29 *J*	18 *J*	17 *UJ*	23 *J*	17 *U*	17 *UJ*
ONON2A	SF0123_R	S340	8/15/2000	2	0 - 2	530 *UJ*	840 *J*	1,100 *UJ*	1,600 *J*	530 *UJ*	1500 *J*	530 *U*	530 *UJ*
ONON2A	SF0126	S340	8/3/2000		0 - 15	4,700 *UJ*	780 *J*	9,400 *UJ*	1,700 *J*	4,700 *UJ*	1100 *J*	4700 *U*	4700 *UJ*
ONON2A	SF0127	S340	8/3/2000		15 - 30	5,600 *UJ*	1,600 *J*	11,000 *UJ*	5,300 *J*	5,600 *UJ*	2500 *J*	5600 *U*	5600 *UJ*
ONON2A	SF0128	S341	8/4/2000		0 - 15	2,600 *UJ*	690 *J*	5,100 *U*	690 *J*	2,600 *U*	4,000	2,600 *U*	2,600 *UJ*
ONON2A	SF0129	S341	8/4/2000		15 - 30	3,200 *UJ*	230 *J*	3,500 *J*	720 *J*	3,200 *UJ*	4,000 *J*	3,200 *U*	3,200 *UJ*
ONON2A	SF0132	S343	8/4/2000		0 - 15	2,200 *UJ*	1,400 *J*	2,300 *J*	610 *J*	2,200 *UJ*	2,200 *J*	2,200 *U*	2,200 *UJ*
ONON2A	SF0133	S343	8/4/2000		15 - 30	2,200 *UJ*	580 *J*	2,400 *J*	420 *J*	2,200 *UJ*	930 *J*	2,200 *U*	2,200 *UJ*
ONON2A	SF0136	S345	8/4/2000		0 - 15	7,400 *UJ*	6,100 *J*	8,000 *J*	2,200 *J*	7,400 *UJ*	8,300 *J*	7,400 *U*	7,400 *UJ*
ONON2A	SF0137	S345	8/4/2000		15 - 30	8,100 *UJ*	5,800 *J*	9,000 *J*	2,000 *J*	8,100 *UJ*	11,000 *J*	8,100 *U*	8,100 *UJ*
ONON2A	SF0138	S346	8/4/2000		0 - 15	4,300 *UJ*	2,200 *J*	4,900 *J*	800 *J*	4,300 *UJ*	2,400 *J*	4,300 *U*	4,300 *UJ*
ONON2A	SF0139	S346	8/4/2000		15 - 30	2,300 *U*	1,700 *J*	4,500 *U*	430 *J*	2,300 *U*	2,300	2,300 *U*	2,300 *U*
ONON2A	SF0140	S347	8/4/2000		0 - 15	2,600 *UJ*	480 *J*	3,000 *J*	340 *J*	2,600 *UJ*	950 *J*	2,600 *U*	2,600 *UJ*
ONON2A	SF0141	S347	8/4/2000		15 - 30	11,000 *UJ*	1,100 *J*	13,000 *J*	7,000 *J*	11,000 *UJ*	3,800 *J*	11,000 *U*	11,000 *UJ*
ONON2A	SF0142	S348	8/5/2000		0 - 15	3,600 *UJ*	1,200 *J*	7,100 *UJ*	490 *J*	3,600 *UJ*	710 *J*	3,600 *U*	3,600 *UJ*
ONON2A	SF0143	S348	8/5/2000		15 - 30	3,000 *UJ*	2,700 *J*	6,100 *UJ*	1,200 *J*	3,000 *UJ*	2,100 *J*	3,000 *U*	3,000 *UJ*
ONON2A	SF0144	S349	8/5/2000		0 - 15	2,600 *UJ*	630 *J*	5,100 *UJ*	1,200 *J*	2,600 *UJ*	4,100 *J*	2,600 *U*	2,600 *UJ*
ONON2A	SF0145	S349	8/5/2000		15 - 30	2,800 *UJ*	1,300 *J*	5,600 *UJ*	2,300 *J*	2,800 *UJ*	11,000 *J*	2,800 *U*	2,800 *UJ*
ONON2A	SF0146	S350	8/5/2000		0 - 15	3,100 *U*	1,100 *J*	6,200 *U*	610	3,100 *U*	380	3,100 *U*	3,100 *U*
ONON2A	SF0147	S350	8/5/2000		15 - 30	2,800 *UJ*	1,400 *J*	5,700 *UJ*	850 *J*	2,800 *UJ*	550 *J*	2,800 *U*	2,800 *UJ*
ONON2A	SF0149	S351	8/5/2000		0 - 15	26 *U*	12	52 *U*	26 *U*	26 *U*	47	26 *U*	26 *U*
ONON2A	SF0150	S351	8/5/2000		15 - 30	15 *U*	20	15 *U*	15 *U*	15 *U*	400	15 *U*	15 *U*
ONON2A	SF0173	S351	8/15/2000		0 - 2	6 *UJ*	11 *J*	13 *U*	6 *UJ*	2 *J*	6 *U*	6 *U*	6 *U*
ONON2A	SF0151	S352	8/10/2000		0 - 15	440 *U*	700	880 *U*	440 *U*	440 *U*	160 *J*	440 *U*	440 *U*
ONON2A	SF0152	S352	8/10/2000		15 - 30	910 *U*	1,600	1,800 *U*	910 *U*	910 *U*	980	910 *U*	910 *U*
ONON2A	SF0113	S353	7/27/2000		0 - 15	4 *U*	3 *J*	10 *J*	4 *U*	4 *U*	8 *U*	4 *U*	4 *U*
ONON2A	SF0114	S353	7/27/2000		15 - 30	3 *UJ*	2 *J*	10 *UJ*	3 *UJ*	3 *UJ*	3 *UJ*	3 *U*	3 *UJ*
ONON2A	SF0170	S434	8/9/2000		0 - 15	4 *U*	0.9 *J*	4 *U*	4 *U*	4 *U*	4 *U*	4 *U*	4 *U*
ONON2A	SF0171	S434	8/9/2000		15 - 30	4 *U*	3 *J*	4 *U*	4 *U*	4 *U*	4 *U*	4 *U*	4 *U*
ONON2A	SF0172	S435	8/9/2000		0 - 5	3,200 *UJ*	71,000 *J*	6,500 *UJ*	2,300 *J*	3,200 *UJ*	6,900 *J*	3,200 *U*	3,200 *UJ*

Table A-3B. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Trichloroethene (µg/kg)	Tetrachloro-benzene (mixed) (µg/kg)	Vinyl chloride (µg/kg)	Xylene (m,p) (µg/kg)	Xylene (o) (µg/kg)	Xylene (Total) (µg/kg)	Sum of Xylenes [1] (µg/kg)	Pentachloro benzene (µg/kg)
ONON2A	SF0123	S340	8/15/2000	1	0 - 2	17 *UJ*		33 *UJ*			200 *J*	200 *J*	
ONON2A	SF0123_R	S340	8/15/2000	2	0 - 2	530 *UJ*		1,100 *UJ*			22,000 *J*	22,000 *J*	
ONON2A	SF0126	S340	8/3/2000		0 - 15	4700 *UJ*		9,400 *UJ*			23,000 *J*	23,000 *J*	
ONON2A	SF0127	S340	8/3/2000		15 - 30	5600 *UJ*		11,000 *UJ*			54,000 *J*	54,000 *J*	
ONON2A	SF0128	S341	8/4/2000		0 - 15	2,600 *U*		5,100 *U*			13,000	13,000	
ONON2A	SF0129	S341	8/4/2000		15 - 30	3,200 *UJ*		6,400 *UJ*			6,100 *J*	6,100 *J*	
ONON2A	SF0132	S343	8/4/2000		0 - 15	2,200 *UJ*		4,300 *UJ*			34,000 *J*	34,000 *J*	
ONON2A	SF0133	S343	8/4/2000		15 - 30	2,200 *UJ*		4,300 *UJ*			14,000 *J*	14,000 *J*	
ONON2A	SF0136	S345	8/4/2000		0 - 15	7,400 *UJ*		15,000 *UJ*			150,000 *J*	150,000 *J*	
ONON2A	SF0137	S345	8/4/2000		15 - 30	8,100 *UJ*		16,000 *UJ*			140,000 *J*	140,000 *J*	
ONON2A	SF0138	S346	8/4/2000		0 - 15	4,300 *UJ*		8,600 *UJ*			53,000 *J*	53,000 *J*	
ONON2A	SF0139	S346	8/4/2000		15 - 30	2,300 *U*		4,500 *U*			42,000	42,000	
ONON2A	SF0140	S347	8/4/2000		0 - 15	2,600 *UJ*		5,200 *UJ*			9,800 *J*	9,800 *J*	
ONON2A	SF0141	S347	8/4/2000		15 - 30	11,000 *UJ*		23,000 *UJ*			23,000 *J*	23,000 *J*	
ONON2A	SF0142	S348	8/5/2000		0 - 15	3,600 *UJ*		7,100 *UJ*			16,000 *J*	16,000 *J*	
ONON2A	SF0143	S348	8/5/2000		15 - 30	3,000 *UJ*		6,100 *UJ*			35,000 *J*	35,000 *J*	
ONON2A	SF0144	S349	8/5/2000		0 - 15	2,600 *UJ*		5,100 *UJ*			9,500 *J*	9,500 *J*	
ONON2A	SF0145	S349	8/5/2000		15 - 30	2,800 *UJ*		5,600 *UJ*			21,000 *J*	21,000 *J*	
ONON2A	SF0146	S350	8/5/2000		0 - 15	3,100 *U*		6,200 *U*			14,000	14,000	
ONON2A	SF0147	S350	8/5/2000		15 - 30	2,800 *UJ*		5,700 *UJ*			20,000 *J*	20,000 *J*	
ONON2A	SF0149	S351	8/5/2000		0 - 15	26 *U*		52 *U*			170	170	
ONON2A	SF0150	S351	8/5/2000		15 - 30	15 *U*		29 *U*			440	440	
ONON2A	SF0173	S351	8/15/2000		0 - 2	4		13 *U*			46 *J*	46 *J*	
ONON2A	SF0151	S352	8/10/2000		0 - 15	440 *U*		880 *U*			1,600	1,600	
ONON2A	SF0152	S352	8/10/2000		15 - 30	910 *U*		1,800 *U*			8,000	8,000	
ONON2A	SF0113	S353	7/27/2000		0 - 15	4 *U*		8 *U*			14	14	
ONON2A	SF0114	S353	7/27/2000		15 - 30	3 *UJ*		7 *UJ*			16 *J*	16 *J*	
ONON2A	SF0170	S434	8/9/2000		0 - 15	4 *U*		8 *U*			4 *U*	4 *U*	
ONON2A	SF0171	S434	8/9/2000		15 - 30	4 *U*		9 *U*			4 *U*	4 *U*	
ONON2A	SF0172	S435	8/9/2000		0 - 5	3,200 *UJ*		6,500 *UJ*			330,000 *J*	330,000 *J*	

Notes: [1] Sum of xylenes is a calculated quantity, not a direct measurement

J - estimated

U - not detected at reported quantitation limit

R - rejected datum

Table A-3C. Southern Basin Nearshore Sediments – Semivolatile Organic Compound Data

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	1,2,3,4-Tetrachloro-benzene (µg/kg)	1,2-Dichloro-benzene (µg/kg)	1,3-Dichloro-benzene (µg/kg)	1,4-Dichloro-benzene (µg/kg)	Dichloro-benzenes, (sum of) [1] (µg/kg)	2,2'-Oxybis (1-chloro-propane) (ug/kg)	1,2,3-Trichloro-benzene (µg/kg)	1,2,4-Trichloro-benzene (µg/kg)
O-SEDCHM	S00014	S1	5/8/1992		0 - 30		6,000 *J*	5,700 *UJ*	15,000 *J*	21,000 *J*	5,700 *UJ*		5,700 *J*
O-SEDCHM	S00556	S1	8/2/1992	D1	0 - 2		370 *J*	1,200 *UJ*	860 *J*	1,230 *J*	1,200 *UJ*		260 *J*
O-SEDCHM	S00557	S1	8/2/1992	D2	0 - 2		690 *J*	1,200 *UJ*	870 *J*	1,560 *J*	1,200 *UJ*		320 *J*
O-SEDCHM	S00558	S1	8/2/1992	D3	0 - 2		400 *J*	1,200 *UJ*	930 *J*	1,330 *J*	1,200 *UJ*		280 *J*
O-SEDCHM	S00546	S2	7/30/1992		0 - 2	36	870 *J*	1,200 *U*	3,300	4,170		1200 *U*	1,200 *U*
O-SEDCHM	S00340	S3	10/1/1992		0 - 30	30,000 *UJ*	3,700	5,000	42,000	50,700		4500	3,700
O-SEDCHM	S00613	S3	8/12/1992		0 - 2	37 *J*							
O-SEDCHM	S00653	S3	9/17/1992		0 - 2		75	64	770	909		26 *U*	25 *J*
O-SEDCHM	S00547	S5	7/30/1992		0 - 2	15 *U*	33 *J*	21 *J*	120 *J*	174 *J*		11 *UJ*	11 *UJ*
O-SEDCHM	S00004	S6	5/7/1992		0 - 30		1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*		1,200 *UJ*
O-SEDCHM	S00582	S6	8/6/1992		0 - 2		48 *J*	120 *U*	89 *J*	137 *J*	120 *U*		43 *J*
O-SEDCHM	S00555	S7	8/2/1992		0 - 2	11	7 *UJ*	7 *UJ*	5 *J*	5 *J*		7 *UJ*	7 *UJ*
O-SEDCHM	S00001	S10	5/7/1992		0 - 30		180 *J*	630 *UJ*	410 *J*	590 *J*	630 *UJ*		630 *UJ*
O-SEDCHM	S00572	S10	8/4/1992		0 - 2		1,500 *UJ*	1,500 *UJ*	1,500 *UJ*	1,500 *UJ*	1,500 *UJ*		1,500 *UJ*
O-SEDCHM	S00162	S11	7/10/1992		0 - 30	4.1 *U*	1,500 *U*	1,500 *U*	1,800	1,800		910 *J*	1,500 *U*
O-SEDCHM	S00567	S11	8/3/1992		0 - 2	4.9 *U*	7 *U*	7 *U*	7 *U*	7 *U*		7 *U*	7 *U*
O-SEDCHM	S00565	S13	8/3/1992		0 - 2	7.2 *U*	50 *UJ*	50 *UJ*	50 *UJ*	50 *UJ*		50 *UJ*	50 *UJ*
O-SEDCHM	S00542	S14	7/30/1992		0 - 2	110	7,900	1,200 *J*	9,300	18,400		2700 *U*	2,700 *U*
O-SEDCHM	S00062	S16	5/11/1992	D1	0 - 30		1,900 *UJ*	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*		1,900 *UJ*
O-SEDCHM	S00065	S16	5/11/1992	D2	0 - 30		2,300 *UJ*	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*		2,300 *UJ*
O-SEDCHM	S00066	S16	5/11/1992	D3	0 - 30		2,200 *UJ*	2,200 *UJ*	2,200 *UJ*	2,200 *UJ*	2,200 *UJ*		2,200 *UJ*
O-SEDCHM	S00566	S16	8/3/1992		0 - 2		150 *U*	150 *U*	150 *U*	150 *U*	150 *U*		150 *U*
O-SEDCHM	S00562	S17	8/3/1992	D1	0 - 2	6.4 *UJ*	11 *UJ*	11 *UJ*	11 *UJ*	11 *UJ*		11 *UJ*	11 *UJ*
O-SEDCHM	S00563	S17	8/3/1992	D2	0 - 2	6.9 *UJ*	10 *UJ*	10 *UJ*	10 *UJ*	10 *UJ*		10 *UJ*	10 *UJ*
O-SEDCHM	S00564	S17	8/3/1992	D3	0 - 2	6.8 *U*	10 *UJ*	10 *UJ*	10 *UJ*	10 *UJ*		10 *UJ*	10 *UJ*
O-SEDCHM	S00017	S20	5/8/1992		0 - 30		4,600 *UJ*	4,600 *UJ*	1,100 *J*	1,100 *J*	4,600 *UJ*		4,600 *UJ*
O-SEDCHM	S00560	S20	8/2/1992		0 - 2		3,500 *J*	4,400 *UJ*	7,000 *J*	10,500 *J*	4,400 *UJ*		4,400 *UJ*
O-SEDCHM	S00540	S21	7/30/1992		0 - 2	650	2,700	780 *J*	11,000	14,480		1100 *U*	1,100 *U*
O-SEDCHM	S00580	S26	8/6/1992		0 - 2	5.6 *U*	8 *U*	8 *U*	8 *U*	8 *U*		8 *U*	8 *U*
O-SEDCHM	S00533	S28	7/28/1992		0 - 2	4.7 *U*	1,400 *U*	1,400 *U*	1,300 *J*	1,300 *J*		1400 *U*	1,400 *U*
O-SEDCHM	S00573	S34	8/4/1992		0 - 2	5.8 *U*	8 *UJ*	8 *UJ*	8 *UJ*	8 *UJ*		8 *UJ*	8 *UJ*
O-SEDCHM	S00535	S35	7/28/1992		0 - 2	6.4 *U*	10 *UJ*	10 *UJ*	10 *UJ*	10 *UJ*		10 *UJ*	10 *UJ*
O-SEDCHM	S00007	S36	5/8/1992		0 - 30		3,100 *UJ*	3,100 *UJ*	3,100 *UJ*	3,100 *UJ*	3,100 *UJ*		3,100 *UJ*
O-SEDCHM	S00532	S36	7/27/1992		0 - 2		8 *U*	8 *UJ*	6 *J*	42,000 *UJ*	42,000 *UJ*	8 *UJ*	8 *UJ*
O-SEDCHM	S00521	S37	7/24/1992		0 - 2	6.6 *UJ*	10 *UJ*	10 *UJ*	5 *J*	5 *J*		10 *UJ*	10 *UJ*
O-SEDCHM	S00051	S46	5/10/1992		0 - 30		80 *U*	80 *U*	80 *U*	80 *U*	80 *U*		80 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	1,3,5-Trichloro-benzene (µg/kg)	(Sum of) Trichloro-benzenes [1] (µg/kg)	2,4,5-Trichloro-phenol (µg/kg)	2,4,6-Trichloro-phenol (µg/kg)	2,4-Dichlorophenol (µg/kg)	2,4-Dimethyl-phenol (µg/kg)	2,4-Dinitro-phenol (µg/kg)	2,4-Dinitro-toluene (µg/kg)
O-SEDCHM	S00014	S1	5/8/1992		0 - 30			14,000 *UJ*	5,700 *UJ*	5,700 *UJ*	5,700 *UJ*	14,000 *UJ*	5,700 *UJ*
O-SEDCHM	S00556	S1	8/2/1992	D1	0 - 2			2,900 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	2,900 *UJ*	1,200 *UJ*
O-SEDCHM	S00557	S1	8/2/1992	D2	0 - 2			3,100 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	3,100 *UJ*	1,200 *UJ*
O-SEDCHM	S00558	S1	8/2/1992	D3	0 - 2			3,100 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	3,100 *UJ*	1,200 *UJ*
O-SEDCHM	S00546	S2	7/30/1992		0 - 2	560 *J*	560 *J*						
O-SEDCHM	S00340	S3	10/1/1992		0 - 30	6,400	14,600						
O-SEDCHM	S00613	S3	8/12/1992		0 - 2								
O-SEDCHM	S00653	S3	9/17/1992		0 - 2	26 *U*	25 *J*						
O-SEDCHM	S00547	S5	7/30/1992		0 - 2	11 *UJ*	11 *UJ*						
O-SEDCHM	S00004	S6	5/7/1992		0 - 30			2,900 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	2,900 *UJ*	1,200 *UJ*
O-SEDCHM	S00582	S6	8/6/1992		0 - 2			310 *U*	120 *U*	120 *U*	120 *U*	310 *U*	120 *U*
O-SEDCHM	S00555	S7	8/2/1992		0 - 2	7 *UJ*	7 *UJ*						
O-SEDCHM	S00001	S10	5/7/1992		0 - 30			1,600 *UJ*	630 *UJ*	630 *UJ*	630 *UJ*	1,600 *UJ*	630 *UJ*
O-SEDCHM	S00572	S10	8/4/1992		0 - 2			3,700 *UJ*	1,500 *UJ*	1,500 *UJ*	1,500 *UJ*	3,700 *UJ*	1,500 *UJ*
O-SEDCHM	S00162	S11	7/10/1992		0 - 30	1,500 *U*	910 *J*						
O-SEDCHM	S00567	S11	8/3/1992		0 - 2	7 *U*	7 *U*						
O-SEDCHM	S00565	S13	8/3/1992		0 - 2	50 *UJ*	50 *UJ*						
O-SEDCHM	S00542	S14	7/30/1992		0 - 2	4,200	4,200						
O-SEDCHM	S00062	S16	5/11/1992	D1	0 - 30			4,800 *UJ*	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*	4,800 *UJ*	1,900 *UJ*
O-SEDCHM	S00065	S16	5/11/1992	D2	0 - 30			5,800 *UJ*	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*	5,800 *UJ*	2,300 *UJ*
O-SEDCHM	S00066	S16	5/11/1992	D3	0 - 30			5,400 *UJ*	2,200 *UJ*	2,200 *UJ*	2,200 *UJ*	5,400 *UJ*	2,200 *UJ*
O-SEDCHM	S00566	S16	8/3/1992		0 - 2			370 *U*	150 *U*	150 *U*	150 *U*	370 *U*	150 *U*
O-SEDCHM	S00562	S17	8/3/1992	D1	0 - 2	11 *UJ*	11 *UJ*						
O-SEDCHM	S00563	S17	8/3/1992	D2	0 - 2	10 *UJ*	10 *UJ*						
O-SEDCHM	S00564	S17	8/3/1992	D3	0 - 2	10 *UJ*	10 *UJ*						
O-SEDCHM	S00017	S20	5/8/1992		0 - 30			11,000 *UJ*	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	11,000 *UJ*	4,600 *UJ*
O-SEDCHM	S00560	S20	8/2/1992		0 - 2			11,000 *UJ*	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*	11,000 *UJ*	4,400 *UJ*
O-SEDCHM	S00540	S21	7/30/1992		0 - 2	1,300	1,300						
O-SEDCHM	S00580	S26	8/6/1992		0 - 2	8 *U*	8 *U*						
O-SEDCHM	S00533	S28	7/28/1992		0 - 2	1,400 *U*	1,400 *U*						
O-SEDCHM	S00573	S34	8/4/1992		0 - 2	8 *UJ*	8 *UJ*						
O-SEDCHM	S00535	S35	7/28/1992		0 - 2	10 *UJ*	10 *UJ*						
O-SEDCHM	S00007	S36	5/8/1992		0 - 30			7,800 *UJ*	3,100 *UJ*	3,100 *UJ*	3,100 *UJ*	7,800 *UJ*	3,100 *UJ*
O-SEDCHM	S00532	S36	7/27/1992		0 - 2	8 *UJ*	8 *UJ*	100,000 *UJ*	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*	100,000 *UJ*	42,000 *UJ*
O-SEDCHM	S00521	S37	7/24/1992		0 - 2	10 *UJ*	10 *UJ*						
O-SEDCHM	S00051	S46	5/10/1992		0 - 30			200 *U*	80 *U*	80 *U*	80 *U*	200 *U*	80 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	2,6-Dinitro-toluene (µg/kg)	2-Chloro-naphthalene (µg/kg)	2-Chloro-phenol (µg/kg)	2-Methyl-4,6-dinitrophenol (µg/kg)	2-Methyl-naphthalene (µg/kg)	2-Methyl-phenol (µg/kg)	4-Methyl-phenol (µg/kg)	2-Nitro-aniline (µg/kg)	3-Nitro-aniline (µg/kg)
O-SEDCHM	S00014	S1	5/8/1992		0 - 30	5,700 *UJ*	5,700 *UJ*	5,700 *UJ*	14,000 *UJ*	5,100 *J*	5,700 *UJ*	5,700 *UJ*	14,000 *UJ*	14,000 *UJ*
O-SEDCHM	S00556	S1	8/2/1992	D1	0 - 2	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	2,900 *UJ*	800 *J*	1,200 *UJ*	1,200 *UJ*	2,900 *UJ*	2,900 *UJ*
O-SEDCHM	S00557	S1	8/2/1992	D2	0 - 2	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	3,100 *UJ*	690 *J*	1,200 *UJ*	1,200 *UJ*	3,100 *UJ*	3,100 *UJ*
O-SEDCHM	S00558	S1	8/2/1992	D3	0 - 2	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	3,100 *UJ*	1,700 *J*	1,200 *UJ*	1,200 *UJ*	3,100 *UJ*	3,100 *UJ*
O-SEDCHM	S00546	S2	7/30/1992		0 - 2									
O-SEDCHM	S00340	S3	10/1/1992		0 - 30									
O-SEDCHM	S00613	S3	8/12/1992		0 - 2									
O-SEDCHM	S00653	S3	9/17/1992		0 - 2									
O-SEDCHM	S00547	S5	7/30/1992		0 - 2									
O-SEDCHM	S00004	S6	5/7/1992		0 - 30	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	2,900 *UJ*	390 *J*	1,200 *UJ*	1,200 *UJ*	2,900 *UJ*	2,900 *UJ*
O-SEDCHM	S00582	S6	8/6/1992		0 - 2	120 *U*	120 *U*	120 *U*	310 *U*	33 *J*	120 *U*	120 *U*	310 *U*	310 *U*
O-SEDCHM	S00555	S7	8/2/1992		0 - 2									
O-SEDCHM	S00001	S10	5/7/1992		0 - 30	630 *UJ*	630 *UJ*	630 *UJ*	1,600 *UJ*	460 *J*	630 *UJ*	690 *J*	1,600 *UJ*	1,600 *UJ*
O-SEDCHM	S00572	S10	8/4/1992		0 - 2	1,500 *UJ*	1,500 *UJ*	1,500 *UJ*	3,700 *UJ*	620 *J*	1,500 *UJ*	1,500 *UJ*	3,700 *UJ*	3,700 *UJ*
O-SEDCHM	S00162	S11	7/10/1992		0 - 30									
O-SEDCHM	S00567	S11	8/3/1992		0 - 2									
O-SEDCHM	S00565	S13	8/3/1992		0 - 2									
O-SEDCHM	S00542	S14	7/30/1992		0 - 2									
O-SEDCHM	S00062	S16	5/11/1992	D1	0 - 30	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*	4,800 *UJ*	2,600 *J*	1,900 *UJ*	1,900 *UJ*	4,800 *UJ*	4,800 *UJ*
O-SEDCHM	S00065	S16	5/11/1992	D2	0 - 30	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*	5,800 *UJ*	3,700 *J*	2,300 *UJ*	2,300 *UJ*	5,800 *UJ*	5,800 *UJ*
O-SEDCHM	S00066	S16	5/11/1992	D3	0 - 30	2,200 *UJ*	2,200 *UJ*	2,200 *UJ*	5,400 *UJ*	3,700 *J*	2,200 *UJ*	2,200 *UJ*	5,400 *UJ*	5,400 *UJ*
O-SEDCHM	S00566	S16	8/3/1992		0 - 2	150 *U*	150 *U*	150 *U*	370 *U*	150 *U*	150 *U*	150 *U*	370 *U*	370 *U*
O-SEDCHM	S00562	S17	8/3/1992	D1	0 - 2									
O-SEDCHM	S00563	S17	8/3/1992	D2	0 - 2									
O-SEDCHM	S00564	S17	8/3/1992	D3	0 - 2									
O-SEDCHM	S00017	S20	5/8/1992		0 - 30	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	11,000 *UJ*	4,500 *J*	4,600 *UJ*	4,600 *UJ*	11,000 *UJ*	11,000 *UJ*
O-SEDCHM	S00560	S20	8/2/1992		0 - 2	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*	11,000 *UJ*	3,700 *J*	4,400 *UJ*	4,400 *UJ*	11,000 *UJ*	11,000 *UJ*
O-SEDCHM	S00540	S21	7/30/1992		0 - 2									
O-SEDCHM	S00580	S26	8/6/1992		0 - 2									
O-SEDCHM	S00533	S28	7/28/1992		0 - 2									
O-SEDCHM	S00573	S34	8/4/1992		0 - 2									
O-SEDCHM	S00535	S35	7/28/1992		0 - 2									
O-SEDCHM	S00007	S36	5/8/1992		0 - 30	3,100 *UJ*	3,100 *UJ*	3,100 *UJ*	7,800 *UJ*	1,000 *J*	3,100 *UJ*	3,100 *UJ*	7,800 *UJ*	7,800 *UJ*
O-SEDCHM	S00532	S36	7/27/1992		0 - 2	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*	100,000 *UJ*	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*	100,000 *UJ*	100,000 *UJ*
O-SEDCHM	S00521	S37	7/24/1992		0 - 2									
O-SEDCHM	S00051	S46	5/10/1992		0 - 30	80 *U*	80 *U*	80 *U*	200 *U*	80 *U*	80 *U*	80 *U*	200 *U*	200 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	4-Nitro-aniline (µg/kg)	2-Nitro-phenol (µg/kg)	4-Nitro-phenol (µg/kg)	3,3-Dichloro-benzidine (µg/kg)	4-Bromo-phenyl-phenyl ether (µg/kg)	4-Chloro-3-methyl- phenol (µg/kg)	4-Chloro-aniline (µg/kg)	4-Chloro-phenyl-phenyl ether (µg/kg)
O-SEDCHM	S00014	S1	5/8/1992		0 - 30	14,000 *UJ*	5,700 *UJ*	14,000 *UJ*	5,700 *UJ*	5,700 *UJ*	5,700 *UJ*	5,700 *UJ*	5,700 *UJ*
O-SEDCHM	S00556	S1	8/2/1992	D1	0 - 2	2,900 *UJ*	1,200 *UJ*	2,900 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*
O-SEDCHM	S00557	S1	8/2/1992	D2	0 - 2	3,100 *UJ*	1,200 *UJ*	3,100 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*
O-SEDCHM	S00558	S1	8/2/1992	D3	0 - 2	3,100 *UJ*	1,200 *UJ*	3,100 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*
O-SEDCHM	S00546	S2	7/30/1992		0 - 2								
O-SEDCHM	S00340	S3	10/1/1992		0 - 30								
O-SEDCHM	S00613	S3	8/12/1992		0 - 2								
O-SEDCHM	S00653	S3	9/17/1992		0 - 2								
O-SEDCHM	S00547	S5	7/30/1992		0 - 2								
O-SEDCHM	S00004	S6	5/7/1992		0 - 30	2,900 *UJ*	1,200 *UJ*	2,900 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*
O-SEDCHM	S00582	S6	8/6/1992		0 - 2	310 *U*	120 *U*	310 *U*	120 *U*	120 *U*	120 *U*	120 *U*	120 *U*
O-SEDCHM	S00555	S7	8/2/1992		0 - 2								
O-SEDCHM	S00001	S10	5/7/1992		0 - 30	1,600 *UJ*	630 *UJ*	1,600 *UJ*	630 *UJ*	630 *UJ*	630 *UJ*	630 *UJ*	630 *UJ*
O-SEDCHM	S00572	S10	8/4/1992		0 - 2	3,700 *UJ*	1,500 *UJ*	3,700 *UJ*	1,500 *UJ*	1,500 *UJ*	1,500 *UJ*	1,500 *UJ*	1,500 *UJ*
O-SEDCHM	S00162	S11	7/10/1992		0 - 30								
O-SEDCHM	S00567	S11	8/3/1992		0 - 2								
O-SEDCHM	S00565	S13	8/3/1992		0 - 2								
O-SEDCHM	S00542	S14	7/30/1992		0 - 2								
O-SEDCHM	S00062	S16	5/11/1992	D1	0 - 30	4,800 *UJ*	1,900 *UJ*	4,800 *UJ*	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*
O-SEDCHM	S00065	S16	5/11/1992	D2	0 - 30	5,800 *UJ*	2,300 *UJ*	5,800 *UJ*	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*
O-SEDCHM	S00066	S16	5/11/1992	D3	0 - 30	5,400 *UJ*	2,200 *UJ*	5,400 *UJ*	2,200 *UJ*	2,200 *UJ*	2,200 *UJ*	2,200 *UJ*	2,200 *UJ*
O-SEDCHM	S00566	S16	8/3/1992		0 - 2	370 *U*	150 *U*	370 *U*	150 *U*	150 *U*	150 *U*	150 *U*	150 *U*
O-SEDCHM	S00562	S17	8/3/1992	D1	0 - 2								
O-SEDCHM	S00563	S17	8/3/1992	D2	0 - 2								
O-SEDCHM	S00564	S17	8/3/1992	D3	0 - 2								
O-SEDCHM	S00017	S20	5/8/1992		0 - 30	11,000 *UJ*	4,600 *UJ*	11,000 *UJ*	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*
O-SEDCHM	S00560	S20	8/2/1992		0 - 2	11,000 *UJ*	4,400 *UJ*	11,000 *UJ*	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*
O-SEDCHM	S00540	S21	7/30/1992		0 - 2								
O-SEDCHM	S00580	S26	8/6/1992		0 - 2								
O-SEDCHM	S00533	S28	7/28/1992		0 - 2								
O-SEDCHM	S00573	S34	8/4/1992		0 - 2								
O-SEDCHM	S00535	S35	7/28/1992		0 - 2								
O-SEDCHM	S00007	S36	5/8/1992		0 - 30	7,800 *UJ*	3,100 *UJ*	7,800 *UJ*	3,100 *UJ*	3,100 *UJ*	3,100 *UJ*	3,100 *UJ*	3,100 *UJ*
O-SEDCHM	S00532	S36	7/27/1992		0 - 2	100,000 *UJ*	42,000 *UJ*	100,000 *UJ*	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*
O-SEDCHM	S00521	S37	7/24/1992		0 - 2								
O-SEDCHM	S00051	S46	5/10/1992		0 - 30	200 *U*	80 *U*	200 *U*	80 *U*	80 *U*	80 *U*	80 *U*	80 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Acenaphthene (µg/kg)	Acenaph - thylene (µg/kg)	Anthracene (µg/kg)	Benz(a)anth racene (µg/kg)	Benzo(a) pyrene (µg/kg)	Benzo(b) fluoranthene (µg/kg)	Benzo(g,h,i) perylene (µg/kg)	Benzo(k) fluoranthene (µg/kg)	Benzyl Alcohol (µg/kg)
O-SEDCHM	S00014	S1	5/8/1992		0 - 30	3,100 *J*	1,200 *J*	5,700 *UJ*	3,400 *J*	2,100 *J*	5,700 *UJ*	1,200 *J*	5,700 *UJ*	
O-SEDCHM	S00556	S1	8/2/1992	D1	0 - 2	890 *J*	550 *J*	5,900 *J*	3,300 *J*	3,100 *J*	5,200 *J*	1,500 *J*	1,200 *UJ*	
O-SEDCHM	S00557	S1	8/2/1992	D2	0 - 2	950 *J*	610 *J*	2,000 *J*	5,500 *J*	4,800 *J*	8,000 *J*	2,000 *J*	1,200 *UJ*	
O-SEDCHM	S00558	S1	8/2/1992	D3	0 - 2	1,200 *J*	740 *J*	2,000 *J*	3,600 *J*	3,200 *J*	5,600 *J*	1,600 *J*	1,200 *UJ*	
O-SEDCHM	S00546	S2	7/30/1992		0 - 2	1,100 *J*	7,000 *UJ*	390 *J*	770 *J*	470 *J*	2,000 *J*	2,100 *J*	350 *UJ*	
O-SEDCHM	S00340	S3	10/1/1992		0 - 30									
O-SEDCHM	S00613	S3	8/12/1992		0 - 2	1,800 *UJ*	3,500 *UJ*	680 *J*	920 *J*	490 *J*	2,700 *J*	3,100 *J*	530 *J*	
O-SEDCHM	S00653	S3	9/17/1992		0 - 2									
O-SEDCHM	S00547	S5	7/30/1992		0 - 2	2,900 *J*	2,600 *J*	1,300 *J*	2,000 *J*	1,600 *J*	4,200 *J*	4,400 *J*	990 *J*	
O-SEDCHM	S00004	S6	5/7/1992		0 - 30	8,000 *J*	1,400 *J*	9,400 *J*	13,000 *J*	11,000 *J*	13,000 *J*	4,200 *J*	1,200 *UJ*	
O-SEDCHM	S00582	S6	8/6/1992		0 - 2	190	120 *J*	490	780	870	1300	290	120 *U*	
O-SEDCHM	S00555	S7	8/2/1992		0 - 2	15,000 *J*	24,000 *UJ*	4,000 *J*	4,300 *J*	1,400 *J*	4,200 *J*	3,600 *J*	2,500 *J*	
O-SEDCHM	S00001	S10	5/7/1992		0 - 30	670 *J*	830 *J*	1,500 *J*	4,100 *J*	4,600 *J*	5,800 *J*	2,100 *J*	630 *UJ*	
O-SEDCHM	S00572	S10	8/4/1992		0 - 2	890 *J*	2,000 *J*	4,400 *J*	7,700 *J*	7,800 *J*	9,700 *J*	1,900 *J*	1,500 *UJ*	
O-SEDCHM	S00162	S11	7/10/1992		0 - 30	3,200 *J*	3,800 *J*	680 *J*	1,600 *J*	1,600 *J*	3,000 *J*	2,700 *J*	490 *J*	
O-SEDCHM	S00567	S11	8/3/1992		0 - 2	2,500 *UJ*	4,900 *UJ*	570 *J*	340 *J*	700 *J*	1,300 *J*	2,200 *J*	810 *J*	
O-SEDCHM	S00565	S13	8/3/1992		0 - 2	18,000 *UJ*	36,000 *UJ*	8,900 *J*	2,600 *J*	2,700 *J*	29,000 *J*	9,300 *J*	3,800 *J*	
O-SEDCHM	S00542	S14	7/30/1992		0 - 2	21,000 *UJ*	41,000 *UJ*	4,800 *J*	1,000 *J*	2,100 *UJ*	1,400 *J*	3,000 *J*	2,100 *UJ*	
O-SEDCHM	S00062	S16	5/11/1992	D1	0 - 30	1,500 *J*	1,900 *UJ*	1,100 *J*	1,200 *J*	1,100 *J*	1,800 *J*	760 *J*	1,900 *UJ*	
O-SEDCHM	S00065	S16	5/11/1992	D2	0 - 30	1,300 *J*	560 *J*	1,500 *J*	1,400 *J*	1,200 *J*	2,200 *J*	770 *J*	2,300 *UJ*	
O-SEDCHM	S00066	S16	5/11/1992	D3	0 - 30	1,300 *J*	2,200 *UJ*	2,200 *UJ*	1,600 *J*	1,200 *J*	1,800 *J*	960 *J*	2,200 *UJ*	
O-SEDCHM	S00566	S16	8/3/1992		0 - 2	46 *J*	72 *J*	240	630	640	1,100	260	150 *U*	
O-SEDCHM	S00562	S17	8/3/1992	D1	0 - 2	380 *J*	420 *J*	52 *J*	200 *J*	170 *J*	390 *J*	550 *J*	160 *J*	
O-SEDCHM	S00563	S17	8/3/1992	D2	0 - 2	240 *J*	440 *J*	58	160 *J*	140 *J*	260 *J*	510 *J*	120 *J*	
O-SEDCHM	S00564	S17	8/3/1992	D3	0 - 2	1,300	420 *J*	57	200 *J*	190	270 *J*	350	150 *J*	
O-SEDCHM	S00017	S20	5/8/1992		0 - 30	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	
O-SEDCHM	S00560	S20	8/2/1992		0 - 2	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*	
O-SEDCHM	S00540	S21	7/30/1992		0 - 2	3,300 *UJ*	6,600 *UJ*	300 *J*	570 *J*	330 *UJ*	660 *UJ*	1,900 *J*	410 *J*	
O-SEDCHM	S00580	S26	8/6/1992		0 - 2	310 *J*	370 *J*	28 *UJ*	28 *U*	22 *J*	120 *J*	57 *U*	43	
O-SEDCHM	S00533	S28	7/28/1992		0 - 2	1,400 *J*	3,500 *J*	630	1,400	200 *U*	2,900	3,000	580	
O-SEDCHM	S00573	S34	8/4/1992		0 - 2	310 *J*	380 *J*	45 *J*	110 *J*	41 *J*	570 *J*	410 *J*	48 *J*	
O-SEDCHM	S00535	S35	7/28/1992		0 - 2	1,600 *U*	3,000 *J*	410	1,400	1,300	2,100	2,700	1,100	
O-SEDCHM	S00007	S36	5/8/1992		0 - 30	2,200 *J*	3,100 *UJ*	5,800 *J*	31,000 *J*	31,000 *J*	46,000 *J*	16,000 *J*	3,100 *UJ*	
O-SEDCHM	S00532	S36	7/27/1992		0 - 2	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*	
O-SEDCHM	S00521	S37	7/24/1992		0 - 2	330 *UJ*	660 *UJ*	33 *UJ*	61 *J*	58 *J*	150 *J*	760 *J*	78 *J*	
O-SEDCHM	S00051	S46	5/10/1992		0 - 30	29 *J*	80 *U*	72 *J*	130	160	200	81	80 *U*	

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Bis(2-chloro-ethoxy) methane (µg/kg)	Bis(2-chloroethyl) ether (µg/kg)	Bis(2-ethylhexyl) phthalate (µg/kg)	Butylbenzyl-phthalate (µg/kg)	Carbazole (µg/kg)	Chrysene (µg/kg)	Dibenz(a,h) anthracene (µg/kg)	Dibenzofuran (µg/kg)	Diethyl phthalate (µg/kg)
O-SEDCHM	S00014	S1	5/8/1992		0 - 30	5,700 *UJ*	5,700 *UJ*	5,700 *UJ*	5,700 *UJ*	5,700 *UJ*	3,300 *J*	5,700 *UJ*	3,500 *J*	5,700 *UJ*
O-SEDCHM	S00556	S1	8/2/1992	D1	0 - 2	1,200 *UJ*	1,200 *UJ*	1,500 *J*	1,200 *UJ*	330 *J*	3,600 *J*	540 *J*	1,100 *J*	1,200 *UJ*
O-SEDCHM	S00557	S1	8/2/1992	D2	0 - 2	1,200 *UJ*	1,200 *UJ*	1,300 *J*	1,200 *UJ*	340 *J*	6,000 *J*	840 *J*	1,200 *J*	1,200 *UJ*
O-SEDCHM	S00558	S1	8/2/1992	D3	0 - 2	1,200 *UJ*	1,200 *UJ*	1,600 *J*	1,200 *UJ*	400 *J*	4,200 *J*	620 *J*	1,600 *J*	1,200 *UJ*
O-SEDCHM	S00546	S2	7/30/1992		0 - 2						850 *J*	410 *J*		
O-SEDCHM	S00340	S3	10/1/1992		0 - 30						870 *J*	350 *UJ*		
O-SEDCHM	S00613	S3	8/12/1992		0 - 2						3,000 *J*	640 *J*		
O-SEDCHM	S00653	S3	9/17/1992		0 - 2									
O-SEDCHM	S00547	S5	7/30/1992		0 - 2									
O-SEDCHM	S00004	S6	5/7/1992		0 - 30	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	290 *J*	9,100 *J*	1,200 *UJ*	1,700 *J*	1,200 *UJ*
O-SEDCHM	S00582	S6	8/6/1992		0 - 2	120 *U*	120 *U*	350	120 *U*	120 *U*	790	120 *J*	43 *J*	120 *U*
O-SEDCHM	S00555	S7	8/2/1992		0 - 2						4,600 *J*	2,400 *UJ*		
O-SEDCHM	S00001	S10	5/7/1992		0 - 30	630 *UJ*	630 *UJ*	950 *J*	630 *UJ*	400 *J*	3,700 *J*	630 *UJ*	240 *J*	630 *UJ*
O-SEDCHM	S00572	S10	8/4/1992		0 - 2	1,500 *UJ*	1,500 *UJ*	440 *J*	1,500 *UJ*	330 *J*	7,500 *J*	730 *J*	470 *J*	1,500 *UJ*
O-SEDCHM	S00162	S11	7/10/1992		0 - 30						2,700 *J*	650 *J*		
O-SEDCHM	S00567	S11	8/3/1992		0 - 2						250 *UJ*	370 *J*		
O-SEDCHM	S00565	S13	8/3/1992		0 - 2						1,800 *UJ*	890 *J*		
O-SEDCHM	S00542	S14	7/30/1992		0 - 2						2,100 *UJ*	4,100 *UJ*		
O-SEDCHM	S00062	S16	5/11/1992	D1	0 - 30	1,900 *UJ*	1,900 *UJ*	2,500 *J*	1,900 *UJ*	1,900 *UJ*	1,500 *J*	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*
O-SEDCHM	S00065	S16	5/11/1992	D2	0 - 30	2,300 *UJ*	2,300 *UJ*	3,100 *J*	2,300 *UJ*	2,300 *UJ*	1,600 *J*	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*
O-SEDCHM	S00066	S16	5/11/1992	D3	0 - 30	2,200 *UJ*	2,200 *UJ*	2,400 *J*	2,200 *UJ*	2,200 *UJ*	1,600 *J*	2,200 *UJ*	2,200 *UJ*	2,200 *UJ*
O-SEDCHM	S00566	S16	8/3/1992		0 - 2	150 *U*	150 *U*	270	150 *U*	46 *J*	670	100 *J*	150 *U*	150 *U*
O-SEDCHM	S00562	S17	8/3/1992	D1	0 - 2						460 *J*	110 *J*		
O-SEDCHM	S00563	S17	8/3/1992	D2	0 - 2						370 *J*	75		
O-SEDCHM	S00564	S17	8/3/1992	D3	0 - 2						430 *J*	80		
O-SEDCHM	S00017	S20	5/8/1992		0 - 30	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*
O-SEDCHM	S00560	S20	8/2/1992		0 - 2	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*
O-SEDCHM	S00540	S21	7/30/1992		0 - 2						490 *J*	260 *J*		
O-SEDCHM	S00580	S26	8/6/1992		0 - 2						14 *J*	57 *U*		
O-SEDCHM	S00533	S28	7/28/1992		0 - 2						2,200	530		
O-SEDCHM	S00573	S34	8/4/1992		0 - 2						210 *J*	70 *UJ*		
O-SEDCHM	S00535	S35	7/28/1992		0 - 2						2700	660		
O-SEDCHM	S00007	S36	5/8/1992		0 - 30	3,100 *UJ*	3,100 *UJ*	3,100 *UJ*	3,100 *UJ*	3,900 *J*	34,000 *J*	3,100 *UJ*	3,100 *UJ*	3,100 *UJ*
O-SEDCHM	S00532	S36	7/27/1992		0 - 2	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*
O-SEDCHM	S00521	S37	7/24/1992		0 - 2						140 *J*	66 *UJ*		
O-SEDCHM	S00051	S46	5/10/1992		0 - 30	80 *U*	80 *U*	27 *J*	80 *U*	33 *J*	130	31 *J*	18 *J*	80 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Dimethyl phthalate (µg/kg)	Di-n-butyl phthalate (µg/kg)	Di-n-octyl phthalate (µg/kg)	Fluoranthene (µg/kg)	Fluorene (µg/kg)	Hexachlor obenzene (GC/ECD) (µg/kg)	Hexachlorob enzene (GC/MS) (µg/kg)	Final HCB Value (µg/kg)	Hexachloro-butadiene (µg/kg)
O-SEDCHM	S00014	S1	5/8/1992		0 - 30	5,700 *UJ*	5,700 *UJ*	5,700 *UJ*	9,300 *J*	14,000 *J*		1,600 *J*	1,600 *J*	5,700 *UJ*
O-SEDCHM	S00556	S1	8/2/1992	D1	0 - 2	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	6,900 *J*	1,300 *J*		1,200 *UJ*	1,200 *UJ*	1,200 *UJ*
O-SEDCHM	S00557	S1	8/2/1992	D2	0 - 2	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	6,600 *J*	1,200 *UJ*		1,200 *UJ*	1,200 *UJ*	1,200 *UJ*
O-SEDCHM	S00558	S1	8/2/1992	D3	0 - 2	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	6,400 *J*	1,800 *J*		1,200 *UJ*	1,200 *UJ*	1,200 *UJ*
O-SEDCHM	S00546	S2	7/30/1992		0 - 2				9,600 *J*	570 *J*		130	130	
O-SEDCHM	S00340	S3	10/1/1992		0 - 30							20,000 *J*	20,000 *J*	
O-SEDCHM	S00613	S3	8/12/1992		0 - 2				350 *UJ*	600 *J*		290 *J*	290 *J*	
O-SEDCHM	S00653	S3	9/17/1992		0 - 2									
O-SEDCHM	S00547	S5	7/30/1992		0 - 2				4,900 *J*	1,400 *J*		120	120	
O-SEDCHM	S00004	S6	5/7/1992		0 - 30	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	18,000 *J*	5,100 *J*		1,200 *UJ*	1,200 *UJ*	1,200 *UJ*
O-SEDCHM	S00582	S6	8/6/1992		0 - 2	120 *U*	120 *U*	120 *U*	910	160		120 *U*	120 *U*	120 *U*
O-SEDCHM	S00555	S7	8/2/1992		0 - 2				86,000 *UJ*	2,600 *J*		11	11	
O-SEDCHM	S00001	S10	5/7/1992		0 - 30	630 *UJ*	630 *UJ*	630 *UJ*	4,300 *J*	1,000 *J*		630 *UJ*	630 *UJ*	630 *UJ*
O-SEDCHM	S00572	S10	8/4/1992		0 - 2	1,500 *UJ*	1,500 *UJ*	1,500 *UJ*	10,000 *J*	3,500 *J*		1,500 *UJ*	1,500 *UJ*	1,500 *UJ*
O-SEDCHM	S00162	S11	7/10/1992		0 - 30				2,700 *J*	500 *J*		4.1 *U*	4.1 *U*	
O-SEDCHM	S00567	S11	8/3/1992		0 - 2				26,000 *UJ*	490 *UJ*		4.9 *U*	4.9 *U*	
O-SEDCHM	S00565	S13	8/3/1992		0 - 2				230,000 *UJ*	7,200 *J*		4.6 *J*	4.6 *J*	
O-SEDCHM	S00542	S14	7/30/1992		0 - 2				40,000 *J*	4,100 *UJ*		170	170	
O-SEDCHM	S00062	S16	5/11/1992	D1	0 - 30	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*	3,000 *J*	1,200 *J*		1,900 *UJ*	1,900 *UJ*	1,900 *UJ*
O-SEDCHM	S00065	S16	5/11/1992	D2	0 - 30	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*	4,100 *J*	1,200 *J*		2,300 *UJ*	2,300 *UJ*	2,300 *UJ*
O-SEDCHM	S00066	S16	5/11/1992	D3	0 - 30	2,200 *UJ*	2,200 *UJ*	2,200 *UJ*	3,900 *J*	940 *J*		2,200 *UJ*	2,200 *UJ*	2,200 *UJ*
O-SEDCHM	S00566	S16	8/3/1992		0 - 2	150 *U*	150 *U*	150 *U*	930	72 *J*		150 *U*	150 *U*	150 *U*
O-SEDCHM	S00562	S17	8/3/1992	D1	0 - 2				700 *UJ*	66 *UJ*		6.4 *UJ*	6.4 *UJ*	
O-SEDCHM	S00563	S17	8/3/1992	D2	0 - 2				720 *UJ*	68 *UJ*		6.9 *UJ*	6.9 *UJ*	
O-SEDCHM	S00564	S17	8/3/1992	D3	0 - 2				440 *UJ*	73 *J*		6.8 *U*	6.8 *U*	
O-SEDCHM	S00017	S20	5/8/1992		0 - 30	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	15,000 *J*		4,600 *UJ*	4,600 *UJ*	4,600 *UJ*
O-SEDCHM	S00560	S20	8/2/1992		0 - 2	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*		4,400 *UJ*	4,400 *UJ*	4,400 *UJ*
O-SEDCHM	S00540	S21	7/30/1992		0 - 2				1,300 *J*	2,500 *J*		1,200	1,200	
O-SEDCHM	S00580	S26	8/6/1992		0 - 2				640 *UJ*	57 *U*		5.6 *U*	5.6 *U*	
O-SEDCHM	S00533	S28	7/28/1992		0 - 2				28,000	520		16	16	
O-SEDCHM	S00573	S34	8/4/1992		0 - 2				1,900 *UJ*	42 *J*		5.8 *U*	5.8 *U*	
O-SEDCHM	S00535	S35	7/28/1992		0 - 2				16,000	380		5 *J*	5 *J*	
O-SEDCHM	S00007	S36	5/8/1992		0 - 30	3,100 *UJ*	3,100 *UJ*	3,100 *UJ*	35,000 *J*	8,900 *J*		3,100 *UJ*	3,100 *UJ*	3,100 *UJ*
O-SEDCHM	S00532	S36	7/27/1992		0 - 2	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*	8,900 *J*	42,000 *UJ*		42,000 *UJ*	42,000 *UJ*	42,000 *UJ*
O-SEDCHM	S00521	S37	7/24/1992		0 - 2				1,400 *J*	66 *UJ*		6.6 *UJ*	6.6 *UJ*	
O-SEDCHM	S00051	S46	5/10/1992		0 - 30	80 *U*	80 *U*	80 *U*	260	54 *J*		80 *U*	80 *U*	80 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Hexachloro-cyclopentadiene (µg/kg)	Hexachloro-ethane (µg/kg)	Indeno(1,2,3-cd) pyrene (µg/kg)	Isophorone (µg/kg)	Naphthalene (µg/kg)	Nitrobenzene (µg/kg)	N-Nitroso dimethyl-amine (µg/kg)	N-nitroso-di-n-propylamine (µg/kg)
O-SEDCHM	S00014	S1	5/8/1992		0 - 30	5,700 *UJ*	5,700 *UJ*	5,700 *UJ*	5,700 *UJ*	25,000 *J*	5,700 *UJ*		5,700 *UJ*
O-SEDCHM	S00556	S1	8/2/1992	D1	0 - 2	1,200 *UJ*	1,200 *UJ*	1,700 *J*	1,200 *UJ*	1,700 *J*	1,200 *UJ*		1,200 *UJ*
O-SEDCHM	S00557	S1	8/2/1992	D2	0 - 2	1,200 *UJ*	1,200 *UJ*	2,300 *J*	1,200 *UJ*	1,400 *J*	1,200 *UJ*		1,200 *UJ*
O-SEDCHM	S00558	S1	8/2/1992	D3	0 - 2	1,200 *UJ*	1,200 *UJ*	1,800 *J*	1,200 *UJ*	3,200 *J*	1,200 *UJ*		1,200 *UJ*
O-SEDCHM	S00546	S2	7/30/1992		0 - 2			1,100 *J*		2,900 *J*			
O-SEDCHM	S00340	S3	10/1/1992		0 - 30								
O-SEDCHM	S00613	S3	8/12/1992		0 - 2			480 *J*		1,100 *J*			
O-SEDCHM	S00653	S3	9/17/1992		0 - 2								
O-SEDCHM	S00547	S5	7/30/1992		0 - 2			780 *J*		4,200 *J*			
O-SEDCHM	S00004	S6	5/7/1992		0 - 30	1,200 *UJ*	1,200 *UJ*	4,300 *J*	1,200 *UJ*	840 *J*	1,200 *UJ*		1,200 *UJ*
O-SEDCHM	S00582	S6	8/6/1992		0 - 2	120 *U*	120 *U*	320	120 *U*	81 *J*	120 *U*		120 *U*
O-SEDCHM	S00555	S7	8/2/1992		0 - 2			1,200 *UJ*		12,000 *UJ*			
O-SEDCHM	S00001	S10	5/7/1992		0 - 30	630 *UJ*	630 *UJ*	2200 *J*	630 *UJ*	770 *J*	630 *UJ*		630 *UJ*
O-SEDCHM	S00572	S10	8/4/1992		0 - 2	1,500 *UJ*	1,500 *UJ*	1,900 *J*	1,500 *UJ*	690 *J*	1,500 *UJ*		1,500 *UJ*
O-SEDCHM	S00162	S11	7/10/1992		0 - 30			570 *J*		1,500 *J*			
O-SEDCHM	S00567	S11	8/3/1992		0 - 2			250 *UJ*		2,500 *UJ*			
O-SEDCHM	S00565	S13	8/3/1992		0 - 2			1,800 *UJ*		11,000 *J*			
O-SEDCHM	S00542	S14	7/30/1992		0 - 2			2,100 *UJ*		30,000 *J*			
O-SEDCHM	S00062	S16	5/11/1992	D1	0 - 30	1,900 *UJ*	1,900 *UJ*	610 *J*	1,900 *UJ*	500 *J*	1,900 *UJ*		1,900 *UJ*
O-SEDCHM	S00065	S16	5/11/1992	D2	0 - 30	2,300 *UJ*	2,300 *UJ*	560 *J*	2,300 *UJ*	1,400 *J*	2,300 *UJ*		2,300 *UJ*
O-SEDCHM	S00066	S16	5/11/1992	D3	0 - 30	2,200 *UJ*	2,200 *UJ*	750 *J*	2,200 *UJ*	2,100 *J*	2,200 *UJ*		2,200 *UJ*
O-SEDCHM	S00566	S16	8/3/1992		0 - 2	150 *U*	150 *U*	280	150 *U*	150 *U*	150 *U*		150 *U*
O-SEDCHM	S00562	S17	8/3/1992	D1	0 - 2			150 *J*		540 *J*			
O-SEDCHM	S00563	S17	8/3/1992	D2	0 - 2			120		420			
O-SEDCHM	S00564	S17	8/3/1992	D3	0 - 2			34 *U*		670			
O-SEDCHM	S00017	S20	5/8/1992		0 - 30	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	4,600 *UJ*	34,000 *J*	4,600 *UJ*		4,600 *UJ*
O-SEDCHM	S00560	S20	8/2/1992		0 - 2	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*	4,400 *UJ*	22,000 *J*	4,400 *UJ*		4,400 *UJ*
O-SEDCHM	S00540	S21	7/30/1992		0 - 2			330 *UJ*		15,000 *J*			
O-SEDCHM	S00580	S26	8/6/1992		0 - 2			28 *U*		160 *J*			
O-SEDCHM	S00533	S28	7/28/1992		0 - 2			630		2,300			
O-SEDCHM	S00573	S34	8/4/1992		0 - 2			29 *UJ*		290 *UJ*			
O-SEDCHM	S00535	S35	7/28/1992		0 - 2			770		1,600			
O-SEDCHM	S00007	S36	5/8/1992		0 - 30	3,100 *UJ*	3,100 *UJ*	14,000 *J*	3,100 *UJ*	1,600 *J*	3,100 *UJ*		3,100 *UJ*
O-SEDCHM	S00532	S36	7/27/1992		0 - 2	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*		42,000 *UJ*
O-SEDCHM	S00521	S37	7/24/1992		0 - 2			33 *UJ*		170 *J*			
O-SEDCHM	S00051	S46	5/10/1992		0 - 30	80 *U*	80 *U*	74 *J*	80 *U*	80 *U*	80 *U*		80 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	N-Nitroso-diphenyl-amine (µg/kg)	Pentachloro-benzene (µg/kg)	Pentachloro-phenol (µg/kg)	Phenanthrene (µg/kg)	Phenol (µg/kg)	Pyrene (µg/kg)
O-SEDCHM	S00014	S1	5/8/1992		0 - 30	5,700 *UJ*		14,000 *UJ*	6,100 *J*	5,700 *UJ*	7,700 *J*
O-SEDCHM	S00556	S1	8/2/1992	D1	0 - 2	1,200 *UJ*		2,900 *UJ*	5,000 *J*	1,200 *UJ*	6,500 *J*
O-SEDCHM	S00557	S1	8/2/1992	D2	0 - 2	1,200 *UJ*		3,100 *UJ*	5,800 *J*	1,200 *UJ*	9,300 *J*
O-SEDCHM	S00558	S1	8/2/1992	D3	0 - 2	1,200 *UJ*		3,100 *UJ*	6,100 *J*	1,200 *UJ*	6,600 *J*
O-SEDCHM	S00546	S2	7/30/1992		0 - 2		19		480 *J*		1,800 *J*
O-SEDCHM	S00340	S3	10/1/1992		0 - 30		7100 *UJ*				
O-SEDCHM	S00613	S3	8/12/1992		0 - 2		34 *J*		480 *J*		2,700 *J*
O-SEDCHM	S00653	S3	9/17/1992		0 - 2						
O-SEDCHM	S00547	S5	7/30/1992		0 - 2		17 *U*		2,100 *J*		4,000 *J*
O-SEDCHM	S00004	S6	5/7/1992		0 - 30	1,200 *UJ*		2,900 *UJ*	14,000 *J*	1,200 *UJ*	18,000 *J*
O-SEDCHM	S00582	S6	8/6/1992		0 - 2	120 *U*		310 *U*	740	120 *U*	1,200
O-SEDCHM	S00555	S7	8/2/1992		0 - 2		3.2 *J*		6,300 *J*		9,500 *J*
O-SEDCHM	S00001	S10	5/7/1992		0 - 30	630 *UJ*		1,600 *UJ*	3,700 *J*	630 *UJ*	5,800 *J*
O-SEDCHM	S00572	S10	8/4/1992		0 - 2	1,500 *UJ*		3,700 *UJ*	16,000 *J*	1,500 *UJ*	17,000 *J*
O-SEDCHM	S00162	S11	7/10/1992		0 - 30		4.1 *U*		1,700 *J*		2,900 *J*
O-SEDCHM	S00567	S11	8/3/1992		0 - 2		4.9 *U*		250 *UJ*		380 *J*
O-SEDCHM	S00565	S13	8/3/1992		0 - 2		7.2 *U*		22,000 *J*		3,200 *J*
O-SEDCHM	S00542	S14	7/30/1992		0 - 2		39		6,900 *J*		2,100 *UJ*
O-SEDCHM	S00062	S16	5/11/1992	D1	0 - 30	1,900 *UJ*		4,800 *UJ*	3,100 *J*	1,900 *UJ*	3,000 *J*
O-SEDCHM	S00065	S16	5/11/1992	D2	0 - 30	2,300 *UJ*		5,800 *UJ*	5,100 *J*	2,300 *UJ*	3,600 *J*
O-SEDCHM	S00066	S16	5/11/1992	D3	0 - 30	2,200 *UJ*		5,400 *UJ*	4,300 *J*	2,200 *UJ*	3,400 *J*
O-SEDCHM	S00566	S16	8/3/1992		0 - 2	150 *U*		370 *U*	540	150 *U*	1,100
O-SEDCHM	S00562	S17	8/3/1992	D1	0 - 2		6.4 *UJ*		210 *J*		550 *J*
O-SEDCHM	S00563	S17	8/3/1992	D2	0 - 2		6.9 *UJ*		170 *J*		390 *J*
O-SEDCHM	S00564	S17	8/3/1992	D3	0 - 2		6.8 *U*		210 *J*		680 *J*
O-SEDCHM	S00017	S20	5/8/1992		0 - 30	4,600 *UJ*		11,000 *UJ*	1,600 *J*	4,600 *UJ*	4,600 *UJ*
O-SEDCHM	S00560	S20	8/2/1992		0 - 2	4,400 *UJ*		11,000 *UJ*	1,400 *J*	4,400 *UJ*	4,400 *UJ*
O-SEDCHM	S00540	S21	7/30/1992		0 - 2		330		1,100 *J*		1,500 *J*
O-SEDCHM	S00580	S26	8/6/1992		0 - 2		5.6 *U*		28 *UJ*		28 *UJ*
O-SEDCHM	S00533	S28	7/28/1992		0 - 2		4.8 *U*		2,000		3,300
O-SEDCHM	S00573	S34	8/4/1992		0 - 2		5.8 *U*		220 *J*		370 *J*
O-SEDCHM	S00535	S35	7/28/1992		0 - 2		6.4 *U*		890		1,800
O-SEDCHM	S00007	S36	5/8/1992		0 - 30	3,100 *UJ*		7,800 *UJ*	25,000 *J*	3,100 *UJ*	49,000 *J*
O-SEDCHM	S00532	S36	7/27/1992		0 - 2	42,000 *UJ*		100,000 *UJ*	42,000 *UJ*	42,000 *UJ*	42,000 *UJ*
O-SEDCHM	S00521	S37	7/24/1992		0 - 2		6.6 *UJ*		33 *UJ*		54 *J*
O-SEDCHM	S00051	S46	5/10/1992		0 - 30	80 *U*		200 *U*	220	80 *U*	240

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	1,2,3,4-Tetrachloro-benzene (µg/kg)	1,2-Dichloro-benzene (µg/kg)	1,3-Dichloro-benzene (µg/kg)	1,4-Dichloro-benzene (µg/kg)	Dichloro-benzenes, (sum of) [1] (µg/kg)	2,2'-Oxybis (1-chloro-propane) (ug/kg)	1,2,3-Trichloro-benzene (µg/kg)	1,2,4-Trichloro-benzene (µg/kg)
O-SEDCHM	S00570	S46	8/4/1992		0 - 2		130 *U*	130 *U*	130 *U*	130 *U*	130 *U*		130 *U*
O-SEDCHM	S00519	S47	7/24/1992		0 - 2	7.7 *UJ*	11 *UJ*	11 *UJ*	11 *UJ*	11 *UJ*		11 *UJ*	11 *UJ*
ONON2A	VC0196	S307	7/18/2000		0 - 15		55 *U*	55 *U*	55 *U*		55 *UJ*		55 *U*
ONON2A	VC0197	S307	7/18/2000		15 - 30		52 *U*	52 *U*	52 *U*		52 *UJ*		52 *U*
ONON2A	VC0207	S311	7/20/2000		0 - 15		460	350 *U*	350 *U*		350 *U*		350 *U*
ONON2A	VC0208	S311	7/20/2000		15 - 30		620 *U*	620 *U*	1,300		620 *U*		620 *U*
ONON2A	VC0187	S313	7/18/2000		0 - 15		11,000 *U*	11,000 *U*	9,800		11,000 *U*		11,000 *U*
ONON2A	VC0188	S313	7/18/2000		15 - 30		1,400	560	5,300		400 *UJ*		1,600
ONON2A	SF0072	S314	8/10/2000		0 - 15		1,400 *UJ*	2,700 *J*	13,000 *J*		1,400 *UJ*		1,400 *UJ*
ONON2A	SF0073	S314	8/10/2000		15 - 30		7,800 *J*	3,300 *J*	30,000 *J*		1,500 *UJ*		2,800 *J*
ONON2A	SF0076	S316	8/10/2000		0 - 15		86 *U*	86 *U*	170		86 *U*		86 *U*
ONON2A	SF0077	S316	8/10/2000		15 - 30		210 *U*	210 *U*	210 *U*		210 *U*		210 *U*
ONON2A	VC0189	S318	7/14/2000		0 - 15		38 *J*	42 *UJ*	140 *J*		42 *UJ*		42 *UJ*
ONON2A	VC0190	S318	7/14/2000		15 - 30		70	42 *U*	210		42 *U*		45 *J*
ONON2A	SF0086	S321	8/4/2000		0 - 15		46 *U*	46 *U*	46 *U*		46 *U*		46 *U*
ONON2A	SF0087	S321	8/4/2000		15 - 30		130 *U*	130 *U*	130 *U*		130 *U*		130 *U*
ONON2A	SF0088	S322	8/10/2000		0 - 15		200 *UJ*	200 *UJ*	210 *J*		200 *UJ*		200 *UJ*
ONON2A	SF0089	S322	8/10/2000		15 - 30		650 *UJ*	650 *UJ*	650 *UJ*		650 *UJ*		650 *UJ*
ONON2A	SF0094	S325	7/14/2000		0 - 2		72 *U*	72 *U*	72 *U*		72 *U*		72 *U*
ONON2A	SF0095	S325	7/14/2000		2 - 15		72 *UJ*	72 *UJ*	72 *UJ*		72 *UJ*		72 *UJ*
ONON2A	SF0096	S325	7/14/2000		15 - 30		71 *U*	71 *U*	71 *U*		71 *U*		71 *U*
ONON2A	SF0101	S328	7/15/2000		0 - 15		51 *UJ*	51 *UJ*	51 *UJ*		51 *UJ*		51 *UJ*
ONON2A	SF0102	S328	7/15/2000		15 - 30		58 *U*	58 *U*	58 *U*		58 *U*		58 *U*
ONON2A	SF0103	S329	7/16/2000		0 - 15		61 *UJ*	61 *UJ*	61 *UJ*		61 *UJ*		61 *UJ*
ONON2A	SF0104	S329	7/16/2000		15 - 30		58 *UJ*	58 *UJ*	58 *UJ*		58 *UJ*		58 *UJ*
ONON2A	SF0105	S330	7/16/2000		0 - 15		55 *U*	55 *U*	55 *U*		55 *U*		55 *U*
ONON2A	SF0106	S330	7/16/2000		15 - 30		56 *U*	56 *U*	56 *U*		56 *U*		56 *U*
ONON2A	SF0134	S333	8/2/2000		0 - 15		2,500 *U*	2,500 *U*	2,500 *UJ*		2,500 *U*		2,500 *U*
ONON2A	SF0135	S333	8/2/2000		15 - 30		3,200 *U*	3,200 *U*	3,200 *UJ*		3,200 *U*		3,200 *U*
ONON2A	SF0153	S334	8/2/2000		0 - 15		180	170 *U*	290 *J*		170 *U*		170 *U*
ONON2A	SF0154	S334	8/2/2000		15 - 30		290	280 *U*	280 *UJ*		280 *U*		280 *U*
ONON2A	SF0115	S335	8/2/2000		0 - 15		440	340 *U*	340 *UJ*		340 *U*		340 *U*
ONON2A	SF0116	S335	8/2/2000		15 - 30		1,100 *U*	1,100 *U*	1,100 *UJ*		1,100 *U*		1,100 *U*
ONON2A	SF0117	S336	8/3/2000		0 - 15		33 *U*	660	5,500		33 *U*		33 *U*
ONON2A	SF0118	S336	8/3/2000		15 - 30		33 *U*	7,000	120,000		33 *U*		33 *U*
ONON2A	SF0124	S339	8/3/2000		0 - 15		180	220	1,900		33 *U*		33 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	1,3,5-Trichloro-benzene (µg/kg)	(Sum of) Trichloro-benzenes [1] (µg/kg)	2,4,5-Trichloro-phenol (µg/kg)	2,4,6-Trichloro-phenol (µg/kg)	2,4-Dichlorophenol (µg/kg)	2,4-Dimethyl-phenol (µg/kg)	2,4-Dinitro-phenol (µg/kg)	2,4-Dinitro-toluene (µg/kg)
O-SEDCHM	S00570	S46	8/4/1992		0 - 2			340 *U*	130 *U*	130 *U*	130 *U*	340 *U*	130 *U*
O-SEDCHM	S00519	S47	7/24/1992		0 - 2	11 *UJ*	11 *UJ*						
ONON2A	VC0196	S307	7/18/2000		0 - 15			280 *U*	280 *U*	280 *U*	280 *U*	1,400 *UJ*	280 *U*
ONON2A	VC0197	S307	7/18/2000		15 - 30			270 *U*	270 *U*	270 *U*	270 *U*	1,300 *UJ*	270 *U*
ONON2A	VC0207	S311	7/20/2000		0 - 15			1,800 *U*	1,800 *U*	1,800 *U*	1,800 *U*	8,900 *U*	1,800 *U*
ONON2A	VC0208	S311	7/20/2000		15 - 30			3,200 *U*	3,200 *U*	3,200 *U*	3,200 *U*	16,000 *U*	3,200 *U*
ONON2A	VC0187	S313	7/18/2000		0 - 15			59,000 *U*	59,000 *U*	59,000 *U*	59,000 *U*	300,000 *UJ*	59,000 *U*
ONON2A	VC0188	S313	7/18/2000		15 - 30			2,100 *UJ*	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*	10,000 *UJ*	2,100 *U*
ONON2A	SF0072	S314	8/10/2000		0 - 15			7,100 *UJ*	7,100 *UJ*	7,100 *UJ*	7,100 *UJ*	35,000 *UJ*	7,100 *UJ*
ONON2A	SF0073	S314	8/10/2000		15 - 30			7,700 *UJ*	7,700 *UJ*	7,700 *UJ*	7,700 *UJ*	38,000 *UJ*	7,700 *UJ*
ONON2A	SF0076	S316	8/10/2000		0 - 15			440 *UJ*	440 *UJ*	440 *UJ*	440 *UJ*	2,200 *UJ*	440 *U*
ONON2A	SF0077	S316	8/10/2000		15 - 30			1100 *U*	1100 *U*	1,100 *U*	1,100 *U*	5,500 *UJ*	1,100 *U*
ONON2A	VC0189	S318	7/14/2000		0 - 15			220 *UJ*	220 *UJ*	220 *UJ*	220 *UJ*	1,100 *UJ*	220 *UJ*
ONON2A	VC0190	S318	7/14/2000		15 - 30			220 *U*	220 *U*	220 *U*	220 *U*	1,100 *UJ*	220 *U*
ONON2A	SF0086	S321	8/4/2000		0 - 15			240 *U*	240 *U*	240 *U*	240 *U*	1,200 *U*	240 *U*
ONON2A	SF0087	S321	8/4/2000		15 - 30			690 *U*	690 *U*	690 *U*	690 *U*	3,400 *U*	690 *U*
ONON2A	SF0088	S322	8/10/2000		0 - 15			1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	5,200 *UJ*	1,000 *UJ*
ONON2A	SF0089	S322	8/10/2000		15 - 30			3,400 *UJ*	3,400 *UJ*	3,400 *UJ*	3,400 *UJ*	17,000 *UJ*	3,400 *UJ*
ONON2A	SF0094	S325	7/14/2000		0 - 2			370 *U*	370 *U*	370 *U*	370 *U*	1,900 *U*	370 *U*
ONON2A	SF0095	S325	7/14/2000		2 - 15			370 *U*	370 *U*	370 *U*	370 *U*	1,900 *U*	370 *UJ*
ONON2A	SF0096	S325	7/14/2000		15 - 30			370 *U*	370 *U*	370 *U*	370 *U*	1,800 *U*	370 *U*
ONON2A	SF0101	S328	7/15/2000		0 - 15			260 *UJ*	260 *UJ*	260 *UJ*	260 *UJ*	1,300 *UJ*	260 *UJ*
ONON2A	SF0102	S328	7/15/2000		15 - 30			300 *U*	300 *U*	300 *U*	300 *U*	1,500 *UJ*	300 *U*
ONON2A	SF0103	S329	7/16/2000		0 - 15			320 *UJ*	320 *UJ*	320 *UJ*	320 *UJ*	1,600 *UJ*	320 *UJ*
ONON2A	SF0104	S329	7/16/2000		15 - 30			300 *UJ*	300 *UJ*	300 *UJ*	300 *UJ*	1,500 *UJ*	300 *UJ*
ONON2A	SF0105	S330	7/16/2000		0 - 15			280 *UJ*	280 *UJ*	280 *UJ*	280 *UJ*	1,400 *UJ*	280 *U*
ONON2A	SF0106	S330	7/16/2000		15 - 30			290 *UJ*	290 *UJ*	290 *UJ*	290 *UJ*	1,400 *UJ*	290 *U*
ONON2A	SF0134	S333	8/2/2000		0 - 15			13,000 *U*	13,000 *U*	13,000 *U*	13,000 *U*	66,000 *U*	13,000 *U*
ONON2A	SF0135	S333	8/2/2000		15 - 30			16,000 *U*	16,000 *U*	16,000 *U*	16,000 *U*	82,000 *U*	16,000 *U*
ONON2A	SF0153	S334	8/2/2000		0 - 15			880 *U*	880 *U*	880 *U*	880 *U*	4,400 *U*	880 *U*
ONON2A	SF0154	S334	8/2/2000		15 - 30			1,400 *U*	1,400 *U*	1,400 *U*	1,400 *U*	7,200 *U*	1,400 *U*
ONON2A	SF0115	S335	8/2/2000		0 - 15			1,700 *U*	1,700 *U*	1,700 *U*	1,700 *U*	8,700 *U*	1,700 *U*
ONON2A	SF0116	S335	8/2/2000		15 - 30			5,800 *U*	5,800 *U*	5,800 *U*	5,800 *U*	29,000 *U*	5,800 *U*
ONON2A	SF0117	S336	8/3/2000		0 - 15			170 *U*	170 *U*	170 *U*	170 *U*	850 *U*	170 *U*
ONON2A	SF0118	S336	8/3/2000		15 - 30			170 *U*	170 *U*	170 *U*	170 *U*	850 *U*	170 *U*
ONON2A	SF0124	S339	8/3/2000		0 - 15			170 *U*	170 *U*	170 *U*	170 *U*	850 *U*	170 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	2,6-Dinitro-toluene (µg/kg)	2-Chloro-naphthalene (µg/kg)	2-Chloro-phenol (µg/kg)	2-Methyl-4,6-dinitrophenol (µg/kg)	2-Methyl-naphthalene (µg/kg)	2-Methyl-phenol (µg/kg)	4-Methyl-phenol (µg/kg)	2-Nitro-aniline (µg/kg)	3-Nitro-aniline (µg/kg)
O-SEDCHM	S00570	S46	8/4/1992		0 - 2	130 *U*	130 *U*	130 *U*	340 *U*	130 *U*	130 *U*	130 *U*	340 *U*	340 *U*
O-SEDCHM	S00519	S47	7/24/1992		0 - 2									
ONON2A	VC0196	S307	7/18/2000		0 - 15	280 *U*	55 *U*	55 *U*	1,400 *U*	34 *J*	55 *U*	55 *U*	110 *U*	1,400 *U*
ONON2A	VC0197	S307	7/18/2000		15 - 30	270 *U*	52 *U*	52 *U*	1,300 *U*	52 *U*	52 *U*	52 *U*	110 *U*	1,300 *UJ*
ONON2A	VC0207	S311	7/20/2000		0 - 15	1,800 *U*	350 *U*	350 *U*	8,900 *U*	2,300	350 *U*	350 *U*	700 *U*	8,900 *U*
ONON2A	VC0208	S311	7/20/2000		15 - 30	3,200 *U*	620 *U*	620 *U*	16,000 *U*	3,000	620 *U*	620 *U*	1,300 *U*	16,000 *U*
ONON2A	VC0187	S313	7/18/2000		0 - 15	59,000 *U*	11,000 *U*	11,000 *U*	300,000 *U*	46,000	11,000 *U*	11,000 *U*	23,000 *UJ*	300,000 *UJ*
ONON2A	VC0188	S313	7/18/2000		15 - 30	2,100 *U*	400 *U*	400 *UJ*	10,000 *UJ*	10,000	400 *UJ*	400 *UJ*	820 *U*	10,000 *UJ*
ONON2A	SF0072	S314	8/10/2000		0 - 15	7,100 *UJ*	1,400 *UJ*	1,400 *UJ*	35,000 *UJ*	5,300 *J*	1,400 *UJ*	1,400 *UJ*	2,800 *UJ*	35,000 *UJ*
ONON2A	SF0073	S314	8/10/2000		15 - 30	7,700 *UJ*	1,500 *UJ*	1,500 *UJ*	38,000 *UJ*	10,000 *J*	1,500 *UJ*	1,500 *UJ*	3,000 *UJ*	38,000 *UJ*
ONON2A	SF0076	S316	8/10/2000		0 - 15	440 *U*	86 *U*	86 *UJ*	2,200 *UJ*	130	86 *UJ*	86 *UJ*	170 *U*	2,200 *UJ*
ONON2A	SF0077	S316	8/10/2000		15 - 30	1,100 *U*	210 *U*	210 *U*	5,500 *U*	210 *U*	210 *U*	210 *U*	440 *U*	5,500 *UJ*
ONON2A	VC0189	S318	7/14/2000		0 - 15	220 *UJ*	42 *UJ*	42 *UJ*	1,100 *UJ*	42 *UJ*	42 *UJ*	42 *UJ*	85 *UJ*	1,100 *UJ*
ONON2A	VC0190	S318	7/14/2000		15 - 30	220 *U*	42 *U*	42 *U*	1,100 *U*	47	42 *U*	42 *U*	85 *U*	1,100 *U*
ONON2A	SF0086	S321	8/4/2000		0 - 15	240 *U*	46 *U*	46 *U*	1,200 *U*	46 *U*	46 *U*	46 *U*	94 *U*	1,200 *U*
ONON2A	SF0087	S321	8/4/2000		15 - 30	690 *U*	130 *U*	130 *U*	3,400 *U*	130 *U*	130 *U*	130 *U*	270 *U*	3,400 *U*
ONON2A	SF0088	S322	8/10/2000		0 - 15	1,000 *UJ*	200 *UJ*	200 *UJ*	5,200 *UJ*	2,900 *J*	200 *UJ*	200 *UJ*	410 *UJ*	5,200 *UJ*
ONON2A	SF0089	S322	8/10/2000		15 - 30	3,400 *UJ*	650 *UJ*	650 *UJ*	17,000 *UJ*	9,700 *J*	650 *UJ*	650 *UJ*	1,300 *UJ*	17,000 *UJ*
ONON2A	SF0094	S325	7/14/2000		0 - 2	370 *U*	72 *U*	72 *U*	1,900 *U*	72 *U*	72 *U*	72 *U*	150 *UJ*	1,900 *U*
ONON2A	SF0095	S325	7/14/2000		2 - 15	370 *UJ*	72 *UJ*	72 *U*	1,900 *U*	72 *UJ*	72 *U*	72 *U*	150 *UJ*	1,900 *UJ*
ONON2A	SF0096	S325	7/14/2000		15 - 30	370 *U*	71 *U*	71 *U*	1,800 *U*	71 *U*	71 *U*	71 *U*	140 *UJ*	1,800 *U*
ONON2A	SF0101	S328	7/15/2000		0 - 15	260 *UJ*	51 *UJ*	51 *UJ*	1,300 *UJ*	51 *UJ*	51 *UJ*	51 *UJ*	100 *UJ*	1,300 *UJ*
ONON2A	SF0102	S328	7/15/2000		15 - 30	300 *U*	58 *U*	58 *U*	1,500 *U*	58 *U*	58 *U*	58 *U*	120 *UJ*	1,500 *U*
ONON2A	SF0103	S329	7/16/2000		0 - 15	320 *UJ*	61 *UJ*	61 *UJ*	1,600 *UJ*	61 *UJ*	61 *UJ*	61 *UJ*	120 *UJ*	1,600 *UJ*
ONON2A	SF0104	S329	7/16/2000		15 - 30	300 *UJ*	58 *UJ*	58 *UJ*	1,500 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	120 *UJ*	1,500 *UJ*
ONON2A	SF0105	S330	7/16/2000		0 - 15	280 *U*	55 *U*	55 *UJ*	1,400 *UJ*	55 *U*	55 *UJ*	55 *UJ*	110 *U*	1,400 *UJ*
ONON2A	SF0106	S330	7/16/2000		15 - 30	290 *U*	56 *U*	56 *UJ*	1,400 *UJ*	56 *U*	56 *UJ*	56 *UJ*	110 *U*	1,400 *UJ*
ONON2A	SF0134	S333	8/2/2000		0 - 15	13,000 *U*	2,500 *U*	2,500 *U*	66,000 *U*	16,000	2,500 *U*	2,500 *U*	5,200 *U*	66,000 *U*
ONON2A	SF0135	S333	8/2/2000		15 - 30	16,000 *U*	3,200 *U*	3,200 *U*	82,000 *U*	15,000	3,200 *U*	3,200 *U*	6,500 *U*	82,000 *U*
ONON2A	SF0153	S334	8/2/2000		0 - 15	880 *U*	170 *U*	170 *U*	4,400 *U*	1,000	170 *U*	170 *U*	350 *U*	4,400 *U*
ONON2A	SF0154	S334	8/2/2000		15 - 30	1,400 *U*	280 *U*	280 *U*	7,200 *U*	3,700	280 *U*	280 *U*	560 *U*	7,200 *U*
ONON2A	SF0115	S335	8/2/2000		0 - 15	1,700 *U*	340 *U*	340 *U*	8,700 *U*	2,000	340 *U*	340 *U*	680 *U*	8,700 *U*
ONON2A	SF0116	S335	8/2/2000		15 - 30	5,800 *U*	1,100 *U*	1,100 *U*	29,000 *U*	6,700	1,100 *U*	1,100 *U*	2,300 *U*	29,000 *U*
ONON2A	SF0117	S336	8/3/2000		0 - 15	170 *U*	33 *U*	33 *U*	850 *U*	33 *U*	33 *U*	33 *U*	67 *U*	850 *U*
ONON2A	SF0118	S336	8/3/2000		15 - 30	170 *U*	33 *U*	33 *U*	850 *U*	33 *U*	33 *U*	33 *U*	67 *U*	850 *U*
ONON2A	SF0124	S339	8/3/2000		0 - 15	170 *U*	33 *U*	33 *U*	850 *U*	840	33 *U*	33 *U*	67 *U*	850 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	4-Nitro-aniline (µg/kg)	2-Nitro-phenol (µg/kg)	4-Nitro-phenol (µg/kg)	3,3-Dichloro-benzidine (µg/kg)	4-Bromo-phenyl-phenyl ether (µg/kg)	4-Chloro-3-methyl- phenol (µg/kg)	4-Chloro-aniline (µg/kg)	4-Chloro-phenyl-phenyl ether (µg/kg)
O-SEDCHM	S00570	S46	8/4/1992		0 - 2	340 *U*	130 *U*	340 *U*	130 *U*	130 *U*	130 *U*	130 *U*	130 *U*
O-SEDCHM	S00519	S47	7/24/1992		0 - 2								
ONON2A	VC0196	S307	7/18/2000		0 - 15	1,400 *U*	280 *U*	1,400 *U*	55 *U*	55 *U*	280 *U*	55 *UJ*	55 *U*
ONON2A	VC0197	S307	7/18/2000		15 - 30	1,300 *U*	270 *U*	1,300 *U*	52 *U*	52 *U*	270 *U*	52 *UJ*	52 *U*
ONON2A	VC0207	S311	7/20/2000		0 - 15	8,900 *U*	1,800 *U*	8,900 *U*	350 *U*	350 *U*	1,800 *U*	350 *U*	350 *U*
ONON2A	VC0208	S311	7/20/2000		15 - 30	16,000 *U*	3,200 *U*	16,000 *U*	620 *U*	620 *U*	3,200 *U*	620 *U*	620 *U*
ONON2A	VC0187	S313	7/18/2000		0 - 15	300,000 *U*	59,000 *U*	300,000 *U*	11,000 *U*	11,000 *U*	59,000 *U*	11,000 *UJ*	11,000 *U*
ONON2A	VC0188	S313	7/18/2000		15 - 30	10,000 *U*	2,100 *UJ*	10,000 *U*	400 *U*	400 *U*	2,100 *UJ*	400 *UJ*	400 *U*
ONON2A	SF0072	S314	8/10/2000		0 - 15	35,000 *UJ*	7,100 *UJ*	35,000 *UJ*	1,400 *UJ*	1,400 *UJ*	7,100 *UJ*	1,400 *UJ*	1,400 *UJ*
ONON2A	SF0073	S314	8/10/2000		15 - 30	38,000 *UJ*	7,700 *UJ*	38,000 *UJ*	1,500 *UJ*	1,500 *UJ*	7,700 *UJ*	1,500 *UJ*	1,500 *UJ*
ONON2A	SF0076	S316	8/10/2000		0 - 15	2,200 *U*	440 *UJ*	2,200 *UJ*	86 *U*	86 *U*	440 *UJ*	86 *UJ*	86 *U*
ONON2A	SF0077	S316	8/10/2000		15 - 30	5,500 *U*	1,100 *U*	5,500 *U*	210 *U*	210 *U*	1,100 *U*	210 *UJ*	210 *U*
ONON2A	VC0189	S318	7/14/2000		0 - 15	1,100 *UJ*	220 *UJ*	1,100 *UJ*	42 *UJ*	42 *UJ*	220 *UJ*	42 *UJ*	42 *UJ*
ONON2A	VC0190	S318	7/14/2000		15 - 30	1,100 *U*	220 *U*	1,100 *U*	42 *U*	42 *U*	220 *U*	42 *U*	42 *U*
ONON2A	SF0086	S321	8/4/2000		0 - 15	1,200 *U*	240 *U*	1,200 *U*	46 *U*	46 *U*	240 *U*	46 *U*	46 *U*
ONON2A	SF0087	S321	8/4/2000		15 - 30	3,400 *U*	690 *U*	3,400 *U*	130 *U*	130 *U*	690 *U*	130 *U*	130 *U*
ONON2A	SF0088	S322	8/10/2000		0 - 15	5,200 *UJ*	1,000 *UJ*	5,200 *UJ*	200 *UJ*	200 *UJ*	1,000 *UJ*	200 *UJ*	200 *UJ*
ONON2A	SF0089	S322	8/10/2000		15 - 30	17,000 *UJ*	3,400 *UJ*	17,000 *UJ*	650 *UJ*	650 *UJ*	3,400 *UJ*	650 *UJ*	650 *UJ*
ONON2A	SF0094	S325	7/14/2000		0 - 2	1,900 *U*	370 *U*	1,900 *U*	72 *U*	72 *U*	370 *U*	72 *U*	72 *U*
ONON2A	SF0095	S325	7/14/2000		2 - 15	1,900 *UJ*	370 *U*	1,900 *U*	72 *UJ*	72 *UJ*	370 *U*	72 *UJ*	72 *UJ*
ONON2A	SF0096	S325	7/14/2000		15 - 30	1,800 *U*	370 *U*	1,800 *U*	71 *U*	71 *U*	370 *U*	71 *U*	71 *U*
ONON2A	SF0101	S328	7/15/2000		0 - 15	1,300 *UJ*	260 *UJ*	1,300 *UJ*	51 *UJ*	51 *UJ*	260 *UJ*	51 *UJ*	51 *UJ*
ONON2A	SF0102	S328	7/15/2000		15 - 30	1,500 *U*	300 *U*	1,500 *U*	58 *U*	58 *U*	300 *U*	58 *U*	58 *U*
ONON2A	SF0103	S329	7/16/2000		0 - 15	1,600 *UJ*	320 *UJ*	1,600 *UJ*	61 *UJ*	61 *UJ*	320 *UJ*	61 *UJ*	61 *UJ*
ONON2A	SF0104	S329	7/16/2000		15 - 30	1,500 *UJ*	300 *UJ*	1,500 *UJ*	58 *UJ*	58 *UJ*	300 *UJ*	58 *UJ*	58 *UJ*
ONON2A	SF0105	S330	7/16/2000		0 - 15	1,400 *UJ*	280 *UJ*	1,400 *UJ*	55 *U*	55 *U*	280 *UJ*	55 *UJ*	55 *U*
ONON2A	SF0106	S330	7/16/2000		15 - 30	1,400 *UJ*	290 *UJ*	1,400 *UJ*	56 *U*	56 *U*	290 *UJ*	56 *UJ*	56 *U*
ONON2A	SF0134	S333	8/2/2000		0 - 15	66,000 *U*	13,000 *U*	66,000 *U*	2,500 *U*	2,500 *U*	13,000 *U*	2,500 *U*	2,500 *U*
ONON2A	SF0135	S333	8/2/2000		15 - 30	82,000 *U*	16,000 *U*	82,000 *U*	3,200 *U*	3,200 *U*	16,000 *U*	3,200 *U*	3,200 *U*
ONON2A	SF0153	S334	8/2/2000		0 - 15	4,400 *U*	880 *U*	4,400 *U*	170 *U*	170 *U*	880 *U*	170 *U*	170 *U*
ONON2A	SF0154	S334	8/2/2000		15 - 30	7,200 *U*	1,400 *U*	7,200 *U*	280 *U*	280 *U*	1,400 *U*	280 *U*	280 *U*
ONON2A	SF0115	S335	8/2/2000		0 - 15	8,700 *U*	1,700 *U*	8,700 *U*	340 *U*	340 *U*	1,700 *U*	340 *U*	340 *U*
ONON2A	SF0116	S335	8/2/2000		15 - 30	29,000 *U*	5,800 *U*	29,000 *U*	1,100 *U*	1,100 *U*	5,800 *U*	1,100 *U*	1,100 *U*
ONON2A	SF0117	S336	8/3/2000		0 - 15	850 *U*	170 *U*	850 *U*	33 *U*	33 *U*	170 *U*	33 *U*	33 *U*
ONON2A	SF0118	S336	8/3/2000		15 - 30	850 *U*	170 *U*	850 *U*	33 *U*	33 *U*	170 *U*	33 *U*	33 *U*
ONON2A	SF0124	S339	8/3/2000		0 - 15	850 *U*	170 *U*	850 *U*	33 *U*	33 *U*	170 *U*	33 *U*	33 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Acenaphthene (µg/kg)	Acenaph - thylene (µg/kg)	Anthracene (µg/kg)	Benz(a)anth racene (µg/kg)	Benzo(a) pyrene (µg/kg)	Benzo(b) fluoranthene (µg/kg)	Benzo(g,h,i) perylene (µg/kg)	Benzo(k) fluoranthene (µg/kg)	Benzyl Alcohol (µg/kg)
O-SEDCHM	S00570	S46	8/4/1992		0 - 2	130 *U*	41 *J*	110 *J*	300	240	440	99 *J*	130 *U*	
O-SEDCHM	S00519	S47	7/24/1992		0 - 2	570 *J*	410 *J*	89 *J*	280 *J*	260 *J*	260 *J*	350 *J*	230 *J*	
ONON2A	VC0196	S307	7/18/2000		0 - 15	160	65	580	2,200	1,900	1,500	1,200	1,400	280 *U*
ONON2A	VC0197	S307	7/18/2000		15 - 30	52 *U*	52 *U*	74	280	260	220	170	200	270 *U*
ONON2A	VC0207	S311	7/20/2000		0 - 15	350 *U*	380	940	350 *U*	350 *U*	350 *U*	350 *U*	350 *U*	1,800 *U*
ONON2A	VC0208	S311	7/20/2000		15 - 30	620 *U*	810	1,500	1,900	1,600	1,400	650	1,400	3,200 *U*
ONON2A	VC0187	S313	7/18/2000		0 - 15	85,000	19,000	95,000	100,000	65,000	57,000	35,000	60,000	59,000 *U*
ONON2A	VC0188	S313	7/18/2000		15 - 30	5,200	3,000	8,500	14,000	12,000	9,400	7,300	11,000	2,100 *UJ*
ONON2A	SF0072	S314	8/10/2000		0 - 15	1,400 *UJ*	1,800 *J*	1,400 *UJ*	2,600 *J*	1,800 *J*	2,000 *J*	1,400 *UJ*	1,800 *J*	7,100 *UJ*
ONON2A	SF0073	S314	8/10/2000		15 - 30	1,500 *UJ*	1,500 *UJ*	1,500 *UJ*	1,500 *UJ*	1,500 *UJ*	1,500 *UJ*	1,500 *UJ*	1,500 *UJ*	7,700 *UJ*
ONON2A	SF0076	S316	8/10/2000		0 - 15	440	310	1,000	1,800	2,000	1,200	1,300	1,400	440 *UJ*
ONON2A	SF0077	S316	8/10/2000		15 - 30	1,300	210 *U*	3,400	4,100	3,200	2,000	1,300	2,700	1,100 *U*
ONON2A	VC0189	S318	7/14/2000		0 - 15	70 *J*	77 *J*	210 *J*	350 *J*	370 *J*	250 *J*	250 *J*	290 *J*	220 *UJ*
ONON2A	VC0190	S318	7/14/2000		15 - 30	280	280	880	1,500	1,400	860	850	960	220 *U*
ONON2A	SF0086	S321	8/4/2000		0 - 15	46 *U*	81	110	360	430	320	280	380	240 *U*
ONON2A	SF0087	S321	8/4/2000		15 - 30	360	200	1,900	2,800	2,300	1,500	1,200	1,700	690 *U*
ONON2A	SF0088	S322	8/10/2000		0 - 15	2,200 *J*	560 *J*	2,500 *J*	2,500 *J*	2,300 *J*	1,700 *J*	1,400 *J*	1,800 *J*	1,000 *UJ*
ONON2A	SF0089	S322	8/10/2000		15 - 30	3,500 *J*	830 *J*	3,200 *J*	3,700 *J*	3,300 *J*	2,400 *J*	1,900 *J*	2,400 *J*	3,400 *UJ*
ONON2A	SF0094	S325	7/14/2000		0 - 2	72 *U*	72 *U*	54 *J*	130	150	150	130	140	370 *U*
ONON2A	SF0095	S325	7/14/2000		2 - 15	72 *UJ*	72 *UJ*	72 *UJ*	68 *J*	81 *J*	77 *J*	66 *J*	62 *J*	370 *UJ*
ONON2A	SF0096	S325	7/14/2000		15 - 30	71 *U*	59 *J*	140	330	380	340	310	310	370 *U*
ONON2A	SF0101	S328	7/15/2000		0 - 15	51 *UJ*	51 *UJ*	51 *UJ*	58 *J*	48 *J*	41 *J*	51 *UJ*	52 *J*	260 *UJ*
ONON2A	SF0102	S328	7/15/2000		15 - 30	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	300 *U*
ONON2A	SF0103	S329	7/16/2000		0 - 15	61 *UJ*	61 *UJ*	61 *UJ*	61 *UJ*	61 *UJ*	61 *UJ*	61 *UJ*	61 *UJ*	320 *UJ*
ONON2A	SF0104	S329	7/16/2000		15 - 30	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	300 *UJ*
ONON2A	SF0105	S330	7/16/2000		0 - 15	55 *UJ*	55 *U*	55 *U*	55 *U*	55 *U*	55 *U*	55 *U*	55 *U*	280 *UJ*
ONON2A	SF0106	S330	7/16/2000		15 - 30	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*	290 *UJ*
ONON2A	SF0134	S333	8/2/2000		0 - 15	7,500 *J*	4,100	16,000	7,200	3,800	3,300	2,500 *U*	4,400	13,000 *U*
ONON2A	SF0135	S333	8/2/2000		15 - 30	3,200 *UJ*	3,200 *U*	18,000	14,000	7,900	6,900	4,100	8,600	16,000 *U*
ONON2A	SF0153	S334	8/2/2000		0 - 15	1,000 *J*	1,500	4,000	6,000	4,400	4,000	2,600	4,200	880 *U*
ONON2A	SF0154	S334	8/2/2000		15 - 30	1,500 *J*	1,400	4,800	5,600	4,600	4,400	2,800	4,300	1,400 *U*
ONON2A	SF0115	S335	8/2/2000		0 - 15	450 *J*	770	1,800	2,000	1,500	1,500	980	1,600	1,700 *U*
ONON2A	SF0116	S335	8/2/2000		15 - 30	1,100 *UJ*	1,700	4,500	4,200	3,200	3,200	2,000	3,200	5,800 *U*
ONON2A	SF0117	S336	8/3/2000		0 - 15	33 *U*	33 *U*	140	370	360	330	290	310	170 *U*
ONON2A	SF0118	S336	8/3/2000		15 - 30	33 *U*	33 *U*	760	1,100	940	760	800	970	170 *U*
ONON2A	SF0124	S339	8/3/2000		0 - 15	490	470	1,600	2,300	1,900	1,800	1,300	1,700	170 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Bis(2-chloro ethoxy) methane (µg/kg)	Bis(2-chloroethyl) ether (µg/kg)	Bis(2-ethylhexyl) phthalate (µg/kg)	Butylbenzyl phthalate (µg/kg)	Carbazole (µg/kg)	Chrysene (µg/kg)	Dibenz(a,h) anthracene (µg/kg)	Dibenzofuran (µg/kg)	Diethyl phthalate (µg/kg)
O-SEDCHM	S00570	S46	8/4/1992		0 - 2	130 *U*	130 *U*	86 *J*	130 *U*	130 *U*	310	43 *J*	130 *U*	130 *U*
O-SEDCHM	S00519	S47	7/24/1992		0 - 2						480 *J*	83 *J*		
ONON2A	VC0196	S307	7/18/2000		0 - 15	55 *U*	55 *U*	74	55 *U*	390	2,300	500	98	55 *U*
ONON2A	VC0197	S307	7/18/2000		15 - 30	52 *U*	52 *U*	41 *J*	52 *U*	48 *J*	310	41 *J*	52 *U*	52 *U*
ONON2A	VC0207	S311	7/20/2000		0 - 15	350 *U*	350 *U*	560	350 *U*	350 *U*	350 *U*	350 *U*	350 *U*	350 *U*
ONON2A	VC0208	S311	7/20/2000		15 - 30	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*	1,900	620 *U*	620 *U*	620 *U*
ONON2A	VC0187	S313	7/18/2000		0 - 15	11,000 *U*	11,000 *U*	11,000 *U*	11,000 *U*	19,000	100,000	17,000	81,000	11,000 *U*
ONON2A	VC0188	S313	7/18/2000		15 - 30	400 *U*	400 *U*	660	400 *U*	1,800	14,000	2,700	5,000	400 *U*
ONON2A	SF0072	S314	8/10/2000		0 - 15	1,400 *UJ*	1,400 *UJ*	1,400 *UJ*	1,400 *UJ*	1,400 *UJ*	3,200 *J*	1,400 *UJ*	2,700 *J*	1,400 *UJ*
ONON2A	SF0073	S314	8/10/2000		15 - 30	1,500 *UJ*	1,500 *UJ*	1,500 *UJ*	1,500 *UJ*	1,500 *UJ*	1,500 *UJ*	1,500 *UJ*	2,000 *J*	1,500 *UJ*
ONON2A	SF0076	S316	8/10/2000		0 - 15	86 *U*	86 *U*	350	86 *U*	86 *U*	1,800	450	170	86 *U*
ONON2A	SF0077	S316	8/10/2000		15 - 30	210 *U*	210 *U*	210 *U*	210 *U*	210 *U*	3,600	620	820	210 *U*
ONON2A	VC0189	S318	7/14/2000		0 - 15	42 *UJ*	42 *UJ*	220 *UJ*	42 *UJ*	42 *UJ*	380 *J*	93 *J*	42 *UJ*	42 *UJ*
ONON2A	VC0190	S318	7/14/2000		15 - 30	42 *U*	42 *U*	420	42 *U*	55	1,500	270	79	42 *U*
ONON2A	SF0086	S321	8/4/2000		0 - 15	46 *U*	46 *U*	140	46 *U*	46 *U*	370	96	46 *U*	46 *U*
ONON2A	SF0087	S321	8/4/2000		15 - 30	130 *U*	130 *U*	130 *U*	130 *U*	130 *U*	2,400	420	130 *U*	130 *U*
ONON2A	SF0088	S322	8/10/2000		0 - 15	200 *UJ*	200 *UJ*	3,900 *J*	200 *UJ*	200 *UJ*	3,100 *J*	520 *J*	510 *J*	200 *UJ*
ONON2A	SF0089	S322	8/10/2000		15 - 30	650 *UJ*	650 *UJ*	5,500 *J*	650 *UJ*	650 *UJ*	4,000 *J*	650 *UJ*	760 *J*	650 *UJ*
ONON2A	SF0094	S325	7/14/2000		0 - 2	72 *U*	72 *U*	370	72 *UJ*	72 *U*	180	72 *U*	72 *U*	72 *U*
ONON2A	SF0095	S325	7/14/2000		2 - 15	72 *UJ*	72 *UJ*	200 *J*	72 *UJ*	72 *UJ*	86 *J*	72 *UJ*	72 *UJ*	72 *UJ*
ONON2A	SF0096	S325	7/14/2000		15 - 30	71 *U*	71 *U*	700	71 *UJ*	56 *J*	410	110	71 *U*	71 *U*
ONON2A	SF0101	S328	7/15/2000		0 - 15	51 *UJ*	51 *UJ*	66 *UJ*	51 *UJ*	51 *UJ*	54 *J*	51 *UJ*	51 *UJ*	51 *UJ*
ONON2A	SF0102	S328	7/15/2000		15 - 30	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*
ONON2A	SF0103	S329	7/16/2000		0 - 15	61 *UJ*	61 *UJ*	61 *UJ*	61 *UJ*	61 *UJ*	61 *UJ*	61 *UJ*	61 *UJ*	61 *UJ*
ONON2A	SF0104	S329	7/16/2000		15 - 30	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*
ONON2A	SF0105	S330	7/16/2000		0 - 15	55 *U*	55 *U*	55 *U*	55 *U*	55 *U*	55 *U*	55 *U*	55 *U*	55 *U*
ONON2A	SF0106	S330	7/16/2000		15 - 30	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*
ONON2A	SF0134	S333	8/2/2000		0 - 15	2,500 *U*	2,500 *U*	2,500 *U*	2,500 *U*	2,500 *U*	6,200	2,500 *U*	14,000	2,500 *U*
ONON2A	SF0135	S333	8/2/2000		15 - 30	3,200 *U*	3,200 *U*	3,200 *U*	3,200 *U*	3,200 *U*	11,000	3,200 *U*	11,000	3,200 *U*
ONON2A	SF0153	S334	8/2/2000		0 - 15	170 *U*	170 *U*	170 *U*	170 *U*	770	5,800	1,300	1,300	170 *U*
ONON2A	SF0154	S334	8/2/2000		15 - 30	280 *U*	280 *U*	280 *U*	280 *U*	760	6,300	1,400	1,900	280 *U*
ONON2A	SF0115	S335	8/2/2000		0 - 15	340 *U*	340 *U*	340 *U*	340 *U*	340 *U*	2,200	450	790	340 *U*
ONON2A	SF0116	S335	8/2/2000		15 - 30	1,100 *U*	1,100 *U*	1,100 *U*	1,100 *U*	1,100 *U*	4,800	1,100 *U*	2,200	1,100 *U*
ONON2A	SF0117	S336	8/3/2000		0 - 15	33 *U*	33 *U*	3,000	33 *U*	33 *U*	450	33 *U*	33 *U*	33 *U*
ONON2A	SF0118	S336	8/3/2000		15 - 30	33 *U*	33 *U*	770	33 *U*	33 *U*	1,200	33 *U*	33 *U*	33 *U*
ONON2A	SF0124	S339	8/3/2000		0 - 15	33 *U*	33 *U*	800	33 *U*	380	2,600	520	590	33 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Dimethyl phthalate (µg/kg)	Di-n-butyl phthalate (µg/kg)	Di-n-octyl phthalate (µg/kg)	Fluoranthene (µg/kg)	Fluorene (µg/kg)	Hexachlorobenzene (GC/ECD) (µg/kg)	Hexachlorobenzene (GC/MS) (µg/kg)	Final HCB Value (µg/kg)	Hexachlorobutadiene (µg/kg)
O-SEDCHM	S00570	S46	8/4/1992		0 - 2	130 *U*	130 *U*	130 *U*	610	43 *J*		130 *U*	130 *U*	130 *U*
O-SEDCHM	S00519	S47	7/24/1992		0 - 2				1,400 *J*	99 *J*		7.7 *UJ*	7.7 *UJ*	
ONON2A	VC0196	S307	7/18/2000		0 - 15	55 *U*	55 *U*	55 *U*	3,800	130	*R*	55 *U*	55 *U*	55 *U*
ONON2A	VC0197	S307	7/18/2000		15 - 30	52 *U*	52 *U*	52 *U*	520	52 *U*	1 *UJ*	52 *U*	1 *UJ*	52 *U*
ONON2A	VC0207	S311	7/20/2000		0 - 15	350 *U*	350 *U*	350 *U*	750	510	21.5 *J*	350 *U*	21.5 *J*	350 *U*
ONON2A	VC0208	S311	7/20/2000		15 - 30	620 *U*	620 *U*	620 *U*	4,300	800	40.7 *J*	620 *U*	40.7 *J*	620 *U*
ONON2A	VC0187	S313	7/18/2000		0 - 15	11,000 *U*	11,000 *U*	11,000 *U*	250,000	140,000	*R*	11,000 *U*	11,000 *U*	11,000 *U*
ONON2A	VC0188	S313	7/18/2000		15 - 30	400 *U*	400 *U*	400 *U*	34,000	7,100	289 *J*	400 *U*	289 *J*	400 *U*
ONON2A	SF0072	S314	8/10/2000		0 - 15	1,400 *UJ*	1,400 *UJ*	1,400 *UJ*	8,000 *J*	3,700 *J*	6,750	1,400 *UJ*	4,075 [1]	1,400 *UJ*
ONON2A	SF0073	S314	8/10/2000		15 - 30	1,500 *UJ*	1,500 *UJ*	1,500 *UJ*	3,200 *J*	3,000 *J*	2,630	1,500 *UJ*	2,065 [1]	1,500 *UJ*
ONON2A	SF0076	S316	8/10/2000		0 - 15	86 *U*	86 *U*	86 *U*	3,000	86 *U*	*R*	86 *U*	86 *U*	86 *U*
ONON2A	SF0077	S316	8/10/2000		15 - 30	210 *U*	210 *U*	210 *U*	7,800	1,900	1.08 *U*	210 *U*	1.08 *U*	210 *U*
ONON2A	VC0189	S318	7/14/2000		0 - 15	42 *UJ*	42 *UJ*	42 *UJ*	760 *J*	69 *J*	7.97	42 *UJ*	7.97	42 *UJ*
ONON2A	VC0190	S318	7/14/2000		15 - 30	42 *U*	42 *U*	42 *U*	2,700	280	12	42 *U*	12	42 *U*
ONON2A	SF0086	S321	8/4/2000		0 - 15	46 *U*	46 *U*	46 *U*	490	46 *U*	*R*	46 *U*	46 *U*	46 *U*
ONON2A	SF0087	S321	8/4/2000		15 - 30	130 *U*	130 *U*	130 *U*	5,300	130 *U*	*R*	130 *U*	130 *U*	130 *U*
ONON2A	SF0088	S322	8/10/2000		0 - 15	200 *UJ*	200 *UJ*	200 *UJ*	6,400 *J*	200 *UJ*	3.5	200 *UJ*	3.5	200 *UJ*
ONON2A	SF0089	S322	8/10/2000		15 - 30	650 *UJ*	650 *UJ*	650 *UJ*	9,000 *J*	2,800 *J*	3.08 *J*	650 *UJ*	3.08 *J*	650 *UJ*
ONON2A	SF0094	S325	7/14/2000		0 - 2	72 *U*	72 *U*	72 *U*	340	72 *U*	2.08 *J*	72 *U*	2.08 *J*	72 *U*
ONON2A	SF0095	S325	7/14/2000		2 - 15	72 *UJ*	41 *J*	72 *UJ*	150 *J*	72 *UJ*	2.06	72 *UJ*	2.06	72 *UJ*
ONON2A	SF0096	S325	7/14/2000		15 - 30	71 *U*	49 *J*	71 *U*	870	51 *J*	1.96 *J*	71 *U*	1.96 *J*	71 *U*
ONON2A	SF0101	S328	7/15/2000		0 - 15	51 *UJ*	51 *UJ*	51 *UJ*	97 *J*	51 *UJ*	1.1 *J*	51 *UJ*	1.1 *J*	51 *UJ*
ONON2A	SF0102	S328	7/15/2000		15 - 30	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	1 *U*	58 *U*	1 *U*	58 *U*
ONON2A	SF0103	S329	7/16/2000		0 - 15	61 *UJ*	49 *J*	61 *UJ*	61 *UJ*	61 *UJ*	1 *UJ*	61 *UJ*	1 *UJ*	61 *UJ*
ONON2A	SF0104	S329	7/16/2000		15 - 30	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	1 *UJ*	58 *UJ*	1 *UJ*	58 *UJ*
ONON2A	SF0105	S330	7/16/2000		0 - 15	55 *U*	55 *U*	55 *U*	55 *U*	55 *U*	1 *UJ*	55 *U*	1 *UJ*	55 *U*
ONON2A	SF0106	S330	7/16/2000		15 - 30	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*	1 *UJ*	56 *U*	1 *UJ*	56 *U*
ONON2A	SF0134	S333	8/2/2000		0 - 15	2,500 *U*	2,500 *U*	2,500 *U*	20,000	18,000	3.94 *J*	2,500 *U*	3.94 *J*	2,500 *U*
ONON2A	SF0135	S333	8/2/2000		15 - 30	3,200 *U*	3,200 *U*	3,200 *U*	31,000	42,000	*R*	3,200 *U*	3,200 *U*	3,200 *U*
ONON2A	SF0153	S334	8/2/2000		0 - 15	170 *U*	170 *U*	170 *U*	12,000	2,500	4.95 *J*	170 *U*	4.95 *J*	170 *U*
ONON2A	SF0154	S334	8/2/2000		15 - 30	280 *U*	280 *U*	280 *U*	13,000	4,000	7.49 *J*	280 *U*	7.49 *J*	280 *U*
ONON2A	SF0115	S335	8/2/2000		0 - 15	340 *U*	340 *U*	340 *U*	4,600	1,400	42.9 *J*	340 *U*	42.9 *J*	340 *U*
ONON2A	SF0116	S335	8/2/2000		15 - 30	1,100 *U*	1,100 *U*	1,100 *U*	11,000	3,700	91.1 *J*	1,100 *U*	91.1 *J*	1,100 *U*
ONON2A	SF0117	S336	8/3/2000		0 - 15	33 *U*	33 *U*	33 *U*	980	33 *U*	1.19 *J*	33 *U*	1.19 *J*	33 *U*
ONON2A	SF0118	S336	8/3/2000		15 - 30	33 *U*	33 *U*	33 *U*	2,600	33 *U*	3.46 *J*	33 *U*	3.46 *J*	33 *U*
ONON2A	SF0124	S339	8/3/2000		0 - 15	33 *U*	33 *U*	33 *U*	5,500	880	2.6 *J*	33 *U*	2.6 *J*	33 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Hexachloro-cyclopentadiene (µg/kg)	Hexachloro-ethane (µg/kg)	Indeno(1,2,3-cd) pyrene (µg/kg)	Isophorone (µg/kg)	Naphthalene (µg/kg)	Nitrobenzene (µg/kg)	N-Nitroso dimethyl-amine (µg/kg)	N-nitroso-di-n-propylamine (µg/kg)
O-SEDCHM	S00570	S46	8/4/1992		0 - 2	130 *U*	130 *U*	100 *J*	130 *U*	130 *U*	130 *U*		130 *U*
O-SEDCHM	S00519	S47	7/24/1992		0 - 2			150 *J*		850 *J*			
ONON2A	VC0196	S307	7/18/2000		0 - 15	280 *UJ*	55 *U*	1,200	55 *U*	58	55 *U*	280 *U*	55 *U*
ONON2A	VC0197	S307	7/18/2000		15 - 30	270 *UJ*	52 *U*	160	52 *U*	52 *U*	52 *U*	270 *U*	52 *U*
ONON2A	VC0207	S311	7/20/2000		0 - 15	1,800 *U*	350 *U*	350 *U*	350 *U*	20,000	350 *U*	1,800 *U*	350 *U*
ONON2A	VC0208	S311	7/20/2000		15 - 30	3,200 *U*	620 *U*	700	620 *U*	30,000	620 *U*	3,200 *U*	620 *U*
ONON2A	VC0187	S313	7/18/2000		0 - 15	59,000 *UJ*	11,000 *U*	38,000	11,000 *U*	72,000	11,000 *U*	59,000 *U*	11,000 *U*
ONON2A	VC0188	S313	7/18/2000		15 - 30	2100 *UJ*	400 *U*	7400	400 *U*	32,000	400 *U*	2,100 *U*	400 *U*
ONON2A	SF0072	S314	8/10/2000		0 - 15	7,100 *UJ*	1,400 *UJ*	1,400 *UJ*	1,400 *UJ*	46,000 *J*	1,400 *UJ*	7,100 *UJ*	1,400 *UJ*
ONON2A	SF0073	S314	8/10/2000		15 - 30	7,700 *UJ*	1,500 *UJ*	1,500 *UJ*	1,500 *UJ*	76,000 *J*	1,500 *UJ*	7,700 *UJ*	1,500 *UJ*
ONON2A	SF0076	S316	8/10/2000		0 - 15	*R*	86 *U*	1,100	86 *U*	260	86 *U*	440 *U*	86 *U*
ONON2A	SF0077	S316	8/10/2000		15 - 30	*R*	210 *U*	1,400	210 *U*	210 *U*	210 *U*	1,100 *U*	210 *U*
ONON2A	VC0189	S318	7/14/2000		0 - 15	220 *UJ*	42 *UJ*	230 *J*	42 *UJ*	53 *J*	42 *UJ*	220 *UJ*	42 *UJ*
ONON2A	VC0190	S318	7/14/2000		15 - 30	220 *U*	42 *U*	760	42 *U*	120	42 *U*	220 *U*	42 *U*
ONON2A	SF0086	S321	8/4/2000		0 - 15	240 *U*	46 *U*	280	46 *U*	46 *U*	46 *U*	240 *U*	46 *U*
ONON2A	SF0087	S321	8/4/2000		15 - 30	690 *U*	130 *U*	1,100	130 *U*	130 *U*	130 *U*	690 *U*	130 *U*
ONON2A	SF0088	S322	8/10/2000		0 - 15	*R*	200 *UJ*	1,200 *J*	200 *UJ*	570 *J*	200 *UJ*	1,000 *UJ*	200 *UJ*
ONON2A	SF0089	S322	8/10/2000		15 - 30	3,400 *UJ*	650 *UJ*	1,600 *J*	650 *UJ*	910 *J*	650 *UJ*	3,400 *UJ*	650 *UJ*
ONON2A	SF0094	S325	7/14/2000		0 - 2	370 *U*	72 *U*	130	72 *UJ*	260	72 *U*	370 *U*	72 *U*
ONON2A	SF0095	S325	7/14/2000		2 - 15	370 *UJ*	72 *UJ*	61 *J*	72 *UJ*	48 *J*	72 *UJ*	370 *UJ*	72 *UJ*
ONON2A	SF0096	S325	7/14/2000		15 - 30	370 *U*	71 *U*	260	71 *UJ*	240	71 *U*	370 *U*	71 *U*
ONON2A	SF0101	S328	7/15/2000		0 - 15	260 *UJ*	51 *UJ*	35 *J*	51 *UJ*	51 *UJ*	51 *UJ*	260 *UJ*	51 *UJ*
ONON2A	SF0102	S328	7/15/2000		15 - 30	300 *UJ*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	300 *U*	58 *U*
ONON2A	SF0103	S329	7/16/2000		0 - 15	320 *UJ*	61 *UJ*	61 *UJ*	61 *UJ*	61 *UJ*	61 *UJ*	320 *UJ*	61 *UJ*
ONON2A	SF0104	S329	7/16/2000		15 - 30	300 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*	300 *UJ*	58 *UJ*
ONON2A	SF0105	S330	7/16/2000		0 - 15	280 *UJ*	55 *U*	55 *U*	55 *U*	55 *U*	55 *U*	280 *U*	55 *U*
ONON2A	SF0106	S330	7/16/2000		15 - 30	290 *UJ*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*	290 *U*	56 *U*
ONON2A	SF0134	S333	8/2/2000		0 - 15	13,000 *U*	2,500 *U*	2,500 *U*	2,500 *U*	130,000	2,500 *U*	13,000 *U*	2,500 *U*
ONON2A	SF0135	S333	8/2/2000		15 - 30	16,000 *U*	3,200 *U*	4,500	3,200 *U*	160,000	3,200 *U*	16,000 *U*	3,200 *U*
ONON2A	SF0153	S334	8/2/2000		0 - 15	880 *U*	170 *U*	2,800	170 *U*	5,500	170 *U*	880 *U*	170 *U*
ONON2A	SF0154	S334	8/2/2000		15 - 30	1,400 *U*	280 *U*	2,900	280 *U*	19,000	280 *U*	1,400 *U*	280 *U*
ONON2A	SF0115	S335	8/2/2000		0 - 15	1,700 *U*	340 *U*	950	340 *U*	15,000	340 *U*	1,700 *U*	340 *U*
ONON2A	SF0116	S335	8/2/2000		15 - 30	5,800 *U*	1,100 *U*	2,100	1,100 *U*	57,000	1,100 *U*	5,800 *U*	1,100 *U*
ONON2A	SF0117	S336	8/3/2000		0 - 15	170 *U*	33 *U*	240	33 *U*	360	33 *U*	170 *U*	33 *U*
ONON2A	SF0118	S336	8/3/2000		15 - 30	170 *U*	33 *U*	650	33 *U*	3,100	33 *U*	170 *U*	33 *U*
ONON2A	SF0124	S339	8/3/2000		0 - 15	170 *U*	33 *U*	1,200	33 *U*	7,700	33 *U*	170 *U*	33 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	N-Nitroso-diphenyl-amine (µg/kg)	Pentachloro-benzene (µg/kg)	Pentachloro-phenol (µg/kg)	Phenanthrene (µg/kg)	Phenol (µg/kg)	Pyrene (µg/kg)
O-SEDCHM	S00570	S46	8/4/1992		0 - 2	130 *U*		340 *U*	360	130 *U*	580
O-SEDCHM	S00519	S47	7/24/1992		0 - 2		7.7 *UJ*		310 *J*		660 *J*
ONON2A	VC0196	S307	7/18/2000		0 - 15	55 *U*		1,400 *U*	1,800	55 *U*	3,200
ONON2A	VC0197	S307	7/18/2000		15 - 30	52 *U*		1,300 *U*	310	52 *U*	490
ONON2A	VC0207	S311	7/20/2000		0 - 15	350 *U*		8,900 *U*	1,600	2,200	430
ONON2A	VC0208	S311	7/20/2000		15 - 30	620 *U*		16,000 *U*	3,700	3,700	2,600
ONON2A	VC0187	S313	7/18/2000		0 - 15	11,000 *U*		300,000 *U*	380,000	11,000 *U*	150,000
ONON2A	VC0188	S313	7/18/2000		15 - 30	400 *U*		10,000 *UJ*	28,000	400 *UJ*	25,000
ONON2A	SF0072	S314	8/10/2000		0 - 15	1,400 *UJ*		35,000 *UJ*	9,600 *J*	1,400 *UJ*	1,400 *UJ*
ONON2A	SF0073	S314	8/10/2000		15 - 30	1,500 *UJ*		38,000 *UJ*	5,500 *J*	1,500 *UJ*	1,500 *UJ*
ONON2A	SF0076	S316	8/10/2000		0 - 15	86 *U*		2,200 *UJ*	1,500	86 *UJ*	3,200
ONON2A	SF0077	S316	8/10/2000		15 - 30	210 *U*		5,500 *U*	8,000	210 *U*	6,300
ONON2A	VC0189	S318	7/14/2000		0 - 15	42 *UJ*		1,100 *UJ*	440 *J*	42 *UJ*	700 *J*
ONON2A	VC0190	S318	7/14/2000		15 - 30	42 *U*		1,100 *U*	1,300	42 *U*	2,700
ONON2A	SF0086	S321	8/4/2000		0 - 15	46 *U*		1,200 *U*	240	46 *U*	610
ONON2A	SF0087	S321	8/4/2000		15 - 30	130 *U*		3,400 *U*	3,900	130 *U*	5,400
ONON2A	SF0088	S322	8/10/2000		0 - 15	200 *UJ*		5,200 *UJ*	7,800 *J*	200 *UJ*	6,900 *J*
ONON2A	SF0089	S322	8/10/2000		15 - 30	650 *UJ*		17,000 *UJ*	13,000 *J*	650 *UJ*	10,000 *J*
ONON2A	SF0094	S325	7/14/2000		0 - 2	72 *U*		1,900 *U*	160	72 *U*	260
ONON2A	SF0095	S325	7/14/2000		2 - 15	72 *UJ*		1,900 *U*	77 *J*	72 *U*	120 *J*
ONON2A	SF0096	S325	7/14/2000		15 - 30	71 *U*		1,800 *U*	420	71 *U*	590
ONON2A	SF0101	S328	7/15/2000		0 - 15	51 *UJ*		1,300 *UJ*	74 *J*	51 *UJ*	87 *J*
ONON2A	SF0102	S328	7/15/2000		15 - 30	58 *U*		1,500 *U*	58 *U*	58 *U*	58 *U*
ONON2A	SF0103	S329	7/16/2000		0 - 15	61 *UJ*		1,600 *UJ*	61 *UJ*	61 *UJ*	61 *UJ*
ONON2A	SF0104	S329	7/16/2000		15 - 30	58 *UJ*		1,500 *UJ*	58 *UJ*	58 *UJ*	58 *UJ*
ONON2A	SF0105	S330	7/16/2000		0 - 15	55 *U*		1,400 *UJ*	55 *U*	55 *UJ*	31 *J*
ONON2A	SF0106	S330	7/16/2000		15 - 30	56 *U*		1,400 *UJ*	56 *U*	56 *UJ*	56 *U*
ONON2A	SF0134	S333	8/2/2000		0 - 15	2,500 *U*		66,000 *UJ*	42,000	2,500 *U*	15,000
ONON2A	SF0135	S333	8/2/2000		15 - 30	3,200 *U*		82,000 *UJ*	42,000	3,200 *U*	20,000
ONON2A	SF0153	S334	8/2/2000		0 - 15	170 *U*		4,400 *UJ*	10,000	170 *U*	9,600
ONON2A	SF0154	S334	8/2/2000		15 - 30	280 *U*		7,200 *UJ*	13,000	280 *U*	11,000
ONON2A	SF0115	S335	8/2/2000		0 - 15	340 *U*		8,700 *UJ*	4,000	340 *U*	3,400
ONON2A	SF0116	S335	8/2/2000		15 - 30	1,100 *U*		29,000 *UJ*	11,000	1,100 *U*	8,100
ONON2A	SF0117	S336	8/3/2000		0 - 15	33 *U*		850 *U*	720	33 *U*	880
ONON2A	SF0118	S336	8/3/2000		15 - 30	33 *U*		850 *U*	2,000	33 *U*	2,500
ONON2A	SF0124	S339	8/3/2000		0 - 15	33 *U*		850 *U*	4,600	33 *U*	3,800

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	1,2,3,4-Tetrachloro-benzene (µg/kg)	1,2-Dichloro-benzene (µg/kg)	1,3-Dichloro-benzene (µg/kg)	1,4-Dichloro-benzene (µg/kg)	Dichloro-benzenes, (sum of) [1] (µg/kg)	2,2'-Oxybis (1-chloro-propane) (ug/kg)	1,2,3-Trichloro-benzene (µg/kg)	1,2,4-Trichloro-benzene (µg/kg)
ONON2A	SF0125	S339	8/3/2000		15 - 30		33 *U*	33 *U*	4,600		33 *U*		33 *U*
ONON2A	SF0123	S340	8/15/2000	D1	0 - 2		400 *J*	67 *UJ*	390 *J*		67 *UJ*		67 *UJ*
ONON2A	SF0123R	S340	8/15/2000	D2	0 - 2		1,800 *J*	660 *UJ*	4,200 *J*		660 *UJ*		660 *UJ*
ONON2A	SF0126	S340	8/3/2000		0 - 15		4,000	33 *U*	11,000		33 *U*		500
ONON2A	SF0127	S340	8/3/2000		15 - 30		5,400 *J*	33 *U*	6,900 *J*		33 *U*		1,200
ONON2A	SF0128	S341	8/4/2000		0 - 15		1,300	61 *U*	2,500		61 *U*		330
ONON2A	SF0129	S341	8/4/2000		15 - 30		630 *J*	86 *UJ*	1,300 *J*		86 *UJ*		220 *J*
ONON2A	SF0132	S343	8/4/2000		0 - 15		5,200	1,100 *U*	6,200		1,100 *U*		1,100 *U*
ONON2A	SF0133	S343	8/4/2000		15 - 30		8,100	64 *U*	7,500		64 *U*		64 *U*
ONON2A	SF0136	S345	8/4/2000		0 - 15		810	790 *U*	2,100		790 *U*		790 *U*
ONON2A	SF0137	S345	8/4/2000		15 - 30		1,800	110 *U*	4,600		110 *U*		110 *U*
ONON2A	SF0138	S346	8/4/2000		0 - 15		820	270 *U*	1,500		270 *U*		270 *U*
ONON2A	SF0139	S346	8/4/2000		15 - 30		990	360 *U*	1,600		360 *U*		360 *U*
ONON2A	SF0140	S347	8/4/2000		0 - 15		19,000	540 *U*	31,000		540 *U*		3,700
ONON2A	SF0141	S347	8/4/2000		15 - 30		8,500	460 *U*	14,000		460 *U*		1,300
ONON2A	SF0142	S348	8/5/2000		0 - 15		2,100	980 *U*	6,100		980 *U*		980 *U*
ONON2A	SF0143	S348	8/5/2000		15 - 30		4,700 *J*	2,500 *U*	11,000 *J*		2,500 *U*		2,500 *U*
ONON2A	SF0144	S349	8/5/2000		0 - 15		340 *U*	340 *U*	610		340 *U*		340 *U*
ONON2A	SF0145	S349	8/5/2000		15 - 30		2,300 *U*	2,300 *U*	2,300 *U*		2,300 *U*		2,300 *U*
ONON2A	SF0146	S350	8/5/2000		0 - 15		2,400	88 *U*	2,800		88 *U*		340
ONON2A	SF0147	S350	8/5/2000		15 - 30		2,900	78 *U*	3,300		78 *U*		78 *U*
ONON2A	SF0149	S351	8/5/2000		0 - 15		3,800	710	7,100		180 *U*		2,400
ONON2A	SF0150	S351	8/5/2000		15 - 30		850	150	1,700		98 *U*		420
ONON2A	SF0173	S351	8/15/2000		0 - 2		72 *UJ*	72 *UJ*	72 *UJ*		72 *UJ*		72 *UJ*
ONON2A	SF0151	S352	8/10/2000		0 - 15		1,000 *J*	1,500 *J*	7,100 *J*		600 *UJ*		600 *UJ*
ONON2A	SF0152	S352	8/10/2000		15 - 30		1,200 *U*	2,900	11,000		1,200 *U*		1,200 *U*
ONON2A	SF0113	S353	7/27/2000		0 - 15		850	540 *U*	2,200 *J*		540 *U*		540 *U*
ONON2A	SF0114	S353	7/27/2000		15 - 30		410	180 *U*	1,100 *J*		180 *U*		200 *J*
ONON2A	SF0024	S366	7/27/2000		0 - 15		63 *U*	63 *U*	63 *U*		63 *U*		63 *U*
ONON2A	SF0025	S366	8/15/2000		15 - 30		61 *U*	61 *U*	61 *U*		61 *U*		61 *U*
ONON2A	SF0026	S367	8/15/2000		0 - 2		58 *U*	58 *U*	58 *U*		58 *U*		58 *U*
ONON2A	SF0027	S367	8/15/2000		2 - 15		58 *U*	58 *U*	58 *U*		58 *U*		58 *U*
ONON2A	SF0028	S367	8/15/2000		15 - 30		700	280	1,900		61 *U*		470
ONON2A	SF0170	S434	8/9/2000		0 - 15		55 *U*	55 *U*	55 *U*		55 *U*		55 *U*
ONON2A	SF0171	S434	8/9/2000		15 - 30		60 *U*	60 *U*	60 *U*		60 *U*		60 *U*
ONON2A	SF0172	S435	8/9/2000		0 - 5		230,000 *U*	230,000 *U*	230,000 *U*		230,000 *U*		230,000 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	1,3,5-Trichloro-benzene (µg/kg)	(Sum of) Trichloro-benzenes [1] (µg/kg)	2,4,5-Trichloro-phenol (µg/kg)	2,4,6-Trichloro-phenol (µg/kg)	2,4-Dichlorophenol (µg/kg)	2,4-Dimethyl-phenol (µg/kg)	2,4-Dinitro-phenol (µg/kg)	2,4-Dinitro-toluene (µg/kg)
ONON2A	SF0125	S339	8/3/2000		15 - 30			170 *U*	170 *U*	170 *U*	170 *U*	850 *U*	170 *U*
ONON2A	SF0123	S340	8/15/2000	D1	0 - 2			350 *UJ*	350 *UJ*	350 *UJ*	350 *UJ*	1,700 *UJ*	350 *UJ*
ONON2A	SF0123R	S340	8/15/2000	D2	0 - 2			3,400 *UJ*	3,400 *UJ*	3,400 *UJ*	3,400 *UJ*	17,000 *UJ*	3,400 *UJ*
ONON2A	SF0126	S340	8/3/2000		0 - 15			170 *U*	170 *U*	170 *U*	170 *U*	850 *UJ*	170 *U*
ONON2A	SF0127	S340	8/3/2000		15 - 30			170 *U*	170 *U*	170 *U*	170 *U*	850 *U*	170 *U*
ONON2A	SF0128	S341	8/4/2000		0 - 15			310 *U*	310 *U*	310 *U*	310 *U*	1,600 *UJ*	310 *U*
ONON2A	SF0129	S341	8/4/2000		15 - 30			440 *UJ*	440 *UJ*	440 *UJ*	440 *UJ*	2,200 *UJ*	440 *UJ*
ONON2A	SF0132	S343	8/4/2000		0 - 15			5,700 *U*	5,700 *U*	5,700 *U*	5,700 *U*	29,000 *U*	5,700 *U*
ONON2A	SF0133	S343	8/4/2000		15 - 30			330 *U*	330 *U*	330 *U*	330 *U*	1,700 *UJ*	330 *U*
ONON2A	SF0136	S345	8/4/2000		0 - 15			4,100 *UJ*	4,100 *UJ*	4,100 *UJ*	4,100 *UJ*	20,000 *UJ*	4,100 *U*
ONON2A	SF0137	S345	8/4/2000		15 - 30			540 *UJ*	540 *UJ*	540 *UJ*	540 *UJ*	2,700 *UJ*	540 *U*
ONON2A	SF0138	S346	8/4/2000		0 - 15			1,400 *U*	1,400 *U*	1,400 *U*	1,400 *U*	6,900 *U*	1,400 *U*
ONON2A	SF0139	S346	8/4/2000		15 - 30			1,800 *UJ*	1,800 *UJ*	1,800 *UJ*	1,800 *UJ*	9,200 *UJ*	1,800 *U*
ONON2A	SF0140	S347	8/4/2000		0 - 15			2,800 *UJ*	2,800 *UJ*	2,800 *UJ*	2,800 *UJ*	14,000 *UJ*	2,800 *U*
ONON2A	SF0141	S347	8/4/2000		15 - 30			2,400 *UJ*	2,400 *UJ*	2,400 *UJ*	2,400 *UJ*	12,000 *UJ*	2,400 *U*
ONON2A	SF0142	S348	8/5/2000		0 - 15			5,100 *U*	5,100 *U*	5,100 *U*	5,100 *U*	25,000 *U*	5,100 *U*
ONON2A	SF0143	S348	8/5/2000		15 - 30			13,000 *U*	13,000 *U*	13,000 *U*	13,000 *U*	64,000 *U*	13,000 *U*
ONON2A	SF0144	S349	8/5/2000		0 - 15			1,700 *U*	1,700 *U*	1,700 *U*	990	8,700 *U*	1,700 *U*
ONON2A	SF0145	S349	8/5/2000		15 - 30			12,000 *U*	12,000 *U*	12,000 *U*	12,000 *U*	59,000 *U*	12,000 *U*
ONON2A	SF0146	S350	8/5/2000		0 - 15			450 *U*	450 *U*	450 *U*	450 *U*	2,300 *U*	450 *U*
ONON2A	SF0147	S350	8/5/2000		15 - 30			400 *U*	400 *U*	400 *U*	400 *U*	2,000 *U*	400 *U*
ONON2A	SF0149	S351	8/5/2000		0 - 15			920 *U*	920 *U*	920 *U*	920 *U*	4,600 *U*	920 *U*
ONON2A	SF0150	S351	8/5/2000		15 - 30			500 *U*	500 *U*	500 *U*	500 *U*	2,500 *U*	500 *U*
ONON2A	SF0173	S351	8/15/2000		0 - 2			370 *UJ*	370 *UJ*	370 *UJ*	370 *UJ*	1,800 *UJ*	370 *UJ*
ONON2A	SF0151	S352	8/10/2000		0 - 15			3,100 *UJ*	3,100 *UJ*	3,100 *UJ*	3,100 *UJ*	15,000 *UJ*	3,100 *UJ*
ONON2A	SF0152	S352	8/10/2000		15 - 30			6,000 *U*	6,000 *U*	6,000 *U*	6,000 *U*	30,000 *UJ*	6,000 *U*
ONON2A	SF0113	S353	7/27/2000		0 - 15			2,800 *U*	2,800 *U*	2,800 *U*	2,800 *U*	14,000 *U*	2,800 *U*
ONON2A	SF0114	S353	7/27/2000		15 - 30			940 *U*	940 *U*	940 *U*	940 *U*	4,700 *UJ*	940 *U*
ONON2A	SF0024	S366	7/27/2000		0 - 15			320 *U*	320 *U*	320 *U*	320 *U*	1,600 *UJ*	320 *U*
ONON2A	SF0025	S366	8/15/2000		15 - 30			310 *U*	310 *U*	310 *U*	310 *U*	1,600 *UJ*	310 *U*
ONON2A	SF0026	S367	8/15/2000		0 - 2			300 *U*	300 *U*	300 *U*	300 *U*	1,500 *U*	300 *U*
ONON2A	SF0027	S367	8/15/2000		2 - 15			300 *U*	300 *U*	300 *U*	300 *U*	1,500 *UJ*	300 *U*
ONON2A	SF0028	S367	8/15/2000		15 - 30			320 *U*	320 *U*	320 *U*	320 *U*	1,600 *UJ*	320 *U*
ONON2A	SF0170	S434	8/9/2000		0 - 15			280 *U*	280 *U*	280 *U*	280 *U*	1,400 *UJ*	280 *U*
ONON2A	SF0171	S434	8/9/2000		15 - 30			310 *U*	310 *U*	310 *U*	310 *U*	1,600 *UJ*	310 *U*
ONON2A	SF0172	S435	8/9/2000		0 - 5			1,200,000 *U*	1,200,000 *U*	1,200,000 *U*	1,200,000 *U*	6,000,000 *UJ*	1,200,000 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	2,6-Dinitro-toluene (µg/kg)	2-Chloro-naphthalene (µg/kg)	2-Chloro-phenol (µg/kg)	2-Methyl-4,6-dinitrophenol (µg/kg)	2-Methyl-naphthalene (µg/kg)	2-Methyl-phenol (µg/kg)	4-Methyl-phenol (µg/kg)	2-Nitro-aniline (µg/kg)	3-Nitro-aniline (µg/kg)
ONON2A	SF0125	S339	8/3/2000		15 - 30	170 *U*	33 *U*	33 *U*	850 *U*	4,100	33 *U*	33 *U*	67 *U*	850 *U*
ONON2A	SF0123	S340	8/15/2000	D1	0 - 2	350 *UJ*	67 *UJ*	67 *UJ*	1,700 *UJ*	760 *J*	67 *UJ*	67 *UJ*	140 *UJ*	1,700 *UJ*
ONON2A	SF0123R	S340	8/15/2000	D2	0 - 2	3,400 *UJ*	660 *UJ*	660 *UJ*	17,000 *UJ*	1,500 *J*	660 *UJ*	660 *UJ*	1,300 *UJ*	17,000 *UJ*
ONON2A	SF0126	S340	8/3/2000		0 - 15	170 *U*	33 *U*	33 *U*	850 *U*	1,600	33 *U*	33 *U*	67 *U*	850 *U*
ONON2A	SF0127	S340	8/3/2000		15 - 30	170 *U*	33 *U*	33 *U*	850 *U*	3,700 *J*	33 *U*	33 *U*	67 *U*	850 *U*
ONON2A	SF0128	S341	8/4/2000		0 - 15	310 *U*	61 *U*	61 *U*	1,600 *U*	1,300	61 *U*	61 *U*	120 *U*	1,600 *U*
ONON2A	SF0129	S341	8/4/2000		15 - 30	440 *UJ*	86 *UJ*	86 *UJ*	2,200 *UJ*	270 *J*	86 *UJ*	100 *J*	170 *UJ*	2,200 *UJ*
ONON2A	SF0132	S343	8/4/2000		0 - 15	5,700 *U*	1,100 *U*	1,100 *U*	29,000 *U*	4,300	1100 *U*	1,100 *U*	2,300 *U*	29,000 *U*
ONON2A	SF0133	S343	8/4/2000		15 - 30	330 *U*	64 *U*	64 *U*	1,700 *U*	6,100	64 *U*	560	130 *U*	1,700 *U*
ONON2A	SF0136	S345	8/4/2000		0 - 15	4,100 *U*	790 *U*	790 *UJ*	20,000 *UJ*	5,200	790 *UJ*	790 *UJ*	1,600 *U*	20,000 *U*
ONON2A	SF0137	S345	8/4/2000		15 - 30	540 *U*	110 *U*	110 *UJ*	2,700 *UJ*	7,300	110 *UJ*	290 *J*	210 *U*	2,700 *U*
ONON2A	SF0138	S346	8/4/2000		0 - 15	1,400 *U*	270 *U*	270 *U*	6,900 *U*	1,500	270 *U*	270 *U*	550 *U*	6,900 *U*
ONON2A	SF0139	S346	8/4/2000		15 - 30	1,800 *U*	360 *U*	360 *UJ*	9,200 *UJ*	2,000	360 *UJ*	360 *UJ*	730 *U*	9,200 *U*
ONON2A	SF0140	S347	8/4/2000		0 - 15	2,800 *U*	540 *U*	540 *UJ*	14,000 *UJ*	1,000	540 *UJ*	540 *UJ*	1,100 *U*	14,000 *U*
ONON2A	SF0141	S347	8/4/2000		15 - 30	2,400 *U*	460 *U*	460 *UJ*	12,000 *UJ*	2,400	460 *UJ*	460 *UJ*	930 *U*	12,000 *U*
ONON2A	SF0142	S348	8/5/2000		0 - 15	5,100 *U*	980 *U*	980 *U*	25,000 *U*	3,800	980 *U*	980 *U*	2,000 *U*	25,000 *U*
ONON2A	SF0143	S348	8/5/2000		15 - 30	13,000 *U*	2,500 *U*	2,500 *U*	64,000 *U*	9,000 *J*	2,500 *U*	2,500 *U*	5,000 *U*	64,000 *U*
ONON2A	SF0144	S349	8/5/2000		0 - 15	1,700 *U*	340 *U*	340 *U*	8,700 *U*	2,400	1,100	2,200	690 *U*	8,700 *U*
ONON2A	SF0145	S349	8/5/2000		15 - 30	12,000 *U*	2,300 *U*	2,300 *U*	59,000 *U*	7,800	2,300 *U*	3,000	4,700 *U*	59,000 *U*
ONON2A	SF0146	S350	8/5/2000		0 - 15	450 *U*	88 *U*	88 *U*	2,300 *U*	3,900	88 *U*	88 *U*	180 *U*	2,300 *U*
ONON2A	SF0147	S350	8/5/2000		15 - 30	400 *U*	78 *U*	78 *U*	2,000 *U*	5,100	78 *U*	78 *U*	160 *U*	2,000 *U*
ONON2A	SF0149	S351	8/5/2000		0 - 15	920 *U*	180 *U*	180 *U*	4,600 *U*	1,900	180 *U*	180 *U*	360 *U*	4,600 *U*
ONON2A	SF0150	S351	8/5/2000		15 - 30	500 *U*	98 *U*	98 *U*	2,500 *U*	1,100	98 *U*	98 *U*	200 *U*	2,500 *U*
ONON2A	SF0173	S351	8/15/2000		0 - 2	370 *UJ*	72 *UJ*	72 *UJ*	1,800 *UJ*	72 *UJ*	72 *UJ*	72 *UJ*	150 *UJ*	1,800 *UJ*
ONON2A	SF0151	S352	8/10/2000		0 - 15	3,100 *UJ*	600 *UJ*	600 *UJ*	15,000 *UJ*	8,900 *J*	600 *UJ*	600 *UJ*	1,200 *UJ*	15,000 *UJ*
ONON2A	SF0152	S352	8/10/2000		15 - 30	6,000 *U*	1,200 *U*	1,200 *U*	30,000 *U*	18,000	1,200 *U*	1,200 *U*	2,400 *U*	30,000 *UJ*
ONON2A	SF0113	S353	7/27/2000		0 - 15	2,800 *U*	540 *U*	540 *U*	14,000 *U*	540 *U*	540 *U*	540 *U*	1,100 *U*	14,000 *U*
ONON2A	SF0114	S353	7/27/2000		15 - 30	940 *U*	180 *U*	180 *U*	4,700 *U*	180 *U*	180 *U*	180 *U*	370 *U*	4,700 *U*
ONON2A	SF0024	S366	7/27/2000		0 - 15	320 *U*	63 *U*	63 *U*	1,600 *U*	63 *U*	63 *U*	63 *U*	130 *U*	1,600 *U*
ONON2A	SF0025	S366	8/15/2000		15 - 30	310 *U*	61 *U*	61 *U*	1,600 *U*	61 *U*	61 *U*	61 *U*	120 *U*	1,600 *U*
ONON2A	SF0026	S367	8/15/2000		0 - 2	300 *U*	58 *U*	58 *U*	1,500 *U*	58 *U*	58 *U*	58 *U*	120 *U*	1,500 *U*
ONON2A	SF0027	S367	8/15/2000		2 - 15	300 *U*	58 *U*	58 *U*	1,500 *U*	58 *U*	58 *U*	58 *U*	120 *U*	1,500 *U*
ONON2A	SF0028	S367	8/15/2000		15 - 30	320 *U*	61 *U*	61 *U*	1,600 *U*	180	61 *U*	61 *U*	120 *U*	1,600 *U*
ONON2A	SF0170	S434	8/9/2000		0 - 15	280 *U*	55 *U*	55 *U*	1,400 *U*	55 *U*	55 *U*	55 *U*	110 *U*	1,400 *U*
ONON2A	SF0171	S434	8/9/2000		15 - 30	310 *U*	60 *U*	60 *U*	1,600 *U*	60 *U*	60 *U*	60 *U*	120 *U*	1,600 *U*
ONON2A	SF0172	S435	8/9/2000		0 - 5	1,200,000 *U*	230,000 *U*	230,000 *U*	6,000,000 *U*	2,800,000 *J*	230,000 *U*	230,000 *U*	470,000 *U*	6,000,000 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	4-Nitro-aniline (µg/kg)	2-Nitro-phenol (µg/kg)	4-Nitro-phenol (µg/kg)	3,3-Dichloro-benzidine (µg/kg)	4-Bromo-phenyl-phenyl ether (µg/kg)	4-Chloro-3-methyl- phenol (µg/kg)	4-Chloro-aniline (µg/kg)	4-Chloro-phenyl-phenyl ether (µg/kg)
ONON2A	SF0125	S339	8/3/2000		15 - 30	850 *U*	170 *U*	850 *U*	33 *U*	33 *U*	170 *U*	33 *U*	33 *U*
ONON2A	SF0123	S340	8/15/2000	D1	0 - 2	1,700 *UJ*	350 *UJ*	1,700 *UJ*	67 *UJ*	67 *UJ*	350 *UJ*	67 *UJ*	67 *UJ*
ONON2A	SF0123R	S340	8/15/2000	D2	0 - 2	17,000 *UJ*	3,400 *UJ*	17,000 *UJ*	660 *UJ*	660 *UJ*	3,400 *UJ*	660 *UJ*	660 *UJ*
ONON2A	SF0126	S340	8/3/2000		0 - 15	850 *U*	170 *U*	850 *U*	33 *U*	33 *U*	170 *U*	33 *U*	33 *U*
ONON2A	SF0127	S340	8/3/2000		15 - 30	850 *U*	170 *U*	850 *U*	33 *U*	33 *U*	170 *U*	33 *U*	33 *U*
ONON2A	SF0128	S341	8/4/2000		0 - 15	1,600 *U*	310 *U*	1,600 *U*	61 *U*	61 *U*	310 *U*	61 *U*	61 *U*
ONON2A	SF0129	S341	8/4/2000		15 - 30	2,200 *UJ*	440 *UJ*	2,200 *UJ*	86 *UJ*	86 *UJ*	440 *UJ*	86 *UJ*	86 *UJ*
ONON2A	SF0132	S343	8/4/2000		0 - 15	29,000 *U*	5,700 *U*	29,000 *U*	1,100 *U*	1,100 *U*	5,700 *U*	1,100 *U*	1,100 *U*
ONON2A	SF0133	S343	8/4/2000		15 - 30	1,700 *U*	330 *U*	1,700 *U*	64 *U*	64 *U*	330 *U*	64 *U*	64 *U*
ONON2A	SF0136	S345	8/4/2000		0 - 15	20,000 *U*	4,100 *UJ*	20,000 *UJ*	790 *U*	790 *U*	4,100 *UJ*	790 *U*	790 *U*
ONON2A	SF0137	S345	8/4/2000		15 - 30	2,700 *U*	540 *UJ*	2,700 *UJ*	110 *U*	110 *U*	540 *UJ*	110 *U*	110 *U*
ONON2A	SF0138	S346	8/4/2000		0 - 15	6,900 *U*	1,400 *U*	6,900 *U*	270 *U*	270 *U*	1,400 *U*	270 *U*	270 *U*
ONON2A	SF0139	S346	8/4/2000		15 - 30	9,200 *U*	1,800 *UJ*	9,200 *UJ*	360 *U*	360 *U*	1,800 *UJ*	360 *U*	360 *U*
ONON2A	SF0140	S347	8/4/2000		0 - 15	14,000 *U*	2,800 *UJ*	14,000 *UJ*	540 *U*	540 *U*	2,800 *UJ*	540 *U*	540 *U*
ONON2A	SF0141	S347	8/4/2000		15 - 30	12,000 *U*	2,400 *UJ*	12,000 *UJ*	460 *U*	460 *U*	2,400 *UJ*	460 *U*	460 *U*
ONON2A	SF0142	S348	8/5/2000		0 - 15	25,000 *U*	5,100 *U*	25,000 *U*	980 *U*	980 *U*	5,100 *U*	980 *U*	980 *U*
ONON2A	SF0143	S348	8/5/2000		15 - 30	64,000 *U*	13,000 *U*	64,000 *U*	2,500 *UJ*	2,500 *U*	13,000 *U*	2,500 *U*	2,500 *U*
ONON2A	SF0144	S349	8/5/2000		0 - 15	8,700 *U*	1,700 *U*	8,700 *U*	340 *U*	340 *U*	1,700 *U*	340 *U*	340 *U*
ONON2A	SF0145	S349	8/5/2000		15 - 30	59,000 *U*	12,000 *U*	59,000 *U*	2,300 *U*	2,300 *U*	12,000 *U*	2,300 *U*	2,300 *U*
ONON2A	SF0146	S350	8/5/2000		0 - 15	2,300 *U*	450 *U*	2,300 *U*	88 *U*	88 *U*	450 *U*	88 *U*	88 *U*
ONON2A	SF0147	S350	8/5/2000		15 - 30	2,000 *U*	400 *U*	2,000 *U*	78 *U*	78 *U*	400 *U*	78 *U*	78 *U*
ONON2A	SF0149	S351	8/5/2000		0 - 15	4,600 *U*	920 *U*	4,600 *U*	180 *UJ*	180 *U*	920 *U*	180 *U*	180 *U*
ONON2A	SF0150	S351	8/5/2000		15 - 30	2,500 *U*	500 *U*	2,500 *U*	98 *U*	98 *U*	500 *U*	100	98 *U*
ONON2A	SF0173	S351	8/15/2000		0 - 2	1,800 *UJ*	370 *UJ*	1,800 *UJ*	72 *UJ*	72 *UJ*	370 *UJ*	72 *UJ*	72 *UJ*
ONON2A	SF0151	S352	8/10/2000		0 - 15	15,000 *UJ*	3,100 *UJ*	15,000 *UJ*	600 *UJ*	600 *UJ*	3,100 *UJ*	600 *UJ*	600 *UJ*
ONON2A	SF0152	S352	8/10/2000		15 - 30	30,000 *U*	6,000 *U*	30,000 *U*	1,200 *U*	1,200 *U*	6,000 *U*	1,200 *UJ*	1,200 *U*
ONON2A	SF0113	S353	7/27/2000		0 - 15	14,000 *U*	2,800 *U*	14,000 *U*	540 *U*	540 *U*	2,800 *U*	540 *U*	540 *U*
ONON2A	SF0114	S353	7/27/2000		15 - 30	4,700 *U*	940 *U*	4,700 *U*	180 *U*	180 *U*	940 *U*	180 *U*	180 *U*
ONON2A	SF0024	S366	7/27/2000		0 - 15	1,600 *U*	320 *U*	1,600 *U*	63 *U*	63 *U*	320 *U*	63 *U*	63 *U*
ONON2A	SF0025	S366	8/15/2000		15 - 30	1,600 *U*	310 *U*	1,600 *U*	61 *U*	61 *U*	310 *U*	61 *U*	61 *U*
ONON2A	SF0026	S367	8/15/2000		0 - 2	1,500 *U*	300 *U*	1,500 *U*	58 *U*	58 *U*	300 *U*	58 *U*	58 *U*
ONON2A	SF0027	S367	8/15/2000		2 - 15	1,500 *U*	300 *U*	1,500 *U*	58 *U*	58 *U*	300 *U*	58 *U*	58 *U*
ONON2A	SF0028	S367	8/15/2000		15 - 30	1,600 *U*	320 *U*	1,600 *U*	61 *U*	61 *U*	320 *U*	61 *U*	61 *U*
ONON2A	SF0170	S434	8/9/2000		0 - 15	1,400 *U*	280 *U*	1,400 *U*	55 *U*	55 *U*	280 *U*	55 *U*	55 *U*
ONON2A	SF0171	S434	8/9/2000		15 - 30	1,600 *U*	310 *U*	1,600 *U*	60 *U*	60 *U*	310 *U*	60 *U*	60 *U*
ONON2A	SF0172	S435	8/9/2000		0 - 5	6,000,000 *U*	1,200,000 *U*	6,000,000 *U*	230,000 *U*	230,000 *U*	1,200,000 *U*	230,000 *U*	230,000 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Acenaphthene (µg/kg)	Acenaph-thylene (µg/kg)	Anthracene (µg/kg)	Benz(a)anthracene (µg/kg)	Benzo(a)pyrene (µg/kg)	Benzo(b)fluoranthene (µg/kg)	Benzo(g,h,i)perylene (µg/kg)	Benzo(k)fluoranthene (µg/kg)	Benzyl Alcohol (µg/kg)
ONON2A	SF0125	S339	8/3/2000		15 - 30	1,200	1,100	4,000	4,300	2,900	2,700	1,700	2,600	170 *U*
ONON2A	SF0123	S340	8/15/2000	D1	0 - 2	300 *J*	100 *J*	120 *J*	74 *J*	110 *J*	100 *J*	81 *J*	100 *J*	350 *UJ*
ONON2A	SF0123R	S340	8/15/2000	D2	0 - 2	660 *UJ*	660 *UJ*	660 *UJ*	660 *UJ*	660 *UJ*	660 *UJ*	660 *UJ*	660 *UJ*	3,400 *UJ*
ONON2A	SF0126	S340	8/3/2000		0 - 15	410	390	830	950	620	630	370	560	170 *U*
ONON2A	SF0127	S340	8/3/2000		15 - 30	33 *U*	650	300	140	79	76	33 *U*	33 *U*	170 *U*
ONON2A	SF0128	S341	8/4/2000		0 - 15	170	240	520	510	340	330	220	320	310 *U*
ONON2A	SF0129	S341	8/4/2000		15 - 30	86 *UJ*	86 *UJ*	120 *J*	130 *J*	86 *UJ*	90 *J*	86 *UJ*	86 *UJ*	440 *UJ*
ONON2A	SF0132	S343	8/4/2000		0 - 15	1,100 *U*	1,100 *U*	2,200	1,100 *U*	1,100 *U*	1,100 *U*	1,100 *U*	1,100 *U*	5,700 *U*
ONON2A	SF0133	S343	8/4/2000		15 - 30	270	790	520	350	240	230	160	230	330 *U*
ONON2A	SF0136	S345	8/4/2000		0 - 15	790 *U*	870	790 *U*	790 *U*	790 *U*	790 *U*	790 *U*	790 *U*	4,100 *UJ*
ONON2A	SF0137	S345	8/4/2000		15 - 30	110 *U*	1,300	1,100	110 *U*	110 *U*	110 *U*	110 *U*	110 *U*	540 *UJ*
ONON2A	SF0138	S346	8/4/2000		0 - 15	270 *U*	270 *U*	380 *J*	270 *U*	270 *U*	270 *U*	270 *U*	270 *U*	1,400 *U*
ONON2A	SF0139	S346	8/4/2000		15 - 30	360 *U*	360 *U*	870	360 *U*	360 *U*	360 *U*	360 *U*	360 *U*	1,800 *UJ*
ONON2A	SF0140	S347	8/4/2000		0 - 15	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*	2,800 *UJ*
ONON2A	SF0141	S347	8/4/2000		15 - 30	460 *U*	460 *U*	460 *U*	460 *U*	460 *U*	460 *U*	460 *U*	460 *U*	2,400 *UJ*
ONON2A	SF0142	S348	8/5/2000		0 - 15	980 *U*	980 *U*	980 *U*	980 *U*	980 *U*	980 *U*	980 *U*	980 *U*	5,100 *U*
ONON2A	SF0143	S348	8/5/2000		15 - 30	2,500 *U*	2,500 *U*	2,500 *U*	2,500 *U*	2,500 *U*	2,500 *U*	2,500 *U*	2,500 *U*	13,000 *U*
ONON2A	SF0144	S349	8/5/2000		0 - 15	340 *U*	480	850	430	340 *U*	340 *U*	340 *U*	340 *U*	1,700 *U*
ONON2A	SF0145	S349	8/5/2000		15 - 30	2,300 *U*	2,300 *U*	2,300	2,300 *U*	2,300 *U*	2,300 *U*	2,300 *U*	2,300 *U*	12,000 *U*
ONON2A	SF0146	S350	8/5/2000		0 - 15	230	500	710	350	200	200	88 *U*	220	450 *U*
ONON2A	SF0147	S350	8/5/2000		15 - 30	78 *U*	500	760	290	94	120	78 *U*	110	400 *U*
ONON2A	SF0149	S351	8/5/2000		0 - 15	2,600	750	5,700	4,800	4,400	3,600	2,600	4,500	920 *U*
ONON2A	SF0150	S351	8/5/2000		15 - 30	1,600	370	2,000	1,800	1,600	1,400	1,100	1,200	500 *U*
ONON2A	SF0173	S351	8/15/2000		0 - 2	72 *UJ*	72 *UJ*	72 *UJ*	72 *UJ*	72 *UJ*	72 *UJ*	72 *UJ*	72 *UJ*	370 *UJ*
ONON2A	SF0151	S352	8/10/2000		0 - 15	12,000 *J*	2,200 *J*	16,000 *J*	9,600 *J*	8,100 *J*	6,700 *J*	4,500 *J*	6,800 *J*	3,100 *UJ*
ONON2A	SF0152	S352	8/10/2000		15 - 30	7,700	3,500	14,000	7,600	6,400	5,300	4,200	5,600	6,000 *U*
ONON2A	SF0113	S353	7/27/2000		0 - 15	1,200 *J*	1,100	4,000	9,000	9,400	6,900	6,500	7,100	2,800 *U*
ONON2A	SF0114	S353	7/27/2000		15 - 30	620 *J*	1,000	2,900	6,400	6,800	4,300	4,800	5,500	940 *UJ*
ONON2A	SF0024	S366	7/27/2000		0 - 15	63 *U*	63 *U*	63 *U*	63 *U*	63 *U*	63 *U*	63 *U*	63 *U*	320 *U*
ONON2A	SF0025	S366	8/15/2000		15 - 30	61 *U*	61 *U*	61 *U*	61 *U*	61 *U*	61 *U*	61 *U*	61 *U*	310 *U*
ONON2A	SF0026	S367	8/15/2000		0 - 2	58 *U*	58 *U*	75	260	270	190	160	210	300 *U*
ONON2A	SF0027	S367	8/15/2000		2 - 15	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	300 *U*
ONON2A	SF0028	S367	8/15/2000		15 - 30	320	61 *U*	1,300	1,200	1,400	1,300	970	1,200	320 *U*
ONON2A	SF0170	S434	8/9/2000		0 - 15	55 *U*	55 *U*	55 *U*	130 *J*	110 *J*	140 *J*	110 *J*	130 *J*	280 *U*
ONON2A	SF0171	S434	8/9/2000		15 - 30	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*	310 *U*
ONON2A	SF0172	S435	8/9/2000		0 - 5	230,000 *U*	230,000 *U*	230,000 *U*	230,000 *U*	230,000 *U*	230,000 *U*	230,000 *U*	230,000 *U*	1,200,000 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Bis(2-chloro ethoxy) methane (µg/kg)	Bis(2-chloroethyl) ether (µg/kg)	Bis(2-ethylhexyl) phthalate (µg/kg)	Butylbenzyl phthalate (µg/kg)	Carbazole (µg/kg)	Chrysene (µg/kg)	Dibenz(a,h) anthracene (µg/kg)	Dibenzofuran (µg/kg)	Diethyl phthalate (µg/kg)
ONON2A	SF0125	S339	8/3/2000		15 - 30	33 *U*	33 *U*	33 *U*	33 *U*	33 *U*	4,500	730	1,300	33 *U*
ONON2A	SF0123	S340	8/15/2000	D1	0 - 2	67 *UJ*	67 *UJ*	180 *UJ*	67 *UJ*	210 *J*	100 *J*	67 *UJ*	340 *J*	67 *UJ*
ONON2A	SF0123R	S340	8/15/2000	D2	0 - 2	660 *UJ*	660 *UJ*	660 *UJ*	660 *UJ*	660 *UJ*	660 *UJ*	660 *UJ*	660 *UJ*	660 *UJ*
ONON2A	SF0126	S340	8/3/2000		0 - 15	33 *U*	33 *U*	33 *U*	33 *U*	33 *U*	880	33 *U*	500	33 *U*
ONON2A	SF0127	S340	8/3/2000		15 - 30	33 *U*	33 *U*	33 *U*	33 *U*	33 *U*	140	33 *U*	350	33 *U*
ONON2A	SF0128	S341	8/4/2000		0 - 15	61 *U*	61 *U*	80	61 *U*	61 *U*	540	90	240	61 *U*
ONON2A	SF0129	S341	8/4/2000		15 - 30	86 *UJ*	86 *UJ*	86 *UJ*	86 *UJ*	86 *UJ*	130 *J*	86 *UJ*	86 *UJ*	86 *UJ*
ONON2A	SF0132	S343	8/4/2000		0 - 15	1,100 *U*	1,100 *U*	1,100 *U*	1,100 *U*	1,100 *U*	1,100 *U*	1,100 *U*	1,100 *U*	1,100 *U*
ONON2A	SF0133	S343	8/4/2000		15 - 30	64 *U*	64 *U*	64 *U*	64 *U*	110	360	64 *U*	590	64 *U*
ONON2A	SF0136	S345	8/4/2000		0 - 15	790 *U*	790 *U*	790 *U*	790 *U*	790 *U*	790 *U*	790 *U*	790 *U*	790 *U*
ONON2A	SF0137	S345	8/4/2000		15 - 30	110 *U*	110 *U*	110 *U*	110 *U*	120	120	110 *U*	530	110 *U*
ONON2A	SF0138	S346	8/4/2000		0 - 15	270 *U*	270 *U*	270 *U*	270 *U*	270 *U*	270 *U*	270 *U*	270 *U*	270 *U*
ONON2A	SF0139	S346	8/4/2000		15 - 30	360 *U*	360 *U*	360 *U*	360 *U*	360 *U*	360 *U*	360 *U*	360 *U*	360 *U*
ONON2A	SF0140	S347	8/4/2000		0 - 15	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*
ONON2A	SF0141	S347	8/4/2000		15 - 30	460 *U*	460 *U*	460 *U*	460 *U*	460 *U*	460 *U*	460 *U*	460 *U*	460 *U*
ONON2A	SF0142	S348	8/5/2000		0 - 15	980 *U*	980 *U*	980 *U*	980 *UJ*	980 *U*	980 *U*	980 *U*	980 *U*	980 *U*
ONON2A	SF0143	S348	8/5/2000		15 - 30	2,500 *U*	2,500 *U*	2,500 *UJ*	2,500 *UJ*	2,500 *U*	2,500 *U*	2,500 *U*	2,500 *U*	2,500 *U*
ONON2A	SF0144	S349	8/5/2000		0 - 15	340 *U*	340 *U*	340 *U*	340 *UJ*	340 *U*	530	340 *U*	340 *U*	340 *U*
ONON2A	SF0145	S349	8/5/2000		15 - 30	2,300 *U*	2,300 *U*	2,300 *U*	2,300 *UJ*	2,300 *U*	2,300 *U*	2,300 *U*	2,300 *U*	2,300 *U*
ONON2A	SF0146	S350	8/5/2000		0 - 15	88 *U*	88 *U*	88 *U*	88 *U*	88 *U*	410	88 *U*	710	88 *U*
ONON2A	SF0147	S350	8/5/2000		15 - 30	78 *U*	78 *U*	78 *U*	78 *U*	78 *U*	240	78 *U*	520	78 *U*
ONON2A	SF0149	S351	8/5/2000		0 - 15	180 *U*	180 *U*	1,700 *J*	180 *UJ*	840	5,200	790	1,700	180 *U*
ONON2A	SF0150	S351	8/5/2000		15 - 30	98 *U*	98 *U*	890 *J*	98 *UJ*	390	1,900	380	1,200	98 *U*
ONON2A	SF0173	S351	8/15/2000		0 - 2	72 *UJ*	72 *UJ*	72 *UJ*	72 *UJ*	72 *UJ*	72 *UJ*	72 *UJ*	72 *UJ*	72 *UJ*
ONON2A	SF0151	S352	8/10/2000		0 - 15	600 *UJ*	600 *UJ*	1,800 *J*	600 *UJ*	2,200 *J*	10,000 *J*	1,400 *J*	7,800 *J*	600 *UJ*
ONON2A	SF0152	S352	8/10/2000		15 - 30	1,200 *U*	1,200 *U*	1,300	1,200 *U*	2,000	9,400	1,400	6,200	1,200 *U*
ONON2A	SF0113	S353	7/27/2000		0 - 15	540 *U*	540 *U*	1,200 *J*	540 *U*	910	9,000	2,400 *J*	690	540 *U*
ONON2A	SF0114	S353	7/27/2000		15 - 30	180 *U*	180 *U*	690 *J*	180 *U*	270	6,400	1,700 *J*	200	180 *U*
ONON2A	SF0024	S366	7/27/2000		0 - 15	63 *U*	63 *U*	63 *U*	63 *U*	63 *U*	63 *U*	63 *U*	63 *U*	63 *U*
ONON2A	SF0025	S366	8/15/2000		15 - 30	61 *U*	61 *U*	61 *U*	61 *U*	61 *U*	61 *U*	61 *U*	61 *U*	61 *U*
ONON2A	SF0026	S367	8/15/2000		0 - 2	58 *U*	58 *U*	120 *U*	58 *U*	58 *U*	270	60	58 *U*	58 *U*
ONON2A	SF0027	S367	8/15/2000		2 - 15	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*
ONON2A	SF0028	S367	8/15/2000		15 - 30	61 *U*	61 *U*	490 *U*	61 *U*	190	1,600	380	61 *U*	61 *U*
ONON2A	SF0170	S434	8/9/2000		0 - 15	55 *U*	55 *U*	55 *U*	55 *U*	55 *U*	150 *J*	55 *U*	55 *U*	55 *U*
ONON2A	SF0171	S434	8/9/2000		15 - 30	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*
ONON2A	SF0172	S435	8/9/2000		0 - 5	230,000 *U*	230,000 *U*	230,000 *U*	230,000 *U*	230,000 *U*	230,000 *U*	230,000 *U*	230,000 *U*	230,000 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Dimethyl phthalate (µg/kg)	Di-n-butyl phthalate (µg/kg)	Di-n-octyl phthalate (µg/kg)	Fluoranthene (µg/kg)	Fluorene (µg/kg)	Hexachlor obenzene (GC/ECD) (µg/kg)	Hexachlorob enzene (GC/MS) (µg/kg)	Final HCB Value (µg/kg)	Hexachloro-butadiene (µg/kg)
ONON2A	SF0125	S339	8/3/2000		15 - 30	33 *U*	33 *U*	33 *U*	9,400	2,600	6.4 *J*	33 *U*	6.4 *J*	33 *U*
ONON2A	SF0123	S340	8/15/2000	D1	0 - 2	67 *UJ*	67 *UJ*	67 *UJ*	260 *J*	390 *J*	18.8 *J*	67 *UJ*	18.8 *J*	67 *UJ*
ONON2A	SF0123R	S340	8/15/2000	D2	0 - 2	660 *UJ*	660 *UJ*	660 *UJ*	660 *UJ*	660 *UJ*	8.23 *J*	660 *UJ*	8.23 *J*	660 *UJ*
ONON2A	SF0126	S340	8/3/2000		0 - 15	33 *U*	33 *U*	33 *U*	3,100	900	143	33 *U*	143	33 *U*
ONON2A	SF0127	S340	8/3/2000		15 - 30	33 *U*	33 *U*	33 *U*	490	410	48.5 *J*	33 *U*	48.5 *J*	33 *U*
ONON2A	SF0128	S341	8/4/2000		0 - 15	61 *U*	61 *U*	61 *U*	1,500	420	24 *J*	61 *U*	24 *J*	61 *U*
ONON2A	SF0129	S341	8/4/2000		15 - 30	86 *UJ*	86 *UJ*	86 *UJ*	290 *J*	86 *UJ*	26.9 *J*	86 *UJ*	26.9 *J*	86 *UJ*
ONON2A	SF0132	S343	8/4/2000		0 - 15	1,100 *U*	1,100 *U*	1,100 *U*	1,100 *U*	1,200	35.3 *J*	1,100 *U*	35.3 *J*	1,100 *U*
ONON2A	SF0133	S343	8/4/2000		15 - 30	64 *U*	79	64 *U*	1,300	610	151 *J*	64 *U*	151 *J*	64 *U*
ONON2A	SF0136	S345	8/4/2000		0 - 15	790 *U*	790 *U*	790 *U*	790 *U*	790 *U*	*R*	790 *U*	790 *U*	790 *U*
ONON2A	SF0137	S345	8/4/2000		15 - 30	110 *U*	110 *U*	110 *U*	570	460 *J*	17.6	110 *U*	17.6	110 *U*
ONON2A	SF0138	S346	8/4/2000		0 - 15	270 *U*	270 *U*	270 *U*	620	380 *J*	52.9 *J*	270 *U*	52.9 *J*	270 *U*
ONON2A	SF0139	S346	8/4/2000		15 - 30	360 *U*	360 *U*	360 *U*	940	500 *J*	64.6	360 *U*	64.6	360 *U*
ONON2A	SF0140	S347	8/4/2000		0 - 15	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*	37.4	540 *U*	37.4	540 *U*
ONON2A	SF0141	S347	8/4/2000		15 - 30	460 *U*	460 *U*	460 *U*	460 *U*	460 *U*	34.9	460 *U*	34.9	460 *U*
ONON2A	SF0142	S348	8/5/2000		0 - 15	980 *U*	980 *U*	980 *U*	980 *U*	980 *U*		980 *U*	980 *U*	980 *U*
ONON2A	SF0143	S348	8/5/2000		15 - 30	2,500 *U*	2,500 *U*	2,500 *UJ*	3,300 *J*	2,500 *U*	5.67 *J*	2,500 *U*	5.67 *J*	2,500 *U*
ONON2A	SF0144	S349	8/5/2000		0 - 15	340 *U*	340 *U*	340 *U*	1400	550	92.5	340 *U*	92.5	340 *U*
ONON2A	SF0145	S349	8/5/2000		15 - 30	2,300 *U*	2,300 *U*	2,300 *U*	4,900	2,300 *U*	*R*	2,300 *U*	2,300 *U*	2,300 *U*
ONON2A	SF0146	S350	8/5/2000		0 - 15	88 *U*	88 *U*	88 *U*	1400	750	211 *J*	88 *U*	211 *J*	88 *U*
ONON2A	SF0147	S350	8/5/2000		15 - 30	78 *U*	78 *U*	78 *U*	970	470	60.4	78 *U*	60.4	78 *U*
ONON2A	SF0149	S351	8/5/2000		0 - 15	180 *U*	180 *U*	180 *UJ*	13,000	1,800	149	180 *U*	149	180 *U*
ONON2A	SF0150	S351	8/5/2000		15 - 30	98 *U*	98 *U*	98 *U*	4,900	1,700	88.8	98 *U*	88.8	98 *U*
ONON2A	SF0173	S351	8/15/2000		0 - 2	72 *UJ*	72 *UJ*	72 *UJ*	72 *UJ*	72 *UJ*	124 J	72 UJ	98 [1]	72 *UJ*
ONON2A	SF0151	S352	8/10/2000		0 - 15	600 *UJ*	600 *UJ*	600 *UJ*	32,000 *J*	12,000 *J*	194 *J*	600 *UJ*	194 *J*	600 *UJ*
ONON2A	SF0152	S352	8/10/2000		15 - 30	1,200 *U*	1,200 *U*	1,200 *U*	24,000	9,500	185 *J*	1,200 *U*	185 *J*	1,200 *U*
ONON2A	SF0113	S353	7/27/2000		0 - 15	540 *U*	540 *U*	540 *U*	17,000	1,200	117	540 *U*	117	540 *U*
ONON2A	SF0114	S353	7/27/2000		15 - 30	180 *U*	180 *U*	180 *U*	11,000	450	11.1	180 *U*	11.1	180 *U*
ONON2A	SF0024	S366	7/27/2000		0 - 15	63 *U*	69	63 *U*	63 *U*	63 *U*	1.1 *UJ*	63 *U*	1.1 *UJ*	63 *U*
ONON2A	SF0025	S366	8/15/2000		15 - 30	61 *U*	67 *U*	61 *U*	61 *U*	61 *U*	1.04 *UJ*	61 *U*	1.04 *UJ*	61 *U*
ONON2A	SF0026	S367	8/15/2000		0 - 2	58 *U*	58 *U*	58 *U*	350	58 *U*	1.02 *U*	58 *U*	1.02 *U*	58 *U*
ONON2A	SF0027	S367	8/15/2000		2 - 15	58 *U*	58 *U*	58 *U*	80	58 *U*	1.08 *UJ*	58 *U*	1.08 *UJ*	58 *U*
ONON2A	SF0028	S367	8/15/2000		15 - 30	61 *U*	70 *U*	61 *U*	3,300	270	1.09 *UJ*	61 *U*	1.09 *UJ*	61 *U*
ONON2A	SF0170	S434	8/9/2000		0 - 15	55 *U*	55 *U*	55 *U*	170 *J*	55 *U*	1 *U*	55 *U*	1 *U*	55 *U*
ONON2A	SF0171	S434	8/9/2000		15 - 30	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*	1.08 *U*	60 *U*	1.08 *U*	60 *U*
ONON2A	SF0172	S435	8/9/2000		0 - 5	230,000 *U*	230,000 *U*	230,000 *U*	230,000 *U*	230,000 *U*	1.08 *U*	230,000 *U*	1.08 *U*	230,000 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Hexachloro-cyclopentadiene (µg/kg)	Hexachloro-ethane (µg/kg)	Indeno(1,2,3-cd) pyrene (µg/kg)	Isophorone (µg/kg)	Naphthalene (µg/kg)	Nitrobenzene (µg/kg)	N-Nitroso dimethyl-amine (µg/kg)	N-nitroso-di-n-propylamine (µg/kg)
ONON2A	SF0125	S339	8/3/2000		15 - 30	170 *U*	33 *U*	1,700	33 *U*	27,000	33 *U*	170 *U*	33 *U*
ONON2A	SF0123	S340	8/15/2000	D1	0 - 2	350 *UJ*	67 *UJ*	74 *J*	67 *UJ*	2,300 *J*	67 *UJ*	350 *UJ*	67 *UJ*
ONON2A	SF0123R	S340	8/15/2000	D2	0 - 2	3,400 *UJ*	660 *UJ*	660 *UJ*	660 *UJ*	22,000 *J*	660 *UJ*	3,400 *UJ*	660 *UJ*
ONON2A	SF0126	S340	8/3/2000		0 - 15	170 *UJ*	33 *U*	360	33 *U*	18,000	33 *U*	170 *U*	33 *U*
ONON2A	SF0127	S340	8/3/2000		15 - 30	170 *U*	33 *U*	33 *U*	33 *U*	65,000 *J*	33 *U*	170 *U*	33 *U*
ONON2A	SF0128	S341	8/4/2000		0 - 15	310 *UJ*	61 *U*	210	61 *U*	16,000	61 *U*	310 *U*	61 *U*
ONON2A	SF0129	S341	8/4/2000		15 - 30	440 *UJ*	86 *UJ*	86 *UJ*	86 *UJ*	5,700 *J*	86 *UJ*	440 *UJ*	86 *UJ*
ONON2A	SF0132	S343	8/4/2000		0 - 15	5,700 *UJ*	1,100 *U*	1,100 *U*	1,100 *U*	72,000	1,100 *U*	5,700 *U*	1,100 *U*
ONON2A	SF0133	S343	8/4/2000		15 - 30	330 *UJ*	64 *U*	140	64 *U*	120,000	64 *U*	330 *U*	64 *U*
ONON2A	SF0136	S345	8/4/2000		0 - 15	4,100 *UJ*	790 *U*	790 *U*	790 *U*	56,000	790 *U*	4,100 *U*	790 *U*
ONON2A	SF0137	S345	8/4/2000		15 - 30	540 *UJ*	110 *U*	110 *U*	110 *U*	91,000	110 *U*	540 *U*	110 *U*
ONON2A	SF0138	S346	8/4/2000		0 - 15	1,400 *UJ*	270 *U*	270 *U*	270 *U*	17,000	270 *U*	1,400 *U*	270 *U*
ONON2A	SF0139	S346	8/4/2000		15 - 30	1,800 *UJ*	360 *U*	360 *U*	360 *U*	20,000	360 *U*	1,800 *U*	360 *U*
ONON2A	SF0140	S347	8/4/2000		0 - 15	2,800 *UJ*	540 *U*	540 *U*	540 *U*	11,000	540 *U*	2,800 *U*	540 *U*
ONON2A	SF0141	S347	8/4/2000		15 - 30	2,400 *UJ*	460 *U*	460 *U*	460 *U*	27,000	460 *U*	2,400 *U*	460 *U*
ONON2A	SF0142	S348	8/5/2000		0 - 15	5,100 *U*	980 *U*	980 *U*	980 *U*	49,000	980 *U*	5,100 *U*	980 *U*
ONON2A	SF0143	S348	8/5/2000		15 - 30	13,000 *U*	2,500 *U*	2,500 *U*	2,500 *U*	130,000 *J*	2,500 *U*	13,000 *U*	2,500 *U*
ONON2A	SF0144	S349	8/5/2000		0 - 15	1,700 *U*	340 *U*	340 *U*	340 *U*	23,000	340 *U*	1,700 *U*	340 *U*
ONON2A	SF0145	S349	8/5/2000		15 - 30	12,000 *U*	2,300 *U*	2,300 *U*	2,300 *U*	110,000	2,300 *U*	12,000 *U*	2,300 *U*
ONON2A	SF0146	S350	8/5/2000		0 - 15	450 *U*	88 *U*	88 *U*	88 *U*	34,000	88 *U*	450 *U*	88 *U*
ONON2A	SF0147	S350	8/5/2000		15 - 30	400 *U*	78 *U*	78 *U*	78 *U*	69,000	78 *U*	400 *U*	78 *U*
ONON2A	SF0149	S351	8/5/2000		0 - 15	920 *U*	180 *U*	2,300	180 *U*	4,100	180 *U*	920 *U*	180 *U*
ONON2A	SF0150	S351	8/5/2000		15 - 30	500 *U*	98 *U*	950	98 *U*	1,100	98 *U*	500 *U*	98 *U*
ONON2A	SF0173	S351	8/15/2000		0 - 2	370 *UJ*	72 *UJ*	72 *UJ*	72 *UJ*	72 *UJ*	72 *UJ*	370 *UJ*	72 *UJ*
ONON2A	SF0151	S352	8/10/2000		0 - 15	3,100 *UJ*	600 *UJ*	4,200 *J*	600 *UJ*	25,000 *J*	600 *UJ*	3,100 *UJ*	600 *UJ*
ONON2A	SF0152	S352	8/10/2000		15 - 30	*R*	1,200 *U*	3,700	1,200 *U*	58,000	1,200 *U*	6,000 *U*	1,200 *U*
ONON2A	SF0113	S353	7/27/2000		0 - 15	2,800 *U*	540 *U*	5,400	540 *U*	1,400	540 *U*	2,800 *U*	540 *U*
ONON2A	SF0114	S353	7/27/2000		15 - 30	940 *U*	180 *U*	3,700	180 *U*	540	180 *U*	940 *U*	180 *U*
ONON2A	SF0024	S366	7/27/2000		0 - 15	320 *UJ*	63 *U*	63 *U*	63 *U*	63 *U*	63 *U*	320 *U*	63 *U*
ONON2A	SF0025	S366	8/15/2000		15 - 30	310 *UJ*	61 *U*	61 *U*	61 *U*	61 *U*	61 *U*	310 *U*	61 *U*
ONON2A	SF0026	S367	8/15/2000		0 - 2	300 *U*	58 *U*	140	58 *U*	58 *U*	58 *U*	300 *U*	58 *U*
ONON2A	SF0027	S367	8/15/2000		2 - 15	300 *UJ*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*	300 *U*	58 *U*
ONON2A	SF0028	S367	8/15/2000		15 - 30	320 *UJ*	61 *U*	900	61 *U*	1,200	61 *U*	320 *U*	61 *U*
ONON2A	SF0170	S434	8/9/2000		0 - 15	280 *UJ*	55 *U*	97 *J*	55 *U*	55 *U*	55 *U*	280 *U*	55 *U*
ONON2A	SF0171	S434	8/9/2000		15 - 30	310 *UJ*	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*	310 *U*	60 *U*
ONON2A	SF0172	S435	8/9/2000		0 - 5	1,200,000 *UJ*	230,000 *U*	230,000 *U*	230,000 *U*	26,000,000 *J*	230,000 *U*	1,200,000 *U*	230,000 *U*

Table A-3C. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	N-Nitroso-diphenyl-amine (µg/kg)	Pentachloro-benzene (µg/kg)	Pentachloro-phenol (µg/kg)	Phenanthrene (µg/kg)	Phenol (µg/kg)	Pyrene (µg/kg)
ONON2A	SF0125	S339	8/3/2000		15 - 30	33 *U*		850 *U*	11,000	33 *U*	8,100
ONON2A	SF0123	S340	8/15/2000	D1	0 - 2	67 *UJ*		1,700 *UJ*	640 *J*	230 *J*	190 *J*
ONON2A	SF0123R	S340	8/15/2000	D2	0 - 2	660 *UJ*		17,000 *UJ*	660 *UJ*	660 *UJ*	660 *UJ*
ONON2A	SF0126	S340	8/3/2000		0 - 15	33 *U*		850 *U*	4,500	33 *U*	2,200
ONON2A	SF0127	S340	8/3/2000		15 - 30	33 *U*		850 *U*	990	290	370
ONON2A	SF0128	S341	8/4/2000		0 - 15	61 *U*		1,600 *U*	2,000	440	1,100
ONON2A	SF0129	S341	8/4/2000		15 - 30	86 *UJ*		2,200 *UJ*	410 *J*	860 *J*	250 *J*
ONON2A	SF0132	S343	8/4/2000		0 - 15	1,100 *U*		29,000 *U*	2,300	1,100 *U*	1,100 *U*
ONON2A	SF0133	S343	8/4/2000		15 - 30	64 *U*		1,700 *U*	1,600	2,000	920
ONON2A	SF0136	S345	8/4/2000		0 - 15	790 *U*		20,000 *UJ*	790 *U*	940 *J*	790 *U*
ONON2A	SF0137	S345	8/4/2000		15 - 30	110 *U*		2,700 *UJ*	1,200	3,500 *J*	110 *U*
ONON2A	SF0138	S346	8/4/2000		0 - 15	270 *U*		6,900 *U*	770	270 *U*	620
ONON2A	SF0139	S346	8/4/2000		15 - 30	360 *U*		9,200 *UJ*	1,200	400 *J*	800
ONON2A	SF0140	S347	8/4/2000		0 - 15	540 *U*		14,000 *UJ*	540 *U*	540 *UJ*	540 *U*
ONON2A	SF0141	S347	8/4/2000		15 - 30	460 *U*		12,000 *UJ*	550	580 *J*	460 *U*
ONON2A	SF0142	S348	8/5/2000		0 - 15	980 *U*		25,000 *U*	980 *U*	980 *U*	980 *U*
ONON2A	SF0143	S348	8/5/2000		15 - 30	2,500 *U*		64,000 *U*	3,300 *J*	2,500 *U*	2,700 *J*
ONON2A	SF0144	S349	8/5/2000		0 - 15	340 *U*		8,700 *U*	2,400	2,600	1,500
ONON2A	SF0145	S349	8/5/2000		15 - 30	2,300 *U*		59,000 *U*	7,200	3,100	5,300
ONON2A	SF0146	S350	8/5/2000		0 - 15	88 *U*		2,300 *U*	2,200	190	940
ONON2A	SF0147	S350	8/5/2000		15 - 30	78 *U*		2,000 *U*	1,700	210	470
ONON2A	SF0149	S351	8/5/2000		0 - 15	180 *U*		4,600 *U*	6,700	250	9,700
ONON2A	SF0150	S351	8/5/2000		15 - 30	98 *U*		2,500 *U*	5,400	98 *U*	3,500
ONON2A	SF0173	S351	8/15/2000		0 - 2	72 *UJ*		1,800 *UJ*	72 *UJ*	72 *UJ*	72 *UJ*
ONON2A	SF0151	S352	8/10/2000		0 - 15	600 *UJ*		15,000 *UJ*	38,000 *J*	600 *UJ*	26,000 *J*
ONON2A	SF0152	S352	8/10/2000		15 - 30	1,200 *U*		30,000 *U*	30,000	1,200 *U*	19,000
ONON2A	SF0113	S353	7/27/2000		0 - 15	540 *U*		14,000 *U*	10,000	540 *U*	13,000
ONON2A	SF0114	S353	7/27/2000		15 - 30	180 *U*		4,700 *U*	5,200	180 *U*	9,300
ONON2A	SF0024	S366	7/27/2000		0 - 15	63 *U*		1,600 *U*	63 *U*	63 *U*	63 *U*
ONON2A	SF0025	S366	8/15/2000		15 - 30	61 *U*		1,600 *U*	61 *U*	61 *U*	61 *U*
ONON2A	SF0026	S367	8/15/2000		0 - 2	58 *U*		1,500 *U*	230	58 *U*	360
ONON2A	SF0027	S367	8/15/2000		2 - 15	58 *U*		1,500 *U*	58 *U*	58 *U*	84
ONON2A	SF0028	S367	8/15/2000		15 - 30	61 *U*		1,600 *U*	1,500	61 *U*	2,500
ONON2A	SF0170	S434	8/9/2000		0 - 15	55 *U*		1,400 *U*	72 *J*	55 *U*	230 *J*
ONON2A	SF0171	S434	8/9/2000		15 - 30	60 *U*		1,600 *U*	60 *U*	60 *U*	60 *U*
ONON2A	SF0172	S435	8/9/2000		0 - 5	230,000 *U*		6,000,000 *U*	630,000 *J*	230,000 *U*	230,000 *U*

Table A-3D. Southern Basin Nearshore Sediments – Pesticide Data

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	4,4'-DDD (µg/kg)	4,4'-DDE (µg/kg)	4,4'-DDT (µg/kg)	Aldrin (µg/kg)	Endosulfan I (µg/kg)	Endosulfan II (µg/kg)	Endosulfan sulfate (µg/kg)
O-SEDCHM	S00001	S10	5/7/1992		0 - 30	5.8 *U*	5.8 *U*	5.8 *U*	3 *U*	3 *U*	5.8 *U*	5.8 *U*
O-SEDCHM	S00004	S6	5/7/1992		0 - 30	4.3 *U*	4.3 *U*	4.3 *U*	2.2 *U*	2.2 *U*	4.3 *U*	4.3 *U*
O-SEDCHM	S00007	S36	5/8/1992		0 - 30	5.7 *U*	5.7 *U*	5.7 *U*	2.9 *U*	2.9 *U*	5.7 *U*	5.7 *U*
O-SEDCHM	S00014	S1	5/8/1992		0 - 30	12 *U*	12 *U*	12 *U*	6.1 *U*	6.1 *U*	12 *U*	12 *U*
O-SEDCHM	S00017	S20	5/8/1992		0 - 30	6.7 *U*	7.8 *J*	6.7 *U*	3.5 *U*	3.5 *U*	6.7 *U*	6.7 *U*
O-SEDCHM	S00051	S46	5/10/1992		0 - 30	6 *U*	6 *U*	6 *U*	3.1 *U*	3.1 *U*	6 *U*	6 *U*
O-SEDCHM	S00062	S16	5/11/1992	1	0 - 30	7 *U*	14 *J*	7 *U*	3.6 *U*	3.6 *U*	7 *U*	7 *U*
O-SEDCHM	S00065	S16	5/11/1992	2	0 - 30	6.7 *UJ*	12 *J*	6.7 *UJ*	3.5 *UJ*	3.5 *UJ*	6.7 *UJ*	18 *J*
O-SEDCHM	S00066	S16	5/11/1992	3	0 - 30	6.3 *U*	13 *J*	6.3 *U*	3.3 *U*	3.3 *U*	6.3 *U*	18 *J*
O-SEDCHM	S00532	S36	7/27/1992		0 - 2	29 *U*	29 *U*	29 *U*	15 *U*	15 *U*	29 *U*	29 *U*
O-SEDCHM	S00556	S1	8/2/1992	1	0 - 2	14 *J*	8.7 *UJ*	8.7 *UJ*	4.5 *UJ*	4.5 *UJ*	8.7 *UJ*	8.7 *UJ*
O-SEDCHM	S00557	S1	8/2/1992	2	0 - 2	20 *J*	9.4 *U*	9.4 *U*	4.8 *U*	4.8 *U*	9.4 *U*	9.4 *U*
O-SEDCHM	S00558	S1	8/2/1992	3	0 - 2	30 *U*	30 *U*	30 *U*	15 *U*	15 *U*	30 *U*	30 *U*
O-SEDCHM	S00560	S20	8/2/1992		0 - 2	47 *J*	8.2 *U*	8.2 *U*	4.2 *U*	4.2 *U*	8.2 *U*	8.2 *U*
O-SEDCHM	S00566	S16	8/3/1992		0 - 2	5.5 *UJ*	5.5 *UJ*	5.5 *UJ*	2.8 *UJ*	2.8 *UJ*	5.5 *UJ*	5.5 *UJ*
O-SEDCHM	S00570	S46	8/4/1992		0 - 2	5 *U*	5 *U*	5 *U*	2.6 *U*	2.6 *U*	5 *U*	5 *U*
O-SEDCHM	S00572	S10	8/4/1992		0 - 2	7.4 *J*	5.4 *UJ*	5.4 *UJ*	2.8 *UJ*	2.8 *UJ*	5.4 *UJ*	5.4 *UJ*
O-SEDCHM	S00582	S6	8/6/1992		0 - 2	4.6 *U*	4.6 *U*	4.6 *U*	2.4 *U*	2.4 *U*	4.6 *U*	4.6 *U*
ONON2A	SF0024	S366	8/15/2000		0 - 15	*R*	1.1 *UJ*	1.1 *UJ*	1.1 *UJ*	1.1 *UJ*	*R*	*R*
ONON2A	SF0025	S366	8/15/2000		15 - 30	*R*	1.04 *UJ*	1.04 *UJ*	1.04 *UJ*	1.04 *UJ*	*R*	*R*
ONON2A	SF0026	S367	8/15/2000		0 - 2	1.02 *UJ*	1.02 *UJ*	1.02 *UJ*	1.02 *U*	1.02 *UJ*	*R*	*R*
ONON2A	SF0027	S367	8/15/2000		2 - 15	*R*	1.08 *UJ*	1.22 *J*	1.08 *UJ*	1.08 *UJ*	*R*	*R*
ONON2A	SF0028	S367	8/15/2000		15 - 30	*R*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*	*R*	*R*
ONON2A	SF0072	S314	8/10/2000		0 - 15	1.08 *UJ*	21.4 *J*	37.8 *J*	1.08 *U*	1.08 *UJ*	1.08 *UJ*	*R*
ONON2A	SF0073	S314	8/10/2000		15 - 30	1.09 *UJ*	34 *J*	29.4 *J*	1.09 *U*	1.09 *UJ*	1.09 *UJ*	*R*
ONON2A	SF0076	S316	8/10/2000		0 - 15	1.09 *UJ*	1.38 *J*	*R*	1.09 *U*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*
ONON2A	SF0077	S316	8/10/2000		15 - 30	1.08 *UJ*	1.08 *U*	1.08 *UJ*	1.08 *U*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*
ONON2A	SF0086	S321	8/4/2000		0 - 15	*R*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0087	S321	8/4/2000		15 - 30	*R*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0088	S322	8/10/2000		0 - 15	1.05 *UJ*	17.5 *J*	29 *J*	1.05 *U*	1.05 *U*	1.05 *UJ*	1.05 *UJ*
ONON2A	SF0089	S322	8/10/2000		15 - 30	1.09 *UJ*	15.8 *J*	*R*	1.09 *U*	1.09 *U*	1.09 *UJ*	1.09 *UJ*
ONON2A	SF0094	S325	7/14/2000		0 - 2	1.02 *UJ*	1.02 *UJ*	2.26 *J*	1.02 *U*	1.02 *U*	1.02 *UJ*	*R*
ONON2A	SF0095	S325	7/14/2000		2 - 15	1 *UJ*	1 *UJ*	*R*	1 *U*	1 *U*	1 *UJ*	*R*
ONON2A	SF0096	S325	7/14/2000		15 - 30	1 *UJ*	1 *UJ*	*R*	1 *U*	1 *U*	1 *UJ*	*R*

Table A-3D. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	alpha-BHC (µg/kg)	beta-BHC (µg/kg)	delta-BHC (µg/kg)	gamma-BHC (Lindane) (µg/kg)	Dieldrin (µg/kg)	Endrin aldehyde (µg/kg)	Endrin ketone (µg/kg)	Endrin (µg/kg)
O-SEDCHM	S00001	S10	5/7/1992		0 - 30	3 *U*	3 *UJ*	3 *U*	3 *U*	5.8 *U*	5.8 *U*	5.8 *U*	5.8 *U*
O-SEDCHM	S00004	S6	5/7/1992		0 - 30	2.2 *U*	2.2 *U*	2.2 *U*	2.2 *U*	4.3 *U*	4.3 *U*	4.3 *U*	4.3 *U*
O-SEDCHM	S00007	S36	5/8/1992		0 - 30	2.9 *U*	2.9 *U*	2.9 *U*	2.9 *U*	5.7 *U*	5.7 *U*	5.7 *U*	5.7 *U*
O-SEDCHM	S00014	S1	5/8/1992		0 - 30	6.1 *U*	110 *J*	6.1 *U*	6.1 *U*	12 *U*	12 *U*	12 *U*	12 *U*
O-SEDCHM	S00017	S20	5/8/1992		0 - 30	3.5 *U*	3.5 *U*	3.5 *U*	3.5 *U*	6.7 *U*	6.7 *U*	6.7 *U*	6.7 *U*
O-SEDCHM	S00051	S46	5/10/1992		0 - 30	3.1 *U*	3.1 *U*	3.1 *U*	3.1 *U*	6 *U*	6 *U*	6 *U*	6 *U*
O-SEDCHM	S00062	S16	5/11/1992	1	0 - 30	3.6 *U*	3.6 *U*	3.6 *U*	3.6 *U*	7 *U*	7 *U*	7 *U*	7 *U*
O-SEDCHM	S00065	S16	5/11/1992	2	0 - 30	3.5 *UJ*	3.5 *UJ*	3.5 *UJ*	3.5 *UJ*	6.7 *UJ*	6.7 *UJ*	6.7 *UJ*	6.7 *UJ*
O-SEDCHM	S00066	S16	5/11/1992	3	0 - 30	3.3 *U*	3.3 *U*	3.3 *U*	3.3 *U*	6.3 *U*	6.3 *U*	6.3 *U*	6.3 *U*
O-SEDCHM	S00532	S36	7/27/1992		0 - 2	15 *U*	15 *U*	15 *U*	15 *U*	29 *U*	29 *U*	29 *U*	29 *U*
O-SEDCHM	S00556	S1	8/2/1992	1	0 - 2	4.5 *UJ*	4.5 *UJ*	4.5 *UJ*	4.5 *UJ*	8.7 *UJ*	8.7 *UJ*	8.7 *UJ*	8.7 *UJ*
O-SEDCHM	S00557	S1	8/2/1992	2	0 - 2	4.8 *U*	4.8 *U*	4.8 *U*	4.8 *U*	9.4 *U*	9.4 *U*	9.4 *U*	9.4 *U*
O-SEDCHM	S00558	S1	8/2/1992	3	0 - 2	15 *U*	15 *U*	15 *U*	15 *U*	30 *U*	30 *U*	30 *U*	30 *U*
O-SEDCHM	S00560	S20	8/2/1992		0 - 2	4.2 *U*	4.2 *U*	4.2 *U*	4.2 *U*	8.2 *U*	8.2 *U*	8.2 *U*	8.2 *U*
O-SEDCHM	S00566	S16	8/3/1992		0 - 2	2.8 *UJ*	2.8 *UJ*	2.8 *UJ*	2.8 *UJ*	5.5 *UJ*	5.5 *UJ*	5.5 *UJ*	5.5 *UJ*
O-SEDCHM	S00570	S46	8/4/1992		0 - 2	2.6 *U*	2.6 *U*	2.6 *U*	2.6 *U*	5 *U*	5 *U*	5 *U*	5 *U*
O-SEDCHM	S00572	S10	8/4/1992		0 - 2	2.8 *UJ*	2.8 *UJ*	2.8 *UJ*	2.8 *UJ*	5.4 *UJ*	5.4 *UJ*	5.4 *UJ*	5.4 *UJ*
O-SEDCHM	S00582	S6	8/6/1992		0 - 2	2.4 *U*	2.4 *U*	2.4 *U*	2.4 *U*	4.6 *U*	4.6 *U*	4.6 *U*	4.6 *U*
ONON2A	SF0024	S366	8/15/2000		0 - 15	1.1 *UJ*	1.1 *UJ*	*R*	1.1 *UJ*	1.1 *UJ*	1.1 *UJ*	1.1 *UJ*	1.1 *UJ*
ONON2A	SF0025	S366	8/15/2000		15 - 30	1.04 *UJ*	1.04 *UJ*	*R*	1.04 *UJ*	1.04 *UJ*	1.04 *UJ*	1.04 *UJ*	1.04 *UJ*
ONON2A	SF0026	S367	8/15/2000		0 - 2	1.02 *UJ*	1.02 *U*	*R*	1.02 *UJ*	1.02 *U*	1.02 *UJ*	1.02 *UJ*	1.02 *UJ*
ONON2A	SF0027	S367	8/15/2000		2 - 15	1.08 *UJ*	1.08 *UJ*	*R*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*
ONON2A	SF0028	S367	8/15/2000		15 - 30	1.09 *UJ*	1.09 *UJ*	*R*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*
ONON2A	SF0072	S314	8/10/2000		0 - 15	7.55 *J*	1.08 *UJ*	*R*	1.08 *UJ*	1.08 *U*	1.08 *UJ*	1.08 *UJ*	1.08 *U*
ONON2A	SF0073	S314	8/10/2000		15 - 30	1.09 *UJ*	1.09 *UJ*	2.35 *J*	1.09 *UJ*	29.9 *J*	*R*	1.09 *UJ*	1.09 *U*
ONON2A	SF0076	S316	8/10/2000		0 - 15	1.09 *UJ*	1.52 *J*	*R*	1.09 *UJ*	1.09 *U*	1.09 *UJ*	*R*	1.09 *U*
ONON2A	SF0077	S316	8/10/2000		15 - 30	1.08 *UJ*	3.94 *J*	*R*	1.08 *UJ*	1.08 *U*	1.08 *UJ*	1.08 *UJ*	1.08 *U*
ONON2A	SF0086	S321	8/4/2000		0 - 15	*R*	1.07 *UJ*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0087	S321	8/4/2000		15 - 30	*R*	1.28 *J*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0088	S322	8/10/2000		0 - 15	1.05 *UJ*	*R*	*R*	1.05 *UJ*	1.05 *U*	1.05 *UJ*	1.05 *UJ*	1.05 *U*
ONON2A	SF0089	S322	8/10/2000		15 - 30	1.38 *J*	4.19 *J*	*R*	1.09 *UJ*	26.2 *J*	1.09 *UJ*	1.09 *UJ*	1.12 *J*
ONON2A	SF0094	S325	7/14/2000		0 - 2	1.02 *UJ*	1.02 *UJ*	*R*	1.02 *UJ*	2.25 *J*	1.02 *U*	1.02 *UJ*	1.02 *U*
ONON2A	SF0095	S325	7/14/2000		2 - 15	1 *UJ*	1 *UJ*	*R*	1 *UJ*	3.16 *J*	1 *U*	1 *UJ*	1 *U*
ONON2A	SF0096	S325	7/14/2000		15 - 30	1 *UJ*	1 *UJ*	*R*	1 *UJ*	6.32 *J*	1 *U*	1.15 *J*	1 *U*

Table A-3D. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Heptachlor (µg/kg)	Heptachlor epoxide (µg/kg)	Methoxychlor (µg/kg)	Toxaphene (µg/kg)	alpha (cis) - Chlordane (µg/kg)	gamma (trans)- Chlordane (µg/kg)	Total Chlordane [1] (µg/kg)
O-SEDCHM	S00001	S10	5/7/1992		0 - 30	3 *U*	3 *U*	30 *U*	300 *U*	3 *UJ*	3 *U*	3 *U*
O-SEDCHM	S00004	S6	5/7/1992		0 - 30	2.2 *U*	2.2 *U*	22 *U*	220 *U*	2.2 *U*	2.2 *U*	2.2 *U*
O-SEDCHM	S00007	S36	5/8/1992		0 - 30	2.9 *U*	2.9 *U*	29 *U*	290 *U*	2.9 *U*	2.9 *U*	2.9 *U*
O-SEDCHM	S00014	S1	5/8/1992		0 - 30	6.1 *U*	6.1 *U*	61 *U*	610 *U*	6.1 *U*	6.1 *U*	6.1 *U*
O-SEDCHM	S00017	S20	5/8/1992		0 - 30	6.1 *J*	3.5 *U*	35 *U*	350 *U*	3.5 *U*	3.5 *U*	3.5 *U*
O-SEDCHM	S00051	S46	5/10/1992		0 - 30	3.1 *U*	3.1 *U*	31 *U*	310 *U*	3.1 *U*	3.1 *U*	3.1 *U*
O-SEDCHM	S00062	S16	5/11/1992	1	0 - 30	3.6 *U*	3.6 *U*	36 *U*	360 *U*	3.6 *U*	3.6 *U*	3.6 *U*
O-SEDCHM	S00065	S16	5/11/1992	2	0 - 30	3.5 *UJ*	3.5 *UJ*	35 *UJ*	350 *U*	3.5 *UJ*	3.5 *UJ*	3.5 *UJ*
O-SEDCHM	S00066	S16	5/11/1992	3	0 - 30	3.3 *U*	3.3 *U*	33 *U*	330 *U*	3.3 *U*	3.3 *U*	3.3 *U*
O-SEDCHM	S00532	S36	7/27/1992		0 - 2	15 *U*	15 *U*	150 *U*	1,500 *U*	15 *U*	15 *U*	15 *U*
O-SEDCHM	S00556	S1	8/2/1992	1	0 - 2	4.5 *UJ*	4.5 *UJ*	45 *UJ*	450 *UJ*	4.5 *UJ*	4.5 *UJ*	4.5 *UJ*
O-SEDCHM	S00557	S1	8/2/1992	2	0 - 2	4.8 *U*	4.8 *U*	48 *U*	480 *U*	5.5 *J*	4.8 *U*	5.5 *J*
O-SEDCHM	S00558	S1	8/2/1992	3	0 - 2	15 *U*	15 *U*	150 *U*	1,500 *U*	15 *U*	15 *U*	15 *U*
O-SEDCHM	S00560	S20	8/2/1992		0 - 2	4.2 *U*	4.2 *U*	42 *U*	420 *U*	4.2 *U*	4.2 *U*	4.2 *U*
O-SEDCHM	S00566	S16	8/3/1992		0 - 2	2.8 *UJ*	2.8 *UJ*	28 *UJ*	280 *UJ*	2.8 *UJ*	2.8 *UJ*	2.8 *UJ*
O-SEDCHM	S00570	S46	8/4/1992		0 - 2	2.6 *U*	2.6 *U*	26 *U*	260 *U*	2.6 *U*	2.6 *U*	2.6 *U*
O-SEDCHM	S00572	S10	8/4/1992		0 - 2	2.8 *UJ*	2.8 *UJ*	28 *UJ*	280 *UJ*	2.8 *UJ*	2.8 *UJ*	2.8 *UJ*
O-SEDCHM	S00582	S6	8/6/1992		0 - 2	2.4 *U*	2.4 *U*	24 *U*	240 *U*	2.4 *U*	2.4 *U*	2.4 *U*
ONON2A	SF0024	S366	8/15/2000		0 - 15	1.1 *UJ*	1.1 *UJ*	1.1 *UJ*	110 *UJ*	1.1 *UJ*	1.1 *UJ*	1.1 *UJ*
ONON2A	SF0025	S366	8/15/2000		15 - 30	1.04 *UJ*	1.04 *UJ*	1.04 *UJ*	104 *UJ*	1.04 *UJ*	1.04 *UJ*	1.04 *UJ*
ONON2A	SF0026	S367	8/15/2000		0 - 2	1.02 *U*	1.02 *U*	1.02 *UJ*	102 *UJ*	1.02 *UJ*	1.02 *U*	1.02 *U*
ONON2A	SF0027	S367	8/15/2000		2 - 15	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	108 *UJ*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*
ONON2A	SF0028	S367	8/15/2000		15 - 30	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*	109 *UJ*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*
ONON2A	SF0072	S314	8/10/2000		0 - 15	1.08 *U*	51.9 *J*	1.08 *UJ*	108 *U*	1.08 *UJ*	50.4 *J*	50.4 *J*
ONON2A	SF0073	S314	8/10/2000		15 - 30	*R*	*R*	7.68 *J*	109 *U*	1.09 *UJ*	20 *J*	20 *J*
ONON2A	SF0076	S316	8/10/2000		0 - 15	1.09 *U*	1.09 *U*	1.09 *UJ*	109 *U*	1.09 *UJ*	1.09 *U*	1.09 *U*
ONON2A	SF0077	S316	8/10/2000		15 - 30	1.08 *U*	1.08 *U*	1.08 *UJ*	108 *UJ*	1.08 *UJ*	1.27 *J*	1.27 *J*
ONON2A	SF0086	S321	8/4/2000		0 - 15	1.07 *U*	1.07 *U*	*R*	107 *U*	1.07 *UJ*	1.07 *U*	1.07 *U*
ONON2A	SF0087	S321	8/4/2000		15 - 30	1.07 *U*	1.07 *U*	*R*	107 *U*	1.07 *UJ*	1.07 *U*	1.07 *U*
ONON2A	SF0088	S322	8/10/2000		0 - 15	1.05 *U*	1.05 *U*	1.05 *UJ*	105 *UJ*	4.21 *J*	21.1 *J*	25.31 *J*
ONON2A	SF0089	S322	8/10/2000		15 - 30	1.09 *U*	1.09 *U*	1.09 *UJ*	109 *UJ*	5.64 *J*	23.4 *J*	29.04 *J*
ONON2A	SF0094	S325	7/14/2000		0 - 2	1.02 *U*	*R*	1.02 *UJ*	1.02 *UJ*	1.02 *U*	1.02 *U*	1.02 *U*
ONON2A	SF0095	S325	7/14/2000		2 - 15	1 *U*	*R*	1 *UJ*	1 *U*	1 *U*	1 *U*	1 *U*
ONON2A	SF0096	S325	7/14/2000		15 - 30	1 *U*	1 *U*	1 *UJ*	1 *U*	1 *U*	1 *U*	1 *U*

Table A-3D. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	4,4'-DDD (µg/kg)	4,4'-DDE (µg/kg)	4,4'-DDT (µg/kg)	Aldrin (µg/kg)	Endosulfan I (µg/kg)	Endosulfan II (µg/kg)	Endosulfan sulfate (µg/kg)
ONON2A	SF0101	S328	7/15/2000		0 - 15	1 *UJ*	1 *U*	2.13 *J*	1 *U*	1 *U*	1 *UJ*	*R*
ONON2A	SF0102	S328	7/15/2000		15 - 30	1 *UJ*	1 *U*	1 *UJ*	1 *U*	1 *U*	1 *UJ*	*R*
ONON2A	SF0103	S329	7/16/2000		0 - 15	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*
ONON2A	SF0104	S329	7/16/2000		15 - 30	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*
ONON2A	SF0105	S330	7/16/2000		0 - 15	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*
ONON2A	SF0106	S330	7/16/2000		15 - 30	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*
ONON2A	SF0113	S353	7/27/2000		0 - 15	1.01 *UJ*	*R*	39.2 *J*	*R*	1.01 *U*	1.01 *UJ*	*R*
ONON2A	SF0114	S353	7/27/2000		15 - 30	*R*	*R*	*R*	1.05 *UJ*	1.05 *U*	1.05 *UJ*	2.73 *J*
ONON2A	SF0115	S335	8/2/2000		0 - 15	*R*	*R*	3.99 *J*	*R*	*R*	*R*	*R*
ONON2A	SF0116	S335	8/2/2000		15 - 30	*R*	9.75 *J*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0117	S336	8/3/2000		0 - 15	1.04 *UJ*	*R*	3.52 *J*	1.04 *UJ*	1.04 *UJ*	1.04 *UJ*	3.16 *J*
ONON2A	SF0118	S336	8/3/2000		15 - 30	1.11 *UJ*	*R*	13.5 *J*	1.9 *J*	1.11 *UJ*	1.11 *UJ*	5.87 *J*
ONON2A	SF0123	S340	8/15/2000	1	0 - 2	*R*	1.09 *UJ*	2.06 *J*	1.09 *UJ*	1.09 *UJ*	*R*	*R*
ONON2A	SF0123_R	S340	8/15/2000	2	0 - 2	*R*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0124	S339	8/3/2000		0 - 15	1.05 *UJ*	4.07 *J*	17.3 *J*	3.52 *J*	1.05 *UJ*	1.05 *UJ*	1.05 *UJ*
ONON2A	SF0125	S339	8/3/2000		15 - 30	1.09 *UJ*	*R*	*R*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*
ONON2A	SF0126	S340	8/3/2000		0 - 15	*R*	*R*	4.08 *J*	*R*	*R*	*R*	*R*
ONON2A	SF0127	S340	8/3/2000		15 - 30	*R*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0128	S341	8/4/2000		0 - 15	*R*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0129	S341	8/4/2000		15 - 30	*R*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0133	S343	8/4/2000		15 - 30	*R*	1.08 *J*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0134	S333	8/2/2000		0 - 15	*R*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0135	S333	8/2/2000		15 - 30	*R*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0136	S345	8/4/2000		0 - 15	*R*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0137	S345	8/4/2000		15 - 30	1.06 *UJ*	1.58 *J*	*R*	1.06 *UJ*	1.06 *UJ*	1.06 *UJ*	1.06 *UJ*
ONON2A	SF0138	S346	8/4/2000		0 - 15	1.08 *UJ*	1.38 *J*	*R*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*
ONON2A	SF0139	S346	8/4/2000		15 - 30	1.09 *UJ*	1.09 *U*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*
ONON2A	SF0140	S347	8/4/2000		0 - 15	1.01 *UJ*	1.01 *U*	1.6 *J*	1.01 *UJ*	1.01 *UJ*	1.01 *UJ*	1.01 *UJ*
ONON2A	SF0141	S347	8/4/2000		15 - 30	1.01 *UJ*	1.01 *U*	2.1 *J*	1.01 *UJ*	1.01 *UJ*	1.01 *UJ*	1.01 *UJ*
ONON2A	SF0143	S348	8/5/2000		15 - 30	1.05 *UJ*	1.05 *UJ*	1.05 *UJ*	1.05 *U*	1.05 *U*	1.05 *UJ*	1.05 *UJ*
ONON2A	SF0144	S349	8/5/2000		0 - 15	1.05 *UJ*	1.05 *UJ*	7.24 *J*	1.05 *U*	1.05 *UJ*	1.05 *UJ*	1.05 *UJ*
ONON2A	SF0145	S349	8/5/2000		15 - 30	3.85 *J*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0146	S350	8/5/2000		0 - 15	*R*	14.2 *J*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0147	S350	8/5/2000		15 - 30	1.01 *UJ*	1.01 *UJ*	1.01 *UJ*	1.01 *U*	1.13 *J*	1.01 *UJ*	1.01 *UJ*

Table A-3D. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	alpha-BHC (µg/kg)	beta-BHC (µg/kg)	delta-BHC (µg/kg)	gamma-BHC (Lindane) (µg/kg)	Dieldrin (µg/kg)	Endrin aldehyde (µg/kg)	Endrin ketone (µg/kg)	Endrin (µg/kg)
ONON2A	SF0101	S328	7/15/2000		0 - 15	1 *UJ*	1 *UJ*	*R*	1 *UJ*	1 *U*	1 *U*	1 *U*	1 *U*
ONON2A	SF0102	S328	7/15/2000		15 - 30	1 *UJ*	1 *UJ*	*R*	1 *UJ*	1 *U*	1 *U*	1 *U*	1 *U*
ONON2A	SF0103	S329	7/16/2000		0 - 15	1 *UJ*	1 *UJ*	2 *J*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*
ONON2A	SF0104	S329	7/16/2000		15 - 30	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*
ONON2A	SF0105	S330	7/16/2000		0 - 15	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*
ONON2A	SF0106	S330	7/16/2000		15 - 30	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*
ONON2A	SF0113	S353	7/27/2000		0 - 15	1.87 *J*	1.01 *U*	1.01 *UJ*	1.01 *UJ*	13.2 *J*	1.01 *UJ*	1.01 *UJ*	*R*
ONON2A	SF0114	S353	7/27/2000		15 - 30	1.05 *UJ*	1.05 *U*	1.05 *UJ*	1.05 *UJ*	4.92	1.05 *UJ*	1.05 *UJ*	1.05 *U*
ONON2A	SF0115	S335	8/2/2000		0 - 15	*R*	3.88 *J*	*R*	*R*	2.86 *J*	*R*	*R*	1.97 *J*
ONON2A	SF0116	S335	8/2/2000		15 - 30	*R*	3.9 *J*	*R*	*R*	3.7 *J*	*R*	*R*	*R*
ONON2A	SF0117	S336	8/3/2000		0 - 15	1.04 *UJ*	1.04 *UJ*	*R*	1.04 *UJ*	3.75 *J*	1.04 *UJ*	1.04 *UJ*	1.04 *U*
ONON2A	SF0118	S336	8/3/2000		15 - 30	1.11 *UJ*	1.11 *UJ*	*R*	1.11 *UJ*	19 *J*	1.11 *UJ*	1.11 *UJ*	1.11 *U*
ONON2A	SF0123	S340	8/15/2000	1	0 - 2	1.09 *UJ*	1.09 *UJ*	*R*	1.09 *UJ*	1.38 *J*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*
ONON2A	SF0123_R	S340	8/15/2000	2	0 - 2	*R*	1.62 *J*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0124	S339	8/3/2000		0 - 15	1.08 *J*	*R*	*R*	1.05 *UJ*	1.05 *U*	1.05 *UJ*	1.05 *UJ*	2.01 *J*
ONON2A	SF0125	S339	8/3/2000		15 - 30	1.09 *UJ*	4.6 *J*	1.67 *J*	1.09 *UJ*	11.4 *J*	1.09 *UJ*	1.09 *UJ*	1.09 *U*
ONON2A	SF0126	S340	8/3/2000		0 - 15	1.73 *J*	1.08 *UJ*	1.58 *J*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0127	S340	8/3/2000		15 - 30	*R*	1.07 *UJ*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0128	S341	8/4/2000		0 - 15	*R*	1.07 *UJ*	*R*	*R*	*R*	*R*	*R*	1.2 *J*
ONON2A	SF0129	S341	8/4/2000		15 - 30	*R*	1.06 *UJ*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0133	S343	8/4/2000		15 - 30	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0134	S333	8/2/2000		0 - 15	*R*	2 *J*	*R*	*R*	6.03 *J*	*R*	*R*	1.48 *J*
ONON2A	SF0135	S333	8/2/2000		15 - 30	*R*	*R*	3.41 *J*	*R*	5.06 *J*	*R*	*R*	*R*
ONON2A	SF0136	S345	8/4/2000		0 - 15	*R*	1.14 *UJ*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0137	S345	8/4/2000		15 - 30	1.06 *UJ*	1.06 *UJ*	2.1 *J*	1.06 *UJ*	1.06 *U*	1.06 *UJ*	1.06 *UJ*	1.06 *U*
ONON2A	SF0138	S346	8/4/2000		0 - 15	1.08 *UJ*	*R*	*R*	1.08 *UJ*	1.08 *U*	1.08 *UJ*	1.08 *UJ*	1.08 *U*
ONON2A	SF0139	S346	8/4/2000		15 - 30	1.09 *UJ*	1.09 *UJ*	2.02 *J*	1.09 *UJ*	1.48 *J*	1.09 *UJ*	1.09 *UJ*	1.09 *U*
ONON2A	SF0140	S347	8/4/2000		0 - 15	1.01 *UJ*	1.01 *UJ*	1.01 *J*	1.01 *UJ*	1.01 *U*	1.01 *UJ*	1.01 *UJ*	1.14
ONON2A	SF0141	S347	8/4/2000		15 - 30	1.01 *UJ*	1.01 *UJ*	1.29 *J*	1.01 *UJ*	1.01 *U*	1.01 *UJ*	1.01 *UJ*	1.01 *U*
ONON2A	SF0143	S348	8/5/2000		15 - 30	1.05 *UJ*	1.05 *U*	*R*	1.05 *UJ*	1.05 *U*	1.05 *UJ*	1.05 *UJ*	1.05 *U*
ONON2A	SF0144	S349	8/5/2000		0 - 15	1.6 *J*	1.8 *J*	*R*	1.05 *UJ*	1.05 *U*	1.05 *UJ*	1.05 *UJ*	1.95
ONON2A	SF0145	S349	8/5/2000		15 - 30	1.66 *J*	*R*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0146	S350	8/5/2000		0 - 15	*R*	*R*	1.66 *J*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0147	S350	8/5/2000		15 - 30	*R*	*R*	*R*	1.01 *UJ*	1.01 *U*	1.01 *UJ*	1.01 *UJ*	1.01 *U*

Table A-3D. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Heptachlor (µg/kg)	Heptachlor epoxide (µg/kg)	Methoxychlor (µg/kg)	Toxaphene (µg/kg)	alpha (cis) - Chlordane (µg/kg)	gamma (trans)- Chlordane (µg/kg)	Total Chlordane [1] (µg/kg)
ONON2A	SF0101	S328	7/15/2000		0 - 15	1 *U*	1 *U*	1 *U*	100 *U*	1 *U*	1 *U*	1 *U*
ONON2A	SF0102	S328	7/15/2000		15 - 30	1 *U*	1 *U*	1 *U*	100 *U*	1 *U*	1 *U*	1 *U*
ONON2A	SF0103	S329	7/16/2000		0 - 15	1 *UJ*	1 *UJ*	1 *UJ*	100 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*
ONON2A	SF0104	S329	7/16/2000		15 - 30	1 *UJ*	1 *UJ*	1 *UJ*	100 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*
ONON2A	SF0105	S330	7/16/2000		0 - 15	1 *UJ*	1 *UJ*	1 *UJ*	100 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*
ONON2A	SF0106	S330	7/16/2000		15 - 30	1 *UJ*	1 *UJ*	1 *UJ*	100 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*
ONON2A	SF0113	S353	7/27/2000		0 - 15	5.33 *J*	1.01 *U*	1.01 *UJ*	101 *U*	1.01 *U*	1.01 *U*	1.01 *U*
ONON2A	SF0114	S353	7/27/2000		15 - 30	1.05 *U*	1.05 *U*	1.05 *UJ*	105 *U*	1.05 *U*	2.49 *J*	2.49 *J*
ONON2A	SF0115	S335	8/2/2000		0 - 15	*R*	5.33 *J*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0116	S335	8/2/2000		15 - 30	*R*	11.7 *J*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0117	S336	8/3/2000		0 - 15	1.04 *U*	2.21 *J*	1.04 *UJ*	104 *U*	1.04 *UJ*	1.27 *J*	1.27 *J*
ONON2A	SF0118	S336	8/3/2000		15 - 30	3.9	1.11 *U*	1.11 *UJ*	111 *U*	1.11 *UJ*	1.11 *U*	1.11 *U*
ONON2A	SF0123	S340	8/15/2000	1	0 - 2	1.09 *UJ*	2.25 *J*	1.09 *UJ*	109 *UJ*	1.09 *UJ*	1.6 *J*	1.6 *J*
ONON2A	SF0123_R	S340	8/15/2000	2	0 - 2	*R*	1.18 *J*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0124	S339	8/3/2000		0 - 15	1.05 *U*	7.38	1.05 *UJ*	105 *U*	1.05 *UJ*	*R*	1.05 *UJ*
ONON2A	SF0125	S339	8/3/2000		15 - 30	1.09 *U*	1.09 *U*	1.09 *UJ*	109 *U*	1.09 *UJ*	4.51 *J*	4.51 *J*
ONON2A	SF0126	S340	8/3/2000		0 - 15	1.08 *U*	*R*	*R*	108 *U*	1.08 *UJ*	1.08 *U*	1.08 *U*
ONON2A	SF0127	S340	8/3/2000		15 - 30	1.07 *U*	1.69 *J*	*R*	107 *U*	1.07 *UJ*	1.07 *U*	1.07 *U*
ONON2A	SF0128	S341	8/4/2000		0 - 15	1.07 *U*	*R*	*R*	107 *U*	1.07 *UJ*	1.07 *U*	1.07 *U*
ONON2A	SF0129	S341	8/4/2000		15 - 30	1.06 *U*	*R*	*R*	106 *U*	1.06 *UJ*	1.06 *U*	1.06 *U*
ONON2A	SF0133	S343	8/4/2000		15 - 30	1.05 *U*	*R*	*R*	105 *U*	1.05 *UJ*	1.05 *U*	1.05 *U*
ONON2A	SF0134	S333	8/2/2000		0 - 15	*R*	5.16 *J*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0135	S333	8/2/2000		15 - 30	*R*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0136	S345	8/4/2000		0 - 15	1.14 *U*	2.69 *J*	*R*	114 *U*	1.14 *UJ*	1.14 *U*	1.14 *U*
ONON2A	SF0137	S345	8/4/2000		15 - 30	1.06 *U*	*R*	1.06 *UJ*	106 *UJ*	1.06 *UJ*	1.06 *UJ*	1.06 *UJ*
ONON2A	SF0138	S346	8/4/2000		0 - 15	1.08 *U*	*R*	1.08 *UJ*	108 *UJ*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*
ONON2A	SF0139	S346	8/4/2000		15 - 30	1.09 *U*	1.26 *J*	*R*	109 *UJ*	1.09 *UJ*	1.09 *UJ*	1.09 *UJ*
ONON2A	SF0140	S347	8/4/2000		0 - 15	1.01 *U*	1.01 *U*	1.01 *UJ*	101 *UJ*	1.01 *UJ*	1.08 *J*	1.08 *J*
ONON2A	SF0141	S347	8/4/2000		15 - 30	1.01 *U*	1.01 *UJ*	1.1 *J*	101 *UJ*	1.01 *UJ*	1.01 *UJ*	1.01 *UJ*
ONON2A	SF0143	S348	8/5/2000		15 - 30	1.05 *U*	1.05 *U*	1.05 *UJ*	105 *U*	1.05 *U*	1.05 *U*	1.05 *U*
ONON2A	SF0144	S349	8/5/2000		0 - 15	1.05 *U*	1.05 *U*	1.74 *J*	105 *UJ*	1.05 *UJ*	2.75	2.75
ONON2A	SF0145	S349	8/5/2000		15 - 30	*R*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0146	S350	8/5/2000		0 - 15	*R*	1.9 *J*	*R*	*R*	*R*	1.38 *J*	1.38 *J*
ONON2A	SF0147	S350	8/5/2000		15 - 30	1.01 *U*	1.01 *U*	4.25 *J*	101 *UJ*	1.01 *UJ*	1.01 *U*	1.01 *U*

Table A-3D. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	4,4'-DDD (µg/kg)	4,4'-DDE (µg/kg)	4,4'-DDT (µg/kg)	Aldrin (µg/kg)	Endosulfan I (µg/kg)	Endosulfan II (µg/kg)	Endosulfan sulfate (µg/kg)
ONON2A	SF0149	S351	8/5/2000		0 - 15	1.3 *J*	2.17 *J*	*R*	1.1 *U*	1.1 *UJ*	1.1 *UJ*	1.1 *UJ*
ONON2A	SF0150	S351	8/5/2000		15 - 30	1.08 *UJ*	1.08 *UJ*	*R*	1.08 *U*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*
ONON2A	SF0151	S352	8/10/2000		0 - 15	1.09 *UJ*	*R*	26.7 *J*	1.09 *U*	8.71 *J*	1.09 *UJ*	*R*
ONON2A	SF0152	S352	8/10/2000		15 - 30	1.08 *UJ*	*R*	*R*	1.08 *U*	5.09 *J*	1.08 *UJ*	1.08 *UJ*
ONON2A	SF0153	S334	8/2/2000		0 - 15	*R*	*R*	7.39 *J*	*R*	*R*	*R*	*R*
ONON2A	SF0154	S334	8/2/2000		15 - 30	*R*	*R*	3.51 *J*	*R*	*R*	*R*	*R*
ONON2A	SF0170	S434	8/9/2000		0 - 15	1 *UJ*	1 *UJ*	1 *UJ*	1 *U*	1 *UJ*	1 *UJ*	1 *UJ*
ONON2A	SF0171	S434	8/9/2000		15 - 30	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	1.08 *U*	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*
ONON2A	SF0172	S435	8/9/2000		0 - 5	1.08 *UJ*	1.08 *UJ*	2.9 *J*	1.08 *U*	1.08 *UJ*	1.08 *UJ*	*R*
ONON2A	SF0173	S351	8/15/2000		0 - 2	*R*	4.84 *J*	7.79 *J*	*R*	5.3 *J*	*R*	*R*
ONON2A	VC0187	S313	7/18/2000		0 - 15	*R*	*R*	88.3 *J*	*R*	1 *UJ*	1 *UJ*	31.4 *J*
ONON2A	VC0188	S313	7/18/2000		15 - 30	*R*	*R*	25.7 *J*	1 *UJ*	1 *UJ*	1 *UJ*	*R*
ONON2A	VC0189	S318	7/14/2000		0 - 15	1 *UJ*	1 *U*	*R*	1 *U*	1 *U*	1 *UJ*	*R*
ONON2A	VC0190	S318	7/14/2000		15 - 30	1 *UJ*	*R*	*R*	1 *U*	1 *U*	1 *UJ*	*R*
ONON2A	VC0196	S307	7/18/2000		0 - 15	1 *UJ*	7.4 *J*	4.2 *J*	5.82 *UJ*	1 *UJ*	1 *UJ*	5.15 *J*
ONON2A	VC0197	S307	7/18/2000		15 - 30	1 *UJ*	1 *UJ*	*R*	1 *UJ*	1 *UJ*	1 *UJ*	*R*
ONON2A	VC0207	S311	7/20/2000		0 - 15	3.91 *J*	*R*	3.08 *J*	*R*	*R*	*R*	*R*
ONON2A	VC0208	S311	7/20/2000		15 - 30	*R*	*R*	7.87 *J*	*R*	*R*	*R*	*R*
ONON2A	SF0132	S343	8/4/2000		0 - 15	*R*	*R*	*R*	*R*	*R*	*R*	*R*

Table A-3D. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	alpha-BHC (µg/kg)	beta-BHC (µg/kg)	delta-BHC (µg/kg)	gamma-BHC (Lindane) (µg/kg)	Dieldrin (µg/kg)	Endrin aldehyde (µg/kg)	Endrin ketone (µg/kg)	Endrin (µg/kg)
ONON2A	SF0149	S351	8/5/2000		0 - 15	2.17 *J*	2.34 *J*	*R*	1.1 *UJ*	1.1 *U*	1.1 *UJ*	1.1 *UJ*	2.63 *J*
ONON2A	SF0150	S351	8/5/2000		15 - 30	1.49 *J*	1.56 *J*	*R*	1.08 *UJ*	1.08 *U*	1.08 *UJ*	1.08 *UJ*	3.23
ONON2A	SF0151	S352	8/10/2000		0 - 15	*R*	1.09 *UJ*	1.87 *J*	1.09 *UJ*	1.09 *U*	1.09 *UJ*	1.09 *UJ*	3.66 *J*
ONON2A	SF0152	S352	8/10/2000		15 - 30	*R*	1.08 *UJ*	*R*	1.08 *UJ*	*R*	1.08 *UJ*	1.08 *UJ*	1.08 *U*
ONON2A	SF0153	S334	8/2/2000		0 - 15	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0154	S334	8/2/2000		15 - 30	*R*	2.25 *J*	*R*	*R*	3.65 *J*	*R*	*R*	*R*
ONON2A	SF0170	S434	8/9/2000		0 - 15	1 *UJ*	1 *UJ*	*R*	1 *UJ*	1 *U*	1 *UJ*	1 *UJ*	1 *U*
ONON2A	SF0171	S434	8/9/2000		15 - 30	1.08 *UJ*	1.08 *UJ*	*R*	1.08 *UJ*	1.08 *U*	1.08 *UJ*	1.08 *UJ*	1.08 *U*
ONON2A	SF0172	S435	8/9/2000		0 - 5	1.08 *UJ*	1.08 *UJ*	*R*	1.08 *UJ*	1.08 *U*	1.08 *UJ*	1.08 *UJ*	1.08 *U*
ONON2A	SF0173	S351	8/15/2000		0 - 2	*R*	1.07 *UJ*	1.54 *J*	1.07 *UJ*	*R*	1.07 *UJ*	1.07 *UJ*	1.07 *UJ*
ONON2A	VC0187	S313	7/18/2000		0 - 15	13 *J*	*R*	*R*	1 *UJ*	31.3 *J*	1 *UJ*	49 *J*	8.4 *J*
ONON2A	VC0188	S313	7/18/2000		15 - 30	7.55 *J*	*R*	*R*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	6.14 *J*
ONON2A	VC0189	S318	7/14/2000		0 - 15	1 *UJ*	1 *UJ*	*R*	1 *UJ*	1 *U*	1.77	1.44 *J*	1 *U*
ONON2A	VC0190	S318	7/14/2000		15 - 30	1 *UJ*	1 *UJ*	*R*	1 *UJ*	1 *U*	1 *U*	1 *U*	1 *U*
ONON2A	VC0196	S307	7/18/2000		0 - 15	1 *UJ*	*R*	*R*	1 *UJ*	4.15 *J*	1 *UJ*	1 *UJ*	1 *UJ*
ONON2A	VC0197	S307	7/18/2000		15 - 30	1 *UJ*	*R*	1.19 *J*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*
ONON2A	VC0207	S311	7/20/2000		0 - 15	*R*	*R*	*R*	*R*	*R*	*R*	*R*	2.53 *J*
ONON2A	VC0208	S311	7/20/2000		15 - 30	*R*	2.44 *J*	*R*	*R*	3.36 *J*	*R*	*R*	*R*
ONON2A	SF0132	S343	8/4/2000		0 - 15	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*

Table A-3D. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Heptachlor (µg/kg)	Heptachlor epoxide (µg/kg)	Methoxychlor (µg/kg)	Toxaphene (µg/kg)	alpha (cis) - Chlordane (µg/kg)	gamma (trans)- Chlordane (µg/kg)	Total Chlordane [1] (µg/kg)
ONON2A	SF0149	S351	8/5/2000		0 - 15	1.1 *U*	1.1 *U*	3.41 *J*	110 *UJ*	1.1 *UJ*	4.29 *J*	4.29 *J*
ONON2A	SF0150	S351	8/5/2000		15 - 30	1.08 *U*	1.08 *U*	*R*	108 *UJ*	1.08 *UJ*	7.95	7.95
ONON2A	SF0151	S352	8/10/2000		0 - 15	1.09 *U*	1.09 *U*	*R*	109 *UJ*	14.8 *J*	25.6 *J*	40.4 *J*
ONON2A	SF0152	S352	8/10/2000		15 - 30	1.08 *U*	*R*	1.08 *UJ*	108 *UJ*	7.79 *J*	9.89 *J*	17.68 *J*
ONON2A	SF0153	S334	8/2/2000		0 - 15	*R*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0154	S334	8/2/2000		15 - 30	*R*	6.53 *J*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0170	S434	8/9/2000		0 - 15	1 *U*	1 *U*	1 *UJ*	100 *U*	1 *UJ*	1 *U*	1 *U*
ONON2A	SF0171	S434	8/9/2000		15 - 30	1.08 *U*	1.08 *U*	1.08 *UJ*	108 *U*	1.08 *UJ*	1.08 *U*	1.08 *U*
ONON2A	SF0172	S435	8/9/2000		0 - 5	3.43 *J*	*R*	1.08 *UJ*	108 *U*	1.08 *UJ*	1.08 *U*	1.08 *U*
ONON2A	SF0173	S351	8/15/2000		0 - 2	1.07 *UJ*	6 *J*	1.07 *UJ*	107 *UJ*	3.96 *J*	10.4 *J*	14.36 *J*
ONON2A	VC0187	S313	7/18/2000		0 - 15	1 *UJ*	37.7 *J*	1 *UJ*	100 *UJ*	*R*	*R*	*R*
ONON2A	VC0188	S313	7/18/2000		15 - 30	1 *UJ*	18.5 *J*	1 *UJ*	100 *UJ*	7.89 *J*	14.7 *J*	22.59 *J*
ONON2A	VC0189	S318	7/14/2000		0 - 15	1 *U*	2.44 *J*	1 *U*	100 *U*	1 *U*	1 *U*	1 *U*
ONON2A	VC0190	S318	7/14/2000		15 - 30	1 *U*	1 *U*	1 *U*	100 *U*	1 *U*	4.78	4.78
ONON2A	VC0196	S307	7/18/2000		0 - 15	1 *UJ*	1 *UJ*	1 *UJ*	100 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*
ONON2A	VC0197	S307	7/18/2000		15 - 30	1 *UJ*	1 *UJ*	1 *UJ*	100 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*
ONON2A	VC0207	S311	7/20/2000		0 - 15	1.72 *J*	*R*	*R*	*R*	*R*	*R*	*R*
ONON2A	VC0208	S311	7/20/2000		15 - 30	*R*	2.84 *J*	*R*	*R*	*R*	*R*	*R*
ONON2A	SF0132	S343	8/4/2000		0 - 15	*R*	*R*	*R*	*R*	*R*	*R*	*R*

Notes: [1] Total chlordane is a calculated quantity, not a direct measurement
J - estimated
U - not detected at reported quantitation limit
R - rejected datum

Table A-3E. Southern Basin Nearshore Sediments – PCB Data

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Aroclor 1016 (µg/kg)	Aroclor 1221 (µg/kg)	Aroclor 1232 (µg/kg)	Aroclor 1242 (µg/kg)	Aroclor 1248 (µg/kg)	Aroclor 1254 (µg/kg)	Aroclor 1260 (µg/kg)	Aroclor 1268 (µg/kg)	Sum of PCBs (µg/kg)
O-SEDCHM	S00014	S1	5/8/1992		0 - 30	120 *U*	240 *UJ*	120 *U*	120 *U*	1,200 *J*	510	120 *U*		1,710
O-SEDCHM	S00556	S1	8/2/1992	D1	0 - 2	87 *UJ*	180 *UJ*	87 *UJ*	87 *UJ*	140 *J*	87 *UJ*	87 *UJ*		184
O-SEDCHM	S00557	S1	8/2/1992	D2	0 - 2	94 *UJ*	190 *U*	94 *UJ*	94 *UJ*	210	94 *U*	94 *U*		257
O-SEDCHM	S00558	S1	8/2/1992	D3	0 - 2	300 *U*	610 *U*	300 *U*	300 *U*	300 *U*	300 *U*	300 *U*		600 *U*
O-SEDCHM	S00001	S10	5/7/1992		0 - 30	58 *U*	120 *UJ*	58 *U*	58 *U*	160	110	58 *U*		270
O-SEDCHM	S00572	S10	8/4/1992		0 - 2	54 *UJ*	110 *UJ*	54 *UJ*	54 *UJ*	54 *UJ*	54 *UJ*	54 *UJ*		108 *U*
O-SEDCHM	S00162	S11	7/10/1992		0 - 30	83 *UJ*	83 *UJ*	83 *UJ*	83 *UJ*	490 *J*	83 *UJ*	1,100 *J*		1,590
O-SEDCHM	S00567	S11	8/3/1992		0 - 2	49 *U*	49 *UJ*	49 *U*	49 *U*	49 *U*	49 *U*	49 *U*		98 *U*
O-SEDCHM	S00565	S13	8/3/1992		0 - 2	72 *UJ*	72 *UJ*	72 *U*	72 *UJ*	290	72 *UJ*	70 *J*		360
O-SEDCHM	S00542	S14	7/30/1992		0 - 2	82 *UJ*	82 *UJ*	82 *UJ*	82 *UJ*	240	82 *UJ*	82 *UJ*		281
O-SEDCHM	S00062	S16	5/11/1992	D1	0 - 30	70 *UJ*	140 *UJ*	70 *UJ*	70 *UJ*	540	70 *UJ*	270		810
O-SEDCHM	S00065	S16	5/11/1992	D2	0 - 30	67 *UJ*	140 *UJ*	67 *UJ*	720 *J*	67 *UJ*	67 *UJ*	300 *J*		1,020
O-SEDCHM	S00066	S16	5/11/1992	D3	0 - 30	63 *UJ*	130 *U*	63 *UJ*	720 *J*	63 *U*	63 *U*	330 *J*		1,050
O-SEDCHM	S00566	S16	8/3/1992		0 - 2	55 *UJ*	110 *UJ*	55 *UJ*	55 *UJ*	170 *J*	55 *UJ*	55 *UJ*		198
O-SEDCHM	S00562	S17	8/3/1992	D1	0 - 2	64 *UJ*	64 *UJ*	64 *UJ*	64 *UJ*	49 *J*	64 *UJ*	64 *UJ*		81
O-SEDCHM	S00563	S17	8/3/1992	D2	0 - 2	69 *UJ*	69 *UJ*	69 *UJ*	69 *UJ*	43 *J*	69 *UJ*	69 *UJ*		78
O-SEDCHM	S00564	S17	8/3/1992	D3	0 - 2	68 *U*	68 *UJ*	68 *UJ*	68 *UJ*	76	68 *U*	68 *U*		110
O-SEDCHM	S00546	S2	7/30/1992		0 - 2	140 *UJ*	140 *U*	140 *UJ*	140 *UJ*	670	140 *U*	380		1,050
O-SEDCHM	S00017	S20	5/8/1992		0 - 30	67 *U*	140 *U*	67 *U*	67 *U*	67 *U*	67 *U*	67 *U*		134 *U*
O-SEDCHM	S00560	S20	8/2/1992		0 - 2	82 *UJ*	170 *UJ*	82 *UJ*	82 *U*	82 *UJ*	82 *U*	82 *UJ*		164 *U*
O-SEDCHM	S00540	S21	7/30/1992		0 - 2	130 *U*	130 *U*	130 *U*	130 *U*	680	130 *U*	300		980
O-SEDCHM	S00580	S26	8/6/1992		0 - 2	56 *U*	56 *UJ*	56 *U*	56 *U*	56 *U*	56 *U*	56 *U*		112 *U*
O-SEDCHM	S00533	S28	7/28/1992		0 - 2	240 *UJ*	240 *UJ*	240 *UJ*	240 *UJ*	1,100 *J*	240 *UJ*	1,000 *J*		2,100
O-SEDCHM	S00340	S3	10/1/1992		0 - 30	370 *UJ*	370 *UJ*	370 *UJ*	370 *UJ*	4,200 *J*	370 *UJ*	1,800 *J*		6,000
O-SEDCHM	S00613	S3	8/12/1992		0 - 2	340 *UJ*	340 *U*	340 *UJ*	340 *UJ*	750	340 *U*	900		1,650
O-SEDCHM	S00573	S34	8/4/1992		0 - 2	58 *U*	58 *UJ*	58 *U*	58 *U*	58 *U*	58 *U*	58 *U*		116 *U*
O-SEDCHM	S00535	S35	7/28/1992		0 - 2	64 *U*	64 *U*	64 *U*	64 *U*	64 *U*	64 *UJ*	64 *UJ*		128 *U*
O-SEDCHM	S00007	S36	5/8/1992		0 - 30	57 *U*	110 *UJ*	57 *U*	57 *U*	57 *U*	57 *U*	57 *U*		114 *U*
O-SEDCHM	S00532	S36	7/27/1992		0 - 2	290 *UJ*	590 *U*	290 *UJ*	290 *UJ*	290 *U*	290 *U*	290 *U*		580 *U*
O-SEDCHM	S00521	S37	7/24/1992		0 - 2	66 *U*	66 *U*	66 *U*	66 *U*	66 *U*	65 *J*	66 *U*		98
O-SEDCHM	S00051	S46	5/10/1992		0 - 30	60 *U*	120 *U*	60 *U*	60 *U*	60 *U*	60 *U*	60 *U*		120 *U*
O-SEDCHM	S00570	S46	8/4/1992		0 - 2	50 *U*	100 *U*	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*		100 *U*
O-SEDCHM	S00519	S47	7/24/1992		0 - 2	77 *UJ*	77 *UJ*	77 *UJ*	77 *UJ*	77 *UJ*	77 *UJ*	77 *UJ*		154 *U*
O-SEDCHM	S00547	S5	7/30/1992		0 - 2	71 *UJ*	71 *UJ*	71 *UJ*	71 *UJ*	440 *J*	71 *UJ*	240 *J*		680
O-SEDCHM	S00004	S6	5/7/1992		0 - 30	43 *U*	87 *U*	43 *U*	43 *U*	43 *U*	43 *U*	43 *U*		86 *U*
O-SEDCHM	S00582	S6	8/6/1992		0 - 2	46 *U*	93 *U*	46 *U*	46 *U*	46 *U*	46 *U*	46 *U*		92 *U*

Table A-3E. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Aroclor 1016 (µg/kg)	Aroclor 1221 (µg/kg)	Aroclor 1232 (µg/kg)	Aroclor 1242 (µg/kg)	Aroclor 1248 (µg/kg)	Aroclor 1254 (µg/kg)	Aroclor 1260 (µg/kg)	Aroclor 1268 (µg/kg)	Sum of PCBs (µg/kg)
O-SEDCHM	S00555	S7	8/2/1992		0 - 2	50 *U*	50 *UJ*	50 *UJ*	50 *UJ*	60	50 *U*	37 *J*		97
ONON2A	VC0196	S307	7/18/2000		0 - 15	150 *U*	150 *U*	150 *U*	150 *U*	150 *U*	124 *J*	150 *U*	150 *U*	199
ONON2A	VC0197	S307	7/18/2000		15 - 30	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	100 *U*
ONON2A	VC0207	S311	7/20/2000		0 - 15	500 *U*	500 *U*	500 *U*	500 *U*	500 *U*	500 *U*	500 *U*	500 *U*	1,000 *U*
ONON2A	VC0208	S311	7/20/2000		15 - 30	500 *U*	500 *U*	500 *U*	189 *J*	500 *U*	500 *U*	500 *U*	500 *U*	439
ONON2A	VC0187	S313	7/18/2000		0 - 15	1,500 *U*	1,500 *U*	1,500 *U*	2,190 *J*	1,500 *U*	1,500 *U*	1,020 *J*	1,500 *U*	3,210
ONON2A	VC0188	S313	7/18/2000		15 - 30	1,000 *U*	1,000 *U*	1,000 *U*	958 *J*	1,000 *U*	1,000 *U*	335 *J*	1,000 *U*	1,293
ONON2A	SF0072	S314	8/10/2000		0 - 15	1,080 *U*	1,080 *U*	1,080 *U*	9,340 *J*	1,080 *U*	1,010 *J*	686 *J*	1,080 *U*	11,036
ONON2A	SF0073	S314	8/10/2000		15 - 30	545 *U*	545 *U*	545 *U*	2,750 *J*	545 *U*	345 *J*	119 *J*	545 *U*	3,214
ONON2A	SF0076	S316	8/10/2000		0 - 15	54.7 *U*	54.7 *U*	54.7 *U*	54.7 *U*	54.7 *U*	54.7 *U*	54.7 *U*	54.7 *U*	109 *U*
ONON2A	SF0077	S316	8/10/2000		15 - 30	54.1 *U*	54.1 *U*	54.1 *U*	54.1 *U*	54.1 *U*	54.1 *U*	54.1 *U*	54.1 *U*	108 *U*
ONON2A	VC0189	S318	7/14/2000		0 - 15	50 *U*	50 *U*	50 *U*	131 *J*	50 *U*	80 *J*	39.7 *J*	50 *U*	251
ONON2A	VC0190	S318	7/14/2000		15 - 30	50 *U*	50 *U*	50 *U*	285 *J*	50 *U*	126 *J*	46.9 *J*	50 *U*	458
ONON2A	SF0086	S321	8/4/2000		0 - 15	53.4 *U*	53.4 *U*	53.4 *U*	18 *J*	53.4 *U*	14.3 *J*	17.7 *J*	53.4 *U*	50
ONON2A	SF0087	S321	8/4/2000		15 - 30	53.7 *U*	53.7 *U*	53.7 *U*	53.7 *U*	53.7 *U*	53.7 *U*	53.7 *U*	53.7 *U*	107 *U*
ONON2A	SF0088	S322	8/10/2000		0 - 15	52.4 *U*	52.4 *U*	52.4 *U*	915 *J*	52.4 *U*	678 *J*	225 *J*	52.4 *U*	1,818
ONON2A	SF0089	S322	8/10/2000		15 - 30	110 *U*	110 *U*	110 *U*	994 *J*	110 *U*	1,010 *J*	404 *J*	110 *U*	2,408
ONON2A	SF0094	S325	7/14/2000		0 - 2	50.8 *U*	50.8 *U*	50.8 *U*	50.8 *U*	60.5 *J*	51.9 *J*	26.2 *J*	50.8 *U*	139
ONON2A	SF0095	S325	7/14/2000		2 - 15	50 *U*	50 *U*	50 *U*	50 *U*	63.3 *J*	64.4 *J*	26.6 *J*	50 *U*	154
ONON2A	SF0096	S325	7/14/2000		15 - 30	50 *U*	50 *U*	50 *U*	50 *U*	94.6 *J*	75.3 *J*	35 *J*	19.1 *J*	224
ONON2A	SF0101	S328	7/15/2000		0 - 15	50 *U*	50 *U*	50 *U*	50 *U*	40 *J*	50.5 *J*	23.2 *J*	50 *U*	114
ONON2A	SF0102	S328	7/15/2000		15 - 30	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	100 *U*
ONON2A	SF0103	S329	7/16/2000		0 - 15	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	100 *U*
ONON2A	SF0104	S329	7/16/2000		15 - 30	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	100 *U*
ONON2A	SF0105	S330	7/16/2000		0 - 15	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	11.4 *J*	50 *U*	50 *U*	36
ONON2A	SF0106	S330	7/16/2000		15 - 30	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	50 *U*	100 *U*
ONON2A	SF0134	S333	8/2/2000		0 - 15	103 *U*	103 *U*	103 *U*	103 *U*	103 *U*	51.7 *J*	103 *U*	103 *U*	103
ONON2A	SF0135	S333	8/2/2000		15 - 30	103 *U*	103 *U*	103 *U*	103 *U*	103 *U*	60.9 *J*	103 *U*	103 *U*	112
ONON2A	SF0153	S334	8/2/2000		0 - 15	101 *U*	101 *U*	101 *U*	58.1 *J*	101 *U*	84.7 *J*	37.3 *J*	101 *U*	180
ONON2A	SF0154	S334	8/2/2000		15 - 30	104 *U*	104 *U*	104 *U*	104 *U*	104 *U*	45.7 *J*	104 *U*	104 *U*	98
ONON2A	SF0115	S335	8/2/2000		0 - 15	103 *U*	103 *U*	103 *U*	82.2 *J*	103 *U*	98.9 *J*	34.2 *J*	103 *U*	215
ONON2A	SF0116	S335	8/2/2000		15 - 30	101 *U*	101 *U*	101 *U*	101 *U*	101 *U*	53.9 *J*	101 *U*	101 *U*	104
ONON2A	SF0117	S336	8/3/2000		0 - 15	51.8 *U*	51.8 *U*	51.8 *U*	19.5 *J*	51.8 *U*	62.9 *J*	23.5 *J*	51.8 *U*	106
ONON2A	SF0118	S336	8/3/2000		15 - 30	55.3 *U*	55.3 *U*	55.3 *U*	233 *J*	55.3 *U*	416 *J*	109 *J*	55.3 *U*	758
ONON2A	SF0124	S339	8/3/2000		0 - 15	52.5 *U*	52.5 *U*	52.5 *U*	314 *J*	52.5 *U*	274 *J*	134 *J*	19.4 *J*	741
ONON2A	SF0125	S339	8/3/2000		15 - 30	54.7 *U*	54.7 *U*	54.7 *U*	244 *J*	54.7 *U*	128 *J*	95.7 *J*	26.6 *J*	494

Table A-3E. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Aroclor 1016 (µg/kg)	Aroclor 1221 (µg/kg)	Aroclor 1232 (µg/kg)	Aroclor 1242 (µg/kg)	Aroclor 1248 (µg/kg)	Aroclor 1254 (µg/kg)	Aroclor 1260 (µg/kg)	Aroclor 1268 (µg/kg)	Sum of PCBs (µg/kg)
ONON2A	SF0123	S340	8/15/2000	D1	0 - 2	54.3 *UJ*	54.3 *UJ*	54.3 *UJ*	33 *J*	54.3 *UJ*	33.7 *J*	24.3 *J*	54.3 *UJ*	91
ONON2A	SF0123 R	S340	8/15/2000	D2	0 - 2	52.3 *UJ*	52.3 *UJ*	52.3 *UJ*	16.4 *J*	52.3 *UJ*	52.3 *UJ*	52.3 *UJ*	52.3 *UJ*	43
ONON2A	SF0126	S340	8/3/2000		0 - 15	54.1 *U*	54.1 *U*	54.1 *U*	147 *J*	54.1 *U*	63.3 *J*	20.4 *J*	54.1 *U*	231
ONON2A	SF0127	S340	8/3/2000		15 - 30	53.6 *U*	499 *J*	53.6 *U*	53.6 *U*	53.6 *U*	20.1 *J*	53.6 *U*	53.6 *U*	519
ONON2A	SF0128	S341	8/4/2000		0 - 15	53.5 *U*	287 *J*	53.5 *U*	53.5 *U*	53.5 *U*	21.9 *J*	53.5 *U*	53.5 *U*	309
ONON2A	SF0129	S341	8/4/2000		15 - 30	53.2 *U*	435 *J*	53.2 *U*	53.2 *U*	53.2 *U*	24.1 *J*	53.2 *U*	53.2 *U*	459
ONON2A	SF0132	S343	8/4/2000		0 - 15	52.5 *U*	52.5 *U*	52.5 *U*	152 *J*	52.5 *U*	31.5 *J*	52.5 *U*	52.5 *U*	184
ONON2A	SF0133	S343	8/4/2000		15 - 30	52.5 *U*	52.5 *U*	52.5 *U*	162 *J*	52.5 *U*	52.5 *U*	20.3 *J*	52.5 *U*	182
ONON2A	SF0136	S345	8/4/2000		0 - 15	54.7 *U*	54.7 *U*	54.7 *U*	185 *J*	54.7 *U*	54.7 *U*	19 *J*	54.7 *U*	204
ONON2A	SF0137	S345	8/4/2000		15 - 30	53.1 *U*	53.1 *U*	53.1 *U*	121 *J*	53.1 *U*	53.1 *U*	14.3 *J*	53.1 *U*	135
ONON2A	SF0138	S346	8/4/2000		0 - 15	54.1 *U*	54.1 *U*	54.1 *U*	199 *J*	54.1 *U*	54.1 *U*	17.1 *J*	54.1 *U*	216
ONON2A	SF0139	S346	8/4/2000		15 - 30	54.6 *U*	54.6 *U*	54.6 *U*	257 *J*	54.6 *U*	54.6 *U*	22.3 *J*	54.6 *U*	279
ONON2A	SF0140	S347	8/4/2000		0 - 15	50.6 *U*	50.6 *U*	50.6 *U*	112 *J*	50.6 *U*	20.1 *J*	18.7 *J*	50.6 *U*	151
ONON2A	SF0141	S347	8/4/2000		15 - 30	50.5 *U*	50.5 *U*	50.5 *U*	191 *J*	50.5 *U*	23.3 *J*	14.1 *J*	50.5 *U*	228
ONON2A	SF0142	S348	8/5/2000		0 - 15	50.5 *U*	50.5 *U*	50.5 *U*	134 *J*	50.5 *U*	50.5 *U*	13.6 *J*	50.5 *U*	148
ONON2A	SF0143	S348	8/5/2000		15 - 30	50.3 *U*	50.3 *U*	50.3 *U*	186 *J*	50.3 *U*	50.3 *U*	11.9 *J*	50.3 *U*	198
ONON2A	SF0144	S349	8/5/2000		0 - 15	50.2 *U*	50.2 *U*	50.2 *U*	180 *J*	50.2 *U*	50.2 *U*	239 *J*	50.2 *U*	419
ONON2A	SF0145	S349	8/5/2000		15 - 30	50.6 *U*	50.6 *U*	50.6 *U*	905 *J*	50.6 *U*	670 *J*	558 *J*	50.6 *U*	2,133
ONON2A	SF0146	S350	8/5/2000		0 - 15	51.9 *UJ*	51.9 *UJ*	51.9 *UJ*	247 *J*	51.9 *UJ*	160 *J*	96.9 *J*	51.9 *UJ*	504
ONON2A	SF0147	S350	8/5/2000		15 - 30	50.5 *U*	50.5 *U*	50.5 *U*	279 *J*	50.5 *U*	34.4 *J*	62.4 *J*	50.5 *U*	376
ONON2A	SF0149	S351	8/5/2000		0 - 15	55 *U*	55 *U*	55 *U*	548 *J*	55 *U*	292 *J*	376 *J*	55 *U*	1,216
ONON2A	SF0150	S351	8/5/2000		15 - 30	54.1 *U*	54.1 *U*	54.1 *U*	280 *J*	54.1 *U*	100 *J*	132 *J*	54.1 *U*	512
ONON2A	SF0173	S351	8/15/2000		0 - 2	53.3 *U*	53.3 *U*	53.3 *U*	161 *J*	53.3 *U*	69.1 *J*	57.6 *J*	53.3 *U*	288
ONON2A	SF0151	S352	8/10/2000		0 - 15	54.5 *UJ*	54.5 *UJ*	54.5 *UJ*	466 *J*	54.5 *UJ*	399 *J*	165 *J*	54.5 *UJ*	1,030
ONON2A	SF0152	S352	8/10/2000		15 - 30	54 *UJ*	54 *UJ*	54 *UJ*	448 *J*	54 *UJ*	221 *J*	292 *J*	54 *UJ*	961
ONON2A	SF0113	S353	7/27/2000		0 - 15	152 *U*	152 *U*	152 *U*	378 *J*	152 *U*	360 *J*	208 *J*	152 *U*	946
ONON2A	SF0114	S353	7/27/2000		15 - 30	52.5 *U*	52.5 *U*	52.5 *U*	77.9 *J*	52.5 *U*	80.9 *J*	64 *J*	52.5 *U*	223
ONON2A	SF0024	S366	8/15/2000		0 - 15	54.8 *U*	54.8 *U*	54.8 *U*	54.8 *U*	54.8 *U*	54.8 *U*	54.8 *U*	54.8 *U*	110 *U*
ONON2A	SF0025	S366	8/15/2000		15 - 30	52.2 *U*	52.2 *U*	52.2 *U*	52.2 *U*	52.2 *U*	52.2 *U*	52.2 *U*	52.2 *U*	104 *U*
ONON2A	SF0026	S367	8/15/2000		0 - 2	50.9 *U*	50.9 *U*	50.9 *U*	23.1 *J*	50.9 *U*	13.6 *J*	13.6 *J*	50.9 *U*	50
ONON2A	SF0027	S367	8/15/2000		2 - 15	53.9 *U*	53.9 *U*	53.9 *U*	53.9 *U*	53.9 *U*	53.9 *U*	44.3 *J*	53.9 *U*	71
ONON2A	SF0028	S367	8/15/2000		15 - 30	54.5 *U*	54.5 *U*	54.5 *U*	54.5 *U*	54.5 *U*	54.5 *U*	54.5 *U*	54.5 *U*	109 *U*
ONON2A	BC0009	S402	7/30/2000		0 - 2	206 *U*	206 *U*	206 *U*	269 *J*	206 *U*	206 *U*	206 *U*	206 *U*	372
ONON2A	BC0010	S402	7/30/2000		2 - 10	157 *U*	157 *U*	157 *U*	249 *J*	157 *U*	157 *U*	157 *U*	157 *U*	328
ONON2A	BC0013	S403	7/30/2000		0 - 2	104 *U*	104 *U*	104 *U*	136 *J*	104 *U*	29.1 *J*	104 *J*	104 *U*	269

Table A-3E. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	Aroclor 1016 (µg/kg)	Aroclor 1221 (µg/kg)	Aroclor 1232 (µg/kg)	Aroclor 1242 (µg/kg)	Aroclor 1248 (µg/kg)	Aroclor 1254 (µg/kg)	Aroclor 1260 (µg/kg)	Aroclor 1268 (µg/kg)	Sum of PCBs (µg/kg)
ONON2A	BC0014	S403	7/30/2000		2 - 14	516 *U*	516 *U*	516 *U*	1,080 *J*	516 *U*	192 *J*	516 *U*	516 *U*	1,272
ONON2A	BC0015	S404	7/31/2000		0 - 2	516 *U*	516 *U*	516 *U*	963 *J*	516 *U*	252 *J*	309 *J*	516 *U*	1,524
ONON2A	BC0016	S404	7/31/2000		2 - 8	1,280 *U*	1,280 *U*	1,280 *U*	1,860 *J*	1,280 *U*	739 *J*	324 *J*	1,280 *U*	2,923
ONON2A	BC0019	S406	7/31/2000		0 - 2	205 *U*	205 *U*	205 *U*	1,040 *J*	205 *U*	88.4 *J*	110 *J*	205 *U*	1,238
ONON2A	BC0020	S406	7/31/2000		2 - 15	514 *U*	514 *U*	514 *U*	2,870 *J*	514 *U*	177 *J*	133 *J*	514 *U*	3,180
ONON2A	SF0170	S434	8/9/2000		0 - 15	50.2 *U*	50.2 *U*	50.2 *U*	21 *J*	50.2 *U*	13.3 *J*	50.2 *U*	50.2 *U*	34
ONON2A	SF0171	S434	8/9/2000		15 - 30	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*	1,080 *U*
ONON2A	SF0172	S435	8/9/2000		0 - 5	53.8 *UJ*	53.8 *UJ*	53.8 *UJ*	67.2 *J*	53.8 *UJ*	49.1 *J*	15.8 *J*	53.8 *UJ*	132

Notes: *J* - estimated
U - not detected at reported quantitation limit
R - rejected datum

Table A-3F. Southern Basin Nearshore Sediments – PCDD/PCDF Data

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	TEQ - Total [1] (ND=1/2) (ng/kg)	TEQ - Dioxins [1] (ND=1/2) (ng/kg)	TEQ - Furans [1] (ND=1/2) (ng/kg)	2,3,7,8-Tetrachloro-dibenzodioxin (ng/kg)	1,2,3,7,8-Pentachloro-dibenzodioxin (ng/kg)	1,2,3,4,7,8-Hexachloro-dibenzodioxin (ng/kg)	1,2,3,6,7,8-Hexachloro-dibenzodioxin (ng/kg)
ONON2A	VC0207	S311	7/20/2000		0 - 15	39.15	3.77	35.37	0.871 *J*	2.04 *J*	1.08 *J*	3.01 *J*
ONON2A	VC0208	S311	7/20/2000		15 - 30	714.55	12.80	701.75	3.07 *J*	8.13 *J*	1.76 *J*	5.6 *J*
ONON2A	SF0076	S316	8/10/2000		0 - 15	2.61	0.64	1.97	0.204 *J*	0.255 *J*	0.197 *J*	0.64 *J*
ONON2A	SF0077	S316	8/10/2000		15 - 30	0.24	0.12	0.12	0.10 *U*	0.10 *U*	0.10 *U*	0.10 *U*
ONON2A	SF0088	S322	8/10/2000		0 - 15	78.25	60.22	18.03	10.7	19.8	8.32	85.6
ONON2A	SF0089	S322	8/10/2000		15 - 30	84.64	64.88	19.76	11.8	20.6	8.89	97.8
ONON2A	SF0134	S333	8/2/2000		0 - 15	5.52	1.41	4.11	0.223 *J*	0.771 *J*	0.556 *J*	1.42 *J*
ONON2A	SF0135	S333	8/2/2000		15 - 30	1.92	0.33	1.58	0.15 *U*	0.166 *J*	0.10 *U*	0.435 *J*
ONON2A	SF0115	S335	8/2/2000		0 - 15	68.69	9.55	59.14	1.95	5.11	2.22 *J*	8.22
ONON2A	SF0116	S335	8/2/2000		15 - 30	99.63	9.26	90.37	1.92	5.31	2.53	6.48
ONON2A	SF0117	S336	8/3/2000		0 - 15	6.35	2.33	4.01	0.399 *J*	0.863 *J*	1.08 *J*	3.07
ONON2A	SF0118	S336	8/3/2000		15 - 30	91.60	64.41	27.19	9.99	26.4	20.7	93.7
ONON2A	SF0136	S345	8/4/2000		0 - 15	25.11	3.52	21.59	0.687 *J*	2.08	0.76 *J*	4.07
ONON2A	SF0137	S345	8/4/2000		15 - 30	55.56	7.04	48.53	1.53	4.21 *J*	1.19 *J*	5.24
ONON2A	SF0138	S346	8/4/2000		0 - 15	164.54	6.83	157.71	1.1	4.12 *J*	2.84	5.89
ONON2A	SF0139	S346	8/4/2000		15 - 30	254.71	13.27	241.44	1.55 *J*	8.77	3.78	11.6 *J*
ONON2A	SF0140	S347	8/4/2000		0 - 15	109.59	8.94	100.65	1.78 *J*	5.45	2.56	5.31 *J*
ONON2A	SF0141	S347	8/4/2000		15 - 30	102.98	10.04	92.93	2.9	5.51	3.57 *J*	4.44

Table A-3F. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	1,2,3,7,8,9-Hexachloro-dibenzodioxin (ng/kg)	1,2,3,4,6,7,8-Heptachloro-dibenzodioxin (ng/kg)	Octachloro-dibenzodioxin (ng/kg)	Total tetrachloro-dibenzodioxins (ng/kg)	Total pentachloro-dibenzodioxins (ng/kg)	Total hexachloro-dibenzodioxins (ng/kg)	Total heptachloro-dibenzodioxins (ng/kg)
ONON2A	VC0207	S311	7/20/2000		0 - 15	2.71 *J*	17.4 *J*	75.7 *J*	26.7 *J*	16.6 *J*	20 *J*	31.9 *J*
ONON2A	VC0208	S311	7/20/2000		15 - 30	4.97 *J*	35.4 *J*	166 *J*	33.8 *J*	30.2 *J*	35.7 *J*	66.3 *J*
ONON2A	SF0076	S316	8/10/2000		0 - 15	0.463 *J*	4.44	19.7	5.92	1.16	3.66	7.74
ONON2A	SF0077	S316	8/10/2000		15 - 30	0.10 *U*	0.18 *U*	0.54 *U*	0.355 *J*	0.10 *U*	0.194 *J*	0.10 *U*
ONON2A	SF0088	S322	8/10/2000		0 - 15	51	1,430	9,260	85.2	154	942	3,630
ONON2A	SF0089	S322	8/10/2000		15 - 30	56	1,500	12,100	97.6	156	1,020	3,780
ONON2A	SF0134	S333	8/2/2000		0 - 15	1.06 *J*	10.3	47	22.7	9.97	12.4	19.7
ONON2A	SF0135	S333	8/2/2000		15 - 30	0.317 *J*	2.3 *U*	8.06	6.99	3.87	3.43	4.05
ONON2A	SF0115	S335	8/2/2000		0 - 15	6.82	73.9	261	49.1	29.7	59.1	138
ONON2A	SF0116	S335	8/2/2000		15 - 30	6.16	49.7	133	59.5	43.9	48.7	88.6
ONON2A	SF0117	S336	8/3/2000		0 - 15	2.62 *J*	37.5	198	5.11	4.79	22	70.8
ONON2A	SF0118	S336	8/3/2000		15 - 30	74.4	884	2,980	130	225	737	1,690
ONON2A	SF0136	S345	8/4/2000		0 - 15	0.674 *J*	20	45.9	6.5	3.25	22.2	38.6
ONON2A	SF0137	S345	8/4/2000		15 - 30	4.88	16.2	49.6	4.71	3.31	30.2	26.4
ONON2A	SF0138	S346	8/4/2000		0 - 15	5.55	18.2	38.7 *J*	34.6	25.8	41	32
ONON2A	SF0139	S346	8/4/2000		15 - 30	11.1 *J*	29.7	45	12.7	17.4	25.7	42.4
ONON2A	SF0140	S347	8/4/2000		0 - 15	6.62 *J*	25	136	39.4	13.9	21.6	40.5
ONON2A	SF0141	S347	8/4/2000		15 - 30	5.4	28.3	101	17.7	12.2	20.9	42.9

Table A-3F. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	2,3,7,8-Tetrachloro-dibenzofuran (ng/kg)	1,2,3,7,8-Pentachloro-dibenzofuran (ng/kg)	2,3,4,7,8-Pentachloro-dibenzofuran (ng/kg)	1,2,3,4,7,8-Hexachloro-dibenzofuran (ng/kg)	1,2,3,6,7,8-Hexachloro-dibenzofuran (ng/kg)	1,2,3,7,8,9-Hexachloro-dibenzofuran (ng/kg)	2,3,4,6,7,8-Hexachloro-dibenzofuran (ng/kg)
ONON2A	VC0207	S311	7/20/2000		0 - 15	51.4 *J*	13.6 *J*	54.1 *J*	16.1 *J*	4.03 *J*	0.6 *J*	2.03 *J*
ONON2A	VC0208	S311	7/20/2000		15 - 30	1,050 *J*	130 *J*	1,150 *J*	107 *J*	20.5 *J*	3.68 *J*	9.49 *J*
ONON2A	SF0076	S316	8/10/2000		0 - 15	2.33	1.23	2.51	2.12	0.972 *J*	0.14 *U*	0.463 *J*
ONON2A	SF0077	S316	8/10/2000		15 - 30	0.108 *J*	0.136 *J*	0.133 *J*	0.17 *U*	0.109 *J*	0.10 *U*	0.10 *U*
ONON2A	SF0088	S322	8/10/2000		0 - 15	26.1	10.5	16.5	22.4	9.99	1.1 *U*	7.68
ONON2A	SF0089	S322	8/10/2000		15 - 30	27	9.5	17.9	26.2	11	1.1 *U*	8.17
ONON2A	SF0134	S333	8/2/2000		0 - 15	6.98	2.11	5.08	4.18	1.62 *J*	0.331 *J*	0.972 *J*
ONON2A	SF0135	S333	8/2/2000		15 - 30	3.11	1.23	1.73	1.86 *J*	0.739 *J*	0.101 *J*	0.553 *J*
ONON2A	SF0115	S335	8/2/2000		0 - 15	97.5	30.7	80.6	49.9	11.1	2.6	5.36
ONON2A	SF0116	S335	8/2/2000		15 - 30	139	43.5	128	67.6	16.1	3.9	6.72
ONON2A	SF0117	S336	8/3/2000		0 - 15	10	3.24	3.72	4.8	1.46 *J*	0.326 *J*	1.41 *J*
ONON2A	SF0118	S336	8/3/2000		15 - 30	57.3	20.4	19.9	32.6	11.6	1.51 *J*	11.5
ONON2A	SF0136	S345	8/4/2000		0 - 15	35.5	10.4	29.6	17.8	4.05	0.991 *J*	2.26
ONON2A	SF0137	S345	8/4/2000		15 - 30	86.6	32	57.8	72.5	10.4	1.69 *J*	3.3
ONON2A	SF0138	S346	8/4/2000		0 - 15	268	67.7	231	78.6	18.5	7.44	7.91
ONON2A	SF0139	S346	8/4/2000		15 - 30	270	72.6	368	193	32.1	8.36	17.3
ONON2A	SF0140	S347	8/4/2000		0 - 15	196	36.2	141	65.5	9.01	2.28 *J*	3.78 *J*
ONON2A	SF0141	S347	8/4/2000		15 - 30	232	37.7	109	99.1	13.1	3.48 *J*	5.15

Table A-3F. (cont.)

Survey	Sample Number	Survey Station	Date	Duplicates	Depth (cm)	1,2,3,4,6,7,8-Heptachloro-dibenzofuran (ng/kg)	1,2,3,4,7,8,9-Heptachloro-dibenzofuran (ng/kg)	Octachloro-dibenzofuran (ng/kg)	Total tetrachloro-dibenzofurans (ng/kg)	Total pentachloro-dibenzofurans (ng/kg)	Total hexachloro-dibenzofurans (ng/kg)	Total heptachloro-dibenzofurans (ng/kg)
ONON2A	VC0207	S311	7/20/2000		0 - 15	18.4 *J*	4.08 *J*	36.6 *J*	659 *J*	211 *J*	46.5 *J*	22.6 *J*
ONON2A	VC0208	S311	7/20/2000		15 - 30	84.5 *J*	31 *J*	268 *J*	9,990 *J*	3,140 *J*	299 *J*	173 *J*
ONON2A	SF0076	S316	8/10/2000		0 - 15	4.79	1.23 *J*	6.61	20.2	13.3	7.69	9.3
ONON2A	SF0077	S316	8/10/2000		15 - 30	0.528 *J*	0.10 *U*	0.29 *U*	0.805	0.752	0.648 *J*	0.10 *U*
ONON2A	SF0088	S322	8/10/2000		0 - 15	240	12.7	604	319	277	369	820
ONON2A	SF0089	S322	8/10/2000		15 - 30	284	13.5	699	338	328	428	951
ONON2A	SF0134	S333	8/2/2000		0 - 15	7.8 *U*	1.68 *J*	21.6	97.5	32.6	17.2	15.8
ONON2A	SF0135	S333	8/2/2000		15 - 30	3.0 *U*	0.59 *J*	4.95	57.5	13.2	5.4	4.7
ONON2A	SF0115	S335	8/2/2000		0 - 15	47.5	16.8	179	58.9	349	155	110
ONON2A	SF0116	S335	8/2/2000		15 - 30	57.2	26.4	262	892	520	206	126
ONON2A	SF0117	S336	8/3/2000		0 - 15	17	1.71 *J*	25.3	54	21.2	29.6	43.4
ONON2A	SF0118	S336	8/3/2000		15 - 30	453	18.6	549	336	226	619	1,350
ONON2A	SF0136	S345	8/4/2000		0 - 15	14.3	6.13	46.4	403	143	48.1	32.9
ONON2A	SF0137	S345	8/4/2000		15 - 30	33.3	23.1	140	655	271	115	79.4
ONON2A	SF0138	S346	8/4/2000		0 - 15	47.1	28.8	214	1,400	758	209	108
ONON2A	SF0139	S346	8/4/2000		15 - 30	99.8	68.1	526	1,770	1,250	454	260
ONON2A	SF0140	S347	8/4/2000		0 - 15	37.1	27.9	325	1,330	459	126	97.6
ONON2A	SF0141	S347	8/4/2000		15 - 30	66.2	52.9	729	1,010	400	210	181

Notes: [1] Calculated using WHO TEFs

J - estimated

U - not detected at reported quantitation limit

Table A-4A. Northern Basin Wetland SYW-6 Sediment Sample Data (All Parameters)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	WS0001	WS0002	WS0003	WS0004	WS0005	WS0006
	Station ID:	S375	S375	S376	S376	S377	S377
	Duplicates:						
	Date:	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000
	Depth (cm):	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**						
Inorganics							
Aluminum	mg/kg	7,840	9,450	6,540	4,330	3,950	2,460
Antimony	mg/kg	0.86 *U*	0.74	0.54 *U*	0.41 *U*	0.58	0.35 *U*
Arsenic	mg/kg	3.5	2.3	4.0	2.2	2.7	1.3
Barium	mg/kg	122	115	176	125	114	110
Beryllium	mg/kg	0.63	0.6	0.44	0.31	0.33	0.21
Cadmium	mg/kg	14.3	2.9	1.9	1.8	2.9	0.31
Calcium	mg/kg	99,000	96,800	198,000	189,000	264,000	315,000
Chromium	mg/kg	154	33.4	41.1	27.4	47.9	6.2
Cobalt	mg/kg	3.9	3	5.6	2.3	2.0	1.1
Copper	mg/kg	120	58.3	66.8	51.8	38.3	8.0
Cyanide	mg/kg	2.3 *U*	1.6 *U*	5.4	1.1 *U*	1.3 *U*	0.91 *U*
Iron	mg/kg	11,100	9,370	14,300	6,880	6,420	3,250
Lead	mg/kg	175	162	81.3	41.1	48.6	12
Magnesium	mg/kg	6,780	3,790	14,200	4,320	4,250	2,840
Manganese	mg/kg	230	152	218	120	234	263
Mercury	mg/kg	3.9 *J*	1 *J*	0.45 *J*	0.4 *J*	0.88 *J*	0.07 *J*
Nickel	mg/kg	64.3	42.6	29.8	22.8	26.2	7
Potassium	mg/kg	1,740	1,640	1,290	702	793	349
Selenium	mg/kg	2.5	1.8	1.0 *U*	0.8 *U*	0.93 *U*	0.67 *U*
Silver	mg/kg	1.4	0.26	0.23	0.20	0.30	0.14 *U*
Sodium	mg/kg	3,120 *J*	2,420 *J*	1,640 *J*	1,580 *J*	1,470 *J*	1,110 *J*
Thallium	mg/kg	2.2 *U*	1.6 *U*	1.4 *U*	1.1 *U*	1.2 *U*	1.3
Vanadium	mg/kg	22.3	19.6	17.2	9.9	10.1	4.5
Zinc	mg/kg	353 *J*	175 *J*	510 *J*	198 *J*	128 *J*	52.2 *J*
Semivolatile Organic Compounds							
1,2,4-Trichlorobenzene	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
1,2-Dichlorobenzene	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
1,3-Dichlorobenzene	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
1,4-Dichlorobenzene	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
2,2'-Oxybis(1-chloropropane)	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*

Table A-4A. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	WS0001	WS0002	WS0003	WS0004	WS0005	WS0006
	Station ID:	S375	S375	S376	S376	S377	S377
	Duplicates:						
	Date:	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000
	Depth (cm):	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**						
2,4,5-Trichlorophenol	µg/kg	670 *U*	550 *U*	380 *U*	450 *U*	450 *U*	320 *U*
2,4,6-Trichlorophenol	µg/kg	670 *U*	550 *U*	380 *U*	450 *U*	450 *U*	320 *U*
2,4-Dichlorophenol	µg/kg	670 *U*	550 *U*	380 *U*	450 *U*	450 *U*	320 *U*
2,4-Dimethylphenol	µg/kg	670 *U*	550 *U*	380 *U*	450 *U*	450 *U*	320 *U*
2,4-Dinitrophenol	µg/kg	3,400 *UJ*	2,700 *UJ*	1,900 *UJ*	2,200 *UJ*	2,200 *UJ*	1,600 *UJ*
2,4-Dinitrotoluene	µg/kg	670 *U*	550 *U*	380 *U*	450 *U*	450 *U*	320 *U*
2,6-Dinitrotoluene	µg/kg	670 *U*	550 *U*	380 *U*	450 *U*	450 *U*	320 *U*
2-Chloronaphthalene	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
2-Chlorophenol	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
2-Methyl-4,6-dinitrophenol	µg/kg	3,400 *U*	2,700 *U*	1,900 *U*	2,200 *U*	2,200 *U*	1,600 *U*
2-Methylnaphthalene	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
2-Methylphenol	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
4-Methylphenol	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
2-Nitroaniline	µg/kg	260 *U*	220 *U*	150 *U*	180 *U*	180 *U*	130 *U*
3-Nitroaniline	µg/kg	3,400 *U*	2,700 *U*	1,900 *U*	2,200 *U*	2,200 *U*	1,600 *U*
4-Nitroaniline	µg/kg	3,400 *U*	2,700 *U*	1,900 *U*	2,200 *U*	2,200 *U*	1,600 *U*
2-Nitrophenol	µg/kg	670 *U*	550 *U*	380 *U*	450 *U*	450 *U*	320 *U*
4-Nitrophenol	µg/kg	3,400 *U*	2,700 *U*	1,900 *U*	2,200 *U*	2,200 *U*	1,600 *U*
3,3-Dichlorobenzidine	µg/kg	130 *UJ*	110 *UJ*	74 *UJ*	87 *UJ*	87 *UJ*	62 *UJ*
4-Bromophenyl-phenyl ether	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
4-Chloro-3-methylphenol	µg/kg	670 *U*	550 *U*	380 *U*	450 *U*	450 *U*	320 *U*
4-Chloroaniline	µg/kg	130 *UJ*	110 *UJ*	74 *UJ*	87 *UJ*	87 *UJ*	62 *UJ*
4-Chlorophenyl-phenyl ether	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
Acenaphthene	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
Acenaphthylene	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
Anthracene	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
Benz(a)anthracene	µg/kg	220	180	130	89	130	62 *U*
Benzo(a)pyrene	µg/kg	250	180	160	91	140	62 *U*
Benzo(b)fluoranthene	µg/kg	190	150	180	87 *U*	110	62 *U*
Benzo(g,h,i)perylene	µg/kg	210	130	170	87 *U*	110	62 *U*
Benzo(k)fluoranthene	µg/kg	170	170	150	87 *U*	120	62 *U*
Benzyl alcohol	µg/kg	670 *U*	550 *U*	380 *U*	450 *U*	450 *U*	320 *U*

Table A-4A. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	WS0001	WS0002	WS0003	WS0004	WS0005	WS0006
	Station ID:	S375	S375	S376	S376	S377	S377
	Duplicates:						
	Date:	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000
	Depth (cm):	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**						
Bis(2-chloroethoxy)methane	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
Bis(2-chloroethyl)ether	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
Bis(2-ethylhexyl)phthalate	µg/kg	180 *U*	160 *U*	220 *U*	120 *U*	87 *U*	62 *U*
Butylbenzylphthalate	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
Carbazole	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
Chrysene	µg/kg	280	220	180	110	150	62 *U*
Dibenz(a,h)anthracene	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
Dibenzofuran	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
Diethylphthalate	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
Dimethylphthalate	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
Di-n-butylphthalate	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
Di-n-octylphthalate	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
Fluoranthene	µg/kg	420	330	240	140	250	62 *U*
Fluorene	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
Hexachlorobenzene (GC/ECD)	µg/kg	*R*	1.08 *U*	*R*	*R*	1.07 *U*	1.07 *U*
Hexachlorobenzene (GC/MS)	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
Final HCB Value	µg/kg	130 *U*	1.08 *U*	74 *U*	87 *U*	1.07 *U*	1.07 *U*
Hexachlorobutadiene	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
Hexachlorocyclopentadiene	µg/kg	670 *UJ*	550 *UJ*	380 *UJ*	450 *UJ*	450 *UJ*	320 *U*
Hexachloroethane	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
Indeno(1,2,3-cd)pyrene	µg/kg	170	120	120	87 *U*	90	62 *U*
Isophorone	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
Naphthalene	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
Nitrobenzene	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
N-Nitrosodimethylamine	µg/kg	670 *U*	550 *U*	380 *U*	450 *U*	450 *U*	320 *U*
N-nitroso-di-n-propylamine	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
N-Nitrosodiphenylamine	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
Pentachlorophenol	µg/kg	3,400 *U*	2,700 *U*	1,900 *U*	2,200 *U*	2,200 *U*	1,600 *U*
Phenanthrene	µg/kg	210	230	110	87 *U*	180	62 *U*
Phenol	µg/kg	130 *U*	110 *U*	74 *U*	87 *U*	87 *U*	62 *U*
Pyrene	µg/kg	450	390	260	190	250	62 *U*

Table A-4A. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	WS0001	WS0002	WS0003	WS0004	WS0005	WS0006
Station ID:	S375	S375	S376	S376	S377	S377
Duplicates:						
Date:	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000
Depth (cm):	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**					
Pesticides						
4,4'-DDD	µg/kg	1.08 *UJ*	1.08 *UJ*	*R*	1.06 *UJ*	1.07 *UJ*	1.07 *UJ*
4,4'-DDE	µg/kg	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	1.06 *UJ*	1.07 *UJ*	1.07 *UJ*
4,4'-DDT	µg/kg	1.72 *J*	1.45 *J*	2.32 *J*	2.24 *J*	1.45 *J*	1.07 *UJ*
Aldrin	µg/kg	1.08 *U*	1.08 *U*	1.08 *UJ*	1.06 *U*	1.07 *U*	1.07 *U*
alpha-BHC	µg/kg	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	1.06 *UJ*	1.07 *UJ*	1.07 *UJ*
beta-BHC	µg/kg	1.08 *UJ*	1.08 *UJ*	*R*	1.06 *UJ*	1.07 *UJ*	1.07 *UJ*
delta-BHC	µg/kg	*R*	*R*	*R*	*R*	*R*	*R*
gamma-BHC (Lindane)	µg/kg	1.08 *UJ*	1.08 *UJ*	*R*	1.06 *UJ*	1.07 *UJ*	1.07 *UJ*
Dieldrin	µg/kg	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	1.06 *UJ*	1.07 *UJ*	1.07 *UJ*
Endosulfan I	µg/kg	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	1.06 *UJ*	1.07 *UJ*	1.07 *UJ*
Endosulfan II	µg/kg	1.08 *UJ*	1.08 *UJ*	*R*	1.06 *UJ*	1.07 *UJ*	1.07 *UJ*
Endosulfan sulfate	µg/kg	*R*	*R*	*R*	*R*	*R*	*R*
Endrin aldehyde	µg/kg	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	1.06 *UJ*	1.07 *UJ*	1.07 *UJ*
Endrin ketone	µg/kg	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	1.06 *UJ*	1.07 *UJ*	1.07 *UJ*
Endrin	µg/kg	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	1.06 *UJ*	1.07 *UJ*	1.07 *UJ*
Heptachlor epoxide	µg/kg	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	1.06 *UJ*	1.07 *UJ*	1.07 *UJ*
Heptachlor	µg/kg	1.08 *U*	1.08 *U*	1.08 *UJ*	1.06 *U*	1.07 *U*	1.07 *U*
Methoxychlor	µg/kg	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	1.06 *UJ*	1.07 *UJ*	1.07 *UJ*
Toxaphene	µg/kg	108 *UJ*	108 *UJ*	108 *UJ*	106 *UJ*	107 *UJ*	107 *UJ*
alpha (cis)-Chlordane	µg/kg	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	1.06 *UJ*	1.07 *UJ*	1.07 *UJ*
gamma (trans)-Chlordane	µg/kg	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	1.06 *UJ*	1.07 *UJ*	1.07 *UJ*
Total chlordane[1]	µg/kg	1.08 *UJ*	1.08 *UJ*	1.08 *UJ*	1.06 *UJ*	1.07 *UJ*	1.07 *UJ*
PCBs						
Aroclor 1016	µg/kg	53.8 *U*	54.2 *U*	54 *U*	53.1 *U*	53.5 *U*	53.5 *U*
Aroclor 1221	µg/kg	53.8 *U*	54.2 *U*	54 *U*	53.1 *U*	53.5 *U*	53.5 *U*
Aroclor 1232	µg/kg	53.8 *U*	54.2 *U*	54 *U*	53.1 *U*	53.5 *U*	53.5 *U*
Aroclor 1242	µg/kg	53.8 *U*	54.2 *U*	54 *U*	53.1 *U*	53.5 *U*	53.5 *U*
Aroclor 1248	µg/kg	53.8 *U*	54.2 *U*	54 *U*	53.1 *U*	53.5 *U*	53.5 *U*
Aroclor 1254	µg/kg	35.5 *J*	54.2 *U*	28 *J*	37.7 *J*	16.5 *J*	53.5 *U*
Aroclor 1260	µg/kg	25.5 *J*	54.2 *U*	54 *U*	22.8 *J*	11.7 *J*	53.5 *U*

Table A-4A. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	WS0001	WS0002	WS0003	WS0004	WS0005	WS0006
	Station ID:	S375	S375	S376	S376	S377	S377
	Duplicates:						
	Date:	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000
	Depth (cm):	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**						
Aroclor 1268	µg/kg	53.8 *U*	54.2 *U*	54 *U*	53.1 *U*	53.5 *U*	53.5 *U*
Sum of PCBs	µg/kg	61	108.4 *U*	55	60.5	28.2	107 *U*
PCDD/PCDFs							
2,3,7,8-Tetrachlorodibenzodioxin	ng/kg	2.26	0.221 *J*	0.806 *J*	0.659 *J*	0.625 *J*	0.1 *U*
1,2,3,7,8-Pentachlorodibenzodioxin	ng/kg	4.75	0.553 *J*	1.89 *J*	1.47 *J*	1.37	0.1 *U*
1,2,3,4,7,8-Hexachlorodibenzodioxin	ng/kg	3.66 *J*	0.545 *J*	1.78 *J*	1.27 *J*	1.13 *J*	0.1 *U*
1,2,3,6,7,8-Hexachlorodibenzodioxin	ng/kg	13	1.11 *J*	5.68	4.1	4.15	0.12 *J*
1,2,3,7,8,9-Hexachlorodibenzodioxin	ng/kg	10.3	1.14 *J*	4.88	3.37 *J*	3.52	0.142 *J*
1,2,3,4,6,7,8-Heptachlorodibenzodioxin	ng/kg	159	10.8	84.5	56.9	54.1	1.24 *J*
Octachlorodibenzodioxin	ng/kg	984	43.1	510	285	331	5.28 *J*
Total tetrachlorodibenzodioxins	ng/kg	38.4	8.36	18	10.8	12.4	0.73 *J*
Total pentachlorodibenzodioxins	ng/kg	24.1	6.16	9.28	8.91	10.4	0.485 *J*
Total hexachlorodibenzodioxins	ng/kg	125	13.1	47.4	34.3	38.2	1.17 *J*
Total heptachlorodibenzodioxins	ng/kg	303	20.5	161	107	103	2.15 *J*
2,3,7,8-Tetrachlorodibenzofuran	ng/kg	13.8	3.42	3.75	3.71	4.97	0.242 *J*
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg	5.17 *J*	1.49	1.49	1.04 *J*	1.8	0.156 *J*
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg	8.41	1.98	2.54	1.53	2.59	0.15 *J*
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg	7.65	1.8 *J*	2.67	1.92 *J*	2.66	0.232 *J*
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg	4.73 *J*	1.41 *J*	1.72 *J*	1.28 *J*	1.6 *J*	0.135 *J*
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg	1.5 *U*	0.2 *U*	0.43 *U*	0.32 *U*	0.46 *U*	0.1 *U*
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg	5.83	1.68 *J*	2.33 *J*	1.62 *J*	1.86 *J*	0.12 *J*
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg	64.3	10.7	21.2	15.3	19.3	0.914 *J*
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg	3.02 *J*	0.395 *J*	1.55 *J*	0.929 *J*	1.12 *J*	0.11 *J*
Octachlorodibenzofuran	ng/kg	96.5	7.69	37	21.6	24.7	0.905 *J*
Total tetrachlorodibenzofurans	ng/kg	186	44.3	48.8	41.2	54.9	2.5
Total pentachlorodibenzofurans	ng/kg	121	26	23.4	20	35.5	1.23
Total hexachlorodibenzofurans	ng/kg	89.5	19	33	22.6	26.4	1.25 *J*
Total heptachlorodibenzofurans	ng/kg	126	16	46.4	29.3	38	0.83 *J*
TEQ - Dioxins (ND=1/2)	ng/kg	11.39	1.17	4.83	3.60	3.45	0.14
TEQ - Furans (ND=1/2)	ng/kg	8.42	2.02	2.64	1.85	2.72	0.17
TEQ - Total [2] (ND=1/2)	ng/kg	19.82	3.18	7.47	5.45	6.17	0.32

Table A-4A. (cont.)

	Survey:	ONON2A		ONON2A		NYSDEC-2002[3]		NYSDEC-2002[1]		NYSDEC-2002[3]		NYSDEC-2002[3]	
	Sample Number:	WS0007		WS0008		SYW6-10015		SYW6-11530		SYW6-20015		SYW6-21530	
	Station ID:	S378		S378		W6__1		W6__1		W6__2		W6__2	
	Duplicates:												
	Date:	8/12/2000		8/12/2000		05/09/02		05/09/02		05/09/02		05/09/02	
	Depth (cm):	0 - 15		15 - 30		0-15		15-30		0-15		15-30	
Chemical	**Units**												
Inorganics													
Aluminum	mg/kg	4,250		5,410		1,780		3,720		7,700	*J*	13,700	*J*
Antimony	mg/kg	0.68	*U*	0.55	*U*	0.8	*J*	0.26	*J*	0.19	*UJ*	0.54	*J*
Arsenic	mg/kg	1.8		3.2		0.86		2.3		5.9	*J*	7.7	*J*
Barium	mg/kg	129		131		107		129		133	*J*	224	*J*
Beryllium	mg/kg	0.32		0.37		0.11		0.22		0.49	*J*	0.88	*J*
Cadmium	mg/kg	0.66		1.1		2		1.8		2.5	*J*	4.6	*J*
Calcium	mg/kg	331,000		298,000		275,000		288,000		38,500	*J*	37,600	*J*
Chromium	mg/kg	15.9		21.4		30.9		24		34	*J*	86	*J*
Cobalt	mg/kg	3.0		2.9		1.8	*J*	2.2	*J*	6.7	*J*	7.1	*J*
Copper	mg/kg	19.3		23.6		18.4		21.8		45.1	*J*	122	*J*
Cyanide	mg/kg	1.8	*U*	1.5	*U*								
Iron	mg/kg	9,430		9,860		3,420	*J*	5,270	*J*	24,000	*J*	32,400	*J*
Lead	mg/kg	18.3		26.2		58.2	*J*	89.9	*J*	75	*J*	164	*J*
Magnesium	mg/kg	4,750		4,600		2,950	*J*	3,290	*J*	13,000	*J*	9,580	*J*
Manganese	mg/kg	242		230		280	*J*	301	*J*	406	*J*	434	*J*
Mercury	mg/kg	0.23	*J*	0.083	*UJ*	1		1.5		0.39	*J*	0.63	*J*
Nickel	mg/kg	15.9		17.8		15.4		20.7		37.9	*J*	75	*J*
Potassium	mg/kg	687		914		372	*J*	220	*J*	734	*J*	800	*J*
Selenium	mg/kg	1.3	*U*	1.1	*U*	0.22	*U*	0.24	*U*	1	*J*	0.68	*J*
Silver	mg/kg	0.27	*U*	0.22	*U*	0.3		0.27		0.67	*J*	0.88	*J*
Sodium	mg/kg	2,260	*J*	1,950	*J*	964	*J*	532	*J*	1,120	*J*	1,240	*J*
Thallium	mg/kg	1.7	*U*	1.4	*U*	0.22	*U*	0.24	*U*	1.4	*J*	1.9	*J*
Vanadium	mg/kg	7.5		10.2		5.1		8.5		19.9	*J*	36.4	*J*
Zinc	mg/kg	108	*J*	118	*J*	75.8	*J*	80.5	*J*	165	*J*	239	*J*
Semivolatile Organic Compounds													
1,2,4-Trichlorobenzene	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
1,2-Dichlorobenzene	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
1,3-Dichlorobenzene	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
1,4-Dichlorobenzene	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
2,2'-Oxybis(1-chloropropane)	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*

Table A-4A. (cont.)

Survey:	ONON2A	ONON2A	NYSDEC-2002[3]		NYSDEC-2002[1]		NYSDEC-2002[3]		NYSDEC-2002[3]	
Sample Number:	WS0007	WS0008	SYW6-10015		SYW6-11530		SYW6-20015		SYW6-21530	
Station ID:	S378	S378	W6__1		W6__1		W6__2		W6__2	
Duplicates:										
Date:	8/12/2000	8/12/2000	05/09/02		05/09/02		05/09/02		05/09/02	
Depth (cm):	0 - 15	15 - 30	0-15		15-30		0-15		15-30	
Chemical	**Units**									
2,4,5-Trichlorophenol	µg/kg	500 *U*	440 *U*	1,500	*U*	1,600	*U*	3,000	*UJ*	2,800	*UJ*
2,4,6-Trichlorophenol	µg/kg	500 *U*	440 *U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
2,4-Dichlorophenol	µg/kg	500 *U*	440 *U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
2,4-Dimethylphenol	µg/kg	500 *U*	440 *U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
2,4-Dinitrophenol	µg/kg	2,500 *UJ*	2,200 *UJ*	1,500	*U*	1,600	*U*	3,000	*UJ*	2,800	*UJ*
2,4-Dinitrotoluene	µg/kg	500 *U*	440 *U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
2,6-Dinitrotoluene	µg/kg	500 *U*	440 *U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
2-Chloronaphthalene	µg/kg	98 *U*	86 *U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
2-Chlorophenol	µg/kg	98 *U*	86 *U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
2-Methyl-4,6-dinitrophenol	µg/kg	2,500 *U*	2,200 *U*								
2-Methylnaphthalene	µg/kg	98 *U*	86 *U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
2-Methylphenol	µg/kg	98 *U*	86 *U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
4-Methylphenol	µg/kg	98 *U*	86 *U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
2-Nitroaniline	µg/kg	200 *U*	170 *U*	1,500	*U*	1,600	*U*	3,000	*UJ*	2,800	*UJ*
3-Nitroaniline	µg/kg	2,500 *U*	2,200 *U*	1,500	*U*	1,600	*U*	3,000	*UJ*	2,800	*UJ*
4-Nitroaniline	µg/kg	2,500 *U*	2,200 *U*	1,500	*U*	1,600	*U*	3,000	*UJ*	2,800	*UJ*
2-Nitrophenol	µg/kg	500 *U*	440 *U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
4-Nitrophenol	µg/kg	2,500 *U*	2,200 *U*	1,500	*U*	1,600	*U*	3,000	*UJ*	2,800	*UJ*
3,3-Dichlorobenzidine	µg/kg	98 *UJ*	86 *UJ*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
4-Bromophenyl-phenyl ether	µg/kg	98 *U*	86 *U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
4-Chloro-3-methylphenol	µg/kg	500 *U*	440 *U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
4-Chloroaniline	µg/kg	98 *UJ*	86 *UJ*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
4-Chlorophenyl-phenyl ether	µg/kg	98 *U*	86 *U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
Acenaphthene	µg/kg	98 *U*	86 *U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
Acenaphthylene	µg/kg	98 *U*	86 *U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
Anthracene	µg/kg	98 *U*	86 *U*	100	*J*	800	*U*	1,500	*UJ*	1,400	*UJ*
Benz(a)anthracene	µg/kg	98 *U*	86 *U*	520	*J*	170	*J*	1,500	*UJ*	190	*J*
Benzo(a)pyrene	µg/kg	98 *U*	86 *U*	550	*J*	200	*J*	1,500	*UJ*	210	*J*
Benzo(b)fluoranthene	µg/kg	98 *U*	86 *U*	730	*J*	240	*J*	1,500	*UJ*	350	*J*
Benzo(g,h,i)perylene	µg/kg	98 *U*	86 *U*	410	*J*	800	*U*	1,500	*UJ*	180	*J*
Benzo(k)fluoranthene	µg/kg	98 *U*	86 *U*	260	*J*	800	*U*	1,500	*UJ*	1,400	*UJ*
Benzyl alcohol	µg/kg	500 *U*	440 *U*								

Table A-4A. (cont.)

	Survey:	ONON2A		ONON2A		NYSDEC-2002[3]		NYSDEC-2002[1]		NYSDEC-2002[3]		NYSDEC-2002[3]	
	Sample Number:	WS0007		WS0008		SYW6-10015		SYW6-11530		SYW6-20015		SYW6-21530	
	Station ID:	S378		S378		W6__1		W6__1		W6__2		W6__2	
	Duplicates:												
	Date:	8/12/2000		8/12/2000		05/09/02		05/09/02		05/09/02		05/09/02	
	Depth (cm):	0 - 15		15 - 30		0-15		15-30		0-15		15-30	
Chemical	**Units**												
Bis(2-chloroethoxy)methane	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
Bis(2-chloroethyl)ether	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
Bis(2-ethylhexyl)phthalate	µg/kg	98	*U*	2,100		740	*U*	800	*U*	1,500	*UJ*	240	*J*
Butylbenzylphthalate	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
Carbazole	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
Chrysene	µg/kg	98	*U*	86	*U*	670	*J*	210	*J*	170	*J*	300	*J*
Dibenz(a,h)anthracene	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
Dibenzofuran	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
Diethylphthalate	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
Dimethylphthalate	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
Di-n-butylphthalate	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	170	*J*
Di-n-octylphthalate	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
Fluoranthene	µg/kg	98	*U*	86	*U*	990		320	*J*	310	*J*	450	*J*
Fluorene	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
Hexachlorobenzene (GC/ECD)	µg/kg	1.08	*U*	1.09	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
Hexachlorobenzene (GC/MS)	µg/kg	98	*U*	86	*U*								
Final HCB Value	µg/kg	1.08	*U*	1.09	*U*								
Hexachlorobutadiene	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
Hexachlorocyclopentadiene	µg/kg	500	*UJ*	440	*UJ*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
Hexachloroethane	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
Indeno(1,2,3-cd)pyrene	µg/kg	98	*U*	86	*U*	360	*J*	800	*U*	1,500	*UJ*	170	*J*
Isophorone	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
Naphthalene	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
Nitrobenzene	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
N-Nitrosodimethylamine	µg/kg	500	*U*	440	*U*								
N-nitroso-di-n-propylamine	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
N-Nitrosodiphenylamine	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
Pentachlorophenol	µg/kg	2,500	*U*	2,200	*U*	1,500	*U*	1,600	*U*	3,000	*UJ*	2,800	*UJ*
Phenanthrene	µg/kg	98	*U*	86	*U*	570	*J*	120	*J*	1,500	*UJ*	260	*J*
Phenol	µg/kg	98	*U*	86	*U*	740	*U*	800	*U*	1,500	*UJ*	1,400	*UJ*
Pyrene	µg/kg	98	*U*	86	*U*	1,100		320	*J*	260	*J*	460	*J*

Table A-4A. (cont.)

	Survey:	ONON2A	ONON2A	NYSDEC-2002[3]	NYSDEC-2002[1]	NYSDEC-2002[3]	NYSDEC-2002[3]
	Sample Number:	WS0007	WS0008	SYW6-10015	SYW6-11530	SYW6-20015	SYW6-21530
	Station ID:	S378	S378	W6__1	W6__1	W6__2	W6__2
	Duplicates:						
	Date:	8/12/2000	8/12/2000	05/09/02	05/09/02	05/09/02	05/09/02
	Depth (cm):	0 - 15	15 - 30	0-15	15-30	0-15	15-30
Chemical	**Units**						
Pesticides							
4,4'-DDD	µg/kg	1.08 *UJ*	1.09 *UJ*				
4,4'-DDE	µg/kg	*R*	2.43 *J*				
4,4'-DDT	µg/kg	*R*	*R*				
Aldrin	µg/kg	1.08 *U*	1.09 *U*				
alpha-BHC	µg/kg	1.08 *UJ*	1.09 *UJ*				
beta-BHC	µg/kg	1.08 *UJ*	1.09 *UJ*				
delta-BHC	µg/kg	*R*	*R*				
gamma-BHC (Lindane)	µg/kg	1.08 *UJ*	1.09 *UJ*				
Dieldrin	µg/kg	1.08 *UJ*	1.09 *UJ*				
Endosulfan I	µg/kg	1.08 *UJ*	1.09 *UJ*				
Endosulfan II	µg/kg	1.08 *UJ*	1.09 *UJ*				
Endosulfan sulfate	µg/kg	*R*	*R*				
Endrin aldehyde	µg/kg	1.08 *UJ*	1.09 *UJ*				
Endrin ketone	µg/kg	1.08 *UJ*	1.09 *UJ*				
Endrin	µg/kg	1.08 *UJ*	1.09 *UJ*				
Heptachlor epoxide	µg/kg	1.08 *UJ*	1.09 *UJ*				
Heptachlor	µg/kg	1.08 *U*	1.09 *U*				
Methoxychlor	µg/kg	1.08 *UJ*	1.09 *UJ*				
Toxaphene	µg/kg	108 *UJ*	109 *UJ*				
alpha (cis)-Chlordane	µg/kg	1.08 *UJ*	1.09 *UJ*				
gamma (trans)-Chlordane	µg/kg	1.08 *UJ*	1.09 *UJ*				
Total chlordane[1]	µg/kg	1.08 *UJ*	1.09 *UJ*				
PCBs							
Aroclor 1016	µg/kg	54.2 *U*	54.5 *U*				
Aroclor 1221	µg/kg	54.2 *U*	54.5 *U*				
Aroclor 1232	µg/kg	54.2 *U*	54.5 *U*				
Aroclor 1242	µg/kg	54.2 *U*	21.1 *J*				
Aroclor 1248	µg/kg	54.2 *U*	54.5 *U*				
Aroclor 1254	µg/kg	17.4 *J*	24.9 *J*				
Aroclor 1260	µg/kg	54.2 *U*	54.5 *U*				

Table A-4A. (cont.)

	Survey:	ONON2A	ONON2A	NYSDEC-2002[3]	NYSDEC-2002[1]	NYSDEC-2002[3]	NYSDEC-2002[3]
	Sample Number:	WS0007	WS0008	SYW6-10015	SYW6-11530	SYW6-20015	SYW6-21530
	Station ID:	S378	S378	W6__1	W6__1	W6__2	W6__2
	Duplicates:						
	Date:	8/12/2000	8/12/2000	05/09/02	05/09/02	05/09/02	05/09/02
	Depth (cm):	0 - 15	15 - 30	0-15	15-30	0-15	15-30
Chemical	**Units**						
Aroclor 1268	µg/kg	54.2 *U*	54.5 *U*				
Sum of PCBs	µg/kg	44.5	46.0				
PCDD/PCDFs							
2,3,7,8-Tetrachlorodibenzodioxin	ng/kg	0.173 *J*	0.37 *J*				
1,2,3,7,8-Pentachlorodibenzodioxin	ng/kg	0.377 *J*	0.56 *U*				
1,2,3,4,7,8-Hexachlorodibenzodioxin	ng/kg	0.316 *J*	0.389 *J*				
1,2,3,6,7,8-Hexachlorodibenzodioxin	ng/kg	0.937 *J*	1.48 *J*				
1,2,3,7,8,9-Hexachlorodibenzodioxin	ng/kg	0.896 *J*	1.21 *J*				
1,2,3,4,6,7,8-Heptachlorodibenzodioxin	ng/kg	16.7	19				
Octachlorodibenzodioxin	ng/kg	95.1	117				
Total tetrachlorodibenzodioxins	ng/kg	4.74	4.72				
Total pentachlorodibenzodioxins	ng/kg	1.15 *J*	4.75				
Total hexachlorodibenzodioxins	ng/kg	8.05	13.8				
Total heptachlorodibenzodioxins	ng/kg	31.9	35.5				
2,3,7,8-Tetrachlorodibenzofuran	ng/kg	1.92	2.19				
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg	0.354 *J*	0.708 *J*				
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg	0.724 *J*	1.15				
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg	0.644 *J*	1.18 *J*				
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg	0.582 *J*	0.769 *J*				
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg	0.18 *U*	0.1 *U*				
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg	0.71 *J*	0.619 *J*				
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg	5.33	6.55				
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg	0.411 *J*	0.41 *U*				
Octachlorodibenzofuran	ng/kg	6.76 *J*	9.19				
Total tetrachlorodibenzofurans	ng/kg	23.7	33				
Total pentachlorodibenzofurans	ng/kg	8.72	16.1				
Total hexachlorodibenzofurans	ng/kg	6.07	11.7				
Total heptachlorodibenzofurans	ng/kg	10.4	12.8				
TEQ - Dioxins (ND=1/2)	ng/kg	0.94	1.16				
TEQ - Furans (ND=1/2)	ng/kg	0.83	1.16				
TEQ - Total [2] (ND=1/2)	ng/kg	1.77	2.32				

Table A-4A. (cont.)

Survey:	NYSDEC-2002[3]		NYSDEC-2002[3]		NYSDEC-2002[3]		NYSDEC-2002[3]		NYSDEC-2002[3]		NYSDEC-2002[3]		NYSDEC-2002[3]	
Sample Number:	SYW6-30015		SYW6-31530		SYW6-40015		SYW6-41530		SYW6-41530DUP		SYW6-50015		SYW6-51530	
Station ID:	W6__3		W6__3		W6__4		W6__4		W6__4		W6__5		W6__5	
Duplicates:									D1					
Date:	05/09/02		05/09/02		05/09/02		05/09/02		05/09/02		05/09/02		05/09/02	
Depth (cm):	0-15		15-30		0-15		15-30		15-30		0-15		15-30	
Chemical	**Units**													
Inorganics														
Aluminum	mg/kg	5,310	J	8,080	J	6,610		4,240		4,150		1,550		634	
Antimony	mg/kg	2.2	J	1.2	J	0.12	UJ	0.15	J	0.085	UJ	0.05	UJ	0.061	UJ
Arsenic	mg/kg	3.4	J	4	J	1.9		1.6		1.4		0.54		1.2	
Barium	mg/kg	114	J	131	J	151		124		126		78		111	
Beryllium	mg/kg	0.4	J	0.54	J	0.41		0.23		0.22		0.073		0.021	
Cadmium	mg/kg	5.4	J	2.6	J	0.68		0.52		0.41		0.46		0.67	
Calcium	mg/kg	78,300	J	86,100	J	193,000		238,000		261,000		258,000		336,000	
Chromium	mg/kg	89.4	J	46.1	J	14.9		9.5		9.1		11.2		12.3	
Cobalt	mg/kg	4.9	J	4.3	J	3.2	J	2.1	J	2	J	1.5	J	1.1	J
Copper	mg/kg	71.6	J	67.1	J	26		16.7		14.7		9.5		12.1	
Cyanide	mg/kg														
Iron	mg/kg	11,300	J	11,100	J	8,270		5,450	J	5,200		3,290	J	1,920	J
Lead	mg/kg	143	J	178	J	32.3	J	16.5	J	14.2	J	17.6	J	11.5	J
Magnesium	mg/kg	6,070	J	3,790	J	4,150	J	3,210	J	3,310	J	4,320	J	2,340	J
Manganese	mg/kg	288	J	156	J	287	J	158	J	160	J	222	J	299	J
Mercury	mg/kg	4.5	J	1.6	J	0.2		0.15		0.11		0.19		0.26	
Nickel	mg/kg	52	J	44.4	J	17.4		10.8		10.2		5.5		8.2	
Potassium	mg/kg	1,030	J	979	J	841	J	490	J	502	J	442	J	165	J
Selenium	mg/kg	0.88	J	1.2	J	0.27	U	0.22	U	0.19	U	0.11	U	0.13	U
Silver	mg/kg	1.4	J	0.83	J	0.37		0.032	UJ	0.028	U	0.017	U	0.02	U
Sodium	mg/kg	2,380	J	1,650	J	1,340	J	906	J	946	J	456	J	501	J
Thallium	mg/kg	0.73	J	0.71	J	0.27	U	1		0.19	U	0.11	U	0.13	U
Vanadium	mg/kg	16.2	J	20.2	J	15.6		9.5		9.1		3.4		1.6	
Zinc	mg/kg	195	J	163	J	60.4	J	26.6	J	25	J	33.6	J	22.5	J
Semivolatile Organic Compounds														
1,2,4-Trichlorobenzene	µg/kg	1,900	UJ	6,300	UJ	950	U	720	U	690	U	420	U	460	U
1,2-Dichlorobenzene	µg/kg	1,900	UJ	6,300	UJ	950	U	720	U	690	U	420	U	460	U
1,3-Dichlorobenzene	µg/kg	1,900	UJ	6,300	UJ	950	U	720	U	690	U	420	U	460	U
1,4-Dichlorobenzene	µg/kg	1,900	UJ	6,300	UJ	950	U	720	U	690	U	420	U	460	U
2,2'-Oxybis(1-chloropropane)	µg/kg	1,900	UJ	6,300	UJ	950	U	720	U	690	U	420	U	460	U

Table A-4A. (cont.)

Survey:	NYSDEC-2002[3]		NYSDEC-2002[3]		NYSDEC-2002[3]		NYSDEC-2002[3]		NYSDEC-2002[3]		NYSDEC-2002[3]		NYSDEC-2002[3]	
Sample Number:	SYW6-30015		SYW6-31530		SYW6-40015		SYW6-41530		SYW6-41530DUP		SYW6-50015		SYW6-51530	
Station ID:	W6__3		W6__3		W6__4		W6__4		W6__4		W6__5		W6__5	
Duplicates:									D1					
Date:	05/09/02		05/09/02		05/09/02		05/09/02		05/09/02		05/09/02		05/09/02	
Depth (cm):	0-15		15-30		0-15		15-30		15-30		0-15		15-30	
Chemical	**Units**													
2,4,5-Trichlorophenol	µg/kg	3,900	*UJ*	13,000	*UJ*	1,900	*U*	1,400	*U*	1,400	*U*	840	*U*	930	*U*
2,4,6-Trichlorophenol	µg/kg	1,900	*UJ*	6,300	*UJ*	950	*U*	720	*U*	690	*U*	420	*U*	460	*U*
2,4-Dichlorophenol	µg/kg	1,900	*UJ*	6,300	*UJ*	950	*U*	720	*U*	690	*U*	420	*U*	460	*U*
2,4-Dimethylphenol	µg/kg	1,900	*UJ*	820	*J*	950	*U*	720	*U*	690	*U*	420	*U*	460	*U*
2,4-Dinitrophenol	µg/kg	3,900	*UJ*	13,000	*UJ*	1,900	*U*	1,400	*UJ*	1,400	*UJ*	840	*U*	930	*U*
2,4-Dinitrotoluene	µg/kg	1,900	*UJ*	6,300	*UJ*	950	*U*	720	*U*	690	*U*	420	*U*	460	*U*
2,6-Dinitrotoluene	µg/kg	1,900	*UJ*	6,300	*UJ*	950	*U*	720	*U*	690	*U*	420	*U*	460	*U*
2-Chloronaphthalene	µg/kg	1,900	*UJ*	6,300	*UJ*	950	*U*	720	*U*	690	*U*	420	*U*	460	*U*
2-Chlorophenol	µg/kg	1,900	*UJ*	6,300	*UJ*	950	*U*	720	*U*	690	*U*	420	*U*	460	*U*
2-Methyl-4,6-dinitrophenol	µg/kg														
2-Methylnaphthalene	µg/kg	1,900	*UJ*	5,600	*J*	950	*U*	720	*U*	690	*U*	420	*U*	460	*U*
2-Methylphenol	µg/kg	1,900	*UJ*	6,300	*UJ*	950	*U*	720	*U*	690	*U*	420	*U*	460	*U*
4-Methylphenol	µg/kg	1,900	*UJ*	1,100	*J*	100	*J*	720	*U*	690	*U*	420	*U*	460	*U*
2-Nitroaniline	µg/kg	3,900	*UJ*	13,000	*UJ*	1,900	*U*	1,400	*U*	1,400	*U*	840	*U*	930	*U*
3-Nitroaniline	µg/kg	3,900	*UJ*	13,000	*UJ*	1,900	*U*	1,400	*U*	1,400	*U*	840	*U*	930	*U*
4-Nitroaniline	µg/kg	3,900	*UJ*	13,000	*UJ*	1,900	*U*	1,400	*U*	1,400	*U*	840	*U*	930	*U*
2-Nitrophenol	µg/kg	1,900	*UJ*	6,300	*UJ*	950	*U*	720	*U*	690	*U*	420	*U*	460	*U*
4-Nitrophenol	µg/kg	3,900	*UJ*	13,000	*UJ*	1,900	*U*	1,400	*U*	1,400	*U*	840	*U*	930	*U*
3,3-Dichlorobenzidine	µg/kg	1,900	*UJ*	6,300	*UJ*	950	*U*	720	*U*	690	*U*	420	*U*	460	*U*
4-Bromophenyl-phenyl ether	µg/kg	1,900	*UJ*	6,300	*UJ*	950	*U*	720	*U*	690	*U*	420	*U*	460	*U*
4-Chloro-3-methylphenol	µg/kg	1,900	*UJ*	6,300	*UJ*	950	*U*	720	*U*	690	*U*	420	*U*	460	*U*
4-Chloroaniline	µg/kg	1,900	*UJ*	6,300	*UJ*	950	*U*	720	*U*	690	*U*	420	*U*	460	*U*
4-Chlorophenyl-phenyl ether	µg/kg	1,900	*UJ*	6,300	*UJ*	950	*U*	720	*U*	690	*U*	420	*U*	460	*U*
Acenaphthene	µg/kg	1,900	*UJ*	6,300	*J*	950	*U*	720	*U*	690	*U*	420	*U*	460	*U*
Acenaphthylene	µg/kg	320	*J*	7,500	*J*	540	*J*	78	*J*	690	*U*	420	*U*	460	*U*
Anthracene	µg/kg	540	*J*	18,000	*J*	720	*J*	99	*J*	89	*J*	420	*U*	460	*U*
Benzo(a)anthracene	µg/kg	1,900	*J*	49,000	*J*	2,200		360	*J*	280	*J*	180	*J*	460	*U*
Benzo(a)pyrene	µg/kg	2,000	*J*	48,000	*J*	1,400		250	*J*	190	*J*	190	*J*	460	*U*
Benzo(b)fluoranthene	µg/kg	2,600	*J*	59,000	*J*	1,900		320	*J*	250	*J*	250	*J*	460	*U*
Benzo(g,h,i)perylene	µg/kg	1,400	*J*	28,000	*J*	550	*J*	110	*J*	76	*J*	110	*J*	460	*U*
Benzo(k)fluoranthene	µg/kg	730	*J*	22,000	*J*	850	*J*	150	*J*	100	*J*	94	*J*	460	*U*
Benzyl alcohol	µg/kg														

Table A-4A. (cont.)

Survey:	NYSDEC-2002[3]		NYSDEC-2002[3]		NYSDEC-2002[3]		NYSDEC-2002[3]		NYSDEC-2002[3]		NYSDEC-2002[3]		NYSDEC-2002[3]	
Sample Number:	SYW6-30015		SYW6-31530		SYW6-40015		SYW6-41530		SYW6-41530DUP		SYW6-50015		SYW6-51530	
Station ID:	W6__3		W6__3		W6__4		W6__4		W6__4		W6__5		W6__5	
Duplicates:									D1					
Date:	05/09/02		05/09/02		05/09/02		05/09/02		05/09/02		05/09/02		05/09/02	
Depth (cm):	0-15		15-30		0-15		15-30		15-30		0-15		15-30	
Chemical	**Units**													
Bis(2-chloroethoxy)methane	µg/kg	1,900	UJ	6,300	UJ	950	U	720	U	690	U	420	U	460	U
Bis(2-chloroethyl)ether	µg/kg	1,900	UJ	6,300	UJ	950	U	720	U	690	U	420	U	460	U
Bis(2-ethylhexyl)phthalate	µg/kg	1,900	UJ	6,300	UJ	130	J	720	U	690	U	420	U	460	U
Butylbenzylphthalate	µg/kg	1,900	UJ	6,300	UJ	950	U	720	U	690	U	420	U	460	U
Carbazole	µg/kg	1,900	UJ	6,600	J	950	U	720	U	690	U	420	U	460	U
Chrysene	µg/kg	2,100	J	48,000	J	1,800		300	J	230	J	200	J	50	J
Dibenz(a,h)anthracene	µg/kg	1,900	UJ	7,900	J	260	J	720	U	690	U	420	U	460	U
Dibenzofuran	µg/kg	1,900	UJ	7,600	J	950	U	720	U	690	U	420	U	460	U
Diethylphthalate	µg/kg	1,900	UJ	6,300	UJ	950	U	720	U	690	U	420	U	460	U
Dimethylphthalate	µg/kg	1,900	UJ	6,300	UJ	950	U	720	U	690	U	420	U	460	U
Di-n-butylphthalate	µg/kg	1,900	UJ	6,300	UJ	950	U	720	U	690	U	420	U	460	U
Di-n-octylphthalate	µg/kg	1,900	UJ	6,300	UJ	950	U	720	U	690	U	420	U	460	U
Fluoranthene	µg/kg	3,800	J	86,000	J	3,700		580	J	490	J	210	J	59	J
Fluorene	µg/kg	260	J	12,000	J	110	J	720	U	690	U	420	U	460	U
Hexachlorobenzene (GC/ECD)	µg/kg	1,900	UJ	6,300	UJ	950	U	720	U	690	U	420	U	460	U
Hexachlorobenzene (GC/MS)	µg/kg														
Final HCB Value	µg/kg														
Hexachlorobutadiene	µg/kg	1,900	UJ	6,300	UJ	950	U	720	U	690	U	420	U	460	U
Hexachlorocyclopentadiene	µg/kg	1,900	UJ	6,300	UJ	950	U	720	U	690	U	420	U	460	U
Hexachloroethane	µg/kg	1,900	UJ	6,300	UJ	950	U	720	U	690	U	420	U	460	U
Indeno(1,2,3-cd)pyrene	µg/kg	1,400	J	28,000	J	620	J	130	J	92	J	120	J	460	U
Isophorone	µg/kg	1,900	UJ	6,300	UJ	950	U	720	U	690	U	420	U	460	U
Naphthalene	µg/kg	1,900	UJ	7,600	J	950	U	720	U	690	U	420	U	460	U
Nitrobenzene	µg/kg	1,900	UJ	6,300	UJ	950	U	720	U	690	U	420	U	460	U
N-Nitrosodimethylamine	µg/kg														
N-nitroso-di-n-propylamine	µg/kg	1,900	UJ	6,300	UJ	950	U	720	U	690	U	420	U	460	U
N-Nitrosodiphenylamine	µg/kg	1,900	UJ	6,300	UJ	950	U	720	U	690	U	420	U	460	U
Pentachlorophenol	µg/kg	3,900	UJ	13,000	UJ	1,900	U	1,400	U	1,400	U	840	U	930	U
Phenanthrene	µg/kg	2,000	J	63,000	J	1,200		170	J	200	J	60	J	460	U
Phenol	µg/kg	1,900	UJ	650	J	950	U	720	U	690	U	420	U	460	U
Pyrene	µg/kg	3,400	J	83,000	J	3,400		540	J	440	J	240	J	72	J

Table A-4A. (cont.)

	Survey:	NYSDEC-2002[3]	NYSDEC-2002[3]	NYSDEC-2002[3]	NYSDEC-2002[3]	NYSDEC-2002[3]	NYSDEC-2002[3]	NYSDEC-2002[3]
	Sample Number:	SYW6-30015	SYW6-31530	SYW6-40015	SYW6-41530	SYW6-41530DUP	SYW6-50015	SYW6-51530
	Station ID:	W6__3	W6__3	W6__4	W6__4	W6__4	W6__5	W6__5
	Duplicates:					D1		
	Date:	05/09/02	05/09/02	05/09/02	05/09/02	05/09/02	05/09/02	05/09/02
	Depth (cm):	0-15	15-30	0-15	15-30	15-30	0-15	15-30
Chemical	**Units**							

Notes: [1] Total chlordane is a calculated quantity, not a direct measurement

[2] TEQ calculated using WHO TEFs

[3] NYSDEC-2002 samples were not analyzed for pesticides, PCBs, or PCDD/PDCFs

J - estimated

U - not detected at reported quantitation limit

R - rejected datum

HCB - Hexachlorobenzene

Table A-4B. Northern Basin Wetland SYW-10 Sediment Sample Data (All Parameters)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	WS0009	WS0010	WS0034	WS0011	WS0012	WS0013	WS0014	WS0015	WS0016
	Station ID:	S379	S379	S379	S380	S380	S381	S381	S382	S382
	Duplicates:		D1	D2						
	Date:	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000
	Depth (cm):	0 - 15	15 - 30	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**									
Inorganics										
Aluminum	mg/kg	12,400	9,760	2,810	2,840	1,870	9,000	3,930	4,320	5,440
Antimony	mg/kg	0.51	0.7 *U*	0.34 *U*	0.53 *U*	10	0.36 *U*	0.32	0.3 *U*	0.3 *U*
Arsenic	mg/kg	18.4	8.4 *J*	1.7 *J*	2	3.3	4.3	2.9	3.4	3.9
Barium	mg/kg	98.7	105	101	157	103	84.2	73.7	79.7	84.9
Beryllium	mg/kg	1.2	0.66	0.25	0.32	0.23	0.51	0.27	0.3	0.34
Cadmium	mg/kg	0.64	0.15	0.53	0.9	1	0.18	0.16	0.16	0.14
Calcium	mg/kg	122,000	40,300 *J*	240,000 *J*	335,000	269,000	108,000	282,000	242,000	256,000
Chromium	mg/kg	46.7	16.3	16.7	26.5	17.1	23.1	11.7	13.3	17.7
Cobalt	mg/kg	8.5	3.5	2.1	2.8	2.8	5.6	2.6	2.8	2.9
Copper	mg/kg	48.5	24.3	22.4	26.4	19.8	38.4	23	25.3	37.8
Cyanide	mg/kg	1.1 *U*	1.9 *U*	0.88 *U*	1.4 *U*	1 *U*	0.95 *U*	0.77 *U*	0.8 *U*	0.79 *U*
Iron	mg/kg	21,600	16,900 *J*	4,120 *J*	6,320	9,520	16,900	7,160	8,070	9,360
Lead	mg/kg	115	20.7	46.2	59.1	38.7	37.1	24.3	24.5	33.3
Magnesium	mg/kg	10,700	3,700	3,370	5,700	3,150	14,300	5,400	6,450	8,210
Manganese	mg/kg	294	158	187	328	230	488	292	264	283
Mercury	mg/kg	1.8 *J*	0.22 *J*	1.8 *J*	3.4 *J*	2.3 *J*	2.1 *J*	1.3 *J*	1.2 *J*	0.67 *J*
Nickel	mg/kg	33.8	21.6	16	14.7	17.7	19.4	8.9	12.1	17.9
Potassium	mg/kg	2,120	1,550	518	583	341	2,160	819	1,090	1,330
Selenium	mg/kg	1.8	2.5 *J*	0.67 *J*	1 *U*	0.74 *U*	0.7 *U*	0.57 *U*	0.59 *U*	0.58 *U*
Silver	mg/kg	0.16 *U*	0.28 *U*	0.13 *U*	0.21 *U*	0.15 *U*	0.14 *U*	0.12 *U*	0.12 *U*	0.12 *U*
Sodium	mg/kg	2,180 *J*	4,540 *J*	1,230 *J*	1,680 *J*	1,430 *J*	682 *J*	1,360 *J*	3,420 *J*	5,430 *J*
Thallium	mg/kg	2.5	3.2	0.87 *U*	2.1	0.98 *U*	0.93 *U*	0.89	1.0	1.0
Vanadium	mg/kg	30.6	19 *J*	5.1 *J*	6.4	4.7	16.8	7.3	8.7	9.7
Zinc	mg/kg	119 *J*	33.1 *J*	61.2 *J*	82.3 *J*	163 *J*	118 *J*	57.4 *J*	70.6 *J*	90.4 *J*
Volatile Organic Compounds										
1,1,1-Trichloroethane	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
1,1,2,2-Tetrachloroethane	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
1,1,2-Trichloroethane	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
1,1-Dichloroethane	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
1,1-Dichloroethene	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*

Table A-4B. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	WS0009	WS0010	WS0034	WS0011	WS0012	WS0013	WS0014	WS0015	WS0016
	Station ID:	S379	S379	S379	S380	S380	S381	S381	S382	S382
	Duplicates:		D1	D2						
	Date:	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000
	Depth (cm):	0 - 15	15 - 30	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**									
1,2-Dichloroethane	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
1,2-Dichloropropane	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
2-Butanone	µg/kg	23 *UJ*	35 *UJ*	17 *UJ*	20 *U*	18 *U*	19 *UJ*	16 *U*	16 *U*	26
2-Hexanone	µg/kg	23 *UJ*	35 *UJ*	17 *UJ*	20 *U*	18 *U*	19 *UJ*	16 *U*	16 *U*	16 *U*
4-Methyl-2-pentanone	µg/kg	23 *UJ*	35 *UJ*	17 *UJ*	20 *U*	18 *U*	19 *UJ*	16 *U*	16 *U*	16 *U*
Acetone	µg/kg	46 *UJ*	69 *UJ*	35 *UJ*	41 *U*	37 *U*	38 *UJ*	31 *U*	16	34
Benzene	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
Bromodichloromethane	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
Bromoform	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
Bromomethane	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
Carbon disulfide	µg/kg	23 *UJ*	35 *UJ*	17 *UJ*	20 *U*	18 *U*	19 *UJ*	16 *U*	16 *U*	16 *U*
Carbon tetrachloride	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
Chlorobenzene	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
Chloroethane	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
Chloroform	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
Chloromethane	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
cis-1,2-Dichloroethene	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
trans-1,2-Dichloroethene	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
cis-1,3-Dichloropropene	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
trans-1,3-Dichloropropene	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
Dibromochloromethane	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
Ethylbenzene	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
Methylene chloride	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
Styrene	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
Tetrachloroethene	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
Toluene	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
Trichloroethene	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
Vinyl chloride	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
Xylene (m,p)	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
Xylene (o)	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*

Table A-4B. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	WS0009	WS0010	WS0034	WS0011	WS0012	WS0013	WS0014	WS0015	WS0016
	Station ID:	S379	S379	S379	S380	S380	S381	S381	S382	S382
	Duplicates:		D1	D2						
	Date:	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000
	Depth (cm):	0 - 15	15 - 30	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**									
Sum of Xylenes[1]	µg/kg	11 *UJ*	17 *UJ*	8.7 *UJ*	10 *U*	9.2 *U*	9.4 *UJ*	7.8 *U*	7.8 *U*	7.8 *U*
Semivolatile Organic Compounds										
1,2,4-Trichlorobenzene	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
1,2-Dichlorobenzene	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
1,3-Dichlorobenzene	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
1,4-Dichlorobenzene	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
2,2'-Oxybis(1-chloropropane)	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *UJ*	53 *UJ*
2,4,5-Trichlorophenol	µg/kg	380 *U*	570 *U*	300 *U*	340 *U*	310 *U*	310 *U*	270 *UJ*	260 *U*	270 *U*
2,4,6-Trichlorophenol	µg/kg	380 *U*	570 *U*	300 *U*	340 *U*	310 *U*	310 *U*	270 *UJ*	260 *U*	270 *U*
2,4-Dichlorophenol	µg/kg	380 *U*	570 *U*	300 *U*	340 *U*	310 *U*	310 *U*	270 *UJ*	260 *U*	270 *U*
2,4-Dimethylphenol	µg/kg	380 *U*	570 *U*	300 *U*	340 *U*	310 *U*	310 *U*	270 *UJ*	260 *U*	270 *U*
2,4-Dinitrophenol	µg/kg	1,900 *UJ*	2,800 *UJ*	1,500 *UJ*	1,700 *UJ*	1,500 *UJ*	1,500 *UJ*	1,300 *UJ*	1,300 *UJ*	1,400 *UJ*
2,4-Dinitrotoluene	µg/kg	380 *U*	570 *U*	300 *U*	340 *U*	310 *U*	310 *U*	270 *UJ*	260 *U*	270 *U*
2,6-Dinitrotoluene	µg/kg	380 *U*	570 *U*	300 *U*	340 *U*	310 *U*	310 *U*	270 *UJ*	260 *U*	270 *U*
2-Chloronaphthalene	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
2-Chlorophenol	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
2-Methyl-4,6-dinitrophenol	µg/kg	1,900 *U*	2,800 *U*	1,500 *U*	1,700 *U*	1,500 *U*	1,500 *U*	1,300 *UJ*	1,300 *U*	1,400 *U*
2-Methylnaphthalene	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
2-Methylphenol	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
4-Methylphenol	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
2-Nitroaniline	µg/kg	150 *U*	220 *U*	120 *U*	140 *U*	120 *U*	120 *U*	110 *UJ*	100 *U*	110 *U*
3-Nitroaniline	µg/kg	1,900 *U*	2,800 *U*	1,500 *U*	1,700 *U*	1,500 *U*	1,500 *U*	1,300 *UJ*	1,300 *U*	1,400 *U*
4-Nitroaniline	µg/kg	1,900 *U*	2,800 *U*	1,500 *U*	1,700 *U*	1,500 *U*	1,500 *U*	1,300 *UJ*	1,300 *U*	1,400 *U*
2-Nitrophenol	µg/kg	380 *U*	570 *U*	300 *U*	340 *U*	310 *U*	310 *U*	270 *UJ*	260 *U*	270 *U*
4-Nitrophenol	µg/kg	1,900 *U*	2,800 *U*	1,500 *U*	1,700 *U*	1,500 *U*	1,500 *U*	1,300 *UJ*	1,300 *U*	1,400 *U*
3,3-Dichlorobenzidine	µg/kg	74 *UJ*	110 *UJ*	58 *U*	67 *UJ*	59 *UJ*	60 *UJ*	52 *UJ*	51 *U*	53 *U*
4-Bromophenyl-phenyl ether	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
4-Chloro-3-methylphenol	µg/kg	380 *U*	570 *U*	300 *U*	340 *U*	310 *U*	310 *U*	270 *UJ*	260 *U*	270 *U*
4-Chloroaniline	µg/kg	74 *UJ*	110 *UJ*	58 *UJ*	67 *UJ*	59 *UJ*	60 *UJ*	52 *UJ*	51 *UJ*	53 *UJ*
4-Chlorophenyl-phenyl ether	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*

Table A-4B. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	WS0009	WS0010	WS0034	WS0011	WS0012	WS0013	WS0014	WS0015	WS0016
	Station ID:	S379	S379	S379	S380	S380	S381	S381	S382	S382
	Duplicates:		D1	D2						
	Date:	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000
	Depth (cm):	0 - 15	15 - 30	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**									
Acenaphthene	µg/kg	74 *U*	110 *U*	58 *U*	81	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
Acenaphthylene	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
Anthracene	µg/kg	74 *U*	110 *U*	61	200	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
Benz(a)anthracene	µg/kg	130	110 *U*	210	1,700	350	160	74 *J*	51 *U*	53 *U*
Benzo(a)pyrene	µg/kg	130	110 *U*	240	1,800	340	200	52 *UJ*	51 *U*	53 *U*
Benzo(b)fluoranthene	µg/kg	120	110 *U*	210	1,500	280	200	77 *J*	51 *U*	53 *U*
Benzo(g,h,i)perylene	µg/kg	74 *U*	110 *U*	140	970	180	160	52 *UJ*	51 *U*	53 *U*
Benzo(k)fluoranthene	µg/kg	120	110 *U*	200	1,500	280	200	86 *J*	51 *U*	53 *U*
Benzyl alcohol	µg/kg	380 *U*	570 *U*	300 *U*	340 *U*	310 *U*	310 *U*	270 *UJ*	260 *U*	270 *U*
Bis(2-chloroethoxy)methane	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
Bis(2-chloroethyl)ether	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
Bis(2-ethylhexyl)phthalate	µg/kg	80 *U*	110 *U*	93 *U*	76 *U*	59 *U*	110 *U*	140 *UJ*	73 *U*	160 *U*
Butylbenzylphthalate	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
Carbazole	µg/kg	74 *U*	110 *U*	58 *U*	170	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
Chrysene	µg/kg	160	110 *U*	280	2,000	350	220	100 *J*	100	68
Dibenz(a,h)anthracene	µg/kg	74 *U*	110 *U*	64	480	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
Dibenzofuran	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
Diethylphthalate	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
Dimethylphthalate	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
Di-n-butylphthalate	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
Di-n-octylphthalate	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
Fluoranthene	µg/kg	230	110 *U*	400	2,200	470	290	140 *J*	120	85
Fluorene	µg/kg	74 *U*	110 *U*	58 *U*	71	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
Hexachlorobenzene (GC/ECD)	µg/kg	7.25	3.64 *J*	122 *J*	32.3	126	30.7	106	34.8	261
Hexachlorobenzene (GC/MS)	µg/kg	74 *U*	110 *U*	390 *J*	67 *U*	61	60 *U*	52 *UJ*	51 *U*	240 *J*
Final HCB Value	µg/kg	7.25 *J*	3.64 *J*	256 *J*	32.3 *J*	93.5 *J*	30.7 *J*	79 [4]	34.8 *J*	251 *J*
Hexachlorobutadiene	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
Hexachlorocyclopentadiene	µg/kg	380 *UJ*	570 *UJ*	300 *UJ*	340 *UJ*	310 *UJ*	310 *UJ*	270 *UJ*	260 *UJ*	270 *UJ*
Hexachloroethane	µg/kg	74 *U*	110 *U*	58 *UJ*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *UJ*	53 *UJ*
Indeno(1,2,3-cd)pyrene	µg/kg	74 *U*	110 *U*	140	1,100	210	160	52 *UJ*	51 *U*	53 *U*

Table A-4B. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	WS0009	WS0010	WS0034	WS0011	WS0012	WS0013	WS0014	WS0015	WS0016
Station ID:	S379	S379	S379	S380	S380	S381	S381	S382	S382
Duplicates:		D1	D2						
Date:	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000
Depth (cm):	0 - 15	15 - 30	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**								
Isophorone	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
Naphthalene	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
Nitrobenzene	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
N-Nitrosodimethylamine	µg/kg	380 *U*	570 *U*	300 *U*	340 *U*	310 *U*	310 *U*	270 *UJ*	260 *U*	270 *U*
N-Nitroso-di-n-propylamine	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
N-Nitrosodiphenylamine	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
Pentachlorophenol	µg/kg	1,900 *U*	2,800 *U*	1,500 *U*	1,700 *U*	1,500 *U*	1,500 *U*	1,300 *UJ*	1,300 *U*	1,400 *U*
Phenanthrene	µg/kg	120	110 *U*	250	1,000	210	150	74 *J*	65	53 *U*
Phenol	µg/kg	74 *U*	110 *U*	58 *U*	67 *U*	59 *U*	60 *U*	52 *UJ*	51 *U*	53 *U*
Pyrene	µg/kg	260	110 *U*	400	2,600	540	290	120 *J*	120	53 *U*
Pesticides										
4,4'-DDD	µg/kg	1.04 *UJ*	1.06 *UJ*	1.09 *UJ*	1.05 *UJ*	1.04 *UJ*	1.07 *UJ*	1.09 *UJ*	1.09 *UJ*	1.05 *UJ*
4,4'-DDE	µg/kg	1.04 *UJ*	*R*	1.09 *UJ*	1.05 *UJ*	1.25 *J*	1.07 *UJ*	1.48 *J*	1.09 *UJ*	1.05 *UJ*
4,4'-DDT	µg/kg	1.2 *J*	1.27 *UJ*	3.51 *J*	1.05 *UJ*	1.42 *J*	3.45 *J*	4.73 *J*	1.39 *J*	1.05 *UJ*
Aldrin	µg/kg	1.04 *UJ*	1.06 *U*	1.09 *U*	1.05 *UJ*	1.04 *U*	1.07 *U*	1.09 *U*	1.09 *U*	1.05 *U*
alpha-BHC	µg/kg	1.04 *UJ*	1.06 *UJ*	1.09 *UJ*	1.05 *UJ*	1.04 *UJ*	1.07 *UJ*	1.09 *UJ*	1.09 *UJ*	1.05 *UJ*
beta-BHC	µg/kg	1.04 *UJ*	*R*	1.09 *UJ*	1.05 *UJ*	1.17 *J*	1.07 *UJ*	1.09 *UJ*	1.09 *UJ*	1.05 *UJ*
gamma-BHC (Lindane)	µg/kg	1.04 *UJ*	1.06 *UJ*	1.09 *UJ*	1.05 *UJ*	1.04 *UJ*	1.07 *UJ*	1.09 *UJ*	1.09 *UJ*	1.05 *UJ*
delta-BHC	µg/kg	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*
Dieldrin	µg/kg	1.04 *UJ*	1.06 *U*	*R*	1.05 *UJ*	1.42 *J*	1.07 *UJ*	2.91 *J*	1.09 *UJ*	1.05 *UJ*
Endosulfan I	µg/kg	1.04 *UJ*	1.06 *UJ*	1.09 *UJ*	1.05 *UJ*	1.04 *UJ*	1.07 *UJ*	1.09 *UJ*	1.09 *UJ*	1.05 *UJ*
Endosulfan II	µg/kg	1.04 *UJ*	1.06 *UJ*	1.09 *UJ*	1.05 *UJ*	1.04 *UJ*	1.07 *UJ*	1.09 *UJ*	1.09 *UJ*	1.05 *UJ*
Endosulfan sulfate	µg/kg	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*
Endrin aldehyde	µg/kg	1.04 *UJ*	1.06 *UJ*	1.09 *UJ*	1.05 *UJ*	1.04 *UJ*	1.07 *UJ*	2.04 *J*	1.09 *UJ*	1.05 *UJ*
Endrin ketone	µg/kg	1.04 *UJ*	1.06 *UJ*	1.09 *UJ*	1.05 *UJ*	1.04 *UJ*	1.07 *UJ*	1.09 *UJ*	1.09 *UJ*	1.05 *UJ*
Endrin	µg/kg	1.04 *UJ*	1.06 *U*	1.09 *UJ*	*R*	1.04 *UJ*	1.07 *UJ*	1.09 *UJ*	1.09 *UJ*	1.05 *UJ*
Heptachlor epoxide	µg/kg	1.04 *U*	2.09 *J*	*R*	2.18 *J*	2.34 *J*	1.07 *UJ*	1.26 *J*	1.09 *UJ*	1.05 *UJ*
Heptachlor	µg/kg	1.04 *U*	1.06 *U*	1.09 *U*	1.05 *U*	1.04 *U*	1.07 *U*	1.09 *U*	1.09 *U*	1.05 *U*
Methoxychlor	µg/kg	1.04 *UJ*	1.06 *UJ*	1.09 *UJ*	1.05 *UJ*	1.04 *UJ*	1.07 *UJ*	1.09 *UJ*	1.09 *UJ*	1.05 *UJ*
Toxaphene	µg/kg	104 *UJ*	106 *UJ*	109 *UJ*	105 *UJ*	104 *UJ*	107 *UJ*	109 *UJ*	109 *UJ*	105 *UJ*

Table A-4B. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	WS0009	WS0010	WS0034	WS0011	WS0012	WS0013	WS0014	WS0015	WS0016
Station ID:	S379	S379	S379	S380	S380	S381	S381	S382	S382
Duplicates:		D1	D2						
Date:	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000
Depth (cm):	0 - 15	15 - 30	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**								
cis (alpha)-Chlordane	µg/kg	1.04 *UJ*	1.06 *UJ*	1.09 *UJ*	1.05 *UJ*	1.04 *UJ*	1.07 *UJ*	1.09 *UJ*	1.09 *UJ*	1.05 *UJ*
trans (gamma)-Chlordane	µg/kg	1.04 *U*	1.06 *UJ*	1.09 *UJ*	1.05 *U*	1.71 *J*	1.07 *UJ*	2.16 *J*	1.09 *UJ*	1.05 *UJ*
Total Chlordane [2]	µg/kg	1.04 *U*	1.06 *UJ*	1.09 *UJ*	1.05 *U*	1.71 *J*	1.07 *UJ*	2.16 *J*	1.09 *UJ*	1.05 *UJ*
PCBs										
Aroclor 1016	µg/kg	51.8 *U*	52.9 *U*	54.5 *U*	52.6 *U*	52 *U*	53.3 *U*	54.3 *U*	54.6 *U*	52.5 *U*
Aroclor 1221	µg/kg	51.8 *U*	52.9 *U*	54.5 *U*	52.6 *U*	52 *U*	53.3 *U*	54.3 *U*	54.6 *U*	52.5 *U*
Aroclor 1232	µg/kg	51.8 *U*	52.9 *U*	54.5 *U*	52.6 *U*	52 *U*	53.3 *U*	54.3 *U*	54.6 *U*	52.5 *U*
Aroclor 1242	µg/kg	51.8 *U*	52.9 *U*	54.5 *U*	17.2 *J*	52 *U*	53.3 *U*	54.3 *U*	54.6 *U*	52.5 *U*
Aroclor 1248	µg/kg	51.8 *U*	52.9 *U*	54.5 *U*	52.6 *U*	52 *U*	53.3 *U*	54.3 *U*	54.6 *U*	12 *J*
Aroclor 1254	µg/kg	14.3 *J*	52.9 *U*	56.3 *J*	18.1 *J*	24.6 *J*	53.3 *U*	54.3 *U*	54.6 *U*	52.5 *U*
Aroclor 1260	µg/kg	51.8 *U*	52.9 *U*	54.5 *U*	14 *J*	48.7 *J*	134 *J*	269 *J*	54.8 *J*	52.5 *U*
Aroclor 1268	µg/kg	51.8 *U*	52.9 *U*	157 *J*	52.6 *U*	52 *U*	53.3 *U*	54.3 *U*	54.6 *U*	52.5 *U*
Sum of PCBs	µg/kg	40.2	105.8 *U*	213	49.3	73.3	161	296	82.1	38.3
PCDD/PCDFs										
2,3,7,8-Tetrachlorodibenzodioxin	ng/kg	0.325 *J*	0.1 *U*	0.403 *J*	0.333 *J*	0.533 *J*	0.403 *J*	0.16 *U*	0.23 *J*	0.181 *J*
1,2,3,7,8-Pentachlorodibenzodioxin	ng/kg	0.556 *J*	0.1 *U*	0.63 *U*	0.45 *U*	0.57 *U*	0.55 *U*	0.21 *U*	0.27 *U*	0.28 *J*
1,2,3,4,7,8-Hexachlorodibenzodioxin	ng/kg	0.563 *J*	0.185 *J*	0.356 *J*	0.36 *J*	0.448 *J*	0.673 *J*	0.25 *U*	0.324 *J*	0.313 *J*
1,2,3,6,7,8-Hexachlorodibenzodioxin	ng/kg	2.88	0.141 *J*	1.55 *J*	1.35 *J*	1.71 *J*	2.46	1.02 *J*	1.51 *J*	1.33 *J*
1,2,3,7,8,9-Hexachlorodibenzodioxin	ng/kg	1.86 *J*	0.202 *J*	0.994 *J*	1.22 *J*	1.1 *J*	1.91 *J*	0.58 *U*	0.996 *J*	0.904 *J*
1,2,3,4,6,7,8-Heptachlorodibenzodioxin	ng/kg	45	3.75	18.3	20.9	22.8	51.2	25.7	28.7	25.8
Octachlorodibenzodioxin	ng/kg	331	20.6	121	168	173	431	248	263	247
Total tetrachlorodibenzodioxins	ng/kg	9.51	3.77	10.8	12.7	9.63	7.27	3.29	5.1	4.18
Total pentachlorodibenzodioxins	ng/kg	4.14	0.94 *J*	3.75	1.77	1.67	3.28	0.3 *J*	1.42	1.4
Total hexachlorodibenzodioxins	ng/kg	24.1	0.78 *J*	11.5	11.4	14	18.7	7.04	11.8	8.26
Total heptachlorodibenzodioxins	ng/kg	86.9	6.11	35.2	45.2	46.5	102	52.6	59	52.1
2,3,7,8-Tetrachlorodibenzofuran	ng/kg	5.61	0.789 *J*	225	17.9	20.6	12	18.9	10.2	21.3
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg	2.41	0.371 *J*	22.2	6.99	7.24	4.15	7.35	5.87	9.34
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg	2.18	0.322 *J*	20.1	4.41	3.94	2.65	3.47	2.45	3.88
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg	4.45	0.747 *J*	12.5	9.18	9.48	6.38	8.61	13.9	10.8
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg	1.95 *J*	0.399 *J*	3.13 *J*	2.87	2.85	2.74	2.25 *J*	3.71	3.27

Table A-4B. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	WS0009	WS0010	WS0034	WS0011	WS0012	WS0013	WS0014	WS0015	WS0016
Station ID:	S379	S379	S379	S380	S380	S381	S381	S382	S382
Duplicates:		D1	D2						
Date:	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/12/2000
Depth (cm):	0 - 15	15 - 30	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**								
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg	0.66 *U*	0.1 *U*	0.368 *J*	0.23 *U*	0.39 *U*	0.31 *U*	0.183 *J*	0.4 *U*	0.228 *J*
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg	2.14 *J*	0.494 *J*	1.1 *J*	0.883 *J*	0.779 *J*	0.863 *J*	0.608 *J*	0.882 *J*	0.873 *J*
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg	33	2.05 *J*	11.3	11.1	10.8	20	9.9	17.3	9.64
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg	3.27	0.259 *J*	3.62 *J*	3.6	4.27	4.77	3.61	6.4	22.2
Octachlorodibenzofuran	ng/kg	40	2.73 *J*	42.4	38.4	50.5	85.9	36	83.2	27.8
Total tetrachlorodibenzofurans	ng/kg	47.8	7.88	543	69.9	88.9	62.5	50.3	35.2	84.8
Total pentachlorodibenzofurans	ng/kg	28.2	4.06	92.8	36.6	35.9	31.3	29	23.7	35.5
Total hexachlorodibenzofurans	ng/kg	38	2.81	30	25.6	28.3	33.6	26.2	35.1	37.4
Total heptachlorodibenzofurans	ng/kg	70.4	1.23 *J*	25.5	28.4	29	55.8	29	43.6	103
TEQ - Dioxins (ND=1/2)	ng/kg	1.89	0.19	1.20	1.08	1.39	1.74	0.61	0.96	1.00
TEQ - Furans (ND=1/2)	ng/kg	3.03	0.45	35.52	5.80	5.88	4.00	5.30	4.65	6.38
TEQ - Total [3] (ND=1/2)	ng/kg	4.92	0.64	36.73	6.88	7.27	5.74	5.91	5.61	7.37

Notes: [1] Sum of xylenes is a calculated quantity, not a direct measurement

[2] Total chlordane is a calculated quantity, not a direct measurement

[3] TEQ calculated using WHO TEFs

[4] HCB results for the two methods were inconsistent, and so the average was taken

HCB - Hexachlorobenzene

J - estimated

U - not detected at reported quantitation limit

R - rejected datum

Table A-5A. Southern Basin Wetland SYW-12 Sediment Sample Data (All Parameters)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	WS0025	WS0026	WS0027	WS0028	WS0029	WS0030	WS0031	WS0032
	Station ID:	S387	S387	S388	S388	S389	S389	S390	S390
	Duplicates:								
	Date:	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/13/2000	8/13/2000	8/13/2000	8/13/2000
	Depth (cm):	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**								
Inorganics									
Aluminum	mg/kg	2,610	2,490	3,500	2,470	7,090	5,390	2,410	15,100
Antimony	mg/kg	0.25 *U*	0.27 *UJ*	0.33 *J*	0.46 *J*	0.58 *J*	0.79 *J*	0.23 *UJ*	0.92
Arsenic	mg/kg	1.6	2.4	3.0	3.1	3.7	5.0	1.8	10.8
Barium	mg/kg	67.4	98.2 *J*	143 *J*	161 *J*	152	118	31.4	324
Beryllium	mg/kg	0.28	0.27	0.3	0.25	0.44	0.37	0.17	0.88
Cadmium	mg/kg	2.7	7.3	8.8	8.7	8.8	19	0.94	80.4
Calcium	mg/kg	142,000	207,000	148,000	168,000	110,000	70,700	91,400	74,100
Chromium	mg/kg	48.7	112	87.8	83.9	115 *J*	135 *J*	11.6 *J*	594
Cobalt	mg/kg	1.8	1.4	3.8	3.3	4.7	4.8	1.5	9.3
Copper	mg/kg	18.6	43.5	74	82.9	87.5	165	17.5	517
Cyanide	mg/kg	0.67 *U*	0.72 *U*	0.64 *U*	0.59 *U*	0.79 *U*	0.65 *U*	0.61 *U*	1.4
Iron	mg/kg	6,830	10,700	9,190	6,870	11,800	9,620	7,230	27,000
Lead	mg/kg	23.3	44.5 *J*	112 *J*	114 *J*	116 *J*	112 *J*	55.4 *J*	340
Magnesium	mg/kg	15,600	6,920	7,070	4,830	17,000	9,370	12,900	13,900
Manganese	mg/kg	254	282	242	227	284 *J*	205 *J*	175 *J*	348
Mercury	mg/kg	0.054 *J*	0.11 *J*	1.5 *J*	1.5	1.1	0.37	0.035 *U*	6
Nickel	mg/kg	13.1	11.9	24	26.8	31.8	48.7	8.1	100
Potassium	mg/kg	504	366	930	559	1,880	1,360	666	3,750
Selenium	mg/kg	0.50 *U*	0.64	0.87	0.84	0.59 *U*	4.1	0.45 *U*	1.1
Silver	mg/kg	0.16	0.38	1.8	1.3	2.7	1.7	0.091 *U*	11.5
Sodium	mg/kg	332 *J*	641 *J*	366 *J*	438 *J*	502 *J*	406 *J*	242 *J*	2,070 *J*
Thallium	mg/kg	0.66 *U*	1.0	0.63 *U*	0.58 *U*	0.78 *U*	0.63 *U*	0.6 *U*	0.98 *U*
Vanadium	mg/kg	5.1	4.3	8.7	5.9	15.5 *J*	11.8 *J*	5.3 *J*	31.1 *J*
Zinc	mg/kg	81.4 *J*	147	241	236	224	320	91.9	866
Volatile Organic Compounds									
1,1,1-Trichloroethane	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	49 *U*
1,1,2,2-Tetrachloroethane	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	49 *U*
1,1,2-Trichloroethane	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	49 *U*
1,1-Dichloroethane	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	49 *U*
1,1-Dichloroethene	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	49 *U*
1,2-Dichloroethane	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	49 *U*

Table A-5A. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	WS0025	WS0026	WS0027	WS0028	WS0029	WS0030	WS0031	WS0032
	Station ID:	S387	S387	S388	S388	S389	S389	S390	S390
	Duplicates:								
	Date:	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/13/2000	8/13/2000	8/13/2000	8/13/2000
	Depth (cm):	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**								
1,2-Dichloropropane	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	49 *U*
2-Butanone	µg/kg	11 *U*	14 *U*	13 *U*	12 *UJ*	14 *U*	3.8 *J*	12 *U*	86
2-Hexanone	µg/kg	11 *U*	14 *U*	13 *U*	12 *UJ*	14 *U*	15 *U*	12 *U*	98 *U*
4-Methyl-2-pentanone	µg/kg	11 *U*	14 *U*	13 *U*	12 *UJ*	14 *U*	15 *U*	12 *U*	98 *U*
Acetone	µg/kg	22 *U*	29 *U*	25 *U*	24 *UJ*	28 *U*	18	24 *U*	570
Benzene	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	1.3 *J*	6.9 *U*	7.6 *U*	6 *U*	18 *J*
Bromodichloromethane	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	49 *U*
Bromoform	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	49 *U*
Bromomethane	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	49 *U*
Carbon disulfide	µg/kg	11 *U*	14 *U*	13 *U*	12 *UJ*	14 *U*	15 *U*	12 *U*	11
Carbon Tetrachloride	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	49 *U*
Chlorobenzene	µg/kg	5.6 *U*	7.2 *U*	2 *J*	4.2 *J*	6.9 *U*	7.6 *U*	6 *U*	22
Chloroethane	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	49 *U*
Chloroform	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	49 *U*
Chloromethane	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *UJ*	6 *U*	49 *UJ*
cis-1,2-Dichloroethene	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	49 *U*
trans-1,2-Dichloroethene	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	49 *U*
cis-1,3-Dichloropropene	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	49 *U*
trans-1,3-Dichloropropene	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	49 *U*
Dibromochloromethane	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	49 *U*
Ethylbenzene	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	15
Methylene chloride	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	2.6 *J*	2.1 *J*	1.5 *J*	1.3 *J*	49 *U*
Styrene	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	49 *U*
Tetrachloroethene	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	49 *U*
Toluene	µg/kg	5.6 *U*	7.2 *U*	1.7 *J*	4.9 *J*	6.9 *U*	7.6 *U*	6 *U*	24
Trichloroethene	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	49 *U*
Vinyl chloride	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	49 *U*
Xylene (m,p)	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	67
Xylene (o)	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	47
Sum of Xylenes [1]	µg/kg	5.6 *U*	7.2 *U*	6.4 *U*	6 *UJ*	6.9 *U*	7.6 *U*	6 *U*	114

Table A-5A. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	WS0025	WS0026	WS0027	WS0028	WS0029	WS0030	WS0031	WS0032
Station ID:	S387	S387	S388	S388	S389	S389	S390	S390
Duplicates:								
Date:	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/13/2000	8/13/2000	8/13/2000	8/13/2000
Depth (cm):	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**							
Semivolatile Organic Compounds								
1,2,4-Trichlorobenzene	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
1,2-Dichlorobenzene	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
1,3-Dichlorobenzene	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
1,4-Dichlorobenzene	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	54	46 *U*	40 *U*	65 *U*
2,2'-Oxybis(1-chloropropane)	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
2,4,5-Trichlorophenol	µg/kg	200 *U*	250 *UJ*	2,100 *U*	2,000 *U*	230 *U*	240 *U*	210 *U*	340 *U*
2,4,6-Trichlorophenol	µg/kg	200 *U*	250 *UJ*	2,100 *U*	2,000 *U*	230 *U*	240 *U*	210 *U*	340 *U*
2,4-Dichlorophenol	µg/kg	200 *U*	250 *UJ*	2,100 *U*	2,000 *U*	230 *U*	240 *U*	210 *U*	340 *U*
2,4-Dimethylphenol	µg/kg	200 *U*	250 *UJ*	2,100 *U*	2,000 *U*	230 *U*	240 *U*	210 *U*	340 *U*
2,4-Dinitrophenol	µg/kg	1,000 *UJ*	1,200 *UJ*	11,000 *UJ*	10,000 *UJ*	1,100 *U*	1,200 *U*	1,000 *UJ*	1,700 *U*
2,4-Dinitrotoluene	µg/kg	200 *U*	250 *U*	2,100 *U*	2,000 *U*	230 *U*	240 *U*	210 *UJ*	340 *U*
2,6-Dinitrotoluene	µg/kg	200 *U*	250 *U*	2,100 *U*	2,000 *U*	230 *U*	240 *U*	210 *U*	340 *U*
2-Chloronaphthalene	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
2-Chlorophenol	µg/kg	39 *U*	48 *UJ*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
2-Methyl-4,6-dinitrophenol	µg/kg	1,000 *U*	1,200 *UJ*	11,000 *U*	10,000 *U*	1,100 *U*	1,200 *U*	1,000 *UJ*	1,700 *U*
2-Methylnaphthalene	µg/kg	39 *U*	48 *U*	410 *U*	780	44 *U*	46 *U*	40 *U*	65 *U*
2-Methylphenol	µg/kg	39 *U*	48 *UJ*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
4-Methylphenol	µg/kg	39 *U*	48 *UJ*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
2-Nitroaniline	µg/kg	79 *U*	98 *U*	840 *U*	790 *U*	90 *U*	93 *U*	82 *UJ*	130 *U*
3-Nitroaniline	µg/kg	1,000 *U*	1,200 *U*	11,000 *U*	10,000 *U*	1,100 *U*	1,200 *U*	1,000 *U*	1,700 *U*
4-Nitroaniline	µg/kg	1,000 *U*	1,200 *U*	11,000 *U*	10,000 *U*	1,100 *U*	1,200 *U*	1,000 *U*	1,700 *U*
2-Nitrophenol	µg/kg	200 *U*	250 *UJ*	2,100 *U*	2,000 *U*	230 *U*	240 *U*	210 *U*	340 *U*
4-Nitrophenol	µg/kg	1,000 *U*	1,200 *UJ*	11,000 *U*	10,000 *U*	1,100 *U*	1,200 *U*	1,000 *U*	1,700 *U*
3,3-Dichlorobenzidine	µg/kg	39 *UJ*	48 *UJ*	410 *UJ*	390 *UJ*	44 *U*	46 *U*	40 *U*	65 *U*
4-Bromophenyl-phenyl ether	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
4-Chloro-3-methylphenol	µg/kg	200 *U*	250 *UJ*	2,100 *U*	2,000 *U*	230 *U*	240 *U*	210 *U*	340 *U*
4-Chloroaniline	µg/kg	39 *UJ*	48 *UJ*	410 *UJ*	390 *UJ*	44 *U*	46 *U*	40 *U*	65 *U*
4-Chlorophenyl-phenyl ether	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
Acenaphthene	µg/kg	39 *U*	48 *U*	410 *U*	1,300	44 *U*	61	78	65 *U*
Acenaphthylene	µg/kg	39 *U*	340	590	1,200	80	160	79	160
Anthracene	µg/kg	39 *U*	220	780	3,600	120	260	230	250

Table A-5A. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	WS0025	WS0026	WS0027	WS0028	WS0029	WS0030	WS0031	WS0032
	Station ID:	S387	S387	S388	S388	S389	S389	S390	S390
	Duplicates:								
	Date:	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/13/2000	8/13/2000	8/13/2000	8/13/2000
	Depth (cm):	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**								
Benz(a)anthracene	µg/kg	39 *U*	48 *U*	1,800	7,500	340	590	580	790
Benzo(a)pyrene	µg/kg	39 *U*	48 *U*	2,000	7,100	360	660	610	830
Benzo(b)fluoranthene	µg/kg	39 *U*	48 *U*	1,400	4,900	320	420	410	610
Benzo(g,h,i)perylene	µg/kg	39 *U*	48 *U*	910	4,800	260	450	340	570
Benzo(k)fluoranthene	µg/kg	39 *U*	48 *U*	1,700	5,700	340	450	490	650
Benzyl Alcohol	µg/kg	200 *U*	250 *U*	2,100 *U*	2,000 *U*	230 *U*	240 *U*	210 *U*	340 *U*
Bis(2-chloroethoxy)methane	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
Bis(2-chloroethyl)ether	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
Bis(2-ethylhexyl)phthalate	µg/kg	71 *U*	110 *U*	410 *U*	390 *U*	470	120	170 *UJ*	65 *U*
Butylbenzylphthalate	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
Carbazole	µg/kg	39 *U*	48 *U*	410 *U*	1,600	44 *U*	89	89	78
Chrysene	µg/kg	39 *U*	48 *U*	2,000	7,600	400	700	570	850
Dibenz(a,h)anthracene	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	90	160	130	210
Dibenzofuran	µg/kg	39 *U*	48 *U*	410 *U*	990	44 *U*	46 *U*	46	65 *U*
Diethylphthalate	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
Dimethylphthalate	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
Di-n-butylphthalate	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	44 *U*	46 *U*	130 *UJ*	120
Di-n-octylphthalate	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
Fluoranthene	µg/kg	39 *U*	120	3,200	16,000	730	1,300	1,100	1,300
Fluorene	µg/kg	39 *U*	110	410 *U*	390 *U*	44 *U*	46 *U*	82	73
Hexachlorobenzene (GC/ECD)	µg/kg	2.69	2.21	31.2	46.6	3.53	3.51 *J*	4.35	18.5 *J*
Hexachlorobenzene (GC/MS)	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
Final HCB Value	µg/kg	2.69 *J*	2.21 *J*	31.2 *J*	46.6 *J*	3.53 *J*	3.51 *J*	4.35 *J*	18.5 *J*
Hexachlorobutadiene	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
Hexachlorocyclopentadiene	µg/kg	200 *UJ*	250 *UJ*	2,100 *UJ*	2,000 *UJ*	230 *U*	240 *U*	210 *U*	340 *U*
Hexachloroethane	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
Indeno(1,2,3-cd)pyrene	µg/kg	39 *U*	48 *U*	1,600	4,500	190	370	330	490
Isophorone	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
Naphthalene	µg/kg	39 *U*	48 *U*	410 *U*	1,900	44 *U*	52	40 *U*	65 *U*
Nitrobenzene	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
N-Nitrosodimethylamine	µg/kg	200 *U*	250 *U*	2,100 *U*	2,000 *U*	230 *U*	240 *U*	210 *U*	340 *U*
N-nitroso-di-n-propylamine	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*

Table A-5A. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	WS0025	WS0026	WS0027	WS0028	WS0029	WS0030	WS0031	WS0032
Station ID:	S387	S387	S388	S388	S389	S389	S390	S390
Duplicates:								
Date:	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/13/2000	8/13/2000	8/13/2000	8/13/2000
Depth (cm):	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**							
N-Nitrosodiphenylamine	µg/kg	39 *U*	48 *U*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
Pentachlorophenol	µg/kg	1,000 *U*	1,200 *UJ*	11,000 *U*	10,000 *U*	1,100 *U*	1,200 *U*	1,000 *U*	1,700 *U*
Phenanthrene	µg/kg	39 *U*	88	1,900	13,000	240	1,000	800	870
Phenol	µg/kg	39 *U*	48 *UJ*	410 *U*	390 *U*	44 *U*	46 *U*	40 *U*	65 *U*
Pyrene	µg/kg	39 *U*	48 *U*	2,600	11,000	630	1,100	890	1,200
Pesticides									
4,4'-DDD	µg/kg	1.07 *UJ*	1.09 *UJ*	1.09 *UJ*	1.07 *UJ*	1.96 *J*	*R*	1.43 *J*	8.27 *J*
4,4'-DDE	µg/kg	2.59 *J*	1.09 *UJ*	1.32 *J*	*R*	*R*	7.43 *J*	2.32 *J*	*R*
4,4'-DDT	µg/kg	2.07 *J*	3.12 *J*	3.87 *J*	11.9 *J*	5.78 *J*	8.75 *J*	5.9 *J*	24.7 *J*
Aldrin	µg/kg	1.07 *U*	1.09 *U*	1.09 *U*	*R*	*R*	*R*	1.05 *UJ*	*R*
alpha-BHC	µg/kg	1.07 *UJ*	1.09 *UJ*	1.09 *UJ*	1.07 *UJ*	1.05 *UJ*	*R*	1.05 *UJ*	5.7 *J*
beta-BHC	µg/kg	1.07 *UJ*	1.09 *UJ*	1.09 *UJ*	2.06 *J*	1.05 *UJ*	2.49 *J*	1.05 *UJ*	1.08 *UJ*
gamma-BHC (Lindane)	µg/kg	1.07 *UJ*	1.09 *UJ*	1.09 *UJ*	1.07 *UJ*	1.05 *UJ*	*R*	1.05 *UJ*	1.08 *UJ*
delta-BHC	µg/kg	*R*	*R*	*R*	*R*	*R*	*R*	1.72 *J*	5.01 *J*
Dieldrin	µg/kg	2.63 *J*	3.7 *J*	4.97 *J*	*R*	3.22 *J*	3.86 *J*	1.05 *UJ*	20.6 *J*
Endosulfan I	µg/kg	1.07 *UJ*	1.09 *UJ*	1.09 *UJ*	1.07 *UJ*	1.05 *UJ*	1.05 *UJ*	1.05 *UJ*	1.08 *UJ*
Endosulfan II	µg/kg	1.07 *UJ*	1.09 *UJ*	1.09 *UJ*	*R*	*R*	*R*	*R*	*R*
Endosulfan sulfate	µg/kg	*R*	6.15 *J*	*R*	*R*	*R*	*R*	*R*	*R*
Endrin aldehyde	µg/kg	2.13 *J*	2.51 *J*	1.09 *UJ*	1.07 *UJ*	1.05 *UJ*	*R*	1.05 *UJ*	1.08 *UJ*
Endrin ketone	µg/kg	1.07 *UJ*	1.09 *UJ*	1.09 *UJ*	1.07 *UJ*	1.05 *UJ*	*R*	1.05 *UJ*	1.08 *UJ*
Endrin	µg/kg	1.07 *UJ*	1.68 *J*	1.09 *UJ*	2.89 *J*	1.05 *UJ*	2.61 *J*	1.05 *UJ*	5.17 *J*
Heptachlor epoxide	µg/kg	2.19 *J*	*R*	*R*	1.07 *UJ*	4.97 *J*	*R*	2.65 *J*	11 *J*
Heptachlor	µg/kg	1.07 *U*	1.09 *U*	1.09 *U*	1.07 *U*	1.05 *U*	1.05 *UJ*	1.05 *U*	1.08 *U*
Methoxychlor	µg/kg	1.07 *UJ*	*R*	1.09 *UJ*	8.71 *J*	1.05 *UJ*	1.05 *UJ*	1.05 *UJ*	*R*
Toxaphene	µg/kg	107 *UJ*	109 *UJ*	109 *UJ*	107 *UJ*	105 *UJ*	105 *UJ*	105 *UJ*	108 *UJ*
alpha-Chlordane	µg/kg	1.07 *UJ*	1.09 *UJ*	1.09 *UJ*	*R*	2.99 *J*	4.91 *J*	3.19 *J*	12.4 *J*
gamma-Chlordane	µg/kg	*R*	1.53 *J*	2.29 *J*	6.28 *J*	5.52 *J*	7.87 *J*	4.24 *J*	15 *J*
Total Chlordane[2]	µg/kg	1.07 UJ	1.53 *J*	2.29 *J*	6.28 *J*	8.51 *J*	12.78 *J*	7.43 *J*	27.4 *J*
PCBs									
Aroclor 1016	µg/kg	53.7 *U*	54.7 *U*	54.4 *UJ*	53.7 *U*	52.3 *U*	52.3 *U*	52.3 *U*	54.1 *U*
Aroclor 1221	µg/kg	53.7 *U*	54.7 *U*	54.4 *UJ*	53.7 *U*	52.3 *U*	52.3 *U*	52.3 *U*	54.1 *U*
Aroclor 1232	µg/kg	53.7 *U*	54.7 *U*	54.4 *UJ*	53.7 *U*	52.3 *U*	52.3 *U*	52.3 *U*	54.1 *U*

Table A-5A. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	WS0025	WS0026	WS0027	WS0028	WS0029	WS0030	WS0031	WS0032
	Station ID:	S387	S387	S388	S388	S389	S389	S390	S390
	Duplicates:								
	Date:	8/12/2000	8/12/2000	8/12/2000	8/12/2000	8/13/2000	8/13/2000	8/13/2000	8/13/2000
	Depth (cm):	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**								
Aroclor 1242	µg/kg	16.3 *J*	13.7 *J*	66.3 *J*	108 *J*	17.8 *J*	41.1 *J*	21.3 *J*	537 *J*
Aroclor 1248	µg/kg	53.7 *U*	54.7 *U*	54.4 *UJ*	53.7 *U*	52.3 *U*	52.3 *U*	52.3 *U*	54.1 *U*
Aroclor 1254	µg/kg	42.4 *J*	58.7 *J*	127 *J*	248 *J*	100 *J*	129 *J*	125 *J*	719 *J*
Aroclor 1260	µg/kg	29.5 *J*	55.2 *J*	94.6 *J*	194 *J*	144 *J*	116 *UJ*	189 *J*	249 *J*
Aroclor 1268	µg/kg	53.7 *U*	54.7 *U*	54.4 *UJ*	53.7 *U*	52.3 *U*	52.3 *U*	52.3 *U*	54.1 *U*
Sum of PCBs	µg/kg	88.2	127.6	287.9	550	261.8	170.1	335.3	1505

Notes: [1] Sum of xylenes is a calculated quantity, not a direct measurement

[2] Total chlordane is a calculated quantity, not a direct measurement

HCB - Hexachlorobenzene

J - estimated

U - not detected at reported quantitation limit

R - rejected datum

Table A-5B. Southern Basin Wetland SYW-19 Sediment Sample Data (All Parameters)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	WS0017	WS0018	WS0019	WS0020	WS0021	WS0033	WS0022	WS0023	WS0024
Station ID:	S383	S383	S384	S384	S385	S385	S385	S386	S386
Duplicates:					D1	D2			
Date:	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000
Depth (cm):	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**								
Inorganics									
Aluminum	mg/kg	4,920	3,680	3,510	3,540	5,040	5,450	2,300	5,410	6,500
Antimony	mg/kg	0.64 *J*	0.83 *J*	0.55 *J*	0.59 *J*	1.3 *J*	0.89 *J*	5.5 *J*	0.32 *UJ*	0.43 *J*
Arsenic	mg/kg	6.8	7.0	4.9	4.6	7.1	10.1	8.5	7.8	9.3
Barium	mg/kg	273 *J*	263 *J*	176 *J*	274 *J*	370 *J*	410 *J*	161 *J*	369 *J*	655 *J*
Beryllium	mg/kg	0.46	0.44	0.63	0.35	0.51	0.58	0.25	0.47	0.49
Cadmium	mg/kg	1.3	4.6	0.84	0.85	1.9	2.6	3.1	0.73	0.67
Calcium	mg/kg	218,000	283,000	152,000	233,000	164,000	229,000	302,000	231,000	242,000
Chromium	mg/kg	42.7	97.9	33.7	59.5	49	60.2	48	40	14.5
Cobalt	mg/kg	5.0	4.2	3.1	5.0	4.3	4.8	2.8	4.6	4.0
Copper	mg/kg	53	62.9	45	59.8	63.8	84.7	69	167	89
Cyanide	mg/kg	0.87 *U*	0.86 *U*	1.1 *U*	0.93 *U*	0.89 *U*	0.96 *U*	0.82 *U*	0.85 *U*	0.66 *U*
Iron	mg/kg	11,700	8,940	9,040	9,840	10,800	12,700	3,810	9,420	11,400
Lead	mg/kg	90.8 *J*	276 *J*	92.4 *J*	103 *J*	244 *J*	274 *J*	376 *J*	30.4 *J*	21.8 *J*
Magnesium	mg/kg	7,930	5,220	5,450	8,240	7,770	7,650	3,420	8,810	12,800
Manganese	mg/kg	290	276	175	268	140	185	143	303	299
Mercury	mg/kg	11.4	15.4	17.9	11.1	18	32.1	60.2	4.8	8.5
Nickel	mg/kg	32.5	44.7	23.4	26.2	39.2	48.6	44.5	26.8	23.6
Potassium	mg/kg	832	415	420	499	909	972	138	882	927
Selenium	mg/kg	1.3	1.2	1.6	1.1	1.6	1.8	1.3	1.1	0.81
Silver	mg/kg	0.25	0.74	0.21	0.59	1.1	1.4	1.4	0.15	0.099 *U*
Sodium	mg/kg	1,230 *J*	1,590 *J*	1,300 *J*	3,870 *J*	1,390 *J*	1,780 *J*	3,390 *J*	1,400 *J*	1,300 *J*
Thallium	mg/kg	0.86 *U*	0.84 *U*	1.1 *U*	0.91 *U*	0.88 *U*	0.94 *U*	0.8 *U*	0.83 *U*	0.64 *U*
Vanadium	mg/kg	11	9.3	12.4	12.8	12.7	13.4	6.2	12.9	11.8
Zinc	mg/kg	138	192	110	152	111	127	138	89	65.2
Volatile Organic Compounds									
1,1,1-Trichloroethane	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	9.1 *UJ*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
1,1,2,2-Tetrachloroethane	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	9.1 *UJ*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
1,1,2-Trichloroethane	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	9.1 *UJ*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
1,1-Dichloroethane	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	9.1 *UJ*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
1,1-Dichloroethene	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	9.1 *UJ*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
1,2-Dichloroethane	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	9.1 *UJ*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*

Table A-5B. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	WS0017	WS0018	WS0019	WS0020	WS0021	WS0033	WS0022	WS0023	WS0024
Station ID:	S383	S383	S384	S384	S385	S385	S385	S386	S386
Duplicates:					D1	D2			
Date:	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000
Depth (cm):	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**								
1,2-Dichloropropane	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	9.1 *UJ*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
2-Butanone	µg/kg	5.7 *J*	47 *J*	4.2 *J*	51 *J*	19 *UJ*	20 *U*	35 *J*	5.5	17
2-Hexanone	µg/kg	18 *U*	18 *UJ*	30 *UJ*	18 *UJ*	19 *UJ*	20 *U*	16 *UJ*	17 *U*	14 *U*
4-Methyl-2-pentanone	µg/kg	18 *U*	18 *UJ*	30 *UJ*	18 *UJ*	19 *UJ*	20 *U*	16 *UJ*	17 *U*	14 *U*
Acetone	µg/kg	20 *U*	230 *J*	63 *UJ*	240 *J*	20 *UJ*	39 *U*	110 *UJ*	46 *U*	83 *U*
Benzene	µg/kg	3.9 *J*	35 *J*	60 *J*	160 *J*	4.5 *J*	4.9	27 *J*	8.3 *U*	6.9 *U*
Bromodichloromethane	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	9.1 *UJ*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
Bromoform	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	9.1 *UJ*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
Bromomethane	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	9.1 *UJ*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
Carbon disulfide	µg/kg	18 *U*	2.8 *J*	30 *UJ*	8.4 *J*	19 *UJ*	20 *U*	7.4 *J*	17 *U*	14 *U*
Carbon tetrachloride	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	9.1 *UJ*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
Chlorobenzene	µg/kg	110	540	600	3,500	80 *J*	74		10 *J*	39
Chloroethane	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	9.1 *UJ*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
Chloroform	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	9.1 *UJ*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
Chloromethane	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	9.1 *UJ*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
cis-1,2-Dichloroethene	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	2 *J*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
trans-1,2-Dichloroethene	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	9.1 *UJ*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
cis-1,3-Dichloropropene	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	9.1 *UJ*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
trans-1,3-Dichloropropene	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	9.1 *UJ*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
Dibromochloromethane	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	9.1 *UJ*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
Ethylbenzene	µg/kg	7 *J*	12 *J*	24 *J*	62 *J*	9.3 *J*	9.8 *U*	18 *J*	8.3 *U*	6.9 *U*
Methylene chloride	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	9.1 *UJ*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
Styrene	µg/kg	9.2 *U*	2.8 *J*	15 *UJ*	9.1 *UJ*	6.4 *J*	9.8 *U*	4.5 *J*	8.3 *U*	6.9 *U*
Tetrachloroethene	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	9.1 *UJ*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
Toluene	µg/kg	9.2 *U*	18 *UJ*	39 *UJ*	20 *UJ*	9.7 *UJ*	9.8 *U*	18 *UJ*	8.3 *U*	6.9 *U*
Trichloroethene	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	9.1 *UJ*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
Vinyl chloride	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	9.1 *UJ*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
Xylene (m,p)	µg/kg	9.2 *U*	26 *UJ*	36 *UJ*	100 *J*	9.7 *UJ*	9.8 *U*	32 *UJ*	8.3 *U*	6.9 *U*
Xylene (o)	µg/kg	9.2 *U*	8.8 *UJ*	15 *UJ*	26 *J*	9.7 *UJ*	9.8 *U*	8 *UJ*	8.3 *U*	6.9 *U*
Sum of Xylenes [1]	µg/kg	9.2 *U*	17.4 *UJ*	25.5 *UJ*	126 *J*	9.7 *UJ*	9.8 *U*	20 *UJ*	8.3 *U*	6.9 *U*

Table A-5B. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	WS0017	WS0018	WS0019	WS0020	WS0021	WS0033	WS0022	WS0023	WS0024
Station ID:	S383	S383	S384	S384	S385	S385	S385	S386	S386
Duplicates:					D1	D2			
Date:	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000
Depth (cm):	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**								
Semivolatile Organic Compounds									
1,2,4-Trichlorobenzene	µg/kg	1,400	6,100	3,200	2,800	3,900	9,200	18,000	200 *J*	160
1,2-Dichlorobenzene	µg/kg	2,100	5,800	4,900	3,600	3,000	5,800	3,000	610 *J*	450
1,3-Dichlorobenzene	µg/kg	410	1,200	830 *U*	780	660	2,100	6,200	62 *J*	140
1,4-Dichlorobenzene	µg/kg	4,500	10,000	9,800	8,000	4,900	11,000	5,700	920 *J*	1,300
2,2'-Oxybis(1-chloropropane)	µg/kg	120 *U*	600 *U*	830 *U*	580 *U*	310 *U*	270 *UJ*	420 *U*	54 *UJ*	49 *U*
2,4,5-Trichlorophenol	µg/kg	590 *U*	3,100 *U*	4,300 *U*	3,000 *U*	1,600 *U*	1,400 *U*	2,200 *U*	280 *UJ*	250 *U*
2,4,6-Trichlorophenol	µg/kg	590 *U*	3,100 *U*	4,300 *U*	3,000 *U*	1,600 *U*	1,400 *U*	2,200 *U*	280 *UJ*	250 *U*
2,4-Dichlorophenol	µg/kg	590 *U*	3,100 *U*	4,300 *U*	3,000 *U*	1,600 *U*	1,400 *U*	2,200 *U*	280 *UJ*	250 *U*
2,4-Dimethylphenol	µg/kg	590 *U*	3,100 *U*	4,300 *U*	3,000 *U*	1,600 *U*	1,400 *U*	2,200 *U*	280 *UJ*	250 *U*
2,4-Dinitrophenol	µg/kg	3,000 *U*	15,000 *U*	21,000 *U*	15,000 *U*	7,900 *U*	7,100 *U*	11,000 *U*	1,400 *UJ*	1,300 *UJ*
2,4-Dinitrotoluene	µg/kg	590 *U*	3,100 *U*	4,300 *U*	3,000 *U*	1,600 *U*	1,400 *U*	2,200 *U*	280 *UJ*	250 *U*
2,6-Dinitrotoluene	µg/kg	590 *U*	3,100 *U*	4,300 *U*	3,000 *U*	1,600 *U*	1,400 *U*	2,200 *U*	280 *UJ*	250 *U*
2-Chloronaphthalene	µg/kg	120 *U*	600 *U*	830 *U*	580 *U*	310 *U*	270 *U*	420 *U*	54 *UJ*	49 *U*
2-Chlorophenol	µg/kg	120 *U*	600 *U*	830 *U*	580 *U*	310 *U*	270 *U*	420 *U*	54 *UJ*	49 *U*
2-Methyl-4,6-dinitrophenol	µg/kg	3,000 *U*	15,000 *U*	21,000 *U*	15,000 *U*	7,900 *U*	7,100 *U*	11,000 *U*	1,400 *UJ*	1,300 *U*
2-Methylnaphthalene	µg/kg	330	720	1,300	830	320	510	420 *U*	54 *UJ*	49 *U*
2-Methylphenol	µg/kg	120 *U*	600 *U*	830 *U*	580 *U*	310 *U*	270 *U*	420 *U*	54 *UJ*	49 *U*
4-Methylphenol	µg/kg	130	600 *U*	830 *U*	580 *U*	310 *U*	1,000	420 *U*	54 *UJ*	49 *U*
2-Nitroaniline	µg/kg	230 *U*	1,200 *U*	1,700 *U*	1,200 *U*	620 *U*	560 *U*	860 *U*	110 *UJ*	100 *U*
3-Nitroaniline	µg/kg	3,000 *U*	15,000 *U*	21,000 *U*	15,000 *U*	7,900 *U*	7,100 *U*	11,000 *U*	1,400 *UJ*	1,300 *U*
4-Nitroaniline	µg/kg	3,000 *U*	15,000 *U*	21,000 *U*	15,000 *U*	7,900 *U*	7,100 *U*	11,000 *U*	1,400 *UJ*	1,300 *U*
2-Nitrophenol	µg/kg	590 *U*	3,100 *U*	4,300 *U*	3,000 *U*	1,600 *U*	1,400 *U*	2,200 *U*	280 *UJ*	250 *U*
4-Nitrophenol	µg/kg	3,000 *U*	15,000 *U*	21,000 *U*	15,000 *U*	7,900 *U*	7,100 *U*	11,000 *U*	1,400 *UJ*	1,300 *U*
3,3-Dichlorobenzidine	µg/kg	120 *UJ*	600 *UJ*	830 *UJ*	580 *UJ*	310 *UJ*	270 *UJ*	420 *UJ*	54 *UJ*	49 *UJ*
4-Bromophenyl-phenyl ether	µg/kg	120 *U*	600 *U*	830 *U*	580 *U*	310 *U*	270 *U*	420 *U*	54 *UJ*	49 *U*
4-Chloro-3-methylphenol	µg/kg	590 *U*	3,100 *U*	4,300 *U*	3,000 *U*	1,600 *U*	1,400 *U*	2,200 *U*	280 *UJ*	250 *U*
4-Chloroaniline	µg/kg	120 *UJ*	600 *UJ*	830 *UJ*	580 *UJ*	310 *UJ*	270 *UJ*	420 *UJ*	54 *UJ*	49 *UJ*
4-Chlorophenyl-phenyl ether	µg/kg	120 *U*	600 *U*	830 *U*	580 *U*	310 *U*	270 *U*	420 *U*	54 *UJ*	49 *U*
Acenaphthene	µg/kg	340	1,900	2,500	1,300	330	270 *U*	1,600	54 *UJ*	49 *U*
Acenaphthylene	µg/kg	630	1,700	1,900	1,500	910	1,600	1,500	170 *J*	250
Anthracene	µg/kg	2,400	6,500	10,000	6,300	2,800	270 *U*	420 *U*	300 *J*	380

Table A-5B. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	WS0017	WS0018	WS0019	WS0020	WS0021	WS0033	WS0022	WS0023	WS0024
Station ID:	S383	S383	S384	S384	S385	S385	S385	S386	S386
Duplicates:					D1	D2			
Date:	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000
Depth (cm):	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**								
Benz(a)anthracene	µg/kg	2,800	11,000	14,000	8,700	2,800	1,800 *J*	4,100	160 *J*	560
Benzo(a)pyrene	µg/kg	3,000	11,000	13,000	7,800	3,100	3,100 *J*	9,200	180 *J*	530
Benzo(b)fluoranthene	µg/kg	2,900	8,300	11,000	7,100	3,100	3,900 *J*	10,000	220 *J*	520
Benzo(g,h,i)perylene	µg/kg	1,900	6,200	6,800	4,400	2,100	1,500 *J*	6,800	160 *J*	370
Benzo(k)fluoranthene	µg/kg	2,700	8,200	10,000	5,900	3,300	3,500 *J*	9,000	200 *J*	450
Benzyl alcohol	µg/kg	590 *U*	3,100 *U*	4,300 *U*	3,000 *U*	1,600 *U*	1,400 *U*	2,200 *U*	280 *UJ*	250 *U*
Bis(2-chloroethoxy)methane	µg/kg	120 *U*	600 *U*	830 *U*	580 *U*	310 *U*	270 *U*	420 *U*	54 *UJ*	49 *U*
Bis(2-chloroethyl)ether	µg/kg	120 *U*	600 *U*	830 *U*	580 *U*	310 *U*	270 *U*	420 *U*	54 *UJ*	49 *U*
Bis(2-ethylhexyl)phthalate	µg/kg	890 *J*	600 *U*	1,800 *J*	1,800 *J*	610 *J*	270 *U*	420 *U*	1,800 *J*	49 *U*
Butylbenzylphthalate	µg/kg	120 *U*	600 *U*	830 *U*	580 *U*	310 *U*	270 *U*	420 *U*	54 *UJ*	49 *U*
Carbazole	µg/kg	450	2,300	2,600	1,400	720	270 *U*	420 *U*	54 *UJ*	49 *U*
Chrysene	µg/kg	3,700	12,000	15,000	9,800	3,400	3,300 *J*	5,200	230 *J*	660
Dibenz(a,h)anthracene	µg/kg	800	2,800	3,100	2,200	950	270 *U*	3,300	66 *J*	200
Dibenzofuran	µg/kg	280	600 *U*	1,900	960	310 *U*	270 *U*	1,100	54 *UJ*	49 *U*
Diethylphthalate	µg/kg	120 *U*	600 *U*	830 *U*	580 *U*	310 *U*	270 *U*	420 *U*	54 *UJ*	49 *U*
Dimethylphthalate	µg/kg	120 *U*	600 *U*	830 *U*	580 *U*	310 *U*	270 *U*	420 *U*	54 *UJ*	49 *U*
Di-n-butylphthalate	µg/kg	120 *U*	600 *U*	830 *U*	580 *U*	310 *U*	270 *U*	420 *U*	54 *UJ*	49 *U*
Di-n-octylphthalate	µg/kg	120 *U*	600 *U*	830 *U*	580 *U*	310 *U*	270 *U*	420 *U*	54 *UJ*	49 *U*
Fluoranthene	µg/kg	7,800	28,000	33,000	20,000	7,000	7,600	16,000	330 *J*	700
Fluorene	µg/kg	410	600 *U*	2,700	1,400	360	270 *U*	1,500	54 *UJ*	49 *U*
Hexachlorobenzene (GC/ECD)	µg/kg	2,140 *J*	1,470 *J*	1,040 *J*	458	2,510 *J*	5,110	*R*	106 *J*	63.4 *J*
Hexachlorobenzene (GC/MS)	µg/kg	630	1000	830 *U*	580 *U*	1,800	12,000 *J*	420 *U*	54 *UJ*	49 *U*
Final HCB Value	µg/kg	1,385 *J*	1,235 *J*	935 [4]	458 *J*	2,155 *J*	8,555 *J*	420 *U*	80 [4]	56.2 [4]
Hexachlorobutadiene	µg/kg	120 *U*	600 *U*	830 *U*	580 *U*	310 *U*	270 *U*	420 *U*	54 *UJ*	49 *U*
Hexachlorocyclopentadiene	µg/kg	590 *U*	3,100 *U*	4,300 *U*	3,000 *U*	1,600 *U*	1,400 *U*	2,200 *U*	280 *UJ*	250 *U*
Hexachloroethane	µg/kg	120 *U*	600 *U*	830 *U*	580 *U*	310 *U*	270 *U*	420 *U*	54 *UJ*	49 *U*
Indeno(1,2,3-cd)pyrene	µg/kg	1,800	6,300	7,100	4,900	2,000	1,700 *J*	6,000	120 *J*	400
Isophorone	µg/kg	120 *U*	600 *U*	830 *U*	580 *U*	310 *U*	270 *U*	420 *U*	54 *UJ*	49 *U*
Naphthalene	µg/kg	2,000	2,400	5,000	5,100	1,700	3,600	2,100	340 *J*	660
Nitrobenzene	µg/kg	120 *U*	600 *U*	830 *U*	580 *U*	310 *U*	270 *U*	420 *U*	54 *UJ*	49 *U*
N-Nitrosodimethylamine	µg/kg	590 *U*	3,100 *U*	4,300 *U*	3,000 *U*	1,600 *U*	1,400 *U*	2,200 *U*	280 *UJ*	250 *U*
N-Nitroso-di-n-propylamine	µg/kg	120 *U*	600 *U*	830 *U*	580 *U*	310 *U*	270 *U*	420 *U*	54 *UJ*	49 *U*

Table A-5B. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	WS0017	WS0018	WS0019	WS0020	WS0021	WS0033	WS0022	WS0023	WS0024
Station ID:	S383	S383	S384	S384	S385	S385	S385	S386	S386
Duplicates:					D1	D2			
Date:	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000
Depth (cm):	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**								
N-Nitrosodiphenylamine	µg/kg	120 *U*	600 *U*	830 *U*	580 *U*	310 *U*	270 *U*	420 *U*	54 *UJ*	49 *U*
Pentachlorophenol	µg/kg	3,000 *U*	15,000 *U*	21,000 *U*	15,000 *U*	7,900 *U*	7,100 *U*	11,000 *U*	1,400 *UJ*	1,300 *U*
Phenanthrene	µg/kg	3,700	20,000	22,000	11,000	4,100	4,700	13,000	190 *J*	230
Phenol	µg/kg	530	820	830 *U*	580 *U*	850	4,800	2,200	89 *J*	120
Pyrene	µg/kg	5,600	21,000	26,000	15,000	5,400	5,700 *J*	420 *U*	310 *J*	480
Pesticides										
4,4'-DDD	µg/kg	1.05 *UJ*	1.07 *UJ*	1.08 *UJ*	1.09 *UJ*	1.06 *UJ*	1.09 *UJ*	1.08 *UJ*	1.01 *UJ*	1.1 *UJ*
4,4'-DDE	µg/kg	*R*	*R*	*R*	16.3 *J*	7.84 *J*	26.4 *J*	8.04 *J*	4.85 *J*	3.41 *J*
4,4'-DDT	µg/kg	51 *J*	44.8 *J*	44 *J*	22.1 *J*	20.8 *J*	56.3 *J*	*R*	*R*	3.51 *J*
Aldrin	µg/kg	21 *J*	1.07 *UJ*	45.4 *J*	31.3 *J*	28.7 *J*	26.4 *J*	49.6 *J*	5.43 *UJ*	3.35 *J*
alpha-BHC	µg/kg	*R*	*R*	2.48 *J*	2.35 *J*	1.06 *UJ*	1.09 *UJ*	*R*	1.01 *UJ*	1.1 *UJ*
beta-BHC	µg/kg	1.05 *UJ*	1.07 *UJ*	1.08 *UJ*	1.09 *UJ*	10.7 *J*	1.09 *UJ*	1.08 *UJ*	1.71 *J*	1.1 *UJ*
delta-BHC	µg/kg	1.83 *J*	4.49 *J*	*R*	*R*	3.14 *J*	*R*	10.4 *J*	2.84 *J*	*R*
gamma-BHC (Lindane)	µg/kg	1.05 *UJ*	*R*	6.25 *J*	3.95 *J*	2.34 *J*	1.09 *UJ*	*R*	1.28 *J*	1.1 *UJ*
Dieldrin	µg/kg	20.1 *J*	38.5	21.6 *J*	16.7 *J*	22.2 *J*	25.9	13.5 *J*	4.12 *J*	2.04 *J*
Endosulfan I	µg/kg	1.05 *UJ*	1.07 *UJ*	10.9 *J*	1.09 *UJ*	7.85 *J*	9.82 *J*	1.08 *UJ*	1.01 *UJ*	1.1 *UJ*
Endosulfan II	µg/kg	1.05 *UJ*	1.07 *UJ*	*R*	1.09 *UJ*	1.06 *UJ*	1.09 *UJ*	*R*	1.01 *UJ*	1.1 *UJ*
Endosulfan sulfate	µg/kg	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*
Endrin aldehyde	µg/kg	*R*	1.07 *UJ*	*R*	1.09 *UJ*	1.06 *UJ*	*R*	1.08 *UJ*	1.01 *UJ*	1.1 *UJ*
Endrin ketone	µg/kg	1.05 *UJ*	1.07 *UJ*	16.8 *J*	8.17 *J*	5.88 *J*	1.09 *UJ*	6.06 *J*	1.01 *UJ*	1.1 *UJ*
Endrin	µg/kg	1.05 *UJ*	13.3	1.08 *UJ*	1.09 *U*	*R*	1.09 *U*	1.08 *U*	1.01 *U*	1.1 *U*
Heptachlor epoxide	µg/kg	14.5 *J*	31.8 *J*	1.08 *UJ*	1.09 *U*	14.4 *J*	1.09 *U*	33.5	3.31	1.1 *U*
Heptachlor	µg/kg	1.05 *UJ*	1.07 *U*	1.08 *UJ*	1.09 *U*	1.06 *UJ*	1.09 *U*	1.08 *U*	1.01 *U*	1.1 *U*
Methoxychlor	µg/kg	1.05 *UJ*	1.07 *UJ*	1.08 *UJ*	1.09 *UJ*	1.06 *UJ*	1.09 *UJ*	11.6 *J*	*R*	1.1 *UJ*
Toxaphene	µg/kg	105 *UJ*	107 *UJ*	108 *UJ*	109 *UJ*	106 *UJ*	109 *UJ*	108 *UJ*	101 *UJ*	110 *UJ*
alpha-Chlordane	µg/kg	5.52 *J*	18.4 *J*	10.9 *J*	10.6 *J*	*R*	1.09 *UJ*	1.08 *UJ*	1.01 *UJ*	1.1 *UJ*
gamma-Chlordane	µg/kg	11.4 *J*	*R*	18.8 *J*	16.5 *J*	*R*	*R*	22.4 *J*	4.47 *J*	1.76 *J*
Total chlordane[2]	µg/kg	16.92 *J*	18.4 *J*	29.7 *J*	27.1 *J*	*R*	1.09 *UJ*	22.4 *J*	4.47 *J*	1.76 *J*
PCBs										
Aroclor 1016	µg/kg	52.5 *U*	53.4 *U*	54.2 *U*	54.7 *U*	52.8 *U*	54.7 *U*	54.2 *U*	52.7 *U*	54.9 *U*
Aroclor 1221	µg/kg	52.5 *U*	53.4 *U*	54.2 *U*	54.7 *U*	52.8 *U*	54.7 *U*	54.2 *U*	52.7 *U*	54.9 *U*
Aroclor 1232	µg/kg	52.5 *U*	53.4 *U*	54.2 *U*	54.7 *U*	52.8 *U*	54.7 *U*	54.2 *U*	52.7 *U*	54.9 *U*

Table A-5B. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	WS0017	WS0018	WS0019	WS0020	WS0021	WS0033	WS0022	WS0023	WS0024
Station ID:	S383	S383	S384	S384	S385	S385	S385	S386	S386
Duplicates:					D1	D2			
Date:	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000
Depth (cm):	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**								
Aroclor 1242	µg/kg	308 *J*	201 *J*	541 *J*	350 *J*	111 *J*	447 *J*	1,130 *J*	49 *J*	68.8 *J*
Aroclor 1248	µg/kg	52.5 *U*	53.4 *U*	54.2 *U*	54.7 *U*	52.8 *U*	54.7 *U*	54.2 *U*	52.7 *U*	54.9 *U*
Aroclor 1254	µg/kg	483 *J*	750 *J*	372 *J*	273 *J*	419 *J*	473 *J*	492 *J*	52.7 *U*	50 *J*
Aroclor 1260	µg/kg	190 *J*	372 *J*	158 *J*	154 *J*	141 *J*	140 *J*	197 *J*	576 *J*	52.5 *J*
Aroclor 1268	µg/kg	52.5 *U*	53.4 *U*	54.2 *U*	54.7 *U*	52.8 *U*	54.7 *U*	54.2 *U*	52.7 *U*	54.9 *U*
Sum of PCBs	µg/kg	981	1,323	1,071	777	671	1,060	1,819	625	171.3
PCDD/PCDFs										
2,3,7,8-Tetrachlorodibenzodioxin	ng/kg	9.5	22.4	16.8	8.29	71.6	40.5	14.2	2.61	4.17
1,2,3,7,8-Pentachlorodibenzodioxin	ng/kg	55.8	114	102	37.3	455	241	57.6	11.4	22.7
1,2,3,4,7,8-Hexachlorodibenzodioxin	ng/kg	40.9	74.1	70.5	26.1	401	194	47.6	7.96	13.9
1,2,3,6,7,8-Hexachlorodibenzodioxin	ng/kg	110	204	177	76	860	443	115	21	42.7
1,2,3,7,8,9-Hexachlorodibenzodioxin	ng/kg	57.4	113	95.9	41.6	446	234	64.9	14.8	23.4
1,2,3,4,6,7,8-Heptachlorodibenzodioxin	ng/kg	408	664	561	298	2,070	1,160	374	71.3	96.1
Octachlorodibenzodioxin	ng/kg	1,470	2,190	1,720	1,100	2,700	2,020	688	250	109
Total tetrachlorodibenzodioxins	ng/kg	467	1,030	824	356	4,540	2,370	602	108	187
Total pentachlorodibenzodioxins	ng/kg	493	1,130	935	324	4,400	2,500	626	65.9	235
Total hexachlorodibenzodioxins	ng/kg	609	1,230	1,010	473	5,280	2,780	794	126	254
Total heptachlorodibenzodioxins	ng/kg	697	1,220	968	556	3,500	2,070	674	129	169
2,3,7,8-Tetrachlorodibenzofuran	ng/kg	281	446	442	476	1,070	688	605	137	146
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg	138	206	224	265	553	397	637	51.6	55.6
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg	243	476	477	559	726	695	623	156	121
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg	214	347	332	490	506	421	1,180	72.1	64.1
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg	67.4	94.1	98.6	155	147	119	350	16.3	16.8
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg	6.13	7.18	9.08	10.7	12.8	9.95	23.6	2.51	2.72
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg	21.6	31.4	33.2	40.8	49	37.6	87.9	8.1	6.83
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg	151	207	216	329	391	283	721	53	47.6
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg	43.6	54.5	63.7	88.2	83.9	65.6	240	24.1	16.8
Octachlorodibenzofuran	ng/kg	303	455	481	502	774	633	716	207	154
Total tetrachlorodibenzofurans	ng/kg	1,810	3,220	3,340	3,120	4,960	4,430	4,590	929	865
Total pentachlorodibenzofurans	ng/kg	1,080	1,870	1,910	2,220	3,280	2,930	3,600	605	542
Total hexachlorodibenzofurans	ng/kg	545	833	827	1,120	1,300	1,070	2,410	188	185
Total heptachlorodibenzofurans	ng/kg	300	413	430	598	718	539	1,270	121	92

Table A-5B. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	WS0017	WS0018	WS0019	WS0020	WS0021	WS0033	WS0022	WS0023	WS0024
	Station ID:	S383	S383	S384	S384	S385	S385	S385	S386	S386
	Duplicates:					D1	D2			
	Date:	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000	8/11/2000
	Depth (cm):	0 - 15	15 - 30	0 - 15	15 - 30	0 - 15	0 - 15	15 - 30	0 - 15	15 - 30
Chemical	**Units**									
TEQ - Dioxins (ND=1/2)	ng/kg	90.4	182.4	158.9	63.1	718.3	380.4	98.4	19.1	35.8
TEQ - Furans (ND=1/2)	ng/kg	189.4	343.5	344.0	414.2	574.0	498.5	577.7	105.0	87.6
TEQ - Total[3] (ND=1/2)	ng/kg	279.7	525.9	503.0	477.3	1,292	878.9	676.0	124.1	123.4

Notes: [1] Sum of xylenes is a calculated quantity, not a direct measurement

[2] Total chlordane is a calculated quantity, not a direct measurement

[3] TEQ calculated using WHO TEFs

[4] HCB results for the two methods were inconsistent, and so the average was taken

HCB - Hexachlorobenzene

J - estimated

U - not detected at reported quantitation limit

R - rejected datum

Table A-6. Dredge Spoils Surface Soil Data

Survey:		ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:		DM0001	DM0031	DM0011	DM0021	DM0006	DM0026	DM0016	DM0036
Station ID:		S436	S437	S438	S439	S440	S441	S442	S443
Duplicates:									
Date:		8/16/2000	8/16/2000	8/16/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000
Depth (cm):		0 - 40	0 - 107	0 - 49	6 - 18	3 - 17	6 - 49	0 - 61	0 - 61
Chemical	**Units**								
Inorganics									
Aluminum	mg/kg	9,470	8,030 *J*	9,100	8,950	12,100	8,140	9,980	8,230
Antimony	mg/kg	0.27	0.23 *U*	0.25	0.40 *J*	0.30	0.25 *J*	0.24	0.31 *J*
Arsenic	mg/kg	6.5	6.8	5.9	8.4	8.4	3.2	3.9	3.2
Barium	mg/kg	68.6	77.6	73.5	71.7 *J*	66.6	78.2 *J*	76.1	72.1 *J*
Beryllium	mg/kg	0.46	0.42	0.44	0.43	0.55	0.4	0.46	0.39
Cadmium	mg/kg	0.032 *U*	0.033 *U*	0.033 *U*	0.037 *U*	0.036 *U*	0.034 *U*	0.032 *U*	0.032 *U*
Calcium	mg/kg	111,000	126,000	155,000	142,000	88,700	163,000	70,200	141,000
Chromium	mg/kg	29.4 *J*	14.3	17.2 *J*	16.2 *J*	19.4	16.4 *J*	15.5	12.2 *J*
Cobalt	mg/kg	4.7	4.6	3.9	4.3	4.8	4.1	4.5	3.9
Copper	mg/kg	14.5	26	24.4	17.6	20.4	17.6	18.1	15.4
Cyanide	mg/kg	0.57 *U*	0.6 *U*	0.58 *U*	0.67 *U*	0.63 *U*	0.62 *U*	0.58 *U*	0.57 *U*
Iron	mg/kg	15,200	14,500	14,300	15,900	17,100	10,800	15,400	12,500
Lead	mg/kg	13.2	11.6	13.8	13.8	13.7 *J*	9.4	12.3 *J*	8.2
Magnesium	mg/kg	16,900	12,400	17,000	13,700	9,690	18,900	11,800	19,000
Manganese	mg/kg	345	270	246	272	294	255	354	343
Mercury	mg/kg	0.29	0.77 *J*	4.00	0.16	0.49 *J*	0.086	0.054 *J*	0.032 *U*
Nickel	mg/kg	14.8	13.7	13.4	14	16.6	13.9	13.8	12
Potassium	mg/kg	3,130	2,530	3,180	2,720	3,440	2,370	3,330	2,380
Selenium	mg/kg	0.97	0.97	1.0	1.4	1.2	0.71	0.79	1.1
Silver	mg/kg	0.086 *U*	0.089 *U*	0.087 *U*	0.10 *U*	0.095 *U*	0.092 *U*	0.087 *U*	0.086 *U*
Sodium	mg/kg	521 *J*	378 *J*	440 *J*	375	299	350	229	284
Thallium	mg/kg	0.56 *U*	0.58 *U*	0.57 *U*	0.65 *U*	0.62 *U*	0.60 *U*	0.57 *U*	0.56 *U*
Vanadium	mg/kg	28.6	16.5	18.3	18.6	23.2	15	19.4	15.6
Zinc	mg/kg	42.6	31.8	40.3	50.2	46 *J*	31.2	39.3 *J*	30.1
Semivolatile Organic Compounds									
1,2,4-Trichlorobenzene	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
1,2-Dichlorobenzene	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	51	42 *UJ*	40 *U*	38 *UJ*
1,3-Dichlorobenzene	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
1,4-Dichlorobenzene	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
2,2'-Oxybis(1-chloropropane)	µg/kg	38 *UJ*	39 *UJ*	39 *UJ*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*

Table A-6. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	DM0001	DM0031	DM0011	DM0021	DM0006	DM0026	DM0016	DM0036
	Station ID:	S436	S437	S438	S439	S440	S441	S442	S443
	Duplicates:								
	Date:	8/16/2000	8/16/2000	8/16/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000
	Depth (cm):	0 - 40	0 - 107	0 - 49	6 - 18	3 - 17	6 - 49	0 - 61	0 - 61
Chemical	**Units**								
2,4,5-Trichlorophenol	µg/kg	190 *U*	200 *U*	200 *U*	220 *U*	200 *U*	220 *UJ*	210 *U*	190 *UJ*
2,4,6-Trichlorophenol	µg/kg	190 *U*	200 *U*	200 *U*	220 *U*	200 *U*	220 *UJ*	210 *U*	190 *UJ*
2,4-Dichlorophenol	µg/kg	190 *U*	200 *U*	200 *U*	220 *U*	200 *U*	220 *UJ*	210 *U*	190 *UJ*
2,4-Dimethylphenol	µg/kg	190 *U*	200 *U*	200 *U*	220 *U*	200 *U*	220 *UJ*	210 *U*	190 *UJ*
2,4-Dinitrophenol	µg/kg	970 *U*	1,000 *U*	1,000 *U*	1,100 *U*	1,000 *U*	1,100 *UJ*	1,000 *U*	970 *UJ*
2,4-Dinitrotoluene	µg/kg	190 *U*	200 *U*	200 *U*	220 *U*	200 *U*	220 *UJ*	210 *U*	190 *UJ*
2,6-Dinitrotoluene	µg/kg	190 *U*	200 *U*	200 *U*	220 *U*	200 *U*	220 *UJ*	210 *U*	190 *UJ*
2-Chloronaphthalene	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
2-Chlorophenol	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
2-Methyl-4,6-dinitrophenol	µg/kg	970 *U*	1,000 *U*	1,000 *U*	1,100 *U*	1,000 *U*	1,100 *UJ*	1,000 *U*	970 *UJ*
2-Methylnaphthalene	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
2-Methylphenol	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
4-Methylphenol	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
2-Nitroaniline	µg/kg	76 *U*	79 *U*	80 *U*	88 *U*	80 *U*	86 *UJ*	82 *U*	77 *UJ*
3-Nitroaniline	µg/kg	970 *U*	1,000 *U*	1,000 *U*	1,100 *U*	1,000 *U*	1,100 *UJ*	1,000 *U*	970 *UJ*
4-Nitroaniline	µg/kg	970 *U*	1,000 *U*	1,000 *U*	1,100 *U*	1,000 *U*	1,100 *UJ*	1,000 *U*	970 *UJ*
2-Nitrophenol	µg/kg	190 *U*	200 *U*	200 *U*	220 *U*	200 *U*	220 *UJ*	210 *U*	190 *UJ*
4-Nitrophenol	µg/kg	970 *U*	1,000 *U*	1,000 *U*	1,100 *U*	1,000 *U*	1,100 *UJ*	1,000 *U*	970 *UJ*
3,3-Dichlorobenzidine	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
4-Bromophenyl-phenyl ether	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
4-Chloro-3-methylphenol	µg/kg	190 *U*	200 *U*	200 *U*	220 *U*	200 *U*	220 *UJ*	210 *U*	190 *UJ*
4-Chloroaniline	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
4-Chlorophenyl-phenyl ether	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
Acenaphthene	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
Acenaphthylene	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
Anthracene	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	53	42 *UJ*	40 *U*	38 *UJ*
Benz(a)anthracene	µg/kg	38 *U*	39 *U*	83	47	130	50 *J*	40 *U*	38 *UJ*
Benzo(a)pyrene	µg/kg	38 *U*	39 *U*	86	47	130	44 *J*	40 *U*	38 *UJ*
Benzo(b)fluoranthene	µg/kg	38 *U*	39 *U*	77	43 *U*	110	42 *UJ*	40 *U*	38 *UJ*
Benzo(g,h,i)perylene	µg/kg	38 *U*	39 *U*	56	43 *U*	67	42 *UJ*	40 *U*	38 *UJ*
Benzo(k)fluoranthene	µg/kg	38 *U*	39 *U*	73	43 *U*	110	42 *UJ*	40 *U*	38 *UJ*

Table A-6. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	DM0001	DM0031	DM0011	DM0021	DM0006	DM0026	DM0016	DM0036
	Station ID:	S436	S437	S438	S439	S440	S441	S442	S443
	Duplicates:								
	Date:	8/16/2000	8/16/2000	8/16/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000
	Depth (cm):	0 - 40	0 - 107	0 - 49	6 - 18	3 - 17	6 - 49	0 - 61	0 - 61
Chemical	**Units**								
Benzyl alcohol	µg/kg	190 *U*	200 *U*	200 *U*	220 *U*	200 *U*	220 *UJ*	210 *U*	190 *UJ*
Bis(2-chloroethoxy)methane	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
Bis(2-chloroethyl)ether	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
Bis(2-ethylhexyl)phthalate	µg/kg	96 *J*	47 *J*	63 *J*	110	91	310 *J*	69	55 *J*
Butylbenzylphthalate	µg/kg	38 *UJ*	39 *UJ*	39 *UJ*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
Carbazole	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
Chrysene	µg/kg	38 *U*	41	91	49	140	52 *J*	47	38 *UJ*
Dibenz(a,h)anthracene	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
Dibenzofuran	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
Diethylphthalate	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
Dimethylphthalate	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
Di-n-butylphthalate	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
Di-n-octylphthalate	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
Fluoranthene	µg/kg	38 *U*	71	180	69	290	100 *J*	76	38 *J*
Fluorene	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
Hexachlorobenzene (GCMS)	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	410	42 *UJ*	40 *U*	38 *UJ*
Hexachlorobutadiene	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
Hexachlorocyclopentadiene	µg/kg	190 *U*	200 *U*	200 *U*	220 *UJ*	200 *U*	220 *UJ*	210 *U*	190 *UJ*
Hexachloroethane	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
Indeno(1,2,3-cd)pyrene	µg/kg	38 *U*	39 *U*	54	43 *U*	71	42 *UJ*	40 *U*	38 *UJ*
Isophorone	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
Naphthalene	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
Nitrobenzene	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
N-Nitrosodimethylamine	µg/kg	190 *U*	200 *U*	200 *U*	220 *U*	200 *U*	220 *UJ*	210 *U*	190 *UJ*
N-Nitroso-di-n-propylamine	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
N-Nitrosodiphenylamine	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
Pentachlorophenol	µg/kg	970 *U*	1,000 *U*	1,000 *U*	1,100 *U*	1,000 *U*	1,100 *UJ*	1,000 *U*	970 *UJ*
Phenanthrene	µg/kg	38 *U*	39 *U*	77	43 *U*	220	70 *J*	40 *U*	38 *UJ*
Phenol	µg/kg	38 *U*	39 *U*	39 *U*	43 *U*	40 *U*	42 *UJ*	40 *U*	38 *UJ*
Pyrene	µg/kg	38 *U*	53	130	69	220	95 *J*	63	38 *UJ*

Table A-6. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	DM0001	DM0031	DM0011	DM0021	DM0006	DM0026	DM0016	DM0036
Station ID:	S436	S437	S438	S439	S440	S441	S442	S443
Duplicates:								
Date:	8/16/2000	8/16/2000	8/16/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000
Depth (cm):	0 - 40	0 - 107	0 - 49	6 - 18	3 - 17	6 - 49	0 - 61	0 - 61
Chemical	**Units**							
PCBs								
Aroclor 1016	µg/kg	53.6 *U*	54.1 *U*	53.2 *U*	53.3 *U*	54.6 *U*	53 *U*	53.1 *U*	51.3 *U*
Aroclor 1221	µg/kg	53.6 *U*	54.1 *U*	53.2 *U*	53.3 *U*	54.6 *U*	53 *U*	53.1 *U*	51.3 *U*
Aroclor 1232	µg/kg	53.6 *U*	54.1 *U*	53.2 *U*	53.3 *U*	54.6 *U*	53 *U*	53.1 *U*	51.3 *U*
Aroclor 1242	µg/kg	53.6 *U*	54.1 *U*	53.2 *U*	53.3 *U*	54.6 *U*	53 *U*	53.1 *U*	51.3 *U*
Aroclor 1248	µg/kg	53.6 *U*	54.1 *U*	53.2 *U*	53.3 *U*	54.6 *U*	53 *U*	53.1 *U*	51.3 *U*
Aroclor 1254	µg/kg	53.6 *U*	54.1 *U*	10.6 *J*	53.3 *U*	54.6 *U*	53 *U*	53.1 *U*	51.3 *U*
Aroclor 1260	µg/kg	14 *J*	54.1 *U*	53.2 *U*	53.3 *U*	28.2 *J*	53 *U*	53.1 *U*	51.3 *U*
Aroclor 1268	µg/kg	53.6 *U*	54.1 *U*	53.2 *U*	53.3 *U*	54.6 *U*	53 *U*	53.1 *U*	51.3 *U*
Sum of PCBs	µg/kg	40.8	108.2 *U*	37.2	106.6 *U*	55.5	106 *U*	106.2 *U*	102.6 *U*
PCDD/PCDFs								
2,3,7,8-Tetra-chlorodibenzo-dioxin	ng/kg	0.10 *U*		0.109 *J*		0.11 *U*		0.10 *U*	
1,2,3,7,8-Pentachlorodibenzodioxin	ng/kg	0.10 *U*		0.175 *J*		0.157 *J*		0.163 *J*	
1,2,3,4,7,8-Hexachlorodibenzodioxin	ng/kg	0.10 *U*		0.158 *J*		0.165 *J*		0.118 *J*	
1,2,3,6,7,8-Hexachlorodibenzodioxin	ng/kg	0.15 *J*		0.284 *J*		0.371 *J*		0.247 *J*	
1,2,3,7,8,9-Hexachlorodibenzodioxin	ng/kg	0.261 *J*		0.297 *J*		0.26 *J*		0.172 *J*	
1,2,3,4,6,7,8-Heptachlorodibenzodioxin	ng/kg	3.06		6.01		7.33		3.8	
Octachlorodibenzodioxin	ng/kg	27.3		46.8		57.9 *J*		23.2	
Total tetrachlorodibenzodioxins	ng/kg	0.15 *J*		1.15		1.8		1.1	
Total pentachlorodibenzodioxins	ng/kg	0.456 *J*		1.13		0.72 *J*		0.55 *J*	
Total hexachlorodibenzodioxins	ng/kg	1.68 *J*		3.29		2.52 *J*		1.29 *J*	
Total heptachlorodibenzodioxins	ng/kg	6.67		15.3		15.8		7.18	
2,3,7,8-Tetrachlorodibenzofuran	ng/kg	0.426 *J*		1.23		1.01 *J*		0.264 *J*	
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg	0.308 *J*		1.21		1.04 *J*		0.184 *J*	
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg	0.17 *J*		0.689 *J*		0.96 *J*		0.233 *J*	
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg	0.541 *J*		2.76		1.96 *J*		0.258 *J*	
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg	0.273 *J*		1.01 *J*		0.617 *J*		0.274 *J*	
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg	0.10 *U*		0.09 *U*		0.12 *U*		0.10 *U*	
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg	0.12 *J*		0.426 *J*		0.341 *J*		0.187 *J*	
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg	0.893 *J*		5.52		2.97		1.11 *J*	
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg	0.277 *J*		1.53 *J*		1.04 *J*		0.166 *J*	

Table A-6. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	DM0001	DM0031	DM0011	DM0021	DM0006	DM0026	DM0016	DM0036
	Station ID:	S436	S437	S438	S439	S440	S441	S442	S443
	Duplicates:								
	Date:	8/16/2000	8/16/2000	8/16/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000
	Depth (cm):	0 - 40	0 - 107	0 - 49	6 - 18	3 - 17	6 - 49	0 - 61	0 - 61
Chemical	**Units**								
Octachlorodibenzofuran	ng/kg	2.46 *J*		10.9		9.6		2.17 *J*	
Total tetrachlorodibenzofurans	ng/kg	3.24		10.1		8.18		4.17	
Total pentachlorodibenzofurans	ng/kg	1.28		7.79		5.45		2.79	
Total hexachlorodibenzofurans	ng/kg	1.96 *J*		8.17		6.33		0.83 *J*	
Total heptachlorodibenzofurans	ng/kg	2.25 *J*		10.3		7.25		1.11 *J*	
TEQ - Dioxins (ND=1/2)	ng/kg	0.18		0.42		0.37		0.31	
TEQ - Furans (ND=1/2)	ng/kg	0.25		1.02		0.97		0.24	
TEQ - Total[1](ND=1/2)	ng/kg	0.43		1.45		1.34		0.55	

Notes: [1] Calculated using WHO TEFs

J - estimated

U - not detected at reported quantitation limit

Table A-7. Dredge Spoils Soil Data - All Depths

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	DM0001	DM0002	DM0003	DM0043	DM0004	DM0005	DM0031	DM0032	DM0033
	Station ID:	S436	S436	S436	S436	S436	S436	S437	S437	S437
	Duplicates:			D1	D2					
	Date:	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000
	Depth (cm):	0 - 40	40 - 104	104 - 183	104 - 183	244 - 280	280 - 314	0 - 107	107 - 146	146 - 192
Chemical	**Units**									
Inorganics										
Aluminum	mg/kg	9,470	6,230	5,730	5,780 *J*	3,360 *J*	12,800 *J*	8,030 *J*	5,320 *J*	5,190 *J*
Antimony	mg/kg	0.27	0.33	0.36	0.36	0.32 *U*	0.47 *U*	0.23 *U*	0.37	0.49
Arsenic	mg/kg	6.5	9.8	10.8	13	5.0	5.9	6.8	9.9	9.4
Barium	mg/kg	68.6	86.2	87	87.9	91.9	83.6	77.6	86.9	85.2
Beryllium	mg/kg	0.46	0.57	0.60	0.7	0.33	0.77	0.42	0.54	0.52
Cadmium	mg/kg	0.032 *U*	0.60	0.73	0.72	0.68	0.53	0.033 *U*	0.64	0.85
Calcium	mg/kg	111,000	289,000	271,000	265,000	296,000	70,400	126,000	287,000	287,000
Chromium	mg/kg	29.4 *J*	28.9 *J*	25.7 *J*	25.9	17.1	26.8	14.3	28.6	26.9
Cobalt	mg/kg	4.7	3.1	3.1	3.2	1.4	4.8	4.6	2.8	2.7
Copper	mg/kg	14.5	38.7	46.2	44	20.8	35.2	26	38.6	46.7
Cyanide	mg/kg	0.57 *U*	0.74 *U*	0.90	0.99	0.83 *U*	1.2 *U*	0.60 *U*	0.76 *U*	1.1
Iron	mg/kg	15,200	7,840	8,840	8,300	4,820	14,300	14,500	6,780	6,840
Lead	mg/kg	13.2	31.4	42.9	43.6	15.7	34.8	11.6	33.5	52.4
Magnesium	mg/kg	16,900	6,870	8,340	8,060	5,700	10,200	12,400	5,750	7,250
Manganese	mg/kg	345	252	270	280	186	134	270	262	277
Mercury	mg/kg	0.29	94.5	47.9	40 *J*	17.8	3.4	0.77 *J*	86.3 *J*	98.8 *J*
Nickel	mg/kg	14.8	30	29.9	31.5	14.5	26.8	13.7	27.9	30.3
Potassium	mg/kg	3,130	1,300	781	679	634	3,270	2,530	986	734
Selenium	mg/kg	0.97	0.89	0.88	0.62	0.69	1.2	0.97	1.0	0.60
Silver	mg/kg	0.086 *U*	0.11 *U*	0.12 *U*	0.12 *U*	0.12 *U*	0.19 *U*	0.089 *U*	0.11 *U*	0.12 *U*
Sodium	mg/kg	521 *J*	1,650 *J*	2,000 *J*	2,070 *J*	1,550 *J*	1,550 *J*	378 *J*	1,940 *J*	2,970 *J*
Thallium	mg/kg	0.56 *U*	0.75	0.77 *U*	0.76 *U*	0.81 *U*	1.2 *U*	0.58 *U*	0.74 *U*	0.78 *U*
Vanadium	mg/kg	28.6	13.7	12.7	13.3	6.5	23.8	16.5	12.3	10.7
Zinc	mg/kg	42.6	98.7	128	91.4	63.1	113	31.8	99.4	95.4
Semivolatile Organic Compounds										
1,2,4-Trichlorobenzene	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
1,2-Dichlorobenzene	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	80
1,3-Dichlorobenzene	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	120	39 *U*	57 *UJ*	56 *U*
1,4-Dichlorobenzene	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
2,2'-Oxybis(1-chloropropane)	µg/kg	38 *UJ*	48 *UJ*	550 *UJ*	55 *UJ*	57 *UJ*	81 *UJ*	39 *UJ*	51 *UJ*	56 *UJ*
2,4,5-Trichlorophenol	µg/kg	190 *U*	250 *U*	2,800.0 *U*	280 *UJ*	290 *U*	420 *U*	200 *U*	260 *UJ*	290 *U*

Table A-7. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	DM0001	DM0002	DM0003	DM0043	DM0004	DM0005	DM0031	DM0032	DM0033
Station ID:	S436	S436	S436	S436	S436	S436	S437	S437	S437
Duplicates:			D1	D2					
Date:	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000
Depth (cm):	0 - 40	40 - 104	104 - 183	104 - 183	244 - 280	280 - 314	0 - 107	107 - 146	146 - 192
Chemical	**Units**								
2,4,6-Trichlorophenol	µg/kg	190 *U*	250 *U*	2,800 *U*	280 *UJ*	290 *U*	420 *U*	200 *U*	260 *UJ*	290 *U*
2,4-Dichlorophenol	µg/kg	190 *U*	250 *U*	2,800 *U*	280 *UJ*	290 *U*	420 *U*	200 *U*	260 *UJ*	290 *U*
2,4-Dimethylphenol	µg/kg	190 *U*	250 *U*	2,800 *U*	280 *UJ*	290 *U*	420 *U*	200 *U*	260 *UJ*	290 *U*
2,4-Dinitrophenol	µg/kg	970 *U*	1,200 *U*	14,000 *U*	1,400 *UJ*	1,500 *U*	2,100 *U*	1,000 *U*	1,300 *UJ*	1,400 *U*
2,4-Dinitrotoluene	µg/kg	190 *U*	250 *U*	2,800 *U*	280 *UJ*	290 *U*	420 *U*	200 *U*	260 *UJ*	290 *U*
2,6-Dinitrotoluene	µg/kg	190 *U*	250 *U*	2,800 *U*	280 *UJ*	290 *U*	420 *U*	200 *U*	260 *UJ*	290 *U*
2-Chloronaphthalene	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
2-Chlorophenol	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
2-Methyl-4,6-dinitrophenol	µg/kg	970 *U*	1,200 *U*	14,000 *U*	1,400 *UJ*	1,500 *U*	2,100 *U*	1,000 *U*	1,300 *UJ*	1,400 *U*
2-Methylnaphthalene	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
2-Methylphenol	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
4-Methylphenol	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
2-Nitroaniline	µg/kg	76 *U*	98 *U*	1,100.0 *U*	110 *UJ*	120 *U*	160 *U*	79 *U*	100 *UJ*	110 *U*
3-Nitroaniline	µg/kg	970 *U*	1,200 *U*	14,000 *U*	1,400 *UJ*	1,500 *U*	2,100 *U*	1,000 *U*	1,300 *UJ*	1,400 *U*
4-Nitroaniline	µg/kg	970 *U*	1,200 *U*	14,000 *U*	1,400 *UJ*	1,500 *U*	2,100 *U*	1,000 *U*	1,300 *UJ*	1,400 *U*
2-Nitrophenol	µg/kg	190 *U*	250 *U*	2,800.0 *U*	280 *UJ*	290 *U*	420 *U*	200 *U*	260 *UJ*	290 *U*
4-Nitrophenol	µg/kg	970 *U*	1,200 *U*	14,000 *U*	1,400 *UJ*	1,500 *U*	2,100 *U*	1,000 *U*	1,300 *UJ*	1,400 *U*
3,3-Dichlorobenzidine	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
4-Bromophenyl-phenyl ether	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
4-Chloro-3-methylphenol	µg/kg	190 *U*	250 *U*	2,800.0 *U*	280 *UJ*	290 *U*	420 *U*	200 *U*	260 *UJ*	290 *U*
4-Chloroaniline	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	98 *J*	56 *U*
4-Chlorophenyl-phenyl ether	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
Acenaphthene	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
Acenaphthylene	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
Anthracene	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	96 *J*	56 *U*
Benz(a)anthracene	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	140 *J*	82
Benzo(a)pyrene	µg/kg	38 *U*	63	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	160 *J*	92
Benzo(b)fluoranthene	µg/kg	38 *U*	62	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	160 *J*	79
Benzo(g,h,i)perylene	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	110 *J*	66
Benzo(k)fluoranthene	µg/kg	38 *U*	60	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	150 *J*	85
Benzyl alcohol	µg/kg	190 *U*	250 *U*	2,800 *U*	280 *UJ*	290 *U*	420 *U*	200 *U*	260 *UJ*	290 *U*
Bis(2-chloroethoxy)methane	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*

Table A-7. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	DM0001	DM0002	DM0003	DM0043	DM0004	DM0005	DM0031	DM0032	DM0033
Station ID:	S436	S436	S436	S436	S436	S436	S437	S437	S437
Duplicates:			D1	D2					
Date:	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000
Depth (cm):	0 - 40	40 - 104	104 - 183	104 - 183	244 - 280	280 - 314	0 - 107	107 - 146	146 - 192
Chemical	**Units**								
Bis(2-chloroethyl)ether	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
Bis(2-ethylhexyl)phthalate	µg/kg	96 *J*	48 *UJ*	550 *UJ*	55 *UJ*	130 *J*	96 *J*	47 *J*	560 *J*	99 *J*
Butylbenzylphthalate	µg/kg	38 *UJ*	48 *UJ*	550 *UJ*	55 *UJ*	57 *UJ*	81 *UJ*	39 *UJ*	51 *UJ*	56 *UJ*
Carbazole	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
Chrysene	µg/kg	38 *U*	74	550 *U*	55 *UJ*	57 *U*	81 *U*	41	190 *J*	97
Dibenz(a,h)anthracene	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
Dibenzofuran	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
Diethylphthalate	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
Dimethylphthalate	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
Di-n-butylphthalate	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	100 *J*	56 *U*
Di-n-octylphthalate	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
Fluoranthene	µg/kg	38 *U*	130	550 *U*	79 *J*	100	170	71	320 *J*	180
Fluorene	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
Hexachlorobenzene (GC/ECD)	µg/kg									
Hexachlorobenzene (GC/MS)	µg/kg	38 *U*	55	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	75
Final HCB Value	µg/kg	38 *U*	55	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	75
Hexachlorobutadiene	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
Hexachlorocyclopentadiene	µg/kg	190 *U*	250 *U*	2,800 *U*	280 *UJ*	290 *U*	420 *U*	200 *U*	260 *UJ*	290 *U*
Hexachloroethane	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
Indeno(1,2,3-cd)pyrene	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	100 *J*	57
Isophorone	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
Naphthalene	µg/kg	38 *U*	48 *U*	18,000	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
Nitrobenzene	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
N-Nitrosodimethylamine	µg/kg	190 *U*	250 *U*	2,800 *U*	280 *UJ*	290 *U*	420 *U*	200 *U*	260 *UJ*	290 *U*
N-Nitroso-di-n-propylamine	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
N-Nitrosodiphenylamine	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
Pentachlorophenol	µg/kg	970 *U*	1,200 *U*	14,000 *U*	1,400 *UJ*	1,500 *U*	2,100 *U*	1,000 *U*	1,300 *UJ*	1,400 *U*
Phenanthrene	µg/kg	38 *U*	68	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	130 *J*	120
Phenol	µg/kg	38 *U*	48 *U*	550 *U*	55 *UJ*	57 *U*	81 *U*	39 *U*	51 *UJ*	56 *U*
Pyrene	µg/kg	38 *U*	100	550 *U*	76 *J*	80	120	53	240 *J*	150
Pesticides										
4,4'-DDD	µg/kg									

Table A-7. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	DM0001	DM0002	DM0003	DM0043	DM0004	DM0005	DM0031	DM0032	DM0033
	Station ID:	S436	S436	S436	S436	S436	S436	S437	S437	S437
	Duplicates:			D1	D2					
	Date:	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000
	Depth (cm):	0 - 40	40 - 104	104 - 183	104 - 183	244 - 280	280 - 314	0 - 107	107 - 146	146 - 192
Chemical	**Units**									
4,4'-DDE	µg/kg									
4,4'-DDT	µg/kg									
Aldrin	µg/kg									
alpha-BHC	µg/kg									
beta-BHC	µg/kg									
gamma-BHC (Lindane)	µg/kg									
delta-BHC	µg/kg									
Dieldrin	µg/kg									
Endosulfan I	µg/kg									
Endosulfan II	µg/kg									
Endosulfan sulfate	µg/kg									
Endrin aldehyde	µg/kg									
Endrin ketone	µg/kg									
Endrin	µg/kg									
Heptachlor epoxide	µg/kg									
Heptachlor	µg/kg									
Methoxychlor	µg/kg									
Toxaphene	µg/kg									
cis (alpha)-Chlordane	µg/kg									
trans (gamma)-Chlordane	µg/kg									
Total Chlordane [1]	µg/kg									
PCBs										
Aroclor 1016	µg/kg	53.6 *U*	53.9 *U*	51.9 *U*	53.6 *U*	53.1 *U*	54.1 *U*	54.1 *U*	54.2 *U*	54.6 *U*
Aroclor 1221	µg/kg	53.6 *U*	53.9 *U*	51.9 *U*	53.6 *U*	53.1 *U*	54.1 *U*	54.1 *U*	54.2 *U*	54.6 *U*
Aroclor 1232	µg/kg	53.6 *U*	53.9 *U*	51.9 *U*	53.6 *U*	53.1 *U*	54.1 *U*	54.1 *U*	54.2 *U*	54.6 *U*
Aroclor 1242	µg/kg	53.6 *U*	25.2 *J*	28.3 *J*	48.5 *J*	58.3 *J*	35.7 *J*	54.1 *U*	46.8 *J*	43.7 *J*
Aroclor 1248	µg/kg	53.6 *U*	53.9 *U*	51.9 *U*	53.6 *U*	53.1 *U*	54.1 *U*	54.1 *U*	54.2 *U*	54.6 *U*
Aroclor 1254	µg/kg	53.6 *U*	70.6 *J*	33.8 *J*	63.9 *J*	77.2 *J*	30.6 *J*	54.1 *U*	86.6 *J*	84.9 *J*
Aroclor 1260	µg/kg	14 *J*	53.9 *U*	51.9 *U*	53.6 *U*	53.1 *U*	54.1 *U*	54.1 *U*	54.2 *U*	54.6 *U*
Aroclor 1268	µg/kg	53.6 *U*	108 *J*	204 *J*	438 *J*	216 *J*	53.7 *J*	54.1 *U*	154 *J*	376 *J*
Sum PCBs	µg/kg	40.8	203.8	266.1	550.4	351.5	120	108.2 *U*	287.4	504.6

Table A-7. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	DM0001	DM0002	DM0003	DM0043	DM0004	DM0005	DM0031	DM0032	DM0033
Station ID:	S436	S436	S436	S436	S436	S436	S437	S437	S437
Duplicates:			D1	D2					
Date:	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000
Depth (cm):	0 - 40	40 - 104	104 - 183	104 - 183	244 - 280	280 - 314	0 - 107	107 - 146	146 - 192
Chemical	**Units**								
PCDD/PCDFs									
2,3,7,8-Tetrachlorodibenzodioxin	ng/kg	0.1 *U*	0.474 *J*	0.329 *J*	0.476 *J*	0.109 *J*	0.298 *J*			
1,2,3,7,8-Pentachlorodibenzodioxin	ng/kg	0.1 *U*	0.729 *J*	0.681 *J*	1.57	0.306 *J*	0.474 *J*			
1,2,3,4,7,8-Hexachlorodibenzodioxin	ng/kg	0.1 *U*	0.929 *J*	0.755 *J*	1.27 *J*	0.349 *J*	0.448 *J*			
1,2,3,6,7,8-Hexachlorodibenzodioxin	ng/kg	0.15 *J*	4.87	3.32	3.27 *J*	1.66 *J*	1.42 *J*			
1,2,3,7,8,9-Hexachlorodibenzodioxin	ng/kg	0.261 *J*	2.73	2.57 *J*	8.1	1.11 *J*	1.23 *J*			
1,2,3,4,6,7,8-Heptachlorodibenzodioxin	ng/kg	3.06	106	67.5	69.5	24.5	21			
Octachlorodibenzodioxin	ng/kg	27.3	1,110	648	507	244	144			
Total heptachlorodibenzodioxins	ng/kg	6.67	246	159	156	55.2	43.3			
Total hexachlorodibenzodioxins	ng/kg	1.68 *J*	44.1	34.5	44.1	11.7	13.9			
Total pentachlorodibenzodioxins	ng/kg	0.456 *J*	11.7	5.94	14.9	3.58	3.88			
Total tetrachlorodibenzodioxins	ng/kg	0.15 *J*	8.62	7.73	7.96	3.95	8.44			
2,3,7,8-Tetrachlorodibenzofuran	ng/kg	0.426 *J*	49.4	67.5	69.5	36	15.7			
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg	0.308 *J*	35.2	79.2	60.7	48.9	14.2			
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg	0.17 *J*	13.6	26.6	21.5	17	5.51			
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg	0.541 *J*	67.7	155	111	93.8	36.4			
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg	0.273 *J*	19.6	44.7	34.3	28.2	9.92			
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg	0.1 *U*	1.71 *J*	3.84	3.17	2.79	0.637 *J*			
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg	0.12 *J*	3.71	6.72	5.35	3.77	1.93 *J*			
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg	0.893 *J*	61.5	110	74.3	51.1	41.4			
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg	0.277 *J*	23.8	87.5	46.5	40	11.9			
Octachlorodibenzofuran	ng/kg	2.46 *J*	298	713	423	360	160			
Total heptachlorodibenzofurans	ng/kg	2.25 *J*	164	382	223	168	78.1			
Total hexachlorodibenzofurans	ng/kg	1.96 *J*	202	461	301	243	78.3			
Total pentachlorodibenzofurans	ng/kg	1.28	142	275	204	165	62.5			
Total tetrachlorodibenzofurans	ng/kg	3.24	205	254	208	145	82.4			
TEQ - Dioxins (ND=1/2)	ng/kg	0.18	3.23	2.41	4.06	1.00	1.31			
TEQ - Furans (ND=1/2)	ng/kg	0.25	23.65	47.08	37.37	28.35	10.47			
TEQ - Total [2] (ND=1/2)	ng/kg	0.43	26.88	49.50	41.42	29.34	11.78			

Table A-7. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	DM0034	DM0035	DM0011	DM0012	DM0042	DM0013	DM0014	DM0015	DM0021
Station ID:	S437	S437	S438	S438	S438	S438	S438	S438	S439
Duplicates:				D1	D2				
Date:	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/17/2000
Depth (cm):	210 - 233	282 - 297	0 - 49	61 - 149	61 - 149	183 - 207	207 - 265	265 - 300	6 - 18
Chemical	**Units**								
Inorganics									
Aluminum	mg/kg	5,060 *J*	23,300 *J*	9,100	4,750 *J*	6,640 *J*	3,990 *J*	6,240 *J*	11,200 *J*	8,950
Antimony	mg/kg	0.32 *U*	0.43	0.25	0.22 *U*	0.22 *U*	0.31 *U*	0.57	0.41 *U*	0.40 *J*
Arsenic	mg/kg	10.7	10.6	5.9	5.3	11.3	7.9	13.3	6.7	8.4
Barium	mg/kg	81.7	81.1	73.5	70.7	82.3	85.1	89.9	84.8	71.7 *J*
Beryllium	mg/kg	0.56	1.0	0.44	0.37	0.61	0.41	0.68	0.59	0.43
Cadmium	mg/kg	0.76	0.062 *U*	0.033 *U*	0.26	0.41	0.45	0.41	0.16	0.037 *U*
Calcium	mg/kg	276,000	34,700	155,000	182,000	227,000	291,000	271,000	25,800	142,000
Chromium	mg/kg	26.2	29.9	17.2 *J*	21.3	21.3	19	21.7	16.1	16.2 *J*
Cobalt	mg/kg	2.6	5.3	3.9	2.8	4.0	1.8	3.3	2.4	4.3
Copper	mg/kg	44.5	36.1	24.4	21.8	33.2	28.4	35.5	26.1	17.6
Cyanide	mg/kg	0.96	1.1 *U*	0.58 *U*	0.57 *U*	0.57 *U*	0.81 *U*	0.84 *U*	1.1 *U*	0.67 *U*
Iron	mg/kg	6,210	29,600	14,300	8,900	11,500	5,600	9,050	10,900	15,900
Lead	mg/kg	44.1	36.4	13.8	13.8	17.6	22.8	31.2	38.4	13.8
Magnesium	mg/kg	7,990	7,300	17,000	8,790	7,820	6,490	8,870	7,940	13,700
Manganese	mg/kg	282	247	246	193	252	216	258	106	272
Mercury	mg/kg	78.2 *J*	0.3 *J*	4.0	36 *J*	57.6 *J*	51.2 *J*	29.5 *J*	0.33 *J*	0.16
Nickel	mg/kg	27.7	29.8	13.4	64.6	30.5	18.8	20.2	15.2	14
Potassium	mg/kg	557	5,750	3,180	1,570	2,380	668	1,190	2,930	2,720
Selenium	mg/kg	0.90	2.1	1.0	0.42 *U*	0.71	0.89	0.84	1.9	1.4
Silver	mg/kg	0.12 *U*	0.17 *U*	0.087 *U*	0.086 *U*	0.086 *U*	0.12 *U*	0.13 *U*	0.16 *U*	0.10 *U*
Sodium	mg/kg	4,110 *J*	13,000 *J*	440 *J*	812 *J*	1,060 *J*	1,910 *J*	2,420 *J*	5,450 *J*	375
Thallium	mg/kg	0.81 *U*	1.1 *U*	0.57 *U*	0.56 *U*	0.56 *U*	0.79 *U*	0.82 *U*	1.0 *U*	0.65 *U*
Vanadium	mg/kg	11.1	40.7	18.3	12.7	19.7	8.5	14.7	20.5	18.6
Zinc	mg/kg	97.3	60	40.3	51.8	65.1	72.8	81.8	55	50.2
Semivolatile Organic Compounds									
1,2,4-Trichlorobenzene	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
1,2-Dichlorobenzene	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
1,3-Dichlorobenzene	µg/kg	130	82 *U*	39 *U*	38 *U*	38 *UJ*	110	56 *U*	79 *U*	43 *U*
1,4-Dichlorobenzene	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
2,2'-Oxybis(1-chloropropane)	µg/kg	59 *U*	82 *U*	39 *UJ*	38 *UJ*	38 *UJ*	55 *UJ*	56 *UJ*	79 *UJ*	43 *U*
2,4,5-Trichlorophenol	µg/kg	300 *U*	420 *U*	200 *U*	190 *U*	190 *UJ*	290 *U*	290 *U*	410 *U*	220 *U*

Table A-7. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	DM0034	DM0035	DM0011	DM0012	DM0042	DM0013	DM0014	DM0015	DM0021
	Station ID:	S437	S437	S438	S438	S438	S438	S438	S438	S439
	Duplicates:				D1	D2				
	Date:	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/17/2000
	Depth (cm):	210 - 233	282 - 297	0 - 49	61 - 149	61 - 149	183 - 207	207 - 265	265 - 300	6 - 18
Chemical	**Units**									
2,4,6-Trichlorophenol	µg/kg	300 *U*	420 *U*	200 *U*	190 *U*	190 *UJ*	290 *U*	290 *U*	410 *U*	220 *U*
2,4-Dichlorophenol	µg/kg	300 *U*	420 *U*	200 *U*	190 *U*	190 *UJ*	290 *U*	290 *U*	410 *U*	220 *U*
2,4-Dimethylphenol	µg/kg	300 *U*	420 *U*	200 *U*	190 *U*	190 *UJ*	290 *U*	290 *U*	410 *U*	220 *U*
2,4-Dinitrophenol	µg/kg	1,500 *U*	2,100 *U*	1,000 *U*	970 *U*	970 *UJ*	1,400 *U*	1,500 *U*	2,000 *U*	1,100 *U*
2,4-Dinitrotoluene	µg/kg	300 *U*	420 *U*	200 *U*	190 *U*	190 *UJ*	290 *U*	290 *U*	410 *U*	220 *U*
2,6-Dinitrotoluene	µg/kg	300 *U*	420 *U*	200 *U*	190 *U*	190 *UJ*	290 *U*	290 *U*	410 *U*	220 *U*
2-Chloronaphthalene	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
2-Chlorophenol	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
2-Methyl-4,6-dinitrophenol	µg/kg	1,500 *U*	2,100 *U*	1,000 *U*	970 *U*	970 *UJ*	1,400 *U*	1,500 *U*	2,000 *U*	1,100 *U*
2-Methylnaphthalene	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
2-Methylphenol	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
4-Methylphenol	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
2-Nitroaniline	µg/kg	120 *U*	170 *U*	80 *U*	76 *U*	77 *UJ*	110 *U*	110 *U*	160 *U*	88 *U*
3-Nitroaniline	µg/kg	1,500 *U*	2,100 *U*	1,000 *U*	970 *U*	970 *UJ*	1,400 *U*	1,500 *U*	2,000 *U*	1,100 *U*
4-Nitroaniline	µg/kg	1,500 *U*	2,100 *U*	1,000 *U*	970 *U*	970 *UJ*	1,400 *U*	1,500 *U*	2,000 *U*	1,100 *U*
2-Nitrophenol	µg/kg	300 *U*	420 *U*	200 *U*	190 *U*	190 *UJ*	290 *U*	290 *U*	410 *U*	220 *U*
4-Nitrophenol	µg/kg	1,500 *U*	2,100 *U*	1,000 *U*	970 *U*	970 *UJ*	1,400 *U*	1,500 *U*	2,000 *U*	1,100 *U*
3,3-Dichlorobenzidine	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
4-Bromophenyl-phenyl ether	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
4-Chloro-3-methylphenol	µg/kg	300 *U*	420 *U*	200 *U*	190 *U*	190 *UJ*	290 *U*	290 *U*	410 *U*	220 *U*
4-Chloroaniline	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
4-Chlorophenyl-phenyl ether	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
Acenaphthene	µg/kg	59 *U*	82 *U*	39 *U*	47	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
Acenaphthylene	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
Anthracene	µg/kg	59 *U*	82 *U*	39 *U*	79	51 *J*	55 *U*	56 *U*	79 *U*	43 *U*
Benz(a)anthracene	µg/kg	60	170	83	240	180 *J*	55 *U*	67	170	47
Benzo(a)pyrene	µg/kg	70	170	86	220	190 *J*	55 *U*	74	160	47
Benzo(b)fluoranthene	µg/kg	70	180	77	190	160 *J*	55 *U*	59	130	43 *U*
Benzo(g,h,i)perylene	µg/kg	59 *U*	99	56	130	120 *J*	55 *U*	56 *U*	98	43 *U*
Benzo(k)fluoranthene	µg/kg	62	180	73	190	180 *J*	55 *U*	56 *U*	150	43 *U*
Benzyl alcohol	µg/kg	300 *U*	420 *U*	200 *U*	190 *U*	190 *UJ*	290 *U*	290 *U*	410 *U*	220 *U*
Bis(2-chloroethoxy)methane	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*

Table A-7. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	DM0034	DM0035	DM0011	DM0012	DM0042	DM0013	DM0014	DM0015	DM0021
	Station ID:	S437	S437	S438	S438	S438	S438	S438	S438	S439
	Duplicates:				D1	D2				
	Date:	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/17/2000
	Depth (cm):	210 - 233	282 - 297	0 - 49	61 - 149	61 - 149	183 - 207	207 - 265	265 - 300	6 - 18
Chemical	**Units**									
Bis(2-chloroethyl)ether	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
Bis(2-ethylhexyl)phthalate	µg/kg	91	160	63 *J*	830 *J*	87 *J*	130 *J*	140 *J*	150 *J*	110
Butylbenzylphthalate	µg/kg	59 *U*	82 *U*	39 *UJ*	38 *UJ*	38 *UJ*	55 *UJ*	56 *UJ*	79 *UJ*	43 *U*
Carbazole	µg/kg	59 *U*	82 *U*	39 *U*	48	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
Chrysene	µg/kg	84	210	91	260	220 *J*	55 *U*	91	180	49
Dibenz(a,h)anthracene	µg/kg	59 *U*	82 *U*	39 *U*	49	46 *J*	55 *U*	56 *U*	79 *U*	43 *U*
Dibenzofuran	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
Diethylphthalate	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
Dimethylphthalate	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
Di-n-butylphthalate	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
Di-n-octylphthalate	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
Fluoranthene	µg/kg	130	420	180	580	410 *J*	95	180	400	69
Fluorene	µg/kg	59 *U*	82 *U*	39 *U*	41	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
Hexachlorobenzene (GC/ECD)	µg/kg				620.6					
Hexachlorobenzene (GC/MS)	µg/kg	360	82 *U*	39 *U*	530	620 *J*	55 *U*	56 *U*	79 *U*	43 *U*
Final HCB Value	µg/kg	360	82 *U*	39 *U*	575.3 *J*	620 *J*	55 *U*	56 *U*	79 *U*	43 *U*
Hexachlorobutadiene	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
Hexachlorocyclopentadiene	µg/kg	300 *U*	420 *U*	200 *U*	190 *U*	190 *UJ*	290 *U*	290 *U*	410 *U*	220 *UJ*
Hexachloroethane	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
Indeno(1,2,3-cd)pyrene	µg/kg	59 *U*	96	54	130	100 *J*	55 *U*	56 *U*	100	43 *U*
Isophorone	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
Naphthalene	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
Nitrobenzene	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
N-Nitrosodimethylamine	µg/kg	300 *U*	420 *U*	200 *U*	190 *U*	190 *UJ*	290 *U*	290 *U*	410 *U*	220 *U*
N-Nitroso-di-n-propylamine	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
N-Nitrosodiphenylamine	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
Pentachlorophenol	µg/kg	1,500 *U*	2,100 *U*	1,000 *U*	970 *U*	970 *UJ*	1,400 *U*	1,500 *U*	2,000 *U*	1,100 *U*
Phenanthrene	µg/kg	71	390	77	430	290 *J*	55 *U*	99	230	43 *U*
Phenol	µg/kg	59 *U*	82 *U*	39 *U*	38 *U*	38 *UJ*	55 *U*	56 *U*	79 *U*	43 *U*
Pyrene	µg/kg	140	320	130	440	340 *J*	79	140	280	69
Pesticides										
4,4'-DDD	µg/kg				*R*					

Table A-7. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	DM0034	DM0035	DM0011	DM0012	DM0042	DM0013	DM0014	DM0015	DM0021
Station ID:	S437	S437	S438	S438	S438	S438	S438	S438	S439
Duplicates:				D1	D2				
Date:	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/17/2000
Depth (cm):	210 - 233	282 - 297	0 - 49	61 - 149	61 - 149	183 - 207	207 - 265	265 - 300	6 - 18
Chemical	**Units**								
4,4'-DDE	µg/kg				*R*				
4,4'-DDT	µg/kg				1.49 *J*				
Aldrin	µg/kg				1.18 *J*				
alpha-BHC	µg/kg				*R*				
beta-BHC	µg/kg				3.19 *J*				
gamma-BHC (Lindane)	µg/kg				*R*				
delta-BHC	µg/kg				*R*				
Dieldrin	µg/kg				3.8 *J*				
Endosulfan I	µg/kg				1.08 *UJ*				
Endosulfan II	µg/kg				*R*				
Endosulfan sulfate	µg/kg				*R*				
Endrin aldehyde	µg/kg				2.81 *J*				
Endrin ketone	µg/kg				*R*				
Endrin	µg/kg				*R*				
Heptachlor epoxide	µg/kg				3.84 *J*				
Heptachlor	µg/kg				1.08 *UJ*				
Methoxychlor	µg/kg				*R*				
Toxaphene	µg/kg				108 *UJ*				
cis (alpha)-Chlordane	µg/kg				1.08 *UJ*				
trans (gamma)-Chlordane	µg/kg				2.96 *J*				
Total Chlordane [1]	µg/kg				2.96 *J*				
PCBs									
Aroclor 1016	µg/kg	54 *U*	54.5 *U*	53.2 *U*	53.9 *U*	106 *U*	54.4 *U*	53.4 *U*	54 *U*	53.3 *U*
Aroclor 1221	µg/kg	54 *U*	54.5 *U*	53.2 *U*	53.9 *U*	106 *U*	54.4 *U*	53.4 *U*	54 *U*	53.3 *U*
Aroclor 1232	µg/kg	54 *U*	54.5 *U*	53.2 *U*	53.9 *U*	106 *U*	54.4 *U*	53.4 *U*	54 *U*	53.3 *U*
Aroclor 1242	µg/kg	65.4 *J*	54.5 *U*	53.2 *U*	108 *J*	99.8 *J*	72.4 *J*	53.3 *J*	54 *U*	53.3 *U*
Aroclor 1248	µg/kg	54 *U*	54.5 *U*	53.2 *U*	53.9 *U*	106 *U*	54.4 *U*	53.4 *U*	54 *U*	53.3 *U*
Aroclor 1254	µg/kg	79.9 *J*	54.5 *U*	10.6 *J*	108 *J*	165 *J*	54.1 *J*	63.7 *J*	25.8 *J*	53.3 *U*
Aroclor 1260	µg/kg	54 *U*	54.5 *U*	53.2 *U*	53.9 *U*	106 *U*	54.4 *U*	53.4 *U*	54 *U*	53.3 *U*
Aroclor 1268	µg/kg	72.7 *J*	54.5 *U*	53.2 *U*	109 *J*	193 *J*	169 *J*	59.9 *J*	54 *U*	53.3 *U*
Sum PCBs	µg/kg	218	109 *U*	37.2	325	457.8	295.5	176.9	52.8	106.6 *U*

Table A-7. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	DM0034	DM0035	DM0011	DM0012	DM0042	DM0013	DM0014	DM0015	DM0021
Station ID:	S437	S437	S438	S438	S438	S438	S438	S438	S439
Duplicates:				D1	D2				
Date:	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/16/2000	8/17/2000
Depth (cm):	210 - 233	282 - 297	0 - 49	61 - 149	61 - 149	183 - 207	207 - 265	265 - 300	6 - 18
Chemical	**Units**								
PCDD/PCDFs									
2,3,7,8-Tetrachlorodibenzodioxin	ng/kg		0.109 *J*	0.112 *J*	0.126 *J*	0.261 *J*	0.236 *J*	0.21 *J*	
1,2,3,7,8-Pentachlorodibenzodioxin	ng/kg		0.175 *J*	0.177 *J*	0.212 *J*	0.283 *J*	0.543 *J*	0.93 *J*	
1,2,3,4,7,8-Hexachlorodibenzodioxin	ng/kg		0.158 *J*	0.128 *J*	0.282 *J*	0.504 *J*	0.579 *J*	0.52 *U*	
1,2,3,6,7,8-Hexachlorodibenzodioxin	ng/kg		0.284 *J*	0.584 *J*	0.817 *J*	2.32	2.31 *J*	0.52 *U*	
1,2,3,7,8,9-Hexachlorodibenzodioxin	ng/kg		0.297 *J*	0.445 *J*	0.482 *J*	1.36 *J*	1.57 *J*	0.654 *J*	
1,2,3,4,6,7,8-Heptachlorodibenzodioxin	ng/kg		6.01	13.8	15.9	57	43.7	10.4	
Octachlorodibenzodioxin	ng/kg		46.8	144	172	512	367	60.8	
Total heptachlorodibenzodioxins	ng/kg		15.3	28.8	35.3	126	95.6	19.8	
Total hexachlorodibenzodioxins	ng/kg		3.29	4.86	3.9	22.7	23.1	5.25	
Total pentachlorodibenzodioxins	ng/kg		1.13	0.124 *J*	0.475 *J*	7.92	6.2	3.49	
Total tetrachlorodibenzodioxins	ng/kg		1.15	0.856 *J*	1.17	5.41	6.29	6.24	
2,3,7,8-Tetrachlorodibenzofuran	ng/kg		1.23	14.7	14	37.1	36.8	2.46	
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg		1.21	21.2	10.3	23.8	54.9	2.36	
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg		0.689 *J*	6.91	3.95	8.33	19.3	1.2	
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg		2.76	63.7	35.7	57.8	179	4.15	
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg		1.01 *J*	25.1	10.2	17.2	56.8	1.48 *J*	
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg		0.09 *U*	1.34 *J*	0.56 *J*	1.29 *J*	2.77	0.131 *J*	
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg		0.426 *J*	2.93	1.51 *J*	3.03	5.97	1.06 *J*	
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg		5.52	66.9	41.6	51.5	199	6.49	
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg		1.53 *J*	60	49.3	20.3	95.8	1.19 *J*	
Octachlorodibenzofuran	ng/kg		10.9	286	218	264	735	14.3	
Total heptachlorodibenzofurans	ng/kg		10.3	225	176	134	457	12.6	
Total hexachlorodibenzofurans	ng/kg		8.17	165	108	150	363	17.5	
Total pentachlorodibenzofurans	ng/kg		7.79	70.4	41.6	95.6	200	22.1	
Total tetrachlorodibenzofurans	ng/kg		10.1	47.6	45.9	143	140	28.4	
TEQ - Dioxins (ND=1/2)	ng/kg		0.42	0.56	0.67	1.58	1.70	1.37	
TEQ - Furans (ND=1/2)	ng/kg		1.02	16.59	9.62	17.74	43.55	1.72	
TEQ - Total [2] (ND=1/2)	ng/kg		1.45	17.15	10.29	19.33	45.25	3.09	

Table A-7. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	DM0022	DM0023	DM0024	DM0025	DM0006	DM0007	DM0008	DM0009	DM0010
Station ID:	S439	S439	S439	S439	S440	S440	S440	S440	S440
Duplicates:									
Date:	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000
Depth (cm):	18 - 55	61 - 183	183 - 219	219 - 244	3 - 17	87 - 137	137 - 192	192 - 235	262 - 293
Chemical	**Units**								
Inorganics									
Aluminum	mg/kg	6,170	5,020	3,290	5,520	12,100	5,660	5,710	5,770	1,010
Antimony	mg/kg	0.40 *J*	0.42 *J*	0.72 *J*	1.3 *J*	0.30	0.55	0.37	0.45	0.69
Arsenic	mg/kg	3.4	8.0	5.7	8.0	8.4	8.5	10	9.4	0.70
Barium	mg/kg	72.1 *J*	87.3 *J*	98.7 *J*	97.8 *J*	66.6	93	84.8	91.9	227
Beryllium	mg/kg	0.29	0.41	0.27	0.37	0.55	0.43	0.55	0.53	0.086
Cadmium	mg/kg	0.033 *U*	0.87	0.28	4.3	0.036 *U*	1.1	0.72	0.97	0.041 *U*
Calcium	mg/kg	183,000	311,000	292,000	209,000	88,700	324,000	277,000	333,000	357,000
Chromium	mg/kg	12.4 *J*	28.1 *J*	10.4 *J*	61.6 *J*	19.4	32.2	24.5	28.7	2.8
Cobalt	mg/kg	3.0	2.4	1.8	4.3	4.8	2.7	3.5	2.8	0.15
Copper	mg/kg	10.9	46.2	18	61.6	20.4	49.4	50.6	49.7	2.1
Cyanide	mg/kg	0.59 *U*	0.81 *U*	0.72 *U*	1.1 *U*	0.63 *U*	1.3	1.1	0.94 *U*	0.74 *U*
Iron	mg/kg	9,260	6,330	6,300	11,300	17,100	6,900	9,430	7,070	1,330
Lead	mg/kg	4.5	31.4	44.4	157	13.7 *J*	34.6 *J*	35.4 *J*	49.9 *J*	12.1 *J*
Magnesium	mg/kg	11,800	5,680	4,510	6,480	9,690	6,800	8,680	10,700	3,010
Manganese	mg/kg	280	259	255	263	294	300	286	294	242
Mercury	mg/kg	0.097	86.3	1.6	3.4	0.49 *J*	80.3 *J*	50.7 *J*	56.6 *J*	0.052 *J*
Nickel	mg/kg	9.5	25.9	11.4	49.6	16.6	28.4	33	32.1	1.8
Potassium	mg/kg	1,880	675	608	1,180	3,440	839	659	587	220
Selenium	mg/kg	0.94	0.89	1.1	1.7	1.2	1.4	0.98	0.92	1.1 *U*
Silver	mg/kg	0.089 *U*	0.14	0.11 *U*	0.88	0.095 *U*	0.12 *U*	0.12	0.15	0.11 *U*
Sodium	mg/kg	424	3,070	2,230	4,840	299	3,190	4,970	10,300	7,760
Thallium	mg/kg	0.58 *U*	0.79 *U*	0.70 *U*	1.1 *U*	0.62 *U*	0.78 *U*	0.77 *U*	0.92 *U*	0.73 *U*
Vanadium	mg/kg	13.2	9.9	7.2	14.1	23.2	10.6	12.7	10.9	1.7
Zinc	mg/kg	29	113	50	186	46 *J*	124 *J*	103 *J*	120 *J*	15.4 *J*
Semivolatile Organic Compounds									
1,2,4-Trichlorobenzene	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
1,2-Dichlorobenzene	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	51	54 *U*	51 *U*	97 *J*	50 *UJ*
1,3-Dichlorobenzene	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	110 *J*	50 *UJ*
1,4-Dichlorobenzene	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
2,2'-Oxybis(1-chloropropane)	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
2,4,5-Trichlorophenol	µg/kg	210 *UJ*	290 *U*	250 *UJ*	440 *UJ*	200 *U*	280 *U*	260 *U*	300 *UJ*	260 *UJ*

Table A-7. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	DM0022	DM0023	DM0024	DM0025	DM0006	DM0007	DM0008	DM0009	DM0010
	Station ID:	S439	S439	S439	S439	S440	S440	S440	S440	S440
	Duplicates:									
	Date:	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000
	Depth (cm):	18 - 55	61 - 183	183 - 219	219 - 244	3 - 17	87 - 137	137 - 192	192 - 235	262 - 293
Chemical	**Units**									
2,4,6-Trichlorophenol	µg/kg	210 *UJ*	290 *U*	250 *UJ*	440 *UJ*	200 *U*	280 *U*	260 *U*	300 *UJ*	260 *UJ*
2,4-Dichlorophenol	µg/kg	210 *UJ*	290 *U*	250 *UJ*	440 *UJ*	200 *U*	280 *U*	260 *U*	300 *UJ*	260 *UJ*
2,4-Dimethylphenol	µg/kg	210 *UJ*	290 *U*	250 *UJ*	440 *UJ*	200 *U*	280 *U*	260 *U*	300 *UJ*	260 *UJ*
2,4-Dinitrophenol	µg/kg	1,000 *UJ*	1,400 *U*	1,200 *UJ*	2,200 *UJ*	1,000 *U*	1,400 *U*	1,300 *U*	1,500 *UJ*	1,300 *UJ*
2,4-Dinitrotoluene	µg/kg	210 *UJ*	290 *U*	250 *UJ*	440 *UJ*	200 *U*	280 *U*	260 *U*	300 *UJ*	260 *UJ*
2,6-Dinitrotoluene	µg/kg	210 *UJ*	290 *U*	250 *UJ*	440 *UJ*	200 *U*	280 *U*	260 *U*	300 *UJ*	260 *UJ*
2-Chloronaphthalene	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
2-Chlorophenol	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
2-Methyl-4,6-dinitrophenol	µg/kg	1,000 *UJ*	1,400 *U*	1,200 *UJ*	2,200 *UJ*	1,000 *U*	1,400 *U*	1,300 *U*	1,500 *UJ*	1,300 *UJ*
2-Methylnaphthalene	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
2-Methylphenol	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
4-Methylphenol	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
2-Nitroaniline	µg/kg	82 *UJ*	110 *U*	97 *UJ*	170 *UJ*	80 *U*	110 *U*	100 *U*	120 *UJ*	100 *UJ*
3-Nitroaniline	µg/kg	1,000 *UJ*	1,400 *U*	1,200 *UJ*	2,200 *UJ*	1,000 *U*	1,400 *U*	1,300 *U*	1,500 *UJ*	1,300 *UJ*
4-Nitroaniline	µg/kg	1,000 *UJ*	1,400 *U*	1,200 *UJ*	2,200 *UJ*	1,000 *U*	1,400 *U*	1,300 *U*	1,500 *UJ*	1,300 *UJ*
2-Nitrophenol	µg/kg	210 *UJ*	290 *U*	250 *UJ*	440 *UJ*	200 *U*	280 *U*	260 *U*	300 *UJ*	260 *UJ*
4-Nitrophenol	µg/kg	1,000 *UJ*	1,400 *U*	1,200 *UJ*	2,200 *UJ*	1,000 *U*	1,400 *U*	1,300 *U*	1,500 *UJ*	1,300 *UJ*
3,3-Dichlorobenzidine	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
4-Bromophenyl-phenyl ether	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
4-Chloro-3-methylphenol	µg/kg	210 *UJ*	290 *U*	250 *UJ*	440 *UJ*	200 *U*	280 *U*	260 *U*	300 *UJ*	260 *UJ*
4-Chloroaniline	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
4-Chlorophenyl-phenyl ether	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
Acenaphthene	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	78	58 *UJ*	50 *UJ*
Acenaphthylene	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
Anthracene	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	53	54 *U*	210	58 *UJ*	50 *UJ*
Benz(a)anthracene	µg/kg	40 *UJ*	71	170 *J*	320 *J*	130	54 *U*	1,900	58 *UJ*	50 *UJ*
Benzo(a)pyrene	µg/kg	40 *UJ*	87	180 *J*	370 *J*	130	60	2,100	58 *UJ*	50 *UJ*
Benzo(b)fluoranthene	µg/kg	40 *UJ*	90	140 *J*	310 *J*	110	56	1,900	58 *UJ*	50 *UJ*
Benzo(g,h,i)perylene	µg/kg	40 *UJ*	56 *U*	93 *J*	230 *J*	67	54 *U*	1,200	58 *UJ*	50 *UJ*
Benzo(k)fluoranthene	µg/kg	40 *UJ*	75	140 *J*	300 *J*	110	66	2,000	58 *UJ*	50 *UJ*
Benzyl alcohol	µg/kg	210 *UJ*	290 *U*	250 *UJ*	440 *UJ*	200 *U*	280 *U*	260 *U*	300 *UJ*	260 *UJ*
Bis(2-chloroethoxy)methane	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*

Table A-7. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	DM0022	DM0023	DM0024	DM0025	DM0006	DM0007	DM0008	DM0009	DM0010
	Station ID:	S439	S439	S439	S439	S440	S440	S440	S440	S440
	Duplicates:									
	Date:	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000
	Depth (cm):	18 - 55	61 - 183	183 - 219	219 - 244	3 - 17	87 - 137	137 - 192	192 - 235	262 - 293
Chemical	**Units**									
Bis(2-chloroethyl)ether	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
Bis(2-ethylhexyl)phthalate	µg/kg	53 *J*	130	54 *J*	150 *J*	91	110	64	100 *J*	50 *UJ*
Butylbenzylphthalate	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
Carbazole	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	220	58 *UJ*	50 *UJ*
Chrysene	µg/kg	40 *UJ*	95	180 *J*	390 *J*	140	65	2,300	58 *UJ*	50 *UJ*
Dibenz(a,h)anthracene	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	470	58 *UJ*	50 *UJ*
Dibenzofuran	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
Diethylphthalate	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
Dimethylphthalate	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
Di-n-butylphthalate	µg/kg	40 *UJ*	68	54 *J*	110 *J*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
Di-n-octylphthalate	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
Fluoranthene	µg/kg	40 *UJ*	160	270 *J*	560 *J*	290	110	2,900	120 *J*	57 *J*
Fluorene	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	64	58 *UJ*	50 *UJ*
Hexachlorobenzene (GC/ECD)	µg/kg									
Hexachlorobenzene (GC/MS)	µg/kg	40 *UJ*	360	48 *UJ*	85 *UJ*	410	490	51 *U*	58 *UJ*	50 *UJ*
Final HCB Value	µg/kg	40 *UJ*	360	48 *UJ*	85 *UJ*	410	490	51 *U*	58 *UJ*	50 *UJ*
Hexachlorobutadiene	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
Hexachlorocyclopentadiene	µg/kg	210 *UJ*	290 *UJ*	250 *UJ*	440 *UJ*	200 *U*	280 *U*	260 *U*	300 *UJ*	260 *UJ*
Hexachloroethane	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
Indeno(1,2,3-cd)pyrene	µg/kg	40 *UJ*	56 *U*	91 *J*	200 *J*	71	54 *U*	1,100	58 *UJ*	50 *UJ*
Isophorone	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
Naphthalene	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	85	58 *UJ*	50 *UJ*
Nitrobenzene	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
N-Nitrosodimethylamine	µg/kg	210 *UJ*	290 *U*	250 *UJ*	440 *UJ*	200 *U*	280 *U*	260 *U*	300 *UJ*	260 *UJ*
N-Nitroso-di-n-propylamine	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
N-Nitrosodiphenylamine	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
Pentachlorophenol	µg/kg	1,000 *UJ*	1,400 *U*	1,200 *UJ*	2,200 *UJ*	1,000 *U*	1,400 *U*	1,300 *U*	1,500 *UJ*	1,300 *UJ*
Phenanthrene	µg/kg	40 *UJ*	99	130 *J*	290 *J*	220	59	970	63 *J*	50 *UJ*
Phenol	µg/kg	40 *UJ*	56 *U*	48 *UJ*	85 *UJ*	40 *U*	54 *U*	51 *U*	58 *UJ*	50 *UJ*
Pyrene	µg/kg	40 *UJ*	150	260 *J*	570 *J*	220	100	2,500	88 *J*	50 *UJ*
Pesticides										
4,4'-DDD	µg/kg									

Table A-7. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	DM0022	DM0023	DM0024	DM0025	DM0006	DM0007	DM0008	DM0009	DM0010
	Station ID:	S439	S439	S439	S439	S440	S440	S440	S440	S440
	Duplicates:									
	Date:	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000
	Depth (cm):	18 - 55	61 - 183	183 - 219	219 - 244	3 - 17	87 - 137	137 - 192	192 - 235	262 - 293
Chemical	**Units**									
4,4'-DDE	µg/kg									
4,4'-DDT	µg/kg									
Aldrin	µg/kg									
alpha-BHC	µg/kg									
beta-BHC	µg/kg									
gamma-BHC (Lindane)	µg/kg									
delta-BHC	µg/kg									
Dieldrin	µg/kg									
Endosulfan I	µg/kg									
Endosulfan II	µg/kg									
Endosulfan sulfate	µg/kg									
Endrin aldehyde	µg/kg									
Endrin ketone	µg/kg									
Endrin	µg/kg									
Heptachlor epoxide	µg/kg									
Heptachlor	µg/kg									
Methoxychlor	µg/kg									
Toxaphene	µg/kg									
cis (alpha)-Chlordane	µg/kg									
trans (gamma)-Chlordane	µg/kg									
Total Chlordane [1]	µg/kg									
PCBs										
Aroclor 1016	µg/kg	53.6 *U*	52.8 *U*	50.9 *U*	53 *U*	54.6 *U*	53.8 *U*	54.4 *U*	54.8 *U*	54.3 *U*
Aroclor 1221	µg/kg	53.6 *U*	52.8 *U*	50.9 *U*	53 *U*	54.6 *U*	53.8 *U*	54.4 *U*	54.8 *U*	54.3 *U*
Aroclor 1232	µg/kg	53.6 *U*	52.8 *U*	50.9 *U*	53 *U*	54.6 *U*	53.8 *U*	54.4 *U*	54.8 *U*	54.3 *U*
Aroclor 1242	µg/kg	53.6 *U*	51.6 *J*	50.9 *U*	17 *J*	54.6 *U*	64.6 *J*	29.3 *J*	158 *J*	54.3 *U*
Aroclor 1248	µg/kg	53.6 *U*	52.8 *U*	50.9 *U*	53 *U*	54.6 *U*	53.8 *U*	54.4 *U*	54.8 *U*	54.3 *U*
Aroclor 1254	µg/kg	53.6 *U*	192 *J*	15.1 *J*	83 *J*	54.6 *U*	268 *J*	289 *J*	228 *J*	54.3 *U*
Aroclor 1260	µg/kg	53.6 *U*	52.8 *U*	50.9 *U*	126 *J*	28.2 *J*	53.8 *U*	54.4 *U*	54.8 *U*	54.3 *U*
Aroclor 1268	µg/kg	53.6 *U*	242 *J*	89.9 *J*	53 *U*	54.6 *U*	487 *J*	461 *J*	440 *J*	54.3 *U*
Sum PCBs	µg/kg	107.2 *U*	485.6	105	226	55.5	819.6	779.3	826	108.6 *U*

Table A-7. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	DM0022	DM0023	DM0024	DM0025	DM0006	DM0007	DM0008	DM0009	DM0010
Station ID:	S439	S439	S439	S439	S440	S440	S440	S440	S440
Duplicates:									
Date:	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000
Depth (cm):	18 - 55	61 - 183	183 - 219	219 - 244	3 - 17	87 - 137	137 - 192	192 - 235	262 - 293
Chemical	**Units**								
PCDD/PCDFs									
2,3,7,8-Tetrachlorodibenzodioxin	ng/kg				0.11 *U*	0.47 *J*	0.264 *J*	0.385 *J*	0.1 *U*
1,2,3,7,8-Pentachlorodibenzodioxin	ng/kg				0.157 *J*	0.478 *J*	0.359 *J*	0.633 *J*	0.1 *U*
1,2,3,4,7,8-Hexachlorodibenzodioxin	ng/kg				0.165 *J*	0.671 *J*	0.607 *J*	0.797 *J*	0.1 *U*
1,2,3,6,7,8-Hexachlorodibenzodioxin	ng/kg				0.371 *J*	3.53	2.55	3.55	0.1 *U*
1,2,3,7,8,9-Hexachlorodibenzodioxin	ng/kg				0.26 *J*	2.35 *J*	1.56 *J*	2.56	0.1 *U*
1,2,3,4,6,7,8-Heptachlorodibenzodioxin	ng/kg				7.33	87.9	54.1	74.5	0.246 *J*
Octachlorodibenzodioxin	ng/kg				57.9 *J*	866	586	708	2.4 *J*
Total heptachlorodibenzodioxins	ng/kg				15.8	208	128	171	0.1 *U*
Total hexachlorodibenzodioxins	ng/kg				2.52 *J*	34.8	22.1	32.7	0.1 *U*
Total pentachlorodibenzodioxins	ng/kg				0.72 *J*	5.89	4.13	5.49	0.1 *U*
Total tetrachlorodibenzodioxins	ng/kg				1.8	9.33	5.35	5.67	0.1 *U*
2,3,7,8-Tetrachlorodibenzofuran	ng/kg				1.01 *J*	72.7	57.1	77.6	0.133 *J*
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg				1.04 *J*	78.7	57	96	0.136 *J*
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg				0.96 *J*	32.1	22.7	42.9	0.1 *U*
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg				1.96 *J*	274	148	165	0.32 *J*
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg				0.617 *J*	60.5	43.8	47.5	0.1 *U*
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg				0.12 *U*	3.73	2.36	4.18	0.1 *U*
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg				0.341 *J*	7.26	4.81	7.19	0.1 *U*
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg				2.97	249	119	98.5	0.202 *J*
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg				1.04 *J*	158	64.9	66.5	0.1 *U*
Octachlorodibenzofuran	ng/kg				9.6	3300	914	676	1 *J*
Total heptachlorodibenzofurans	ng/kg				7.25	847	306	306	0.13 *J*
Total hexachlorodibenzofurans	ng/kg				6.33	547	303	405	0.1 *U*
Total pentachlorodibenzofurans	ng/kg				5.45	337	208	345	0.14 *J*
Total tetrachlorodibenzofurans	ng/kg				8.18	312	189	287	0.32 *J*
TEQ - Dioxins (ND=1/2)	ng/kg				0.37	2.57	1.69	2.52	0.12
TEQ - Furans (ND=1/2)	ng/kg				0.97	66.20	41.74	58.11	0.09
TEQ - Total [2] (ND=1/2)	ng/kg				1.34	68.77	43.43	60.64	0.21

Table A-7. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	DM0026	DM0027	DM0028	DM0029	DM0030	DM0044	DM0016	DM0017	DM0018
	Station ID:	S441	S441	S441	S441	S441	S441	S442	S442	S442
	Duplicates:									
	Date:	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000
	Depth (cm):	6 - 49	61 - 131	131 - 195	195 - 259	290 - 357	268 - 290	0 - 61	61 - 122	122 - 183
Chemical	**Units**									
Inorganics										
Aluminum	mg/kg	8,140	7,180	5,040	4,680	1,240	4,870	9,980	13,000	14,400
Antimony	mg/kg	0.25 *J*	0.34 *J*	0.84 *J*	0.55 *J*	0.44 *J*	0.52 *J*	0.24	0.38	0.23 *UJ*
Arsenic	mg/kg	3.2	4.4	7.9	7.4	1.2	6.4	3.9	4.2	2.7
Barium	mg/kg	78.2 *J*	96.2 *J*	89.3 *J*	83.5 *J*	97.5 *J*	49.1 *J*	76.1	74.4	105 *J*
Beryllium	mg/kg	0.4	0.36	0.44	0.41	0.10	0.31	0.46	0.51	0.75
Cadmium	mg/kg	0.034 *U*	0.041 *U*	1.2	0.75	0.043 *U*	0.07	0.032 *U*	0.035 *U*	0.034 *U*
Calcium	mg/kg	163,000	217,000	326,000	320,000	348,000	109,000	70,200	71,600	61,700
Chromium	mg/kg	16.4 *J*	11.7 *J*	32.6 *J*	27.4 *J*	3.3 *J*	10.5 *J*	15.5	20.6	21.2 *J*
Cobalt	mg/kg	4.1	2.6	2.5	2.5	0.46	4.0	4.5	6.0	6.7
Copper	mg/kg	17.6	15	49.6	60.4	2.8	56.9	18.1	16.8	17.5
Cyanide	mg/kg	0.62 *U*	0.73 *U*	1.3	0.94	0.76 *U*	0.57 *U*	0.58 *U*	0.63 *U*	0.62 *U*
Iron	mg/kg	10,800	10,200	5,810	5,880	2,950	7,600	15,400	23,600	18,200
Lead	mg/kg	9.4	6.3	31.6	28.6	2.5	22.8	12.3 *J*	8.1 *J*	11.1
Magnesium	mg/kg	18,900	9,660	5,730	7,150	3,260	10,900	11,800	10,400	10,800
Manganese	mg/kg	255	206	287	288	256	160	354	253	274
Mercury	mg/kg	0.086	0.59	9.3	57.7	0.22	1.9	0.054 *J*	0.11 *J*	0.088 *J*
Nickel	mg/kg	13.9	11.2	28.9	29.8	2.6	12.6	13.8	16.3	19.3
Potassium	mg/kg	2,370	1,880	525	440	261	1,260	3,330	3,330	3,540
Selenium	mg/kg	0.71	1.3	1.3	1.3	1.1 *U*	0.49	0.79	0.70	0.91
Silver	mg/kg	0.092 *U*	0.11 *U*	0.18	0.12 *U*	0.11 *U*	0.086 *U*	0.087 *U*	0.095 *U*	0.092 *U*
Sodium	mg/kg	350	439	2,020	1,920	1,360	321	229	335	587
Thallium	mg/kg	0.60 *U*	0.72 *U*	0.78 *U*	0.81 *U*	0.75 *U*	0.56 *U*	0.57 *U*	0.62 *U*	0.6 *U*
Vanadium	mg/kg	15	13.3	9.4	9.6	2.1	13.5	19.4	25.9	25.2
Zinc	mg/kg	31.2	28.7	131	136	12.1	36.8	39.3 *J*	39.2 *J*	51.6
Semivolatile Organic Compounds										
1,2,4-Trichlorobenzene	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
1,2-Dichlorobenzene	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	65 *J*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
1,3-Dichlorobenzene	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	79 *J*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
1,4-Dichlorobenzene	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
2,2'-Oxybis(1-chloropropane)	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
2,4,5-Trichlorophenol	µg/kg	220 *UJ*	230 *UJ*	270 *UJ*	290 *UJ*	260 *UJ*	200 *UJ*	210 *U*	220 *U*	200 *UJ*

Table A-7. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	DM0026	DM0027	DM0028	DM0029	DM0030	DM0044	DM0016	DM0017	DM0018
Station ID:	S441	S441	S441	S441	S441	S441	S442	S442	S442
Duplicates:									
Date:	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000
Depth (cm):	6 - 49	61 - 131	131 - 195	195 - 259	290 - 357	268 - 290	0 - 61	61 - 122	122 - 183
Chemical	**Units**								
2,4,6-Trichlorophenol	µg/kg	220 *UJ*	230 *UJ*	270 *UJ*	290 *UJ*	260 *UJ*	200 *UJ*	210 *U*	220 *U*	200 *UJ*
2,4-Dichlorophenol	µg/kg	220 *UJ*	230 *UJ*	270 *UJ*	290 *UJ*	260 *UJ*	200 *UJ*	210 *U*	220 *U*	200 *UJ*
2,4-Dimethylphenol	µg/kg	220 *UJ*	230 *UJ*	270 *UJ*	290 *UJ*	260 *UJ*	200 *UJ*	210 *U*	220 *U*	200 *UJ*
2,4-Dinitrophenol	µg/kg	1,100 *UJ*	1,200 *UJ*	1,300 *UJ*	1,500 *UJ*	1,300 *UJ*	1,000 *UJ*	1,000 *U*	1,100 *U*	1,000 *UJ*
2,4-Dinitrotoluene	µg/kg	220 *UJ*	230 *UJ*	270 *UJ*	290 *UJ*	260 *UJ*	200 *UJ*	210 *U*	220 *U*	200 *UJ*
2,6-Dinitrotoluene	µg/kg	220 *UJ*	230 *UJ*	270 *UJ*	290 *UJ*	260 *UJ*	200 *UJ*	210 *U*	220 *U*	200 *UJ*
2-Chloronaphthalene	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
2-Chlorophenol	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
2-Methyl-4,6-dinitrophenol	µg/kg	1,100 *UJ*	1,200 *UJ*	1,300 *UJ*	1,500 *UJ*	1,300 *UJ*	1,000 *UJ*	1,000 *U*	1,100 *U*	1,000 *UJ*
2-Methylnaphthalene	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
2-Methylphenol	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
4-Methylphenol	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
2-Nitroaniline	µg/kg	86 *UJ*	93 *UJ*	110 *UJ*	120 *UJ*	100 *UJ*	79 *UJ*	82 *U*	87 *U*	80 *UJ*
3-Nitroaniline	µg/kg	1,100 *UJ*	1,200 *UJ*	1,300 *UJ*	1,500 *UJ*	1,300 *UJ*	1,000 *UJ*	1,000 *U*	1,100 *U*	1,000 *UJ*
4-Nitroaniline	µg/kg	1,100 *UJ*	1,200 *UJ*	1,300 *UJ*	1,500 *UJ*	1,300 *UJ*	1,000 *UJ*	1,000 *U*	1,100 *U*	1,000 *UJ*
2-Nitrophenol	µg/kg	220 *UJ*	230 *UJ*	270 *UJ*	290 *UJ*	260 *UJ*	200 *UJ*	210 *U*	220 *U*	200 *UJ*
4-Nitrophenol	µg/kg	1,100 *UJ*	1,200 *UJ*	1,300 *UJ*	1,500 *UJ*	1,300 *UJ*	1,000 *UJ*	1,000 *U*	1,100 *U*	1,000 *UJ*
3,3-Dichlorobenzidine	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
4-Bromophenyl-phenyl ether	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
4-Chloro-3-methylphenol	µg/kg	220 *UJ*	230 *UJ*	270 *UJ*	290 *UJ*	260 *UJ*	200 *UJ*	210 *U*	220 *U*	200 *UJ*
4-Chloroaniline	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
4-Chlorophenyl-phenyl ether	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
Acenaphthene	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
Acenaphthylene	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
Anthracene	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
Benz(a)anthracene	µg/kg	50 *J*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	120 *J*	40 *U*	43 *U*	70 *J*
Benzo(a)pyrene	µg/kg	44 *J*	46 *UJ*	52 *UJ*	59 *J*	50 *UJ*	140 *J*	40 *U*	43 *U*	78 *J*
Benzo(b)fluoranthene	µg/kg	42 *UJ*	46 *UJ*	53 *J*	67 *J*	50 *UJ*	150 *J*	40 *U*	43 *U*	72 *J*
Benzo(g,h,i)perylene	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	110 *J*	40 *U*	43 *U*	51 *J*
Benzo(k)fluoranthene	µg/kg	42 *UJ*	46 *UJ*	56 *J*	57 *UJ*	50 *UJ*	140 *J*	40 *U*	43 *U*	67 *J*
Benzyl alcohol	µg/kg	220 *UJ*	230 *UJ*	270 *UJ*	290 *UJ*	260 *UJ*	200 *UJ*	210 *U*	220 *U*	200 *UJ*
Bis(2-chloroethoxy)methane	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*

Table A-7. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	DM0026	DM0027	DM0028	DM0029	DM0030	DM0044	DM0016	DM0017	DM0018
Station ID:	S441	S441	S441	S441	S441	S441	S442	S442	S442
Duplicates:									
Date:	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000
Depth (cm):	6 - 49	61 - 131	131 - 195	195 - 259	290 - 357	268 - 290	0 - 61	61 - 122	122 - 183
Chemical	**Units**								
Bis(2-chloroethyl)ether	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
Bis(2-ethylhexyl)phthalate	µg/kg	310 *J*	310 *J*	130 *J*	330 *J*	120 *J*	61 *J*	69	100	97 *J*
Butylbenzylphthalate	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
Carbazole	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
Chrysene	µg/kg	52 *J*	46 *UJ*	56 *J*	74 *J*	50 *UJ*	170 *J*	47	43 *U*	87 *J*
Dibenz(a,h)anthracene	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
Dibenzofuran	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
Diethylphthalate	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
Dimethylphthalate	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
Di-n-butylphthalate	µg/kg	42 *UJ*	64 *J*	52 *UJ*	61 *J*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
Di-n-octylphthalate	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
Fluoranthene	µg/kg	100 *J*	46 *UJ*	90 *J*	110 *J*	50 *UJ*	230 *J*	76	43 *U*	110 *J*
Fluorene	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
Hexachlorobenzene (GC/ECD)	µg/kg									
Hexachlorobenzene (GC/MS)	µg/kg	42 *UJ*	46 *UJ*	200 *J*	140 *J*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
Final HCB Value	µg/kg	42 *UJ*	46 *UJ*	200 *J*	140 *J*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
Hexachlorobutadiene	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
Hexachlorocyclopentadiene	µg/kg	220 *UJ*	230 *UJ*	270 *UJ*	290 *UJ*	260 *UJ*	200 *UJ*	210 *U*	220 *U*	200 *UJ*
Hexachloroethane	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
Indeno(1,2,3-cd)pyrene	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	100 *J*	40 *U*	43 *U*	47 *J*
Isophorone	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
Naphthalene	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
Nitrobenzene	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
N-Nitrosodimethylamine	µg/kg	220 *UJ*	230 *UJ*	270 *UJ*	290 *UJ*	260 *UJ*	200 *UJ*	210 *U*	220 *U*	200 *UJ*
N-Nitroso-di-n-propylamine	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
N-Nitrosodiphenylamine	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
Pentachlorophenol	µg/kg	1,100 *UJ*	1,200 *UJ*	1,300 *UJ*	1,500 *UJ*	1,300 *UJ*	1,000 *UJ*	1,000 *U*	1,100 *U*	1,000 *UJ*
Phenanthrene	µg/kg	70 *J*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	110 *J*	40 *U*	43 *U*	50 *J*
Phenol	µg/kg	42 *UJ*	46 *UJ*	52 *UJ*	57 *UJ*	50 *UJ*	39 *UJ*	40 *U*	43 *U*	39 *UJ*
Pyrene	µg/kg	95 *J*	46 *UJ*	94 *J*	140 *J*	50 *UJ*	200 *J*	63	43 *U*	100 *J*
Pesticides										
4,4'-DDD	µg/kg									

Table A-7. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	DM0026	DM0027	DM0028	DM0029	DM0030	DM0044	DM0016	DM0017	DM0018
	Station ID:	S441	S441	S441	S441	S441	S441	S442	S442	S442
	Duplicates:									
	Date:	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000
	Depth (cm):	6 - 49	61 - 131	131 - 195	195 - 259	290 - 357	268 - 290	0 - 61	61 - 122	122 - 183
Chemical	**Units**									
4,4'-DDE	µg/kg									
4,4'-DDT	µg/kg									
Aldrin	µg/kg									
alpha-BHC	µg/kg									
beta-BHC	µg/kg									
gamma-BHC (Lindane)	µg/kg									
delta-BHC	µg/kg									
Dieldrin	µg/kg									
Endosulfan I	µg/kg									
Endosulfan II	µg/kg									
Endosulfan sulfate	µg/kg									
Endrin aldehyde	µg/kg									
Endrin ketone	µg/kg									
Endrin	µg/kg									
Heptachlor epoxide	µg/kg									
Heptachlor	µg/kg									
Methoxychlor	µg/kg									
Toxaphene	µg/kg									
cis (alpha)-Chlordane	µg/kg									
trans (gamma)-Chlordane	µg/kg									
Total Chlordane [1]	µg/kg									
PCBs										
Aroclor 1016	µg/kg	53 *U*	51.4 *U*	53.6 *U*	52.6 *U*	52.4 *U*	50.5 *U*	53.1 *U*	53.3 *U*	53.2 *U*
Aroclor 1221	µg/kg	53 *U*	51.4 *U*	53.6 *U*	52.6 *U*	52.4 *U*	50.5 *U*	53.1 *U*	53.3 *U*	53.2 *U*
Aroclor 1232	µg/kg	53 *U*	51.4 *U*	53.6 *U*	52.6 *U*	52.4 *U*	50.5 *U*	53.1 *U*	53.3 *U*	53.2 *U*
Aroclor 1242	µg/kg	53 *U*	51.4 *U*	71.2 *J*	193 *J*	52.4 *U*	50.5 *U*	53.1 *U*	53.3 *U*	53.2 *U*
Aroclor 1248	µg/kg	53 *U*	51.4 *U*	53.6 *U*	52.6 *U*	52.4 *U*	50.5 *U*	53.1 *U*	53.3 *U*	53.2 *U*
Aroclor 1254	µg/kg	53 *U*	51.4 *U*	214 *J*	223 *J*	52.4 *U*	50.5 *U*	53.1 *U*	53.3 *U*	53.2 *U*
Aroclor 1260	µg/kg	53 *U*	51.4 *U*	53.6 *U*	52.6 *U*	52.4 *U*	50.5 *U*	53.1 *U*	53.3 *U*	53.2 *U*
Aroclor 1268	µg/kg	53 *U*	51.4 *U*	120 *J*	162 *J*	52.4 *U*	50.5 *U*	53.1 *U*	53.3 *U*	53.2 *U*
Sum PCBs	µg/kg	106 *U*	102.8 *U*	405.2	578	104.8 *U*	101 *U*	106.2 *U*	106.6 *U*	106.4 *U*

Table A-7. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	DM0026	DM0027	DM0028	DM0029	DM0030	DM0044	DM0016	DM0017	DM0018
Station ID:	S441	S441	S441	S441	S441	S441	S442	S442	S442
Duplicates:									
Date:	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000
Depth (cm):	6 - 49	61 - 131	131 - 195	195 - 259	290 - 357	268 - 290	0 - 61	61 - 122	122 - 183
Chemical	**Units**								
PCDD/PCDFs									
2,3,7,8-Tetrachlorodibenzodioxin	ng/kg						0.1 *U*	0.1 *U*	0.1 *U*
1,2,3,7,8-Pentachlorodibenzodioxin	ng/kg						0.163 *J*	0.1 *U*	0.1 *U*
1,2,3,4,7,8-Hexachlorodibenzodioxin	ng/kg						0.118 *J*	0.1 *U*	0.1 *U*
1,2,3,6,7,8-Hexachlorodibenzodioxin	ng/kg						0.247 *J*	0.1 *U*	0.1 *U*
1,2,3,7,8,9-Hexachlorodibenzodioxin	ng/kg						0.172 *J*	0.1 *U*	0.1 *U*
1,2,3,4,6,7,8-Heptachlorodibenzodioxin	ng/kg						3.8	0.757 *J*	1.01 *J*
Octachlorodibenzodioxin	ng/kg						23.2	6.24	7.42
Total heptachlorodibenzodioxins	ng/kg						7.18	1.58 *J*	2.13 *J*
Total hexachlorodibenzodioxins	ng/kg						1.29 *J*	0.53 *J*	0.7 *J*
Total pentachlorodibenzodioxins	ng/kg						0.55 *J*	0.33 *J*	0.1 *U*
Total tetrachlorodibenzodioxins	ng/kg						1.1	2.3	0.75 *J*
2,3,7,8-Tetrachlorodibenzofuran	ng/kg						0.264 *J*	0.343 *J*	0.154 *J*
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg						0.184 *J*	0.26 *J*	0.1 *U*
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg						0.233 *J*	0.111 *J*	0.124 *J*
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg						0.258 *J*	0.43 *J*	0.2 *J*
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg						0.274 *J*	0.152 *J*	0.1 *U*
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg						0.1 *U*	0.1 *U*	0.1 *U*
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg						0.187 *J*	0.1 *U*	0.1 *U*
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg						1.11 *J*	0.477 *J*	0.517 *J*
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg						0.166 *J*	0.177 *J*	0.1 *U*
Octachlorodibenzofuran	ng/kg						2.17 *J*	1.62 *J*	1.38 *J*
Total heptachlorodibenzofurans	ng/kg						1.11 *J*	0.65 *J*	0.52 *J*
Total hexachlorodibenzofurans	ng/kg						0.83 *J*	1.78 *J*	0.77 *J*
Total pentachlorodibenzofurans	ng/kg						2.79	1.08	0.83 *J*
Total tetrachlorodibenzofurans	ng/kg						4.17	3.06	2.82
TEQ - Dioxins (ND=1/2)	ng/kg						0.31	0.12	0.13
TEQ - Furans (ND=1/2)	ng/kg						0.24	0.18	0.12
TEQ - Total [2] (ND=1/2)	ng/kg						0.55	0.30	0.25

Table A-7. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	DM0019	DM0041	DM0020	DM0036	DM0037	DM0038	DM0039	DM0040
	Station ID:	S442	S442	S442	S443	S443	S443	S443	S443
	Duplicates:	D1	D2						
	Date:	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000
	Depth (cm):	183 - 232	183 - 232	241 - 305	0 - 61	61 - 122	122 - 174	174 - 180	183 - 204
Chemical	**Units**								
Inorganics									
Aluminum	mg/kg	13,800	12,200	1,520	8,230	9,500	7,990	9,410	4,820
Antimony	mg/kg	0.80	0.92 *J*	0.28 *UJ*	0.31 *J*	0.37 *J*	0.32 *J*	0.22 *UJ*	0.55 *J*
Arsenic	mg/kg	4.3	4.4	0.62	3.2	3.7	4.5	4.5	2.5
Barium	mg/kg	80.2	77.4 *J*	103 *J*	72.1 *J*	72.7 *J*	59 *J*	68.6 *J*	121 *J*
Beryllium	mg/kg	0.58	0.54	0.14	0.39	0.43	0.39	0.39	0.27
Cadmium	mg/kg	0.034 *U*	0.034 *U*	0.042 *U*	0.032 *U*	0.031 *U*	0.032 *U*	0.032 *U*	0.2
Calcium	mg/kg	61,000	64,200	344,000	141,000	81,000	87,600	149,000	300,000
Chromium	mg/kg	18.9	17.4 *J*	3.7 *J*	12.2 *J*	14.3 *J*	13.2 *J*	13.6 *J*	9.4 *J*
Cobalt	mg/kg	6.2	6.3	0.47	3.9	5.3	4.9	8.2	2.7
Copper	mg/kg	18.9	18.9	1.8	15.4	14.9	20.9	11.2	9.0
Cyanide	mg/kg	1.4	0.6 *U*	0.75 *U*	0.57 *U*	0.55 *U*	0.57 *U*	0.58 *U*	0.79 *U*
Iron	mg/kg	18,600	17,400	1,670	12,500	15,700	14,400	12,200	6,260
Lead	mg/kg	45.8 *J*	64.4	0.33 *U*	8.2	7.8	31.9	7.9	27.2
Magnesium	mg/kg	13,500	12,600	3,350	19,000	14,400	15,200	16,900	5,460
Manganese	mg/kg	385	390	242	343	440	400	294	308
Mercury	mg/kg	0.061 *J*	0.080	0.042 *U*	0.032 *U*	0.031 *U*	0.11	0.033 *U*	0.11
Nickel	mg/kg	16.1	15.4	2.3	12	13.2	13.2	14.6	10.2
Potassium	mg/kg	3,070	2,610	278	2,380	2,790	2,110	2,960	1,070
Selenium	mg/kg	0.49	0.62	1.1 *U*	1.1	0.77	0.82	0.53	1.4
Silver	mg/kg	0.091 *U*	0.09 *U*	0.11 *U*	0.086 *U*	0.082 *U*	0.086 *U*	0.087 *U*	0.12 *U*
Sodium	mg/kg	338	324	719	284	214	238	318	707
Thallium	mg/kg	0.59 *U*	0.59 *U*	0.73 *U*	0.56 *U*	0.54 *U*	0.56 *U*	0.57 *U*	0.78 *U*
Vanadium	mg/kg	25.9	24	2.6	15.6	18.4	17.2	14.1	8.3
Zinc	mg/kg	47.1 *J*	44.9	13.2	30.1	28.5	39.2	43.3	32.5
Semivolatile Organic Compounds									
1,2,4-Trichlorobenzene	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*		500 *UJ*
1,2-Dichlorobenzene	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*		500 *UJ*
1,3-Dichlorobenzene	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*		500 *UJ*
1,4-Dichlorobenzene	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*		500 *UJ*
2,2'-Oxybis(1-chloropropane)	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*		500 *UJ*
2,4,5-Trichlorophenol	µg/kg	210 *U*	2,100 *UJ*	250 *U*	190 *UJ*	190 *UJ*	200 *UJ*		2,600 *UJ*

Table A-7. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	DM0019	DM0041	DM0020	DM0036	DM0037	DM0038	DM0039	DM0040
Station ID:	S442	S442	S442	S443	S443	S443	S443	S443
Duplicates:	D1	D2						
Date:	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000
Depth (cm):	183 - 232	183 - 232	241 - 305	0 - 61	61 - 122	122 - 174	174 - 180	183 - 204
Chemical	**Units**							
2,4,6-Trichlorophenol	µg/kg	210 *U*	2,100 *UJ*	250 *U*	190 *UJ*	190 *UJ*	200 *UJ*	2,600 *UJ*
2,4-Dichlorophenol	µg/kg	210 *U*	2,100 *UJ*	250 *U*	190 *UJ*	190 *UJ*	200 *UJ*	2,600 *UJ*
2,4-Dimethylphenol	µg/kg	210 *U*	2,100 *UJ*	250 *U*	190 *UJ*	190 *UJ*	200 *UJ*	2,600 *UJ*
2,4-Dinitrophenol	µg/kg	1,000 *U*	11,000 *UJ*	1,300 *U*	970 *UJ*	930 *UJ*	990 *UJ*	13,000 *UJ*
2,4-Dinitrotoluene	µg/kg	210 *U*	2,100 *UJ*	250 *U*	190 *UJ*	190 *UJ*	200 *UJ*	2,600 *UJ*
2,6-Dinitrotoluene	µg/kg	210 *U*	2,100 *UJ*	250 *U*	190 *UJ*	190 *UJ*	200 *UJ*	2,600 *UJ*
2-Chloronaphthalene	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*	500 *UJ*
2-Chlorophenol	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*	500 *UJ*
2-Methyl-4,6-dinitrophenol	µg/kg	1,000 *U*	11,000 *UJ*	1,300 *U*	970 *UJ*	930 *UJ*	990 *UJ*	13,000 *UJ*
2-Methylnaphthalene	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*	500 *UJ*
2-Methylphenol	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*	500 *UJ*
4-Methylphenol	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*	500 *UJ*
2-Nitroaniline	µg/kg	82 *U*	830 *UJ*	100 *U*	77 *UJ*	73 *UJ*	78 *UJ*	1,000 *UJ*
3-Nitroaniline	µg/kg	1,000 *U*	11,000 *UJ*	1,300 *U*	970 *UJ*	930 *UJ*	990 *UJ*	13,000 *UJ*
4-Nitroaniline	µg/kg	1,000 *U*	11,000 *UJ*	1,300 *U*	970 *UJ*	930 *UJ*	990 *UJ*	13,000 *UJ*
2-Nitrophenol	µg/kg	210 *U*	2,100 *UJ*	250 *U*	190 *UJ*	190 *UJ*	200 *UJ*	2,600 *UJ*
4-Nitrophenol	µg/kg	1,000 *U*	11,000 *UJ*	1,300 *U*	970 *UJ*	930 *UJ*	990 *UJ*	13,000 *UJ*
3,3-Dichlorobenzidine	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*	500 *UJ*
4-Bromophenyl-phenyl ether	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*	500 *UJ*
4-Chloro-3-methylphenol	µg/kg	210 *U*	2,100 *UJ*	250 *U*	190 *UJ*	190 *UJ*	200 *UJ*	2,600 *UJ*
4-Chloroaniline	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*	500 *UJ*
4-Chlorophenyl-phenyl ether	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*	500 *UJ*
Acenaphthene	µg/kg	40 *U*	690 *J*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*	1,200 *J*
Acenaphthylene	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	110 *J*	500 *UJ*
Anthracene	µg/kg	40 *U*	2,100 *J*	49 *U*	38 *UJ*	36 *UJ*	140 *J*	1,900 *J*
Benz(a)anthracene	µg/kg	40 *U*	8,600 *J*	49 *U*	38 *UJ*	36 *UJ*	430 *J*	22,000 *J*
Benzo(a)pyrene	µg/kg	40 *U*	8,400 *J*	49 *U*	38 *UJ*	36 *UJ*	530 *J*	23,000 *J*
Benzo(b)fluoranthene	µg/kg	40 *U*	6,300 *J*	49 *U*	38 *UJ*	36 *UJ*	430 *J*	20,000 *J*
Benzo(g,h,i)perylene	µg/kg	40 *U*	4,200 *J*	49 *U*	38 *UJ*	36 *UJ*	360 *J*	11,000 *J*
Benzo(k)fluoranthene	µg/kg	40 *U*	6,100 *J*	49 *U*	38 *UJ*	36 *UJ*	470 *J*	20,000 *J*
Benzyl alcohol	µg/kg	210 *U*	2,100 *UJ*	250 *U*	190 *UJ*	190 *UJ*	200 *UJ*	2,600 *UJ*
Bis(2-chloroethoxy)methane	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*	500 *UJ*

Table A-7. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	DM0019	DM0041	DM0020	DM0036	DM0037	DM0038	DM0039	DM0040
	Station ID:	S442	S442	S442	S443	S443	S443	S443	S443
	Duplicates:	D1	D2						
	Date:	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000
	Depth (cm):	183 - 232	183 - 232	241 - 305	0 - 61	61 - 122	122 - 174	174 - 180	183 - 204
Chemical	**Units**								
Bis(2-chloroethyl)ether	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*		500 *UJ*
Bis(2-ethylhexyl)phthalate	µg/kg	41	410 *UJ*	60	55 *J*	200 *J*	130 *J*		500 *UJ*
Butylbenzylphthalate	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*		500 *UJ*
Carbazole	µg/kg	40 *U*	1,700 *J*	49 *U*	38 *UJ*	36 *UJ*	50 *J*		2,700 *J*
Chrysene	µg/kg	40 *U*	10,000 *J*	49 *U*	38 *UJ*	36 *UJ*	460 *J*		25,000 *J*
Dibenz(a,h)anthracene	µg/kg	40 *U*	1,500 *J*	49 *U*	38 *UJ*	36 *UJ*	140 *J*		5,200 *J*
Dibenzofuran	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*		500 *UJ*
Diethylphthalate	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*		500 *UJ*
Dimethylphthalate	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*		500 *UJ*
Di-n-butylphthalate	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*		500 *UJ*
Di-n-octylphthalate	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*		500 *UJ*
Fluoranthene	µg/kg	40 *U*	17,000 *J*	49 *U*	38 *J*	38 *J*	820 *J*		32,000 *J*
Fluorene	µg/kg	40 *U*	710 *J*	49 *U*	38 *UJ*	36 *UJ*	45 *J*		800 *J*
Hexachlorobenzene (GC/ECD)	µg/kg								
Hexachlorobenzene (GC/MS)	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*		500 *UJ*
Final HCB Value	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*		500 *UJ*
Hexachlorobutadiene	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*		500 *UJ*
Hexachlorocyclopentadiene	µg/kg	210 *U*	2,100 *UJ*	250 *U*	190 *UJ*	190 *UJ*	200 *UJ*		2,600 *UJ*
Hexachloroethane	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*		500 *UJ*
Indeno(1,2,3-cd)pyrene	µg/kg	40 *U*	3,600 *J*	49 *U*	38 *UJ*	36 *UJ*	350 *J*		11,000 *J*
Isophorone	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*		500 *UJ*
Naphthalene	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*		640 *J*
Nitrobenzene	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*		500 *UJ*
N-Nitrosodimethylamine	µg/kg	210 *U*	2,100 *UJ*	250 *U*	190 *UJ*	190 *UJ*	200 *UJ*		2,600 *UJ*
N-Nitroso-di-n-propylamine	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*		500 *UJ*
N-Nitrosodiphenylamine	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*		500 *UJ*
Pentachlorophenol	µg/kg	1,000 *U*	11,000 *UJ*	1,300 *U*	970 *UJ*	930 *UJ*	990 *UJ*		13,000 *UJ*
Phenanthrene	µg/kg	40 *U*	14,000 *J*	49 *U*	38 *UJ*	36 *UJ*	440 *J*		9,500 *J*
Phenol	µg/kg	40 *U*	410 *UJ*	49 *U*	38 *UJ*	36 *UJ*	38 *UJ*		500 *UJ*
Pyrene	µg/kg	40 *U*	17,000 *J*	49 *U*	38 *UJ*	36 *UJ*	700 *J*		25,000 *J*
Pesticides									
4,4'-DDD	µg/kg								

Table A-7. (cont.)

Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
Sample Number:	DM0019	DM0041	DM0020	DM0036	DM0037	DM0038	DM0039	DM0040
Station ID:	S442	S442	S442	S443	S443	S443	S443	S443
Duplicates:	D1	D2						
Date:	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000
Depth (cm):	183 - 232	183 - 232	241 - 305	0 - 61	61 - 122	122 - 174	174 - 180	183 - 204
Chemical	**Units**							
4,4'-DDE	µg/kg							
4,4'-DDT	µg/kg							
Aldrin	µg/kg							
alpha-BHC	µg/kg							
beta-BHC	µg/kg							
gamma-BHC (Lindane)	µg/kg							
delta-BHC	µg/kg							
Dieldrin	µg/kg							
Endosulfan I	µg/kg							
Endosulfan II	µg/kg							
Endosulfan sulfate	µg/kg							
Endrin aldehyde	µg/kg							
Endrin ketone	µg/kg							
Endrin	µg/kg							
Heptachlor epoxide	µg/kg							
Heptachlor	µg/kg							
Methoxychlor	µg/kg							
Toxaphene	µg/kg							
cis (alpha)-Chlordane	µg/kg							
trans (gamma)-Chlordane	µg/kg							
Total Chlordane [1]	µg/kg							
PCBs								
Aroclor 1016	µg/kg	54 *U*	54 *U*	52.7 *UJ*	51.3 *U*	54 *U*	53.9 *U*	51.8 *U*
Aroclor 1221	µg/kg	54 *U*	54 *U*	52.7 *UJ*	51.3 *U*	54 *U*	53.9 *U*	51.8 *U*
Aroclor 1232	µg/kg	54 *U*	54 *U*	52.7 *UJ*	51.3 *U*	54 *U*	53.9 *U*	51.8 *U*
Aroclor 1242	µg/kg	54 *U*	54 *U*	52.7 *UJ*	51.3 *U*	54 *U*	53.9 *U*	51.8 *U*
Aroclor 1248	µg/kg	54 *U*	54 *U*	52.7 *UJ*	51.3 *U*	54 *U*	53.9 *U*	51.8 *U*
Aroclor 1254	µg/kg	54 *U*	54 *U*	52.7 *UJ*	51.3 *U*	54 *U*	53.9 *U*	51.8 *U*
Aroclor 1260	µg/kg	54 *U*	54 *U*	52.7 *UJ*	51.3 *U*	54 *U*	53.9 *U*	51.8 *U*
Aroclor 1268	µg/kg	54 *U*	54 *U*	52.7 *UJ*	51.3 *U*	54 *U*	53.9 *U*	51.8 *U*
Sum PCBs	µg/kg	108 *U*	108 *U*	105.4 *U*	102.6 *U*	108 *U*	107.8 *U*	103.6 *U*

Table A-7. (cont.)

	Survey:	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A	ONON2A
	Sample Number:	DM0019	DM0041	DM0020	DM0036	DM0037	DM0038	DM0039	DM0040
	Station ID:	S442	S442	S442	S443	S443	S443	S443	S443
	Duplicates:	D1	D2						
	Date:	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000	8/17/2000
	Depth (cm):	183 - 232	183 - 232	241 - 305	0 - 61	61 - 122	122 - 174	174 - 180	183 - 204
Chemical	**Units**								
PCDD/PCDFs									
2,3,7,8-Tetrachlorodibenzodioxin	ng/kg	0.1 *U*		0.1 *U*					
1,2,3,7,8-Pentachlorodibenzodioxin	ng/kg	0.1 *U*		0.1 *U*					
1,2,3,4,7,8-Hexachlorodibenzodioxin	ng/kg	0.1 *U*		0.1 *U*					
1,2,3,6,7,8-Hexachlorodibenzodioxin	ng/kg	0.1 *U*		0.1 *U*					
1,2,3,7,8,9-Hexachlorodibenzodioxin	ng/kg	0.1 *U*		0.1 *U*					
1,2,3,4,6,7,8-Heptachlorodibenzodioxin	ng/kg	0.262 *J*		0.1 *U*					
Octachlorodibenzodioxin	ng/kg	1.67 *J*		0.478 *J*					
Total heptachlorodibenzodioxins	ng/kg	0.26 *J*		0.1 *U*					
Total hexachlorodibenzodioxins	ng/kg	0.19 *J*		0.1 *U*					
Total pentachlorodibenzodioxins	ng/kg	0.43 *J*		0.1 *U*					
Total tetrachlorodibenzodioxins	ng/kg	0.34 *J*		0.1 *U*					
2,3,7,8-Tetrachlorodibenzofuran	ng/kg	0.126 *J*		0.1 *U*					
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg	0.118 *J*		0.1 *U*					
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg	0.109 *J*		0.1 *U*					
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg	0.112 *J*		0.1 *U*					
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg	0.1 *U*		0.1 *U*					
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg	0.1 *U*		0.1 *U*					
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg	0.1 *U*		0.1 *U*					
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg	0.285 *J*		0.1 *U*					
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg	0.1 *U*		0.1 *U*					
Octachlorodibenzofuran	ng/kg	0.415 *J*		0.1 *U*					
Total heptachlorodibenzofurans	ng/kg	0.29 *J*		0.1 *U*					
Total hexachlorodibenzofurans	ng/kg	0.32 *J*		0.1 *U*					
Total pentachlorodibenzofurans	ng/kg	0.22 *J*		0.1 *U*					
Total tetrachlorodibenzofurans	ng/kg	1.08		0.1 *U*					
TEQ - Dioxins (ND=1/2)	ng/kg	0.12		0.12					
TEQ - Furans (ND=1/2)	ng/kg	0.10		0.05					
TEQ - Total [2] (ND=1/2)	ng/kg	0.22		0.17					

Notes: [1] Total chlordane is a calculated quantity, not a direct measurement

[2] Calculated using WHO TEFs

HCB - Hexachlorobenzene

U - not detected at reported quantitation limit

J - estimated

R - rejected datum

Table A-8A. Onondaga Lake Surface Water – Inorganic and Organometallic Data

Survey	Date	Station ID	Depth (m)	Duplicate	Sample Number	Cadmium (µg/L)	Calcium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (µg/L)	Lead (µg/L)	Magnesium (µg/L)	Manganese (µg/L)
O-LOADNG	8/29/1992	W12	1.0		L10003	2 *U*	68,200	2 *U*	2 *U*		1 *U*		
O-LOADNG	9/27/1992	W12	1.0		L10067	2 *U*	88,700	2 *UJ*	4.9		2.5 *UJ*		
O-LOADNG	10/18/1992	W12	1.0		L10123	2 *U*	174,000	4 *U*	3 *U*		1 *U*		
O-LOADNG	11/24/1992	W12	1.0		L10182	2 *U*	162,000	4 *U*	3 *U*		1 *U*	24,850	
O-LOADNG	12/18/1992	W12	1.0		L10218	2 *U*	171,000	4 *U*	3.1		5.8 *J*		
O-WCPROC	4/13/1992	W1	3.0		W00014	2 *U*	161,000	4 *U*	51.2 *J*	92.1	2.1 *J*	22,400	23.6
O-WCPROC	5/27/1992	W1	0.0		W00040	2 *U*	154,000	4 *U*	1 *U*	35.3	1 *U*	24,300	10.4
O-WCPROC	5/27/1992	W1	3.0		W00041	2 *U*	150,000	4 *U*	7.4 *U*	39.3	1.8	23,600	11.1
O-WCPROC	6/23/1992	W1	0.0		W00072	2 *U*	162,000	2.6	3.1	58.7	1.3 *J*	24,600	23.1
O-WCPROC	6/23/1992	W1	3.0		W00073	2 *U*	160,000	2.6	2.7	127	1 *UJ*	24,400	19.4
O-WCPROC	6/25/1992	W1	0.0		W00104								
O-WCPROC	6/25/1992	W1	3.0		W00105								
O-WCPROC	7/21/1992	W1	0.0		W00127	2 *U*	158,000	2 *U*	2 *U*	49.9	1 *U*	23,300	7
O-WCPROC	7/21/1992	W1	3.0		W00128	2 *U*	156,000	2 *U*	2 *U*	44.3	1 *U*	22,900	6.7
O-WCPROC	8/25/1992	W1	0.0		W00177	2 *U*	131,000	2.1	2 *U*	32.5	1 *U*	22,100	4.8
O-WCPROC	8/25/1992	W1	3.0		W00178	2 *U*	151,000	2 *U*	2 *U*	76.9	1 *U*	23,000	5.5
O-WCPROC	9/22/1992	W1	0.0		W00274	2 *U*	165,000	2 *U*	2 *U*	194	1.8 *J*	23,800	624
O-WCPROC	9/22/1992	W1	3.0		W00275	2 *U*	157,000	2 *U*	2 *U*	32.5	1 *U*	23,300	12.5
O-WCPROC	10/12/1992	W1	3.0	D1	W00288	2 *U*	161,000	4 *U*	3 *U*	63	1 *U*	24,300	36.2
O-WCPROC	10/12/1992	W1	3.0	D2	W00289	2 *U*	177,000	4 *U*	3.2	77.3	1 *U*	26,700	41
O-WCPROC	10/12/1992	W1	3.0	D3	W00290	2 *U*	162,000	4 *U*	3 *U*	65.8	2.4	24,700	37.3
O-WCPROC	11/16/1992	W1	3.0		W00307	2 *U*	165,000	4 *UJ*	3 *U*	59.5	1 *U*	23,700	145
O-WCPROC	5/28/1992	W1R	0.0		W00047	2 *U*	153,000	4 *U*	2.7 *U*	27.3	3.4	24,000	11.6
O-WCPROC	5/28/1992	W1R	3.0		W00048	2 *U*	152,000	4 *U*	4.8	26.8	1 *U*	23,800	14.4
O-WCPROC	6/24/1992	W1R	0.0		W00081	2 *U*	152,000	2.7	3.5	50.4	1 *U*	23,400	18.8
O-WCPROC	6/24/1992	W1R	3.0		W00082	2 *U*	158,000	2 *U*	2 *U*	44.7	1 *U*	24,100	18.3
O-WCPROC	7/22/1992	W1R	0.0		W00136	2 *U*	155,000	2 *U*	2.1	38.9	1 *U*	22,700	6.1
O-WCPROC	7/22/1992	W1R	3.0		W00137	2 *U*	156,000	2 *U*	2 *U*	49.3	1 *U*	22,900	6.7
O-WCPROC	4/8/1992	W2	3.0		W00001	2 *U*	151,000	4 *U*	2 *J*	98.5	7.7 *J*	21,700	18.3
O-WCPROC	5/26/1992	W2	3.0		W00025	2 *U*	130,000	4 *U*	1 *UJ*	16 *U*	1 *UJ*	20,600	10.9 *UJ*
O-WCPROC	6/23/1992	W2	0.0		W00065	2 *U*	166,000	2.2	2 *U*	50.6	1 *UJ*	25,000	18.1
O-WCPROC	6/23/1992	W2	3.0		W00066	2 *U*	159,000	2 *U*	3	45.9	2.1 *J*	24,100	17.8
O-WCPROC	6/25/1992	W2	0.0		W00097								
O-WCPROC	6/25/1992	W2	3.0		W00098								

Table A -8A. (cont.)

Survey	Date	Station ID	Depth (m)	Duplicate	Sample Number	Dimethyl mercury - Total (ng/L)	Elemental mercury - Total (ng/L)	Ionic mercury - Total (ng/L)	Mercury - Total[1] (ng/L)	Methylmercury (ng/L)	Nickel (µg/L)	Sodium (µg/L)	Zinc (µg/L)
O-LOADNG	8/29/1992	W12	1.0		L10003				3.9	0.13	5 *U*	78,900	15.7 *U*
O-LOADNG	9/27/1992	W12	1.0		L10067				2.4	0.51	5 *U*	91,300	14.9 *U*
O-LOADNG	10/18/1992	W12	1.0		L10123				6.0	2.86	7 *U*	226,000	6.7
O-LOADNG	11/24/1992	W12	1.0		L10182				4.1	0.84	7 *U*	211,000	47
O-LOADNG	12/18/1992	W12	1.0		L10218				5.8	0.85	4 *U*	217,000	47.4 *J*
O-WCPROC	4/13/1992	W1	3.0		W00014	0.011 *UJ*	0.28 *J*	3.32 *J*	10.0	0.25 *J*	8 *U*	234,000	102 *J*
O-WCPROC	5/27/1992	W1	0.0		W00040	0.003 *UJ*	0.14	0.42	4.6	0.22	10.1	212,000	18.8
O-WCPROC	5/27/1992	W1	3.0		W00041	0.003 *UJ*	0.13	0.30	3.1	0.37	9.8	207,000	50.8
O-WCPROC	6/23/1992	W1	0.0		W00072						5	235,000 *J*	15.6
O-WCPROC	6/23/1992	W1	3.0		W00073						5 *U*	234,000 *J*	38
O-WCPROC	6/25/1992	W1	0.0		W00104	0.003 *UJ*	0.03	0.44	2.8	0.43			
O-WCPROC	6/25/1992	W1	3.0		W00105	0.003 *UJ*	0.03	0.44	6.4	0.40			
O-WCPROC	7/21/1992	W1	0.0		W00127	0.006 *U*	0.12	0.40	3.7	0.33	5 *U*	207,000	4.3
O-WCPROC	7/21/1992	W1	3.0		W00128	0.006 *U*	0.13	0.79	6.0	0.34	5 *U*	205,000	5
O-WCPROC	8/25/1992	W1	0.0		W00177	0.002 *U*	0.31	0.88	6.9	0.33	5 *U*	181,000	18.1 *J*
O-WCPROC	8/25/1992	W1	3.0		W00178	0.002 *U*	0.14	0.54	6.2	0.29	5 *U*	187,000	35.7 *J*
O-WCPROC	9/22/1992	W1	0.0		W00274	0.001 *U*	0.05	1.43	6.2	0.36	5 *U*	233,000	16.2 *J*
O-WCPROC	9/22/1992	W1	3.0		W00275	0.001 *U*	0.05	1.61	5.9	0.57	5 *U*	214,000	2.3 *J*
O-WCPROC	10/12/1992	W1	3.0	D1	W00288	0.004 *U*	0.09	0.84	5.4	1.62	9.1	218,000	13.6
O-WCPROC	10/12/1992	W1	3.0	D2	W00289	0.004 *U*	0.12	1.71	7.5	1.30	9	239,000	9.3
O-WCPROC	10/12/1992	W1	3.0	D3	W00290	0.004 *U*	0.06	2.04	4.9	1.3	7 *U*	220,000	27.8
O-WCPROC	11/16/1992	W1	3.0		W00307	0.003 *U*	0.04	0.63	7.3	1.32	7 *U*	217,000	6.6
O-WCPROC	5/28/1992	W1R	0.0		W00047	0.003 *UJ*	0.15	0.32	5.0	0.22	15	211,000	14.7
O-WCPROC	5/28/1992	W1R	3.0		W00048	0.003 *UJ*	0.13	0.36	4.4	0.27	8.4	208,000	31.5
O-WCPROC	6/24/1992	W1R	0.0		W00081	0.003 *UJ*	0.16 *U*	0.81	3.6	0.34	5 *U*	230,000	37.8 *J*
O-WCPROC	6/24/1992	W1R	3.0		W00082	0.003 *UJ*	0.17 *U*	0.70	5.6	0.38	5 *U*	238,000	13.2 *J*
O-WCPROC	7/22/1992	W1R	0.0		W00136	0.001 *U*	0.12	0.86	3.9	0.13	5 *U*	207,000	128
O-WCPROC	7/22/1992	W1R	3.0		W00137	0.002 *U*	0.13	0.94	4.8	0.37	5 *U*	209,000	4.3
O-WCPROC	4/8/1992	W2	3.0		W00001	0.003 *UJ*	0.12 *J*	2.41 *J*	4.4	0.38 *J*	8 *U*	217,000	12 *J*
O-WCPROC	5/26/1992	W2	3.0		W00025	0.003 *UJ*	0.16	0.15	4.4	0.38	8 *U*	187,000	2.7
O-WCPROC	6/23/1992	W2	0.0		W00065						5 *U*	229,000 *J*	80
O-WCPROC	6/23/1992	W2	3.0		W00066						5 *U*	223,000 *J*	21.2
O-WCPROC	6/25/1992	W2	0.0		W00097	0.003 *UJ*	0.05	0.43	2.7	0.32			
O-WCPROC	6/25/1992	W2	3.0		W00098	0.003 *UJ*	0.04	0.43	2.9	0.35			

Table A -8A. (cont.)

Survey	Date	Station ID	Depth (m)	Duplicate	Sample Number	Cadmium (µg/L)	Calcium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (µg/L)	Lead (µg/L)	Magnesium (µg/L)	Manganese (µg/L)
O-WCPROC	7/21/1992	W2	0.0		W00120	2 *U*	156,000	2 *U*	2.1	38.1	1 *U*	23,100	7
O-WCPROC	7/21/1992	W2	3.0		W00121	2 *U*	156,000	2 *U*	2 *U*	40.3	1.1	23,200	6.4
O-WCPROC	8/24/1992	W2	0.0		W00170	2 *U*	147,000	2 *U*	2 *U*	21.2	1 *U*	23,000	3.2
O-WCPROC	8/24/1992	W2	3.0		W00171	2 *U*	149,000	2.3	2 *U*	42.1	1.5	22,900	3.9
O-WCPROC	9/21/1992	W2	0.0		W00217	2 *U*	158,000	2 *U*	2 *U*	31	1 *U*	23,700	6.5
O-WCPROC	9/21/1992	W2	3.0		W00218	2 *U*	157,000	2 *U*	2 *U*	34	1 *U*	23,600	7
O-WCPROC	10/12/1992	W2	3.0		W00293	2 *U*	168,000	4 *U*	3 *U*	63	1 *UJ*	25,800	32.4
O-WCPROC	11/16/1992	W2	3.0		W00312	3.1	166,000	4.1 *J*	3 *U*	56.2	1 *U*	24,400	146
O-WCPROC	5/26/1992	W2	0.0		WYY024	2 *U*	162,000	4 *U*	1 *UJ*	34.3	1 *UJ*	25,900	12.8 *UJ*
O-LAKE96	7/11/1996	SB	3.0	D1	SW0029								
O-LAKE96	7/11/1996	SB	3.0	D2	SW0030								
O-LAKE96	9/18/1996	SB	3.0		SW0054								
O-LAKE96	9/19/1996	NB	3.0		SW0068								
O-LAKE96	9/18/1996	SB	3.0										
O-WCSUP	9/27/1999	W1	0.0		LW0001			3.5		596	1.6 *U*		30 *J*
O-WCSUP	9/27/1999	W1	3.0		LW0002					245			25
O-WCSUP	10/15/1999	W1	0.0		LW0028					125			79
O-WCSUP	10/15/1999	W1	3.0		LW0029					141			65
O-WCSUP	10/25/1999	W1	0.0		LW0044					43			119
O-WCSUP	10/25/1999	W1	3.0		LW0045					39			120
O-WCSUP	11/9/1999	W1	0.0		LW0063					63			112
O-WCSUP	11/9/1999	W1	3.0		LW0064					73			106
O-WCSUP	12/2/1999	W1	0.0		LW0071					173			61
O-WCSUP	12/2/1999	W1	3.0		LW0072					144			59
O-WCSUP	9/28/1999	W12	2.0	D1	LW0015					76			32
O-WCSUP	9/28/1999	W12	2.0	D2	LW0016					65			25
O-WCSUP	10/14/1999	W12	1.0		LW0042					71			244
O-WCSUP	10/14/1999	W12	3.0		LW0043					81			257
O-WCSUP	10/26/1999	W12	2.0		LW0062					36			94
O-WCSUP	12/2/1999	W12	2.0		LW0079					63			90
O-WCSUP	9/27/1999	W2	0.0		LW0008			3.7		51	1.6 *U*		26 *J*
O-WCSUP	9/27/1999	W2	3.0		LW0009					64			28
O-WCSUP	10/15/1999	W2	0.0		LW0035					93			105
O-WCSUP	10/15/1999	W2	3.0		LW0036					46			116

Table A -8A. (cont.)

Survey	Date	Station ID	Depth (m)	Duplicate	Sample Number	Dimethyl mercury - Total (ng/L)	Elemental mercury - Total (ng/L)	Ionic mercury - Total (ng/L)	Mercury - Total[1] (ng/L)	Methylmercury (ng/L)	Nickel (µg/L)	Sodium (µg/L)	Zinc (µg/L)
O-WCPROC	7/21/1992	W2	0.0		W00120	0.006 *U*	0.18	0.44	4.8	0.37	5 *U*	207,000	7.6
O-WCPROC	7/21/1992	W2	3.0		W00121	0.006 *U*	0.18	0.25	3.4	0.32	5 *U*	208,000	18.7
O-WCPROC	8/24/1992	W2	0.0		W00170	0.005 *U*	0.23	0.92	11.2	0.16	5 *U*	186,000	10.5 *J*
O-WCPROC	8/24/1992	W2	3.0		W00171	0.005 *U*	0.15	1.07	7.0	0.31	5 *U*	187,000	19.6 *J*
O-WCPROC	9/21/1992	W2	0.0		W00217	0.008 *U*	0.09	1.59	6.9	0.26	5 *U*	215,000	8.5 *J*
O-WCPROC	9/21/1992	W2	3.0		W00218	0.008 *U*	0.08	1.54	7.7	0.47	5 *U*	213,000	25.5 *J*
O-WCPROC	10/12/1992	W2	3.0		W00293	0.004 *U*	0.10	1.00	5.0	1.33	7 *U*	233,000	5.1
O-WCPROC	11/16/1992	W2	3.0		W00312	0.003 *U*	0.05	0.35	7.4	1.6	7 *U*	211,000	3.6
O-WCPROC	5/26/1992	W2	0.0		WYY024	0.003 *UJ*	0.17	0.17	2.9	0.20	8 *U*	238,000	49.8
O-LAKE96	7/11/1996	SB	3.0	D1	SW0029				9.4	0.77			
O-LAKE96	7/11/1996	SB	3.0	D2	SW0030				9.6	0.57			
O-LAKE96	9/18/1996	SB	3.0		SW0054				5.2	0.36 *J*			
O-LAKE96	9/19/1996	NB	3.0		SW0068				7.3	0.44 *J*			
O-LAKE96	9/18/1996	SB	3.0						5.2	0.36 *J*			
O-WCSUP	9/27/1999	W1	0.0		LW0001				13.7	1.12	3.6 *J*		
O-WCSUP	9/27/1999	W1	3.0		LW0002				5.5	0.72			
O-WCSUP	10/15/1999	W1	0.0		LW0028				6.6	2.77			
O-WCSUP	10/15/1999	W1	3.0		LW0029				7.5	2.41			
O-WCSUP	10/25/1999	W1	0.0		LW0044				6.5	2.77			
O-WCSUP	10/25/1999	W1	3.0		LW0045				6.5	1.87			
O-WCSUP	11/9/1999	W1	0.0		LW0063				11.2	1.62			
O-WCSUP	11/9/1999	W1	3.0		LW0064				10.4	1.41			
O-WCSUP	12/2/1999	W1	0.0		LW0071				7.1	1.22			
O-WCSUP	12/2/1999	W1	3.0		LW0072				7.3	0.98			
O-WCSUP	9/28/1999	W12	2.0	D1	LW0015				4.8	1.12			
O-WCSUP	9/28/1999	W12	2.0	D2	LW0016				4.0	1.67			
O-WCSUP	10/14/1999	W12	1.0		LW0042				10.0	5.82			
O-WCSUP	10/14/1999	W12	3.0		LW0043				10.0	5.93			
O-WCSUP	10/26/1999	W12	2.0		LW0062				6.3	2.08			
O-WCSUP	12/2/1999	W12	2.0		LW0079				6.6	1.27 *J*			
O-WCSUP	9/27/1999	W2	0.0		LW0008				3.5	0.85	3.7 *J*		
O-WCSUP	9/27/1999	W2	3.0		LW0009				4.1	0.85			
O-WCSUP	10/15/1999	W2	0.0		LW0035				6.2	3.44			
O-WCSUP	10/15/1999	W2	3.0		LW0036				6.6	2.08			

Table A -8A. (cont.)

Survey	Date	Station ID	Depth (m)	Duplicate	Sample Number	Cadmium (µg/L)	Calcium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (µg/L)	Lead (µg/L)	Magnesium (µg/L)	Manganese (µg/L)
O-WCSUP	10/25/1999	W2	0.0		LW0052					40			132
O-WCSUP	10/25/1999	W2	3.0		LW0053					34			92
O-WCSUP	9/28/1999	W50	1.0		LW0022			3.9			3.1		20.6 *J*
O-WCSUP	9/28/1999	W51	0.0		LW0021			3.7			1.6 *U*		27.4 *J*
O-WCSUP	9/28/1999	W52	1.0		LW0020			3.5			1.6 *U*		15 *J*
O-WCSUP	10/25/1999	W52	1.0		LW0059					39			87
O-WCSUP	9/28/1999	W53	1.0	D1	LW0019			3.5			1.6 *U*		15 *J*
O-WCSUP	9/28/1999	W53	1.0	D2	LW0026			2.6			1.6 *U*		15.4 *J*
O-WCSUP	9/28/1999	W54	0.0		LW0017			3.13			1.6 *U*		14.3 *J*
O-WCSUP	10/25/1999	W54	1.0		LW0060					26			102
O-WCSUP	9/28/1999	W55	0.0		LW0023			3.8			1.6 *U*		30.6 *J*
O-WCSUP	9/28/1999	W56	1.0		LW0018			3.6			1.6 *U*		18.6 *J*
O-WCSUP	9/28/1999	W57	0.0		LW0025			3.2			1.6 *U*		16 *J*
O-WCSUP	9/28/1999	W58	1.0		LW0024			3.2			1.6 *U*		16.4 *J*
O-WCSUP	10/26/1999	W58	1.0		LW0061					216			110
ONON2A	7/21/2000	S402	< 2.0		OW0006					65 *J*			7.55

Table A -8A. (cont.)

Survey	Date	Station ID	Depth (m)	Duplicate	Sample Number	Dimethyl mercury - Total (ng/L)	Elemental mercury - Total (ng/L)	Ionic mercury - Total (ng/L)	Mercury - Total[1] (ng/L)	Methylmercury (ng/L)	Nickel (µg/L)	Sodium (µg/L)	Zinc (µg/L)
O-WCSUP	10/25/1999	W2	0.0		LW0052				4.8	2.32			
O-WCSUP	10/25/1999	W2	3.0		LW0053				5.8	2.36			
O-WCSUP	9/28/1999	W50	1.0		LW0022				12.2	0.98	4.6 *J*		
O-WCSUP	9/28/1999	W51	0.0		LW0021				11.0	0.80	4.7 *J*		
O-WCSUP	9/28/1999	W52	1.0		LW0020				2.3	0.82	4.2 *J*		
O-WCSUP	10/25/1999	W52	1.0		LW0059				7.5	1.49			
O-WCSUP	9/28/1999	W53	1.0	D1	LW0019				26.2	0.82	4 *J*		
O-WCSUP	9/28/1999	W53	1.0	D2	LW0026				9.8	0.82	3.9 *J*		
O-WCSUP	9/28/1999	W54	0.0		LW0017				6.2	0.76	3.7 *J*		
O-WCSUP	10/25/1999	W54	1.0		LW0060				6.5	2.41			
O-WCSUP	9/28/1999	W55	0.0		LW0023				103.0	1.09	4.2 *J*		
O-WCSUP	9/28/1999	W56	1.0		LW0018				4.8	0.61	3.5 *J*		
O-WCSUP	9/28/1999	W57	0.0		LW0025				10.3	0.78	3.9 *J*		
O-WCSUP	9/28/1999	W58	1.0		LW0024				8.1	0.84	4 *J*		
O-WCSUP	10/26/1999	W58	1.0		LW0061				14.3	0.77			
ONON2A	7/21/2000	S402	< 2.0		OW0006				19.0	0.41			

Notes: [1] Total mercury analysis

J - estimated

U - not detected at reported quantitation limit

Table A-8B. Onondaga Lake Surface Water – Organic Data

Survey	Date	Station	Depth (m)	Duplicate	Sample Number	1,1,1-Trichloroethane (µg/L)	Tetrachloro-ethane (µg/L)	1,1,2-Trichloroethane (µg/L)	1,1-Dichloroethane (µg/L)	1,1-Dichloroethene (µg/L)	1,2,3-Trichloro-benzene (µg/L)
O-LOADNG	8/29/1992	W12	1.0		L10003						1 *U*
O-LOADNG	9/27/1992	W12	1.0		L10067						1 *U*
O-LOADNG	10/18/1992	W12	1.0		L10123						1 *U*
O-LOADNG	11/24/1992	W12	1.0		L10182						1 *U*
O-LOADNG	12/18/1992	W12	1.0		L10218						1 *U*
O-WCPROC	5/27/1992	W1	0.0		W00040						1 *U*
O-WCPROC	6/23/1992	W1	0.0		W00072						1 *U*
O-WCPROC	7/21/1992	W1	0.0		W00127						1 *U*
O-WCPROC	8/25/1992	W1	0.0		W00177						1 *U*
O-WCPROC	9/22/1992	W1	0.0		W00274						1 *U*
O-WCPROC	4/13/1992	W1	3.0		W00014						1 *U*
O-WCPROC	5/27/1992	W1	3.0		W00041						1 *U*
O-WCPROC	6/23/1992	W1	3.0		W00073						1 *U*
O-WCPROC	7/21/1992	W1	3.0		W00128						1 *U*
O-WCPROC	8/25/1992	W1	3.0		W00178						1 *U*
O-WCPROC	9/22/1992	W1	3.0		W00275						1 *U*
O-WCPROC	7/22/1992	W117	0.0		W00150						1 *UJ*
O-WCPROC	7/22/1992	W117	3.0		W00151						1 *UJ*
O-WCPROC	7/22/1992	W119	0.0		W00154						1 *UJ*
O-WCPROC	7/22/1992	W120	0.0		W00152						1 *UJ*
O-WCPROC	5/28/1992	W1R	0.0		W00047						1 *U*
O-WCPROC	6/24/1992	W1R	0.0		W00081						1 *U*
O-WCPROC	7/22/1992	W1R	0.0		W00136						1 *U*
O-WCPROC	5/28/1992	W1R	3.0		W00048						1 *U*
O-WCPROC	6/24/1992	W1R	3.0		W00082						1 *U*
O-WCPROC	7/22/1992	W1R	3.0		W00137						2.7 *J*
O-WCPROC	5/26/1992	W2	0.0		WYY024						1 *UJ*
O-WCPROC	6/23/1992	W2	0.0		W00065						1 *U*
O-WCPROC	7/21/1992	W2	0.0		W00120						1 *UJ*
O-WCPROC	8/24/1992	W2	0.0		W00170						1 *U*
O-WCPROC	9/21/1992	W2	0.0		W00217						1 *U*
O-WCPROC	4/8/1992	W2	3.0		W00001						1 *U*
O-WCPROC	5/26/1992	W2	3.0		W00025						1 *UJ*
O-WCPROC	6/23/1992	W2	3.0		W00066						1 *U*
O-WCPROC	7/21/1992	W2	3.0		W00121						1 *U*

Table A-8B. (cont.)

Survey	Date	Station	Depth (m)	Duplicate	Sample Number	1,2,4-Trichloro-benzene (µg/L)	1,3,5-Trichloro-benzene (µg/L)	1,2-Dichlorobenzene (µg/L)	1,3-Dichlorobenzene (µg/L)	1,4-Dichlorobenzene (µg/L)	1,2-Dichloroethane (µg/L)
O-LOADNG	8/29/1992	W12	1.0		L10003	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-LOADNG	9/27/1992	W12	1.0		L10067	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-LOADNG	10/18/1992	W12	1.0		L10123	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-LOADNG	11/24/1992	W12	1.0		L10182	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-LOADNG	12/18/1992	W12	1.0		L10218	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	5/27/1992	W1	0.0		W00040	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	6/23/1992	W1	0.0		W00072	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	7/21/1992	W1	0.0		W00127	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	8/25/1992	W1	0.0		W00177	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	9/22/1992	W1	0.0		W00274	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	4/13/1992	W1	3.0		W00014	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	5/27/1992	W1	3.0		W00041	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	6/23/1992	W1	3.0		W00073	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	7/21/1992	W1	3.0		W00128	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	8/25/1992	W1	3.0		W00178	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	9/22/1992	W1	3.0		W00275	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	7/22/1992	W117	0.0		W00150	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	
O-WCPROC	7/22/1992	W117	3.0		W00151	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1.1 *J*	
O-WCPROC	7/22/1992	W119	0.0		W00154	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	
O-WCPROC	7/22/1992	W120	0.0		W00152	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	
O-WCPROC	5/28/1992	W1R	0.0		W00047	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	6/24/1992	W1R	0.0		W00081	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	7/22/1992	W1R	0.0		W00136	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	5/28/1992	W1R	3.0		W00048	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	6/24/1992	W1R	3.0		W00082	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	7/22/1992	W1R	3.0		W00137	2.4 *J*	1.6 *J*	1.7 *J*	1.2 *J*	1.7 *J*	
O-WCPROC	5/26/1992	W2	0.0		WYY024	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	
O-WCPROC	6/23/1992	W2	0.0		W00065	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	7/21/1992	W2	0.0		W00120	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	
O-WCPROC	8/24/1992	W2	0.0		W00170	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	9/21/1992	W2	0.0		W00217	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	4/8/1992	W2	3.0		W00001	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	5/26/1992	W2	3.0		W00025	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	1 *UJ*	
O-WCPROC	6/23/1992	W2	3.0		W00066	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	7/21/1992	W2	3.0		W00121	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	

Table A-8B. (cont.)

Survey	Date	Station	Depth (m)	Duplicate	Sample Number	1,2-Dichloropropane (µg/L)	2-Butanone (µg/L)	2-Hexanone (µg/L)	4-Methyl-2-pentanone (µg/L)	Acetone (µg/L)	Benzene (µg/L)
O-LOADNG	8/29/1992	W12	1.0		L10003						1 *U*
O-LOADNG	9/27/1992	W12	1.0		L10067						1 *U*
O-LOADNG	10/18/1992	W12	1.0		L10123						1 *U*
O-LOADNG	11/24/1992	W12	1.0		L10182						1 *U*
O-LOADNG	12/18/1992	W12	1.0		L10218						1 *U*
O-WCPROC	5/27/1992	W1	0.0		W00040						1 *U*
O-WCPROC	6/23/1992	W1	0.0		W00072						1 *U*
O-WCPROC	7/21/1992	W1	0.0		W00127						1 *U*
O-WCPROC	8/25/1992	W1	0.0		W00177						1 *U*
O-WCPROC	9/22/1992	W1	0.0		W00274						1 *U*
O-WCPROC	4/13/1992	W1	3.0		W00014						1 *U*
O-WCPROC	5/27/1992	W1	3.0		W00041						1 *U*
O-WCPROC	6/23/1992	W1	3.0		W00073						1 *U*
O-WCPROC	7/21/1992	W1	3.0		W00128						1 *U*
O-WCPROC	8/25/1992	W1	3.0		W00178						1 *U*
O-WCPROC	9/22/1992	W1	3.0		W00275						1 *U*
O-WCPROC	7/22/1992	W117	0.0		W00150						1 *UJ*
O-WCPROC	7/22/1992	W117	3.0		W00151						1 *UJ*
O-WCPROC	7/22/1992	W119	0.0		W00154						1 *UJ*
O-WCPROC	7/22/1992	W120	0.0		W00152						1 *UJ*
O-WCPROC	5/28/1992	W1R	0.0		W00047						1 *U*
O-WCPROC	6/24/1992	W1R	0.0		W00081						1 *U*
O-WCPROC	7/22/1992	W1R	0.0		W00136						1 *U*
O-WCPROC	5/28/1992	W1R	3.0		W00048						1 *U*
O-WCPROC	6/24/1992	W1R	3.0		W00082						1 *U*
O-WCPROC	7/22/1992	W1R	3.0		W00137						1 *UJ*
O-WCPROC	5/26/1992	W2	0.0		WYY024						1 *UJ*
O-WCPROC	6/23/1992	W2	0.0		W00065						1 *U*
O-WCPROC	7/21/1992	W2	0.0		W00120						1 *UJ*
O-WCPROC	8/24/1992	W2	0.0		W00170						1 *U*
O-WCPROC	9/21/1992	W2	0.0		W00217						1 *U*
O-WCPROC	4/8/1992	W2	3.0		W00001						1 *U*
O-WCPROC	5/26/1992	W2	3.0		W00025						1 *UJ*
O-WCPROC	6/23/1992	W2	3.0		W00066						1 *U*
O-WCPROC	7/21/1992	W2	3.0		W00121						1 *U*

Table A-8B. (cont.)

Survey	Date	Station	Depth (m)	Duplicate	Sample Number	Bromo-dichloromethane (µg/L)	Bromoform (µg/L)	Bromomethane (µg/L)	Carbon disulfide (µg/L)	Carbon tetrachloride (µg/L)	Chlorobenzene (µg/L)
O-LOADNG	8/29/1992	W12	1.0		L10003						1 *U*
O-LOADNG	9/27/1992	W12	1.0		L10067						1 *U*
O-LOADNG	10/18/1992	W12	1.0		L10123						1 *U*
O-LOADNG	11/24/1992	W12	1.0		L10182						1 *U*
O-LOADNG	12/18/1992	W12	1.0		L10218						1 *U*
O-WCPROC	5/27/1992	W1	0.0		W00040						1 *U*
O-WCPROC	6/23/1992	W1	0.0		W00072						1 *U*
O-WCPROC	7/21/1992	W1	0.0		W00127						1 *U*
O-WCPROC	8/25/1992	W1	0.0		W00177						1 *U*
O-WCPROC	9/22/1992	W1	0.0		W00274						1 *U*
O-WCPROC	4/13/1992	W1	3.0		W00014						1 *U*
O-WCPROC	5/27/1992	W1	3.0		W00041						1 *U*
O-WCPROC	6/23/1992	W1	3.0		W00073						1 *U*
O-WCPROC	7/21/1992	W1	3.0		W00128						1 *U*
O-WCPROC	8/25/1992	W1	3.0		W00178						1 *U*
O-WCPROC	9/22/1992	W1	3.0		W00275						1 *U*
O-WCPROC	7/22/1992	W117	0.0		W00150						1 *UJ*
O-WCPROC	7/22/1992	W117	3.0		W00151						1 *UJ*
O-WCPROC	7/22/1992	W119	0.0		W00154						1 *UJ*
O-WCPROC	7/22/1992	W120	0.0		W00152						1 *UJ*
O-WCPROC	5/28/1992	W1R	0.0		W00047						1 *U*
O-WCPROC	6/24/1992	W1R	0.0		W00081						1 *UJ*
O-WCPROC	7/22/1992	W1R	0.0		W00136						1 *U*
O-WCPROC	5/28/1992	W1R	3.0		W00048						1 *U*
O-WCPROC	6/24/1992	W1R	3.0		W00082						1 *UJ*
O-WCPROC	7/22/1992	W1R	3.0		W00137						1 *UJ*
O-WCPROC	5/26/1992	W2	0.0		WYY024						1 *UJ*
O-WCPROC	6/23/1992	W2	0.0		W00065						1 *U*
O-WCPROC	7/21/1992	W2	0.0		W00120						1 *UJ*
O-WCPROC	8/24/1992	W2	0.0		W00170						1 *U*
O-WCPROC	9/21/1992	W2	0.0		W00217						1 *U*
O-WCPROC	4/8/1992	W2	3.0		W00001						1 *U*
O-WCPROC	5/26/1992	W2	3.0		W00025						1 *UJ*
O-WCPROC	6/23/1992	W2	3.0		W00066						1 *U*
O-WCPROC	7/21/1992	W2	3.0		W00121						1 *U*

Table A-8B. (cont.)

Survey	Date	Station	Depth (m)	Duplicate	Sample Number	Chloroethane (µg/L)	Chloroform (µg/L)	Chloromethane (µg/L)	cis-1,2-Dichloroethene (µg/L)	trans-1,2-Dichloroethene (µg/L)	cis-1,3-Dichloropropene (µg/L)
O-LOADNG	8/29/1992	W12	1.0		L10003						
O-LOADNG	9/27/1992	W12	1.0		L10067						
O-LOADNG	10/18/1992	W12	1.0		L10123						
O-LOADNG	11/24/1992	W12	1.0		L10182						
O-LOADNG	12/18/1992	W12	1.0		L10218						
O-WCPROC	5/27/1992	W1	0.0		W00040						
O-WCPROC	6/23/1992	W1	0.0		W00072						
O-WCPROC	7/21/1992	W1	0.0		W00127						
O-WCPROC	8/25/1992	W1	0.0		W00177						
O-WCPROC	9/22/1992	W1	0.0		W00274						
O-WCPROC	4/13/1992	W1	3.0		W00014						
O-WCPROC	5/27/1992	W1	3.0		W00041						
O-WCPROC	6/23/1992	W1	3.0		W00073						
O-WCPROC	7/21/1992	W1	3.0		W00128						
O-WCPROC	8/25/1992	W1	3.0		W00178						
O-WCPROC	9/22/1992	W1	3.0		W00275						
O-WCPROC	7/22/1992	W117	0.0		W00150						
O-WCPROC	7/22/1992	W117	3.0		W00151						
O-WCPROC	7/22/1992	W119	0.0		W00154						
O-WCPROC	7/22/1992	W120	0.0		W00152						
O-WCPROC	5/28/1992	W1R	0.0		W00047						
O-WCPROC	6/24/1992	W1R	0.0		W00081						
O-WCPROC	7/22/1992	W1R	0.0		W00136						
O-WCPROC	5/28/1992	W1R	3.0		W00048						
O-WCPROC	6/24/1992	W1R	3.0		W00082						
O-WCPROC	7/22/1992	W1R	3.0		W00137						
O-WCPROC	5/26/1992	W2	0.0		WYY024						
O-WCPROC	6/23/1992	W2	0.0		W00065						
O-WCPROC	7/21/1992	W2	0.0		W00120						
O-WCPROC	8/24/1992	W2	0.0		W00170						
O-WCPROC	9/21/1992	W2	0.0		W00217						
O-WCPROC	4/8/1992	W2	3.0		W00001						
O-WCPROC	5/26/1992	W2	3.0		W00025						
O-WCPROC	6/23/1992	W2	3.0		W00066						
O-WCPROC	7/21/1992	W2	3.0		W00121						

Table A-8B. (cont.)

Survey	Date	Station	Depth (m)	Duplicate	Sample Number	trans-1,3-Dichloropropene (µg/L)	Dibromo-chloromethane (µg/L)	Ethylbenzene (µg/L)	Hexachlorobenzene (µg/L)	Methylene chloride (µg/L)	Styrene (µg/L)
O-LOADNG	8/29/1992	W12	1.0		L10003			1 *U*	0.05 *UJ*		
O-LOADNG	9/27/1992	W12	1.0		L10067			1 *U*	0.05 *UJ*		
O-LOADNG	10/18/1992	W12	1.0		L10123			1 *U*	0.05 *UJ*		
O-LOADNG	11/24/1992	W12	1.0		L10182			1 *U*	0.05 *UJ*		
O-LOADNG	12/18/1992	W12	1.0		L10218			1 *U*	0.05 *UJ*		
O-WCPROC	5/27/1992	W1	0.0		W00040			1 *U*			
O-WCPROC	6/23/1992	W1	0.0		W00072			1 *U*			
O-WCPROC	7/21/1992	W1	0.0		W00127			1 *U*			
O-WCPROC	8/25/1992	W1	0.0		W00177			1 *U*			
O-WCPROC	9/22/1992	W1	0.0		W00274			1 *U*			
O-WCPROC	4/13/1992	W1	3.0		W00014			1 *U*			
O-WCPROC	5/27/1992	W1	3.0		W00041			1 *U*			
O-WCPROC	6/23/1992	W1	3.0		W00073			1 *U*			
O-WCPROC	7/21/1992	W1	3.0		W00128			1 *U*			
O-WCPROC	8/25/1992	W1	3.0		W00178			1 *U*			
O-WCPROC	9/22/1992	W1	3.0		W00275			1 *U*			
O-WCPROC	7/22/1992	W117	0.0		W00150			1 *UJ*			
O-WCPROC	7/22/1992	W117	3.0		W00151			1 *UJ*			
O-WCPROC	7/22/1992	W119	0.0		W00154			1 *UJ*			
O-WCPROC	7/22/1992	W120	0.0		W00152			1 *UJ*			
O-WCPROC	5/28/1992	W1R	0.0		W00047			1 *U*			
O-WCPROC	6/24/1992	W1R	0.0		W00081			1 *U*			
O-WCPROC	7/22/1992	W1R	0.0		W00136			1 *U*			
O-WCPROC	5/28/1992	W1R	3.0		W00048			1 *U*			
O-WCPROC	6/24/1992	W1R	3.0		W00082			1 *U*			
O-WCPROC	7/22/1992	W1R	3.0		W00137			1 *UJ*			
O-WCPROC	5/26/1992	W2	0.0		WYY024			1 *UJ*			
O-WCPROC	6/23/1992	W2	0.0		W00065			1 *U*			
O-WCPROC	7/21/1992	W2	0.0		W00120			1 *UJ*			
O-WCPROC	8/24/1992	W2	0.0		W00170			1 *U*			
O-WCPROC	9/21/1992	W2	0.0		W00217			1 *U*			
O-WCPROC	4/8/1992	W2	3.0		W00001			1 *U*			
O-WCPROC	5/26/1992	W2	3.0		W00025			1 *UJ*			
O-WCPROC	6/23/1992	W2	3.0		W00066			1 *U*			
O-WCPROC	7/21/1992	W2	3.0		W00121			1 *U*			

Table A-8B. (cont.)

Survey	Date	Station	Depth (m)	Duplicate	Sample Number	Tetrachloroethene (µg/L)	Toluene (µg/L)	Trichloroethene (µg/L)	Vinyl chloride (µg/L)	Xylene isomers (Total) (µg/L)
O-LOADNG	8/29/1992	W12	1.0		L10003		1 *UJ*			1 *U*
O-LOADNG	9/27/1992	W12	1.0		L10067		1 *U*			1 *U*
O-LOADNG	10/18/1992	W12	1.0		L10123		1 *U*			1 *U*
O-LOADNG	11/24/1992	W12	1.0		L10182		1 *U*			1 *U*
O-LOADNG	12/18/1992	W12	1.0		L10218		1 *U*			1 *U*
O-WCPROC	5/27/1992	W1	0.0		W00040		1 *U*			1 *U*
O-WCPROC	6/23/1992	W1	0.0		W00072		1 *U*			1 *U*
O-WCPROC	7/21/1992	W1	0.0		W00127		1 *U*			1 *U*
O-WCPROC	8/25/1992	W1	0.0		W00177		1 *U*			1 *U*
O-WCPROC	9/22/1992	W1	0.0		W00274		1 *U*			1 *U*
O-WCPROC	4/13/1992	W1	3.0		W00014		1 *U*			1 *U*
O-WCPROC	5/27/1992	W1	3.0		W00041		1 *U*			1 *U*
O-WCPROC	6/23/1992	W1	3.0		W00073		1 *U*			1 *U*
O-WCPROC	7/21/1992	W1	3.0		W00128		1 *U*			1 *U*
O-WCPROC	8/25/1992	W1	3.0		W00178		1 *U*			1 *U*
O-WCPROC	9/22/1992	W1	3.0		W00275		1 *U*			1 *U*
O-WCPROC	7/22/1992	W117	0.0		W00150		1 *UJ*			1 *UJ*
O-WCPROC	7/22/1992	W117	3.0		W00151		1 *UJ*			1 *UJ*
O-WCPROC	7/22/1992	W119	0.0		W00154		1 *UJ*			1 *UJ*
O-WCPROC	7/22/1992	W120	0.0		W00152		1 *UJ*			1 *UJ*
O-WCPROC	5/28/1992	W1R	0.0		W00047		1 *U*			1 *U*
O-WCPROC	6/24/1992	W1R	0.0		W00081		1 *U*			1 *U*
O-WCPROC	7/22/1992	W1R	0.0		W00136		1 *U*			1 *U*
O-WCPROC	5/28/1992	W1R	3.0		W00048		1 *U*			1 *U*
O-WCPROC	6/24/1992	W1R	3.0		W00082		1 *U*			1 *U*
O-WCPROC	7/22/1992	W1R	3.0		W00137		1 *UJ*			1 *UJ*
O-WCPROC	5/26/1992	W2	0.0		WYY024		1 *UJ*			1 *UJ*
O-WCPROC	6/23/1992	W2	0.0		W00065		1 *U*			1 *U*
O-WCPROC	7/21/1992	W2	0.0		W00120		1 *UJ*			1 *UJ*
O-WCPROC	8/24/1992	W2	0.0		W00170		1 *U*			1 *U*
O-WCPROC	9/21/1992	W2	0.0		W00217		1 *U*			1 *U*
O-WCPROC	4/8/1992	W2	3.0		W00001		1 *U*			1 *U*
O-WCPROC	5/26/1992	W2	3.0		W00025		1 *UJ*			1 *UJ*
O-WCPROC	6/23/1992	W2	3.0		W00066		1 *U*			1 *U*
O-WCPROC	7/21/1992	W2	3.0		W00121		1 *U*			1 *U*

Table A-8B. (cont.)

Survey	Date	Station	Depth (m)	Duplicate	Sample Number	1,1,1-Trichloroethane (µg/L)	Tetrachloroethane (µg/L)	1,1,2-Trichloroethane (µg/L)	1,1-Dichloroethane (µg/L)	1,1-Dichloroethene (µg/L)	1,2,3-Trichlorobenzene (µg/L)
O-WCPROC	8/24/1992	W2	3.0		W00171						1 *U*
O-WCPROC	9/21/1992	W2	3.0		W00218						1 *U*
O-WCSUP	9/27/1999	W1	0.0		LW0001	0.5 *U*	0.5 *U*	0.5 *U*	0.5 *U*	0.5 *U*	
O-WCSUP	9/27/1999	W2	0.0		LW0008	0.5 *U*	0.5 *U*	0.5 *U*	0.5 *U*	0.5 *U*	
O-WCSUP	9/28/1999	W50	1.0		LW0022	0.5 *U*	0.5 *U*	0.5 *U*	0.5 *U*	0.5 *U*	
O-WCSUP	9/28/1999	W51	0.0		LW0021	0.5 *UJ*	0.5 *UJ*	0.5 *UJ*	0.5 *UJ*	0.5 *UJ*	
O-WCSUP	9/28/1999	W52	1.0		LW0020	0.5 *U*	0.5 *UJ*	0.5 *U*	0.5 *U*	0.5 *U*	
O-WCSUP	9/28/1999	W53	1.0	D1	LW0019	0.5 *U*	0.5 *U*	0.5 *U*	0.5 *U*	0.5 *U*	
O-WCSUP	9/28/1999	W53	1.0	D2	LW0026	0.5 *U*	0.5 *UJ*	0.5 *U*	0.5 *U*	0.5 *U*	
O-WCSUP	9/28/1999	W54	0.0		LW0017	0.5 *U*	0.5 *U*	0.5 *U*	0.5 *U*	0.5 *U*	
O-WCSUP	9/28/1999	W55	0.0		LW0023	0.5 *U*	0.5 *U*	0.5 *U*	0.5 *U*	0.5 *U*	
O-WCSUP	9/28/1999	W56	1.0		LW0018	0.5 *U*	0.5 *U*	0.5 *U*	0.5 *U*	0.5 *U*	
O-WCSUP	9/28/1999	W57	0.0		LW0025	0.5 *U*	0.5 *UJ*	0.5 *U*	0.5 *U*	0.5 *U*	
O-WCSUP	9/28/1999	W58	1.0		LW0024	0.5 *U*	0.5 *U*	0.5 *U*	0.5 *U*	0.5 *U*	

Table A-8B. (cont.)

Survey	Date	Station	Depth (m)	Duplicate	Sample Number	1,2,4-Trichloro-benzene (µg/L)	1,3,5-Trichloro-benzene (µg/L)	1,2-Dichlorobenzene (µg/L)	1,3-Dichlorobenzene (µg/L)	1,4-Dichlorobenzene (µg/L)	1,2-Dichloroethane (µg/L)
O-WCPROC	8/24/1992	W2	3.0		W00171	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCPROC	9/21/1992	W2	3.0		W00218	1 *U*	1 *U*	1 *U*	1 *U*	1 *U*	
O-WCSUP	9/27/1999	W1	0.0		LW0001			0.5 *U*		0.18 *J*	0.5 *U*
O-WCSUP	9/27/1999	W2	0.0		LW0008			0.5 *U*		0.15 *J*	0.5 *U*
O-WCSUP	9/28/1999	W50	1.0		LW0022			3.2		3.4	0.5 *U*
O-WCSUP	9/28/1999	W51	0.0		LW0021			0.11 *J*		0.31 *J*	0.5 *UJ*
O-WCSUP	9/28/1999	W52	1.0		LW0020			0.5 *UJ*		0.16 *J*	0.5 *U*
O-WCSUP	9/28/1999	W53	1.0	D1	LW0019			0.5 *U*		0.18 *J*	0.5 *U*
O-WCSUP	9/28/1999	W53	1.0	D2	LW0026			0.5 *UJ*		0.5 *U*	0.5 *U*
O-WCSUP	9/28/1999	W54	0.0		LW0017			0.5 *U*		0.16 *J*	0.5 *U*
O-WCSUP	9/28/1999	W55	0.0		LW0023			0.17 *J*		0.53	0.5 *U*
O-WCSUP	9/28/1999	W56	1.0		LW0018			0.5 *U*		0.14 *J*	0.5 *U*
O-WCSUP	9/28/1999	W57	0.0		LW0025			0.5 *UJ*		0.5 *U*	0.5 *U*
O-WCSUP	9/28/1999	W58	1.0		LW0024			0.5 *U*		0.19 *J*	0.5 *U*

Table A-8B. (cont.)

Survey	Date	Station	Depth (m)	Duplicate	Sample Number	1,2-Dichloropropane (µg/L)	2-Butanone (µg/L)	2-Hexanone (µg/L)	4-Methyl-2-pentanone (µg/L)	Acetone (µg/L)	Benzene (µg/L)
O-WCPROC	8/24/1992	W2	3.0		W00171						1 *U*
O-WCPROC	9/21/1992	W2	3.0		W00218						1 *U*
O-WCSUP	9/27/1999	W1	0.0		LW0001	0.5 *U*	10 *UJ*	5 *U*	5 *U*	*R*	0.5 *U*
O-WCSUP	9/27/1999	W2	0.0		LW0008	0.5 *U*	10 *UJ*	5 *U*	5 *U*	*R*	0.5 *U*
O-WCSUP	9/28/1999	W50	1.0		LW0022	0.5 *U*	10 *UJ*	5 *U*	5 *U*	*R*	6.3
O-WCSUP	9/28/1999	W51	0.0		LW0021	0.5 *UJ*	10 *UJ*	5 *UJ*	5 *UJ*	*R*	0.5 *UJ*
O-WCSUP	9/28/1999	W52	1.0		LW0020	0.5 *U*	10 *U*	5 *U*	5 *U*	*R*	0.5 *U*
O-WCSUP	9/28/1999	W53	1.0	D1	LW0019	0.5 *U*	10 *UJ*	5 *U*	5 *U*	*R*	0.5 *U*
O-WCSUP	9/28/1999	W53	1.0	D2	LW0026	0.5 *U*	10 *U*	5 *U*	5 *U*	*R*	0.5 *U*
O-WCSUP	9/28/1999	W54	0.0		LW0017	0.5 *U*	10 *UJ*	5 *U*	5 *U*	*R*	0.5 *U*
O-WCSUP	9/28/1999	W55	0.0		LW0023	0.5 *U*	10 *UJ*	5 *U*	5 *U*	*R*	0.11 *J*
O-WCSUP	9/28/1999	W56	1.0		LW0018	0.5 *U*	10 *UJ*	5 *U*	5 *U*	*R*	0.5 *U*
O-WCSUP	9/28/1999	W57	0.0		LW0025	0.5 *U*	10 *U*	5 *U*	5 *U*	*R*	0.5 *U*
O-WCSUP	9/28/1999	W58	1.0		LW0024	0.5 *U*	10 *UJ*	5 *U*	5 *U*	*R*	0.5 *U*

Table A-8B. (cont.)

Survey	Date	Station	Depth (m)	Duplicate	Sample Number	Bromo-dichloromethane (µg/L)	Bromoform (µg/L)	Bromomethane (µg/L)	Carbon disulfide (µg/L)	Carbon tetrachloride (µg/L)	Chlorobenzene (µg/L)
O-WCPROC	8/24/1992	W2	3.0		W00171						1 *U*
O-WCPROC	9/21/1992	W2	3.0		W00218						1 *U*
O-WCSUP	9/27/1999	W1	0.0		LW0001	0.12 *J*	0.5 *U*	1 *U*	0.5 *U*	0.5 *U*	0.5 *U*
O-WCSUP	9/27/1999	W2	0.0		LW0008	0.5 *U*	0.5 *U*	1 *U*	0.5 *U*	0.5 *U*	0.5 *U*
O-WCSUP	9/28/1999	W50	1.0		LW0022	0.24 *J*	0.5 *U*	1 *U*	0.5 *U*	0.5 *U*	12
O-WCSUP	9/28/1999	W51	0.0		LW0021	0.22 *J*	0.5 *UJ*	1 *UJ*	0.5 *UJ*	0.5 *UJ*	0.5 *UJ*
O-WCSUP	9/28/1999	W52	1.0		LW0020	0.5 *U*	0.5 *U*	1 *U*	0.5 *U*	0.5 *U*	0.5 *U*
O-WCSUP	9/28/1999	W53	1.0	D1	LW0019	0.5 *U*	0.5 *U*	1 *U*	0.5 *U*	0.5 *U*	0.5 *U*
O-WCSUP	9/28/1999	W53	1.0	D2	LW0026	0.5 *U*	0.5 *U*	1 *U*	0.5 *U*	0.5 *U*	0.5 *U*
O-WCSUP	9/28/1999	W54	0.0		LW0017	0.5 *U*	0.5 *U*	1 *U*	0.5 *U*	0.5 *U*	0.5 *U*
O-WCSUP	9/28/1999	W55	0.0		LW0023	0.17 *J*	0.5 *U*	1 *U*	0.5 *U*	0.5 *U*	0.51
O-WCSUP	9/28/1999	W56	1.0		LW0018	0.5 *U*	0.5 *U*	1 *U*	0.5 *U*	0.5 *U*	0.5 *U*
O-WCSUP	9/28/1999	W57	0.0		LW0025	0.5 *U*	0.5 *U*	1 *U*	0.5 *U*	0.5 *U*	0.5 *U*
O-WCSUP	9/28/1999	W58	1.0		LW0024	0.5 *U*	0.5 *U*	1 *U*	0.5 *U*	0.5 *U*	0.5 *U*

Table A-8B. (cont.)

Survey	Date	Station	Depth (m)	Duplicate	Sample Number	Chloroethane (µg/L)	Chloroform (µg/L)	Chloromethane (µg/L)	cis-1,2-Dichloroethene (µg/L)	trans-1,2-Dichloroethene (µg/L)	cis-1,3-Dichloropropene (µg/L)
O-WCPROC	8/24/1992	W2	3.0		W00171						
O-WCPROC	9/21/1992	W2	3.0		W00218						
O-WCSUP	9/27/1999	W1	0.0		LW0001	1 *U*	0.45 *J*	1 *U*	0.5 *U*	0.5 *U*	0.5 *U*
O-WCSUP	9/27/1999	W2	0.0		LW0008	1 *U*	0.2 *J*	1 *U*	0.5 *U*	0.5 *U*	0.5 *U*
O-WCSUP	9/28/1999	W50	1.0		LW0022	1 *U*	0.84	1 *U*	0.5 *U*	0.5 *U*	0.5 *U*
O-WCSUP	9/28/1999	W51	0.0		LW0021	1 *UJ*	0.85 *J*	1 *UJ*	0.5 *UJ*	0.5 *UJ*	0.5 *UJ*
O-WCSUP	9/28/1999	W52	1.0		LW0020	1 *U*	0.22 *J*	1 *U*	0.5 *U*	0.5 *U*	0.5 *U*
O-WCSUP	9/28/1999	W53	1.0	D1	LW0019	1 *U*	0.16 *J*	1 *U*	0.5 *U*	0.5 *U*	0.5 *U*
O-WCSUP	9/28/1999	W53	1.0	D2	LW0026	1 *U*	0.16 *J*	1 *U*	0.5 *U*	0.5 *U*	0.5 *U*
O-WCSUP	9/28/1999	W54	0.0		LW0017	1 *U*	0.15 *J*	1 *U*	0.5 *U*	0.5 *U*	0.5 *U*
O-WCSUP	9/28/1999	W55	0.0		LW0023	1 *U*	0.59	1 *U*	0.5 *U*	0.5 *U*	0.5 *U*
O-WCSUP	9/28/1999	W56	1.0		LW0018	1 *U*	0.13 *J*	1 *U*	0.5 *U*	0.5 *U*	0.5 *U*
O-WCSUP	9/28/1999	W57	0.0		LW0025	1 *U*	0.19 *J*	1 *U*	0.5 *U*	0.5 *U*	0.5 *U*
O-WCSUP	9/28/1999	W58	1.0		LW0024	1 *U*	0.36 *J*	1 *U*	0.5 *U*	0.5 *U*	0.5 *U*

Table A-8B. (cont.)

Survey	Date	Station	Depth (m)	Duplicate	Sample Number	trans-1,3-Dichloropropene (µg/L)	Dibromo-chloromethane (µg/L)	Ethylbenzene (µg/L)	Hexachlorobenzene (µg/L)	Methylene chloride (µg/L)	Styrene (µg/L)
O-WCPROC	8/24/1992	W2	3.0		W00171			1 *U*			
O-WCPROC	9/21/1992	W2	3.0		W00218			1 *U*			
O-WCSUP	9/27/1999	W1	0.0		LW0001	0.5 *U*	0.5 *U*	0.5 *U*		0.21 *UJ*	0.5 *U*
O-WCSUP	9/27/1999	W2	0.0		LW0008	0.5 *U*	0.5 *U*	0.5 *U*		0.14 *UJ*	0.5 *U*
O-WCSUP	9/28/1999	W50	1.0		LW0022	0.5 *U*	0.5 *U*	0.5 *U*		0.34 *UJ*	0.5 *U*
O-WCSUP	9/28/1999	W51	0.0		LW0021	0.5 *UJ*	0.5 *UJ*	0.5 *UJ*		0.17 *UJ*	0.5 *UJ*
O-WCSUP	9/28/1999	W52	1.0		LW0020	0.5 *U*	0.5 *U*	0.5 *U*		0.16 *UJ*	0.5 *U*
O-WCSUP	9/28/1999	W53	1.0	D1	LW0019	0.5 *U*	0.5 *U*	0.5 *U*		0.17 *UJ*	0.5 *U*
O-WCSUP	9/28/1999	W53	1.0	D2	LW0026	0.5 *U*	0.5 *U*	0.5 *U*		0.15 *UJ*	0.5 *U*
O-WCSUP	9/28/1999	W54	0.0		LW0017	0.5 *U*	0.5 *U*	0.5 *U*		0.44 *UJ*	0.5 *U*
O-WCSUP	9/28/1999	W55	0.0		LW0023	0.5 *U*	0.5 *U*	0.5 *U*		0.19 *UJ*	0.5 *U*
O-WCSUP	9/28/1999	W56	1.0		LW0018	0.5 *U*	0.5 *U*	0.5 *U*		0.33 *UJ*	0.5 *U*
O-WCSUP	9/28/1999	W57	0.0		LW0025	0.5 *U*	0.5 *U*	0.5 *U*		0.13 *UJ*	0.5 *U*
O-WCSUP	9/28/1999	W58	1.0		LW0024	0.5 *U*	0.5 *U*	0.5 *U*		0.19 *UJ*	0.5 *U*

Table A-8B. (cont.)

Survey	Date	Station	Depth (m)	Duplicate	Sample Number	Tetrachloroethene (µg/L)	Toluene (µg/L)	Trichloroethene (µg/L)	Vinyl chloride (µg/L)	Xylene isomers (Total) (µg/L)
O-WCPROC	8/24/1992	W2	3.0		W00171		1 *U*			1 *U*
O-WCPROC	9/21/1992	W2	3.0		W00218		1 *U*			1 *U*
O-WCSUP	9/27/1999	W1	0.0		LW0001	0.5 *U*	0.5 *U*	0.5 *U*	1 *U*	0.5 *U*
O-WCSUP	9/27/1999	W2	0.0		LW0008	0.5 *U*	0.5 *U*	0.5 *U*	1 *U*	0.5 *U*
O-WCSUP	9/28/1999	W50	1.0		LW0022	0.5 *U*	0.16 *J*	0.5 *U*	1 *U*	0.5 *U*
O-WCSUP	9/28/1999	W51	0.0		LW0021	0.5 *UJ*	0.5 *UJ*	0.5 *UJ*	1 *UJ*	0.5 *UJ*
O-WCSUP	9/28/1999	W52	1.0		LW0020	0.5 *U*	0.5 *U*	0.5 *U*	1 *U*	0.5 *U*
O-WCSUP	9/28/1999	W53	1.0	D1	LW0019	0.5 *U*	0.5 *U*	0.5 *U*	1 *U*	0.5 *U*
O-WCSUP	9/28/1999	W53	1.0	D2	LW0026	0.5 *U*	0.5 *U*	0.5 *U*	1 *U*	0.5 *U*
O-WCSUP	9/28/1999	W54	0.0		LW0017	0.5 *U*	0.5 *U*	0.5 *U*	1 *U*	0.5 *U*
O-WCSUP	9/28/1999	W55	0.0		LW0023	0.5 *U*	0.5 *U*	0.5 *U*	1 *U*	0.33 *J*
O-WCSUP	9/28/1999	W56	1.0		LW0018	0.5 *U*	0.5 *U*	0.5 *U*	1 *U*	0.5 *U*
O-WCSUP	9/28/1999	W57	0.0		LW0025	0.5 *U*	0.5 *U*	0.5 *U*	1 *U*	0.5 *U*
O-WCSUP	9/28/1999	W58	1.0		LW0024	0.5 *U*	0.5 *U*	0.5 *U*	1 *U*	0.5 *U*

Notes: *J* - estimated
U - not detected at reported quantitation limit

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Table 8.28 RME	Calculation of Cancer Risks Reasonable Maximum Exposure, Onondaga Lake – Surface Water, Recreational, Adult
Table 8.29.RME	Calculation of Cancer Risks Reasonable Maximum Exposure, Onondaga Lake – Surface Water, Recreational, Young Children (0-6)

Table 8.30.RME	Calculation of Cancer Risks Reasonable Maximum Exposure, Onondaga Lake – Surface Water, Recreational, Older Children (7-18)
Table 8.31.RME	Calculation of Cancer Risks Reasonable Maximum Exposure, Onondaga Lake – Surface Water, Construction Worker, Adult
Table 8.1.CT	Calculation of Cancer Risks Central Tendency, Onondaga Lake – Fish Fillet Tissue from Onondaga Lake, Recreational, Adult
Table 8.2.CT	Calculation of Cancer Risks Central Tendency, Onondaga Lake – Fish Fillet Tissue from Onondaga Lake, Recreational, Young Child
Table 8.3.CT	Calculation of Cancer Risks Central Tendency, Onondaga Lake – Fish Fillet Tissue from Onondaga Lake, Recreational, Older Child
Table 8.4.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – North Basin Sediments, Recreational, Adults
Table 8.5.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – North Basin Sediments, Recreational, Young Children (0-6)
Table 8.6.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – North Lake Sediments, Recreational, Older Children (7-18)
Table 8.7.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – North Lake Sediments, Construction Worker, Adult
Table 8.8.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – South Basin Sediments, Recreational, Adults
Table 8.9.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – South Basin Sediments, Recreational, Young Children (0-6)
Table 8.10.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – South Basin Sediments, Recreational, Older Children (7-18)
Table 8.11.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – South Basin Sediments, Construction Worker, Adult
Table 8.12.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – Wetland SYW-6 (North Basin), Wetland Soil, Recreational, Adult
Table 8.13.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – Wetland SYW-6 (North Basin), Wetland Soil, Recreational, Older Children (7-18)
Table 8.14.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – Wetland SYW-6 (North Basin), Wetland Soil, Construction Worker, Adult
Table 8.15.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – Wetland SYW-10 (North Basin), Wetland Soil, Recreational, Adult
Table 8.16.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – Wetland SYW-10 (North Basin), Wetland Soil, Recreational, Older Child (7-18)
Table 8.17.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – Wetland SYW-10 (North Basin), Wetland Soil, Recreational, Construction Worker
Table 8.18.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – Wetland SYW-12 (North Basin), Wetland Soil, Recreational, Adult
Table 8.19.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – Wetland SYW-12 (North Basin), Wetland Soil, Recreational, Older Children (7-18)
Table 8.20.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – Wetland SYW-12 (South Basin), Wetland Soil, Construction Worker, Adult

Table 8.21.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – Wetland SYW-19 (South Basin), Wetland Soil, Recreational, Adult
Table 8.22.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – Wetland SYW-19 (South Basin), Wetland Soil, Recreational, Older Children (7-18)
Table 8.23.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – Wetland SYW-19 (South Basin), Wetland Soil, Construction Worker, Adult
Table 8.24.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – Dredge Spoil Soils (0-3.5 ft), Surface Soil, Recreational, Adult
Table 8.25.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – Dredge Spoil Soils (0-3.5 ft), Surface Soil, Recreational, Older Children (7-18)
Table 8.26.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – Dredge Spoil Soils (0-3.5 ft), Surface Soil, Construction Worker, Adult
Table 8.27.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – Dredge Spoil Soils (0-11.7 ft), Surface Soil, Construction Worker, Adult
Table 8.28.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – Onondaga Lake, Surface Water, Recreational, Adult
Table 8.29.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – Onondaga Lake, Surface Water, Recreational, Young Children (0-6)
Table 8.30.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – Onondaga Lake, Surface Water, Recreational, Older Children (7-18)
Table 8.31.CT	Calculation of Cancer Hazards Central Tendency, Onondaga Lake – Onondaga Lake, Surface Water, Construction Worker, Adult
Table 8.32	Footnotes and Acronyms/Abbreviations for Tables 8.1 through 8.31

RAGS Table 9:

Table 9.1.RME	Summary of Receptor Risks and Hazards for COPCs, Adult: Reasonable Maximum Exposure Recreational, Onondaga Lake
Table 9.2.RME	Summary of Receptor Risks and Hazards for COPCs, Young Child: Reasonable Maximum Exposure Recreational, Onondaga Lake
Table 9.3.RME	Summary of Receptor Risks and Hazards for COPCs, Older Child: Reasonable Maximum Exposure Recreational, Onondaga Lake
Table 9.4.RME	Summary of Receptor Risks and Hazards for COPCs, Construction Worker: Reasonable Maximum Exposure, Onondaga Lake
Table 9.1.CT	Summary of Receptor Risks and Hazards for COPCs, Adult: Central Tendency Recreational, Onondaga Lake
Table 9.2.CT	Summary of Receptor Risks and Hazards for COPCs, Young Child: Central Tendency Recreational, Onondaga Lake
Table 9.3.CT	Summary of Receptor Risks and Hazards for COPCs, Older Child: Central Tendency Recreational, Onondaga Lake
Table 9.4.CT	Summary of Receptor Risks and Hazards for COPCs, Construction Worker: Central Tendency, Onondaga Lake

RAGS Table 10:

Table 10.1.RME	Summary of Receptor Risks and Hazards for COPCs, Adult: Reasonable Maximum Exposure Recreational, Onondaga Lake
Table 10.2.RME	Summary of Receptor Risks and Hazards for COPCs, Young Child: Reasonable Maximum Exposure Recreational, Onondaga Lake
Table 10.3.RME	Summary of Receptor Risks and Hazards for COPCs, Older Child: Reasonable Maximum Exposure Recreational, Onondaga Lake
Table 10.4.RME	Summary of Receptor Risks and Hazards for COPCs, Construction Worker: Reasonable Maximum Exposure, Onondaga Lake
Table 10.1.CT	Summary of Receptor Risks and Hazards for COPCs, Adult: Central Tendency Recreational, Onondaga Lake
Table 10.2.CT	Summary of Receptor Risks and Hazards for COPCs, Young Child: Central Tendency Recreational, Onondaga Lake
Table 10.3.CT	Summary of Receptor Risks and Hazards for COPCs, Older Child: Central Tendency Recreational, Onondaga Lake
Table 10.4.CT	Summary of Receptor Risks and Hazards for COPCs, Construction Worker: Central Tendency, Onondaga Lake

Table 1.1
Selection of Exposure Pathways
Onondaga Lake Human Health Risk Assessment

Scenario Time Frame	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis[a]	Rationale for Selection or Exclusion of Exposure Pathway
Current/ Future	Soil	Soil	Soil	Resident	Adult	Dermal	On-Site	None	Residential populations not evaluated in the RA due to lack of current residential use and unlikely future development for residential use.
						Ingestion	On-Site	None	
						Inhalation	On-Site	None	No structures currently exist and none are likely to be built in the future; concentrations of VOCs are low; PSA indicates inhalation unlikely. See text (Section 4.2.5) for discussion.
					Child	Dermal	On-Site	None	Residential populations not evaluated in the RA due to lack of current residential use and unlikely future development for residential use.
						Ingestion	On-Site	None	
						Inhalation	On-Site	None	No structures currently exist and none are likely to be built in the future; concentrations of VOCs are low; PSA indicates inhalation unlikely. See text (Section 4.2.5) for discussion.
	Sediment	Sediment	Sediment	Resident	Adult	Dermal	On-Site	None	Residential populations not evaluated in the RA due to lack of current residential use and unlikely future development for residential use.
						Ingestion	On-Site	None	
						Inhalation	On-Site	None	No structures currently exist and none are likely to be built in the future; concentrations of VOCs are low; PSA indicates inhalation unlikely. See text (Section 4.2.5) for discussion.
					Child	Dermal	On-Site	None	Residential populations not evaluated in the RA due to lack of current residential use and unlikely future development for residential use.
						Ingestion	On-Site	None	
						Inhalation	On-Site	None	No structures currently exist and none are likely to be built in the future; concentrations of VOCs are low; PSA indicates inhalation unlikely. See text (Section 4.2.5) for discussion.
	Water	Potable water supply	Tap water	Resident	Adult	Dermal	On-Site	None	Residential populations not evaluated in the RA due to lack of current residential use and unlikely future development for residential use.
						Ingestion	On-Site	None	Groundwater and Onondaga Lake water not used for potable water supply.
						Inhalation	On-Site	None	No structures currently exist and none are likely to be built in the future; concentrations of VOCs are low; PSA indicates inhalation unlikely. See text (Section 4.2.5) for discussion.
					Child	Dermal	On-Site	None	Residential populations not evaluated in the RA due to lack of current residential use and unlikely future development for residential use.
						Ingestion	On-Site	None	Groundwater and Onondaga Lake water not used for potable water supply.
						Inhalation	On-Site	None	No structures currently exist and none are likely to be built in the future; concentrations of VOCs are low; PSA indicates inhalation unlikely. See text (Section 4.2.5) for discussion.
	Edible fish	Fish tissue	Fish tissue[b]	Anglers and fish consumers	Adult	Ingestion	On-Site	Quant	Consumption of contaminants in fish identified as a potential pathway and evaluated in the RA.
					Child	Ingestion	On-Site	Quant	Consumption of contaminants in fish identified as a potential pathway and evaluated in the RA.
				Other (subsistence fisher)	Adult	Ingestion	On-Site	Qual	Because a possible subsistence fishing community does exist near the lake, a subsistence fish diet will be addressed qualitatively.
					Child	Ingestion	On-Site	Qual	Because a possible subsistence fishing community does exist near the lake, a subsistence fish diet will be addressed qualitatively.
	Game (flesh)	Edible waterfowl and turtles	Edible flesh	Hunters	Adult and Child	Ingestion	On-Site	None	Although the hunting of waterfowl on Onondaga Lake is legally permitted under New York State law, the hunting season is significantly shorter than the fishing season. There is a state-wide advisory regarding consumption of waterfowl and snapping turtles. However, the absence of available data on contaminant concentrations in waterfowl and the paucity of data on ingestion rates of waterfowl precluded a quantitative analysis of this pathway. See text (Section 4.2.4) for discussion.

Table 1.1
Selection of Exposure Pathways
Onondaga Lake Human Health Risk Assessment

Scenario Time Frame	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis[a]	Rationale for Selection or Exclusion of Exposure Pathway
Current/ Future	Surface sediments	Surface and near-surface sediments on shoreline and in lake to depth of 2.0 meters	Sediments at 0- to 30-cm depths in lake and wetlands	Recreational Visitor	Adult	Dermal	On-Site	Quant	Dermal contact with, and incidental ingestion of, contaminants in lake and wetland (surface and near-surface) sediment by visitors and construction workers identified as a potential pathway and evaluated in the RA.
						Ingestion	On-Site	Quant	
					Child	Dermal	On-Site	Quant	Dermal contact with, and incidental ingestion of, contaminants in lake and wetland sediment (surface and near-surface) by visitors identified as a potential pathway and evaluated in the RA.
						Ingestion	On-Site	Quant	
				Construction Worker (future only)	Adult	Dermal	On-Site	Quant	Dermal contact with, and incidental ingestion of, contaminants in lake and wetland (surface and near-surface) sediment by visitors and construction workers identified as a potential pathway and evaluated in the RA.
						Ingestion	On-Site	Quant	
	Dredge-spoil soil	Surface soil	Soil at 0- to 3.5-ft depth	Recreational Visitor	Adult	Dermal	On-Site	Quant	Dermal contact with, and incidental ingestion of, contaminants in dredge-spoil soil by visitors identified as a potential pathway and evaluated in the RA.
						Ingestion	On-Site	Quant	
					Child	Dermal	On-Site	Quant	Dermal contact with, and incidental ingestion of, contaminants in dredge-spoil soil by visitors identified as a potential pathway and evaluated in the RA.
						Ingestion	On-Site	Quant	
				Construction Worker (future only)	Adult	Dermal	On-Site	Quant	Dermal contact with, and incidental ingestion of, contaminants in surface and near-surface dredge-spoil soil by construction workers identified as a potential pathway and evaluated in the RA.
						Ingestion	On-Site	Quant	
		Surface soil/ subsurface soil	Soil at 0- to 11.7-ft depth	Construction Worker (future only)	Adult	Dermal	On-Site	Quant	Dermal contact with, and incidental ingestion of, contaminants in deeper dredge-spoil soil by construction workers identified as a potential pathway and evaluated in the RA.
						Ingestion	On-Site	Quant	
	Onondaga Lake – Surface Water	Surface Water	Surface water in lake	Recreational Visitor	Adult	Dermal	On-Site	Quant	Dermal contact with, and incidental ingestion of, contaminants in lake water by visitors and construction workers identified as a potential pathway and evaluated in the RA.
						Ingestion	On-Site	Quant	
					Child	Dermal	On-Site	Quant	Dermal contact with, and incidental ingestion of, contaminants in lake water by visitors identified as a potential pathway and evaluated in the RA.
						Ingestion	On-Site	Quant	
				Construction Worker (future only)	Adult	Dermal	On-Site	Quant	Dermal contact with, and incidental ingestion of, contaminants in lake water by visitors and construction workers identified as a potential pathway and evaluated in the RA.
						Ingestion	On-Site	Quant	

Notes: See Appendix A for locations of samples used in evaluating potential exposures.

North lake, south lake, and the four wetlands areas are considered separately, due to differences in access and use designation. All ages are assumed to contact lake media (adults and children are evaluated). See text for age discussion.

RA = Risk Assessment.

[a] Quant = Quantitative risk analysis performed. Qual=Qualitative analysis performed. None = Not considered a complete pathway; not evaluated in the RA.

[b] Fish species collected that were considered edible and for which fillets were analyzed include bluegill, smallmouth bass, carp, channel catfish, largemouth bass, northern pike, white perch, and walleye. Consistent with New York's fishing regulations, size was limited to fish of approximately legal size or larger (e.g., 12 inches for smallmouth bass and 15 inches for walleye). Fishing regulations allow "any size" for other species, but individual fish smaller than about 6 inches were excluded, as fish that small are unlikely to be consumed by humans.

Table 2.1
Occurrence, Distribution, and Selection of Contaminants of Potential Concern
Onondaga Lake

Scenario Time Frame:	Current/Future
Medium:	Fish Tissue
Exposure Medium:	Fish Tissue
Exposure Point:	**Fish fillet tissue from Onondaga Lake**

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Screening Toxicity Values: Region III Fish Consumption[a]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
Inorganics															
7429-90-5	Aluminum	5.30		5.90		mg/kg-ww	5AHB[p]	3/11	4.84-9.3	5.90	140 N			No	BSL
7440-36-0	Antimony	1.80		2.10		mg/kg-ww	SEND	2/11	0.05-2.2	2.10	0.054 N			Yes	ASL
7440-38-2	Arsenic	1.00		1.05		mg/kg-ww	5AHB	2/11	0.14-0.5	1.05	0.0021 C			Yes	ASL
7440-39-3	Barium	0.04		0.78		mg/kg-ww	5AHB	7/11	0.15-0.2	0.78	9.5 N			No	BSL
7440-41-7	Beryllium	0.02		0.03		mg/kg-ww	5AHB	3/11	0.02-0.2	0.03	0.27 N			No	BSL
7440-43-9	Cadmium	-		-		mg/kg-ww	N/A	0/11	0.05-0.2	ND	0.07 N			No	IFD
7440-70-2	Calcium	79.30		24,400	J	mg/kg-ww	5AHB	11/11	N/A	24,400	N/A			No	NUT
7440-47-3	Chromium	0.54		0.73		mg/kg-ww	SEND	3/11	0.29-0.99	0.73	0.41 N[b]			Yes	ASL
7440-48-4	Cobalt	0.03		0.2		mg/kg-ww	WF0035F	4/11	0.02-0.4	0.20	2.7 N			No	BSL
7440-50-8	Copper	1.3		3.1		mg/kg-ww	5AHB & MNMC	8/11	0.35-0.71	3.10	5.4 N			No	BSL
74-90-8	Cyanide	1.0		14.30		mg/kg-ww	5AHB	3/11	0.41-0.92	14.30	2.7 N			Yes	ASL
7439-89-6	Iron	11.40		44		mg/kg-ww	5AHB	7/11	6.9-11.1	44	81 N			No	BSL
7439-92-1	Lead	0.02		0.29		mg/kg-ww	SEND	8/11	0.02-0.21	0.29	N/A[c]			No	NTX
7439-95-4	Magnesium	169		1,610		mg/kg-ww	5AHB	11/11	N/A	1,610	N/A			No	NUT
7439-96-5	Manganese	0.18		5.51		mg/kg-ww	5AHB	9/11	0.2-0.25	5.51	3 N			Yes	ASL
7439-97-6	Mercury (as Methylmercury)	0.04		5.07		mg/kg-ww	SO12	728/728	N/A	5.07	0.014 N[d]			Yes	ASL
7440-02-0	Nickel	0.30		1.90		mg/kg-ww	NMNMC	7/11	1.2-1.6	1.90	2.7 N			No	BSL
7440-09-7	Potassium	2,720		17,700		mg/kg-ww	NMNMC	11/11	N/A	17,700	N/A			No	NUT
7782-49-2	Selenium	0.86	J	2.20		mg/kg-ww	5AHB	8/11	0.14-0.21	2.20	0.68 N			Yes	ASL
7440-22-4	Silver	-		-		mg/kg-ww	N/A	0/11	0.02-0.4	ND	0.68 N			No	IFD
7440-23-5	Sodium	355		2,980		mg/kg-ww	5AHB	11/11	N/A	2,980	N/A			No	NUT
7440-28-0	Thallium	-		-		mg/kg-ww	N/A	0/11	0.02-0.21	ND	0.010 N			No	IFD
7440-62-2	Vanadium	0.45		0.97		mg/kg-ww	MNMC	7/11	0.29-0.4	0.97	0.95 N			Yes	ASL
7440-66-6	Zinc	16.60		73.80	J	mg/kg-ww	5AHB	8/11	5.5-8.4	73.80	41 N			Yes	ASL
VOCs															
67-64-1	Acetone	50	J	180	J	µg/kg-ww	SEND	4/4	N/A	180	14,000 N			No	BSL
71-43-2	Benzene	-		-		µg/kg-ww	N/A	0/4	10-10	ND	57 C			No	IFD
75-27-4	Bromodichloromethane	-		-		µg/kg-ww	N/A	0/4	10-10	ND	51 C			No	IFD
75-25-2	Bromoform	-		-		µg/kg-ww	N/A	0/4	10-10	ND	400 C			No	IFD
74-83-9	Bromomethane	-		-		µg/kg-ww	N/A	0/4	10-10	ND	190 N			No	IFD
78-93-3	2-Butanone	6	J	8	J	µg/kg-ww	SEND	2/4	10-10	8	81,000 N			No	BSL
75-15-0	Carbon disulfide	-		-		µg/kg-ww	N/A	0/4	10-10	ND	14,000 N			No	IFD
56-23-5	Carbon tetrachloride	-		-		µg/kg-ww	N/A	0/4	10-10	ND	24 C			No	IFD
108-90-7	Chlorobenzene	-		-		µg/kg-ww	N/A	0/4	10-10	ND	2,700 N			No	IFD
75-00-3	Chloroethane	-		-		µg/kg-ww	N/A	0/4	10-10	ND	1,100 C			No	IFD
67-66-3	Chloroform	-		-		µg/kg-ww	N/A	0/4	10-10	ND	520 C			No	IFD
74-87-3	Chloromethane	-		-		µg/kg-ww	N/A	0/4	10-10	ND	240 C			No	IFD
124-48-1	Dibromochloromethane	-		-		µg/kg-ww	N/A	0/4	10-10	ND	38 C			No	IFD
75-34-3	1,1-Dichloroethane	-		-		µg/kg-ww	N/A	0/4	10-10	ND	14,000 N			No	IFD
107-06-2	1,2-Dichloroethane	-		-		µg/kg-ww	N/A	0/4	10-10	ND	35 C			No	IFD
75-35-4	1,1-Dichloroethene	-		-		µg/kg-ww	N/A	0/4	10-10	ND	5.3 C			No	IFD
540-59-0	1,2-Dichloroethene isomers (tc	-		-		µg/kg-ww	N/A	0/4	10-10	ND	1,200 N			No	IFD
78-87-5	1,2-Dichloropropane	-		-		µg/kg-ww	N/A	0/4	10-10	ND	46 C			No	IFD
10061-01-5	cis-1,3-Dichloropropene	-		-		µg/kg-ww	N/A	0/4	10-10	ND	32 C[e]			No	IFD
10061-02-6	trans-1,3-Dichloropropene	-		-		µg/kg-ww	N/A	0/4	10-10	ND	32 C[e]			No	IFD

Table 2.1
Occurrence, Distribution, and Selection of Contaminants of Potential Concern
Onondaga Lake

	CAS Registry Number		Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Screening Toxicity Values: Region III Fish Consumption[a]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
	100-41-4	Ethylbenzene	-		-		µg/kg-ww	N/A	0/4	10-10	ND	14,000 N			No	IFD
	591-78-6	2-Hexanone	-		-		µg/kg-ww	N/A	0/4	10-10	ND	5,400 N			No	IFD
	108-10-1	4-Methyl-2-pentanone	-		-		µg/kg-ww	N/A	0/4	10-10	ND	11,000 N			No	IFD
	75-09-2	Methylene chloride	-		-		µg/kg-ww	N/A	0/0	10-10	ND	420 C			No	IFD
	100-42-5	Styrene	-		-		µg/kg-ww	N/A	0/4	10-10	ND	27,000 N			No	IFD
	79-34-5	1,1,2,2-Tetrachloroethane	-		-		µg/kg-ww	N/A	0/4	10-10	ND	16 C			No	IFD
	127-18-4	Tetrachloroethene	-		-		µg/kg-ww	N/A	0/4	10-10	ND	61 C			No	IFD
	108-88-3	Toluene	5	J	5	J	µg/kg-ww	SEND	1/4	10-10	5.0	27,000 N			No	BSL
	71-55-6	1,1,1-Trichloroethane	-		-		µg/kg-ww	N/A	0/4	10-10	ND	38,000 N			No	IFD
	79-00-5	1,1,2-Trichloroethane	-		-		µg/kg-ww	N/A	0/4	10-10	ND	55 C			No	IFD
	79-01-6	Trichloroethene	-		-		µg/kg-ww	N/A	0/4	10-10	ND	290 C			No	IFD
	75-01-4	Vinyl chloride	-		-		µg/kg-ww	N/A	0/4	10-10	ND	4.4 C			No	IFD
	1330-20-7	Xylene isomers (total)	-		-		µg/kg-ww	N/A	0/4	10-10	ND	270,000 N			No	IFD
SVOCs																
	111-91-1	bis(2-chloroethoxy)methane	-		-		µg/kg-ww	N/A	0/4	150-160	ND	N/A			No	IFD
	111-44-4	bis(2-chloroethyl)ether	-		-		µg/kg-ww	N/A	0/4	150-160	ND	2.9 C			No	IFD
	117-81-7	bis(2-Ethylhexyl)phthalate	2,300		2,300		µg/kg-ww	SEND	1/4	150-430	2,300	230 C			Yes	ASL
	101-55-3	4-Bromophenyl-phenyl ether	-		-		µg/kg-ww	N/A	0/4	150-160	ND	N/A			No	IFD
	85-68-7	Butylbenzyl phthalate	-		-		µg/kg-ww	N/A	0/4	150-160	ND	27,000 N			No	IFD
	86-74-8	Carbazole	-		-		µg/kg-ww	N/A	0/4	150-160	ND	160 C			No	IFD
	59-50-7	4-Chloro-3-methylphenol	-		-		µg/kg-ww	N/A	0/0	N/A	ND	N/A			No	IFD
	106-47-8	4-Chloroaniline	-		-		µg/kg-ww	N/A	0/4	150-160	ND	540 N			No	IFD
	91-58-7	2-Chloronaphthalene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	11,000 N			No	IFD
	95-57-8	2-Chlorophenol	-		-		µg/kg-ww	N/A	0/0	N/A	ND	680 N			No	IFD
	7005-72-3	4-Chlorophenyl-phenyl ether	-		-		µg/kg-ww	N/A	0/4	150-160	ND	N/A			No	IFD
	132-64-9	Dibenzofuran	-		-		µg/kg-ww	N/A	0/4	150-160	ND	540 N			No	IFD
	95-50-1	1,2-Dichlorobenzene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	12,000 N			No	IFD
	541-73-1	1,3-Dichlorobenzene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	4,100 N			No	IFD
	106-46-7	1,4-Dichlorobenzene	37		58		µg/kg-ww	SEND	3/4	160-160	58	130 C			No	BSL
	91-94-1	3,3'-Dichlorobenzidine	-		-		µg/kg-ww	N/A	0/4	150-160	ND	7.0 C			No	IFD
	120-83-2	2,4-Dichlorophenol	-		-		µg/kg-ww	N/A	0/0	N/A	ND	410 N			No	IFD
	84-66-2	Diethyl phthalate	-		-		µg/kg-ww	N/A	0/4	150-160	ND	108,000 N			No	IFD
	131-11-3	Dimethyl phthalate	-		-		µg/kg-ww	N/A	0/4	150-160	ND	1,352,000 N			No	IFD
	105-67-9	2,4-Dimethylphenol	-		-		µg/kg-ww	N/A	0/0	N/A	ND	2,700 N			No	IFD
	84-74-2	Di-n-butyl phthalate	-		-		µg/kg-ww	N/A	0/4	150-160	ND	14,000 N			No	IFD
	51-28-5	2,4-Dinitrophenol	-		-		µg/kg-ww	N/A	0/0	N/A	ND	270 N			No	IFD
	121-14-2	2,4-Dinitrotoluene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	270 N			No	IFD
	606-20-2	2,6-Dinitrotoluene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	140 N			No	IFD
	117-84-0	Di-n-octyl phthalate	-		-		µg/kg-ww	N/A	0/4	150-160	ND	2,700 N			No	IFD
	118-74-1	Hexachlorobenzene	2		170		µg/kg-ww	Lake	102/134	2 - 160	170	2.0 C			Yes	ASL
	87-68-3	Hexachlorobutadiene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	27 N			No	IFD
	77-47-4	Hexachlorocyclopentadiene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	810 N			No	IFD
	67-72-1	Hexachloroethane	-		-		µg/kg-ww	N/A	0/4	150-160	ND	140 N			No	IFD
	78-59-1	Isophorone	-		-		µg/kg-ww	N/A	0/4	150-160	ND	3,300 C			No	IFD
	534-52-1	2-Methyl-4,6-dinitrophenol	-		-		µg/kg-ww	N/A	0/0	N/A	ND	140 N			No	IFD
	95-48-7	2-Methylphenol	-		-		µg/kg-ww	N/A	0/0	N/A	ND	6,800 N			No	IFD
	106-44-5	4-Methylphenol	-		-		µg/kg-ww	N/A	0/0	N/A	ND	680 N			No	IFD
	88-74-4	2-Nitroaniline	-		-		µg/kg-ww	N/A	0/4	390-400	ND	N/A			No	IFD
	99-09-2	3-Nitroaniline	-		-		µg/kg-ww	N/A	0/4	390-400	ND	N/A			No	IFD
	100-01-6	4-Nitroaniline	-		-		µg/kg-ww	N/A	0/4	390-400	ND	N/A			No	IFD
	98-95-3	Nitrobenzene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	68 N			No	IFD
	88-75-5	2-Nitrophenol	-		-		µg/kg-ww	N/A	0/0	N/A	ND	1,100 N			No	IFD

Table 2.1
Occurrence, Distribution, and Selection of Contaminants of Potential Concern
Onondaga Lake

	CAS Registry Number		Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Screening Toxicity Values: Region III Fish Consumption[a]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
	100-02-7	4-Nitrophenol	-		-		µg/kg-ww	N/A	0/0	N/A	ND	1,100 N			No	IFD
	621-64-7	N-nitroso-di-n-propylamine	-		-		µg/kg-ww	N/A	0/4	150-160	ND	0.45 C			No	IFD
	86-30-6	N-nitrosodiphenylamine	-		-		µg/kg-ww	N/A	0/4	150-160	ND	640 C			No	IFD
	108-60-1	2,2'-Oxybis(1-chloropropane)	-		-		µg/kg-ww	N/A	0/4	150-160	ND	45 C			No	IFD
	87-86-5	Pentachlorophenol	-		-		µg/kg-ww	N/A	0/0	N/A	ND	26 C			No	IFD
	108-95-2	Phenol	-		-		µg/kg-ww	N/A	0/0	N/A	ND	81,000 N			No	IFD
	120-82-1	1,2,4-Trichlorobenzene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	1,400 N			No	IFD
	95-95-4	2,4,5-Trichlorophenol	-		-		µg/kg-ww	N/A	0/0	N/A	ND	14,000 N			No	IFD
	88-06-2	2,4,6-Trichlorophenol	-		-		µg/kg-ww	N/A	0/0	N/A	ND	290 C			No	IFD
PAHs																
	83-32-9	Acenaphthene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	8,100 N			No	IFD
	208-96-8	Acenaphthylene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	2,700 N [g]			No	IFD
	120-12-7	Anthracene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	41,000 N			No	IFD
	56-55-3	Benz(a)anthracene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	4.3 C			No	IFD
	50-32-8	Benzo(a)pyrene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	0.43 C			No	IFD
	205-99-2	Benzo(b)fluoranthene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	4.3 C			No	IFD
	191-24-2	Benzo(g,h,i)perylene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	2,700 N [g]			No	IFD
	207-08-9	Benzo(k)fluoranthene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	43 C			No	IFD
	218-01-9	Chrysene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	430 C			No	IFD
	53-70-3	Dibenz(a,h)anthracene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	0.43 C			No	IFD
	206-44-0	Fluoranthene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	5,400 N			No	IFD
	86-73-7	Fluorene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	5,400 N			No	IFD
	193-39-5	Indeno(1,2,3-cd)pyrene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	4.3 C			No	IFD
	91-57-6	2-Methylnaphthalene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	2,700 N [g]			No	IFD
	91-20-3	Naphthalene	61		61		µg/kg-ww	SEND	1/4	150-160	61	2,700 N			No	BSL
	85-01-8	Phenanthrene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	2,700 N [g]			No	IFD
	129-00-0	Pyrene	-		-		µg/kg-ww	N/A	0/4	150-160	ND	4,100 N			No	IFD
Pesticides																
	309-00-2	Aldrin	3		3		µg/kg-ww	Lake	1/49	1 - 10	3	0.19 C			Yes	ASL
	319-84-6	alpha-BHC	-		-		µg/kg-ww	N/A	0/49	1 - 10	ND	0.50 C			No	IFD
	319-85-7	beta-BHC	-		-		µg/kg-ww	N/A	0/49	1 - 10	ND	1.8 C			No	IFD
	319-86-8	delta-BHC	1.7 *J*		2.8 *J*		µg/kg-ww	SEND	3/50	1 - 10	2.8	1.8 C [h]			Yes	ASL
	58-89-9	gamma-BHC (Lindane)	1.5		1.5		µg/kg-ww	Lake	1/49	1 - 10	1.5	2.4 C			No	BSL
	57-74-9	Sum of Chlordanes	1.1		61		µg/kg-ww	SO7	53/124	1 - 10	61	9.0 C			Yes	ASL
	53-19-0	2,4'- DDD	5		5		µg/kg-ww	SO7	2/38	5 - 5	5	13 C [i]			No	BSL
	3424-82-6	2,4'- DDE	5.0		24		µg/kg-ww	SO7	7/38	5 - 10	24	9.3 C [i]			Yes	ASL
	789-02-6	2,4'- DDT	-		-		µg/kg-ww	N/A	0/38	5 - 5	ND	9.3 C [i]			No	IFD
	72-54-8	4,4'-DDD	1.4		170 *J*		µg/kg-ww	SEND	121/134	2 - 9	170	13 C [i]			Yes	ASL
	72-55-9	4,4'-DDE	2		400 *J*		µg/kg-ww	SEND	131/134	2 - 18	400	9.3 C [i]			Yes	ASL
	50-29-3	4,4'-DDT	1.6 *J*		82		µg/kg-ww	SO7	111/134	2 - 7	82	9.3 C [i]			Yes	ASL
	60-57-1	Dieldrin	3.7		42 *J*		µg/kg-ww	Lake	26/134	3.1 - 10	42	0.20 C			Yes	ASL
	959-98-8	Endosulfan I	3.5 *J*		7.5 *J*		µg/kg-ww	SEND	3/49	1 - 10	7.5	810 N			No	BSL
	33213-65-9	Endosulfan II	-		-		µg/kg-ww	N/A	0/39	1 - 10	ND	810 N [j]			No	IFD
	1031-07-8	Endosulfan sulfate	4.2 *J*		4.2 *J*		µg/kg-ww	SEND	1/49	1 - 10	4.2	810 N [j]			No	BSL
	72-20-8	Endrin	1.6		32 *J*		µg/kg-ww	SEND	13/124	5 - 5	32	41 N			No	BSL
	7421-93-4	Endrin aldehyde	-		-		µg/kg-ww	N/A	0/49	1 - 25	ND	41 N [k]			No	IFD
	53494-70-5	Endrin ketone	-		-		µg/kg-ww	N/A	0/11	1 - 10	ND	41 N [k]			No	IFD
	76-44-8	Heptachlor	-		-		µg/kg-ww	N/A	0/49	1 - 10	ND	0.70 C			No	IFD
	1024-57-3	Heptachlor epoxide	4.0 *J*		10		µg/kg-ww	SO7	8/49	1.6 - 20	10	0.35 C			Yes	ASL
	72-43-5	Methoxychlor	-		-		µg/kg-ww	N/A	0/11	1 - 17	ND	680 N			No	IFD
	2385-85-5	Mirex/Photomirex	2		5		µg/kg-ww	SO7	6/226	2 - 5	2	27 N [l]			No	BSL

Table 2.1
Occurrence, Distribution, and Selection of Contaminants of Potential Concern
Onondaga Lake

	CAS Registry Number		Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Screening Toxicity Values: Region III Fish Consumption[a]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
	8001-35-2	Toxaphene	-		-		µg/kg-ww	N/A	0/11	50 - 2000	ND	2.9 C			No	IFD
PCBs																
	12674-11-2	Aroclor 1016	22		1,607		µg/kg-ww	SO12	70/82	10 - 100	1,607	9.0 N			Yes	ASL
	11104-28-2	Aroclor 1221	-		-		µg/kg-ww	N/A	0/7	20 - 200	ND	1.6 C			No	IFD
	11141-16-5	Aroclor 1232	-		-		µg/kg-ww	N/A	0/7	10 - 100	ND	1.6 C			No	IFD
	53469-21-9	Aroclor 1242	44		1,980		µg/kg-ww	SO7	38/45	10 - 100	1,980	1.6 C			Yes	ASL
	12672-29-6	Aroclor 1248	61 *J*		1,100 *J*		µg/kg-ww	MNMC	7/7	N/A	1,100	1.6 C			Yes	ASL
	11097-69-1	Aroclor 1254	-		-		µg/kg-ww	N/A	0/7	10 - 100	ND	1.6 C [o]			No	IFD
	11096-82-5	Aroclor 1260	72 *J*		720 *J*		µg/kg-ww	MNMC	7/7	N/A	720	1.6 C			Yes	ASL
		Aroclors 1254 & 1260	20		1,923		µg/kg-ww	SO7	121/123	20 - 20	1,923	1.6 C [m]			Yes	ASL
		Aroclor 1268	-		-		µg/kg-ww	N/A	0/7	10 - 100	ND	1.6 C [m]			No	IFD
	1336-36-3	Sum of PCBs	30		3,903		µg/kg-ww	SO7	128/130	40 - 40	3,903	1.6 C			Yes	ASL
Dioxins and Furans																
		TEQ as 2,3,7,8-TCDD	0.25		45.98		ng/kg-ww	HB Mouth	30/30	N/A	46	0.021 C [n]			Yes	ASL

Notes: – no detected value
C – carcinogenic
COPC – contaminant of potential concern
J – estimated value
N – non-carcinogenic
N/A – not applicable
ND – not detected

Rationale Codes:

Selection Reason: ASL – above screening levels
BKG – below background levels
FD – frequent detection
HIST – infrequent detection but associated historically
TX – toxicity information available

Deletion Reason: BSL – below screening level
IFD – infrequent detection
NTX – no toxicity information
NUT – essential nutrient

[a] Screening toxicity values for fish are the USEPA Region III RBCs (2001). RBCs correspond to 1 X 10^{-6} cancer risk or a hazard quotient of 0.1, whichever is lower.
[b] This default carcinogenic screening value for chromium is that for chromium VI.
[c] No toxicity data for lead in fish. Observed concentrations not expected to pose significant risk. See text.
[d] This default screening value is for methylmercury.
[e] Criterion for cis and trans is 1,3-dichloropropene (however, there were no detects, so summing was not necessary).
[f] This default screening value is for 4-nitrophenol.
[g] This default screening value is that for naphthalene, the non-carcinogenic PAH with the most stringent RBC/PRG.
[h] This default screening value is for technical HCH (BHC).
[i] These default screening values for DDD, DDE, and DDT are not isomer-specific.
[j] This default non-carcinogenic screening value is that for endosulfan.
[k] This default non-carcinogenic screening value is that for endrin.
[l] No screening criteria available for photomirex. Photomirex detections were added to mirex, and the mirex/photomirex total was screened against the mirex criteria.
[m] This default carcinogenic screening value is that for PCBs.
[n] This default carcinogenic screening value for PCDD/PCDFs is 2,3,7,8-TCDD.
[o] The removal of the 1992 PTI PCB data results in Aroclor 1254 not being flagged as a COPC.
[p] 5AHB is the area of the lake extending from Tributary 5A to Harbor Brook (Honeywell 2000 Phase 2A sampling). HB Mouth is from NYSDEC 1999 fish sampling.

Table 2.2
Occurrence, Distribution, and Selection of Contaminants of Potential Concern
Onondaga Lake

Scenario Time Frame:	Current/Future
Medium:	Surface Sediments
Exposure Medium:	Surface Sediments
Exposure Point:	Nearshore surface sediment from the northern basin of Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value [a]	Screening Toxicity Values: Region III Residential Soils [b]	Screening Toxicity Values: Region IX Residential Soils [c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
Inorganics																	
7429-90-5	Aluminum	159		6,465		mg/kg	S360	42/42	N/A	6,465	13,220	7,800 N	7,600 N			No	BSL
7440-36-0	Antimony	0.32		9.2		mg/kg	S93	12/42	0.24-8.7	9.2	3.3	3.1 N	3.1 N			Yes	ASL
7440-38-2	Arsenic	0.32		8.0		mg/kg	S53	37/42	0.34-0.41	8.0	8.3	0.43 C	0.39 C			Yes	BKG
7440-39-3	Barium	38.2		708		mg/kg	S53	42/42	N/A	708	203	550 N	540 N			Yes	ASL
7440-41-7	Beryllium	0.11		0.40		mg/kg	S363	30/42	0.2-0.54	0.40	0.67	16 N	15 N			No	BSL
7440-43-9	Cadmium	0.083		4.6		mg/kg	S105	38/54	0.04-1.1	4.6	0.45	3.9 N	3.7 N			Yes	ASL
7440-70-2	Calcium	74,200		392,000		mg/kg	S363	54/54	N/A	392,000	170,277	N/A	N/A			No	NUT
7440-47-3	Chromium	2.3	J	81.6		mg/kg	S372	54/54	N/A	82	22	23 N [d]	23 N [d]			Yes	ASL
7440-48-4	Cobalt	0.20		8.9	J	mg/kg	S304	37/42	0.17-0.69	8.9	12	160 N	470 N			No	BSL
7440-50-8	Copper	1.7		41	J	mg/kg	S304	52/54	9.3-11.4	41	146	310 N	290 N			No	BSL
74-90-8	Cyanide	1.0		1.0		mg/kg	S66	1/36	0.64-7.9	1.0	-	160 N	1.1 N			No	BSL
7439-89-6	Iron	874		14,000		mg/kg	S359	42/42	N/A	14,000	25,526	4,700 N	2,300 N			Yes	BKG
7439-92-1	Lead	0.50		48.3	J	mg/kg	S304	54/54	N/A	48	33	N/A	400 N			No	BSL
7439-95-4	Magnesium	1,640	J	30,300		mg/kg	S363	54/54	N/A	30,300	10,909	N/A	N/A			No	NUT
7439-96-5	Manganese	104		445	J	mg/kg	S100	42/42	N/A	445	1,373	160 N	180 N			Yes	BKG
7439-97-6	Total Mercury	0.055		10.5	J	mg/kg	S360	43/56	0.04-0.5	11	0.163	2.3 N	2.3 N			Yes	ASL
22967-92-6	Methylmercury	1.8		3.3		µg/kg	S372	3/3	N/A	3.3	1.2	780 N	610 N			Yes	HIST
7440-02-0	Nickel	2.1		36.4	J	mg/kg	S304	53/54	2.4-2.4	36	29	160 N	160 N			No	BSL
7440-09-7	Potassium	62.3		2,090		mg/kg	S360	41/42	121-121	2,090	1602	N/A	N/A			No	NUT
7782-49-2	Selenium	0.38	J	1.2	J	mg/kg	S304, S306 & S372	19/42	0.15-1.3	1.2	1.6	39 N	39 N			No	BSL
7440-22-4	Silver	0.26		2.7	J	mg/kg	S66	13/42	0.1-1.1	2.7	ND	39 N	39 N			No	BSL
7440-23-5	Sodium	394		16,000		mg/kg	S362	41/42	782-782	16,000	277	N/A	N/A			No	NUT
7440-28-0	Thallium	0.19		0.73	J	mg/kg	S53	4/42	0.15-1.7	0.73	0.83	0.55 N	0.52 N			Yes	BKG
7440-62-2	Vanadium	1.0		17	J	mg/kg	S304	35/42	0.51-1.4	17	21	55 N	55 N			No	BSL
7440-66-6	Zinc	6.8	J	113		mg/kg	S363	52/54	8.4-40.6	113	104	2,300 N	2,300 N			No	BSL
VOCs																	
67-64-1	Acetone	23		210		µg/kg	S362	12/22	20-7400	210		782,000	160,000 N			No	BSL
71-43-2	Benzene	3.9		1,400		µg/kg	S363	8/34	7-22	1,400		12,000	650 C			Yes	ASL
75-27-4	Bromodichloromethane	-		-		µg/kg	N/A	0/22	7.4-1800	ND		10,000	1,000 C			No	IFD
75-25-2	Bromoform	-		-		µg/kg	N/A	0/22	7.4-1800	ND		81,000	62,000 C			No	IFD
74-83-9	Bromomethane	-		-		µg/kg	N/A	0/22	7.4-1800	ND		11,000	390 N			No	IFD
78-93-3	2-Butanone	2.9		200		µg/kg	S66	9/22	15-3700	200		4,693,000	730,000 N			No	BSL
75-15-0	Carbon disulfide	2.1		17		µg/kg	S361	4/22	15-3700	17		782,000	36,000 N			No	BSL
56-23-5	Carbon tetrachloride	-		-		µg/kg	N/A	0/22	7.4-1800	ND		4,900	210 N			No	IFD
108-90-7	Chlorobenzene	20		20		µg/kg	S304	1/35	7-1800	20		156,000	15,000 N			No	BSL
75-00-3	Chloroethane	-		-		µg/kg	N/A	0/22	7.4-1800	ND		220,000	3,000 C			No	IFD
67-66-3	Chloroform	-		-		µg/kg	N/A	0/22	7.4-1800	ND		78,000	39 N			No	IFD
74-87-3	Chloromethane	-		-		µg/kg	N/A	0/22	7.4-1800	ND		49,000	1,200 C			No	IFD

Table 2.2
Occurrence, Distribution, and Selection of Contaminants of Potential Concern
Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value [a]	Screening Toxicity Values: Region III Residential Soils [b]	Screening Toxicity Values: Region IX Residential Soils [c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
124-48-1	Dibromochloromethane	-		-		µg/kg	N/A	0/22	7.4-1800	ND		7,600	1,100 C			No	IFD
75-34-3	1,1-Dichloroethane	-		-		µg/kg	N/A	0/22	7.4-1800	ND		782,000	59,000 N			No	IFD
107-06-2	1,2-Dichloroethane	-		-		µg/kg	N/A	0/22	7.4-1800	ND		7,000	350 C			No	IFD
75-35-4	1,1-Dichloroethene	-		-		µg/kg	N/A	0/22	7.4-1800	ND		1,100	54 C			No	IFD
156-59-2	cis-1,2-Dichloroethene	-		-		µg/kg	N/A	0/11	7.4-1800	ND		78,000	4,300 N			No	IFD
156-60-5	trans-1,2-Dichloroethene	-		-		µg/kg	N/A	0/11	7.4-1800	ND		156,000	6,300 N			No	IFD
540-59-0	1,2-Dichloroethene isomers (total)	-		-		µg/kg	N/A	0/11	16-63	ND		70,000	4,300 N [e]			No	IFD
78-87-5	1,2-Dichloropropane	-		-		µg/kg	N/A	0/22	7.4-1800	ND		9,400	350 C			No	IFD
10061-01-5	cis-1,3-Dichloropropene	-		-		µg/kg	N/A	0/22	7.4-1800	ND		6400 [f]	700 C [f]			No	IFD
10061-02-6	trans-1,3-Dichloropropene	-		-		µg/kg	N/A	0/22	7.4-1800	ND		6400 [f]	700 C [f]			No	IFD
100-41-4	Ethylbenzene	16	J	1,100		µg/kg	S363	5/34	7-63	1,100		782,000	230,000 sat			No	BSL
591-78-6	2-Hexanone	-		-		µg/kg	N/A	0/22	15-3700	ND		313,000	N/A			No	IFD
108-10-1	4-Methyl-2-pentanone	-		-		µg/kg	N/A	0/22	15-3700	ND		626,000	79,000 N			No	IFD
75-09-2	Methylene chloride	-		-		µg/kg	N/A	0/22	7.4-1800	ND		85,000	8,900 C			No	IFD
100-42-5	Styrene	-		-		µg/kg	N/A	0/22	7.4-1800	ND		1,564,000	1,700,000 sat			No	IFD
	Tetrachlorobenzene (mixed)	-		-		µg/kg	N/A	0/6	4-6.2	ND		2,300 [g]	1,800 N [g]			No	IFD
79-34-5	1,1,2,2-Tetrachloroethane	-		-		µg/kg	N/A	0/22	7.4-1800	ND		3,200	380 C			No	IFD
127-18-4	Tetrachloroethene	-		-		µg/kg	N/A	0/22	7.4-1800	ND		12,000	5,700 C			No	IFD
108-88-3	Toluene	3.0	J	8,000		µg/kg	S363	13/34	7.4-20	8,000		1,564,000	520,000 sat			No	BSL
71-55-6	1,1,1-Trichloroethane	-		-		µg/kg	N/A	0/22	7.4-1800	ND		2,190,000	630,00 N			No	IFD
79-00-5	1,1,2-Trichloroethane	-		-		µg/kg	N/A	0/22	7.4-1800	ND		11,000	840 C			No	IFD
79-01-6	Trichloroethene	-		-		µg/kg	N/A	0/22	7.4-1800	ND		47,000	2,300 N			No	IFD
75-01-4	Vinyl chloride	-		-		µg/kg	N/A	0/22	7.4-1800	ND		90	150 C			No	IFD
1330-20-7	Sum of Xylenes	14	J	28,850		µg/kg	S363	7/34	7-22	28,850		15643000 [h]	210,000 sat [h]			No	BSL
SVOCs																	
100-51-6	Benzyl alcohol	-		-		µg/kg	N/A	0/30	250-1500	ND		2,346,000	1,800,000 N			No	IFD
111-91-1	bis(2-chloroethoxy)methane	-		-		µg/kg	N/A	0/42	48-300	ND		N/A	N/A			No	IFD
111-44-4	bis(2-chloroethyl)ether	-		-		µg/kg	N/A	0/42	48-300	ND		580	210 C			No	IFD
117-81-7	bis(2-Ethylhexyl)phthalate	22	J	1,300		µg/kg	S356	14/40	49-300	1,300		46,000	35,000 C			No	BSL
101-55-3	4-Bromophenyl-phenyl ether	-		-		µg/kg	N/A	0/42	48-300	ND		N/A	N/A			No	IFD
85-68-7	Butylbenzyl phthalate	-		-		µg/kg	N/A	0/42	48-300	ND		1,564,000	1,200,000 N			No	IFD
86-74-8	Carbazole	20	J	470		µg/kg	S66	3/42	48-300	470		32,000	24,000 C			No	BSL
59-50-7	4-Chloro-3-methylphenol	-		-		µg/kg	N/A	0/41	74-1500	ND		N/A	N/A			No	IFD
106-47-8	4-Chloroaniline	-		-		µg/kg	N/A	0/42	48-300	ND		31,000	24,000 N			No	IFD
91-58-7	2-Chloronaphthalene	-		-		µg/kg	N/A	0/42	48-300	ND		626,000	390,000 N			No	IFD
95-57-8	2-Chlorophenol	-		-		µg/kg	N/A	0/41	48-300	ND		39,000	6,300 N			No	IFD
7005-72-3	4-Chlorophenyl-phenyl ether	-		-		µg/kg	N/A	0/42	48-300	ND		N/A	N/A			No	IFD
132-64-9	Dibenzofuran	18	J	340		µg/kg	S66	2/42	48-300	340		31,000	29,000 N			No	BSL
95-50-1	1,2-Dichlorobenzene	20	J	20	J	µg/kg	S100	1/54	7-300	20		704,000	370,000 sat			No	BSL
541-73-1	1,3-Dichlorobenzene	81	J	120	J	µg/kg	S304	2/54	7-300	120		235,000	1,300 N			No	BSL
106-46-7	1,4-Dichlorobenzene	-		-		µg/kg	N/A	0/54	7-300	ND		27,000	3,400 C			No	IFD
91-94-1	3,3'-Dichlorobenzidine	-		-		µg/kg	N/A	0/42	48-300	ND		1,400	1,100 C			No	IFD
120-83-2	2,4-Dichlorophenol	-		-		µg/kg	N/A	0/41	74-1500	ND		23,000	18,000 N			No	IFD

Table 2.2
Occurrence, Distribution, and Selection of Contaminants of Potential Concern
Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value [a]	Screening Toxicity Values: Region III Residential Soils [b]	Screening Toxicity Values: Region IX Residential Soils [c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
84-66-2	Diethyl phthalate	-		-		µg/kg	N/A	0/42	48-300	ND		6,257,000	4,900,000 N			No	IFD
131-11-3	Dimethyl phthalate	-		-		µg/kg	N/A	0/42	48-300	ND		78,214,000	100,000,000 max			No	IFD
105-67-9	2,4-Dimethylphenol	-		-		µg/kg	N/A	0/41	74-1500	ND		156,000	120,000 N			No	IFD
84-74-2	Di-n-butyl phthalate	-		-		µg/kg	N/A	0/42	48-300	ND		782,000	610,000 N			No	IFD
51-28-5	2,4-Dinitrophenol	-		-		µg/kg	N/A	0/41	190-7600	ND		16,000	12,000 N			No	IFD
121-14-2	2,4-Dinitrotoluene	-		-		µg/kg	N/A	0/42	74-1500	ND		16,000	12,000 N			No	IFD
606-20-2	2,6-Dinitrotoluene	-		-		µg/kg	N/A	0/42	74-1500	ND		7,800	6,100 N			No	IFD
117-84-0	Di-n-octyl phthalate	-		-		µg/kg	N/A	0/42	48-300	ND		156,000	120,000 N			No	IFD
118-74-1	Hexachlorobenzene	4.3	J	755	J	µg/kg	S304	12/49	1-190	755		400	300 C			Yes	ASL
87-68-3	Hexachlorobutadiene	-		-		µg/kg	N/A	0/42	48-300	ND		1,600	1,800 N			No	IFD
77-47-4	Hexachlorocyclopentadiene	-		-		µg/kg	N/A	0/42	74-1500	ND		47,000	42,000 N			No	IFD
67-72-1	Hexachloroethane	-		-		µg/kg	N/A	0/42	48-300	ND		7,800	6,100 N			No	IFD
78-59-1	Isophorone	-		-		µg/kg	N/A	0/42	48-300	ND		672,000	510,000 C			No	IFD
534-52-1	2-Methyl-4,6-dinitrophenol	-		-		µg/kg	N/A	0/41	190-7600	ND		7,800	N/A			No	IFD
95-48-7	2-Methylphenol	30	J	365	J	µg/kg	S360	4/42	48-300	365		391,000	310,000 N			No	BSL
106-44-5	4-Methylphenol	77		1,850	J	µg/kg	S360	9/42	48-190	1,850		39,000	31,000 N			No	BSL
88-74-4	2-Nitroaniline	-		-		µg/kg	N/A	0/42	97-600	ND		N/A	350 N			No	IFD
99-09-2	3-Nitroaniline	-		-		µg/kg	N/A	0/42	190-7600	ND		N/A	350 N [j]			No	IFD
100-01-6	4-Nitroaniline	-		-		µg/kg	N/A	0/42	190-7600	ND		N/A	350 N [j]			No	IFD
98-95-3	Nitrobenzene	-		-		µg/kg	N/A	0/42	48-300	ND		3,900	2,000 N			No	IFD
88-75-5	2-Nitrophenol	-		-		µg/kg	N/A	0/41	74-1500	ND		N/A	49,000 N [k]			No	IFD
100-02-7	4-Nitrophenol	-		-		µg/kg	N/A	0/41	190-7600	ND		63,000	49,000 N			No	IFD
62-75-9	N-nitroso dimethylamine	-		-		µg/kg	N/A	0/30	55-1500	ND		13	9.5 C			No	IFD
621-64-7	N-nitroso-di-n-propylamine	-		-		µg/kg	N/A	0/42	48-300	ND		91	69 C			No	IFD
86-30-6	N-nitrosodiphenylamine	-		-		µg/kg	N/A	0/42	48-300	ND		130,000	99,000 C			No	IFD
108-60-1	2,2'-Oxybis(1-chloropropane)	-		-		µg/kg	N/A	0/42	48-300	ND		9,100	2,900 C			No	IFD
608-93-5	Pentachlorobenzene	-		-		µg/kg	N/A	0/6	4.8-6.2	ND		6,300	4,900 N			No	IFD
87-86-5	Pentachlorophenol	-		-		µg/kg	N/A	0/41	190-7600	ND		5,300	3,000 C			No	IFD
108-95-2	Phenol	45	J	995	J	µg/kg	S360	8/42	48-150	995		4,693,000	3,700,000 N			No	BSL
634-66-2	1,2,3,4-Tetrachlorobenzene	-		-		µg/kg	N/A	0/7	4.8-9	ND		2,300 [g]	1,800 N [g]			No	IFD
87-61-6	1,2,3-Trichlorobenzene	-		-		µg/kg	N/A	0/14	7-11	ND		78,000 N [l]	65,000 N [l]			No	IFD
120-82-1	1,2,4-Trichlorobenzene	-		-		µg/kg	N/A	0/54	7-300	ND		78,000 N	65,000 N			No	IFD
108-70-3	1,3,5-Trichlorobenzene	-		-		µg/kg	N/A	0/14	7-11	ND		78,000 N [l]	65,000 N [l]			No	IFD
12002-48-1	Sum of Trichlorobenzenes	-		-		µg/kg	N/A	0/14	7-11	ND		78,000 N [l]	65,000 N [l]			No	IFD
95-95-4	2,4,5-Trichlorophenol	-		-		µg/kg	N/A	0/41	190-1500	ND		782,000 N	610,000 N			No	IFD
88-06-2	2,4,6-Trichlorophenol	-		-		µg/kg	N/A	0/41	74-1500	ND		58,000 C	44,000 C			No	IFD
83-32-9	Acenaphthene	41	J	730		µg/kg	S61	5/53	48-650	730		469,000 N	370,000 N			No	BSL
208-96-8	Acenaphthylene	34	J	770	J	µg/kg	S61	3/53	48-1300	770		156,000 N [m]	5,600 N [m]			No	BSL
120-12-7	Anthracene	13	J	750		µg/kg	S66	15/53	24-300	750		2,346,000 N	2,200,000 N			No	BSL
56-55-3	Benz(a)anthracene	17	J	1,500		µg/kg	S66	24/53	29-300	1,500		870 C	620 C			Yes	ASL
50-32-8	Benzo(a)pyrene	19	J	1,300		µg/kg	S66	23/53	24-300	1,300		87 C	62 C			Yes	ASL
205-99-2	Benzo(b)fluoranthene	31	J	1,600		µg/kg	S66	24/53	51-300	1,600		870 C	620 C			Yes	ASL

Table 2.2
Occurrence, Distribution, and Selection of Contaminants of Potential Concern
Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value [a]	Screening Toxicity Values: Region III Residential Soils [b]	Screening Toxicity Values: Region IX Residential Soils [c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
191-24-2	Benzo(g,h,i)perylene	45	J	520		µg/kg	S61	18/53	47-300	520		156,000 N [m]	5,600 N [m]			No	BSL
207-08-9	Benzo(k)fluoranthene	12	J	250		µg/kg	S61	15/53	29-300	250		8,700 C	6,200 C			No	BSL
218-01-9	Chrysene	21	J	1,200		µg/kg	S66	23/53	24-300	1,200		87,000 C	62,000 C			No	BSL
53-70-3	Dibenz(a,h)anthracene	19	J	180		µg/kg	S66	11/53	47-300	180		87 C	62 C			Yes	ASL
206-44-0	Fluoranthene	23	J	2,300		µg/kg	S66	28/53	47-1000	2,300		313,000 N	230,000 N			No	BSL
86-73-7	Fluorene	23	J	480		µg/kg	S66	9/53	47-300	480		313,000 N	260,000 N			No	BSL
193-39-5	Indeno(1,2,3-cd)pyrene	16	J	540		µg/kg	S66	17/53	24-300	540		870 C	620 C			No	BSL
91-57-6	2-Methylnaphthalene	160		160		µg/kg	S66	1/42	48-300	160		156,000 N	5,600 N [m]			No	BSL
91-20-3	Naphthalene	35	J	14,000		µg/kg	S363	8/53	48-650	14,000		156,000 N	5,600 N			Yes	ASL
85-01-8	Phenanthrene	32	J	2,300		µg/kg	S66	19/53	24-300	2,300		156,000 N [m]	5,600 N [m]			No	BSL
129-00-0	Pyrene	25	J	2,200		µg/kg	S66	29/53	29-300	2,200		235,000 N	230,000 N			No	BSL
Pesticides																	
309-00-2	Aldrin	-		-		µg/kg	N/A	0/39	1-4.7	ND		38 C	29 C			No	IFD
319-84-6	alpha-BHC	-		-		µg/kg	N/A	0/39	1-4.7	ND		100 C	90 C			No	IFD
319-85-7	beta-BHC	-		-		µg/kg	N/A	0/39	1-4.7	ND		350 C	320 C			No	IFD
319-86-8	delta-BHC	-		-		µg/kg	N/A	0/14	1-4.7	ND		350 C [n]	320 C [n]			No	IFD
58-89-9	gamma-BHC (Lindane)	-		-		µg/kg	N/A	0/26	1-4.7	ND		490 C	440 C			No	IFD
57-74-9	Sum of Chlordanes	-		-		µg/kg	N/A	0/39	1-4.7	ND		1,800 C	1,600 C			No	IFD
72-54-8	4,4'-DDD	-		-		µg/kg	N/A	0/22	1-9.1	ND		2,700 C	2,400 C [o]			No	IFD
72-55-9	4,4'-DDE	1.1	J	1.6	J	µg/kg	S358	4/39	1-9.1	1.6		1,900 C	1,700 C [o]			No	BSL
50-29-3	4,4'-DDT	1.3	J	31	J	µg/kg	S359	9/29	1-9.1	31		1,900 C	1,700 C [o]			No	BSL
60-57-1	Dieldrin	1.3	J	24	J	µg/kg	S359	4/39	1-9.1	24		40 C	30 C			No	BSL
959-98-8	Endosulfan I	-		-		µg/kg	N/A	0/39	1-4.7	ND		47,000 N [p]	37,000 N [p]			No	IFD
33213-65-9	Endosulfan II	-		-		µg/kg	N/A	0/16	1-9.1	ND		47,000 N [p]	37,000 N [q]			No	IFD
1031-07-8	Endosulfan sulfate	1.2	J	1.2	J	µg/kg	S306	1/16	1-9.1	1.2		47,000 N [p]	37,000 N [q]			No	BSL
72-20-8	Endrin	1.1	J	1.1	J	µg/kg	S363	1/38	1-9.1	1.1		47,000 N [q]	1,800 N			No	BSL
7421-93-4	Endrin aldehyde	1.2	J	3.4	J	µg/kg	S356	5/40	1-9.1	3.4		2,300 N [q]	1,800 N [q]			No	BSL
53494-70-5	Endrin ketone	-		-		µg/kg	N/A	0/39	1-9.1	ND		2,300 N [q]	1,800 N [q]			No	BSL
76-44-8	Heptachlor	-		-		µg/kg	N/A	0/39	1-4.7	ND		140 C	110 C			No	IFD
1024-57-3	Heptachlor epoxide	1.1	J	2.3	J	µg/kg	S360	3/37	1-4.7	2.3		70 C	53 C			No	IFD
72-43-5	Methoxychlor	-		-		µg/kg	N/A	0/39	1-47	ND		39,000 N	31,000 N			No	BSL
8001-35-2	Toxaphene	-		-		µg/kg	N/A	0/39	100-470	ND		580 C	440 C			No	IFD
PCBs																	
12674-11-2	Aroclor 1016	-		-		µg/kg	N/A	0/56	29-91	ND		550 N	390 N			No	IFD
11104-28-2	Aroclor 1221	-		-		µg/kg	N/A	0/56	29-180	ND		320 C	220 C			No	IFD
11141-16-5	Aroclor 1232	-		-		µg/kg	N/A	0/56	29-91	ND		320 C	220 C			No	IFD
53469-21-9	Aroclor 1242	12	J	86	J	µg/kg	S304	8/56	29-91	86		320 C	220 C			No	BSL
12672-29-6	Aroclor 1248	70		70		µg/kg	S61	1/56	29-91	70		320 C	220 C			No	BSL
11097-69-1	Aroclor 1254	11	J	1,200		µg/kg	S359	8/56	29-91	1,200		160 N	110 N			Yes	ASL
11096-82-5	Aroclor 1260	15	J	143		µg/kg	S359	7/56	29-91	143		320 C	220 C			No	BSL
	Aroclor 1268	58	J	313	J	µg/kg	S360	3/32	50-54.9	313		320 C [r]	220 C [r]			Yes	ASL
1336-36-3	Sum of PCBs	27		1,377		µg/kg	S359	13/56	58-182	1,377		320 C	220 C			Yes	ASL

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Onondaga Lake

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PCDD/PCDFs																	
	TEQ as 2,3,7,8-TCDD	0.37		8.4		ng/kg	S360	5/5	N/A	8.4		4.3 C [s]	3.9 C [s]			Yes	ASL

Notes: All results reported as dry weight.

– no detected value
C – carcinogenic
COPC – contaminant of potential concern
J – estimated value
max – non-risk-based ceiling limit
N – non-carcinogenic
N/A – not applicable
ND – not detected
sat – non-risk-based concentration calculated based on soil saturation

Rationale Codes:

Selection Reason:
ASL – above screening levels
BKG – below background levels
FD – frequent detection
HIST – infrequent detection but associated historically
TX – toxicity information available

Deletion Reason:
BSL – below screening level
IFD – infrequent detection
NTX – no toxicity information
NUT – essential nutrient

[a] Background values derived from sediment from Otisco Lake (OT1-OT7) as twice the mean value.
[b] Screening toxicity values for sediment are the USEPA Region III RBCs (2001). RBCs correspond to 1 X 10^{-6} cancer risk or a hazard quotient of 0.1, whichever is lower.
[c] Screening toxicity values for sediment are the USEPA Region IX PRGs (2001). PRGs correspond to 1 X 10^{-6} cancer risk or a hazard quotient of 0.1, whichever is lower.
[d] This default carcinogenic screening value for chromium is that for chromium VI.
[e] This default screening value is for cis-1,2-Dichloroethene.
[f] Criterion for cis and trans is 1,3-Dichloropropene (however, there were no detects, so summing was not necessary).
[g] This default screening value is for 1,2,4,5-Tetrachlorobenzene.
[h] This default screening value is for total xylenes.
[i] This default screening value is for 1,3-Dichlorobenzene.
[j] This default screening value is for 2-Nitroaniline.
[k] This default screening value is for 4-Nitrophenol.
[l] This default screening value is for 1,2,4-Trichlorobenzene.
[m] This default screening value is that for naphthalene, the non-carcinogenic PAH with the most stringent RBC/PRG.
[n] This default screening value is for Technical HCH (BHC).
[o] These default screening values for DDD, DDE, and DDT are not isomer-specific.
[p] This default non-carcinogenic screening value is for endosulfan.
[q] This default non-carcinogenic screening value is for endrin.
[r] This default carcinogenic screening value for Aroclor 1268 is that for PCBs.
[s] This default carcinogenic screening value for the PCDD/PCDFs is 2,3,7,8-TCDD.
[t] 1992 samples were collected at 0-0.02 and 0-0.30 meter intervals, 2000 samples were collected at 0-0.02, 0.02-0.15, 0-0.15 and 0.15-0.30 meter intervals. The 1992 and 2000 data are used as discrete, individual data points for the screening. Discussion is in Section 3.2

Table 2.3
Occurrence, Distribution, and Selection of Contaminants of Potential Concern
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Surface Sediments
Exposure Medium: Surface Sediments
Exposure Point: Nearshore surface sediment from the southern basin of Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value [a]	Screening Toxicity Values: Region III Residential Soils [b]	Screening Toxicity Values: Region IX Residential Soils [c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
Inorganics																	
7429-90-5	Aluminum	655		17,200		mg/kg	S322	83/83	N/A	17,200	13,220	7,800 N	7,600 N			Yes	ASL
7440-36-0	Antimony	0.25	J	7.4	J	mg/kg	S336	49/83	0.24-5.6	7.4	3.3	3.1 N	3.1 N			Yes	ASL
7440-38-2	Arsenic	0.51		47	J	mg/kg	S333	80/83	0.41-0.42	47	8.3	0.43 C	0.39 C			Yes	ASL
7440-39-3	Barium	24		22,600		mg/kg	S341	83/83	N/A	22,600	203	550 N	540 N			Yes	ASL
7440-41-7	Beryllium	0.03		0.93		mg/kg	S322	74/83	0.17-0.36	0.93	0.67	16 N	15 N			No	BSL
7440-43-9	Cadmium	0.05		18		mg/kg	S322	88/100	0.04-0.54	18	0.45	3.9 N	3.7 N			Yes	ASL
7440-70-2	Calcium	45,300		371,000		mg/kg	S328	100/100	N/A	371,000	170,277	N/A	N/A			No	NUT
7440-47-3	Chromium	3.2		3,040		mg/kg	S336	100/100	N/A	3,040	22	23 N [d]	23 N [d]			Yes	ASL
7440-48-4	Cobalt	0.23		105	J	mg/kg	S336	83/83	N/A	105	12	160 N	470 N			No	BSL
7440-50-8	Copper	1.6		446	J	mg/kg	S336	100/100	N/A	446	146	310 N	290 N			Yes	ASL
74-90-8	Cyanide	0.94		12		mg/kg	S345	20/76	0.57-5.4	12	-	160 N	1.1 N			Yes	ASL
7439-89-6	Iron	1,780		42,000		mg/kg	S336	83/83	N/A	42,000	25,526	4,700 N	2,300 N			Yes	ASL
7439-92-1	Lead	0.39		2,050	J	mg/kg	S336	100/100	N/A	2,050	33	N/A	400 N			Yes	ASL
7439-95-4	Magnesium	2,500		39,800		mg/kg	S345	100/100	N/A	39,800	10,909	N/A	N/A			No	NUT
7439-96-5	Manganese	93.3	J	850		mg/kg	S336	83/83	N/A	850	1,373	160 N	180 N			Yes	BKG
7439-97-6	Total mercury	0.056		65		mg/kg	S406	107/114	0.04-0.14	65	0.16	2.3 N	2.3 N			Yes	ASL
22967-92-6	Methylmercury	0.44		42		µg/kg	S406	14/14	N/A	42	1.2	780 N	610 N			Yes	HIST
7440-02-0	Nickel	2.4		1,080	J	mg/kg	S339	100/100	N/A	1,080	29	160 N	160 N			Yes	ASL
7440-09-7	Potassium	48.3	J	3,820		mg/kg	S322	79/83	11.9-14.6	3,820	1,602	N/A	N/A			No	NUT
7782-49-2	Selenium	0.25	J	5.4	J	mg/kg	S435	54/83	0.16-1.2	5.4	1.6	39 N	39 N			No	BSL
7440-22-4	Silver	0.11		6.2		mg/kg	S322	55/83	0.09-0.37	6.2	ND	39 N	39 N			No	BSL
7440-23-5	Sodium	163		13,700		mg/kg	S349	83/83	N/A	13,700	277	N/A	N/A			No	NUT
7440-28-0	Thallium	0.28	J	1.3		mg/kg	S352	15/83	0.11-1.6	1.3	0.83	0.55 N	0.52 N			Yes	ASL
7440-62-2	Vanadium	0.51		174	J	mg/kg	S336	81/83	0.4-1	174	21	55 N	55 N			Yes	ASL
7440-66-6	Zinc	12.4	J	2,260	J	mg/kg	S336	100/100	N/A	2,260	104	2,300 N	2,300 N			No	BSL
VOCs																	
67-64-1	Acetone	8.0	J	8,000	J	µg/kg	S341	22/48	14-6600	8,000		782,000 N	160,000			No	BSL
71-43-2	Benzene	2.0		180,000		µg/kg	S335	60/95	3-3600	180,000		12,000 C	650			Yes	ASL
75-27-4	Bromodichloromethane	-		-		µg/kg	N/A	0/78	3-22000	ND		10,000 C	1,000			No	IFD
75-25-2	Bromoform	-		-		µg/kg	N/A	0/78	3-22000	ND		81,000 C	62,000			No	IFD
74-83-9	Bromomethane	-		-		µg/kg	N/A	0/78	6.2-45000	ND		11,000 N	390			No	IFD
78-93-3	2-Butanone	2.0	J	2,900	J	µg/kg	S20	21/53	11-45000	2,900		4,693,000 N	730,000			No	BSL
75-15-0	Carbon disulfide	0.70	J	4,400	J	µg/kg	S345	16/78	4-22000	4,400		782,000 N	36,000			No	BSL
56-23-5	Carbon tetrachloride	-		-		µg/kg	N/A	0/74	3-22000	ND		4,900 C	210			No	IFD
108-90-7	Chlorobenzene	1.7		290,000	J	µg/kg	S336	68/95	3-76	290,000		156,000 N	15,000			Yes	ASL
75-00-3	Chloroethane	-		-		µg/kg	N/A	0/78	6.2-45000	ND		220,000 C	3,000			No	IFD
67-66-3	Chloroform	-		-		µg/kg	N/A	0/78	3-22000	ND		78,000 N	39			No	IFD
74-87-3	Chloromethane	-		-		µg/kg	N/A	0/78	6.2-45000	ND		49,000 C	1,200			No	IFD

Table 2.3
Occurrence, Distribution, and Selection of Contaminants of Potential Concern
Onondaga Lake

	CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value [a]	Screening Toxicity Values: Region III Residential Soils [b]	Screening Toxicity Values: Region IX Residential Soils [c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
	124-48-1	Dibromochloromethane	-		-		µg/kg	N/A	0/74	3-22000	ND		7,600 C	1,100			No	IFD
	75-34-3	1,1-Dichloroethane	-		-		µg/kg	N/A	0/78	3-22000	ND		782,000 N	59,000			No	IFD
	107-06-2	1,2-Dichloroethane	11	J	11	J	µg/kg	S340	1/78	3-22000	11		7,000 C	350			No	BSL
	75-35-4	1,1-Dichloroethene	-		-		µg/kg	N/A	0/78	3-22000	ND		1,100 C	54			No	IFD
	156-59-2	cis-1,2-Dichloroethene	1.0		2.4	J	µg/kg	S313	2/64	3-22000	2.4		78,000 N	4,300			No	BSL
	156-60-5	trans-1,2-Dichloroethene	-		-		µg/kg	N/A	0/64	3-22000	ND		156,000 N	6,300 N			No	IFD
	540-59-0	1,2-Dichloroethene isomers (total)	-		-		µg/kg	N/A	0/14	11-5900	ND		70,000 N	4,300 N [e]			No	IFD
	78-87-5	1,2-Dichloropropane	-		-		µg/kg	N/A	0/78	3-22000	ND		9,400 C	350 C			No	IFD
	10061-01-5	cis-1,3-Dichloropropene	-		-		µg/kg	N/A	0/78	3-22000	ND		6,400 C [f]	700 C [f]			No	IFD
	10061-02-6	trans-1,3-Dichloropropene	-		-		µg/kg	N/A	0/67	3-22000	ND		6,400 C [f]	700 C [f]			No	IFD
	100-41-4	Ethylbenzene	0.90	J	71,000	J	µg/kg	S435	49/95	3-22000	71,000		782,000 N	230,000 sat			No	BSL
	591-78-6	2-Hexanone	-		-		µg/kg	N/A	0/78	7-45000	ND		313,000 N	N/A			No	IFD
	108-10-1	4-Methyl-2-pentanone	-		-		µg/kg	N/A	0/78	7-45000	ND		626,000 N	79,000 N			No	IFD
	75-09-2	Methylene chloride	10	J	13,000	J	µg/kg	S347	10/78	4-45000	13,000		85,000 C	8,900 C			Yes	ASL
	100-42-5	Styrene	110	J	7,000	J	µg/kg	S347	21/78	3-22000	7,000		1,564,000 N	1,700,000 sat			No	BSL
		Tetrachlorobenzene (mixed)	13		1,000		µg/kg	S21	4/17	4.1-22000	1,000		2,300 N [g]	1,800 N [g]			No	BSL
	79-34-5	1,1,2,2-Tetrachloroethane	-		-		µg/kg	N/A	0/78	3-22000	ND		3,200 C	380 C			No	IFD
	127-18-4	Tetrachloroethene	2.0	J	3.0	J	µg/kg	S313	2/78	3-22000	3.0		12,000 C	5,700 C			No	BSL
	108-88-3	Toluene	3.0	J	12,000		µg/kg	P20	57/95	3-22000	12,000		1,564,000 N	520,000 sat			No	BSL
	71-55-6	1,1,1-Trichloroethane	2.7	J	2.7	J	µg/kg	S313	1/78	3-22000	2.7		2,190,000 N	63,000 N			No	BSL
	79-00-5	1,1,2-Trichloroethane	-		-		µg/kg	N/A	0/78	3-22000	ND		11,000 C	840 C			No	IFD
	79-01-6	Trichloroethene	1.7	J	4.0		µg/kg	S351	2/78	3-22000	4.0		47,000 N	2,300 N			No	BSL
	75-01-4	Vinyl chloride	-		-		µg/kg	N/A	0/78	6.2-45000	ND		90 C	150 C			No	IFD
	1330-20-7	Sum of Xylenes	2.1		330,000	J	µg/kg	S435	53/95	3-22000	330,000		15,643,000 N [h]	210,000 sat [h]			Yes	ASL
SVOCs																		
	100-51-6	Benzyl alcohol	-		-		µg/kg	N/A	0/69	170-1200000	ND		2,346,000 N	1,800,000 N			No	IFD
	111-91-1	bis(2-chloroethoxy)methane	-		-		µg/kg	N/A	0/83	33-230000	ND		N/A	N/A			No	IFD
	111-44-4	bis(2-chloroethyl)ether	-		-		µg/kg	N/A	0/83	33-230000	ND		580 C	210 C			No	IFD
	117-81-7	bis(2-Ethylhexyl)phthalate	27	J	5,500	J	µg/kg	S322	30/83	33-230000	5,500		46,000 C	35,000 C			No	BSL
	101-55-3	4-Bromophenyl-phenyl ether	-		-		µg/kg	N/A	0/83	33-230000	ND		N/A	N/A			No	IFD
	85-68-7	Butylbenzyl phthalate	-		-		µg/kg	N/A	0/83	33-230000	ND		1,564,000 N	1,200,000 N			No	IFD
	86-74-8	Carbazole	33	J	19,000		µg/kg	S313	26/83	33-230000	19,000		32,000 C	24,000 C			No	BSL
	59-50-7	4-Chloro-3-methylphenol	-		-		µg/kg	N/A	0/83	80-1200000	ND		N/A	N/A			No	IFD
	106-47-8	4-Chloroaniline	100		100		µg/kg	S351	1/83	33-230000	100		31,000 N	24,000 N			No	BSL
	91-58-7	2-Chloronaphthalene	-		-		µg/kg	N/A	0/83	33-230000	ND		626,000 N	390,000 N			No	IFD
	95-57-8	2-Chlorophenol	-		-		µg/kg	N/A	0/83	33-230000	ND		39,000 N	6,300 N			No	IFD
	7005-72-3	4-Chlorophenyl-phenyl ether	-		-		µg/kg	N/A	0/83	33-230000	ND		N/A	N/A			No	IFD
	132-64-9	Dibenzofuran	18	J	81,000		µg/kg	S313	39/83	33-230000	81,000		31,000 N	29,000 N			Yes	ASL
	95-50-1	1,2-Dichlorobenzene	33	J	19,000		µg/kg	S347	43/100	7-230000	19,000		704,000 N	370,000 sat			No	BSL
	541-73-1	1,3-Dichlorobenzene	21	J	7,000		µg/kg	S336	16/100	7-230000	7,000		235,000 N	1,300 N			Yes	ASL
	106-46-7	1,4-Dichlorobenzene	5.0	J	120,000		µg/kg	S336	56/100	7-230000	120,000		27,000 C	3,400 C			Yes	ASL
	91-94-1	3,3'-Dichlorobenzidine	-		-		µg/kg	N/A	0/83	33-230000	ND		1,400 C	1,100 C			No	IFD
	120-83-2	2,4-Dichlorophenol	-		-		µg/kg	N/A	0/83	80-1200000	ND		23,000 N	18,000 N			No	IFD
	84-66-2	Diethyl phthalate	-		-		µg/kg	N/A	0/83	33-230000	ND		6,257,000 N	4,900,000 N			No	IFD
	131-11-3	Dimethyl phthalate	-		-		µg/kg	N/A	0/83	33-230000	ND		78,214,000 N	100,000,000 max			No	IFD

Table 2.3
Occurrence, Distribution, and Selection of Contaminants of Potential Concern
Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value [a]	Screening Toxicity Values: Region III Residential Soils [b]	Screening Toxicity Values: Region IX Residential Soils [c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
105-67-9	2,4-Dimethylphenol	990		990		µg/kg	S349	1/83	80-1200000	990		156,000 N	120,000 N			No	BSL
84-74-2	Di-n-butyl phthalate	41	J	79		µg/kg	S343	5/83	33-230000	79		782,000 N	610,000 N			No	BSL
51-28-5	2,4-Dinitrophenol	-		-		µg/kg	N/A	0/83	200-6000000	ND		16,000 N	12,000 N			No	IFD
121-14-2	2,4-Dinitrotoluene	-		-		µg/kg	N/A	0/83	80-1200000	ND		16,000 N	12,000 N			No	IFD
606-20-2	2,6-Dinitrotoluene	-		-		µg/kg	N/A	0/83	80-1200000	ND		7,800 N	6,100 N			No	IFD
117-84-0	Di-n-octyl phthalate	-		-		µg/kg	N/A	0/83	33-230000	ND		156,000 N	120,000 N			No	IFD
118-74-1	Hexachlorobenzene	1.1	J	20,000	J	µg/kg	S3	56/100	1-42000	20,000		400 C	300 C			Yes	ASL
87-68-3	Hexachlorobutadiene	-		-		µg/kg	N/A	0/83	33-230000	ND		1,600 N	1,800 N			No	IFD
77-47-4	Hexachlorocyclopentadiene	-		-		µg/kg	N/A	0/79	80-1200000	ND		47,000 N	42,000 N			No	IFD
67-72-1	Hexachloroethane	-		-		µg/kg	N/A	0/83	33-230000	ND		7,800 N	6,100 N			No	IFD
78-59-1	Isophorone	-		-		µg/kg	N/A	0/83	33-230000	ND		672,000 C	510,000 C			No	IFD
534-52-1	2-Methyl-4,6-dinitrophenol	-		-		µg/kg	N/A	0/83	200-6000000	ND		7,800 N	N/A			No	IFD
95-48-7	2-Methylphenol	1,100		1,100		µg/kg	S349	1/83	33-230000	1,100		391,000 N	310,000 N			No	BSL
106-44-5	4-Methylphenol	100	J	3,000		µg/kg	S349	6/83	33-230000	3,000		39,000 N	31,000 N			No	BSL
88-74-4	2-Nitroaniline	-		-		µg/kg	N/A	0/83	67-470000	ND		N/A	350 N			No	IFD
99-09-2	3-Nitroaniline	-		-		µg/kg	N/A	0/83	200-6000000	ND		N/A	350 N [j]			No	IFD
100-01-6	4-Nitroaniline	-		-		µg/kg	N/A	0/83	200-6000000	ND		N/A	350 N [j]			No	IFD
98-95-3	Nitrobenzene	-		-		µg/kg	N/A	0/83	33-230000	ND		3,900 N	2,000 N			No	IFD
88-75-5	2-Nitrophenol	-		-		µg/kg	N/A	0/83	80-1200000	ND		N/A	49,000 N [k]			No	IFD
100-02-7	4-Nitrophenol	-		-		µg/kg	N/A	0/83	200-6000000	ND		63,000 N	49,000 N			No	IFD
62-75-9	N-nitroso dimethylamine	-		-		µg/kg	N/A	0/69	170-1200000	ND		13 C	9.5 C			No	IFD
621-64-7	N-nitroso-di-n-propylamine	-		-		µg/kg	N/A	0/83	33-230000	ND		91 C	69 C			No	IFD
86-30-6	N-nitrosodiphenylamine	-		-		µg/kg	N/A	0/83	33-230000	ND		130,000 C	99,000 C			No	IFD
108-60-1	2,2'-Oxybis(1-chloropropane)	-		-		µg/kg	N/A	0/83	33-230000	ND		9,100 C	2,900 C			No	IFD
608-93-5	Pentachlorobenzene	3.2	J	330		µg/kg	S21	5/17	4.1-7100	330		6,300 N	4,900 N			No	BSL
87-86-5	Pentachlorophenol	-		-		µg/kg	N/A	0/83	200-6000000	ND		5,300 C	3,000 C			No	IFD
108-95-2	Phenol	190		3,700		µg/kg	S311	16/83	33-230000	3,700		4,693,000 N	3,700,000 N			No	BSL
634-66-2	1,2,3,4-Tetrachlorobenzene	11		650		µg/kg	S21	5/17	4.1-30000	650		2,300 N [g]	1,800 N [g]			No	BSL
87-61-6	1,2,3-Trichlorobenzene	910	J	4,500		µg/kg	S3	2/18	7-2700	4,500		78,000 N [i]	65,000 N [i]			No	BSL
120-82-1	1,2,4-Trichlorobenzene	25	J	5,700	J	µg/kg	S1	19/100	7-230000	5,700		78,000 N	65,000 N			No	BSL
108-70-3	1,3,5-Trichlorobenzene	560	J	6,400		µg/kg	S3	4/18	7-1500	6,400		78,000 N [i]	65,000 N [i]			No	BSL
95-95-4	2,4,5-Trichlorophenol	-		-		µg/kg	N/A	0/83	170-1200000	ND		782,000 N	610,000 N			No	IFD
88-06-2	2,4,6-Trichlorophenol	-		-		µg/kg	N/A	0/83	80-1200000	ND		58,000 C	44,000 C			No	IFD
83-32-9	Acenaphthene	29	J	85,000		µg/kg	S313	47/99	33-230000	85,000		469,000 N	370,000 N			No	BSL
208-96-8	Acenaphthylene	41	J	19,000		µg/kg	S313	54/99	33-230000	19,000		156,000 N [m]	5,600 N [m]			Yes	ASL
120-12-7	Anthracene	45	J	95,000		µg/kg	S313	72/99	28-230000	95,000		2,346,000 N	2,200,000 N			No	BSL
56-55-3	Benz(a)anthracene	58	J	100,000		µg/kg	S313	72/99	28-230000	100,000		870 C	620 C			Yes	ASL
50-32-8	Benzo(a)pyrene	22	J	65,000		µg/kg	S313	68/99	55-230000	65,000		87 C	62 C			Yes	ASL
205-99-2	Benzo(b)fluoranthene	41	J	57,000		µg/kg	S313	70/99	55-230000	57,000		870 C	620 C			Yes	ASL
191-24-2	Benzo(g,h,i)perylene	66	J	35,000		µg/kg	S313	64/99	33-230000	35,000		156,000 N [m]	5,600 N [m]			Yes	ASL
207-08-9	Benzo(k)fluoranthene	43		60,000		µg/kg	S313	57/99	33-230000	60,000		8,700 C	6,200 C			Yes	ASL
218-01-9	Chrysene	14	J	100,000		µg/kg	S313	71/99	55-230000	100,000		87,000 C	62,000 C			Yes	ASL
53-70-3	Dibenz(a,h)anthracene	31	J	17,000		µg/kg	S313	42/99	33-230000	17,000		87 C	62 C			Yes	ASL
206-44-0	Fluoranthene	80		250,000		µg/kg	S313	75/99	55-230000	250,000		313,000 N	230,000 N			Yes	ASL
86-73-7	Fluorene	42	J	140,000		µg/kg	S313	63/99	33-230000	140,000		313,000 N	260,000 N			No	BSL

Table 2.3
Occurrence, Distribution, and Selection of Contaminants of Potential Concern
Onondaga Lake

	CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value [a]	Screening Toxicity Values: Region III Residential Soils [b]	Screening Toxicity Values: Region IX Residential Soils [c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
	193-39-5	Indeno(1,2,3-cd)pyrene	35	J	38,000		µg/kg	S313	57/99	28-230000	38,000		870 C	620 C			Yes	ASL
	91-57-6	2-Methylnaphthalene	33	J	2,800,000	J	µg/kg	S435	54/83	33-42000	2,800,000		156,000 N	5,600 N [m]			Yes	ASL
	91-20-3	Naphthalene	48	J	26,000,000	J	µg/kg	S435	75/99	46-42000	26,000,000		156,000 N	5,600 N			Yes	ASL
	85-01-8	Phenanthrene	72	J	630,000	J	µg/kg	S435	82/99	28-42000	630,000		156,000 N [m]	5,600 N [m]			Yes	ASL
	129-00-0	Pyrene	31	J	150,000		µg/kg	S313	77/99	28-230000	150,000		235,000 N	230,000 N			No	BSL
Pesticides																		
	309-00-2	Aldrin	1.9	J	3.5	J	µg/kg	S339	2/60	1-15	3.5		38 C	29 C			No	BSL
	319-84-6	alpha-BHC	1.1	J	13	J	µg/kg	S313	11/61	1-15	13		100 C	90 C			No	BSL
	319-85-7	beta-BHC	1.3	J	110	J	µg/kg	S1	15/67	1-15	110		350 C	320 C			No	BSL
	319-86-8	delta-BHC	1.0	J	3.4	J	µg/kg	S333	13/32	1-15	3.4		350 C [n]	320 C [n]			No	BSL
	58-89-9	gamma-BHC (Lindane)	-		-		µg/kg	N/A	0/63	1-15	ND		490 C	440 C			No	IFD
	57-74-9	Sum of Chlordanes	1.1	J	50	J	µg/kg	S314	20/71	1-15	50		1,800 C	1,600 C			No	BSL
	72-54-8	4,4'-DDD	1.3	J	47	J	µg/kg	S20	6/56	1-29	47		2,700 C	2,400 C [o]			No	BSL
	72-55-9	4,4'-DDE	1.1	J	34	J	µg/kg	S314	16/56	1-29	34		1,900 C	1,700 C [o]			No	BSL
	50-29-3	4,4'-DDT	1.2	J	88	J	µg/kg	S313	26/55	1-29	88		1,900 C	1,700 C [o]			No	BSL
	60-57-1	Dieldrin	1.4	J	31	J	µg/kg	S313	20/67	1-29	31		40 C	30 C			Yes	ASL
	959-98-8	Endosulfan I	1.1	J	8.7	J	µg/kg	S352	4/63	1-15	8.7		47,000 N [p]	37,000 N [p]			No	BSL
	33213-65-9	Endosulfan II	-		-		µg/kg	N/A	0/56	1-29	ND		47,000 N [p]	37,000 N [p]			No	IFD
	1031-07-8	Endosulfan sulfate	2.7	J	31	J	µg/kg	S313	6/42	1-29	31		47,000 N [p]	37,000 N [p]			No	BSL
	72-20-8	Endrin	1.1	J	8.4	J	µg/kg	S313	13/66	1-29	8.4		2,300 N	1,800 N			No	BSL
	7421-93-4	Endrin aldehyde	1.8		1.8		µg/kg	S318	1/62	1-29	1.77		2,300 N [q]	1,800 N [q]			No	BSL
	53494-70-5	Endrin ketone	1.2	J	49	J	µg/kg	S313	3/62	1-29	49		2,300 N [q]	1,800 N [q]			No	BSL
	76-44-8	Heptachlor	1.7	J	6.1	J	µg/kg	S20	5/71	1-15	6.1		140 C	110 C			No	BSL
	1024-57-3	Heptachlor epoxide	1.3	J	52	J	µg/kg	S314	17/66	1-15	52		70 C	53 C			No	BSL
	72-43-5	Methoxychlor	1.1	J	7.7	J	µg/kg	S314	5/60	1-150	7.7		39,000 N	31,000 N			No	BSL
	8001-35-2	Toxaphene	-		-		µg/kg	N/A	0/71	1-1500	ND		580 C	440 C			No	IFD
PCBs																		
	12674-11-2	Aroclor 1016	-		-		µg/kg	N/A	0/108	43-1500	ND		550 N	390 N			No	IFD
	11104-28-2	Aroclor 1221	287	J	499	J	µg/kg	S340	3/108	49-1500	499		320 C	220 C			Yes	ASL
	11141-16-5	Aroclor 1232	-		-		µg/kg	N/A	0/108	43-1500	ND		320 C	220 C			No	IFD
	53469-21-9	Aroclor 1242	18	J	9,340	J	µg/kg	S314	51/108	43-540	9,340		320 C	220 C			Yes	ASL
	12672-29-6	Aroclor 1248	40	J	4,200	J	µg/kg	S3	20/108	43-1500	4,200		320 C	220 C			Yes	ASL
	11097-69-1	Aroclor 1254	11	J	1,010	J	µg/kg	S314 & S322	53/108	43-1500	1,010		160 N	110 N			Yes	ASL
	11096-82-5	Aroclor 1260	12	J	1,800	J	µg/kg	S3	59/108	43-540	1,800		320 C	220 C			Yes	ASL
		Aroclor 1268	19	J	27	J	µg/kg	S339	3/77	50-1500	27		320 C [r]	220 C [r]			No	BSL
	1336-36-3	Sum of PCBs	34		11,036		µg/kg	S314	81/108	86-1080	11,036		320 C	220 C			Yes	ASL
PCDD/PCDFs																		
		TEQ as 2,3,7,8-TCDD	0.24		715		ng/kg	S311	18/18	N/A	715		4.3 C [s]	3.9 C [s]			Yes	ASL

Notes: All results reported as dry weight.
- – no detected value
C – carcinogenic
COPC – contaminant of potential concern
J – estimated value
max – non-risk-based ceiling limit
N – non-carcinogenic
N/A – not applicable

Table 2.3
Occurrence, Distribution, and Selection of Contaminants of Potential Concern
Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value [a]	Screening Toxicity Values: Region III Residential Soils [b]	Screening Toxicity Values: Region IX Residential Soils [c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection

ND – not detected
sat – non-risk-based concentration calculated based on soil saturation

Rationale Codes:

Selection Reason:
ASL – above screening levels
BKG – below background levels
FD – frequent detection
HIST – infrequent detection but associated historically
TX – toxicity information available

Deletion Reason:
BSL – below screening level
IFD – infrequent detection
NTX – no toxicity information
NUT – essential nutrient

[a] Background values derived from sediment from Otisco Lake (OT1-OT7) as twice the mean value.
[b] Screening toxicity values for sediment are the USEPA Region III RBCs (2001). RBCs correspond to 1 X 10^{-6} cancer risk or a hazard quotient of 0.1, whichever is lower.
[c] Screening toxicity values for sediment are the USEPA Region IX PRGs (2001). PRGs correspond to 1 X 10^{-6} cancer risk or a hazard quotient of 0.1, whichever is lower.
[d] This default carcinogenic screening value for chromium is that for chromium VI.
[e] This default screening value is for cis-1,2-Dichloroethene.
[f] Criterion for cis and trans is 1,3-Dichloropropene (however, there were no detects, so summing was not necessary).
[g] This default screening value is for 1,2,4,5-Tetrachlorobenzene.
[h] This default screening value is for total xylenes.
[i] This default screening value is for 1,3-Dichlorobenzene.
[j] This default screening value is for 2-Nitroaniline.
[k] This default screening value is for 4-Nitrophenol.
[l] This default screening value is for 1,2,4-Trichlorobenzene.
[m] This default screening value is that for naphthalene, the non-carcinogenic PAH with the most stringent RBC/PRG.
[n] This default screening value is for Technical HCH (BHC).
[o] These default screening values for DDD, DDE, and DDT are not isomer-specific.
[p] This default non-carcinogenic screening value is that for endosulfan.
[q] This default non-carcinogenic screening value is that for endrin.
[r] This default carcinogenic screening value for Aroclor 1268 is that for PCBs.
[s] This default carcinogenic screening value for the PCDD/PCDFs is 2,3,7,8-TCDD.
[t] 1992 samples were collected at 0-0.02 and 0-0.30 meter intervals, 2000 samples were collected at 0-0.02, 0.02-0.15, 0-0.15 and 0.15-0.30 meter intervals. The 1992 and 2000 data are used as discrete, individual data points for the screening. Discussion is in Section 3.2

Table 2.4
Occurrence, Distribution, and Selection of Contaminants of Potential Concern
Onondaga Lake

Scenario Time Frame:	Current/Future
Medium:	Surface Sediments
Exposure Medium:	Surface Sediments
Exposure Point:	Wetland SYW-6 sediment from the northern basin of Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[a]	Screening Toxicity Values: Region III Residential Soils[b]	Screening Toxicity Values: Region IX Residential Soils[c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
Inorganics																	
7429-90-5	Aluminum	634		13,700	J	mg/kg	W6__2	18/18	N/A	13,700	13,220	7,800 N	7,600 N			Yes	ASL
7440-36-0	Antimony	0.10	J	2.20	J	mg/kg	W6__3	8/18	0.05-0.86	2.2	3.3	3.1 N	3.1 N			No	BSL
7440-38-2	Arsenic	0.5		7.7	J	mg/kg	W6__2	18/18	N/A	7.7	8.3	0.43 C	0.39 C			Yes	BKG
7440-39-3	Barium	78		224	J	mg/kg	W6__2	18/18	N/A	224	203	550 N	540 N			No	BSL
7440-41-7	Beryllium	0.02		0.88	J	mg/kg	W6__2	18/18	N/A	0.88	0.67	16 N	15 N			No	BSL
7440-43-9	Cadmium	0.31		14		mg/kg	S375	18/18	N/A	14	0.45	3.9 N	3.7 N			Yes	ASL
7440-70-2	Calcium	37,600	J	336,000		mg/kg	W6__5	18/18	N/A	336,000	170,277	N/A	N/A			No	NUT
7440-47-3	Chromium	6.2		154		mg/kg	S375	18/18	N/A	154	22	23 N[d]	23 N[d]			Yes	ASL
7440-48-4	Cobalt	1.1	J	7.1	J	mg/kg	W6__2	18/18	N/A	7.1	12	160 N	470 N			No	BSL
7440-50-8	Copper	8.0		122	J	mg/kg	W6__2	18/18	N/A	122	146	310 N	290 N			No	BSL
74-90-8	Cyanide	5.4		5.4		mg/kg	S376	1/8	0.91-2.3	5.4	-	160 N	1.1 N			Yes	ASL
7439-89-6	Iron	1,920	J	32,400	J	mg/kg	W6__2	18/18	N/A	32,400	25,526	4,700 N	2,300 N			Yes	ASL
7439-92-1	Lead	12	J	178	J	mg/kg	W6__3	18/18	N/A	178	33	N/A	400 N			No	BSL
7439-95-4	Magnesium	2,340	J	14,200		mg/kg	S376	18/18	N/A	14,200	10,909	N/A	N/A			No	NUT
7439-96-5	Manganese	120		434	J	mg/kg	W6__2	18/18	N/A	434	1,373	160 N	180 N			Yes	BKG
7439-97-6	Mercury(inorganic)[e]	0.07	J	4.46	J	mg/kg	W6__3	17/18	0.08-0.08	4.46	0.16	2.3 N	2.3 N			Yes	ASL
22967-92-6	Methylmercury[e]	0.001	J	0.045	J	mg/kg	W6__3	17/18	0.08-0.08	0.001	1.2	780 N	610 N			Yes	HIST
7440-02-0	Nickel	5.5		75	J	mg/kg	W6__2	18/18	N/A	75	29	160 N	160 N			No	BSL
7440-09-7	Potassium	165	J	1,740		mg/kg	S375	18/18	N/A	1,740	1,602	N/A	N/A			No	NUT
7782-49-2	Selenium	0.7	J	2.5		mg/kg	S375	6/18	0.11-1.3	2.5	1.6	39 N	39 N			No	BSL
7440-22-4	Silver	0.20		1.4	J	mg/kg	S375 & W6__3	12/18	0.02-0.27	1.4	ND	39 N	39 N			No	BSL
7440-23-5	Sodium	456	J	3,120	J	mg/kg	S375	18/18	N/A	3120	277	N/A	N/A			No	NUT
7440-28-0	Thallium	0.5	J	1.9	J	mg/kg	W6__2	6/18	0.11-2.2	1.9	0.83	0.55 N	0.52 N			Yes	ASL
7440-62-2	Vanadium	1.6		36	J	mg/kg	W6__2	18/18	N/A	36	21	55 N	55 N			No	BSL
7440-66-6	Zinc	23	J	510	J	mg/kg	S376	18/18	N/A	510	104	2,300 N	2,300 N			No	BSL
SVOCs																	
100-51-6	Benzyl alcohol	-		-		µg/kg	N/A	0/8	320-670	ND		2,346,000 N	1,800,000 N			No	IFD
111-91-1	bis(2-chloroethoxy)methane	-		-		µg/kg	N/A	0/18	62-130	ND		N/A	N/A			No	IFD
111-44-4	bis(2-chloroethyl)ether	-		-		µg/kg	N/A	0/18	62-130	ND		580 C	210 C			No	IFD
117-81-7	bis(2-Ethylhexyl)phthalate	2,100		2,100		µg/kg	S378	3/18	62-220	2,100		46,000 C	35,000 C			No	BSL
101-55-3	4-Bromophenyl-phenyl ether	-		-		µg/kg	N/A	0/18	62-130	ND		N/A	N/A			No	IFD
85-68-7	Butylbenzyl phthalate	-		-		µg/kg	N/A	0/18	62-130	ND		1,564,000 N	1,200,000 N			No	IFD
86-74-8	Carbazole	6,600	J	6,600	J	µg/kg	W6__3	1/18	62-1900	6600		32,000 C	24,000 C			No	BSL
59-50-7	4-Chloro-3-methylphenol	-		-		µg/kg	N/A	0/18	320-670	ND		N/A	N/A			No	IFD
106-47-8	4-Chloroaniline	-		-		µg/kg	N/A	0/18	62-130	ND		31,000 N	24,000 N			No	IFD
91-58-7	2-Chloronaphthalene	-		-		µg/kg	N/A	0/18	62-130	ND		626,000 N	390,000 N			No	IFD
95-57-8	2-Chlorophenol	-		-		µg/kg	N/A	0/18	62-130	ND		39,000 N	6,300 N			No	IFD
7005-72-3	4-Chlorophenyl-phenyl ether	-		-		µg/kg	N/A	0/18	62-130	ND		N/A	N/A			No	IFD
132-64-9	Dibenzofuran	7,600	J	7,600	J	µg/kg	W6__3	1/18	62-1900	7600		31,000 N	29,000 N			No	BSL
95-50-1	1,2-Dichlorobenzene	-		-		µg/kg	N/A	0/18	62-130	ND		704,000 N	370,000 sat			No	IFD
541-73-1	1,3-Dichlorobenzene	-		-		µg/kg	N/A	0/18	62-130	ND		235,000 N	1,300 N			No	IFD

Table 2.4
Occurrence, Distribution, and Selection of Contaminants of Concern
Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[a]	Screening Toxicity Values: Region III Residential Soils[b]	Screening Toxicity Values: Region IX Residential Soils[c]	ARAR/ TBC Value	ARAR/ TBC Source	COC Flag	Rationale for Contaminant Deletion or Selection
106-46-7	1,4-Dichlorobenzene	-		-		µg/kg	N/A	0/18	62-130	ND		27,000 C	3,400 C			No	IFD
91-94-1	3,3'-Dichlorobenzidine	-		-		µg/kg	N/A	0/18	62-130	ND		1,400 C	1,100 C			No	IFD
120-83-2	2,4-Dichlorophenol	-		-		µg/kg	N/A	0/18	320-670	ND		23,000 N	18,000 N			No	IFD
84-66-2	Diethyl phthalate	-		-		µg/kg	N/A	0/18	62-130	ND		6,257,000 N	4,900,000 N			No	IFD
131-11-3	Dimethyl phthalate	-		-		µg/kg	N/A	0/18	62-130	ND		78,214,000 N	100,000,000 max			No	IFD
105-67-9	2,4-Dimethylphenol	820	J	820	J	µg/kg	W6__3	1/18	320-1900	820		156,000 N	120,000 N			No	BSL
84-74-2	Di-n-butyl phthalate	170	J	170	J	µg/kg	W6__2	1/18	62-6300	170		782,000 N	610,000 N			No	BSL
51-28-5	2,4-Dinitrophenol	-		-		µg/kg	N/A	0/18	1600-3400	ND		16,000 N	12,000 N			No	IFD
121-14-2	2,4-Dinitrotoluene	-		-		µg/kg	N/A	0/18	320-670	ND		16,000 N	12,000 N			No	IFD
606-20-2	2,6-Dinitrotoluene	-		-		µg/kg	N/A	0/18	320-670	ND		7,800 N	6,100 N			No	IFD
117-84-0	Di-n-octyl phthalate	-		-		µg/kg	N/A	0/18	62-130	ND		156,000 N	120,000 N			No	IFD
118-74-1	Hexachlorobenzene	-		-		µg/kg	N/A	0//23	1.07-130	ND		400 C	300 C			No	IFD
87-68-3	Hexachlorobutadiene	-		-		µg/kg	N/A	0/18	62-130	ND		1,600 N	1,800 N			No	IFD
77-47-4	Hexachlorocyclopentadiene	-		-		µg/kg	N/A	0/18	320-670	ND		47,000 N	42,000 N			No	IFD
67-72-1	Hexachloroethane	-		-		µg/kg	N/A	0/18	62-130	ND		7,800 N	6,100 N			No	IFD
78-59-1	Isophorone	-		-		µg/kg	N/A	0/18	62-130	ND		672,000 C	510,000 C			No	IFD
534-52-1	2-Methyl-4,6-dinitrophenol	-		-		µg/kg	N/A	0/9	1600-3400	ND		7,800 N	N/A			No	IFD
95-48-7	2-Methylphenol	-		-		µg/kg	N/A	0/18	62-130	ND		391,000 N	310,000 N			No	IFD
106-44-5	4-Methylphenol	100	J	1,100	J	µg/kg	W6__3	2/18	62-1900	1100		39,000 N	31,000 N			No	BSL
88-74-4	2-Nitroaniline	-		-		µg/kg	N/A	0/18	130-260	ND		N/A	350 N			No	IFD
99-09-2	3-Nitroaniline	-		-		µg/kg	N/A	0/18	1600-3400	ND		N/A	350 N[e]			No	IFD
100-01-6	4-Nitroaniline	-		-		µg/kg	N/A	0/18	1600-3400	ND		N/A	350 N[e]			No	IFD
98-95-3	Nitrobenzene	-		-		µg/kg	N/A	0/18	62-130	ND		3,900 N	2,000 N			No	IFD
88-75-5	2-Nitrophenol	-		-		µg/kg	N/A	0/18	320-670	ND		N/A	49,000 N[f]			No	IFD
100-02-7	4-Nitrophenol	-		-		µg/kg	N/A	0/18	1600-3400	ND		63,000 N	49,000 N			No	IFD
62-75-9	N-nitroso dimethylamine	-		-		µg/kg	N/A	0/8	320-670	ND		13 C	9.5 C			No	IFD
621-64-7	N-nitroso-di-n-propylamine	-		-		µg/kg	N/A	0/18	62-130	ND		91 C	69 C			No	IFD
86-30-6	N-nitrosodiphenylamine	-		-		µg/kg	N/A	0/18	62-130	ND		130,000 C	99,000 C			No	IFD
108-60-1	2,2'-Oxybis(1-chloropropane)	-		-		µg/kg	N/A	0/18	62-130	ND		9,100 C	2,900 C			No	IFD
87-86-5	Pentachlorophenol	-		-		µg/kg	N/A	0/18	1600-3400	ND		5,300 C	3,000 C			No	IFD
108-95-2	Phenol	650	J	650	J	µg/kg	W6__3	1/18	62-1900	650		4,693,000 N	3,700,000 N			No	BSL
120-82-1	1,2,4-Trichlorobenzene	-		-		µg/kg	N/A	0/18	62-130	ND		78,000 N	65,000 N			No	IFD
95-95-4	2,4,5-Trichlorophenol	-		-		µg/kg	N/A	0/18	320-670	ND		782,000 N	610,000 N			No	IFD
88-06-2	2,4,6-Trichlorophenol	-		-		µg/kg	N/A	0/18	320-670	ND		58,000 C	44,000 C			No	IFD
83-32-9	Acenaphthene	6,300	J	6,300	J	µg/kg	W6__3	1/18	62-1900	6300		469,000 N	370,000 N			No	BSL
208-96-8	Acenaphthylene	212	J	7,500	J	µg/kg	W6__3	4/18	62-1500	7500		156,000 N[g]	5,600 N[g]			Yes	ASL
120-12-7	Anthracene	94	J	18,000	J	µg/kg	W6__3	5/18	62-1500	18000		2,346,000 N	2,200,000 N			No	BSL
56-55-3	Benz(a)anthracene	89		49,000	J	µg/kg	W6__3	13/18	62-1500	49000		870 C	620 C			Yes	ASL
50-32-8	Benzo(a)pyrene	91		48,000	J	µg/kg	W6__3	13/18	62-1500	48000		87 C	62 C			Yes	ASL
205-99-2	Benzo(b)fluoranthene	110		59,000	J	µg/kg	W6__3	12/18	62-1500	59000		870 C	620 C			Yes	ASL
191-24-2	Benzo(g,h,i)perylene	93	J	28,000	J	µg/kg	W6__3	11/18	62-1500	28000		156,000 N[g]	5,600 N[g]			Yes	ASL
207-08-9	Benzo(k)fluoranthene	94	J	22,000	J	µg/kg	W6__3	10/18	62-1500	22000		8,700 C	6,200 C			Yes	ASL
218-01-9	Chrysene	50	J	48,000	J	µg/kg	W6__3	15/18	62-98	48000		87,000 C	62,000 C			No	BSL
53-70-3	Dibenz(a,h)anthracene	260	J	7,900	J	µg/kg	W6__3	2/18	62-1900	7900		87 C	62 C			Yes	ASL
206-44-0	Fluoranthene	59	J	86,000	J	µg/kg	W6__3	15/18	62-98	86000		313,000 N	230,000 N			No	BSL
86-73-7	Fluorene	110	J	12,000	J	µg/kg	W6__3	3/18	62-1500	12000		313,000 N	260,000 N			No	BSL
193-39-5	Indeno(1,2,3-cd)pyrene	90		28,000	J	µg/kg	W6__3	11/18	62-1500	28000		870 C	620 C			Yes	ASL
91-57-6	2-Methylnaphthalene	5,600	J	5,600	J	µg/kg	W6__3	1/18	62-1900	5600		156,000 N	5,600 N[g]			Yes	ASL

Table 2.4
Occurrence, Distribution, and Selection of Contaminants of Concern
Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[a]	Screening Toxicity Values: Region III Residential Soils[b]	Screening Toxicity Values: Region IX Residential Soils[c]	ARAR/ TBC Value	ARAR/ TBC Source	COC Flag	Rationale for Contaminant Deletion or Selection
91-20-3	Naphthalene	7,600	J	7,600	J	µg/kg	W6__3	1/18	62-1900	7600		156,000 N	5,600 N			Yes	ASL
85-01-8	Phenanthrene	60	J	63,000	J	µg/kg	W6__3	12/18	62-1500	63000		156,000 N[g]	5,600 N[g]			Yes	ASL
129-00-0	Pyrene	72	J	83,000	J	µg/kg	W6__3	15/18	62-98	83000		235,000 N	230,000 N			No	BSL
Pesticides																	
309-00-2	Aldrin	-		-		µg/kg	N/A	0/8	1.06-1.09	ND		38 C	29 C			No	IFD
319-84-6	alpha-BHC	-		-		µg/kg	N/A	0/8	1.06-1.09	ND		100 C	90 C			No	IFD
319-85-7	beta-BHC	-		-		µg/kg	N/A	0/7	1.06-1.09	ND		350 C	320 C			No	IFD
319-86-8	delta-BHC	-		-		µg/kg	N/A	0/0	N/A	ND		350 C[h]	320 C[h]			No	IFD
58-89-9	gamma-BHC (Lindane)	-		-		µg/kg	N/A	0/7	1.06-1.09	ND		490 C	440 C			No	IFD
57-74-9	Sum of Chlordanes	-		-		µg/kg	N/A	0/8	1.06-1.09	ND		1,800 C	1,600 C			No	IFD
72-54-8	4,4'-DDD	-		-		µg/kg	N/A	0/7	1.06-1.09	ND		2,700 C	2,400 C[i]			No	IFD
72-55-9	4,4'-DDE	2.4	J	2.4	J	µg/kg	S378	1/7	1.06-1.08	2.4		1,900 C	1,700 C[i]			No	BSL
50-29-3	4,4'-DDT	1.5	J	2.3	J	µg/kg	S376	5/6	1.07-1.07	2.3		1,900 C	1,700 C[i]			No	BSL
60-57-1	Dieldrin	-		-		µg/kg	N/A	0/8	1.06-1.09	ND		40 C	30 C			No	IFD
959-98-8	Endosulfan I	-		-		µg/kg	N/A	0/8	1.06-1.09	ND		47,000 N[j]	37,000 N[j]			No	IFD
33213-65-9	Endosulfan II	-		-		µg/kg	N/A	0/7	1.06-1.09	ND		47,000 N[j]	37,000 N[j]			No	IFD
1031-07-8	Endosulfan sulfate	-		-		µg/kg	N/A	0/0	N/A	ND		47,000 N[j]	37,000 N[j]			No	IFD
72-20-8	Endrin	-		-		µg/kg	N/A	0/8	1.06-1.09	ND		2,300 N	1,800 N			No	IFD
7421-93-4	Endrin aldehyde	-		-		µg/kg	N/A	0/8	1.06-1.09	ND		2,300 N[j]	1,800 N[k]			No	IFD
53494-70-5	Endrin ketone	-		-		µg/kg	N/A	0/8	1.06-1.09	ND		2,300 N[j]	1,800 N[k]			No	IFD
76-44-8	Heptachlor	-		-		µg/kg	N/A	0/8	1.06-1.09	ND		140 C	110 C			No	IFD
1024-57-3	Heptachlor epoxide	-		-		µg/kg	N/A	0/8	1.06-1.09	ND		70 C	53 C			No	IFD
72-43-5	Methoxychlor	-		-		µg/kg	N/A	0/8	1.06-1.09	ND		39,000 N	31,000 N			No	IFD
8001-35-2	Toxaphene	-		-		µg/kg	N/A	0/8	106-109	ND		580 C	440 C			No	IFD
PCBs																	
12674-11-2	Aroclor 1016	-		-		µg/kg	N/A	0/8	53.1-54.5	ND		550 N	390 N			No	IFD
11104-28-2	Aroclor 1221	-		-		µg/kg	N/A	0/8	53.1-54.5	ND		320 C	220 C			No	IFD
11141-16-5	Aroclor 1232	-		-		µg/kg	N/A	0/8	53.1-54.5	ND		320 C	220 C			No	IFD
53469-21-9	Aroclor 1242	21	J	21	J	µg/kg	S378	1/8	53.1-54.2	21		320 C	220 C			No	BSL
12672-29-6	Aroclor 1248	-		-		µg/kg	N/A	0/8	53.1-54.5	ND		320 C	220 C			No	IFD
11097-69-1	Aroclor 1254	17	J	38	J	µg/kg	S376	6/8	53.5-54.2	38		160 N	110 N			No	BSL
11096-82-5	Aroclor 1260	12	J	26	J	µg/kg	S375	3/8	53.5-54.5	26		320 C	220 C			No	BSL
	Aroclor 1268	-		-		µg/kg	N/A	0/8	53.1-54.5	ND		320 C[l]	220 C[l]			No	IFD
1336-36-3	Sum of PCBs	28		61		µg/kg	S375	6/8	107-108.4	61		320 C	220 C			No	BSL
PCDD/PCDFs																	
	TEQ as 2,3,7,8-TCDD	0.32		20		ng/kg	S375	8/8	N/A	20		4.3 C[m]	3.9 C[m]			Yes	ASL

Notes: All results reported as dry weight.

– no detected value
C – carcinogenic
COPC – contaminant of potential concern
J – estimated value
max – non-risk-based ceiling limit
N – non-carcinogenic
N/A – not applicable
ND – not detected
sat – non-risk-based concentration calculated based on soil saturation

Table 2.4
Occurrence, Distribution, and Selection of Contaminants of Concern
Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[a]	Screening Toxicity Values: Region III Residential Soils[b]	Screening Toxicity Values: Region IX Residential Soils[c]	ARAR/ TBC Value	ARAR/ TBC Source	COC Flag	Rationale for Contaminant Deletion or Selection

Rationale Codes:

Selection Reason:
- ASL – above screening levels
- BKG – below background levels
- FD – frequent detection
- HIST – infrequent detection but associated historically
- TX – toxicity information available

Deletion Reason:
- BSL – below screening level
- IFD – infrequent detection
- NTX – no toxicity information
- NUT – essential nutrient

[a] Background values derived from sediment from Otisco Lake (OT1-OT7) as twice the mean value.
[b] Screening toxicity values for sediment are the USEPA Region III RBCs (2001). RBCs correspond to 1 X 10^{-6} cancer risk or a hazard quotient of 0.1, whichever is lower.
[c] Screening toxicity values for sediment are the USEPA Region IX PRGs (2001). PRGs correspond to 1 X 10^{-6} cancer risk or a hazard quotient of 0.1, whichever is lower.
[d] This default carcinogenic screening value for chromium is that for chromium VI.
[e] This default screening value is for 2-Nitroaniline.
[f] This default screening value is for 4-Nitrophenol.
[g] This default screening value is for naphthalene, the non-carcinogenic PAH with the most stringent RBC/PRG.
[h] This default screening value is for Technical HCH (BHC).
[i] These default screening values for DDD, DDE, and DDT are not isomer-specific.
[j] This default non-carcinogenic screening value is that for endosulfan.
[k] This default non-carcinogenic screening value is that for endrin.
[l] This default carcinogenic screening value for Aroclor 1268 is that for PCBs.
[m] This default carcinogenic screening value for the PCDD/PCDFs is 2,3,7,8-TCDD.
[n] 2000 samples were collected at 0-0.15 and 0.15-0.30 meter intervals, 2002 data collected at 0-0.15 and 0.15-0.30 meter intervals. The 2000 and 2002 data are used as discrete, individual data points for the screening. Discussion is in Section 3.2
[o] Mercury (inorganic) and methylmercury concentrations in wetlands sediment estimated from total mercury concentration data (as shown in Appendix A.4 and A.5) and the assumption that one percent of the wetland sediment mercury is in the form of methylmercury

Table 2.5
Occurrence, Distribution, and Selection of Contaminants of Potential Concern
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Surface Sediments
Exposure Medium: Surface Sediments
Exposure Point: Wetland SWY-10 sediment from the northern basin of Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[a]	Screening Toxicity Values: Region III Residential Soils[b]	Screening Toxicity Values: Region IX Residential Soils[c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
Inorganics																	
7429-90-5	Aluminum	1,870		12,400		mg/kg	S379	8/8	N/A	12,400	13,220	7,800 N	7,600 N			Yes	BKG
7440-36-0	Antimony	0.32		10		mg/kg	S380	3/8	0.3-0.53	10	3.3	3.1 N	3.1 N			Yes	ASL
7440-38-2	Arsenic	2.0		18		mg/kg	S379	8/8	N/A	18	8.3	0.43 C	0.39 C			Yes	ASL
7440-39-3	Barium	73.7		157		mg/kg	S380	8/8	N/A	157	203	550 N	540 N			No	BSL
7440-41-7	Beryllium	0.23		1.2		mg/kg	S379	8/8	N/A	1.2	0.67	16 N	15 N			No	BSL
7440-43-9	Cadmium	0.14		1.0		mg/kg	S380	8/8	N/A	1.0	0.45	3.9 N	3.7 N			No	BSL
7440-70-2	Calcium	108,000		335,000		mg/kg	S380	8/8	N/A	335,000	170,277	N/A	N/A			No	NUT
7440-47-3	Chromium	11.7		47		mg/kg	S379	8/8	N/A	47	22	23 N[d]	23 N[d]			Yes	ASL
7440-48-4	Cobalt	2.6		8.5		mg/kg	S379	8/8	N/A	8.5	12	160 N	470 N			No	BSL
7440-50-8	Copper	19.8		49		mg/kg	S379	8/8	N/A	49	146	310 N	290 N			No	BSL
74-90-8	Cyanide	-		-		mg/kg	N/A	0/8	0.77-1.4	ND	-	160 N	1.1 N			No	IFD
7439-89-6	Iron	6,320		21,600		mg/kg	S379	8/8	N/A	21,600	25,526	4,700 N	2,300 N			Yes	BKG
7439-92-1	Lead	24.3		115		mg/kg	S379	8/8	N/A	115	33	N/A	400 N			No	BSL
7439-95-4	Magnesium	3,150		14,300		mg/kg	S381	8/8	N/A	14,300	10,909	N/A	N/A			No	NUT
7439-96-5	Manganese	172.5		488		mg/kg	S381	8/8	N/A	488	1,373	160 N	180 N			Yes	BKG
7439-97-6	Mercury(inorganic)[q]	0.66	J	3.37	J	mg/kg	S380	8/8	N/A	3.4	0.16	2.3 N	2.3 N			Yes	ASL
22967-92-6	Methylmercury[q]	0.01	J	0.03	J	mg/kg	S380	8/8	N/A	0.03	0.16	2.3 N	2.3 N			Yes	HIST
7440-02-0	Nickel	8.9		34		mg/kg	S379	8/8	N/A	34	29	160 N	160 N			No	BSL
7440-09-7	Potassium	341		2,160		mg/kg	S381	8/8	N/A	2,160	1,602	N/A	N/A			No	NUT
7782-49-2	Selenium	1.6	J	1.8		mg/kg	S379	2/8	0.57-1	1.8	1.6	39 N	39 N			No	BSL
7440-22-4	Silver	-		-		mg/kg	N/A	0/8	0.12-0.21	ND	ND	39 N	39 N			No	IFD
7440-23-5	Sodium	682	J	5,430	J	mg/kg	S382	8/8	N/A	5,430	277	N/A	N/A			No	NUT
7440-28-0	Thallium	0.89		2.5		mg/kg	S379	6/8	0.93-0.98	2.5	0.83	0.55 N	0.52 N			Yes	ASL
7440-62-2	Vanadium	4.7		31		mg/kg	S379	8/8	N/A	31	21	55 N	55 N			No	BSL
7440-66-6	Zinc	47.2	J	163	J	mg/kg	S380	8/8	N/A	163	104	2,300 N	2,300 N			No	BSL
VOCs																	
67-64-1	Acetone	16		34		µg/kg	S382	2/8	31-46	34		782,000 N	160,000 N			No	BSL
71-43-2	Benzene	-		-		µg/kg	N/A	0/8	7.8-11	ND		12,000 C	650 C			No	IFD
75-27-4	Bromodichloromethane	-		-		µg/kg	N/A	0/8	7.8-11	ND		10,000 C	1,000 C			No	IFD
75-25-2	Bromoform	-		-		µg/kg	N/A	0/8	7.8-11	ND		81,000 C	62,000 C			No	IFD
74-83-9	Bromomethane	-		-		µg/kg	N/A	0/8	7.8-11	ND		11,000 N	390 N			No	IFD
78-93-3	2-Butanone	26		26		µg/kg	S382	1/8	16-23	26		4,693,000 N	730,000 N			No	BSL
75-15-0	Carbon disulfide	-		-		µg/kg	N/A	0/8	16-23	ND		782,000 N	36,000 N			No	IFD
56-23-5	Carbon tetrachloride	-		-		µg/kg	N/A	0/8	7.8-11	ND		4,900 C	210 N			No	IFD
108-90-7	Chlorobenzene	-		-		µg/kg	N/A	0/8	7.8-11	ND		156,000 N	15,000 N			No	IFD
75-00-3	Chloroethane	-		-		µg/kg	N/A	0/8	7.8-11	ND		220,000 C	3,000 C			No	IFD
67-66-3	Chloroform	-		-		µg/kg	N/A	0/8	7.8-11	ND		78,000 N	39 N			No	IFD
74-87-3	Chloromethane	-		-		µg/kg	N/A	0/8	7.8-11	ND		49,000 C	1,200 C			No	IFD
124-48-1	Dibromochloromethane	-		-		µg/kg	N/A	0/8	7.8-11	ND		7,600 C	1,100 C			No	IFD
75-34-3	1,1-Dichloroethane	-		-		µg/kg	N/A	0/8	7.8-11	ND		782,000 N	59,000 N			No	IFD

Table 2.5
Occurrence, Distribution, and Selection of Contaminants of Concern
Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[a]	Screening Toxicity Values: Region III Residential Soils [b]	Screening Toxicity Values: Region IX Residential Soils [c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COC Flag	Rationale for Contaminant Deletion or Selection
107-06-2	1,2-Dichloroethane	-		-		µg/kg	N/A	0/8	7.8-11	ND		7,000 C	350 C			No	IFD
75-35-4	1,1-Dichloroethene	-		-		µg/kg	N/A	0/8	7.8-11	ND		1,100 C	54 C			No	IFD
156-59-2	cis-1,2-Dichloroethene	-		-		µg/kg	N/A	0/8	7.8-11	ND		78,000 N	4,300 N			No	IFD
156-60-5	trans-1,2-Dichloroethene	-		-		µg/kg	N/A	0/8	7.8-11	ND		156,000 N	6,300 N			No	IFD
78-87-5	1,2-Dichloropropane	-		-		µg/kg	N/A	0/8	7.8-11	ND		9,400 C	350 C			No	IFD
10061-01-5	cis-1,3-Dichloropropene	-		-		µg/kg	N/A	0/8	7.8-11	ND		6,400 C *	700 C *			No	IFD
10061-02-6	trans-1,3-Dichloropropene	-		-		µg/kg	N/A	0/8	7.8-11	ND		6,400 C *	700 C *			No	IFD
100-41-4	Ethylbenzene	-		-		µg/kg	N/A	0/8	7.8-11	ND		782,000 N	230,000 sat			No	IFD
591-78-6	2-Hexanone	-		-		µg/kg	N/A	0/8	16-23	ND		313,000 N	N/A			No	IFD
108-10-1	4-Methyl-2-pentanone	-		-		µg/kg	N/A	0/8	16-23	ND		626,000 N	79,000 N			No	IFD
75-09-2	Methylene chloride	-		-		µg/kg	N/A	0/8	7.8-11	ND		85,000 C	8,900 C			No	IFD
100-42-5	Styrene	-		-		µg/kg	N/A	0/8	7.8-11	ND		1,564,000 N	1,700,000 sat			No	IFD
79-34-5	1,1,2,2-Tetrachloroethane	-		-		µg/kg	N/A	0/8	7.8-11	ND		3,200 C	380 C			No	IFD
127-18-4	Tetrachloroethene	-		-		µg/kg	N/A	0/8	7.8-11	ND		12,000 C	5,700 C			No	IFD
108-88-3	Toluene	-		-		µg/kg	N/A	0/8	7.8-11	ND		1,564,000 N	520,000 sat			No	IFD
71-55-6	1,1,1-Trichloroethane	-		-		µg/kg	N/A	0/8	7.8-11	ND		2,190,000 N	63,000 N			No	IFD
79-00-5	1,1,2-Trichloroethane	-		-		µg/kg	N/A	0/8	7.8-11	ND		11,000 C	840 C			No	IFD
79-01-6	Trichloroethene	-		-		µg/kg	N/A	0/8	7.8-11	ND		47,000 N	2,300 N			No	IFD
1330-20-7	Sum of Xylenes	-		-		µg/kg	N/A	0/8	7.8-11	ND		15,643,000 N [f]	210,000 sat [f]			No	IFD
SVOCs																	
100-51-6	Benzyl alcohol	-		-		µg/kg	N/A	0/8	260-380	ND		2,346,000 N	1,800,000 N			No	IFD
111-91-1	bis(2-chloroethoxy)methane	-		-		µg/kg	N/A	0/8	51-74	ND		N/A	N/A			No	IFD
111-44-4	bis(2-chloroethyl)ether	-		-		µg/kg	N/A	0/8	51-74	ND		580 C	210 C			No	IFD
117-81-7	bis(2-Ethylhexyl)phthalate	-		-		µg/kg	N/A	0/8	59-160	ND		46,000 C	35,000 C			No	IFD
101-55-3	4-Bromophenyl-phenyl ether	-		-		µg/kg	N/A	0/8	51-74	ND		N/A	N/A			No	IFD
85-68-7	Butylbenzyl phthalate	-		-		µg/kg	N/A	0/8	51-74	ND		1,564,000 N	1,200,000 N			No	IFD
86-74-8	Carbazole	170		170		µg/kg	S380	1/8	51-74	170		32,000 C	24,000 C			No	BSL
59-50-7	4-Chloro-3-methylphenol	-		-		µg/kg	N/A	0/8	260-380	ND		N/A	N/A			No	IFD
106-47-8	4-Chloroaniline	-		-		µg/kg	N/A	0/8	51-74	ND		31,000 N	24,000 N			No	IFD
91-58-7	2-Chloronaphthalene	-		-		µg/kg	N/A	0/8	51-74	ND		626,000 N	390,000 N			No	IFD
95-57-8	2-Chlorophenol	-		-		µg/kg	N/A	0/8	51-74	ND		39,000 N	6,300 N			No	IFD
7005-72-3	4-Chlorophenyl-phenyl ether	-		-		µg/kg	N/A	0/8	51-74	ND		N/A	N/A			No	IFD
132-64-9	Dibenzofuran	-		-		µg/kg	N/A	0/8	51-74	ND		31,000 N	29,000 N			No	IFD
95-50-1	1,2-Dichlorobenzene	-		-		µg/kg	N/A	0/8	51-74	ND		704,000 N	370,000 sat			No	IFD
541-73-1	1,3-Dichlorobenzene	-		-		µg/kg	N/A	0/8	51-74	ND		235,000 N	1,300 N			No	IFD
106-46-7	1,4-Dichlorobenzene	-		-		µg/kg	N/A	0/8	51-74	ND		27,000 C	3,400 C			No	IFD
91-94-1	3,3'-Dichlorobenzidine	-		-		µg/kg	N/A	0/8	51-74	ND		1,400 C	1,100 C			No	IFD
120-83-2	2,4-Dichlorophenol	-		-		µg/kg	N/A	0/8	260-380	ND		23,000 N	18,000 N			No	IFD
84-66-2	Diethyl phthalate	-		-		µg/kg	N/A	0/8	51-74	ND		6,257,000 N	4,900,000 N			No	IFD
131-11-3	Dimethyl phthalate	-		-		µg/kg	N/A	0/8	51-74	ND		78,214,000 N	100,000,000 max			No	IFD
105-67-9	2,4-Dimethylphenol	-		-		µg/kg	N/A	0/8	260-380	ND		156,000 N	120,000 N			No	IFD
84-74-2	Di-n-butyl phthalate	-		-		µg/kg	N/A	0/8	51-74	ND		782,000 N	610,000 N			No	IFD
51-28-5	2,4-Dinitrophenol	-		-		µg/kg	N/A	0/8	1300-1900	ND		16,000 N	12,000 N			No	IFD
121-14-2	2,4-Dinitrotoluene	-		-		µg/kg	N/A	0/8	260-380	ND		16,000 N	12,000 N			No	IFD
606-20-2	2,6-Dinitrotoluene	-		-		µg/kg	N/A	0/8	260-380	ND		7,800 N	6,100 N			No	IFD
117-84-0	Di-n-octyl phthalate	-		-		µg/kg	N/A	0/8	51-74	ND		156,000 N	120,000 N			No	IFD

Table 2.5
Occurrence, Distribution, and Selection of Contaminants of Concern
Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[a]	Screening Toxicity Values: Region III Residential Soils[b]	Screening Toxicity Values: Region IX Residential Soils[c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COC Flag	Rationale for Contaminant Deletion or Selection
118-74-1	Hexachlorobenzene	4.0		251	J	µg/kg	S382	9/9	N/A	251		400 C	300 C			No	BSL
87-68-3	Hexachlorobutadiene	-		-		µg/kg	N/A	0/8	51-74	ND		1,600 N	1,800 N			No	IFD
77-47-4	Hexachlorocyclopentadiene	-		-		µg/kg	N/A	0/8	260-380	ND		47,000 N	42,000 N			No	IFD
67-72-1	Hexachloroethane	-		-		µg/kg	N/A	0/8	51-74	ND		7,800 N	6,100 N			No	IFD
78-59-1	Isophorone	-		-		µg/kg	N/A	0/8	51-74	ND		672,000 C	510,000 C			No	IFD
534-52-1	2-Methyl-4,6-dinitrophenol	-		-		µg/kg	N/A	0/8	1300-1900	ND		7,800 N	N/A			No	IFD
95-48-7	2-Methylphenol	-		-		µg/kg	N/A	0/8	51-74	ND		391,000 N	310,000 N			No	IFD
106-44-5	4-Methylphenol	-		-		µg/kg	N/A	0/8	51-74	ND		39,000 N	31,000 N			No	IFD
88-74-4	2-Nitroaniline	-		-		µg/kg	N/A	0/8	100-150	ND		N/A	350 N			No	IFD
99-09-2	3-Nitroaniline	-		-		µg/kg	N/A	0/8	1300-1900	ND		N/A	350 N[g]			No	IFD
100-01-6	4-Nitroaniline	-		-		µg/kg	N/A	0/8	1300-1900	ND		N/A	350 N[g]			No	IFD
98-95-3	Nitrobenzene	-		-		µg/kg	N/A	0/8	51-74	ND		3,900 N	2,000 N			No	IFD
88-75-5	2-Nitrophenol	-		-		µg/kg	N/A	0/8	260-380	ND		N/A	49,000 N[h]			No	IFD
100-02-7	4-Nitrophenol	-		-		µg/kg	N/A	0/8	1300-1900	ND		63,000 N	49,000 N			No	IFD
62-75-9	N-nitroso dimethylamine	-		-		µg/kg	N/A	0/8	260-380	ND		13 C	9.5 C			No	IFD
621-64-7	N-nitroso-di-n-propylamine	-		-		µg/kg	N/A	0/8	51-74	ND		91 C	69 C			No	IFD
86-30-6	N-nitrosodiphenylamine	-		-		µg/kg	N/A	0/8	51-74	ND		130,000 C	99,000 C			No	IFD
108-60-1	2,2'-Oxybis(1-chloropropane)	-		-		µg/kg	N/A	0/8	51-74	ND		9,100 C	2,900 C			No	IFD
87-86-5	Pentachlorophenol	-		-		µg/kg	N/A	0/8	1300-1900	ND		5,300 C	3,000 C			No	IFD
108-95-2	Phenol	-		-		µg/kg	N/A	0/8	51-74	ND		4,693,000 N	3,700,000 N			No	IFD
120-82-1	1,2,4-Trichlorobenzene	-		-		µg/kg	N/A	0/8	51-74	ND		78,000 N	65,000 N			No	IFD
95-95-4	2,4,5-Trichlorophenol	-		-		µg/kg	N/A	0/8	260-380	ND		782,000 N	610,000 N			No	IFD
88-06-2	2,4,6-Trichlorophenol	-		-		µg/kg	N/A	0/8	260-380	ND		58,000 C	44,000 C			No	IFD
83-32-9	Acenaphthene	81		81		µg/kg	S380	1/8	51-74	81		469,000 N	370,000 N			No	BSL
208-96-8	Acenaphthylene	-		-		µg/kg	N/A	0/8	51-74	ND		156,000 N[i]	5,600 N[i]			No	IFD
120-12-7	Anthracene	61		200		µg/kg	S380	2/8	51-74	200		2,346,000 N	2,200,000 N			No	BSL
56-55-3	Benz(a)anthracene	74	J	1,700		µg/kg	S380	6/8	51-53	1,700		870 C	620 C			Yes	ASL
50-32-8	Benzo(a)pyrene	130		1,800		µg/kg	S380	5/8	51-53	1,800		87 C	62 C			Yes	ASL
205-99-2	Benzo(b)fluoranthene	77	J	1,500		µg/kg	S380	6/8	51-53	1,500		870 C	620 C			Yes	ASL
191-24-2	Benzo(g,h,i)perylene	125		970		µg/kg	S380	4/8	51-74	970		156,000 N[i]	5,600 N[i]			No	BSL
207-08-9	Benzo(k)fluoranthene	86	J	1,500		µg/kg	S380	6/8	51-53	1,500		8,700 C	6,200 C			No	BSL
218-01-9	Chrysene	68		2,000		µg/kg	S380	8/8	N/A	2,000		87,000 C	62,000 C			No	BSL
53-70-3	Dibenz(a,h)anthracene	64		480		µg/kg	S380	2/8	51-74	480		87 C	62 C			Yes	ASL
206-44-0	Fluoranthene	85		2,200		µg/kg	S380	8/8	N/A	2,200		313,000 N	230,000 N			No	BSL
86-73-7	Fluorene	71		71		µg/kg	S380	1/8	51-74	71		313,000 N	260,000 N			No	BSL
193-39-5	Indeno(1,2,3-cd)pyrene	125		1,100		µg/kg	S380	4/8	51-74	1,100		870 C	620 C			Yes	ASL
91-57-6	2-Methylnaphthalene	-		-		µg/kg	N/A	0/8	51-74	ND		156,000 N[i]	5,600 N[i]			No	IFD
91-20-3	Naphthalene	-		-		µg/kg	N/A	0/8	51-74	ND		156,000 N	5,600 N			No	IFD
85-01-8	Phenanthrene	65		1,000		µg/kg	S380	7/8	53-53	1,000		156,000 N[i]	5,600 N[i]			No	BSL
129-00-0	Pyrene	120		2,600		µg/kg	S380	7/8	53-53	2,600		235,000 N	230,000 N			No	BSL
Pesticides																	
309-00-2	Aldrin	-		-		µg/kg	N/A	0/8	1.04-1.09	ND		38 C	29 C			No	IFD
319-84-6	alpha-BHC	-		-		µg/kg	N/A	0/8	1.04-1.09	ND		100 C	90 C			No	IFD
319-85-7	beta-BHC	1.2	J	1.2	J	µg/kg	S380	1/8	1.04-1.09	1.2		350 C	320 C			No	BSL
319-86-8	delta-BHC	-		-		µg/kg	N/A	0/0	N/A	ND		350 C[j]	320 C[j]			No	IFD
58-89-9	gamma-BHC (Lindane)	-		-		µg/kg	N/A	0/8	1.04-1.09	ND		490 C	440 C			No	IFD

Table 2.5
Occurrence, Distribution, and Selection of Contaminants of Concern
Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[a]	Screening Toxicity Values: Region III Residential Soils[b]	Screening Toxicity Values: Region IX Residential Soils[c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COC Flag	Rationale for Contaminant Deletion or Selection
57-74-9	Sum of Chlordanes	1.7	J	2.2	J	µg/kg	S381	2/8	1.04-1.09	2.2		1,800 C	1,600 C			No	BSL
72-54-8	4,4'-DDD	-		-		µg/kg	N/A	0/8	1.04-1.09	ND		2,700 C	2,400 C[k]			No	IFD
72-55-9	4,4'-DDE	1.3	J	1.5	J	µg/kg	S381	2/8	1.04-1.09	1.5		1,900 C	1,700 C[k]			No	BSL
50-29-3	4,4'-DDT	1.2	J	4.7	J	µg/kg	S381	6/8	1.05-1.05	4.7		1,900 C	1,700 C[k]			No	BSL
60-57-1	Dieldrin	1.4	J	2.9	J	µg/kg	S381	2/8	1.04-1.09	2.9		40 C	30 C			No	BSL
959-98-8	Endosulfan I	-		-		µg/kg	N/A	0/8	1.04-1.09	ND		47,000 N[l]	37,000 N[l]			No	IFD
33213-65-9	Endosulfan II	-		-		µg/kg	N/A	0/8	1.04-1.09	ND		47,000 N[l]	37,000 N[l]			No	IFD
1031-07-8	Endosulfan sulfate	-		-		µg/kg	N/A	0/0	N/A	ND		47,000 N[l]	37,000 N[l]			No	IFD
72-20-8	Endrin	-		-		µg/kg	N/A	0/7	1.04-1.09	ND		2,300 N	1,800 N			No	IFD
7421-93-4	Endrin aldehyde	2.0	J	2.0	J	µg/kg	S381	1/8	1.04-1.09	2.0		2,300 N[m]	1,800 N[m]			No	BSL
53494-70-5	Endrin ketone	-		-		µg/kg	N/A	0/8	1.04-1.09	ND		2,300 N[m]	1,800 N[m]			No	IFD
76-44-8	Heptachlor	-		-		µg/kg	N/A	0/8	1.04-1.09	ND		140 C	110 C			No	IFD
1024-57-3	Heptachlor epoxide	1.3	J	2.3	J	µg/kg	S380	4/8	1.04-1.09	2.3		70 C	53 C			No	BSL
72-43-5	Methoxychlor	-		-		µg/kg	N/A	0/8	1.04-1.09	ND		39,000 N	31,000 N			No	IFD
8001-35-2	Toxaphene	-		-		µg/kg	N/A	0/8	104-109	ND		580 C	440 C			No	IFD
PCBs																	
12674-11-2	Aroclor 1016	-		-		µg/kg	N/A	0/8	51.8-54.6	ND		550 N	390 N			No	IFD
11104-28-2	Aroclor 1221	-		-		µg/kg	N/A	0/8	51.8-54.6	ND		320 C	220 C			No	IFD
11141-16-5	Aroclor 1232	-		-		µg/kg	N/A	0/8	51.8-54.6	ND		320 C	220 C			No	IFD
53469-21-9	Aroclor 1242	17	J	17	J	µg/kg	S380	1/8	51.8-54.6	17		320 C	220 C			No	BSL
12672-29-6	Aroclor 1248	12	J	12	J	µg/kg	S382	1/8	51.8-54.6	12		320 C	220 C			No	BSL
11097-69-1	Aroclor 1254	14	J	55	J	µg/kg	S379	4/8	52.5-54.6	55		160 N	110 N			No	BSL
11096-82-5	Aroclor 1260	14	J	269	J	µg/kg	S381	5/8	51.8-52.9	269		320 C	220 C			Yes	ASL
	Aroclor 1268	105	J	105	J	µg/kg	S379	1/8	51.8-54.6	105		320 C[n]	220 C[n]			No	BSL
1336-36-3	Sum of PCBs	38		296		µg/kg	S381	8/8	N/A	296		320 C	220 C			Yes	ASL
PCDD/PCDFs																	
	TEQ as 2,3,7,8-TCDD	4.9		19		ng/kg	S379	8/8	N/A	19		4.3 C[o]	3.9 C[o]			Yes	ASL

Notes: All results reported as dry weight.

– no detected value
C – carcinogenic
COPC – contaminant of potential concern
J – estimated value
max – non-risk-based ceiling limit
N – non-carcinogenic
N/A – not applicable
ND – not detected
sat – non-risk-based concentration calculated based on soil saturation

Rationale Codes:

Selection Reason: ASL – above screening levels
BKG – below background levels
FD – frequent detection
HIST – infrequent detection but associated historically
TX – toxicity information available

Deletion Reason:
BSL – below screening level
IFD – infrequent detection
NTX – no toxicity information
NUT – essential nutrient

Table 2.5
Occurrence, Distribution, and Selection of Contaminants of Concern
Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[a]	Screening Toxicity Values: Region III Residential Soils [b]	Screening Toxicity Values: Region IX Residential Soils [c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COC Flag	Rationale for Contaminant Deletion or Selection

[a] Background values derived from sediment from Otisco Lake (OT1-OT7) as twice the mean value.
[b] Screening toxicity values for sediment are the USEPA Region III RBCs (2001). RBCs correspond to 1 X 10cancer risk or a hazard quotient of 0.1, whichever is lower.
[c] Screening toxicity values for sediment are the USEPA Region IX PRGs (2001). PRGs correspond to 1 X 10cancer risk or a hazard quotient of 0.1, whichever is lower.
[d] This default carcinogenic screening value for chromium is that for chromium VI.
[e] Criterion for cis and trans is 1,3-Dichloropropene (however, there were no detects, so summing was not necessary)
[f] This default screening value is for total xylenes.
[g] This default screening value is for 2-Nitroaniline.
[h] This default screening value is for 4-Nitrophenol.
[i] This default screening value is for naphthalene, the non-carcinogenic PAH with the most stringent RBC/PRG.
[j] This default screening value is for Technical HCH (BHC).
[k] These default screening values for DDD, DDE, and DDT are not isomer-specific.
[l] This default non-carcinogenic screening value is that for endosulfan.
[m] This default non-carcinogenic screening value is that for endrin.
[n] This default carcinogenic screening value for Aroclor 1268 is that for PCBs.
[o] This default carcinogenic screening value for the PCDD/PCDFs is 2,3,7,8-TCDD.
[p] 2000 samples were collected at 0-0.15 and 0.15-0.30 meter intervals. The 2000 data is used as discrete, individual data points for the screening. Discussion is in Section 3.2
[q] Mercury (inorganic) and methylmercury concentrations in wetlands sediment estimated from total mercury concentration data (as shown in Appendix A.4 and A.5) and the assumption that one percent of the wetland sediment mercury is in the form of methylmercury

Table 2.6
Occurrence, Distribution, and Selection of Contaminants of Potential Concern
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Surface Sediments
Exposure Medium: Surface Sediments
Exposure Point: Wetland SYW-12 sediment from the southern basin of Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[a]	Screening Toxicity Values: Region III Residential Soils[b]	Screening Toxicity Values: Region IX Residential Soils[c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
Inorganics																	
7429-90-5	Aluminum	2,410		15,100		mg/kg	S390	8/8	N/A	15,100	13,220	7,800 N	7,600 N			Yes	ASL
7440-36-0	Antimony	0.33	J	0.92		mg/kg	S390	5/8	0.23-0.27	0.92	3.3	3.1 N	3.1 N			No	BSL
7440-38-2	Arsenic	1.6		11		mg/kg	S390	8/8	N/A	11	8.3	0.43 C	0.39 C			Yes	ASL
7440-39-3	Barium	31.4		324		mg/kg	S390	8/8	N/A	324	203	550 N	540 N			No	BSL
7440-41-7	Beryllium	0.17		0.88		mg/kg	S390	8/8	N/A	0.88	0.67	16 N	15 N			No	BSL
7440-43-9	Cadmium	0.94		80		mg/kg	S390	8/8	N/A	80	0.45	3.9 N	3.7 N			Yes	ASL
7440-70-2	Calcium	70,700		207,000		mg/kg	S387	8/8	N/A	207,000	170,277	N/A	N/A			No	NUT
7440-47-3	Chromium	11.6	J	594		mg/kg	S390	8/8	N/A	594	22	23 N[d]	23 N[d]			Yes	ASL
7440-48-4	Cobalt	1.4		9.3		mg/kg	S390	8/8	N/A	9.3	12	160 N	470 N			No	BSL
7440-50-8	Copper	17.5		517		mg/kg	S390	8/8	N/A	517	146	310 N	290 N			Yes	ASL
74-90-8	Cyanide	1.4		1.4		mg/kg	S390	1/8	0.59-0.79	1.4	-	160 N	1.1 N			Yes	ASL
7439-89-6	Iron	6,830		27,000		mg/kg	S390	8/8	N/A	27,000	25,526	4,700 N	2,300 N			Yes	ASL
7439-92-1	Lead	23.3		340		mg/kg	S390	8/8	N/A	340	33	N/A	400 N			No	BSL
7439-95-4	Magnesium	4,830		17,000		mg/kg	S389	8/8	N/A	17,000	10,909	N/A	N/A			No	NUT
7439-96-5	Manganese	175	J	348		mg/kg	S390	8/8	N/A	348	1,373	160 N	180 N			Yes	BKG
7439-97-6	Mercury(inorganic)[q]	0.053	J	5.940		mg/kg	S390	7/8	0.04-0.04	5.9	0.16	2.3 N	2.3 N			Yes	ASL
22967-92-6	Methylmercury[q]	0.001	J	0.060		mg/kg	S390	7/8	0.04-0.04	0.1	0.16	2.3 N	2.3 N			Yes	HIST
7440-02-0	Nickel	8.1		100		mg/kg	S390	8/8	N/A	100	29	160 N	160 N			No	BSL
7440-09-7	Potassium	366		3,750		mg/kg	S390	8/8	N/A	3,750	1,602	N/A	N/A			No	NUT
7782-49-2	Selenium	0.64		4.1		mg/kg	S389	5/8	0.45-0.59	4.1	1.6	39 N	39 N			No	BSL
7440-22-4	Silver	0.16		12		mg/kg	S390	7/8	0.09-0.09	12	ND	39 N	39 N			No	BSL
7440-23-5	Sodium	242	J	2,070	J	mg/kg	S390	8/8	N/A	2,070	277	N/A	N/A			No	NUT
7440-28-0	Thallium	1.0		1.0		mg/kg	S387	1/8	0.58-0.98	1.0	0.83	0.55 N	0.52 N			Yes	ASL
7440-62-2	Vanadium	4.3		31	J	mg/kg	S390	8/8	N/A	31	21	55 N	55 N			No	BSL
7440-66-6	Zinc	81.4	J	866		mg/kg	S390	8/8	N/A	866	104	2,300 N	2,300 N			No	BSL
VOCs																	
67-64-1	Acetone	18		570		µg/kg	S390	2/8	22-29	570		782,000 N	160,000 N			No	BSL
71-43-2	Benzene	1.3	J	18	J	µg/kg	S390	2/8	5.6-7.6	18		12,000 C	650 C			No	BSL
75-27-4	Bromodichloromethane	-		-		µg/kg	N/A	0/8	5.6-49	ND		10,000 C	1,000 C			No	IFD
75-25-2	Bromoform	-		-		µg/kg	N/A	0/8	5.6-49	ND		81,000 C	62,000 C			No	IFD
74-83-9	Bromomethane	-		-		µg/kg	N/A	0/8	5.6-49	ND		11,000 N	390 N			No	IFD
78-93-3	2-Butanone	3.8	J	86		µg/kg	S390	2/8	11-14	86		4,693,000 N	730,000 N			No	BSL
75-15-0	Carbon disulfide	11		11		µg/kg	S390	1/8	11-15	11		782,000 N	36,000 N			No	BSL
56-23-5	Carbon tetrachloride	-		-		µg/kg	N/A	0/8	5.6-49	ND		4,900 C	210 N			No	IFD
108-90-7	Chlorobenzene	2.0	J	22		µg/kg	S390	3/8	5.6-7.6	22		156,000 N	15,000 N			No	BSL
75-00-3	Chloroethane	-		-		µg/kg	N/A	0/8	5.6-49	ND		220,000 C	3,000 C			No	IFD
67-66-3	Chloroform	-		-		µg/kg	N/A	0/8	5.6-49	ND		78,000 N	39 N			No	IFD
74-87-3	Chloromethane	-		-		µg/kg	N/A	0/8	5.6-49	ND		49,000 C	1,200 C			No	IFD
124-48-1	Dibromochloromethane	-		-		µg/kg	N/A	0/8	5.6-49	ND		7,600 C	1,100 C			No	IFD
75-34-3	1,1-Dichloroethane	-		-		µg/kg	N/A	0/8	5.6-49	ND		782,000 N	59,000 N			No	IFD
107-06-2	1,2-Dichloroethane	-		-		µg/kg	N/A	0/8	5.6-49	ND		7,000 C	350 C			No	IFD
75-35-4	1,1-Dichloroethene	-		-		µg/kg	N/A	0/8	5.6-49	ND		1,100 C	54 C			No	IFD

Table 2.6
Occurrence, Distribution, and Selection of Contaminants of Concern
Onondaga Lake

	CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[a]	Screening Toxicity Values: Region III Residential Soils[b]	Screening Toxicity Values: Region IX Residential Soils[c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COC Flag	Rationale for Contaminant Deletion or Selection
	156-59-2	cis-1,2-Dichloroethene	-		-		µg/kg	N/A	0/8	5.6-49	ND		78,000 N	4,300 N			No	IFD
	156-60-5	trans-1,2-Dichloroethene	-		-		µg/kg	N/A	0/8	5.6-49	ND		156,000 N	6,300 N			No	IFD
	78-87-5	1,2-Dichloropropane	-		-		µg/kg	N/A	0/8	5.6-49	ND		9,400 C	350 C			No	IFD
	10061-01-5	cis-1,3-Dichloropropene	-		-		µg/kg	N/A	0/8	5.6-49	ND		6,400 C[e]	700 C[e]			No	IFD
	10061-02-6	trans-1,3-Dichloropropene	-		-		µg/kg	N/A	0/8	5.6-49	ND		6,400 C[e]	700 C[e]			No	IFD
	100-41-4	Ethylbenzene	15		15		µg/kg	S390	1/8	5.6-7.6	15		782,000 N	230,000 sat			No	BSL
	591-78-6	2-Hexanone	-		-		µg/kg	N/A	0/8	11-98	ND		313,000 N	N/A			No	IFD
	108-10-1	4-Methyl-2-pentanone	-		-		µg/kg	N/A	0/8	11-98	ND		626,000 N	79,000 N			No	IFD
	75-09-2	Methylene chloride	1.3	J	2.6	J	µg/kg	S388	4/8	5.6-49	2.6		85,000 C	8,900 C			No	BSL
	100-42-5	Styrene	-		-		µg/kg	N/A	0/8	5.6-49	ND		1,564,000 N	1,700,000 sat			No	IFD
	79-34-5	1,1,2,2-Tetrachloroethane	-		-		µg/kg	N/A	0/8	5.6-49	ND		3,200 C	380 C			No	IFD
	127-18-4	Tetrachloroethene	-		-		µg/kg	N/A	0/8	5.6-49	ND		12,000 C	5,700 C			No	IFD
	108-88-3	Toluene	1.7	J	24		µg/kg	S390	3/8	5.6-7.6	24		1,564,000 N	520,000 sat			No	BSL
	71-55-6	1,1,1-Trichloroethane	-		-		µg/kg	N/A	0/8	5.6-49	ND		2,190,000 N	63,000 N			No	IFD
	79-00-5	1,1,2-Trichloroethane	-		-		µg/kg	N/A	0/8	5.6-49	ND		11,000 C	840 C			No	IFD
	79-01-6	Trichloroethene	-		-		µg/kg	N/A	0/8	5.6-49	ND		47,000 N	2,300 N			No	IFD
	75-01-4	Vinyl chloride	-		-		µg/kg	N/A	0/8	5.6-49	ND		90 C	150 C			No	IFD
	1330-20-7	Sum of Xylenes	114		114		µg/kg	S390	1/8	5.6-7.6	114		15,643,000 N[f]	210,000 sat[f]			No	BSL
SVOCs																		
	100-51-6	Benzyl alcohol	-		-		µg/kg	N/A	0/8	200-2100	ND		2,346,000 N	1,800,000 N			No	IFD
	111-91-1	bis(2-chloroethoxy)methane	-		-		µg/kg	N/A	0/8	39-410	ND		N/A	N/A			No	IFD
	111-44-4	bis(2-chloroethyl)ether	-		-		µg/kg	N/A	0/8	39-410	ND		580 C	210 C			No	IFD
	117-81-7	bis(2-Ethylhexyl)phthalate	120		470		µg/kg	S389	2/8	65-410	470		46,000 C	35,000 C			No	BSL
	101-55-3	4-Bromophenyl-phenyl ether	-		-		µg/kg	N/A	0/8	39-410	ND		N/A	N/A			No	IFD
	85-68-7	Butylbenzyl phthalate	-		-		µg/kg	N/A	0/8	39-410	ND		1,564,000 N	1,200,000 N			No	IFD
	86-74-8	Carbazole	78		1,600		µg/kg	S388	4/8	39-410	1,600		32,000 C	24,000 C			No	BSL
	59-50-7	4-Chloro-3-methylphenol	-		-		µg/kg	N/A	0/8	200-2100	ND		N/A	N/A			No	IFD
	106-47-8	4-Chloroaniline	-		-		µg/kg	N/A	0/8	39-410	ND		31,000 N	24,000 N			No	IFD
	91-58-7	2-Chloronaphthalene	-		-		µg/kg	N/A	0/8	39-410	ND		626,000 N	390,000 N			No	IFD
	95-57-8	2-Chlorophenol	-		-		µg/kg	N/A	0/8	39-410	ND		39,000 N	6,300 N			No	IFD
	7005-72-3	4-Chlorophenyl-phenyl ether	-		-		µg/kg	N/A	0/8	39-410	ND		N/A	N/A			No	IFD
	132-64-9	Dibenzofuran	46		990		µg/kg	S388	2/8	39-410	990		31,000 N	29,000 N			No	BSL
	95-50-1	1,2-Dichlorobenzene	-		-		µg/kg	N/A	0/8	39-410	ND		704,000 N	370,000 sat			No	IFD
	541-73-1	1,3-Dichlorobenzene	-		-		µg/kg	N/A	0/8	39-410	ND		235,000 N	1,300 N			No	IFD
	106-46-7	1,4-Dichlorobenzene	54		54		µg/kg	S389	1/8	39-410	54		27,000 C	3,400 C			No	BSL
	91-94-1	3,3'-Dichlorobenzidine	-		-		µg/kg	N/A	0/8	39-410	ND		1,400 C	1,100 C			No	IFD
	120-83-2	2,4-Dichlorophenol	-		-		µg/kg	N/A	0/8	200-2100	ND		23,000 N	18,000 N			No	IFD
	84-66-2	Diethyl phthalate	-		-		µg/kg	N/A	0/8	39-410	ND		6,257,000 N	4,900,000 N			No	IFD
	131-11-3	Dimethyl phthalate	-		-		µg/kg	N/A	0/8	39-410	ND		78,214,000 N	100,000,000 max			No	IFD
	105-67-9	2,4-Dimethylphenol	-		-		µg/kg	N/A	0/8	200-2100	ND		156,000 N	120,000 N			No	IFD
	84-74-2	Di-n-butyl phthalate	120		120		µg/kg	S390	1/8	39-410	120		782,000 N	610,000 N			No	BSL
	51-28-5	2,4-Dinitrophenol	-		-		µg/kg	N/A	0/8	1000-11000	ND		16,000 N	12,000 N			No	IFD
	121-14-2	2,4-Dinitrotoluene	-		-		µg/kg	N/A	0/8	200-2100	ND		16,000 N	12,000 N			No	IFD
	606-20-2	2,6-Dinitrotoluene	-		-		µg/kg	N/A	0/8	200-2100	ND		7,800 N	61,00 N			No	IFD
	117-84-0	Di-n-octyl phthalate	-		-		µg/kg	N/A	0/8	39-410	ND		156,000 N	120,000 N			No	IFD
	118-74-1	Hexachlorobenzene	2.2	J	47	J	µg/kg	S388	8/8	N/A	47		400 C	300 C			No	BSL
	87-68-3	Hexachlorobutadiene	-		-		µg/kg	N/A	0/8	39-410	ND		1,600 N	1,800 N			No	IFD

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77-47-4	Hexachlorocyclopentadiene	-		-		µg/kg	N/A	0/8	200-2100	ND		47,000 N	42,000 N			No	IFD
67-72-1	Hexachloroethane	-		-		µg/kg	N/A	0/8	39-410	ND		7,800 N	6,100 N			No	IFD
78-59-1	Isophorone	-		-		µg/kg	N/A	0/8	39-410	ND		672,000 C	510,000 C			No	IFD
534-52-1	2-Methyl-4,6-dinitrophenol	-		-		µg/kg	N/A	0/8	1000-11000	ND		7,800 N	N/A			No	IFD
95-48-7	2-Methylphenol	-		-		µg/kg	N/A	0/8	39-410	ND		391,000 N	310,000 N			No	IFD
106-44-5	4-Methylphenol	-		-		µg/kg	N/A	0/8	39-410	ND		39,000 N	31,000 N			No	IFD
88-74-4	2-Nitroaniline	-		-		µg/kg	N/A	0/8	79-840	ND		N/A	350 N			No	IFD
99-09-2	3-Nitroaniline	-		-		µg/kg	N/A	0/8	1000-11000	ND		N/A	350 N[g]			No	IFD
100-01-6	4-Nitroaniline	-		-		µg/kg	N/A	0/8	1000-11000	ND		N/A	350 N[g]			No	IFD
98-95-3	Nitrobenzene	-		-		µg/kg	N/A	0/8	39-410	ND		3,900 N	2,000 N			No	IFD
88-75-5	2-Nitrophenol	-		-		µg/kg	N/A	0/8	200-2100	ND		N/A	49,000 N[h]			No	IFD
100-02-7	4-Nitrophenol	-		-		µg/kg	N/A	0/8	1000-11000	ND		63,000 N	49,000 N			No	IFD
62-75-9	N-nitroso dimethylamine	-		-		µg/kg	N/A	0/8	200-2100	ND		13 C	9.5 C			No	IFD
621-64-7	N-nitroso-di-n-propylamine	-		-		µg/kg	N/A	0/8	39-410	ND		91 C	69 C			No	IFD
86-30-6	N-nitrosodiphenylamine	-		-		µg/kg	N/A	0/8	39-410	ND		130,000 C	99,000 C			No	IFD
108-60-1	2,2'-Oxybis(1-chloropropane)	-		-		µg/kg	N/A	0/8	39-410	ND		9,100 C	2,900 C			No	IFD
87-86-5	Pentachlorophenol	-		-		µg/kg	N/A	0/8	1000-11000	ND		5,300 C	3,000 C			No	IFD
108-95-2	Phenol	-		-		µg/kg	N/A	0/8	39-410	ND		4,693,000 N	3,700,000 N			No	IFD
120-82-1	1,2,4-Trichlorobenzene	-		-		µg/kg	N/A	0/8	39-410	ND		78,000 N	65,000 N			No	IFD
95-95-4	2,4,5-Trichlorophenol	-		-		µg/kg	N/A	0/8	200-2100	ND		782,000 N	610,000 N			No	IFD
88-06-2	2,4,6-Trichlorophenol	-		-		µg/kg	N/A	0/8	200-2100	ND		58,000 C	44,000 C			No	IFD
83-32-9	Acenaphthene	61		1,300		µg/kg	S388	3/8	39-410	1,300		469,000 N	370,000 N			No	BSL
208-96-8	Acenaphthylene	79		1,200		µg/kg	S388	7/8	39-39	1,200		156,000 N[i]	5,600 N[i]			No	BSL
120-12-7	Anthracene	120		3,600		µg/kg	S388	7/8	39-39	3,600		2,346,000 N	2,200,000 N			No	BSL
56-55-3	Benz(a)anthracene	340		7,500		µg/kg	S388	6/8	39-48	7,500		870 C	620 C			Yes	ASL
50-32-8	Benzo(a)pyrene	360		7,100		µg/kg	S388	6/8	39-48	7,100		87 C	62 C			Yes	ASL
205-99-2	Benzo(b)fluoranthene	320		4,900		µg/kg	S388	6/8	39-48	4,900		870 C	620 C			Yes	ASL
191-24-2	Benzo(g,h,i)perylene	260		4,800		µg/kg	S388	6/8	39-48	4,800		156,000 N[i]	5,600 N[i]			No	BSL
207-08-9	Benzo(k)fluoranthene	340		5,700		µg/kg	S388	6/8	39-48	5,700		8,700 C	6,200 C			No	BSL
218-01-9	Chrysene	400		7,600		µg/kg	S388	6/8	39-48	7,600		87,000 C	62,000 C			No	BSL
53-70-3	Dibenz(a,h)anthracene	90		210		µg/kg	S390	4/8	39-410	210		87 C	62 C			Yes	ASL
206-44-0	Fluoranthene	120		16,000		µg/kg	S388	7/8	39-39	16,000		313,000 N	230,000 N			No	BSL
86-73-7	Fluorene	73		110		µg/kg	S387	3/8	39-410	110		313,000 N	260,000 N			No	BSL
193-39-5	Indeno(1,2,3-cd)pyrene	190		4,500		µg/kg	S388	6/8	39-48	4,500		870 C	620 C			Yes	ASL
91-57-6	2-Methylnaphthalene	780		780		µg/kg	S388	1/8	39-410	780		156,000 N	5,600 N[i]			No	BSL
91-20-3	Naphthalene	52		1,900		µg/kg	S388	2/8	39-410	1,900		156,000 N	5,600 N			No	BSL
85-01-8	Phenanthrene	88		13,000		µg/kg	S388	7/8	39-39	13,000		156,000 N[i]	5,600 N[i]			Yes	ASL
129-00-0	Pyrene	630		11,000		µg/kg	S388	6/8	39-48	11,000		235,000 N	230,000 N			No	BSL
Pesticides																	
309-00-2	Aldrin	-		-		µg/kg	N/A	0/4	1.05-1.09	ND		.38 C	29 C			No	IFD
319-84-6	alpha-BHC	5.7	J	5.7	J	µg/kg	S390	1/7	1.05-1.09	5.7		100 C	90 C			No	BSL
319-85-7	beta-BHC	2.1	J	2.5	J	µg/kg	S389	2/8	1.05-1.09	2.5		350 C	320 C			No	BSL
319-86-8	delta-BHC	1.7	J	5.0	J	µg/kg	S390	2/2	N/A	5.0		350 C[j]	320 C[j]			No	BSL
58-89-9	gamma-BHC (Lindane)	-		-		µg/kg	N/A	0/7	1.05-1.09	ND		490 C	440 C			No	IFD
57-74-9	Sum of Chlordanes	1.5	J	27	J	µg/kg	S390	7/8	1.07-1.07	27		1,800 C	1,600 C			No	BSL
72-54-8	4,4'-DDD	1.4	J	8.3	J	µg/kg	S390	3/7	1.07-1.09	8.3		2,700 C	2,400 C[k]			No	BSL
72-55-9	4,4'-DDE	1.3	J	7.4	J	µg/kg	S389	4/5	1.09-1.09	7.4		1,900 C	1,700 C[k]			No	BSL

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50-29-3	4,4'-DDT	2.1	J	25	J	µg/kg	S390	8/8	N/A	25		1,900 C	1,700 C[k]			No	BSL
60-57-1	Dieldrin	2.6	J	21	J	µg/kg	S390	6/7	1.05-1.05	21		40 C	30 C			No	BSL
959-98-8	Endosulfan I	-		-		µg/kg	N/A	0/8	1.05-1.09	ND		47,000 N[l]	37,000 N[l]			No	IFD
33213-65-9	Endosulfan II	-		-		µg/kg	N/A	0/3	1.07-1.09	ND		47,000 N[l]	37,000 N[l]			No	IFD
1031-07-8	Endosulfan sulfate	6.2	J	6.2	J	µg/kg	S387	1/1	N/A	6.2		47,000 N[l]	37,000 N[l]			No	BSL
72-20-8	Endrin	1.7	J	5.2	J	µg/kg	S390	4/8	1.05-1.09	5.2		2,300 N	1,800 N			No	BSL
7421-93-4	Endrin aldehyde	2.1	J	2.5	J	µg/kg	S387	2/7	1.05-1.09	2.5		2,300 N[m]	1,800 N[m]			No	BSL
53494-70-5	Endrin ketone	-		-		µg/kg	N/A	0/7	1.05-1.09	ND		2,300 N[m]	1,800 N[m]			No	IFD
76-44-8	Heptachlor	-		-		µg/kg	N/A	0/8	1.05-1.09	ND		140 C	110 C			No	IFD
1024-57-3	Heptachlor epoxide	2.2	J	11	J	µg/kg	S390	4/5	1.07-1.07	11		70 C	53 C			No	BSL
72-43-5	Methoxychlor	8.7	J	8.7	J	µg/kg	S388	1/6	1.05-1.09	8.7		39,000 N	31,000 N			No	BSL
8001-35-2	Toxaphene	-		-		µg/kg	N/A	0/8	105-109	ND		580 C	440 C			No	IFD
PCBs																	
12674-11-2	Aroclor 1016	-		-		µg/kg	N/A	0/8	52.3-54.7	ND		550 N	390 N			No	IFD
11104-28-2	Aroclor 1221	-		-		µg/kg	N/A	0/8	52.3-54.7	ND		320 C	220 C			No	IFD
11141-16-5	Aroclor 1232	-		-		µg/kg	N/A	0/8	52.3-54.7	ND		320 C	220 C			No	IFD
53469-21-9	Aroclor 1242	14	J	537	J	µg/kg	S390	8/8	N/A	537		320 C	220 C			Yes	ASL
12672-29-6	Aroclor 1248	-		-		µg/kg	N/A	0/8	52.3-54.7	ND		320 C	220 C			No	IFD
11097-69-1	Aroclor 1254	42	J	719	J	µg/kg	S390	8/8	N/A	719		160 N	110 N			Yes	ASL
11096-82-5	Aroclor 1260	30	J	249	J	µg/kg	S390	7/8	116-116	249		320 C	220 C			Yes	ASL
	Aroclor 1268	-		-		µg/kg	N/A	0/8	52.3-54.7	ND		320 C[n]	220 C[n]			No	IFD
1336-36-3	Sum of PCBs	88		1,505		µg/kg	S390	8/8	N/A	1,505		320 C	220 C			Yes	ASL

Notes: All results reported as dry weight.

– no detected value
C – carcinogenic
COPC – contaminant of potential concern
J – estimated value
max – non-risk-based ceiling limit
N – non-carcinogenic
N/A – not applicable
ND – not detected
sat – non-risk-based concentration calculated based on soil saturation

Rationale Codes:

Selection Reason: ASL – above screening levels
BKG – below background levels
FD – frequent detection
HIST – infrequent detection but associated historically
TX – toxicity information available

Deletion Reason:
BSL – below screening level
IFD – infrequent detection
NTX – no toxicity information
NUT – essential nutrient

[a] Background values derived from sediment from Otisco Lake (OT1-OT7) as twice the mean value.
[b] Screening toxicity values for sediment are the USEPA Region III RBCs (2001). RBCs correspond to 1 X 10^{-6} cancer risk or a hazard quotient of 0.1, whichever is lower.
[c] Screening toxicity values for sediment are the USEPA Region IX PRGs (2001). PRGs correspond to 1 X 10^{-6} cancer risk or a hazard quotient of 0.1, whichever is lower.
[d] This default carcinogenic screening value for chromium is that for chromium VI.
[e] Criterion for cis and trans is 1,3-Dichloropropene (however, there were no detects, so summing was not necessary).
[f] This default screening value is for total xylenes.
[g] This default screening value is for 2-Nitroaniline.

Table 2.6
Occurrence, Distribution, and Selection of Contaminants of Concern
Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[a]	Screening Toxicity Values: Region III Residential Soils[b]	Screening Toxicity Values: Region IX Residential Soils[c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COC Flag	Rationale for Contaminant Deletion or Selection

[h] This default screening value is for 4-Nitrophenol.
[i] This default screening value is for naphthalene, the non-carcinogenic PAH with the most stringent RBC/PRG.
[j] This default screening value is for Technical HCH (BHC).
[k] These default screening values for DDD, DDE, and DDT are not isomer-specific.
[l] This default non-carcinogenic screening value is that for endosulfan.
[m] This default non-carcinogenic screening value is that for endrin.
[n] This default carcinogenic screening value for Aroclor 1268 is that for PCBs.
[p] 2000 samples were collected at 0-0.15 and 0.15-0.30 meter intervals. The 2000 data is used as discrete, individual data points for the screening. Discussion is in Section 3.2
[q] Mercury (inorganic) and methylmercury concentrations in wetlands sediment estimated from total mercury concentration data (as shown in Appendix A.4 and A.5) and the assumption that one percent of the wetland sediment mercury is in the form of methylmercury

Table 2.7
Occurrence, Distribution, and Selection of Contaminants of Potential Concern
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Surface Sediments
Exposure Medium: Surface Sediments
Exposure Point: Wetland SYW-19 sediment from the southern basin of Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[a]	Screening Toxicity Values: Region III Residential Soils[b]	Screening Toxicity Values: Region IX Residential Soils[c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
Inorganics																	
7429-90-5	Aluminum	2,300		6,500		mg/kg	S386	8/8	N/A	6,500	13,220	7,800 N	7,600 N			No	BSL
7440-36-0	Antimony	0.43	J	5.5	J	mg/kg	S385	7/8	0.32-0.32	5.5	3.3	3.1 N	3.1 N			Yes	ASL
7440-38-2	Arsenic	4.6		9.3		mg/kg	S386	8/8	N/A	9.3	8.3	0.43 C	0.39 C			Yes	ASL
7440-39-3	Barium	161	J	655	J	mg/kg	S386	8/8	N/A	655	203	550 N	540 N			Yes	ASL
7440-41-7	Beryllium	0.25		0.63		mg/kg	S384	8/8	N/A	0.63	0.67	16 N	15 N			No	BSL
7440-43-9	Cadmium	0.67		4.6		mg/kg	S383	8/8	N/A	4.6	0.45	3.9 N	3.7 N			Yes	ASL
7440-70-2	Calcium	152,000		302,000		mg/kg	S385	8/8	N/A	302,000	170,277	N/A	N/A			No	NUT
7440-47-3	Chromium	14.5		98		mg/kg	S383	8/8	N/A	98	22	23 N[d]	23 N[d]			Yes	ASL
7440-48-4	Cobalt	2.8		5.0		mg/kg	S383 & S384	8/8	N/A	5.0	12	160 N	470 N			No	BSL
7440-50-8	Copper	45		167		mg/kg	S386	8/8	N/A	167	146	310 N	290 N			No	BSL
74-90-8	Cyanide	-		-		mg/kg	N/A	0/8	0.66-1.1	ND	-	160 N	1.1 N			No	IFD
7439-89-6	Iron	3,810		11,750		mg/kg	S385	8/8	N/A	11,750	25,526	4,700 N	2,300 N			Yes	BKG
7439-92-1	Lead	22	J	376	J	mg/kg	S385	8/8	N/A	376	33	N/A	400 N			No	BSL
7439-95-4	Magnesium	3,420		12,800		mg/kg	S386	8/8	N/A	12,800	10,909	N/A	N/A			No	NUT
7439-96-5	Manganese	143		303		mg/kg	S386	8/8	N/A	303	1,373	160 N	180 N			Yes	BKG
7439-97-6	Mercury(inorganic)[e]	4.8		59.6		mg/kg	S385	8/8	N/A	60	0.16	2.3 N	2.3 N			Yes	ASL
22967-92-6	Methylmercury[e]	0.05		0.60		mg/kg	S385	8/8	N/A	1	0.16	2.3 N	2.3 N			Yes	HIST
7440-02-0	Nickel	23.4		45		mg/kg	S383	8/8	N/A	45	29	160 N	160 N			No	BSL
7440-09-7	Potassium	138		941		mg/kg	S385	8/8	N/A	941	1,602	N/A	N/A			No	NUT
7782-49-2	Selenium	0.81		1.7		mg/kg	S385	8/8	N/A	1.7	1.6	39 N	39 N			No	BSL
7440-22-4	Silver	0.15		1.4		mg/kg	S385	7/8	0.1-0.1	1.4	ND	39 N	39 N			No	BSL
7440-23-5	Sodium	1,230	J	3,870	J	mg/kg	S384	8/8	N/A	3,870	277	N/A	N/A			No	NUT
7440-28-0	Thallium	-		-		mg/kg	N/A	0/8	0.64-1.1	ND	0.83	0.55 N	0.52 N			No	IFD
7440-62-2	Vanadium	6.2		13		mg/kg	S385	8/8	N/A	13	21	55 N	55 N			No	BSL
7440-66-6	Zinc	65.2		192		mg/kg	S383	8/8	N/A	192	104	2,300 N	23,00 N			No	BSL
VOCs																	
67-64-1	Acetone	230	J	240	J	µg/kg	S384	2/8	20-110	240		782,000 N	160,000 N			No	BSL
71-43-2	Benzene	3.9	J	160	J	µg/kg	S384	6/8	6.9-8.3	160		12,000 C	650 C			No	BSL
75-27-4	Bromodichloromethane	-		-		µg/kg	N/A	0/8	6.9-15	ND		10,000 C	1,000 C			No	IFD
75-25-2	Bromoform	-		-		µg/kg	N/A	0/8	6.9-15	ND		81,000 C	62,000 C			No	IFD
74-83-9	Bromomethane	-		-		µg/kg	N/A	0/8	6.9-15	ND		11,000 N	390 N			No	IFD
78-93-3	2-Butanone	4.2	J	51	J	µg/kg	S384	7/8	19-19	51		4,693,000 N	730,000 N			No	BSL
75-15-0	Carbon disulfide	2.8	J	8.4	J	µg/kg	S384	3/8	14-30	8.4		782,000 N	36,000 N			No	BSL
56-23-5	Carbon tetrachloride	-		-		µg/kg	N/A	0/8	6.9-15	ND		4,900 C	210 N			No	IFD
108-90-7	Chlorobenzene	10	J	3,500		µg/kg	S384	7/7	N/A	3,500		156,000 N	15,000 N			No	BSL
75-00-3	Chloroethane	-		-		µg/kg	N/A	0/8	6.9-15	ND		220,000 C	3,000 C			No	IFD
67-66-3	Chloroform	-		-		µg/kg	N/A	0/8	6.9-15	ND		78,000 N	39 N			No	IFD
74-87-3	Chloromethane	-		-		µg/kg	N/A	0/8	6.9-15	ND		49,000 C	1,200 C			No	IFD
124-48-1	Dibromochloromethane	-		-		µg/kg	N/A	0/8	6.9-15	ND		7,600 C	1,100 C			No	IFD
75-34-3	1,1-Dichloroethane	-		-		µg/kg	N/A	0/8	6.9-15	ND		782,000 N	59,000 N			No	IFD

Table 2.7
Occurrence, Distribution, and Selection of Contaminants of Concern
Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value [a]	Screening Toxicity Values: Region III Residential Soils [b]	Screening Toxicity Values: Region IX Residential Soils [c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COC Flag	Rationale for Contaminant Deletion or Selection
107-06-2	1,2-Dichloroethane	-		-		µg/kg	N/A	0/8	6.9-15	ND		7,000 C	350 C			No	IFD
75-35-4	1,1-Dichloroethene	-		-		µg/kg	N/A	0/8	6.9-15	ND		1,100 C	54 C			No	IFD
156-59-2	cis-1,2-Dichloroethene	2.0	J	2.0	J	µg/kg	S384	1/8	6.9-15	2.0		78,000 N	4,300 N			No	BSL
156-60-5	trans-1,2-Dichloroethene	-		-		µg/kg	N/A	0/8	6.9-15	ND		156,000 N	6,300 N			No	IFD
78-87-5	1,2-Dichloropropane	-		-		µg/kg	N/A	0/8	6.9-15	ND		9,400 C	350 C			No	IFD
10061-01-5	cis-1,3-Dichloropropene	-		-		µg/kg	N/A	0/8	6.9-15	ND		6,400 C [e]	700 C [e]			No	IFD
10061-02-6	trans-1,3-Dichloropropene	-		-		µg/kg	N/A	0/8	6.9-15	ND		6,400 C [e]	700 C [e]			No	IFD
100-41-4	Ethylbenzene	7.0	J	62	J	µg/kg	S384	6/8	6.9-8.3	62		782,000 N	230,000 sat			No	BSL
591-78-6	2-Hexanone	-		-		µg/kg	N/A	0/8	14-30	ND		313,000 N	N/A			No	IFD
108-10-1	4-Methyl-2-pentanone	-		-		µg/kg	N/A	0/8	14-30	ND		626,000 N	79,000 N			No	IFD
75-09-2	Methylene chloride	-		-		µg/kg	N/A	0/8	6.9-15	ND		85,000 C	8,900 C			No	IFD
100-42-5	Styrene	2.8	J	6.4	J	µg/kg	S385	3/8	6.9-15	6.4		1,564,000 N	1,700,000 sat			No	BSL
79-34-5	1,1,2,2-Tetrachloroethane	-		-		µg/kg	N/A	0/8	6.9-15	ND		3,200 C	380 C			No	IFD
127-18-4	Tetrachloroethene	-		-		µg/kg	N/A	0/8	6.9-15	ND		12,000 C	5,700 C			No	IFD
108-88-3	Toluene	-		-		µg/kg	N/A	0/8	6.9-39	ND		1,564,000 N	520,000 sat			No	IFD
71-55-6	1,1,1-Trichloroethane	-		-		µg/kg	N/A	0/8	6.9-15	ND		2,190,000 N	63,000 N			No	IFD
79-00-5	1,1,2-Trichloroethane	-		-		µg/kg	N/A	0/8	6.9-15	ND		11,000 C	840 C			No	IFD
79-01-6	Trichloroethene	-		-		µg/kg	N/A	0/8	6.9-15	ND		47,000 N	2,300 N			No	IFD
75-01-4	Vinyl chloride	-		-		µg/kg	N/A	0/8	6.9-15	ND		90 C	150 C			No	IFD
1330-20-7	Sum of Xylenes	126	J	126	J	µg/kg	S384	1/8	6.9-25.5	126		15,643,000 N [f]	210,000 sat [f]			No	BSL
SVOCs																	
100-51-6	Benzyl alcohol	-		-		µg/kg	N/A	0/8	250-4300	ND		2,346,000 N	1,800,000 N			No	IFD
111-91-1	bis(2-chloroethoxy)methane	-		-		µg/kg	N/A	0/8	49-830	ND		N/A	N/A			No	IFD
111-44-4	bis(2-chloroethyl)ether	-		-		µg/kg	N/A	0/8	49-830	ND		580 C	210 C			No	IFD
117-81-7	bis(2-Ethylhexyl)phthalate	440	J	1,800	J	µg/kg	S384 & S386	5/8	49-600	1,800		46,000 C	35,000 C			No	BSL
101-55-3	4-Bromophenyl-phenyl ether	-		-		µg/kg	N/A	0/8	49-830	ND		N/A	N/A			No	IFD
85-68-7	Butylbenzyl phthalate	-		-		µg/kg	N/A	0/8	49-830	ND		1,564,000 N	1,200,000 N			No	IFD
86-74-8	Carbazole	450		2,600		µg/kg	S384	5/8	49-420	2,600		32,000 C	24,000 C			No	BSL
59-50-7	4-Chloro-3-methylphenol	-		-		µg/kg	N/A	0/8	250-4300	ND		N/A	N/A			No	IFD
106-47-8	4-Chloroaniline	-		-		µg/kg	N/A	0/8	49-830	ND		31,000 N	24,000 N			No	IFD
91-58-7	2-Chloronaphthalene	-		-		µg/kg	N/A	0/8	49-830	ND		626,000 N	390,000 N			No	IFD
95-57-8	2-Chlorophenol	-		-		µg/kg	N/A	0/8	49-830	ND		39,000 N	6,300 N			No	IFD
7005-72-3	4-Chlorophenyl-phenyl ether	-		-		µg/kg	N/A	0/8	49-830	ND		N/A	N/A			No	IFD
132-64-9	Dibenzofuran	280		1,900		µg/kg	S384	4/8	49-600	1,900		31,000 N	29,000 N			No	BSL
95-50-1	1,2-Dichlorobenzene	450		5,800		µg/kg	S383	8/8	N/A	5,800		704,000 N	370,000 sat			No	BSL
541-73-1	1,3-Dichlorobenzene	62	J	6,200		µg/kg	S385	7/8	830-830	6,200		235,000 N	1,300 N			Yes	ASL
106-46-7	1,4-Dichlorobenzene	920	J	10,000		µg/kg	S383	8/8	N/A	10,000		27,000 C	3,400 C			Yes	ASL
91-94-1	3,3'-Dichlorobenzidine	-		-		µg/kg	N/A	0/8	49-830	ND		1,400 C	1,100 C			No	IFD
120-83-2	2,4-Dichlorophenol	-		-		µg/kg	N/A	0/8	250-4300	ND		23,000 N	18,000 N			No	IFD
84-66-2	Diethyl phthalate	-		-		µg/kg	N/A	0/8	49-830	ND		6,257,000 N	4,900,000 N			No	IFD
131-11-3	Dimethyl phthalate	-		-		µg/kg	N/A	0/8	49-830	ND		78,214,000 N	100,000,000 max			No	IFD
105-67-9	2,4-Dimethylphenol	-		-		µg/kg	N/A	0/8	250-4300	ND		156,000 N	120,000 N			No	IFD
84-74-2	Di-n-butyl phthalate	-		-		µg/kg	N/A	0/8	49-830	ND		782,000 N	610,000 N			No	IFD
51-28-5	2,4-Dinitrophenol	-		-		µg/kg	N/A	0/8	1300-21000	ND		16,000 N	12,000 N			No	IFD
121-14-2	2,4-Dinitrotoluene	-		-		µg/kg	N/A	0/8	250-4300	ND		16,000 N	12,000 N			No	IFD
606-20-2	2,6-Dinitrotoluene	-		-		µg/kg	N/A	0/8	250-4300	ND		7,800 N	6,100 N			No	IFD

Table 2.7
Occurrence, Distribution, and Selection of Contaminants of Concern
Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value [a]	Screening Toxicity Values: Region III Residential Soils [b]	Screening Toxicity Values: Region IX Residential Soils [c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COC Flag	Rationale for Contaminant Deletion or Selection
117-84-0	Di-n-octyl phthalate	-		-		µg/kg	N/A	0/8	49-830	ND		156,000 N	120,000 N			No	IFD
118-74-1	Hexachlorobenzene	4.0		5,355	J	µg/kg	S385	10/11	4-420	5,355		400 C	300 C			Yes	ASL
87-68-3	Hexachlorobutadiene	-		-		µg/kg	N/A	0/8	49-830	ND		1,600 N	1,800 N			No	IFD
77-47-4	Hexachlorocyclopentadiene	-		-		µg/kg	N/A	0/8	250-4300	ND		47,000 N	42,000 N			No	IFD
67-72-1	Hexachloroethane	-		-		µg/kg	N/A	0/8	49-830	ND		7,800 N	6,100 N			No	IFD
78-59-1	Isophorone	-		-		µg/kg	N/A	0/8	49-830	ND		672,000 C	510,000 C			No	IFD
534-52-1	2-Methyl-4,6-dinitrophenol	-		-		µg/kg	N/A	0/8	1300-21000	ND		7,800 N	N/A			No	IFD
95-48-7	2-Methylphenol	-		-		µg/kg	N/A	0/8	49-830	ND		391,000 N	310,000 N			No	IFD
106-44-5	4-Methylphenol	130		655		µg/kg	S385	2/8	49-830	655		39,000 N	31,000 N			No	BSL
88-74-4	2-Nitroaniline	-		-		µg/kg	N/A	0/8	100-1700	ND		N/A	350 N			No	IFD
99-09-2	3-Nitroaniline	-		-		µg/kg	N/A	0/8	1300-21000	ND		N/A	350 N [g]			No	IFD
100-01-6	4-Nitroaniline	-		-		µg/kg	N/A	0/8	1300-21000	ND		N/A	350 N [g]			No	IFD
98-95-3	Nitrobenzene	-		-		µg/kg	N/A	0/8	49-830	ND		3,900 N	2,000 N			No	IFD
88-75-5	2-Nitrophenol	-		-		µg/kg	N/A	0/8	250-4300	ND		N/A	49,000 N [h]			No	IFD
100-02-7	4-Nitrophenol	-		-		µg/kg	N/A	0/8	1300-21000	ND		63,000 N	49,000 N			No	IFD
62-75-9	N-nitroso dimethylamine	-		-		µg/kg	N/A	0/8	250-4300	ND		13 C	9.5 C			No	IFD
621-64-7	N-nitroso-di-n-propylamine	-		-		µg/kg	N/A	0/8	49-830	ND		91 C	69 C			No	IFD
86-30-6	N-nitrosodiphenylamine	-		-		µg/kg	N/A	0/8	49-830	ND		130,000 C	99,000 C			No	IFD
108-60-1	2,2'-Oxybis(1-chloropropane)	-		-		µg/kg	N/A	0/8	49-830	ND		9,100 C	2,900 C			No	IFD
87-86-5	Pentachlorophenol	-		-		µg/kg	N/A	0/8	1300-21000	ND		5,300 C	3,000 C			No	IFD
108-95-2	Phenol	89	J	2,825		µg/kg	S385	6/8	580-830	2,825		4,693,000 N	3,700,000 N			No	BSL
120-82-1	1,2,4-Trichlorobenzene	160		18,000		µg/kg	S385	8/8	N/A	18,000		78,000 N	65,000 N			No	BSL
95-95-4	2,4,5-Trichlorophenol	-		-		µg/kg	N/A	0/8	250-4300	ND		782,000 N	610,000 N			No	IFD
88-06-2	2,4,6-Trichlorophenol	-		-		µg/kg	N/A	0/8	250-4300	ND		58,000 C	44,000 C			No	IFD
83-32-9	Acenaphthene	300		2,500		µg/kg	S384	6/8	49-54	2,500		469,000 N	370,000 N			No	BSL
208-96-8	Acenaphthylene	170	J	1,900		µg/kg	S384	8/8	N/A	1,900		156,000 N [i]	5,600 N [i]			No	BSL
120-12-7	Anthracene	300	J	10,000		µg/kg	S384	7/8	420-420	10,000		2,346,000 N	2,200,000 N			No	BSL
56-55-3	Benz(a)anthracene	160	J	14,000		µg/kg	S384	8/8	N/A	14,000		870 C	620 C			Yes	ASL
50-32-8	Benzo(a)pyrene	180	J	13,000		µg/kg	S384	8/8	N/A	13,000		87 C	62 C			Yes	ASL
205-99-2	Benzo(b)fluoranthene	220	J	11,000		µg/kg	S384	8/8	N/A	11,000		870 C	620 C			Yes	ASL
191-24-2	Benzo(g,h,i)perylene	160	J	6,800		µg/kg	S384 & S385	8/8	N/A	6,800		156,000 N [i]	5,600 N [i]			Yes	ASL
207-08-9	Benzo(k)fluoranthene	200	J	10,000		µg/kg	S384	8/8	N/A	10,000		8,700 C	6,200 C			Yes	ASL
218-01-9	Chrysene	230	J	15,000		µg/kg	S384	8/8	N/A	15,000		87,000 C	62,000 C			No	BSL
53-70-3	Dibenz(a,h)anthracene	66	J	3,300		µg/kg	S385	8/8	N/A	3,300		87 C	62 C			Yes	ASL
206-44-0	Fluoranthene	330	J	33,000		µg/kg	S384	8/8	N/A	33,000		313,000 N	230,000 N			No	BSL
86-73-7	Fluorene	315		2,700		µg/kg	S384	5/8	49-600	2,700		313,000 N	260,000 N			No	BSL
193-39-5	Indeno(1,2,3-cd)pyrene	120	J	7,100		µg/kg	S384	8/8	N/A	7,100		870 C	620 C			Yes	ASL
91-57-6	2-Methylnaphthalene	330		1,300		µg/kg	S384	5/8	49-420	1,300		156,000 N	5,600 N [i]			No	BSL
91-20-3	Naphthalene	340	J	5,100		µg/kg	S384	8/8	N/A	5,100		156,000 N	5,600 N			No	BSL
85-01-8	Phenanthrene	190	J	22,000		µg/kg	S384	8/8	N/A	22,000		156,000 N [i]	5,600 N [i]			Yes	ASL
129-00-0	Pyrene	310	J	26,000		µg/kg	S384	7/8	420-420	26,000		235,000 N	230,000 N			No	BSL
Pesticides																	
309-00-2	Aldrin	3.4	J	50	J	µg/kg	S385	6/8	1.07-5.43	50		38 C	29 C			Yes	ASL
319-84-6	alpha-BHC	2.4	J	2.5	J	µg/kg	S384	2/5	1.01-1.1	2.5		100 C	90 C			No	BSL
319-85-7	beta-BHC	1.7	J	5.9	J	µg/kg	S385	2/8	1.05-1.1	5.9		350 C	320 C			No	BSL
319-86-8	delta-BHC	1.8	J	10	J	µg/kg	S385	5/5	N/A	10		350 C [j]	320 C [j]			No	BSL

Table 2.7
Occurrence, Distribution, and Selection of Contaminants of Concern
Onondaga Lake

	CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value [a]	Screening Toxicity Values: Region III Residential Soils [b]	Screening Toxicity Values: Region IX Residential Soils [c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COC Flag	Rationale for Contaminant Deletion or Selection
	58-89-9	gamma-BHC (Lindane)	1.3	J	6.3	J	µg/kg	S384	4/6	1.05-1.1	6.3		490 C	440 C			No	BSL
	57-74-9	Sum of Chlordanes	1.8	J	30	J	µg/kg	S384	7/8	1.09-1.09	30		1,800 C	1,600 C			No	BSL
	72-54-8	4,4'-DDD	-		-		µg/kg	N/A	0/8	1.01-1.1	ND		2,700 C	2,400 C [k]			No	IFD
	72-55-9	4,4'-DDE	3.4	J	17	J	µg/kg	S385	5/5	N/A	17		1,900 C	1,700 C [k]			No	BSL
	50-29-3	4,4'-DDT	3.5	J	51	J	µg/kg	S383	6/6	N/A	51		1,900 C	1,700 C [k]			No	BSL
	60-57-1	Dieldrin	2.0	J	39		µg/kg	S383	8/8	N/A	39		40 C	30 C			Yes	ASL
	959-98-8	Endosulfan I	8.8	J	11	J	µg/kg	S384	2/8	1.01-1.1	11		47,000 N [l]	37,000 N [l]			No	BSL
	33213-65-9	Endosulfan II	-		-		µg/kg	N/A	0/6	1.01-1.1	ND		47,000 N [l]	37,000 N [l]			No	IFD
	1031-07-8	Endosulfan sulfate	-		-		µg/kg	N/A	0/0	N/A	ND		47,000 N [l]	37,000 N [l]			No	IFD
	72-20-8	Endrin	13		13		µg/kg	S383	1/8	1.01-1.1	13		2,300 N	1,800 N			No	BSL
	7421-93-4	Endrin aldehyde	-		-		µg/kg	N/A	0/6	1.01-1.1	ND		2,300 N [m]	1,800 N [m]			No	IFD
	53494-70-5	Endrin ketone	3.5	J	17	J	µg/kg	S384	4/8	1.01-1.1	17		2,300 N [m]	1,800 N [m]			No	BSL
	76-44-8	Heptachlor	-		-		µg/kg	N/A	0/8	1.01-1.1	ND		140 C	110 C			No	IFD
	1024-57-3	Heptachlor epoxide	3.3		34		µg/kg	S385	5/8	1.08-1.1	34		70 C	53 C			No	BSL
	72-43-5	Methoxychlor	12	J	12	J	µg/kg	S385	1/7	1.05-1.1	12		39,000 N	31,000 N			No	BSL
	8001-35-2	Toxaphene	-		-		µg/kg	N/A	0/8	101-110	ND		580 C	440 C			No	IFD
PCBs																		
	12674-11-2	Aroclor 1016	-		-		µg/kg	N/A	0/8	52.5-54.9	ND		550 N	390 N			No	IFD
	11104-28-2	Aroclor 1221	-		-		µg/kg	N/A	0/8	52.5-54.9	ND		320 C	220 C			No	IFD
	11141-16-5	Aroclor 1232	-		-		µg/kg	N/A	0/8	52.5-54.9	ND		320 C	220 C			No	IFD
	53469-21-9	Aroclor 1242	49	J	1,130	J	µg/kg	S385	8/8	N/A	1,130		320 C	220 C			Yes	ASL
	12672-29-6	Aroclor 1248	-		-		µg/kg	N/A	0/8	52.5-54.9	ND		320 C	220 C			No	IFD
	11097-69-1	Aroclor 1254	50	J	750	J	µg/kg	S383	7/8	52.7-52.7	750		160 N	110 N			Yes	ASL
	11096-82-5	Aroclor 1260	53	J	576	J	µg/kg	S386	8/8	N/A	576		320 C	220 C			Yes	ASL
		Aroclor 1268	-		-		µg/kg	N/A	0/8	52.5-54.9	ND		320 C [n]	220 C [n]			No	IFD
	1336-36-3	Sum of PCBs	171		1,819		µg/kg	S385	8/8	N/A	1,819		320 C	220 C			Yes	ASL
PCDD/PCDFs																		
		TEQ as 2,3,7,8-TCDD	123		1,086		ng/kg	S385	8/8	N/A	1,086		4.3 C [o]	3.9 C [o]			Yes	ASL

Notes: All results reported as dry weight.

– no detected value
C – carcinogenic
COPC – contaminant of potential concern
J – estimated value
max – non-risk-based ceiling limit
N – non-carcinogenic
N/A – not applicable
ND – not detected
sat – non-risk-based concentration calculated based on soil saturation

Rationale Codes:
Selection Reason: ASL – above screening levels
BKG – below background levels
FD – frequent detection
HIST – infrequent detection but associated historically
TX – toxicity information available

Deletion Reason:
BSL – below screening level
IFD – infrequent detection
NTX – no toxicity information

Table 2.7
Occurrence, Distribution, and Selection of Contaminants of Concern
Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value [a]	Screening Toxicity Values: Region III Residential Soils [b]	Screening Toxicity Values: Region IX Residential Soils [c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COC Flag	Rationale for Contaminant Deletion or Selection
NUT – essential nutrient																	

[a] Background values derived from sediment from Otisco Lake (OT1-OT7) as twice the mean value.
[b] Screening toxicity values for sediment are the USEPA Region III RBCs (2001). RBCs correspond to 1 X 10cancer risk or a hazard quotient of 0.1, whichever is lower.
[c] Screening toxicity values for sediment are the USEPA Region IX PRGs (2001). PRGs correspond to 1 X 10cancer risk or a hazard quotient of 0.1, whichever is lower.
[d] This default carcinogenic screening value for chromium is that for chromium VI.
[e] Criterion for cis and trans is 1,3-Dichloropropene (however, there were no detects, so summing was not necessary).
[f] This default screening value is for total xylenes.
[g] This default screening value is for 2-Nitroaniline.
[h] This default screening value is for 4-Nitrophenol.
[i] This default screening value is for naphthalene, the non-carcinogenic PAH with the most stringent RBC/PRG.
[j] This default screening value is for Technical HCH (BHC).
[k] These default screening values for DDD, DDE, and DDT are not isomer-specific.
[l] This default non-carcinogenic screening value is that for endosulfan.
[m] This default non-carcinogenic screening value is that for endrin.
[n] This default carcinogenic screening value for Aroclor 1268 is that for PCBs.
[o] This default carcinogenic screening value for the PCDD/PCDFs is 2,3,7,8-TCDD.
[p] 2000 samples were collected at 0-0.15 and 0.15-0.30 meter intervals. The 2000 data is used as discrete, individual data points for the screening. Discussion is in Section 3.2
[q] Mercury (inorganic) and methylmercury concentrations in wetlands sediment estimated from total mercury concentration data (as shown in Appendix A.4 and A.5) and the assumption that one percent of the wetland sediment mercury is in the form of methylmercury

Table 2.8
Occurrence, Distribution, and Selection of Contaminants of Potential Concern
Onondaga Lake

Scenario Time Frame:	Current/Future
Medium:	Surface Sediments
Exposure Medium:	Surface Sediments
Exposure Point:	Surface soils from Onondaga Lake dredge spoils (0 to 3.5 ft)

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[a]	Screening Toxicity Values: Region III Residential Soils[b]	Screening Toxicity Values: Region IX Residential Soils[c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
Inorganics																	
7429-90-5	Aluminum	8,030	J	12,100		mg/kg	S440	8/8	N/A	12,100		7,800 N	7,600 N			Yes	ASL
7440-36-0	Antimony	0.24		0.40	J	mg/kg	S439	7/8	0.23-0.23	0.40		3.1 N	3.1 N			No	BSL
7440-38-2	Arsenic	3.2		8.4		mg/kg	S439 & S440	8/8	N/A	8.4		0.43 C	0.39 C			Yes	ASL
7440-39-3	Barium	66.6		78	J	mg/kg	S441	8/8	N/A	78		550 N	540 N			No	BSL
7440-41-7	Beryllium	0.39		0.55		mg/kg	S440	8/8	N/A	0.55		16 N	15 N			No	BSL
7440-43-9	Cadmium	-		-		mg/kg	N/A	0/8	0.03-0.04	ND		3.9 N	3.7 N			No	IFD
7440-70-2	Calcium	70,200		163,000		mg/kg	S441	8/8	N/A	163,000		N/A	N/A			No	NUT
7440-47-3	Chromium	12.2	J	29	J	mg/kg	S436	8/8	N/A	29		23 N[d]	23 N[d]			Yes	ASL
7440-48-4	Cobalt	3.9		4.8		mg/kg	S440	8/8	N/A	4.8		160 N	470 N			No	BSL
7440-50-8	Copper	14.5		26		mg/kg	S437	8/8	N/A	26		310 N	290 N			No	BSL
74-90-8	Cyanide	-		-		mg/kg	N/A	0/8	0.57-0.67	ND		160 N	1.1 N			No	IFD
7439-89-6	Iron	10,800		17,100		mg/kg	S440	8/8	N/A	17,100		4,700 N	2,300 N			Yes	ASL
7439-92-1	Lead	8.2		14		mg/kg	S438 & S439	8/8	N/A	14		N/A	400 N			No	BSL
7439-95-4	Magnesium	9,690		19,000		mg/kg	S443	8/8	N/A	19,000		N/A	N/A			No	NUT
7439-96-5	Manganese	246		354		mg/kg	S442	8/8	N/A	354		160 N	180 N			Yes	ASL
7439-97-6	Total mercury	0.054	J	4.0		mg/kg	S438	7/8	0.03-0.03	4.0		2.3 N	2.3 N			Yes	ASL
7440-02-0	Nickel	12		17		mg/kg	S440	8/8	N/A	17		160 N	160 N			No	BSL
7440-09-7	Potassium	2,370		3,440		mg/kg	S440	8/8	N/A	3,440		N/A	N/A			No	NUT
7782-49-2	Selenium	0.71		1.4		mg/kg	S439	8/8	N/A	1.4		39 N	39 N			No	BSL
7440-22-4	Silver	-		-		mg/kg	N/A	0/8	0.09-0.1	ND		39 N	39 N			No	IFD
7440-23-5	Sodium	229		521	J	mg/kg	S436	8/8	N/A	521		N/A	N/A			No	NUT
7440-28-0	Thallium	-		-		mg/kg	N/A	0/8	0.56-0.65	ND		0.55 N	0.52 N			No	IFD
7440-62-2	Vanadium	15		29		mg/kg	S436	8/8	N/A	29		55 N	55 N			No	BSL
7440-66-6	Zinc	30.1		50		mg/kg	S439	8/8	N/A	50		2,300 N	2,300 N			No	BSL
SVOCs																	
100-51-6	Benzyl alcohol	-		-		µg/kg	N/A	0/8	190-220	ND		2,346,000 N	1,800,000 N			No	IFD
111-91-1	bis(2-chloroethoxy)methane	-		-		µg/kg	N/A	0/8	38-43	ND		N/A	N/A			No	IFD
111-44-4	bis(2-chloroethyl)ether	-		-		µg/kg	N/A	0/8	38-43	ND		580 C	210 C			No	IFD
117-81-7	bis(2-Ethylhexyl)phthalate	47	J	310	J	µg/kg	S441	8/8	N/A	310		46000 C	35000 C			No	BSL
101-55-3	4-Bromophenyl-phenyl ether	-		-		µg/kg	N/A	0/8	38-43	ND		N/A	N/A			No	IFD
85-68-7	Butylbenzyl phthalate	-		-		µg/kg	N/A	0/8	38-43	ND		1,564,000 N	1,200,000 N			No	IFD
86-74-8	Carbazole	-		-		µg/kg	N/A	0/8	38-43	ND		32,000 C	24,000 C			No	IFD
59-50-7	4-Chloro-3-methylphenol	-		-		µg/kg	N/A	0/8	190-220	ND		N/A	N/A			No	IFD
106-47-8	4-Chloroaniline	-		-		µg/kg	N/A	0/8	38-43	ND		31,000 N	24,000 N			No	IFD
91-58-7	2-Chloronaphthalene	-		-		µg/kg	N/A	0/8	38-43	ND		626,000 N	390,000 N			No	IFD
95-57-8	2-Chlorophenol	-		-		µg/kg	N/A	0/8	38-43	ND		39,000 N	6,300 N			No	IFD
7005-72-3	4-Chlorophenyl-phenyl ether	-		-		µg/kg	N/A	0/8	38-43	ND		N/A	N/A			No	IFD
132-64-9	Dibenzofuran	-		-		µg/kg	N/A	0/8	38-43	ND		31,000 N	29,000 N			No	IFD
95-50-1	1,2-Dichlorobenzene	51		51		µg/kg	S440	1/8	38-43	51		704,000 N	370,000 sat			No	BSL
541-73-1	1,3-Dichlorobenzene	-		-		µg/kg	N/A	0/8	38-43	ND		235,000 N	1,300 N			No	IFD
106-46-7	1,4-Dichlorobenzene	-		-		µg/kg	N/A	0/8	38-43	ND		27,000 C	3,400 C			No	IFD
91-94-1	3,3'-Dichlorobenzidine	-		-		µg/kg	N/A	0/8	38-43	ND		1,400 C	1,100 C			No	IFD

Table 2.8
Occurrence, Distribution, and Selection of Contaminants of Concern
Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[a]	Screening Toxicity Values: Region III Residential Soils[b]	Screening Toxicity Values: Region IX Residential Soils[c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COC Flag	Rationale for Contaminant Deletion or Selection
120-83-2	2,4-Dichlorophenol	-		-		µg/kg	N/A	0/8	190-220	ND		23,000 N	18,000 N			No	IFD
84-66-2	Diethyl phthalate	-		-		µg/kg	N/A	0/8	38-43	ND		6,257,000 N	4,900,000 N			No	IFD
131-11-3	Dimethyl phthalate	-		-		µg/kg	N/A	0/8	38-43	ND		78,214,000 N	100,000,000 max			No	IFD
105-67-9	2,4-Dimethylphenol	-		-		µg/kg	N/A	0/8	190-220	ND		156,000 N	120,000 N			No	IFD
84-74-2	Di-n-butyl phthalate	-		-		µg/kg	N/A	0/8	38-43	ND		782,000 N	610,000 N			No	IFD
51-28-5	2,4-Dinitrophenol	-		-		µg/kg	N/A	0/8	970-1100	ND		16,000 N	12,000 N			No	IFD
121-14-2	2,4-Dinitrotoluene	-		-		µg/kg	N/A	0/8	190-220	ND		16,000 N	12,000 N			No	IFD
606-20-2	2,6-Dinitrotoluene	-		-		µg/kg	N/A	0/8	190-220	ND		7,800 N	6,100 N			No	IFD
117-84-0	Di-n-octyl phthalate	-		-		µg/kg	N/A	0/8	38-43	ND		156,000 N	120,000 N			No	IFD
118-74-1	Hexachlorobenzene (GC/MS)	410		410		µg/kg	S440	1/8	38-43	410		400 C	300 C			Yes	ASL
87-68-3	Hexachlorobutadiene	-		-		µg/kg	N/A	0/8	38-43	ND		1,600 N	1,800 N			No	IFD
77-47-4	Hexachlorocyclopentadiene	-		-		µg/kg	N/A	0/8	190-220	ND		47,000 N	42,000 N			No	IFD
67-72-1	Hexachloroethane	-		-		µg/kg	N/A	0/8	38-43	ND		7,800 N	6,100 N			No	IFD
78-59-1	Isophorone	-		-		µg/kg	N/A	0/8	38-43	ND		672,000 C	510,000 C			No	IFD
534-52-1	2-Methyl-4,6-dinitrophenol	-		-		µg/kg	N/A	0/8	970-1100	ND		7,800 N	N/A			No	IFD
95-48-7	2-Methylphenol	-		-		µg/kg	N/A	0/8	38-43	ND		391,000 N	310,000 N			No	IFD
106-44-5	4-Methylphenol	-		-		µg/kg	N/A	0/8	38-43	ND		39,000 N	31,000 N			No	IFD
88-74-4	2-Nitroaniline	-		-		µg/kg	N/A	0/8	76-88	ND		N/A	350 N			No	IFD
99-09-2	3-Nitroaniline	-		-		µg/kg	N/A	0/8	970-1100	ND		N/A	350 N[e]			No	IFD
100-01-6	4-Nitroaniline	-		-		µg/kg	N/A	0/8	970-1100	ND		N/A	350 N[e]			No	IFD
98-95-3	Nitrobenzene	-		-		µg/kg	N/A	0/8	38-43	ND		3,900 N	2,000 N			No	IFD
88-75-5	2-Nitrophenol	-		-		µg/kg	N/A	0/8	190-220	ND		N/A	49,000 N[f]			No	IFD
100-02-7	4-Nitrophenol	-		-		µg/kg	N/A	0/8	970-1100	ND		63,000 N	49,000 N			No	IFD
62-75-9	N-nitroso dimethylamine	-		-		µg/kg	N/A	0/8	190-220	ND		13 C	9.5 C			No	IFD
621-64-7	N-nitroso-di-n-propylamine	-		-		µg/kg	N/A	0/8	38-43	ND		91 C	69 C			No	IFD
86-30-6	N-nitrosodiphenylamine	-		-		µg/kg	N/A	0/8	38-43	ND		130,000 C	99,000 C			No	IFD
108-60-1	2,2'-Oxybis(1-chloropropane)	-		-		µg/kg	N/A	0/8	38-43	ND		9,100 C	2,900 C			No	IFD
87-86-5	Pentachlorophenol	-		-		µg/kg	N/A	0/8	970-1100	ND		5,300 C	3,000 C			No	IFD
108-95-2	Phenol	-		-		µg/kg	N/A	0/8	38-43	ND		4,693,000 N	3,700,000 N			No	IFD
120-82-1	1,2,4-Trichlorobenzene	-		-		µg/kg	N/A	0/8	38-43	ND		78,000 N	65,000 N			No	IFD
95-95-4	2,4,5-Trichlorophenol	-		-		µg/kg	N/A	0/8	190-220	ND		782,000 N	610,000 N			No	IFD
88-06-2	2,4,6-Trichlorophenol	-		-		µg/kg	N/A	0/8	190-220	ND		58,000 C	44,000 C			No	IFD
83-32-9	Acenaphthene	-		-		µg/kg	N/A	0/8	38-43	ND		469,000 N	370,000 N			No	IFD
208-96-8	Acenaphthylene	-		-		µg/kg	N/A	0/8	38-43	ND		156,000 N[g]	5,600 N[g]			No	IFD
120-12-7	Anthracene	53		53		µg/kg	S440	1/8	38-43	53		2,346,000 N	2,200,000 N			No	BSL
56-55-3	Benz(a)anthracene	47		130		µg/kg	S440	4/8	38-40	130		870 C	620 C			No	BSL
50-32-8	Benzo(a)pyrene	44	J	130		µg/kg	S440	4/8	38-40	130		87 C	62 C			Yes	ASL
205-99-2	Benzo(b)fluoranthene	77		110		µg/kg	S440	2/8	38-43	110		870 C	620 C			No	BSL
191-24-2	Benzo(g,h,i)perylene	56		67		µg/kg	S440	2/8	38-43	67		156,000 N[g]	5,600 N[g]			No	BSL
207-08-9	Benzo(k)fluoranthene	73		110		µg/kg	S440	2/8	38-43	110		8,700 C	6,200 C			No	BSL
218-01-9	Chrysene	41		140		µg/kg	S440	6/8	38-38	140		87,000 C	62,000 C			No	BSL
53-70-3	Dibenz(a,h)anthracene	-		-		µg/kg	N/A	0/8	38-43	ND		87 C	62 C			No	IFD
206-44-0	Fluoranthene	38	J	290		µg/kg	S440	7/8	38-38	290		313,000 N	230,000 N			No	BSL
86-73-7	Fluorene	-		-		µg/kg	N/A	0/8	38-43	ND		313,000 N	260,000 N			No	IFD
193-39-5	Indeno(1,2,3-cd)pyrene	54		71		µg/kg	S440	2/8	38-43	71		870 C	620 C			No	BSL
91-57-6	2-Methylnaphthalene	-		-		µg/kg	N/A	0/8	38-43	ND		156,000 N	5,600 N[g]			No	IFD
91-20-3	Naphthalene	-		-		µg/kg	N/A	0/8	38-43	ND		156,000 N	5,600 N			No	IFD

Table 2.8
Occurrence, Distribution, and Selection of Contaminants of Concern
Onondaga Lake

	CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[a]	Screening Toxicity Values: Region III Residential Soils[b]	Screening Toxicity Values: Region IX Residential Soils[c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COC Flag	Rationale for Contaminant Deletion or Selection
	85-01-8	Phenanthrene	70	J	220		µg/kg	S440	3/8	38-43	220		156,000 N[g]	5,600 N[g]			No	BSL
	129-00-0	Pyrene	53		220		µg/kg	S440	6/8	38-38	220		235,000 N	230,000 N			No	BSL
PCBs																		
	12674-11-2	Aroclor 1016	-		-		µg/kg	N/A	0/8	51.3-54.6	ND		550 N	390 N			No	IFD
	11104-28-2	Aroclor 1221	-		-		µg/kg	N/A	0/8	51.3-54.6	ND		320 C	220 C			No	IFD
	11141-16-5	Aroclor 1232	-		-		µg/kg	N/A	0/8	51.3-54.6	ND		320 C	220 C			No	IFD
	53469-21-9	Aroclor 1242	-		-		µg/kg	N/A	0/8	51.3-54.6	ND		320 C	220 C			No	IFD
	12672-29-6	Aroclor 1248	-		-		µg/kg	N/A	0/8	51.3-54.6	ND		320 C	220 C			No	IFD
	11097-69-1	Aroclor 1254	11	J	11	J	µg/kg	S438	1/8	51.3-54.6	11		160 N	110 N			No	BSL
	11096-82-5	Aroclor 1260	14	J	28	J	µg/kg	S440	2/8	51.3-54.1	28		320 C	220 C			No	BSL
		Aroclor 1268	-		-		µg/kg	N/A	0/8	51.3-54.6	ND		320 C[h]	220 C[h]			No	IFD
	1336-36-3	Sum of PCBs	37		56		µg/kg	S440	3/8	102.6-108.2	56		320 C	220 C			No	BSL
PCDD/PCDFs																		
		TEQ as 2,3,7,8-TCDD	0.43		1.4		ng/kg	S438	4/4	N/A	1.4		4.3 C[i]	3.9 C[i]			No	BSL

Notes: All results reported as dry weight.

– no detected value
C – carcinogenic
COPC – contaminant of potential concern
J – estimated value
max – non-risk-based ceiling limit
N – non-carcinogenic
N/A – not applicable
ND – not detected
sat – non-risk-based concentration calculated based on soil saturation

Rationale Codes:

Selection Reason:
- ASL – above screening levels
- BKG – below background levels
- FD – frequent detection
- HIST – infrequent detection but associated historically
- TX – toxicity information available

Deletion Reason:
- BSL – below screening level
- IFD – infrequent detection
- NTX – no toxicity information
- NUT – essential nutrient

[a] N/A
[b] Screening toxicity values for soil are the USEPA Region III RBCs (2001). RBCs correspond to 1 X 10^{-6} cancer risk or a hazard quotient of 0.1, whichever is lower.
[c] Screening toxicity values for soil are the USEPA Region IX PRGs (2001). PRGs correspond to 1 X 10^{-6} cancer risk or a hazard quotient of 0.1, whichever is lower.
[d] This default carcinogenic screening value for chromium is that for chromium VI.
[e] This default screening value is for 2-Nitroaniline.
[f] This default screening value is for 4-Nitrophenol.
[g] This default screening value is for naphthalene, the non-carcinogenic PAH with the most stringent RBC/PRG.
[h] This default carcinogenic screening value for Aroclor 1268 is that for PCBs.
[i] This default carcinogenic screening value for the PCDD/PCDFs is 2,3,7,8-TCDD.

Table 2.9
Occurrence, Distribution, and Selection of Contaminants of Potential Concern
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Subsurface Soils
Exposure Medium: Subsurface Soils
Exposure Point: All soil samples from Onondaga Lake dredge spoils (0 to 11.7 ft)

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value [a]	Screening Toxicity Values: Region III Residential Soils [b]	Screening Toxicity Values: Region IX Residential Soils [c]	Potential ARAR/ TBC Source	Potential ARAR/ TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
Inorganics																	
7429-90-5	Aluminum	1,010		23,300	J	mg/kg	S437	41/41	N/A	23,300		7,800 N	7,600 N			Yes	ASL
7440-36-0	Antimony	0.24		1.3	J	mg/kg	S439	31/41	0.22-0.47	1.3		3.1 N	3.1 N			No	BSL
7440-38-2	Arsenic	0.62		13		mg/kg	S438	41/41	N/A	13		0.43 C	0.39 C			Yes	ASL
7440-39-3	Barium	49.1	J	227		mg/kg	S440	41/41	N/A	227		550 N	540 N			No	BSL
7440-41-7	Beryllium	0.086		1.0		mg/kg	S437	41/41	N/A	1.0		16 N	15 N			No	BSL
7440-43-9	Cadmium	0.070		4.3		mg/kg	S439	21/41	0.03-0.06	4.3		3.9 N	3.7 N			Yes	ASL
7440-70-2	Calcium	25,800		357,000		mg/kg	S440	41/41	N/A	357,000		N/A	N/A			No	NUT
7440-47-3	Chromium	2.8		62	J	mg/kg	S439	41/41	N/A	62		23 N [d]	23 N [d]			Yes	ASL
7440-48-4	Cobalt	0.15		8.2		mg/kg	S443	41/41	N/A	8.2		160 N	470 N			No	BSL
7440-50-8	Copper	1.8		62		mg/kg	S439	41/41	N/A	62		310 N	290 N			No	BSL
74-90-8	Cyanide	0.94		1.3		mg/kg	S440 & S441	8/41	0.55-1.2	1.3		160 N	1.1 N			Yes	ASL
7439-89-6	Iron	1,330		29,600		mg/kg	S437	41/41	N/A	29,600		4,700 N	2,300 N			Yes	ASL
7439-92-1	Lead	2.5		157		mg/kg	S439	40/41	0.33-0.33	157		N/A	400 N			No	BSL
7439-95-4	Magnesium	3,010		19,000		mg/kg	S443	41/41	N/A	19,000		N/A	N/A			No	NUT
7439-96-5	Manganese	106		440		mg/kg	S443	41/41	N/A	440		160 N	180 N			Yes	ASL
7439-97-6	Total mercury	0.052	J	99	J	mg/kg	S437	37/41	0.03-0.04	99		2.3 N	2.3 N			Yes	ASL
7440-02-0	Nickel	1.8		50		mg/kg	S439	41/41	N/A	50		160 N	160 N			No	BSL
7440-09-7	Potassium	220		5,750		mg/kg	S437	41/41	N/A	5,750		N/A	N/A			No	NUT
7782-49-2	Selenium	0.49		2.1		mg/kg	S437	38/41	1.1-1.1	2.1		39 N	39 N			No	BSL
7440-22-4	Silver	0.12		0.88		mg/kg	S439	5/41	0.08-0.19	0.88		39 N	39 N			No	BSL
7440-23-5	Sodium	214		13,000	J	mg/kg	S437	41/41	N/A	13,000		N/A	N/A			No	NUT
7440-28-0	Thallium	0.75		0.75		mg/kg	S436	1/41	0.54-1.2	0.75		0.55 N	0.52 N			Yes	ASL
7440-62-2	Vanadium	1.7		41		mg/kg	S437	41/41	N/A	41		55 N	55 N			No	BSL
7440-66-6	Zinc	12.1		186		mg/kg	S439	41/41	N/A	186		2,300 N	2,300 N			No	BSL
SVOCs																	
100-51-6	Benzyl alcohol	-		-		µg/kg	N/A	0/40	190-2600	ND		2,346,000 N	1,800,000 N			No	IFD
111-91-1	bis(2-chloroethoxy)methane	-		-		µg/kg	N/A	0/40	36-500	ND		N/A	N/A			No	IFD
111-44-4	bis(2-chloroethyl)ether	-		-		µg/kg	N/A	0/40	36-500	ND		580 C	210 C			No	IFD
117-81-7	bis(2-Ethylhexyl)phthalate	41		560	J	µg/kg	S437	36/40	48-500	560		46,000 C	35,000 C			No	BSL
101-55-3	4-Bromophenyl-phenyl ether	-		-		µg/kg	N/A	0/40	36-500	ND		N/A	N/A			No	IFD
85-68-7	Butylbenzyl phthalate	-		-		µg/kg	N/A	0/40	36-500	ND		1,564,000 N	1,200,000 N			No	IFD
86-74-8	Carbazole	43		2,700	J	µg/kg	S443	5/40	36-85	2,700		32,000 C	24,000 C			No	BSL
59-50-7	4-Chloro-3-methylphenol	-		-		µg/kg	N/A	0/40	190-2600	ND		N/A	N/A			No	IFD
106-47-8	4-Chloroaniline	98	J	98	J	µg/kg	S437	1/40	36-500	98		31,000 N	24,000 N			No	BSL
91-58-7	2-Chloronaphthalene	-		-		µg/kg	N/A	0/40	36-500	ND		626,000 N	390,000 N			No	IFD
95-57-8	2-Chlorophenol	-		-		µg/kg	N/A	0/40	36-500	ND		39,000 N	6,300 N			No	IFD
7005-72-3	4-Chlorophenyl-phenyl ether	-		-		µg/kg	N/A	0/40	36-500	ND		N/A	N/A			No	IFD
132-64-9	Dibenzofuran	-		-		µg/kg	N/A	0/40	36-500	ND		31,000 N	29,000 N			No	IFD
95-50-1	1,2-Dichlorobenzene	51		97	J	µg/kg	S440	4/40	36-500	97		704,000 N	370,000 sat			No	BSL
541-73-1	1,3-Dichlorobenzene	79	J	130		µg/kg	S437	5/40	36-500	130		235,000 N	1,300 N			No	BSL
106-46-7	1,4-Dichlorobenzene	-		-		µg/kg	N/A	0/40	36-500	ND		27,000 C	3,400 C			No	IFD
91-94-1	3,3'-Dichlorobenzidine	-		-		µg/kg	N/A	0/40	36-500	ND		1,400 C	1,100 C			No	IFD

Table 2.9
Occurrence, Distribution, and Selection of Contaminants of Concern
Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value [a]	Screening Toxicity Values: Region III Residential Soils [b]	Screening Toxicity Values: Region IX Residential Soils [c]	Potential ARAR/ TBC Source	Potential ARAR/ TBC Source	COC Flag	Rationale for Contaminant Deletion or Selection
120-83-2	2,4-Dichlorophenol	-		-		µg/kg	N/A	0/40	190-2600	ND		23,000 N	18,000 N			No	IFD
84-66-2	Diethyl phthalate	-		-		µg/kg	N/A	0/40	36-500	ND		6,257,000 N	4,900,000 N			No	IFD
131-11-3	Dimethyl phthalate	-		-		µg/kg	N/A	0/40	36-500	ND		78,214,000 N	100,000,000 max			No	IFD
105-67-9	2,4-Dimethylphenol	-		-		µg/kg	N/A	0/40	190-2600	ND		156,000 N	120,000 N			No	IFD
84-74-2	Di-n-butyl phthalate	54	J	110	J	µg/kg	S439	6/40	36-500	110		782,000 N	610,000 N			No	BSL
51-28-5	2,4-Dinitrophenol	-		-		µg/kg	N/A	0/40	930-13000	ND		16,000 N	12,000 N			No	IFD
121-14-2	2,4-Dinitrotoluene	-		-		µg/kg	N/A	0/40	190-2600	ND		16,000 N	12,000 N			No	IFD
606-20-2	2,6-Dinitrotoluene	-		-		µg/kg	N/A	0/40	190-2600	ND		7,800 N	6,100 N			No	IFD
117-84-0	Di-n-octyl phthalate	-		-		µg/kg	N/A	0/40	36-500	ND		156,000 N	120,000 N			No	IFD
118-74-1	Hexachlorobenzene	55		598	J	µg/kg	S438	9/40	36-500	598		400 C	300 C			Yes	ASL
87-68-3	Hexachlorobutadiene	-		-		µg/kg	N/A	0/40	36-500	ND		1,600 N	1,800 N			No	IFD
77-47-4	Hexachlorocyclopentadiene	-		-		µg/kg	N/A	0/40	190-2600	ND		47,000 N	42,000 N			No	IFD
67-72-1	Hexachloroethane	-		-		µg/kg	N/A	0/40	36-500	ND		7,800 N	6,100 N			No	IFD
78-59-1	Isophorone	-		-		µg/kg	N/A	0/40	36-500	ND		672,000 C	510,000 C			No	IFD
534-52-1	2-Methyl-4,6-dinitrophenol	-		-		µg/kg	N/A	0/40	930-13000	ND		7,800 N	N/A			No	IFD
95-48-7	2-Methylphenol	-		-		µg/kg	N/A	0/40	36-500	ND		391,000 N	310,000 N			No	IFD
106-44-5	4-Methylphenol	-		-		µg/kg	N/A	0/40	36-500	ND		39,000 N	31,000 N			No	IFD
88-74-4	2-Nitroaniline	-		-		µg/kg	N/A	0/40	73-1000	ND		N/A	350 N			No	IFD
99-09-2	3-Nitroaniline	-		-		µg/kg	N/A	0/40	930-13000	ND		N/A	350 N [e]			No	IFD
100-01-6	4-Nitroaniline	-		-		µg/kg	N/A	0/40	930-13000	ND		N/A	350 N [e]			No	IFD
98-95-3	Nitrobenzene	-		-		µg/kg	N/A	0/40	36-500	ND		3,900 N	2,000 N			No	IFD
88-75-5	2-Nitrophenol	-		-		µg/kg	N/A	0/40	190-2600	ND		N/A	49,000 N [f]			No	IFD
100-02-7	4-Nitrophenol	-		-		µg/kg	N/A	0/40	930-13000	ND		63,000 N	49,000 N			No	IFD
62-75-9	N-nitroso dimethylamine	-		-		µg/kg	N/A	0/40	190-2600	ND		13 C	9.5 C			No	IFD
621-64-7	N-nitroso-di-n-propylamine	-		-		µg/kg	N/A	0/40	36-500	ND		91 C	69 C			No	IFD
86-30-6	N-nitrosodiphenylamine	-		-		µg/kg	N/A	0/40	36-500	ND		130,000 C	99,000 C			No	IFD
108-60-1	2,2'-Oxybis(1-chloropropane)	-		-		µg/kg	N/A	0/40	36-500	ND		9,100 C	2,900 C			No	IFD
87-86-5	Pentachlorophenol	-		-		µg/kg	N/A	0/40	930-13000	ND		5,300 C	3,000 C			No	IFD
108-95-2	Phenol	-		-		µg/kg	N/A	0/40	36-500	ND		4,693,000 N	3,700,000 N			No	IFD
120-82-1	1,2,4-Trichlorobenzene	-		-		µg/kg	N/A	0/40	36-500	ND		78,000 N	65,000 N			No	IFD
95-95-4	2,4,5-Trichlorophenol	-		-		µg/kg	N/A	0/40	190-2600	ND		782,000 N	610,000 N			No	IFD
88-06-2	2,4,6-Trichlorophenol	-		-		µg/kg	N/A	0/40	190-2600	ND		58,000 C	44,000 C			No	IFD
83-32-9	Acenaphthene	43		1,200	J	µg/kg	S443	4/40	36-85	1,200		469,000 N	370,000 N			No	BSL
208-96-8	Acenaphthylene	110	J	110	J	µg/kg	S443	1/40	36-500	110		156,000 N [g]	5,600 N [g]			No	BSL
120-12-7	Anthracene	53		1,900	J	µg/kg	S443	7/40	36-85	1,900		2,346,000 N	2,200,000 N			No	BSL
56-55-3	Benz(a)anthracene	47		22,000	J	µg/kg	S443	20/40	36-81	22,000		870 C	620 C			Yes	ASL
50-32-8	Benzo(a)pyrene	44	J	23,000	J	µg/kg	S443	23/40	36-81	23,000		87 C	62 C			Yes	ASL
205-99-2	Benzo(b)fluoranthene	53	J	20,000	J	µg/kg	S443	22/40	36-81	20,000		870 C	620 C			Yes	ASL
191-24-2	Benzo(g,h,i)perylene	51	J	11,000	J	µg/kg	S443	15/40	36-81	11,000		156,000 N [g]	5,600 N [g]			Yes	ASL
207-08-9	Benzo(k)fluoranthene	56	J	20,000	J	µg/kg	S443	20/40	36-81	20,000		8,700 C	6,200 C			Yes	ASL
218-01-9	Chrysene	41		25,000	J	µg/kg	S443	26/40	36-81	25,000		87,000 C	62,000 C			No	BSL
53-70-3	Dibenz(a,h)anthracene	48		5,200	J	µg/kg	S443	5/40	36-85	5,200		87 C	62 C			Yes	ASL
206-44-0	Fluoranthene	38	J	32,000	J	µg/kg	S443	34/40	38-50	32,000		313,000 N	230,000 N			No	BSL
86-73-7	Fluorene	40		800	J	µg/kg	S443	5/40	36-85	800		313,000 N	260,000 N			No	BSL
193-39-5	Indeno(1,2,3-cd)pyrene	47	J	11,000	J	µg/kg	S443	15/40	36-81	11,000		870 C	620 C			Yes	ASL
91-57-6	2-Methylnaphthalene	-		-		µg/kg	N/A	0/40	36-500	ND		156,000 N	5,600 N [g]			No	IFD
91-20-3	Naphthalene	85		9,028		µg/kg	S436	3/40	36-85	9,028		156,000 N	5,600 N			Yes	ASL

Table 2.9
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Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value [a]	Screening Toxicity Values: Region III Residential Soils [b]	Screening Toxicity Values: Region IX Residential Soils [c]	Potential ARAR/ TBC Source	Potential ARAR/ TBC Source	COC Flag	Rationale for Contaminant Deletion or Selection
85-01-8	Phenanthrene	50	J	9,500	J	µg/kg	S443	22/40	36-81	9,500		156,000 N [g]	5,600 N [g]			Yes	ASL
129-00-0	Pyrene	53		25,000	J	µg/kg	S443	31/40	36-50	25,000		235,000 N	230,000 N			No	BSL
Pesticides																	
309-00-2	Aldrin	1.2	J	1.2	J	µg/kg	S438	1/1	N/A	1.2		38 C	29 C			No	BSL
319-84-6	alpha-BHC	-		-		µg/kg	N/A	0/0	N/A	ND		100 C	90 C			No	IFD
319-85-7	beta-BHC	3.2	J	3.2	J	µg/kg	S438	1/1	N/A	3.2		350 C	320 C			No	BSL
319-86-8	delta-BHC	-		-		µg/kg	N/A	0/0	N/A	ND		350 C [h]	320 C [h]			No	IFD
58-89-9	gamma-BHC (Lindane)	-		-		µg/kg	N/A	0/0	N/A	ND		490 C	440 C			No	IFD
57-74-9	Sum of Chlordanes	3.0	J	3.0	J	µg/kg	S438	1/1	N/A	3.0		1,800 C	1,600 C			No	BSL
72-54-8	4,4'-DDD	-		-		µg/kg	N/A	0/0	N/A	ND		2,700 C	2,400 C [i]			No	IFD
72-55-9	4,4'-DDE	-		-		µg/kg	N/A	0/0	N/A	ND		1,900 C	1,700 C [i]			No	IFD
50-29-3	4,4'-DDT	1.5	J	1.5	J	µg/kg	S438	1/1	N/A	1.5		1,900 C	1,700 C [i]			No	BSL
60-57-1	Dieldrin	3.8	J	3.8	J	µg/kg	S438	1/1	N/A	3.8		40 C	30 C			No	BSL
959-98-8	Endosulfan I	-		-		µg/kg	N/A	0/1	1.08-1.08	ND		47,000 N [j]	37,000 N [j]			No	IFD
33213-65-9	Endosulfan II	-		-		µg/kg	N/A	0/0	N/A	ND		47,000 N [j]	37,000 N [j]			No	IFD
1031-07-8	Endosulfan sulfate	-		-		µg/kg	N/A	0/0	N/A	ND		47,000 N [j]	37,000 N [j]			No	IFD
72-20-8	Endrin	-		-		µg/kg	N/A	0/0	N/A	ND		2,300 N	1,800 N			No	IFD
7421-93-4	Endrin aldehyde	2.8	J	2.8	J	µg/kg	S438	1/1	N/A	2.8		2,300 N [k]	1,800 N [k]			No	BSL
53494-70-5	Endrin ketone	-		-		µg/kg	N/A	0/0	N/A	ND		2,300 N [k]	1,800 N [k]			No	IFD
76-44-8	Heptachlor	-		-		µg/kg	N/A	0/1	1.08-1.08	ND		140 C	110 C			No	IFD
1024-57-3	Heptachlor epoxide	3.8	J	3.8	J	µg/kg	S438	1/1	N/A	3.8		70 C	53 C			No	BSL
72-43-5	Methoxychlor	-		-		µg/kg	N/A	0/0	N/A	ND		39,000 N	31,000 N			No	IFD
8001-35-2	Toxaphene	-		-		µg/kg	N/A	0/1	108-108	ND		580 C	440 C			No	IFD
PCBs																	
12674-11-2	Aroclor 1016	-		-		µg/kg	N/A	0/40	50.5-54.8	ND		550 N	390 N			No	IFD
11104-28-2	Aroclor 1221	-		-		µg/kg	N/A	0/40	50.5-54.8	ND		320 C	220 C			No	IFD
11141-16-5	Aroclor 1232	-		-		µg/kg	N/A	0/40	50.5-54.8	ND		320 C	220 C			No	IFD
53469-21-9	Aroclor 1242	17	J	193	J	µg/kg	S441	17/40	50.5-54.6	193		320 C	220 C			No	BSL
12672-29-6	Aroclor 1248	-		-		µg/kg	N/A	0/40	50.5-54.8	ND		320 C	220 C			No	IFD
11097-69-1	Aroclor 1254	11	J	289	J	µg/kg	S440	20/40	50.5-54.6	289		160 N	110 N			Yes	ASL
11096-82-5	Aroclor 1260	14	J	126	J	µg/kg	S439	3/40	50.5-54.8	126		320 C	220 C			No	BSL
	Aroclor 1268	54	J	487	J	µg/kg	S440	17/40	50.5-54.6	487		320 C [l]	220 C [l]			Yes	ASL
1336-36-3	Sum of PCBs	37		826		µg/kg	S440	22/40	101-109	826		320 C	220 C			Yes	ASL
PCDD/PCDFs																	
	TEQ as 2,3,7,8-TCDD	0.17		69		ng/kg	S440	20/20	N/A	69		4.3 C [m]	3.9 C [m]			Yes	ASL

Notes: All results reported as dry weight.

– no detected value
C – carcinogenic
COPC – contaminant of potential concern
J – estimated value
max – non-risk-based ceiling limit
N – non-carcinogenic
N/A – not applicable
ND – not detected
sat – non-risk-based concentration calculated based on soil saturation

Table 2.9
Occurrence, Distribution, and Selection of Contaminants of Concern
Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value [a]	Screening Toxicity Values: Region III Residential Soils [b]	Screening Toxicity Values: Region IX Residential Soils [c]	Potential ARAR/ TBC Source	Potential ARAR/ TBC Source	COC Flag	Rationale for Contaminant Deletion or Selection

Rationale Codes:

Selection Reason:
- ASL – above screening levels
- BKG – below background levels
- FD – frequent detection
- HIST – infrequent detection but associated historically
- TX – toxicity information available

Deletion Reason:
- BSL – below screening level
- IFD – infrequent detection
- NTX – no toxicity information
- NUT – essential nutrient

[a] N/A
[b] Screening toxicity values for soil are the USEPA Region III RBCs (2001). RBCs correspond to 1 X 10^{-6} cancer risk or a hazard quotient of 0.1, whichever is lower.
[c] Screening toxicity values for soil are the USEPA Region IX PRGs (2001). PRGs correspond to 1 X 10^{-6} cancer risk or a hazard quotient of 0.1, whichever is lower.
[d] This default carcinogenic screening value for chromium is that for chromium VI.
[e] This default screening value is for 2-Nitroaniline.
[f] This default screening value is for 4-Nitrophenol.
[g] This default screening value is for naphthalene, the non-carcinogenic PAH with the most stringent RBC/PRG.
[h] This default screening value is for Technical HCH (BHC).
[i] These default screening values for DDD, DDE, and DDT are not isomer-specific.
[j] This default non-carcinogenic screening value is that for endosulfan.
[k] This default non-carcinogenic screening value is that for endrin.
[l] This default carcinogenic screening value for Aroclor 1268 is that for PCBs.
[m] This default carcinogenic screening value for the PCDD/PCDFs is 2,3,7,8-TCDD.
[k] 2000 samples were collected at multiple depths up to 11.5 feet. The 2000 data is used as discrete, individual data points for the screening. Discussion is in Section 3.2

Table 2.10
Occurrence, Distribution, and Selection of Contaminants of Potential Concern
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Surface water from Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[a]	Screening Toxicity Values: Region III Residential Tapwater[b]	Screening Toxicity Values: Region IX Residential Tapwater[c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
Inorganics																	
7440-43-9	Cadmium	3.1		3.1		µg/L	W2	1/37	2-2	3.1		1.8 N	1.8 N			Yes	ASL
7440-70-2	Calcium	68,200		174,000		µg/L	W12	37/37	N/A	174,000		N/A	N/A			No	NUT
7440-47-3	Chromium	2.1		4.1	J	µg/L	W2	18/48	2-4	4.1		11 N[d]	11 N[d]			Yes	D-BSL
7440-50-8	Copper	2.0	J	51	J	µg/L	W1	11/37	1-7.4	51		150 N	140 N			No	BSL
7439-89-6	Iron	21.2		596		µg/L	W1	56/57	16-16	596		2,200 N	1100 N			No	BSL
7439-92-1	Lead	1.1		7.7	J	µg/L	W2	12/48	1-2.5	7.7		15 [e]	15 [e]			No	BSL
7439-95-4	Magnesium	20,600		25,900		µg/L	W2	33/33	N/A	25,900		N/A	N/A			No	NUT
7439-96-5	Manganese	3.2		624		µg/L	W1	64/66	10.9-12.8	624		73 N	88 N			Yes	ASL
7439-97-6	Total mercury	2.3		103		ng/L	W55	75/75	N/A	103		370 N[f]	1,100 N			Yes	HIST
22967-92-6	Methylmercury	0.13		5.9		ng/L	W12	75/75	N/A	5.9		370 N	360 N			Yes	HIST
593-74-8	Dimethyl mercury	-		-		ng/L	N/A	0/32	0.0006-0.011	ND		N/A	N/A			No	IFD
7439-97-6	Elemental mercury	0.028		0.31		ng/L	W1	30/32	0.16-0.17	0.31		N/A	1,100 N[g]			No	BSL
	Ionic mercury	0.15		3.3	J	ng/L	W1	32/32	N/A	3.3		1,100 N[h]	1,100 N[g]			No	BSL
7440-02-0	Nickel	3.5	J	15		µg/L	W1R	17/48	4-8	15		73 N	73 N			No	BSL
7440-23-5	Sodium	78,900		238,000		µg/L	W1R & W2	37/37	N/A	238,000		N/A	N/A			No	NUT
7440-66-6	Zinc	2.3	J	128		µg/L	W1R	35/37	14.9-15.7	128		1,100 N	1,100 N			No	BSL
VOCs																	
71-43-2	Benzene	0.11	J	6.3		µg/L	W50	2/48	0.5-1	6.3		0.32 C	0.35 C			Yes	ASL
75-27-4	Bromodichloromethane	0.12	J	0.24	J	µg/L	W50	4/11	0.5-0.5	0.24		0.17 C	0.18 C			Yes	ASL
75-25-2	Bromoform	-		-		µg/L	N/A	0/11	0.5-0.5	ND		8.5 C	8.5 C			No	IFD
74-83-9	Bromomethane	-		-		µg/L	N/A	0/11	1-1	ND		0.85 N	0.87 N			No	IFD
78-93-3	2-Butanone	-		-		µg/L	N/A	0/11	10-10	ND		190 N	190 N			No	IFD
75-15-0	Carbon disulfide	-		-		µg/L	N/A	0/11	0.5-0.5	ND		100 N	100 N			No	IFD
56-23-5	Carbon tetrachloride	-		-		µg/L	N/A	0/11	0.5-0.5	ND		0.16 C	0.17 C			No	IFD
108-90-7	Chlorobenzene	0.51		12		µg/L	W50	2/48	0.5-1	12		11 N	11 N			Yes	ASL
75-00-3	Chloroethane	-		-		µg/L	N/A	0/11	1-1	ND		3.6 C	4.6 C			No	IFD
67-66-3	Chloroform	0.13	J	0.85	J	µg/L	W51	11/11	N/A	0.85		0.063 N	0.063 N			Yes	ASL
74-87-3	Chloromethane	-		-		µg/L	N/A	0/11	1-1	ND		2.1 C	1.5 C			No	IFD
124-48-1	Dibromochloromethane	-		-		µg/L	N/A	0/11	0.5-0.5	ND		0.13 C	0.13 C			No	IFD
75-34-3	1,1-Dichloroethane	-		-		µg/L	N/A	0/11	0.5-0.5	ND		80 N	81 N			No	IFD
107-06-2	1,2-Dichloroethane	-		-		µg/L	N/A	0/11	0.5-0.5	ND		0.12 C	0.12 C			No	IFD
75-35-4	1,1-Dichloroethene	-		-		µg/L	N/A	0/11	0.5-0.5	ND		0.044 C	0.046 C			No	IFD
156-59-2	cis-1,2-Dichloroethene	-		-		µg/L	N/A	0/11	0.5-0.5	ND		6.1 N	6.1 N			No	IFD
156-60-5	trans-1,2-Dichloroethene	-		-		µg/L	N/A	0/11	0.5-0.5	ND		12 N	12 N			No	IFD
78-87-5	1,2-Dichloropropane	-		-		µg/L	N/A	0/11	0.5-0.5	ND		0.16 C	0.16 C			No	IFD
10061-01-5	cis-1,3-Dichloropropene	-		-		µg/L	N/A	0/11	0.5-0.5	ND		0.44 C[i]	0.4 C[i]			No	IFD
10061-02-6	trans-1,3-Dichloropropene	-		-		µg/L	N/A	0/11	0.5-0.5	ND		0.44 C[i]	0.4 C[i]			No	IFD
100-41-4	Ethylbenzene	-		-		µg/L	N/A	0/48	0.5-1	ND		130 N	130 N			No	IFD
591-78-6	2-Hexanone	-		-		µg/L	N/A	0/11	5-5	ND		150 N	N/A			No	IFD
108-10-1	4-Methyl-2-pentanone	-		-		µg/L	N/A	0/11	5-5	ND		14 N	16 N			No	IFD
75-09-2	Methylene chloride	-		-		µg/L	N/A	0/11	0.13-0.44	ND		4.1 C	4.3 C			No	IFD
100-42-5	Styrene	-		-		µg/L	N/A	0/11	0.5-0.5	ND		160 N	160 N			No	IFD

Table 2.10
Occurrence, Distribution, and Selection of Contaminants of Concern
Onondaga Lake

CAS Registry Number	Analyte	Minimum Detected Value	Minimum Qualifier	Maximum Detected Value	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value[a]	Screening Toxicity Values: Region III Residential Tapwater[b]	Screening Toxicity Values: Region IX Residential Tapwater[c]	Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COC Flag	Rationale for Contaminant Deletion or Selection
79-34-5	1,1,2,2-Tetrachloroethane	-		-		µg/L	N/A	0/11	0.5-0.5	ND		0.053 C	0.055 C			No	IFD
127-18-4	Tetrachloroethene	-		-		µg/L	N/A	0/11	0.5-0.5	ND		1.1 C	1.1 C			No	IFD
108-88-3	Toluene	0.16	J	0.16	J	µg/L	W50	1/48	0.5-1	0.16		75 N	72 N			No	D*-BSL
71-55-6	1,1,1-Trichloroethane	-		-		µg/L	N/A	0/11	0.5-0.5	ND		320 N	54 N			No	IFD
79-00-5	1,1,2-Trichloroethane	-		-		µg/L	N/A	0/11	0.5-0.5	ND		0.19 C	0.2 C			No	IFD
79-01-6	Trichloroethene	-		-		µg/L	N/A	0/11	0.5-0.5	ND		1.6 C	1.6 C			No	IFD
75-01-4	Vinyl chloride	-		-		µg/L	N/A	0/11	1-1	ND		0.015 C	0.041 C			No	IFD
1330-20-7	Xylene isomers (total)	0.33	J	0.33	J	µg/L	W55	1/48	0.5-1	0.33		1,200 N	140 N			No	D*-BSL
SVOCs																	
95-50-1	1,2-Dichlorobenzene	0.11	J	3.2		µg/L	W50	4/48	0.5-1	3.2		27 N	37 N			Yes	D-BSL
541-73-1	1,3-Dichlorobenzene	1.2	J	1.2	J	µg/L	W1R	1/37	1-1	1.2		18 N	0.55 N			Yes	ASL
106-46-7	1,4-Dichlorobenzene	0.14	J	3.4		µg/L	W50	12/48	0.5-1	3.4		0.47 C	0.5 C			Yes	ASL
118-74-1	Hexachlorobenzene (GC/MS)	-		-		µg/L	N/A	0/5	0.05-0.05	ND		0.042 C	0.042 C			No	IFD
87-61-6	1,2,3-Trichlorobenzene	2.7	J	2.7	J	µg/L	W1R	1/37	1-1	2.7		19 N[j]	19 N[j]			No	BSL
120-82-1	1,2,4-Trichlorobenzene	2.4	J	2.4	J	µg/L	W1R	1/37	1-1	2.4		19 N	19 N			Yes	D-BSL
108-70-3	1,3,5-Trichlorobenzene	1.6	J	1.6	J	µg/L	W1R	1/37	1-1	1.6		19 N[j]	19 N[j]			No	BSL

Notes: All results reported as unfiltered.

– no detected value
C – carcinogenic
COPC – contaminant of potential concern
J – estimated value
N – non-carcinogenic
N/A – not applicable
ND – not detected

Rationale Codes:

Selection Reason:
ASL – above screening levels
BKG – below background levels
FD – frequent detection
HIST – infrequent detection but associated historically
TX – toxicity information available
D-BSL – contaminant is below screening for ingestion, but targeted for assessment per RAGS Part E

Deletion Reason:
BSL – below screening level
D*-BSL – contaminant is targeted for assessment per RAGS Part E, but excluded due to infrequent detection and low maximum concentration relative to screening criteria
IFD – infrequent detection
NTX – no toxicity information
NUT – essential nutrient

[a] N/A
[b] Screening toxicity values for surface water are the USEPA Region III RBCs (2001). RBCs correspond to 1 X 10^{0} cancer risk or a hazard quotient of 0.1, whichever is lower.
[c] Screening toxicity values for surface water are the USEPA Region IX PRGs (2001). PRGs correspond to 1 X 10^{0} cancer risk or a hazard quotient of 0.1, whichever is lower.
[d] This default carcinogenic screening value for chromium is that for chromium VI.
[e] National primary drinking water standard for lead, which requires that lead concentrations be less than 15 µg/L in 90 percent of monitored households.
[f] This default non-carcinogenic screening value for total mercury is that for methylmercury.
[g] Criterion for Ionic and Elemental, Region 9 is "Mercury and Compounds."
[h] Criterion for Ionic, Region 3 is "Mercuric Chloride."
[i] Criterion for cis and trans is 1,3-Dichloropropene (however, there were no detects, so summing was not necessary).
[j] This default non-carcinogenic screening value is based on 1,2,4-trichlorobenzene.

Table 3.1
Medium-Specific Exposure Point Concentration Summary – Onondaga Lake

Scenario Time Frame:	Current/Future
Medium:	Fish tissue
Exposure Medium:	Fish tissue
Exposure Point:	**Fish fillet tissue from Onondaga Lake**

								Reasonable Maximum Exposure			Central Tendency		
Chemical of Potential Concern	Units	Arithmetic Mean	Standard Deviation	95% UCL of Normal Data	Maximum Detected Value	Maximum Qualifier	EPC Units	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Inorganics													
Antimony	mg/kg	5.57E-01	7.97E-01	9.92E-01	2.10E+00		mg/kg	9.9E-01	95% UCL-T	W - Test(2)	9.9E-01	95% UCL-T	W - Test(2)
Arsenic (inorganic)	mg/kg	3.27E-01	3.54E-01	8.03E-02	1.05E+00		mg/kg	8.0E-02	95% UCL-T	W - Test(1)	8.0E-02	95% UCL-T	W - Test(1)
Chromium	mg/kg	4.91E-01	1.36E-01	5.65E-01	7.30E-01		mg/kg	5.7E-01	95% UCL-T	W - Test(2)	5.7E-01	95% UCL-T	W - Test(2)
Cyanide	mg/kg	1.73E+00	4.20E+00	5.69E+00	1.43E+01		mg/kg	5.7E+00	95% UCL-T	W - Test(1)	5.7E+00	95% UCL-T	W - Test(1)
Manganese	mg/kg	9.91E-01	1.58E+00	3.23E+00	5.51E+00		mg/kg	3.2E+00	95% UCL-T	W - Test(1)	3.2E+00	95% UCL-T	W - Test(1)
Mercury (as methylmercury)	mg/kg	1.05E+00	5.20E-01	1.08E+00	5.07E+00		mg/kg	1.1E+00	95% UCL-T	Y Statistic(2)	1.1E+00	95% UCL-T	Y Statistic(2)
Selenium	mg/kg	1.08E+00	7.21E-01	1.47E+00	2.20E+00		mg/kg	1.5E+00	95% UCL-T	W - Test(2)	1.5E+00	95% UCL-T	W - Test(2)
Vanadium	mg/kg	4.75E-01	2.80E-01	6.27E-01	9.70E-01		mg/kg	6.3E-01	95% UCL-T	W - Test(2)	6.3E-01	95% UCL-T	W - Test(2)
Zinc	mg/kg	3.05E+01	2.42E+01	4.37E+01	7.38E+01	J	mg/kg	4.4E+01	95% UCL-T	W - Test(2)	4.4E+01	95% UCL-T	W - Test(2)
SVOCs													
bis(2-ethylhexyl)phthalate	mg/kg	7.00E-01	1.07E+00	n<10	2.30E+00		mg/kg	2.3E+00	Max	W - Test(4)	2.3E+00	Max	W - Test(4)
Hexachlorobenzene	mg/kg	1.18E-02	2.31E-02	1.30E-02	1.70E-01		mg/kg	1.3E-02	95% UCL-T	Y - Statistic(1)	1.3E-02	95% UCL-T	Y - Statistic(1)
Pesticides													
2,4'-DDE	mg/kg	3.76E-03	3.74E-03	4.13E-03	2.40E-02		mg/kg	4.1E-03	95% UCL-T	W - Test(1)	4.1E-03	95% UCL-T	W - Test(1)
4,4'-DDD	mg/kg	1.12E-02	1.75E-02	1.33E-02	1.70E-01	J	mg/kg	1.3E-02	95% UCL-T	Y - Statistic(1)	1.3E-02	95% UCL-T	Y - Statistic(1)
4,4'-DDE	mg/kg	2.86E-02	4.41E-02	3.44E-02	4.00E-01	J	mg/kg	3.4E-02	95% UCL-T	Y - Statistic(1)	3.4E-02	95% UCL-T	Y - Statistic(1)
4,4'-DDT	mg/kg	8.08E-03	1.06E-02	9.49E-03	8.20E-02		mg/kg	9.5E-03	95% UCL-T	Y - Statistic(1)	9.5E-03	95% UCL-T	Y - Statistic(1)
Aldrin	mg/kg	2.32E-03	8.76E-04	2.53E-03	3.00E-03		mg/kg	2.5E-03	95% UCL-T	W - Test(2)	2.5E-03	95% UCL-T	W - Test(2)
delta-BHC	mg/kg	2.31E-03	8.85E-04	2.52E-03	2.80E-03	J	mg/kg	2.5E-03	95% UCL-T	W - Test(2)	2.5E-03	95% UCL-T	W - Test(2)
Dieldrin	mg/kg	3.79E-03	4.24E-03	3.82E-03	4.20E-02	J	mg/kg	3.8E-03	95% UCL-T	Y - Statistic(1)	3.8E-03	95% UCL-T	Y - Statistic(1)
Heptachlor epoxide	mg/kg	3.55E-03	2.30E-03	4.14E-03	1.00E-02		mg/kg	4.1E-03	95% UCL-T	W - Test(1)	4.1E-03	95% UCL-T	W - Test(1)
Sum of chlordanes	mg/kg	8.39E-03	1.01E-02	9.73E-03	6.10E-02		mg/kg	9.7E-03	95% UCL-T	Y - Statistic(1)	9.7E-03	95% UCL-T	Y - Statistic(1)
PCBs													
Aroclor 1016	mg/kg	2.37E-01	2.82E-01	4.91E-01	1.61E+00		mg/kg	4.9E-01	95% UCL-T	Y - Statistic(1)	4.9E-01	95% UCL-T	Y - Statistic(1)
Aroclor 1242	mg/kg	3.00E-01	3.56E-01	9.59E-01	1.98E+00		mg/kg	9.6E-01	95% UCL-T	W - Test(1)	9.6E-01	95% UCL-T	W - Test(1)
Sum of Low MW PCBs	mg/kg	2.74E-01	3.13E-01	4.79E-01	1.98E+00		mg/kg	4.8E-01	95% UCL-T	Y - Statistic(1)	4.8E-01	95% UCL-T	Y - Statistic(1)
Aroclor 1248	mg/kg	4.70E-01	3.44E-01	n<10	1.10E+00	J	mg/kg	1.1E+00	Max	W - Test(4)	1.1E+00	Max	W - Test(4)
Aroclor 1260	mg/kg	2.72E-01	2.16E-01	n<10	7.20E-01	J	mg/kg	7.2E-01	Max	W - Test(4)	7.2E-01	Max	W - Test(4)
Aroclors 1254 & 1260	mg/kg	4.02E-01	3.56E-01	5.55E-01	1.92E+00		mg/kg	5.5E-01	95% UCL-T	Y - Statistic(1)	5.5E-01	95% UCL-T	Y - Statistic(1)
Sum of High MW PCBs	mg/kg	4.21E-01	3.74E-01	5.77E-01	1.92E+00		mg/kg	5.8E-01	95% UCL-T	Y - Statistic(1)	5.8E-01	95% UCL-T	Y - Statistic(1)
Sum of PCBs	mg/kg	6.73E-01	6.01E-01	9.13E-01	3.90E+00		mg/kg	9.1E-01	95% UCL-T	Y - Statistic(1)	9.1E-01	95% UCL-T	Y - Statistic(1)
PCDD/PCDFs													
TEQ as 2,3,7,8-TCDD	mg/kg	1.01E-05	1.35E-05	1.95E-05	4.60E-05		mg/kg	2.0E-05	95% UCL-T	W - Test(1)	2.0E-05	95% UCL-T	W - Test(1)

Notes: Duplicate sample results were averaged in calculations.
Distributional fits were assessed using the Shapiro-Wilk W test for sample sets containing less than 50 samples.
Distributional fits were assessed using the D'Agostino Y statistic for sample sets containing greater than 50 samples.
Arithmetic mean and 95% UCL of normal data were calculated using half the detection limit for non-detects. 95% UCL was not calculated for less than 10 data points.
J – estimated value.
Arsenic (inorganic) = assumed 10% of total arsenic detected (see section 4.7.2)
Mercury (as methylmercury) = mercury concentrations used in the Risk Assessment, representing the sum of all detected forms of mercury in a particular sample, and is interpreted as methylmercury.
95% UCL-T – 95% UCL of log-transformed data.
(1) Statistical test indicates data are log-normally distributed.
(2) Statistical test indicates data are normally distributed.
(3) 95% UCL exceeds maximum detected concentration; therefore, maximum detected concentration was used for EPC.
(4) 95% UCL not calculated due to an insufficent number of samples (n<10).

Table 3.2
Medium-Specific Exposure Point Concentration Summary – Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: **Nearshore surface sediment from the northern basin of Onondaga Lake**

								Reasonable Maximum Exposure			Central Tendency		
	Chemical of Potential Concern	Units	Arithmetic Mean	Standard Deviation	95% UCL of Normal Data	Maximum Detected Value	Maximum Qualifier	EPC Units	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Inorganics														
	Antimony	mg/kg	2.63E+00	3.32E+00	2.04E+01	9.20E+00		mg/kg	9.2E+00	Max	W - Test(3)	9.2E+00	Max	W - Test(3)
	Arsenic	mg/kg	1.95E+00	2.08E+00	3.86E+00	8.00E+00		mg/kg	3.9E+00	95% UCL-T	W - Test(1)	3.9E+00	95% UCL-T	W - Test(1)
	Barium	mg/kg	1.30E+02	1.64E+02	1.51E+02	7.08E+02		mg/kg	1.5E+02	95% UCL-T	W - Test(1)	1.5E+02	95% UCL-T	W - Test(1)
	Cadmium	mg/kg	9.62E-01	1.09E+00	2.03E+00	4.60E+00		mg/kg	2.0E+00	95% UCL-T	W - Test(1)	2.0E+00	95% UCL-T	W - Test(1)
	Chromium	mg/kg	2.20E+01	2.06E+01	3.24E+01	8.01E+01	J	mg/kg	3.2E+01	95% UCL-T	W - Test(1)	3.2E+01	95% UCL-T	W - Test(1)
	Iron	mg/kg	4.21E+03	3.40E+03	5.79E+03	1.36E+04		mg/kg	5.8E+03	95% UCL-T	W - Test(1)	5.8E+03	95% UCL-T	W - Test(1)
	Manganese	mg/kg	2.49E+02	8.10E+01	2.77E+02	4.45E+02	J	mg/kg	2.8E+02	95% UCL-T	W - Test(2)	2.8E+02	95% UCL-T	W - Test(2)
	Methylmercury	mg/kg	1.73E-03	3.70E-04	n<10	1.99E-03		mg/kg	2.0E-03	Max	W - Test(4)	2.0E-03	Max	W - Test(4)
	Total Mercury	mg/kg	8.29E-01	8.25E-01	1.89E+00	2.80E+00		mg/kg	1.9E+00	95% UCL-T	W - Test(1)	1.9E+00	95% UCL-T	W - Test(1)
	Thallium	mg/kg	2.41E-01	1.54E-01	2.93E-01	7.30E-01		mg/kg	2.9E-01	95% UCL-T	W - Test(1)	2.9E-01	95% UCL-T	W - Test(1)
VOCs														
	Benzene	mg/kg	8.65E-02	2.73E-01	8.94E-02	1.18E+00		mg/kg	8.9E-02	95% UCL-T	W - Test(1)	8.9E-02	95% UCL-T	W - Test(1)
SVOCs														
	Benz(a)anthracene	mg/kg	1.19E-01	2.57E-01	1.63E-01	1.50E+00		mg/kg	1.6E-01	95% UCL-T	W - Test(1)	1.6E-01	95% UCL-T	W - Test(1)
	Benzo(a)pyrene	mg/kg	1.11E-01	2.24E-01	1.56E-01	1.30E+00		mg/kg	1.6E-01	95% UCL-T	W - Test(1)	1.6E-01	95% UCL-T	W - Test(1)
	Benzo(b)fluoranthene	mg/kg	1.49E-01	2.78E-01	2.37E-01	1.60E+00		mg/kg	2.4E-01	95% UCL-T	W - Test(1)	2.4E-01	95% UCL-T	W - Test(1)
	Dibenz(a,h)anthracene	mg/kg	3.86E-02	3.34E-02	4.83E-02	1.80E-01		mg/kg	4.8E-02	95% UCL-T	W - Test(1)	4.8E-02	95% UCL-T	W - Test(1)
	Hexachlorobenzene	mg/kg	4.15E-02	1.02E-01	4.06E-01	5.83E-01		mg/kg	4.1E-01	95% UCL-T	W - Test(1)	4.1E-01	95% UCL-T	W - Test(1)
	Naphthalene	mg/kg	4.33E-01	1.99E+00	3.89E-01	1.20E+01		mg/kg	3.9E-01	95% UCL-T	W - Test(1)	3.9E-01	95% UCL-T	W - Test(1)
PCBs														
	Aroclor 1254	mg/kg	4.19E-02	9.65E-02	4.12E-02	6.19E-01		mg/kg	4.1E-02	95% UCL-T	W - Test(1)	4.1E-02	95% UCL-T	W - Test(1)
	Aroclor 1268	mg/kg	2.53E-02	3.78E-02	3.47E-02	1.54E-01		mg/kg	3.5E-02	95% UCL-T	W - Test(1)	3.5E-02	95% UCL-T	W - Test(1)
	Sum of PCBs	mg/kg	7.85E-02	1.10E-01	8.62E-02	7.20E-01		mg/kg	8.6E-02	95% UCL-T	W - Test(1)	8.6E-02	95% UCL-T	W - Test(1)
PCDD/PCDFs														
	TEQ as 2,3,7,8-TCDD	mg/kg	1.59E-06	5.14E-07	n<10	1.95E-06		mg/kg	2.0E-06	Max	W - Test(4)	2.0E-06	Max	W - Test(4)

Notes: Duplicate sample results were averaged in calculations.
Distributional fits were assessed using the Shapiro-Wilk W test for sample sets containing less than 50 samples.
Distributional fits were assessed using the D'Agostino Y statistic for sample sets containing greater than 50 samples.
Arithmetic mean and 95% UCL of normal data were calculated using half the detection limit for non-detects. 95% UCL was not calculated for less than 10 data points.
0 to 0.02 and 0 to 0.30 meter depth samples (or the length-weighted average of samples in 0 to 0.30 meter interval) were used to calculate the 95% UCLs, for discussion see Section 3.2 of HHRA
J – estimated value.
95% UCL-T – 95% UCL of log-transformed data.
(1) Statistical test indicates data are log-normally distributed.
(2) Statistical test indicates data are normally distributed.
(3) 95% UCL exceeds maximum detected concentration; therefore, maximum detected concentration was used for EPC.
(4) 95% UCL not calculated due to an insufficent number of samples (n<10).

Table 3.3
Medium-Specific Exposure Point Concentration Summary – Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Nearshore surface sediment from the southern basin of Onondaga Lake

Chemical of Potential Concern	Units	Arithmetic Mean	Standard Deviation	95% UCL of Normal Data	Maximum Detected Value	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure: Medium EPC Value	Reasonable Maximum Exposure: Medium EPC Statistic	Reasonable Maximum Exposure: Medium EPC Rationale	Central Tendency: Medium EPC Value	Central Tendency: Medium EPC Statistic	Central Tendency: Medium EPC Rationale
Inorganics													
Aluminum	mg/kg	3.33E+03	2.54E+03	4.08E+03	1.59E+04		mg/kg	4.1E+03	95% UCL-T	Y - Statistic(1)	4.1E+03	95% UCL-T	Y - Statistic(1)
Antimony	mg/kg	1.46E+00	1.71E+00	3.05E+00	6.70E+00	J	mg/kg	3.0E+00	95% UCL-T	Y - Statistic(1)	3.0E+00	95% UCL-T	Y - Statistic(1)
Arsenic	mg/kg	7.35E+00	7.78E+00	1.24E+01	4.35E+01		mg/kg	1.2E+01	95% UCL-T	Y - Statistic(1)	1.2E+01	95% UCL-T	Y - Statistic(1)
Barium	mg/kg	6.56E+02	1.69E+03	9.02E+02	1.18E+04		mg/kg	9.0E+02	95% UCL-T	W - Test(1)	9.0E+02	95% UCL-T	W - Test(1)
Cadmium	mg/kg	2.05E+00	2.85E+00	3.91E+00	1.67E+01		mg/kg	3.9E+00	95% UCL-T	Y - Statistic(1)	3.9E+00	95% UCL-T	Y - Statistic(1)
Chromium	mg/kg	1.71E+02	4.05E+02	2.05E+02	2.15E+03		mg/kg	2.0E+02	95% UCL-T	Y - Statistic(1)	2.0E+02	95% UCL-T	Y - Statistic(1)
Copper	mg/kg	6.64E+01	6.58E+01	9.61E+01	3.65E+02		mg/kg	9.6E+01	95% UCL-T	Y - Statistic(1)	9.6E+01	95% UCL-T	Y - Statistic(1)
Cyanide	mg/kg	1.08E+00	1.64E+00	1.51E+00	9.20E+00		mg/kg	1.5E+00	95% UCL-T	W - Test(1)	1.5E+00	95% UCL-T	W - Test(1)
Iron	mg/kg	9.83E+03	8.99E+03	1.22E+04	3.42E+04		mg/kg	1.2E+04	95% UCL-T	W - Test(1)	1.2E+04	95% UCL-T	W - Test(1)
Lead	mg/kg	1.32E+02	2.19E+02	2.35E+02	1.17E+03		mg/kg	2.3E+02	95% UCL-T	Y - Statistic(1)	2.3E+02	95% UCL-T	Y - Statistic(1)
Manganese	mg/kg	2.65E+02	1.36E+02	2.95E+02	7.57E+02		mg/kg	2.9E+02	95% UCL-T	W - Test(1)	2.9E+02	95% UCL-T	W - Test(1)
Methylmercury	mg/kg	1.06E-02	9.60E-03	n<10	2.25E-02		mg/kg	2.2E-02	Max	W - Test(4)	2.2E-02	Max	W - Test(4)
Total Mercury	mg/kg	6.47E+00	1.10E+01	1.89E+01	6.15E+01		mg/kg	1.9E+01	95% UCL-T	Y - Statistic(1)	1.9E+01	95% UCL-T	Y - Statistic(1)
Nickel	mg/kg	6.43E+01	1.55E+02	7.32E+01	9.72E+02		mg/kg	7.3E+01	95% UCL-T	Y - Statistic(1)	7.3E+01	95% UCL-T	Y - Statistic(1)
Thallium	mg/kg	3.35E-01	2.36E-01	4.01E-01	1.15E+00		mg/kg	4.0E-01	95% UCL-T	W - Test(1)	4.0E-01	95% UCL-T	W - Test(1)
Vanadium	mg/kg	1.71E+01	2.84E+01	2.99E+01	1.45E+02		mg/kg	3.0E+01	95% UCL-T	W - Test(1)	3.0E+01	95% UCL-T	W - Test(1)
VOCs													
Benzene	mg/kg	3.39E+00	1.45E+01	6.12E+01	1.11E+02		mg/kg	6.1E+01	95% UCL-T	Y - Statistic(1)	6.1E+01	95% UCL-T	Y - Statistic(1)
Chlorobenzene	mg/kg	1.15E+01	3.29E+01	2.34E+03	1.80E+02		mg/kg	1.8E+02	Max	Y - Statistic(3)	1.8E+02	Max	Y - Statistic(3)
Methylene chloride	mg/kg	1.35E+00	2.16E+00	1.69E+02	8.50E+00		mg/kg	8.5E+00	Max	Y - Statistic(3)	8.5E+00	Max	Y - Statistic(3)
Xylenes	mg/kg	1.61E+01	4.81E+01	1.53E+04	3.30E+02	J	mg/kg	3.3E+02	Max	Y - Statistic(3)	3.3E+02	Max	Y - Statistic(3)
SVOCs													
Acenaphthylene	mg/kg	1.16E+00	1.70E+00	4.24E+00	1.10E+01		mg/kg	4.2E+00	95% UCL-T	Y - Statistic(3)	4.2E+00	95% UCL-T	Y - Statistic(3)
Benz[a]anthracene	mg/kg	3.31E+00	8.29E+00	9.76E+00	5.70E+01		mg/kg	9.8E+00	95% UCL-T	Y - Statistic(1)	9.8E+00	95% UCL-T	Y - Statistic(1)
Benzo[a]pyrene	mg/kg	2.69E+00	6.35E+00	7.40E+00	3.85E+01		mg/kg	7.4E+00	95% UCL-T	Y - Statistic(1)	7.4E+00	95% UCL-T	Y - Statistic(1)
Benzo[b]fluoranthene	mg/kg	3.56E+00	7.94E+00	9.82E+00	4.60E+01	J	mg/kg	9.8E+00	95% UCL-T	Y - Statistic(1)	9.8E+00	95% UCL-T	Y - Statistic(1)
Benzo[ghi]perylene	mg/kg	2.00E+00	3.51E+00	6.39E+00	2.12E+01		mg/kg	6.4E+00	95% UCL-T	Y - Statistic(1)	6.4E+00	95% UCL-T	Y - Statistic(1)
Benzo[k]fluoranthene	mg/kg	1.67E+00	4.63E+00	3.55E+00	3.55E+01		mg/kg	3.6E+00	95% UCL-T	Y - Statistic(1)	3.6E+00	95% UCL-T	Y - Statistic(1)
Chrysene	mg/kg	3.37E+00	8.38E+00	9.62E+00	5.70E+01		mg/kg	9.6E+00	95% UCL-T	Y - Statistic(1)	9.6E+00	95% UCL-T	Y - Statistic(1)
Dibenz[a,h]anthracene	mg/kg	6.69E-01	1.35E+01	1.63E+00	9.85E+00		mg/kg	1.6E+00	95% UCL-T	Y - Statistic(1)	1.6E+00	95% UCL-T	Y - Statistic(1)
Dibenzofuran	mg/kg	4.71E+00	1.77E+01	1.80E+01	4.30E+01		mg/kg	1.8E+01	95% UCL-T	W - Test(1)	1.8E+01	95% UCL-T	W - Test(1)
1,3-Dichlorobenzene	mg/kg	2.34E+00	1.42E+01	4.64E+00	5.00E+00		mg/kg	4.6E+00	95% UCL-T	Y - Statistic(1)	4.6E+00	95% UCL-T	Y - Statistic(1)
1,4-Dichlorobenzene	mg/kg	5.95E+00	1.70E+01	1.33E+02	6.28E+01		mg/kg	6.3E+01	Max	Y - Statistic(3)	6.3E+01	Max	Y - Statistic(3)
Fluoranthene	mg/kg	8.40E+00	1.95E+01	3.37E+01	1.42E+02		mg/kg	3.4E+01	95% UCL-T	Y - Statistic(1)	3.4E+01	95% UCL-T	Y - Statistic(1)
Hexachlorobenzene	mg/kg	6.20E-01	2.60E+00	6.66E+00	2.00E+01	J	mg/kg	6.7E+00	95% UCL-T	Y - Statistic(1)	6.7E+00	95% UCL-T	Y - Statistic(1)
Indeno[1,2,3-cd]pyrene	mg/kg	1.46E+00	3.39E+00	3.77E+00	2.27E+01		mg/kg	3.8E+00	95% UCL-T	Y - Statistic(1)	3.8E+00	95% UCL-T	Y - Statistic(1)
2-Methylnaphthalene	mg/kg	6.17E+01	4.04E+02	1.76E+02	2.80E+03	J	mg/kg	1.8E+02	95% UCL-T	W - Test(1)	1.8E+02	95% UCL-T	W - Test(1)
Naphthalene	mg/kg	4.23E+02	3.25E+03	1.05E+03	2.60E+04	J	mg/kg	1.1E+03	95% UCL-T	Y - Statistic(1)	1.1E+03	95% UCL-T	Y - Statistic(1)
Phenanthrene	mg/kg	1.79E+01	8.20E+01	5.25E+01	6.30E+02	J	mg/kg	5.3E+01	95% UCL-T	Y - Statistic(1)	5.3E+01	95% UCL-T	Y - Statistic(1)
Pesticides													
Dieldrin	mg/kg	3.57E-03	4.33E-03	8.69E-03	1.59E-02		mg/kg	8.7E-03	95% UCL-T	W - Test(1)	8.7E-03	95% UCL-T	W - Test(1)
PCBs													
Aroclor 1221	mg/kg	6.53E-02	7.91E-02	8.14E-02	3.61E-01		mg/kg	8.1E-02	95% UCL-T	Y - Statistic(1)	8.1E-02	95% UCL-T	Y - Statistic(1)

Table 3.3
Medium-Specific Exposure Point Concentration Summary – Onondaga Lake

Chemical of Potential Concern	Units	Arithmetic Mean	Standard Deviation	95% UCL of Normal Data	Maximum Detected Value	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
								Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Aroclor 1242	mg/kg	2.94E-01	8.23E-01	3.46E-01	6.05E+00		mg/kg	3.5E-01	95% UCL-T	Y - Statistic(1)	3.5E-01	95% UCL-T	Y - Statistic(1)
Aroclor 1248	mg/kg	1.93E-01	5.45E-01	2.25E-01	4.20E+00	J	mg/kg	2.3E-01	95% UCL-T	Y - Statistic(1)	2.3E-01	95% UCL-T	Y - Statistic(1)
Aroclor 1254	mg/kg	1.11E-01	1.61E-01	1.39E-01	8.44E-01		mg/kg	1.4E-01	95% UCL-T	Y - Statistic(1)	1.4E-01	95% UCL-T	Y - Statistic(1)
Aroclor 1260	mg/kg	1.60E-01	3.01E-01	2.01E-01	1.80E+00	J	mg/kg	2.0E-01	95% UCL-T	Y - Statistic(1)	2.0E-01	95% UCL-T	Y - Statistic(1)
PCBs	mg/kg	6.82E-01	1.23E+00	1.06E+00	7.13E+00		mg/kg	1.1E+00	95% UCL-T	Y - Statistic(1)	1.1E+00	95% UCL-T	Y - Statistic(1)
PCDD/PCDFs													
TEQ as 2,3,7,8-TCDD	mg/kg	1.06E-04	1.19E-04	n<10	3.77E-04		mg/kg	3.8E-04	Max	W - Test(4)	3.8E-04	Max	W - Test(4)

Notes: Duplicate sample results were averaged in calculations.
Distributional fits were assessed using the Shapiro-Wilk W test for sample sets containing less than 50 samples.
Distributional fits were assessed using the D'Agostino Y statistic for sample sets containing greater than 50 samples.
Arithmetic mean and 95% UCL of normal data were calculated using half the detection limit for non-detects. 95% UCL was not calculated for less than 10 data points.
0 to 0.02 and 0 to 0.30 meter depth samples (or the length-weighted average of samples in 0 to 0.30 meter interval) were used to calculate the 95% UCLs, for discussion see Section 3.2 of HHRA
J – estimated value.
95% UCL-T – 95% UCL of log-transformed data.
(1) Statistical test indicates data are log-normally distributed.
(2) Statistical test indicates data are normally distributed.
(3) 95% UCL exceeds maximum detected concentration; therefore, maximum detected concentration was used for EPC.
(4) 95% UCL not calculated due to an insufficent number of samples (n<10).

Table 3.4
Medium-Specific Exposure Point Concentration Summary – Onondaga Lake

Scenario Time Frame:	Current/Future
Medium:	Sediment
Exposure Medium:	Sediment
Exposure Point:	**Wetland SYW-6 sediment from the northern basin of Onondaga Lake**

Chemical of Potential Concern	Units	Arithmetic Mean	Standard Deviation	95% UCL of Normal Data	Maximum Detected Value	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure: Medium EPC Value	Reasonable Maximum Exposure: Medium EPC Statistic	Reasonable Maximum Exposure: Medium EPC Rationale	Central Tendency: Medium EPC Value	Central Tendency: Medium EPC Statistic	Central Tendency: Medium EPC Rationale
Inorganics													
Aluminum	mg/kg	5.42E+03	2.98E+03	n < 10	1.07E+04		mg/kg	1.1E+04	Max	W - Test(4)	1.1E+04	Max	W - Test(4)
Arsenic	mg/kg	2.79E+00	1.73E+00	n < 10	6.80E+00		mg/kg	6.8E+00	Max	W - Test(4)	6.8E+00	Max	W - Test(4)
Cadmium	mg/kg	2.61E+00	2.55E+00	n < 10	8.60E+00		mg/kg	8.6E+00	Max	W - Test(4)	8.6E+00	Max	W - Test(4)
Chromium	mg/kg	3.92E+01	2.84E+01	n < 10	9.37E+01		mg/kg	9.4E+01	Max	W - Test(4)	9.4E+01	Max	W - Test(4)
Cyanide	mg/kg	8.56E-01	1.32E+00	n < 10	2.84E+00		mg/kg	2.8E+00	Max	W - Test(4)	2.8E+00	Max	W - Test(4)
Iron	mg/kg	9.83E+03	7.55E+03	n < 10	2.82E+04		mg/kg	2.8E+04	Max	W - Test(4)	2.8E+04	Max	W - Test(4)
Manganese	mg/kg	2.51E+02	7.28E+01	n < 10	4.20E+02		mg/kg	4.2E+02	Max	W - Test(4)	4.2E+02	Max	W - Test(4)
(5) Mercury(inorganic)	mg/kg	9.54E-01	1.07E+00	n < 10	3.02E+00		mg/kg	3.0E+00	Max	W - Test(4)	3.0E+00	Max	W - Test(4)
(5) Methylmercury	mg/kg	9.64E-03	1.08E-02	n < 10	3.05E-02		mg/kg	3.1E-02	Max	W - Test(4)	3.1E-02	Max	W - Test(4)
Thallium	mg/kg	5.60E-01	4.64E-01	n < 10	1.65E+00		mg/kg	1.7E+00	Max	W - Test(4)	1.7E+00	Max	W - Test(4)
SVOCs													
2-Methylnaphthalene	mg/kg	7.92E-01	1.04E+00	n<10	3.28E+00	J	mg/kg	3.3E+00	Max	W - Test(4)	3.3E+00	Max	W - Test(4)
Acenaphthylene	mg/kg	8.13E-01	1.25E+00	n<10	3.91E+00	J	mg/kg	3.9E+00	Max	W - Test(4)	3.9E+00	Max	W - Test(4)
Benz(a)anthracene	mg/kg	3.13E+00	8.38E+00	n<10	2.55E+01	J	mg/kg	2.5E+01	Max	W - Test(4)	2.5E+01	Max	W - Test(4)
Benzo(a)pyrene	mg/kg	3.04E+00	8.24E+00	n<10	2.50E+01	J	mg/kg	2.5E+01	Max	W - Test(4)	2.5E+01	Max	W - Test(4)
Benzo(b)fluoranthene	mg/kg	3.73E+00	1.02E+01	n<10	3.08E+01	J	mg/kg	3.1E+01	Max	W - Test(4)	3.1E+01	Max	W - Test(4)
Benzo(g,h,i)perylene	mg/kg	1.83E+00	4.83E+00	n<10	1.47E+01	J	mg/kg	1.5E+01	Max	W - Test(4)	1.5E+01	Max	W - Test(4)
Benzo(k)fluoranthene	mg/kg	1.58E+00	3.69E+00	n<10	1.14E+01	J	mg/kg	1.1E+01	Max	W - Test(4)	1.1E+01	Max	W - Test(4)
Dibenz(a,h)anthracene	mg/kg	8.62E-01	1.41E+00	n<10	4.43E+00	J	mg/kg	4.4E+00	Max	W - Test(4)	4.4E+00	Max	W - Test(4)
Indeno(1,2,3-cd)pyrene	mg/kg	1.83E+00	4.83E+00	n<10	1.47E+01	J	mg/kg	1.5E+01	Max	W - Test(4)	1.5E+01	Max	W - Test(4)
Naphthalene	mg/kg	9.03E-01	1.35E+00	n<10	4.28E+00	J	mg/kg	4.3E+00	Max	W - Test(4)	4.3E+00	Max	W - Test(4)
Phenanthrene	mg/kg	3.85E+00	1.07E+01	n<10	3.25E+01	J	mg/kg	3.3E+01	Max	W - Test(4)	3.3E+01	Max	W - Test(4)
PCDD/PCDFs													
TEQ as 2,3,7,8-TCDD	mg/kg	5.81E-06	4.22E-06	n < 10	1.15E-05		mg/kg	1.1E-05	Max	W - Test(4)	1.1E-05	Max	W - Test(4)

Notes: Duplicate sample results were averaged in calculations.
Distributional fits were assessed using the Shapiro-Wilk W test for sample sets containing less than 50 samples.
Distributional fits were assessed using the D'Agostino Y statistic for sample sets containing greater than 50 samples.
Arithmetic mean and 95% UCL of normal data were calculated using half the detection limit for non-detects. 95% UCL was not calculated for less than 10 data points.
The length-weighted average of samples in the 0 to 0.30 meter interval were used to calculate the 95% UCLs, for discussion see Section 3.2 of HHRA
J – estimated value.
95% UCL-T – 95% UCL of log-transformed data.
(1) Statistical test indicates data are log-normally distributed.
(2) Statistical test indicates data are normally distributed.
(3) 95% UCL exceeds maximum detected concentration; therefore, maximum detected concentration was used for EPC.
(4) 95% UCL not calculated due to an insufficent number of samples (n<10).
(5) Mercury (inorganic) and methylmercury concentrations in wetland sediment estimated from total mercury concentration data (as shown in Appendix A tables A-4 and A-5) and the assumption that one percent of the wetland sediment mercury is in the form of methylmercury

Table 3.5
Medium-Specific Exposure Point Concentration Summary – Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Wetland SYW-10 sediment from the northern basin of Onondaga Lake

Chemical of Potential Concern	Units	Arithmetic Mean	Standard Deviation	95% UCL of Normal Data	Maximum Detected Value	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
								Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Inorganics													
Aluminum	mg/kg	5.76E+03	2.93E+03	n < 10	9.34E+03		mg/kg	9.3E+03	Max	W - Test(4)	9.3E+03	Max	W - Test(4)
Antimony	mg/kg	1.49E+00	2.43E+00	n < 10	5.13E+00		mg/kg	5.1E+00	Max	W - Test(4)	5.1E+00	Max	W - Test(4)
Arsenic	mg/kg	5.41E+00	4.24E+00	n < 10	1.17E+01		mg/kg	1.2E+01	Max	W - Test(4)	1.2E+01	Max	W - Test(4)
Chromium	mg/kg	2.16E+01	7.19E+00	n < 10	3.16E+01		mg/kg	3.2E+01	Max	W - Test(4)	3.2E+01	Max	W - Test(4)
Iron	mg/kg	1.12E+04	3.71E+03	n < 10	1.61E+04		mg/kg	1.6E+04	Max	W - Test(4)	1.6E+04	Max	W - Test(4)
Manganese	mg/kg	2.94E+02	6.72E+01	n < 10	3.90E+02		mg/kg	3.9E+02	Max	W - Test(4)	3.9E+02	Max	W - Test(4)
(5) Mercury(inorganic)	mg/kg	1.71E+00	8.07E-01	n < 10	2.82E+00		mg/kg	2.8E+00	Max	W - Test(4)	2.8E+00	Max	W - Test(4)
(5) Methylmercury	mg/kg	1.72E-02	8.15E-03	n < 10	2.85E-02		mg/kg	2.9E-02	Max	W - Test(4)	2.9E-02	Max	W - Test(4)
Thallium	mg/kg	1.36E+00	6.27E-01	n < 10	2.27E+00		mg/kg	2.3E+00	Max	W - Test(4)	2.3E+00	Max	W - Test(4)
SVOCs													
Benz(a)anthracene	mg/kg	3.28E-01	4.67E-01	n < 10	1.03E+00		mg/kg	1.0E+00	Max	W - Test(4)	1.0E+00	Max	W - Test(4)
Benzo(a)pyrene	mg/kg	3.62E-01	4.78E-01	n < 10	1.07E+00		mg/kg	1.1E+00	Max	W - Test(4)	1.1E+00	Max	W - Test(4)
Benzo(b)fluoranthene	mg/kg	2.99E-01	3.98E-01	n < 10	8.90E-01		mg/kg	8.9E-01	Max	W - Test(4)	8.9E-01	Max	W - Test(4)
Dibenz(a,h)anthracene	mg/kg	8.92E-02	1.11E-01	n < 10	2.55E-01		mg/kg	2.5E-01	Max	W - Test(4)	2.5E-01	Max	W - Test(4)
Indeno(1,2,3-cd)pyrene	mg/kg	2.30E-01	2.88E-01	n < 10	6.55E-01		mg/kg	6.6E-01	Max	W - Test(4)	6.6E-01	Max	W - Test(4)
PCBs													
Aroclor 1260	mg/kg	7.84E-02	8.30E-02	n < 10	2.02E-01	J	mg/kg	2.0E-01	Max	W - Test(4)	2.0E-01	Max	W - Test(4)
Sum of PCBs	mg/kg	1.12E-01	7.95E-02	n < 10	2.28E-01		mg/kg	2.3E-01	Max	W - Test(4)	2.3E-01	Max	W - Test(4)
PCDD/PCDFs													
TEQ as 2,3,7,8-TCDD	mg/kg	7.80E-06	2.72E-06	n < 10	1.18E-05		mg/kg	1.2E-05	Max	W - Test(4)	1.2E-05	Max	W - Test(4)

Notes: Duplicate sample results were averaged in calculations.
Distributional fits were assessed using the Shapiro-Wilk W test for sample sets containing less than 50 samples.
Distributional fits were assessed using the D'Agostino Y statistic for sample sets containing greater than 50 samples.
Arithmetic mean and 95% UCL of normal data were calculated using half the detection limit for non-detects. 95% UCL was not calculated for less than 10 data points.
The length-weighted average of samples in the 0 to 0.30 meter interval were used to calculate the 95% UCLs, for discussion see Section 3.2 of HHRA
J – estimated value.
95% UCL-T – 95% UCL of log-transformed data.
(1) Statistical test indicates data are log-normally distributed.
(2) Statistical test indicates data are normally distributed.
(3) 95% UCL exceeds maximum detected concentration; therefore, maximum detected concentration was used for EPC.
(4) 95% UCL not calculated due to an insufficent number of samples (n<10).
(5) Mercury (inorganic) and methylmercury concentrations in wetland sediment estimated from total mercury concentration data (as shown in Appendix A tables A-4 and A-5) and the assumption that one percent of the wetland sediment mercury is in the form of methylmercury

Table 3.6
Medium-Specific Exposure Point Concentration Summary – Onondaga Lake

Scenario Time Frame:	Current/Future
Medium:	Sediment
Exposure Medium:	Sediment
Exposure Point:	**Wetland SYW-12 sediment from the southern basin of Onondaga Lake**

								Reasonable Maximum Exposure			Central Tendency		
Chemical of Potential Concern	Units	Arithmetic Mean	Standard Deviation	95% UCL of Normal Data	Maximum Detected Value	Maximum Qualifier	EPC Units	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Inorganics													
Aluminum	mg/kg	5.13E+03	2.92E+03	n < 10	8.76E+03		mg/kg	8.8E+03	Max	W - Test(4)	8.8E+03	Max	W - Test(4)
Arsenic	mg/kg	3.93E+00	1.85E+00	n < 10	6.30E+00		mg/kg	6.3E+00	Max	W - Test(4)	6.3E+00	Max	W - Test(4)
Cadmium	mg/kg	1.71E+01	1.61E+01	n < 10	4.07E+01		mg/kg	4.1E+01	Max	W - Test(4)	4.1E+01	Max	W - Test(4)
Chromium	mg/kg	1.49E+02	1.05E+02	n < 10	3.03E+02		mg/kg	3.0E+02	Max	W - Test(4)	3.0E+02	Max	W - Test(4)
Copper	mg/kg	1.26E+02	1.02E+02	n < 10	2.67E+02		mg/kg	2.7E+02	Max	W - Test(4)	2.7E+02	Max	W - Test(4)
Cyanide	mg/kg	3.40E-01	3.42E-01	n < 10	8.53E-01		mg/kg	8.5E-01	Max	W - Test(4)	8.5E-01	Max	W - Test(4)
Iron	mg/kg	1.12E+04	4.13E+03	n < 10	1.71E+04		mg/kg	1.7E+04	Max	W - Test(4)	1.7E+04	Max	W - Test(4)
Manganese	mg/kg	2.52E+02	1.54E+01	n < 10	2.68E+02		mg/kg	2.7E+02	Max	W - Test(4)	2.7E+02	Max	W - Test(4)
(5) Mercury(inorganic)	mg/kg	1.32E+00	1.25E+00	n < 10	2.98E+00		mg/kg	3.0E+00	Max	W - Test(4)	3.0E+00	Max	W - Test(4)
(5) Methylmercury	mg/kg	1.33E-02	1.26E-02	n < 10	3.01E-02		mg/kg	3.0E-02	Max	W - Test(4)	3.0E-02	Max	W - Test(4)
Thallium	mg/kg	2.98E-01	2.46E-01	n < 10	6.65E-01		mg/kg	6.7E-01	Max	W - Test(4)	6.7E-01	Max	W - Test(4)
SVOCs													
Benz(a)anthracene	mg/kg	1.45E+00	2.15E+00	n < 10	4.65E+00		mg/kg	4.7E+00	Max	W - Test(4)	4.7E+00	Max	W - Test(4)
Benzo(a)pyrene	mg/kg	1.45E+00	2.09E+00	n < 10	4.55E+00		mg/kg	4.6E+00	Max	W - Test(4)	4.6E+00	Max	W - Test(4)
Benzo(b)fluoranthene	mg/kg	1.01E+00	1.44E+00	n < 10	3.15E+00		mg/kg	3.2E+00	Max	W - Test(4)	3.2E+00	Max	W - Test(4)
Dibenz(a,h)anthracene	mg/kg	1.01E-01	6.70E-02	n < 10	1.70E-01		mg/kg	1.7E-01	Max	W - Test(4)	1.7E-01	Max	W - Test(4)
Indeno(1,2,3-cd)pyrene	mg/kg	9.38E-01	1.42E+00	n < 10	3.05E+00		mg/kg	3.1E+00	Max	W - Test(4)	3.1E+00	Max	W - Test(4)
Phenanthrene	mg/kg	2.24E+00	3.49E+00	n < 10	7.45E+00		mg/kg	7.5E+00	Max	W - Test(4)	7.5E+00	Max	W - Test(4)
PCBs													
Aroclor 1242	mg/kg	1.03E-01	1.22E-01	n < 10	2.79E-01	*J*	mg/kg	2.8E-01	Max	W - Test(4)	2.8E-01	Max	W - Test(4)
Aroclor 1254	mg/kg	1.94E-01	1.62E-01	n < 10	4.22E-01	*J*	mg/kg	4.2E-01	Max	W - Test(4)	4.2E-01	Max	W - Test(4)
Aroclor 1260	mg/kg	1.27E-01	7.44E-02	n < 10	2.19E-01	*J*	mg/kg	2.2E-01	Max	W - Test(4)	2.2E-01	Max	W - Test(4)
Sum of PCBs	mg/kg	4.16E-01	3.60E-01	n < 10	9.20E-01		mg/kg	9.2E-01	Max	W - Test(4)	9.2E-01	Max	W - Test(4)

Notes: Duplicate sample results were averaged in calculations.
Distributional fits were assessed using the Shapiro-Wilk W test for sample sets containing less than 50 samples.
Distributional fits were assessed using the D'Agostino Y statistic for sample sets containing greater than 50 samples.
Arithmetic mean and 95% UCL of normal data were calculated using half the detection limit for non-detects. 95% UCL was not calculated for less than 10 data points.
The length-weighted average of samples in the 0 to 0.30 meter interval were used to calculate the 95% UCLs, for discussion see Section 3.2 of HHRA
J – estimated value.
95% UCL-T – 95% UCL of log-transformed data.
(1) Statistical test indicates data are log-normally distributed.
(2) Statistical test indicates data are normally distributed.
(3) 95% UCL exceeds maximum detected concentration; therefore, maximum detected concentration was used for EPC.
(4) 95% UCL not calculated due to an insufficent number of samples (n<10).
(5) Mercury (inorganic) and methylmercury concentrations in wetland sediment estimated from total mercury concentration data (as shown in Appendix A tables A-4 and A-5) and the assumption that one percent of the wetland sediment mercury is in the form of methylmercury

Table 3.7
Medium-Specific Exposure Point Concentration Summary – Onondaga Lake

Scenario Time Frame:	Current/Future
Medium:	Sediment
Exposure Medium:	Sediment
Exposure Point:	**Wetland SYW-19 sediment from the southern basin of Onondaga Lake**

Chemical of Potential Concern	Units	Arithmetic Mean	Standard Deviation	95% UCL of Normal Data	Maximum Detected Value	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
								Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Inorganics													
Antimony	mg/kg	1.22E+00	1.07E+00	n < 10	3.30E+00	J	mg/kg	3.3E+00	Max	W - Test(4)	3.3E+00	Max	W - Test(4)
Arsenic	mg/kg	7.19E+00	1.83E+00	n < 10	8.55E+00		mg/kg	8.6E+00	Max	W - Test(4)	8.6E+00	Max	W - Test(4)
Barium	mg/kg	3.20E+02	1.36E+02	n < 10	5.12E+02	J	mg/kg	5.1E+02	Max	W - Test(4)	5.1E+02	Max	W - Test(4)
Cadmium	mg/kg	1.79E+00	8.88E-01	n < 10	2.95E+00		mg/kg	3.0E+00	Max	W - Test(4)	3.0E+00	Max	W - Test(4)
Chromium	mg/kg	4.89E+01	1.52E+01	n < 10	7.03E+01		mg/kg	7.0E+01	Max	W - Test(4)	7.0E+01	Max	W - Test(4)
Iron	mg/kg	9.49E+03	2.11E+03	n < 10	1.04E+04		mg/kg	1.0E+04	Max	W - Test(4)	1.0E+04	Max	W - Test(4)
Manganese	mg/kg	2.40E+02	2.92E+01	n < 10	3.01E+02		mg/kg	3.0E+02	Max	W - Test(4)	3.0E+02	Max	W - Test(4)
(5) Mercury(inorganic)	mg/kg	1.91E+01	8.81E+00	n < 10	4.22E+01		mg/kg	4.2E+01	Max	W - Test(4)	4.2E+01	Max	W - Test(4)
(5) Methylmercury	mg/kg	1.93E-01	8.90E-02	n < 10	4.26E-01		mg/kg	4.3E-01	Max	W - Test(4)	4.3E-01	Max	W - Test(4)
SVOCs													
1,3-Dichlorobenzene	mg/kg	1.32E+00	1.21E+00	n < 10	3.79E+00		mg/kg	3.8E+00	Max	W - Test(4)	3.8E+00	Max	W - Test(4)
1,4-Dichlorobenzene	mg/kg	6.02E+00	2.52E+00	n < 10	8.90E+00		mg/kg	8.9E+00	Max	W - Test(4)	8.9E+00	Max	W - Test(4)
Hexachlorobenzene	mg/kg	1.21E+00	1.10E+00	n < 10	2.78E+00		mg/kg	2.8E+00	Max	W - Test(4)	2.8E+00	Max	W - Test(4)
Benz(a)anthracene	mg/kg	5.45E+00	4.62E+00	n < 10	1.14E+01	J	mg/kg	1.1E+01	Max	W - Test(4)	1.1E+01	Max	W - Test(4)
Benzo(a)pyrene	mg/kg	5.98E+00	3.63E+00	n < 10	1.04E+01		mg/kg	1.0E+01	Max	W - Test(4)	1.0E+01	Max	W - Test(4)
Benzo(b)fluoranthene	mg/kg	5.44E+00	2.88E+00	n < 10	9.05E+00		mg/kg	9.1E+00	Max	W - Test(4)	9.1E+00	Max	W - Test(4)
Benzo(g,h,i)perylene	mg/kg	3.55E+00	1.87E+00	n < 10	5.60E+00		mg/kg	5.6E+00	Max	W - Test(4)	5.6E+00	Max	W - Test(4)
Benzo(k)fluoranthene	mg/kg	4.98E+00	2.48E+00	n < 10	7.95E+00		mg/kg	8.0E+00	Max	W - Test(4)	8.0E+00	Max	W - Test(4)
Dibenz(a,h)anthracene	mg/kg	9.84E-01	1.03E+00	n < 10	2.65E+00		mg/kg	2.7E+00	Max	W - Test(4)	2.7E+00	Max	W - Test(4)
Indeno(1,2,3-cd)pyrene	mg/kg	3.56E+00	2.03E+00	n < 10	6.00E+00		mg/kg	6.0E+00	Max	W - Test(4)	6.0E+00	Max	W - Test(4)
Phenanthrene	mg/kg	9.28E+00	6.87E+00	n < 10	1.65E+01		mg/kg	1.7E+01	Max	W - Test(4)	1.7E+01	Max	W - Test(4)
Pesticides													
Aldrin	mg/kg	2.27E-02	1.23E-02	n < 10	3.86E-02	J	mg/kg	3.9E-02	Max	W - Test(4)	3.9E-02	Max	W - Test(4)
Dieldrin	mg/kg	1.76E-02	8.89E-03	n < 10	2.93E-02	J	mg/kg	2.9E-02	Max	W - Test(4)	2.9E-02	Max	W - Test(4)
PCBs													
Aroclor 1242	mg/kg	3.66E-01	1.88E-01	n < 10	7.05E-01	J	mg/kg	7.1E-01	Max	W - Test(4)	7.1E-01	Max	W - Test(4)
Aroclor 1254	mg/kg	3.62E-01	1.73E-01	n < 10	6.17E-01	J	mg/kg	6.2E-01	Max	W - Test(4)	6.2E-01	Max	W - Test(4)
Aroclor 1260	mg/kg	2.30E-01	1.30E-01	n < 10	3.14E-01	J	mg/kg	3.1E-01	Max	W - Test(4)	3.1E-01	Max	W - Test(4)
Sum of PCBs	mg/kg	9.54E-01	3.17E-01	n < 10	1.34E+00		mg/kg	1.3E+00	Max	W - Test(4)	1.3E+00	Max	W - Test(4)
PCDD/PCDFs													
TEQ as 2,3,7,8-TCDD	mg/kg	4.74E-04	9.63E-05	n < 10	8.81E-04		mg/kg	8.8E-04	Max	W - Test(4)	8.8E-04	Max	W - Test(4)

Notes: Duplicate sample results were averaged in calculations.
Distributional fits were assessed using the Shapiro-Wilk W test for sample sets containing less than 50 samples.
Distributional fits were assessed using the D'Agostino Y statistic for sample sets containing greater than 50 samples.
Arithmetic mean and 95% UCL of normal data were calculated using half the detection limit for non-detects. 95% UCL was not calculated for less than 10 data points.
The length-weighted average of s≤ 0 to 0.02 and 0 to 0.30 meter depth samples (or the length-weighted average of samples in 0 to 0.30 meter interval) were used to calculate the 95% UCLs, for discussion see Section 3.2 of HHRA
J – estimated value.
95% UCL-T – 95% UCL of log-transformed data.
(1) Statistical test indicates data are log-normally distributed.
(2) Statistical test indicates data are normally distributed.
(3) 95% UCL exceeds maximum detected concentration; therefore, maximum detected concentration was used for EPC.
(4) 95% UCL not calculated due to an insufficent number of samples (n<10).
(5) Mercury (inorganic) and methylmercury concentrations in wetland sediment estimated from total mercury concentration data (as shown in Appendix A tables A-4 and A-5) and the assumption that one percent of the wetland sediment mercury is in the form of methylmercury

Table 3.8

Medium-Specific Exposure Point Concentration Summary – Onondaga Lake

Scenario Time Frame:	Current/Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	**Surface soils from Onondaga Lake dredge spoils (0 to 3.5 ft)**

								Reasonable Maximum Exposure			Central Tendency		
Chemical of Potential Concern	Units	Arithmetic Mean	Standard Deviation	95% UCL of Normal Data	Maximum Detected Value	Maximum Qualifier	EPC Units	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Inorganics													
Aluminum	mg/kg	9.25E+03	1.34E+03	n<10	1.21E+04		mg/kg	1.2E+04	Max	W - Test(4)	1.2E+04	Max	W - Test(4)
Arsenic	mg/kg	5.79E+00	2.14E+00	n<10	8.40E+00		mg/kg	8.4E+00	Max	W - Test(4)	8.4E+00	Max	W - Test(4)
Chromium	mg/kg	1.76E+01	5.22E+00	n<10	2.94E+01	*J*	mg/kg	2.9E+01	Max	W - Test(4)	2.9E+01	Max	W - Test(4)
Iron	mg/kg	1.45E+04	1.99E+03	n<10	1.71E+04		mg/kg	1.7E+04	Max	W - Test(4)	1.7E+04	Max	W - Test(4)
Manganese	mg/kg	2.97E+02	4.37E+01	n<10	3.54E+02		mg/kg	3.5E+02	Max	W - Test(4)	3.5E+02	Max	W - Test(4)
Total Mercury	mg/kg	7.33E-01	1.34E+00	n<10	4.00E+00		mg/kg	4.0E+00	Max	W - Test(4)	4.0E+00	Max	W - Test(4)
SVOCs													
Benzo(a)pyrene	mg/kg	4.81E-02	4.05E-02	n<10	1.30E-01		mg/kg	1.3E-01	Max	W - Test(4)	1.3E-01	Max	W - Test(4)
Hexachlorobenzene (GC/MS)	mg/kg	6.87E-02	1.38E-01	n<10	4.10E-01		mg/kg	4.1E-01	Max	W - Test(4)	4.1E-01	Max	W - Test(4)

Notes: Duplicate sample results were averaged in calculations.
Distributional fits were assessed using the Shapiro-Wilk W test for sample sets containing less than 50 samples.
Distributional fits were assessed using the D'Agostino Y statistic for sample sets containing greater than 50 samples.
Arithmetic mean and 95% UCL of normal data were calculated using half the detection limit for non-detects. 95% UCL was not calculated for less than 10 data points.
J – estimated value.
95% UCL-T – 95% UCL of log-transformed data.
(1) Statistical test indicates data are log-normally distributed.
(2) Statistical test indicates data are normally distributed.
(3) 95% UCL exceeds maximum detected concentration; therefore, maximum detected concentration was used for EPC.
(4) 95% UCL not calculated due to an insufficent number of samples (n<10).

Table 3.9
Medium-Specific Exposure Point Concentration Summary – Onondaga Lake

Scenario Time Frame:	Current/Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	**All soil samples from Onondaga Lake dredge spoils (0 to 11.7 ft)**

Chemical of Potential Concern	Units	Arithmetic Mean	Standard Deviation	95% UCL of Normal Data	Maximum Detected Value	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure: Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Central Tendency: Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Inorganics													
Aluminum	mg/kg	6.99E+03	1.76E+03	n<10	1.02E+04		mg/kg	1.0E+04	Max	W - Test(4)	1.0E+04	Max	W - Test(4)
Arsenic	mg/kg	6.56E+00	2.33E+00	n<10	8.73E+00		mg/kg	8.7E+00	Max	W - Test(4)	8.7E+00	Max	W - Test(4)
Cadmium	mg/kg	4.14E-01	3.24E-01	n<10	9.68E-01		mg/kg	9.7E-01	Max	W - Test(4)	9.7E-01	Max	W - Test(4)
Chromium	mg/kg	2.03E+01	4.79E+00	n<10	2.60E+01		mg/kg	2.6E+01	Max	W - Test(4)	2.6E+01	Max	W - Test(4)
Cyanide	mg/kg	5.13E-01	1.77E-01	n<10	8.37E-01		mg/kg	8.4E-01	Max	W - Test(4)	8.4E-01	Max	W - Test(4)
Iron	mg/kg	1.03E+04	2.93E+03	n<10	1.51E+04		mg/kg	1.5E+04	Max	W - Test(4)	1.5E+04	Max	W - Test(4)
Manganese	mg/kg	2.77E+02	4.88E+01	n<10	3.82E+02		mg/kg	3.8E+02	Max	W - Test(4)	3.8E+02	Max	W - Test(4)
Total Mercury	mg/kg	2.74E+01	2.02E+01	n<10	4.79E+01	*J*	mg/kg	4.8E+01	Max	W - Test(4)	4.8E+01	Max	W - Test(4)
Thallium	mg/kg	3.67E-01	6.10E-02	n<10	4.91E-01		mg/kg	4.9E-01	Max	W - Test(4)	4.9E-01	Max	W - Test(4)
SVOCs													
Benz(a)anthracene	mg/kg	5.21E-01	8.42E-01	n<10	2.50E+00	*J*	mg/kg	2.5E+00	Max	W - Test(4)	2.5E+00	Max	W - Test(4)
Benzo(a)pyrene	mg/kg	5.49E-01	8.85E-01	n<10	2.63E+00	*J*	mg/kg	2.6E+00	Max	W - Test(4)	2.6E+00	Max	W - Test(4)
Benzo(b)fluoranthene	mg/kg	4.72E-01	7.64E-01	n<10	2.28E+00	*J*	mg/kg	2.3E+00	Max	W - Test(4)	2.3E+00	Max	W - Test(4)
Benzo(g,h,i)perylene	mg/kg	2.84E-01	4.33E-01	n<10	1.29E+00	*J*	mg/kg	1.3E+00	Max	W - Test(4)	1.3E+00	Max	W - Test(4)
Benzo(k)fluoranthene	mg/kg	4.73E-01	7.69E-01	n<10	2.29E+00	*J*	mg/kg	2.3E+00	Max	W - Test(4)	2.3E+00	Max	W - Test(4)
Dibenz(a,h)anthracene	mg/kg	1.31E-01	2.01E-01	n<10	6.09E-01	*J*	mg/kg	6.1E-01	Max	W - Test(4)	6.1E-01	Max	W - Test(4)
Hexachlorobenzene	mg/kg	1.06E-01	8.14E-02	n<10	2.25E-01	*J*	mg/kg	2.3E-01	Max	W - Test(4)	2.3E-01	Max	W - Test(4)
Indeno(1,2,3-cd)pyrene	mg/kg	2.73E-01	4.31E-01	n<10	1.29E+00	*J*	mg/kg	1.3E+00	Max	W - Test(4)	1.3E+00	Max	W - Test(4)
Naphthalene	mg/kg	3.86E-01	9.91E-01	n<10	2.84E+00		mg/kg	2.8E+00	Max	W - Test(4)	2.8E+00	Max	W - Test(4)
Phenanthrene	mg/kg	3.91E-01	4.89E-01	n<10	1.19E+00	*J*	mg/kg	1.2E+00	Max	W - Test(4)	1.2E+00	Max	W - Test(4)
PCBs													
Aroclor 1254	mg/kg	8.24E-02	6.05E-02	n<10	2.09E-01	*J*	mg/kg	2.1E-01	Max	W - Test(4)	2.1E-01	Max	W - Test(4)
Aroclor 1268	mg/kg	1.27E-01	1.08E-01	n<10	3.62E-01	*J*	mg/kg	3.6E-01	Max	W - Test(4)	3.6E-01	Max	W - Test(4)
Sum of PCBs	mg/kg	2.42E-01	1.81E-01	n<10	6.31E-01		mg/kg	6.3E-01	Max	W - Test(4)	6.3E-01	Max	W - Test(4)
PCDD/PCDFs													
TEQ as 2,3,7,8-TCDD	mg/kg	1.11E-05	1.68E-05	n<10	4.38E-05		mg/kg	4.4E-05	Max	W - Test(4)	4.4E-05	Max	W - Test(4)

Notes: Duplicate sample results were averaged in calculations.
Distributional fits were assessed using the Shapiro-Wilk W test for sample sets containing less than 50 samples.
Distributional fits were assessed using the D'Agostino Y statistic for sample sets containing greater than 50 samples.
Arithmetic mean and 95% UCL of normal data were calculated using half the detection limit for non-detects. 95% UCL was not calculated for less than 10 data points.
95% UCL is a length-weighted average calculated from all available samples from each boring location. Number and depths of subsurface soil samples varied
J – estimated value.
95% UCL-T – 95% UCL of log-transformed data.
(1) Statistical test indicates data are log-normally distributed.
(2) Statistical test indicates data are normally distributed.
(3) 95% UCL exceeds maximum detected concentration; therefore, maximum detected concentration was used for EPC.
(4) 95% UCL not calculated due to an insufficient number of samples (n<10).

Table 3.10
Medium-Specific Exposure Point Concentration Summary – Onondaga Lake

Scenario Time Frame:	Current/Future
Medium:	Surface Water
Exposure Medium:	Surface Water
Exposure Point:	**Surface water from Onondaga Lake**

								Reasonable Maximum Exposure			Central Tendency		
Chemical of Potential Concern	**Units**	**Arithmetic Mean**	**Standard Deviation**	**95% UCL of Normal Data**	**Maximum Detected Value**	**Maximum Qualifier**	**EPC Units**	**Medium EPC Value**	**Medium EPC Statistic**	**Medium EPC Rationale**	**Medium EPC Value**	**Medium EPC Statistic**	**Medium EPC Rationale**
Inorganics													
Cadmium	mg/L	1.06E-03	3.45E-04	1.11E-03	3.10E-03		mg/L	1.1E-03	95% UCL-T	W - Test(1)	1.1E-03	95% UCL-T	W - Test(1)
Chromium	mg/L	2.10E-03	9.92E-04	2.34E-03	4.10E-03		mg/L	2.3E-03	95% UCL-T	W - Test(2)	2.3E-03	95% UCL-T	W - Test(2)
Manganese	mg/L	5.69E-02	8.99E-02	8.17E-02	6.24E-01		mg/L	8.2E-02	95% UCL-T	Y - Statistic(1)	8.2E-02	95% UCL-T	Y - Statistic(1)
Methylmercury	mg/L	1.07E-06	1.12E-06	1.33E-06	5.93E-06		mg/L	1.3E-06	95% UCL-T	Y - Statistic(1)	1.3E-06	95% UCL-T	Y - Statistic(1)
Total Mercury	mg/L	7.99E-06	1.17E-05	8.28E-06	1.03E-04		mg/L	8.3E-06	95% UCL-T	Y - Statistic(1)	8.3E-06	95% UCL-T	Y - Statistic(1)
VOCs													
Benzene	mg/L	5.66E-04	8.52E-04	5.90E-04	6.30E-03		mg/L	5.9E-04	95% UCL-T	W - Test(1)	5.9E-04	95% UCL-T	W - Test(1)
Chlorobenzene	mg/L	6.93E-04	1.67E-03	6.37E-04	1.20E-02		mg/L	6.4E-04	95% UCL-T	W - Test(1)	6.4E-04	95% UCL-T	W - Test(1)
Chloroform	mg/L	3.76E-04	2.72E-04	6.58E-04	8.50E-04	*J*	mg/L	6.6E-04	95% UCL-T	W - Test(1)	6.6E-04	95% UCL-T	W - Test(1)
SVOCs													
Bromodichloromethane	mg/L	2.27E-04	4.31E-05	2.51E-04	2.40E-04	*J*	mg/L	2.4E-04	Max	W - Test(3)	2.4E-04	Max	W - Test(3)
1,2-Dichlorobenzene	mg/L	5.25E-04	4.49E-04	5.85E-04	3.20E-03	*J*	mg/L	5.8E-04	95% UCL-T	W - Test(1)	5.8E-04	95% UCL-T	W - Test(1)
1,3-Dichlorobenzene	mg/L	5.19E-04	1.15E-04	5.39E-04	1.20E-03	*J*	mg/L	5.4E-04	95% UCL-T	W - Test(1)	5.4E-04	95% UCL-T	W - Test(1)
1,4-Dichlorobenzene	mg/L	5.41E-04	4.84E-04	6.17E-04	3.40E-03	*J*	mg/L	6.2E-04	95% UCL-T	W - Test(1)	6.2E-04	95% UCL-T	W - Test(1)
1,2,4-Trichlorobenzene	mg/L	5.51E-04	3.12E-04	5.82E-04	2.40E-03		mg/L	5.8E-04	95% UCL-T	W - Test(1)	5.8E-04	95% UCL-T	W - Test(1)

Notes: Duplicate sample results were averaged in calculations.
Distributional fits were assessed using the Shapiro-Wilk W test for sample sets containing less than 50 samples.
Distributional fits were assessed using the D'Agostino Y statistic for sample sets containing greater than 50 samples.
Arithmetic mean and 95% UCL of normal data were calculated using half the detection limit for non-detects. 95% UCL was not calculated for less than 10 data points.
Only data from 0 to 3 meter depths used for 95% UCL calculation
J – estimated value.
95% UCL-T – 95% UCL of log-transformed data.
(1) Statistical test indicates data are log-normally distributed.
(2) Statistical test indicates data are normally distributed.
(3) 95% UCL exceeds maximum detected concentration; therefore, maximum detected concentration was used for EPC.
(4) 95% UCL not calculated due to an insufficient number of samples (n<10).

Table 4.1
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Fish Tissue
Exposure Medium: Fish Tissue
Exposure Point: Onondaga Lake
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time – carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	Chronic Daily Intake (CDI) (mg/kg-day) =
	AT	Averaging time – non-carcinogens	days	10,950	USEPA, 1989b	3,285	USEPA, 1989b	C x CF x IR x FI x EF x ED / (BW x AT)
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	C	Chemical concentration in fish	mg/kg (wet)	See Appendix B, Table 3.1	NA	See Appendix B, Table 3.1	NA	
	CF	Conversion factor	kg/g	0.001	USEPA, 1989b	0.001	USEPA, 1989b	Chronic Daily Intake for PCBs and PCDD/PCDFs [2] (CDI) (mg/kg-day) =
	CL	Cooking loss (PCBs and PCDD/PCDFs only) [1]	unitless	N/A	USEPA, 2001	0.33	USEPA, 1997	(C x [1 – CL]) x CF x IR x FI x EF x ED / (BW x AT)
	ED	Exposure duration	years	30	USEPA, 1991a	9	USEPA, 1991a	
	EF	Exposure frequency	days/year	365	USEPA, 1997a	365	USEPA, 1997a	
	FI	Fraction ingested from contaminated source	–	1	NYSDEC and NYSDOL, 1998a	1	NYSDEC and NYSDOL, 1998a	
	IR	Ingestion rate	g fish/day	25	USEPA, 1997a	8	USEPA, 1997a	

Notes: NA – not applicable

[1] Used to adjust exposure point concentration (EPC) for PCBs and PCDD/PCDFs ingested for central tendency (CT) only.

Table 4.2
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Fish Tissue
Exposure Medium: Fish Tissue
Exposure Point: Onondaga Lake
Receptor Population: Recreational
Receptor Age: Young Child (less than 6)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time – carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	Chronic Daily Intake (CDI) (mg/kg-day) =
	AT	Averaging time – non-carcinogens	days	2,190	USEPA, 1989b	2,190	USEPA, 1989b	C x CF x IR x FI x EF x ED / (BW x AT)
	BW	Body weight	kg	15	USEPA, 1991a	15	USEPA, 1991a	
	C	Chemical concentration in fish	mg/kg (wet)	See Appendix B, Table 3.1	NA	See Appendix B, Table 3.1	NA	
	CF	Conversion factor	kg/g	0.001	USEPA, 1989b	0.001	USEPA, 1989b	Chronic Daily Intake for PCBs and PCDD/PCDFs [2] (CDI) (mg/kg-day) =
	CL	Cooking loss (PCBs and PCDD/PCDFs only) [1]	unitless	N/A	USEPA, 2001	0.33	USEPA, 1997	(C x [1 – CL]) x CF x IR x FI x EF x ED / (BW x AT)
	ED	Exposure duration	years	6	USEPA, 1991a	6	USEPA, 1991a	
	EF	Exposure frequency	days/year	365	USEPA, 1997a	365	USEPA, 1997a	
	FI	Fraction ingested from contaminated source	–	1	NYSDEC and NYSDOL, 1998a	1	NYSDEC and NYSDOL, 1998a	
	IR	Ingestion rate	g fish/day	8.3	USEPA, 1997a	2.7	USEPA, 1997a	

Notes: NA – not applicable

[1] Used to adjust exposure point concentration (EPC) for PCBs and PCDD/PCDFs ingested for central tendency (CT) only.

Table 4.3
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Fish Tissue
Exposure Medium: Fish Tissue
Exposure Point: Onondaga Lake
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time – carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	Chronic Daily Intake (CDI) (mg/kg-day) =
	AT	Averaging time – non-carcinogens	days	4,380	USEPA, 1989b	3,285	USEPA, 1989b	C x CF x IR x FI x EF x ED / (BW x AT)
	BW	Body weight	kg	43	USEPA, 1991a	43	USEPA, 1991a	
	C	Chemical concentration in fish	mg/kg (wet)	See Appendix B, Table 3.1	NA	See Appendix B, Table 3.1	NA	
	CF	Conversion factor	kg/g	0.001	USEPA, 1989b	0.001	USEPA, 1989b	Chronic Daily Intake for PCBs and PCDD/PCDFs [2] (CDI) (mg/kg-day) =
	CL	Cooking loss (PCBs and PCDD/PCDFs only) [1]	unitless	N/A	USEPA, 2001	0.33	USEPA, 1997	(C x [1 – CL]) x CF x IR x FI x EF x ED / (BW x AT)
	ED	Exposure duration	years	12	USEPA, 1991a	9	USEPA, 1991a	
	EF	Exposure frequency	days/year	365	USEPA, 1997a	365	USEPA, 1997a	
	FI	Fraction ingested from contaminated source	–	1	NYSDEC and NYSDOL, 1998a	1	NYSDEC and NYSDOL, 1998a	
	IR	Ingestion rate	g fish/day	16.7	USEPA, 1997a	5.3	USEPA, 1997a	

Notes: NA – not applicable

[1] Used to adjust exposure point concentration (EPC) for PCBs and PCDD/PCDFs ingested for central tendency (CT) only.

Table 4.4
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Surface Sediments
Exposure Medium: Sediment
Exposure Point: Northern Basin
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time – carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	Chronic Daily Intake (CDI) (mg/kg-day) =
	AT	Averaging time – non-carcinogens	days	10,950	USEPA, 1989b	3,285	USEPA, 1989b	CS x CF x IR x FI x EF x ED / (BW x AT)
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.2	NA	See Appendix B, Table 3.2	NA	
	ED	Exposure duration	years	30	USEPA, 1991a	9	USEPA, 1991a	
	EF	Exposure frequency	days/year	44	BPJ[a]	32	BPJ[a]	
	FI	Fraction ingested	–	1	NYSDEC and NYSDOL, 1998a	1	NYSDEC and NYSDOL, 1998a	
	IR	Ingestion rate	mg soil/day	100	USEPA, 1991a	50	USEPA, 1991a	
Dermal	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.2	NA	See Appendix B, Table 3.2	NA	Chronic Daily Intake (CDI) (mg/kg-day) =
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	SA	Skin surface area available for contact	cm^2/event	5,700	USEPA, 2001	5,700	USEPA, 2001	
	AF	Sediment/soil-to-skin adherence factor	mg/cm^2	0.3	USEPA, 1997a	0.15	USEPA, 1997a	
	EF	Exposure frequency	days/year	44	BPJ[a]	32	BPJ[a]	
	ED	Exposure duration	years	30	USEPA, 1991a	9	USEPA, 1991a	
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	AT	Averaging time – carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	
	AT	Averaging time – non-carcinogens	days	10,950	USEPA, 1989b	3,285	USEPA, 1989b	
	ABS	Dermal absorption factor – all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

Table 4.5
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Surface Sediments
Exposure Medium: Sediment
Exposure Point: Northern Basin
Receptor Population: Recreational
Receptor Age: Younger Child (less than 6)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time – carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	AT	Averaging time – non-carcinogens	days	2,190	USEPA, 1989b	2,190	USEPA, 1989b	
	BW	Body weight	kg	15	USEPA, 1997a,b	15	USEPA 1997a,b	
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.2	NA	See Appendix B, Table 3.2	NA	
	ED	Exposure duration	years	6	USEPA, 1991a	6	USEPA 1991a	
	EF	Exposure frequency	days/year	44	BPJ[a]	32	BPJ[a]	
	FI	Fraction ingested	–	1	NYSDEC, 1998a	1	NYSDEC, 1998a	
	IR	Ingestion rate	mg soil/day	200	USEPA, 1991a	100	USEPA, 1991a	
Dermal	ABS	Dermal absorption factor – all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	AF	Sediment/soil-to-skin adherence factor	mg/cm^2	2.7	USEPA, 1997b	0.2	USEPA, 1997b	
	AT	Averaging time – carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	
	AT	Averaging time – non-carcinogens	days	2,190	USEPA, 1989b	2,190	USEPA, 1989b	
	BW	Body weight	kg	15	USEPA, 1997a,b	15	USEPA, 1997a,b	
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.2	NA	See Appendix B, Table 3.2	NA	
	ED	Exposure duration	years	6	USEPA, 1991a	6	USEPA, 1991a	
	EF	Exposure frequency	days/year	44	BPJ[a]	32	BPJ[a]	
	SA	Skin surface area available for contact	cm^2/event	2,800	USEPA 1997b, 2001	2,800	USEPA, 1997b, 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

Table 4.6
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Surface Sediments
Exposure Medium: Sediment
Exposure Point: Northern Basin
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time – carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	AT	Averaging time – non-carcinogens	days	4,380	USEPA, 1989b	3,285	USEPA, 1989b	
	BW	Body weight	kg	43	USEPA, 1997b	43	USEPA, 1997b	
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.2	NA	See Appendix B, Table 3.2	NA	
	ED	Exposure duration	years	12	USEPA, 1991a	9	USEPA, 1991a	
	EF	Exposure frequency	days/year	44	BPJ[a]	32	BPJ[a]	
	FI	Fraction ingested	–	1	NYSDEC, 1998a	1	NYSDEC, 1998a	
	IR	Ingestion rate	mg soil/day	100	USEPA, 1991a	50	USEPA, 1991a	
Dermal	ABS	Dermal absorption factor – all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	AF	Sediment/soil-to-skin adherence factor	mg/cm^2	2.7	USEPA, 1997b	0.2	USEPA, 1997b	
	AT	Averaging time – carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	
	AT	Averaging time – non-carcinogens	days	4,380	USEPA, 1989b	3,285	USEPA, 1989b	
	BW	Body weight	kg	43	USEPA, 1997b	43	USEPA, 1997b	
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.2	NA	See Appendix B, Table 3.2	NA	
	ED	Exposure duration	years	12	USEPA, 1991a	9	USEPA, 1991a	
	EF	Exposure frequency	days/year	44	BPJ[a]	32	BPJ[a]	
	SA	Skin surface area available for contact	cm^2/event	5,400	USEPA, 1997b, 2001	5,400	USEPA, 1997b, 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

Table 4.7
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Future
Medium: Surface Sediments
Exposure Medium: Sediment
Exposure Point: Northern Basin
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time – carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	AT	Averaging time – non-carcinogens	days	730	USEPA, 1989b	730	USEPA, 1989b	
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.2	NA	See Appendix B, Table 3.2	NA	
	ED	Exposure duration	years	2	BPJ[a]	2	BPJ[a]	
	EF	Exposure frequency	days/year	25	BPJ[a]	10	BPJ[a]	
	FI	Fraction ingested	–	1	BPJ[a]	1	BPJ[a]	
	IR	Ingestion rate	mg soil/day	330	USEPA, 2001b	330	USEPA, 2001b	
Dermal	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.2	NA	See Appendix B, Table 3.2	NA	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	SA	Skin surface area available for contact	cm^2/event	5,700	USEPA, 1997a, 2001	5,700	USEPA, 1997a, 2001	
	AF	Soil-to-skin adherence factor	mg/cm^2	0.9[b]	USEPA, 2001	0.2[b]	USEPA, 2001	
	EF	Exposure frequency	days/year	25	BPJ[a]	10	BPJ[a]	
	ED	Exposure duration	years	2	BPJ[a]	2	BPJ[a]	
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	AT	Averaging time – carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	
	AT	Averaging time – non-carcinogens	days	730	USEPA, 1989b	730	USEPA, 1989b	
	ABS	Dermal absorption fraction – all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

[b] AF for construction worker based on 95th percentile (for RME) and geometric mean (CT) for utility workers (USEPA, 2001, Exhibit 3-3).

Table 4.8
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Surface Sediments
Exposure Medium: Sediment
Exposure Point: Southern Basin
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	AT	Averaging time - non-carcinogens	days	10,950	USEPA, 1989b	3,285	USEPA, 1989b	
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.3	NA	See Appendix B, Table 3.3	NA	
	ED	Exposure duration	years	30	USEPA, 1991a	9	USEPA, 1991a	
	EF	Exposure frequency	days/year	14	BPJ[a]	5	BPJ[a]	
	FI	Fraction ingested	--	1	NYSDEC, 1998a	1	NYSDEC, 1998a	
	IR	Ingestion rate	mg soil/day	100	USEPA, 1991a	50	USEPA, 1991a	
Dermal	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.3	NA	See Appendix B, Table 3.3	NA	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	SA	Skin surface area available for contact	cm^2/event	5,700	USEPA, 2001	5,700	USEPA, 2001	
	AF	Sediment/soil-to-skin adherence factor	mg/cm^2	0.3	USEPA, 1997a	0.15	USEPA, 1997a	
	EF	Exposure frequency	days/year	14	BPJ[a]	5	BPJ[a]	
	ED	Exposure duration	years	30	USEPA, 1991a	9	USEPA, 1991a	
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	
	AT	Averaging time - non-carcinogens	days	10,950	USEPA, 1989b	3,285	USEPA, 1989b	
	ABS	Dermal absorption fraction - all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

Table 4.9
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Surface Sediments
Exposure Medium: Sediment
Exposure Point: Southern Basin
Receptor Population: Recreational
Receptor Age: Younger Child (less than 6)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	AT	Averaging time - non-carcinogens	days	2,190	USEPA, 1989b	2,190	USEPA, 1989b	
	BW	Body weight	kg	15	USEPA, 1997a,b	15	USEPA, 1997a,b	
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.3	NA	See Appendix B, Table 3.3	NA	
	ED	Exposure duration	years	6	USEPA, 1991a	6	USEPA, 1991a	
	EF	Exposure frequency	days/year	14	BPJ[a]	5	BPJ[a]	
	FI	Fraction ingested	--	1	NYSDEC, 1998a	1	NYSDEC, 1998a	
	IR	Ingestion rate	mg soil/day	200	USEPA, 1991a	100	USEPA, 1991a	
Dermal	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.3	NA	See Appendix B, Table 3.3	NA	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	SA	Skin surface area available for contact	cm^2/event	2,800	USEPA, 1997b, 2001	2,800	USEPA, 1997b, 2001	
	AF	Sediment/soil-to-skin adherence factor	mg/cm^2	2.7	USEPA, 1997a	0.2	USEPA, 1997a	
	EF	Exposure frequency	days/year	14	BPJ[a]	5	BPJ[a]	
	ED	Exposure duration	years	6	USEPA, 1991a	6	USEPA, 1991a	
	BW	Body weight	kg	15	USEPA, 1997a,b	15	USEPA, 1997a,b	
	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	
	AT	Averaging time - non-carcinogens	days	2,190	USEPA, 1989b	2,190	USEPA, 1989b	
	ABS	Dermal absorption fraction - all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	

Notes: NA – not applicable
[a] Based on best professional judgment (BPJ).

Table 4.10
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Surface Sediments
Exposure Medium: Sediment
Exposure Point: Southern Basin
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	AT	Averaging time - non-carcinogens	days	4,380	USEPA, 1989b	3,285	USEPA, 1989b	
	BW	Body weight	kg	43	USEPA, 1997a,b	43	USEPA, 1997a,b	
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.3	NA	See Appendix B, Table 3.3	NA	
	ED	Exposure duration	years	12	USEPA, 1991a	9	USEPA, 1991a	
	EF	Exposure frequency	days/year	14	BPJ[a]	5	BPJ[a]	
	FI	Fraction ingested	--	1	NYSDEC, 1998a	1	NYSDEC, 1998a	
	IR	Ingestion rate	mg soil/day	100	USEPA, 1991a	50	USEPA, 1991a	
Dermal	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.3	NA	See Appendix B, Table 3.3	NA	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	SA	Skin surface area available for contact	cm^2/event	5,400	USEPA, 1997b, 2001	5,400	USEPA, 1997b, 2001	
	AF	Sediment/soil-to-skin adherence factor	mg/cm^2	2.7	USEPA, 1997a	0.2	USEPA, 1997a	
	EF	Exposure frequency	days/year	14	BPJ[a]	5	BPJ[a]	
	ED	Exposure duration	years	12	USEPA, 1991a	9	USEPA, 1991a	
	BW	Body weight	kg	43	USEPA, 1997a,b	43	USEPA, 1997a,b	
	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	
	AT	Averaging time - non-carcinogens	days	4,380	USEPA, 1989b	3,285	USEPA, 1989b	
	ABS	Dermal absorption fraction - all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

Table 4.11
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Future
Medium: Surface Sediments
Exposure Medium: Sediment
Exposure Point: Southern Basin
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	AT	Averaging time - non-carcinogens	days	730	USEPA, 1989b	730	USEPA, 1989b	
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.3	NA	See Appendix B, Table 3.3	NA	
	ED	Exposure duration	years	2	BPJ[a]	2	BPJ[a]	
	EF	Exposure frequency	days/year	25	BPJ[a]	10	BPJ[a]	
	FI	Fraction ingested	--	1	BPJ[a]	1	BPJ[a]	
	IR	Ingestion rate	mg soil/day	330	USEPA, 2001b	330	USEPA, 2001b	
Dermal	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.3	NA	See Appendix B, Table 3.3	NA	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	SA	Skin surface area available for contact	cm^2/event	5,700	USEPA, 2001	5,700	USEPA, 2001	
	AF	Soil-to-skin adherence factor	mg/cm^2	0.9[b]	USEPA, 2001	0.2[b]	USEPA, 2001	
	EF	Exposure frequency	days/year	25	BPJ[a]	10	BPJ[a]	
	ED	Exposure duration	years	2	BPJ[a]	2	BPJ[a]	
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	
	AT	Averaging time - non-carcinogens	days	730	USEPA, 1989b	730	USEPA, 1989b	
	ABS	Dermal absorption factor - all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

[b] AF for construction worker based on 95th percentile (for RME) and geometric mean (CT) for utility workers (USEPA, 2001, Exhibit 3-3).

Table 4.12
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Sediment
Exposure Point: Wetland SYW-6 (Northern Basin)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	AT	Averaging time - non-carcinogens	days	10,950	USEPA, 1989b	3,285	USEPA, 1989b	
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.4	NA	See Appendix B, Table 3.4	NA	
	ED	Exposure duration	years	30	USEPA, 1991a	9	USEPA, 1991a	
	EF	Exposure frequency	days/year	44	BPJ[a]	32	BPJ[a]	
	FI	Fraction ingested	--	1	NYSDEC and NYSDOL, 1998a	1	NYSDEC and NYSDOL, 1998a	
	IR	Ingestion rate	mg soil/day	100	USEPA, 1991a	50	USEPA, 1991a	
Dermal	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.4	NA	See Appendix B, Table 3.4	NA	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	SA	Skin surface area available for contact	cm^2/event	5,700	USEPA, 2001	5,700	USEPA, 2001	
	AF	Sediment/soil-to-skin adherence factor	mg/cm^2	0.3	USEPA, 1997a	0.15	USEPA, 1997a	
	EF	Exposure frequency	days/year	44	BPJ[a]	32	BPJ[a]	
	ED	Exposure duration	years	30	USEPA, 1991a	9	USEPA, 1991a	
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	
	AT	Averaging time - non-carcinogens	days	10,950	USEPA, 1989b	3,285	USEPA, 1989b	
	ABS	Dermal absorption factor - all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

Table 4.13
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Sediment
Exposure Point: Wetland #SYW-6 (Northern Basin)
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	AT	Averaging time - non-carcinogens	days	4,380	USEPA, 1989b	3,285	USEPA, 1989b	
	BW	Body weight	kg	43	USEPA, 1997a,b	43	USEPA, 1997a,b	
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.4	NA	See Appendix B, Table 3.4	NA	
	ED	Exposure duration	years	12	USEPA, 1991a	9	USEPA, 1991a	
	EF	Exposure frequency	days/year	44	BPJ[a]	32	BPJ[a]	
	FI	Fraction ingested	--	1	NYSDEC, 1998a	1	NYSDEC, 1998a	
	IR	Ingestion rate	mg soil/day	100	USEPA, 1991a	50	USEPA, 1991a	
Dermal	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.4	NA	See Appendix B, Table 3.4	NA	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	SA	Skin surface area available for contact	cm^2/event	5,400	USEPA, 1997b, 2001	5,400	USEPA, 1997b, 2001	
	AF	Sediment/soil-to-skin adherence factor	mg/cm^2	2.7	USEPA, 1997b	0.2	USEPA, 1997b	
	EF	Exposure frequency	days/year	44	BPJ[a]	32	BPJ[a]	
	ED	Exposure duration	years	12	USEPA, 1991a	9	USEPA, 1991a	
	BW	Body weight	kg	43	USEPA, 1997a,b	43	USEPA, 1997a,b	
	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	
	AT	Averaging time - non-carcinogens	days	4,380	USEPA, 1989b	3,285	USEPA, 1989b	
	ABS	Dermal absorption factor - all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

Table 4.14
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Future
Medium: Surface Sediments
Exposure Medium: Wetland Sediment
Exposure Point: Wetland SYW- 6 (Northern Basin)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	AT	Averaging time - non-carcinogens	days	730	USEPA, 1989b	730	USEPA, 1989b	
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.4	NA	See Appendix B, Table 3.4	NA	
	ED	Exposure duration	years	2	BPJ[a]	2	BPJ[a]	
	EF	Exposure frequency	days/year	25	BPJ[a]	10	BPJ[a]	
	FI	Fraction ingested	--	1	BPJ[a]	1	BPJ[a]	
	IR	Ingestion rate	mg soil/day	330	USEPA, 2001b	330	USEPA, 2001b	
Dermal	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.4	NA	See Appendix B, Table 3.4	NA	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	SA	Skin surface area available for contact	cm^2/event	5,700	USEPA, 2001	5,700	USEPA, 2001	
	AF	Soil-to-skin adherence factor	mg/cm^2	0.9[b]	USEPA, 2001	0.2[b]	USEPA, 2001	
	EF	Exposure frequency	days/year	25	BPJ[a]	10	BPJ[a]	
	ED	Exposure duration	years	2	BPJ[a]	2	BPJ[a]	
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	
	AT	Averaging time - non-carcinogens	days	730	USEPA, 1989b	730	USEPA, 1989b	
	ABS	Dermal absorption factor - all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

[b] AF for construction worker based on 95th percentile (for RME) and geometric mean (CT) for utility workers (USEPA, 2001, Exhibit 3-3).

Table 4.15
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Sediment
Exposure Point: Wetland SYW-10 (Northern Basin)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	Chronic Daily Intake (CDI) (mg/kg-day) =
	AT	Averaging time - non-carcinogens	days	10,950	USEPA, 1989b	3,285	USEPA, 1989b	CS x CF x IR x FI x EF x ED / (BW x AT)
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.5	NA	See Appendix B, Table 3.5	NA	
	ED	Exposure duration	years	30	USEPA, 1991a	9	USEPA, 1991a	
	EF	Exposure frequency	days/year	44	BPJ[a]	32	BPJ[a]	
	FI	Fraction ingested	--	1	NYSDEC and NYSDOL, 1998a	1	NYSDEC and NYSDOL, 1998a	
	IR	Ingestion rate	mg soil/day	100	USEPA, 1991a	50	USEPA, 1991a	
Dermal	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.5	NA	See Appendix B, Table 3.5	NA	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS /
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	(BW x AT)
	SA	Skin surface area available for contact	cm^2/event	5,700	USEPA, 2001	5,700	USEPA, 2001	
	AF	Sediment/soil-to-skin adherence factor	mg/cm^2	0.3	USEPA, 1997a	0.15	USEPA, 1997a	
	EF	Exposure frequency	days/year	44	BPJ[a]	32	BPJ[a]	
	ED	Exposure duration	years	30	USEPA, 1991a	9	USEPA, 1991a	
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	
	AT	Averaging time - non-carcinogens	days	10,950	USEPA, 1989b	3,285	USEPA, 1989b	
	ABS	Dermal absorption factor - all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

Table 4.16
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Sediment
Exposure Point: Wetland SYW-10 (Northern Basin)
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	AT	Averaging time - non-carcinogens	days	4,380	USEPA, 1989b	3,285	USEPA, 1989b	
	BW	Body weight	kg	43	USEPA, 1997a,b	43	USEPA, 1997a,b	
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.5	NA	See Appendix B, Table 3.5	NA	
	ED	Exposure duration	years	12	USEPA, 1991a	9	USEPA, 1991a	
	EF	Exposure frequency	days/year	44	BPJ[a]	32	BPJ[a]	
	FI	Fraction ingested	–	1	NYSDEC, 1998a	1	NYSDEC, 1998a	
	IR	Ingestion rate	mg soil/day	100	USEPA, 1991a	50	USEPA, 1991a	
Dermal	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.5	NA	See Appendix B, Table 3.5	NA	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	SA	Skin surface area available for contact	cm^2/event	5,400	USEPA, 1997b, 2001	5,400	USEPA, 1997b, 2001	
	AF	Sediment/soil-to-skin adherence factor	mg/cm^2	2.7	USEPA, 1997b	0.2	USEPA, 1997b	
	EF	Exposure frequency	days/year	44	BPJ[a]	32	BPJ[a]	
	ED	Exposure duration	years	12	USEPA, 1991a	9	USEPA, 1991a	
	BW	Body weight	kg	43	USEPA, 1997a,b	43	USEPA, 1997a,b	
	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	
	AT	Averaging time - non-carcinogens	days	4,380	USEPA, 1989b	3,285	USEPA, 1989b	
	ABS	Dermal absorption factor - all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

Table 4.17
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Future
Medium: Surface Sediments
Exposure Medium: Wetland Sediment
Exposure Point: Wetland SYW-10 (Northern Basin)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	AT	Averaging time - non-carcinogens	days	730	USEPA, 1989b	730	USEPA, 1989b	
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.5	NA	See Appendix B, Table 3.5	NA	
	ED	Exposure duration	years	2	BPJ[a]	2	BPJ[a]	
	EF	Exposure frequency	days/year	25	BPJ[a]	10	BPJ[a]	
	FI	Fraction ingested	–	1	BPJ[a]	1	BPJ[a]	
	IR	Ingestion rate	mg soil/day	330	USEPA, 2001b	330	USEPA, 2001b	
Dermal	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.5	NA	See Appendix B, Table 3.5	NA	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	SA	Skin surface area available for contact	cm^2/event	5,700	USEPA, 1997a, 2001	5,700	USEPA, 1997a, 2001	
	AF	Soil-to-skin adherence factor	mg/cm^2	0.9 [b]	USEPA, 2001	0.2 [b]	USEPA, 2001	
	EF	Exposure frequency	days/year	25	BPJ[a]	10	BPJ[a]	
	ED	Exposure duration	years	2	BPJ[a]	2	BPJ[a]	
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	
	AT	Averaging time - non-carcinogens	days	730	USEPA, 1989b	730	USEPA, 1989b	
	ABS	Dermal absorption factor - all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

[b] AF for construction worker based on 95th percentile (for RME) and geometric mean (CT) for utility workers (USEPA, 2001, Exhibit 3-3).

Table 4.18
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Sediment
Exposure Point: Wetland SYW-12 (Southern Basin)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA,1989b	25,550	USEPA,1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	AT	Averaging time - non-carcinogens	days	10,950	USEPA, 1989b	3,285	USEPA, 1989b	
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.6	NA	See Appendix B, Table 3.6	NA	
	ED	Exposure duration	years	30	USEPA, 1991a	9	USEPA, 1991a	
	EF	Exposure frequency	days/year	14	BPJ[a]	5	BPJ[a]	
	FI	Fraction ingested	–	1	NYSDEC, 1998a	1	NYSDEC, 1998a	
	IR	Ingestion rate	mg soil/day	100	USEPA, 1991a	50	USEPA, 1991a	
Dermal	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.6	NA	See Appendix B, Table 3.6	NA	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	SA	Skin surface area available for contact	cm^2/event	5,700	USEPA, 2001	5,700	USEPA, 2001	
	AF	Sediment/soil-to-skin adherence factor	mg/cm^2	0.3	USEPA, 1997a	0.15	USEPA, 1997a	
	EF	Exposure frequency	days/year	14	BPJ[a]	5	BPJ[a]	
	ED	Exposure duration	years	30	USEPA, 1991a	9	USEPA, 1991a	
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	
	AT	Averaging time - non-carcinogens	days	10,950	USEPA, 1989b	3,285	USEPA, 1989b	
	ABS	Dermal absorption factor - all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

Table 4.19
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Sediment
Exposure Point: Wetland SYW-12 (Southern Basin)
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	AT	Averaging time - non-carcinogens	days	4,380	USEPA, 1989b	3,285	USEPA, 1989b	
	BW	Body weight	kg	43	USEPA, 1997a,b	43	USEPA, 1997a,b	
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.6	NA	See Appendix B, Table 3.6	NA	
	ED	Exposure duration	years	12	USEPA, 1991a	9	USEPA, 1991a	
	EF	Exposure frequency	days/year	14	BPJ[a]	5	BPJ[a]	
	FI	Fraction ingested	--	1	NYSDEC, 1998a	1	NYSDEC, 1998a	
	IR	Ingestion rate	mg soil/day	100	USEPA, 1991a	50	USEPA, 1991a	
Dermal	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.6	NA	See Appendix B, Table 3.6	NA	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	SA	Skin surface area available for contact	cm^2/event	5,400	USEPA, 1997b, 2001	5,400	USEPA, 1997b, 2001	
	AF	Sediment/soil-to-skin adherence factor	mg/cm^2	2.7	USEPA, 1997a	0.2	USEPA, 1997a	
	EF	Exposure frequency	days/year	14	BPJ[a]	5	BPJ[a]	
	ED	Exposure duration	years	12	USEPA, 1991a	9	USEPA, 1991a	
	BW	Body weight	kg	43	USEPA, 1997a,b	43	USEPA, 1997a,b	
	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	
	AT	Averaging time - non-carcinogens	days	4,380	USEPA, 1989b	3,285	USEPA, 1989b	
	ABS	Dermal absorption factor - all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

Table 4.20
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Future
Medium: Surface Sediments
Exposure Medium: Wetland Sediment
Exposure Point: Wetland SYW-12 (Southern Basin)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	AT	Averaging time - non-carcinogens	days	730	USEPA, 1989b	730	USEPA, 1989b	
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.6	NA	See Appendix B, Table 3.6	NA	
	ED	Exposure duration	years	2	BPJ[a]	2	[v]	
	EF	Exposure frequency	days/year	25	BPJ[a]	10	BPJ[a]	
	FI	Fraction ingested	--	1	BPJ[a]	1	BPJ[a]	
	IR	Ingestion rate	mg soil/day	330	USEPA, 2001b	330	USEPA, 2001b	
Dermal	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.6	NA	See Appendix B, Table 3.6	NA	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	NA	0.000001	NA	
	SA	Skin surface area available for contact	cm^2/event	5,700	USEPA, 2001	5,700	USEPA, 2001	
	AF	Soil-to-skin adherence factor	mg/cm^2	0.9 [b]	USEPA, 2001	0.2 [b]	USEPA, 2001	
	EF	Exposure frequency	days/year	25	BPJ[a]	10	BPJ[a]	
	ED	Exposure duration	years	2	BPJ[a]	2	BPJ[a]	
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	
	AT	Averaging time - non-carcinogens	days	730	USEPA, 1989b	730	USEPA, 1989b	
	ABS	Dermal absorption factor - all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

[b] AF for construction worked based on 95th percentile (for RME) and geometric mean (CT) for utility workers (USEPA 2001, exhibit 3-3)

Table 4.21
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Sediment
Exposure Point: Wetland SYW-19 (Southern Basin)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	AT	Averaging time - non-carcinogens	days	10,950	USEPA, 1989b	3,285	USEPA, 1989b	
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.7	NA	See Appendix B, Table 3.7	NA	
	ED	Exposure duration	years	30	USEPA, 1991a	9	USEPA, 1991a	
	EF	Exposure frequency	days/year	14	BPJ[a]	5	BPJ[a]	
	FI	Fraction ingested	--	1	NYSDEC, 1998a	1	NYSDEC, 1998a	
	IR	Ingestion rate	mg soil/day	100	USEPA, 1991a	50	USEPA, 1991a	
Dermal	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.7	NA	See Appendix B, Table 3.7	NA	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	SA	Skin surface area available for contact	cm^2/event	5,700	USEPA, 2001	5,700	USEPA, 2001	
	AF	Sediment/soil-to-skin adherence factor	mg/cm^2	0.3	USEPA, 1997a	0.15	USEPA, 1997a	
	EF	Exposure frequency	days/year	14	BPJ[a]	5	BPJ[a]	
	ED	Exposure duration	years	30	USEPA, 1991a	9	USEPA, 1991a	
	BW	Body weight	kg	70	USEPA, 1991a	70	USEPA, 1991a	
	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	
	AT	Averaging time - non-carcinogens	days	10,950	USEPA, 1989b	3,285	USEPA, 1989b	
	ABS	Dermal absorption factor - all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

Table 4.22
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Sediment
Exposure Point: Wetland SYW-19 (Southern Basin)
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	AT	Averaging time - non-carcinogens	days	4,380	USEPA, 1989b	3,285	USEPA, 1989b	
	BW	Body weight	kg	43	USEPA, 1997a,b	43	USEPA, 1997a,b	
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.7	NA	See Appendix B, Table 3.7	NA	
	ED	Exposure duration	years	12	USEPA, 1991a	9	USEPA, 1991a	
	EF	Exposure frequency	days/year	14	BPJ[a]	5	BPJ[a]	
	FI	Fraction ingested	–	1	NYSDEC, 1998a	1	NYSDEC, 1998a	
	IR	Ingestion rate	mg soil/day	100	USEPA, 1991a	50	USEPA, 1991a	
Dermal	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.7	NA	See Appendix B, Table 3.7	NA	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	USEPA, 1989b	0.000001	USEPA, 1989b	
	SA	Skin surface area available for contact	cm^2/event	5,400	USEPA, 1997b, 2001	5,400	USEPA, 1997b, 2001	
	AF	Sediment/soil-to-skin adherence factor	mg/cm^2	2.7	USEPA, 1997a	0.2	USEPA, 1997a	
	EF	Exposure frequency	days/year	14	BPJ[a]	5	BPJ[a]	
	ED	Exposure duration	years	12	USEPA, 1991a	9	USEPA, 1991a	
	BW	Body weight	kg	43	USEPA, 1997a,b	43	USEPA, 1997a,b	
	AT	Averaging time - carcinogens	days	25,550	USEPA, 1989b	25,550	USEPA, 1989b	
	AT	Averaging time - non-carcinogens	days	4,380	USEPA, 1989b	3,285	USEPA, 1989b	
	ABS	Dermal absorption factor - all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA, 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

Table 4.23
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Future
Medium: Surface Sediments
Exposure Medium: Wetland Sediment
Exposure Point: Wetland SYW-19 (Southern Basin)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA 1989b	25,550	USEPA 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	AT	Averaging time - non-carcinogens	days	730	USEPA 1989b	730	USEPA 1989b	
	BW	Body weight	kg	70	USEPA 1991a	70	USEPA 1991a	
	CF	Conversion factor	kg/mg	0.000001	USEPA 1989b	0.000001	USEPA 1989b	
	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.7	NA	See Appendix B, Table 3.7	NA	
	ED	Exposure duration	years	2	BPJ[a]	2	BPJ[a]	
	EF	Exposure frequency	days/year	25	BPJ[a]	10	BPJ[a]	
	FI	Fraction ingested	–	1	BPJ[a]	1	BPJ[a]	
	IR	Ingestion rate	mg soil/day	330	USEPA 2001b	330	USEPA 2001b	
Dermal	CS	Chemical concentration in sediment	mg/kg	See Appendix B, Table 3.7	NA	See Appendix B, Table 3.7	NA	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	USEPA 1989b	0.000001	USEPA 1989b	
	SA	Skin surface area available for contact	cm^2/event	5,700	USEPA 2001	5,700	USEPA 2001	
	AF	Soil-to-skin adherence factor	mg/cm^2	0.9 [b]	USEPA 2001	0.2 [b]	USEPA 2001	
	EF	Exposure frequency	days/year	25	BPJ[a]	10	BPJ[a]	
	ED	Exposure duration	years	2	BPJ[a]	2	BPJ[a]	
	BW	Body weight	kg	70	USEPA 1991a	70	USEPA 1991a	
	AT	Averaging time - carcinogens	days	25,550	USEPA 1989b	25,550	USEPA 1989b	
	AT	Averaging time - non-carcinogens	days	730	USEPA 1989b	730	USEPA 1989b	
	ABS	Dermal absorption factor - all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

[b] AF for construction worker based on 95th percentile (for RME) and geometric mean (CT) for utility workers (USEPA, 2001, Exhibit 3-3).

Table 4.24
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Dredge Spoil Soils
Exposure Medium: Surface Soil
Exposure Point: Dredge Spoil Soils (0-3.5 ft)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA 1989b	25,550	USEPA 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	AT	Averaging time - non-carcinogens	days	10,950	USEPA 1989b	3,285	USEPA 1989b	
	BW	Body weight	kg	70	USEPA 1991a	70	USEPA 1991a	
	CF	Conversion factor	kg/mg	0.000001	USEPA 1989b	0.000001	USEPA 1989b	
	CS	Chemical concentration in surface soil	mg/kg	See Appendix B, Table 3.8	NA	See Appendix B, Table 3.8	NA	
	ED	Exposure duration	years	30	USEPA 1991a	9	USEPA 1991a	
	EF	Exposure frequency	days/year	44	BPJ[a]	32	BPJ[a]	
	FI	Fraction ingested	--	1	NYSDEC 1998a	1	NYSDEC 1998a	
	IR	Ingestion rate	mg soil/day	100	USEPA 1991a	50	USEPA 1991a	
Dermal	CS	Chemical concentration in surface soil	mg/kg	See Appendix B, Table 3.8	NA	See Appendix B, Table 3.8	NA	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	USEPA 1989b	0.000001	USEPA 1989b	
	SA	Skin surface area available for contact	cm^2/event	5,700	USEPA 2001	5,700	USEPA 2001	
	AF	Sediment/soil-to-skin adherence factor	mg/cm^2	0.3	USEPA 1997a	0.15	USEPA 1997a	
	EF	Exposure frequency	days/year	44	BPJ[a]	32	BPJ[a]	
	ED	Exposure duration	years	30	USEPA 1991a	9	USEPA 1991a	
	BW	Body weight	kg	70	USEPA 1991a	70	USEPA 1991a	
	AT	Averaging time - carcinogens	days	25,550	USEPA 1989b	25,550	USEPA 1989b	
	AT	Averaging time - non-carcinogens	days	10,950	USEPA 1989b	3,285	USEPA 1989b	
	ABS	Dermal absorption factor - all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

Table 4.25
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Dredge Spoil Soils
Exposure Medium: Surface Soil
Exposure Point: Dredge Spoil Soils (0-3.5 ft)
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA 1989b	25,550	USEPA 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	AT	Averaging time - non-carcinogens	days	4,380	USEPA 1989b	3,285	USEPA 1989b	
	BW	Body weight	kg	43	USEPA 1997b	43	USEPA 1997b	
	CF	Conversion factor	kg/mg	0.000001	USEPA 1989b	0.000001	USEPA 1989b	
	CS	Chemical concentration in surface soil	mg/kg	See Appendix B, Table 3.8	NA	See Appendix B, Table 3.8	NA	
	ED	Exposure duration	years	12	USEPA 1991a	9	USEPA 1991a	
	EF	Exposure frequency	days/year	44	BPJ[a]	32	BPJ[a]	
	FI	Fraction ingested	--	1	NYSDEC 1998a	1	NYSDEC 1998a	
	IR	Ingestion rate	mg soil/day	100	USEPA 1991a	50	USEPA 1991a	
Dermal	CS	Chemical concentration in surface soil	mg/kg	See Appendix B, Table 3.8	NA	See Appendix B, Table 3.8	NA	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	USEPA 1989b	0.000001	USEPA 1989b	
	SA	Skin surface area available for contact	cm^2/event	5,400	USEPA 2001	5,400	USEPA 2001	
	AF	Sediment/soil-to-skin adherence factor	mg/cm^2	2.7	USEPA 1997a	0.2	USEPA 1997a	
	EF	Exposure frequency	days/year	44	BPJ[a]	32	BPJ[a]	
	ED	Exposure duration	years	12	USEPA 1991a	9	USEPA 1991a	
	BW	Body weight	kg	43	USEPA 1997b	43	USEPA 1997b	
	AT	Averaging time - carcinogens	days	25,550	USEPA 1989b	25,550	USEPA 1989b	
	AT	Averaging time - non-carcinogens	days	4,380	USEPA 1989b	3,285	USEPA 1989b	
	ABS	Dermal absorption factor - all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

Table 4.26
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Future
Medium: Dredge Spoil Soils
Exposure Medium: Surface Soil
Exposure Point: Dredge Spoil Soils (0-3.5 ft)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA 1989b	25,550	USEPA 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	AT	Averaging time - non-carcinogens	days	730	USEPA 1989b	730	USEPA 1989b	
	BW	Body weight	kg	70	USEPA 1991a	70	USEPA 1991a	
	CF	Conversion factor	kg/mg	0.000001	USEPA 1989b	0.000001	USEPA 1989b	
	CS	Chemical concentration in surface soil	mg/kg	See Appendix B, Table 3.8	NA	See Appendix B, Table 3.8	NA	
	ED	Exposure duration	years	2	BPJ[a]	2	BPJ[a]	
	EF	Exposure frequency	days/year	25	BPJ[a]	10	BPJ[a]	
	FI	Fraction ingested	--	1	BPJ[a]	1	BPJ[a]	
	IR	Ingestion rate	mg soil/day	330	USEPA 2001b	330	USEPA 2001b	
Dermal	CS	Chemical concentration in surface soil	mg/kg	See Appendix B, Table 3.8	NA	See Appendix B, Table 3.8	NA	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	USEPA 1989b	0.000001	USEPA 1989b	
	SA	Skin surface area available for contact	cm^2/event	5,700	USEPA 2001	5,700	USEPA 2001	
	AF	Soil-to-skin adherence factor	mg/cm^2	0.9 [b]	USEPA 2001	0.2 [b]	USEPA 2001	
	EF	Exposure frequency	days/year	25	BPJ[a]	10	BPJ[a]	
	ED	Exposure duration	years	2	BPJ[a]	2	BPJ[a]	
	BW	Body weight	kg	70	USEPA 1991a	70	USEPA 1991a	
	AT	Averaging time - carcinogens	days	25,550	USEPA 1989b	25,550	USEPA 1989b	
	AT	Averaging time - non-carcinogens	days	730	USEPA 1989b	730	USEPA 1989b	
	ABS	Dermal absorption factor - all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

[b] AF for construction worker based on 95th percentile (for RME) and geometric mean (CT) for utility workers (USEPA, 2001, Exhibit 3-3).

Table 4.27
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Future
Medium: Dredge Spoil Soils
Exposure Medium: Surface and Subsurface Soils
Exposure Point: Dredge Spoil Soils (0-11.7 ft)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA 1989b	25,550	USEPA 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	AT	Averaging time - non-carcinogens	days	730	USEPA 1989b	730	USEPA 1989b	
	BW	Body weight	kg	70	USEPA 1991a	70	USEPA 1991a	
	CF	Conversion factor	kg/mg	0.000001	USEPA 1989b	0.000001	USEPA 1989b	
	CS	Chemical concentration in surface and subsurface soils	mg/kg	See Appendix B, Table 3.9	NA	See Appendix B, Table 3.9	NA	
	ED	Exposure duration	years	2	BPJ[a]	2	BPJ[a]	
	EF	Exposure frequency	days/year	25	BPJ[a]	10	BPJ[a]	
	FI	Fraction ingested	–	1	BPJ[a]	1	BPJ[a]	
	IR	Ingestion rate	mg soil/day	330	USEPA 2001b	330	USEPA 2001b	
Dermal	CS	Chemical concentration in surface and subsurface soils	mg/kg	See Appendix B, Table 3.9	NA	See Appendix B, Table 3.9	NA	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	USEPA 1989b	0.000001	USEPA 1989b	
	SA	Skin surface area available for contact	cm^2/event	5,700	USEPA 2001	5,700	USEPA 2001	
	AF	Soil-to-skin adherence factor	mg/cm^2	0.9 [b]	USEPA 2001	0.2 [b]	USEPA 2001	
	EF	Exposure frequency	days/year	25	BPJ[a]	10	BPJ[a]	
	ED	Exposure duration	years	2	BPJ[a]	2	BPJ[a]	
	BW	Body weight	kg	70	USEPA 1991a	70	USEPA 1991a	
	AT	Averaging time - carcinogens	days	25,550	USEPA 1989b	25,550	USEPA 1989b	
	AT	Averaging time - non-carcinogens	days	730	USEPA 1989b	730	USEPA 1989b	
	ABS	Dermal absorption factor - all COPCs	unitless	Chemical-specific; see Chapter 4, Table 4-1	USEPA 2001	Chemical-specific; see Chapter 4, Table 4-1	USEPA 2001	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

[b] AF for construction worker based on 95th percentile (for RME) and geometric mean (CT) for utility workers (USEPA, 2001, Exhibit 3-3).

Table 4.28
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Onondaga Lake
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA 1989b	25,550	USEPA 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CW x CF x IR x EF x ED x ET / (BW x AT)
	AT	Averaging time - non-carcinogens	days	10,950	USEPA 1989b	3,285	USEPA 1989b	
	BW	Body weight	kg	70	USEPA 1991a	70	USEPA 1991a	
	CF	Conversion factor	L/mL	0.001	USEPA 1989b	0.001	USEPA 1989b	
	CW	Chemical concentration in surface water	mg/L	See Appendix B, Table 3.10	NA	See Appendix B, Table 3.10	NA	
	ED	Exposure duration	years	30	USEPA 1989b	9	USEPA 1989b	
	EF	Exposure frequency	events/year	44	BPJ[a]	32	BPJ[a]	
	ET	Exposure time	hours/event	2.6	USEPA 1997a	1	USEPA 1989b	
	IR	Ingestion rate	mL/hour	50	USEPA 1989b	50	USEPA 1989b	
Dermal	CW	Chemical concentration in surface water	mg/L	See Appendix B, Table 3.10	NA	See Appendix B, Table 3.10	NA	Chronic Daily Intake (CDI) (mg/kg-day) = DA(event) x CF x SA x EF x ED x EV / (BW x AT)
	CF	Conversion factor	L/cm^3	0.001	USEPA 1989b	0.001	USEPA 1989b	
	DA(event)	Absorbed dose per event [2]	mg/cm^2-event	calculated	USEPA 2001	calculated	USEPA 2001	
	SA	Skin surface area available for contact	cm^2	18,000	USEPA 2001	18,000	USEPA 2001	
	PC	Chem.-spec. dermal permeability constant [1]	cm/hour	chem. spec.	USEPA 2001	chem. spec.	USEPA 2001	
	EF	Exposure frequency	days/year	44	BPJ[a]	32	BPJ[a]	
	ED	Exposure duration	years	30	USEPA 1989b	9	USEPA 1989b	
	ET	Exposure time [3]	hours/day	2.6	USEPA 1997a	1	USEPA 1989b	
	EV	Event frequency	events/day	1.0	USEPA 2001	1.0	USEPA 2001	
	BW	Body weight	kg	70	USEPA 1991a	70	USEPA 1991a	
	AT	Averaging time - carcinogens	days	25,550	USEPA 1989b	25,550	USEPA 1989b	
	AT	Averaging time - non-carcinogens	days	10,950	USEPA 1989b	3,285	USEPA 1989b	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

[1] Dermal PCs for inorganics and organics in water presented in Exhibit 3-1 and Exhibit B-3 of RAGS Part E (USEPA, 2001) respectively.

[2] The equations to calculate the absorbed dose per event are available in RAGS Part E (USEPA, 2001).

[3] Exposure time for RME is 2.6 hours based on swimming, average value, presented in RAGS Part A (USEPA, 1989). CT value from USEPA, 1997a, Table 15-176.

Table 4.29
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Onondaga Lake
Receptor Population: Recreational
Receptor Age: Younger Child (less than 6)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA 1989b	25,550	USEPA 1989b	Chronic Daily Intake (CDI) (mg/kg-day) =
	AT	Averaging time - non-carcinogens	days	2,190	USEPA 1989b	2,190	USEPA 1989b	CW x CF x IR x EF x ED x ET / (BW x AT)
	BW	Body weight	kg	15	USEPA 1997b	15	USEPA 1997b	
	CF	Conversion factor	L/mL	0.001	USEPA 1989b	0.001	USEPA 1989b	
	CW	Chemical concentration in surface water	mg/L	See Appendix B, Table 3.10	NA	See Appendix B, Table 3.10	NA	
	ED	Exposure duration	years	6	USEPA 1997a	6	USEPA 1997a	
	EF	Exposure frequency	events/year	44	BPJ[a]	32	BPJ[a]	
	ET	Exposure time	hours/event	2.6	USEPA 1997a	1	USEPA 1989b	
	IR	Ingestion rate	mL/hour	50	USEPA 1989b	50	USEPA 1989b	
Dermal	CW	Chemical concentration in surface water	mg/L	See Appendix B, Table 3.10	NA	See Appendix B, Table 3.10	NA	Chronic Daily Intake (CDI) (mg/kg-day) = DA(event) x CF x SA x EF x ED x EV /
	CF	Conversion factor	L/cm^3	0.001	USEPA 1989b	0.001	USEPA 1989b	(BW x AT)
	DA(event)	Absorbed dose per event [2]	mg/cm^2-event	calculated	USEPA 2001	calculated	USEPA 2001	
	SA	Skin surface area available for contact	cm^2	6,600	USEPA 2001	6,600	USEPA 2001	
	PC	Chem.-spec. dermal permeability constant [1]	cm/hour	chem. spec.	USEPA 1999a	chem. spec.	USEPA 1999a	
	EF	Exposure frequency	days/year	44	BPJ[a]	32	BPJ[a]	
	ED	Exposure duration	years	6	USEPA 1997a	6	USEPA 1997a	
	ET	Exposure time [3]	hours/day	2.6	USEPA 1997a	1	USEPA 1989b	
	EV	Event frequency	events/day	1.0	USEPA 2001	1.0	USEPA 2001	
	BW	Body weight	kg	15	USEPA 1997b	15	USEPA 1997b	
	AT	Averaging time - carcinogens	days	25,550	USEPA 1989b	25,550	USEPA 1989b	
	AT	Averaging time - non-carcinogens	days	2,190	USEPA 1989b	2,190	USEPA 1989b	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

[1] Dermal PCs for inorganics in water presented in Exhibit 3-1 of RAGS Part E (USEPA, 2001). Dermal PCs for organics in water presented in Exhibit B-3 of RAGS Part E (USEPA, 2001).

[2] The equations to calculate the absorbed dose per event are available in RAGS Part E (USEPA, 2001).

[3] Exposure time for RME is 2.6 hours based on swimming, average value, presented in RAGS Part A (USEPA, 1989). CT value from USEPA, 1997a, Table 15-176.

Table 4.30
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Onondaga Lake
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA 1989b	25,550	USEPA 1989b	Chronic Daily Intake (CDI) (mg/kg-day) = CW x CF x IR x EF x ED x ET / (BW x AT)
	AT	Averaging time - non-carcinogens	days	4,380	USEPA 1989b	3,285	USEPA 1989b	
	BW	Body weight	kg	43	USEPA 1997b	43	USEPA 1997b	
	CF	Conversion factor	L/mL	0.001	USEPA 1989b	0.001	USEPA 1989b	
	CW	Chemical concentration in surface water	mg/L	See Appendix B, Table 3.10	NA	See Appendix B, Table 3.10	NA	
	ED	Exposure duration	years	12	USEPA 1997a	9	USEPA 1997a	
	EF	Exposure frequency	events/year	44	BPJ[a]	32	BPJ[a]	
	ET	Exposure time	hours/event	2.6	USEPA 1997a	1	USEPA 1989b	
	IR	Ingestion rate	mL/hour	50	USEPA 1989b	50	USEPA 1989b	
Dermal	CW	Chemical concentration in surface water	mg/L	See Appendix B, Table 3.10	NA	See Appendix B, Table 3.10	NA	Chronic Daily Intake (CDI) (mg/kg-day) = DA(event) x CF x SA x EF x ED x EV / (BW x AT)
	CF	Conversion factor	L/cm^3	0.001	USEPA 1989b	0.001	USEPA 1989b	
	DA(event)	Absorbed dose per event [2]	mg/cm^2-event	calculated	USEPA 2001	calculated	USEPA 2001	
	SA	Skin surface area available for contact	cm^2	13,000	USEPA 2001	13,000	USEPA 2001	
	PC	Chem.-spec. dermal permeability constant [1]	cm/hour	chem. spec.	USEPA 1999a	chem. spec.	USEPA 1999a	
	EF	Exposure frequency	days/year	44	BPJ[a]	32	BPJ[a]	
	ED	Exposure duration	years	12	USEPA 1997a	9	USEPA 1997a	
	ET	Exposure time [3]	hours/day	2.6	USEPA 1997a	1	USEPA 1989b	
	EV	Event frequency	events/day	1.0	USEPA 2001	1.0	USEPA 2001	
	BW	Body weight	kg	43	USEPA 1997b	43	USEPA 1997b	
	AT	Averaging time - carcinogens	days	25,550	USEPA 1989b	25,550	USEPA 1989b	
	AT	Averaging time - non-carcinogens	days	4,380	USEPA 1989b	3,285	USEPA 1989b	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

[1] Dermal PCs for inorganics in water presented in Exhibit 3-1 of RAGS Part E (USEPA, 2001). Dermal PCs for organics in water presented in Exhibit B-3 of RAGS Part E (USEPA, 2001).

[2] The equations to calculate the absorbed dose per event are available in RAGS Part E (USEPA, 2001).

[3] Exposure time for RME is 2.6 hours based on swimming, average value, presented in RAGS Part A (USEPA, 1989). CT value from USEPA, 1997a, Table 15-176.

Table 4.31
Values Used for Daily Intake Calculations
Onondaga Lake

Scenario Time Frame: Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Onondaga Lake
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME RME Value	RME Rationale/ Reference	CT CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	AT	Averaging time - carcinogens	days	25,550	USEPA 1989b	25,550	USEPA 1989b	Chronic Daily Intake (CDI) (mg/kg-day) =
	AT	Averaging time - non-carcinogens	days	730	USEPA 1989b	730	USEPA 1989b	CW x CF x IR x EF x ED x ET / (BW x AT)
	BW	Body weight	kg	70	USEPA 1991a	70	USEPA 1991a	
	CF	Conversion factor	L/mL	0.001	USEPA 1989a	0.001	USEPA 1989a	
	CW	Chemical concentration in surface water	mg/L	See Appendix B, Table 3.10	NA	See Appendix B, Table 3.10	NA	
	ED	Exposure duration	years	2	BPJ[a]	2	BPJ[a]	
	EF	Exposure frequency	events/year	25	BPJ[a]	10	BPJ[a]	
	ET	Exposure time	hours/event	1	BPJ[a]	0.5	BPJ[a]	
	IR	Ingestion rate	mL/hour	12	BPJ[a]	12	BPJ[a]	
Dermal	CW	Chemical concentration in surface water	mg/L	See Appendix B, Table 3.10	NA	See Appendix B, Table 3.10	NA	Chronic Daily Intake (CDI) (mg/kg-day) = DA(event) x CF x SA x EF x ED x EV /
	CF	Conversion factor	L/cm^3	0.001	USEPA 1989b	0.001	USEPA 1989b	(BW x AT)
	DA(event)	Absorbed dose per event [2]	mg/cm^2-event	calculated	USEPA 2001	calculated	USEPA 2001	
	SA	Skin surface area available for contact	cm^2	5,700	USEPA 2001	5,700	USEPA 2001	
	PC	Chemical-specific dermal permeability constant	cm/hour	chemical- specific	USEPA 1999a, 2001	chemical specific	USEPA 1999a, 2001	
	EF	Exposure frequency	days/year	25	BPJ[a]	10	BPJ[a]	
	ED	Exposure duration	years	2	BPJ[a]	2	BPJ[a]	
	ET	Exposure time	hours/day	1	BPJ[a]	0.5	BPJ[a]	
	EV	Event frequency	events/day	1.0	USEPA 2001	1.0	USEPA 2001	
	BW	Body weight	kg	70	USEPA 1991a	70	USEPA 1991a	
	AT	Averaging time - carcinogens	days	25,550	USEPA 1989b	25,550	USEPA 1989b	
	AT	Averaging time - non-carcinogens	days	730	USEPA 1989b	730	USEPA 1989b	

Notes: NA – not applicable

[a] Based on best professional judgment (BPJ).

[1] The equations to calculate the absorbed dose per event are available in RAGS Part E (USEPA, 2001).

[2] The equations to calculate the absorbed dose per event are available in RAGS Part E (USEPA, 2001), and Section 4.5 of this text.

TABLE 5.1
NON-CANCER TOXICITY DATA -- ORAL/DERMAL
ONONDAGA LAKE NPL SITE

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Oral to Dermal Adjustment Factor (1)	Adjusted Dermal RfD (2)	Units	Primary Target Organ(s)	Combined Uncertainty / Modifying Factors	Sources of RfD: Target Organ	Dates of RfD: Target Organ (3) (MM/DD/YY)
Inorganics										
Aluminum	Chronic	1	mg/kg-day	1	1	mg/kg-day	Skeletal, skin	Not Reported	NCEA; ATSDR	11/01/00 & 09/25/01
Antimony	Chronic	0.0004	mg/kg-day	0.15	0.00006	mg/kg-day	Whole Body/Blood	1000/1	IRIS	02/25/02
Arsenic	Chronic	0.0003	mg/kg-day	1	0.0003	mg/kg-day	Skin	3/1	IRIS	02/25/02
Barium	Chronic	0.07	mg/kg-day	0.07	0.0049	mg/kg-day	Cardiovascular System	3/1	IRIS/HEAST	02/25/02 and 07/31/97
Cadmium (sediment/soil)	Chronic	0.001	mg/kg-day	0.025	0.000025	mg/kg-day	Kidneys	10/1	IRIS	02/25/02
Cadmium (surface water)	Chronic	0.0005	mg/kg-day	0.025	0.0000125	mg/kg-day	Kidneys	10/1	IRIS	02/25/02
Chromium (VI)	Chronic	0.003	mg/kg-day	0.025	0.000075	mg/kg-day	None reported	300/3	IRIS	02/25/02
Chromium (III) (insoluble salts) *	Chronic	1.5	mg/kg-day	0.013	0.0195	mg/kg-day	NOAEL	100/10	IRIS	5/16/2002
Copper	Chronic	0.04	mg/kg-day	1	0.04	mg/kg-day	Liver/Kidneys/Forestomach	2/1	NCEA	06/28/02
Cyanide (Free cyanide)	Chronic	0.02	mg/kg-day	1	0.02	mg/kg-day	Whole Body/Blood	100/5	IRIS/HEAST	02/25/02 and 07/31/97
Iron	Chronic	0.3	mg/kg-day	1	0.3	mg/kg-day	Liver, spleen, lymph system	Not Reported	NCEA; Sittig	11/01/00; 1991
Lead	Chronic	No data	mg/kg-day	NA	NA	mg/kg-day	CNS, blood, whole body	NA	IRIS/HEAST/ATSDR	11/01/00 & 09/25/01
Manganese	Chronic	0.14	mg/kg-day	0.04	0.0056	mg/kg-day	Central Nervous System	1/1	IRIS	02/25/02
Manganese (non-dietary ingestion)**	Chronic	0.023	mg/kg-day	Ingestion only	NA	mg/kg-day	Central Nervous System	1/6	IRIS	02/25/02
Total mercury (inorganic as $HgCl_2$)	Chronic	0.0003	mg/kg-day	0.07	0.000021	mg/kg-day	Immune System	1000/1	IRIS	02/25/02
Methylmercury	Chronic	0.0001	mg/kg-day	1	0.0001	mg/kg-day	Developmental	10/1	IRIS	02/25/02
Nickel	Chronic	0.02	mg/kg-day	0.04	0.0008	mg/kg-day	Whole Body/Major Organs	300/1	IRIS	02/25/02
Selenium	Chronic	0.005	mg/kg-day	Ingestion only	NA	mg/kg-day	Whole Body	3/1	IRIS/HEAST	02/25/02 and 07/31/97
Thallium	Chronic	0.000066	mg/kg-day	1	0.000066	mg/kg-day	NOAEL; various	Not Reported	NCEA; IRIS/ATSDR	11/01/00
Vanadium	Chronic	0.007	mg/kg-day	0.026	0.000182	mg/kg-day	Not Reported/Unknown	100/1	HEAST/ATSDR	07/31/97
Zinc	Chronic	0.3	mg/kg-day	Ingestion only	NA	NA	Blood	3/1	IRIS	05/17/02
VOCs										
Benzene	Chronic	0.003	mg/kg-day	1	0.003	mg/kg-day	Immune System/Blood	3000/1	NCEA	06/28/02
Bromodichloromethane	Chronic	0.02	mg/kg-day	1	0.02	mg/kg-day	Kidney	1000/1	IRIS	02/25/02
Chlorobenzene	Chronic	0.02	mg/kg-day	1	0.02	mg/kg-day	Liver	1000/1	IRIS	02/25/02
Chloroform	Chronic	0.01	mg/kg-day	1	0.01	mg/kg-day	Liver	100/1	IRIS	02/25/02
Methylene chloride	Chronic	0.06	mg/kg-day	1	0.06	mg/kg-day	Liver	100/1	IRIS	02/25/02
Total (sum of) Xylenes	Chronic	2	mg/kg-day	1	2	mg/kg-day	NOAEL; CNS	100/1	IRIS	02/25/02
SVOCs										
bis(2-Ethylhexyl)phthalate	Chronic	0.02	mg/kg-day	Ingestion only	NA	mg/kg-day	Liver	1000/1	IRIS	02/25/02
Dibenzofuran	Chronic	0.004	mg/kg-day	1	0.004	mg/kg-day	Liver	3000/1	NCEA	06/28/02
1,2-Dichlorobenzene	Chronic	0.09	mg/kg-day	1	0.09	mg/kg-day	NOAEL	1000/1	IRIS	02/25/02
1,3-Dichlorobenzene	Chronic	0.0009	mg/kg-day	1	0.0009	mg/kg-day	Liver/Pituitary Gland	10000/1	NCEA	06/28/02
1,4-Dichlorobenzene	Chronic	0.03	mg/kg-day	1	0.03	mg/kg-day	Skin/Blood	1000/1	NCEA; ATSDR	06/28/02
Hexachlorobenzene	Chronic	0.0008	mg/kg-day	1	0.0008	mg/kg-day	Liver	100/1	IRIS	02/25/02
1,2,4-Trichlorobenzene	Chronic	0.01	mg/kg-day	1	0.01	mg/kg-day	Adrenal/Liver/Kidney	1000/1	IRIS	3/08/02

TABLE 5.1
NON-CANCER TOXICITY DATA -- ORAL/DERMAL
ONONDAGA LAKE NPL SITE

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Oral to Dermal Adjustment Factor (1)	Adjusted Dermal RfD (2)	Units	Primary Target Organ(s)	Combined Uncertainty / Modifying Factors	Sources of RfD: Target Organ	Dates of RfD: Target Organ (3) (MM/DD/YY)
PAHs										
Acenaphthylene (5)	Chronic	0.03	mg/kg-day	1	0.03	mg/kg-day	Kidney	3000/1	IRIS	02/25/02
Benz(a)anthracene	NA									
Benzo(a)pyrene	NA									
Benzo(b)fluoranthene	NA									
Benzo(g,h,i)perylene (5)	Chronic	0.03	mg/kg-day	1	0.03	mg/kg-day	Kidney	3000/1	IRIS	02/25/02
Benzo(k)fluoranthene	NA									
Chrysene	NA									
Dibenz(a,h)anthracene	NA									
Fluoranthene	Chronic	0.04	mg/kg-day	1	0.04	mg/kg-day	Kidney/Liver/Blood	3000/1	IRIS/HEAST	02/25/02 and 07/31/97
Indeno(1,2,3-cd)pyrene	NA									
2-Methylnaphthalene	Chronic	0.02	mg/kg-day	1	0.02	mg/kg-day	Lungs/Decreased body weight	3000/1	NCEA	07/02/02
Naphthalene	Chronic	0.02	mg/kg-day	1	0.02	mg/kg-day	Decreased body weight	3000/1	IRIS	02/25/02
Phenanthrene (5)	Chronic	0.03	mg/kg-day	1	0.03	mg/kg-day	Kidney	3000/1	IRIS	02/25/02
Pesticides										
Aldrin	Chronic	0.00003	mg/kg-day	1	0.00003	mg/kg-day	Liver	1000/1	IRIS	02/25/02
delta-BHC (6)	Chronic	0.0003	mg/kg-day	Ingestion only	NA		Liver/kidney	1000/1	IRIS	07/09/02
Total (Sum of) Chlordanes	Chronic	0.0005	mg/kg-day	Ingestion only	NA		Liver	300/1	IRIS/HEAST	02/25/02 and 07/31/97
2,4'- DDE (7)	NA			Ingestion only	NA					
4,4'-DDD	Chronic	0.003	mg/kg-day	Ingestion only	NA		Liver	10000/1	NCEA	06/28/02
4,4'-DDE	Chronic	0.0007	mg/kg-day	Ingestion only	NA		Liver	10000/1	NCEA	06/28/02
4,4'-DDT	Chronic	0.0005	mg/kg-day	Ingestion only	NA		Liver	100/1	IRIS	02/25/02
Dieldrin	Chronic	0.00005	mg/kg-day	1	0.00005	mg/kg-day	Liver	100/1	IRIS	02/25/02
Heptachlor epoxide	Chronic	0.000013	mg/kg-day	Ingestion only	NA	mg/kg-day	Liver	1000/1	IRIS	02/25/02
PCBs										
Aroclor 1016	Chronic	0.00007	mg/kg-day	Ingestion only	NA	mg/kg-day	Reduced Birth Weights	100/1	IRIS	02/25/02
Aroclor 1221	Chronic	0.00007	mg/kg-day	1	0.00007	mg/kg-day	Assumed same as Ar 1016	Ar 1016	Ar 1016	Low MW PCB
Aroclor 1242	Chronic	0.00007	mg/kg-day	1	0.00007	mg/kg-day	Assumed same as Ar 1016	Ar 1016	Ar 1016	Low MW PCB
Aroclor 1248	Chronic	0.00002	mg/kg-day	1	0.00002	mg/kg-day	Assumed same as Ar 1254	Ar 1254	Ar 1254	High MW PCB
Aroclor 1254	Chronic	0.00002	mg/kg-day	1	0.00002	mg/kg-day	Immune System	300/1	IRIS/HEAST	02/25/02 and 07/31/97
Aroclor 1260	Chronic	0.00002	mg/kg-day	1	0.00002	mg/kg-day	Assumed same as Ar 1254	Ar 1254	Ar 1254	High MW PCB
Aroclors 1254 & 1260	Chronic	0.00002	mg/kg-day	Ingestion only	NA	mg/kg-day	Assumed same as Ar 1254	Ar 1254	Ar 1254	High MW PCB
Aroclor 1268	Chronic	0.00002	mg/kg-day	1	0.00002	mg/kg-day	Assumed same as Ar 1254	Ar 1254	Ar 1254	High MW PCB
Total (Sum of) PCBs	NA	Assessed as either individual aroclor or grouped as 'low molecular weight arolcor' or 'high molecular weight aroclor'								
Dioxins/Furans										
Total PCDD/PCDF TEQ	NA									

TABLE 5.1
NON-CANCER TOXICITY DATA -- ORAL/DERMAL
ONONDAGA LAKE NPL SITE

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Oral to Dermal Adjustment Factor (1)	Adjusted Dermal RfD (2)	Units	Primary Target Organ(s)	Combined Uncertainty / Modifying Factors	Sources of RfD: Target Organ	Dates of RfD: Target Organ (3) (MM/DD/YY)

NOTES FOR TABLE 5-1

Values from NCEA and HEAST are provisional; USEPA/NCEA review/verification has been requested.
NA = Not Applicable. This COPC was not evaluated for non-cancer toxicity.
NR = Not reported
* Toxicity data for Chromium(III) shown for comparison purposes; all chromium assumed to be Chromium(VI) for this HHRA. See text for discussion.
** IRIS file for manganese recommends a modifying factor (MF) of 6 for non-dietary ingestion of manganese; factor shown does not include the MF.
(1) See RAGS Part E, Exhibit 4-1, and HHRA Table 4-1. If COPC is flagged 'yes' for adjust, that factor is shown here. All other COPCs (those flagged 'No' for "Adjust?") are assigned a factor of 1.
(2) Adjusted Dermal RfD = Oral RfD x Oral to Dermal Adjustment Factor
(3) For IRIS values, the date IRIS was searched is shown. (Text references to IRIS identify IRIS file dates as most recent revision shown under "revision history" section of file.)
For HEAST values, the date of HEAST publication is shown (most recent version is 7/31/97).
NCEA values were obtained from EPA Region III Risk-Based Concentration (RBC) Table (Revised 9/25/01) and Region IX PRG Table (Revised 11/1/00). Dates of original NCEA files unknown.
(4) HEAST value shown is from Region 9 PRG tables; could not be confirmed on HEAST (1997) document.
(5) Based on NCEA guidance the pyrene was used as surrogate for toxicity
(6) Based on NCEA guidance the gamma-BHC (lindane) was used as surrogate for toxicity
(7) 2,4-DDE was screened against Region 3 fish ingestion criterion for 'DDE' (unspecified isomer). 2,4-DDE will be assessed qualitatively only (EPC compared to screening criterion)

TABLE 6.1
CANCER TOXICITY DATA – ORAL/DERMAL
ONONDAGA LAKE NPL SITE

Chemical of Potential Concern	Oral Cancer Slope Factor	Oral to Dermal Adjustment Factor	Adjusted Dermal Cancer Slope Factor (1)	Units	Weight of Evidence/Cancer Guideline Description (USEPA Group)	Source Target Organ	Date (2) (MM/DD/YY)
Metals/Inorganics							
Aluminum	NA	1	NA	$(mg/kg/day)^{-1}$	Not classified [no IRIS file]	NA	NA
Antimony	NA	0.15	NA	$(mg/kg/day)^{-1}$	Not evaluated in IRIS	NA	05/16/02
Arsenic, inorganic	1.5E+00	1	1.5E+00	$(mg/kg/day)^{-1}$	A	Skin (IRIS)	05/16/02
Barium and compounds	NA	0.07	NA	$(mg/kg/day)^{-1}$	Not likely (oral) [1996 guidelines]	NA (oral)	05/16/02
Cadmium	NA	0.025	NA	$(mg/kg/day)^{-1}$	B(1) (inhalation only)	NA (oral)	05/16/02
Chromium (VI)	NA	0.025	NA	$(mg/kg/day)^{-1}$	D by oral route; A by inhalation	NA (oral)	06/16/02
Chromium (III)	NA	0.013	NA	$(mg/kg/day)^{-1}$	D	NA	05/16/02
Copper	NA	1	NA	$(mg/kg/day)^{-1}$	D	NA	05/17/02
Cyanide	NA	1	NA	$(mg/kg/day)^{-1}$	D	NA	05/17/02
Iron	NA	1	NA	$(mg/kg/day)^{-1}$	Not classified (no IRIS/ATSDR file)	NA	NA
Lead	NA	NA	NA	$(mg/kg/day)^{-1}$	B(2)	Kidneys (IRIS)	05/20/02
Manganese	NA	0.04	NA	$(mg/kg/day)^{-1}$	D	NA	05/20/02
Methylmercury	NA	Ingestion only	NA	$(mg/kg/day)^{-1}$	C	Kidneys (IRIS)	05/20/02
Total mercury (inorganic, as $HgCl_2$)	NA	0.07	NA	$(mg/kg/day)^{-1}$	C	GI, kidneys	05/20/02
Nickel (as soluble salts)	NA	0.04	NA	$(mg/kg/day)^{-1}$	Not evaluated in IRIS	NA	05/20/02
Selenium	NA	Ingestion only	NA	$(mg/kg/day)^{-1}$	D	NA	05/20/02
Thallium	NA	1	NA	$(mg/kg/day)^{-1}$	D (TlCl; Tl_2SO_4)	NA	05/20/02
Vanadium	NA	0.026	NA	$(mg/kg/day)^{-1}$	Not classified (ATSDR; no IRIS)	NA	9/95 (ATSDR)
Zinc	NA	Ingestion only	NA	$(mg/kg/day)^{-1}$	D	NA	05/20/02
Volatile Organic Compounds							
Benzene (3)	5.5E-02	1	5.5E-02	$(mg/kg/day)^{-1}$	A	Blood, other organs	05/17/02
Bromodichloromethane	6.2E-02	1	6.2E-02	$(mg/kg/day)^{-1}$	B(2)	Kidneys (IRIS)	05/20/02
Chlorobenzene	NA	1	NA	$(mg/kg/day)^{-1}$	D	NA	05/17/02
Chloroform	NA	1	NA	$(mg/kg/day)^{-1}$	B(2); 'likely' by 1996 guidelines	Kidneys, liver (IRIS)	05/17/02
Methylene chloride	7.5E-03	1	7.5E-03	$(mg/kg/day)^{-1}$	B(2)	Liver, others (IRIS)	05/17/02
Total xylenes (sum)	NA	1	NA	$(mg/kg/day)^{-1}$	D	NA	05/21/02

TABLE 6.1
CANCER TOXICITY DATA – ORAL/DERMAL
ONONDAGA LAKE NPL SITE

Chemical of Potential Concern	Oral Cancer Slope Factor	Oral to Dermal Adjustment Factor	Adjusted Dermal Cancer Slope Factor (1)	Units	Weight of Evidence/Cancer Guideline Description (USEPA Group)	Source Target Organ	Date (2) (MM/DD/YY)
Semivolatile Organic Compounds							
Bis(2-ethylhexyl)phthalate	1.4E-02	NA	Ingestion only	$(mg/kg/day)^{-1}$	B(2)	Liver	05/20/02
Dibenzofuran	NA	1	NA	$(mg/kg/day)^{-1}$	D	NA	05/20/02
1,2-Dichlorobenzene	NA	1	NA	$(mg/kg/day)^{-1}$	D	NA	05/20/02
1,3-Dichlorobenzene	NA	1	NA	$(mg/kg/day)^{-1}$	D	NA	05/20/02
1,4-Dichlorobenzene	2.4E-02	1	2.4E-02	$(mg/kg/day)^{-1}$	C	NA	HEAST, 1997
Hexachlorobenzene	1.6E+00	1	1.6E+00	$(mg/kg/day)^{-1}$	B(2)	Liver, thyroid, kidneys	05/20/02
1,2,4-Trichlorobenzene	NA	1	NA	$(mg/kg/day)^{-1}$	D	NA	
Polycyclic Aromatic Hydrocarbons							
Acenaphthylene	NA	1	NA	$(mg/kg/day)^{-1}$	D	NA	05/16/02
Benz[a]anthracene (4)	7.3E-01	1	7.3E-01	$(mg/kg/day)^{-1}$	B(2)	Tumors (IRIS)	05/16/02
Benzo[a]pyrene (BaP)	7.3E+00	1	7.3E+00	$(mg/kg/day)^{-1}$	B(2)	Tumors (IRIS)	05/16/02
Benzo[b]fluoranthene (4)	7.3E-01	1	7.3E-01	$(mg/kg/day)^{-1}$	B(2)	Tumors (IRIS)	06/16/02
Benzo(g,h,i)perylene	NA	1	NA	$(mg/kg/day)^{-1}$	D	NA	05/16/02
Benzo[k]fluoranthene (4)	7.3E-02	1	7.3E-02	$(mg/kg/day)^{-1}$	B(2)	Tumors (IRIS)	05/16/02
Chrysene (4)	7.3E-03	1	7.3E-03	$(mg/kg/day)^{-1}$	B(2)	Tumors (IRIS)	05/16/02
Dibenz[a,h]anthracene (4)	7.3E+00	1	7.3E+00	$(mg/kg/day)^{-1}$	B(2)	Tumors (IRIS)	5/1602
Fluoranthene	NA	1	NA	$(mg/kg/day)^{-1}$	D	NA	05/17/02
Indeno(1,2,3-cd)perylene (4)	7.3E-01	1	7.3E-01	$(mg/kg/day)^{-1}$	B(2)	Tumors (IRIS)	05/17/02
2-Methylnaphthalene	NA	1	NA	$(mg/kg/day)^{-1}$	No IRIS/ATSDR file. Not classified	NA	No IRIS/ATSDR file
Naphthalene	NA	1	NA	$(mg/kg/day)^{-1}$	C; 'cannot be determined' [1996]	NA	05/17/02
Phenanthrene	NA	1	NA	$(mg/kg/day)^{-1}$	D	NA	05/17/02
Pesticides							
Aldrin	1.7E+01	1	1.7E+01	$(mg/kg/day)^{-1}$	B(2)	Liver (IRIS)	05/17/02
delta-HCH	NA	NA	Ingestion only	$(mg/kg/day)^{-1}$	D	NA	05/21/02
Chlordane (total, as technical)	3.5E-01	NA	Ingestion only	$(mg/kg/day)^{-1}$	B(2)	Liver (IRIS)	05/17/02
2,4'-DDE	NA	NA	Ingestion only	$(mg/kg/day)^{-1}$	No IRIS/ATSDR file. Not classified	NA	No IRIS/ATSDR file
4,4'-DDD	2.4E-01	NA	Ingestion only	$(mg/kg/day)^{-1}$	B(2)	Liver, lungs (IRIS)	05/21/02

TABLE 6.1
CANCER TOXICITY DATA – ORAL/DERMAL
ONONDAGA LAKE NPL SITE

Chemical of Potential Concern	Oral Cancer Slope Factor	Oral to Dermal Adjustment Factor	Adjusted Dermal Cancer Slope Factor (1)	Units	Weight of Evidence/Cancer Guideline Description (USEPA Group)	Source Target Organ	Date (2) (MM/DD/YY)
4,4'-DDE	3.4E-01	NA	Ingestion only	$(mg/kg/day)^{-1}$	B(2)	Liver (IRIS)	05/17/02
4,4'-DDT	3.4E-01	NA	Ingestion only	$(mg/kg/day)^{-1}$	B(2)	Liver (IRIS)	05/21/02
Dieldrin	1.6E+01	1	1.6E+01	$(mg/kg/day)^{-1}$	B(2)	Tumors (IRIS)	5/17.02
Heptachlor epoxide	9.1E+00	NA	Ingestion only	$(mg/kg/day)^{-1}$	B(2)	Liver (IRIS)	05/17/02
Polychlorinated Biphenyls							
Aroclor 1016 (5)	NA	1	NA	$(mg/kg/day)^{-1}$	Not evaluation (see 'PCBs')	See 'PCBs'	05/20/02
Aroclor 1221 (5)	NA	1	NA	$(mg/kg/day)^{-1}$	No IRIS file (see 'PCBs')	See 'PCBs'	NA (5)
Aroclor 1242 (5)	NA	1	NA	$(mg/kg/day)^{-1}$	No IRIS file (see 'PCBs')	See 'PCBs'	NA (5)
Aroclor 1248 (5)	NA	1	NA	$(mg/kg/day)^{-1}$	No IRIS evaluation (see 'PCBs')	See 'PCBs'	05/20/02
Aroclor 1254 (5)	NA	1	NA	$(mg/kg/day)^{-1}$	No IRIS evaluation (see 'PCBs')	See 'PCBs'	05/20/02
Aroclor 1260 (5)	NA	1	NA	$(mg/kg/day)^{-1}$	No IRIS file (see 'PCBs')	See 'PCBs'	NA (5)
Aroclor 1254/1260	NA	NA	Ingestion only	$(mg/kg/day)^{-1}$	No IRIS file (see 'PCBs')	See 'PCBs'	NA (5)
Aroclor 1268 (5)	NA	1	NA	$(mg/kg/day)^{-1}$	No IRIS file (see 'PCBs')	See 'PCBs'	NA (5)
PCBs (6)	2.0E+00	1	2.0E+00	$(mg/kg/day)^{-1}$	B(2)	Liver (IRIS)	05/20/02
PCBs (7)	1.0E+00	1	1.0E+00	$(mg/kg/day)^{-1}$	B(2)	Liver (IRIS)	05/20/02
Dioxins/Furans							
PCDD TEQ (as 2378-TCDD) (8)	1.5E+05	1	1.5E+05	$(mg/kg/day)^{-1}$	B(2)	Liver, respiratory	HEAST, 1997

Notes: ATSDR – Agency for Toxic Substances and Disease Registry
HEAST – Health Effects Assessment Summary Tables
IRIS – Integrated Risk Information System
NA – Not applicable
NCEA – National Center for Environmental Assessment
NPL – National Priorities List
WHO – World Health Organization

(1) Adjusted CSF – Oral CSF * adjustment factor.
(2) Dates for IRIS indicate the date IRIS was searched, not the revision date of the IRIS file.
Dates for all HEAST are July 1997, last known revision of HEAST.
Dates for NCEA are the dates of the USEPA Region 3 RBCs and Region 9 PRGs from which the NCEA data were found. Date of original file unknown.
Dates for ATSDR data are the date indicated on the document.
(3) Benzene oral slope factor is a range from $1.5e^{-2}$ to $5.5e^{-2}$ with no preference stated for any value in the range (IRIS). The higher value has been utilized.

TABLE 6.1
CANCER TOXICITY DATA – ORAL/DERMAL
ONONDAGA LAKE NPL SITE

Chemical of Potential Concern	Oral Cancer Slope Factor	Oral to Dermal Adjustment Factor	Adjusted Dermal Cancer Slope Factor (1)	Units	Weight of Evidence/Cancer Guideline Description (USEPA Group)	Source Target Organ	Date (2) (MM/DD/YY)

(4) CSFs for these PAHs derived from that of benzo(a)pyrene in accordance with *Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons* (USEPA, 1993).
(5) Individual PCB/Aroclor mixtures are assessed for cancer risk as ' total PCBs '.

(6) The IRIS file for PCBs provides a range of CSF values. The CSF used is the highest (most conservative) used for the RME risk calculations; see discussion and rationale in Chapter 5.
(7) The IRIS file for PCBs provides a range of CSF values. The CSF used is the average value used for the CT risk calculations; see discussion and rationale in Chapter 5.
(8) Oral CSF for 2,3,7,8-TCDD from HEAST (1997). Other PCDD/PCDFs were converted to 2,3,7,8-TCDD equivalently using the WHO TEFs (1998).

USEPA Group:
A – Human carcinogen
B1 – Probable human carcinogen; indicates that limited human data are available
B2 – Probable human carcinogen; indicates sufficient evidence in animals and inadequate or no evidence in humans
C – Possible human carcinogen
D – Not classifiable as a human carcinogen
E – Evidence of non-carcinogenicity

Weight of Evidence:
Known/Likely
Cannot be Determined
Not Likely
"No IRIS file" – IRIS has not published an assessment of this substance
"Not evaluated" – IRIS file exists, but the substance has not been assessed in the IRIS program

TABLE 7.1.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Fish Tissue
Exposure Medium: Fish Tissue
Exposure Point: Fish fillet tissue from Onondaga Lake
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Antimony	9.92E-01	mg/kg	9.92E-01	mg/kg	M	3.5E-04	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	8.9E-01
	Arsenic (inorganic)	8.03E-02	mg/kg	8.03E-02	mg/kg	M	2.9E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	9.6E-02
	Chromium	5.65E-01	mg/kg	5.65E-01	mg/kg	M	2.0E-04	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	6.7E-02
	Cyanide	5.69E+00	mg/kg	5.69E+00	mg/kg	M	2.0E-03	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.0E-01
	Manganese	3.23E+00	mg/kg	3.23E+00	mg/kg	M	1.2E-03	mg/kg-day	1.4E-01	mg/kg-day	NA	NA	8.2E-03
	Mercury (as methylmercury)	1.08E+00	mg/kg	1.08E+00	mg/kg	M	3.9E-04	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	3.9E+00
	Selenium	1.47E+00	mg/kg	1.47E+00	mg/kg	M	5.2E-04	mg/kg-day	5.0E-03	mg/kg-day	NA	NA	1.0E-01
	Vanadium	6.27E-01	mg/kg	6.27E-01	mg/kg	M	2.2E-04	mg/kg-day	7.0E-03	mg/kg-day	NA	NA	3.2E-02
	Zinc	4.37E+01	mg/kg	4.37E+01	mg/kg	M	1.6E-02	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	5.2E-02
	SVOCs												
	bis(2-ethylhexyl)phthalate	2.30E+00	mg/kg	2.30E+00	mg/kg	M	8.2E-04	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	4.1E-02
	Hexachlorobenzene	1.30E-02	mg/kg	1.30E-02	mg/kg	M	4.6E-06	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	5.8E-03
	Pesticides												
	2,4'-DDE	4.13E-03	mg/kg	4.13E-03	mg/kg	M	1.5E-06	mg/kg-day	NA		NA	NA	NA
	4,4'-DDD	1.33E-02	mg/kg	1.33E-02	mg/kg	M	4.7E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.6E-03
	4,4'-DDE	3.44E-02	mg/kg	3.44E-02	mg/kg	M	1.2E-05	mg/kg-day	7.0E-04	mg/kg-day	NA	NA	1.8E-02
	4,4'-DDT	9.49E-03	mg/kg	9.49E-03	mg/kg	M	3.4E-06	mg/kg-day	5.0E-04	mg/kg-day	NA	NA	6.8E-03
	Aldrin	2.53E-03	mg/kg	2.53E-03	mg/kg	M	9.0E-07	mg/kg-day	3.0E-05	mg/kg-day	NA	NA	3.0E-02
	delta-BHC	2.52E-03	mg/kg	2.52E-03	mg/kg	M	9.0E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.0E-03
	Dieldrin	3.82E-03	mg/kg	3.82E-03	mg/kg	M	1.4E-06	mg/kg-day	5.0E-05	mg/kg-day	NA	NA	2.7E-02
	Heptachlor epoxide	4.14E-03	mg/kg	4.14E-03	mg/kg	M	1.5E-06	mg/kg-day	1.3E-05	mg/kg-day	NA	NA	1.1E-01
	Sum of chlordanes	9.73E-03	mg/kg	9.73E-03	mg/kg	M	3.5E-06	mg/kg-day	5.0E-04	mg/kg-day	NA	NA	6.9E-03
	PCBs												
	Sum of Low MW PCBs	4.79E-01	mg/kg	4.79E-01	mg/kg	M	1.7E-04	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	2.4E+00
	Sum of High MW PCBs	5.77E-01	mg/kg	5.77E-01	mg/kg	M	2.1E-04	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.0E+01
	Sum of PCBs	9.13E-01	mg/kg	9.13E-01	mg/kg	M	3.3E-04	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.95E-05	mg/kg	1.95E-05	mg/kg	M	7.0E-09	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												18.2
Dermal	NA												
	Sum of Non-Cancer Hazards from Dermal Contact												NA

Total Non-Cancer Hazards 18.2

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.2.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Fish Tissue
Exposure Medium: Fish Tissue
Exposure Point: Fish fillet tissue from Onondaga Lake
Receptor Population: Recreational
Receptor Age: Young Child (less than 6)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Antimony	9.92E-01	mg/kg	9.92E-01	mg/kg	M	5.5E-04	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	1.4E+00
	Arsenic (inorganic)	8.03E-02	mg/kg	8.03E-02	mg/kg	M	4.5E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.5E-01
	Chromium	5.65E-01	mg/kg	5.65E-01	mg/kg	M	3.1E-04	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.0E-01
	Cyanide	5.69E+00	mg/kg	5.69E+00	mg/kg	M	3.2E-03	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.6E-01
	Manganese	3.23E+00	mg/kg	3.23E+00	mg/kg	M	1.8E-03	mg/kg-day	1.4E-01	mg/kg-day	NA	NA	1.3E-02
	Mercury (as methylmercury)	1.08E+00	mg/kg	1.08E+00	mg/kg	M	6.0E-04	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	6.0E+00
	Selenium	1.47E+00	mg/kg	1.47E+00	mg/kg	M	8.2E-04	mg/kg-day	5.0E-03	mg/kg-day	NA	NA	1.6E-01
	Vanadium	6.27E-01	mg/kg	6.27E-01	mg/kg	M	3.5E-04	mg/kg-day	7.0E-03	mg/kg-day	NA	NA	5.0E-02
	Zinc	4.37E+01	mg/kg	4.37E+01	mg/kg	M	2.4E-02	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	8.1E-02
	SVOCs												
	bis(2-ethylhexyl)phthalate	2.30E+00	mg/kg	2.30E+00	mg/kg	M	1.3E-03	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	6.4E-02
	Hexachlorobenzene	1.30E-02	mg/kg	1.30E-02	mg/kg	M	7.2E-06	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	9.0E-03
	Pesticides												
	2,4'-DDE	4.13E-03	mg/kg	4.13E-03	mg/kg	M	2.3E-06	mg/kg-day	NA		NA	NA	NA
	4,4'-DDD	1.33E-02	mg/kg	1.33E-02	mg/kg	M	7.4E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.5E-03
	4,4'-DDE	3.44E-02	mg/kg	3.44E-02	mg/kg	M	1.9E-05	mg/kg-day	7.0E-04	mg/kg-day	NA	NA	2.7E-02
	4,4'-DDT	9.49E-03	mg/kg	9.49E-03	mg/kg	M	5.3E-06	mg/kg-day	5.0E-04	mg/kg-day	NA	NA	1.1E-02
	Aldrin	2.53E-03	mg/kg	2.53E-03	mg/kg	M	1.4E-06	mg/kg-day	3.0E-05	mg/kg-day	NA	NA	4.7E-02
	delta-BHC	2.52E-03	mg/kg	2.52E-03	mg/kg	M	1.4E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	4.7E-03
	Dieldrin	3.82E-03	mg/kg	3.82E-03	mg/kg	M	2.1E-06	mg/kg-day	5.0E-05	mg/kg-day	NA	NA	4.2E-02
	Heptachlor epoxide	4.14E-03	mg/kg	4.14E-03	mg/kg	M	2.3E-06	mg/kg-day	1.3E-05	mg/kg-day	NA	NA	1.8E-01
	Sum of chlordanes	9.73E-03	mg/kg	9.73E-03	mg/kg	M	5.4E-06	mg/kg-day	5.0E-04	mg/kg-day	NA	NA	1.1E-02
	PCBs												
	Sum of Low MW PCBs	4.79E-01	mg/kg	4.79E-01	mg/kg	M	2.7E-04	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	3.8E+00
	Sum of High MW PCBs	5.77E-01	mg/kg	5.77E-01	mg/kg	M	3.2E-04	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.6E+01
	Sum of PCBs	9.13E-01	mg/kg	9.13E-01	mg/kg	M	5.1E-04	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.95E-05	mg/kg	1.95E-05	mg/kg	M	1.1E-08	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												28.3
	Sum of Non-Cancer Hazards from Dermal Contact												NA

Total Non-Cancer Hazards 28.3

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.3.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Fish Tissue
Exposure Medium: Fish Tissue
Exposure Point: Fish fillet tissue from Onondaga Lake
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Antimony	9.92E-01	mg/kg	9.92E-01	mg/kg	M	3.8E-04	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	9.6E-01
	Arsenic (inorganic)	8.03E-02	mg/kg	8.03E-02	mg/kg	M	3.1E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.0E-01
	Chromium	5.65E-01	mg/kg	5.65E-01	mg/kg	M	2.2E-04	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	7.3E-02
	Cyanide	5.69E+00	mg/kg	5.69E+00	mg/kg	M	2.2E-03	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.1E-01
	Manganese	3.23E+00	mg/kg	3.23E+00	mg/kg	M	1.3E-03	mg/kg-day	1.4E-01	mg/kg-day	NA	NA	8.9E-03
	Mercury (as methylmercury)	1.08E+00	mg/kg	1.08E+00	mg/kg	M	4.2E-04	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	4.2E+00
	Selenium	1.47E+00	mg/kg	1.47E+00	mg/kg	M	5.7E-04	mg/kg-day	5.0E-03	mg/kg-day	NA	NA	1.1E-01
	Vanadium	6.27E-01	mg/kg	6.27E-01	mg/kg	M	2.4E-04	mg/kg-day	7.0E-03	mg/kg-day	NA	NA	3.5E-02
	Zinc	4.37E+01	mg/kg	4.37E+01	mg/kg	M	1.7E-02	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	5.6E-02
	SVOCs												
	bis(2-ethylhexyl)phthalate	2.30E+00	mg/kg	2.30E+00	mg/kg	M	8.9E-04	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	4.5E-02
	Hexachlorobenzene	1.30E-02	mg/kg	1.30E-02	mg/kg	M	5.0E-06	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	6.3E-03
	Pesticides												
	2,4'-DDE	4.13E-03	mg/kg	4.13E-03	mg/kg	M	1.6E-06	mg/kg-day	NA		NA	NA	NA
	4,4'-DDD	1.33E-02	mg/kg	1.33E-02	mg/kg	M	5.1E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.7E-03
	4,4'-DDE	3.44E-02	mg/kg	3.44E-02	mg/kg	M	1.3E-05	mg/kg-day	7.0E-04	mg/kg-day	NA	NA	1.9E-02
	4,4'-DDT	9.49E-03	mg/kg	9.49E-03	mg/kg	M	3.7E-06	mg/kg-day	5.0E-04	mg/kg-day	NA	NA	7.4E-03
	Aldrin	2.53E-03	mg/kg	2.53E-03	mg/kg	M	9.8E-07	mg/kg-day	3.0E-05	mg/kg-day	NA	NA	3.3E-02
	delta-BHC	2.52E-03	mg/kg	2.52E-03	mg/kg	M	9.8E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.3E-03
	Dieldrin	3.82E-03	mg/kg	3.82E-03	mg/kg	M	1.5E-06	mg/kg-day	5.0E-05	mg/kg-day	NA	NA	3.0E-02
	Heptachlor epoxide	4.14E-03	mg/kg	4.14E-03	mg/kg	M	1.6E-06	mg/kg-day	1.3E-05	mg/kg-day	NA	NA	1.2E-01
	Sum of chlordanes	9.73E-03	mg/kg	9.73E-03	mg/kg	M	3.8E-06	mg/kg-day	5.0E-04	mg/kg-day	NA	NA	7.5E-03
	PCBs												
	Sum of Low MW PCBs	4.79E-01	mg/kg	4.79E-01	mg/kg	M	1.9E-04	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	2.6E+00
	Sum of High MW PCBs	5.77E-01	mg/kg	5.77E-01	mg/kg	M	2.2E-04	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.1E+01
	Sum of PCBs	9.13E-01	mg/kg	9.13E-01	mg/kg	M	3.5E-04	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.95E-05	mg/kg	1.95E-05	mg/kg	M	7.6E-09	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												19.8
Dermal	NA												
	Sum of Non-Cancer Hazards from Dermal Contact												NA

Total Non-Cancer Hazards 19.8

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.4.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
NORTH BASIN - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: North Basin Sediments
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Antimony	9.20E+00	mg/kg	9.20E+00	mg/kg	M	1.6E-06	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	4.0E-03
	Arsenic	3.86E+00	mg/kg	3.86E+00	mg/kg	M	6.6E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.2E-03
	Barium	1.51E+02	mg/kg	1.51E+02	mg/kg	M	2.6E-05	mg/kg-day	7.0E-02	mg/kg-day	NA	NA	3.7E-04
	Cadmium	2.03E+00	mg/kg	2.03E+00	mg/kg	M	3.5E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	3.5E-04
	Chromium	3.24E+01	mg/kg	3.24E+01	mg/kg	M	5.6E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.9E-03
	Iron	5.79E+03	mg/kg	5.79E+03	mg/kg	M	1.0E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	3.3E-03
	Manganese	2.77E+02	mg/kg	2.77E+02	mg/kg	M	4.8E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	2.0E-03
	Methylmercury	1.99E-03	mg/kg	1.99E-03	mg/kg	M	3.4E-10	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	3.4E-06
	Total Mercury	1.89E+00	mg/kg	1.89E+00	mg/kg	M	3.3E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.1E-03
	Thallium	2.93E-01	mg/kg	2.93E-01	mg/kg	M	5.0E-08	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	7.6E-04
	VOCs												
	Benzene	8.94E-02	mg/kg	8.94E-02	mg/kg	M	1.5E-08	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	5.1E-06
	SVOCs												
	Hexachlorobenzene	4.06E-01	mg/kg	4.06E-01	mg/kg	M	7.0E-08	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	8.7E-05
	PAHs												
	Benz(a)anthracene	1.63E-01	mg/kg	1.63E-01	mg/kg	M	2.8E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.56E-01	mg/kg	1.56E-01	mg/kg	M	2.7E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	2.37E-01	mg/kg	2.37E-01	mg/kg	M	4.1E-08	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.83E-02	mg/kg	4.83E-02	mg/kg	M	8.3E-09	mg/kg-day	NA		NA	NA	NA
	Naphthalene	3.89E-01	mg/kg	3.89E-01	mg/kg	M	6.7E-08	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	3.4E-06
	PCBs												
	Aroclor 1254	4.12E-02	mg/kg	4.12E-02	mg/kg	M	7.1E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.5E-04
	Aroclor 1268	3.47E-02	mg/kg	3.47E-02	mg/kg	M	6.0E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.0E-04
	Sum of PCBs	8.62E-02	mg/kg	8.62E-02	mg/kg	M	1.5E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.95E-06	mg/kg	1.95E-06	mg/kg	M	3.4E-13	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												1.7E-02

TABLE 7.4.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
NORTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Dermal	**Metals and Organometallic Compounds**												
	Antimony	9.20E+00	mg/kg	9.20E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	3.86E+00	mg/kg	3.86E+00	mg/kg	M	3.4E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.1E-03
	Barium	1.51E+02	mg/kg	1.51E+02	mg/kg	M	NA		4.9E-03	mg/kg-day	NA	NA	NA
	Cadmium	2.03E+00	mg/kg	2.03E+00	mg/kg	M	6.0E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	2.4E-04
	Chromium	3.24E+01	mg/kg	3.24E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	5.79E+03	mg/kg	5.79E+03	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	2.77E+02	mg/kg	2.77E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Methylmercury	1.99E-03	mg/kg	1.99E-03	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Total Mercury	1.89E+00	mg/kg	1.89E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Thallium	2.93E-01	mg/kg	2.93E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	VOCs												
	Benzene	8.94E-02	mg/kg	8.94E-02	mg/kg	M	NA		3.0E-03	mg/kg-day	NA	NA	NA
	SVOCs												
	Hexachlorobenzene	4.06E-01	mg/kg	4.06E-01	mg/kg	M	1.2E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	1.5E-04
	PAHs												
	Benz(a)anthracene	1.63E-01	mg/kg	1.63E-01	mg/kg	M	6.2E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.56E-01	mg/kg	1.56E-01	mg/kg	M	6.0E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	2.37E-01	mg/kg	2.37E-01	mg/kg	M	9.1E-08	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.83E-02	mg/kg	4.83E-02	mg/kg	M	1.8E-08	mg/kg-day	NA		NA	NA	NA
	Naphthalene	3.89E-01	mg/kg	3.89E-01	mg/kg	M	1.5E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	7.4E-06
	PCBs												
	Aroclor 1254	4.12E-02	mg/kg	4.12E-02	mg/kg	M	1.7E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	8.5E-04
	Aroclor 1268	3.47E-02	mg/kg	3.47E-02	mg/kg	M	1.4E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	7.1E-04
	Sum of PCBs	8.62E-02	mg/kg	8.62E-02	mg/kg	M	3.6E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.95E-06	mg/kg	1.95E-06	mg/kg	M	1.7E-13	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												3.1E-03

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

Total Non-Cancer Hazards 0.02

TABLE 7.5.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
NORTH BASIN - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: North Basin Sediments
Receptor Population: Recreational
Receptor Age: Younger Child (less than 6)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Antimony	9.20E+00	mg/kg	9.20E+00	mg/kg	M	1.5E-05	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	3.7E-02
	Arsenic	3.86E+00	mg/kg	3.86E+00	mg/kg	M	6.2E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.1E-02
	Barium	1.51E+02	mg/kg	1.51E+02	mg/kg	M	2.4E-04	mg/kg-day	7.0E-02	mg/kg-day	NA	NA	3.5E-03
	Cadmium	2.03E+00	mg/kg	2.03E+00	mg/kg	M	3.3E-06	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	3.3E-03
	Chromium	3.24E+01	mg/kg	3.24E+01	mg/kg	M	5.2E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.7E-02
	Iron	5.79E+03	mg/kg	5.79E+03	mg/kg	M	9.3E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	3.1E-02
	Manganese	2.77E+02	mg/kg	2.77E+02	mg/kg	M	4.5E-04	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	1.9E-02
	Methylmercury	1.99E-03	mg/kg	1.99E-03	mg/kg	M	3.2E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	3.2E-05
	Total Mercury	1.89E+00	mg/kg	1.89E+00	mg/kg	M	3.0E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.0E-02
	Thallium	2.93E-01	mg/kg	2.93E-01	mg/kg	M	4.7E-07	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	7.1E-03
	VOCs												
	Benzene	8.94E-02	mg/kg	8.94E-02	mg/kg	M	1.4E-07	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	4.8E-05
	SVOCs												
	Hexachlorobenzene	4.06E-01	mg/kg	4.06E-01	mg/kg	M	6.5E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	8.2E-04
	PAHs												
	Benz(a)anthracene	1.63E-01	mg/kg	1.63E-01	mg/kg	M	2.6E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.56E-01	mg/kg	1.56E-01	mg/kg	M	2.5E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	2.37E-01	mg/kg	2.37E-01	mg/kg	M	3.8E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.83E-02	mg/kg	4.83E-02	mg/kg	M	7.8E-08	mg/kg-day	NA		NA	NA	NA
	Naphthalene	3.89E-01	mg/kg	3.89E-01	mg/kg	M	6.3E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	3.1E-05
	PCBs												
	Aroclor 1254	4.12E-02	mg/kg	4.12E-02	mg/kg	M	6.6E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.3E-03
	Aroclor 1268	3.47E-02	mg/kg	3.47E-02	mg/kg	M	5.6E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.8E-03
	Sum of PCBs	8.62E-02	mg/kg	8.62E-02	mg/kg	M	1.4E-07	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.95E-06	mg/kg	1.95E-06	mg/kg	M	3.1E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												1.6E-01

TABLE 7.5.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
NORTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Dermal	**Metals and Organometallic Compounds**												
	Antimony	9.20E+00	mg/kg	9.20E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	3.86E+00	mg/kg	3.86E+00	mg/kg	M	7.0E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.3E-02
	Barium	1.51E+02	mg/kg	1.51E+02	mg/kg	M	NA		4.9E-03	mg/kg-day	NA	NA	NA
	Cadmium	2.03E+00	mg/kg	2.03E+00	mg/kg	M	1.2E-07	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	4.9E-03
	Chromium	3.24E+01	mg/kg	3.24E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	5.79E+03	mg/kg	5.79E+03	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	2.77E+02	mg/kg	2.77E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Methylmercury	1.99E-03	mg/kg	1.99E-03	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Total Mercury	1.89E+00	mg/kg	1.89E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Thallium	2.93E-01	mg/kg	2.93E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	VOCs												
	Benzene	8.94E-02	mg/kg	8.94E-02	mg/kg	M	NA		3.0E-03	mg/kg-day	NA	NA	NA
	SVOCs												
	Hexachlorobenzene	4.06E-01	mg/kg	4.06E-01	mg/kg	M	2.5E-06	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	3.1E-03
	PAHs												
	Benz(a)anthracene	1.63E-01	mg/kg	1.63E-01	mg/kg	M	1.3E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.56E-01	mg/kg	1.56E-01	mg/kg	M	1.2E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	2.37E-01	mg/kg	2.37E-01	mg/kg	M	1.9E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.83E-02	mg/kg	4.83E-02	mg/kg	M	3.8E-07	mg/kg-day	NA		NA	NA	NA
	Naphthalene	3.89E-01	mg/kg	3.89E-01	mg/kg	M	3.1E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.5E-04
	PCBs												
	Aroclor 1254	4.12E-02	mg/kg	4.12E-02	mg/kg	M	3.5E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.8E-02
	Aroclor 1268	3.47E-02	mg/kg	3.47E-02	mg/kg	M	2.9E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.5E-02
	Sum of PCBs	8.62E-02	mg/kg	8.62E-02	mg/kg	M	7.3E-07	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.95E-06	mg/kg	1.95E-06	mg/kg	M	3.6E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												6.4E-02

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

Total Non-Cancer Hazards 0.22

TABLE 7.6.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
NORTH BASIN - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: North Basin Sediments
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Antimony	9.20E+00	mg/kg	9.20E+00	mg/kg	M	2.6E-06	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	6.4E-03
	Arsenic	3.86E+00	mg/kg	3.86E+00	mg/kg	M	1.1E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.6E-03
	Barium	1.51E+02	mg/kg	1.51E+02	mg/kg	M	4.2E-05	mg/kg-day	7.0E-02	mg/kg-day	NA	NA	6.0E-04
	Cadmium	2.03E+00	mg/kg	2.03E+00	mg/kg	M	5.7E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	5.7E-04
	Chromium	3.24E+01	mg/kg	3.24E+01	mg/kg	M	9.1E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	3.0E-03
	Iron	5.79E+03	mg/kg	5.79E+03	mg/kg	M	1.6E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	5.4E-03
	Manganese	2.77E+02	mg/kg	2.77E+02	mg/kg	M	7.8E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	3.3E-03
	Methylmercury	1.99E-03	mg/kg	1.99E-03	mg/kg	M	5.6E-10	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	5.6E-06
	Total Mercury	1.89E+00	mg/kg	1.89E+00	mg/kg	M	5.3E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.8E-03
	Thallium	2.93E-01	mg/kg	2.93E-01	mg/kg	M	8.2E-08	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	1.2E-03
	VOCs												
	Benzene	8.94E-02	mg/kg	8.94E-02	mg/kg	M	2.5E-08	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	8.4E-06
	SVOCs												
	Hexachlorobenzene	4.06E-01	mg/kg	4.06E-01	mg/kg	M	1.1E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	1.4E-04
	PAHs												
	Benz(a)anthracene	1.63E-01	mg/kg	1.63E-01	mg/kg	M	4.6E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.56E-01	mg/kg	1.56E-01	mg/kg	M	4.4E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	2.37E-01	mg/kg	2.37E-01	mg/kg	M	6.7E-08	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.83E-02	mg/kg	4.83E-02	mg/kg	M	1.4E-08	mg/kg-day	NA		NA	NA	NA
	Naphthalene	3.89E-01	mg/kg	3.89E-01	mg/kg	M	1.1E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	5.5E-06
	PCBs												
	Aroclor 1254	4.12E-02	mg/kg	4.12E-02	mg/kg	M	1.2E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	5.8E-04
	Aroclor 1268	3.47E-02	mg/kg	3.47E-02	mg/kg	M	9.7E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	4.9E-04
	Sum of PCBs	8.62E-02	mg/kg	8.62E-02	mg/kg	M	2.4E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.95E-06	mg/kg	1.95E-06	mg/kg	M	5.5E-13	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												2.7E-02

TABLE 7.6.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
NORTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Dermal	**Metals and Organometallic Compounds**												
	Antimony	9.20E+00	mg/kg	9.20E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	3.86E+00	mg/kg	3.86E+00	mg/kg	M	4.7E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.6E-02
	Barium	1.51E+02	mg/kg	1.51E+02	mg/kg	M	NA		4.9E-03	mg/kg-day	NA	NA	NA
	Cadmium	2.03E+00	mg/kg	2.03E+00	mg/kg	M	8.3E-08	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	3.3E-03
	Chromium	3.24E+01	mg/kg	3.24E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	5.79E+03	mg/kg	5.79E+03	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	2.77E+02	mg/kg	2.77E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Methylmercury	1.99E-03	mg/kg	1.99E-03	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Total Mercury	1.89E+00	mg/kg	1.89E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Thallium	2.93E-01	mg/kg	2.93E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	VOCs												
	Benzene	8.94E-02	mg/kg	8.94E-02	mg/kg	M	NA		3.0E-03	mg/kg-day	NA	NA	NA
	SVOCs												
	Hexachlorobenzene	4.06E-01	mg/kg	4.06E-01	mg/kg	M	1.7E-06	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	2.1E-03
	PAHs												
	Benz(a)anthracene	1.63E-01	mg/kg	1.63E-01	mg/kg	M	8.7E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.56E-01	mg/kg	1.56E-01	mg/kg	M	8.3E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	2.37E-01	mg/kg	2.37E-01	mg/kg	M	1.3E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.83E-02	mg/kg	4.83E-02	mg/kg	M	2.6E-07	mg/kg-day	NA		NA	NA	NA
	Naphthalene	3.89E-01	mg/kg	3.89E-01	mg/kg	M	2.1E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.0E-04
	PCBs												
	Aroclor 1254	4.12E-02	mg/kg	4.12E-02	mg/kg	M	2.4E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.2E-02
	Aroclor 1268	3.47E-02	mg/kg	3.47E-02	mg/kg	M	2.0E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	9.9E-03
	Sum of PCBs	8.62E-02	mg/kg	8.62E-02	mg/kg	M	4.9E-07	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.95E-06	mg/kg	1.95E-06	mg/kg	M	2.4E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												4.3E-02

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

Total Non-Cancer Hazards 0.07

TABLE 7.7.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
NORTH BASIN - ONONDAGA LAKE

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: North Basin Sediments
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Antimony	9.20E+00	mg/kg	9.20E+00	mg/kg	M	3.0E-06	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	7.4E-03
	Arsenic	3.86E+00	mg/kg	3.86E+00	mg/kg	M	1.2E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	4.1E-03
	Barium	1.51E+02	mg/kg	1.51E+02	mg/kg	M	4.9E-05	mg/kg-day	7.0E-02	mg/kg-day	NA	NA	7.0E-04
	Cadmium	2.03E+00	mg/kg	2.03E+00	mg/kg	M	6.6E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	6.6E-04
	Chromium	3.24E+01	mg/kg	3.24E+01	mg/kg	M	1.0E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	3.5E-03
	Iron	5.79E+03	mg/kg	5.79E+03	mg/kg	M	1.9E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	6.2E-03
	Manganese	2.77E+02	mg/kg	2.77E+02	mg/kg	M	9.0E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	3.8E-03
	Methylmercury	1.99E-03	mg/kg	1.99E-03	mg/kg	M	6.4E-10	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	6.4E-06
	Total Mercury	1.89E+00	mg/kg	1.89E+00	mg/kg	M	6.1E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.0E-03
	Thallium	2.93E-01	mg/kg	2.93E-01	mg/kg	M	9.5E-08	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	1.4E-03
	VOCs												
	Benzene	8.94E-02	mg/kg	8.94E-02	mg/kg	M	2.9E-08	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	9.6E-06
	SVOCs												
	Hexachlorobenzene	4.06E-01	mg/kg	4.06E-01	mg/kg	M	1.3E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	1.6E-04
	PAHs												
	Benz(a)anthracene	1.63E-01	mg/kg	1.63E-01	mg/kg	M	5.3E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.56E-01	mg/kg	1.56E-01	mg/kg	M	5.0E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	2.37E-01	mg/kg	2.37E-01	mg/kg	M	7.7E-08	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.83E-02	mg/kg	4.83E-02	mg/kg	M	1.6E-08	mg/kg-day	NA		NA	NA	NA
	Naphthalene	3.89E-01	mg/kg	3.89E-01	mg/kg	M	1.3E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	6.3E-06
	PCBs												
	Aroclor 1254	4.12E-02	mg/kg	4.12E-02	mg/kg	M	1.3E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	6.7E-04
	Aroclor 1268	3.47E-02	mg/kg	3.47E-02	mg/kg	M	1.1E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	5.6E-04
	Sum of PCBs	8.62E-02	mg/kg	8.62E-02	mg/kg	M	2.8E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.95E-06	mg/kg	1.95E-06	mg/kg	M	6.3E-13	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												3.1E-02

TABLE 7.7.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
NORTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Dermal	**Metals and Organometallic Compounds**												
	Antimony	9.20E+00	mg/kg	9.20E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	3.86E+00	mg/kg	3.86E+00	mg/kg	M	5.8E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.9E-03
	Barium	1.51E+02	mg/kg	1.51E+02	mg/kg	M	NA		4.9E-03	mg/kg-day	NA	NA	NA
	Cadmium	2.03E+00	mg/kg	2.03E+00	mg/kg	M	1.0E-08	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	4.1E-04
	Chromium	3.24E+01	mg/kg	3.24E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	5.79E+03	mg/kg	5.79E+03	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	2.77E+02	mg/kg	2.77E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Methylmercury	1.99E-03	mg/kg	1.99E-03	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Total Mercury	1.89E+00	mg/kg	1.89E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Thallium	2.93E-01	mg/kg	2.93E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	VOCs												
	Benzene	8.94E-02	mg/kg	8.94E-02	mg/kg	M	NA		3.0E-03	mg/kg-day	NA	NA	NA
	SVOCs												
	Hexachlorobenzene	4.06E-01	mg/kg	4.06E-01	mg/kg	M	2.0E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	2.5E-04
	PAHs												
	Benz(a)anthracene	1.63E-01	mg/kg	1.63E-01	mg/kg	M	1.1E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.56E-01	mg/kg	1.56E-01	mg/kg	M	1.0E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	2.37E-01	mg/kg	2.37E-01	mg/kg	M	1.5E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.83E-02	mg/kg	4.83E-02	mg/kg	M	3.2E-08	mg/kg-day	NA		NA	NA	NA
	Naphthalene	3.89E-01	mg/kg	3.89E-01	mg/kg	M	2.5E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.3E-05
	PCBs												
	Aroclor 1254	4.12E-02	mg/kg	4.12E-02	mg/kg	M	2.9E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.4E-03
	Aroclor 1268	3.47E-02	mg/kg	3.47E-02	mg/kg	M	2.4E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.2E-03
	Sum of PCBs	8.62E-02	mg/kg	8.62E-02	mg/kg	M	6.1E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.95E-06	mg/kg	1.95E-06	mg/kg	M	2.9E-13	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												5.3E-03

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

Total Non-Cancer Hazards 0.04

TABLE 7.8.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SOUTH BASIN - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: South Basin Sediments
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Aluminum	4.08E+03	mg/kg	4.08E+03	mg/kg	M	2.2E-04	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	2.2E-04
	Antimony	3.05E+00	mg/kg	3.05E+00	mg/kg	M	1.7E-07	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	4.2E-04
	Arsenic	1.24E+01	mg/kg	1.24E+01	mg/kg	M	6.8E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.3E-03
	Barium	9.02E+02	mg/kg	9.02E+02	mg/kg	M	4.9E-05	mg/kg-day	7.0E-02	mg/kg-day	NA	NA	7.1E-04
	Cadmium	3.91E+00	mg/kg	3.91E+00	mg/kg	M	2.1E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	2.1E-04
	Chromium	2.05E+02	mg/kg	2.05E+02	mg/kg	M	1.1E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	3.7E-03
	Copper	9.61E+01	mg/kg	9.61E+01	mg/kg	M	5.3E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	1.3E-04
	Cyanide	1.51E+00	mg/kg	1.51E+00	mg/kg	M	8.3E-08	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	4.1E-06
	Iron	1.22E+04	mg/kg	1.22E+04	mg/kg	M	6.7E-04	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	2.2E-03
	Lead	2.35E+02	mg/kg	2.35E+02	mg/kg	M	1.3E-05	mg/kg-day	No data		NA	NA	NA
	Manganese	2.95E+02	mg/kg	2.95E+02	mg/kg	M	1.6E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	6.9E-04
	Methylmercury	2.25E-02	mg/kg	2.25E-02	mg/kg	M	1.2E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	1.2E-05
	Total Mercury	1.89E+01	mg/kg	1.89E+01	mg/kg	M	1.0E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.4E-03
	Nickel	7.32E+01	mg/kg	7.32E+01	mg/kg	M	4.0E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	2.0E-04
	Thallium	4.01E-01	mg/kg	4.01E-01	mg/kg	M	2.2E-08	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	3.3E-04
	Vanadium	2.99E+01	mg/kg	2.99E+01	mg/kg	M	1.6E-06	mg/kg-day	7.0E-03	mg/kg-day	NA	NA	2.3E-04
	VOCs												
	Benzene	6.12E+01	mg/kg	6.12E+01	mg/kg	M	3.4E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.1E-03
	Chlorobenzene	1.80E+02	mg/kg	1.80E+02	mg/kg	M	9.9E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	4.9E-04
	Methylene chloride	8.50E+00	mg/kg	8.50E+00	mg/kg	M	4.7E-07	mg/kg-day	6.0E-02	mg/kg-day	NA	NA	7.8E-06
	Xylenes	3.30E+02	mg/kg	3.30E+02	mg/kg	M	1.8E-05	mg/kg-day	2.0E+00	mg/kg-day	NA	NA	9.0E-06
	SVOCs												
	Dibenzofuran	1.80E+01	mg/kg	1.80E+01	mg/kg	M	9.9E-07	mg/kg-day	4.0E-03	mg/kg-day	NA	NA	2.5E-04
	Hexachlorobenzene	6.66E+00	mg/kg	6.66E+00	mg/kg	M	3.6E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	4.6E-04
	PAHs												
	Acenaphthylene	4.24E+00	mg/kg	4.24E+00	mg/kg	M	2.3E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	7.7E-06
	Benz[a]anthracene	9.76E+00	mg/kg	9.76E+00	mg/kg	M	5.3E-07	mg/kg-day	NA		NA	NA	NA
	Benzo[a]pyrene	7.40E+00	mg/kg	7.40E+00	mg/kg	M	4.1E-07	mg/kg-day	NA		NA	NA	NA
	Benzo[b]fluoranthene	9.82E+00	mg/kg	9.82E+00	mg/kg	M	5.4E-07	mg/kg-day	NA		NA	NA	NA

TABLE 7.8.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SOUTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Benzo[ghi]perylene	6.39E+00	mg/kg	6.39E+00	mg/kg	M	3.5E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.2E-05
	Benzo[k]fluoranthene	3.55E+00	mg/kg	3.55E+00	mg/kg	M	1.9E-07	mg/kg-day	NA		NA	NA	NA
	Chrysene	9.62E+00	mg/kg	9.62E+00	mg/kg	M	5.3E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz[a,h]anthracene	1.63E+00	mg/kg	1.63E+00	mg/kg	M	8.9E-08	mg/kg-day	NA		NA	NA	NA
	1,3-Dichlorobenzene	4.64E+00	mg/kg	4.64E+00	mg/kg	M	2.5E-07	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	2.8E-04
	1,4-Dichlorobenzene	6.28E+01	mg/kg	6.28E+01	mg/kg	M	3.4E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.1E-04
	Fluoranthene	3.37E+01	mg/kg	3.37E+01	mg/kg	M	1.8E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	4.6E-05
	Indeno[1,2,3-cd]pyrene	3.77E+00	mg/kg	3.77E+00	mg/kg	M	2.1E-07	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	1.76E+02	mg/kg	1.76E+02	mg/kg	M	9.7E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	4.8E-04
	Naphthalene	1.05E+03	mg/kg	1.05E+03	mg/kg	M	5.8E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	2.9E-03
	Phenanthrene	5.25E+01	mg/kg	5.25E+01	mg/kg	M	2.9E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	9.6E-05
	Pesticides												
	Dieldrin	8.69E-03	mg/kg	8.69E-03	mg/kg	M	4.8E-10	mg/kg-day	5.0E-05	mg/kg-day	NA	NA	9.5E-06
	PCBs												
	Aroclor 1221	8.14E-02	mg/kg	8.14E-02	mg/kg	M	4.5E-09	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	6.4E-05
	Aroclor 1242	3.46E-01	mg/kg	3.46E-01	mg/kg	M	1.9E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	2.7E-04
	Aroclor 1248	2.25E-01	mg/kg	2.25E-01	mg/kg	M	1.2E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	6.2E-04
	Aroclor 1254	1.39E-01	mg/kg	1.39E-01	mg/kg	M	7.6E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.8E-04
	Aroclor 1260	2.01E-01	mg/kg	2.01E-01	mg/kg	M	1.1E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	5.5E-04
	PCBs	1.06E+00	mg/kg	1.06E+00	mg/kg	M	5.8E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	3.77E-04	mg/kg	3.77E-04	mg/kg	M	2.1E-11	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												2.3E-02
Dermal	**Metals and Organometallic Compounds**												
	Aluminum	4.08E+03	mg/kg	4.08E+03	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Antimony	3.05E+00	mg/kg	3.05E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	1.24E+01	mg/kg	1.24E+01	mg/kg	M	3.5E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.2E-03
	Barium	9.02E+02	mg/kg	9.02E+02	mg/kg	M	NA		4.9E-03	mg/kg-day	NA	NA	NA
	Cadmium	3.91E+00	mg/kg	3.91E+00	mg/kg	M	3.7E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	1.5E-04
	Chromium	2.05E+02	mg/kg	2.05E+02	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Copper	9.61E+01	mg/kg	9.61E+01	mg/kg	M	NA		4.0E-02	mg/kg-day	NA	NA	NA
	Cyanide	1.51E+00	mg/kg	1.51E+00	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Iron	1.22E+04	mg/kg	1.22E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Lead	2.35E+02	mg/kg	2.35E+02	mg/kg	M	NA		NA		NA	NA	NA
	Manganese	2.95E+02	mg/kg	2.95E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Methylmercury	2.25E-02	mg/kg	2.25E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Total Mercury	1.89E+01	mg/kg	1.89E+01	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA

TABLE 7.8.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SOUTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
	Nickel	7.32E+01	mg/kg	7.32E+01	mg/kg	M	NA		8.0E-04	mg/kg-day	NA	NA	NA
	Thallium	4.01E-01	mg/kg	4.01E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	Vanadium	2.99E+01	mg/kg	2.99E+01	mg/kg	M	NA		1.8E-04	mg/kg-day	NA	NA	NA
	VOCs												
	Benzene	6.12E+01	mg/kg	6.12E+01	mg/kg	M	NA		3.0E-03	mg/kg-day	NA	NA	NA
	Chlorobenzene	1.80E+02	mg/kg	1.80E+02	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Methylene chloride	8.50E+00	mg/kg	8.50E+00	mg/kg	M	NA		6.0E-02	mg/kg-day	NA	NA	NA
	Xylenes	3.30E+02	mg/kg	3.30E+02	mg/kg	M	NA		2.0E+00	mg/kg-day	NA	NA	NA
	SVOCs												
	Dibenzofuran	1.80E+01	mg/kg	1.80E+01	mg/kg	M	1.7E-06	mg/kg-day	4.0E-03	mg/kg-day	NA	NA	4.2E-04
	Hexachlorobenzene	6.66E+00	mg/kg	6.66E+00	mg/kg	M	6.2E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	7.8E-04
	PAHs												
	Acenaphthylene	4.24E+00	mg/kg	4.24E+00	mg/kg	M	5.2E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.7E-05
	Benz[a]anthracene	9.76E+00	mg/kg	9.76E+00	mg/kg	M	1.2E-06	mg/kg-day	NA		NA	NA	NA
	Benzo[a]pyrene	7.40E+00	mg/kg	7.40E+00	mg/kg	M	9.0E-07	mg/kg-day	NA		NA	NA	NA
	Benzo[b]fluoranthene	9.82E+00	mg/kg	9.82E+00	mg/kg	M	1.2E-06	mg/kg-day	NA		NA	NA	NA
	Benzo[ghi]perylene	6.39E+00	mg/kg	6.39E+00	mg/kg	M	7.8E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.6E-05
	Benzo[k]fluoranthene	3.55E+00	mg/kg	3.55E+00	mg/kg	M	4.3E-07	mg/kg-day	NA		NA	NA	NA
	Chrysene	9.62E+00	mg/kg	9.62E+00	mg/kg	M	1.2E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz[a,h]anthracene	1.63E+00	mg/kg	1.63E+00	mg/kg	M	2.0E-07	mg/kg-day	NA		NA	NA	NA
	1,3-Dichlorobenzene	4.64E+00	mg/kg	4.64E+00	mg/kg	M	4.4E-07	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	4.8E-04
	1,4-Dichlorobenzene	6.28E+01	mg/kg	6.28E+01	mg/kg	M	5.9E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.0E-04
	Fluoranthene	3.37E+01	mg/kg	3.37E+01	mg/kg	M	4.1E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	1.0E-04
	Indeno[1,2,3-cd]pyrene	3.77E+00	mg/kg	3.77E+00	mg/kg	M	4.6E-07	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	1.76E+02	mg/kg	1.76E+02	mg/kg	M	2.1E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.1E-03
	Naphthalene	1.05E+03	mg/kg	1.05E+03	mg/kg	M	1.3E-04	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	6.4E-03
	Phenanthrene	5.25E+01	mg/kg	5.25E+01	mg/kg	M	6.4E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.1E-04
	Pesticides												
	Dieldrin	8.69E-03	mg/kg	8.69E-03	mg/kg	M	NA		5.0E-05	mg/kg-day	NA	NA	NA
	PCBs												
	Aroclor 1221	8.14E-02	mg/kg	8.14E-02	mg/kg	M	1.1E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	1.5E-04
	Aroclor 1242	3.46E-01	mg/kg	3.46E-01	mg/kg	M	4.5E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	6.5E-04
	Aroclor 1248	2.25E-01	mg/kg	2.25E-01	mg/kg	M	3.0E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.5E-03
	Aroclor 1254	1.39E-01	mg/kg	1.39E-01	mg/kg	M	1.8E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	9.1E-04
	Aroclor 1260	2.01E-01	mg/kg	2.01E-01	mg/kg	M	2.6E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.3E-03
	PCBs	1.06E+00	mg/kg	1.06E+00	mg/kg	M	1.4E-07	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	3.77E-04	mg/kg	3.77E-04	mg/kg	M	1.1E-11	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												1.6E-02

Total Non-Cancer Hazards: 0.04

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.9.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SOUTH BASIN - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: South Basin Sediments
Receptor Population: Recreational
Receptor Age: Younger Child (less than 6)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Aluminum	4.08E+03	mg/kg	4.08E+03	mg/kg	M	2.1E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	2.1E-03
	Antimony	3.05E+00	mg/kg	3.05E+00	mg/kg	M	1.6E-06	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	3.9E-03
	Arsenic	1.24E+01	mg/kg	1.24E+01	mg/kg	M	6.3E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.1E-02
	Barium	9.02E+02	mg/kg	9.02E+02	mg/kg	M	4.6E-04	mg/kg-day	7.0E-02	mg/kg-day	NA	NA	6.6E-03
	Cadmium	3.91E+00	mg/kg	3.91E+00	mg/kg	M	2.0E-06	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	2.0E-03
	Chromium	2.05E+02	mg/kg	2.05E+02	mg/kg	M	1.0E-04	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	3.5E-02
	Copper	9.61E+01	mg/kg	9.61E+01	mg/kg	M	4.9E-05	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	1.2E-03
	Cyanide	1.51E+00	mg/kg	1.51E+00	mg/kg	M	7.7E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	3.9E-05
	Iron	1.22E+04	mg/kg	1.22E+04	mg/kg	M	6.3E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	2.1E-02
	Lead	2.35E+02	mg/kg	2.35E+02	mg/kg	M	1.2E-04	mg/kg-day	No data		NA	NA	NA
	Manganese	2.95E+02	mg/kg	2.95E+02	mg/kg	M	1.5E-04	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	6.5E-03
	Methylmercury	2.25E-02	mg/kg	2.25E-02	mg/kg	M	1.1E-08	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	1.1E-04
	Total Mercury	1.89E+01	mg/kg	1.89E+01	mg/kg	M	9.7E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.2E-02
	Nickel	7.32E+01	mg/kg	7.32E+01	mg/kg	M	3.7E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.9E-03
	Thallium	4.01E-01	mg/kg	4.01E-01	mg/kg	M	2.1E-07	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	3.1E-03
	Vanadium	2.99E+01	mg/kg	2.99E+01	mg/kg	M	1.5E-05	mg/kg-day	7.0E-03	mg/kg-day	NA	NA	2.2E-03
	VOCs												
	Benzene	6.12E+01	mg/kg	6.12E+01	mg/kg	M	3.1E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.0E-02
	Chlorobenzene	1.80E+02	mg/kg	1.80E+02	mg/kg	M	9.2E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	4.6E-03
	Methylene chloride	8.50E+00	mg/kg	8.50E+00	mg/kg	M	4.3E-06	mg/kg-day	6.0E-02	mg/kg-day	NA	NA	7.2E-05
	Xylenes	3.30E+02	mg/kg	3.30E+02	mg/kg	M	1.7E-04	mg/kg-day	2.0E+00	mg/kg-day	NA	NA	8.4E-05
	SVOCs												
	Dibenzofuran	1.80E+01	mg/kg	1.80E+01	mg/kg	M	9.2E-06	mg/kg-day	4.0E-03	mg/kg-day	NA	NA	2.3E-03
	Hexachlorobenzene	6.66E+00	mg/kg	6.66E+00	mg/kg	M	3.4E-06	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	4.3E-03
	PAHs												
	Acenaphthylene	4.24E+00	mg/kg	4.24E+00	mg/kg	M	2.2E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	7.2E-05
	Benz[a]anthracene	9.76E+00	mg/kg	9.76E+00	mg/kg	M	5.0E-06	mg/kg-day	NA		NA	NA	NA
	Benzo[a]pyrene	7.40E+00	mg/kg	7.40E+00	mg/kg	M	3.8E-06	mg/kg-day	NA		NA	NA	NA
	Benzo[b]fluoranthene	9.82E+00	mg/kg	9.82E+00	mg/kg	M	5.0E-06	mg/kg-day	NA		NA	NA	NA

TABLE 7.9.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SOUTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
	Benzo[ghi]perylene	6.39E+00	mg/kg	6.39E+00	mg/kg	M	3.3E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.1E-04
	Benzo[k]fluoranthene	3.55E+00	mg/kg	3.55E+00	mg/kg	M	1.8E-06	mg/kg-day	NA		NA	NA	NA
	Chrysene	9.62E+00	mg/kg	9.62E+00	mg/kg	M	4.9E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz[a,h]anthracene	1.63E+00	mg/kg	1.63E+00	mg/kg	M	8.3E-07	mg/kg-day	NA		NA	NA	NA
	1,3-Dichlorobenzene	4.64E+00	mg/kg	4.64E+00	mg/kg	M	2.4E-06	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	2.6E-03
	1,4-Dichlorobenzene	6.28E+01	mg/kg	6.28E+01	mg/kg	M	3.2E-05	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.1E-03
	Fluoranthene	3.37E+01	mg/kg	3.37E+01	mg/kg	M	1.7E-05	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	4.3E-04
	Indeno[1,2,3-cd]pyrene	3.77E+00	mg/kg	3.77E+00	mg/kg	M	1.9E-06	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	1.76E+02	mg/kg	1.76E+02	mg/kg	M	9.0E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	4.5E-03
	Naphthalene	1.05E+03	mg/kg	1.05E+03	mg/kg	M	5.4E-04	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	2.7E-02
	Phenanthrene	5.25E+01	mg/kg	5.25E+01	mg/kg	M	2.7E-05	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	9.0E-04
	Pesticides												
	Dieldrin	8.69E-03	mg/kg	8.69E-03	mg/kg	M	4.4E-09	mg/kg-day	5.0E-05	mg/kg-day	NA	NA	8.9E-05
	PCBs												
	Aroclor 1221	8.14E-02	mg/kg	8.14E-02	mg/kg	M	4.2E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	5.9E-04
	Aroclor 1242	3.46E-01	mg/kg	3.46E-01	mg/kg	M	1.8E-07	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	2.5E-03
	Aroclor 1248	2.25E-01	mg/kg	2.25E-01	mg/kg	M	1.2E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	5.8E-03
	Aroclor 1254	1.39E-01	mg/kg	1.39E-01	mg/kg	M	7.1E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.5E-03
	Aroclor 1260	2.01E-01	mg/kg	2.01E-01	mg/kg	M	1.0E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	5.1E-03
	PCBs	1.06E+00	mg/kg	1.06E+00	mg/kg	M	5.4E-07	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	3.77E-04	mg/kg	3.77E-04	mg/kg	M	1.9E-10	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												2.1E-01
Dermal	**Metals and Organometallic Compounds**												
	Aluminum	4.08E+03	mg/kg	4.08E+03	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Antimony	3.05E+00	mg/kg	3.05E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	1.24E+01	mg/kg	1.24E+01	mg/kg	M	7.2E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.4E-02
	Barium	9.02E+02	mg/kg	9.02E+02	mg/kg	M	NA		4.9E-03	mg/kg-day	NA	NA	NA
	Cadmium	3.91E+00	mg/kg	3.91E+00	mg/kg	M	7.6E-08	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	3.0E-03
	Chromium	2.05E+02	mg/kg	2.05E+02	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Copper	9.61E+01	mg/kg	9.61E+01	mg/kg	M	NA		4.0E-02	mg/kg-day	NA	NA	NA
	Cyanide	1.51E+00	mg/kg	1.51E+00	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Iron	1.22E+04	mg/kg	1.22E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Lead	2.35E+02	mg/kg	2.35E+02	mg/kg	M	NA		NA		NA	NA	NA
	Manganese	2.95E+02	mg/kg	2.95E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Methylmercury	2.25E-02	mg/kg	2.25E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Total Mercury	1.89E+01	mg/kg	1.89E+01	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA

TABLE 7.9.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SOUTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
	Nickel	7.32E+01	mg/kg	7.32E+01	mg/kg	M	NA		8.0E-04	mg/kg-day	NA	NA	NA
	Thallium	4.01E-01	mg/kg	4.01E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	Vanadium	2.99E+01	mg/kg	2.99E+01	mg/kg	M	NA		1.8E-04	mg/kg-day	NA	NA	NA
	VOCs												
	Benzene	6.12E+01	mg/kg	6.12E+01	mg/kg	M	NA		3.0E-03	mg/kg-day	NA	NA	NA
	Chlorobenzene	1.80E+02	mg/kg	1.80E+02	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Methylene chloride	8.50E+00	mg/kg	8.50E+00	mg/kg	M	NA		6.0E-02	mg/kg-day	NA	NA	NA
	Xylenes	3.30E+02	mg/kg	3.30E+02	mg/kg	M	NA		2.0E+00	mg/kg-day	NA	NA	NA
	SVOCs												
	Dibenzofuran	1.80E+01	mg/kg	1.80E+01	mg/kg	M	3.5E-05	mg/kg-day	4.0E-03	mg/kg-day	NA	NA	8.7E-03
	Hexachlorobenzene	6.66E+00	mg/kg	6.66E+00	mg/kg	M	1.3E-05	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	1.6E-02
	PAHs												
	Acenaphthylene	4.24E+00	mg/kg	4.24E+00	mg/kg	M	1.1E-05	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.6E-04
	Benz[a]anthracene	9.76E+00	mg/kg	9.76E+00	mg/kg	M	2.5E-05	mg/kg-day	NA		NA	NA	NA
	Benzo[a]pyrene	7.40E+00	mg/kg	7.40E+00	mg/kg	M	1.9E-05	mg/kg-day	NA		NA	NA	NA
	Benzo[b]fluoranthene	9.82E+00	mg/kg	9.82E+00	mg/kg	M	2.5E-05	mg/kg-day	NA		NA	NA	NA
	Benzo[ghi]perylene	6.39E+00	mg/kg	6.39E+00	mg/kg	M	1.6E-05	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	5.4E-04
	Benzo[k]fluoranthene	3.55E+00	mg/kg	3.55E+00	mg/kg	M	8.9E-06	mg/kg-day	NA		NA	NA	NA
	Chrysene	9.62E+00	mg/kg	9.62E+00	mg/kg	M	2.4E-05	mg/kg-day	NA		NA	NA	NA
	Dibenz[a,h]anthracene	1.63E+00	mg/kg	1.63E+00	mg/kg	M	4.1E-06	mg/kg-day	NA		NA	NA	NA
	1,3-Dichlorobenzene	4.64E+00	mg/kg	4.64E+00	mg/kg	M	9.0E-06	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	1.0E-02
	1,4-Dichlorobenzene	6.28E+01	mg/kg	6.28E+01	mg/kg	M	1.2E-04	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	4.0E-03
	Fluoranthene	3.37E+01	mg/kg	3.37E+01	mg/kg	M	8.5E-05	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	2.1E-03
	Indeno[1,2,3-cd]pyrene	3.77E+00	mg/kg	3.77E+00	mg/kg	M	9.5E-06	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	1.76E+02	mg/kg	1.76E+02	mg/kg	M	4.4E-04	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	2.2E-02
	Naphthalene	1.05E+03	mg/kg	1.05E+03	mg/kg	M	2.6E-03	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.3E-01
	Phenanthrene	5.25E+01	mg/kg	5.25E+01	mg/kg	M	1.3E-04	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	4.4E-03
	Pesticides												
	Dieldrin	8.69E-03	mg/kg	8.69E-03	mg/kg	M	NA		5.0E-05	mg/kg-day	NA	NA	NA
	PCBs												
	Aroclor 1221	8.14E-02	mg/kg	8.14E-02	mg/kg	M	2.2E-07	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	3.1E-03
	Aroclor 1242	3.46E-01	mg/kg	3.46E-01	mg/kg	M	9.4E-07	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	1.3E-02
	Aroclor 1248	2.25E-01	mg/kg	2.25E-01	mg/kg	M	6.1E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.0E-02
	Aroclor 1254	1.39E-01	mg/kg	1.39E-01	mg/kg	M	3.8E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.9E-02
	Aroclor 1260	2.01E-01	mg/kg	2.01E-01	mg/kg	M	5.4E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.7E-02
	PCBs	1.06E+00	mg/kg	1.06E+00	mg/kg	M	2.9E-06	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	3.77E-04	mg/kg	3.77E-04	mg/kg	M	2.2E-10	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												3.2E-01

Total Non-Cancer Hazards 0.54

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.10.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SOUTH BASIN - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: South Basin Sediments
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Aluminum	4.08E+03	mg/kg	4.08E+03	mg/kg	M	3.6E-04	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	3.6E-04
	Antimony	3.05E+00	mg/kg	3.05E+00	mg/kg	M	2.7E-07	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	6.8E-04
	Arsenic	1.24E+01	mg/kg	1.24E+01	mg/kg	M	1.1E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.7E-03
	Barium	9.02E+02	mg/kg	9.02E+02	mg/kg	M	8.0E-05	mg/kg-day	7.0E-02	mg/kg-day	NA	NA	1.1E-03
	Cadmium	3.91E+00	mg/kg	3.91E+00	mg/kg	M	3.5E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	3.5E-04
	Chromium	2.05E+02	mg/kg	2.05E+02	mg/kg	M	1.8E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	6.1E-03
	Copper	9.61E+01	mg/kg	9.61E+01	mg/kg	M	8.6E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	2.1E-04
	Cyanide	1.51E+00	mg/kg	1.51E+00	mg/kg	M	1.4E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	6.8E-06
	Iron	1.22E+04	mg/kg	1.22E+04	mg/kg	M	1.1E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	3.6E-03
	Lead	2.35E+02	mg/kg	2.35E+02	mg/kg	M	2.1E-05	mg/kg-day	No data		NA	NA	NA
	Manganese	2.95E+02	mg/kg	2.95E+02	mg/kg	M	2.6E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	1.1E-03
	Methylmercury	2.25E-02	mg/kg	2.25E-02	mg/kg	M	2.0E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	2.0E-05
	Total Mercury	1.89E+01	mg/kg	1.89E+01	mg/kg	M	1.7E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	5.6E-03
	Nickel	7.32E+01	mg/kg	7.32E+01	mg/kg	M	6.5E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	3.3E-04
	Thallium	4.01E-01	mg/kg	4.01E-01	mg/kg	M	3.6E-08	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	5.4E-04
	Vanadium	2.99E+01	mg/kg	2.99E+01	mg/kg	M	2.7E-06	mg/kg-day	7.0E-03	mg/kg-day	NA	NA	3.8E-04
	VOCs												
	Benzene	6.12E+01	mg/kg	6.12E+01	mg/kg	M	5.5E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.8E-03
	Chlorobenzene	1.80E+02	mg/kg	1.80E+02	mg/kg	M	1.6E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	8.0E-04
	Methylene chloride	8.50E+00	mg/kg	8.50E+00	mg/kg	M	7.6E-07	mg/kg-day	6.0E-02	mg/kg-day	NA	NA	1.3E-05
	Xylenes	3.30E+02	mg/kg	3.30E+02	mg/kg	M	2.9E-05	mg/kg-day	2.0E+00	mg/kg-day	NA	NA	1.5E-05
	SVOCs												
	Dibenzofuran	1.80E+01	mg/kg	1.80E+01	mg/kg	M	1.6E-06	mg/kg-day	4.0E-03	mg/kg-day	NA	NA	4.0E-04
	Hexachlorobenzene	6.66E+00	mg/kg	6.66E+00	mg/kg	M	5.9E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	7.4E-04
	PAHs												
	Acenaphthylene	4.24E+00	mg/kg	4.24E+00	mg/kg	M	3.8E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.3E-05
	Benz[a]anthracene	9.76E+00	mg/kg	9.76E+00	mg/kg	M	8.7E-07	mg/kg-day	NA		NA	NA	NA
	Benzo[a]pyrene	7.40E+00	mg/kg	7.40E+00	mg/kg	M	6.6E-07	mg/kg-day	NA		NA	NA	NA
	Benzo[b]fluoranthene	9.82E+00	mg/kg	9.82E+00	mg/kg	M	8.8E-07	mg/kg-day	NA		NA	NA	NA

TABLE 7.10.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SOUTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
	Benzo[ghi]perylene	6.39E+00	mg/kg	6.39E+00	mg/kg	M	5.7E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.9E-05
	Benzo[k]fluoranthene	3.55E+00	mg/kg	3.55E+00	mg/kg	M	3.2E-07	mg/kg-day	NA		NA	NA	NA
	Chrysene	9.62E+00	mg/kg	9.62E+00	mg/kg	M	8.6E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz[a,h]anthracene	1.63E+00	mg/kg	1.63E+00	mg/kg	M	1.5E-07	mg/kg-day	NA		NA	NA	NA
	1,3-Dichlorobenzene	4.64E+00	mg/kg	4.64E+00	mg/kg	M	4.1E-07	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	4.6E-04
	1,4-Dichlorobenzene	6.28E+01	mg/kg	6.28E+01	mg/kg	M	5.6E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.9E-04
	Fluoranthene	3.37E+01	mg/kg	3.37E+01	mg/kg	M	3.0E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	7.5E-05
	Indeno[1,2,3-cd]pyrene	3.77E+00	mg/kg	3.77E+00	mg/kg	M	3.4E-07	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	1.76E+02	mg/kg	1.76E+02	mg/kg	M	1.6E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	7.9E-04
	Naphthalene	1.05E+03	mg/kg	1.05E+03	mg/kg	M	9.4E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	4.7E-03
	Phenanthrene	5.25E+01	mg/kg	5.25E+01	mg/kg	M	4.7E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.6E-04
	Pesticides												
	Dieldrin	8.69E-03	mg/kg	8.69E-03	mg/kg	M	7.8E-10	mg/kg-day	5.0E-05	mg/kg-day	NA	NA	1.6E-05
	PCBs												
	Aroclor 1221	8.14E-02	mg/kg	8.14E-02	mg/kg	M	7.3E-09	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	1.0E-04
	Aroclor 1242	3.46E-01	mg/kg	3.46E-01	mg/kg	M	3.1E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	4.4E-04
	Aroclor 1248	2.25E-01	mg/kg	2.25E-01	mg/kg	M	2.0E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.0E-03
	Aroclor 1254	1.39E-01	mg/kg	1.39E-01	mg/kg	M	1.2E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	6.2E-04
	Aroclor 1260	2.01E-01	mg/kg	2.01E-01	mg/kg	M	1.8E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	8.9E-04
	PCBs	1.06E+00	mg/kg	1.06E+00	mg/kg	M	9.5E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	3.77E-04	mg/kg	3.77E-04	mg/kg	M	3.4E-11	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												3.7E-02
Dermal	**Metals and Organometallic Compounds**												
	Aluminum	4.08E+03	mg/kg	4.08E+03	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Antimony	3.05E+00	mg/kg	3.05E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	1.24E+01	mg/kg	1.24E+01	mg/kg	M	4.8E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.6E-02
	Barium	9.02E+02	mg/kg	9.02E+02	mg/kg	M	NA		4.9E-03	mg/kg-day	NA	NA	NA
	Cadmium	3.91E+00	mg/kg	3.91E+00	mg/kg	M	5.1E-08	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	2.0E-03
	Chromium	2.05E+02	mg/kg	2.05E+02	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Copper	9.61E+01	mg/kg	9.61E+01	mg/kg	M	NA		4.0E-02	mg/kg-day	NA	NA	NA
	Cyanide	1.51E+00	mg/kg	1.51E+00	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Iron	1.22E+04	mg/kg	1.22E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Lead	2.35E+02	mg/kg	2.35E+02	mg/kg	M	NA		NA		NA	NA	NA
	Manganese	2.95E+02	mg/kg	2.95E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Methylmercury	2.25E-02	mg/kg	2.25E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Total Mercury	1.89E+01	mg/kg	1.89E+01	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA

TABLE 7.10.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SOUTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
	Nickel	7.32E+01	mg/kg	7.32E+01	mg/kg	M	NA		8.0E-04	mg/kg-day	NA	NA	NA
	Thallium	4.01E-01	mg/kg	4.01E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	Vanadium	2.99E+01	mg/kg	2.99E+01	mg/kg	M	NA		1.8E-04	mg/kg-day	NA	NA	NA
	VOCs												
	Benzene	6.12E+01	mg/kg	6.12E+01	mg/kg	M	NA		3.0E-03	mg/kg-day	NA	NA	NA
	Chlorobenzene	1.80E+02	mg/kg	1.80E+02	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Methylene chloride	8.50E+00	mg/kg	8.50E+00	mg/kg	M	NA		6.0E-02	mg/kg-day	NA	NA	NA
	Xylenes	3.30E+02	mg/kg	3.30E+02	mg/kg	M	NA		2.0E+00	mg/kg-day	NA	NA	NA
	SVOCs												
	Dibenzofuran	1.80E+01	mg/kg	1.80E+01	mg/kg	M	2.3E-05	mg/kg-day	4.0E-03	mg/kg-day	NA	NA	5.9E-03
	Hexachlorobenzene	6.66E+00	mg/kg	6.66E+00	mg/kg	M	8.7E-06	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	1.1E-02
	PAHs												
	Acenaphthylene	4.24E+00	mg/kg	4.24E+00	mg/kg	M	7.2E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.4E-04
	Benz[a]anthracene	9.76E+00	mg/kg	9.76E+00	mg/kg	M	1.7E-05	mg/kg-day	NA		NA	NA	NA
	Benzo[a]pyrene	7.40E+00	mg/kg	7.40E+00	mg/kg	M	1.3E-05	mg/kg-day	NA		NA	NA	NA
	Benzo[b]fluoranthene	9.82E+00	mg/kg	9.82E+00	mg/kg	M	1.7E-05	mg/kg-day	NA		NA	NA	NA
	Benzo[ghi]perylene	6.39E+00	mg/kg	6.39E+00	mg/kg	M	1.1E-05	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.6E-04
	Benzo[k]fluoranthene	3.55E+00	mg/kg	3.55E+00	mg/kg	M	6.0E-06	mg/kg-day	NA		NA	NA	NA
	Chrysene	9.62E+00	mg/kg	9.62E+00	mg/kg	M	1.6E-05	mg/kg-day	NA		NA	NA	NA
	Dibenz[a,h]anthracene	1.63E+00	mg/kg	1.63E+00	mg/kg	M	2.8E-06	mg/kg-day	NA		NA	NA	NA
	1,3-Dichlorobenzene	4.64E+00	mg/kg	4.64E+00	mg/kg	M	6.0E-06	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	6.7E-03
	1,4-Dichlorobenzene	6.28E+01	mg/kg	6.28E+01	mg/kg	M	8.2E-05	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.7E-03
	Fluoranthene	3.37E+01	mg/kg	3.37E+01	mg/kg	M	5.7E-05	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	1.4E-03
	Indeno[1,2,3-cd]pyrene	3.77E+00	mg/kg	3.77E+00	mg/kg	M	6.4E-06	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	1.76E+02	mg/kg	1.76E+02	mg/kg	M	3.0E-04	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.5E-02
	Naphthalene	1.05E+03	mg/kg	1.05E+03	mg/kg	M	1.8E-03	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	8.9E-02
	Phenanthrene	5.25E+01	mg/kg	5.25E+01	mg/kg	M	8.9E-05	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.0E-03
	Pesticides												
	Dieldrin	8.69E-03	mg/kg	8.69E-03	mg/kg	M	NA		5.0E-05	mg/kg-day	NA	NA	NA
	PCBs												
	Aroclor 1221	8.14E-02	mg/kg	8.14E-02	mg/kg	M	1.5E-07	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	2.1E-03
	Aroclor 1242	3.46E-01	mg/kg	3.46E-01	mg/kg	M	6.3E-07	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	9.0E-03
	Aroclor 1248	2.25E-01	mg/kg	2.25E-01	mg/kg	M	4.1E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.1E-02
	Aroclor 1254	1.39E-01	mg/kg	1.39E-01	mg/kg	M	2.5E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.3E-02
	Aroclor 1260	2.01E-01	mg/kg	2.01E-01	mg/kg	M	3.7E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.8E-02
	PCBs	1.06E+00	mg/kg	1.06E+00	mg/kg	M	1.9E-06	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	3.77E-04	mg/kg	3.77E-04	mg/kg	M	1.5E-10	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												2.2E-01

Total Non-Cancer Hazards 0.25

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.11.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SOUTH BASIN - ONONDAGA LAKE

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: South Basin Sediments
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Aluminum	4.08E+03	mg/kg	4.08E+03	mg/kg	M	1.3E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	1.3E-03
	Antimony	3.05E+00	mg/kg	3.05E+00	mg/kg	M	9.8E-07	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	2.5E-03
	Arsenic	1.24E+01	mg/kg	1.24E+01	mg/kg	M	4.0E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.3E-02
	Barium	9.02E+02	mg/kg	9.02E+02	mg/kg	M	2.9E-04	mg/kg-day	7.0E-02	mg/kg-day	NA	NA	4.2E-03
	Cadmium	3.91E+00	mg/kg	3.91E+00	mg/kg	M	1.3E-06	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	1.3E-03
	Chromium	2.05E+02	mg/kg	2.05E+02	mg/kg	M	6.6E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.2E-02
	Copper	9.61E+01	mg/kg	9.61E+01	mg/kg	M	3.1E-05	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	7.8E-04
	Cyanide	1.51E+00	mg/kg	1.51E+00	mg/kg	M	4.9E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	2.4E-05
	Iron	1.22E+04	mg/kg	1.22E+04	mg/kg	M	3.9E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	1.3E-02
	Lead	2.35E+02	mg/kg	2.35E+02	mg/kg	M	7.6E-05	mg/kg-day	No data		NA	NA	NA
	Manganese	2.95E+02	mg/kg	2.95E+02	mg/kg	M	9.5E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	4.1E-03
	Methylmercury	2.25E-02	mg/kg	2.25E-02	mg/kg	M	7.3E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	7.3E-05
	Total Mercury	1.89E+01	mg/kg	1.89E+01	mg/kg	M	6.1E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.0E-02
	Nickel	7.32E+01	mg/kg	7.32E+01	mg/kg	M	2.4E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.2E-03
	Thallium	4.01E-01	mg/kg	4.01E-01	mg/kg	M	1.3E-07	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	2.0E-03
	Vanadium	2.99E+01	mg/kg	2.99E+01	mg/kg	M	9.6E-06	mg/kg-day	7.0E-03	mg/kg-day	NA	NA	1.4E-03
	VOCs												
	Benzene	6.12E+01	mg/kg	6.12E+01	mg/kg	M	2.0E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	6.6E-03
	Chlorobenzene	1.80E+02	mg/kg	1.80E+02	mg/kg	M	5.8E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	2.9E-03
	Methylene chloride	8.50E+00	mg/kg	8.50E+00	mg/kg	M	2.7E-06	mg/kg-day	6.0E-02	mg/kg-day	NA	NA	4.6E-05
	Xylenes	3.30E+02	mg/kg	3.30E+02	mg/kg	M	1.1E-04	mg/kg-day	2.0E+00	mg/kg-day	NA	NA	5.3E-05
	SVOCs												
	Dibenzofuran	1.80E+01	mg/kg	1.80E+01	mg/kg	M	5.8E-06	mg/kg-day	4.0E-03	mg/kg-day	NA	NA	1.5E-03
	Hexachlorobenzene	6.66E+00	mg/kg	6.66E+00	mg/kg	M	2.2E-06	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	2.7E-03
	PAHs												
	Acenaphthylene	4.24E+00	mg/kg	4.24E+00	mg/kg	M	1.4E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	4.6E-05
	Benz[a]anthracene	9.76E+00	mg/kg	9.76E+00	mg/kg	M	3.2E-06	mg/kg-day	NA		NA	NA	NA
	Benzo[a]pyrene	7.40E+00	mg/kg	7.40E+00	mg/kg	M	2.4E-06	mg/kg-day	NA		NA	NA	NA
	Benzo[b]fluoranthene	9.82E+00	mg/kg	9.82E+00	mg/kg	M	3.2E-06	mg/kg-day	NA		NA	NA	NA

TABLE 7.11.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SOUTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
	Benzo[ghi]perylene	6.39E+00	mg/kg	6.39E+00	mg/kg	M	2.1E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	6.9E-05
	Benzo[k]fluoranthene	3.55E+00	mg/kg	3.55E+00	mg/kg	M	1.1E-06	mg/kg-day	NA		NA	NA	NA
	Chrysene	9.62E+00	mg/kg	9.62E+00	mg/kg	M	3.1E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz[a,h]anthracene	1.63E+00	mg/kg	1.63E+00	mg/kg	M	5.3E-07	mg/kg-day	NA		NA	NA	NA
	1,3-Dichlorobenzene	4.64E+00	mg/kg	4.64E+00	mg/kg	M	1.5E-06	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	1.7E-03
	1,4-Dichlorobenzene	6.28E+01	mg/kg	6.28E+01	mg/kg	M	2.0E-05	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	6.8E-04
	Fluoranthene	3.37E+01	mg/kg	3.37E+01	mg/kg	M	1.1E-05	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	2.7E-04
	Indeno[1,2,3-cd]pyrene	3.77E+00	mg/kg	3.77E+00	mg/kg	M	1.2E-06	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	1.76E+02	mg/kg	1.76E+02	mg/kg	M	5.7E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	2.8E-03
	Naphthalene	1.05E+03	mg/kg	1.05E+03	mg/kg	M	3.4E-04	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.7E-02
	Phenanthrene	5.25E+01	mg/kg	5.25E+01	mg/kg	M	1.7E-05	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	5.7E-04
	Pesticides												
	Dieldrin	8.69E-03	mg/kg	8.69E-03	mg/kg	M	2.8E-09	mg/kg-day	5.0E-05	mg/kg-day	NA	NA	5.6E-05
	PCBs												
	Aroclor 1221	8.14E-02	mg/kg	8.14E-02	mg/kg	M	2.6E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	3.8E-04
	Aroclor 1242	3.46E-01	mg/kg	3.46E-01	mg/kg	M	1.1E-07	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	1.6E-03
	Aroclor 1248	2.25E-01	mg/kg	2.25E-01	mg/kg	M	7.3E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.6E-03
	Aroclor 1254	1.39E-01	mg/kg	1.39E-01	mg/kg	M	4.5E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.2E-03
	Aroclor 1260	2.01E-01	mg/kg	2.01E-01	mg/kg	M	6.5E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.2E-03
	PCBs	1.06E+00	mg/kg	1.06E+00	mg/kg	M	3.4E-07	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	3.77E-04	mg/kg	3.77E-04	mg/kg	M	1.2E-10	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												1.4E-01
Dermal	**Metals and Organometallic Compounds**												
	Aluminum	4.08E+03	mg/kg	4.08E+03	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Antimony	3.05E+00	mg/kg	3.05E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	1.24E+01	mg/kg	1.24E+01	mg/kg	M	1.9E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	6.2E-03
	Barium	9.02E+02	mg/kg	9.02E+02	mg/kg	M	NA		4.9E-03	mg/kg-day	NA	NA	NA
	Cadmium	3.91E+00	mg/kg	3.91E+00	mg/kg	M	2.0E-08	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	7.8E-04
	Chromium	2.05E+02	mg/kg	2.05E+02	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Copper	9.61E+01	mg/kg	9.61E+01	mg/kg	M	NA		4.0E-02	mg/kg-day	NA	NA	NA
	Cyanide	1.51E+00	mg/kg	1.51E+00	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Iron	1.22E+04	mg/kg	1.22E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Lead	2.35E+02	mg/kg	2.35E+02	mg/kg	M	NA		NA		NA	NA	NA
	Manganese	2.95E+02	mg/kg	2.95E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Methylmercury	2.25E-02	mg/kg	2.25E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Total Mercury	1.89E+01	mg/kg	1.89E+01	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA

TABLE 7.11.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SOUTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
	Nickel	7.32E+01	mg/kg	7.32E+01	mg/kg	M	NA		8.0E-04	mg/kg-day	NA	NA	NA
	Thallium	4.01E-01	mg/kg	4.01E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	Vanadium	2.99E+01	mg/kg	2.99E+01	mg/kg	M	NA		1.8E-04	mg/kg-day	NA	NA	NA
	VOCs												
	Benzene	6.12E+01	mg/kg	6.12E+01	mg/kg	M	NA		3.0E-03	mg/kg-day	NA	NA	NA
	Chlorobenzene	1.80E+02	mg/kg	1.80E+02	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Methylene chloride	8.50E+00	mg/kg	8.50E+00	mg/kg	M	NA		6.0E-02	mg/kg-day	NA	NA	NA
	Xylenes	3.30E+02	mg/kg	3.30E+02	mg/kg	M	NA		2.0E+00	mg/kg-day	NA	NA	NA
	SVOCs												
	Dibenzofuran	1.80E+01	mg/kg	1.80E+01	mg/kg	M	9.0E-06	mg/kg-day	4.0E-03	mg/kg-day	NA	NA	2.3E-03
	Hexachlorobenzene	6.66E+00	mg/kg	6.66E+00	mg/kg	M	3.3E-06	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	4.2E-03
	PAHs												
	Acenaphthylene	4.24E+00	mg/kg	4.24E+00	mg/kg	M	2.8E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	9.2E-05
	Benz[a]anthracene	9.76E+00	mg/kg	9.76E+00	mg/kg	M	6.4E-06	mg/kg-day	NA		NA	NA	NA
	Benzo[a]pyrene	7.40E+00	mg/kg	7.40E+00	mg/kg	M	4.8E-06	mg/kg-day	NA		NA	NA	NA
	Benzo[b]fluoranthene	9.82E+00	mg/kg	9.82E+00	mg/kg	M	6.4E-06	mg/kg-day	NA		NA	NA	NA
	Benzo[ghi]perylene	6.39E+00	mg/kg	6.39E+00	mg/kg	M	4.2E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.4E-04
	Benzo[k]fluoranthene	3.55E+00	mg/kg	3.55E+00	mg/kg	M	2.3E-06	mg/kg-day	NA		NA	NA	NA
	Chrysene	9.62E+00	mg/kg	9.62E+00	mg/kg	M	6.3E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz[a,h]anthracene	1.63E+00	mg/kg	1.63E+00	mg/kg	M	1.1E-06	mg/kg-day	NA		NA	NA	NA
	1,3-Dichlorobenzene	4.64E+00	mg/kg	4.64E+00	mg/kg	M	2.3E-06	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	2.6E-03
	1,4-Dichlorobenzene	6.28E+01	mg/kg	6.28E+01	mg/kg	M	3.1E-05	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.0E-03
	Fluoranthene	3.37E+01	mg/kg	3.37E+01	mg/kg	M	2.2E-05	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	5.5E-04
	Indeno[1,2,3-cd]pyrene	3.77E+00	mg/kg	3.77E+00	mg/kg	M	2.5E-06	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	1.76E+02	mg/kg	1.76E+02	mg/kg	M	1.2E-04	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	5.8E-03
	Naphthalene	1.05E+03	mg/kg	1.05E+03	mg/kg	M	6.9E-04	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	3.4E-02
	Phenanthrene	5.25E+01	mg/kg	5.25E+01	mg/kg	M	3.4E-05	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.1E-03
	Pesticides												
	Dieldrin	8.69E-03	mg/kg	8.69E-03	mg/kg	M	NA		5.0E-05	mg/kg-day	NA	NA	NA
	PCBs												
	Aroclor 1221	8.14E-02	mg/kg	8.14E-02	mg/kg	M	5.7E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	8.2E-04
	Aroclor 1242	3.46E-01	mg/kg	3.46E-01	mg/kg	M	2.4E-07	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	3.5E-03
	Aroclor 1248	2.25E-01	mg/kg	2.25E-01	mg/kg	M	1.6E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	7.9E-03
	Aroclor 1254	1.39E-01	mg/kg	1.39E-01	mg/kg	M	9.7E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	4.9E-03
	Aroclor 1260	2.01E-01	mg/kg	2.01E-01	mg/kg	M	1.4E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	7.0E-03
	PCBs	1.06E+00	mg/kg	1.06E+00	mg/kg	M	7.5E-07	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	3.77E-04	mg/kg	3.77E-04	mg/kg	M	5.7E-11	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												8.3E-02

Total Non-Cancer Hazards 0.22

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.12.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-6 (NORTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-6 (North Basin)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	Inorganics												
	Aluminum	1.07E+04	mg/kg	1.07E+04	mg/kg	M	1.8E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	1.8E-03
	Arsenic	6.80E+00	mg/kg	6.80E+00	mg/kg	M	1.2E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.9E-03
	Cadmium	8.60E+00	mg/kg	8.60E+00	mg/kg	M	1.5E-06	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	1.5E-03
	Chromium	9.37E+01	mg/kg	9.37E+01	mg/kg	M	1.6E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	5.4E-03
	Cyanide	2.84E+00	mg/kg	2.84E+00	mg/kg	M	4.9E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	2.4E-05
	Iron	2.82E+04	mg/kg	2.82E+04	mg/kg	M	4.9E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	1.6E-02
	Manganese	4.20E+02	mg/kg	4.20E+02	mg/kg	M	7.2E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	3.1E-03
	Mercury(inorganic)	3.02E+00	mg/kg	3.02E+00	mg/kg	M	5.2E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.7E-03
	Methylmercury	3.05E-02	mg/kg	3.05E-02	mg/kg	M	5.3E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	5.3E-05
	Thallium	1.65E+00	mg/kg	1.65E+00	mg/kg	M	2.8E-07	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	4.3E-03
	PAHs												
	Benzo(a)pyrene	2.50E+01	mg/kg	2.50E+01	mg/kg	M	4.3E-06	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	3.28E+00	mg/kg	3.28E+00	mg/kg	M	5.6E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	2.8E-05
	Acenaphthylene	3.91E+00	mg/kg	3.91E+00	mg/kg	M	6.7E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.2E-05
	Benz(a)anthracene	2.55E+01	mg/kg	2.55E+01	mg/kg	M	4.4E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.08E+01	mg/kg	3.08E+01	mg/kg	M	5.3E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	2.5E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	8.4E-05
	Benzo(k)fluoranthene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	2.0E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.43E+00	mg/kg	4.43E+00	mg/kg	M	7.6E-07	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	2.5E-06	mg/kg-day	NA		NA	NA	NA
	Naphthalene	4.28E+00	mg/kg	4.28E+00	mg/kg	M	7.4E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	3.7E-05
	Phenanthrene	3.25E+01	mg/kg	3.25E+01	mg/kg	M	5.6E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.9E-04
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.15E-05	mg/kg	1.15E-05	mg/kg	M	2.0E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												3.8E-02
Dermal	Inorganics												
	Aluminum	1.07E+04	mg/kg	1.07E+04	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Arsenic	6.80E+00	mg/kg	6.80E+00	mg/kg	M	6.0E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.0E-03
	Cadmium	8.60E+00	mg/kg	8.60E+00	mg/kg	M	2.5E-08	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	1.0E-03
	Chromium	9.37E+01	mg/kg	9.37E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Cyanide	2.84E+00	mg/kg	2.84E+00	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA

TABLE 7.12.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-6 (NORTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Iron	2.82E+04	mg/kg	2.82E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	4.20E+02	mg/kg	4.20E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	3.02E+00	mg/kg	3.02E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Methylmercury	3.05E-02	mg/kg	3.05E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Thallium	1.65E+00	mg/kg	1.65E+00	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	PAHs												
	Benzo(a)pyrene	2.50E+01	mg/kg	2.50E+01	mg/kg	M	9.6E-06	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	3.28E+00	mg/kg	3.28E+00	mg/kg	M	1.3E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	6.3E-05
	Acenaphthylene	3.91E+00	mg/kg	3.91E+00	mg/kg	M	1.5E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	5.0E-05
	Benz(a)anthracene	2.55E+01	mg/kg	2.55E+01	mg/kg	M	9.7E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.08E+01	mg/kg	3.08E+01	mg/kg	M	1.2E-05	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	5.6E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.9E-04
	Benzo(k)fluoranthene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	4.4E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.43E+00	mg/kg	4.43E+00	mg/kg	M	1.7E-06	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	5.6E-06	mg/kg-day	NA		NA	NA	NA
	Naphthalene	4.28E+00	mg/kg	4.28E+00	mg/kg	M	1.6E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	8.2E-05
	Phenanthrene	3.25E+01	mg/kg	3.25E+01	mg/kg	M	1.2E-05	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	4.1E-04
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.15E-05	mg/kg	1.15E-05	mg/kg	M	1.0E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												3.8E-03

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

Total Non-Cancer Hazards 0.04

TABLE 7.13.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-6 (NORTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-6 (North Basin)
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	Inorganics												
	Aluminum	1.07E+04	mg/kg	1.07E+04	mg/kg	M	3.0E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	3.0E-03
	Arsenic	6.80E+00	mg/kg	6.80E+00	mg/kg	M	1.9E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	6.4E-03
	Cadmium	8.60E+00	mg/kg	8.60E+00	mg/kg	M	2.4E-06	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	2.4E-03
	Chromium	9.37E+01	mg/kg	9.37E+01	mg/kg	M	2.6E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	8.8E-03
	Cyanide	2.84E+00	mg/kg	2.84E+00	mg/kg	M	8.0E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	4.0E-05
	Iron	2.82E+04	mg/kg	2.82E+04	mg/kg	M	7.9E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	2.6E-02
	Manganese	4.20E+02	mg/kg	4.20E+02	mg/kg	M	1.2E-04	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	5.0E-03
	Mercury(inorganic)	3.02E+00	mg/kg	3.02E+00	mg/kg	M	8.5E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.8E-03
	Methylmercury	3.05E-02	mg/kg	3.05E-02	mg/kg	M	8.6E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	8.6E-05
	Thallium	1.65E+00	mg/kg	1.65E+00	mg/kg	M	4.6E-07	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	7.0E-03
	PAHs												
	Benzo(a)pyrene	2.50E+01	mg/kg	2.50E+01	mg/kg	M	7.0E-06	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	3.28E+00	mg/kg	3.28E+00	mg/kg	M	9.2E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	4.6E-05
	Acenaphthylene	3.91E+00	mg/kg	3.91E+00	mg/kg	M	1.1E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.7E-05
	Benz(a)anthracene	2.55E+01	mg/kg	2.55E+01	mg/kg	M	7.1E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.08E+01	mg/kg	3.08E+01	mg/kg	M	8.6E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	4.1E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.4E-04
	Benzo(k)fluoranthene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	3.2E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.43E+00	mg/kg	4.43E+00	mg/kg	M	1.2E-06	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	4.1E-06	mg/kg-day	NA		NA	NA	NA
	Naphthalene	4.28E+00	mg/kg	4.28E+00	mg/kg	M	1.2E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	6.0E-05
	Phenanthrene	3.25E+01	mg/kg	3.25E+01	mg/kg	M	9.1E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.0E-04
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.15E-05	mg/kg	1.15E-05	mg/kg	M	3.2E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												6.2E-02
Dermal	Inorganics												
	Aluminum	1.07E+04	mg/kg	1.07E+04	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Arsenic	6.80E+00	mg/kg	6.80E+00	mg/kg	M	8.3E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.8E-02
	Cadmium	8.60E+00	mg/kg	8.60E+00	mg/kg	M	3.5E-07	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	1.4E-02
	Chromium	9.37E+01	mg/kg	9.37E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Cyanide	2.84E+00	mg/kg	2.84E+00	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA

TABLE 7.13.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-6 (NORTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Iron	2.82E+04	mg/kg	2.82E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	4.20E+02	mg/kg	4.20E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	3.02E+00	mg/kg	3.02E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Methylmercury	3.05E-02	mg/kg	3.05E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Thallium	1.65E+00	mg/kg	1.65E+00	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	PAHs												
	Benzo(a)pyrene	2.50E+01	mg/kg	2.50E+01	mg/kg	M	1.3E-04	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	3.28E+00	mg/kg	3.28E+00	mg/kg	M	1.7E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	8.7E-04
	Acenaphthylene	3.91E+00	mg/kg	3.91E+00	mg/kg	M	2.1E-05	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	6.9E-04
	Benz(a)anthracene	2.55E+01	mg/kg	2.55E+01	mg/kg	M	1.4E-04	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.08E+01	mg/kg	3.08E+01	mg/kg	M	1.6E-04	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	7.8E-05	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.6E-03
	Benzo(k)fluoranthene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	6.0E-05	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.43E+00	mg/kg	4.43E+00	mg/kg	M	2.4E-05	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	7.8E-05	mg/kg-day	NA		NA	NA	NA
	Naphthalene	4.28E+00	mg/kg	4.28E+00	mg/kg	M	2.3E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.1E-03
	Phenanthrene	3.25E+01	mg/kg	3.25E+01	mg/kg	M	1.7E-04	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	5.8E-03
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.15E-05	mg/kg	1.15E-05	mg/kg	M	1.4E-11	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												5.3E-02

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

Total Non-Cancer Hazards 0.12

TABLE 7.14.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-6 (NORTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-6 (North Basin)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	1.07E+04	mg/kg	1.07E+04	mg/kg	M	3.5E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	3.5E-03
	Arsenic	6.80E+00	mg/kg	6.80E+00	mg/kg	M	2.2E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	7.3E-03
	Cadmium	8.60E+00	mg/kg	8.60E+00	mg/kg	M	2.8E-06	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	2.8E-03
	Chromium	9.37E+01	mg/kg	9.37E+01	mg/kg	M	3.0E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.0E-02
	Cyanide	2.84E+00	mg/kg	2.84E+00	mg/kg	M	9.2E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	4.6E-05
	Iron	2.82E+04	mg/kg	2.82E+04	mg/kg	M	9.1E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	3.0E-02
	Manganese	4.20E+02	mg/kg	4.20E+02	mg/kg	M	1.4E-04	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	5.8E-03
	Mercury(inorganic)	3.02E+00	mg/kg	3.02E+00	mg/kg	M	9.7E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.2E-03
	Methylmercury	3.05E-02	mg/kg	3.05E-02	mg/kg	M	9.8E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	9.8E-05
	Thallium	1.65E+00	mg/kg	1.65E+00	mg/kg	M	5.3E-07	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	8.1E-03
	PAHs												
	Benzo(a)pyrene	2.50E+01	mg/kg	2.50E+01	mg/kg	M	8.1E-06	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	3.28E+00	mg/kg	3.28E+00	mg/kg	M	1.1E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	5.3E-05
	Acenaphthylene	3.91E+00	mg/kg	3.91E+00	mg/kg	M	1.3E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	4.2E-05
	Benz(a)anthracene	2.55E+01	mg/kg	2.55E+01	mg/kg	M	8.2E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.08E+01	mg/kg	3.08E+01	mg/kg	M	9.9E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	4.7E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.6E-04
	Benzo(k)fluoranthene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	3.7E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.43E+00	mg/kg	4.43E+00	mg/kg	M	1.4E-06	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	4.7E-06	mg/kg-day	NA		NA	NA	NA
	Naphthalene	4.28E+00	mg/kg	4.28E+00	mg/kg	M	1.4E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	6.9E-05
	Phenanthrene	3.25E+01	mg/kg	3.25E+01	mg/kg	M	1.0E-05	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.5E-04
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.15E-05	mg/kg	1.15E-05	mg/kg	M	3.7E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												7.2E-02
Dermal	**Inorganics**												
	Aluminum	1.07E+04	mg/kg	1.07E+04	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Arsenic	6.80E+00	mg/kg	6.80E+00	mg/kg	M	1.0E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.4E-03
	Cadmium	8.60E+00	mg/kg	8.60E+00	mg/kg	M	4.3E-08	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	1.7E-03
	Chromium	9.37E+01	mg/kg	9.37E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Cyanide	2.84E+00	mg/kg	2.84E+00	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA

TABLE 7.14.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-6 (NORTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Iron	2.82E+04	mg/kg	2.82E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	4.20E+02	mg/kg	4.20E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	3.02E+00	mg/kg	3.02E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Methylmercury	3.05E-02	mg/kg	3.05E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Thallium	1.65E+00	mg/kg	1.65E+00	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	PAHs												
	Benzo(a)pyrene	2.50E+01	mg/kg	2.50E+01	mg/kg	M	1.6E-05	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	3.28E+00	mg/kg	3.28E+00	mg/kg	M	2.1E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.1E-04
	Acenaphthylene	3.91E+00	mg/kg	3.91E+00	mg/kg	M	2.6E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	8.5E-05
	Benz(a)anthracene	2.55E+01	mg/kg	2.55E+01	mg/kg	M	1.7E-05	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.08E+01	mg/kg	3.08E+01	mg/kg	M	2.0E-05	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	9.6E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.2E-04
	Benzo(k)fluoranthene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	7.4E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.43E+00	mg/kg	4.43E+00	mg/kg	M	2.9E-06	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	9.6E-06	mg/kg-day	NA		NA	NA	NA
	Naphthalene	4.28E+00	mg/kg	4.28E+00	mg/kg	M	2.8E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.4E-04
	Phenanthrene	3.25E+01	mg/kg	3.25E+01	mg/kg	M	2.1E-05	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	7.1E-04
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.15E-05	mg/kg	1.15E-05	mg/kg	M	1.7E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												6.5E-03

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

Total Non-Cancer Hazards 0.08

TABLE 7.15.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-10 (NORTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-10 (North Basin)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	9.34E+03	mg/kg	9.34E+03	mg/kg	M	1.6E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	1.6E-03
	Antimony	5.13E+00	mg/kg	5.13E+00	mg/kg	M	8.8E-07	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	2.2E-03
	Arsenic	1.17E+01	mg/kg	1.17E+01	mg/kg	M	2.0E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	6.7E-03
	Chromium	3.16E+01	mg/kg	3.16E+01	mg/kg	M	5.4E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.8E-03
	Iron	1.61E+04	mg/kg	1.61E+04	mg/kg	M	2.8E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	9.2E-03
	Manganese	3.90E+02	mg/kg	3.90E+02	mg/kg	M	6.7E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	2.9E-03
	Mercury(inorganic)	2.82E+00	mg/kg	2.82E+00	mg/kg	M	4.9E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.6E-03
	Methylmercury	2.85E-02	mg/kg	2.85E-02	mg/kg	M	4.9E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	4.9E-05
	Thallium	2.27E+00	mg/kg	2.27E+00	mg/kg	M	3.9E-07	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	5.9E-03
	PAHs												
	Benz(a)anthracene	1.03E+00	mg/kg	1.03E+00	mg/kg	M	1.8E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.07E+00	mg/kg	1.07E+00	mg/kg	M	1.8E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	8.90E-01	mg/kg	8.90E-01	mg/kg	M	1.5E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.55E-01	mg/kg	2.55E-01	mg/kg	M	4.4E-08	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.55E-01	mg/kg	6.55E-01	mg/kg	M	1.1E-07	mg/kg-day	NA		NA	NA	NA
	PCBs												
	Aroclor 1260	2.02E-01	mg/kg	2.02E-01	mg/kg	M	3.5E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.7E-03
	Sum of PCBs	2.28E-01	mg/kg	2.28E-01	mg/kg	M	3.9E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.18E-05	mg/kg	1.18E-05	mg/kg	M	2.0E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												3.4E-02
Dermal	**Inorganics**												
	Aluminum	9.34E+03	mg/kg	9.34E+03	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Antimony	5.13E+00	mg/kg	5.13E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	1.17E+01	mg/kg	1.17E+01	mg/kg	M	1.0E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.5E-03
	Chromium	3.16E+01	mg/kg	3.16E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	1.61E+04	mg/kg	1.61E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	3.90E+02	mg/kg	3.90E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	2.82E+00	mg/kg	2.82E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Methylmercury	2.85E-02	mg/kg	2.85E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA

TABLE 7.15.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-10 (NORTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Thallium	2.27E+00	mg/kg	2.27E+00	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	PAHs												
	Benz(a)anthracene	1.03E+00	mg/kg	1.03E+00	mg/kg	M	3.9E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.07E+00	mg/kg	1.07E+00	mg/kg	M	4.1E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	8.90E-01	mg/kg	8.90E-01	mg/kg	M	3.4E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.55E-01	mg/kg	2.55E-01	mg/kg	M	9.8E-08	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.55E-01	mg/kg	6.55E-01	mg/kg	M	2.5E-07	mg/kg-day	NA		NA	NA	NA
	PCBs												
	Aroclor 1260	2.02E-01	mg/kg	2.02E-01	mg/kg	M	8.3E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	4.2E-03
	Sum of PCBs	2.28E-01	mg/kg	2.28E-01	mg/kg	M	9.4E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.18E-05	mg/kg	1.18E-05	mg/kg	M	1.0E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												7.6E-03

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

Total Non-Cancer Hazards: 0.04

TABLE 7.16.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-10 (NORTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-10 (North Basin)
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	9.34E+03	mg/kg	9.34E+03	mg/kg	M	2.6E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	2.6E-03
	Antimony	5.13E+00	mg/kg	5.13E+00	mg/kg	M	1.4E-06	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	3.6E-03
	Arsenic	1.17E+01	mg/kg	1.17E+01	mg/kg	M	3.3E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.1E-02
	Chromium	3.16E+01	mg/kg	3.16E+01	mg/kg	M	8.9E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	3.0E-03
	Iron	1.61E+04	mg/kg	1.61E+04	mg/kg	M	4.5E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	1.5E-02
	Manganese	3.90E+02	mg/kg	3.90E+02	mg/kg	M	1.1E-04	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	4.7E-03
	Mercury(inorganic)	2.82E+00	mg/kg	2.82E+00	mg/kg	M	7.9E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.6E-03
	Methylmercury	2.85E-02	mg/kg	2.85E-02	mg/kg	M	8.0E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	8.0E-05
	Thallium	2.27E+00	mg/kg	2.27E+00	mg/kg	M	6.4E-07	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	9.6E-03
	PAHs												
	Benz(a)anthracene	1.03E+00	mg/kg	1.03E+00	mg/kg	M	2.9E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.07E+00	mg/kg	1.07E+00	mg/kg	M	3.0E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	8.90E-01	mg/kg	8.90E-01	mg/kg	M	2.5E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.55E-01	mg/kg	2.55E-01	mg/kg	M	7.1E-08	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.55E-01	mg/kg	6.55E-01	mg/kg	M	1.8E-07	mg/kg-day	NA		NA	NA	NA
	PCBs												
	Aroclor 1260	2.02E-01	mg/kg	2.02E-01	mg/kg	M	5.6E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.8E-03
	Sum of PCBs	2.28E-01	mg/kg	2.28E-01	mg/kg	M	6.4E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.18E-05	mg/kg	1.18E-05	mg/kg	M	3.3E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												5.5E-02
Dermal	**Inorganics**												
	Aluminum	9.34E+03	mg/kg	9.34E+03	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Antimony	5.13E+00	mg/kg	5.13E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	1.17E+01	mg/kg	1.17E+01	mg/kg	M	1.4E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	4.8E-02
	Chromium	3.16E+01	mg/kg	3.16E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	1.61E+04	mg/kg	1.61E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	3.90E+02	mg/kg	3.90E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	2.82E+00	mg/kg	2.82E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Methylmercury	2.85E-02	mg/kg	2.85E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA

TABLE 7.16.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-10 (NORTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
	Thallium	2.27E+00	mg/kg	2.27E+00	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	PAHs												
	Benz(a)anthracene	1.03E+00	mg/kg	1.03E+00	mg/kg	M	5.4E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.07E+00	mg/kg	1.07E+00	mg/kg	M	5.7E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	8.90E-01	mg/kg	8.90E-01	mg/kg	M	4.7E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.55E-01	mg/kg	2.55E-01	mg/kg	M	1.4E-06	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.55E-01	mg/kg	6.55E-01	mg/kg	M	3.5E-06	mg/kg-day	NA		NA	NA	NA
	PCBs												
	Aroclor 1260	2.02E-01	mg/kg	2.02E-01	mg/kg	M	1.2E-06	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	5.8E-02
	Sum of PCBs	2.28E-01	mg/kg	2.28E-01	mg/kg	M	1.3E-06	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.18E-05	mg/kg	1.18E-05	mg/kg	M	1.4E-11	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												1.1E-01

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

Total Non-Cancer Hazards 0.16

TABLE 7.17.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-10 (NORTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-10 (North Basin)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	9.34E+03	mg/kg	9.34E+03	mg/kg	M	3.0E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	3.0E-03
	Antimony	5.13E+00	mg/kg	5.13E+00	mg/kg	M	1.7E-06	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	4.1E-03
	Arsenic	1.17E+01	mg/kg	1.17E+01	mg/kg	M	3.8E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.3E-02
	Chromium	3.16E+01	mg/kg	3.16E+01	mg/kg	M	1.0E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	3.4E-03
	Iron	1.61E+04	mg/kg	1.61E+04	mg/kg	M	5.2E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	1.7E-02
	Manganese	3.90E+02	mg/kg	3.90E+02	mg/kg	M	1.3E-04	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	5.4E-03
	Mercury(inorganic)	2.82E+00	mg/kg	2.82E+00	mg/kg	M	9.1E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.0E-03
	Methylmercury	2.85E-02	mg/kg	2.85E-02	mg/kg	M	9.2E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	9.2E-05
	Thallium	2.27E+00	mg/kg	2.27E+00	mg/kg	M	7.3E-07	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	1.1E-02
	PAHs												
	Benz(a)anthracene	1.03E+00	mg/kg	1.03E+00	mg/kg	M	3.3E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.07E+00	mg/kg	1.07E+00	mg/kg	M	3.5E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	8.90E-01	mg/kg	8.90E-01	mg/kg	M	2.9E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.55E-01	mg/kg	2.55E-01	mg/kg	M	8.2E-08	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.55E-01	mg/kg	6.55E-01	mg/kg	M	2.1E-07	mg/kg-day	NA		NA	NA	NA
	PCBs												
	Aroclor 1260	2.02E-01	mg/kg	2.02E-01	mg/kg	M	6.5E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.3E-03
	Sum of PCBs	2.28E-01	mg/kg	2.28E-01	mg/kg	M	7.4E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.18E-05	mg/kg	1.18E-05	mg/kg	M	3.8E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												6.3E-02
Dermal	**Inorganics**												
	Aluminum	9.34E+03	mg/kg	9.34E+03	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Antimony	5.13E+00	mg/kg	5.13E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	1.17E+01	mg/kg	1.17E+01	mg/kg	M	1.8E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	5.9E-03
	Chromium	3.16E+01	mg/kg	3.16E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	1.61E+04	mg/kg	1.61E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	3.90E+02	mg/kg	3.90E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	2.82E+00	mg/kg	2.82E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Methylmercury	2.85E-02	mg/kg	2.85E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA

TABLE 7.17.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-10 (NORTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Thallium	2.27E+00	mg/kg	2.27E+00	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	PAHs												
	Benz(a)anthracene	1.03E+00	mg/kg	1.03E+00	mg/kg	M	6.7E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.07E+00	mg/kg	1.07E+00	mg/kg	M	7.0E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	8.90E-01	mg/kg	8.90E-01	mg/kg	M	5.8E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.55E-01	mg/kg	2.55E-01	mg/kg	M	1.7E-07	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.55E-01	mg/kg	6.55E-01	mg/kg	M	4.3E-07	mg/kg-day	NA		NA	NA	NA
	PCBs												
	Aroclor 1260	2.02E-01	mg/kg	2.02E-01	mg/kg	M	1.4E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	7.1E-03
	Sum of PCBs	2.28E-01	mg/kg	2.28E-01	mg/kg	M	1.6E-07	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.18E-05	mg/kg	1.18E-05	mg/kg	M	1.8E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												1.3E-02

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

Total Non-Cancer Hazards 0.08

TABLE 7.18.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-12 (SOUTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-12 (South Basin)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	8.76E+03	mg/kg	8.76E+03	mg/kg	M	4.8E-04	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	4.8E-04
	Arsenic	6.30E+00	mg/kg	6.30E+00	mg/kg	M	3.5E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.2E-03
	Cadmium	4.07E+01	mg/kg	4.07E+01	mg/kg	M	2.2E-06	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	2.2E-03
	Chromium	3.03E+02	mg/kg	3.03E+02	mg/kg	M	1.7E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	5.5E-03
	Copper	2.67E+02	mg/kg	2.67E+02	mg/kg	M	1.5E-05	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	3.7E-04
	Cyanide	8.53E-01	mg/kg	8.53E-01	mg/kg	M	4.7E-08	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	2.3E-06
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	9.4E-04	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	3.1E-03
	Manganese	2.68E+02	mg/kg	2.68E+02	mg/kg	M	1.5E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	6.3E-04
	Mercury(inorganic)	2.98E+00	mg/kg	2.98E+00	mg/kg	M	1.6E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	5.4E-04
	Methylmercury	3.01E-02	mg/kg	3.01E-02	mg/kg	M	1.6E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	1.6E-05
	Thallium	6.65E-01	mg/kg	6.65E-01	mg/kg	M	3.6E-08	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	5.5E-04
	PAHs												
	Benz(a)anthracene	4.65E+00	mg/kg	4.65E+00	mg/kg	M	2.5E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	4.55E+00	mg/kg	4.55E+00	mg/kg	M	2.5E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.15E+00	mg/kg	3.15E+00	mg/kg	M	1.7E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	1.70E-01	mg/kg	1.70E-01	mg/kg	M	9.3E-09	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3.05E+00	mg/kg	3.05E+00	mg/kg	M	1.7E-07	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	7.45E+00	mg/kg	7.45E+00	mg/kg	M	4.1E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.4E-05
	PCBs												
	Aroclor 1242	2.79E-01	mg/kg	2.79E-01	mg/kg	M	1.5E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	2.2E-04
	Aroclor 1254	4.22E-01	mg/kg	4.22E-01	mg/kg	M	2.3E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.2E-03
	Aroclor 1260	2.19E-01	mg/kg	2.19E-01	mg/kg	M	1.2E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	6.0E-04
	Sum of PCBs	9.20E-01	mg/kg	9.20E-01	mg/kg	M	5.0E-08	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												1.7E-02
Dermal	**Inorganics**												
	Aluminum	8.76E+03	mg/kg	8.76E+03	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Arsenic	6.30E+00	mg/kg	6.30E+00	mg/kg	M	1.8E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	5.9E-04
	Cadmium	4.07E+01	mg/kg	4.07E+01	mg/kg	M	3.8E-08	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	1.5E-03
	Chromium	3.03E+02	mg/kg	3.03E+02	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA

TABLE 7.18.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-12 (SOUTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Copper	2.67E+02	mg/kg	2.67E+02	mg/kg	M	NA		4.0E-02	mg/kg-day	NA	NA	NA
	Cyanide	8.53E-01	mg/kg	8.53E-01	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	2.68E+02	mg/kg	2.68E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	2.98E+00	mg/kg	2.98E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Methylmercury	3.01E-02	mg/kg	3.01E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Thallium	6.65E-01	mg/kg	6.65E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	PAHs												
	Benz(a)anthracene	4.65E+00	mg/kg	4.65E+00	mg/kg	M	5.7E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	4.55E+00	mg/kg	4.55E+00	mg/kg	M	5.5E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.15E+00	mg/kg	3.15E+00	mg/kg	M	3.8E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	1.70E-01	mg/kg	1.70E-01	mg/kg	M	2.1E-08	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3.05E+00	mg/kg	3.05E+00	mg/kg	M	3.7E-07	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	7.45E+00	mg/kg	7.45E+00	mg/kg	M	9.1E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.0E-05
	PCBs												
	Aroclor 1242	2.79E-01	mg/kg	2.79E-01	mg/kg	M	3.7E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	5.2E-04
	Aroclor 1254	4.22E-01	mg/kg	4.22E-01	mg/kg	M	5.5E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.8E-03
	Aroclor 1260	2.19E-01	mg/kg	2.19E-01	mg/kg	M	2.9E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.4E-03
	Sum of PCBs	9.20E-01	mg/kg	9.20E-01	mg/kg	M	1.2E-07	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												6.9E-03

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

Total Non-Cancer Hazards 0.02

TABLE 7.19.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-12 (SOUTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-12 (South Basin)
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	8.76E+03	mg/kg	8.76E+03	mg/kg	M	7.8E-04	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	7.8E-04
	Arsenic	6.30E+00	mg/kg	6.30E+00	mg/kg	M	5.6E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.9E-03
	Cadmium	4.07E+01	mg/kg	4.07E+01	mg/kg	M	3.6E-06	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	3.6E-03
	Chromium	3.03E+02	mg/kg	3.03E+02	mg/kg	M	2.7E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	9.0E-03
	Copper	2.67E+02	mg/kg	2.67E+02	mg/kg	M	2.4E-05	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	6.0E-04
	Cyanide	8.53E-01	mg/kg	8.53E-01	mg/kg	M	7.6E-08	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	3.8E-06
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	1.5E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	5.1E-03
	Manganese	2.68E+02	mg/kg	2.68E+02	mg/kg	M	2.4E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	1.0E-03
	Mercury(inorganic)	2.98E+00	mg/kg	2.98E+00	mg/kg	M	2.7E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	8.9E-04
	Methylmercury	3.01E-02	mg/kg	3.01E-02	mg/kg	M	2.7E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	2.7E-05
	Thallium	6.65E-01	mg/kg	6.65E-01	mg/kg	M	5.9E-08	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	9.0E-04
	PAHs												
	Benz(a)anthracene	4.65E+00	mg/kg	4.65E+00	mg/kg	M	4.1E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	4.55E+00	mg/kg	4.55E+00	mg/kg	M	4.1E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.15E+00	mg/kg	3.15E+00	mg/kg	M	2.8E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	1.70E-01	mg/kg	1.70E-01	mg/kg	M	1.5E-08	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3.05E+00	mg/kg	3.05E+00	mg/kg	M	2.7E-07	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	7.45E+00	mg/kg	7.45E+00	mg/kg	M	6.6E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.2E-05
	PCBs												
	Aroclor 1242	2.79E-01	mg/kg	2.79E-01	mg/kg	M	2.5E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	3.6E-04
	Aroclor 1254	4.22E-01	mg/kg	4.22E-01	mg/kg	M	3.8E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.9E-03
	Aroclor 1260	2.19E-01	mg/kg	2.19E-01	mg/kg	M	2.0E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	9.8E-04
	Sum of PCBs	9.20E-01	mg/kg	9.20E-01	mg/kg	M	8.2E-08	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												2.7E-02
Dermal	**Inorganics**												
	Aluminum	8.76E+03	mg/kg	8.76E+03	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Arsenic	6.30E+00	mg/kg	6.30E+00	mg/kg	M	2.5E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	8.2E-03
	Cadmium	4.07E+01	mg/kg	4.07E+01	mg/kg	M	5.3E-07	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	2.1E-02
	Chromium	3.03E+02	mg/kg	3.03E+02	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Copper	2.67E+02	mg/kg	2.67E+02	mg/kg	M	NA		4.0E-02	mg/kg-day	NA	NA	NA

TABLE 7.19.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-12 (SOUTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Cyanide	8.53E-01	mg/kg	8.53E-01	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	2.68E+02	mg/kg	2.68E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	2.98E+00	mg/kg	2.98E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Methylmercury	3.01E-02	mg/kg	3.01E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Thallium	6.65E-01	mg/kg	6.65E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	PAHs												
	Benz(a)anthracene	4.65E+00	mg/kg	4.65E+00	mg/kg	M	7.9E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	4.55E+00	mg/kg	4.55E+00	mg/kg	M	7.7E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.15E+00	mg/kg	3.15E+00	mg/kg	M	5.3E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	1.70E-01	mg/kg	1.70E-01	mg/kg	M	2.9E-07	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3.05E+00	mg/kg	3.05E+00	mg/kg	M	5.2E-06	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	7.45E+00	mg/kg	7.45E+00	mg/kg	M	1.3E-05	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	4.2E-04
	PCBs												
	Aroclor 1242	2.79E-01	mg/kg	2.79E-01	mg/kg	M	5.1E-07	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	7.3E-03
	Aroclor 1254	4.22E-01	mg/kg	4.22E-01	mg/kg	M	7.7E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.8E-02
	Aroclor 1260	2.19E-01	mg/kg	2.19E-01	mg/kg	M	4.0E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.0E-02
	Sum of PCBs	9.20E-01	mg/kg	9.20E-01	mg/kg	M	1.7E-06	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												9.5E-02

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

Total Non-Cancer Hazards 0.12

TABLE 7.20.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-12 (SOUTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-12 (South Basin)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	8.76E+03	mg/kg	8.76E+03	mg/kg	M	2.8E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	2.8E-03
	Arsenic	6.30E+00	mg/kg	6.30E+00	mg/kg	M	2.0E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	6.8E-03
	Cadmium	4.07E+01	mg/kg	4.07E+01	mg/kg	M	1.3E-05	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	1.3E-02
	Chromium	3.03E+02	mg/kg	3.03E+02	mg/kg	M	9.8E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	3.3E-02
	Copper	2.67E+02	mg/kg	2.67E+02	mg/kg	M	8.6E-05	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	2.2E-03
	Cyanide	8.53E-01	mg/kg	8.53E-01	mg/kg	M	2.8E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.4E-05
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	5.5E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	1.8E-02
	Manganese	2.68E+02	mg/kg	2.68E+02	mg/kg	M	8.7E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	3.7E-03
	Mercury(inorganic)	2.98E+00	mg/kg	2.98E+00	mg/kg	M	9.6E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.2E-03
	Methylmercury	3.01E-02	mg/kg	3.01E-02	mg/kg	M	9.7E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	9.7E-05
	Thallium	6.65E-01	mg/kg	6.65E-01	mg/kg	M	2.1E-07	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	3.3E-03
	PAHs												
	Benz(a)anthracene	4.65E+00	mg/kg	4.65E+00	mg/kg	M	1.5E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	4.55E+00	mg/kg	4.55E+00	mg/kg	M	1.5E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.15E+00	mg/kg	3.15E+00	mg/kg	M	1.0E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	1.70E-01	mg/kg	1.70E-01	mg/kg	M	5.5E-08	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3.05E+00	mg/kg	3.05E+00	mg/kg	M	9.8E-07	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	7.45E+00	mg/kg	7.45E+00	mg/kg	M	2.4E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	8.0E-05
	PCBs												
	Aroclor 1242	2.79E-01	mg/kg	2.79E-01	mg/kg	M	9.0E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	1.3E-03
	Aroclor 1254	4.22E-01	mg/kg	4.22E-01	mg/kg	M	1.4E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	6.8E-03
	Aroclor 1260	2.19E-01	mg/kg	2.19E-01	mg/kg	M	7.1E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.5E-03
	Sum of PCBs	9.20E-01	mg/kg	9.20E-01	mg/kg	M	3.0E-07	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												9.8E-02
Dermal	**Inorganics**												
	Aluminum	8.76E+03	mg/kg	8.76E+03	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Arsenic	6.30E+00	mg/kg	6.30E+00	mg/kg	M	9.5E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.2E-03
	Cadmium	4.07E+01	mg/kg	4.07E+01	mg/kg	M	2.0E-07	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	8.2E-03
	Chromium	3.03E+02	mg/kg	3.03E+02	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Copper	2.67E+02	mg/kg	2.67E+02	mg/kg	M	NA		4.0E-02	mg/kg-day	NA	NA	NA

TABLE 7.20.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-12 (SOUTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Cyanide	8.53E-01	mg/kg	8.53E-01	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	2.68E+02	mg/kg	2.68E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	2.98E+00	mg/kg	2.98E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Methylmercury	3.01E-02	mg/kg	3.01E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Thallium	6.65E-01	mg/kg	6.65E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	PAHs												
	Benz(a)anthracene	4.65E+00	mg/kg	4.65E+00	mg/kg	M	3.0E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	4.55E+00	mg/kg	4.55E+00	mg/kg	M	3.0E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.15E+00	mg/kg	3.15E+00	mg/kg	M	2.1E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	1.70E-01	mg/kg	1.70E-01	mg/kg	M	1.1E-07	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3.05E+00	mg/kg	3.05E+00	mg/kg	M	2.0E-06	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	7.45E+00	mg/kg	7.45E+00	mg/kg	M	4.9E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.6E-04
	PCBs												
	Aroclor 1242	2.79E-01	mg/kg	2.79E-01	mg/kg	M	2.0E-07	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	2.8E-03
	Aroclor 1254	4.22E-01	mg/kg	4.22E-01	mg/kg	M	3.0E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.5E-02
	Aroclor 1260	2.19E-01	mg/kg	2.19E-01	mg/kg	M	1.5E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	7.7E-03
	Sum of PCBs	9.20E-01	mg/kg	9.20E-01	mg/kg	M	6.5E-07	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												3.7E-02

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

Total Non-Cancer Hazards 0.13

TABLE 7.21.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-19 (SOUTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-19 (South Basin)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Antimony	3.30E+00	mg/kg	3.30E+00	mg/kg	M	1.8E-07	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	4.5E-04
	Arsenic	8.55E+00	mg/kg	8.55E+00	mg/kg	M	4.7E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.6E-03
	Barium	5.12E+02	mg/kg	5.12E+02	mg/kg	M	2.8E-05	mg/kg-day	7.0E-02	mg/kg-day	NA	NA	4.0E-04
	Cadmium	2.95E+00	mg/kg	2.95E+00	mg/kg	M	1.6E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	1.6E-04
	Chromium	7.03E+01	mg/kg	7.03E+01	mg/kg	M	3.9E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.3E-03
	Iron	1.04E+04	mg/kg	1.04E+04	mg/kg	M	5.7E-04	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	1.9E-03
	Manganese	3.01E+02	mg/kg	3.01E+02	mg/kg	M	1.6E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	7.1E-04
	Mercury(inorganic)	4.22E+01	mg/kg	4.22E+01	mg/kg	M	2.3E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	7.7E-03
	Methylmercury	4.26E-01	mg/kg	4.26E-01	mg/kg	M	2.3E-08	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	2.3E-04
	SVOCs												
	1,3-Dichlorobenzene	3.79E+00	mg/kg	3.79E+00	mg/kg	M	2.1E-07	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	2.3E-04
	1,4-Dichlorobenzene	8.90E+00	mg/kg	8.90E+00	mg/kg	M	4.9E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.6E-05
	Hexachlorobenzene	2.78E+00	mg/kg	2.78E+00	mg/kg	M	1.5E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	1.9E-04
	PAHs												
	Benz(a)anthracene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	6.2E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.04E+01	mg/kg	1.04E+01	mg/kg	M	5.7E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	9.05E+00	mg/kg	9.05E+00	mg/kg	M	5.0E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	5.60E+00	mg/kg	5.60E+00	mg/kg	M	3.1E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.0E-05
	Benzo(k)fluoranthene	7.95E+00	mg/kg	7.95E+00	mg/kg	M	4.4E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.65E+00	mg/kg	2.65E+00	mg/kg	M	1.5E-07	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.00E+00	mg/kg	6.00E+00	mg/kg	M	3.3E-07	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	1.65E+01	mg/kg	1.65E+01	mg/kg	M	9.0E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.0E-05
	Pesticides												
	Aldrin	3.86E-02	mg/kg	3.86E-02	mg/kg	M	2.1E-09	mg/kg-day	3.0E-05	mg/kg-day	NA	NA	7.1E-05
	Dieldrin	2.93E-02	mg/kg	2.93E-02	mg/kg	M	1.6E-09	mg/kg-day	5.0E-05	mg/kg-day	NA	NA	3.2E-05
	PCBs												
	Aroclor 1242	7.05E-01	mg/kg	7.05E-01	mg/kg	M	3.9E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	5.5E-04
	Aroclor 1254	6.17E-01	mg/kg	6.17E-01	mg/kg	M	3.4E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.7E-03
	Aroclor 1260	3.14E-01	mg/kg	3.14E-01	mg/kg	M	1.7E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	8.6E-04
	Sum of PCBs	1.34E+00	mg/kg	1.34E+00	mg/kg	M	7.3E-08	mg/kg-day	NA		NA	NA	NA

TABLE 7.21.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-19 (SOUTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	8.81E-04	mg/kg	8.81E-04	mg/kg	M	4.8E-11	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												1.8E-02
Dermal	**Inorganics**												
	Antimony	3.30E+00	mg/kg	3.30E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	8.55E+00	mg/kg	8.55E+00	mg/kg	M	2.4E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	8.0E-04
	Barium	5.12E+02	mg/kg	5.12E+02	mg/kg	M	NA		4.9E-03	mg/kg-day	NA	NA	NA
	Cadmium	2.95E+00	mg/kg	2.95E+00	mg/kg	M	2.8E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	1.1E-04
	Chromium	7.03E+01	mg/kg	7.03E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	1.04E+04	mg/kg	1.04E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	3.01E+02	mg/kg	3.01E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	4.22E+01	mg/kg	4.22E+01	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Methylmercury	4.26E-01	mg/kg	4.26E-01	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	SVOCs												
	1,3-Dichlorobenzene	3.79E+00	mg/kg	3.79E+00	mg/kg	M	3.6E-07	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	3.9E-04
	1,4-Dichlorobenzene	8.90E+00	mg/kg	8.90E+00	mg/kg	M	8.3E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.8E-05
	Hexachlorobenzene	2.78E+00	mg/kg	2.78E+00	mg/kg	M	2.6E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	3.3E-04
	PAHs												
	Benz(a)anthracene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	1.4E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.04E+01	mg/kg	1.04E+01	mg/kg	M	1.3E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	9.05E+00	mg/kg	9.05E+00	mg/kg	M	1.1E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	5.60E+00	mg/kg	5.60E+00	mg/kg	M	6.8E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.3E-05
	Benzo(k)fluoranthene	7.95E+00	mg/kg	7.95E+00	mg/kg	M	9.7E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.65E+00	mg/kg	2.65E+00	mg/kg	M	3.2E-07	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.00E+00	mg/kg	6.00E+00	mg/kg	M	7.3E-07	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	1.65E+01	mg/kg	1.65E+01	mg/kg	M	2.0E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	6.7E-05
	Pesticides												
	Aldrin	3.86E-02	mg/kg	3.86E-02	mg/kg	M	NA		3.0E-05	mg/kg-day	NA	NA	NA
	Dieldrin	2.93E-02	mg/kg	2.93E-02	mg/kg	M	NA		5.0E-05	mg/kg-day	NA	NA	NA
	PCBs												
	Aroclor 1242	7.05E-01	mg/kg	7.05E-01	mg/kg	M	9.2E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	1.3E-03
	Aroclor 1254	6.17E-01	mg/kg	6.17E-01	mg/kg	M	8.1E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	4.0E-03
	Aroclor 1260	3.14E-01	mg/kg	3.14E-01	mg/kg	M	4.1E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.1E-03
	Sum of PCBs	1.34E+00	mg/kg	1.34E+00	mg/kg	M	1.8E-07	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	8.81E-04	mg/kg	8.81E-04	mg/kg	M	2.5E-11	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												9.2E-03

Total Non-Cancer Hazards 0.03

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.22.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-19 (SOUTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-19 (South Basin)
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Antimony	3.30E+00	mg/kg	3.30E+00	mg/kg	M	2.9E-07	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	7.4E-04
	Arsenic	8.55E+00	mg/kg	8.55E+00	mg/kg	M	7.6E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.5E-03
	Barium	5.12E+02	mg/kg	5.12E+02	mg/kg	M	4.6E-05	mg/kg-day	7.0E-02	mg/kg-day	NA	NA	6.5E-04
	Cadmium	2.95E+00	mg/kg	2.95E+00	mg/kg	M	2.6E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	2.6E-04
	Chromium	7.03E+01	mg/kg	7.03E+01	mg/kg	M	6.3E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.1E-03
	Iron	1.04E+04	mg/kg	1.04E+04	mg/kg	M	9.3E-04	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	3.1E-03
	Manganese	3.01E+02	mg/kg	3.01E+02	mg/kg	M	2.7E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	1.2E-03
	Mercury(inorganic)	4.22E+01	mg/kg	4.22E+01	mg/kg	M	3.8E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.3E-02
	Methylmercury	4.26E-01	mg/kg	4.26E-01	mg/kg	M	3.8E-08	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	3.8E-04
	SVOCs												
	1,3-Dichlorobenzene	3.79E+00	mg/kg	3.79E+00	mg/kg	M	3.4E-07	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	3.8E-04
	1,4-Dichlorobenzene	8.90E+00	mg/kg	8.90E+00	mg/kg	M	7.9E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.6E-05
	Hexachlorobenzene	2.78E+00	mg/kg	2.78E+00	mg/kg	M	2.5E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	3.1E-04
	PAHs												
	Benz(a)anthracene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	1.0E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.04E+01	mg/kg	1.04E+01	mg/kg	M	9.3E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	9.05E+00	mg/kg	9.05E+00	mg/kg	M	8.1E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	5.60E+00	mg/kg	5.60E+00	mg/kg	M	5.0E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.7E-05
	Benzo(k)fluoranthene	7.95E+00	mg/kg	7.95E+00	mg/kg	M	7.1E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.65E+00	mg/kg	2.65E+00	mg/kg	M	2.4E-07	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.00E+00	mg/kg	6.00E+00	mg/kg	M	5.4E-07	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	1.65E+01	mg/kg	1.65E+01	mg/kg	M	1.5E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	4.9E-05
	Pesticides												
	Aldrin	3.86E-02	mg/kg	3.86E-02	mg/kg	M	3.4E-09	mg/kg-day	3.0E-05	mg/kg-day	NA	NA	1.1E-04
	Dieldrin	2.93E-02	mg/kg	2.93E-02	mg/kg	M	2.6E-09	mg/kg-day	5.0E-05	mg/kg-day	NA	NA	5.2E-05
	PCBs												
	Aroclor 1242	7.05E-01	mg/kg	7.05E-01	mg/kg	M	6.3E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	9.0E-04
	Aroclor 1254	6.17E-01	mg/kg	6.17E-01	mg/kg	M	5.5E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.7E-03
	Aroclor 1260	3.14E-01	mg/kg	3.14E-01	mg/kg	M	2.8E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.4E-03
	Sum of PCBs	1.34E+00	mg/kg	1.34E+00	mg/kg	M	1.2E-07	mg/kg-day	NA		NA	NA	NA

TABLE 7.22.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-19 (SOUTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	8.81E-04	mg/kg	8.81E-04	mg/kg	M	7.9E-11	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												2.9E-02
Dermal	**Inorganics**												
	Antimony	3.30E+00	mg/kg	3.30E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	8.55E+00	mg/kg	8.55E+00	mg/kg	M	3.3E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.1E-02
	Barium	5.12E+02	mg/kg	5.12E+02	mg/kg	M	NA		4.9E-03	mg/kg-day	NA	NA	NA
	Cadmium	2.95E+00	mg/kg	2.95E+00	mg/kg	M	3.8E-08	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	1.5E-03
	Chromium	7.03E+01	mg/kg	7.03E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	1.04E+04	mg/kg	1.04E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	3.01E+02	mg/kg	3.01E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	4.22E+01	mg/kg	4.22E+01	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Methylmercury	4.26E-01	mg/kg	4.26E-01	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	SVOCs												
	1,3-Dichlorobenzene	3.79E+00	mg/kg	3.79E+00	mg/kg	M	4.9E-06	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	5.5E-03
	1,4-Dichlorobenzene	8.90E+00	mg/kg	8.90E+00	mg/kg	M	1.2E-05	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.9E-04
	Hexachlorobenzene	2.78E+00	mg/kg	2.78E+00	mg/kg	M	3.6E-06	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	4.5E-03
	PAHs												
	Benz(a)anthracene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	1.9E-05	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.04E+01	mg/kg	1.04E+01	mg/kg	M	1.8E-05	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	9.05E+00	mg/kg	9.05E+00	mg/kg	M	1.5E-05	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	5.60E+00	mg/kg	5.60E+00	mg/kg	M	9.5E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.2E-04
	Benzo(k)fluoranthene	7.95E+00	mg/kg	7.95E+00	mg/kg	M	1.3E-05	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.65E+00	mg/kg	2.65E+00	mg/kg	M	4.5E-06	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.00E+00	mg/kg	6.00E+00	mg/kg	M	1.0E-05	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	1.65E+01	mg/kg	1.65E+01	mg/kg	M	2.8E-05	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	9.3E-04
	Pesticides												
	Aldrin	3.86E-02	mg/kg	3.86E-02	mg/kg	M	NA		3.0E-05	mg/kg-day	NA	NA	NA
	Dieldrin	2.93E-02	mg/kg	2.93E-02	mg/kg	M	NA		5.0E-05	mg/kg-day	NA	NA	NA
	PCBs												
	Aroclor 1242	7.05E-01	mg/kg	7.05E-01	mg/kg	M	1.3E-06	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	1.8E-02
	Aroclor 1254	6.17E-01	mg/kg	6.17E-01	mg/kg	M	1.1E-06	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	5.6E-02
	Aroclor 1260	3.14E-01	mg/kg	3.14E-01	mg/kg	M	5.7E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.9E-02
	Sum of PCBs	1.34E+00	mg/kg	1.34E+00	mg/kg	M	2.4E-06	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	8.81E-04	mg/kg	8.81E-04	mg/kg	M	3.4E-10	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												1.3E-01

Total Non-Cancer Hazards 0.16

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.23.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-19 (SOUTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-19 (South Basin)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Antimony	3.30E+00	mg/kg	3.30E+00	mg/kg	M	1.1E-06	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	2.7E-03
	Arsenic	8.55E+00	mg/kg	8.55E+00	mg/kg	M	2.8E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	9.2E-03
	Barium	5.12E+02	mg/kg	5.12E+02	mg/kg	M	1.7E-04	mg/kg-day	7.0E-02	mg/kg-day	NA	NA	2.4E-03
	Cadmium	2.95E+00	mg/kg	2.95E+00	mg/kg	M	9.5E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	9.5E-04
	Chromium	7.03E+01	mg/kg	7.03E+01	mg/kg	M	2.3E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	7.6E-03
	Iron	1.04E+04	mg/kg	1.04E+04	mg/kg	M	3.4E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	1.1E-02
	Manganese	3.01E+02	mg/kg	3.01E+02	mg/kg	M	9.7E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	4.2E-03
	Mercury(inorganic)	4.22E+01	mg/kg	4.22E+01	mg/kg	M	1.4E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	4.5E-02
	Methylmercury	4.26E-01	mg/kg	4.26E-01	mg/kg	M	1.4E-07	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	1.4E-03
	SVOCs												
	1,3-Dichlorobenzene	3.79E+00	mg/kg	3.79E+00	mg/kg	M	1.2E-06	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	1.4E-03
	1,4-Dichlorobenzene	8.90E+00	mg/kg	8.90E+00	mg/kg	M	2.9E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	9.6E-05
	Hexachlorobenzene	2.78E+00	mg/kg	2.78E+00	mg/kg	M	9.0E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	1.1E-03
	PAHs												
	Benz(a)anthracene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	3.7E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.04E+01	mg/kg	1.04E+01	mg/kg	M	3.4E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	9.05E+00	mg/kg	9.05E+00	mg/kg	M	2.9E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	5.60E+00	mg/kg	5.60E+00	mg/kg	M	1.8E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	6.0E-05
	Benzo(k)fluoranthene	7.95E+00	mg/kg	7.95E+00	mg/kg	M	2.6E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.65E+00	mg/kg	2.65E+00	mg/kg	M	8.6E-07	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.00E+00	mg/kg	6.00E+00	mg/kg	M	1.9E-06	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	1.65E+01	mg/kg	1.65E+01	mg/kg	M	5.3E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.8E-04
	Pesticides												
	Aldrin	3.86E-02	mg/kg	3.86E-02	mg/kg	M	1.2E-08	mg/kg-day	3.0E-05	mg/kg-day	NA	NA	4.2E-04
	Dieldrin	2.93E-02	mg/kg	2.93E-02	mg/kg	M	9.5E-09	mg/kg-day	5.0E-05	mg/kg-day	NA	NA	1.9E-04
	PCBs												
	Aroclor 1242	7.05E-01	mg/kg	7.05E-01	mg/kg	M	2.3E-07	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	3.3E-03
	Aroclor 1254	6.17E-01	mg/kg	6.17E-01	mg/kg	M	2.0E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.0E-02
	Aroclor 1260	3.14E-01	mg/kg	3.14E-01	mg/kg	M	1.0E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	5.1E-03
	Sum of PCBs	1.34E+00	mg/kg	1.34E+00	mg/kg	M	4.3E-07	mg/kg-day	NA		NA	NA	NA

TABLE 7.23.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
WETLAND SYW-19 (SOUTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	8.81E-04	mg/kg	8.81E-04	mg/kg	M	2.8E-10	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												1.1E-01
Dermal	**Inorganics**												
	Antimony	3.30E+00	mg/kg	3.30E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	8.55E+00	mg/kg	8.55E+00	mg/kg	M	1.3E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	4.3E-03
	Barium	5.12E+02	mg/kg	5.12E+02	mg/kg	M	NA		4.9E-03	mg/kg-day	NA	NA	NA
	Cadmium	2.95E+00	mg/kg	2.95E+00	mg/kg	M	1.5E-08	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	5.9E-04
	Chromium	7.03E+01	mg/kg	7.03E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	1.04E+04	mg/kg	1.04E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	3.01E+02	mg/kg	3.01E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	4.22E+01	mg/kg	4.22E+01	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Methylmercury	4.26E-01	mg/kg	4.26E-01	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	SVOCs												
	1,3-Dichlorobenzene	3.79E+00	mg/kg	3.79E+00	mg/kg	M	1.9E-06	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	2.1E-03
	1,4-Dichlorobenzene	8.90E+00	mg/kg	8.90E+00	mg/kg	M	4.5E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.5E-04
	Hexachlorobenzene	2.78E+00	mg/kg	2.78E+00	mg/kg	M	1.4E-06	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	1.7E-03
	PAHs												
	Benz(a)anthracene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	7.4E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.04E+01	mg/kg	1.04E+01	mg/kg	M	6.8E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	9.05E+00	mg/kg	9.05E+00	mg/kg	M	5.9E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	5.60E+00	mg/kg	5.60E+00	mg/kg	M	3.7E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.2E-04
	Benzo(k)fluoranthene	7.95E+00	mg/kg	7.95E+00	mg/kg	M	5.2E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.65E+00	mg/kg	2.65E+00	mg/kg	M	1.7E-06	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.00E+00	mg/kg	6.00E+00	mg/kg	M	3.9E-06	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	1.65E+01	mg/kg	1.65E+01	mg/kg	M	1.1E-05	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.6E-04
	Pesticides												
	Aldrin	3.86E-02	mg/kg	3.86E-02	mg/kg	M	NA		3.0E-05	mg/kg-day	NA	NA	NA
	Dieldrin	2.93E-02	mg/kg	2.93E-02	mg/kg	M	NA		5.0E-05	mg/kg-day	NA	NA	NA
	PCBs												
	Aroclor 1242	7.05E-01	mg/kg	7.05E-01	mg/kg	M	5.0E-07	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	7.1E-03
	Aroclor 1254	6.17E-01	mg/kg	6.17E-01	mg/kg	M	4.3E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.2E-02
	Aroclor 1260	3.14E-01	mg/kg	3.14E-01	mg/kg	M	2.2E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.1E-02
	Sum of PCBs	1.34E+00	mg/kg	1.34E+00	mg/kg	M	9.4E-07	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	8.81E-04	mg/kg	8.81E-04	mg/kg	M	1.3E-10	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												4.9E-02

Total Non-Cancer Hazards 0.16

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.24.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
DREDGE SPOIL SOILS - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Dredge Spoil Soils
Exposure Medium: Surface Soil
Exposure Point: Dredge Spoil Soils (0-3.5 ft)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	1.21E+04	mg/kg	1.21E+04	mg/kg	M	2.1E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	2.1E-03
	Arsenic	8.40E+00	mg/kg	8.40E+00	mg/kg	M	1.4E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	4.8E-03
	Chromium	2.94E+01	mg/kg	2.94E+01	mg/kg	M	5.1E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.7E-03
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	2.9E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	9.8E-03
	Manganese	3.54E+02	mg/kg	3.54E+02	mg/kg	M	6.1E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	2.6E-03
	Total Mercury	4.00E+00	mg/kg	4.00E+00	mg/kg	M	6.9E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.3E-03
	SVOCs												
	Hexachlorobenzene	4.10E-01	mg/kg	4.10E-01	mg/kg	M	7.1E-08	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	8.8E-05
	PAHs												
	Benzo(a)pyrene	1.30E-01	mg/kg	1.30E-01	mg/kg	M	2.2E-08	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												2.3E-02
Dermal	**Inorganics**												
	Aluminum	1.21E+04	mg/kg	1.21E+04	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Arsenic	8.40E+00	mg/kg	8.40E+00	mg/kg	M	7.4E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.5E-03
	Chromium	2.94E+01	mg/kg	2.94E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	3.54E+02	mg/kg	3.54E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Total Mercury	4.00E+00	mg/kg	4.00E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	SVOCs												
	Hexachlorobenzene	4.10E-01	mg/kg	4.10E-01	mg/kg	M	1.2E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	1.5E-04
	PAHs												
	Benzo(a)pyrene	1.30E-01	mg/kg	1.30E-01	mg/kg	M	5.0E-08	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												2.6E-03

Total Non-Cancer Hazards 0.03

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.25.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
DREDGE SPOIL SOILS - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Dredge Spoil Soils
Exposure Medium: Surface Soil
Exposure Point: Dredge Spoil Soils (0-3.5 ft)
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	1.21E+04	mg/kg	1.21E+04	mg/kg	M	3.4E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	3.4E-03
	Arsenic	8.40E+00	mg/kg	8.40E+00	mg/kg	M	2.4E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	7.8E-03
	Chromium	2.94E+01	mg/kg	2.94E+01	mg/kg	M	8.2E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.7E-03
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	4.8E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	1.6E-02
	Manganese	3.54E+02	mg/kg	3.54E+02	mg/kg	M	9.9E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	4.3E-03
	Total Mercury	4.00E+00	mg/kg	4.00E+00	mg/kg	M	1.1E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.7E-03
	SVOCs												
	Hexachlorobenzene	4.10E-01	mg/kg	4.10E-01	mg/kg	M	1.1E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	1.4E-04
	PAHs												
	Benzo(a)pyrene	1.30E-01	mg/kg	1.30E-01	mg/kg	M	3.6E-08	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												3.8E-02
Dermal	**Inorganics**												
	Aluminum	1.21E+04	mg/kg	1.21E+04	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Arsenic	8.40E+00	mg/kg	8.40E+00	mg/kg	M	1.0E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.4E-02
	Chromium	2.94E+01	mg/kg	2.94E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	3.54E+02	mg/kg	3.54E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Total Mercury	4.00E+00	mg/kg	4.00E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	SVOCs												
	Hexachlorobenzene	4.10E-01	mg/kg	4.10E-01	mg/kg	M	1.7E-06	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	2.1E-03
	PAHs												
	Benzo(a)pyrene	1.30E-01	mg/kg	1.30E-01	mg/kg	M	6.9E-07	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												3.6E-02

Total Non-Cancer Hazards 0.07

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.26.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
DREDGE SPOIL SOILS - ONONDAGA LAKE

Scenario Timeframe: Future
Medium: Dredge Spoil Soils
Exposure Medium: Surface Soil
Exposure Point: Dredge Spoil Soils (0-3.5 ft)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	1.21E+04	mg/kg	1.21E+04	mg/kg	M	3.9E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	3.9E-03
	Arsenic	8.40E+00	mg/kg	8.40E+00	mg/kg	M	2.7E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	9.0E-03
	Chromium	2.94E+01	mg/kg	2.94E+01	mg/kg	M	9.5E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	3.2E-03
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	5.5E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	1.8E-02
	Manganese	3.54E+02	mg/kg	3.54E+02	mg/kg	M	1.1E-04	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	4.9E-03
	Total Mercury	4.00E+00	mg/kg	4.00E+00	mg/kg	M	1.3E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	4.3E-03
	SVOCs												
	Hexachlorobenzene	4.10E-01	mg/kg	4.10E-01	mg/kg	M	1.3E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	1.7E-04
	PAHs												
	Benzo(a)pyrene	1.30E-01	mg/kg	1.30E-01	mg/kg	M	4.2E-08	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												4.4E-02
Dermal	**Inorganics**												
	Aluminum	1.21E+04	mg/kg	1.21E+04	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Arsenic	8.40E+00	mg/kg	8.40E+00	mg/kg	M	1.3E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	4.2E-03
	Chromium	2.94E+01	mg/kg	2.94E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	3.54E+02	mg/kg	3.54E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Total Mercury	4.00E+00	mg/kg	4.00E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	SVOCs												
	Hexachlorobenzene	4.10E-01	mg/kg	4.10E-01	mg/kg	M	2.1E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	2.6E-04
	PAHs												
	Benzo(a)pyrene	1.30E-01	mg/kg	1.30E-01	mg/kg	M	8.5E-08	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												4.5E-03

Total Non-Cancer Hazards 0.05

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.27.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
DREDGE SPOIL SUBSURFACE SOILS - ONONDAGA LAKE

Scenario Timeframe: Future
Medium: Dredge Spoil Soils
Exposure Medium: Subsurface Soil
Exposure Point: Dredge Spoil Soils (0-11.7 ft)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	1.02E+04	mg/kg	1.02E+04	mg/kg	M	3.3E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	3.3E-03
	Arsenic	8.73E+00	mg/kg	8.73E+00	mg/kg	M	2.8E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	9.4E-03
	Cadmium	9.68E-01	mg/kg	9.68E-01	mg/kg	M	3.1E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	3.1E-04
	Chromium	2.60E+01	mg/kg	2.60E+01	mg/kg	M	8.4E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.8E-03
	Cyanide	8.37E-01	mg/kg	8.37E-01	mg/kg	M	2.7E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.4E-05
	Iron	1.51E+04	mg/kg	1.51E+04	mg/kg	M	4.9E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	1.6E-02
	Manganese	3.82E+02	mg/kg	3.82E+02	mg/kg	M	1.2E-04	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	5.3E-03
	Total Mercury	4.79E+01	mg/kg	4.79E+01	mg/kg	M	1.5E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	5.2E-02
	Thallium	4.91E-01	mg/kg	4.91E-01	mg/kg	M	1.6E-07	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	2.4E-03
	SVOCs												
	Hexachlorobenzene	2.25E-01	mg/kg	2.25E-01	mg/kg	M	7.3E-08	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	9.1E-05
	PAHs												
	Benz(a)anthracene	2.50E+00	mg/kg	2.50E+00	mg/kg	M	8.1E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	2.63E+00	mg/kg	2.63E+00	mg/kg	M	8.5E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	2.28E+00	mg/kg	2.28E+00	mg/kg	M	7.4E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	1.29E+00	mg/kg	1.29E+00	mg/kg	M	4.2E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.4E-05
	Benzo(k)fluoranthene	2.29E+00	mg/kg	2.29E+00	mg/kg	M	7.4E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	6.09E-01	mg/kg	6.09E-01	mg/kg	M	2.0E-07	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	1.29E+00	mg/kg	1.29E+00	mg/kg	M	4.2E-07	mg/kg-day	NA		NA	NA	NA
	Naphthalene	2.84E+00	mg/kg	2.84E+00	mg/kg	M	9.2E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	4.6E-05
	Phenanthrene	1.19E+00	mg/kg	1.19E+00	mg/kg	M	3.8E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.3E-05
	PCBs												
	Aroclor 1254	2.09E-01	mg/kg	2.09E-01	mg/kg	M	6.7E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.4E-03
	Aroclor 1268	3.62E-01	mg/kg	3.62E-01	mg/kg	M	1.2E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	5.8E-03
	Sum of PCBs	6.31E-01	mg/kg	6.31E-01	mg/kg	M	2.0E-07	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	4.38E-05	mg/kg	4.38E-05	mg/kg	M	1.4E-11	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												1.0E-01

TABLE 7.27.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
DREDGE SPOIL SUBSURFACE SOILS - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Dermal	Inorganics												
	Aluminum	1.02E+04	mg/kg	1.02E+04	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Arsenic	8.73E+00	mg/kg	8.73E+00	mg/kg	M	1.3E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	4.4E-03
	Cadmium	9.68E-01	mg/kg	9.68E-01	mg/kg	M	4.9E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	1.9E-04
	Chromium	2.60E+01	mg/kg	2.60E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Cyanide	8.37E-01	mg/kg	8.37E-01	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Iron	1.51E+04	mg/kg	1.51E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	3.82E+02	mg/kg	3.82E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Total Mercury	4.79E+01	mg/kg	4.79E+01	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Thallium	4.91E-01	mg/kg	4.91E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	SVOCs												
	Hexachlorobenzene	2.25E-01	mg/kg	2.25E-01	mg/kg	M	1.1E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	1.4E-04
	PAHs												
	Benz(a)anthracene	2.50E+00	mg/kg	2.50E+00	mg/kg	M	1.6E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	2.63E+00	mg/kg	2.63E+00	mg/kg	M	1.7E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	2.28E+00	mg/kg	2.28E+00	mg/kg	M	1.5E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	1.29E+00	mg/kg	1.29E+00	mg/kg	M	8.4E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.8E-05
	Benzo(k)fluoranthene	2.29E+00	mg/kg	2.29E+00	mg/kg	M	1.5E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	6.09E-01	mg/kg	6.09E-01	mg/kg	M	4.0E-07	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	1.29E+00	mg/kg	1.29E+00	mg/kg	M	8.4E-07	mg/kg-day	NA		NA	NA	NA
	Naphthalene	2.84E+00	mg/kg	2.84E+00	mg/kg	M	1.9E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	9.3E-05
	Phenanthrene	1.19E+00	mg/kg	1.19E+00	mg/kg	M	7.7E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.6E-05
	PCBs												
	Aroclor 1254	2.09E-01	mg/kg	2.09E-01	mg/kg	M	1.5E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	7.3E-03
	Aroclor 1268	3.62E-01	mg/kg	3.62E-01	mg/kg	M	2.5E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.3E-02
	Sum of PCBs	6.31E-01	mg/kg	6.31E-01	mg/kg	M	4.4E-07	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	4.38E-05	mg/kg	4.38E-05	mg/kg	M	6.6E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												2.5E-02

Total Non-Cancer Hazards 0.13

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.28.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SURFACE WATER - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Onondaga Lake
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Cadmium	1.11E-03	mg/L	1.11E-03	mg/L	M	2.5E-07	mg/kg-day	5.0E-04	mg/kg-day	NA	NA	5.0E-04
	Chromium	2.34E-03	mg/L	2.34E-03	mg/L	M	5.2E-07	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.7E-04
	Manganese	8.17E-02	mg/L	8.17E-02	mg/L	M	1.8E-05	mg/kg-day	1.4E-01	mg/kg-day	NA	NA	1.3E-04
	Methylmercury	1.33E-06	mg/L	1.33E-06	mg/L	M	3.0E-10	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	3.0E-06
	Total Mercury	8.28E-06	mg/L	8.28E-06	mg/L	M	1.9E-09	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	6.2E-06
	VOCs												
	Benzene	5.90E-04	mg/L	5.90E-04	mg/L	M	1.3E-07	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	4.4E-05
	Bromodichloromethane	2.40E-04	mg/L	2.40E-04	mg/L	M	5.4E-08	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	2.7E-06
	Chlorobenzene	6.37E-04	mg/L	6.37E-04	mg/L	M	1.4E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	7.1E-06
	Chloroform	6.58E-04	mg/L	6.58E-04	mg/L	M	1.5E-07	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	1.5E-05
	SVOCs												
	1,2-Dichlorobenzene	5.85E-04	mg/L	5.85E-04	mg/L	M	1.3E-07	mg/kg-day	9.0E-02	mg/kg-day	NA	NA	1.5E-06
	1,3-Dichlorobenzene	5.39E-04	mg/L	5.39E-04	mg/L	M	1.2E-07	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	1.3E-04
	1,4-Dichlorobenzene	6.17E-04	mg/L	6.17E-04	mg/L	M	1.4E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	4.6E-06
	1,2,4-Trichlorobenzene	5.82E-04	mg/L	5.82E-04	mg/L	M	1.3E-07	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	1.3E-05
	Sum of Non-Cancer Hazards from Ingestion												1.0E-03
Dermal	**Metals and Organometallic Compounds**												
	Cadmium	1.11E-03	mg/L	1.11E-03	mg/L	M	8.9E-08	mg/kg-day	1.3E-05	mg/kg-day	NA	NA	7.1E-03
	Chromium	2.34E-03	mg/L	2.34E-03	mg/L	M	3.8E-07	mg/kg-day	7.5E-05	mg/kg-day	NA	NA	5.0E-03
	Manganese	8.17E-02	mg/L	8.17E-02	mg/L	M	6.6E-06	mg/kg-day	5.6E-03	mg/kg-day	NA	NA	1.2E-03
	Methylmercury	1.33E-06	mg/L	1.33E-06	mg/L	M	1.1E-10	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	1.1E-06
	Total Mercury	8.28E-06	mg/L	8.28E-06	mg/L	M	6.7E-10	mg/kg-day	2.1E-05	mg/kg-day	NA	NA	3.2E-05
	VOCs												
	Benzene	5.90E-04	mg/L	5.90E-04	mg/L	M	8.2E-07	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.7E-04
	Bromodichloromethane	2.40E-04	mg/L	2.40E-04	mg/L	M	1.5E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	7.5E-06
	Chlorobenzene	6.37E-04	mg/L	6.37E-04	mg/L	M	1.9E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	9.3E-05
	Chloroform	6.58E-04	mg/L	6.58E-04	mg/L	M	5.0E-07	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	5.0E-05
	SVOCs												
	1,2-Dichlorobenzene	5.85E-04	mg/L	5.85E-04	mg/L	M	2.9E-06	mg/kg-day	9.0E-02	mg/kg-day	NA	NA	3.2E-05

TABLE 7.28.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SURFACE WATER - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	1,3-Dichlorobenzene	5.39E-04	mg/L	5.39E-04	mg/L	M	3.7E-06	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	4.1E-03
	1,4-Dichlorobenzene	6.17E-04	mg/L	6.17E-04	mg/L	M	3.1E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.0E-04
	1,2,4-Trichlorobenzene	5.82E-04	mg/L	5.82E-04	mg/L	M	5.8E-06	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	5.8E-04
Sum of Non-Cancer Hazards from Dermal Contact													1.9E-02

Total Non-Cancer Hazards 0.02

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.29.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SURFACE WATER - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Onondaga Lake
Receptor Population: Recreational
Receptor Age: Younger Child (less than 6)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Cadmium	1.11E-03	mg/L	1.11E-03	mg/L	M	1.2E-06	mg/kg-day	5.0E-04	mg/kg-day	NA	NA	2.3E-03
	Chromium	2.34E-03	mg/L	2.34E-03	mg/L	M	2.4E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	8.2E-04
	Manganese	8.17E-02	mg/L	8.17E-02	mg/L	M	8.5E-05	mg/kg-day	1.4E-01	mg/kg-day	NA	NA	6.1E-04
	Methylmercury	1.33E-06	mg/L	1.33E-06	mg/L	M	1.4E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	1.4E-05
	Total Mercury	8.28E-06	mg/L	8.28E-06	mg/L	M	8.6E-09	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.9E-05
	VOCs												
	Benzene	5.90E-04	mg/L	5.90E-04	mg/L	M	6.2E-07	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.1E-04
	Bromodichloromethane	2.40E-04	mg/L	2.40E-04	mg/L	M	2.5E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.3E-05
	Chlorobenzene	6.37E-04	mg/L	6.37E-04	mg/L	M	6.7E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	3.3E-05
	Chloroform	6.58E-04	mg/L	6.58E-04	mg/L	M	6.9E-07	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	6.9E-05
	SVOCs												
	1,2-Dichlorobenzene	5.85E-04	mg/L	5.85E-04	mg/L	M	6.1E-07	mg/kg-day	9.0E-02	mg/kg-day	NA	NA	6.8E-06
	1,3-Dichlorobenzene	5.39E-04	mg/L	5.39E-04	mg/L	M	5.6E-07	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	6.3E-04
	1,4-Dichlorobenzene	6.17E-04	mg/L	6.17E-04	mg/L	M	6.4E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.1E-05
	1,2,4-Trichlorobenzene	5.82E-04	mg/L	5.82E-04	mg/L	M	6.1E-07	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	6.1E-05
	Sum of Non-Cancer Hazards from Ingestion												4.8E-03
Dermal	**Metals and Organometallic Compounds**												
	Cadmium	1.11E-03	mg/L	1.11E-03	mg/L	M	1.5E-07	mg/kg-day	1.3E-05	mg/kg-day	NA	NA	1.2E-02
	Chromium	2.34E-03	mg/L	2.34E-03	mg/L	M	6.5E-07	mg/kg-day	7.5E-05	mg/kg-day	NA	NA	8.6E-03
	Manganese	8.17E-02	mg/L	8.17E-02	mg/L	M	1.1E-05	mg/kg-day	5.6E-03	mg/kg-day	NA	NA	2.0E-03
	Methylmercury	1.33E-06	mg/L	1.33E-06	mg/L	M	1.8E-10	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	1.8E-06
	Total Mercury	8.28E-06	mg/L	8.28E-06	mg/L	M	1.1E-09	mg/kg-day	2.1E-05	mg/kg-day	NA	NA	5.4E-05
	VOCs												
	Benzene	5.90E-04	mg/L	5.90E-04	mg/L	M	1.4E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	4.7E-04
	Bromodichloromethane	2.40E-04	mg/L	2.40E-04	mg/L	M	2.6E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.3E-05
	Chlorobenzene	6.37E-04	mg/L	6.37E-04	mg/L	M	3.2E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.6E-04
	Chloroform	6.58E-04	mg/L	6.58E-04	mg/L	M	8.5E-07	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	8.5E-05
	SVOCs												
	1,2-Dichlorobenzene	5.85E-04	mg/L	5.85E-04	mg/L	M	4.9E-06	mg/kg-day	9.0E-02	mg/kg-day	NA	NA	5.5E-05

TABLE 7.29.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SURFACE WATER - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	1,3-Dichlorobenzene	5.39E-04	mg/L	5.39E-04	mg/L	M	6.3E-06	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	7.0E-03
	1,4-Dichlorobenzene	6.17E-04	mg/L	6.17E-04	mg/L	M	5.3E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.8E-04
	1,2,4-Trichlorobenzene	5.82E-04	mg/L	5.82E-04	mg/L	M	9.9E-06	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	9.9E-04
	Sum of Non-Cancer Hazards from Dermal Contact												3.2E-02

Total Non-Cancer Hazards 0.04

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.30.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SURFACE WATER - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Onondaga Lake
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Cadmium	1.11E-03	mg/L	1.11E-03	mg/L	M	4.0E-07	mg/kg-day	5.0E-04	mg/kg-day	NA	NA	8.1E-04
	Chromium	2.34E-03	mg/L	2.34E-03	mg/L	M	8.5E-07	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.8E-04
	Manganese	8.17E-02	mg/L	8.17E-02	mg/L	M	3.0E-05	mg/kg-day	1.4E-01	mg/kg-day	NA	NA	2.1E-04
	Methylmercury	1.33E-06	mg/L	1.33E-06	mg/L	M	4.8E-10	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	4.8E-06
	Total Mercury	8.28E-06	mg/L	8.28E-06	mg/L	M	3.0E-09	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.0E-05
	VOCs												
	Benzene	5.90E-04	mg/L	5.90E-04	mg/L	M	2.2E-07	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	7.2E-05
	Bromodichloromethane	2.40E-04	mg/L	2.40E-04	mg/L	M	8.7E-08	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	4.4E-06
	Chlorobenzene	6.37E-04	mg/L	6.37E-04	mg/L	M	2.3E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.2E-05
	Chloroform	6.58E-04	mg/L	6.58E-04	mg/L	M	2.4E-07	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	2.4E-05
	SVOCs												
	1,2-Dichlorobenzene	5.85E-04	mg/L	5.85E-04	mg/L	M	2.1E-07	mg/kg-day	9.0E-02	mg/kg-day	NA	NA	2.4E-06
	1,3-Dichlorobenzene	5.39E-04	mg/L	5.39E-04	mg/L	M	2.0E-07	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	2.2E-04
	1,4-Dichlorobenzene	6.17E-04	mg/L	6.17E-04	mg/L	M	2.2E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	7.5E-06
	1,2,4-Trichlorobenzene	5.82E-04	mg/L	5.82E-04	mg/L	M	2.1E-07	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	2.1E-05
	Sum of Non-Cancer Hazards from Ingestion												1.7E-03
Dermal	**Metals and Organometallic Compounds**												
	Cadmium	1.11E-03	mg/L	1.11E-03	mg/L	M	1.0E-07	mg/kg-day	1.3E-05	mg/kg-day	NA	NA	8.4E-03
	Chromium	2.34E-03	mg/L	2.34E-03	mg/L	M	4.4E-07	mg/kg-day	7.5E-05	mg/kg-day	NA	NA	5.9E-03
	Manganese	8.17E-02	mg/L	8.17E-02	mg/L	M	7.7E-06	mg/kg-day	5.6E-03	mg/kg-day	NA	NA	1.4E-03
	Methylmercury	1.33E-06	mg/L	1.33E-06	mg/L	M	1.3E-10	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	1.3E-06
	Total Mercury	8.28E-06	mg/L	8.28E-06	mg/L	M	7.8E-10	mg/kg-day	2.1E-05	mg/kg-day	NA	NA	3.7E-05
	VOCs												
	Benzene	5.90E-04	mg/L	5.90E-04	mg/L	M	9.7E-07	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	3.2E-04
	Bromodichloromethane	2.40E-04	mg/L	2.40E-04	mg/L	M	1.8E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	8.8E-06
	Chlorobenzene	6.37E-04	mg/L	6.37E-04	mg/L	M	2.2E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.1E-04
	Chloroform	6.58E-04	mg/L	6.58E-04	mg/L	M	5.9E-07	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	5.9E-05
	SVOCs												
	1,2-Dichlorobenzene	5.85E-04	mg/L	5.85E-04	mg/L	M	3.4E-06	mg/kg-day	9.0E-02	mg/kg-day	NA	NA	3.7E-05

TABLE 7.30.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SURFACE WATER - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	1,3-Dichlorobenzene	5.39E-04	mg/L	5.39E-04	mg/L	M	4.4E-06	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	4.8E-03
	1,4-Dichlorobenzene	6.17E-04	mg/L	6.17E-04	mg/L	M	3.6E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.2E-04
	1,2,4-Trichlorobenzene	5.82E-04	mg/L	5.82E-04	mg/L	M	6.8E-06	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	6.8E-04
Sum of Non-Cancer Hazards from Dermal Contact													2.2E-02

Total Non-Cancer Hazards: 0.02

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.31.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SURFACE WATER - ONONDAGA LAKE

Scenario Timeframe: Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Onondaga Lake
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Cadmium	1.11E-03	mg/L	1.11E-03	mg/L	M	1.3E-08	mg/kg-day	5.0E-04	mg/kg-day	NA	NA	2.6E-05
	Chromium	2.34E-03	mg/L	2.34E-03	mg/L	M	2.7E-08	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	9.2E-06
	Manganese	8.17E-02	mg/L	8.17E-02	mg/L	M	9.6E-07	mg/kg-day	1.4E-01	mg/kg-day	NA	NA	6.8E-06
	Methylmercury	1.33E-06	mg/L	1.33E-06	mg/L	M	1.6E-11	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	1.6E-07
	Total Mercury	8.28E-06	mg/L	8.28E-06	mg/L	M	9.7E-11	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.2E-07
	VOCs												
	Benzene	5.90E-04	mg/L	5.90E-04	mg/L	M	6.9E-09	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.3E-06
	Bromodichloromethane	2.40E-04	mg/L	2.40E-04	mg/L	M	2.8E-09	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.4E-07
	Chlorobenzene	6.37E-04	mg/L	6.37E-04	mg/L	M	7.5E-09	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	3.7E-07
	Chloroform	6.58E-04	mg/L	6.58E-04	mg/L	M	7.7E-09	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	7.7E-07
	SVOCs												
	1,2-Dichlorobenzene	5.85E-04	mg/L	5.85E-04	mg/L	M	6.9E-09	mg/kg-day	9.0E-02	mg/kg-day	NA	NA	7.6E-08
	1,3-Dichlorobenzene	5.39E-04	mg/L	5.39E-04	mg/L	M	6.3E-09	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	7.0E-06
	1,4-Dichlorobenzene	6.17E-04	mg/L	6.17E-04	mg/L	M	7.2E-09	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.4E-07
	1,2,4-Trichlorobenzene	5.82E-04	mg/L	5.82E-04	mg/L	M	6.8E-09	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	6.8E-07
	Sum of Non-Cancer Hazards from Ingestion												5.4E-05
Dermal	**Metals and Organometallic Compounds**												
	Cadmium	1.11E-03	mg/L	1.11E-03	mg/L	M	6.2E-09	mg/kg-day	1.3E-05	mg/kg-day	NA	NA	4.9E-04
	Chromium	2.34E-03	mg/L	2.34E-03	mg/L	M	2.6E-08	mg/kg-day	7.5E-05	mg/kg-day	NA	NA	3.5E-04
	Manganese	8.17E-02	mg/L	8.17E-02	mg/L	M	4.6E-07	mg/kg-day	5.6E-03	mg/kg-day	NA	NA	8.1E-05
	Methylmercury	1.33E-06	mg/L	1.33E-06	mg/L	M	7.4E-12	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	7.4E-08
	Total Mercury	8.28E-06	mg/L	8.28E-06	mg/L	M	4.6E-11	mg/kg-day	2.1E-05	mg/kg-day	NA	NA	2.2E-06
	VOCs												
	Benzene	5.90E-04	mg/L	5.90E-04	mg/L	M	7.6E-08	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.5E-05
	Bromodichloromethane	2.40E-04	mg/L	2.40E-04	mg/L	M	1.7E-08	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	8.5E-07
	Chlorobenzene	6.37E-04	mg/L	6.37E-04	mg/L	M	1.9E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	9.6E-06
	Chloroform	6.58E-04	mg/L	6.58E-04	mg/L	M	5.0E-08	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	5.0E-06
	SVOCs												
	1,2-Dichlorobenzene	5.85E-04	mg/L	5.85E-04	mg/L	M	3.4E-07	mg/kg-day	9.0E-02	mg/kg-day	NA	NA	3.8E-06

TABLE 7.31.RME
CALCULATION OF NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SURFACE WATER - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	1,3-Dichlorobenzene	5.39E-04	mg/L	5.39E-04	mg/L	M	4.5E-07	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	5.0E-04
	1,4-Dichlorobenzene	6.17E-04	mg/L	6.17E-04	mg/L	M	3.7E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.2E-05
	1,2,4-Trichlorobenzene	5.82E-04	mg/L	5.82E-04	mg/L	M	6.2E-07	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	6.2E-05
Sum of Non-Cancer Hazards from Dermal Contact													1.5E-03

Total Non-Cancer Hazards 0.002

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.1.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Fish Tissue
Exposure Medium: Fish Tissue
Exposure Point: Fish fillet tissue from Onondaga Lake
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Antimony	9.92E-01	mg/kg	9.92E-01	mg/kg	M	1.1E-04	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	2.8E-01
	Arsenic (inorganic)	8.03E-02	mg/kg	8.03E-02	mg/kg	M	9.2E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.1E-02
	Chromium	5.65E-01	mg/kg	5.65E-01	mg/kg	M	6.5E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.2E-02
	Cyanide	5.69E+00	mg/kg	5.69E+00	mg/kg	M	6.5E-04	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	3.3E-02
	Manganese	3.23E+00	mg/kg	3.23E+00	mg/kg	M	3.7E-04	mg/kg-day	1.4E-01	mg/kg-day	NA	NA	2.6E-03
	Mercury (as methylmercury)	1.08E+00	mg/kg	1.08E+00	mg/kg	M	1.2E-04	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	1.2E+00
	Selenium	1.47E+00	mg/kg	1.47E+00	mg/kg	M	1.7E-04	mg/kg-day	5.0E-03	mg/kg-day	NA	NA	3.4E-02
	Vanadium	6.27E-01	mg/kg	6.27E-01	mg/kg	M	7.2E-05	mg/kg-day	7.0E-03	mg/kg-day	NA	NA	1.0E-02
	Zinc	4.37E+01	mg/kg	4.37E+01	mg/kg	M	5.0E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	1.7E-02
	SVOCs												
	bis(2-ethylhexyl)phthalate	2.30E+00	mg/kg	2.30E+00	mg/kg	M	2.6E-04	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.3E-02
	Hexachlorobenzene	1.30E-02	mg/kg	1.30E-02	mg/kg	M	1.5E-06	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	1.9E-03
	Pesticides												
	2,4'-DDE	4.13E-03	mg/kg	4.13E-03	mg/kg	M	4.7E-07	mg/kg-day	NA		NA	NA	NA
	4,4'-DDD	1.33E-02	mg/kg	1.33E-02	mg/kg	M	1.5E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	5.1E-04
	4,4'-DDE	3.44E-02	mg/kg	3.44E-02	mg/kg	M	3.9E-06	mg/kg-day	7.0E-04	mg/kg-day	NA	NA	5.6E-03
	4,4'-DDT	9.49E-03	mg/kg	9.49E-03	mg/kg	M	1.1E-06	mg/kg-day	5.0E-04	mg/kg-day	NA	NA	2.2E-03
	Aldrin	2.53E-03	mg/kg	2.53E-03	mg/kg	M	2.9E-07	mg/kg-day	3.0E-05	mg/kg-day	NA	NA	9.6E-03
	delta-BHC	2.52E-03	mg/kg	2.52E-03	mg/kg	M	2.9E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	9.6E-04
	Dieldrin	3.82E-03	mg/kg	3.82E-03	mg/kg	M	4.4E-07	mg/kg-day	5.0E-05	mg/kg-day	NA	NA	8.7E-03
	Heptachlor epoxide	4.14E-03	mg/kg	4.14E-03	mg/kg	M	4.7E-07	mg/kg-day	1.3E-05	mg/kg-day	NA	NA	3.6E-02
	Sum of chlordanes	9.73E-03	mg/kg	9.73E-03	mg/kg	M	1.1E-06	mg/kg-day	5.0E-04	mg/kg-day	NA	NA	2.2E-03
	PCBs												
	Sum of Low MW PCBs	4.79E-01	mg/kg	4.79E-01	mg/kg	M	3.7E-05	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	5.2E-01
	Sum of High MW PCBs	5.77E-01	mg/kg	5.77E-01	mg/kg	M	4.4E-05	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.2E+00
	Sum of PCBs	9.13E-01	mg/kg	9.13E-01	mg/kg	M	7.0E-05	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.95E-05	mg/kg	1.95E-05	mg/kg	M	1.5E-09	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												4.5
Dermal	NA												
	Sum of Non-Cancer Hazards from Dermal Contact												NA

Total Non-Cancer Hazards 4.5

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.2.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Fish Tissue
Exposure Medium: Fish Tissue
Exposure Point: Fish fillet tissue from Onondaga Lake
Receptor Population: Recreational
Receptor Age: Young Child (less than 6)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Antimony	9.92E-01	mg/kg	9.92E-01	mg/kg	M	1.8E-04	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	4.4E-01
	Arsenic (inorganic)	8.03E-02	mg/kg	8.03E-02	mg/kg	M	1.4E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	4.8E-02
	Chromium	5.65E-01	mg/kg	5.65E-01	mg/kg	M	1.0E-04	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	3.4E-02
	Cyanide	5.69E+00	mg/kg	5.69E+00	mg/kg	M	1.0E-03	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	5.1E-02
	Manganese	3.23E+00	mg/kg	3.23E+00	mg/kg	M	5.7E-04	mg/kg-day	1.4E-01	mg/kg-day	NA	NA	4.1E-03
	Mercury (as methylmercury)	1.08E+00	mg/kg	1.08E+00	mg/kg	M	1.9E-04	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	1.9E+00
	Selenium	1.47E+00	mg/kg	1.47E+00	mg/kg	M	2.6E-04	mg/kg-day	5.0E-03	mg/kg-day	NA	NA	5.2E-02
	Vanadium	6.27E-01	mg/kg	6.27E-01	mg/kg	M	1.1E-04	mg/kg-day	7.0E-03	mg/kg-day	NA	NA	1.6E-02
	Zinc	4.37E+01	mg/kg	4.37E+01	mg/kg	M	7.8E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	2.6E-02
	SVOCs												
	bis(2-ethylhexyl)phthalate	2.30E+00	mg/kg	2.30E+00	mg/kg	M	4.1E-04	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	2.0E-02
	Hexachlorobenzene	1.30E-02	mg/kg	1.30E-02	mg/kg	M	2.3E-06	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	2.9E-03
	Pesticides												
	2,4'-DDE	4.13E-03	mg/kg	4.13E-03	mg/kg	M	7.3E-07	mg/kg-day	NA		NA	NA	NA
	4,4'-DDD	1.33E-02	mg/kg	1.33E-02	mg/kg	M	2.4E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	7.9E-04
	4,4'-DDE	3.44E-02	mg/kg	3.44E-02	mg/kg	M	6.1E-06	mg/kg-day	7.0E-04	mg/kg-day	NA	NA	8.7E-03
	4,4'-DDT	9.49E-03	mg/kg	9.49E-03	mg/kg	M	1.7E-06	mg/kg-day	5.0E-04	mg/kg-day	NA	NA	3.4E-03
	Aldrin	2.53E-03	mg/kg	2.53E-03	mg/kg	M	4.5E-07	mg/kg-day	3.0E-05	mg/kg-day	NA	NA	1.5E-02
	delta-BHC	2.52E-03	mg/kg	2.52E-03	mg/kg	M	4.5E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.5E-03
	Dieldrin	3.82E-03	mg/kg	3.82E-03	mg/kg	M	6.8E-07	mg/kg-day	5.0E-05	mg/kg-day	NA	NA	1.4E-02
	Heptachlor epoxide	4.14E-03	mg/kg	4.14E-03	mg/kg	M	7.4E-07	mg/kg-day	1.3E-05	mg/kg-day	NA	NA	5.7E-02
	Sum of chlordanes	9.73E-03	mg/kg	9.73E-03	mg/kg	M	1.7E-06	mg/kg-day	5.0E-04	mg/kg-day	NA	NA	3.5E-03
	PCBs												
	Sum of Low MW PCBs	4.79E-01	mg/kg	4.79E-01	mg/kg	M	5.7E-05	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	8.1E-01
	Sum of High MW PCBs	5.77E-01	mg/kg	5.77E-01	mg/kg	M	6.9E-05	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.4E+00
	Sum of PCBs	9.13E-01	mg/kg	9.13E-01	mg/kg	M	1.1E-04	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.95E-05	mg/kg	1.95E-05	mg/kg	M	2.3E-09	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												7.0
Dermal	NA												
	Sum of Non-Cancer Hazards from Dermal Contact												NA

Total Non-Cancer Hazards 7.0

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.3.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Fish Tissue
Exposure Medium: Fish Tissue
Exposure Point: Fish fillet tissue from Onondaga Lake
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Antimony	9.92E-01	mg/kg	9.92E-01	mg/kg	M	1.2E-04	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	3.1E-01
	Arsenic (inorganic)	8.03E-02	mg/kg	8.03E-02	mg/kg	M	1.0E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.3E-02
	Chromium	5.65E-01	mg/kg	5.65E-01	mg/kg	M	7.0E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.3E-02
	Cyanide	5.69E+00	mg/kg	5.69E+00	mg/kg	M	7.1E-04	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	3.5E-02
	Manganese	3.23E+00	mg/kg	3.23E+00	mg/kg	M	4.0E-04	mg/kg-day	1.4E-01	mg/kg-day	NA	NA	2.9E-03
	Mercury (as methylmercury)	1.08E+00	mg/kg	1.08E+00	mg/kg	M	1.3E-04	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	1.3E+00
	Selenium	1.47E+00	mg/kg	1.47E+00	mg/kg	M	1.8E-04	mg/kg-day	5.0E-03	mg/kg-day	NA	NA	3.6E-02
	Vanadium	6.27E-01	mg/kg	6.27E-01	mg/kg	M	7.8E-05	mg/kg-day	7.0E-03	mg/kg-day	NA	NA	1.1E-02
	Zinc	4.37E+01	mg/kg	4.37E+01	mg/kg	M	5.4E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	1.8E-02
	SVOCs												
	bis(2-ethylhexyl)phthalate	2.30E+00	mg/kg	2.30E+00	mg/kg	M	2.9E-04	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.4E-02
	Hexachlorobenzene	1.30E-02	mg/kg	1.30E-02	mg/kg	M	1.6E-06	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	2.0E-03
	Pesticides												
	2,4'-DDE	4.13E-03	mg/kg	4.13E-03	mg/kg	M	5.1E-07	mg/kg-day	NA		NA	NA	NA
	4,4'-DDD	1.33E-02	mg/kg	1.33E-02	mg/kg	M	1.6E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	5.5E-04
	4,4'-DDE	3.44E-02	mg/kg	3.44E-02	mg/kg	M	4.3E-06	mg/kg-day	7.0E-04	mg/kg-day	NA	NA	6.1E-03
	4,4'-DDT	9.49E-03	mg/kg	9.49E-03	mg/kg	M	1.2E-06	mg/kg-day	5.0E-04	mg/kg-day	NA	NA	2.4E-03
	Aldrin	2.53E-03	mg/kg	2.53E-03	mg/kg	M	3.1E-07	mg/kg-day	3.0E-05	mg/kg-day	NA	NA	1.0E-02
	delta-BHC	2.52E-03	mg/kg	2.52E-03	mg/kg	M	3.1E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.0E-03
	Dieldrin	3.82E-03	mg/kg	3.82E-03	mg/kg	M	4.7E-07	mg/kg-day	5.0E-05	mg/kg-day	NA	NA	9.5E-03
	Heptachlor epoxide	4.14E-03	mg/kg	4.14E-03	mg/kg	M	5.1E-07	mg/kg-day	1.3E-05	mg/kg-day	NA	NA	3.9E-02
	Sum of chlordanes	9.73E-03	mg/kg	9.73E-03	mg/kg	M	1.2E-06	mg/kg-day	5.0E-04	mg/kg-day	NA	NA	2.4E-03
	PCBs												
	Sum of Low MW PCBs	4.79E-01	mg/kg	4.79E-01	mg/kg	M	4.0E-05	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	5.7E-01
	Sum of High MW PCBs	5.77E-01	mg/kg	5.77E-01	mg/kg	M	4.8E-05	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.4E+00
	Sum of PCBs	9.13E-01	mg/kg	9.13E-01	mg/kg	M	7.6E-05	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.95E-05	mg/kg	1.95E-05	mg/kg	M	1.6E-09	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												4.9
Dermal	NA												
	Sum of Non-Cancer Hazards from Dermal Contact												NA

Total Non-Cancer Hazards 4.9

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.4.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
NORTH BASIN - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: North Basin Sediments
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Antimony	9.20E+00	mg/kg	9.20E+00	mg/kg	M	5.8E-07	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	1.4E-03
	Arsenic	3.86E+00	mg/kg	3.86E+00	mg/kg	M	2.4E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	8.0E-04
	Barium	1.51E+02	mg/kg	1.51E+02	mg/kg	M	9.5E-06	mg/kg-day	7.0E-02	mg/kg-day	NA	NA	1.4E-04
	Cadmium	2.03E+00	mg/kg	2.03E+00	mg/kg	M	1.3E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	1.3E-04
	Chromium	3.24E+01	mg/kg	3.24E+01	mg/kg	M	2.0E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	6.8E-04
	Iron	5.79E+03	mg/kg	5.79E+03	mg/kg	M	3.6E-04	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	1.2E-03
	Manganese	2.77E+02	mg/kg	2.77E+02	mg/kg	M	1.7E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	7.4E-04
	Methylmercury	1.99E-03	mg/kg	1.99E-03	mg/kg	M	1.2E-10	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	1.2E-06
	Total Mercury	1.89E+00	mg/kg	1.89E+00	mg/kg	M	1.2E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.9E-04
	Thallium	2.93E-01	mg/kg	2.93E-01	mg/kg	M	1.8E-08	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	2.8E-04
	VOCs												
	Benzene	8.94E-02	mg/kg	8.94E-02	mg/kg	M	5.6E-09	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.9E-06
	SVOCs												
	Hexachlorobenzene	4.06E-01	mg/kg	4.06E-01	mg/kg	M	2.5E-08	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	3.2E-05
	PAHs												
	Benz(a)anthracene	1.63E-01	mg/kg	1.63E-01	mg/kg	M	1.0E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.56E-01	mg/kg	1.56E-01	mg/kg	M	9.7E-09	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	2.37E-01	mg/kg	2.37E-01	mg/kg	M	1.5E-08	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.83E-02	mg/kg	4.83E-02	mg/kg	M	3.0E-09	mg/kg-day	NA		NA	NA	NA
	Naphthalene	3.89E-01	mg/kg	3.89E-01	mg/kg	M	2.4E-08	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.2E-06
	PCBs												
	Aroclor 1254	4.12E-02	mg/kg	4.12E-02	mg/kg	M	2.6E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.3E-04
	Aroclor 1268	3.47E-02	mg/kg	3.47E-02	mg/kg	M	2.2E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.1E-04
	Sum of PCBs	8.62E-02	mg/kg	8.62E-02	mg/kg	M	5.4E-09	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.95E-06	mg/kg	1.95E-06	mg/kg	M	1.2E-13	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												6.1E-03

TABLE 7.4.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
NORTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Dermal	**Metals and Organometallic Compo**												
	Antimony	9.20E+00	mg/kg	9.20E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	3.86E+00	mg/kg	3.86E+00	mg/kg	M	1.2E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	4.1E-04
	Barium	1.51E+02	mg/kg	1.51E+02	mg/kg	M	NA		4.9E-03	mg/kg-day	NA	NA	NA
	Cadmium	2.03E+00	mg/kg	2.03E+00	mg/kg	M	2.2E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	8.7E-05
	Chromium	3.24E+01	mg/kg	3.24E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	5.79E+03	mg/kg	5.79E+03	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	2.77E+02	mg/kg	2.77E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Methylmercury	1.99E-03	mg/kg	1.99E-03	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Total Mercury	1.89E+00	mg/kg	1.89E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Thallium	2.93E-01	mg/kg	2.93E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	VOCs												
	Benzene	8.94E-02	mg/kg	8.94E-02	mg/kg	M	NA		3.0E-03	mg/kg-day	NA	NA	NA
	SVOCs												
	Hexachlorobenzene	4.06E-01	mg/kg	4.06E-01	mg/kg	M	4.3E-08	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	5.4E-05
	PAHs												
	Benz(a)anthracene	1.63E-01	mg/kg	1.63E-01	mg/kg	M	2.3E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.56E-01	mg/kg	1.56E-01	mg/kg	M	2.2E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	2.37E-01	mg/kg	2.37E-01	mg/kg	M	3.3E-08	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.83E-02	mg/kg	4.83E-02	mg/kg	M	6.7E-09	mg/kg-day	NA		NA	NA	NA
	Naphthalene	3.89E-01	mg/kg	3.89E-01	mg/kg	M	5.4E-08	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	2.7E-06
	PCBs												
	Aroclor 1254	4.12E-02	mg/kg	4.12E-02	mg/kg	M	6.2E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.1E-04
	Aroclor 1268	3.47E-02	mg/kg	3.47E-02	mg/kg	M	5.2E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.6E-04
	Sum of PCBs	8.62E-02	mg/kg	8.62E-02	mg/kg	M	1.3E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.95E-06	mg/kg	1.95E-06	mg/kg	M	6.3E-14	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												1.1E-03

Total Non-Cancer Hazards 0.007

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.5.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
NORTH BASIN - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: North Basin Sediments
Receptor Population: Recreational
Receptor Age: Younger Child (less than 6)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Antimony	9.20E+00	mg/kg	9.20E+00	mg/kg	M	5.4E-06	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	1.3E-02
	Arsenic	3.86E+00	mg/kg	3.86E+00	mg/kg	M	2.3E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	7.5E-03
	Barium	1.51E+02	mg/kg	1.51E+02	mg/kg	M	8.8E-05	mg/kg-day	7.0E-02	mg/kg-day	NA	NA	1.3E-03
	Cadmium	2.03E+00	mg/kg	2.03E+00	mg/kg	M	1.2E-06	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	1.2E-03
	Chromium	3.24E+01	mg/kg	3.24E+01	mg/kg	M	1.9E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	6.3E-03
	Iron	5.79E+03	mg/kg	5.79E+03	mg/kg	M	3.4E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	1.1E-02
	Manganese	2.77E+02	mg/kg	2.77E+02	mg/kg	M	1.6E-04	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	6.9E-03
	Methylmercury	1.99E-03	mg/kg	1.99E-03	mg/kg	M	1.2E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	1.2E-05
	Total Mercury	1.89E+00	mg/kg	1.89E+00	mg/kg	M	1.1E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.7E-03
	Thallium	2.93E-01	mg/kg	2.93E-01	mg/kg	M	1.7E-07	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	2.6E-03
	VOCs												
	Benzene	8.94E-02	mg/kg	8.94E-02	mg/kg	M	5.2E-08	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.7E-05
	SVOCs												
	Hexachlorobenzene	4.06E-01	mg/kg	4.06E-01	mg/kg	M	2.4E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	3.0E-04
	PAHs												
	Benz(a)anthracene	1.63E-01	mg/kg	1.63E-01	mg/kg	M	9.5E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.56E-01	mg/kg	1.56E-01	mg/kg	M	9.1E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	2.37E-01	mg/kg	2.37E-01	mg/kg	M	1.4E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.83E-02	mg/kg	4.83E-02	mg/kg	M	2.8E-08	mg/kg-day	NA		NA	NA	NA
	Naphthalene	3.89E-01	mg/kg	3.89E-01	mg/kg	M	2.3E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.1E-05
	PCBs												
	Aroclor 1254	4.12E-02	mg/kg	4.12E-02	mg/kg	M	2.4E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.2E-03
	Aroclor 1268	3.47E-02	mg/kg	3.47E-02	mg/kg	M	2.0E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.0E-03
	Sum of PCBs	8.62E-02	mg/kg	8.62E-02	mg/kg	M	5.0E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.95E-06	mg/kg	1.95E-06	mg/kg	M	1.1E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												5.7E-02

TABLE 7.5.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
NORTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Dermal	**Metals and Organometallic Comp**												
	Antimony	9.20E+00	mg/kg	9.20E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	3.86E+00	mg/kg	3.86E+00	mg/kg	M	3.8E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.3E-03
	Barium	1.51E+02	mg/kg	1.51E+02	mg/kg	M	NA		4.9E-03	mg/kg-day	NA	NA	NA
	Cadmium	2.03E+00	mg/kg	2.03E+00	mg/kg	M	6.7E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	2.7E-04
	Chromium	3.24E+01	mg/kg	3.24E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	5.79E+03	mg/kg	5.79E+03	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	2.77E+02	mg/kg	2.77E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Methylmercury	1.99E-03	mg/kg	1.99E-03	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Total Mercury	1.89E+00	mg/kg	1.89E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Thallium	2.93E-01	mg/kg	2.93E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	VOCs												
	Benzene	8.94E-02	mg/kg	8.94E-02	mg/kg	M	NA		3.0E-03	mg/kg-day	NA	NA	NA
	SVOCs												
	Hexachlorobenzene	4.06E-01	mg/kg	4.06E-01	mg/kg	M	1.3E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	1.7E-04
	PAHs												
	Benz(a)anthracene	1.63E-01	mg/kg	1.63E-01	mg/kg	M	6.9E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.56E-01	mg/kg	1.56E-01	mg/kg	M	6.6E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	2.37E-01	mg/kg	2.37E-01	mg/kg	M	1.0E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	1.63E-01	mg/kg	1.63E-01	mg/kg	M	6.9E-08	mg/kg-day	NA		NA	NA	NA
	Naphthalene	3.89E-01	mg/kg	3.89E-01	mg/kg	M	1.7E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	8.3E-06
	PCBs												
	Aroclor 1254	4.12E-02	mg/kg	4.12E-02	mg/kg	M	1.9E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	9.4E-04
	Aroclor 1268	3.47E-02	mg/kg	3.47E-02	mg/kg	M	1.6E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	7.9E-04
	Sum of PCBs	8.62E-02	mg/kg	8.62E-02	mg/kg	M	4.0E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.95E-06	mg/kg	1.95E-06	mg/kg	M	1.9E-13	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												3.4E-03

Total Non-Cancer Hazards 0.06

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.6.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
NORTH BASIN - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: North Basin Sediments
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Antimony	9.20E+00	mg/kg	9.20E+00	mg/kg	M	9.4E-07	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	2.3E-03
	Arsenic	3.86E+00	mg/kg	3.86E+00	mg/kg	M	3.9E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.3E-03
	Barium	1.51E+02	mg/kg	1.51E+02	mg/kg	M	1.5E-05	mg/kg-day	7.0E-02	mg/kg-day	NA	NA	2.2E-04
	Cadmium	2.03E+00	mg/kg	2.03E+00	mg/kg	M	2.1E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	2.1E-04
	Chromium	3.24E+01	mg/kg	3.24E+01	mg/kg	M	3.3E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.1E-03
	Iron	5.79E+03	mg/kg	5.79E+03	mg/kg	M	5.9E-04	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	2.0E-03
	Manganese	2.77E+02	mg/kg	2.77E+02	mg/kg	M	2.8E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	1.2E-03
	Methylmercury	1.99E-03	mg/kg	1.99E-03	mg/kg	M	2.0E-10	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	2.0E-06
	Total Mercury	1.89E+00	mg/kg	1.89E+00	mg/kg	M	1.9E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	6.4E-04
	Thallium	2.93E-01	mg/kg	2.93E-01	mg/kg	M	3.0E-08	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	4.5E-04
	VOCs												
	Benzene	8.94E-02	mg/kg	8.94E-02	mg/kg	M	9.1E-09	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	3.0E-06
	SVOCs												
	Hexachlorobenzene	4.06E-01	mg/kg	4.06E-01	mg/kg	M	4.1E-08	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	5.2E-05
	PAHs												
	Benz(a)anthracene	1.63E-01	mg/kg	1.63E-01	mg/kg	M	1.7E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.56E-01	mg/kg	1.56E-01	mg/kg	M	1.6E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	2.37E-01	mg/kg	2.37E-01	mg/kg	M	2.4E-08	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.83E-02	mg/kg	4.83E-02	mg/kg	M	4.9E-09	mg/kg-day	NA		NA	NA	NA
	Naphthalene	3.89E-01	mg/kg	3.89E-01	mg/kg	M	4.0E-08	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	2.0E-06
	PCBs												
	Aroclor 1254	4.12E-02	mg/kg	4.12E-02	mg/kg	M	4.2E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.1E-04
	Aroclor 1268	3.47E-02	mg/kg	3.47E-02	mg/kg	M	3.5E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.8E-04
	Sum of PCBs	8.62E-02	mg/kg	8.62E-02	mg/kg	M	8.8E-09	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.95E-06	mg/kg	1.95E-06	mg/kg	M	2.0E-13	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												9.9E-03

TABLE 7.6.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
NORTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Dermal	**Metals and Organometallic Compounds**												
	Antimony	9.20E+00	mg/kg	9.20E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	3.86E+00	mg/kg	3.86E+00	mg/kg	M	2.5E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	8.5E-04
	Barium	1.51E+02	mg/kg	1.51E+02	mg/kg	M	NA		4.9E-03	mg/kg-day	NA	NA	NA
	Cadmium	2.03E+00	mg/kg	2.03E+00	mg/kg	M	4.5E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	1.8E-04
	Chromium	3.24E+01	mg/kg	3.24E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	5.79E+03	mg/kg	5.79E+03	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	2.77E+02	mg/kg	2.77E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Methylmercury	1.99E-03	mg/kg	1.99E-03	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Total Mercury	1.89E+00	mg/kg	1.89E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Thallium	2.93E-01	mg/kg	2.93E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	VOCs												
	Benzene	8.94E-02	mg/kg	8.94E-02	mg/kg	M	NA		3.0E-03	mg/kg-day	NA	NA	NA
	SVOCs												
	Hexachlorobenzene	4.06E-01	mg/kg	4.06E-01	mg/kg	M	8.9E-08	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	1.1E-04
	PAHs												
	Benz(a)anthracene	1.63E-01	mg/kg	1.63E-01	mg/kg	M	4.7E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.56E-01	mg/kg	1.56E-01	mg/kg	M	4.5E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	2.37E-01	mg/kg	2.37E-01	mg/kg	M	6.8E-08	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.83E-02	mg/kg	4.83E-02	mg/kg	M	1.4E-08	mg/kg-day	NA		NA	NA	NA
	Naphthalene	3.89E-01	mg/kg	3.89E-01	mg/kg	M	1.1E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	5.6E-06
	PCBs												
	Aroclor 1254	4.12E-02	mg/kg	4.12E-02	mg/kg	M	1.3E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	6.4E-04
	Aroclor 1268	3.47E-02	mg/kg	3.47E-02	mg/kg	M	1.1E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	5.3E-04
	Sum of PCBs	8.62E-02	mg/kg	8.62E-02	mg/kg	M	2.7E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.95E-06	mg/kg	1.95E-06	mg/kg	M	1.3E-13	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												2.3E-03

Total Non-Cancer Hazards 0.01

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.7.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
NORTH BASIN - ONONDAGA LAKE

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: North Basin Sediments
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Antimony	9.20E+00	mg/kg	9.20E+00	mg/kg	M	1.2E-06	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	3.0E-03
	Arsenic	3.86E+00	mg/kg	3.86E+00	mg/kg	M	5.0E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.7E-03
	Barium	1.51E+02	mg/kg	1.51E+02	mg/kg	M	1.9E-05	mg/kg-day	7.0E-02	mg/kg-day	NA	NA	2.8E-04
	Cadmium	2.03E+00	mg/kg	2.03E+00	mg/kg	M	2.6E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	2.6E-04
	Chromium	3.24E+01	mg/kg	3.24E+01	mg/kg	M	4.2E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.4E-03
	Iron	5.79E+03	mg/kg	5.79E+03	mg/kg	M	7.5E-04	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	2.5E-03
	Manganese	2.77E+02	mg/kg	2.77E+02	mg/kg	M	3.6E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	1.5E-03
	Methylmercury	1.99E-03	mg/kg	1.99E-03	mg/kg	M	2.6E-10	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	2.6E-06
	Total Mercury	1.89E+00	mg/kg	1.89E+00	mg/kg	M	2.4E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	8.1E-04
	Thallium	2.93E-01	mg/kg	2.93E-01	mg/kg	M	3.8E-08	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	5.7E-04
	VOCs												
	Benzene	8.94E-02	mg/kg	8.94E-02	mg/kg	M	1.2E-08	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	3.8E-06
	SVOCs												
	Hexachlorobenzene	4.06E-01	mg/kg	4.06E-01	mg/kg	M	5.2E-08	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	6.6E-05
	PAHs												
	Benz(a)anthracene	1.63E-01	mg/kg	1.63E-01	mg/kg	M	2.1E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.56E-01	mg/kg	1.56E-01	mg/kg	M	2.0E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	2.37E-01	mg/kg	2.37E-01	mg/kg	M	3.1E-08	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.83E-02	mg/kg	4.83E-02	mg/kg	M	6.2E-09	mg/kg-day	NA		NA	NA	NA
	Naphthalene	3.89E-01	mg/kg	3.89E-01	mg/kg	M	5.0E-08	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	2.5E-06
	PCBs												
	Aroclor 1254	4.12E-02	mg/kg	4.12E-02	mg/kg	M	5.3E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.7E-04
	Aroclor 1268	3.47E-02	mg/kg	3.47E-02	mg/kg	M	4.5E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.2E-04
	Sum of PCBs	8.62E-02	mg/kg	8.62E-02	mg/kg	M	1.1E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.95E-06	mg/kg	1.95E-06	mg/kg	M	2.5E-13	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												1.3E-02

TABLE 7.7.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
NORTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Dermal	**Metals and Organometallic Compounds**												
	Antimony	9.20E+00	mg/kg	9.20E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	3.86E+00	mg/kg	3.86E+00	mg/kg	M	5.2E-08	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.7E-04
	Barium	1.51E+02	mg/kg	1.51E+02	mg/kg	M	NA		4.9E-03	mg/kg-day	NA	NA	NA
	Cadmium	2.03E+00	mg/kg	2.03E+00	mg/kg	M	9.1E-10	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	3.6E-05
	Chromium	3.24E+01	mg/kg	3.24E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	5.79E+03	mg/kg	5.79E+03	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	2.77E+02	mg/kg	2.77E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Methylmercury	1.99E-03	mg/kg	1.99E-03	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Total Mercury	1.89E+00	mg/kg	1.89E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Thallium	2.93E-01	mg/kg	2.93E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	VOCs												
	Benzene	8.94E-02	mg/kg	8.94E-02	mg/kg	M	NA		3.0E-03	mg/kg-day	NA	NA	NA
	SVOCs												
	Hexachlorobenzene	4.06E-01	mg/kg	4.06E-01	mg/kg	M	1.8E-08	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	2.3E-05
	PAHs												
	Benz(a)anthracene	1.63E-01	mg/kg	1.63E-01	mg/kg	M	9.5E-09	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.56E-01	mg/kg	1.56E-01	mg/kg	M	9.0E-09	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	2.37E-01	mg/kg	2.37E-01	mg/kg	M	1.4E-08	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.83E-02	mg/kg	4.83E-02	mg/kg	M	2.8E-09	mg/kg-day	NA		NA	NA	NA
	Naphthalene	3.89E-01	mg/kg	3.89E-01	mg/kg	M	2.3E-08	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.1E-06
	PCBs												
	Aroclor 1254	4.12E-02	mg/kg	4.12E-02	mg/kg	M	2.6E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.3E-04
	Aroclor 1268	3.47E-02	mg/kg	3.47E-02	mg/kg	M	2.2E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.1E-04
	Sum of PCBs	8.62E-02	mg/kg	8.62E-02	mg/kg	M	5.4E-09	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.95E-06	mg/kg	1.95E-06	mg/kg	M	2.6E-14	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												4.7E-04

Total Non-Cancer Hazards 0.01

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.8.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SOUTH BASIN - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: South Basin Sediments
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Aluminum	4.08E+03	mg/kg	4.08E+03	mg/kg	M	4.0E-05	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	4.0E-05
	Antimony	3.05E+00	mg/kg	3.05E+00	mg/kg	M	3.0E-08	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	7.5E-05
	Arsenic	1.24E+01	mg/kg	1.24E+01	mg/kg	M	1.2E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	4.0E-04
	Barium	9.02E+02	mg/kg	9.02E+02	mg/kg	M	8.8E-06	mg/kg-day	7.0E-02	mg/kg-day	NA	NA	1.3E-04
	Cadmium	3.91E+00	mg/kg	3.91E+00	mg/kg	M	3.8E-08	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	3.8E-05
	Chromium	2.05E+02	mg/kg	2.05E+02	mg/kg	M	2.0E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	6.7E-04
	Copper	9.61E+01	mg/kg	9.61E+01	mg/kg	M	9.4E-07	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	2.4E-05
	Cyanide	1.51E+00	mg/kg	1.51E+00	mg/kg	M	1.5E-08	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	7.4E-07
	Iron	1.22E+04	mg/kg	1.22E+04	mg/kg	M	1.2E-04	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	4.0E-04
	Lead	2.35E+02	mg/kg	2.35E+02	mg/kg	M	2.3E-06	mg/kg-day	No data		NA	NA	NA
	Manganese	2.95E+02	mg/kg	2.95E+02	mg/kg	M	2.9E-06	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	1.2E-04
	Methylmercury	2.25E-02	mg/kg	2.25E-02	mg/kg	M	2.2E-10	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	2.2E-06
	Total Mercury	1.89E+01	mg/kg	1.89E+01	mg/kg	M	1.8E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	6.2E-04
	Nickel	7.32E+01	mg/kg	7.32E+01	mg/kg	M	7.2E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	3.6E-05
	Thallium	4.01E-01	mg/kg	4.01E-01	mg/kg	M	3.9E-09	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	5.9E-05
	Vanadium	2.99E+01	mg/kg	2.99E+01	mg/kg	M	2.9E-07	mg/kg-day	7.0E-03	mg/kg-day	NA	NA	4.2E-05
	VOCs												
	Benzene	6.12E+01	mg/kg	6.12E+01	mg/kg	M	6.0E-07	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.0E-04
	Chlorobenzene	1.80E+02	mg/kg	1.80E+02	mg/kg	M	1.8E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	8.8E-05
	Methylene chloride	8.50E+00	mg/kg	8.50E+00	mg/kg	M	8.3E-08	mg/kg-day	6.0E-02	mg/kg-day	NA	NA	1.4E-06
	Xylenes	3.30E+02	mg/kg	3.30E+02	mg/kg	M	3.2E-06	mg/kg-day	2.0E+00	mg/kg-day	NA	NA	1.6E-06
	SVOCs												
	Dibenzofuran	1.80E+01	mg/kg	1.80E+01	mg/kg	M	1.8E-07	mg/kg-day	4.0E-03	mg/kg-day	NA	NA	4.4E-05
	Hexachlorobenzene	6.66E+00	mg/kg	6.66E+00	mg/kg	M	6.5E-08	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	8.1E-05
	PAHs												
	Acenaphthylene	4.24E+00	mg/kg	4.24E+00	mg/kg	M	4.1E-08	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.4E-06
	Benz[a]anthracene	9.76E+00	mg/kg	9.76E+00	mg/kg	M	9.5E-08	mg/kg-day	NA		NA	NA	NA
	Benzo[a]pyrene	7.40E+00	mg/kg	7.40E+00	mg/kg	M	7.2E-08	mg/kg-day	NA		NA	NA	NA
	Benzo[b]fluoranthene	9.82E+00	mg/kg	9.82E+00	mg/kg	M	9.6E-08	mg/kg-day	NA		NA	NA	NA

TABLE 7.8.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SOUTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
	Benzo[ghi]perylene	6.39E+00	mg/kg	6.39E+00	mg/kg	M	6.3E-08	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.1E-06
	Benzo[k]fluoranthene	3.55E+00	mg/kg	3.55E+00	mg/kg	M	3.5E-08	mg/kg-day	NA		NA	NA	NA
	Chrysene	9.62E+00	mg/kg	9.62E+00	mg/kg	M	9.4E-08	mg/kg-day	NA		NA	NA	NA
	Dibenz[a,h]anthracene	1.63E+00	mg/kg	1.63E+00	mg/kg	M	1.6E-08	mg/kg-day	NA		NA	NA	NA
	1,3-Dichlorobenzene	4.64E+00	mg/kg	4.64E+00	mg/kg	M	4.5E-08	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	5.0E-05
	1,4-Dichlorobenzene	6.28E+01	mg/kg	6.28E+01	mg/kg	M	6.1E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.0E-05
	Fluoranthene	3.37E+01	mg/kg	3.37E+01	mg/kg	M	3.3E-07	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	8.2E-06
	Indeno[1,2,3-cd]pyrene	3.77E+00	mg/kg	3.77E+00	mg/kg	M	3.7E-08	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	1.76E+02	mg/kg	1.76E+02	mg/kg	M	1.7E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	8.6E-05
	Naphthalene	1.05E+03	mg/kg	1.05E+03	mg/kg	M	1.0E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	5.1E-04
	Phenanthrene	5.25E+01	mg/kg	5.25E+01	mg/kg	M	5.1E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.7E-05
	Pesticides												
	Dieldrin	8.69E-03	mg/kg	8.69E-03	mg/kg	M	8.5E-11	mg/kg-day	5.0E-05	mg/kg-day	NA	NA	1.7E-06
	PCBs												
	Aroclor 1221	8.14E-02	mg/kg	8.14E-02	mg/kg	M	8.0E-10	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	1.1E-05
	Aroclor 1242	3.46E-01	mg/kg	3.46E-01	mg/kg	M	3.4E-09	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	4.8E-05
	Aroclor 1248	2.25E-01	mg/kg	2.25E-01	mg/kg	M	2.2E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.1E-04
	Aroclor 1254	1.39E-01	mg/kg	1.39E-01	mg/kg	M	1.4E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	6.8E-05
	Aroclor 1260	2.01E-01	mg/kg	2.01E-01	mg/kg	M	2.0E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	9.8E-05
	PCBs	1.06E+00	mg/kg	1.06E+00	mg/kg	M	1.0E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	3.77E-04	mg/kg	3.77E-04	mg/kg	M	3.7E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												4.1E-03
Dermal	**Metals and Organometallic Compounds**												
	Aluminum	4.08E+03	mg/kg	4.08E+03	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Antimony	3.05E+00	mg/kg	3.05E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	1.24E+01	mg/kg	1.24E+01	mg/kg	M	6.2E-08	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.1E-04
	Barium	9.02E+02	mg/kg	9.02E+02	mg/kg	M	NA		4.9E-03	mg/kg-day	NA	NA	NA
	Cadmium	3.91E+00	mg/kg	3.91E+00	mg/kg	M	6.5E-10	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	2.6E-05
	Chromium	2.05E+02	mg/kg	2.05E+02	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Copper	9.61E+01	mg/kg	9.61E+01	mg/kg	M	NA		4.0E-02	mg/kg-day	NA	NA	NA
	Cyanide	1.51E+00	mg/kg	1.51E+00	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Iron	1.22E+04	mg/kg	1.22E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Lead	2.35E+02	mg/kg	2.35E+02	mg/kg	M	NA		NA		NA	NA	NA
	Manganese	2.95E+02	mg/kg	2.95E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Methylmercury	2.25E-02	mg/kg	2.25E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Total Mercury	1.89E+01	mg/kg	1.89E+01	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA

TABLE 7.8.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SOUTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Nickel	7.32E+01	mg/kg	7.32E+01	mg/kg	M	NA		8.0E-04	mg/kg-day	NA	NA	NA
	Thallium	4.01E-01	mg/kg	4.01E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	Vanadium	2.99E+01	mg/kg	2.99E+01	mg/kg	M	NA		1.8E-04	mg/kg-day	NA	NA	NA
	VOCs												
	Benzene	6.12E+01	mg/kg	6.12E+01	mg/kg	M	NA		3.0E-03	mg/kg-day	NA	NA	NA
	Chlorobenzene	1.80E+02	mg/kg	1.80E+02	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Methylene chloride	8.50E+00	mg/kg	8.50E+00	mg/kg	M	NA		6.0E-02	mg/kg-day	NA	NA	NA
	Xylenes	3.30E+02	mg/kg	3.30E+02	mg/kg	M	NA		2.0E+00	mg/kg-day	NA	NA	NA
	SVOCs												
	Dibenzofuran	1.80E+01	mg/kg	1.80E+01	mg/kg	M	3.0E-07	mg/kg-day	4.0E-03	mg/kg-day	NA	NA	7.5E-05
	Hexachlorobenzene	6.66E+00	mg/kg	6.66E+00	mg/kg	M	1.1E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	1.4E-04
	PAHs												
	Acenaphthylene	4.24E+00	mg/kg	4.24E+00	mg/kg	M	9.2E-08	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.1E-06
	Benz[a]anthracene	9.76E+00	mg/kg	9.76E+00	mg/kg	M	2.1E-07	mg/kg-day	NA		NA	NA	NA
	Benzo[a]pyrene	7.40E+00	mg/kg	7.40E+00	mg/kg	M	1.6E-07	mg/kg-day	NA		NA	NA	NA
	Benzo[b]fluoranthene	9.82E+00	mg/kg	9.82E+00	mg/kg	M	2.1E-07	mg/kg-day	NA		NA	NA	NA
	Benzo[ghi]perylene	6.39E+00	mg/kg	6.39E+00	mg/kg	M	1.4E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	4.6E-06
	Benzo[k]fluoranthene	3.55E+00	mg/kg	3.55E+00	mg/kg	M	7.7E-08	mg/kg-day	NA		NA	NA	NA
	Chrysene	9.62E+00	mg/kg	9.62E+00	mg/kg	M	2.1E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz[a,h]anthracene	1.63E+00	mg/kg	1.63E+00	mg/kg	M	3.5E-08	mg/kg-day	NA		NA	NA	NA
	1,3-Dichlorobenzene	4.64E+00	mg/kg	4.64E+00	mg/kg	M	7.8E-08	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	8.6E-05
	1,4-Dichlorobenzene	6.28E+01	mg/kg	6.28E+01	mg/kg	M	1.0E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.5E-05
	Fluoranthene	3.37E+01	mg/kg	3.37E+01	mg/kg	M	7.3E-07	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	1.8E-05
	Indeno[1,2,3-cd]pyrene	3.77E+00	mg/kg	3.77E+00	mg/kg	M	8.2E-08	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	1.76E+02	mg/kg	1.76E+02	mg/kg	M	3.8E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.9E-04
	Naphthalene	1.05E+03	mg/kg	1.05E+03	mg/kg	M	2.3E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.1E-03
	Phenanthrene	5.25E+01	mg/kg	5.25E+01	mg/kg	M	1.1E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.8E-05
	Pesticides												
	Dieldrin	8.69E-03	mg/kg	8.69E-03	mg/kg	M	NA		5.0E-05	mg/kg-day	NA	NA	NA
	PCBs												
	Aroclor 1221	8.14E-02	mg/kg	8.14E-02	mg/kg	M	1.9E-09	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	2.7E-05
	Aroclor 1242	3.46E-01	mg/kg	3.46E-01	mg/kg	M	8.1E-09	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	1.2E-04
	Aroclor 1248	2.25E-01	mg/kg	2.25E-01	mg/kg	M	5.3E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.6E-04
	Aroclor 1254	1.39E-01	mg/kg	1.39E-01	mg/kg	M	3.2E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.6E-04
	Aroclor 1260	2.01E-01	mg/kg	2.01E-01	mg/kg	M	4.7E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.3E-04
	PCBs	1.06E+00	mg/kg	1.06E+00	mg/kg	M	2.5E-08	mg/kg-day	NA		NA	NA	NA

TABLE 7.8.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SOUTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	3.77E-04	mg/kg	3.77E-04	mg/kg	M	1.9E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												2.8E-03

Total Non-Cancer Hazards 0.01

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.9.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SOUTH BASIN - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: South Basin Sediments
Receptor Population: Recreational
Receptor Age: Younger Child (less than 6)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Aluminum	4.08E+03	mg/kg	4.08E+03	mg/kg	M	3.7E-04	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	3.7E-04
	Antimony	3.05E+00	mg/kg	3.05E+00	mg/kg	M	2.8E-07	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	7.0E-04
	Arsenic	1.24E+01	mg/kg	1.24E+01	mg/kg	M	1.1E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.8E-03
	Barium	9.02E+02	mg/kg	9.02E+02	mg/kg	M	8.2E-05	mg/kg-day	7.0E-02	mg/kg-day	NA	NA	1.2E-03
	Cadmium	3.91E+00	mg/kg	3.91E+00	mg/kg	M	3.6E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	3.6E-04
	Chromium	2.05E+02	mg/kg	2.05E+02	mg/kg	M	1.9E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	6.2E-03
	Copper	9.61E+01	mg/kg	9.61E+01	mg/kg	M	8.8E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	2.2E-04
	Cyanide	1.51E+00	mg/kg	1.51E+00	mg/kg	M	1.4E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	6.9E-06
	Iron	1.22E+04	mg/kg	1.22E+04	mg/kg	M	1.1E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	3.7E-03
	Lead	2.35E+02	mg/kg	2.35E+02	mg/kg	M	2.1E-05	mg/kg-day	No data		NA	NA	NA
	Manganese	2.95E+02	mg/kg	2.95E+02	mg/kg	M	2.7E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	1.2E-03
	Methylmercury	2.25E-02	mg/kg	2.25E-02	mg/kg	M	2.1E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	2.1E-05
	Total Mercury	1.89E+01	mg/kg	1.89E+01	mg/kg	M	1.7E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	5.7E-03
	Nickel	7.32E+01	mg/kg	7.32E+01	mg/kg	M	6.7E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	3.3E-04
	Thallium	4.01E-01	mg/kg	4.01E-01	mg/kg	M	3.7E-08	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	5.6E-04
	Vanadium	2.99E+01	mg/kg	2.99E+01	mg/kg	M	2.7E-06	mg/kg-day	7.0E-03	mg/kg-day	NA	NA	3.9E-04
	VOCs												
	Benzene	6.12E+01	mg/kg	6.12E+01	mg/kg	M	5.6E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.9E-03
	Chlorobenzene	1.80E+02	mg/kg	1.80E+02	mg/kg	M	1.6E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	8.2E-04
	Methylene chloride	8.50E+00	mg/kg	8.50E+00	mg/kg	M	7.8E-07	mg/kg-day	6.0E-02	mg/kg-day	NA	NA	1.3E-05
	Xylenes	3.30E+02	mg/kg	3.30E+02	mg/kg	M	3.0E-05	mg/kg-day	2.0E+00	mg/kg-day	NA	NA	1.5E-05
	SVOCs												
	Dibenzofuran	1.80E+01	mg/kg	1.80E+01	mg/kg	M	1.6E-06	mg/kg-day	4.0E-03	mg/kg-day	NA	NA	4.1E-04
	Hexachlorobenzene	6.66E+00	mg/kg	6.66E+00	mg/kg	M	6.1E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	7.6E-04
	PAHs												
	Acenaphthylene	4.24E+00	mg/kg	4.24E+00	mg/kg	M	3.9E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.3E-05
	Benz[a]anthracene	9.76E+00	mg/kg	9.76E+00	mg/kg	M	8.9E-07	mg/kg-day	NA		NA	NA	NA
	Benzo[a]pyrene	7.40E+00	mg/kg	7.40E+00	mg/kg	M	6.8E-07	mg/kg-day	NA		NA	NA	NA
	Benzo[b]fluoranthene	9.82E+00	mg/kg	9.82E+00	mg/kg	M	9.0E-07	mg/kg-day	NA		NA	NA	NA

TABLE 7.9.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SOUTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Benzo[ghi]perylene	6.39E+00	mg/kg	6.39E+00	mg/kg	M	5.8E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.9E-05
	Benzo[k]fluoranthene	3.55E+00	mg/kg	3.55E+00	mg/kg	M	3.2E-07	mg/kg-day	NA		NA	NA	NA
	Chrysene	9.62E+00	mg/kg	9.62E+00	mg/kg	M	8.8E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz[a,h]anthracene	1.63E+00	mg/kg	1.63E+00	mg/kg	M	1.5E-07	mg/kg-day	NA		NA	NA	NA
	1,3-Dichlorobenzene	4.64E+00	mg/kg	4.64E+00	mg/kg	M	4.2E-07	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	4.7E-04
	1,4-Dichlorobenzene	6.28E+01	mg/kg	6.28E+01	mg/kg	M	5.7E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.9E-04
	Fluoranthene	3.37E+01	mg/kg	3.37E+01	mg/kg	M	3.1E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	7.7E-05
	Indeno[1,2,3-cd]pyrene	3.77E+00	mg/kg	3.77E+00	mg/kg	M	3.4E-07	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	1.76E+02	mg/kg	1.76E+02	mg/kg	M	1.6E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	8.1E-04
	Naphthalene	1.05E+03	mg/kg	1.05E+03	mg/kg	M	9.6E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	4.8E-03
	Phenanthrene	5.25E+01	mg/kg	5.25E+01	mg/kg	M	4.8E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.6E-04
	Pesticides												
	Dieldrin	8.69E-03	mg/kg	8.69E-03	mg/kg	M	7.9E-10	mg/kg-day	5.0E-05	mg/kg-day	NA	NA	1.6E-05
	PCBs												
	Aroclor 1221	8.14E-02	mg/kg	8.14E-02	mg/kg	M	7.4E-09	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	1.1E-04
	Aroclor 1242	3.46E-01	mg/kg	3.46E-01	mg/kg	M	3.2E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	4.5E-04
	Aroclor 1248	2.25E-01	mg/kg	2.25E-01	mg/kg	M	2.1E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.0E-03
	Aroclor 1254	1.39E-01	mg/kg	1.39E-01	mg/kg	M	1.3E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	6.3E-04
	Aroclor 1260	2.01E-01	mg/kg	2.01E-01	mg/kg	M	1.8E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	9.2E-04
	PCBs	1.06E+00	mg/kg	1.06E+00	mg/kg	M	9.7E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	3.77E-04	mg/kg	3.77E-04	mg/kg	M	3.4E-11	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												3.8E-02
Dermal	**Metals and Organometallic Compounds**												
	Aluminum	4.08E+03	mg/kg	4.08E+03	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Antimony	3.05E+00	mg/kg	3.05E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	1.24E+01	mg/kg	1.24E+01	mg/kg	M	1.9E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	6.3E-04
	Barium	9.02E+02	mg/kg	9.02E+02	mg/kg	M	NA		4.9E-03	mg/kg-day	NA	NA	NA
	Cadmium	3.91E+00	mg/kg	3.91E+00	mg/kg	M	2.0E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	8.0E-05
	Chromium	2.05E+02	mg/kg	2.05E+02	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Copper	9.61E+01	mg/kg	9.61E+01	mg/kg	M	NA		4.0E-02	mg/kg-day	NA	NA	NA
	Cyanide	1.51E+00	mg/kg	1.51E+00	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Iron	1.22E+04	mg/kg	1.22E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Lead	2.35E+02	mg/kg	2.35E+02	mg/kg	M	NA		NA		NA	NA	NA
	Manganese	2.95E+02	mg/kg	2.95E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Methylmercury	2.25E-02	mg/kg	2.25E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Total Mercury	1.89E+01	mg/kg	1.89E+01	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA

TABLE 7.9.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SOUTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Nickel	7.32E+01	mg/kg	7.32E+01	mg/kg	M	NA		8.0E-04	mg/kg-day	NA	NA	NA
	Thallium	4.01E-01	mg/kg	4.01E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	Vanadium	2.99E+01	mg/kg	2.99E+01	mg/kg	M	NA		1.8E-04	mg/kg-day	NA	NA	NA
	VOCs												
	Benzene	6.12E+01	mg/kg	6.12E+01	mg/kg	M	NA		3.0E-03	mg/kg-day	NA	NA	NA
	Chlorobenzene	1.80E+02	mg/kg	1.80E+02	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Methylene chloride	8.50E+00	mg/kg	8.50E+00	mg/kg	M	NA		6.0E-02	mg/kg-day	NA	NA	NA
	Xylenes	3.30E+02	mg/kg	3.30E+02	mg/kg	M	NA		2.0E+00	mg/kg-day	NA	NA	NA
	SVOCs												
	Dibenzofuran	1.80E+01	mg/kg	1.80E+01	mg/kg	M	9.2E-07	mg/kg-day	4.0E-03	mg/kg-day	NA	NA	2.3E-04
	Hexachlorobenzene	6.66E+00	mg/kg	6.66E+00	mg/kg	M	3.4E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	4.3E-04
	PAHs												
	Acenaphthylene	4.24E+00	mg/kg	4.24E+00	mg/kg	M	2.8E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	9.4E-06
	Benz[a]anthracene	9.76E+00	mg/kg	9.76E+00	mg/kg	M	6.5E-07	mg/kg-day	NA		NA	NA	NA
	Benzo[a]pyrene	7.40E+00	mg/kg	7.40E+00	mg/kg	M	4.9E-07	mg/kg-day	NA		NA	NA	NA
	Benzo[b]fluoranthene	9.82E+00	mg/kg	9.82E+00	mg/kg	M	6.5E-07	mg/kg-day	NA		NA	NA	NA
	Benzo[ghi]perylene	6.39E+00	mg/kg	6.39E+00	mg/kg	M	4.2E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.4E-05
	Benzo[k]fluoranthene	3.55E+00	mg/kg	3.55E+00	mg/kg	M	2.4E-07	mg/kg-day	NA		NA	NA	NA
	Chrysene	9.62E+00	mg/kg	9.62E+00	mg/kg	M	6.4E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz[a,h]anthracene	1.63E+00	mg/kg	1.63E+00	mg/kg	M	1.1E-07	mg/kg-day	NA		NA	NA	NA
	1,3-Dichlorobenzene	4.64E+00	mg/kg	4.64E+00	mg/kg	M	2.4E-07	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	2.6E-04
	1,4-Dichlorobenzene	6.28E+01	mg/kg	6.28E+01	mg/kg	M	3.2E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.1E-04
	Fluoranthene	3.37E+01	mg/kg	3.37E+01	mg/kg	M	2.2E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	5.6E-05
	Indeno[1,2,3-cd]pyrene	3.77E+00	mg/kg	3.77E+00	mg/kg	M	2.5E-07	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	1.76E+02	mg/kg	1.76E+02	mg/kg	M	1.2E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	5.9E-04
	Naphthalene	1.05E+03	mg/kg	1.05E+03	mg/kg	M	7.0E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	3.5E-03
	Phenanthrene	5.25E+01	mg/kg	5.25E+01	mg/kg	M	3.5E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.2E-04
	Pesticides												
	Dieldrin	8.69E-03	mg/kg	8.69E-03	mg/kg	M	NA		5.0E-05	mg/kg-day	NA	NA	NA
	PCBs												
	Aroclor 1221	8.14E-02	mg/kg	8.14E-02	mg/kg	M	5.8E-09	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	8.3E-05
	Aroclor 1242	3.46E-01	mg/kg	3.46E-01	mg/kg	M	2.5E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	3.5E-04
	Aroclor 1248	2.25E-01	mg/kg	2.25E-01	mg/kg	M	1.6E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	8.1E-04
	Aroclor 1254	1.39E-01	mg/kg	1.39E-01	mg/kg	M	9.9E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	5.0E-04
	Aroclor 1260	2.01E-01	mg/kg	2.01E-01	mg/kg	M	1.4E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	7.2E-04
	PCBs	1.06E+00	mg/kg	1.06E+00	mg/kg	M	7.6E-08	mg/kg-day	NA		NA	NA	NA

TABLE 7.9.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SOUTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	3.77E-04	mg/kg	3.77E-04	mg/kg	M	5.8E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												8.5E-03

Total Non-Cancer Hazards 0.05

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.10.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SOUTH BASIN - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: South Basin Sediments
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Aluminum	4.08E+03	mg/kg	4.08E+03	mg/kg	M	6.5E-05	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	6.5E-05
	Antimony	3.05E+00	mg/kg	3.05E+00	mg/kg	M	4.9E-08	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	1.2E-04
	Arsenic	1.24E+01	mg/kg	1.24E+01	mg/kg	M	2.0E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	6.6E-04
	Barium	9.02E+02	mg/kg	9.02E+02	mg/kg	M	1.4E-05	mg/kg-day	7.0E-02	mg/kg-day	NA	NA	2.1E-04
	Cadmium	3.91E+00	mg/kg	3.91E+00	mg/kg	M	6.2E-08	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	6.2E-05
	Chromium	2.05E+02	mg/kg	2.05E+02	mg/kg	M	3.3E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.1E-03
	Copper	9.61E+01	mg/kg	9.61E+01	mg/kg	M	1.5E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	3.8E-05
	Cyanide	1.51E+00	mg/kg	1.51E+00	mg/kg	M	2.4E-08	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.2E-06
	Iron	1.22E+04	mg/kg	1.22E+04	mg/kg	M	1.9E-04	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	6.5E-04
	Lead	2.35E+02	mg/kg	2.35E+02	mg/kg	M	3.7E-06	mg/kg-day	No data		NA	NA	NA
	Manganese	2.95E+02	mg/kg	2.95E+02	mg/kg	M	4.7E-06	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	2.0E-04
	Methylmercury	2.25E-02	mg/kg	2.25E-02	mg/kg	M	3.6E-10	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	3.6E-06
	Total Mercury	1.89E+01	mg/kg	1.89E+01	mg/kg	M	3.0E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.0E-03
	Nickel	7.32E+01	mg/kg	7.32E+01	mg/kg	M	1.2E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	5.8E-05
	Thallium	4.01E-01	mg/kg	4.01E-01	mg/kg	M	6.4E-09	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	9.7E-05
	Vanadium	2.99E+01	mg/kg	2.99E+01	mg/kg	M	4.8E-07	mg/kg-day	7.0E-03	mg/kg-day	NA	NA	6.8E-05
	VOCs												
	Benzene	6.12E+01	mg/kg	6.12E+01	mg/kg	M	9.8E-07	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	3.3E-04
	Chlorobenzene	1.80E+02	mg/kg	1.80E+02	mg/kg	M	2.9E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.4E-04
	Methylene chloride	8.50E+00	mg/kg	8.50E+00	mg/kg	M	1.4E-07	mg/kg-day	6.0E-02	mg/kg-day	NA	NA	2.3E-06
	Xylenes	3.30E+02	mg/kg	3.30E+02	mg/kg	M	5.3E-06	mg/kg-day	2.0E+00	mg/kg-day	NA	NA	2.6E-06
	SVOCs												
	Dibenzofuran	1.80E+01	mg/kg	1.80E+01	mg/kg	M	2.9E-07	mg/kg-day	4.0E-03	mg/kg-day	NA	NA	7.2E-05
	Hexachlorobenzene	6.66E+00	mg/kg	6.66E+00	mg/kg	M	1.1E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	1.3E-04
	PAHs												
	Acenaphthylene	4.24E+00	mg/kg	4.24E+00	mg/kg	M	6.8E-08	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.3E-06
	Benz[a]anthracene	9.76E+00	mg/kg	9.76E+00	mg/kg	M	1.6E-07	mg/kg-day	NA		NA	NA	NA
	Benzo[a]pyrene	7.40E+00	mg/kg	7.40E+00	mg/kg	M	1.2E-07	mg/kg-day	NA		NA	NA	NA
	Benzo[b]fluoranthene	9.82E+00	mg/kg	9.82E+00	mg/kg	M	1.6E-07	mg/kg-day	NA		NA	NA	NA

TABLE 7.10.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SOUTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Benzo[ghi]perylene	6.39E+00	mg/kg	6.39E+00	mg/kg	M	1.0E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.4E-06
	Benzo[k]fluoranthene	3.55E+00	mg/kg	3.55E+00	mg/kg	M	5.7E-08	mg/kg-day	NA		NA	NA	NA
	Chrysene	9.62E+00	mg/kg	9.62E+00	mg/kg	M	1.5E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz[a,h]anthracene	1.63E+00	mg/kg	1.63E+00	mg/kg	M	2.6E-08	mg/kg-day	NA		NA	NA	NA
	1,3-Dichlorobenzene	4.64E+00	mg/kg	4.64E+00	mg/kg	M	7.4E-08	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	8.2E-05
	1,4-Dichlorobenzene	6.28E+01	mg/kg	6.28E+01	mg/kg	M	1.0E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.3E-05
	Fluoranthene	3.37E+01	mg/kg	3.37E+01	mg/kg	M	5.4E-07	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	1.3E-05
	Indeno[1,2,3-cd]pyrene	3.77E+00	mg/kg	3.77E+00	mg/kg	M	6.0E-08	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	1.76E+02	mg/kg	1.76E+02	mg/kg	M	2.8E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.4E-04
	Naphthalene	1.05E+03	mg/kg	1.05E+03	mg/kg	M	1.7E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	8.4E-04
	Phenanthrene	5.25E+01	mg/kg	5.25E+01	mg/kg	M	8.4E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.8E-05
	Pesticides												
	Dieldrin	8.69E-03	mg/kg	8.69E-03	mg/kg	M	1.4E-10	mg/kg-day	5.0E-05	mg/kg-day	NA	NA	2.8E-06
	PCBs												
	Aroclor 1221	8.14E-02	mg/kg	8.14E-02	mg/kg	M	1.3E-09	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	1.9E-05
	Aroclor 1242	3.46E-01	mg/kg	3.46E-01	mg/kg	M	5.5E-09	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	7.9E-05
	Aroclor 1248	2.25E-01	mg/kg	2.25E-01	mg/kg	M	3.6E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.8E-04
	Aroclor 1254	1.39E-01	mg/kg	1.39E-01	mg/kg	M	2.2E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.1E-04
	Aroclor 1260	2.01E-01	mg/kg	2.01E-01	mg/kg	M	3.2E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.6E-04
	PCBs	1.06E+00	mg/kg	1.06E+00	mg/kg	M	1.7E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	3.77E-04	mg/kg	3.77E-04	mg/kg	M	6.0E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												6.7E-03
Dermal	**Metals and Organometallic Compounds**												
	Aluminum	4.08E+03	mg/kg	4.08E+03	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Antimony	3.05E+00	mg/kg	3.05E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	1.24E+01	mg/kg	1.24E+01	mg/kg	M	1.3E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	4.3E-04
	Barium	9.02E+02	mg/kg	9.02E+02	mg/kg	M	NA		4.9E-03	mg/kg-day	NA	NA	NA
	Cadmium	3.91E+00	mg/kg	3.91E+00	mg/kg	M	1.3E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	5.4E-05
	Chromium	2.05E+02	mg/kg	2.05E+02	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Copper	9.61E+01	mg/kg	9.61E+01	mg/kg	M	NA		4.0E-02	mg/kg-day	NA	NA	NA
	Cyanide	1.51E+00	mg/kg	1.51E+00	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Iron	1.22E+04	mg/kg	1.22E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Lead	2.35E+02	mg/kg	2.35E+02	mg/kg	M	NA		NA		NA	NA	NA
	Manganese	2.95E+02	mg/kg	2.95E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Methylmercury	2.25E-02	mg/kg	2.25E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Total Mercury	1.89E+01	mg/kg	1.89E+01	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA

TABLE 7.10.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SOUTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Nickel	7.32E+01	mg/kg	7.32E+01	mg/kg	M	NA		8.0E-04	mg/kg-day	NA	NA	NA
	Thallium	4.01E-01	mg/kg	4.01E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	Vanadium	2.99E+01	mg/kg	2.99E+01	mg/kg	M	NA		1.8E-04	mg/kg-day	NA	NA	NA
	VOCs												
	Benzene	6.12E+01	mg/kg	6.12E+01	mg/kg	M	NA		3.0E-03	mg/kg-day	NA	NA	NA
	Chlorobenzene	1.80E+02	mg/kg	1.80E+02	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Methylene chloride	8.50E+00	mg/kg	8.50E+00	mg/kg	M	NA		6.0E-02	mg/kg-day	NA	NA	NA
	Xylenes	3.30E+02	mg/kg	3.30E+02	mg/kg	M	NA		2.0E+00	mg/kg-day	NA	NA	NA
	SVOCs												
	Dibenzofuran	1.80E+01	mg/kg	1.80E+01	mg/kg	M	6.2E-07	mg/kg-day	4.0E-03	mg/kg-day	NA	NA	1.6E-04
	Hexachlorobenzene	6.66E+00	mg/kg	6.66E+00	mg/kg	M	2.3E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	2.9E-04
	PAHs												
	Acenaphthylene	4.24E+00	mg/kg	4.24E+00	mg/kg	M	1.9E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	6.3E-06
	Benz[a]anthracene	9.76E+00	mg/kg	9.76E+00	mg/kg	M	4.4E-07	mg/kg-day	NA		NA	NA	NA
	Benzo[a]pyrene	7.40E+00	mg/kg	7.40E+00	mg/kg	M	3.3E-07	mg/kg-day	NA		NA	NA	NA
	Benzo[b]fluoranthene	9.82E+00	mg/kg	9.82E+00	mg/kg	M	4.4E-07	mg/kg-day	NA		NA	NA	NA
	Benzo[ghi]perylene	6.39E+00	mg/kg	6.39E+00	mg/kg	M	2.9E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	9.5E-06
	Benzo[k]fluoranthene	3.55E+00	mg/kg	3.55E+00	mg/kg	M	1.6E-07	mg/kg-day	NA		NA	NA	NA
	Chrysene	9.62E+00	mg/kg	9.62E+00	mg/kg	M	4.3E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz[a,h]anthracene	1.63E+00	mg/kg	1.63E+00	mg/kg	M	7.3E-08	mg/kg-day	NA		NA	NA	NA
	1,3-Dichlorobenzene	4.64E+00	mg/kg	4.64E+00	mg/kg	M	1.6E-07	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	1.8E-04
	1,4-Dichlorobenzene	6.28E+01	mg/kg	6.28E+01	mg/kg	M	2.2E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	7.2E-05
	Fluoranthene	3.37E+01	mg/kg	3.37E+01	mg/kg	M	1.5E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	3.8E-05
	Indeno[1,2,3-cd]pyrene	3.77E+00	mg/kg	3.77E+00	mg/kg	M	1.7E-07	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	1.76E+02	mg/kg	1.76E+02	mg/kg	M	7.9E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	3.9E-04
	Naphthalene	1.05E+03	mg/kg	1.05E+03	mg/kg	M	4.7E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	2.4E-03
	Phenanthrene	5.25E+01	mg/kg	5.25E+01	mg/kg	M	2.3E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	7.8E-05
	Pesticides												
	Dieldrin	8.69E-03	mg/kg	8.69E-03	mg/kg	M	NA		5.0E-05	mg/kg-day	NA	NA	NA
	PCBs												
	Aroclor 1221	8.14E-02	mg/kg	8.14E-02	mg/kg	M	3.9E-09	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	5.6E-05
	Aroclor 1242	3.46E-01	mg/kg	3.46E-01	mg/kg	M	1.7E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	2.4E-04
	Aroclor 1248	2.25E-01	mg/kg	2.25E-01	mg/kg	M	1.1E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	5.4E-04
	Aroclor 1254	1.39E-01	mg/kg	1.39E-01	mg/kg	M	6.7E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.3E-04
	Aroclor 1260	2.01E-01	mg/kg	2.01E-01	mg/kg	M	9.7E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	4.8E-04
	PCBs	1.06E+00	mg/kg	1.06E+00	mg/kg	M	5.1E-08	mg/kg-day	NA		NA	NA	NA

TABLE 7.10.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SOUTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	3.77E-04	mg/kg	3.77E-04	mg/kg	M	3.9E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												5.7E-03

Total Non-Cancer Hazards 0.01

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.11.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SOUTH BASIN - ONONDAGA LAKE

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: South Basin Sediments
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Aluminum	4.08E+03	mg/kg	4.08E+03	mg/kg	M	5.3E-04	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	5.3E-04
	Antimony	3.05E+00	mg/kg	3.05E+00	mg/kg	M	3.9E-07	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	9.8E-04
	Arsenic	1.24E+01	mg/kg	1.24E+01	mg/kg	M	1.6E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	5.3E-03
	Barium	9.02E+02	mg/kg	9.02E+02	mg/kg	M	1.2E-04	mg/kg-day	7.0E-02	mg/kg-day	NA	NA	1.7E-03
	Cadmium	3.91E+00	mg/kg	3.91E+00	mg/kg	M	5.0E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	5.0E-04
	Chromium	2.05E+02	mg/kg	2.05E+02	mg/kg	M	2.6E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	8.8E-03
	Copper	9.61E+01	mg/kg	9.61E+01	mg/kg	M	1.2E-05	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	3.1E-04
	Cyanide	1.51E+00	mg/kg	1.51E+00	mg/kg	M	2.0E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	9.8E-06
	Iron	1.22E+04	mg/kg	1.22E+04	mg/kg	M	1.6E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	5.3E-03
	Lead	2.35E+02	mg/kg	2.35E+02	mg/kg	M	3.0E-05	mg/kg-day	No data		NA	NA	NA
	Manganese	2.95E+02	mg/kg	2.95E+02	mg/kg	M	3.8E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	1.6E-03
	Methylmercury	2.25E-02	mg/kg	2.25E-02	mg/kg	M	2.9E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	2.9E-05
	Total Mercury	1.89E+01	mg/kg	1.89E+01	mg/kg	M	2.4E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	8.1E-03
	Nickel	7.32E+01	mg/kg	7.32E+01	mg/kg	M	9.5E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	4.7E-04
	Thallium	4.01E-01	mg/kg	4.01E-01	mg/kg	M	5.2E-08	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	7.9E-04
	Vanadium	2.99E+01	mg/kg	2.99E+01	mg/kg	M	3.9E-06	mg/kg-day	7.0E-03	mg/kg-day	NA	NA	5.5E-04
	VOCs												
	Benzene	6.12E+01	mg/kg	6.12E+01	mg/kg	M	7.9E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.6E-03
	Chlorobenzene	1.80E+02	mg/kg	1.80E+02	mg/kg	M	2.3E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.2E-03
	Methylene chloride	8.50E+00	mg/kg	8.50E+00	mg/kg	M	1.1E-06	mg/kg-day	6.0E-02	mg/kg-day	NA	NA	1.8E-05
	Xylenes	3.30E+02	mg/kg	3.30E+02	mg/kg	M	4.3E-05	mg/kg-day	2.0E+00	mg/kg-day	NA	NA	2.1E-05
	SVOCs												
	Dibenzofuran	1.80E+01	mg/kg	1.80E+01	mg/kg	M	2.3E-06	mg/kg-day	4.0E-03	mg/kg-day	NA	NA	5.8E-04
	Hexachlorobenzene	6.66E+00	mg/kg	6.66E+00	mg/kg	M	8.6E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	1.1E-03
	PAHs												
	Acenaphthylene	4.24E+00	mg/kg	4.24E+00	mg/kg	M	5.5E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.8E-05
	Benz[a]anthracene	9.76E+00	mg/kg	9.76E+00	mg/kg	M	1.3E-06	mg/kg-day	NA		NA	NA	NA
	Benzo[a]pyrene	7.40E+00	mg/kg	7.40E+00	mg/kg	M	9.6E-07	mg/kg-day	NA		NA	NA	NA
	Benzo[b]fluoranthene	9.82E+00	mg/kg	9.82E+00	mg/kg	M	1.3E-06	mg/kg-day	NA		NA	NA	NA

TABLE 7.11.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SOUTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Benzo[ghi]perylene	6.39E+00	mg/kg	6.39E+00	mg/kg	M	8.3E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.8E-05
	Benzo[k]fluoranthene	3.55E+00	mg/kg	3.55E+00	mg/kg	M	4.6E-07	mg/kg-day	NA		NA	NA	NA
	Chrysene	9.62E+00	mg/kg	9.62E+00	mg/kg	M	1.2E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz[a,h]anthracene	1.63E+00	mg/kg	1.63E+00	mg/kg	M	2.1E-07	mg/kg-day	NA		NA	NA	NA
	1,3-Dichlorobenzene	4.64E+00	mg/kg	4.64E+00	mg/kg	M	6.0E-07	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	6.7E-04
	1,4-Dichlorobenzene	6.28E+01	mg/kg	6.28E+01	mg/kg	M	8.1E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.7E-04
	Fluoranthene	3.37E+01	mg/kg	3.37E+01	mg/kg	M	4.4E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	1.1E-04
	Indeno[1,2,3-cd]pyrene	3.77E+00	mg/kg	3.77E+00	mg/kg	M	4.9E-07	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	1.76E+02	mg/kg	1.76E+02	mg/kg	M	2.3E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.1E-03
	Naphthalene	1.05E+03	mg/kg	1.05E+03	mg/kg	M	1.4E-04	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	6.8E-03
	Phenanthrene	5.25E+01	mg/kg	5.25E+01	mg/kg	M	6.8E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.3E-04
	Pesticides												
	Dieldrin	8.69E-03	mg/kg	8.69E-03	mg/kg	M	1.1E-09	mg/kg-day	5.0E-05	mg/kg-day	NA	NA	2.2E-05
	PCBs												
	Aroclor 1221	8.14E-02	mg/kg	8.14E-02	mg/kg	M	1.1E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	1.5E-04
	Aroclor 1242	3.46E-01	mg/kg	3.46E-01	mg/kg	M	4.5E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	6.4E-04
	Aroclor 1248	2.25E-01	mg/kg	2.25E-01	mg/kg	M	2.9E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.5E-03
	Aroclor 1254	1.39E-01	mg/kg	1.39E-01	mg/kg	M	1.8E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	9.0E-04
	Aroclor 1260	2.01E-01	mg/kg	2.01E-01	mg/kg	M	2.6E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.3E-03
	PCBs	1.06E+00	mg/kg	1.06E+00	mg/kg	M	1.4E-07	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	3.77E-04	mg/kg	3.77E-04	mg/kg	M	4.9E-11	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												5.4E-02
Dermal	**Metals and Organometallic Compounds**												
	Aluminum	4.08E+03	mg/kg	4.08E+03	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Antimony	3.05E+00	mg/kg	3.05E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	1.24E+01	mg/kg	1.24E+01	mg/kg	M	1.7E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	5.5E-04
	Barium	9.02E+02	mg/kg	9.02E+02	mg/kg	M	NA		4.9E-03	mg/kg-day	NA	NA	NA
	Cadmium	3.91E+00	mg/kg	3.91E+00	mg/kg	M	1.7E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	7.0E-05
	Chromium	2.05E+02	mg/kg	2.05E+02	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Copper	9.61E+01	mg/kg	9.61E+01	mg/kg	M	NA		4.0E-02	mg/kg-day	NA	NA	NA
	Cyanide	1.51E+00	mg/kg	1.51E+00	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Iron	1.22E+04	mg/kg	1.22E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Lead	2.35E+02	mg/kg	2.35E+02	mg/kg	M	NA		NA		NA	NA	NA
	Manganese	2.95E+02	mg/kg	2.95E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Methylmercury	2.25E-02	mg/kg	2.25E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Total Mercury	1.89E+01	mg/kg	1.89E+01	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA

TABLE 7.11.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SOUTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
	Nickel	7.32E+01	mg/kg	7.32E+01	mg/kg	M	NA		8.0E-04	mg/kg-day	NA	NA	NA
	Thallium	4.01E-01	mg/kg	4.01E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	Vanadium	2.99E+01	mg/kg	2.99E+01	mg/kg	M	NA		1.8E-04	mg/kg-day	NA	NA	NA
	VOCs												
	Benzene	6.12E+01	mg/kg	6.12E+01	mg/kg	M	NA		3.0E-03	mg/kg-day	NA	NA	NA
	Chlorobenzene	1.80E+02	mg/kg	1.80E+02	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Methylene chloride	8.50E+00	mg/kg	8.50E+00	mg/kg	M	NA		6.0E-02	mg/kg-day	NA	NA	NA
	Xylenes	3.30E+02	mg/kg	3.30E+02	mg/kg	M	NA		2.0E+00	mg/kg-day	NA	NA	NA
	SVOCs												
	Dibenzofuran	1.80E+01	mg/kg	1.80E+01	mg/kg	M	8.0E-07	mg/kg-day	4.0E-03	mg/kg-day	NA	NA	2.0E-04
	Hexachlorobenzene	6.66E+00	mg/kg	6.66E+00	mg/kg	M	3.0E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	3.7E-04
	PAHs												
	Acenaphthylene	4.24E+00	mg/kg	4.24E+00	mg/kg	M	2.5E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	8.2E-06
	Benz[a]anthracene	9.76E+00	mg/kg	9.76E+00	mg/kg	M	5.7E-07	mg/kg-day	NA		NA	NA	NA
	Benzo[a]pyrene	7.40E+00	mg/kg	7.40E+00	mg/kg	M	4.3E-07	mg/kg-day	NA		NA	NA	NA
	Benzo[b]fluoranthene	9.82E+00	mg/kg	9.82E+00	mg/kg	M	5.7E-07	mg/kg-day	NA		NA	NA	NA
	Benzo[ghi]perylene	6.39E+00	mg/kg	6.39E+00	mg/kg	M	3.7E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.2E-05
	Benzo[k]fluoranthene	3.55E+00	mg/kg	3.55E+00	mg/kg	M	2.1E-07	mg/kg-day	NA		NA	NA	NA
	Chrysene	9.62E+00	mg/kg	9.62E+00	mg/kg	M	5.6E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz[a,h]anthracene	1.63E+00	mg/kg	1.63E+00	mg/kg	M	9.5E-08	mg/kg-day	NA		NA	NA	NA
	1,3-Dichlorobenzene	4.64E+00	mg/kg	4.64E+00	mg/kg	M	2.1E-07	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	2.3E-04
	1,4-Dichlorobenzene	6.28E+01	mg/kg	6.28E+01	mg/kg	M	2.8E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	9.3E-05
	Fluoranthene	3.37E+01	mg/kg	3.37E+01	mg/kg	M	2.0E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	4.9E-05
	Indeno[1,2,3-cd]pyrene	3.77E+00	mg/kg	3.77E+00	mg/kg	M	2.2E-07	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	1.76E+02	mg/kg	1.76E+02	mg/kg	M	1.0E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	5.1E-04
	Naphthalene	1.05E+03	mg/kg	1.05E+03	mg/kg	M	6.1E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	3.1E-03
	Phenanthrene	5.25E+01	mg/kg	5.25E+01	mg/kg	M	3.0E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.0E-04
	Pesticides												
	Dieldrin	8.69E-03	mg/kg	8.69E-03	mg/kg	M	NA		5.0E-05	mg/kg-day	NA	NA	NA
	PCBs												
	Aroclor 1221	8.14E-02	mg/kg	8.14E-02	mg/kg	M	5.1E-09	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	7.3E-05
	Aroclor 1242	3.46E-01	mg/kg	3.46E-01	mg/kg	M	2.2E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	3.1E-04
	Aroclor 1248	2.25E-01	mg/kg	2.25E-01	mg/kg	M	1.4E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	7.0E-04
	Aroclor 1254	1.39E-01	mg/kg	1.39E-01	mg/kg	M	8.7E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	4.3E-04
	Aroclor 1260	2.01E-01	mg/kg	2.01E-01	mg/kg	M	1.3E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	6.3E-04
	PCBs	1.06E+00	mg/kg	1.06E+00	mg/kg	M	6.6E-08	mg/kg-day	NA		NA	NA	NA

TABLE 7.11.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SOUTH BASIN - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	3.77E-04	mg/kg	3.77E-04	mg/kg	M	5.0E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												7.4E-03

Total Non-Cancer Hazards 0.06

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.12.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-6 (NORTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-6 (North Basin)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	1.07E+04	mg/kg	1.07E+04	mg/kg	M	6.7E-04	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	6.7E-04
	Arsenic	6.80E+00	mg/kg	6.80E+00	mg/kg	M	4.3E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.4E-03
	Cadmium	8.60E+00	mg/kg	8.60E+00	mg/kg	M	5.4E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	5.4E-04
	Chromium	9.37E+01	mg/kg	9.37E+01	mg/kg	M	5.9E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.0E-03
	Cyanide	2.84E+00	mg/kg	2.84E+00	mg/kg	M	1.8E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	8.9E-06
	Iron	2.82E+04	mg/kg	2.82E+04	mg/kg	M	1.8E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	5.9E-03
	Manganese	4.20E+02	mg/kg	4.20E+02	mg/kg	M	2.6E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	1.1E-03
	Mercury(inorganic)	3.02E+00	mg/kg	3.02E+00	mg/kg	M	1.9E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	6.3E-04
	Methylmercury	3.05E-02	mg/kg	3.05E-02	mg/kg	M	1.9E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	1.9E-05
	Thallium	1.65E+00	mg/kg	1.65E+00	mg/kg	M	1.0E-07	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	1.6E-03
	PAHs												
	Benzo(a)pyrene	2.50E+01	mg/kg	2.50E+01	mg/kg	M	1.6E-06	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	3.28E+00	mg/kg	3.28E+00	mg/kg	M	2.1E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.0E-05
	Acenaphthylene	3.91E+00	mg/kg	3.91E+00	mg/kg	M	2.4E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	8.2E-06
	Benz(a)anthracene	2.55E+01	mg/kg	2.55E+01	mg/kg	M	1.6E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.08E+01	mg/kg	3.08E+01	mg/kg	M	1.9E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	9.2E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.1E-05
	Benzo(k)fluoranthene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	7.1E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.43E+00	mg/kg	4.43E+00	mg/kg	M	2.8E-07	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	9.2E-07	mg/kg-day	NA		NA	NA	NA
	Naphthalene	4.28E+00	mg/kg	4.28E+00	mg/kg	M	2.7E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.3E-05
	Phenanthrene	3.25E+01	mg/kg	3.25E+01	mg/kg	M	2.0E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	6.8E-05
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.15E-05	mg/kg	1.15E-05	mg/kg	M	7.2E-13	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												1.4E-02
Dermal	**Inorganics**												
	Aluminum	1.07E+04	mg/kg	1.07E+04	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Arsenic	6.80E+00	mg/kg	6.80E+00	mg/kg	M	2.2E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	7.3E-04
	Cadmium	8.60E+00	mg/kg	8.60E+00	mg/kg	M	9.2E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	3.7E-04
	Chromium	9.37E+01	mg/kg	9.37E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA

TABLE 7.12.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-6 (NORTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Cyanide	2.84E+00	mg/kg	2.84E+00	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Iron	2.82E+04	mg/kg	2.82E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	4.20E+02	mg/kg	4.20E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	3.02E+00	mg/kg	3.02E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Methylmercury	3.05E-02	mg/kg	3.05E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Thallium	1.65E+00	mg/kg	1.65E+00	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	PAHs												
	Benzo(a)pyrene	2.50E+01	mg/kg	2.50E+01	mg/kg	M	3.5E-06	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	3.28E+00	mg/kg	3.28E+00	mg/kg	M	4.6E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	2.3E-05
	Acenaphthylene	3.91E+00	mg/kg	3.91E+00	mg/kg	M	5.4E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.8E-05
	Benz(a)anthracene	2.55E+01	mg/kg	2.55E+01	mg/kg	M	3.5E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.08E+01	mg/kg	3.08E+01	mg/kg	M	4.3E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	2.0E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	6.8E-05
	Benzo(k)fluoranthene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	1.6E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.43E+00	mg/kg	4.43E+00	mg/kg	M	6.2E-07	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	2.0E-06	mg/kg-day	NA		NA	NA	NA
	Naphthalene	4.28E+00	mg/kg	4.28E+00	mg/kg	M	6.0E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	3.0E-05
	Phenanthrene	3.25E+01	mg/kg	3.25E+01	mg/kg	M	4.5E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.5E-04
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.15E-05	mg/kg	1.15E-05	mg/kg	M	3.7E-13	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												1.4E-03

Total Non-Cancer Hazards 0.02

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.13.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-6 (NORTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW- 6 (North Basin)
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	1.07E+04	mg/kg	1.07E+04	mg/kg	M	1.1E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	1.1E-03
	Arsenic	6.80E+00	mg/kg	6.80E+00	mg/kg	M	6.9E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.3E-03
	Cadmium	8.60E+00	mg/kg	8.60E+00	mg/kg	M	8.8E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	8.8E-04
	Chromium	9.37E+01	mg/kg	9.37E+01	mg/kg	M	9.6E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	3.2E-03
	Cyanide	2.84E+00	mg/kg	2.84E+00	mg/kg	M	2.9E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.4E-05
	Iron	2.82E+04	mg/kg	2.82E+04	mg/kg	M	2.9E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	9.6E-03
	Manganese	4.20E+02	mg/kg	4.20E+02	mg/kg	M	4.3E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	1.8E-03
	Mercury(inorganic)	3.02E+00	mg/kg	3.02E+00	mg/kg	M	3.1E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.0E-03
	Methylmercury	3.05E-02	mg/kg	3.05E-02	mg/kg	M	3.1E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	3.1E-05
	Thallium	1.65E+00	mg/kg	1.65E+00	mg/kg	M	1.7E-07	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	2.5E-03
	PAHs												
	Benzo(a)pyrene	2.50E+01	mg/kg	2.50E+01	mg/kg	M	2.5E-06	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	3.28E+00	mg/kg	3.28E+00	mg/kg	M	3.3E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.7E-05
	Acenaphthylene	3.91E+00	mg/kg	3.91E+00	mg/kg	M	4.0E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.3E-05
	Benz(a)anthracene	2.55E+01	mg/kg	2.55E+01	mg/kg	M	2.6E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.08E+01	mg/kg	3.08E+01	mg/kg	M	3.1E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	1.5E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	5.0E-05
	Benzo(k)fluoranthene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	1.2E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.43E+00	mg/kg	4.43E+00	mg/kg	M	4.5E-07	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	1.5E-06	mg/kg-day	NA		NA	NA	NA
	Naphthalene	4.28E+00	mg/kg	4.28E+00	mg/kg	M	4.4E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	2.2E-05
	Phenanthrene	3.25E+01	mg/kg	3.25E+01	mg/kg	M	3.3E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.1E-04
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.15E-05	mg/kg	1.15E-05	mg/kg	M	1.2E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												2.3E-02
Dermal	**Inorganics**												
	Aluminum	1.07E+04	mg/kg	1.07E+04	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Arsenic	6.80E+00	mg/kg	6.80E+00	mg/kg	M	4.5E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.5E-03
	Cadmium	8.60E+00	mg/kg	8.60E+00	mg/kg	M	1.9E-08	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	7.6E-04
	Chromium	9.37E+01	mg/kg	9.37E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA

TABLE 7.13.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-6 (NORTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Cyanide	2.84E+00	mg/kg	2.84E+00	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Iron	2.82E+04	mg/kg	2.82E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	4.20E+02	mg/kg	4.20E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	3.02E+00	mg/kg	3.02E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Methylmercury	3.05E-02	mg/kg	3.05E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Thallium	1.65E+00	mg/kg	1.65E+00	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	PAHs												
	Benzo(a)pyrene	2.50E+01	mg/kg	2.50E+01	mg/kg	M	7.2E-06	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	3.28E+00	mg/kg	3.28E+00	mg/kg	M	9.4E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	4.7E-05
	Acenaphthylene	3.91E+00	mg/kg	3.91E+00	mg/kg	M	1.1E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.7E-05
	Benz(a)anthracene	2.55E+01	mg/kg	2.55E+01	mg/kg	M	7.3E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.08E+01	mg/kg	3.08E+01	mg/kg	M	8.8E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	4.2E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.4E-04
	Benzo(k)fluoranthene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	3.3E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.43E+00	mg/kg	4.43E+00	mg/kg	M	1.3E-06	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	4.2E-06	mg/kg-day	NA		NA	NA	NA
	Naphthalene	4.28E+00	mg/kg	4.28E+00	mg/kg	M	1.2E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	6.1E-05
	Phenanthrene	3.25E+01	mg/kg	3.25E+01	mg/kg	M	9.3E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.1E-04
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.15E-05	mg/kg	1.15E-05	mg/kg	M	7.6E-13	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												2.9E-03

Total Non-Cancer Hazards 0.03

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.14.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-6 (NORTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW- 6 (North Basin)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	1.07E+04	mg/kg	1.07E+04	mg/kg	M	1.4E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	1.4E-03
	Arsenic	6.80E+00	mg/kg	6.80E+00	mg/kg	M	8.8E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.9E-03
	Cadmium	8.60E+00	mg/kg	8.60E+00	mg/kg	M	1.1E-06	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	1.1E-03
	Chromium	9.37E+01	mg/kg	9.37E+01	mg/kg	M	1.2E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	4.0E-03
	Cyanide	2.84E+00	mg/kg	2.84E+00	mg/kg	M	3.7E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.8E-05
	Iron	2.82E+04	mg/kg	2.82E+04	mg/kg	M	3.6E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	1.2E-02
	Manganese	4.20E+02	mg/kg	4.20E+02	mg/kg	M	5.4E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	2.3E-03
	Mercury(inorganic)	3.02E+00	mg/kg	3.02E+00	mg/kg	M	3.9E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.3E-03
	Methylmercury	3.05E-02	mg/kg	3.05E-02	mg/kg	M	3.9E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	3.9E-05
	Thallium	1.65E+00	mg/kg	1.65E+00	mg/kg	M	2.1E-07	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	3.2E-03
	PAHs												
	Benzo(a)pyrene	2.50E+01	mg/kg	2.50E+01	mg/kg	M	3.2E-06	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	3.28E+00	mg/kg	3.28E+00	mg/kg	M	4.2E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	2.1E-05
	Acenaphthylene	3.91E+00	mg/kg	3.91E+00	mg/kg	M	5.1E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.7E-05
	Benz(a)anthracene	2.55E+01	mg/kg	2.55E+01	mg/kg	M	3.3E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.08E+01	mg/kg	3.08E+01	mg/kg	M	4.0E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	1.9E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	6.3E-05
	Benzo(k)fluoranthene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	1.5E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.43E+00	mg/kg	4.43E+00	mg/kg	M	5.7E-07	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	1.9E-06	mg/kg-day	NA		NA	NA	NA
	Naphthalene	4.28E+00	mg/kg	4.28E+00	mg/kg	M	5.5E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	2.8E-05
	Phenanthrene	3.25E+01	mg/kg	3.25E+01	mg/kg	M	4.2E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.4E-04
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.15E-05	mg/kg	1.15E-05	mg/kg	M	1.5E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												2.9E-02
Dermal	**Inorganics**												
	Aluminum	1.07E+04	mg/kg	1.07E+04	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Arsenic	6.80E+00	mg/kg	6.80E+00	mg/kg	M	9.1E-08	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.0E-04
	Cadmium	8.60E+00	mg/kg	8.60E+00	mg/kg	M	3.8E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	1.5E-04
	Chromium	9.37E+01	mg/kg	9.37E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA

TABLE 7.14.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-6 (NORTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Cyanide	2.84E+00	mg/kg	2.84E+00	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Iron	2.82E+04	mg/kg	2.82E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	4.20E+02	mg/kg	4.20E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	3.02E+00	mg/kg	3.02E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Methylmercury	3.05E-02	mg/kg	3.05E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Thallium	1.65E+00	mg/kg	1.65E+00	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	PAHs												
	Benzo(a)pyrene	2.50E+01	mg/kg	2.50E+01	mg/kg	M	1.5E-06	mg/kg-day	NA		NA	NA	NA
	2-Methylnaphthalene	3.28E+00	mg/kg	3.28E+00	mg/kg	M	1.9E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	9.5E-06
	Acenaphthylene	3.91E+00	mg/kg	3.91E+00	mg/kg	M	2.3E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	7.6E-06
	Benz(a)anthracene	2.55E+01	mg/kg	2.55E+01	mg/kg	M	1.5E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.08E+01	mg/kg	3.08E+01	mg/kg	M	1.8E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	8.5E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.8E-05
	Benzo(k)fluoranthene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	6.6E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	4.43E+00	mg/kg	4.43E+00	mg/kg	M	2.6E-07	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	1.47E+01	mg/kg	1.47E+01	mg/kg	M	8.5E-07	mg/kg-day	NA		NA	NA	NA
	Naphthalene	4.28E+00	mg/kg	4.28E+00	mg/kg	M	2.5E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.2E-05
	Phenanthrene	3.25E+01	mg/kg	3.25E+01	mg/kg	M	1.9E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	6.3E-05
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.15E-05	mg/kg	1.15E-05	mg/kg	M	1.5E-13	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												5.8E-04

Total Non-Cancer Hazards 0.03

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.15.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-10 (NORTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-10 (North Basin)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	9.34E+03	mg/kg	9.34E+03	mg/kg	M	5.9E-04	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	5.9E-04
	Antimony	5.13E+00	mg/kg	5.13E+00	mg/kg	M	3.2E-07	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	8.0E-04
	Arsenic	1.17E+01	mg/kg	1.17E+01	mg/kg	M	7.3E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.4E-03
	Chromium	3.16E+01	mg/kg	3.16E+01	mg/kg	M	2.0E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	6.6E-04
	Iron	1.61E+04	mg/kg	1.61E+04	mg/kg	M	1.0E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	3.4E-03
	Manganese	3.90E+02	mg/kg	3.90E+02	mg/kg	M	2.4E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	1.0E-03
	Mercury(inorganic)	2.82E+00	mg/kg	2.82E+00	mg/kg	M	1.8E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	5.9E-04
	Methylmercury	2.85E-02	mg/kg	2.85E-02	mg/kg	M	1.8E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	1.8E-05
	Thallium	2.27E+00	mg/kg	2.27E+00	mg/kg	M	1.4E-07	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	2.2E-03
	PAHs												
	Benz(a)anthracene	1.03E+00	mg/kg	1.03E+00	mg/kg	M	6.4E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.07E+00	mg/kg	1.07E+00	mg/kg	M	6.7E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	8.90E-01	mg/kg	8.90E-01	mg/kg	M	5.6E-08	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.55E-01	mg/kg	2.55E-01	mg/kg	M	1.6E-08	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.55E-01	mg/kg	6.55E-01	mg/kg	M	4.1E-08	mg/kg-day	NA		NA	NA	NA
	PCBs												
	Aroclor 1260	2.02E-01	mg/kg	2.02E-01	mg/kg	M	1.3E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	6.3E-04
	Sum of PCBs	2.28E-01	mg/kg	2.28E-01	mg/kg	M	1.4E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.18E-05	mg/kg	1.18E-05	mg/kg	M	7.4E-13	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												1.2E-02
Dermal	**Inorganics**												
	Aluminum	9.34E+03	mg/kg	9.34E+03	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Antimony	5.13E+00	mg/kg	5.13E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	1.17E+01	mg/kg	1.17E+01	mg/kg	M	3.8E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.3E-03
	Chromium	3.16E+01	mg/kg	3.16E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	1.61E+04	mg/kg	1.61E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	3.90E+02	mg/kg	3.90E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	2.82E+00	mg/kg	2.82E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA

TABLE 7.15.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-10 (NORTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Methylmercury	2.85E-02	mg/kg	2.85E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Thallium	2.27E+00	mg/kg	2.27E+00	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	PAHs												
	Benz(a)anthracene	1.03E+00	mg/kg	1.03E+00	mg/kg	M	1.4E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.07E+00	mg/kg	1.07E+00	mg/kg	M	1.5E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	8.90E-01	mg/kg	8.90E-01	mg/kg	M	1.2E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.55E-01	mg/kg	2.55E-01	mg/kg	M	3.5E-08	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.55E-01	mg/kg	6.55E-01	mg/kg	M	9.1E-08	mg/kg-day	NA		NA	NA	NA
	PCBs												
Dermal	Aroclor 1260	2.02E-01	mg/kg	2.02E-01	mg/kg	M	3.0E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.5E-03
	Sum of PCBs	2.28E-01	mg/kg	2.28E-01	mg/kg	M	3.4E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.18E-05	mg/kg	1.18E-05	mg/kg	M	3.8E-13	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												2.8E-03

Total Non-Cancer Hazards 0.02

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.16.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-10 (NORTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-10 (North Basin)
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	9.34E+03	mg/kg	9.34E+03	mg/kg	M	9.5E-04	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	9.5E-04
	Antimony	5.13E+00	mg/kg	5.13E+00	mg/kg	M	5.2E-07	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	1.3E-03
	Arsenic	1.17E+01	mg/kg	1.17E+01	mg/kg	M	1.2E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	4.0E-03
	Chromium	3.16E+01	mg/kg	3.16E+01	mg/kg	M	3.2E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.1E-03
	Iron	1.61E+04	mg/kg	1.61E+04	mg/kg	M	1.6E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	5.5E-03
	Manganese	3.90E+02	mg/kg	3.90E+02	mg/kg	M	4.0E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	1.7E-03
	Mercury(inorganic)	2.82E+00	mg/kg	2.82E+00	mg/kg	M	2.9E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	9.6E-04
	Methylmercury	2.85E-02	mg/kg	2.85E-02	mg/kg	M	2.9E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	2.9E-05
	Thallium	2.27E+00	mg/kg	2.27E+00	mg/kg	M	2.3E-07	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	3.5E-03
	PAHs												
	Benz(a)anthracene	1.03E+00	mg/kg	1.03E+00	mg/kg	M	1.0E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.07E+00	mg/kg	1.07E+00	mg/kg	M	1.1E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	8.90E-01	mg/kg	8.90E-01	mg/kg	M	9.1E-08	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.55E-01	mg/kg	2.55E-01	mg/kg	M	2.6E-08	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.55E-01	mg/kg	6.55E-01	mg/kg	M	6.7E-08	mg/kg-day	NA		NA	NA	NA
	PCBs												
	Aroclor 1260	2.02E-01	mg/kg	2.02E-01	mg/kg	M	2.1E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.0E-03
	Sum of PCBs	2.28E-01	mg/kg	2.28E-01	mg/kg	M	2.3E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.18E-05	mg/kg	1.18E-05	mg/kg	M	1.2E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												2.0E-02
Dermal	**Inorganics**												
	Aluminum	9.34E+03	mg/kg	9.34E+03	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Antimony	5.13E+00	mg/kg	5.13E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	1.17E+01	mg/kg	1.17E+01	mg/kg	M	7.7E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.6E-03
	Chromium	3.16E+01	mg/kg	3.16E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	1.61E+04	mg/kg	1.61E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	3.90E+02	mg/kg	3.90E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA

TABLE 7.16.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-10 (NORTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Mercury(inorganic)	2.82E+00	mg/kg	2.82E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Methylmercury	2.85E-02	mg/kg	2.85E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Thallium	2.27E+00	mg/kg	2.27E+00	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	PAHs												
	Benz(a)anthracene	1.03E+00	mg/kg	1.03E+00	mg/kg	M	2.9E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.07E+00	mg/kg	1.07E+00	mg/kg	M	3.1E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	8.90E-01	mg/kg	8.90E-01	mg/kg	M	2.5E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.55E-01	mg/kg	2.55E-01	mg/kg	M	7.3E-08	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.55E-01	mg/kg	6.55E-01	mg/kg	M	1.9E-07	mg/kg-day	NA		NA	NA	NA
	PCBs												
Dermal	Aroclor 1260	2.02E-01	mg/kg	2.02E-01	mg/kg	M	6.2E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.1E-03
	Sum of PCBs	2.28E-01	mg/kg	2.28E-01	mg/kg	M	7.0E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.18E-05	mg/kg	1.18E-05	mg/kg	M	7.8E-13	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												5.7E-03

Total Non-Cancer Hazards 0.03

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.17.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-10 (NORTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-10 (North Basin)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	9.34E+03	mg/kg	9.34E+03	mg/kg	M	1.2E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	1.2E-03
	Antimony	5.13E+00	mg/kg	5.13E+00	mg/kg	M	6.6E-07	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	1.7E-03
	Arsenic	1.17E+01	mg/kg	1.17E+01	mg/kg	M	1.5E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	5.0E-03
	Chromium	3.16E+01	mg/kg	3.16E+01	mg/kg	M	4.1E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.4E-03
	Iron	1.61E+04	mg/kg	1.61E+04	mg/kg	M	2.1E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	6.9E-03
	Manganese	3.90E+02	mg/kg	3.90E+02	mg/kg	M	5.0E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	2.2E-03
	Mercury(inorganic)	2.82E+00	mg/kg	2.82E+00	mg/kg	M	3.6E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.2E-03
	Methylmercury	2.85E-02	mg/kg	2.85E-02	mg/kg	M	3.7E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	3.7E-05
	Thallium	2.27E+00	mg/kg	2.27E+00	mg/kg	M	2.9E-07	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	4.4E-03
	PAHs												
	Benz(a)anthracene	1.03E+00	mg/kg	1.03E+00	mg/kg	M	1.3E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.07E+00	mg/kg	1.07E+00	mg/kg	M	1.4E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	8.90E-01	mg/kg	8.90E-01	mg/kg	M	1.1E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.55E-01	mg/kg	2.55E-01	mg/kg	M	3.3E-08	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.55E-01	mg/kg	6.55E-01	mg/kg	M	8.5E-08	mg/kg-day	NA		NA	NA	NA
	PCBs												
	Aroclor 1260	2.02E-01	mg/kg	2.02E-01	mg/kg	M	2.6E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.3E-03
	Sum of PCBs	2.28E-01	mg/kg	2.28E-01	mg/kg	M	2.9E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.18E-05	mg/kg	1.18E-05	mg/kg	M	1.5E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												2.5E-02
Dermal	**Inorganics**												
	Aluminum	9.34E+03	mg/kg	9.34E+03	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Antimony	5.13E+00	mg/kg	5.13E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	1.17E+01	mg/kg	1.17E+01	mg/kg	M	1.6E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	5.2E-04
	Chromium	3.16E+01	mg/kg	3.16E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	1.61E+04	mg/kg	1.61E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	3.90E+02	mg/kg	3.90E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	2.82E+00	mg/kg	2.82E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA

TABLE 7.17.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-10 (NORTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Methylmercury	2.85E-02	mg/kg	2.85E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Thallium	2.27E+00	mg/kg	2.27E+00	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	PAHs												
	Benz(a)anthracene	1.03E+00	mg/kg	1.03E+00	mg/kg	M	5.9E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.07E+00	mg/kg	1.07E+00	mg/kg	M	6.2E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	8.90E-01	mg/kg	8.90E-01	mg/kg	M	5.2E-08	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.55E-01	mg/kg	2.55E-01	mg/kg	M	1.5E-08	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.55E-01	mg/kg	6.55E-01	mg/kg	M	3.8E-08	mg/kg-day	NA		NA	NA	NA
	PCBs												
	Aroclor 1260	2.02E-01	mg/kg	2.02E-01	mg/kg	M	1.3E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	6.3E-04
	Sum of PCBs	2.28E-01	mg/kg	2.28E-01	mg/kg	M	1.4E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	1.18E-05	mg/kg	1.18E-05	mg/kg	M	1.6E-13	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												1.2E-03

Total Non-Cancer Hazards 0.03

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.18.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-12 (SOUTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-12 (South Basin)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	8.76E+03	mg/kg	8.76E+03	mg/kg	M	8.6E-05	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	8.6E-05
	Arsenic	6.30E+00	mg/kg	6.30E+00	mg/kg	M	6.2E-08	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.1E-04
	Cadmium	4.07E+01	mg/kg	4.07E+01	mg/kg	M	4.0E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	4.0E-04
	Chromium	3.03E+02	mg/kg	3.03E+02	mg/kg	M	3.0E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	9.9E-04
	Copper	2.67E+02	mg/kg	2.67E+02	mg/kg	M	2.6E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	6.5E-05
	Cyanide	8.53E-01	mg/kg	8.53E-01	mg/kg	M	8.3E-09	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	4.2E-07
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	1.7E-04	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	5.6E-04
	Manganese	2.68E+02	mg/kg	2.68E+02	mg/kg	M	2.6E-06	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	1.1E-04
	Mercury(inorganic)	2.98E+00	mg/kg	2.98E+00	mg/kg	M	2.9E-08	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	9.7E-05
	Methylmercury	3.01E-02	mg/kg	3.01E-02	mg/kg	M	2.9E-10	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	2.9E-06
	Thallium	6.65E-01	mg/kg	6.65E-01	mg/kg	M	6.5E-09	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	9.9E-05
	PAHs												
	Benz(a)anthracene	4.65E+00	mg/kg	4.65E+00	mg/kg	M	4.5E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	4.55E+00	mg/kg	4.55E+00	mg/kg	M	4.5E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.15E+00	mg/kg	3.15E+00	mg/kg	M	3.1E-08	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	1.70E-01	mg/kg	1.70E-01	mg/kg	M	1.7E-09	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3.05E+00	mg/kg	3.05E+00	mg/kg	M	3.0E-08	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	7.45E+00	mg/kg	7.45E+00	mg/kg	M	7.3E-08	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.4E-06
	PCBs												
	Aroclor 1242	2.79E-01	mg/kg	2.79E-01	mg/kg	M	2.7E-09	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	3.9E-05
	Aroclor 1254	4.22E-01	mg/kg	4.22E-01	mg/kg	M	4.1E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.1E-04
	Aroclor 1260	2.19E-01	mg/kg	2.19E-01	mg/kg	M	2.1E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.1E-04
	Sum of PCBs	9.20E-01	mg/kg	9.20E-01	mg/kg	M	9.0E-09	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												3.0E-03
Dermal	**Inorganics**												
	Aluminum	8.76E+03	mg/kg	8.76E+03	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Arsenic	6.30E+00	mg/kg	6.30E+00	mg/kg	M	3.2E-08	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.1E-04
	Cadmium	4.07E+01	mg/kg	4.07E+01	mg/kg	M	6.8E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	2.7E-04
	Chromium	3.03E+02	mg/kg	3.03E+02	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA

TABLE 7.18.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-12 (SOUTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Copper	2.67E+02	mg/kg	2.67E+02	mg/kg	M	NA		4.0E-02	mg/kg-day	NA	NA	NA
	Cyanide	8.53E-01	mg/kg	8.53E-01	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	2.68E+02	mg/kg	2.68E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	2.98E+00	mg/kg	2.98E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Methylmercury	3.01E-02	mg/kg	3.01E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Thallium	6.65E-01	mg/kg	6.65E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	PAHs												
	Benz(a)anthracene	4.65E+00	mg/kg	4.65E+00	mg/kg	M	1.0E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	4.55E+00	mg/kg	4.55E+00	mg/kg	M	9.9E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.15E+00	mg/kg	3.15E+00	mg/kg	M	6.9E-08	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	1.70E-01	mg/kg	1.70E-01	mg/kg	M	3.7E-09	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3.05E+00	mg/kg	3.05E+00	mg/kg	M	6.6E-08	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	7.45E+00	mg/kg	7.45E+00	mg/kg	M	1.6E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	5.4E-06
	PCBs												
	Aroclor 1242	2.79E-01	mg/kg	2.79E-01	mg/kg	M	6.5E-09	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	9.3E-05
	Aroclor 1254	4.22E-01	mg/kg	4.22E-01	mg/kg	M	9.9E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	4.9E-04
	Aroclor 1260	2.19E-01	mg/kg	2.19E-01	mg/kg	M	5.1E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.6E-04
	Sum of PCBs	9.20E-01	mg/kg	9.20E-01	mg/kg	M	2.2E-08	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												1.2E-03

Total Non-Cancer Hazards 0.004

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.19.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-12 (SOUTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-12 (South Basin)
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	8.76E+03	mg/kg	8.76E+03	mg/kg	M	1.4E-04	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	1.4E-04
	Arsenic	6.30E+00	mg/kg	6.30E+00	mg/kg	M	1.0E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.3E-04
	Cadmium	4.07E+01	mg/kg	4.07E+01	mg/kg	M	6.5E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	6.5E-04
	Chromium	3.03E+02	mg/kg	3.03E+02	mg/kg	M	4.8E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.6E-03
	Copper	2.67E+02	mg/kg	2.67E+02	mg/kg	M	4.3E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	1.1E-04
	Cyanide	8.53E-01	mg/kg	8.53E-01	mg/kg	M	1.4E-08	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	6.8E-07
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	2.7E-04	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	9.1E-04
	Manganese	2.68E+02	mg/kg	2.68E+02	mg/kg	M	4.3E-06	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	1.8E-04
	Mercury(inorganic)	2.98E+00	mg/kg	2.98E+00	mg/kg	M	4.7E-08	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.6E-04
	Methylmercury	3.01E-02	mg/kg	3.01E-02	mg/kg	M	4.8E-10	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	4.8E-06
	Thallium	6.65E-01	mg/kg	6.65E-01	mg/kg	M	1.1E-08	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	1.6E-04
	PAHs												
	Benz(a)anthracene	4.65E+00	mg/kg	4.65E+00	mg/kg	M	7.4E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	4.55E+00	mg/kg	4.55E+00	mg/kg	M	7.2E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.15E+00	mg/kg	3.15E+00	mg/kg	M	5.0E-08	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	1.70E-01	mg/kg	1.70E-01	mg/kg	M	2.7E-09	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3.05E+00	mg/kg	3.05E+00	mg/kg	M	4.9E-08	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	7.45E+00	mg/kg	7.45E+00	mg/kg	M	1.2E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	4.0E-06
	PCBs												
	Aroclor 1242	2.79E-01	mg/kg	2.79E-01	mg/kg	M	4.4E-09	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	6.4E-05
	Aroclor 1254	4.22E-01	mg/kg	4.22E-01	mg/kg	M	6.7E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.4E-04
	Aroclor 1260	2.19E-01	mg/kg	2.19E-01	mg/kg	M	3.5E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.7E-04
	Sum of PCBs	9.20E-01	mg/kg	9.20E-01	mg/kg	M	1.5E-08	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												4.8E-03
Dermal	**Inorganics**												
	Aluminum	8.76E+03	mg/kg	8.76E+03	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Arsenic	6.30E+00	mg/kg	6.30E+00	mg/kg	M	6.5E-08	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.2E-04
	Cadmium	4.07E+01	mg/kg	4.07E+01	mg/kg	M	1.4E-08	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	5.6E-04
	Chromium	3.03E+02	mg/kg	3.03E+02	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Copper	2.67E+02	mg/kg	2.67E+02	mg/kg	M	NA		4.0E-02	mg/kg-day	NA	NA	NA

TABLE 7.19.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-12 (SOUTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Cyanide	8.53E-01	mg/kg	8.53E-01	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	2.68E+02	mg/kg	2.68E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	2.98E+00	mg/kg	2.98E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Methylmercury	3.01E-02	mg/kg	3.01E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Thallium	6.65E-01	mg/kg	6.65E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	PAHs												
	Benz(a)anthracene	4.65E+00	mg/kg	4.65E+00	mg/kg	M	2.1E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	4.55E+00	mg/kg	4.55E+00	mg/kg	M	2.0E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.15E+00	mg/kg	3.15E+00	mg/kg	M	1.4E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	1.70E-01	mg/kg	1.70E-01	mg/kg	M	7.6E-09	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3.05E+00	mg/kg	3.05E+00	mg/kg	M	1.4E-07	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	7.45E+00	mg/kg	7.45E+00	mg/kg	M	3.3E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.1E-05
	PCBs												
	Aroclor 1242	2.79E-01	mg/kg	2.79E-01	mg/kg	M	1.3E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	1.9E-04
	Aroclor 1254	4.22E-01	mg/kg	4.22E-01	mg/kg	M	2.0E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.0E-03
	Aroclor 1260	2.19E-01	mg/kg	2.19E-01	mg/kg	M	1.1E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	5.3E-04
	Sum of PCBs	9.20E-01	mg/kg	9.20E-01	mg/kg	M	4.4E-08	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												2.5E-03

Total Non-Cancer Hazards 0.01

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.20.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-12 (SOUTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-12 (South Basin)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	8.76E+03	mg/kg	8.76E+03	mg/kg	M	1.1E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	1.1E-03
	Arsenic	6.30E+00	mg/kg	6.30E+00	mg/kg	M	8.1E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.7E-03
	Cadmium	4.07E+01	mg/kg	4.07E+01	mg/kg	M	5.3E-06	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	5.3E-03
	Chromium	3.03E+02	mg/kg	3.03E+02	mg/kg	M	3.9E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.3E-02
	Copper	2.67E+02	mg/kg	2.67E+02	mg/kg	M	3.5E-05	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	8.6E-04
	Cyanide	8.53E-01	mg/kg	8.53E-01	mg/kg	M	1.1E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	5.5E-06
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	2.2E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	7.4E-03
	Manganese	2.68E+02	mg/kg	2.68E+02	mg/kg	M	3.5E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	1.5E-03
	Mercury(inorganic)	2.98E+00	mg/kg	2.98E+00	mg/kg	M	3.8E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.3E-03
	Methylmercury	3.01E-02	mg/kg	3.01E-02	mg/kg	M	3.9E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	3.9E-05
	Thallium	6.65E-01	mg/kg	6.65E-01	mg/kg	M	8.6E-08	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	1.3E-03
	PAHs												
	Benz(a)anthracene	4.65E+00	mg/kg	4.65E+00	mg/kg	M	6.0E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	4.55E+00	mg/kg	4.55E+00	mg/kg	M	5.9E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.15E+00	mg/kg	3.15E+00	mg/kg	M	4.1E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	1.70E-01	mg/kg	1.70E-01	mg/kg	M	2.2E-08	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3.05E+00	mg/kg	3.05E+00	mg/kg	M	3.9E-07	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	7.45E+00	mg/kg	7.45E+00	mg/kg	M	9.6E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.2E-05
	PCBs												
	Aroclor 1242	2.79E-01	mg/kg	2.79E-01	mg/kg	M	3.6E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	5.2E-04
	Aroclor 1254	4.22E-01	mg/kg	4.22E-01	mg/kg	M	5.5E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.7E-03
	Aroclor 1260	2.19E-01	mg/kg	2.19E-01	mg/kg	M	2.8E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.4E-03
	Sum of PCBs	9.20E-01	mg/kg	9.20E-01	mg/kg	M	1.2E-07	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												3.9E-02
Dermal	**Inorganics**												
	Aluminum	8.76E+03	mg/kg	8.76E+03	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Arsenic	6.30E+00	mg/kg	6.30E+00	mg/kg	M	8.4E-08	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.8E-04
	Cadmium	4.07E+01	mg/kg	4.07E+01	mg/kg	M	1.8E-08	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	7.3E-04
	Chromium	3.03E+02	mg/kg	3.03E+02	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA

TABLE 7.20.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-12 (SOUTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	Copper	2.67E+02	mg/kg	2.67E+02	mg/kg	M	NA		4.0E-02	mg/kg-day	NA	NA	NA
	Cyanide	8.53E-01	mg/kg	8.53E-01	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	2.68E+02	mg/kg	2.68E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	2.98E+00	mg/kg	2.98E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Methylmercury	3.01E-02	mg/kg	3.01E-02	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	Thallium	6.65E-01	mg/kg	6.65E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	PAHs												
	Benz(a)anthracene	4.65E+00	mg/kg	4.65E+00	mg/kg	M	2.7E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	4.55E+00	mg/kg	4.55E+00	mg/kg	M	2.6E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	3.15E+00	mg/kg	3.15E+00	mg/kg	M	1.8E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	1.70E-01	mg/kg	1.70E-01	mg/kg	M	9.9E-09	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3.05E+00	mg/kg	3.05E+00	mg/kg	M	1.8E-07	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	7.45E+00	mg/kg	7.45E+00	mg/kg	M	4.3E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.4E-05
	PCBs												
	Aroclor 1242	2.79E-01	mg/kg	2.79E-01	mg/kg	M	1.7E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	2.5E-04
	Aroclor 1254	4.22E-01	mg/kg	4.22E-01	mg/kg	M	2.6E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.3E-03
	Aroclor 1260	2.19E-01	mg/kg	2.19E-01	mg/kg	M	1.4E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	6.8E-04
	Sum of PCBs	9.20E-01	mg/kg	9.20E-01	mg/kg	M	5.7E-08	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												3.3E-03

Total Non-Cancer Hazards 0.04

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.21.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-19 (SOUTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-19 (South Basin)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Antimony	3.30E+00	mg/kg	3.30E+00	mg/kg	M	3.2E-08	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	8.1E-05
	Arsenic	8.55E+00	mg/kg	8.55E+00	mg/kg	M	8.4E-08	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.8E-04
	Barium	5.12E+02	mg/kg	5.12E+02	mg/kg	M	5.0E-06	mg/kg-day	7.0E-02	mg/kg-day	NA	NA	7.2E-05
	Cadmium	2.95E+00	mg/kg	2.95E+00	mg/kg	M	2.9E-08	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	2.9E-05
	Chromium	7.03E+01	mg/kg	7.03E+01	mg/kg	M	6.9E-07	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.3E-04
	Iron	1.04E+04	mg/kg	1.04E+04	mg/kg	M	1.0E-04	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	3.4E-04
	Manganese	3.01E+02	mg/kg	3.01E+02	mg/kg	M	2.9E-06	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	1.3E-04
	Mercury(inorganic)	4.22E+01	mg/kg	4.22E+01	mg/kg	M	4.1E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.4E-03
	Methylmercury	4.26E-01	mg/kg	4.26E-01	mg/kg	M	4.2E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	4.2E-05
	SVOCs												
	1,3-Dichlorobenzene	3.79E+00	mg/kg	3.79E+00	mg/kg	M	3.7E-08	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	4.1E-05
	1,4-Dichlorobenzene	8.90E+00	mg/kg	8.90E+00	mg/kg	M	8.7E-08	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.9E-06
	Hexachlorobenzene	2.78E+00	mg/kg	2.78E+00	mg/kg	M	2.7E-08	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	3.4E-05
	PAHs												
	Benz(a)anthracene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	1.1E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.04E+01	mg/kg	1.04E+01	mg/kg	M	1.0E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	9.05E+00	mg/kg	9.05E+00	mg/kg	M	8.9E-08	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	5.60E+00	mg/kg	5.60E+00	mg/kg	M	5.5E-08	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.8E-06
	Benzo(k)fluoranthene	7.95E+00	mg/kg	7.95E+00	mg/kg	M	7.8E-08	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.65E+00	mg/kg	2.65E+00	mg/kg	M	2.6E-08	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.00E+00	mg/kg	6.00E+00	mg/kg	M	5.9E-08	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	1.65E+01	mg/kg	1.65E+01	mg/kg	M	1.6E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	5.4E-06
	Pesticides												
	Aldrin	3.86E-02	mg/kg	3.86E-02	mg/kg	M	3.8E-10	mg/kg-day	3.0E-05	mg/kg-day	NA	NA	1.3E-05
	Dieldrin	2.93E-02	mg/kg	2.93E-02	mg/kg	M	2.9E-10	mg/kg-day	5.0E-05	mg/kg-day	NA	NA	5.7E-06
	PCBs												
	Aroclor 1242	7.05E-01	mg/kg	7.05E-01	mg/kg	M	6.9E-09	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	9.9E-05
	Aroclor 1254	6.17E-01	mg/kg	6.17E-01	mg/kg	M	6.0E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.0E-04
	Aroclor 1260	3.14E-01	mg/kg	3.14E-01	mg/kg	M	3.1E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.5E-04

TABLE 7.21.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-19 (SOUTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
	Sum of PCBs	1.34E+00	mg/kg	1.34E+00	mg/kg	M	1.3E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	8.81E-04	mg/kg	8.81E-04	mg/kg	M	8.6E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												3.2E-03
Dermal	**Inorganics**												
	Antimony	3.30E+00	mg/kg	3.30E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	8.55E+00	mg/kg	8.55E+00	mg/kg	M	4.3E-08	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.4E-04
	Barium	5.12E+02	mg/kg	5.12E+02	mg/kg	M	NA		4.9E-03	mg/kg-day	NA	NA	NA
	Cadmium	2.95E+00	mg/kg	2.95E+00	mg/kg	M	4.9E-10	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	2.0E-05
	Chromium	7.03E+01	mg/kg	7.03E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	1.04E+04	mg/kg	1.04E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	3.01E+02	mg/kg	3.01E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	4.22E+01	mg/kg	4.22E+01	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Methylmercury	4.26E-01	mg/kg	4.26E-01	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	SVOCs												
	1,3-Dichlorobenzene	3.79E+00	mg/kg	3.79E+00	mg/kg	M	6.3E-08	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	7.0E-05
	1,4-Dichlorobenzene	8.90E+00	mg/kg	8.90E+00	mg/kg	M	1.5E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	5.0E-06
	Hexachlorobenzene	2.78E+00	mg/kg	2.78E+00	mg/kg	M	4.7E-08	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	5.8E-05
	PAHs												
	Benz(a)anthracene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	2.5E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.04E+01	mg/kg	1.04E+01	mg/kg	M	2.3E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	9.05E+00	mg/kg	9.05E+00	mg/kg	M	2.0E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	5.60E+00	mg/kg	5.60E+00	mg/kg	M	1.2E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	4.1E-06
	Benzo(k)fluoranthene	7.95E+00	mg/kg	7.95E+00	mg/kg	M	1.7E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.65E+00	mg/kg	2.65E+00	mg/kg	M	5.8E-08	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.00E+00	mg/kg	6.00E+00	mg/kg	M	1.3E-07	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	1.65E+01	mg/kg	1.65E+01	mg/kg	M	3.6E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.2E-05
	Pesticides												
	Aldrin	3.86E-02	mg/kg	3.86E-02	mg/kg	M	NA		3.0E-05	mg/kg-day	NA	NA	NA
	Dieldrin	2.93E-02	mg/kg	2.93E-02	mg/kg	M	NA		5.0E-05	mg/kg-day	NA	NA	NA
	PCBs												
	Aroclor 1242	7.05E-01	mg/kg	7.05E-01	mg/kg	M	1.7E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	2.4E-04
	Aroclor 1254	6.17E-01	mg/kg	6.17E-01	mg/kg	M	1.4E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	7.2E-04
	Aroclor 1260	3.14E-01	mg/kg	3.14E-01	mg/kg	M	7.4E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.7E-04
	Sum of PCBs	1.34E+00	mg/kg	1.34E+00	mg/kg	M	3.1E-08	mg/kg-day	NA		NA	NA	NA

TABLE 7.21.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-19 (SOUTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	8.81E-04	mg/kg	8.81E-04	mg/kg	M	4.4E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												1.6E-03

Total Non-Cancer Hazards 0.005

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.22.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-19 (SOUTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-19 (South Basin)
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Antimony	3.30E+00	mg/kg	3.30E+00	mg/kg	M	5.3E-08	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	1.3E-04
	Arsenic	8.55E+00	mg/kg	8.55E+00	mg/kg	M	1.4E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	4.5E-04
	Barium	5.12E+02	mg/kg	5.12E+02	mg/kg	M	8.2E-06	mg/kg-day	7.0E-02	mg/kg-day	NA	NA	1.2E-04
	Cadmium	2.95E+00	mg/kg	2.95E+00	mg/kg	M	4.7E-08	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	4.7E-05
	Chromium	7.03E+01	mg/kg	7.03E+01	mg/kg	M	1.1E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	3.7E-04
	Iron	1.04E+04	mg/kg	1.04E+04	mg/kg	M	1.7E-04	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	5.5E-04
	Manganese	3.01E+02	mg/kg	3.01E+02	mg/kg	M	4.8E-06	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	2.1E-04
	Mercury(inorganic)	4.22E+01	mg/kg	4.22E+01	mg/kg	M	6.7E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.2E-03
	Methylmercury	4.26E-01	mg/kg	4.26E-01	mg/kg	M	6.8E-09	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	6.8E-05
	SVOCs												
	1,3-Dichlorobenzene	3.79E+00	mg/kg	3.79E+00	mg/kg	M	6.0E-08	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	6.7E-05
	1,4-Dichlorobenzene	8.90E+00	mg/kg	8.90E+00	mg/kg	M	1.4E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	4.7E-06
	Hexachlorobenzene	2.78E+00	mg/kg	2.78E+00	mg/kg	M	4.4E-08	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	5.5E-05
	PAHs												
	Benz(a)anthracene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	1.8E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.04E+01	mg/kg	1.04E+01	mg/kg	M	1.7E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	9.05E+00	mg/kg	9.05E+00	mg/kg	M	1.4E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	5.60E+00	mg/kg	5.60E+00	mg/kg	M	8.9E-08	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.0E-06
	Benzo(k)fluoranthene	7.95E+00	mg/kg	7.95E+00	mg/kg	M	1.3E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.65E+00	mg/kg	2.65E+00	mg/kg	M	4.2E-08	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.00E+00	mg/kg	6.00E+00	mg/kg	M	9.6E-08	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	1.65E+01	mg/kg	1.65E+01	mg/kg	M	2.6E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	8.8E-06
	Pesticides												
	Aldrin	3.86E-02	mg/kg	3.86E-02	mg/kg	M	6.1E-10	mg/kg-day	3.0E-05	mg/kg-day	NA	NA	2.0E-05
	Dieldrin	2.93E-02	mg/kg	2.93E-02	mg/kg	M	4.7E-10	mg/kg-day	5.0E-05	mg/kg-day	NA	NA	9.3E-06
	PCBs												
	Aroclor 1242	7.05E-01	mg/kg	7.05E-01	mg/kg	M	1.1E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	1.6E-04
	Aroclor 1254	6.17E-01	mg/kg	6.17E-01	mg/kg	M	9.8E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	4.9E-04
	Aroclor 1260	3.14E-01	mg/kg	3.14E-01	mg/kg	M	5.0E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.5E-04
	Sum of PCBs	1.34E+00	mg/kg	1.34E+00	mg/kg	M	2.1E-08	mg/kg-day	NA		NA	NA	NA

TABLE 7.22.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-19 (SOUTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	8.81E-04	mg/kg	8.81E-04	mg/kg	M	1.4E-11	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												5.3E-03
Dermal	**Inorganics**												
	Antimony	3.30E+00	mg/kg	3.30E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	8.55E+00	mg/kg	8.55E+00	mg/kg	M	8.8E-08	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.9E-04
	Barium	5.12E+02	mg/kg	5.12E+02	mg/kg	M	NA		4.9E-03	mg/kg-day	NA	NA	NA
	Cadmium	2.95E+00	mg/kg	2.95E+00	mg/kg	M	1.0E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	4.1E-05
	Chromium	7.03E+01	mg/kg	7.03E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	1.04E+04	mg/kg	1.04E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	3.01E+02	mg/kg	3.01E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	4.22E+01	mg/kg	4.22E+01	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Methylmercury	4.26E-01	mg/kg	4.26E-01	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	SVOCs												
	1,3-Dichlorobenzene	3.79E+00	mg/kg	3.79E+00	mg/kg	M	1.3E-07	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	1.4E-04
	1,4-Dichlorobenzene	8.90E+00	mg/kg	8.90E+00	mg/kg	M	3.1E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.0E-05
	Hexachlorobenzene	2.78E+00	mg/kg	2.78E+00	mg/kg	M	9.6E-08	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	1.2E-04
	PAHs												
	Benz(a)anthracene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	5.1E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.04E+01	mg/kg	1.04E+01	mg/kg	M	4.7E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	9.05E+00	mg/kg	9.05E+00	mg/kg	M	4.0E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	5.60E+00	mg/kg	5.60E+00	mg/kg	M	2.5E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	8.3E-06
	Benzo(k)fluoranthene	7.95E+00	mg/kg	7.95E+00	mg/kg	M	3.6E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.65E+00	mg/kg	2.65E+00	mg/kg	M	1.2E-07	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.00E+00	mg/kg	6.00E+00	mg/kg	M	2.7E-07	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	1.65E+01	mg/kg	1.65E+01	mg/kg	M	7.4E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.5E-05
	Pesticides												
	Aldrin	3.86E-02	mg/kg	3.86E-02	mg/kg	M	NA		3.0E-05	mg/kg-day	NA	NA	NA
	Dieldrin	2.93E-02	mg/kg	2.93E-02	mg/kg	M	NA		5.0E-05	mg/kg-day	NA	NA	NA
	PCBs												
	Aroclor 1242	7.05E-01	mg/kg	7.05E-01	mg/kg	M	3.4E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	4.9E-04
	Aroclor 1254	6.17E-01	mg/kg	6.17E-01	mg/kg	M	3.0E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.5E-03
	Aroclor 1260	3.14E-01	mg/kg	3.14E-01	mg/kg	M	1.5E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	7.6E-04
	Sum of PCBs	1.34E+00	mg/kg	1.34E+00	mg/kg	M	6.5E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	8.81E-04	mg/kg	8.81E-04	mg/kg	M	9.1E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												3.4E-03

Total Non-Cancer Hazards 0.01

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.23.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-19 (SOUTH BASIN) - ONONDAGA LAKE

Scenario Timeframe: Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-19 (South Basin)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Antimony	3.30E+00	mg/kg	3.30E+00	mg/kg	M	4.3E-07	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	1.1E-03
	Arsenic	8.55E+00	mg/kg	8.55E+00	mg/kg	M	1.1E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.7E-03
	Barium	5.12E+02	mg/kg	5.12E+02	mg/kg	M	6.6E-05	mg/kg-day	7.0E-02	mg/kg-day	NA	NA	9.4E-04
	Cadmium	2.95E+00	mg/kg	2.95E+00	mg/kg	M	3.8E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	3.8E-04
	Chromium	7.03E+01	mg/kg	7.03E+01	mg/kg	M	9.1E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	3.0E-03
	Iron	1.04E+04	mg/kg	1.04E+04	mg/kg	M	1.3E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	4.5E-03
	Manganese	3.01E+02	mg/kg	3.01E+02	mg/kg	M	3.9E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	1.7E-03
	Mercury(inorganic)	4.22E+01	mg/kg	4.22E+01	mg/kg	M	5.4E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.8E-02
	Methylmercury	4.26E-01	mg/kg	4.26E-01	mg/kg	M	5.5E-08	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	5.5E-04
	SVOCs												
	1,3-Dichlorobenzene	3.79E+00	mg/kg	3.79E+00	mg/kg	M	4.9E-07	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	5.4E-04
	1,4-Dichlorobenzene	8.90E+00	mg/kg	8.90E+00	mg/kg	M	1.1E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.8E-05
	Hexachlorobenzene	2.78E+00	mg/kg	2.78E+00	mg/kg	M	3.6E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	4.5E-04
	PAHs												
	Benz(a)anthracene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	1.5E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.04E+01	mg/kg	1.04E+01	mg/kg	M	1.3E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	9.05E+00	mg/kg	9.05E+00	mg/kg	M	1.2E-06	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	5.60E+00	mg/kg	5.60E+00	mg/kg	M	7.2E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.4E-05
	Benzo(k)fluoranthene	7.95E+00	mg/kg	7.95E+00	mg/kg	M	1.0E-06	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.65E+00	mg/kg	2.65E+00	mg/kg	M	3.4E-07	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.00E+00	mg/kg	6.00E+00	mg/kg	M	7.7E-07	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	1.65E+01	mg/kg	1.65E+01	mg/kg	M	2.1E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	7.1E-05
	Pesticides												
	Aldrin	3.86E-02	mg/kg	3.86E-02	mg/kg	M	5.0E-09	mg/kg-day	3.0E-05	mg/kg-day	NA	NA	1.7E-04
	Dieldrin	2.93E-02	mg/kg	2.93E-02	mg/kg	M	3.8E-09	mg/kg-day	5.0E-05	mg/kg-day	NA	NA	7.6E-05
	PCBs												
	Aroclor 1242	7.05E-01	mg/kg	7.05E-01	mg/kg	M	9.1E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	1.3E-03
	Aroclor 1254	6.17E-01	mg/kg	6.17E-01	mg/kg	M	8.0E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	4.0E-03
	Aroclor 1260	3.14E-01	mg/kg	3.14E-01	mg/kg	M	4.1E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.0E-03
	Sum of PCBs	1.34E+00	mg/kg	1.34E+00	mg/kg	M	1.7E-07	mg/kg-day	NA		NA	NA	NA

TABLE 7.23.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
WETLAND SYW-19 (SOUTH BASIN) - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[e]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	8.81E-04	mg/kg	8.81E-04	mg/kg	M	1.1E-10	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												4.3E-02
Dermal	**Inorganics**												
	Antimony	3.30E+00	mg/kg	3.30E+00	mg/kg	M	NA		6.0E-05	mg/kg-day	NA	NA	NA
	Arsenic	8.55E+00	mg/kg	8.55E+00	mg/kg	M	1.1E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.8E-04
	Barium	5.12E+02	mg/kg	5.12E+02	mg/kg	M	NA		4.9E-03	mg/kg-day	NA	NA	NA
	Cadmium	2.95E+00	mg/kg	2.95E+00	mg/kg	M	1.3E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	5.3E-05
	Chromium	7.03E+01	mg/kg	7.03E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	1.04E+04	mg/kg	1.04E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	3.01E+02	mg/kg	3.01E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Mercury(inorganic)	4.22E+01	mg/kg	4.22E+01	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Methylmercury	4.26E-01	mg/kg	4.26E-01	mg/kg	M	NA		1.0E-04	mg/kg-day	NA	NA	NA
	SVOCs												
	1,3-Dichlorobenzene	3.79E+00	mg/kg	3.79E+00	mg/kg	M	1.7E-07	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	1.9E-04
	1,4-Dichlorobenzene	8.90E+00	mg/kg	8.90E+00	mg/kg	M	4.0E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.3E-05
	Hexachlorobenzene	2.78E+00	mg/kg	2.78E+00	mg/kg	M	1.2E-07	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	1.6E-04
	PAHs												
	Benz(a)anthracene	1.14E+01	mg/kg	1.14E+01	mg/kg	M	6.6E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	1.04E+01	mg/kg	1.04E+01	mg/kg	M	6.0E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	9.05E+00	mg/kg	9.05E+00	mg/kg	M	5.2E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	5.60E+00	mg/kg	5.60E+00	mg/kg	M	3.2E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.1E-05
	Benzo(k)fluoranthene	7.95E+00	mg/kg	7.95E+00	mg/kg	M	4.6E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	2.65E+00	mg/kg	2.65E+00	mg/kg	M	1.5E-07	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	6.00E+00	mg/kg	6.00E+00	mg/kg	M	3.5E-07	mg/kg-day	NA		NA	NA	NA
	Phenanthrene	1.65E+01	mg/kg	1.65E+01	mg/kg	M	9.6E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	3.2E-05
	Pesticides												
	Aldrin	3.86E-02	mg/kg	3.86E-02	mg/kg	M	NA		3.0E-05	mg/kg-day	NA	NA	NA
	Dieldrin	2.93E-02	mg/kg	2.93E-02	mg/kg	M	NA		5.0E-05	mg/kg-day	NA	NA	NA
	PCBs												
	Aroclor 1242	7.05E-01	mg/kg	7.05E-01	mg/kg	M	4.4E-08	mg/kg-day	7.0E-05	mg/kg-day	NA	NA	6.3E-04
	Aroclor 1254	6.17E-01	mg/kg	6.17E-01	mg/kg	M	3.9E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.9E-03
	Aroclor 1260	3.14E-01	mg/kg	3.14E-01	mg/kg	M	2.0E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	9.8E-04
	Sum of PCBs	1.34E+00	mg/kg	1.34E+00	mg/kg	M	8.4E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	8.81E-04	mg/kg	8.81E-04	mg/kg	M	1.2E-11	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												4.4E-03

Total Non-Cancer Hazards 0.05

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.24.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
DREDGE SPOIL SOILS - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Dredge Spoil Soils
Exposure Medium: Surface Soil
Exposure Point: Dredge Spoil Soils (0-3.5 ft)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	1.21E+04	mg/kg	1.21E+04	mg/kg	M	7.6E-04	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	7.6E-04
	Arsenic	8.40E+00	mg/kg	8.40E+00	mg/kg	M	5.3E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.8E-03
	Chromium	2.94E+01	mg/kg	2.94E+01	mg/kg	M	1.8E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	6.1E-04
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	1.1E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	3.6E-03
	Manganese	3.54E+02	mg/kg	3.54E+02	mg/kg	M	2.2E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	9.5E-04
	Total Mercury	4.00E+00	mg/kg	4.00E+00	mg/kg	M	2.5E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	8.3E-04
	SVOCs												
	Hexachlorobenzene	4.10E-01	mg/kg	4.10E-01	mg/kg	M	2.6E-08	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	3.2E-05
	PAHs												
	Benzo(a)pyrene	1.30E-01	mg/kg	1.30E-01	mg/kg	M	8.1E-09	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												8.5E-03
Dermal	**Inorganics**												
	Aluminum	1.21E+04	mg/kg	1.21E+04	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Arsenic	8.40E+00	mg/kg	8.40E+00	mg/kg	M	2.7E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	9.0E-04
	Chromium	2.94E+01	mg/kg	2.94E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	3.54E+02	mg/kg	3.54E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Total Mercury	4.00E+00	mg/kg	4.00E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	SVOCs												
	Hexachlorobenzene	4.10E-01	mg/kg	4.10E-01	mg/kg	M	4.4E-08	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	5.5E-05
	PAHs												
	Benzo(a)pyrene	1.30E-01	mg/kg	1.30E-01	mg/kg	M	1.8E-08	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												9.5E-04

Total Non-Cancer Hazards 0.01

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.25.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
DREDGE SPOIL SOILS - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Dredge Spoil Soils
Exposure Medium: Surface Soil
Exposure Point: Dredge Spoil Soils (0-3.5 ft)
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	1.21E+04	mg/kg	1.21E+04	mg/kg	M	1.2E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	1.2E-03
	Arsenic	8.40E+00	mg/kg	8.40E+00	mg/kg	M	8.6E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.9E-03
	Chromium	2.94E+01	mg/kg	2.94E+01	mg/kg	M	3.0E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.0E-03
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	1.7E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	5.8E-03
	Manganese	3.54E+02	mg/kg	3.54E+02	mg/kg	M	3.6E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	1.5E-03
	Total Mercury	4.00E+00	mg/kg	4.00E+00	mg/kg	M	4.1E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.4E-03
	SVOCs												
	Hexachlorobenzene	4.10E-01	mg/kg	4.10E-01	mg/kg	M	4.2E-08	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	5.2E-05
	PAHs												
	Benzo(a)pyrene	1.30E-01	mg/kg	1.30E-01	mg/kg	M	1.3E-08	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												1.4E-02
Dermal	**Inorganics**												
	Aluminum	1.21E+04	mg/kg	1.21E+04	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Arsenic	8.40E+00	mg/kg	8.40E+00	mg/kg	M	5.5E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.8E-03
	Chromium	2.94E+01	mg/kg	2.94E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	3.54E+02	mg/kg	3.54E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Total Mercury	4.00E+00	mg/kg	4.00E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	SVOCs												
	Hexachlorobenzene	4.10E-01	mg/kg	4.10E-01	mg/kg	M	9.0E-08	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	1.1E-04
	PAHs												
	Benzo(a)pyrene	1.30E-01	mg/kg	1.30E-01	mg/kg	M	3.7E-08	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												2.0E-03

Total Non-Cancer Hazards 0.02

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.26.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
DREDGE SPOIL SOILS - ONONDAGA LAKE

Scenario Timeframe: Future
Medium: Dredge Spoil Soils
Exposure Medium: Surface Soil
Exposure Point: Dredge Spoil Soils (0-3.5 ft)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	1.21E+04	mg/kg	1.21E+04	mg/kg	M	1.6E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	1.6E-03
	Arsenic	8.40E+00	mg/kg	8.40E+00	mg/kg	M	1.1E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.6E-03
	Chromium	2.94E+01	mg/kg	2.94E+01	mg/kg	M	3.8E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.3E-03
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	2.2E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	7.4E-03
	Manganese	3.54E+02	mg/kg	3.54E+02	mg/kg	M	4.6E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	2.0E-03
	Total Mercury	4.00E+00	mg/kg	4.00E+00	mg/kg	M	5.2E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.7E-03
	SVOCs												
	Hexachlorobenzene	4.10E-01	mg/kg	4.10E-01	mg/kg	M	5.3E-08	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	6.6E-05
	PAHs												
	Benzo(a)pyrene	1.30E-01	mg/kg	1.30E-01	mg/kg	M	1.7E-08	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												1.8E-02
Dermal	**Inorganics**												
	Aluminum	1.21E+04	mg/kg	1.21E+04	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Arsenic	8.40E+00	mg/kg	8.40E+00	mg/kg	M	1.1E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.7E-04
	Chromium	2.94E+01	mg/kg	2.94E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Iron	1.71E+04	mg/kg	1.71E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	3.54E+02	mg/kg	3.54E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Total Mercury	4.00E+00	mg/kg	4.00E+00	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	SVOCs												
	Hexachlorobenzene	4.10E-01	mg/kg	4.10E-01	mg/kg	M	1.8E-08	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	2.3E-05
	PAHs												
	Benzo(a)pyrene	1.30E-01	mg/kg	1.30E-01	mg/kg	M	7.5E-09	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												4.0E-04

Total Non-Cancer Hazards: 0.02

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.27.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
DREDGE SPOIL SUBSURFACE SOILS - ONONDAGA LAKE

Scenario Timeframe: Future
Medium: Dredge Spoil Soils
Exposure Medium: Subsurface Soil
Exposure Point: Dredge Spoil Soils (0-11.7 ft)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Inorganics**												
	Aluminum	1.02E+04	mg/kg	1.02E+04	mg/kg	M	1.3E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	1.3E-03
	Arsenic	8.73E+00	mg/kg	8.73E+00	mg/kg	M	1.1E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.8E-03
	Cadmium	9.68E-01	mg/kg	9.68E-01	mg/kg	M	1.3E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	1.3E-04
	Chromium	2.60E+01	mg/kg	2.60E+01	mg/kg	M	3.4E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.1E-03
	Cyanide	8.37E-01	mg/kg	8.37E-01	mg/kg	M	1.1E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	5.4E-06
	Iron	1.51E+04	mg/kg	1.51E+04	mg/kg	M	2.0E-03	mg/kg-day	3.0E-01	mg/kg-day	NA	NA	6.5E-03
	Manganese	3.82E+02	mg/kg	3.82E+02	mg/kg	M	4.9E-05	mg/kg-day	2.3E-02	mg/kg-day	NA	NA	2.1E-03
	Total Mercury	4.79E+01	mg/kg	4.79E+01	mg/kg	M	6.2E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.1E-02
	Thallium	4.91E-01	mg/kg	4.91E-01	mg/kg	M	6.3E-08	mg/kg-day	6.6E-05	mg/kg-day	NA	NA	9.6E-04
	SVOCs												
	Hexachlorobenzene	2.25E-01	mg/kg	2.25E-01	mg/kg	M	2.9E-08	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	3.6E-05
	PAHs												
	Benz(a)anthracene	2.50E+00	mg/kg	2.50E+00	mg/kg	M	3.2E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	2.63E+00	mg/kg	2.63E+00	mg/kg	M	3.4E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	2.28E+00	mg/kg	2.28E+00	mg/kg	M	2.9E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	1.29E+00	mg/kg	1.29E+00	mg/kg	M	1.7E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	5.6E-06
	Benzo(k)fluoranthene	2.29E+00	mg/kg	2.29E+00	mg/kg	M	3.0E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	6.09E-01	mg/kg	6.09E-01	mg/kg	M	7.9E-08	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	1.29E+00	mg/kg	1.29E+00	mg/kg	M	1.7E-07	mg/kg-day	NA		NA	NA	NA
	Naphthalene	2.84E+00	mg/kg	2.84E+00	mg/kg	M	3.7E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.8E-05
	Phenanthrene	1.19E+00	mg/kg	1.19E+00	mg/kg	M	1.5E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	5.1E-06
	PCBs												
	Aroclor 1254	2.09E-01	mg/kg	2.09E-01	mg/kg	M	2.7E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.3E-03
	Aroclor 1268	3.62E-01	mg/kg	3.62E-01	mg/kg	M	4.7E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.3E-03
	Sum of PCBs	6.31E-01	mg/kg	6.31E-01	mg/kg	M	8.2E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	4.38E-05	mg/kg	4.38E-05	mg/kg	M	5.7E-12	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Ingestion												4.0E-02

TABLE 7.27.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
DREDGE SPOIL SUBSURFACE SOILS - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Dermal	**Inorganics**												
	Aluminum	1.02E+04	mg/kg	1.02E+04	mg/kg	M	NA		1.0E+00	mg/kg-day	NA	NA	NA
	Arsenic	8.73E+00	mg/kg	8.73E+00	mg/kg	M	1.2E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.9E-04
	Cadmium	9.68E-01	mg/kg	9.68E-01	mg/kg	M	4.3E-10	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	1.7E-05
	Chromium	2.60E+01	mg/kg	2.60E+01	mg/kg	M	NA		7.5E-05	mg/kg-day	NA	NA	NA
	Cyanide	8.37E-01	mg/kg	8.37E-01	mg/kg	M	NA		2.0E-02	mg/kg-day	NA	NA	NA
	Iron	1.51E+04	mg/kg	1.51E+04	mg/kg	M	NA		3.0E-01	mg/kg-day	NA	NA	NA
	Manganese	3.82E+02	mg/kg	3.82E+02	mg/kg	M	NA		5.6E-03	mg/kg-day	NA	NA	NA
	Total Mercury	4.79E+01	mg/kg	4.79E+01	mg/kg	M	NA		2.1E-05	mg/kg-day	NA	NA	NA
	Thallium	4.91E-01	mg/kg	4.91E-01	mg/kg	M	NA		6.6E-05	mg/kg-day	NA	NA	NA
	SVOCs												
	Hexachlorobenzene	2.25E-01	mg/kg	2.25E-01	mg/kg	M	1.0E-08	mg/kg-day	8.0E-04	mg/kg-day	NA	NA	1.3E-05
	PAHs												
	Benz(a)anthracene	2.50E+00	mg/kg	2.50E+00	mg/kg	M	1.4E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(a)pyrene	2.63E+00	mg/kg	2.63E+00	mg/kg	M	1.5E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(b)fluoranthene	2.28E+00	mg/kg	2.28E+00	mg/kg	M	1.3E-07	mg/kg-day	NA		NA	NA	NA
	Benzo(g,h,i)perylene	1.29E+00	mg/kg	1.29E+00	mg/kg	M	7.5E-08	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.5E-06
	Benzo(k)fluoranthene	2.29E+00	mg/kg	2.29E+00	mg/kg	M	1.3E-07	mg/kg-day	NA		NA	NA	NA
	Dibenz(a,h)anthracene	6.09E-01	mg/kg	6.09E-01	mg/kg	M	3.5E-08	mg/kg-day	NA		NA	NA	NA
	Indeno(1,2,3-cd)pyrene	1.29E+00	mg/kg	1.29E+00	mg/kg	M	7.5E-08	mg/kg-day	NA		NA	NA	NA
	Naphthalene	2.84E+00	mg/kg	2.84E+00	mg/kg	M	1.6E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	8.2E-06
	Phenanthrene	1.19E+00	mg/kg	1.19E+00	mg/kg	M	6.9E-08	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.3E-06
	PCBs												
	Aroclor 1254	2.09E-01	mg/kg	2.09E-01	mg/kg	M	1.3E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	6.5E-04
	Aroclor 1268	3.62E-01	mg/kg	3.62E-01	mg/kg	M	2.3E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.1E-03
	Sum of PCBs	6.31E-01	mg/kg	6.31E-01	mg/kg	M	3.9E-08	mg/kg-day	NA		NA	NA	NA
	PCDD/PCDFs												
	TEQ as 2,3,7,8-TCDD	4.38E-05	mg/kg	4.38E-05	mg/kg	M	5.9E-13	mg/kg-day	NA		NA	NA	NA
	Sum of Non-Cancer Hazards from Dermal Contact												2.2E-03

Total Non-Cancer Hazards 0.04

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.28.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SURFACE WATER - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Onondaga Lake
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Cadmium	1.11E-03	mg/L	1.11E-03	mg/L	M	6.9E-08	mg/kg-day	5.0E-04	mg/kg-day	NA	NA	1.4E-04
	Chromium	2.34E-03	mg/L	2.34E-03	mg/L	M	1.5E-07	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	4.9E-05
	Manganese	8.17E-02	mg/L	8.17E-02	mg/L	M	5.1E-06	mg/kg-day	1.4E-01	mg/kg-day	NA	NA	3.7E-05
	Methylmercury	1.33E-06	mg/L	1.33E-06	mg/L	M	8.3E-11	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	8.3E-07
	Total Mercury	8.28E-06	mg/L	8.28E-06	mg/L	M	5.2E-10	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.7E-06
	VOCs												
	Benzene	5.90E-04	mg/L	5.90E-04	mg/L	M	3.7E-08	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.2E-05
	Bromodichloromethane	2.40E-04	mg/L	2.40E-04	mg/L	M	1.5E-08	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	7.5E-07
	Chlorobenzene	6.37E-04	mg/L	6.37E-04	mg/L	M	4.0E-08	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	2.0E-06
	Chloroform	6.58E-04	mg/L	6.58E-04	mg/L	M	4.1E-08	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	4.1E-06
	SVOCs												
	1,2-Dichlorobenzene	5.85E-04	mg/L	5.85E-04	mg/L	M	3.7E-08	mg/kg-day	9.0E-02	mg/kg-day	NA	NA	4.1E-07
	1,3-Dichlorobenzene	5.39E-04	mg/L	5.39E-04	mg/L	M	3.4E-08	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	3.8E-05
	1,4-Dichlorobenzene	6.17E-04	mg/L	6.17E-04	mg/L	M	3.9E-08	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.3E-06
	1,2,4-Trichlorobenzene	5.82E-04	mg/L	5.82E-04	mg/L	M	3.6E-08	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	3.6E-06
	Sum of Non-Cancer Hazards from Ingestion												2.9E-04
Dermal	**Metals and Organometallic Compounds**												
	Cadmium	1.11E-03	mg/L	1.11E-03	mg/L	M	2.5E-08	mg/kg-day	1.3E-05	mg/kg-day	NA	NA	2.0E-03
	Chromium	2.34E-03	mg/L	2.34E-03	mg/L	M	1.1E-07	mg/kg-day	7.5E-05	mg/kg-day	NA	NA	1.4E-03
	Manganese	8.17E-02	mg/L	8.17E-02	mg/L	M	1.8E-06	mg/kg-day	5.6E-03	mg/kg-day	NA	NA	3.3E-04
	Methylmercury	1.33E-06	mg/L	1.33E-06	mg/L	M	3.0E-11	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	3.0E-07
	Total Mercury	8.28E-06	mg/L	8.28E-06	mg/L	M	1.9E-10	mg/kg-day	2.1E-05	mg/kg-day	NA	NA	8.9E-06
	VOCs												
	Benzene	5.90E-04	mg/L	5.90E-04	mg/L	M	4.2E-07	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.4E-04
	Bromodichloromethane	2.40E-04	mg/L	2.40E-04	mg/L	M	9.4E-08	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	4.7E-06
	Chlorobenzene	6.37E-04	mg/L	6.37E-04	mg/L	M	1.1E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	5.3E-05
	Chloroform	6.58E-04	mg/L	6.58E-04	mg/L	M	2.8E-07	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	2.8E-05
	SVOCs												
	1,2-Dichlorobenzene	5.85E-04	mg/L	5.85E-04	mg/L	M	1.9E-06	mg/kg-day	9.0E-02	mg/kg-day	NA	NA	2.1E-05

TABLE 7.28.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SURFACE WATER - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	1,3-Dichlorobenzene	5.39E-04	mg/L	5.39E-04	mg/L	M	2.5E-06	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	2.8E-03
	1,4-Dichlorobenzene	6.17E-04	mg/L	6.17E-04	mg/L	M	2.0E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	6.8E-05
	1,2,4-Trichlorobenzene	5.82E-04	mg/L	5.82E-04	mg/L	M	3.5E-06	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	3.5E-04
	Sum of Non-Cancer Hazards from Dermal Contact												7.2E-03

Total Non-Cancer Hazards 0.01

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.29.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SURFACE WATER - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Onondaga Lake
Receptor Population: Recreational
Receptor Age: Younger Child (less than 6)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Cadmium	1.11E-03	mg/L	1.11E-03	mg/L	M	3.2E-07	mg/kg-day	5.0E-04	mg/kg-day	NA	NA	6.5E-04
	Chromium	2.34E-03	mg/L	2.34E-03	mg/L	M	6.8E-07	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.3E-04
	Manganese	8.17E-02	mg/L	8.17E-02	mg/L	M	2.4E-05	mg/kg-day	1.4E-01	mg/kg-day	NA	NA	1.7E-04
	Methylmercury	1.33E-06	mg/L	1.33E-06	mg/L	M	3.9E-10	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	3.9E-06
	Total Mercury	8.28E-06	mg/L	8.28E-06	mg/L	M	2.4E-09	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	8.1E-06
	VOCs												
	Benzene	5.90E-04	mg/L	5.90E-04	mg/L	M	1.7E-07	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	5.8E-05
	Bromodichloromethane	2.40E-04	mg/L	2.40E-04	mg/L	M	7.0E-08	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	3.5E-06
	Chlorobenzene	6.37E-04	mg/L	6.37E-04	mg/L	M	1.9E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	9.3E-06
	Chloroform	6.58E-04	mg/L	6.58E-04	mg/L	M	1.9E-07	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	1.9E-05
	SVOCs												
	1,2-Dichlorobenzene	5.85E-04	mg/L	5.85E-04	mg/L	M	1.7E-07	mg/kg-day	9.0E-02	mg/kg-day	NA	NA	1.9E-06
	1,3-Dichlorobenzene	5.39E-04	mg/L	5.39E-04	mg/L	M	1.6E-07	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	1.8E-04
	1,4-Dichlorobenzene	6.17E-04	mg/L	6.17E-04	mg/L	M	1.8E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	6.0E-06
	1,2,4-Trichlorobenzene	5.82E-04	mg/L	5.82E-04	mg/L	M	1.7E-07	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	1.7E-05
	Sum of Non-Cancer Hazards from Ingestion												1.3E-03
Dermal	**Metals and Organometallic Compounds**												
	Cadmium	1.11E-03	mg/L	1.11E-03	mg/L	M	4.3E-08	mg/kg-day	1.3E-05	mg/kg-day	NA	NA	3.4E-03
	Chromium	2.34E-03	mg/L	2.34E-03	mg/L	M	1.8E-07	mg/kg-day	7.5E-05	mg/kg-day	NA	NA	2.4E-03
	Manganese	8.17E-02	mg/L	8.17E-02	mg/L	M	3.1E-06	mg/kg-day	5.6E-03	mg/kg-day	NA	NA	5.6E-04
	Methylmercury	1.33E-06	mg/L	1.33E-06	mg/L	M	5.1E-11	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	5.1E-07
	Total Mercury	8.28E-06	mg/L	8.28E-06	mg/L	M	3.2E-10	mg/kg-day	2.1E-05	mg/kg-day	NA	NA	1.5E-05
	VOCs												
	Benzene	5.90E-04	mg/L	5.90E-04	mg/L	M	7.3E-07	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.4E-04
	Bromodichloromethane	2.40E-04	mg/L	2.40E-04	mg/L	M	1.6E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	8.1E-06
	Chlorobenzene	6.37E-04	mg/L	6.37E-04	mg/L	M	1.8E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	9.1E-05
	Chloroform	6.58E-04	mg/L	6.58E-04	mg/L	M	4.7E-07	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	4.7E-05
	SVOCs												
	1,2-Dichlorobenzene	5.85E-04	mg/L	5.85E-04	mg/L	M	3.2E-06	mg/kg-day	9.0E-02	mg/kg-day	NA	NA	3.6E-05

TABLE 7.29.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SURFACE WATER - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	1,3-Dichlorobenzene	5.39E-04	mg/L	5.39E-04	mg/L	M	4.3E-06	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	4.8E-03
	1,4-Dichlorobenzene	6.17E-04	mg/L	6.17E-04	mg/L	M	3.5E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	1.2E-04
	1,2,4-Trichlorobenzene	5.82E-04	mg/L	5.82E-04	mg/L	M	5.9E-06	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	5.9E-04
	Sum of Non-Cancer Hazards from Dermal Contact												1.2E-02

Total Non-Cancer Hazards 0.01

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.30.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SURFACE WATER - ONONDAGA LAKE

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Onondaga Lake
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Cadmium	1.11E-03	mg/L	1.11E-03	mg/L	M	1.1E-07	mg/kg-day	5.0E-04	mg/kg-day	NA	NA	2.3E-04
	Chromium	2.34E-03	mg/L	2.34E-03	mg/L	M	2.4E-07	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	8.0E-05
	Manganese	8.17E-02	mg/L	8.17E-02	mg/L	M	8.3E-06	mg/kg-day	1.4E-01	mg/kg-day	NA	NA	5.9E-05
	Methylmercury	1.33E-06	mg/L	1.33E-06	mg/L	M	1.4E-10	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	1.4E-06
	Total Mercury	8.28E-06	mg/L	8.28E-06	mg/L	M	8.4E-10	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.8E-06
	VOCs												
	Benzene	5.90E-04	mg/L	5.90E-04	mg/L	M	6.0E-08	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.0E-05
	Bromodichloromethane	2.40E-04	mg/L	2.40E-04	mg/L	M	2.4E-08	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	1.2E-06
	Chlorobenzene	6.37E-04	mg/L	6.37E-04	mg/L	M	6.5E-08	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	3.2E-06
	Chloroform	6.58E-04	mg/L	6.58E-04	mg/L	M	6.7E-08	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	6.7E-06
	SVOCs												
	1,2-Dichlorobenzene	5.85E-04	mg/L	5.85E-04	mg/L	M	6.0E-08	mg/kg-day	9.0E-02	mg/kg-day	NA	NA	6.6E-07
	1,3-Dichlorobenzene	5.39E-04	mg/L	5.39E-04	mg/L	M	5.5E-08	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	6.1E-05
	1,4-Dichlorobenzene	6.17E-04	mg/L	6.17E-04	mg/L	M	6.3E-08	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	2.1E-06
	1,2,4-Trichlorobenzene	5.82E-04	mg/L	5.82E-04	mg/L	M	5.9E-08	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	5.9E-06
	Sum of Non-Cancer Hazards from Ingestion												4.7E-04
Dermal	**Metals and Organometallic Compounds**												
	Cadmium	1.11E-03	mg/L	1.11E-03	mg/L	M	2.9E-08	mg/kg-day	1.3E-05	mg/kg-day	NA	NA	2.3E-03
	Chromium	2.34E-03	mg/L	2.34E-03	mg/L	M	1.2E-07	mg/kg-day	7.5E-05	mg/kg-day	NA	NA	1.7E-03
	Manganese	8.17E-02	mg/L	8.17E-02	mg/L	M	2.2E-06	mg/kg-day	5.6E-03	mg/kg-day	NA	NA	3.9E-04
	Methylmercury	1.33E-06	mg/L	1.33E-06	mg/L	M	3.5E-11	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	3.5E-07
	Total Mercury	8.28E-06	mg/L	8.28E-06	mg/L	M	2.2E-10	mg/kg-day	2.1E-05	mg/kg-day	NA	NA	1.0E-05
	VOCs												
	Benzene	5.90E-04	mg/L	5.90E-04	mg/L	M	5.0E-07	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.7E-04
	Bromodichloromethane	2.40E-04	mg/L	2.40E-04	mg/L	M	1.1E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	5.6E-06
	Chlorobenzene	6.37E-04	mg/L	6.37E-04	mg/L	M	1.2E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	6.2E-05
	Chloroform	6.58E-04	mg/L	6.58E-04	mg/L	M	3.3E-07	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	3.3E-05
	SVOCs												
	1,2-Dichlorobenzene	5.85E-04	mg/L	5.85E-04	mg/L	M	2.2E-06	mg/kg-day	9.0E-02	mg/kg-day	NA	NA	2.5E-05

TABLE 7.30.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SURFACE WATER - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	1,3-Dichlorobenzene	5.39E-04	mg/L	5.39E-04	mg/L	M	3.0E-06	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	3.3E-03
	1,4-Dichlorobenzene	6.17E-04	mg/L	6.17E-04	mg/L	M	2.4E-06	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	8.0E-05
	1,2,4-Trichlorobenzene	5.82E-04	mg/L	5.82E-04	mg/L	M	4.1E-06	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	4.1E-04
	Sum of Non-Cancer Hazards from Dermal Contact												8.5E-03

Total Non-Cancer Hazards 0.01

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

TABLE 7.31.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SURFACE WATER - ONONDAGA LAKE

Scenario Timeframe: Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Onondaga Lake
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**												
	Cadmium	1.11E-03	mg/L	1.11E-03	mg/L	M	2.6E-09	mg/kg-day	5.0E-04	mg/kg-day	NA	NA	5.2E-06
	Chromium	2.34E-03	mg/L	2.34E-03	mg/L	M	5.5E-09	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.8E-06
	Manganese	8.17E-02	mg/L	8.17E-02	mg/L	M	1.9E-07	mg/kg-day	1.4E-01	mg/kg-day	NA	NA	1.4E-06
	Methylmercury	1.33E-06	mg/L	1.33E-06	mg/L	M	3.1E-12	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	3.1E-08
	Total Mercury	8.28E-06	mg/L	8.28E-06	mg/L	M	1.9E-11	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	6.5E-08
	VOCs												
	Benzene	5.90E-04	mg/L	5.90E-04	mg/L	M	1.4E-09	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	4.6E-07
	Bromodichloromethane	2.40E-04	mg/L	2.40E-04	mg/L	M	5.6E-10	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	2.8E-08
	Chlorobenzene	6.37E-04	mg/L	6.37E-04	mg/L	M	1.5E-09	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	7.5E-08
	Chloroform	6.58E-04	mg/L	6.58E-04	mg/L	M	1.5E-09	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	1.5E-07
	SVOCs												
	1,2-Dichlorobenzene	5.85E-04	mg/L	5.85E-04	mg/L	M	1.4E-09	mg/kg-day	9.0E-02	mg/kg-day	NA	NA	1.5E-08
	1,3-Dichlorobenzene	5.39E-04	mg/L	5.39E-04	mg/L	M	1.3E-09	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	1.4E-06
	1,4-Dichlorobenzene	6.17E-04	mg/L	6.17E-04	mg/L	M	1.4E-09	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	4.8E-08
	1,2,4-Trichlorobenzene	5.82E-04	mg/L	5.82E-04	mg/L	M	1.4E-09	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	1.4E-07
	Sum of Non-Cancer Hazards from Ingestion												1.1E-05
Dermal	**Metals and Organometallic Compounds**												
	Cadmium	1.11E-03	mg/L	1.11E-03	mg/L	M	1.2E-09	mg/kg-day	1.3E-05	mg/kg-day	NA	NA	9.9E-05
	Chromium	2.34E-03	mg/L	2.34E-03	mg/L	M	5.2E-09	mg/kg-day	7.5E-05	mg/kg-day	NA	NA	7.0E-05
	Manganese	8.17E-02	mg/L	8.17E-02	mg/L	M	9.1E-08	mg/kg-day	5.6E-03	mg/kg-day	NA	NA	1.6E-05
	Methylmercury	1.33E-06	mg/L	1.33E-06	mg/L	M	1.5E-12	mg/kg-day	1.0E-04	mg/kg-day	NA	NA	1.5E-08
	Total Mercury	8.28E-06	mg/L	8.28E-06	mg/L	M	9.2E-12	mg/kg-day	2.1E-05	mg/kg-day	NA	NA	4.4E-07
	VOCs												
	Benzene	5.90E-04	mg/L	5.90E-04	mg/L	M	5.4E-08	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.8E-05
	Bromodichloromethane	2.40E-04	mg/L	2.40E-04	mg/L	M	1.1E-08	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	5.6E-07
	Chlorobenzene	6.37E-04	mg/L	6.37E-04	mg/L	M	1.5E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	7.3E-06
	Chloroform	6.58E-04	mg/L	6.58E-04	mg/L	M	3.4E-08	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	3.4E-06
	SVOCs												
	1,2-Dichlorobenzene	5.85E-04	mg/L	5.85E-04	mg/L	M	2.2E-07	mg/kg-day	9.0E-02	mg/kg-day	NA	NA	2.4E-06

TABLE 7.31.CT
CALCULATION OF NON-CANCER HAZARDS
CENTRAL TENDENCY
SURFACE WATER - ONONDAGA LAKE

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concen-tration	Reference Concen-tration Units	Hazard Quotient
	1,3-Dichlorobenzene	5.39E-04	mg/L	5.39E-04	mg/L	M	2.9E-07	mg/kg-day	9.0E-04	mg/kg-day	NA	NA	3.2E-04
	1,4-Dichlorobenzene	6.17E-04	mg/L	6.17E-04	mg/L	M	2.4E-07	mg/kg-day	3.0E-02	mg/kg-day	NA	NA	7.9E-06
	1,2,4-Trichlorobenzene	5.82E-04	mg/L	5.82E-04	mg/L	M	4.4E-07	mg/kg-day	1.0E-02	mg/kg-day	NA	NA	4.4E-05
Sum of Non-Cancer Hazards from Dermal Contact													5.9E-04

Total Non-Cancer Hazards 0.001

Please refer to Table 7.32 for footnotes, acronyms and abbreviations.

Table 7.32
Footnotes and Acronyms and Abbreviations for Tables 7.1 through 7.31

Acronyms and abbreviations

NA	- not applicable
EPA	- U.S. Environmental Protection Agency
EPC	- Exposure Point Concentration
M	- medium-specific
NCEA-STSC	- National Center for Environmental Assessment - Superfund Technical Support Center (USEPA)
PAHs	- Polycyclic aromatic hydrocarbons
PCBs	- Polychlorinated biphenyls
PCDD/PCDFs	- Polychlorinated dibenzo-*p*-dioxins and dibenzofurans
SVOCs	- Semivolatile Organic Compounds
TEQ	- Toxic equivalents (as 2,3,7,8-TCDD) (See report section 5.2.7 and Table 5-1.)
VOCs	- Volatile Organic Compounds

Footnotes

[a] EPCs are either the 95th percentile UCL on the mean or the maximum concentration; see RAGS tables 3.1 - 3.10

[b] [Not needed]

[c] Toxicity values (RfDs) obtained from IRIS (accessed 2002), EPA Health Effects Assessment Summary Tables (HEAST) (USEPA, 1997b) or NCEA (2002). See detailed chemical-specific discussion in Chapter 5.

Toxicity values were adjusted to account for oral absorption (ABS_{GI}) to calculate risks for dermal exposure on the basis of absorbed dose. See Section 5.1.2.

Toxicity information for chromium assume chromium in form of Chromium(VI). See discussion in Chapter 5.

Toxicity information for arsenic in fish assume inorganic arsenic. See discussion in Chapter 5.

Methylmercury toxicity value used in hazard calculations for fish tissue. See discussion in Chapter 5.

Table 8.1.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Fish Tissue
Exposure Medium: Fish Tissue
Exposure Point: Fish Tissue
Receptor Population: Recreational
Receptor Age: Adults (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Antimony	9.9E-01	mg/kg	9.9E-01	mg/kg	M	1.5E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic (inorganic)	8.0E-02	mg/kg	8.0E-02	mg/kg	M	1.2E-05	mg/kg-day	1.5	(mg/kg/day)-1	1.8E-05
	Chromium	5.7E-01	mg/kg	5.7E-01	mg/kg	M	8.7E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	5.7E+00	mg/kg	5.7E+00	mg/kg	M	8.7E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.2E+00	mg/kg	3.2E+00	mg/kg	M	4.9E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury (as methylmercury)	1.1E+00	mg/kg	1.1E+00	mg/kg	M	1.7E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Selenium	1.5E+00	mg/kg	1.5E+00	mg/kg	M	2.2E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Vanadium	6.3E-01	mg/kg	6.3E-01	mg/kg	M	9.6E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Zinc	4.4E+01	mg/kg	4.4E+01	mg/kg	M	6.7E-03	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	bis(2-ethylhexyl)phthalate	2.3E+00	mg/kg	2.3E+00	mg/kg	M	3.5E-04	mg/kg-day	0.014	(mg/kg/day)-1	4.9E-06
	Hexachlorobenzene	1.3E-02	mg/kg	1.3E-02	mg/kg	M	2.0E-06	mg/kg-day	1.6	(mg/kg/day)-1	3.2E-06
	Pesticides										
	2,4'-DDE	4.1E-03	mg/kg	4.1E-03	mg/kg	M	6.3E-07	mg/kg-day	NA	(mg/kg/day)-1	
	4,4'-DDD	1.3E-02	mg/kg	1.3E-02	mg/kg	M	2.0E-06	mg/kg-day	0.24	(mg/kg/day)-1	4.9E-07
	4,4'-DDE	3.4E-02	mg/kg	3.4E-02	mg/kg	M	5.3E-06	mg/kg-day	0.34	(mg/kg/day)-1	1.8E-06
	4,4'-DDT	9.5E-03	mg/kg	9.5E-03	mg/kg	M	1.5E-06	mg/kg-day	0.34	(mg/kg/day)-1	4.9E-07
	Aldrin	2.5E-03	mg/kg	2.5E-03	mg/kg	M	3.9E-07	mg/kg-day	17	(mg/kg/day)-1	6.6E-06
	delta-BHC	2.5E-03	mg/kg	2.5E-03	mg/kg	M	3.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Dieldrin	3.8E-03	mg/kg	3.8E-03	mg/kg	M	5.8E-07	mg/kg-day	16	(mg/kg/day)-1	9.3E-06
	Heptachlor epoxide	4.1E-03	mg/kg	4.1E-03	mg/kg	M	6.3E-07	mg/kg-day	9.1	(mg/kg/day)-1	5.8E-06
	Sum of Chlordanes	9.7E-03	mg/kg	9.7E-03	mg/kg	M	1.5E-06	mg/kg-day	0.35	(mg/kg/day)-1	5.2E-07
	PCBs										
	Aroclor 1016	4.9E-01	mg/kg	4.9E-01	mg/kg	M	7.5E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1242	9.6E-01	mg/kg	9.6E-01	mg/kg	M	1.5E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1248	1.1E+00	mg/kg	1.1E+00	mg/kg	M	1.7E-04	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.1.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Onondaga Lake

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Aroclor 1260	7.2E-01	mg/kg	7.2E-01	mg/kg	M	1.1E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclors 1254 & 1260	5.5E-01	mg/kg	5.5E-01	mg/kg	M	8.5E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	9.1E-01	mg/kg	9.1E-01	mg/kg	M	1.4E-04	mg/kg-day	2	(mg/kg/day)-1	2.8E-04
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	2.0E-05	mg/kg	2.0E-05	mg/kg	M	3.0E-09	mg/kg-day	150000	(mg/kg/day)-1	4.5E-04
										Sum of Cancer Risk from Ingestion	7.8E-04
Dermal	NA										
										Sum of Cancer Risk from Dermal	NA
										Total Cancer Risk	7.8E-04

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.2.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Fish Tissue
Exposure Medium: Fish Tissue
Exposure Point: Fish Tissue
Receptor Population: Recreational
Receptor Age: Young Child (less than 6)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Antimony	9.9E-01	mg/kg	9.9E-01	mg/kg	M	4.7E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic (inorganic)	8.0E-02	mg/kg	8.0E-02	mg/kg	M	3.8E-06	mg/kg-day	1.5	(mg/kg/day)-1	5.7E-06
	Chromium	5.7E-01	mg/kg	5.7E-01	mg/kg	M	2.7E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	5.7E+00	mg/kg	5.7E+00	mg/kg	M	2.7E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.2E+00	mg/kg	3.2E+00	mg/kg	M	1.5E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury (as methylmercury)	1.1E+00	mg/kg	1.1E+00	mg/kg	M	5.2E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Selenium	1.5E+00	mg/kg	1.5E+00	mg/kg	M	7.0E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Vanadium	6.3E-01	mg/kg	6.3E-01	mg/kg	M	3.0E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Zinc	4.4E+01	mg/kg	4.4E+01	mg/kg	M	2.1E-03	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	bis(2-ethylhexyl)phthalate	2.3E+00	mg/kg	2.3E+00	mg/kg	M	1.1E-04	mg/kg-day	0.014	(mg/kg/day)-1	1.5E-06
	Hexachlorobenzene	1.3E-02	mg/kg	1.3E-02	mg/kg	M	6.2E-07	mg/kg-day	1.6	(mg/kg/day)-1	9.9E-07
	Pesticides										
	2,4'-DDE	4.1E-03	mg/kg	4.1E-03	mg/kg	M	2.0E-07	mg/kg-day	NA	(mg/kg/day)-1	
	4,4'-DDD	1.3E-02	mg/kg	1.3E-02	mg/kg	M	6.3E-07	mg/kg-day	0.24	(mg/kg/day)-1	1.5E-07
	4,4'-DDE	3.4E-02	mg/kg	3.4E-02	mg/kg	M	1.6E-06	mg/kg-day	0.34	(mg/kg/day)-1	5.6E-07
	4,4'-DDT	9.5E-03	mg/kg	9.5E-03	mg/kg	M	4.5E-07	mg/kg-day	0.34	(mg/kg/day)-1	1.5E-07
	Aldrin	2.5E-03	mg/kg	2.5E-03	mg/kg	M	1.2E-07	mg/kg-day	17	(mg/kg/day)-1	2.0E-06
	delta-BHC	2.5E-03	mg/kg	2.5E-03	mg/kg	M	1.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Dieldrin	3.8E-03	mg/kg	3.8E-03	mg/kg	M	1.8E-07	mg/kg-day	16	(mg/kg/day)-1	2.9E-06
	Heptachlor epoxide	4.1E-03	mg/kg	4.1E-03	mg/kg	M	2.0E-07	mg/kg-day	9.1	(mg/kg/day)-1	1.8E-06
	Sum of Chlordanes	9.7E-03	mg/kg	9.7E-03	mg/kg	M	4.6E-07	mg/kg-day	0.35	(mg/kg/day)-1	1.6E-07
	PCBs										
	Aroclor 1016	4.9E-01	mg/kg	4.9E-01	mg/kg	M	2.3E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1242	9.6E-01	mg/kg	9.6E-01	mg/kg	M	4.6E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1248	1.1E+00	mg/kg	1.1E+00	mg/kg	M	5.2E-05	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.2.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Onondaga Lake

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Aroclor 1260	7.2E-01	mg/kg	7.2E-01	mg/kg	M	3.4E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclors 1254 & 1260	5.5E-01	mg/kg	5.5E-01	mg/kg	M	2.6E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	9.1E-01	mg/kg	9.1E-01	mg/kg	M	4.3E-05	mg/kg-day	2	(mg/kg/day)-1	8.7E-05
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	2.0E-05	mg/kg	2.0E-05	mg/kg	M	9.3E-10	mg/kg-day	150000	(mg/kg/day)-1	1.4E-04
										Sum of Cancer Risk from Ingestion	2.4E-04
Dermal	NA										
										Sum of Cancer Risk from Dermal	NA
										Total Cancer Risk	2.4E-04

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.3.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Fish Tissue
Exposure Medium: Fish Tissue
Exposure Point: Fish Tissue
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Antimony	9.9E-01	mg/kg	9.9E-01	mg/kg	M	6.6E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic (inorganic)	8.0E-02	mg/kg	8.0E-02	mg/kg	M	5.3E-06	mg/kg-day	1.5	(mg/kg/day)-1	8.0E-06
	Chromium	5.7E-01	mg/kg	5.7E-01	mg/kg	M	3.8E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	5.7E+00	mg/kg	5.7E+00	mg/kg	M	3.8E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.2E+00	mg/kg	3.2E+00	mg/kg	M	2.1E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury (as methylmercury)	1.1E+00	mg/kg	1.1E+00	mg/kg	M	7.2E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Selenium	1.5E+00	mg/kg	1.5E+00	mg/kg	M	9.8E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Vanadium	6.3E-01	mg/kg	6.3E-01	mg/kg	M	4.2E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Zinc	4.4E+01	mg/kg	4.4E+01	mg/kg	M	2.9E-03	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	bis(2-ethylhexyl)phthalate	2.3E+00	mg/kg	2.3E+00	mg/kg	M	1.5E-04	mg/kg-day	0.014	(mg/kg/day)-1	2.1E-06
	Hexachlorobenzene	1.3E-02	mg/kg	1.3E-02	mg/kg	M	8.6E-07	mg/kg-day	1.6	(mg/kg/day)-1	1.4E-06
	Pesticides										
	2,4'-DDE	4.1E-03	mg/kg	4.1E-03	mg/kg	M	2.7E-07	mg/kg-day	NA	(mg/kg/day)-1	
	4,4'-DDD	1.3E-02	mg/kg	1.3E-02	mg/kg	M	8.8E-07	mg/kg-day	0.24	(mg/kg/day)-1	2.1E-07
	4,4'-DDE	3.4E-02	mg/kg	3.4E-02	mg/kg	M	2.3E-06	mg/kg-day	0.34	(mg/kg/day)-1	7.8E-07
	4,4'-DDT	9.5E-03	mg/kg	9.5E-03	mg/kg	M	6.3E-07	mg/kg-day	0.34	(mg/kg/day)-1	2.1E-07
	Aldrin	2.5E-03	mg/kg	2.5E-03	mg/kg	M	1.7E-07	mg/kg-day	17	(mg/kg/day)-1	2.9E-06
	delta-BHC	2.5E-03	mg/kg	2.5E-03	mg/kg	M	1.7E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Dieldrin	3.8E-03	mg/kg	3.8E-03	mg/kg	M	2.5E-07	mg/kg-day	16	(mg/kg/day)-1	4.1E-06
	Heptachlor epoxide	4.1E-03	mg/kg	4.1E-03	mg/kg	M	2.7E-07	mg/kg-day	9.1	(mg/kg/day)-1	2.5E-06
	Sum of Chlordanes	9.7E-03	mg/kg	9.7E-03	mg/kg	M	6.5E-07	mg/kg-day	0.35	(mg/kg/day)-1	2.3E-07
	PCBs										
	Aroclor 1016	4.9E-01	mg/kg	4.9E-01	mg/kg	M	3.3E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1242	9.6E-01	mg/kg	9.6E-01	mg/kg	M	6.4E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1248	1.1E+00	mg/kg	1.1E+00	mg/kg	M	7.3E-05	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.3.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Onondaga Lake

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Aroclor 1260	7.2E-01	mg/kg	7.2E-01	mg/kg	M	4.8E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclors 1254 & 1260	5.5E-01	mg/kg	5.5E-01	mg/kg	M	3.7E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	9.1E-01	mg/kg	9.1E-01	mg/kg	M	6.1E-05	mg/kg-day	2	(mg/kg/day)-1	1.2E-04
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	2.0E-05	mg/kg	2.0E-05	mg/kg	M	1.3E-09	mg/kg-day	150000	(mg/kg/day)-1	2.0E-04
										Sum of Cancer Risk from Ingestion	3.4E-04
Dermal	NA										
										Sum of Cancer Risk from Dermal	NA
										Total Cancer Risk	3.4E-04

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.4.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
North Basin Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: North Basin Sediments
Receptor Population: Recreational
Receptor Age: Adults (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Antimony	9.2E+00	mg/kg	9.2E+00	mg/kg	M	6.8E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	3.9E+00	mg/kg	3.9E+00	mg/kg	M	2.8E-07	mg/kg-day	1.5	(mg/kg/day)-1	4.3E-07
	Barium	1.5E+02	mg/kg	1.5E+02	mg/kg	M	1.1E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	2.0E+00	mg/kg	2.0E+00	mg/kg	M	1.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	2.4E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	5.8E+03	mg/kg	5.8E+03	mg/kg	M	4.3E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.8E+02	mg/kg	2.8E+02	mg/kg	M	2.0E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+00	mg/kg	1.9E+00	mg/kg	M	1.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.0E-03	mg/kg	2.0E-03	mg/kg	M	1.5E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.9E-01	mg/kg	2.9E-01	mg/kg	M	2.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	VOC										
	Benzene	8.9E-02	mg/kg	8.9E-02	mg/kg	M	6.6E-09	mg/kg-day	0.055	(mg/kg/day)-1	3.6E-10
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	3.0E-08	mg/kg-day	1.6	(mg/kg/day)-1	4.8E-08
	PAHs										
	Benz(a)anthracene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	1.2E-08	mg/kg-day	0.73	(mg/kg/day)-1	8.8E-09
	Benzo(a)pyrene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	1.1E-08	mg/kg-day	7.3	(mg/kg/day)-1	8.4E-08
	Benzo(b)fluoranthene	2.4E-01	mg/kg	2.4E-01	mg/kg	M	1.8E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.3E-08
	Dibenz(a,h)anthracene	4.8E-02	mg/kg	4.8E-02	mg/kg	M	3.6E-09	mg/kg-day	7.3	(mg/kg/day)-1	2.6E-08
	Naphthalene	3.9E-01	mg/kg	3.9E-01	mg/kg	M	2.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1254	4.1E-02	mg/kg	4.1E-02	mg/kg	M	3.0E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1268	3.5E-02	mg/kg	3.5E-02	mg/kg	M	2.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	8.6E-02	mg/kg	8.6E-02	mg/kg	M	6.4E-09	mg/kg-day	2	(mg/kg/day)-1	1.3E-08

Table 8.4.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
North Basin Onondaga Lake

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	2.0E-06	mg/kg	2.0E-06	mg/kg	M	1.4E-13	mg/kg-day	150000	(mg/kg/day)-1	2.2E-08
										Sum of Cancer Risks from Ingestion	6.4E-07
Dermal	**Metals and Organometallic Compounds**										
	Antimony	9.2E+00	mg/kg	9.2E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	3.9E+00	mg/kg	3.9E+00	mg/kg	M	1.5E-07	mg/kg-day	1.5	(mg/kg/day)-1	2.2E-07
	Barium	1.5E+02	mg/kg	1.5E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	2.0E+00	mg/kg	2.0E+00	mg/kg	M	2.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	5.8E+03	mg/kg	5.8E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.8E+02	mg/kg	2.8E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+00	mg/kg	1.9E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.0E-03	mg/kg	2.0E-03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.9E-01	mg/kg	2.9E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	8.9E-02	mg/kg	8.9E-02	mg/kg	M	NA	mg/kg-day	0.055	(mg/kg/day)-1	
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	5.1E-08	mg/kg-day	1.6	(mg/kg/day)-1	8.2E-08
	PAHs										
	Benz(a)anthracene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	2.7E-08	mg/kg-day	0.73	(mg/kg/day)-1	2.0E-08
	Benzo(a)pyrene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	2.6E-08	mg/kg-day	7.3	(mg/kg/day)-1	1.9E-07
	Benzo(b)fluoranthene	2.4E-01	mg/kg	2.4E-01	mg/kg	M	3.9E-08	mg/kg-day	0.73	(mg/kg/day)-1	2.8E-08
	Dibenz(a,h)anthracene	4.8E-02	mg/kg	4.8E-02	mg/kg	M	7.9E-09	mg/kg-day	7.3	(mg/kg/day)-1	5.8E-08
	Naphthalene	3.9E-01	mg/kg	3.9E-01	mg/kg	M	6.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1254	4.1E-02	mg/kg	4.1E-02	mg/kg	M	7.3E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1268	3.5E-02	mg/kg	3.5E-02	mg/kg	M	6.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	8.6E-02	mg/kg	8.6E-02	mg/kg	M	1.5E-08	mg/kg-day	2	(mg/kg/day)-1	3.0E-08
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	2.0E-06	mg/kg	2.0E-06	mg/kg	M	7.4E-14	mg/kg-day	150000	(mg/kg/day)-1	1.1E-08
										Sum of Cancer Risks from Dermal Contact	6.3E-07
										Total Cancer Risks	1.3E-06

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.5.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
North Basin Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: North Basin Sediments
Receptor Population: Recreational
Receptor Age: Young Children (less than 6)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Antimony	9.2E+00	mg/kg	9.2E+00	mg/kg	M	1.3E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	3.9E+00	mg/kg	3.9E+00	mg/kg	M	5.3E-07	mg/kg-day	1.5	(mg/kg/day)-1	8.0E-07
	Barium	1.5E+02	mg/kg	1.5E+02	mg/kg	M	2.1E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	2.0E+00	mg/kg	2.0E+00	mg/kg	M	2.8E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	4.5E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	5.8E+03	mg/kg	5.8E+03	mg/kg	M	8.0E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.8E+02	mg/kg	2.8E+02	mg/kg	M	3.8E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+00	mg/kg	1.9E+00	mg/kg	M	2.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.0E-03	mg/kg	2.0E-03	mg/kg	M	2.7E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.9E-01	mg/kg	2.9E-01	mg/kg	M	4.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	8.9E-02	mg/kg	8.9E-02	mg/kg	M	1.2E-08	mg/kg-day	0.055	(mg/kg/day)-1	6.8E-10
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	5.6E-08	mg/kg-day	1.6	(mg/kg/day)-1	8.9E-08
	PAHs										
	Benz(a)anthracene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	2.2E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.6E-08
	Benzo(a)pyrene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	2.1E-08	mg/kg-day	7.3	(mg/kg/day)-1	1.6E-07
	Benzo(b)fluoranthene	2.4E-01	mg/kg	2.4E-01	mg/kg	M	3.3E-08	mg/kg-day	0.73	(mg/kg/day)-1	2.4E-08
	Dibenz(a,h)anthracene	4.8E-02	mg/kg	4.8E-02	mg/kg	M	6.7E-09	mg/kg-day	7.3	(mg/kg/day)-1	4.9E-08
	Naphthalene	3.9E-01	mg/kg	3.9E-01	mg/kg	M	5.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1254	4.1E-02	mg/kg	4.1E-02	mg/kg	M	5.7E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1268	3.5E-02	mg/kg	3.5E-02	mg/kg	M	4.8E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	8.6E-02	mg/kg	8.6E-02	mg/kg	M	1.2E-08	mg/kg-day	2	(mg/kg/day)-1	2.4E-08
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	2.0E-06	mg/kg	2.0E-06	mg/kg	M	2.7E-13	mg/kg-day	150000	(mg/kg/day)-1	4.0E-08
										Sum of Cancer Risks from Ingestion	1.2E-06

Table 8.5.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
North Basin Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Dermal	**Metals and Organometallic Compounds**										
	Antimony	9.2E+00	mg/kg	9.2E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	3.9E+00	mg/kg	3.9E+00	mg/kg	M	6.0E-07	mg/kg-day	1.5	(mg/kg/day)-1	9.0E-07
	Barium	1.5E+02	mg/kg	1.5E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	2.0E+00	mg/kg	2.0E+00	mg/kg	M	1.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	5.8E+03	mg/kg	5.8E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.8E+02	mg/kg	2.8E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+00	mg/kg	1.9E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.0E-03	mg/kg	2.0E-03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.9E-01	mg/kg	2.9E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	8.9E-02	mg/kg	8.9E-02	mg/kg	M	NA	mg/kg-day	0.055	(mg/kg/day)-1	
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	2.1E-07	mg/kg-day	1.6	(mg/kg/day)-1	3.4E-07
	PAHs										
	Benz(a)anthracene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	1.1E-07	mg/kg-day	0.73	(mg/kg/day)-1	8.1E-08
	Benzo(a)pyrene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	1.1E-07	mg/kg-day	7.3	(mg/kg/day)-1	7.7E-07
	Benzo(b)fluoranthene	2.4E-01	mg/kg	2.4E-01	mg/kg	M	1.6E-07	mg/kg-day	0.73	(mg/kg/day)-1	1.2E-07
	Dibenz(a,h)anthracene	4.8E-02	mg/kg	4.8E-02	mg/kg	M	3.3E-08	mg/kg-day	7.3	(mg/kg/day)-1	2.4E-07
	Naphthalene	3.9E-01	mg/kg	3.9E-01	mg/kg	M	2.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1254	4.1E-02	mg/kg	4.1E-02	mg/kg	M	3.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1268	3.5E-02	mg/kg	3.5E-02	mg/kg	M	2.5E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	8.6E-02	mg/kg	8.6E-02	mg/kg	M	6.3E-08	mg/kg-day	2	(mg/kg/day)-1	1.3E-07
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	2.0E-06	mg/kg	2.0E-06	mg/kg	M	3.1E-13	mg/kg-day	150000	(mg/kg/day)-1	4.6E-08
										Sum of Cancer Risks from Dermal Contact	2.6E-06

Total Cancer Risk: 3.8E-06

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.6.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
North Basin Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: North Basin Sediments
Receptor Population: Recreational
Receptor Age: Older Children (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Antimony	9.2E+00	mg/kg	9.2E+00	mg/kg	M	4.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	3.9E+00	mg/kg	3.9E+00	mg/kg	M	1.9E-07	mg/kg-day	1.5	(mg/kg/day)-1	2.8E-07
	Barium	1.5E+02	mg/kg	1.5E+02	mg/kg	M	7.3E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	2.0E+00	mg/kg	2.0E+00	mg/kg	M	9.8E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	1.6E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	5.8E+03	mg/kg	5.8E+03	mg/kg	M	2.8E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.8E+02	mg/kg	2.8E+02	mg/kg	M	1.3E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+00	mg/kg	1.9E+00	mg/kg	M	9.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.0E-03	mg/kg	2.0E-03	mg/kg	M	9.6E-11	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.9E-01	mg/kg	2.9E-01	mg/kg	M	1.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	8.9E-02	mg/kg	8.9E-02	mg/kg	M	4.3E-09	mg/kg-day	0.055	(mg/kg/day)-1	2.4E-10
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	2.0E-08	mg/kg-day	1.6	(mg/kg/day)-1	3.1E-08
	PAHs										
	Benz(a)anthracene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	7.8E-09	mg/kg-day	0.73	(mg/kg/day)-1	5.7E-09
	Benzo(a)pyrene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	7.5E-09	mg/kg-day	7.3	(mg/kg/day)-1	5.5E-08
	Benzo(b)fluoranthene	2.4E-01	mg/kg	2.4E-01	mg/kg	M	1.1E-08	mg/kg-day	0.73	(mg/kg/day)-1	8.3E-09
	Dibenz(a,h)anthracene	4.8E-02	mg/kg	4.8E-02	mg/kg	M	2.3E-09	mg/kg-day	7.3	(mg/kg/day)-1	1.7E-08
	Naphthalene	3.9E-01	mg/kg	3.9E-01	mg/kg	M	1.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1254	4.1E-02	mg/kg	4.1E-02	mg/kg	M	2.0E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1268	3.5E-02	mg/kg	3.5E-02	mg/kg	M	1.7E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	8.6E-02	mg/kg	8.6E-02	mg/kg	M	4.1E-09	mg/kg-day	2	(mg/kg/day)-1	8.3E-09

Table 8.6.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
North Basin Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	2.0E-06	mg/kg	2.0E-06	mg/kg	M	9.4E-14	mg/kg-day	150000	(mg/kg/day)-1	1.4E-08
										Sum of Cancer Risks from Ingestion	4.2E-07
Dermal	**Metals and Organometallic Compounds**										
	Antimony	9.2E+00	mg/kg	9.2E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	3.9E+00	mg/kg	3.9E+00	mg/kg	M	8.1E-07	mg/kg-day	1.5	(mg/kg/day)-1	1.2E-06
	Barium	1.5E+02	mg/kg	1.5E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	2.0E+00	mg/kg	2.0E+00	mg/kg	M	1.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	5.8E+03	mg/kg	5.8E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.8E+02	mg/kg	2.8E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+00	mg/kg	1.9E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.0E-03	mg/kg	2.0E-03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.9E-01	mg/kg	2.9E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	8.9E-02	mg/kg	8.9E-02	mg/kg	M	NA	mg/kg-day	0.055	(mg/kg/day)-1	
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	2.8E-07	mg/kg-day	1.6	(mg/kg/day)-1	4.5E-07
	PAHs										
	Benz(a)anthracene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	1.5E-07	mg/kg-day	0.73	(mg/kg/day)-1	1.1E-07
	Benzo(a)pyrene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	1.4E-07	mg/kg-day	7.3	(mg/kg/day)-1	1.0E-06
	Benzo(b)fluoranthene	2.4E-01	mg/kg	2.4E-01	mg/kg	M	2.2E-07	mg/kg-day	0.73	(mg/kg/day)-1	1.6E-07
	Dibenz(a,h)anthracene	4.8E-02	mg/kg	4.8E-02	mg/kg	M	4.4E-08	mg/kg-day	7.3	(mg/kg/day)-1	3.2E-07
	Naphthalene	3.9E-01	mg/kg	3.9E-01	mg/kg	M	3.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1254	4.1E-02	mg/kg	4.1E-02	mg/kg	M	4.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1268	3.5E-02	mg/kg	3.5E-02	mg/kg	M	3.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	8.6E-02	mg/kg	8.6E-02	mg/kg	M	8.5E-08	mg/kg-day	2	(mg/kg/day)-1	1.7E-07
	PCDD/PCDFs										
	TEQ Furans	1.6E-06	mg/kg	1.6E-06	mg/kg	M	3.3E-13	mg/kg-day	150000	(mg/kg/day)-1	4.9E-08
	TEQ as 2,3,7,8-TCDD	2.0E-06	mg/kg	2.0E-06	mg/kg	M	4.1E-13	mg/kg-day	150000	(mg/kg/day)-1	6.2E-08
										Sum of Cancer Risks from Dermal Contact	3.5E-06
										Total Cancer Risk	3.9E-06

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.7.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
North Basin Onondaga Lake

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: North Basin Sediments
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Antimony	9.2E+00	mg/kg	9.2E+00	mg/kg	M	8.5E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	3.9E+00	mg/kg	3.9E+00	mg/kg	M	3.6E-08	mg/kg-day	1.50E+00	(mg/kg/day)-1	5.3E-08
	Barium	1.5E+02	mg/kg	1.5E+02	mg/kg	M	1.4E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	2.0E+00	mg/kg	2.0E+00	mg/kg	M	1.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	3.0E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	5.8E+03	mg/kg	5.8E+03	mg/kg	M	5.3E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.8E+02	mg/kg	2.8E+02	mg/kg	M	2.6E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+00	mg/kg	1.9E+00	mg/kg	M	1.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.0E-03	mg/kg	2.0E-03	mg/kg	M	1.8E-11	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.9E-01	mg/kg	2.9E-01	mg/kg	M	2.7E-09	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	8.9E-02	mg/kg	8.9E-02	mg/kg	M	8.2E-10	mg/kg-day	5.50E-02	(mg/kg/day)-1	4.5E-11
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	3.7E-09	mg/kg-day	1.60E+00	(mg/kg/day)-1	6.0E-09
	PAHs										
	Benz(a)anthracene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	1.5E-09	mg/kg-day	7.30E-01	(mg/kg/day)-1	1.1E-09
	Benzo(a)pyrene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	1.4E-09	mg/kg-day	7.30E+00	(mg/kg/day)-1	1.0E-08
	Benzo(b)fluoranthene	2.4E-01	mg/kg	2.4E-01	mg/kg	M	2.2E-09	mg/kg-day	7.30E-01	(mg/kg/day)-1	1.6E-09
	Dibenz(a,h)anthracene	4.8E-02	mg/kg	4.8E-02	mg/kg	M	4.5E-10	mg/kg-day	7.30E+00	(mg/kg/day)-1	3.3E-09
	Naphthalene	3.9E-01	mg/kg	3.9E-01	mg/kg	M	3.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1254	4.1E-02	mg/kg	4.1E-02	mg/kg	M	3.8E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1268	3.5E-02	mg/kg	3.5E-02	mg/kg	M	3.2E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	8.6E-02	mg/kg	8.6E-02	mg/kg	M	8.0E-10	mg/kg-day	2.00E+00	(mg/kg/day)-1	1.6E-09
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	2.0E-06	mg/kg	2.0E-06	mg/kg	M	1.8E-14	mg/kg-day	1.50E+05	(mg/kg/day)-1	2.7E-09
										Sum of Cancer Risks from Ingestion	8.0E-08

Table 8.7.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
North Basin Onondaga Lake

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Dermal	**Metals and Organometallic Compounds**										
	Antimony	9.2E+00	mg/kg	9.2E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	3.9E+00	mg/kg	3.9E+00	mg/kg	M	1.7E-08	mg/kg-day	1.50E+00	(mg/kg/day)-1	2.5E-08
	Barium	1.5E+02	mg/kg	1.5E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	2.0E+00	mg/kg	2.0E+00	mg/kg	M	2.9E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	5.8E+03	mg/kg	5.8E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.8E+02	mg/kg	2.8E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+00	mg/kg	1.9E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.0E-03	mg/kg	2.0E-03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.9E-01	mg/kg	2.9E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	8.9E-02	mg/kg	8.9E-02	mg/kg	M	NA	mg/kg-day	5.50E-02	(mg/kg/day)-1	
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	5.8E-09	mg/kg-day	1.60E+00	(mg/kg/day)-1	9.3E-09
	PAHs										
	Benz(a)anthracene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	3.0E-09	mg/kg-day	7.30E-01	(mg/kg/day)-1	2.2E-09
	Benzo(a)pyrene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	2.9E-09	mg/kg-day	7.30E+00	(mg/kg/day)-1	2.1E-08
	Benzo(b)fluoranthene	2.4E-01	mg/kg	2.4E-01	mg/kg	M	4.4E-09	mg/kg-day	7.30E-01	(mg/kg/day)-1	3.2E-09
	Dibenz(a,h)anthracene	4.8E-02	mg/kg	4.8E-02	mg/kg	M	9.0E-10	mg/kg-day	7.30E+00	(mg/kg/day)-1	6.6E-09
	Naphthalene	3.9E-01	mg/kg	3.9E-01	mg/kg	M	7.3E-09	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1254	4.1E-02	mg/kg	4.1E-02	mg/kg	M	8.3E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1268	3.5E-02	mg/kg	3.5E-02	mg/kg	M	7.0E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	8.6E-02	mg/kg	8.6E-02	mg/kg	M	1.7E-09	mg/kg-day	2.00E+00	(mg/kg/day)-1	3.5E-09
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	2.0E-06	mg/kg	2.0E-06	mg/kg	M	8.4E-15	mg/kg-day	1.50E+05	(mg/kg/day)-1	1.3E-09
										Sum of Cancer Risks from Dermal Contact	7.2E-08

Total Cancer Risk 1.5E-07

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.8.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
South Basin Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: South Basin Sediments
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	4.1E+03	mg/kg	4.1E+03	mg/kg	M	9.6E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	3.0E+00	mg/kg	3.0E+00	mg/kg	M	7.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	2.9E-07	mg/kg-day	1.5	(mg/kg/day)-1	4.4E-07
	Barium	9.0E+02	mg/kg	9.0E+02	mg/kg	M	2.1E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.9E+00	mg/kg	3.9E+00	mg/kg	M	9.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.0E+02	mg/kg	2.0E+02	mg/kg	M	4.8E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	9.6E+01	mg/kg	9.6E+01	mg/kg	M	2.3E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	1.5E+00	mg/kg	1.5E+00	mg/kg	M	3.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.2E+04	mg/kg	1.2E+04	mg/kg	M	2.9E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Lead	2.3E+02	mg/kg	2.3E+02	mg/kg	M	5.5E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.9E+02	mg/kg	2.9E+02	mg/kg	M	6.9E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+01	mg/kg	1.9E+01	mg/kg	M	4.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.2E-02	mg/kg	2.2E-02	mg/kg	M	5.3E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Nickel	7.3E+01	mg/kg	7.3E+01	mg/kg	M	1.7E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	4.0E-01	mg/kg	4.0E-01	mg/kg	M	9.4E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Vanadium	3.0E+01	mg/kg	3.0E+01	mg/kg	M	7.0E-07	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	6.1E+01	mg/kg	6.1E+01	mg/kg	M	1.4E-06	mg/kg-day	0.1	(mg/kg/day)-1	7.9E-08
	Chlorobenzene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	4.2E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Methylene chloride	8.5E+00	mg/kg	8.5E+00	mg/kg	M	2.0E-07	mg/kg-day	0.0	(mg/kg/day)-1	1.5E-09
	Xylenes	3.3E+02	mg/kg	3.3E+02	mg/kg	M	7.7E-06	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	1.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.3E+01	mg/kg	6.3E+01	mg/kg	M	1.5E-06	mg/kg-day	0.0	(mg/kg/day)-1	3.5E-08
	Dibenzofuran	1.8E+01	mg/kg	1.8E+01	mg/kg	M	4.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Hexachlorobenzene	6.7E+00	mg/kg	6.7E+00	mg/kg	M	1.6E-07	mg/kg-day	1.6	(mg/kg/day)-1	2.5E-07

Table 8.8.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
South Basin Onondaga Lake

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	PAHs										
	2-Methylnaphthalene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	4.1E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	4.2E+00	mg/kg	4.2E+00	mg/kg	M	1.0E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Benz[a]anthracene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	2.3E-07	mg/kg-day	0.7	(mg/kg/day)-1	1.7E-07
	Benzo[a]pyrene	7.4E+00	mg/kg	7.4E+00	mg/kg	M	1.7E-07	mg/kg-day	7.3	(mg/kg/day)-1	1.3E-06
	Benzo[b]fluoranthene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	2.3E-07	mg/kg-day	0.7	(mg/kg/day)-1	1.7E-07
	Benzo[ghi]perylene	6.4E+00	mg/kg	6.4E+00	mg/kg	M	1.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo[k]fluoranthene	3.6E+00	mg/kg	3.6E+00	mg/kg	M	8.3E-08	mg/kg-day	0.1	(mg/kg/day)-1	6.1E-09
	Chrysene	9.6E+00	mg/kg	9.6E+00	mg/kg	M	2.3E-07	mg/kg-day	0.0	(mg/kg/day)-1	1.6E-09
	Dibenz[a,h]anthracene	1.6E+00	mg/kg	1.6E+00	mg/kg	M	3.8E-08	mg/kg-day	7.3	(mg/kg/day)-1	2.8E-07
	Fluoranthene	3.4E+01	mg/kg	3.4E+01	mg/kg	M	7.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Indeno[1,2,3-cd]pyrene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	8.9E-08	mg/kg-day	0.7	(mg/kg/day)-1	6.5E-08
	Naphthalene	1.1E+03	mg/kg	1.1E+03	mg/kg	M	2.5E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	5.3E+01	mg/kg	5.3E+01	mg/kg	M	1.2E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Dieldrin	8.7E-03	mg/kg	8.7E-03	mg/kg	M	2.0E-10	mg/kg-day	16.0	(mg/kg/day)-1	3.3E-09
	PCBs										
	Aroclor 1221	8.1E-02	mg/kg	8.1E-02	mg/kg	M	1.9E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1242	3.5E-01	mg/kg	3.5E-01	mg/kg	M	8.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1248	2.3E-01	mg/kg	2.3E-01	mg/kg	M	5.3E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	1.4E-01	mg/kg	1.4E-01	mg/kg	M	3.3E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	4.7E-09	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs	1.1E+00	mg/kg	1.1E+00	mg/kg	M	2.5E-08	mg/kg-day	2.0	(mg/kg/day)-1	5.0E-08
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	3.8E-04	mg/kg	3.8E-04	mg/kg	M	8.8E-12	mg/kg-day	150000.0	(mg/kg/day)-1	1.3E-06
									Sum of Cancer Risks from Ingestion		4.1E-06
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	4.1E+03	mg/kg	4.1E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	3.0E+00	mg/kg	3.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	1.5E-07	mg/kg-day	1.5	(mg/kg/day)-1	2.2E-07
	Barium	9.0E+02	mg/kg	9.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.9E+00	mg/kg	3.9E+00	mg/kg	M	1.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.0E+02	mg/kg	2.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	9.6E+01	mg/kg	9.6E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	1.5E+00	mg/kg	1.5E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.2E+04	mg/kg	1.2E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Lead	2.3E+02	mg/kg	2.3E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.8.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
South Basin Onondaga Lake

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Manganese	2.9E+02	mg/kg	2.9E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+01	mg/kg	1.9E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.2E-02	mg/kg	2.2E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Nickel	7.3E+01	mg/kg	7.3E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	4.0E-01	mg/kg	4.0E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Vanadium	3.0E+01	mg/kg	3.0E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	6.1E+01	mg/kg	6.1E+01	mg/kg	M	NA	mg/kg-day	0.1	(mg/kg/day)-1	
	Chlorobenzene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylene chloride	8.5E+00	mg/kg	8.5E+00	mg/kg	M	NA	mg/kg-day	0.0	(mg/kg/day)-1	
	Xylenes	3.3E+02	mg/kg	3.3E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	1.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.3E+01	mg/kg	6.3E+01	mg/kg	M	2.5E-06	mg/kg-day	0.0	(mg/kg/day)-1	6.0E-08
	Dibenzofuran	1.8E+01	mg/kg	1.8E+01	mg/kg	M	7.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Hexachlorobenzene	6.7E+00	mg/kg	6.7E+00	mg/kg	M	2.7E-07	mg/kg-day	1.6	(mg/kg/day)-1	4.3E-07
	PAHs										
	2-Methylnaphthalene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	9.2E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	4.2E+00	mg/kg	4.2E+00	mg/kg	M	2.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Benz[a]anthracene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	5.1E-07	mg/kg-day	0.7	(mg/kg/day)-1	3.7E-07
	Benzo[a]pyrene	7.4E+00	mg/kg	7.4E+00	mg/kg	M	3.9E-07	mg/kg-day	7.3	(mg/kg/day)-1	2.8E-06
	Benzo[b]fluoranthene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	5.1E-07	mg/kg-day	0.7	(mg/kg/day)-1	3.7E-07
	Benzo[ghi]perylene	6.4E+00	mg/kg	6.4E+00	mg/kg	M	3.3E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo[k]fluoranthene	3.6E+00	mg/kg	3.6E+00	mg/kg	M	1.9E-07	mg/kg-day	0.1	(mg/kg/day)-1	1.4E-08
	Chrysene	9.6E+00	mg/kg	9.6E+00	mg/kg	M	5.0E-07	mg/kg-day	0.0	(mg/kg/day)-1	3.7E-09
	Dibenz[a,h]anthracene	1.6E+00	mg/kg	1.6E+00	mg/kg	M	8.5E-08	mg/kg-day	7.3	(mg/kg/day)-1	6.2E-07
	Fluoranthene	3.4E+01	mg/kg	3.4E+01	mg/kg	M	1.8E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Indeno[1,2,3-cd]pyrene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	2.0E-07	mg/kg-day	0.7	(mg/kg/day)-1	1.4E-07
	Naphthalene	1.1E+03	mg/kg	1.1E+03	mg/kg	M	5.5E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	5.3E+01	mg/kg	5.3E+01	mg/kg	M	2.7E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Dieldrin	8.7E-03	mg/kg	8.7E-03	mg/kg	M	NA	mg/kg-day	16.0	(mg/kg/day)-1	
	PCBs						6.0E-08				
	Aroclor 1221	8.1E-02	mg/kg	8.1E-02	mg/kg	M	4.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1242	3.5E-01	mg/kg	3.5E-01	mg/kg	M	1.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1248	2.3E-01	mg/kg	2.3E-01	mg/kg	M	1.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	1.4E-01	mg/kg	1.4E-01	mg/kg	M	7.8E-09	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.8.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
South Basin Onondaga Lake

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	1.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs	1.1E+00	mg/kg	1.1E+00	mg/kg	M	6.0E-08	mg/kg-day	2.0	(mg/kg/day)-1	1.2E-07
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	3.8E-04	mg/kg	3.8E-04	mg/kg	M	4.5E-12	mg/kg-day	150000.0	(mg/kg/day)-1	6.8E-07
										Sum of Cancer Risks from Dermal Contact	5.9E-06

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Total Cancer Risk 1.0E-05

Table 8.9.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
South Basin Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: South Basin Sediments
Receptor Population: Recreational
Receptor Age: Young Children (less than 6)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	4.1E+03	mg/kg	4.1E+03	mg/kg	M	1.8E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	3.0E+00	mg/kg	3.0E+00	mg/kg	M	1.3E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	5.4E-07	mg/kg-day	1.5	(mg/kg/day)-1	8.1E-07
	Barium	9.0E+02	mg/kg	9.0E+02	mg/kg	M	4.0E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.9E+00	mg/kg	3.9E+00	mg/kg	M	1.7E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.0E+02	mg/kg	2.0E+02	mg/kg	M	9.0E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	9.6E+01	mg/kg	9.6E+01	mg/kg	M	4.2E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	1.5E+00	mg/kg	1.5E+00	mg/kg	M	6.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.2E+04	mg/kg	1.2E+04	mg/kg	M	5.4E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Lead	2.3E+02	mg/kg	2.3E+02	mg/kg	M	1.0E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.9E+02	mg/kg	2.9E+02	mg/kg	M	1.3E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+01	mg/kg	1.9E+01	mg/kg	M	8.3E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.2E-02	mg/kg	2.2E-02	mg/kg	M	9.8E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Nickel	7.3E+01	mg/kg	7.3E+01	mg/kg	M	3.2E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	4.0E-01	mg/kg	4.0E-01	mg/kg	M	1.8E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Vanadium	3.0E+01	mg/kg	3.0E+01	mg/kg	M	1.3E-06	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	6.1E+01	mg/kg	6.1E+01	mg/kg	M	2.7E-06	mg/kg-day	0.055	(mg/kg/day)-1	1.5E-07
	Chlorobenzene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	7.9E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Methylene chloride	8.5E+00	mg/kg	8.5E+00	mg/kg	M	3.7E-07	mg/kg-day	0.0075	(mg/kg/day)-1	2.8E-09
	Xylenes	3.3E+02	mg/kg	3.3E+02	mg/kg	M	1.4E-05	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	2.0E-07	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.3E+01	mg/kg	6.3E+01	mg/kg	M	2.8E-06	mg/kg-day	0.024	(mg/kg/day)-1	6.6E-08
	Dibenzofuran	1.8E+01	mg/kg	1.8E+01	mg/kg	M	7.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Hexachlorobenzene	6.7E+00	mg/kg	6.7E+00	mg/kg	M	2.9E-07	mg/kg-day	1.6	(mg/kg/day)-1	4.7E-07

Table 8.9.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
South Basin Onondaga Lake

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	PAHs										
	2-Methylnaphthalene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	7.7E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	4.2E+00	mg/kg	4.2E+00	mg/kg	M	1.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Benz[a]anthracene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	4.3E-07	mg/kg-day	0.73	(mg/kg/day)-1	3.1E-07
	Benzo[a]pyrene	7.4E+00	mg/kg	7.4E+00	mg/kg	M	3.2E-07	mg/kg-day	7.3	(mg/kg/day)-1	2.4E-06
	Benzo[b]fluoranthene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	4.3E-07	mg/kg-day	0.73	(mg/kg/day)-1	3.1E-07
	Benzo[ghi]perylene	6.4E+00	mg/kg	6.4E+00	mg/kg	M	2.8E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo[k]fluoranthene	3.6E+00	mg/kg	3.6E+00	mg/kg	M	1.6E-07	mg/kg-day	0.073	(mg/kg/day)-1	1.1E-08
	Chrysene	9.6E+00	mg/kg	9.6E+00	mg/kg	M	4.2E-07	mg/kg-day	0.0073	(mg/kg/day)-1	3.1E-09
	Dibenz[a,h]anthracene	1.6E+00	mg/kg	1.6E+00	mg/kg	M	7.1E-08	mg/kg-day	7.3	(mg/kg/day)-1	5.2E-07
	Fluoranthene	3.4E+01	mg/kg	3.4E+01	mg/kg	M	1.5E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Indeno[1,2,3-cd]pyrene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	1.7E-07	mg/kg-day	0.73	(mg/kg/day)-1	1.2E-07
	Naphthalene	1.1E+03	mg/kg	1.1E+03	mg/kg	M	4.6E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	5.3E+01	mg/kg	5.3E+01	mg/kg	M	2.3E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Dieldrin	8.7E-03	mg/kg	8.7E-03	mg/kg	M	3.8E-10	mg/kg-day	16	(mg/kg/day)-1	6.1E-09
	PCBs										
	Aroclor 1221	8.1E-02	mg/kg	8.1E-02	mg/kg	M	3.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1242	3.5E-01	mg/kg	3.5E-01	mg/kg	M	1.5E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1248	2.3E-01	mg/kg	2.3E-01	mg/kg	M	9.9E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	1.4E-01	mg/kg	1.4E-01	mg/kg	M	6.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	8.8E-09	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs	1.1E+00	mg/kg	1.1E+00	mg/kg	M	4.7E-08	mg/kg-day	2	(mg/kg/day)-1	9.3E-08
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	3.8E-04	mg/kg	3.8E-04	mg/kg	M	1.7E-11	mg/kg-day	150000	(mg/kg/day)-1	2.5E-06
										Sum of Cancer Risks from Ingestion	7.7E-06
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	4.1E+03	mg/kg	4.1E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	3.0E+00	mg/kg	3.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	6.2E-07	mg/kg-day	1.5	(mg/kg/day)-1	9.2E-07
	Barium	9.0E+02	mg/kg	9.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.9E+00	mg/kg	3.9E+00	mg/kg	M	6.5E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.0E+02	mg/kg	2.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	9.6E+01	mg/kg	9.6E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	1.5E+00	mg/kg	1.5E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.2E+04	mg/kg	1.2E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Lead	2.3E+02	mg/kg	2.3E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.9E+02	mg/kg	2.9E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+01	mg/kg	1.9E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.2E-02	mg/kg	2.2E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Nickel	7.3E+01	mg/kg	7.3E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.9.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
South Basin Onondaga Lake

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Thallium	4.0E-01	mg/kg	4.0E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Vanadium	3.0E+01	mg/kg	3.0E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	6.1E+01	mg/kg	6.1E+01	mg/kg	M	NA	mg/kg-day	0.055	(mg/kg/day)-1	
	Chlorobenzene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylene chloride	8.5E+00	mg/kg	8.5E+00	mg/kg	M	NA	mg/kg-day	0.0075	(mg/kg/day)-1	
	Xylenes	3.3E+02	mg/kg	3.3E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	7.7E-07	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.3E+01	mg/kg	6.3E+01	mg/kg	M	1.0E-05	mg/kg-day	0.024	(mg/kg/day)-1	2.5E-07
	Dibenzofuran	1.8E+01	mg/kg	1.8E+01	mg/kg	M	3.0E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Hexachlorobenzene	6.7E+00	mg/kg	6.7E+00	mg/kg	M	1.1E-06	mg/kg-day	1.6	(mg/kg/day)-1	1.8E-06
	PAHs										
	2-Methylnaphthalene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	3.8E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	4.2E+00	mg/kg	4.2E+00	mg/kg	M	9.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Benz[a]anthracene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	2.1E-06	mg/kg-day	0.73	(mg/kg/day)-1	1.5E-06
	Benzo[a]pyrene	7.4E+00	mg/kg	7.4E+00	mg/kg	M	1.6E-06	mg/kg-day	7.3	(mg/kg/day)-1	1.2E-05
	Benzo[b]fluoranthene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	2.1E-06	mg/kg-day	0.73	(mg/kg/day)-1	1.5E-06
	Benzo[ghi]perylene	6.4E+00	mg/kg	6.4E+00	mg/kg	M	1.4E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo[k]fluoranthene	3.6E+00	mg/kg	3.6E+00	mg/kg	M	7.6E-07	mg/kg-day	0.073	(mg/kg/day)-1	5.6E-08
	Chrysene	9.6E+00	mg/kg	9.6E+00	mg/kg	M	2.1E-06	mg/kg-day	0.0073	(mg/kg/day)-1	1.5E-08
	Dibenz[a,h]anthracene	1.6E+00	mg/kg	1.6E+00	mg/kg	M	3.5E-07	mg/kg-day	7.3	(mg/kg/day)-1	2.6E-06
	Fluoranthene	3.4E+01	mg/kg	3.4E+01	mg/kg	M	7.3E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Indeno[1,2,3-cd]pyrene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	8.1E-07	mg/kg-day	0.73	(mg/kg/day)-1	5.9E-07
	Naphthalene	1.1E+03	mg/kg	1.1E+03	mg/kg	M	2.3E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	5.3E+01	mg/kg	5.3E+01	mg/kg	M	1.1E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Dieldrin	8.7E-03	mg/kg	8.7E-03	mg/kg	M	NA	mg/kg-day	16	(mg/kg/day)-1	
	PCBs										
	Aroclor 1221	8.1E-02	mg/kg	8.1E-02	mg/kg	M	1.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1242	3.5E-01	mg/kg	3.5E-01	mg/kg	M	8.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1248	2.3E-01	mg/kg	2.3E-01	mg/kg	M	5.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	1.4E-01	mg/kg	1.4E-01	mg/kg	M	3.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	4.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs	1.1E+00	mg/kg	1.1E+00	mg/kg	M	2.5E-07	mg/kg-day	2	(mg/kg/day)-1	4.9E-07
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	3.8E-04	mg/kg	3.8E-04	mg/kg	M	1.9E-11	mg/kg-day	150000	(mg/kg/day)-1	2.8E-06
										Sum of Cancer Risks from Dermal Contact	2.4E-05
										Total Cancer Risk	3.2E-05

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.10.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
South Basin Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: South Basin Sediments
Receptor Population: Recreational
Receptor Age: Older Children (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	4.1E+03	mg/kg	4.1E+03	mg/kg	M	6.2E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	3.0E+00	mg/kg	3.0E+00	mg/kg	M	4.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	1.9E-07	mg/kg-day	1.5	(mg/kg/day)-1	2.8E-07
	Barium	9.0E+02	mg/kg	9.0E+02	mg/kg	M	1.4E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.9E+00	mg/kg	3.9E+00	mg/kg	M	6.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.0E+02	mg/kg	2.0E+02	mg/kg	M	3.1E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	9.6E+01	mg/kg	9.6E+01	mg/kg	M	1.5E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	1.5E+00	mg/kg	1.5E+00	mg/kg	M	2.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.2E+04	mg/kg	1.2E+04	mg/kg	M	1.9E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Lead	2.3E+02	mg/kg	2.3E+02	mg/kg	M	3.6E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.9E+02	mg/kg	2.9E+02	mg/kg	M	4.5E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+01	mg/kg	1.9E+01	mg/kg	M	2.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.2E-02	mg/kg	2.2E-02	mg/kg	M	3.4E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Nickel	7.3E+01	mg/kg	7.3E+01	mg/kg	M	1.1E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	4.0E-01	mg/kg	4.0E-01	mg/kg	M	6.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Vanadium	3.0E+01	mg/kg	3.0E+01	mg/kg	M	4.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	6.1E+01	mg/kg	6.1E+01	mg/kg	M	9.4E-07	mg/kg-day	0.1	(mg/kg/day)-1	5.2E-08
	Chlorobenzene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	2.8E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Methylene chloride	8.5E+00	mg/kg	8.5E+00	mg/kg	M	1.3E-07	mg/kg-day	0.0	(mg/kg/day)-1	9.7E-10
	Xylenes	3.3E+02	mg/kg	3.3E+02	mg/kg	M	5.0E-06	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	7.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.3E+01	mg/kg	6.3E+01	mg/kg	M	9.6E-07	mg/kg-day	0.0	(mg/kg/day)-1	2.3E-08
	Dibenzofuran	1.8E+01	mg/kg	1.8E+01	mg/kg	M	2.8E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Hexachlorobenzene	6.7E+00	mg/kg	6.7E+00	mg/kg	M	1.0E-07	mg/kg-day	1.6	(mg/kg/day)-1	1.6E-07

Table 8.10.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
South Basin Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	PAHs										
	2-Methylnaphthalene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	2.7E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	4.2E+00	mg/kg	4.2E+00	mg/kg	M	6.5E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benz[a]anthracene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	1.5E-07	mg/kg-day	0.7	(mg/kg/day)-1	1.1E-07
	Benzo[a]pyrene	7.4E+00	mg/kg	7.4E+00	mg/kg	M	1.1E-07	mg/kg-day	7.3	(mg/kg/day)-1	8.3E-07
	Benzo[b]fluoranthene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	1.5E-07	mg/kg-day	0.7	(mg/kg/day)-1	1.1E-07
	Benzo[ghi]perylene	6.4E+00	mg/kg	6.4E+00	mg/kg	M	9.8E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo[k]fluoranthene	3.6E+00	mg/kg	3.6E+00	mg/kg	M	5.4E-08	mg/kg-day	0.1	(mg/kg/day)-1	4.0E-09
	Chrysene	9.6E+00	mg/kg	9.6E+00	mg/kg	M	1.5E-07	mg/kg-day	0.0	(mg/kg/day)-1	1.1E-09
	Dibenz[a,h]anthracene	1.6E+00	mg/kg	1.6E+00	mg/kg	M	2.5E-08	mg/kg-day	7.3	(mg/kg/day)-1	1.8E-07
	Fluoranthene	3.4E+01	mg/kg	3.4E+01	mg/kg	M	5.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Indeno[1,2,3-cd]pyrene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	5.8E-08	mg/kg-day	0.7	(mg/kg/day)-1	4.2E-08
	Naphthalene	1.1E+03	mg/kg	1.1E+03	mg/kg	M	1.6E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	5.3E+01	mg/kg	5.3E+01	mg/kg	M	8.0E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Dieldrin	8.7E-03	mg/kg	8.7E-03	mg/kg	M	1.3E-10	mg/kg-day	16.0	(mg/kg/day)-1	2.1E-09
	PCBs						1.6E-08				
	Aroclor 1221	8.1E-02	mg/kg	8.1E-02	mg/kg	M	1.2E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1242	3.5E-01	mg/kg	3.5E-01	mg/kg	M	5.3E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1248	2.3E-01	mg/kg	2.3E-01	mg/kg	M	3.4E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	1.4E-01	mg/kg	1.4E-01	mg/kg	M	2.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	3.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs	1.1E+00	mg/kg	1.1E+00	mg/kg	M	1.6E-08	mg/kg-day	2.0	(mg/kg/day)-1	3.2E-08
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	3.8E-04	mg/kg	3.8E-04	mg/kg	M	5.8E-12	mg/kg-day	150000.0	(mg/kg/day)-1	8.6E-07
									Sum of Cancer Risks from Ingestion		2.7E-06
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	4.1E+03	mg/kg	4.1E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	3.0E+00	mg/kg	3.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	8.3E-07	mg/kg-day	1.5	(mg/kg/day)-1	1.2E-06
	Barium	9.0E+02	mg/kg	9.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.9E+00	mg/kg	3.9E+00	mg/kg	M	8.7E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.0E+02	mg/kg	2.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	9.6E+01	mg/kg	9.6E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	1.5E+00	mg/kg	1.5E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.2E+04	mg/kg	1.2E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Lead	2.3E+02	mg/kg	2.3E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.9E+02	mg/kg	2.9E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.10.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
South Basin Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Total Mercury	1.9E+01	mg/kg	1.9E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.2E-02	mg/kg	2.2E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Nickel	7.3E+01	mg/kg	7.3E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	4.0E-01	mg/kg	4.0E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Vanadium	3.0E+01	mg/kg	3.0E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	6.1E+01	mg/kg	6.1E+01	mg/kg	M	NA	mg/kg-day	0.1	(mg/kg/day)-1	
	Chlorobenzene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylene chloride	8.5E+00	mg/kg	8.5E+00	mg/kg	M	NA	mg/kg-day	0.0	(mg/kg/day)-1	
	Xylenes	3.3E+02	mg/kg	3.3E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	1.0E-06	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.3E+01	mg/kg	6.3E+01	mg/kg	M	1.4E-05	mg/kg-day	0.0	(mg/kg/day)-1	3.4E-07
	Dibenzofuran	1.8E+01	mg/kg	1.8E+01	mg/kg	M	4.0E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Hexachlorobenzene	6.7E+00	mg/kg	6.7E+00	mg/kg	M	1.5E-06	mg/kg-day	1.6	(mg/kg/day)-1	2.4E-06
	PAHs										
	2-Methylnaphthalene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	5.1E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	4.2E+00	mg/kg	4.2E+00	mg/kg	M	1.2E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Benz[a]anthracene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	2.8E-06	mg/kg-day	0.7	(mg/kg/day)-1	2.1E-06
	Benzo[a]pyrene	7.4E+00	mg/kg	7.4E+00	mg/kg	M	2.1E-06	mg/kg-day	7.3	(mg/kg/day)-1	1.6E-05
	Benzo[b]fluoranthene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	2.8E-06	mg/kg-day	0.7	(mg/kg/day)-1	2.1E-06
	Benzo[ghi]perylene	6.4E+00	mg/kg	6.4E+00	mg/kg	M	1.9E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo[k]fluoranthene	3.6E+00	mg/kg	3.6E+00	mg/kg	M	1.0E-06	mg/kg-day	0.1	(mg/kg/day)-1	7.5E-08
	Chrysene	9.6E+00	mg/kg	9.6E+00	mg/kg	M	2.8E-06	mg/kg-day	0.0	(mg/kg/day)-1	2.0E-08
	Dibenz[a,h]anthracene	1.6E+00	mg/kg	1.6E+00	mg/kg	M	4.7E-07	mg/kg-day	7.3	(mg/kg/day)-1	3.4E-06
	Fluoranthene	3.4E+01	mg/kg	3.4E+01	mg/kg	M	9.8E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Indeno[1,2,3-cd]pyrene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	1.1E-06	mg/kg-day	0.7	(mg/kg/day)-1	8.0E-07
	Naphthalene	1.1E+03	mg/kg	1.1E+03	mg/kg	M	3.0E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	5.3E+01	mg/kg	5.3E+01	mg/kg	M	1.5E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Dieldrin	8.7E-03	mg/kg	8.7E-03	mg/kg	M	NA	mg/kg-day	16.0	(mg/kg/day)-1	

Table 8.10.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
South Basin Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	PCBs										
	Aroclor 1221	8.1E-02	mg/kg	8.1E-02	mg/kg	M	2.5E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1242	3.5E-01	mg/kg	3.5E-01	mg/kg	M	1.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1248	2.3E-01	mg/kg	2.3E-01	mg/kg	M	7.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	1.4E-01	mg/kg	1.4E-01	mg/kg	M	4.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	6.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs	1.1E+00	mg/kg	1.1E+00	mg/kg	M	3.3E-07	mg/kg-day	2.0	(mg/kg/day)-1	6.6E-07
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	3.8E-04	mg/kg	3.8E-04	mg/kg	M	2.5E-11	mg/kg-day	150000.0	(mg/kg/day)-1	3.8E-06
										Sum of Cancer Risks from Dermal contact	3.3E-05
										Total Cancer Risks	3.5E-05

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.11.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
South Basin Onondaga Lake

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: South Basin Sediments
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	4.1E+03	mg/kg	4.1E+03	mg/kg	M	3.8E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	3.0E+00	mg/kg	3.0E+00	mg/kg	M	2.8E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	1.1E-07	mg/kg-day	1.5	(mg/kg/day)-1	1.7E-07
	Barium	9.0E+02	mg/kg	9.0E+02	mg/kg	M	8.3E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.9E+00	mg/kg	3.9E+00	mg/kg	M	3.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.0E+02	mg/kg	2.0E+02	mg/kg	M	1.9E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	9.6E+01	mg/kg	9.6E+01	mg/kg	M	8.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	1.5E+00	mg/kg	1.5E+00	mg/kg	M	1.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.2E+04	mg/kg	1.2E+04	mg/kg	M	1.1E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Lead	2.3E+02	mg/kg	2.3E+02	mg/kg	M	2.2E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.9E+02	mg/kg	2.9E+02	mg/kg	M	2.7E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+01	mg/kg	1.9E+01	mg/kg	M	1.7E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.2E-02	mg/kg	2.2E-02	mg/kg	M	2.1E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Nickel	7.3E+01	mg/kg	7.3E+01	mg/kg	M	6.8E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	4.0E-01	mg/kg	4.0E-01	mg/kg	M	3.7E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Vanadium	3.0E+01	mg/kg	3.0E+01	mg/kg	M	2.8E-07	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	6.1E+01	mg/kg	6.1E+01	mg/kg	M	5.6E-07	mg/kg-day	0.1	(mg/kg/day)-1	3.1E-08
	Chlorobenzene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	1.7E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Methylene chloride	8.5E+00	mg/kg	8.5E+00	mg/kg	M	7.8E-08	mg/kg-day	0.0	(mg/kg/day)-1	5.9E-10
	Xylenes	3.3E+02	mg/kg	3.3E+02	mg/kg	M	3.0E-06	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	4.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.3E+01	mg/kg	6.3E+01	mg/kg	M	5.8E-07	mg/kg-day	0.0	(mg/kg/day)-1	1.4E-08
	Dibenzofuran	1.8E+01	mg/kg	1.8E+01	mg/kg	M	1.7E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Hexachlorobenzene	6.7E+00	mg/kg	6.7E+00	mg/kg	M	6.1E-08	mg/kg-day	1.6	(mg/kg/day)-1	9.8E-08
	PAHs										

Table 8.11.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
South Basin Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	2-Methylnaphthalene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	1.6E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	4.2E+00	mg/kg	4.2E+00	mg/kg	M	3.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benz[a]anthracene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	9.0E-08	mg/kg-day	0.7	(mg/kg/day)-1	6.6E-08
	Benzo[a]pyrene	7.4E+00	mg/kg	7.4E+00	mg/kg	M	6.8E-08	mg/kg-day	7.3	(mg/kg/day)-1	5.0E-07
	Benzo[b]fluoranthene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	9.1E-08	mg/kg-day	0.7	(mg/kg/day)-1	6.6E-08
	Benzo[ghi]perylene	6.4E+00	mg/kg	6.4E+00	mg/kg	M	5.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo[k]fluoranthene	3.6E+00	mg/kg	3.6E+00	mg/kg	M	3.3E-08	mg/kg-day	0.1	(mg/kg/day)-1	2.4E-09
	Chrysene	9.6E+00	mg/kg	9.6E+00	mg/kg	M	8.9E-08	mg/kg-day	0.0	(mg/kg/day)-1	6.5E-10
	Dibenz[a,h]anthracene	1.6E+00	mg/kg	1.6E+00	mg/kg	M	1.5E-08	mg/kg-day	7.3	(mg/kg/day)-1	1.1E-07
	Fluoranthene	3.4E+01	mg/kg	3.4E+01	mg/kg	M	3.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Indeno[1,2,3-cd]pyrene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	3.5E-08	mg/kg-day	0.7	(mg/kg/day)-1	2.5E-08
	Naphthalene	1.1E+03	mg/kg	1.1E+03	mg/kg	M	9.7E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	5.3E+01	mg/kg	5.3E+01	mg/kg	M	4.8E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Dieldrin	8.7E-03	mg/kg	8.7E-03	mg/kg	M	8.0E-11	mg/kg-day	16.0	(mg/kg/day)-1	1.3E-09
	PCBs						9.8E-09				
	Aroclor 1221	8.1E-02	mg/kg	8.1E-02	mg/kg	M	7.5E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1242	3.5E-01	mg/kg	3.5E-01	mg/kg	M	3.2E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1248	2.3E-01	mg/kg	2.3E-01	mg/kg	M	2.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	1.4E-01	mg/kg	1.4E-01	mg/kg	M	1.3E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	1.9E-09	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs	1.1E+00	mg/kg	1.1E+00	mg/kg	M	9.8E-09	mg/kg-day	2.0	(mg/kg/day)-1	2.0E-08
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	3.8E-04	mg/kg	3.8E-04	mg/kg	M	3.5E-12	mg/kg-day	150000.0	(mg/kg/day)-1	5.2E-07
									Sum of Cancer Risks from Ingestion		1.6E-06
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	4.1E+03	mg/kg	4.1E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	3.0E+00	mg/kg	3.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	5.3E-08	mg/kg-day	1.5	(mg/kg/day)-1	8.0E-08
	Barium	9.0E+02	mg/kg	9.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.9E+00	mg/kg	3.9E+00	mg/kg	M	5.6E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.0E+02	mg/kg	2.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	9.6E+01	mg/kg	9.6E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	1.5E+00	mg/kg	1.5E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.2E+04	mg/kg	1.2E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Lead	2.3E+02	mg/kg	2.3E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.9E+02	mg/kg	2.9E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+01	mg/kg	1.9E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.11.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
South Basin Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Methylmercury	2.2E-02	mg/kg	2.2E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Nickel	7.3E+01	mg/kg	7.3E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	4.0E-01	mg/kg	4.0E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Vanadium	3.0E+01	mg/kg	3.0E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	6.1E+01	mg/kg	6.1E+01	mg/kg	M	NA	mg/kg-day	0.1	(mg/kg/day)-1	
	Chlorobenzene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylene chloride	8.5E+00	mg/kg	8.5E+00	mg/kg	M	NA	mg/kg-day	0.008	(mg/kg/day)-1	
	Xylenes	3.3E+02	mg/kg	3.3E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	6.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.3E+01	mg/kg	6.3E+01	mg/kg	M	9.0E-07	mg/kg-day	0.024	(mg/kg/day)-1	2.2E-08
	Dibenzofuran	1.8E+01	mg/kg	1.8E+01	mg/kg	M	2.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Hexachlorobenzene	6.7E+00	mg/kg	6.7E+00	mg/kg	M	9.6E-08	mg/kg-day	1.6	(mg/kg/day)-1	1.5E-07
	PAHs										
	2-Methylnaphthalene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	3.3E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	4.2E+00	mg/kg	4.2E+00	mg/kg	M	7.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benz[a]anthracene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	1.8E-07	mg/kg-day	0.7	(mg/kg/day)-1	1.3E-07
	Benzo[a]pyrene	7.4E+00	mg/kg	7.4E+00	mg/kg	M	1.4E-07	mg/kg-day	7.3	(mg/kg/day)-1	1.0E-06
	Benzo[b]fluoranthene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	1.8E-07	mg/kg-day	0.7	(mg/kg/day)-1	1.3E-07
	Benzo[ghi]perylene	6.4E+00	mg/kg	6.4E+00	mg/kg	M	1.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo[k]fluoranthene	3.6E+00	mg/kg	3.6E+00	mg/kg	M	6.6E-08	mg/kg-day	0.1	(mg/kg/day)-1	4.8E-09
	Chrysene	9.6E+00	mg/kg	9.6E+00	mg/kg	M	1.8E-07	mg/kg-day	0.0	(mg/kg/day)-1	1.3E-09
	Dibenz[a,h]anthracene	1.6E+00	mg/kg	1.6E+00	mg/kg	M	3.0E-08	mg/kg-day	7.3	(mg/kg/day)-1	2.2E-07
	Fluoranthene	3.4E+01	mg/kg	3.4E+01	mg/kg	M	6.3E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Indeno[1,2,3-cd]pyrene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	7.0E-08	mg/kg-day	0.7	(mg/kg/day)-1	5.1E-08
	Naphthalene	1.1E+03	mg/kg	1.1E+03	mg/kg	M	2.0E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	5.3E+01	mg/kg	5.3E+01	mg/kg	M	9.8E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Dieldrin	8.7E-03	mg/kg	8.7E-03	mg/kg	M	NA	mg/kg-day	16.0	(mg/kg/day)-1	
	PCBs										
	Aroclor 1221	8.1E-02	mg/kg	8.1E-02	mg/kg	M	1.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1242	3.5E-01	mg/kg	3.5E-01	mg/kg	M	6.9E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1248	2.3E-01	mg/kg	2.3E-01	mg/kg	M	4.5E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	1.4E-01	mg/kg	1.4E-01	mg/kg	M	2.8E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	4.0E-09	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs	1.1E+00	mg/kg	1.1E+00	mg/kg	M	2.1E-08	mg/kg-day	2.0	(mg/kg/day)-1	4.3E-08

Table 8.11.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
South Basin Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	3.8E-04	mg/kg	3.8E-04	mg/kg	M	1.6E-12	mg/kg-day	150000.0	(mg/kg/day)-1	2.4E-07
										Sum of Cancer Risks from Dermal contact	2.1E-06
										Total Cancer Risks	3.7E-06

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.12.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-6 (North Basin) Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-6 (North Basin)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	1.1E+04	mg/kg	1.1E+04	mg/kg	M	7.9E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.8E+00	mg/kg	6.8E+00	mg/kg	M	5.0E-07	mg/kg-day	1.50E+00	(mg/kg/day)-1	7.5E-07
	Cadmium	8.6E+00	mg/kg	8.6E+00	mg/kg	M	6.3E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	9.4E+01	mg/kg	9.4E+01	mg/kg	M	6.9E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	2.8E+00	mg/kg	2.8E+00	mg/kg	M	2.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	2.8E+04	mg/kg	2.8E+04	mg/kg	M	2.1E-03	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	2.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.1E-02	mg/kg	3.1E-02	mg/kg	M	2.3E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	4.2E+02	mg/kg	4.2E+02	mg/kg	M	3.1E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	1.7E+00	mg/kg	1.7E+00	mg/kg	M	1.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	PAHs										
	Benzo(a)pyrene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	1.8E-06	mg/kg-day	7.30E+00	(mg/kg/day)-1	1.3E-05
	2-Methylnaphthalene	3.3E+00	mg/kg	3.3E+00	mg/kg	M	2.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	3.9E+00	mg/kg	3.9E+00	mg/kg	M	2.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Benz(a)anthracene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	1.9E-06	mg/kg-day	7.30E-01	(mg/kg/day)-1	1.4E-06
	Benzo(b)fluoranthene	3.1E+01	mg/kg	3.1E+01	mg/kg	M	2.3E-06	mg/kg-day	7.30E-01	(mg/kg/day)-1	1.7E-06
	Benzo(g,h,i)perylene	1.5E+01	mg/kg	1.5E+01	mg/kg	M	1.1E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	8.4E-07	mg/kg-day	7.30E-02	(mg/kg/day)-1	6.1E-08
	Dibenz(a,h)anthracene	4.4E+00	mg/kg	4.4E+00	mg/kg	M	3.3E-07	mg/kg-day	7.30E+00	(mg/kg/day)-1	2.4E-06
	Indeno(1,2,3-cd)pyrene	1.5E+01	mg/kg	1.5E+01	mg/kg	M	1.1E-06	mg/kg-day	7.30E-01	(mg/kg/day)-1	7.9E-07
	Naphthalene	4.3E+00	mg/kg	4.3E+00	mg/kg	M	3.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	3.3E+01	mg/kg	3.3E+01	mg/kg	M	2.4E-06	mg/kg-day	NA	(mg/kg/day)-1	
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	1.1E-05	mg/kg	1.1E-05	mg/kg	M	8.5E-13	mg/kg-day	1.50E+05	(mg/kg/day)-1	1.3E-07
										Sum of Cancer Risk from Ingestion	2.1E-05
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	1.1E+04	mg/kg	1.1E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.8E+00	mg/kg	6.8E+00	mg/kg	M	2.6E-07	mg/kg-day	1.50E+00	(mg/kg/day)-1	3.9E-07

Table 8.12.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-6 (North Basin) Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Cadmium	8.6E+00	mg/kg	8.6E+00	mg/kg	M	1.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	9.4E+01	mg/kg	9.4E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	2.8E+00	mg/kg	2.8E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	2.8E+04	mg/kg	2.8E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.1E-02	mg/kg	3.1E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	4.2E+02	mg/kg	4.2E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	1.7E+00	mg/kg	1.7E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	PAHs										
	Benzo(a)pyrene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	4.1E-06	mg/kg-day	7.30E+00	(mg/kg/day)-1	3.0E-05
	2-Methylnaphthalene	3.3E+00	mg/kg	3.3E+00	mg/kg	M	5.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	3.9E+00	mg/kg	3.9E+00	mg/kg	M	6.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Benz(a)anthracene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	4.2E-06	mg/kg-day	7.30E-01	(mg/kg/day)-1	3.0E-06
	Benzo(b)fluoranthene	3.1E+01	mg/kg	3.1E+01	mg/kg	M	5.1E-06	mg/kg-day	7.30E-01	(mg/kg/day)-1	3.7E-06
	Benzo(g,h,i)perylene	1.5E+01	mg/kg	1.5E+01	mg/kg	M	2.4E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	1.9E-06	mg/kg-day	7.30E-02	(mg/kg/day)-1	1.4E-07
	Dibenz(a,h)anthracene	4.4E+00	mg/kg	4.4E+00	mg/kg	M	7.3E-07	mg/kg-day	7.30E+00	(mg/kg/day)-1	5.3E-06
	Indeno(1,2,3-cd)pyrene	1.5E+01	mg/kg	1.5E+01	mg/kg	M	2.4E-06	mg/kg-day	7.30E-01	(mg/kg/day)-1	1.8E-06
	Naphthalene	4.3E+00	mg/kg	4.3E+00	mg/kg	M	7.0E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	3.3E+01	mg/kg	3.3E+01	mg/kg	M	5.3E-06	mg/kg-day	NA	(mg/kg/day)-1	
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	1.1E-05	mg/kg	1.1E-05	mg/kg	M	4.4E-13	mg/kg-day	1.50E+05	(mg/kg/day)-1	6.5E-08
										Sum of Cancer Risk from Dermal Contact	4.4E-05
										Total Cancer Risk	6.5E-05

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.13.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-6 (North Basin) Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-6 (North Basin)
Receptor Population: Recreational
Receptor Age: Older Children (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	1.1E+04	mg/kg	1.1E+04	mg/kg	M	5.1E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.8E+00	mg/kg	6.8E+00	mg/kg	M	3.3E-07	mg/kg-day	1.5	(mg/kg/day)-1	4.9E-07
	Cadmium	8.6E+00	mg/kg	8.6E+00	mg/kg	M	4.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	9.4E+01	mg/kg	9.4E+01	mg/kg	M	4.5E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	2.8E+00	mg/kg	2.8E+00	mg/kg	M	1.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	2.8E+04	mg/kg	2.8E+04	mg/kg	M	1.4E-03	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	1.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.1E-02	mg/kg	3.1E-02	mg/kg	M	1.5E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	4.2E+02	mg/kg	4.2E+02	mg/kg	M	2.0E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	1.7E+00	mg/kg	1.7E+00	mg/kg	M	7.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	PAHs										
	Benzo(a)pyrene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	1.2E-06	mg/kg-day	7.3	(mg/kg/day)-1	8.8E-06
	2-Methylnaphthalene	3.3E+00	mg/kg	3.3E+00	mg/kg	M	1.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	3.9E+00	mg/kg	3.9E+00	mg/kg	M	1.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Benz(a)anthracene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	1.2E-06	mg/kg-day	0.7	(mg/kg/day)-1	8.9E-07
	Benzo(b)fluoranthene	3.1E+01	mg/kg	3.1E+01	mg/kg	M	1.5E-06	mg/kg-day	0.7	(mg/kg/day)-1	1.1E-06
	Benzo(g,h,i)perylene	1.5E+01	mg/kg	1.5E+01	mg/kg	M	7.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	5.5E-07	mg/kg-day	0.1	(mg/kg/day)-1	4.0E-08
	Dibenz(a,h)anthracene	4.4E+00	mg/kg	4.4E+00	mg/kg	M	2.1E-07	mg/kg-day	7.3	(mg/kg/day)-1	1.6E-06
	Indeno(1,2,3-cd)pyrene	1.5E+01	mg/kg	1.5E+01	mg/kg	M	7.1E-07	mg/kg-day	0.7	(mg/kg/day)-1	5.2E-07
	Naphthalene	4.3E+00	mg/kg	4.3E+00	mg/kg	M	2.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	3.3E+01	mg/kg	3.3E+01	mg/kg	M	1.6E-06	mg/kg-day	NA	(mg/kg/day)-1	
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	1.1E-05	mg/kg	1.1E-05	mg/kg	M	5.5E-13	mg/kg-day	150000	(mg/kg/day)-1	8.3E-08
										Sum of Cancer Risk from Ingestion	1.3E-05

Table 8.13.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-6 (North Basin) Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	1.1E+04	mg/kg	1.1E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.8E+00	mg/kg	6.8E+00	mg/kg	M	1.4E-06	mg/kg-day	1.5	(mg/kg/day)-1	2.1E-06
	Cadmium	8.6E+00	mg/kg	8.6E+00	mg/kg	M	6.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	9.4E+01	mg/kg	9.4E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	2.8E+00	mg/kg	2.8E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	2.8E+04	mg/kg	2.8E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.1E-02	mg/kg	3.1E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	4.2E+02	mg/kg	4.2E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	1.7E+00	mg/kg	1.7E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	PAHs										
	Benzo(a)pyrene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	2.3E-05	mg/kg-day	7.3	(mg/kg/day)-1	1.7E-04
	2-Methylnaphthalene	3.3E+00	mg/kg	3.3E+00	mg/kg	M	3.0E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	3.9E+00	mg/kg	3.9E+00	mg/kg	M	3.6E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Benz(a)anthracene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	2.3E-05	mg/kg-day	0.7	(mg/kg/day)-1	1.7E-05
	Benzo(b)fluoranthene	3.1E+01	mg/kg	3.1E+01	mg/kg	M	2.8E-05	mg/kg-day	0.7	(mg/kg/day)-1	2.0E-05
	Benzo(g,h,i)perylene	1.5E+01	mg/kg	1.5E+01	mg/kg	M	1.3E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	1.0E-05	mg/kg-day	0.1	(mg/kg/day)-1	7.6E-07
	Dibenz(a,h)anthracene	4.4E+00	mg/kg	4.4E+00	mg/kg	M	4.0E-06	mg/kg-day	7.3	(mg/kg/day)-1	2.9E-05
	Indeno(1,2,3-cd)pyrene	1.5E+01	mg/kg	1.5E+01	mg/kg	M	1.3E-05	mg/kg-day	0.7	(mg/kg/day)-1	9.8E-06
	Naphthalene	4.3E+00	mg/kg	4.3E+00	mg/kg	M	3.9E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	3.3E+01	mg/kg	3.3E+01	mg/kg	M	3.0E-05	mg/kg-day	NA	(mg/kg/day)-1	
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	1.1E-05	mg/kg	1.1E-05	mg/kg	M	2.4E-12	mg/kg-day	150000	(mg/kg/day)-1	3.6E-07
										Sum of Cancer Risk from Dermal Contact	2.5E-04
										Total Cancer Risk	2.6E-04

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.14.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-6 (North Basin) Onondaga Lake

Scenario Timeframe: Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-6 (North Basin)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	1.1E+04	mg/kg	1.1E+04	mg/kg	M	9.9E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.8E+00	mg/kg	6.8E+00	mg/kg	M	6.3E-08	mg/kg-day	1.50E+00	(mg/kg/day)-1	9.4E-08
	Cadmium	8.6E+00	mg/kg	8.6E+00	mg/kg	M	7.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	9.4E+01	mg/kg	9.4E+01	mg/kg	M	8.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	2.8E+00	mg/kg	2.8E+00	mg/kg	M	2.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	2.8E+04	mg/kg	2.8E+04	mg/kg	M	2.6E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	2.8E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.1E-02	mg/kg	3.1E-02	mg/kg	M	2.8E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	4.2E+02	mg/kg	4.2E+02	mg/kg	M	3.9E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	1.7E+00	mg/kg	1.7E+00	mg/kg	M	1.5E-08	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	PAHs										
	Benzo(a)pyrene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	2.3E-07	mg/kg-day	7.30E+00	(mg/kg/day)-1	1.7E-06
	2-Methylnaphthalene	3.3E+00	mg/kg	3.3E+00	mg/kg	M	3.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	3.9E+00	mg/kg	3.9E+00	mg/kg	M	3.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benz(a)anthracene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	2.3E-07	mg/kg-day	7.30E-01	(mg/kg/day)-1	1.7E-07
	Benzo(b)fluoranthene	3.1E+01	mg/kg	3.1E+01	mg/kg	M	2.8E-07	mg/kg-day	7.30E-01	(mg/kg/day)-1	2.1E-07
	Benzo(g,h,i)perylene	1.5E+01	mg/kg	1.5E+01	mg/kg	M	1.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	1.0E-07	mg/kg-day	7.30E-02	(mg/kg/day)-1	7.7E-09
	Dibenz(a,h)anthracene	4.4E+00	mg/kg	4.4E+00	mg/kg	M	4.1E-08	mg/kg-day	7.30E+00	(mg/kg/day)-1	3.0E-07
	Indeno(1,2,3-cd)pyrene	1.5E+01	mg/kg	1.5E+01	mg/kg	M	1.4E-07	mg/kg-day	7.30E-01	(mg/kg/day)-1	9.9E-08
	Naphthalene	4.3E+00	mg/kg	4.3E+00	mg/kg	M	3.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	3.3E+01	mg/kg	3.3E+01	mg/kg	M	3.0E-07	mg/kg-day	NA	(mg/kg/day)-1	
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	1.1E-05	mg/kg	1.1E-05	mg/kg	M	1.1E-13	mg/kg-day	1.50E+05	(mg/kg/day)-1	1.6E-08
										Sum of Cancer Risk from Ingestion	2.6E-06

Table 8.14.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-6 (North Basin) Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	1.1E+04	mg/kg	1.1E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.8E+00	mg/kg	6.8E+00	mg/kg	M	2.9E-08	mg/kg-day	1.50E+00	(mg/kg/day)-1	4.4E-08
	Cadmium	8.6E+00	mg/kg	8.6E+00	mg/kg	M	1.2E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	9.4E+01	mg/kg	9.4E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	2.8E+00	mg/kg	2.8E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	2.8E+04	mg/kg	2.8E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.1E-02	mg/kg	3.1E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	4.2E+02	mg/kg	4.2E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	1.7E+00	mg/kg	1.7E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	PAHs										
	Benzo(a)pyrene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	4.7E-07	mg/kg-day	7.30E+00	(mg/kg/day)-1	3.4E-06
	2-Methylnaphthalene	3.3E+00	mg/kg	3.3E+00	mg/kg	M	6.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	3.9E+00	mg/kg	3.9E+00	mg/kg	M	7.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benz(a)anthracene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	4.7E-07	mg/kg-day	7.30E-01	(mg/kg/day)-1	3.5E-07
	Benzo(b)fluoranthene	3.1E+01	mg/kg	3.1E+01	mg/kg	M	5.7E-07	mg/kg-day	7.30E-01	(mg/kg/day)-1	4.2E-07
	Benzo(g,h,i)perylene	1.5E+01	mg/kg	1.5E+01	mg/kg	M	2.7E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	2.1E-07	mg/kg-day	7.30E-02	(mg/kg/day)-1	1.5E-08
	Dibenz(a,h)anthracene	4.4E+00	mg/kg	4.4E+00	mg/kg	M	8.3E-08	mg/kg-day	7.30E+00	(mg/kg/day)-1	6.0E-07
	Indeno(1,2,3-cd)pyrene	1.5E+01	mg/kg	1.5E+01	mg/kg	M	2.7E-07	mg/kg-day	7.30E-01	(mg/kg/day)-1	2.0E-07
	Naphthalene	4.3E+00	mg/kg	4.3E+00	mg/kg	M	8.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	3.3E+01	mg/kg	3.3E+01	mg/kg	M	6.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	1.1E-05	mg/kg	1.1E-05	mg/kg	M	4.9E-14	mg/kg-day	1.50E+05	(mg/kg/day)-1	7.4E-09
										Sum of Cancer Risk from Dermal Contact	5.0E-06
										Total Cancer Risk	7.6E-06

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.15.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-10 (North Basin) Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-10 (North Basin)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	9.3E+03	mg/kg	9.3E+03	mg/kg	M	6.9E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	5.1E+00	mg/kg	5.1E+00	mg/kg	M	3.8E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	8.7E-07	mg/kg-day	1.5	(mg/kg/day)-1	1.3E-06
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	2.3E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.6E+04	mg/kg	1.6E+04	mg/kg	M	1.2E-03	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.9E+02	mg/kg	3.9E+02	mg/kg	M	2.9E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.3E+00	mg/kg	2.3E+00	mg/kg	M	1.7E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	2.8E+00	mg/kg	2.8E+00	mg/kg	M	2.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.9E-02	mg/kg	2.9E-02	mg/kg	M	2.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	1.0E+00	mg/kg	1.0E+00	mg/kg	M	7.6E-08	mg/kg-day	0.73	(mg/kg/day)-1	5.5E-08
	Benzo(a)pyrene	1.1E+00	mg/kg	1.1E+00	mg/kg	M	7.9E-08	mg/kg-day	7.3	(mg/kg/day)-1	5.8E-07
	Benzo(b)fluoranthene	8.9E-01	mg/kg	8.9E-01	mg/kg	M	6.6E-08	mg/kg-day	0.73	(mg/kg/day)-1	4.8E-08
	Dibenz(a,h)anthracene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	1.9E-08	mg/kg-day	7.3	(mg/kg/day)-1	1.4E-07
	Indeno(1,2,3-cd)pyrene	6.6E-01	mg/kg	6.6E-01	mg/kg	M	4.8E-08	mg/kg-day	0.73	(mg/kg/day)-1	3.5E-08
	PCBs										
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	1.5E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	2.3E-01	mg/kg	2.3E-01	mg/kg	M	1.7E-08	mg/kg-day	2	(mg/kg/day)-1	3.4E-08
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	1.2E-05	mg/kg	1.2E-05	mg/kg	M	8.7E-13	mg/kg-day	150000	(mg/kg/day)-1	1.3E-07
										Sum of Cancer Risk from Ingestion	2.3E-06
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	9.3E+03	mg/kg	9.3E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	5.1E+00	mg/kg	5.1E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	4.4E-07	mg/kg-day	1.5	(mg/kg/day)-1	6.7E-07
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.6E+04	mg/kg	1.6E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.15.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-10 (North Basin) Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Manganese	3.9E+02	mg/kg	3.9E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.3E+00	mg/kg	2.3E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	2.8E+00	mg/kg	2.8E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.9E-02	mg/kg	2.9E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	1.0E+00	mg/kg	1.0E+00	mg/kg	M	1.7E-07	mg/kg-day	0.73	(mg/kg/day)-1	1.2E-07
	Benzo(a)pyrene	1.1E+00	mg/kg	1.1E+00	mg/kg	M	1.8E-07	mg/kg-day	7.3	(mg/kg/day)-1	1.3E-06
	Benzo(b)fluoranthene	8.9E-01	mg/kg	8.9E-01	mg/kg	M	1.5E-07	mg/kg-day	0.73	(mg/kg/day)-1	1.1E-07
	Dibenz(a,h)anthracene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	4.2E-08	mg/kg-day	7.3	(mg/kg/day)-1	3.1E-07
	Indeno(1,2,3-cd)pyrene	6.6E-01	mg/kg	6.6E-01	mg/kg	M	1.1E-07	mg/kg-day	0.73	(mg/kg/day)-1	7.8E-08
	PCBs										
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	3.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	2.3E-01	mg/kg	2.3E-01	mg/kg	M	4.0E-08	mg/kg-day	2	(mg/kg/day)-1	8.1E-08
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	1.2E-05	mg/kg	1.2E-05	mg/kg	M	4.5E-13	mg/kg-day	150000	(mg/kg/day)-1	6.7E-08
										Sum of Cancer Risks from Dermal Contact	2.7E-06
										Total Cancer Risks	5.0E-06

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.16.RME
Calculation of Cancer Hazards
Reasonable Maximum Exposure
Wetland SYW-10 (North Basin) Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-10 (North Basin)
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	9.3E+03	mg/kg	9.3E+03	mg/kg	M	4.5E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	5.1E+00	mg/kg	5.1E+00	mg/kg	M	2.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	5.6E-07	mg/kg-day	1.5	(mg/kg/day)-1	8.5E-07
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	1.5E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.6E+04	mg/kg	1.6E+04	mg/kg	M	7.7E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.9E+02	mg/kg	3.9E+02	mg/kg	M	1.9E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.3E+00	mg/kg	2.3E+00	mg/kg	M	1.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	2.8E+00	mg/kg	2.8E+00	mg/kg	M	1.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.9E-02	mg/kg	2.9E-02	mg/kg	M	1.4E-09	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	1.0E+00	mg/kg	1.0E+00	mg/kg	M	4.9E-08	mg/kg-day	0.73	(mg/kg/day)-1	3.6E-08
	Benzo(a)pyrene	1.1E+00	mg/kg	1.1E+00	mg/kg	M	5.1E-08	mg/kg-day	7.3	(mg/kg/day)-1	3.8E-07
	Benzo(b)fluoranthene	8.9E-01	mg/kg	8.9E-01	mg/kg	M	4.3E-08	mg/kg-day	0.73	(mg/kg/day)-1	3.1E-08
	Dibenz(a,h)anthracene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	1.2E-08	mg/kg-day	7.3	(mg/kg/day)-1	8.9E-08
	Indeno(1,2,3-cd)pyrene	6.6E-01	mg/kg	6.6E-01	mg/kg	M	3.1E-08	mg/kg-day	0.73	(mg/kg/day)-1	2.3E-08
	PCBs										
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	9.7E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	2.3E-01	mg/kg	2.3E-01	mg/kg	M	1.1E-08	mg/kg-day	2	(mg/kg/day)-1	2.2E-08
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	1.2E-05	mg/kg	1.2E-05	mg/kg	M	5.7E-13	mg/kg-day	150000	(mg/kg/day)-1	8.5E-08
										Sum of Cancer Risks from Ingestion	1.5E-06
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	9.3E+03	mg/kg	9.3E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	5.1E+00	mg/kg	5.1E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	2.5E-06	mg/kg-day	1.5	(mg/kg/day)-1	3.7E-06
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.6E+04	mg/kg	1.6E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.90E+02	mg/kg	3.90E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.16.RME
Calculation of Cancer Hazards
Reasonable Maximum Exposure
Wetland SYW-10 (North Basin) Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Thallium	2.3E+00	mg/kg	2.3E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	2.8E+00	mg/kg	2.8E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.9E-02	mg/kg	2.9E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	1.0E+00	mg/kg	1.0E+00	mg/kg	M	9.3E-07	mg/kg-day	0.73	(mg/kg/day)-1	6.8E-07
	Benzo(a)pyrene	1.1E+00	mg/kg	1.1E+00	mg/kg	M	9.7E-07	mg/kg-day	7.3	(mg/kg/day)-1	7.1E-06
	Benzo(b)fluoranthene	8.9E-01	mg/kg	8.9E-01	mg/kg	M	8.1E-07	mg/kg-day	0.73	(mg/kg/day)-1	5.9E-07
	Dibenz(a,h)anthracene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	2.3E-07	mg/kg-day	7.3	(mg/kg/day)-1	1.7E-06
	Indeno(1,2,3-cd)pyrene	6.6E-01	mg/kg	6.6E-01	mg/kg	M	6.0E-07	mg/kg-day	0.73	(mg/kg/day)-1	4.4E-07
	PCBs										
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	2.0E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	2.3E-01	mg/kg	2.3E-01	mg/kg	M	2.2E-07	mg/kg-day	2	(mg/kg/day)-1	4.5E-07
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	1.2E-05	mg/kg	1.2E-05	mg/kg	M	2.5E-12	mg/kg-day	150000	(mg/kg/day)-1	3.7E-07
										Sum of Cancer Risks from Dermal Contact	1.5E-05
										Total Cancer Risks	1.7E-05

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.17.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-10 (North Basin) Onondaga Lake

Scenario Timeframe: Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-10 (North Basin)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	9.3E+03	mg/kg	9.3E+03	mg/kg	M	8.6E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	5.1E+00	mg/kg	5.1E+00	mg/kg	M	4.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	1.1E-07	mg/kg-day	1.50	(mg/kg/day)-1	1.6E-07
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	2.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.6E+04	mg/kg	1.6E+04	mg/kg	M	1.5E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.9E+02	mg/kg	3.9E+02	mg/kg	M	3.6E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.3E+00	mg/kg	2.3E+00	mg/kg	M	2.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	2.8E+00	mg/kg	2.8E+00	mg/kg	M	2.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.9E-02	mg/kg	2.9E-02	mg/kg	M	2.6E-10	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	1.0E+00	mg/kg	1.0E+00	mg/kg	M	9.5E-09	mg/kg-day	0.73	(mg/kg/day)-1	6.9E-09
	Benzo(a)pyrene	1.1E+00	mg/kg	1.1E+00	mg/kg	M	9.9E-09	mg/kg-day	7.30	(mg/kg/day)-1	7.2E-08
	Benzo(b)fluoranthene	8.9E-01	mg/kg	8.9E-01	mg/kg	M	8.2E-09	mg/kg-day	0.73	(mg/kg/day)-1	6.0E-09
	Dibenz(a,h)anthracene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	2.4E-09	mg/kg-day	7.30	(mg/kg/day)-1	1.7E-08
	Indeno(1,2,3-cd)pyrene	6.6E-01	mg/kg	6.6E-01	mg/kg	M	6.0E-09	mg/kg-day	0.73	(mg/kg/day)-1	4.4E-09
	PCBs										
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	1.9E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	2.3E-01	mg/kg	2.3E-01	mg/kg	M	2.1E-09	mg/kg-day	2.00	(mg/kg/day)-1	4.2E-09
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	1.2E-05	mg/kg	1.2E-05	mg/kg	M	1.1E-13	mg/kg-day	150000	(mg/kg/day)-1	1.6E-08
										Sum of Cancer Risks from Ingestion	2.9E-07
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	9.3E+03	mg/kg	9.3E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	5.1E+00	mg/kg	5.1E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	5.0E-08	mg/kg-day	1.50	(mg/kg/day)-1	7.6E-08
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.6E+04	mg/kg	1.6E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.17.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-10 (North Basin) Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Manganese	3.9E+02	mg/kg	3.9E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.3E+00	mg/kg	2.3E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	2.8E+00	mg/kg	2.8E+00	mg/kg	M	NA	mg/kg-day		(mg/kg/day)-1	
	Methylmercury	2.9E-02	mg/kg	2.9E-02	mg/kg	M	NA	mg/kg-day		(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	1.0E+00	mg/kg	1.0E+00	mg/kg	M	1.9E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.4E-08
	Benzo(a)pyrene	1.1E+00	mg/kg	1.1E+00	mg/kg	M	2.0E-08	mg/kg-day	7.30	(mg/kg/day)-1	1.5E-07
	Benzo(b)fluoranthene	8.9E-01	mg/kg	8.9E-01	mg/kg	M	1.7E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.2E-08
	Dibenz(a,h)anthracene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	4.7E-09	mg/kg-day	7.30	(mg/kg/day)-1	3.5E-08
	Indeno(1,2,3-cd)pyrene	6.6E-01	mg/kg	6.6E-01	mg/kg	M	1.2E-08	mg/kg-day	0.73	(mg/kg/day)-1	8.9E-09
	PCBs										
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	4.0E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	2.3E-01	mg/kg	2.3E-01	mg/kg	M	4.6E-09	mg/kg-day	2.00	(mg/kg/day)-1	9.2E-09
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	1.2E-05	mg/kg	1.2E-05	mg/kg	M	5.1E-14	mg/kg-day	150000	(mg/kg/day)-1	7.6E-09
										Sum of Cancer Risks from Dermal Contact	3.1E-07
										Total	6.0E-07

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.18.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-12 (South Basin) Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-12 (South Basin)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	8.8E+03	mg/kg	8.8E+03	mg/kg	M	2.1E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.3E+00	mg/kg	6.3E+00	mg/kg	M	1.5E-07	mg/kg-day	1.5	(mg/kg/day)-1	2.2E-07
	Cadmium	4.1E+01	mg/kg	4.1E+01	mg/kg	M	9.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.0E+02	mg/kg	3.0E+02	mg/kg	M	7.1E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	2.7E+02	mg/kg	2.7E+02	mg/kg	M	6.3E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	8.5E-01	mg/kg	8.5E-01	mg/kg	M	2.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	4.0E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.7E+02	mg/kg	2.7E+02	mg/kg	M	6.3E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	6.7E-01	mg/kg	6.7E-01	mg/kg	M	1.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	7.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.0E-02	mg/kg	3.0E-02	mg/kg	M	7.1E-10	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	4.7E+00	mg/kg	4.7E+00	mg/kg	M	1.1E-07	mg/kg-day	0.73	(mg/kg/day)-1	8.0E-08
	Benzo(a)pyrene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	1.1E-07	mg/kg-day	7.3	(mg/kg/day)-1	7.8E-07
	Benzo(b)fluoranthene	3.2E+00	mg/kg	3.2E+00	mg/kg	M	7.4E-08	mg/kg-day	0.73	(mg/kg/day)-1	5.4E-08
	Dibenz(a,h)anthracene	1.7E-01	mg/kg	1.7E-01	mg/kg	M	4.0E-09	mg/kg-day	7.3	(mg/kg/day)-1	2.9E-08
	Indeno(1,2,3-cd)pyrene	3.1E+00	mg/kg	3.1E+00	mg/kg	M	7.2E-08	mg/kg-day	0.73	(mg/kg/day)-1	5.2E-08
	Phenanthrene	7.5E+00	mg/kg	7.5E+00	mg/kg	M	1.7E-07	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1242	2.8E-01	mg/kg	2.8E-01	mg/kg	M	6.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	4.2E-01	mg/kg	4.2E-01	mg/kg	M	9.9E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.2E-01	mg/kg	2.2E-01	mg/kg	M	5.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	9.2E-01	mg/kg	9.2E-01	mg/kg	M	2.2E-08	mg/kg-day	2	(mg/kg/day)-1	4.3E-08
										Sum of Cancer Risks from Ingestion	1.3E-06
Dermal											
	Aluminum	8.8E+03	mg/kg	8.8E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.3E+00	mg/kg	6.3E+00	mg/kg	M	7.6E-08	mg/kg-day	1.5	(mg/kg/day)-1	1.1E-07
	Cadmium	4.1E+01	mg/kg	4.1E+01	mg/kg	M	1.6E-08	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.18.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-12 (South Basin) Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Chromium	3.0E+02	mg/kg	3.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	2.7E+02	mg/kg	2.7E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	8.5E-01	mg/kg	8.5E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.7E+02	mg/kg	2.7E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	6.7E-01	mg/kg	6.7E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.0E-02	mg/kg	3.0E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	4.7E+00	mg/kg	4.7E+00	mg/kg	M	2.4E-07	mg/kg-day	0.73	(mg/kg/day)-1	1.8E-07
	Benzo(a)pyrene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	2.4E-07	mg/kg-day	7.3	(mg/kg/day)-1	1.7E-06
	Benzo(b)fluoranthene	3.2E+00	mg/kg	3.2E+00	mg/kg	M	1.6E-07	mg/kg-day	0.73	(mg/kg/day)-1	1.2E-07
	Dibenz(a,h)anthracene	1.7E-01	mg/kg	1.7E-01	mg/kg	M	8.9E-09	mg/kg-day	7.3	(mg/kg/day)-1	6.5E-08
	Indeno(1,2,3-cd)pyrene	3.1E+00	mg/kg	3.1E+00	mg/kg	M	1.6E-07	mg/kg-day	0.73	(mg/kg/day)-1	1.2E-07
	Phenanthrene	7.5E+00	mg/kg	7.5E+00	mg/kg	M	3.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1242	2.8E-01	mg/kg	2.8E-01	mg/kg	M	1.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	4.2E-01	mg/kg	4.2E-01	mg/kg	M	2.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	9.2E-01	mg/kg	9.2E-01	mg/kg	M	5.2E-08	mg/kg-day	2	(mg/kg/day)-1	1.0E-07
										Sum of Cancer Risks from Dermal Contact	2.4E-06
										Total Cancer Risks	3.7E-06

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.19.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-12 (South Basin) Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-12 (South Basin)
Receptor Population: Recreational
Receptor Age: Older Children (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	8.8E+03	mg/kg	8.8E+03	mg/kg	M	1.3E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.3E+00	mg/kg	6.3E+00	mg/kg	M	9.6E-08	mg/kg-day	1.5	(mg/kg/day)-1	1.4E-07
	Cadmium	4.1E+01	mg/kg	4.1E+01	mg/kg	M	6.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.0E+02	mg/kg	3.0E+02	mg/kg	M	4.6E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	2.7E+02	mg/kg	2.7E+02	mg/kg	M	4.1E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	8.5E-01	mg/kg	8.5E-01	mg/kg	M	1.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	2.6E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.7E+02	mg/kg	2.7E+02	mg/kg	M	4.1E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	6.7E-01	mg/kg	6.7E-01	mg/kg	M	1.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	4.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.0E-02	mg/kg	3.0E-02	mg/kg	M	4.6E-10	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	4.7E+00	mg/kg	4.7E+00	mg/kg	M	7.1E-08	mg/kg-day	0.73	(mg/kg/day)-1	5.2E-08
	Benzo(a)pyrene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	7.0E-08	mg/kg-day	7.3	(mg/kg/day)-1	5.1E-07
	Benzo(b)fluoranthene	3.2E+00	mg/kg	3.2E+00	mg/kg	M	4.8E-08	mg/kg-day	0.73	(mg/kg/day)-1	3.5E-08
	Dibenz(a,h)anthracene	1.7E-01	mg/kg	1.7E-01	mg/kg	M	2.6E-09	mg/kg-day	7.3	(mg/kg/day)-1	1.9E-08
	Indeno(1,2,3-cd)pyrene	3.1E+00	mg/kg	3.1E+00	mg/kg	M	4.7E-08	mg/kg-day	0.73	(mg/kg/day)-1	3.4E-08
	Phenanthrene	7.5E+00	mg/kg	7.5E+00	mg/kg	M	1.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1242	2.8E-01	mg/kg	2.8E-01	mg/kg	M	4.3E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	4.2E-01	mg/kg	4.2E-01	mg/kg	M	6.5E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.2E-01	mg/kg	2.2E-01	mg/kg	M	3.3E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	9.2E-01	mg/kg	9.2E-01	mg/kg	M	1.4E-08	mg/kg-day	2	(mg/kg/day)-1	2.8E-08
										Sum of Cancer Risks from Ingestion	8.2E-07
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	8.8E+03	mg/kg	8.8E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.3E+00	mg/kg	6.3E+00	mg/kg	M	4.2E-07	mg/kg-day	1.5	(mg/kg/day)-1	6.3E-07
	Cadmium	4.1E+01	mg/kg	4.1E+01	mg/kg	M	9.1E-08	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.19.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-12 (South Basin) Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Chromium	3.0E+02	mg/kg	3.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	2.7E+02	mg/kg	2.7E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	8.5E-01	mg/kg	8.5E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.7E+02	mg/kg	2.7E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	6.7E-01	mg/kg	6.7E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.0E-02	mg/kg	3.0E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	4.7E+00	mg/kg	4.7E+00	mg/kg	M	1.3E-06	mg/kg-day	0.73	(mg/kg/day)-1	9.8E-07
	Benzo(a)pyrene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	1.3E-06	mg/kg-day	7.3	(mg/kg/day)-1	9.6E-06
	Benzo(b)fluoranthene	3.2E+00	mg/kg	3.2E+00	mg/kg	M	9.1E-07	mg/kg-day	0.73	(mg/kg/day)-1	6.7E-07
	Dibenz(a,h)anthracene	1.7E-01	mg/kg	1.7E-01	mg/kg	M	4.9E-08	mg/kg-day	7.3	(mg/kg/day)-1	3.6E-07
	Indeno(1,2,3-cd)pyrene	3.1E+00	mg/kg	3.1E+00	mg/kg	M	8.8E-07	mg/kg-day	0.73	(mg/kg/day)-1	6.5E-07
	Phenanthrene	7.5E+00	mg/kg	7.5E+00	mg/kg	M	2.2E-06	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1242	2.8E-01	mg/kg	2.8E-01	mg/kg	M	8.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	4.2E-01	mg/kg	4.2E-01	mg/kg	M	1.3E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.2E-01	mg/kg	2.2E-01	mg/kg	M	6.8E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	9.2E-01	mg/kg	9.2E-01	mg/kg	M	2.9E-07	mg/kg-day	2	(mg/kg/day)-1	5.7E-07
										Sum of Cancer Risks from Dermal Contact	1.3E-05
										Total Cancer Risks	1.4E-05

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.20.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-12 (South Basin) Onondaga Lake

Scenario Timeframe: Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-12 (South Basin)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	8.8E+03	mg/kg	8.8E+03	mg/kg	M	8.1E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.3E+00	mg/kg	6.3E+00	mg/kg	M	5.8E-08	mg/kg-day	1.5	(mg/kg/day)-1	8.7E-08
	Cadmium	4.1E+01	mg/kg	4.1E+01	mg/kg	M	3.8E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.0E+02	mg/kg	3.0E+02	mg/kg	M	2.8E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	2.7E+02	mg/kg	2.7E+02	mg/kg	M	2.5E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	8.5E-01	mg/kg	8.5E-01	mg/kg	M	7.9E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	1.6E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.7E+02	mg/kg	2.7E+02	mg/kg	M	2.5E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	6.7E-01	mg/kg	6.7E-01	mg/kg	M	6.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	2.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.0E-02	mg/kg	3.0E-02	mg/kg	M	2.8E-10	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	4.7E+00	mg/kg	4.7E+00	mg/kg	M	4.3E-08	mg/kg-day	0.73	(mg/kg/day)-1	3.1E-08
	Benzo(a)pyrene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	4.2E-08	mg/kg-day	7.3	(mg/kg/day)-1	3.1E-07
	Benzo(b)fluoranthene	3.2E+00	mg/kg	3.2E+00	mg/kg	M	2.9E-08	mg/kg-day	0.73	(mg/kg/day)-1	2.1E-08
	Dibenz(a,h)anthracene	1.7E-01	mg/kg	1.7E-01	mg/kg	M	1.6E-09	mg/kg-day	7.3	(mg/kg/day)-1	1.1E-08
	Indeno(1,2,3-cd)pyrene	3.1E+00	mg/kg	3.1E+00	mg/kg	M	2.8E-08	mg/kg-day	0.73	(mg/kg/day)-1	2.1E-08
	Phenanthrene	7.5E+00	mg/kg	7.5E+00	mg/kg	M	6.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1242	2.8E-01	mg/kg	2.8E-01	mg/kg	M	2.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	4.2E-01	mg/kg	4.2E-01	mg/kg	M	3.9E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.2E-01	mg/kg	2.2E-01	mg/kg	M	2.0E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	9.2E-01	mg/kg	9.2E-01	mg/kg	M	8.5E-09	mg/kg-day	2	(mg/kg/day)-1	1.7E-08
										Sum of Cancer Risks from Ingestion	5.0E-07
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	8.8E+03	mg/kg	8.8E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.3E+00	mg/kg	6.3E+00	mg/kg	M	2.7E-08	mg/kg-day	1.5	(mg/kg/day)-1	4.1E-08
	Cadmium	4.1E+01	mg/kg	4.1E+01	mg/kg	M	5.8E-09	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.20.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-12 (South Basin) Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Chromium	3.0E+02	mg/kg	3.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	2.7E+02	mg/kg	2.7E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	8.5E-01	mg/kg	8.5E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.7E+02	mg/kg	2.7E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	6.7E-01	mg/kg	6.7E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.0E-02	mg/kg	3.0E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	4.7E+00	mg/kg	4.7E+00	mg/kg	M	8.7E-08	mg/kg-day	0.73	(mg/kg/day)-1	6.3E-08
	Benzo(a)pyrene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	8.5E-08	mg/kg-day	7.3	(mg/kg/day)-1	6.2E-07
	Benzo(b)fluoranthene	3.2E+00	mg/kg	3.2E+00	mg/kg	M	5.9E-08	mg/kg-day	0.73	(mg/kg/day)-1	4.3E-08
	Dibenz(a,h)anthracene	1.7E-01	mg/kg	1.7E-01	mg/kg	M	3.2E-09	mg/kg-day	7.3	(mg/kg/day)-1	2.3E-08
	Indeno(1,2,3-cd)pyrene	3.1E+00	mg/kg	3.1E+00	mg/kg	M	5.7E-08	mg/kg-day	0.73	(mg/kg/day)-1	4.2E-08
	Phenanthrene	7.5E+00	mg/kg	7.5E+00	mg/kg	M	1.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1242	2.8E-01	mg/kg	2.8E-01	mg/kg	M	5.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	4.2E-01	mg/kg	4.2E-01	mg/kg	M	8.5E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.2E-01	mg/kg	2.2E-01	mg/kg	M	4.4E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	9.2E-01	mg/kg	9.2E-01	mg/kg	M	1.8E-08	mg/kg-day	2	(mg/kg/day)-1	3.7E-08
										Sum of Cancer Risks from Dermal Contact	8.7E-07
										Total Cancer Risks	1.4E-06

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.21.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-19 (South Basin) Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-19 (South Basin)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Antimony	3.3E+00	mg/kg	3.3E+00	mg/kg	M	7.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.6E+00	mg/kg	8.6E+00	mg/kg	M	2.0E-07	mg/kg-day	1.5	(mg/kg/day)-1	3.0E-07
	Barium	5.1E+02	mg/kg	5.1E+02	mg/kg	M	1.2E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.0E+00	mg/kg	3.0E+00	mg/kg	M	6.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	7.0E+01	mg/kg	7.0E+01	mg/kg	M	1.7E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.0E+04	mg/kg	1.0E+04	mg/kg	M	2.4E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.0E+02	mg/kg	3.0E+02	mg/kg	M	7.1E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	4.2E+01	mg/kg	4.2E+01	mg/kg	M	9.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	4.3E-01	mg/kg	4.3E-01	mg/kg	M	1.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	8.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	8.9E+00	mg/kg	8.9E+00	mg/kg	M	2.1E-07	mg/kg-day	0.024	(mg/kg/day)-1	5.0E-09
	Hexachlorobenzene	2.8E+00	mg/kg	2.8E+00	mg/kg	M	6.5E-08	mg/kg-day	1.6	(mg/kg/day)-1	1.0E-07
	PAHs										
	Benz(a)anthracene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	2.7E-07	mg/kg-day	0.73	(mg/kg/day)-1	1.9E-07
	Benzo(a)pyrene	1.0E+01	mg/kg	1.0E+01	mg/kg	M	2.4E-07	mg/kg-day	7.3	(mg/kg/day)-1	1.8E-06
	Benzo(b)fluoranthene	9.1E+00	mg/kg	9.1E+00	mg/kg	M	2.1E-07	mg/kg-day	0.73	(mg/kg/day)-1	1.6E-07
	Benzo(g,h,i)perylene	5.6E+00	mg/kg	5.6E+00	mg/kg	M	1.3E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	8.0E+00	mg/kg	8.0E+00	mg/kg	M	1.9E-07	mg/kg-day	0.073	(mg/kg/day)-1	1.4E-08
	Dibenz(a,h)anthracene	2.7E+00	mg/kg	2.7E+00	mg/kg	M	6.2E-08	mg/kg-day	7.3	(mg/kg/day)-1	4.5E-07
	Indeno(1,2,3-cd)pyrene	6.0E+00	mg/kg	6.0E+00	mg/kg	M	1.4E-07	mg/kg-day	0.73	(mg/kg/day)-1	1.0E-07
	Phenanthrene	1.7E+01	mg/kg	1.7E+01	mg/kg	M	3.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Aldrin	3.9E-02	mg/kg	3.9E-02	mg/kg	M	9.1E-10	mg/kg-day	17	(mg/kg/day)-1	1.5E-08
	Dieldrin	2.9E-02	mg/kg	2.9E-02	mg/kg	M	6.9E-10	mg/kg-day	16	(mg/kg/day)-1	1.1E-08
	PCBs										
	Aroclor 1242	7.1E-01	mg/kg	7.1E-01	mg/kg	M	1.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	6.2E-01	mg/kg	6.2E-01	mg/kg	M	1.4E-08	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.21.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-19 (South Basin) Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Aroclor 1260	3.1E-01	mg/kg	3.1E-01	mg/kg	M	7.4E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	1.3E+00	mg/kg	1.3E+00	mg/kg	M	3.1E-08	mg/kg-day	2	(mg/kg/day)-1	6.3E-08
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	8.8E-04	mg/kg	8.8E-04	mg/kg	M	2.1E-11	mg/kg-day	150000	(mg/kg/day)-1	3.1E-06
									Sum of Cancer Risk from Ingestion		6.3E-06
Dermal	**Metals and Organometallic Compounds**										
	Antimony	3.3E+00	mg/kg	3.3E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.6E+00	mg/kg	8.6E+00	mg/kg	M	1.0E-07	mg/kg-day	1.5	(mg/kg/day)-1	1.5E-07
	Barium	5.1E+02	mg/kg	5.1E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.0E+00	mg/kg	3.0E+00	mg/kg	M	1.2E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	7.0E+01	mg/kg	7.0E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.0E+04	mg/kg	1.0E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.0E+02	mg/kg	3.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	4.2E+01	mg/kg	4.2E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	4.3E-01	mg/kg	4.3E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	1.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	8.9E+00	mg/kg	8.9E+00	mg/kg	M	3.6E-07	mg/kg-day	0.024	(mg/kg/day)-1	8.6E-09
	Hexachlorobenzene	2.8E+00	mg/kg	2.8E+00	mg/kg	M	1.1E-07	mg/kg-day	1.6	(mg/kg/day)-1	1.8E-07
	PAHs										
	Benz(a)anthracene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	5.9E-07	mg/kg-day	0.73	(mg/kg/day)-1	4.3E-07
	Benzo(a)pyrene	1.0E+01	mg/kg	1.0E+01	mg/kg	M	5.4E-07	mg/kg-day	7.3	(mg/kg/day)-1	4.0E-06
	Benzo(b)fluoranthene	9.1E+00	mg/kg	9.1E+00	mg/kg	M	4.7E-07	mg/kg-day	0.73	(mg/kg/day)-1	3.4E-07
	Benzo(g,h,i)perylene	5.6E+00	mg/kg	5.6E+00	mg/kg	M	2.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	8.0E+00	mg/kg	8.0E+00	mg/kg	M	4.2E-07	mg/kg-day	0.073	(mg/kg/day)-1	3.0E-08
	Dibenz(a,h)anthracene	2.7E+00	mg/kg	2.7E+00	mg/kg	M	1.4E-07	mg/kg-day	7.3	(mg/kg/day)-1	1.0E-06
	Indeno(1,2,3-cd)pyrene	6.0E+00	mg/kg	6.0E+00	mg/kg	M	3.1E-07	mg/kg-day	0.73	(mg/kg/day)-1	2.3E-07
	Phenanthrene	1.7E+01	mg/kg	1.7E+01	mg/kg	M	8.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Aldrin	3.9E-02	mg/kg	3.9E-02	mg/kg	M	NA	mg/kg-day	17	(mg/kg/day)-1	
	Dieldrin	2.9E-02	mg/kg	2.9E-02	mg/kg	M	NA	mg/kg-day	16	(mg/kg/day)-1	
	PCBs										
	Aroclor 1242	7.1E-01	mg/kg	7.1E-01	mg/kg	M	4.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	6.2E-01	mg/kg	6.2E-01	mg/kg	M	3.5E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	3.1E-01	mg/kg	3.1E-01	mg/kg	M	1.8E-08	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.21.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-19 (South Basin) Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Sum of PCBs	1.3E+00	mg/kg	1.3E+00	mg/kg	M	7.5E-08	mg/kg-day	2	(mg/kg/day)-1	1.5E-07
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	8.8E-04	mg/kg	8.8E-04	mg/kg	M	1.1E-11	mg/kg-day	150000	(mg/kg/day)-1	1.6E-06
										Sum of Cancer Risks from Dermal Contact	8.1E-06
										Total	1.4E-05

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.22.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-19 (South Basin) Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-19 (South Basin)
Receptor Population: Recreational
Receptor Age: Older Children (6 to < 18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Antimony	3.3E+00	mg/kg	3.3E+00	mg/kg	M	5.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.6E+00	mg/kg	8.6E+00	mg/kg	M	1.3E-07	mg/kg-day	1.5	(mg/kg/day)-1	2.0E-07
	Barium	5.1E+02	mg/kg	5.1E+02	mg/kg	M	7.8E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.0E+00	mg/kg	3.0E+00	mg/kg	M	4.5E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	7.0E+01	mg/kg	7.0E+01	mg/kg	M	1.1E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.0E+04	mg/kg	1.0E+04	mg/kg	M	1.6E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.0E+02	mg/kg	3.0E+02	mg/kg	M	4.6E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	4.2E+01	mg/kg	4.2E+01	mg/kg	M	6.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	4.3E-01	mg/kg	4.3E-01	mg/kg	M	6.5E-09	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	5.8E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	8.9E+00	mg/kg	8.9E+00	mg/kg	M	1.4E-07	mg/kg-day	0.024	(mg/kg/day)-1	3.3E-09
	Hexachlorobenzene	2.8E+00	mg/kg	2.8E+00	mg/kg	M	4.3E-08	mg/kg-day	1.6	(mg/kg/day)-1	6.8E-08
	PAHs										
	Benz(a)anthracene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	1.7E-07	mg/kg-day	0.73	(mg/kg/day)-1	1.3E-07
	Benzo(a)pyrene	1.0E+01	mg/kg	1.0E+01	mg/kg	M	1.6E-07	mg/kg-day	7.3	(mg/kg/day)-1	1.2E-06
	Benzo(b)fluoranthene	9.1E+00	mg/kg	9.1E+00	mg/kg	M	1.4E-07	mg/kg-day	0.73	(mg/kg/day)-1	1.0E-07
	Benzo(g,h,i)perylene	5.6E+00	mg/kg	5.6E+00	mg/kg	M	8.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	8.0E+00	mg/kg	8.0E+00	mg/kg	M	1.2E-07	mg/kg-day	0.073	(mg/kg/day)-1	8.9E-09
	Dibenz(a,h)anthracene	2.7E+00	mg/kg	2.7E+00	mg/kg	M	4.1E-08	mg/kg-day	7.3	(mg/kg/day)-1	3.0E-07
	Indeno(1,2,3-cd)pyrene	6.0E+00	mg/kg	6.0E+00	mg/kg	M	9.2E-08	mg/kg-day	0.73	(mg/kg/day)-1	6.7E-08
	Phenanthrene	1.7E+01	mg/kg	1.7E+01	mg/kg	M	2.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Aldrin	3.9E-02	mg/kg	3.9E-02	mg/kg	M	5.9E-10	mg/kg-day	17	(mg/kg/day)-1	1.0E-08
	Dieldrin	2.9E-02	mg/kg	2.9E-02	mg/kg	M	4.5E-10	mg/kg-day	16	(mg/kg/day)-1	7.2E-09
	PCBs										
	Aroclor 1242	7.1E-01	mg/kg	7.1E-01	mg/kg	M	1.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	6.2E-01	mg/kg	6.2E-01	mg/kg	M	9.4E-09	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.22.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-19 (South Basin) Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Aroclor 1260	3.1E-01	mg/kg	3.1E-01	mg/kg	M	4.8E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	1.3E+00	mg/kg	1.3E+00	mg/kg	M	2.0E-08	mg/kg-day	2	(mg/kg/day)-1	4.1E-08
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	8.8E-04	mg/kg	8.8E-04	mg/kg	M	1.3E-11	mg/kg-day	150000	(mg/kg/day)-1	2.0E-06
										Sum of Cancer Risk from Ingestion	4.1E-06
Dermal	**Metals and Organometallic Compounds**										
	Antimony	3.3E+00	mg/kg	3.3E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.6E+00	mg/kg	8.6E+00	mg/kg	M	5.7E-07	mg/kg-day	1.5	(mg/kg/day)-1	8.6E-07
	Barium	5.1E+02	mg/kg	5.1E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.0E+00	mg/kg	3.0E+00	mg/kg	M	6.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	7.0E+01	mg/kg	7.0E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.0E+04	mg/kg	1.0E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.0E+02	mg/kg	3.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	4.2E+01	mg/kg	4.2E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	4.3E-01	mg/kg	4.3E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	8.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	8.9E+00	mg/kg	8.9E+00	mg/kg	M	2.0E-06	mg/kg-day	0.024	(mg/kg/day)-1	4.8E-08
	Hexachlorobenzene	2.8E+00	mg/kg	2.8E+00	mg/kg	M	6.2E-07	mg/kg-day	1.6	(mg/kg/day)-1	9.9E-07
	PAHs										
	Benz(a)anthracene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	3.3E-06	mg/kg-day	0.73	(mg/kg/day)-1	2.4E-06
	Benzo(a)pyrene	1.0E+01	mg/kg	1.0E+01	mg/kg	M	3.0E-06	mg/kg-day	7.3	(mg/kg/day)-1	2.2E-05
	Benzo(b)fluoranthene	9.1E+00	mg/kg	9.1E+00	mg/kg	M	2.6E-06	mg/kg-day	0.73	(mg/kg/day)-1	1.9E-06
	Benzo(g,h,i)perylene	5.6E+00	mg/kg	5.6E+00	mg/kg	M	1.6E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	8.0E+00	mg/kg	8.0E+00	mg/kg	M	2.3E-06	mg/kg-day	0.073	(mg/kg/day)-1	1.7E-07
	Dibenz(a,h)anthracene	2.7E+00	mg/kg	2.7E+00	mg/kg	M	7.7E-07	mg/kg-day	7.3	(mg/kg/day)-1	5.6E-06
	Indeno(1,2,3-cd)pyrene	6.0E+00	mg/kg	6.0E+00	mg/kg	M	1.7E-06	mg/kg-day	0.73	(mg/kg/day)-1	1.3E-06
	Phenanthrene	1.7E+01	mg/kg	1.7E+01	mg/kg	M	4.8E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Aldrin	3.9E-02	mg/kg	3.9E-02	mg/kg	M	NA	mg/kg-day	17	(mg/kg/day)-1	
	Dieldrin	2.9E-02	mg/kg	2.9E-02	mg/kg	M	NA	mg/kg-day	16	(mg/kg/day)-1	
	PCBs										
	Aroclor 1242	7.1E-01	mg/kg	7.1E-01	mg/kg	M	2.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	6.2E-01	mg/kg	6.2E-01	mg/kg	M	1.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	3.1E-01	mg/kg	3.1E-01	mg/kg	M	9.8E-08	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.22.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-19 (South Basin) Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Sum of PCBs	1.3E+00	mg/kg	1.3E+00	mg/kg	M	4.2E-07	mg/kg-day	2	(mg/kg/day)-1	8.4E-07
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	8.8E-04	mg/kg	8.8E-04	mg/kg	M	5.9E-11	mg/kg-day	150000	(mg/kg/day)-1	8.8E-06
										Sum of Cancer Risks from Dermal Contact	4.5E-05
										Total	4.9E-05

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.23.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-19 (South Basin) Onondaga Lake

Scenario Timeframe: Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-19 (South Basin)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Antimony	3.3E+00	mg/kg	3.3E+00	mg/kg	M	3.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.6E+00	mg/kg	8.6E+00	mg/kg	M	7.9E-08	mg/kg-day	1.5	(mg/kg/day)-1	1.2E-07
	Barium	5.1E+02	mg/kg	5.1E+02	mg/kg	M	4.7E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.0E+00	mg/kg	3.0E+00	mg/kg	M	2.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	7.0E+01	mg/kg	7.0E+01	mg/kg	M	6.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.0E+04	mg/kg	1.0E+04	mg/kg	M	9.6E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.0E+02	mg/kg	3.0E+02	mg/kg	M	2.8E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	4.2E+01	mg/kg	4.2E+01	mg/kg	M	3.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	4.3E-01	mg/kg	4.3E-01	mg/kg	M	3.9E-09	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	3.5E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	8.9E+00	mg/kg	8.9E+00	mg/kg	M	8.2E-08	mg/kg-day	0.024	(mg/kg/day)-1	2.0E-09
	Hexachlorobenzene	2.8E+00	mg/kg	2.8E+00	mg/kg	M	2.6E-08	mg/kg-day	1.6	(mg/kg/day)-1	4.1E-08
	PAHs										
	Benz(a)anthracene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	1.0E-07	mg/kg-day	0.73	(mg/kg/day)-1	7.6E-08
	Benzo(a)pyrene	1.0E+01	mg/kg	1.0E+01	mg/kg	M	9.6E-08	mg/kg-day	7.3	(mg/kg/day)-1	7.0E-07
	Benzo(b)fluoranthene	9.1E+00	mg/kg	9.1E+00	mg/kg	M	8.3E-08	mg/kg-day	0.73	(mg/kg/day)-1	6.1E-08
	Benzo(g,h,i)perylene	5.6E+00	mg/kg	5.6E+00	mg/kg	M	5.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	8.0E+00	mg/kg	8.0E+00	mg/kg	M	7.3E-08	mg/kg-day	0.073	(mg/kg/day)-1	5.4E-09
	Dibenz(a,h)anthracene	2.7E+00	mg/kg	2.7E+00	mg/kg	M	2.4E-08	mg/kg-day	7.3	(mg/kg/day)-1	1.8E-07
	Indeno(1,2,3-cd)pyrene	6.0E+00	mg/kg	6.0E+00	mg/kg	M	5.5E-08	mg/kg-day	0.73	(mg/kg/day)-1	4.0E-08
	Phenanthrene	1.7E+01	mg/kg	1.7E+01	mg/kg	M	1.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Aldrin	3.9E-02	mg/kg	3.9E-02	mg/kg	M	3.6E-10	mg/kg-day	17	(mg/kg/day)-1	6.1E-09
	Dieldrin	2.9E-02	mg/kg	2.9E-02	mg/kg	M	2.7E-10	mg/kg-day	16	(mg/kg/day)-1	4.3E-09
	PCBs										
	Aroclor 1242	7.1E-01	mg/kg	7.1E-01	mg/kg	M	6.5E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	6.2E-01	mg/kg	6.2E-01	mg/kg	M	5.7E-09	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.23.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-19 (South Basin) Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Aroclor 1260	3.1E-01	mg/kg	3.1E-01	mg/kg	M	2.9E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	1.3E+00	mg/kg	1.3E+00	mg/kg	M	1.2E-08	mg/kg-day	2	(mg/kg/day)-1	2.5E-08
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	8.8E-04	mg/kg	8.8E-04	mg/kg	M	8.1E-12	mg/kg-day	150000	(mg/kg/day)-1	1.2E-06
									Sum of Cancer Risk from Ingestion		2.5E-06
Dermal	**Metals and Organometallic Compounds**										
	Antimony	3.3E+00	mg/kg	3.3E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.6E+00	mg/kg	8.6E+00	mg/kg	M	3.7E-08	mg/kg-day	1.5	(mg/kg/day)-1	5.5E-08
	Barium	5.1E+02	mg/kg	5.1E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.0E+00	mg/kg	3.0E+00	mg/kg	M	4.2E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	7.0E+01	mg/kg	7.0E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.0E+04	mg/kg	1.0E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.0E+02	mg/kg	3.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	4.2E+01	mg/kg	4.2E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	4.3E-01	mg/kg	4.3E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	5.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	8.9E+00	mg/kg	8.9E+00	mg/kg	M	1.3E-07	mg/kg-day	0.024	(mg/kg/day)-1	3.1E-09
	Hexachlorobenzene	2.8E+00	mg/kg	2.8E+00	mg/kg	M	4.0E-08	mg/kg-day	1.6	(mg/kg/day)-1	6.4E-08
	PAHs										
	Benz(a)anthracene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	2.1E-07	mg/kg-day	0.73	(mg/kg/day)-1	1.5E-07
	Benzo(a)pyrene	1.0E+01	mg/kg	1.0E+01	mg/kg	M	1.9E-07	mg/kg-day	7.3	(mg/kg/day)-1	1.4E-06
	Benzo(b)fluoranthene	9.1E+00	mg/kg	9.1E+00	mg/kg	M	1.7E-07	mg/kg-day	0.73	(mg/kg/day)-1	1.2E-07
	Benzo(g,h,i)perylene	5.6E+00	mg/kg	5.6E+00	mg/kg	M	1.0E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	8.0E+00	mg/kg	8.0E+00	mg/kg	M	1.5E-07	mg/kg-day	0.073	(mg/kg/day)-1	1.1E-08
	Dibenz(a,h)anthracene	2.7E+00	mg/kg	2.7E+00	mg/kg	M	4.9E-08	mg/kg-day	7.3	(mg/kg/day)-1	3.6E-07
	Indeno(1,2,3-cd)pyrene	6.0E+00	mg/kg	6.0E+00	mg/kg	M	1.1E-07	mg/kg-day	0.73	(mg/kg/day)-1	8.2E-08
	Phenanthrene	1.7E+01	mg/kg	1.7E+01	mg/kg	M	3.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Aldrin	3.9E-02	mg/kg	3.9E-02	mg/kg	M	NA	mg/kg-day	17	(mg/kg/day)-1	
	Dieldrin	2.9E-02	mg/kg	2.9E-02	mg/kg	M	NA	mg/kg-day	16	(mg/kg/day)-1	
	PCBs										
	Aroclor 1242	7.1E-01	mg/kg	7.1E-01	mg/kg	M	1.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	6.2E-01	mg/kg	6.2E-01	mg/kg	M	1.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	3.1E-01	mg/kg	3.1E-01	mg/kg	M	6.3E-09	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.23.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Wetland SYW-19 (South Basin) Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Sum of PCBs	1.3E+00	mg/kg	1.3E+00	mg/kg	M	2.7E-08	mg/kg-day	2	(mg/kg/day)-1	5.4E-08
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	8.8E-04	mg/kg	8.8E-04	mg/kg	M	3.8E-12	mg/kg-day	150000	(mg/kg/day)-1	5.7E-07
								Sum of Cancer Risks from Dermal Contact			2.9E-06
										Total	5.4E-06

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.24.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Dredge Spoil Soils, Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Dredge Spoil Soils
Exposure Medium: Surface Soil
Exposure Point: Dredge Spoil Soils (0-3.5 ft)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	1.2E+04	mg/kg	1.2E+04	mg/kg	M	8.9E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.4E+00	mg/kg	8.4E+00	mg/kg	M	6.2E-07	mg/kg-day	1.5	(mg/kg/day)-1	9.3E-07
	Chromium	2.9E+01	mg/kg	2.9E+01	mg/kg	M	2.2E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	1.3E-03	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.5E+02	mg/kg	3.5E+02	mg/kg	M	2.6E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	4.0E+00	mg/kg	4.0E+00	mg/kg	M	3.0E-07	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	3.0E-08	mg/kg-day	1.6	(mg/kg/day)-1	4.8E-08
	PAHs										
	Benzo(a)pyrene	1.3E-01	mg/kg	1.3E-01	mg/kg	M	9.6E-09	mg/kg-day	7.3	(mg/kg/day)-1	7.0E-08
										Sum of Cancer Risk from Ingestion	1.0E-06
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	1.2E+04	mg/kg	1.2E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.4E+00	mg/kg	8.4E+00	mg/kg	M	3.2E-07	mg/kg-day	1.5	(mg/kg/day)-1	4.8E-07
	Chromium	2.9E+01	mg/kg	2.9E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.5E+02	mg/kg	3.5E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	4.0E+00	mg/kg	4.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	5.2E-08	mg/kg-day	1.6	(mg/kg/day)-1	8.3E-08
	PAHs										
	Benzo(a)pyrene	1.3E-01	mg/kg	1.3E-01	mg/kg	M	2.1E-08	mg/kg-day	7.3	(mg/kg/day)-1	1.6E-07
										Sum of Cancer Risk from Dermal Contact	7.2E-07
										Total Cancer Risk	1.8E-06

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.25.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Dredge Spoil Soils, Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Dredge Spoil Soils
Exposure Medium: Surface Soil
Exposure Point: Dredge Spoil Soils (0-3.5 ft)
Receptor Population: Recreational
Receptor Age: Older Children (6 to < 18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	1.2E+04	mg/kg	1.2E+04	mg/kg	M	5.8E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.4E+00	mg/kg	8.4E+00	mg/kg	M	4.0E-07	mg/kg-day	1.5	(mg/kg/day)-1	6.1E-07
	Chromium	2.9E+01	mg/kg	2.9E+01	mg/kg	M	1.4E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	8.2E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.5E+02	mg/kg	3.5E+02	mg/kg	M	1.7E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	4.0E+00	mg/kg	4.0E+00	mg/kg	M	1.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	2.0E-08	mg/kg-day	1.6	(mg/kg/day)-1	3.2E-08
	PAHs										
	Benzo(a)pyrene	1.3E-01	mg/kg	1.3E-01	mg/kg	M	6.2E-09	mg/kg-day	7.3	(mg/kg/day)-1	4.6E-08
										Sum of Cancer Risk from Ingestion	6.8E-07
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	1.2E+04	mg/kg	1.2E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.4E+00	mg/kg	8.4E+00	mg/kg	M	1.8E-06	mg/kg-day	1.5	(mg/kg/day)-1	2.6E-06
	Chromium	2.9E+01	mg/kg	2.9E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.5E+02	mg/kg	3.5E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	4.0E+00	mg/kg	4.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	2.9E-07	mg/kg-day	1.6	(mg/kg/day)-1	4.6E-07
	PAHs										
	Benzo(a)pyrene	1.3E-01	mg/kg	1.3E-01	mg/kg	M	1.2E-07	mg/kg-day	7.3	(mg/kg/day)-1	8.6E-07
										Sum of Cancer Risk from Dermal Contact	4.0E-06
										Total Cancer Risk	4.7E-06

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.26.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Dredge Spoil Soils, Onondaga Lake

Scenario Timeframe: Future
Medium: Dredge Spoil Soils
Exposure Medium: Surface Soil
Exposure Point: Dredge Spoil Soils (0-3.5 ft)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	1.2E+04	mg/kg	1.2E+04	mg/kg	M	1.1E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.4E+00	mg/kg	8.4E+00	mg/kg	M	7.7E-08	mg/kg-day	1.5	(mg/kg/day)-1	1.2E-07
	Chromium	2.9E+01	mg/kg	2.9E+01	mg/kg	M	2.7E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	1.6E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.5E+02	mg/kg	3.5E+02	mg/kg	M	3.3E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	4.0E+00	mg/kg	4.0E+00	mg/kg	M	3.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	3.8E-09	mg/kg-day	1.6	(mg/kg/day)-1	6.1E-09
	PAHs										
	Benzo(a)pyrene	1.3E-01	mg/kg	1.3E-01	mg/kg	M	1.2E-09	mg/kg-day	7.3	(mg/kg/day)-1	8.8E-09
										Sum of Cancer Risk from Ingestion	1.3E-07
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	1.2E+04	mg/kg	1.2E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.4E+00	mg/kg	8.4E+00	mg/kg	M	3.6E-08	mg/kg-day	1.5	(mg/kg/day)-1	5.4E-08
	Chromium	2.9E+01	mg/kg	2.9E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.5E+02	mg/kg	3.5E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	4.0E+00	mg/kg	4.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	5.9E-09	mg/kg-day	1.6	(mg/kg/day)-1	9.4E-09
	PAHs										
	Benzo(a)pyrene	1.3E-01	mg/kg	1.3E-01	mg/kg	M	2.4E-09	mg/kg-day	7.3	(mg/kg/day)-1	1.8E-08
										Sum of Cancer Risk from Dermal Contact	8.1E-08
										Total Cancer Risk	2.1E-07

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.27.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Dredge Spoil Soils (0-11.7 ft), Onondaga Lake

Scenario Timeframe: Future
Medium: Dredge Spoil Soils
Exposure Medium: Surface Soil
Exposure Point: Dredge Spoil Soils (0-11.7 ft)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	1.0E+04	mg/kg	1.0E+04	mg/kg	M	9.4E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.7E+00	mg/kg	8.7E+00	mg/kg	M	8.1E-08	mg/kg-day	1.5	(mg/kg/day)-1	1.2E-07
	Cadmium	9.7E-01	mg/kg	9.7E-01	mg/kg	M	8.9E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.6E+01	mg/kg	2.6E+01	mg/kg	M	2.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	8.4E-01	mg/kg	8.4E-01	mg/kg	M	7.7E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.5E+04	mg/kg	1.5E+04	mg/kg	M	1.4E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.8E+02	mg/kg	3.8E+02	mg/kg	M	3.5E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	4.9E-01	mg/kg	4.9E-01	mg/kg	M	4.5E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	4.8E+01	mg/kg	4.8E+01	mg/kg	M	4.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	Hexachlorobenzene	2.3E-01	mg/kg	2.3E-01	mg/kg	M	2.1E-09	mg/kg-day	1.6	(mg/kg/day)-1	3.3E-09
	PAHs										
	Benz(a)anthracene	2.5E+00	mg/kg	2.5E+00	mg/kg	M	2.3E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.7E-08
	Benzo(a)pyrene	2.6E+00	mg/kg	2.6E+00	mg/kg	M	2.4E-08	mg/kg-day	7.3	(mg/kg/day)-1	1.8E-07
	Benzo(b)fluoranthene	2.3E+00	mg/kg	2.3E+00	mg/kg	M	2.1E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.5E-08
	Benzo(g,h,i)perylene	1.3E+00	mg/kg	1.3E+00	mg/kg	M	1.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	2.3E+00	mg/kg	2.3E+00	mg/kg	M	2.1E-08	mg/kg-day	0.073	(mg/kg/day)-1	1.5E-09
	Dibenz(a,h)anthracene	6.1E-01	mg/kg	6.1E-01	mg/kg	M	5.6E-09	mg/kg-day	7.3	(mg/kg/day)-1	4.1E-08
	Indeno(1,2,3-cd)pyrene	1.3E+00	mg/kg	1.3E+00	mg/kg	M	1.2E-08	mg/kg-day	0.73	(mg/kg/day)-1	8.7E-09
	Naphthalene	2.8E+00	mg/kg	2.8E+00	mg/kg	M	2.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	1.2E+00	mg/kg	1.2E+00	mg/kg	M	1.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1254	2.1E-01	mg/kg	2.1E-01	mg/kg	M	1.9E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1268	3.6E-01	mg/kg	3.6E-01	mg/kg	M	3.3E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	6.3E-01	mg/kg	6.3E-01	mg/kg	M	5.8E-09	mg/kg-day	2	(mg/kg/day)-1	1.2E-08
	PCDD/PCDFs										
	TEQ Furans (only)	4.2E-05	mg/kg	4.2E-05	mg/kg	M	3.9E-13	mg/kg-day	150000	(mg/kg/day)-1	5.8E-08
	TEQ as 2,3,7,8-TCDD	4.4E-05	mg/kg	4.4E-05	mg/kg	M	4.0E-13	mg/kg-day	150000	(mg/kg/day)-1	6.1E-08

Table 8.27.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Dredge Spoil Soils (0-11.7 ft), Onondaga Lake

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
										Sum of Cancer Risk from Ingestion	4.6E-07
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	1.0E+04	mg/kg	1.0E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.7E+00	mg/kg	8.7E+00	mg/kg	M	3.8E-08	mg/kg-day	1.5	(mg/kg/day)-1	5.6E-08
	Cadmium	9.7E-01	mg/kg	9.7E-01	mg/kg	M	1.4E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.6E+01	mg/kg	2.6E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	8.4E-01	mg/kg	8.4E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.5E+04	mg/kg	1.5E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.8E+02	mg/kg	3.8E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	4.9E-01	mg/kg	4.9E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	4.8E+01	mg/kg	4.8E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	Hexachlorobenzene	2.3E-01	mg/kg	2.3E-01	mg/kg	M	3.2E-09	mg/kg-day	1.6	(mg/kg/day)-1	5.2E-09
	PAHs										
	Benz(a)anthracene	2.5E+00	mg/kg	2.5E+00	mg/kg	M	4.7E-08	mg/kg-day	0.73	(mg/kg/day)-1	3.4E-08
	Benzo(a)pyrene	2.6E+00	mg/kg	2.6E+00	mg/kg	M	4.9E-08	mg/kg-day	7.3	(mg/kg/day)-1	3.6E-07
	Benzo(b)fluoranthene	2.3E+00	mg/kg	2.3E+00	mg/kg	M	4.3E-08	mg/kg-day	0.73	(mg/kg/day)-1	3.1E-08
	Benzo(g,h,i)perylene	1.3E+00	mg/kg	1.3E+00	mg/kg	M	2.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	2.3E+00	mg/kg	2.3E+00	mg/kg	M	4.3E-08	mg/kg-day	0.073	(mg/kg/day)-1	3.1E-09
	Dibenz(a,h)anthracene	6.1E-01	mg/kg	6.1E-01	mg/kg	M	1.1E-08	mg/kg-day	7.3	(mg/kg/day)-1	8.3E-08
	Indeno(1,2,3-cd)pyrene	1.3E+00	mg/kg	1.3E+00	mg/kg	M	2.4E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.8E-08
	Naphthalene	2.8E+00	mg/kg	2.8E+00	mg/kg	M	5.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	1.2E+00	mg/kg	1.2E+00	mg/kg	M	2.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1254	2.1E-01	mg/kg	2.1E-01	mg/kg	M	4.2E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1268	3.6E-01	mg/kg	3.6E-01	mg/kg	M	7.3E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	6.3E-01	mg/kg	6.3E-01	mg/kg	M	1.3E-08	mg/kg-day	2	(mg/kg/day)-1	2.5E-08
	PCDD/PCDFS										
	TEQ Furans (only)	4.2E-05	mg/kg	4.2E-05	mg/kg	M	1.8E-13	mg/kg-day	150000	(mg/kg/day)-1	2.7E-08
	TEQ as 2,3,7,8-TCDD	4.4E-05	mg/kg	4.4E-05	mg/kg	M	1.9E-13	mg/kg-day	150000	(mg/kg/day)-1	2.8E-08
										Sum of Cancer Risk from Dermal Contact	6.4E-07
										Total Cancer Risk	1.1E-06

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.28.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Surface Water Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Onondaga Lake
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Cadmium	1.1E-03	mg/kg	1.1E-03	mg/kg	M	1.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.3E-03	mg/kg	2.3E-03	mg/kg	M	2.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	8.2E-02	mg/kg	8.2E-02	mg/kg	M	7.8E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	8.3E-06	mg/kg	8.3E-06	mg/kg	M	7.9E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	1.3E-06	mg/kg	1.3E-06	mg/kg	M	1.3E-10	mg/kg-day	NA	(mg/kg/day)-1	
	VOC										
	Benzene	5.9E-04	mg/kg	5.9E-04	mg/kg	M	5.7E-08	mg/kg-day	0.055	(mg/kg/day)-1	3.1E-09
	Bromodichloromethane	2.4E-04	mg/kg	2.4E-04	mg/kg	M	2.3E-08	mg/kg-day	0.062	(mg/kg/day)-1	1.4E-09
	Chlorobenzene	6.4E-04	mg/kg	6.4E-04	mg/kg	M	6.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chloroform	6.6E-04	mg/kg	6.6E-04	mg/kg	M	6.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	1,2,4-Trichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	5.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,2-Dichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	5.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,3-Dichlorobenzene	5.4E-04	mg/kg	5.4E-04	mg/kg	M	5.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.2E-04	mg/kg	6.2E-04	mg/kg	M	5.9E-08	mg/kg-day	0.024	(mg/kg/day)-1	1.4E-09
										Sum of Cancer Risk from Ingestion	6.0E-09
Dermal	**Metals and Organometallic Compounds**										
	Cadmium	1.1E-03	mg/kg	1.1E-03	mg/kg	M	3.8E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.3E-03	mg/kg	2.3E-03	mg/kg	M	1.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	8.2E-02	mg/kg	8.2E-02	mg/kg	M	2.8E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	8.3E-06	mg/kg	8.3E-06	mg/kg	M	2.9E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	1.3E-06	mg/kg	1.3E-06	mg/kg	M	4.6E-11	mg/kg-day	NA	(mg/kg/day)-1	
	VOC										
	Benzene	5.9E-04	mg/kg	5.9E-04	mg/kg	M	3.5E-07	mg/kg-day	0.055	(mg/kg/day)-1	1.9E-08
	Bromodichloromethane	2.4E-04	mg/kg	2.4E-04	mg/kg	M	6.4E-08	mg/kg-day	0.062	(mg/kg/day)-1	4.0E-09
	Chlorobenzene	6.4E-04	mg/kg	6.4E-04	mg/kg	M	8.0E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Chloroform	6.6E-04	mg/kg	6.6E-04	mg/kg	M	2.1E-07	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.28.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Surface Water Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	SVOC										
	1,2,4-Trichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	2.5E-06	mg/kg-day	NA	(mg/kg/day)-1	
	1,2-Dichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	1.2E-06	mg/kg-day	NA	(mg/kg/day)-1	
	1,3-Dichlorobenzene	5.4E-04	mg/kg	5.4E-04	mg/kg	M	1.6E-06	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.2E-04	mg/kg	6.2E-04	mg/kg	M	1.3E-06	mg/kg-day	0.024	(mg/kg/day)-1	3.2E-08
										Sum of Cancer Risk from Dermal Contact	5.5E-08
										Total Cancer Risk	6.1E-08

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.29.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Surface Water Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Onondaga Lake
Receptor Population: Recreational
Receptor Age: Young Children (less than 6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Cadmium	1.1E-03	mg/kg	1.1E-03	mg/kg	M	1.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.3E-03	mg/kg	2.3E-03	mg/kg	M	2.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	8.2E-02	mg/kg	8.2E-02	mg/kg	M	7.8E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	8.3E-06	mg/kg	8.3E-06	mg/kg	M	7.9E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	1.3E-06	mg/kg	1.3E-06	mg/kg	M	1.3E-10	mg/kg-day	NA	(mg/kg/day)-1	
	VOC										
	Benzene	5.9E-04	mg/kg	5.9E-04	mg/kg	M	5.7E-08	mg/kg-day	0.055	(mg/kg/day)-1	3.1E-09
	Bromodichloromethane	2.4E-04	mg/kg	2.4E-04	mg/kg	M	2.3E-08	mg/kg-day	0.062	(mg/kg/day)-1	1.4E-09
	Chlorobenzene	6.4E-04	mg/kg	6.4E-04	mg/kg	M	6.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chloroform	6.6E-04	mg/kg	6.6E-04	mg/kg	M	6.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	1,2,4-Trichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	5.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,2-Dichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	5.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,3-Dichlorobenzene	5.4E-04	mg/kg	5.4E-04	mg/kg	M	5.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.2E-04	mg/kg	6.2E-04	mg/kg	M	5.9E-08	mg/kg-day	0.024	(mg/kg/day)-1	1.4E-09
									Sum of Cancer Risk from Ingestion		6.0E-09
Dermal	**Metals and Organometallic Compounds**										
	Cadmium	1.1E-03	mg/kg	1.1E-03	mg/kg	M	1.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.3E-03	mg/kg	2.3E-03	mg/kg	M	5.5E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	8.2E-02	mg/kg	8.2E-02	mg/kg	M	9.7E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	8.3E-06	mg/kg	8.3E-06	mg/kg	M	9.8E-11	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	1.3E-06	mg/kg	1.3E-06	mg/kg	M	1.6E-11	mg/kg-day	NA	(mg/kg/day)-1	
	VOC										
	Benzene	5.9E-04	mg/kg	5.9E-04	mg/kg	M	1.2E-07	mg/kg-day	0.055	(mg/kg/day)-1	6.6E-09
	Bromodichloromethane	2.4E-04	mg/kg	2.4E-04	mg/kg	M	2.2E-08	mg/kg-day	0.062	(mg/kg/day)-1	1.4E-09
	Chlorobenzene	6.4E-04	mg/kg	6.4E-04	mg/kg	M	2.7E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Chloroform	6.6E-04	mg/kg	6.6E-04	mg/kg	M	7.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										

Table 8.29.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Surface Water Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	1,2,4-Trichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	8.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	1,2-Dichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	4.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	1,3-Dichlorobenzene	5.4E-04	mg/kg	5.4E-04	mg/kg	M	5.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.2E-04	mg/kg	6.2E-04	mg/kg	M	4.6E-07	mg/kg-day	0.024	(mg/kg/day)-1	1.1E-08
										Sum of Cancer Risk from Dermal Contact	1.9E-08
										Total Cancer Risk	2.5E-08

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.30.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Surface Water Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Onondaga Lake
Receptor Population: Recreational
Receptor Age: Older Children (6 to < 18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Cadmium	1.1E-03	mg/kg	1.1E-03	mg/kg	M	6.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	8.3E-06	mg/kg	8.3E-06	mg/kg	M	5.2E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	1.3E-06	mg/kg	1.3E-06	mg/kg	M	8.3E-11	mg/kg-day	NA	(mg/kg/day)-1	
	VOC										
	Benzene	5.9E-04	mg/kg	5.9E-04	mg/kg	M	3.7E-08	mg/kg-day	0.055	(mg/kg/day)-1	2.0E-09
	Bromodichloromethane	2.4E-04	mg/kg	2.4E-04	mg/kg	M	1.5E-08	mg/kg-day	0.062	(mg/kg/day)-1	9.3E-10
	Chlorobenzene	6.4E-04	mg/kg	6.4E-04	mg/kg	M	4.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chloroform	6.6E-04	mg/kg	6.6E-04	mg/kg	M	4.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	1,2,4-Trichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	3.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,2-Dichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	3.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,3-Dichlorobenzene	5.4E-04	mg/kg	5.4E-04	mg/kg	M	3.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.2E-04	mg/kg	6.2E-04	mg/kg	M	3.9E-08	mg/kg-day	0.024	(mg/kg/day)-1	9.3E-10
									Sum of Cancer Risk from Ingestion		3.9E-09
Dermal	**Metals and Organometallic Compounds**										
	Cadmium	1.1E-03	mg/kg	1.1E-03	mg/kg	M	1.8E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.3E-03	mg/kg	2.3E-03	mg/kg	M	7.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	8.2E-02	mg/kg	8.2E-02	mg/kg	M	1.3E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	8.3E-06	mg/kg	8.3E-06	mg/kg	M	1.3E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	1.3E-06	mg/kg	1.3E-06	mg/kg	M	2.2E-11	mg/kg-day	NA	(mg/kg/day)-1	
	VOC										
	Benzene	5.9E-04	mg/kg	5.9E-04	mg/kg	M	1.7E-07	mg/kg-day	0.055	(mg/kg/day)-1	9.1E-09
	Bromodichloromethane	2.4E-04	mg/kg	2.4E-04	mg/kg	M	3.0E-08	mg/kg-day	0.062	(mg/kg/day)-1	1.9E-09
	Chlorobenzene	6.4E-04	mg/kg	6.4E-04	mg/kg	M	3.8E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Chloroform	6.6E-04	mg/kg	6.6E-04	mg/kg	M	1.0E-07	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										

Table 8.30.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Surface Water Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	1,2,4-Trichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	1.2E-06	mg/kg-day	NA	(mg/kg/day)-1	
	1,2-Dichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	5.8E-07	mg/kg-day	NA	(mg/kg/day)-1	
	1,3-Dichlorobenzene	5.4E-04	mg/kg	5.4E-04	mg/kg	M	7.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.2E-04	mg/kg	6.2E-04	mg/kg	M	6.3E-07	mg/kg-day	0.024	(mg/kg/day)-1	1.5E-08
										Sum of Cancer Risk from Dermal Contact	2.6E-08
										Total Cancer Risk	3.0E-08

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.31.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Surface Water Onondaga Lake

Scenario Timeframe: Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Onondaga Lake
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Cadmium	1.1E-03	mg/kg	1.1E-03	mg/kg	M	3.7E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.3E-03	mg/kg	2.3E-03	mg/kg	M	7.9E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	8.2E-02	mg/kg	8.2E-02	mg/kg	M	2.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	8.3E-06	mg/kg	8.3E-06	mg/kg	M	2.8E-12	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	1.3E-06	mg/kg	1.3E-06	mg/kg	M	4.5E-13	mg/kg-day	NA	(mg/kg/day)-1	
	VOC										
	Benzene	5.9E-04	mg/kg	5.9E-04	mg/kg	M	2.0E-10	mg/kg-day	0.055	(mg/kg/day)-1	1.1E-11
	Bromodichloromethane	2.4E-04	mg/kg	2.4E-04	mg/kg	M	8.1E-11	mg/kg-day	0.062	(mg/kg/day)-1	5.0E-12
	Chlorobenzene	6.4E-04	mg/kg	6.4E-04	mg/kg	M	2.1E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Chloroform	6.6E-04	mg/kg	6.6E-04	mg/kg	M	2.2E-10	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	1,2,4-Trichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	2.0E-10	mg/kg-day	NA	(mg/kg/day)-1	
	1,2-Dichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	2.0E-10	mg/kg-day	NA	(mg/kg/day)-1	
	1,3-Dichlorobenzene	5.4E-04	mg/kg	5.4E-04	mg/kg	M	1.8E-10	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.2E-04	mg/kg	6.2E-04	mg/kg	M	2.1E-10	mg/kg-day	0.024	(mg/kg/day)-1	5.0E-12
									Sum of Cancer Risk from Ingestion		2.1E-11
Dermal	**Metals and Organometallic Compounds**										
	Cadmium	1.1E-03	mg/kg	1.1E-03	mg/kg	M	1.8E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.3E-03	mg/kg	2.3E-03	mg/kg	M	7.5E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	8.2E-02	mg/kg	8.2E-02	mg/kg	M	1.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	8.3E-06	mg/kg	8.3E-06	mg/kg	M	1.3E-12	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	1.3E-06	mg/kg	1.3E-06	mg/kg	M	2.1E-13	mg/kg-day	NA	(mg/kg/day)-1	
	VOC										
	Benzene	5.9E-04	mg/kg	5.9E-04	mg/kg	M	2.2E-09	mg/kg-day	0.055	(mg/kg/day)-1	1.2E-10
	Bromodichloromethane	2.4E-04	mg/kg	2.4E-04	mg/kg	M	4.9E-10	mg/kg-day	0.062	(mg/kg/day)-1	3.0E-11
	Chlorobenzene	6.4E-04	mg/kg	6.4E-04	mg/kg	M	5.5E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chloroform	6.6E-04	mg/kg	6.6E-04	mg/kg	M	1.4E-09	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										

Table 8.31.RME
Calculation of Cancer Risks
Reasonable Maximum Exposure
Surface Water Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	1,2,4-Trichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	1.8E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,2-Dichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	9.7E-09	mg/kg-day	NA	(mg/kg/day)-1	
	1,3-Dichlorobenzene	5.4E-04	mg/kg	5.4E-04	mg/kg	M	1.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.2E-04	mg/kg	6.2E-04	mg/kg	M	1.0E-08	mg/kg-day	0.024	(mg/kg/day)-1	2.5E-10
										Sum of Cancer Risk from Dermal Contact	4.0E-10
										Total Cancer Risk	4.2E-10

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.1.CT
Calculation of Cancer Risks
Central Tendency
Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Fish Tissue
Exposure Medium: Fish Tissue
Exposure Point: Fish Fillet Tissue from Onondaga Lake
Receptor Population: Recreational
Receptor Age: Adults (18 and older)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Antimony	9.9E-01	mg/kg	9.9E-01	mg/kg	M	1.5E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic (inorganic)	8.0E-02	mg/kg	8.0E-02	mg/kg	M	1.2E-06	mg/kg-day	1.5	(mg/kg/day)-1	1.8E-06
	Chromium	5.7E-01	mg/kg	5.7E-01	mg/kg	M	8.3E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	5.7E+00	mg/kg	5.7E+00	mg/kg	M	8.4E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.2E+00	mg/kg	3.2E+00	mg/kg	M	4.7E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury (as methylmercury)	1.1E+00	mg/kg	1.1E+00	mg/kg	M	1.6E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Selenium	1.5E+00	mg/kg	1.5E+00	mg/kg	M	2.2E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Vanadium	6.3E-01	mg/kg	6.3E-01	mg/kg	M	9.2E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Zinc	4.4E+01	mg/kg	4.4E+01	mg/kg	M	6.4E-04	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	bis(2-ethylhexyl)phthalate	2.3E+00	mg/kg	2.3E+00	mg/kg	M	3.4E-05	mg/kg-day	0.014	(mg/kg/day)-1	4.7E-07
	Hexachlorobenzene	1.3E-02	mg/kg	1.3E-02	mg/kg	M	1.9E-07	mg/kg-day	1.6	(mg/kg/day)-1	3.1E-07
	Pesticides										
	2,4'-DDE	4.1E-03	mg/kg	4.1E-03	mg/kg	M	6.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	4,4'-DDD	1.3E-02	mg/kg	1.3E-02	mg/kg	M	1.9E-07	mg/kg-day	0.24	(mg/kg/day)-1	4.7E-08
	4,4'-DDE	3.4E-02	mg/kg	3.4E-02	mg/kg	M	5.1E-07	mg/kg-day	0.34	(mg/kg/day)-1	1.7E-07
	4,4'-DDT	9.5E-03	mg/kg	9.5E-03	mg/kg	M	1.4E-07	mg/kg-day	0.34	(mg/kg/day)-1	4.7E-08
	Aldrin	2.5E-03	mg/kg	2.5E-03	mg/kg	M	3.7E-08	mg/kg-day	17	(mg/kg/day)-1	6.3E-07
	delta-BHC	2.5E-03	mg/kg	2.5E-03	mg/kg	M	3.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Dieldrin	3.8E-03	mg/kg	3.8E-03	mg/kg	M	5.6E-08	mg/kg-day	16	(mg/kg/day)-1	9.0E-07
	Heptachlor epoxide	4.1E-03	mg/kg	4.1E-03	mg/kg	M	6.1E-08	mg/kg-day	9.1	(mg/kg/day)-1	5.5E-07
	Sum of Chlordanes	9.7E-03	mg/kg	9.7E-03	mg/kg	M	1.4E-07	mg/kg-day	0.35	(mg/kg/day)-1	5.0E-08
	PCBs										
	Aroclor 1016	4.9E-01	mg/kg	4.9E-01	mg/kg	M	7.2E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1242	9.6E-01	mg/kg	9.6E-01	mg/kg	M	1.4E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1248	1.1E+00	mg/kg	1.1E+00	mg/kg	M	1.6E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	7.2E-01	mg/kg	7.2E-01	mg/kg	M	1.1E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclors 1254 & 1260	5.5E-01	mg/kg	5.5E-01	mg/kg	M	8.1E-06	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.1.CT
Calculation of Cancer Risks
Central Tendency
Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Sum of PCBs	9.1E-01	mg/kg	9.1E-01	mg/kg	M	9.0E-06	mg/kg-day	1	(mg/kg/day)-1	9.0E-06
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	2.0E-05	mg/kg	2.0E-05	mg/kg	M	1.9E-10	mg/kg-day	150000	(mg/kg/day)-1	2.9E-05
										Sum of Cancer Risk from Ingestion	4.3E-05
Dermal											
										Sum of Cancer Risk from Dermal Contact	NA
										Total Cancer Risk	4.3E-05

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.2.CT
Calculation of Cancer Risks
Central Tendency
Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Fish Tissue
Exposure Medium: Fish Tissue
Exposure Point: Fish Fillet Tissue from Onondaga Lake
Receptor Population: Recreational
Receptor Age: Young Child (less than 6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Antimony	9.9E-01	mg/kg	9.9E-01	mg/kg	M	1.5E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic (inorganic)	8.0E-02	mg/kg	8.0E-02	mg/kg	M	1.2E-06	mg/kg-day	1.5	(mg/kg/day)-1	1.8E-06
	Chromium	5.7E-01	mg/kg	5.7E-01	mg/kg	M	8.6E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	5.7E+00	mg/kg	5.7E+00	mg/kg	M	8.7E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.2E+00	mg/kg	3.2E+00	mg/kg	M	4.9E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury (as methylmercury	1.1E+00	mg/kg	1.1E+00	mg/kg	M	1.6E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Selenium	1.5E+00	mg/kg	1.5E+00	mg/kg	M	2.2E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Vanadium	6.3E-01	mg/kg	6.3E-01	mg/kg	M	9.6E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Zinc	4.4E+01	mg/kg	4.4E+01	mg/kg	M	6.7E-04	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	bis(2-ethylhexyl)phthalate	2.3E+00	mg/kg	2.3E+00	mg/kg	M	3.5E-05	mg/kg-day	0.014	(mg/kg/day)-1	4.9E-07
	Hexachlorobenzene	1.3E-02	mg/kg	1.3E-02	mg/kg	M	2.0E-07	mg/kg-day	1.6	(mg/kg/day)-1	3.2E-07
	Pesticides										
	2,4'-DDE	4.1E-03	mg/kg	4.1E-03	mg/kg	M	6.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	4,4'-DDD	1.3E-02	mg/kg	1.3E-02	mg/kg	M	2.0E-07	mg/kg-day	0.24	(mg/kg/day)-1	4.8E-08
	4,4'-DDE	3.4E-02	mg/kg	3.4E-02	mg/kg	M	5.2E-07	mg/kg-day	0.34	(mg/kg/day)-1	1.8E-07
	4,4'-DDT	9.5E-03	mg/kg	9.5E-03	mg/kg	M	1.4E-07	mg/kg-day	0.34	(mg/kg/day)-1	4.9E-08
	Aldrin	2.5E-03	mg/kg	2.5E-03	mg/kg	M	3.9E-08	mg/kg-day	17	(mg/kg/day)-1	6.6E-07
	delta-BHC	2.5E-03	mg/kg	2.5E-03	mg/kg	M	3.8E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Dieldrin	3.8E-03	mg/kg	3.8E-03	mg/kg	M	5.8E-08	mg/kg-day	16	(mg/kg/day)-1	9.3E-07
	Heptachlor epoxide	4.1E-03	mg/kg	4.1E-03	mg/kg	M	6.3E-08	mg/kg-day	9.1	(mg/kg/day)-1	5.7E-07
	Sum of Chlordanes	9.7E-03	mg/kg	9.7E-03	mg/kg	M	1.5E-07	mg/kg-day	0.35	(mg/kg/day)-1	5.2E-08
	PCBs										
	Aroclor 1016	4.9E-01	mg/kg	4.9E-01	mg/kg	M	7.5E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1242	9.6E-01	mg/kg	9.6E-01	mg/kg	M	1.5E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1248	1.1E+00	mg/kg	1.1E+00	mg/kg	M	1.7E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	7.2E-01	mg/kg	7.2E-01	mg/kg	M	1.1E-05	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.2.CT
Calculation of Cancer Risks
Central Tendency
Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Aroclors 1254 & 1260	5.5E-01	mg/kg	5.5E-01	mg/kg	M	8.5E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	9.1E-01	mg/kg	9.1E-01	mg/kg	M	9.3E-06	mg/kg-day	1	(mg/kg/day)-1	9.3E-06
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	2.0E-05	mg/kg	2.0E-05	mg/kg	M	2.0E-10	mg/kg-day	150000	(mg/kg/day)-1	3.0E-05
										Sum of Cancer Risk from Ingestion	4.4E-05
Dermal											
										Sum of Cancer Risk from Dermal Contact	NA
										Total Cancer Risk	4.4E-05

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.3.CT
Calculation of Cancer Risks
Central Tendency
Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Fish Tissue
Exposure Medium: Fish Tissue
Exposure Point: Fish Fillet Tissue from Onondaga Lake
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Antimony	9.9E-01	mg/kg	9.9E-01	mg/kg	M	1.6E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic (inorganic)	8.0E-02	mg/kg	8.0E-02	mg/kg	M	1.3E-06	mg/kg-day	1.5	(mg/kg/day)-1	1.9E-06
	Chromium	5.7E-01	mg/kg	5.7E-01	mg/kg	M	9.0E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	5.7E+00	mg/kg	5.7E+00	mg/kg	M	9.1E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.2E+00	mg/kg	3.2E+00	mg/kg	M	5.2E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury (as methylmercury	1.1E+00	mg/kg	1.1E+00	mg/kg	M	1.7E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Selenium	1.5E+00	mg/kg	1.5E+00	mg/kg	M	2.3E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Vanadium	6.3E-01	mg/kg	6.3E-01	mg/kg	M	1.0E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Zinc	4.4E+01	mg/kg	4.4E+01	mg/kg	M	7.0E-04	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	bis(2-ethylhexyl)phthalate	2.3E+00	mg/kg	2.3E+00	mg/kg	M	3.7E-05	mg/kg-day	0.014	(mg/kg/day)-1	5.1E-07
	Hexachlorobenzene	1.3E-02	mg/kg	1.3E-02	mg/kg	M	2.1E-07	mg/kg-day	1.6	(mg/kg/day)-1	3.3E-07
	Pesticides										
	2,4'-DDE	4.1E-03	mg/kg	4.1E-03	mg/kg	M	6.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	4,4'-DDD	1.3E-02	mg/kg	1.3E-02	mg/kg	M	2.1E-07	mg/kg-day	0.24	(mg/kg/day)-1	5.1E-08
	4,4'-DDE	3.4E-02	mg/kg	3.4E-02	mg/kg	M	5.5E-07	mg/kg-day	0.34	(mg/kg/day)-1	1.9E-07
	4,4'-DDT	9.5E-03	mg/kg	9.5E-03	mg/kg	M	1.5E-07	mg/kg-day	0.34	(mg/kg/day)-1	5.1E-08
	Aldrin	2.5E-03	mg/kg	2.5E-03	mg/kg	M	4.0E-08	mg/kg-day	17	(mg/kg/day)-1	6.9E-07
	delta-BHC	2.5E-03	mg/kg	2.5E-03	mg/kg	M	4.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Dieldrin	3.8E-03	mg/kg	3.8E-03	mg/kg	M	6.1E-08	mg/kg-day	16	(mg/kg/day)-1	9.7E-07
	Heptachlor epoxide	4.1E-03	mg/kg	4.1E-03	mg/kg	M	6.6E-08	mg/kg-day	9.1	(mg/kg/day)-1	6.0E-07
	Sum of Chlordanes	9.7E-03	mg/kg	9.7E-03	mg/kg	M	1.6E-07	mg/kg-day	0.35	(mg/kg/day)-1	5.4E-08
	PCBs										
	Aroclor 1016	4.9E-01	mg/kg	4.9E-01	mg/kg	M	7.8E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1242	9.6E-01	mg/kg	9.6E-01	mg/kg	M	1.5E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1248	1.1E+00	mg/kg	1.1E+00	mg/kg	M	1.8E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	7.2E-01	mg/kg	7.2E-01	mg/kg	M	1.1E-05	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.3.CT
Calculation of Cancer Risks
Central Tendency
Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Aroclors 1254 & 1260	5.5E-01	mg/kg	5.5E-01	mg/kg	M	8.8E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	9.1E-01	mg/kg	9.1E-01	mg/kg	M	9.8E-06	mg/kg-day	1	(mg/kg/day)-1	9.8E-06
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	2.0E-05	mg/kg	2.0E-05	mg/kg	M	2.1E-10	mg/kg-day	150000	(mg/kg/day)-1	3.1E-05
										Sum of Cancer Risk from Ingestion	4.6E-05
Dermal											
										Sum of Cancer Risk from Dermal Contact	NA
										Total Cancer Risk	4.6E-05

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.4.CT
Calculation of Cancer Hazards
Central Tendency
North Basin Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: North Basin Sediments
Receptor Population: Recreational
Receptor Age: Adults (18 and older)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Antimony	9.2E+00	mg/kg	9.2E+00	mg/kg	M	7.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	3.9E+00	mg/kg	3.9E+00	mg/kg	M	3.1E-08	mg/kg-day	1.5	(mg/kg/day)-1	4.7E-08
	Barium	1.5E+02	mg/kg	1.5E+02	mg/kg	M	1.2E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	2.0E+00	mg/kg	2.0E+00	mg/kg	M	1.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	2.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	5.8E+03	mg/kg	5.8E+03	mg/kg	M	4.7E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.8E+02	mg/kg	2.8E+02	mg/kg	M	2.2E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+00	mg/kg	1.9E+00	mg/kg	M	1.5E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.0E-03	mg/kg	2.0E-03	mg/kg	M	1.6E-11	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.9E-01	mg/kg	2.9E-01	mg/kg	M	2.4E-09	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	8.9E-02	mg/kg	8.9E-02	mg/kg	M	7.2E-10	mg/kg-day	0.055	(mg/kg/day)-1	4.0E-11
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	3.3E-09	mg/kg-day	1.6	(mg/kg/day)-1	5.2E-09
	PAHs										
	Benz(a)anthracene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	1.3E-09	mg/kg-day	0.73	(mg/kg/day)-1	9.6E-10
	Benzo(a)pyrene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	1.3E-09	mg/kg-day	7.3	(mg/kg/day)-1	9.1E-09
	Benzo(b)fluoranthene	2.4E-01	mg/kg	2.4E-01	mg/kg	M	1.9E-09	mg/kg-day	0.73	(mg/kg/day)-1	1.4E-09
	Dibenz(a,h)anthracene	4.8E-02	mg/kg	4.8E-02	mg/kg	M	3.9E-10	mg/kg-day	7.3	(mg/kg/day)-1	2.8E-09
	Naphthalene	3.9E-01	mg/kg	3.9E-01	mg/kg	M	3.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1254	4.1E-02	mg/kg	4.1E-02	mg/kg	M	3.3E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1268	3.5E-02	mg/kg	3.5E-02	mg/kg	M	2.8E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	8.6E-02	mg/kg	8.6E-02	mg/kg	M	6.9E-10	mg/kg-day	1	(mg/kg/day)-1	6.9E-10
	PCDD/Fs										
	TEQ as 2,3,7,8-TCDD	2.0E-06	mg/kg	2.0E-06	mg/kg	M	1.6E-14	mg/kg-day	150000	(mg/kg/day)-1	2.4E-09
										Sum of Cancer Risk from Ingestion	6.9E-08

Table 8.4.CT
Calculation of Cancer Hazards
Central Tendency
North Basin Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Dermal	**Metals and Organometallic Compounds**										
	Antimony	9.2E+00	mg/kg	9.2E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	3.9E+00	mg/kg	3.9E+00	mg/kg	M	1.59E-08	mg/kg-day	1.5	(mg/kg/day)-1	2.4E-08
	Barium	1.5E+02	mg/kg	1.5E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	2.0E+00	mg/kg	2.0E+00	mg/kg	M	2.8E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	5.8E+03	mg/kg	5.8E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.8E+02	mg/kg	2.8E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+00	mg/kg	1.9E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.0E-03	mg/kg	2.0E-03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.9E-01	mg/kg	2.9E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	8.9E-02	mg/kg	8.9E-02	mg/kg	M	NA	mg/kg-day	0.055	(mg/kg/day)-1	
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	5.6E-09	mg/kg-day	1.6	(mg/kg/day)-1	8.9E-09
	PAHs										
	Benz(a)anthracene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	2.9E-09	mg/kg-day	0.73	(mg/kg/day)-1	2.1E-09
	Benzo(a)pyrene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	2.8E-09	mg/kg-day	7.3	(mg/kg/day)-1	2.0E-08
	Benzo(b)fluoranthene	2.4E-01	mg/kg	2.4E-01	mg/kg	M	4.3E-09	mg/kg-day	0.73	(mg/kg/day)-1	3.1E-09
	Dibenz(a,h)anthracene	4.8E-02	mg/kg	4.8E-02	mg/kg	M	8.6E-10	mg/kg-day	7.3	(mg/kg/day)-1	6.3E-09
	Naphthalene	3.9E-01	mg/kg	3.9E-01	mg/kg	M	7.0E-09	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1254	4.1E-02	mg/kg	4.1E-02	mg/kg	M	7.9E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1268	3.5E-02	mg/kg	3.5E-02	mg/kg	M	6.7E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	8.6E-02	mg/kg	8.6E-02	mg/kg	M	1.7E-09	mg/kg-day	1	(mg/kg/day)-1	1.7E-09
	PCDD/Fs										
	TEQ as 2,3,7,8-TCDD	2.0E-06	mg/kg	2.0E-06	mg/kg	M	8.1E-15	mg/kg-day	150000	(mg/kg/day)-1	1.2E-09
										Sum of Cancer Risk from Dermal Contact	6.8E-08
										Total Cancer Risks	1.4E-07

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.5.CT
Calculation of Cancer Hazards
Central Tendency
North Basin Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: North Basin Sediments
Receptor Population: Recreational
Receptor Age: Young Children (less than 6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Antimony	9.2E+00	mg/kg	9.2E+00	mg/kg	M	4.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	3.9E+00	mg/kg	3.9E+00	mg/kg	M	1.9E-07	mg/kg-day	1.5	(mg/kg/day)-1	2.9E-07
	Barium	1.5E+02	mg/kg	1.5E+02	mg/kg	M	7.6E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	2.0E+00	mg/kg	2.0E+00	mg/kg	M	1.0E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	1.6E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	5.8E+03	mg/kg	5.8E+03	mg/kg	M	2.9E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.8E+02	mg/kg	2.8E+02	mg/kg	M	1.4E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+00	mg/kg	1.9E+00	mg/kg	M	9.5E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.0E-03	mg/kg	2.0E-03	mg/kg	M	1.0E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.9E-01	mg/kg	2.9E-01	mg/kg	M	1.5E-08	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	8.9E-02	mg/kg	8.9E-02	mg/kg	M	4.5E-09	mg/kg-day	0.055	(mg/kg/day)-1	2.5E-10
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	2.0E-08	mg/kg-day	1.6	(mg/kg/day)-1	3.3E-08
	PAHs										
	Benz(a)anthracene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	8.2E-09	mg/kg-day	0.73	(mg/kg/day)-1	6.0E-09
	Benzo(a)pyrene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	7.8E-09	mg/kg-day	7.3	(mg/kg/day)-1	5.7E-08
	Benzo(b)fluoranthene	2.4E-01	mg/kg	2.4E-01	mg/kg	M	1.2E-08	mg/kg-day	0.73	(mg/kg/day)-1	8.7E-09
	Dibenz(a,h)anthracene	4.8E-02	mg/kg	4.8E-02	mg/kg	M	2.4E-09	mg/kg-day	7.3	(mg/kg/day)-1	1.8E-08
	Naphthalene	3.9E-01	mg/kg	3.9E-01	mg/kg	M	1.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1254	4.1E-02	mg/kg	4.1E-02	mg/kg	M	2.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1268	3.5E-02	mg/kg	3.5E-02	mg/kg	M	1.7E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	8.6E-02	mg/kg	8.6E-02	mg/kg	M	4.3E-09	mg/kg-day	1	(mg/kg/day)-1	4.3E-09
	PCDD/PCDFs										
	TEQ as 2,3,7,8-	2.0E-06	mg/kg	2.0E-06	mg/kg	M	9.8E-14	mg/kg-day	150000	(mg/kg/day)-1	1.5E-08
										Sum of Cancer Risk from Ingestion	4.3E-07

Table 8.5.CT
Calculation of Cancer Hazards
Central Tendency
North Basin Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Dermal	**Metals and Organometallic Compounds**										
	Antimony	9.2E+00	mg/kg	9.2E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	3.9E+00	mg/kg	3.9E+00	mg/kg	M	3.2E-08	mg/kg-day	1.5	(mg/kg/day)-1	4.9E-08
	Barium	1.5E+02	mg/kg	1.5E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	2.0E+00	mg/kg	2.0E+00	mg/kg	M	5.7E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	5.8E+03	mg/kg	5.8E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.8E+02	mg/kg	2.8E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+00	mg/kg	1.9E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.0E-03	mg/kg	2.0E-03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.9E-01	mg/kg	2.9E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	8.9E-02	mg/kg	8.9E-02	mg/kg	M	NA	mg/kg-day	0.055	(mg/kg/day)-1	
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	1.1E-08	mg/kg-day	1.6	(mg/kg/day)-1	1.8E-08
	PAHs										
	Benz(a)anthracene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	5.9E-09	mg/kg-day	0.73	(mg/kg/day)-1	4.3E-09
	Benzo(a)pyrene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	5.7E-09	mg/kg-day	7.3	(mg/kg/day)-1	4.1E-08
	Benzo(b)fluoranthene	2.4E-01	mg/kg	2.4E-01	mg/kg	M	8.7E-09	mg/kg-day	0.73	(mg/kg/day)-1	6.3E-09
	Dibenz(a,h)anthracene	4.8E-02	mg/kg	4.8E-02	mg/kg	M	1.8E-09	mg/kg-day	7.3	(mg/kg/day)-1	1.3E-08
	Naphthalene	3.9E-01	mg/kg	3.9E-01	mg/kg	M	1.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1254	4.1E-02	mg/kg	4.1E-02	mg/kg	M	1.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1268	3.5E-02	mg/kg	3.5E-02	mg/kg	M	1.4E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	8.6E-02	mg/kg	8.6E-02	mg/kg	M	3.4E-09	mg/kg-day	1	(mg/kg/day)-1	3.4E-09
	PCDD/Fs										
	TEQ as 2,3,7,8-	2.0E-06	mg/kg	2.0E-06	mg/kg	M	1.6E-14	mg/kg-day	150000	(mg/kg/day)-1	2.5E-09
										Sum of Cancer Risk from Dermal Contact	1.4E-07
										Total Cancer Risks	5.7E-07

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.6.CT
Calculation of Cancer Hazards
Central Tendency
North Basin Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: North Lake Sediments
Receptor Population: Recreational
Receptor Age: Older Children (6 to < 18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Antimony	9.2E+00	mg/kg	9.2E+00	mg/kg	M	1.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	3.9E+00	mg/kg	3.9E+00	mg/kg	M	5.1E-08	mg/kg-day	1.5	(mg/kg/day)-1	7.6E-08
	Barium	1.5E+02	mg/kg	1.5E+02	mg/kg	M	2.0E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	2.0E+00	mg/kg	2.0E+00	mg/kg	M	2.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	4.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	5.8E+03	mg/kg	5.8E+03	mg/kg	M	7.6E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.8E+02	mg/kg	2.8E+02	mg/kg	M	3.6E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+00	mg/kg	1.9E+00	mg/kg	M	2.5E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.0E-03	mg/kg	2.0E-03	mg/kg	M	2.6E-11	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.9E-01	mg/kg	2.9E-01	mg/kg	M	3.8E-09	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	8.9E-02	mg/kg	8.9E-02	mg/kg	M	1.2E-09	mg/kg-day	0.055	(mg/kg/day)-1	6.4E-11
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	5.3E-09	mg/kg-day	1.6	(mg/kg/day)-1	8.5E-09
	PAHs										
	Benz(a)anthracene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	2.1E-09	mg/kg-day	0.73	(mg/kg/day)-1	1.6E-09
	Benzo(a)pyrene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	2.0E-09	mg/kg-day	7.3	(mg/kg/day)-1	1.5E-08
	Benzo(b)fluoranthene	2.4E-01	mg/kg	2.4E-01	mg/kg	M	3.1E-09	mg/kg-day	0.73	(mg/kg/day)-1	2.3E-09
	Dibenz(a,h)anthracene	4.8E-02	mg/kg	4.8E-02	mg/kg	M	6.3E-10	mg/kg-day	7.3	(mg/kg/day)-1	4.6E-09
	Naphthalene	3.9E-01	mg/kg	3.9E-01	mg/kg	M	5.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1254	4.1E-02	mg/kg	4.1E-02	mg/kg	M	5.4E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1268	3.5E-02	mg/kg	3.5E-02	mg/kg	M	4.5E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	8.6E-02	mg/kg	8.6E-02	mg/kg	M	1.1E-09	mg/kg-day	1	(mg/kg/day)-1	1.1E-09
	PCDD/Fs										
	TEQ as 2,3,7,8-TCDD	2.0E-06	mg/kg	2.0E-06	mg/kg	M	2.6E-14	mg/kg-day	150000	(mg/kg/day)-1	3.8E-09
										Sum of Cancer Risk from Ingestion	1.1E-07

Table 8.6.CT
Calculation of Cancer Hazards
Central Tendency
North Basin Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Dermal	**Metals and Organometallic Compounds**										
	Antimony	9.20E+00	mg/kg	9.20E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	3.86E+00	mg/kg	3.86E+00	mg/kg	M	3.3E-08	mg/kg-day	1.5	(mg/kg/day)-1	4.9E-08
	Barium	1.51E+02	mg/kg	1.51E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	2.0E+00	mg/kg	2.0E+00	mg/kg	M	5.8E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	5.8E+03	mg/kg	5.8E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.8E+02	mg/kg	2.8E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+00	mg/kg	1.9E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.0E-03	mg/kg	2.0E-03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.9E-01	mg/kg	2.9E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	8.9E-02	mg/kg	8.9E-02	mg/kg	M	NA	mg/kg-day	0.055	(mg/kg/day)-1	
	SVOCs										
	Benz(a)anthracene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	6.0E-09	mg/kg-day	0.73	(mg/kg/day)-1	4.4E-09
	Benzo(a)pyrene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	5.7E-09	mg/kg-day	7.3	(mg/kg/day)-1	4.2E-08
	Benzo(b)fluoranthene	2.4E-01	mg/kg	2.4E-01	mg/kg	M	8.7E-09	mg/kg-day	0.73	(mg/kg/day)-1	6.4E-09
	Dibenz(a,h)anthracene	4.8E-02	mg/kg	4.8E-02	mg/kg	M	1.8E-09	mg/kg-day	7.3	(mg/kg/day)-1	1.3E-08
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	1.1E-08	mg/kg-day	1.6	(mg/kg/day)-1	1.8E-08
	Naphthalene	3.9E-01	mg/kg	3.9E-01	mg/kg	M	1.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1254	4.1E-02	mg/kg	4.1E-02	mg/kg	M	1.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1268	3.5E-02	mg/kg	3.5E-02	mg/kg	M	1.4E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	8.6E-02	mg/kg	8.6E-02	mg/kg	M	3.4E-09	mg/kg-day	1	(mg/kg/day)-1	3.4E-09
	PCDD/Fs										
	TEQ as 2,3,7,8-TCDD	2.0E-06	mg/kg	2.0E-06	mg/kg	M	1.7E-14	mg/kg-day	150000	(mg/kg/day)-1	2.5E-09
										Sum of Cancer Risk from Dermal Contact	1.4E-07
										Total Cancer Risks	2.5E-07

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.7.CT
Calculation of Cancer Hazards
Central Tendency
North Basin Onondaga Lake

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: North Lake Sediments
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Antimony	9.2E+00	mg/kg	9.2E+00	mg/kg	M	3.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	3.9E+00	mg/kg	3.9E+00	mg/kg	M	1.4E-08	mg/kg-day	1.5	(mg/kg/day)-1	2.1E-08
	Barium	1.5E+02	mg/kg	1.5E+02	mg/kg	M	5.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	2.0E+00	mg/kg	2.0E+00	mg/kg	M	7.5E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	1.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	5.8E+03	mg/kg	5.8E+03	mg/kg	M	2.1E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.8E+02	mg/kg	2.8E+02	mg/kg	M	1.0E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+00	mg/kg	1.9E+00	mg/kg	M	7.0E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.0E-03	mg/kg	2.0E-03	mg/kg	M	7.3E-12	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.9E-01	mg/kg	2.9E-01	mg/kg	M	1.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	8.9E-02	mg/kg	8.9E-02	mg/kg	M	3.3E-10	mg/kg-day	0.055	(mg/kg/day)-1	1.8E-11
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	1.5E-09	mg/kg-day	1.6	(mg/kg/day)-1	2.4E-09
	PAHs										
	Benz(a)anthracene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	6.0E-10	mg/kg-day	0.73	(mg/kg/day)-1	4.4E-10
	Benzo(a)pyrene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	5.7E-10	mg/kg-day	7.3	(mg/kg/day)-1	4.2E-09
	Benzo(b)fluoranthene	2.4E-01	mg/kg	2.4E-01	mg/kg	M	8.8E-10	mg/kg-day	0.73	(mg/kg/day)-1	6.4E-10
	Dibenz(a,h)anthracene	4.8E-02	mg/kg	4.8E-02	mg/kg	M	1.8E-10	mg/kg-day	7.3	(mg/kg/day)-1	1.3E-09
	Naphthalene	3.9E-01	mg/kg	3.9E-01	mg/kg	M	1.4E-09	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1254	4.1E-02	mg/kg	4.1E-02	mg/kg	M	1.5E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1268	3.5E-02	mg/kg	3.5E-02	mg/kg	M	1.3E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	8.6E-02	mg/kg	8.6E-02	mg/kg	M	3.2E-10	mg/kg-day	1	(mg/kg/day)-1	3.2E-10
	PCDD/Fs										
	TEQ as 2,3,7,8-TCDD	2.0E-06	mg/kg	2.0E-06	mg/kg	M	7.2E-15	mg/kg-day	150000	(mg/kg/day)-1	1.1E-09
										Sum of Cancer Risk from Ingestion	3.2E-08
Dermal	**Metals and Organometallic Compounds**										
	Antimony	9.2E+00	mg/kg	9.2E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.7.CT
Calculation of Cancer Hazards
Central Tendency
North Basin Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Arsenic	3.9E+00	mg/kg	3.9E+00	mg/kg	M	1.5E-09	mg/kg-day	1.5	(mg/kg/day)-1	2.2E-09
	Barium	1.5E+02	mg/kg	1.5E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	2.0E+00	mg/kg	2.0E+00	mg/kg	M	2.6E-11	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	5.8E+03	mg/kg	5.8E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.8E+02	mg/kg	2.8E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+00	mg/kg	1.9E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.0E-03	mg/kg	2.0E-03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.9E-01	mg/kg	2.9E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	8.9E-02	mg/kg	8.9E-02	mg/kg	M	NA	mg/kg-day	0.055	(mg/kg/day)-1	
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	5.2E-10	mg/kg-day	1.6	(mg/kg/day)-1	8.3E-10
	PAHs										
	Benz(a)anthracene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	2.7E-10	mg/kg-day	0.73	(mg/kg/day)-1	2.0E-10
	Benzo(a)pyrene	1.6E-01	mg/kg	1.6E-01	mg/kg	M	2.6E-10	mg/kg-day	7.3	(mg/kg/day)-1	1.9E-09
	Benzo(b)fluoranthene	2.4E-01	mg/kg	2.4E-01	mg/kg	M	3.9E-10	mg/kg-day	0.73	(mg/kg/day)-1	2.9E-10
	Dibenz(a,h)anthracene	4.8E-02	mg/kg	4.8E-02	mg/kg	M	8.0E-11	mg/kg-day	7.3	(mg/kg/day)-1	5.8E-10
	Naphthalene	3.9E-01	mg/kg	3.9E-01	mg/kg	M	6.4E-10	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1254	4.1E-02	mg/kg	4.1E-02	mg/kg	M	7.4E-11	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1268	3.5E-02	mg/kg	3.5E-02	mg/kg	M	6.2E-11	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	8.6E-02	mg/kg	8.6E-02	mg/kg	M	1.5E-10	mg/kg-day	1	(mg/kg/day)-1	1.5E-10
	PCDD/Fs										
	TEQ as 2,3,7,8-TCDD	2.0E-06	mg/kg	2.0E-06	mg/kg	M	7.5E-16	mg/kg-day	150000	(mg/kg/day)-1	1.1E-10
										Sum of Cancer Risk from Dermal Contact	6.3E-09
										Total Cancer Risks	3.8E-08

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.8.CT
Calculation of Cancer Hazards
Central Tendency
South Basin Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: South Basin Sediments
Receptor Population: Recreational
Receptor Age: Adults (18 and older)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**											
	Aluminum	4.1E+03	mg/kg		4.1E+03	mg/kg	M	5.1E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	3.0E+00	mg/kg		3.0E+00	mg/kg	M	3.8E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg		1.2E+01	mg/kg	M	1.6E-08	mg/kg-day	1.5	(mg/kg/day)-1	2.3E-08
	Barium	9.0E+02	mg/kg		9.0E+02	mg/kg	M	1.1E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.9E+00	mg/kg		3.9E+00	mg/kg	M	4.9E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.0E+02	mg/kg		2.0E+02	mg/kg	M	2.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	9.6E+01	mg/kg		9.6E+01	mg/kg	M	1.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	1.5E+00	mg/kg		1.5E+00	mg/kg	M	1.9E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.2E+04	mg/kg		1.2E+04	mg/kg	M	1.5E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Lead	2.3E+02	mg/kg		2.3E+02	mg/kg	M	3.0E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.9E+02	mg/kg		2.9E+02	mg/kg	M	3.7E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+01	mg/kg		1.9E+01	mg/kg	M	2.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.2E-02	mg/kg		2.2E-02	mg/kg	M	2.8E-11	mg/kg-day	NA	(mg/kg/day)-1	
	Nickel	7.3E+01	mg/kg		7.3E+01	mg/kg	M	9.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	4.0E-01	mg/kg		4.0E-01	mg/kg	M	5.0E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Vanadium	3.0E+01	mg/kg		3.0E+01	mg/kg	M	3.8E-08	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs											
	Benzene	6.1E+01	mg/kg		6.1E+01	mg/kg	M	7.7E-08	mg/kg-day	0.055	(mg/kg/day)-1	4.2E-09
	Chlorobenzene	1.8E+02	mg/kg		1.8E+02	mg/kg	M	2.3E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Methylene chloride	8.5E+00	mg/kg		8.5E+00	mg/kg	M	1.1E-08	mg/kg-day	0.0075	(mg/kg/day)-1	8.0E-11
	Xylenes	3.3E+02	mg/kg		3.3E+02	mg/kg	M	4.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs											
	1,3-Dichlorobenzene	4.6E+00	mg/kg		4.6E+00	mg/kg	M	5.8E-09	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.3E+01	mg/kg		6.3E+01	mg/kg	M	7.9E-08	mg/kg-day	0.024	(mg/kg/day)-1	1.9E-09
	Dibenzofuran	1.8E+01	mg/kg		1.8E+01	mg/kg	M	2.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Hexachlorobenzene	6.7E+00	mg/kg		6.7E+00	mg/kg	M	8.4E-09	mg/kg-day	1.6	(mg/kg/day)-1	1.3E-08
	PAHs											
	2-Methylnaphthalene	1.8E+02	mg/kg		1.8E+02	mg/kg	M	2.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	4.2E+00	mg/kg		4.2E+00	mg/kg	M	5.3E-09	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.8.CT
Calculation of Cancer Hazards
Central Tendency
South Basin Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Benz[a]anthracene	9.8E+00	mg/kg		9.8E+00	mg/kg	M	1.2E-08	mg/kg-day	0.73	(mg/kg/day)-1	9.0E-09
	Benzo[a]pyrene	7.4E+00	mg/kg		7.4E+00	mg/kg	M	9.3E-09	mg/kg-day	7.3	(mg/kg/day)-1	6.8E-08
	Benzo[b]fluoranthene	9.8E+00	mg/kg		9.8E+00	mg/kg	M	1.2E-08	mg/kg-day	0.73	(mg/kg/day)-1	9.0E-09
	Benzo[ghi]perylene	6.4E+00	mg/kg		6.4E+00	mg/kg	M	8.0E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo[k]fluoranthene	3.6E+00	mg/kg		3.6E+00	mg/kg	M	4.5E-09	mg/kg-day	0.073	(mg/kg/day)-1	3.3E-10
	Chrysene	9.6E+00	mg/kg		9.6E+00	mg/kg	M	1.2E-08	mg/kg-day	0.0073	(mg/kg/day)-1	8.8E-11
	Dibenz[a,h]anthracene	1.6E+00	mg/kg		1.6E+00	mg/kg	M	2.1E-09	mg/kg-day	7.3	(mg/kg/day)-1	1.5E-08
	Fluoranthene	3.4E+01	mg/kg		3.4E+01	mg/kg	M	4.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Indeno[1,2,3-cd]pyrene	3.8E+00	mg/kg		3.8E+00	mg/kg	M	4.7E-09	mg/kg-day	0.73	(mg/kg/day)-1	3.5E-09
	Naphthalene	1.1E+03	mg/kg		1.1E+03	mg/kg	M	1.3E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	5.3E+01	mg/kg		5.3E+01	mg/kg	M	6.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides											
	Dieldrin	8.7E-03	mg/kg		8.7E-03	mg/kg	M	1.1E-11	mg/kg-day	16	(mg/kg/day)-1	1.7E-10
	PCBs							1.3E-09				
	Aroclor 1221	8.1E-02	mg/kg		8.1E-02	mg/kg	M	1.0E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1242	3.5E-01	mg/kg		3.5E-01	mg/kg	M	4.3E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1248	2.3E-01	mg/kg		2.3E-01	mg/kg	M	2.8E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	1.4E-01	mg/kg		1.4E-01	mg/kg	M	1.7E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.0E-01	mg/kg		2.0E-01	mg/kg	M	2.5E-10	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs	1.1E+00	mg/kg		1.1E+00	mg/kg	M	1.3E-09	mg/kg-day	1	(mg/kg/day)-1	1.3E-09
	PCDD/PCDFs											
	TEQ as 2,3,7,8-TCDD	3.8E-04	mg/kg		3.8E-04	mg/kg	M	4.7E-13	mg/kg-day	150000	(mg/kg/day)-1	7.1E-08
											Sum of Cancer Risk from Ingestion	2.2E-07
Dermal	**Metals and Organometallic Compounds**											
	Aluminum	4.1E+03	mg/kg	–	4.1E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	3.0E+00	mg/kg	–	3.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	3.00E-02	1.2E+01	mg/kg	M	8.0E-09	mg/kg-day	1.5	(mg/kg/day)-1	1.2E-08
	Barium	9.0E+02	mg/kg	–	9.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.9E+00	mg/kg	1.00E-03	3.9E+00	mg/kg	M	8.4E-11	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.0E+02	mg/kg	–	2.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	9.6E+01	mg/kg	–	9.6E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	1.5E+00	mg/kg	–	1.5E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.2E+04	mg/kg	–	1.2E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Lead	2.3E+02	mg/kg	–	2.3E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.9E+02	mg/kg	–	2.9E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+01	mg/kg	–	1.9E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.2E-02	mg/kg	–	2.2E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.8.CT
Calculation of Cancer Hazards
Central Tendency
South Basin Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Nickel	7.3E+01	mg/kg	–	7.3E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	4.0E-01	mg/kg	–	4.0E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Vanadium	3.0E+01	mg/kg	–	3.0E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs											
	Benzene	6.1E+01	mg/kg	–	6.1E+01	mg/kg	M	NA	mg/kg-day	0.055	(mg/kg/day)-1	
	Chlorobenzene	1.8E+02	mg/kg	–	1.8E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylene chloride	8.5E+00	mg/kg	–	8.5E+00	mg/kg	M	NA	mg/kg-day	0.0075	(mg/kg/day)-1	
	Xylenes	3.3E+02	mg/kg	–	3.3E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs											
	1,3-Dichlorobenzene	4.6E+00	mg/kg	1.00E-01	4.6E+00	mg/kg	M	1.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.3E+01	mg/kg	1.00E-01	6.3E+01	mg/kg	M	1.3E-07	mg/kg-day	0.024	(mg/kg/day)-1	3.2E-09
	Dibenzofuran	1.8E+01	mg/kg	1.00E-01	1.8E+01	mg/kg	M	3.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Hexachlorobenzene	6.7E+00	mg/kg	1.00E-01	6.7E+00	mg/kg	M	1.4E-08	mg/kg-day	1.6	(mg/kg/day)-1	2.3E-08
	PAHs											
	2-Methylnaphthalene	1.8E+02	mg/kg	1.30E-01	1.8E+02	mg/kg	M	4.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	4.2E+00	mg/kg	1.30E-01	4.2E+00	mg/kg	M	1.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benz[a]anthracene	9.8E+00	mg/kg	1.30E-01	9.8E+00	mg/kg	M	2.7E-08	mg/kg-day	0.73	(mg/kg/day)-1	2.0E-08
	Benzo[a]pyrene	7.4E+00	mg/kg	1.30E-01	7.4E+00	mg/kg	M	2.1E-08	mg/kg-day	7.3	(mg/kg/day)-1	1.5E-07
	Benzo[b]fluoranthene	9.8E+00	mg/kg	1.30E-01	9.8E+00	mg/kg	M	2.7E-08	mg/kg-day	0.73	(mg/kg/day)-1	2.0E-08
	Benzo[ghi]perylene	6.4E+00	mg/kg	1.30E-01	6.4E+00	mg/kg	M	1.8E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo[k]fluoranthene	3.6E+00	mg/kg	1.30E-01	3.6E+00	mg/kg	M	9.9E-09	mg/kg-day	0.073	(mg/kg/day)-1	7.2E-10
	Chrysene	9.6E+00	mg/kg	1.30E-01	9.6E+00	mg/kg	M	2.7E-08	mg/kg-day	0.0073	(mg/kg/day)-1	2.0E-10
	Dibenz[a,h]anthracene	1.6E+00	mg/kg	1.30E-01	1.6E+00	mg/kg	M	4.6E-09	mg/kg-day	7.3	(mg/kg/day)-1	3.3E-08
	Fluoranthene	3.4E+01	mg/kg	1.30E-01	3.4E+01	mg/kg	M	9.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Indeno[1,2,3-cd]pyrene	3.8E+00	mg/kg	1.30E-01	3.8E+00	mg/kg	M	1.1E-08	mg/kg-day	0.73	(mg/kg/day)-1	7.7E-09
	Naphthalene	1.1E+03	mg/kg	1.30E-01	1.1E+03	mg/kg	M	2.9E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	5.3E+01	mg/kg	1.30E-01	5.3E+01	mg/kg	M	1.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides											
	Dieldrin	8.7E-03	mg/kg	–	8.7E-03	mg/kg	M	NA	mg/kg-day	16	(mg/kg/day)-1	
	PCBs			1.40E-01								
	Aroclor 1221	8.1E-02	mg/kg	1.40E-01	8.1E-02	mg/kg	M	2.5E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1242	3.5E-01	mg/kg	1.40E-01	3.5E-01	mg/kg	M	1.0E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1248	2.3E-01	mg/kg	1.40E-01	2.3E-01	mg/kg	M	6.8E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	1.4E-01	mg/kg	1.40E-01	1.4E-01	mg/kg	M	4.2E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.0E-01	mg/kg	1.40E-01	2.0E-01	mg/kg	M	6.0E-10	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs	1.1E+00	mg/kg	1.40E-01	1.1E+00	mg/kg	M	3.2E-09	mg/kg-day	1	(mg/kg/day)-1	3.2E-09

Table 8.8.CT
Calculation of Cancer Hazards
Central Tendency
South Basin Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	PCDD/PCDFs											
	TEQ as 2,3,7,8-TCDD	3.8E-04	mg/kg	3.00E-02	3.8E-04	mg/kg	M	2.4E-13	mg/kg-day	150000	(mg/kg/day)-1	3.6E-08
											Sum of Cancer Risk from Dermal Contact	3.1E-07
											Total Cancer Risk	5.3E-07

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.9.CT
Calculation of Cancer Hazards
Central Tendency
South Basin Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: South Basin Sediments
Receptor Population: Recreational
Receptor Age: Young Children (less than 6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	4.1E+03	mg/kg	4.1E+03	mg/kg	M	3.2E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	3.0E+00	mg/kg	3.0E+00	mg/kg	M	2.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	9.7E-08	mg/kg-day	1.5	(mg/kg/day)-1	1.5E-07
	Barium	9.0E+02	mg/kg	9.0E+02	mg/kg	M	7.1E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.9E+00	mg/kg	3.9E+00	mg/kg	M	3.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.0E+02	mg/kg	2.0E+02	mg/kg	M	1.6E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	9.6E+01	mg/kg	9.6E+01	mg/kg	M	7.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	1.5E+00	mg/kg	1.5E+00	mg/kg	M	1.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.2E+04	mg/kg	1.2E+04	mg/kg	M	9.6E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Lead	2.3E+02	mg/kg	2.3E+02	mg/kg	M	1.8E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.9E+02	mg/kg	2.9E+02	mg/kg	M	2.3E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+01	mg/kg	1.9E+01	mg/kg	M	1.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.2E-02	mg/kg	2.2E-02	mg/kg	M	1.8E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Nickel	7.3E+01	mg/kg	7.3E+01	mg/kg	M	5.7E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	4.0E-01	mg/kg	4.0E-01	mg/kg	M	3.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Vanadium	3.0E+01	mg/kg	3.0E+01	mg/kg	M	2.3E-07	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	6.1E+01	mg/kg	6.1E+01	mg/kg	M	4.8E-07	mg/kg-day	0.055	(mg/kg/day)-1	2.6E-08
	Chlorobenzene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	1.4E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Methylene chloride	8.5E+00	mg/kg	8.5E+00	mg/kg	M	6.7E-08	mg/kg-day	0.0075	(mg/kg/day)-1	5.0E-10
	Xylenes	3.3E+02	mg/kg	3.3E+02	mg/kg	M	2.6E-06	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	3.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.3E+01	mg/kg	6.3E+01	mg/kg	M	4.9E-07	mg/kg-day	0.024	(mg/kg/day)-1	1.2E-08
	Dibenzofuran	1.8E+01	mg/kg	1.8E+01	mg/kg	M	1.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Hexachlorobenzene	6.7E+00	mg/kg	6.7E+00	mg/kg	M	5.2E-08	mg/kg-day	1.6	(mg/kg/day)-1	8.3E-08
	PAHs										
	2-Methylnaphthalene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	1.4E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	4.2E+00	mg/kg	4.2E+00	mg/kg	M	3.3E-08	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.9.CT
Calculation of Cancer Hazards
Central Tendency
South Basin Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Benz[a]anthracene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	7.64E-08	mg/kg-day	0.73	(mg/kg/day)-1	5.6E-08
	Benzo[a]pyrene	7.4E+00	mg/kg	7.4E+00	mg/kg	M	5.8E-08	mg/kg-day	7.3	(mg/kg/day)-1	4.2E-07
	Benzo[b]fluoranthene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	7.7E-08	mg/kg-day	0.73	(mg/kg/day)-1	5.6E-08
	Benzo[ghi]perylene	6.4E+00	mg/kg	6.4E+00	mg/kg	M	5.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo[k]fluoranthene	3.6E+00	mg/kg	3.6E+00	mg/kg	M	2.8E-08	mg/kg-day	0.073	(mg/kg/day)-1	2.0E-09
	Chrysene	9.6E+00	mg/kg	9.6E+00	mg/kg	M	7.5E-08	mg/kg-day	0.0073	(mg/kg/day)-1	5.5E-10
	Dibenz[a,h]anthracene	1.6E+00	mg/kg	1.6E+00	mg/kg	M	1.3E-08	mg/kg-day	7.3	(mg/kg/day)-1	9.3E-08
	Fluoranthene	3.4E+01	mg/kg	3.4E+01	mg/kg	M	2.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Indeno[1,2,3-cd]pyrene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	3.0E-08	mg/kg-day	0.73	(mg/kg/day)-1	2.2E-08
	Naphthalene	1.1E+03	mg/kg	1.1E+03	mg/kg	M	8.2E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	5.3E+01	mg/kg	5.3E+01	mg/kg	M	4.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Dieldrin	8.7E-03	mg/kg	8.7E-03	mg/kg	M	6.8E-11	mg/kg-day	16	(mg/kg/day)-1	1.1E-09
	PCBs										
	Aroclor 1221	8.1E-02	mg/kg	8.1E-02	mg/kg	M	6.4E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1242	3.5E-01	mg/kg	3.5E-01	mg/kg	M	2.7E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1248	2.3E-01	mg/kg	2.3E-01	mg/kg	M	1.8E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	1.4E-01	mg/kg	1.4E-01	mg/kg	M	1.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	1.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs	1.1E+00	mg/kg	1.1E+00	mg/kg	M	8.3E-09	mg/kg-day	1	(mg/kg/day)-1	8.3E-09
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	3.8E-04	mg/kg	3.8E-04	mg/kg	M	2.9E-12	mg/kg-day	150000	(mg/kg/day)-1	4.4E-07
										Sum of Cancer Risk from Ingestion	1.4E-06
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	4.1E+03	mg/kg	4.1E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	3.0E+00	mg/kg	3.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	1.6E-08	mg/kg-day	1.5	(mg/kg/day)-1	2.4E-08
	Barium	9.0E+02	mg/kg	9.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.9E+00	mg/kg	3.9E+00	mg/kg	M	1.7E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.0E+02	mg/kg	2.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	9.6E+01	mg/kg	9.6E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	1.5E+00	mg/kg	1.5E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.2E+04	mg/kg	1.2E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Lead	2.3E+02	mg/kg	2.3E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.9E+02	mg/kg	2.9E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+01	mg/kg	1.9E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.2E-02	mg/kg	2.2E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.9.CT
Calculation of Cancer Hazards
Central Tendency
South Basin Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Nickel	7.3E+01	mg/kg	7.3E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	4.0E-01	mg/kg	4.0E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Vanadium	3.0E+01	mg/kg	3.0E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	6.1E+01	mg/kg	6.1E+01	mg/kg	M	NA	mg/kg-day	0.055	(mg/kg/day)-1	
	Chlorobenzene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylene chloride	8.5E+00	mg/kg	8.5E+00	mg/kg	M	NA	mg/kg-day	0.0075	(mg/kg/day)-1	
	Xylenes	3.3E+02	mg/kg	3.3E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	2.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.3E+01	mg/kg	6.3E+01	mg/kg	M	2.8E-07	mg/kg-day	0.024	(mg/kg/day)-1	6.6E-09
	Dibenzofuran	1.8E+01	mg/kg	1.8E+01	mg/kg	M	7.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Hexachlorobenzene	6.7E+00	mg/kg	6.7E+00	mg/kg	M	2.9E-08	mg/kg-day	1.6	(mg/kg/day)-1	4.7E-08
	2-Methylnaphthalene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	1.0E-06	mg/kg-day	NA	(mg/kg/day)-1	
	PAHs										
	Acenaphthylene	4.2E+00	mg/kg	4.2E+00	mg/kg	M	2.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benz[a]anthracene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	5.6E-08	mg/kg-day	0.73	(mg/kg/day)-1	4.1E-08
	Benzo[a]pyrene	7.4E+00	mg/kg	7.4E+00	mg/kg	M	4.2E-08	mg/kg-day	7.3	(mg/kg/day)-1	3.1E-07
	Benzo[b]fluoranthene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	5.6E-08	mg/kg-day	0.73	(mg/kg/day)-1	4.1E-08
	Benzo[ghi]perylene	6.4E+00	mg/kg	6.4E+00	mg/kg	M	3.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo[k]fluoranthene	3.6E+00	mg/kg	3.6E+00	mg/kg	M	2.0E-08	mg/kg-day	0.073	(mg/kg/day)-1	1.5E-09
	Chrysene	9.6E+00	mg/kg	9.6E+00	mg/kg	M	5.5E-08	mg/kg-day	0.0073	(mg/kg/day)-1	4.0E-10
	Dibenz[a,h]anthracene	1.6E+00	mg/kg	1.6E+00	mg/kg	M	9.3E-09	mg/kg-day	7.3	(mg/kg/day)-1	6.8E-08
	Fluoranthene	3.4E+01	mg/kg	3.4E+01	mg/kg	M	1.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Indeno[1,2,3-cd]pyrene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	2.1E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.6E-08
	Naphthalene	1.1E+03	mg/kg	1.1E+03	mg/kg	M	6.0E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	5.3E+01	mg/kg	5.3E+01	mg/kg	M	3.0E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Dieldrin	8.7E-03	mg/kg	8.7E-03	mg/kg	M	NA	mg/kg-day	16	(mg/kg/day)-1	
	PCBs										
	Aroclor 1221	8.1E-02	mg/kg	8.1E-02	mg/kg	M	5.0E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1242	3.5E-01	mg/kg	3.5E-01	mg/kg	M	2.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1248	2.3E-01	mg/kg	2.3E-01	mg/kg	M	1.4E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	1.4E-01	mg/kg	1.4E-01	mg/kg	M	8.5E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	1.2E-09	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs	1.1E+00	mg/kg	1.1E+00	mg/kg	M	6.5E-09	mg/kg-day	1	(mg/kg/day)-1	6.5E-09

Table 8.9.CT
Calculation of Cancer Hazards
Central Tendency
South Basin Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	PCDD/Fs TEQ as 2,3,7,8-TCDD	3.8E-04	mg/kg	3.8E-04	mg/kg	M	5.0E-13	mg/kg-day	150000	(mg/kg/day)-1	7.4E-08
										Sum of Cancer Risk from Dermal Contact	6.3E-07
										Total Cancer Risk	2.0E-06

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.10.CT
Calculation of Cancer Hazards
Central Tendency
South Basin Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: South Basin Sediments
Receptor Population: Recreational
Receptor Age: Older Children (6 to < 18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	4.1E+03	mg/kg	4.1E+03	mg/kg	M	8.4E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	3.0E+00	mg/kg	3.0E+00	mg/kg	M	6.2E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	2.5E-08	mg/kg-day	1.5	(mg/kg/day)-1	3.8E-08
	Barium	9.0E+02	mg/kg	9.0E+02	mg/kg	M	1.8E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.9E+00	mg/kg	3.9E+00	mg/kg	M	8.0E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.0E+02	mg/kg	2.0E+02	mg/kg	M	4.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	9.6E+01	mg/kg	9.6E+01	mg/kg	M	2.0E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	1.5E+00	mg/kg	1.5E+00	mg/kg	M	3.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.2E+04	mg/kg	1.2E+04	mg/kg	M	2.5E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Lead	2.3E+02	mg/kg	2.3E+02	mg/kg	M	4.8E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.9E+02	mg/kg	2.9E+02	mg/kg	M	6.0E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+01	mg/kg	1.9E+01	mg/kg	M	3.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.2E-02	mg/kg	2.2E-02	mg/kg	M	4.6E-11	mg/kg-day	NA	(mg/kg/day)-1	
	Nickel	7.3E+01	mg/kg	7.3E+01	mg/kg	M	1.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	4.0E-01	mg/kg	4.0E-01	mg/kg	M	8.2E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Vanadium	3.0E+01	mg/kg	3.0E+01	mg/kg	M	6.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	6.1E+01	mg/kg	6.1E+01	mg/kg	M	1.3E-07	mg/kg-day	0.055	(mg/kg/day)-1	6.9E-09
	Chlorobenzene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	3.7E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Methylene chloride	8.5E+00	mg/kg	8.5E+00	mg/kg	M	1.7E-08	mg/kg-day	0.0075	(mg/kg/day)-1	1.3E-10
	Xylenes	3.3E+02	mg/kg	3.3E+02	mg/kg	M	6.8E-07	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	9.5E-09	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.3E+01	mg/kg	6.3E+01	mg/kg	M	1.3E-07	mg/kg-day	0.024	(mg/kg/day)-1	3.1E-09
	Dibenzofuran	1.8E+01	mg/kg	1.8E+01	mg/kg	M	3.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Hexachlorobenzene	6.7E+00	mg/kg	6.7E+00	mg/kg	M	1.4E-08	mg/kg-day	1.6	(mg/kg/day)-1	2.2E-08
	PAHs										
	2-Methylnaphthalene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	3.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	4.2E+00	mg/kg	4.2E+00	mg/kg	M	8.7E-09	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.10.CT
Calculation of Cancer Hazards
Central Tendency
South Basin Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Benz[a]anthracene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	2.0E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.5E-08
	Benzo[a]pyrene	7.4E+00	mg/kg	7.4E+00	mg/kg	M	1.5E-08	mg/kg-day	7.3	(mg/kg/day)-1	1.1E-07
	Benzo[b]fluoranthene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	2.0E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.5E-08
	Benzo[ghi]perylene	6.4E+00	mg/kg	6.4E+00	mg/kg	M	1.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo[k]fluoranthene	3.6E+00	mg/kg	3.6E+00	mg/kg	M	7.3E-09	mg/kg-day	0.073	(mg/kg/day)-1	5.3E-10
	Chrysene	9.6E+00	mg/kg	9.6E+00	mg/kg	M	2.0E-08	mg/kg-day	0.0073	(mg/kg/day)-1	1.4E-10
	Dibenz[a,h]anthracene	1.6E+00	mg/kg	1.6E+00	mg/kg	M	3.3E-09	mg/kg-day	7.3	(mg/kg/day)-1	2.4E-08
	Fluoranthene	3.4E+01	mg/kg	3.4E+01	mg/kg	M	6.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Indeno[1,2,3-cd]pyrene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	7.7E-09	mg/kg-day	0.73	(mg/kg/day)-1	5.6E-09
	Naphthalene	1.1E+03	mg/kg	1.1E+03	mg/kg	M	2.2E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	5.3E+01	mg/kg	5.3E+01	mg/kg	M	1.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Dieldrin	8.7E-03	mg/kg	8.7E-03	mg/kg	M	1.8E-11	mg/kg-day	16	(mg/kg/day)-1	2.8E-10
	PCBs										
	Aroclor 1221	8.1E-02	mg/kg	8.1E-02	mg/kg	M	1.7E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1242	3.5E-01	mg/kg	3.5E-01	mg/kg	M	7.1E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1248	2.3E-01	mg/kg	2.3E-01	mg/kg	M	4.6E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	1.4E-01	mg/kg	1.4E-01	mg/kg	M	2.8E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	4.1E-10	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs	1.1E+00	mg/kg	1.1E+00	mg/kg	M	2.2E-09	mg/kg-day	1	(mg/kg/day)-1	2.2E-09
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	3.8E-04	mg/kg	3.8E-04	mg/kg	M	7.7E-13	mg/kg-day	150000	(mg/kg/day)-1	1.2E-07
										Sum of Cancer Risk from Ingestion	3.6E-07
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	4.1E+03	mg/kg	4.1E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	3.0E+00	mg/kg	3.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	1.6E-08	mg/kg-day	1.5	(mg/kg/day)-1	2.5E-08
	Barium	9.0E+02	mg/kg	9.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.9E+00	mg/kg	3.9E+00	mg/kg	M	1.7E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.0E+02	mg/kg	2.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	9.6E+01	mg/kg	9.6E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	1.5E+00	mg/kg	1.5E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.2E+04	mg/kg	1.2E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Lead	2.3E+02	mg/kg	2.3E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.9E+02	mg/kg	2.9E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+01	mg/kg	1.9E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.2E-02	mg/kg	2.2E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.10.CT
Calculation of Cancer Hazards
Central Tendency
South Basin Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Nickel	7.3E+01	mg/kg	7.3E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	4.0E-01	mg/kg	4.0E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Vanadium	3.0E+01	mg/kg	3.0E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	6.1E+01	mg/kg	6.1E+01	mg/kg	M	NA	mg/kg-day	0.055	(mg/kg/day)-1	
	Chlorobenzene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylene chloride	8.5E+00	mg/kg	8.5E+00	mg/kg	M	NA	mg/kg-day	0.0075	(mg/kg/day)-1	
	Xylenes	3.3E+02	mg/kg	3.3E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	2.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.3E+01	mg/kg	6.3E+01	mg/kg	M	2.8E-07	mg/kg-day	0.024	(mg/kg/day)-1	6.7E-09
	Dibenzofuran	1.8E+01	mg/kg	1.8E+01	mg/kg	M	8.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Hexachlorobenzene	6.7E+00	mg/kg	6.7E+00	mg/kg	M	2.9E-08	mg/kg-day	1.6	(mg/kg/day)-1	4.7E-08
	2-Methylnaphthalene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	1.0E-06	mg/kg-day	NA	(mg/kg/day)-1	
	PAHs										
	Acenaphthylene	4.2E+00	mg/kg	4.2E+00	mg/kg	M	2.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benz[a]anthracene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	5.6E-08	mg/kg-day	0.73	(mg/kg/day)-1	4.1E-08
	Benzo[a]pyrene	7.4E+00	mg/kg	7.4E+00	mg/kg	M	4.3E-08	mg/kg-day	7.3	(mg/kg/day)-1	3.1E-07
	Benzo[b]fluoranthene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	5.6E-08	mg/kg-day	0.73	(mg/kg/day)-1	4.1E-08
	Benzo[ghi]perylene	6.4E+00	mg/kg	6.4E+00	mg/kg	M	3.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo[k]fluoranthene	3.6E+00	mg/kg	3.6E+00	mg/kg	M	2.0E-08	mg/kg-day	0.073	(mg/kg/day)-1	1.5E-09
	Chrysene	9.6E+00	mg/kg	9.6E+00	mg/kg	M	5.5E-08	mg/kg-day	0.0073	(mg/kg/day)-1	4.0E-10
	Dibenz[a,h]anthracene	1.6E+00	mg/kg	1.6E+00	mg/kg	M	9.4E-09	mg/kg-day	7.3	(mg/kg/day)-1	6.8E-08
	Fluoranthene	3.4E+01	mg/kg	3.4E+01	mg/kg	M	1.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Indeno[1,2,3-cd]pyrene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	2.2E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.6E-08
	Naphthalene	1.1E+03	mg/kg	1.1E+03	mg/kg	M	6.0E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	5.3E+01	mg/kg	5.3E+01	mg/kg	M	3.0E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Dieldrin	8.7E-03	mg/kg	8.7E-03	mg/kg	M	NA	mg/kg-day	16	(mg/kg/day)-1	
	PCBs										
	Aroclor 1221	8.1E-02	mg/kg	8.1E-02	mg/kg	M	5.0E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1242	3.5E-01	mg/kg	3.5E-01	mg/kg	M	2.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1248	2.3E-01	mg/kg	2.3E-01	mg/kg	M	1.4E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	1.4E-01	mg/kg	1.4E-01	mg/kg	M	8.6E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	1.2E-09	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs	1.1E+00	mg/kg	1.1E+00	mg/kg	M	6.6E-09	mg/kg-day	1	(mg/kg/day)-1	6.6E-09

Table 8.10.CT
Calculation of Cancer Hazards
Central Tendency
South Basin Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	PCDD/Fs										
	TEQ as 2,3,7,8-TCDD	3.8E-04	mg/kg	3.8E-04	mg/kg	M	5.0E-13	mg/kg-day	150000	(mg/kg/day)-1	7.5E-08
									Sum of Cancer Risk from Dermal Contact		6.4E-07
										Total Cancer Risk	1.0E-06

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.11.CT
Calculation of Cancer Hazards
Central Tendency
South Basin Onondaga Lake

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: South Basin Sediments
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	4.1E+03	mg/kg	4.1E+03	mg/kg	M	1.5E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	3.0E+00	mg/kg	3.0E+00	mg/kg	M	1.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	4.6E-08	mg/kg-day	1.5	(mg/kg/day)-1	6.9E-08
	Barium	9.0E+02	mg/kg	9.0E+02	mg/kg	M	3.3E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.9E+00	mg/kg	3.9E+00	mg/kg	M	1.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.0E+02	mg/kg	2.0E+02	mg/kg	M	7.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	9.6E+01	mg/kg	9.6E+01	mg/kg	M	3.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	1.5E+00	mg/kg	1.5E+00	mg/kg	M	5.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.2E+04	mg/kg	1.2E+04	mg/kg	M	4.5E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Lead	2.3E+02	mg/kg	2.3E+02	mg/kg	M	8.7E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.9E+02	mg/kg	2.9E+02	mg/kg	M	1.1E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+01	mg/kg	1.9E+01	mg/kg	M	7.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.2E-02	mg/kg	2.2E-02	mg/kg	M	8.3E-11	mg/kg-day	NA	(mg/kg/day)-1	
	Nickel	7.3E+01	mg/kg	7.3E+01	mg/kg	M	2.7E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	4.0E-01	mg/kg	4.0E-01	mg/kg	M	1.5E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Vanadium	3.0E+01	mg/kg	3.0E+01	mg/kg	M	1.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	6.1E+01	mg/kg	6.1E+01	mg/kg	M	2.3E-07	mg/kg-day	0.055	(mg/kg/day)-1	1.2E-08
	Chlorobenzene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	6.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Methylene chloride	8.5E+00	mg/kg	8.5E+00	mg/kg	M	3.1E-08	mg/kg-day	0.0075	(mg/kg/day)-1	2.4E-10
	Xylenes	3.3E+02	mg/kg	3.3E+02	mg/kg	M	1.2E-06	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	1.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.3E+01	mg/kg	6.3E+01	mg/kg	M	2.3E-07	mg/kg-day	0.024	(mg/kg/day)-1	5.6E-09
	Dibenzofuran	1.8E+01	mg/kg	1.8E+01	mg/kg	M	6.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Hexachlorobenzene	6.7E+00	mg/kg	6.7E+00	mg/kg	M	2.5E-08	mg/kg-day	1.6	(mg/kg/day)-1	3.9E-08
	PAHs										
	2-Methylnaphthalene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	6.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	4.2E+00	mg/kg	4.2E+00	mg/kg	M	1.6E-08	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.11.CT
Calculation of Cancer Hazards
Central Tendency
South Basin Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Benz[a]anthracene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	3.6E-08	mg/kg-day	0.73	(mg/kg/day)-1	2.6E-08
	Benzo[a]pyrene	7.4E+00	mg/kg	7.4E+00	mg/kg	M	2.7E-08	mg/kg-day	7.3	(mg/kg/day)-1	2.0E-07
	Benzo[b]fluoranthene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	3.6E-08	mg/kg-day	0.73	(mg/kg/day)-1	2.6E-08
	Benzo[ghi]perylene	6.4E+00	mg/kg	6.4E+00	mg/kg	M	2.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo[k]fluoranthene	3.6E+00	mg/kg	3.6E+00	mg/kg	M	1.3E-08	mg/kg-day	0.073	(mg/kg/day)-1	9.6E-10
	Chrysene	9.6E+00	mg/kg	9.6E+00	mg/kg	M	3.6E-08	mg/kg-day	0.0073	(mg/kg/day)-1	2.6E-10
	Dibenz[a,h]anthracene	1.6E+00	mg/kg	1.6E+00	mg/kg	M	6.0E-09	mg/kg-day	7.3	(mg/kg/day)-1	4.4E-08
	Fluoranthene	3.4E+01	mg/kg	3.4E+01	mg/kg	M	1.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Indeno[1,2,3-cd]pyrene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	1.4E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.0E-08
	Naphthalene	1.1E+03	mg/kg	1.1E+03	mg/kg	M	3.9E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	5.3E+01	mg/kg	5.3E+01	mg/kg	M	1.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Dieldrin	8.7E-03	mg/kg	8.7E-03	mg/kg	M	3.2E-11	mg/kg-day	16	(mg/kg/day)-1	5.1E-10
	PCBs						3.9E-09				
	Aroclor 1221	8.1E-02	mg/kg	8.1E-02	mg/kg	M	3.0E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1242	3.5E-01	mg/kg	3.5E-01	mg/kg	M	1.3E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1248	2.3E-01	mg/kg	2.3E-01	mg/kg	M	8.3E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	1.4E-01	mg/kg	1.4E-01	mg/kg	M	5.1E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	7.4E-10	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs	1.1E+00	mg/kg	1.1E+00	mg/kg	M	3.9E-09	mg/kg-day	1	(mg/kg/day)-1	3.9E-09
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	3.8E-04	mg/kg	3.8E-04	mg/kg	M	1.4E-12	mg/kg-day	150000	(mg/kg/day)-1	2.1E-07
										Sum of Cancer Risk from Ingestion	6.5E-07
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	4.1E+03	mg/kg	4.1E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	3.0E+00	mg/kg	3.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	4.7E-09	mg/kg-day	1.5	(mg/kg/day)-1	7.1E-09
	Barium	9.0E+02	mg/kg	9.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.9E+00	mg/kg	3.9E+00	mg/kg	M	5.0E-11	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.0E+02	mg/kg	2.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	9.6E+01	mg/kg	9.6E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	1.5E+00	mg/kg	1.5E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.2E+04	mg/kg	1.2E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Lead	2.3E+02	mg/kg	2.3E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.9E+02	mg/kg	2.9E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	1.9E+01	mg/kg	1.9E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.2E-02	mg/kg	2.2E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.11.CT
Calculation of Cancer Hazards
Central Tendency
South Basin Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Nickel	7.3E+01	mg/kg	7.3E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	4.0E-01	mg/kg	4.0E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Vanadium	3.0E+01	mg/kg	3.0E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	VOCs										
	Benzene	6.1E+01	mg/kg	6.1E+01	mg/kg	M	NA	mg/kg-day	0.055	(mg/kg/day)-1	
	Chlorobenzene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylene chloride	8.5E+00	mg/kg	8.5E+00	mg/kg	M	NA	mg/kg-day	0.0075	(mg/kg/day)-1	
	Xylenes	3.3E+02	mg/kg	3.3E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	5.9E-09	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.3E+01	mg/kg	6.3E+01	mg/kg	M	8.0E-08	mg/kg-day	0.024	(mg/kg/day)-1	1.9E-09
	Dibenzofuran	1.8E+01	mg/kg	1.8E+01	mg/kg	M	2.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Hexachlorobenzene	6.7E+00	mg/kg	6.7E+00	mg/kg	M	8.5E-09	mg/kg-day	1.6	(mg/kg/day)-1	1.4E-08
	2-Methylnaphthalene	1.8E+02	mg/kg	1.8E+02	mg/kg	M	2.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	PAHs										
	Acenaphthylene	4.2E+00	mg/kg	4.2E+00	mg/kg	M	7.0E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Benz[a]anthracene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	1.6E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.2E-08
	Benzo[a]pyrene	7.4E+00	mg/kg	7.4E+00	mg/kg	M	1.2E-08	mg/kg-day	7.3	(mg/kg/day)-1	9.0E-08
	Benzo[b]fluoranthene	9.8E+00	mg/kg	9.8E+00	mg/kg	M	1.6E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.2E-08
	Benzo[ghi]perylene	6.4E+00	mg/kg	6.4E+00	mg/kg	M	1.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo[k]fluoranthene	3.6E+00	mg/kg	3.6E+00	mg/kg	M	5.9E-09	mg/kg-day	0.073	(mg/kg/day)-1	4.3E-10
	Chrysene	9.6E+00	mg/kg	9.6E+00	mg/kg	M	1.6E-08	mg/kg-day	0.0073	(mg/kg/day)-1	1.2E-10
	Dibenz[a,h]anthracene	1.6E+00	mg/kg	1.6E+00	mg/kg	M	2.7E-09	mg/kg-day	7.3	(mg/kg/day)-1	2.0E-08
	Fluoranthene	3.4E+01	mg/kg	3.4E+01	mg/kg	M	5.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Indeno[1,2,3-cd]pyrene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	6.2E-09	mg/kg-day	0.73	(mg/kg/day)-1	4.6E-09
	Naphthalene	1.1E+03	mg/kg	1.1E+03	mg/kg	M	1.7E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	5.3E+01	mg/kg	5.3E+01	mg/kg	M	8.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Dieldrin	8.7E-03	mg/kg	8.7E-03	mg/kg	M	NA	mg/kg-day	16	(mg/kg/day)-1	
	PCBs										
	Aroclor 1221	8.1E-02	mg/kg	8.1E-02	mg/kg	M	1.5E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1242	3.5E-01	mg/kg	3.5E-01	mg/kg	M	6.2E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1248	2.3E-01	mg/kg	2.3E-01	mg/kg	M	4.0E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	1.4E-01	mg/kg	1.4E-01	mg/kg	M	2.5E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	3.6E-10	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs	1.1E+00	mg/kg	1.1E+00	mg/kg	M	1.9E-09	mg/kg-day	1	(mg/kg/day)-1	1.9E-09

Table 8.11.CT
Calculation of Cancer Hazards
Central Tendency
South Basin Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	PCDD/Fs										
	TEQ as 2,3,7,8-TCDD	3.8E-04	mg/kg	3.8E-04	mg/kg	M	1.4E-13	mg/kg-day	150000	(mg/kg/day)-1	2.2E-08
										Sum of Cancer Risk from Dermal Contact	1.8E-07
										Total Cancer Risk	8.3E-07

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.12.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-6 (North Basin) Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-6 (North Basin)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	1.1E+04	mg/kg	1.1E+04	mg/kg	M	8.6E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.8E+00	mg/kg	6.8E+00	mg/kg	M	5.5E-08	mg/kg-day	1.5	(mg/kg/day)-1	8.2E-08
	Cadmium	8.6E+00	mg/kg	8.6E+00	mg/kg	M	6.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	9.4E+01	mg/kg	9.4E+01	mg/kg	M	7.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	2.8E+00	mg/kg	2.8E+00	mg/kg	M	2.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	2.8E+04	mg/kg	2.8E+04	mg/kg	M	2.3E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	2.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.1E-02	mg/kg	3.1E-02	mg/kg	M	2.5E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	4.2E+02	mg/kg	4.2E+02	mg/kg	M	3.4E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	1.7E+00	mg/kg	1.7E+00	mg/kg	M	1.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	PAHs										
	Benzo(a)pyrene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	2.0E-07	mg/kg-day	7.3	(mg/kg/day)-1	1.5E-06
	2-Methylnaphthalene	3.3E+00	mg/kg	3.3E+00	mg/kg	M	2.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	3.9E+00	mg/kg	3.9E+00	mg/kg	M	3.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benz(a)anthracene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	2.0E-07	mg/kg-day	0.73	(mg/kg/day)-1	1.5E-07
	Benzo(b)fluoranthene	3.1E+01	mg/kg	3.1E+01	mg/kg	M	2.5E-07	mg/kg-day	0.73	(mg/kg/day)-1	1.8E-07
	Benzo(g,h,i)perylene	1.5E+01	mg/kg	1.5E+01	mg/kg	M	1.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	9.2E-08	mg/kg-day	0.073	(mg/kg/day)-1	6.7E-09
	Dibenz(a,h)anthracene	4.4E+00	mg/kg	4.4E+00	mg/kg	M	3.6E-08	mg/kg-day	7.3	(mg/kg/day)-1	2.6E-07
	Indeno(1,2,3-cd)pyrene	1.5E+01	mg/kg	1.5E+01	mg/kg	M	1.2E-07	mg/kg-day	0.73	(mg/kg/day)-1	8.6E-08
	Naphthalene	4.3E+00	mg/kg	4.3E+00	mg/kg	M	3.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	3.3E+01	mg/kg	3.3E+01	mg/kg	M	2.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	1.1E-05	mg/kg	1.1E-05	mg/kg	M	9.3E-14	mg/kg-day	150000	(mg/kg/day)-1	1.4E-08
										Sum of Cancer Risk from Ingestion	2.2E-06

Table 8.12.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-6 (North Basin) Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	1.1E+04	mg/kg	1.1E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.8E+00	mg/kg	6.8E+00	mg/kg	M	2.8E-08	mg/kg-day	1.5	(mg/kg/day)-1	4.2E-08
	Cadmium	8.6E+00	mg/kg	8.6E+00	mg/kg	M	1.2E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	9.4E+01	mg/kg	9.4E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	2.8E+00	mg/kg	2.8E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	2.8E+04	mg/kg	2.8E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.1E-02	mg/kg	3.1E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	4.2E+02	mg/kg	4.2E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	1.7E+00	mg/kg	1.7E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	PAHs										
	Benzo(a)pyrene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	4.5E-07	mg/kg-day	7.3	(mg/kg/day)-1	3.3E-06
	2-Methylnaphthalene	3.3E+00	mg/kg	3.3E+00	mg/kg	M	5.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	3.9E+00	mg/kg	3.9E+00	mg/kg	M	7.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benz(a)anthracene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	4.6E-07	mg/kg-day	0.73	(mg/kg/day)-1	3.3E-07
	Benzo(b)fluoranthene	3.1E+01	mg/kg	3.1E+01	mg/kg	M	5.5E-07	mg/kg-day	0.73	(mg/kg/day)-1	4.0E-07
	Benzo(g,h,i)perylene	1.5E+01	mg/kg	1.5E+01	mg/kg	M	2.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	2.0E-07	mg/kg-day	0.073	(mg/kg/day)-1	1.5E-08
	Dibenz(a,h)anthracene	4.4E+00	mg/kg	4.4E+00	mg/kg	M	7.9E-08	mg/kg-day	7.3	(mg/kg/day)-1	5.8E-07
	Indeno(1,2,3-cd)pyrene	1.5E+01	mg/kg	1.5E+01	mg/kg	M	2.6E-07	mg/kg-day	0.73	(mg/kg/day)-1	1.9E-07
	Naphthalene	4.3E+00	mg/kg	4.3E+00	mg/kg	M	7.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	3.3E+01	mg/kg	3.3E+01	mg/kg	M	5.8E-07	mg/kg-day	NA	(mg/kg/day)-1	
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	1.1E-05	mg/kg	1.1E-05	mg/kg	M	4.7E-14	mg/kg-day	150000	(mg/kg/day)-1	7.1E-09
										Sum of Cancer Risk from Dermal Contact	4.8E-06
										Total Cancer Risk	7.1E-06

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.13.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-6 (North Basin) Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW- 6 (North Basin)
Receptor Population: Recreational
Receptor Age: Older Children (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	1.1E+04	mg/kg	1.1E+04	mg/kg	M	1.4E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.8E+00	mg/kg	6.8E+00	mg/kg	M	8.9E-08	mg/kg-day	1.5	(mg/kg/day)-1	1.3E-07
	Cadmium	8.6E+00	mg/kg	8.6E+00	mg/kg	M	1.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	9.4E+01	mg/kg	9.4E+01	mg/kg	M	1.2E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	2.8E+00	mg/kg	2.8E+00	mg/kg	M	3.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	2.8E+04	mg/kg	2.8E+04	mg/kg	M	3.7E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	4.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.1E-02	mg/kg	3.1E-02	mg/kg	M	4.0E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	4.2E+02	mg/kg	4.2E+02	mg/kg	M	5.5E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	1.7E+00	mg/kg	1.7E+00	mg/kg	M	2.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	PAHs										
	Benzo(a)pyrene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	3.3E-07	mg/kg-day	7.3	(mg/kg/day)-1	2.4E-06
	2-Methylnaphthalene	3.3E+00	mg/kg	3.3E+00	mg/kg	M	4.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	3.9E+00	mg/kg	3.9E+00	mg/kg	M	5.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benz(a)anthracene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	3.3E-07	mg/kg-day	0.73	(mg/kg/day)-1	2.4E-07
	Benzo(b)fluoranthene	3.1E+01	mg/kg	3.1E+01	mg/kg	M	4.0E-07	mg/kg-day	0.73	(mg/kg/day)-1	2.9E-07
	Benzo(g,h,i)perylene	1.5E+01	mg/kg	1.5E+01	mg/kg	M	1.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	1.5E-07	mg/kg-day	0.073	(mg/kg/day)-1	1.1E-08
	Dibenz(a,h)anthracene	4.4E+00	mg/kg	4.4E+00	mg/kg	M	5.8E-08	mg/kg-day	7.3	(mg/kg/day)-1	4.2E-07
	Indeno(1,2,3-cd)pyren	1.5E+01	mg/kg	1.5E+01	mg/kg	M	1.9E-07	mg/kg-day	0.73	(mg/kg/day)-1	1.4E-07
	Naphthalene	4.3E+00	mg/kg	4.3E+00	mg/kg	M	5.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	3.3E+01	mg/kg	3.3E+01	mg/kg	M	4.3E-07	mg/kg-day	NA	(mg/kg/day)-1	
	PCDD/PCDFs										
	TEQ as 2,3,7,8-	1.1E-05	mg/kg	1.1E-05	mg/kg	M	1.5E-13	mg/kg-day	150000	(mg/kg/day)-1	2.3E-08
										Sum of Cancer Risk from Ingestion	3.7E-06
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	1.1E+04	mg/kg	1.1E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.8E+00	mg/kg	6.8E+00	mg/kg	M	5.8E-08	mg/kg-day	1.5	(mg/kg/day)-1	8.7E-08

Table 8.13.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-6 (North Basin) Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Cadmium	8.6E+00	mg/kg	8.6E+00	mg/kg	M	2.4E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	9.4E+01	mg/kg	9.4E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	2.8E+00	mg/kg	2.8E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	2.8E+04	mg/kg	2.8E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.1E-02	mg/kg	3.1E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	4.2E+02	mg/kg	4.2E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	1.7E+00	mg/kg	1.7E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	PAHs										
	Benzo(a)pyrene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	9.2E-07	mg/kg-day	7.3	(mg/kg/day)-1	6.7E-06
	2-Methylnaphthalene	3.3E+00	mg/kg	3.3E+00	mg/kg	M	1.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	3.9E+00	mg/kg	3.9E+00	mg/kg	M	1.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Benz(a)anthracene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	9.4E-07	mg/kg-day	0.73	(mg/kg/day)-1	6.8E-07
	Benzo(b)fluoranthene	3.1E+01	mg/kg	3.1E+01	mg/kg	M	1.1E-06	mg/kg-day	0.73	(mg/kg/day)-1	8.3E-07
	Benzo(g,h,i)perylene	1.5E+01	mg/kg	1.5E+01	mg/kg	M	5.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	4.2E-07	mg/kg-day	0.073	(mg/kg/day)-1	3.1E-08
	Dibenz(a,h)anthracene	4.4E+00	mg/kg	4.4E+00	mg/kg	M	1.6E-07	mg/kg-day	7.3	(mg/kg/day)-1	1.2E-06
	Indeno(1,2,3-cd)pyren	1.5E+01	mg/kg	1.5E+01	mg/kg	M	5.4E-07	mg/kg-day	0.73	(mg/kg/day)-1	3.9E-07
	Naphthalene	4.3E+00	mg/kg	4.3E+00	mg/kg	M	1.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	3.3E+01	mg/kg	3.3E+01	mg/kg	M	1.2E-06	mg/kg-day	NA	(mg/kg/day)-1	
	PCDD/PCDFs										
	TEQ as 2,3,7,8-	1.1E-05	mg/kg	1.1E-05	mg/kg	M	9.8E-14	mg/kg-day	150000	(mg/kg/day)-1	1.5E-08
										Sum of Cancer Risk from Dermal Contact	9.9E-06
										Total Cancer Risk	1.4E-05

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.14.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-6 (North Basin) Onondaga Lake

Scenario Timeframe: Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-6 (North Basin)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	1.1E+04	mg/kg	1.1E+04	mg/kg	M	3.9E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.8E+00	mg/kg	6.8E+00	mg/kg	M	2.5E-08	mg/kg-day	1.5	(mg/kg/day)-1	3.8E-08
	Cadmium	8.6E+00	mg/kg	8.6E+00	mg/kg	M	3.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	9.4E+01	mg/kg	9.4E+01	mg/kg	M	3.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	2.8E+00	mg/kg	2.8E+00	mg/kg	M	1.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	2.8E+04	mg/kg	2.8E+04	mg/kg	M	1.0E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	1.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.1E-02	mg/kg	3.1E-02	mg/kg	M	1.1E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	4.2E+02	mg/kg	4.2E+02	mg/kg	M	1.5E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	1.7E+00	mg/kg	1.7E+00	mg/kg	M	6.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	PAHs										
	Benzo(a)pyrene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	9.2E-08	mg/kg-day	7.3	(mg/kg/day)-1	6.7E-07
	2-Methylnaphthalene	3.3E+00	mg/kg	3.3E+00	mg/kg	M	1.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	3.9E+00	mg/kg	3.9E+00	mg/kg	M	1.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benz(a)anthracene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	9.4E-08	mg/kg-day	0.73	(mg/kg/day)-1	6.9E-08
	Benzo(b)fluoranthene	3.1E+01	mg/kg	3.1E+01	mg/kg	M	1.1E-07	mg/kg-day	0.73	(mg/kg/day)-1	8.3E-08
	Benzo(g,h,i)perylene	1.5E+01	mg/kg	1.5E+01	mg/kg	M	5.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	4.2E-08	mg/kg-day	0.073	(mg/kg/day)-1	3.1E-09
	Dibenz(a,h)anthracene	4.4E+00	mg/kg	4.4E+00	mg/kg	M	1.6E-08	mg/kg-day	7.3	(mg/kg/day)-1	1.2E-07
	Indeno(1,2,3-cd)pyrene	1.5E+01	mg/kg	1.5E+01	mg/kg	M	5.4E-08	mg/kg-day	0.73	(mg/kg/day)-1	4.0E-08
	Naphthalene	4.3E+00	mg/kg	4.3E+00	mg/kg	M	1.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	3.3E+01	mg/kg	3.3E+01	mg/kg	M	1.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	1.1E-05	mg/kg	1.1E-05	mg/kg	M	4.2E-14	mg/kg-day	150000	(mg/kg/day)-1	6.4E-09
										Sum of Cancer Risk from Ingestion	1.0E-06
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	1.1E+04	mg/kg	1.1E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.14.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-6 (North Basin) Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Arsenic	6.8E+00	mg/kg	6.8E+00	mg/kg	M	2.6E-09	mg/kg-day	1.5	(mg/kg/day)-1	3.9E-09
	Cadmium	8.6E+00	mg/kg	8.6E+00	mg/kg	M	1.1E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	9.4E+01	mg/kg	9.4E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	2.8E+00	mg/kg	2.8E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	2.8E+04	mg/kg	2.8E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.1E-02	mg/kg	3.1E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	4.2E+02	mg/kg	4.2E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	1.7E+00	mg/kg	1.7E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	PAHs										
	Benzo(a)pyrene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	4.1E-08	mg/kg-day	7.3	(mg/kg/day)-1	3.0E-07
	2-Methylnaphthalene	3.3E+00	mg/kg	3.3E+00	mg/kg	M	5.4E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Acenaphthylene	3.9E+00	mg/kg	3.9E+00	mg/kg	M	6.5E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Benz(a)anthracene	2.5E+01	mg/kg	2.5E+01	mg/kg	M	4.2E-08	mg/kg-day	0.73	(mg/kg/day)-1	3.1E-08
	Benzo(b)fluoranthene	3.1E+01	mg/kg	3.1E+01	mg/kg	M	5.1E-08	mg/kg-day	0.73	(mg/kg/day)-1	3.7E-08
	Benzo(g,h,i)perylene	1.5E+01	mg/kg	1.5E+01	mg/kg	M	2.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	1.9E-08	mg/kg-day	0.073	(mg/kg/day)-1	1.4E-09
	Dibenz(a,h)anthracene	4.4E+00	mg/kg	4.4E+00	mg/kg	M	7.3E-09	mg/kg-day	7.3	(mg/kg/day)-1	5.4E-08
	Indeno(1,2,3-cd)pyrene	1.5E+01	mg/kg	1.5E+01	mg/kg	M	2.4E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.8E-08
	Naphthalene	4.3E+00	mg/kg	4.3E+00	mg/kg	M	7.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	3.3E+01	mg/kg	3.3E+01	mg/kg	M	5.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	1.1E-05	mg/kg	1.1E-05	mg/kg	M	4.4E-15	mg/kg-day	150000	(mg/kg/day)-1	6.6E-10
									Sum of Cancer Risk from Dermal Contact		4.5E-07
										Total Cancer Risk	1.5E-06

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.15.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-10 (North Basin) Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-10 (North Basin)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	9.3E+03	mg/kg	9.3E+03	mg/kg	M	7.5E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	5.1E+00	mg/kg	5.1E+00	mg/kg	M	4.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	9.4E-08	mg/kg-day	1.5	(mg/kg/day)-1	1.4E-07
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	2.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.6E+04	mg/kg	1.6E+04	mg/kg	M	1.3E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.9E+02	mg/kg	3.9E+02	mg/kg	M	3.1E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.3E+00	mg/kg	2.3E+00	mg/kg	M	1.8E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	2.8E+00	mg/kg	2.8E+00	mg/kg	M	2.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.9E-02	mg/kg	2.9E-02	mg/kg	M	2.3E-10	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	1.0E+00	mg/kg	1.0E+00	mg/kg	M	8.3E-09	mg/kg-day	0.73	(mg/kg/day)-1	6.0E-09
	Benzo(a)pyrene	1.1E+00	mg/kg	1.1E+00	mg/kg	M	8.6E-09	mg/kg-day	7.3	(mg/kg/day)-1	6.3E-08
	Benzo(b)fluoranthene	8.9E-01	mg/kg	8.9E-01	mg/kg	M	7.2E-09	mg/kg-day	0.73	(mg/kg/day)-1	5.2E-09
	Dibenz(a,h)anthracene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	2.1E-09	mg/kg-day	7.3	(mg/kg/day)-1	1.5E-08
	Indeno(1,2,3-cd)pyrene	6.6E-01	mg/kg	6.6E-01	mg/kg	M	5.3E-09	mg/kg-day	0.73	(mg/kg/day)-1	3.8E-09
	PCBs										
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	1.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	2.3E-01	mg/kg	2.3E-01	mg/kg	M	1.8E-09	mg/kg-day	1	(mg/kg/day)-1	1.8E-09
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	1.2E-05	mg/kg	1.2E-05	mg/kg	M	9.5E-14	mg/kg-day	150000	(mg/kg/day)-1	1.4E-08
										Sum of Cancer Risk from Ingestion	2.5E-07
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	9.3E+03	mg/kg	9.3E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	5.1E+00	mg/kg	5.1E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	4.8E-08	mg/kg-day	1.5	(mg/kg/day)-1	7.3E-08
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.6E+04	mg/kg	1.6E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.9E+02	mg/kg	3.9E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.15.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-10 (North Basin) Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Thallium	2.3E+00	mg/kg	2.3E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	2.8E+00	mg/kg	2.8E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.9E-02	mg/kg	2.9E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	1.0E+00	mg/kg	1.0E+00	mg/kg	M	1.8E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.3E-08
	Benzo(a)pyrene	1.1E+00	mg/kg	1.1E+00	mg/kg	M	1.9E-08	mg/kg-day	7.3	(mg/kg/day)-1	1.4E-07
	Benzo(b)fluoranthene	8.9E-01	mg/kg	8.9E-01	mg/kg	M	1.6E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.2E-08
	Dibenz(a,h)anthracene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	4.6E-09	mg/kg-day	7.3	(mg/kg/day)-1	3.3E-08
	Indeno(1,2,3-cd)pyrene	6.6E-01	mg/kg	6.6E-01	mg/kg	M	1.2E-08	mg/kg-day	0.73	(mg/kg/day)-1	8.6E-09
	PCBs										
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	3.9E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	2.3E-01	mg/kg	2.3E-01	mg/kg	M	4.4E-09	mg/kg-day	1	(mg/kg/day)-1	4.4E-09
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	1.2E-05	mg/kg	1.2E-05	mg/kg	M	4.9E-14	mg/kg-day	150000	(mg/kg/day)-1	7.3E-09
										Sum of Cancer Risk from Dermal Contact	2.9E-07
										Total Cancer Risk	5.4E-07

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.16.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-10 (North Basin) Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-10 (North Basin)
Receptor Population: Recreational
Receptor Age: Older Child (6 to < 18)

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	9.3E+03	mg/kg	9.3E+03	mg/kg	M	1.2E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	5.1E+00	mg/kg	5.1E+00	mg/kg	M	6.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	1.5E-07	mg/kg-day	1.5	(mg/kg/day)-1	2.3E-07
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	4.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.6E+04	mg/kg	1.6E+04	mg/kg	M	2.1E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.9E+02	mg/kg	3.9E+02	mg/kg	M	5.1E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.3E+00	mg/kg	2.3E+00	mg/kg	M	3.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	2.8E+00	mg/kg	2.8E+00	mg/kg	M	3.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.9E-02	mg/kg	2.9E-02	mg/kg	M	3.7E-10	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	1.0E+00	mg/kg	1.0E+00	mg/kg	M	1.3E-08	mg/kg-day	0.73	(mg/kg/day)-1	9.8E-09
	Benzo(a)pyrene	1.1E+00	mg/kg	1.1E+00	mg/kg	M	1.4E-08	mg/kg-day	7.3	(mg/kg/day)-1	1.0E-07
	Benzo(b)fluoranthene	8.9E-01	mg/kg	8.9E-01	mg/kg	M	1.2E-08	mg/kg-day	0.73	(mg/kg/day)-1	8.5E-09
	Dibenz(a,h)anthracene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	3.3E-09	mg/kg-day	7.3	(mg/kg/day)-1	2.4E-08
	Indeno(1,2,3-cd)pyrene	6.6E-01	mg/kg	6.6E-01	mg/kg	M	8.6E-09	mg/kg-day	0.73	(mg/kg/day)-1	6.3E-09
	PCBs										
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	2.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	2.3E-01	mg/kg	2.3E-01	mg/kg	M	3.0E-09	mg/kg-day	1	(mg/kg/day)-1	3.0E-09
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	1.2E-05	mg/kg	1.2E-05	mg/kg	M	1.5E-13	mg/kg-day	150000	(mg/kg/day)-1	2.3E-08
										Sum of Cancer Risk from Ingestion	4.1E-07
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	9.3E+03	mg/kg	9.3E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	5.1E+00	mg/kg	5.1E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	1.0E-07	mg/kg-day	1.5	(mg/kg/day)-1	1.5E-07
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.6E+04	mg/kg	1.6E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.9E+02	mg/kg	3.9E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.16.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-10 (North Basin) Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Thallium	2.3E+00	mg/kg	2.3E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	2.8E+00	mg/kg	2.8E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.9E-02	mg/kg	2.9E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	1.0E+00	mg/kg	1.0E+00	mg/kg	M	3.8E-08	mg/kg-day	0.73	(mg/kg/day)-1	2.8E-08
	Benzo(a)pyrene	1.1E+00	mg/kg	1.1E+00	mg/kg	M	3.9E-08	mg/kg-day	7.3	(mg/kg/day)-1	2.9E-07
	Benzo(b)fluoranthene	8.9E-01	mg/kg	8.9E-01	mg/kg	M	3.3E-08	mg/kg-day	0.73	(mg/kg/day)-1	2.4E-08
	Dibenz(a,h)anthracene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	9.4E-09	mg/kg-day	7.3	(mg/kg/day)-1	6.8E-08
	Indeno(1,2,3-cd)pyrene	6.6E-01	mg/kg	6.6E-01	mg/kg	M	2.4E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.8E-08
	PCBs										
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	8.0E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	2.3E-01	mg/kg	2.3E-01	mg/kg	M	9.1E-09	mg/kg-day	1	(mg/kg/day)-1	9.1E-09
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	1.2E-05	mg/kg	1.2E-05	mg/kg	M	1.0E-13	mg/kg-day	150000	(mg/kg/day)-1	1.5E-08
										Sum of Cancer Risk from Dermal Contact	6.0E-07
										Total Cancer Risk	1.0E-06

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.17.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-10 (North Basin) Onondaga Lake

Scenario Timeframe: Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-10 (North Basin)
Receptor Population: Recreational
Receptor Age: Construction worker

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	9.3E+03	mg/kg	9.3E+03	mg/kg	M	3.4E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	5.1E+00	mg/kg	5.1E+00	mg/kg	M	1.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	4.3E-08	mg/kg-day	1.5	(mg/kg/day)-1	6.5E-08
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	1.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.6E+04	mg/kg	1.6E+04	mg/kg	M	5.9E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.9E+02	mg/kg	3.9E+02	mg/kg	M	1.4E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	2.3E+00	mg/kg	2.3E+00	mg/kg	M	8.4E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	2.8E+00	mg/kg	2.8E+00	mg/kg	M	1.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	2.9E-02	mg/kg	2.9E-02	mg/kg	M	1.1E-10	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	1.0E+00	mg/kg	1.0E+00	mg/kg	M	3.8E-09	mg/kg-day	0.73	(mg/kg/day)-1	2.8E-09
	Benzo(a)pyrene	1.1E+00	mg/kg	1.1E+00	mg/kg	M	3.9E-09	mg/kg-day	7.3	(mg/kg/day)-1	2.9E-08
	Benzo(b)fluoranthene	8.9E-01	mg/kg	8.9E-01	mg/kg	M	3.3E-09	mg/kg-day	0.73	(mg/kg/day)-1	2.4E-09
	Dibenz(a,h)anthracene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	9.4E-10	mg/kg-day	7.3	(mg/kg/day)-1	6.9E-09
	Indeno(1,2,3-cd)pyrene	6.6E-01	mg/kg	6.6E-01	mg/kg	M	2.4E-09	mg/kg-day	0.73	(mg/kg/day)-1	1.8E-09
	PCBs										
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	7.4E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	2.3E-01	mg/kg	2.3E-01	mg/kg	M	8.4E-10	mg/kg-day	1	(mg/kg/day)-1	8.4E-10
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	1.2E-05	mg/kg	1.2E-05	mg/kg	M	4.4E-14	mg/kg-day	150000	(mg/kg/day)-1	6.5E-09
										Sum of Cancer Risk from Ingestion	1.1E-07
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	9.3E+03	mg/kg	9.3E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Antimony	5.1E+00	mg/kg	5.1E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	1.2E+01	mg/kg	1.2E+01	mg/kg	M	4.5E-09	mg/kg-day	1.5	(mg/kg/day)-1	
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.6E+04	mg/kg	1.6E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.9E+02	mg/kg	3.9E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.17.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-10 (North Basin) Onondaga Lake

Exposure Route	Chemicals of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Thallium	2.3E+00	mg/kg	2.3E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	2.8E+00	mg/kg	2.8E+00	mg/kg	M	NA	mg/kg-day		(mg/kg/day)-1	
	Methylmercury	2.9E-02	mg/kg	2.9E-02	mg/kg	M	NA	mg/kg-day		(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	1.0E+00	mg/kg	1.0E+00	mg/kg	M	1.7E-09	mg/kg-day	0.73	(mg/kg/day)-1	1.2E-09
	Benzo(a)pyrene	1.1E+00	mg/kg	1.1E+00	mg/kg	M	1.8E-09	mg/kg-day	7.3	(mg/kg/day)-1	1.3E-08
	Benzo(b)fluoranthene	8.9E-01	mg/kg	8.9E-01	mg/kg	M	1.5E-09	mg/kg-day	0.73	(mg/kg/day)-1	1.1E-09
	Dibenz(a,h)anthracene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	4.2E-10	mg/kg-day	7.3	(mg/kg/day)-1	3.1E-09
	Indeno(1,2,3-cd)pyrene	6.6E-01	mg/kg	6.6E-01	mg/kg	M	1.1E-09	mg/kg-day	0.73	(mg/kg/day)-1	7.9E-10
	PCBs										
	Aroclor 1260	2.0E-01	mg/kg	2.0E-01	mg/kg	M	3.6E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	2.3E-01	mg/kg	2.3E-01	mg/kg	M	4.1E-10	mg/kg-day	1	(mg/kg/day)-1	4.1E-10
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	1.2E-05	mg/kg	1.2E-05	mg/kg	M	4.5E-15	mg/kg-day	150000	(mg/kg/day)-1	6.8E-10
										Sum of Cancer Risk from Dermal Contact	2.0E-08
										Total Cancer Risk	1.4E-07

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.18.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-12 (South Basin) Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-12 (South Basin)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	8.8E+03	mg/kg	8.8E+03	mg/kg	M	1.1E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.3E+00	mg/kg	6.3E+00	mg/kg	M	7.9E-09	mg/kg-day	1.5	(mg/kg/day)-1	1.2E-08
	Cadmium	4.1E+01	mg/kg	4.1E+01	mg/kg	M	5.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.0E+02	mg/kg	3.0E+02	mg/kg	M	3.8E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	2.7E+02	mg/kg	2.7E+02	mg/kg	M	3.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	8.5E-01	mg/kg	8.5E-01	mg/kg	M	1.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	2.2E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.7E+02	mg/kg	2.7E+02	mg/kg	M	3.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	6.7E-01	mg/kg	6.7E-01	mg/kg	M	8.4E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	3.0E+00	mg/kg	3.0E+00	mg/kg	M	3.8E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	3.7E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.0E-02	mg/kg	3.0E-02	mg/kg	M	3.8E-11	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	4.7E+00	mg/kg	4.7E+00	mg/kg	M	5.8E-09	mg/kg-day	0.73	(mg/kg/day)-1	4.3E-09
	Benzo(a)pyrene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	5.7E-09	mg/kg-day	7.3	(mg/kg/day)-1	4.2E-08
	Benzo(b)fluoranthene	3.2E+00	mg/kg	3.2E+00	mg/kg	M	4.0E-09	mg/kg-day	0.73	(mg/kg/day)-1	2.9E-09
	Dibenz(a,h)anthracene	1.7E-01	mg/kg	1.7E-01	mg/kg	M	2.1E-10	mg/kg-day	7.3	(mg/kg/day)-1	1.6E-09
	Indeno(1,2,3-cd)pyrene	3.1E+00	mg/kg	3.1E+00	mg/kg	M	3.8E-09	mg/kg-day	0.73	(mg/kg/day)-1	2.8E-09
	Phenanthrene	7.5E+00	mg/kg	7.5E+00	mg/kg	M	9.4E-09	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1242	2.8E-01	mg/kg	2.8E-01	mg/kg	M	3.5E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	4.2E-01	mg/kg	4.2E-01	mg/kg	M	5.3E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.2E-01	mg/kg	2.2E-01	mg/kg	M	2.8E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	9.2E-01	mg/kg	9.2E-01	mg/kg	M	1.2E-09	mg/kg-day	1	(mg/kg/day)-1	1.2E-09
										Sum of Cancer Risk from Ingestion	6.6E-08
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	8.8E+03	mg/kg	8.8E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.3E+00	mg/kg	6.3E+00	mg/kg	M	4.1E-09	mg/kg-day	1.5	(mg/kg/day)-1	6.1E-09

Table 8.18.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-12 (South Basin) Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Cadmium	4.1E+01	mg/kg	4.1E+01	mg/kg	M	8.7E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.0E+02	mg/kg	3.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	2.7E+02	mg/kg	2.7E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	8.5E-01	mg/kg	8.5E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.7E+02	mg/kg	2.7E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	6.7E-01	mg/kg	6.7E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.0E-02	mg/kg	3.0E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	4.7E+00	mg/kg	4.7E+00	mg/kg	M	1.3E-08	mg/kg-day	0.73	(mg/kg/day)-1	9.5E-09
	Benzo(a)pyrene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	1.3E-08	mg/kg-day	7.3	(mg/kg/day)-1	9.3E-08
	Benzo(b)fluoranthene	3.2E+00	mg/kg	3.2E+00	mg/kg	M	8.8E-09	mg/kg-day	0.73	(mg/kg/day)-1	6.4E-09
	Dibenz(a,h)anthracene	1.7E-01	mg/kg	1.7E-01	mg/kg	M	4.8E-10	mg/kg-day	7.3	(mg/kg/day)-1	3.5E-09
	Indeno(1,2,3-cd)pyrene	3.1E+00	mg/kg	3.1E+00	mg/kg	M	8.5E-09	mg/kg-day	0.73	(mg/kg/day)-1	6.2E-09
	Phenanthrene	7.5E+00	mg/kg	7.5E+00	mg/kg	M	2.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1242	2.8E-01	mg/kg	2.8E-01	mg/kg	M	8.4E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	4.2E-01	mg/kg	4.2E-01	mg/kg	M	1.3E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.2E-01	mg/kg	2.2E-01	mg/kg	M	6.6E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	9.2E-01	mg/kg	9.2E-01	mg/kg	M	2.8E-09	mg/kg-day	1	(mg/kg/day)-1	2.8E-09
										Sum of Cancer Risk from Dermal Contact	1.3E-07
										Total Cancer Risk	1.9E-07

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.19.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-12 (South Basin) Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-12 (South Basin)
Receptor Population: Recreational
Receptor Age: Older Children (6 to < 18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	8.8E+03	mg/kg	8.8E+03	mg/kg	M	1.8E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.3E+00	mg/kg	6.3E+00	mg/kg	M	1.3E-08	mg/kg-day	1.5	(mg/kg/day)-1	1.9E-08
	Cadmium	4.1E+01	mg/kg	4.1E+01	mg/kg	M	8.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.0E+02	mg/kg	3.0E+02	mg/kg	M	6.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	2.7E+02	mg/kg	2.7E+02	mg/kg	M	5.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	8.5E-01	mg/kg	8.5E-01	mg/kg	M	1.7E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	3.5E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.7E+02	mg/kg	2.7E+02	mg/kg	M	5.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	6.7E-01	mg/kg	6.7E-01	mg/kg	M	1.4E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)										
	Methylmercury										
	SVOCs										
	PAHs										
	Benz(a)anthracene	4.7E+00	mg/kg	4.7E+00	mg/kg	M	9.5E-09	mg/kg-day	0.73	(mg/kg/day)-1	7.0E-09
	Benzo(a)pyrene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	9.3E-09	mg/kg-day	7.3	(mg/kg/day)-1	6.8E-08
	Benzo(b)fluoranthene	3.2E+00	mg/kg	3.2E+00	mg/kg	M	6.5E-09	mg/kg-day	0.73	(mg/kg/day)-1	4.7E-09
	Dibenz(a,h)anthracene	1.7E-01	mg/kg	1.7E-01	mg/kg	M	3.5E-10	mg/kg-day	7.3	(mg/kg/day)-1	2.5E-09
	Indeno(1,2,3-cd)pyrene	3.1E+00	mg/kg	3.1E+00	mg/kg	M	6.2E-09	mg/kg-day	0.73	(mg/kg/day)-1	4.6E-09
	Phenanthrene	7.5E+00	mg/kg	7.5E+00	mg/kg	M	1.5E-08	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1242	2.8E-01	mg/kg	2.8E-01	mg/kg	M	5.7E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	4.2E-01	mg/kg	4.2E-01	mg/kg	M	8.6E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.2E-01	mg/kg	2.2E-01	mg/kg	M	4.5E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	9.2E-01	mg/kg	9.2E-01	mg/kg	M	1.9E-09	mg/kg-day	1	(mg/kg/day)-1	1.9E-09
										Sum of Cancer Risk from Ingestion	1.1E-07
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	8.8E+03	mg/kg	8.8E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.3E+00	mg/kg	6.3E+00	mg/kg	M	8.4E-09	mg/kg-day	1.5	(mg/kg/day)-1	1.3E-08
	Cadmium	4.1E+01	mg/kg	4.1E+01	mg/kg	M	1.8E-09	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.19.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-12 (South Basin) Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Chromium	3.0E+02	mg/kg	3.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	2.7E+02	mg/kg	2.7E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	8.5E-01	mg/kg	8.5E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.7E+02	mg/kg	2.7E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	6.7E-01	mg/kg	6.7E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.0E-02	mg/kg	3.0E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	4.7E+00	mg/kg	4.7E+00	mg/kg	M	2.7E-08	mg/kg-day	0.73	(mg/kg/day)-1	2.0E-08
	Benzo(a)pyrene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	2.6E-08	mg/kg-day	7.3	(mg/kg/day)-1	1.9E-07
	Benzo(b)fluoranthene	3.2E+00	mg/kg	3.2E+00	mg/kg	M	1.8E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.3E-08
	Dibenz(a,h)anthracene	1.7E-01	mg/kg	1.7E-01	mg/kg	M	9.8E-10	mg/kg-day	7.3	(mg/kg/day)-1	7.1E-09
	Indeno(1,2,3-cd)pyrene	3.1E+00	mg/kg	3.1E+00	mg/kg	M	1.8E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.3E-08
	Phenanthrene	7.5E+00	mg/kg	7.5E+00	mg/kg	M	4.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1242	2.8E-01	mg/kg	2.8E-01	mg/kg	M	1.7E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	4.2E-01	mg/kg	4.2E-01	mg/kg	M	2.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.4E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	9.2E-01	mg/kg	9.2E-01	mg/kg	M	5.7E-09	mg/kg-day	1	(mg/kg/day)-1	5.7E-09
										Sum of Cancer Risk from Dermal Contact	2.6E-07
										Total Cancer Risk	3.7E-07

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.20.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-12 (South Basin) Onondaga Lake

Scenario Timeframe: Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-12 (South Basin)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	8.8E+03	mg/kg	8.8E+03	mg/kg	M	3.2E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.3E+00	mg/kg	6.3E+00	mg/kg	M	2.3E-08	mg/kg-day	1.5	(mg/kg/day)-1	3.5E-08
	Cadmium	4.1E+01	mg/kg	4.1E+01	mg/kg	M	1.5E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	3.0E+02	mg/kg	3.0E+02	mg/kg	M	1.1E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	2.7E+02	mg/kg	2.7E+02	mg/kg	M	9.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	8.5E-01	mg/kg	8.5E-01	mg/kg	M	3.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	6.3E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.7E+02	mg/kg	2.7E+02	mg/kg	M	9.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	6.7E-01	mg/kg	6.7E-01	mg/kg	M	2.5E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	1.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.0E-02	mg/kg	3.0E-02	mg/kg	M	1.1E-10	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	4.7E+00	mg/kg	4.7E+00	mg/kg	M	1.7E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.3E-08
	Benzo(a)pyrene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	1.7E-08	mg/kg-day	7.3	(mg/kg/day)-1	1.2E-07
	Benzo(b)fluoranthene	3.2E+00	mg/kg	3.2E+00	mg/kg	M	1.2E-08	mg/kg-day	0.73	(mg/kg/day)-1	8.5E-09
	Dibenz(a,h)anthracene	1.7E-01	mg/kg	1.7E-01	mg/kg	M	6.3E-10	mg/kg-day	7.3	(mg/kg/day)-1	4.6E-09
	Indeno(1,2,3-cd)pyrene	3.1E+00	mg/kg	3.1E+00	mg/kg	M	1.1E-08	mg/kg-day	0.73	(mg/kg/day)-1	8.2E-09
	Phenanthrene	7.5E+00	mg/kg	7.5E+00	mg/kg	M	2.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1242	2.8E-01	mg/kg	2.8E-01	mg/kg	M	1.0E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	4.2E-01	mg/kg	4.2E-01	mg/kg	M	1.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.2E-01	mg/kg	2.2E-01	mg/kg	M	8.1E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	9.2E-01	mg/kg	9.2E-01	mg/kg	M	3.4E-09	mg/kg-day	1	(mg/kg/day)-1	3.4E-09
										Sum of Cancer Risk from Ingestion	1.9E-07
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	8.8E+03	mg/kg	8.8E+03	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	6.3E+00	mg/kg	6.3E+00	mg/kg	M	2.4E-09	mg/kg-day	1.5	(mg/kg/day)-1	3.6E-09
	Cadmium	4.1E+01	mg/kg	4.1E+01	mg/kg	M	5.2E-10	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.20.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-12 (South Basin) Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	Chromium	3.0E+02	mg/kg	3.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Copper	2.7E+02	mg/kg	2.7E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	8.5E-01	mg/kg	8.5E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	2.7E+02	mg/kg	2.7E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	6.7E-01	mg/kg	6.7E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	3.0E+00	mg/kg	3.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	3.0E-02	mg/kg	3.0E-02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	PAHs										
	Benz(a)anthracene	4.7E+00	mg/kg	4.7E+00	mg/kg	M	7.7E-09	mg/kg-day	0.73	(mg/kg/day)-1	5.6E-09
	Benzo(a)pyrene	4.6E+00	mg/kg	4.6E+00	mg/kg	M	7.5E-09	mg/kg-day	7.3	(mg/kg/day)-1	5.5E-08
	Benzo(b)fluoranthene	3.2E+00	mg/kg	3.2E+00	mg/kg	M	5.2E-09	mg/kg-day	0.73	(mg/kg/day)-1	3.8E-09
	Dibenz(a,h)anthracene	1.7E-01	mg/kg	1.7E-01	mg/kg	M	2.8E-10	mg/kg-day	7.3	(mg/kg/day)-1	2.1E-09
	Indeno(1,2,3-cd)pyrene	3.1E+00	mg/kg	3.1E+00	mg/kg	M	5.1E-09	mg/kg-day	0.73	(mg/kg/day)-1	3.7E-09
	Phenanthrene	7.5E+00	mg/kg	7.5E+00	mg/kg	M	1.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1242	2.8E-01	mg/kg	2.8E-01	mg/kg	M	5.0E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	4.2E-01	mg/kg	4.2E-01	mg/kg	M	7.5E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	2.2E-01	mg/kg	2.2E-01	mg/kg	M	3.9E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	9.2E-01	mg/kg	9.2E-01	mg/kg	M	1.6E-09	mg/kg-day	1	(mg/kg/day)-1	1.6E-09
										Sum of Cancer Risk from Dermal Contact	7.5E-08
										Total Cancer Risk	2.7E-07

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.21.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-19 (South Basin) Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-19 (South Basin)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Antimony	3.3E+00	mg/kg	3.3E+00	mg/kg	M	4.2E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.6E+00	mg/kg	8.6E+00	mg/kg	M	1.1E-08	mg/kg-day	1.5	(mg/kg/day)-1	1.6E-08
	Barium	5.1E+02	mg/kg	5.1E+02	mg/kg	M	6.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.0E+00	mg/kg	3.0E+00	mg/kg	M	3.7E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	7.0E+01	mg/kg	7.0E+01	mg/kg	M	8.8E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.0E+04	mg/kg	1.0E+04	mg/kg	M	1.3E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.0E+02	mg/kg	3.0E+02	mg/kg	M	3.8E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	4.2E+01	mg/kg	4.2E+01	mg/kg	M	5.3E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	4.3E-01	mg/kg	4.3E-01	mg/kg	M	5.4E-10	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	4.8E-09	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	8.9E+00	mg/kg	8.9E+00	mg/kg	M	1.1E-08	mg/kg-day	0.024	(mg/kg/day)-1	2.7E-10
	Hexachlorobenzene	2.8E+00	mg/kg	2.8E+00	mg/kg	M	3.5E-09	mg/kg-day	1.6	(mg/kg/day)-1	5.6E-09
	PAHs										
	Benz(a)anthracene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	1.4E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.0E-08
	Benzo(a)pyrene	1.0E+01	mg/kg	1.0E+01	mg/kg	M	1.3E-08	mg/kg-day	7.3	(mg/kg/day)-1	9.6E-08
	Benzo(b)fluoranthene	9.1E+00	mg/kg	9.1E+00	mg/kg	M	1.1E-08	mg/kg-day	0.73	(mg/kg/day)-1	8.3E-09
	Benzo(g,h,i)perylene	5.6E+00	mg/kg	5.6E+00	mg/kg	M	7.0E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	8.0E+00	mg/kg	8.0E+00	mg/kg	M	1.0E-08	mg/kg-day	0.073	(mg/kg/day)-1	7.3E-10
	Dibenz(a,h)anthracene	2.7E+00	mg/kg	2.7E+00	mg/kg	M	3.3E-09	mg/kg-day	7.3	(mg/kg/day)-1	2.4E-08
	Indeno(1,2,3-cd)pyrene	6.0E+00	mg/kg	6.0E+00	mg/kg	M	7.5E-09	mg/kg-day	0.73	(mg/kg/day)-1	5.5E-09
	Phenanthrene	1.7E+01	mg/kg	1.7E+01	mg/kg	M	2.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Aldrin	3.9E-02	mg/kg	3.9E-02	mg/kg	M	4.9E-11	mg/kg-day	17	(mg/kg/day)-1	8.3E-10
	Dieldrin	2.9E-02	mg/kg	2.9E-02	mg/kg	M	3.7E-11	mg/kg-day	16	(mg/kg/day)-1	5.9E-10
	PCBs										
	Aroclor 1242	7.1E-01	mg/kg	7.1E-01	mg/kg	M	8.9E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	6.2E-01	mg/kg	6.2E-01	mg/kg	M	7.8E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	3.1E-01	mg/kg	3.1E-01	mg/kg	M	4.0E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	1.3E+00	mg/kg	1.3E+00	mg/kg	M	1.7E-09	mg/kg-day	1	(mg/kg/day)-1	1.7E-09
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	8.8E-04	mg/kg	8.8E-04	mg/kg	M	1.1E-12	mg/kg-day	150000	(mg/kg/day)-1	1.7E-07
										Sum of Cancer Risk from Ingestion	3.4E-07

Table 8.21.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-19 (South Basin) Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Dermal	**Metals and Organometallic Compounds**										
	Antimony	3.3E+00	mg/kg	3.3E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.6E+00	mg/kg	8.6E+00	mg/kg	M	5.5E-09	mg/kg-day	1.5	(mg/kg/day)-1	8.3E-09
	Barium	5.1E+02	mg/kg	5.1E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.0E+00	mg/kg	3.0E+00	mg/kg	M	6.3E-11	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	7.0E+01	mg/kg	7.0E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.0E+04	mg/kg	1.0E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.0E+02	mg/kg	3.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	4.2E+01	mg/kg	4.2E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	4.3E-01	mg/kg	4.3E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	8.2E-09	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	8.9E+00	mg/kg	8.9E+00	mg/kg	M	1.9E-08	mg/kg-day	0.024	(mg/kg/day)-1	4.6E-10
	Hexachlorobenzene	2.8E+00	mg/kg	2.8E+00	mg/kg	M	6.0E-09	mg/kg-day	1.6	(mg/kg/day)-1	9.6E-09
	PAHs										
	Benz(a)anthracene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	3.2E-08	mg/kg-day	0.73	(mg/kg/day)-1	2.3E-08
	Benzo(a)pyrene	1.0E+01	mg/kg	1.0E+01	mg/kg	M	2.9E-08	mg/kg-day	7.3	(mg/kg/day)-1	2.1E-07
	Benzo(b)fluoranthene	9.1E+00	mg/kg	9.1E+00	mg/kg	M	2.5E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.8E-08
	Benzo(g,h,i)perylene	5.6E+00	mg/kg	5.6E+00	mg/kg	M	1.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	8.0E+00	mg/kg	8.0E+00	mg/kg	M	2.2E-08	mg/kg-day	0.073	(mg/kg/day)-1	1.6E-09
	Dibenz(a,h)anthracene	2.7E+00	mg/kg	2.7E+00	mg/kg	M	7.4E-09	mg/kg-day	7.3	(mg/kg/day)-1	5.4E-08
	Indeno(1,2,3-cd)pyrene	6.0E+00	mg/kg	6.0E+00	mg/kg	M	1.7E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.2E-08
	Phenanthrene	1.7E+01	mg/kg	1.7E+01	mg/kg	M	4.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Aldrin	3.9E-02	mg/kg	3.9E-02	mg/kg	M	NA	mg/kg-day	17	(mg/kg/day)-1	
	Dieldrin	2.9E-02	mg/kg	2.9E-02	mg/kg	M	NA	mg/kg-day	16	(mg/kg/day)-1	
	PCBs										
	Aroclor 1242	7.1E-01	mg/kg	7.1E-01	mg/kg	M	2.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	6.2E-01	mg/kg	6.2E-01	mg/kg	M	1.9E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	3.1E-01	mg/kg	3.1E-01	mg/kg	M	9.5E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	1.3E+00	mg/kg	1.3E+00	mg/kg	M	4.0E-09	mg/kg-day	1	(mg/kg/day)-1	4.0E-09
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	8.8E-04	mg/kg	8.8E-04	mg/kg	M	5.7E-13	mg/kg-day	150000	(mg/kg/day)-1	8.5E-08
										Sum of Cancer Risk from Dermal Contact	4.3E-07
										Total Cancer Risk	7.7E-07

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.22.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-19 (South Basin) Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-19 (South Basin)
Receptor Population: Recreational
Receptor Age: Older Children (6 to < 18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Antimony	3.3E+00	mg/kg	3.3E+00	mg/kg	M	6.8E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.6E+00	mg/kg	8.6E+00	mg/kg	M	1.8E-08	mg/kg-day	1.5	(mg/kg/day)-1	2.6E-08
	Barium	5.1E+02	mg/kg	5.1E+02	mg/kg	M	1.0E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.0E+00	mg/kg	3.0E+00	mg/kg	M	6.0E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	7.0E+01	mg/kg	7.0E+01	mg/kg	M	1.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.0E+04	mg/kg	1.0E+04	mg/kg	M	2.1E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.0E+02	mg/kg	3.0E+02	mg/kg	M	6.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	4.2E+01	mg/kg	4.2E+01	mg/kg	M	8.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	4.3E-01	mg/kg	4.3E-01	mg/kg	M	8.7E-10	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	7.8E-09	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	8.9E+00	mg/kg	8.9E+00	mg/kg	M	1.8E-08	mg/kg-day	0.024	(mg/kg/day)-1	4.4E-10
	Hexachlorobenzene	2.8E+00	mg/kg	2.8E+00	mg/kg	M	5.7E-09	mg/kg-day	1.6	(mg/kg/day)-1	9.1E-09
	PAHs										
	Benz(a)anthracene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	2.3E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.7E-08
	Benzo(a)pyrene	1.0E+01	mg/kg	1.0E+01	mg/kg	M	2.1E-08	mg/kg-day	7.3	(mg/kg/day)-1	1.6E-07
	Benzo(b)fluoranthene	9.1E+00	mg/kg	9.1E+00	mg/kg	M	1.9E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.4E-08
	Benzo(g,h,i)perylene	5.6E+00	mg/kg	5.6E+00	mg/kg	M	1.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	8.0E+00	mg/kg	8.0E+00	mg/kg	M	1.6E-08	mg/kg-day	0.073	(mg/kg/day)-1	1.2E-09
	Dibenz(a,h)anthracene	2.7E+00	mg/kg	2.7E+00	mg/kg	M	5.4E-09	mg/kg-day	7.3	(mg/kg/day)-1	4.0E-08
	Indeno(1,2,3-cd)pyrene	6.0E+00	mg/kg	6.0E+00	mg/kg	M	1.2E-08	mg/kg-day	0.73	(mg/kg/day)-1	9.0E-09
	Phenanthrene	1.7E+01	mg/kg	1.7E+01	mg/kg	M	3.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Aldrin	3.9E-02	mg/kg	3.9E-02	mg/kg	M	7.9E-11	mg/kg-day	17	(mg/kg/day)-1	1.3E-09
	Dieldrin	2.9E-02	mg/kg	2.9E-02	mg/kg	M	6.0E-11	mg/kg-day	16	(mg/kg/day)-1	9.6E-10
	PCBs										
	Aroclor 1242	7.1E-01	mg/kg	7.1E-01	mg/kg	M	1.4E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	6.2E-01	mg/kg	6.2E-01	mg/kg	M	1.3E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	3.1E-01	mg/kg	3.1E-01	mg/kg	M	6.4E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	1.3E+00	mg/kg	1.3E+00	mg/kg	M	2.7E-09	mg/kg-day	1	(mg/kg/day)-1	2.7E-09
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	8.8E-04	mg/kg	8.8E-04	mg/kg	M	1.8E-12	mg/kg-day	150000	(mg/kg/day)-1	2.7E-07
										Sum of Cancer Risk from Ingestion	5.5E-07

Table 8.22.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-19 (South Basin) Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Dermal	**Metals and Organometallic Compounds**										
	Antimony	3.3E+00	mg/kg	3.3E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.6E+00	mg/kg	8.6E+00	mg/kg	M	1.1E-08	mg/kg-day	1.5	(mg/kg/day)-1	1.7E-08
	Barium	5.1E+02	mg/kg	5.1E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.0E+00	mg/kg	3.0E+00	mg/kg	M	1.3E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	7.0E+01	mg/kg	7.0E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.0E+04	mg/kg	1.0E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.0E+02	mg/kg	3.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	4.2E+01	mg/kg	4.2E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	4.3E-01	mg/kg	4.3E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	1.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	8.9E+00	mg/kg	8.9E+00	mg/kg	M	3.9E-08	mg/kg-day	0.024	(mg/kg/day)-1	9.4E-10
	Hexachlorobenzene	2.8E+00	mg/kg	2.8E+00	mg/kg	M	1.2E-08	mg/kg-day	1.6	(mg/kg/day)-1	2.0E-08
	PAHs										
	Benz(a)anthracene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	6.5E-08	mg/kg-day	0.73	(mg/kg/day)-1	4.8E-08
	Benzo(a)pyrene	1.0E+01	mg/kg	1.0E+01	mg/kg	M	6.0E-08	mg/kg-day	7.3	(mg/kg/day)-1	4.4E-07
	Benzo(b)fluoranthene	9.1E+00	mg/kg	9.1E+00	mg/kg	M	5.2E-08	mg/kg-day	0.73	(mg/kg/day)-1	3.8E-08
	Benzo(g,h,i)perylene	5.6E+00	mg/kg	5.6E+00	mg/kg	M	3.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	8.0E+00	mg/kg	8.0E+00	mg/kg	M	4.6E-08	mg/kg-day	0.073	(mg/kg/day)-1	3.3E-09
	Dibenz(a,h)anthracene	2.7E+00	mg/kg	2.7E+00	mg/kg	M	1.5E-08	mg/kg-day	7.3	(mg/kg/day)-1	1.1E-07
	Indeno(1,2,3-cd)pyrene	6.0E+00	mg/kg	6.0E+00	mg/kg	M	3.5E-08	mg/kg-day	0.73	(mg/kg/day)-1	2.5E-08
	Phenanthrene	1.7E+01	mg/kg	1.7E+01	mg/kg	M	9.5E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Aldrin	3.9E-02	mg/kg	3.9E-02	mg/kg	M	NA	mg/kg-day	17	(mg/kg/day)-1	
	Dieldrin	2.9E-02	mg/kg	2.9E-02	mg/kg	M	NA	mg/kg-day	16	(mg/kg/day)-1	
	PCBs										
	Aroclor 1242	7.1E-01	mg/kg	7.1E-01	mg/kg	M	4.4E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	6.2E-01	mg/kg	6.2E-01	mg/kg	M	3.8E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	3.1E-01	mg/kg	3.1E-01	mg/kg	M	1.9E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	1.3E+00	mg/kg	1.3E+00	mg/kg	M	8.3E-09	mg/kg-day	1	(mg/kg/day)-1	8.3E-09
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	8.8E-04	mg/kg	8.8E-04	mg/kg	M	1.2E-12	mg/kg-day	150000	(mg/kg/day)-1	1.8E-07
										Sum of Cancer Risk from Dermal Contact	8.8E-07
										Total Cancer Risk	1.4E-06

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.23.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-19 (South Basin) Onondaga Lake

Scenario Timeframe: Future
Medium: Surface Sediments
Exposure Medium: Wetland Soil
Exposure Point: Wetland SYW-19 (South Basin)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Antimony	3.3E+00	mg/kg	3.3E+00	mg/kg	M	1.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.6E+00	mg/kg	8.6E+00	mg/kg	M	3.2E-08	mg/kg-day	1.5	(mg/kg/day)-1	4.7E-08
	Barium	5.1E+02	mg/kg	5.1E+02	mg/kg	M	1.9E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.0E+00	mg/kg	3.0E+00	mg/kg	M	1.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	7.0E+01	mg/kg	7.0E+01	mg/kg	M	2.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.0E+04	mg/kg	1.0E+04	mg/kg	M	3.8E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.0E+02	mg/kg	3.0E+02	mg/kg	M	1.1E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	4.2E+01	mg/kg	4.2E+01	mg/kg	M	1.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	4.3E-01	mg/kg	4.3E-01	mg/kg	M	1.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	1.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	8.9E+00	mg/kg	8.9E+00	mg/kg	M	3.3E-08	mg/kg-day	0.024	(mg/kg/day)-1	7.9E-10
	Hexachlorobenzene	2.8E+00	mg/kg	2.8E+00	mg/kg	M	1.0E-08	mg/kg-day	1.6	(mg/kg/day)-1	1.6E-08
	PAHs										
	Benz(a)anthracene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	4.2E-08	mg/kg-day	0.73	(mg/kg/day)-1	3.1E-08
	Benzo(a)pyrene	1.0E+01	mg/kg	1.0E+01	mg/kg	M	3.8E-08	mg/kg-day	7.3	(mg/kg/day)-1	2.8E-07
	Benzo(b)fluoranthene	9.1E+00	mg/kg	9.1E+00	mg/kg	M	3.3E-08	mg/kg-day	0.73	(mg/kg/day)-1	2.4E-08
	Benzo(g,h,i)perylene	5.6E+00	mg/kg	5.6E+00	mg/kg	M	2.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	8.0E+00	mg/kg	8.0E+00	mg/kg	M	2.9E-08	mg/kg-day	0.073	(mg/kg/day)-1	2.1E-09
	Dibenz(a,h)anthracene	2.7E+00	mg/kg	2.7E+00	mg/kg	M	9.8E-09	mg/kg-day	7.3	(mg/kg/day)-1	7.1E-08
	Indeno(1,2,3-cd)pyrene	6.0E+00	mg/kg	6.0E+00	mg/kg	M	2.2E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.6E-08
	Phenanthrene	1.7E+01	mg/kg	1.7E+01	mg/kg	M	6.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Aldrin	3.9E-02	mg/kg	3.9E-02	mg/kg	M	1.4E-10	mg/kg-day	17	(mg/kg/day)-1	2.4E-09
	Dieldrin	2.9E-02	mg/kg	2.9E-02	mg/kg	M	1.1E-10	mg/kg-day	16	(mg/kg/day)-1	1.7E-09
	PCBs										
	Aroclor 1242	7.1E-01	mg/kg	7.1E-01	mg/kg	M	2.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	6.2E-01	mg/kg	6.2E-01	mg/kg	M	2.3E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	3.1E-01	mg/kg	3.1E-01	mg/kg	M	1.2E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	1.3E+00	mg/kg	1.3E+00	mg/kg	M	4.9E-09	mg/kg-day	1	(mg/kg/day)-1	4.9E-09
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	8.8E-04	mg/kg	8.8E-04	mg/kg	M	3.3E-12	mg/kg-day	150000	(mg/kg/day)-1	4.9E-07
										Sum of Cancer Risk from Ingestion	9.9E-07

Table 8.23.CT
Calculation of Cancer Hazards
Central Tendency
Wetland SYW-19 (South Basin) Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Dermal	**Metals and Organometallic Compounds**										
	Antimony	3.3E+00	mg/kg	3.3E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.6E+00	mg/kg	8.6E+00	mg/kg	M	3.3E-09	mg/kg-day	1.5	(mg/kg/day)-1	4.9E-09
	Barium	5.1E+02	mg/kg	5.1E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cadmium	3.0E+00	mg/kg	3.0E+00	mg/kg	M	3.8E-11	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	7.0E+01	mg/kg	7.0E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.0E+04	mg/kg	1.0E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.0E+02	mg/kg	3.0E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Mercury(inorganic)	4.2E+01	mg/kg	4.2E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	4.3E-01	mg/kg	4.3E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	1,3-Dichlorobenzene	3.8E+00	mg/kg	3.8E+00	mg/kg	M	4.8E-09	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	8.9E+00	mg/kg	8.9E+00	mg/kg	M	1.1E-08	mg/kg-day	0.024	(mg/kg/day)-1	2.7E-10
	Hexachlorobenzene	2.8E+00	mg/kg	2.8E+00	mg/kg	M	3.5E-09	mg/kg-day	1.6	(mg/kg/day)-1	5.7E-09
	PAHs										
	Benz(a)anthracene	1.1E+01	mg/kg	1.1E+01	mg/kg	M	1.9E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.4E-08
	Benzo(a)pyrene	1.0E+01	mg/kg	1.0E+01	mg/kg	M	1.7E-08	mg/kg-day	7.3	(mg/kg/day)-1	1.3E-07
	Benzo(b)fluoranthene	9.1E+00	mg/kg	9.1E+00	mg/kg	M	1.5E-08	mg/kg-day	0.73	(mg/kg/day)-1	1.1E-08
	Benzo(g,h,i)perylene	5.6E+00	mg/kg	5.6E+00	mg/kg	M	9.3E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	8.0E+00	mg/kg	8.0E+00	mg/kg	M	1.3E-08	mg/kg-day	0.073	(mg/kg/day)-1	9.6E-10
	Dibenz(a,h)anthracene	2.7E+00	mg/kg	2.7E+00	mg/kg	M	4.4E-09	mg/kg-day	7.3	(mg/kg/day)-1	3.2E-08
	Indeno(1,2,3-cd)pyrene	6.0E+00	mg/kg	6.0E+00	mg/kg	M	9.9E-09	mg/kg-day	0.73	(mg/kg/day)-1	7.3E-09
	Phenanthrene	1.7E+01	mg/kg	1.7E+01	mg/kg	M	2.7E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Pesticides										
	Aldrin	3.9E-02	mg/kg	3.9E-02	mg/kg	M	NA	mg/kg-day	17	(mg/kg/day)-1	
	Dieldrin	2.9E-02	mg/kg	2.9E-02	mg/kg	M	NA	mg/kg-day	16	(mg/kg/day)-1	
	PCBs										
	Aroclor 1242	7.1E-01	mg/kg	7.1E-01	mg/kg	M	1.3E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1254	6.2E-01	mg/kg	6.2E-01	mg/kg	M	1.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1260	3.1E-01	mg/kg	3.1E-01	mg/kg	M	5.6E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	1.3E+00	mg/kg	1.3E+00	mg/kg	M	2.4E-09	mg/kg-day	1	(mg/kg/day)-1	2.4E-09
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	8.8E-04	mg/kg	8.8E-04	mg/kg	M	3.4E-13	mg/kg-day	150000	(mg/kg/day)-1	5.1E-08
										Sum of Cancer Risk from Dermal Contact	2.5E-07
										Total Cancer Risk	1.2E-06

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.24.CT
Calculation of Cancer Hazards
Central Tendency
Dredge Spoil Soils, Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Dredge Spoil Soils
Exposure Medium: Surface Soil
Exposure Point: Dredge Spoil Soils (0-3.5 ft)
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	1.2E+04	mg/kg	1.2E+04	mg/kg	M	9.7E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.4E+00	mg/kg	8.4E+00	mg/kg	M	6.8E-08	mg/kg-day	1.5	(mg/kg/day)-1	1.0E-07
	Chromium	2.9E+01	mg/kg	2.9E+01	mg/kg	M	2.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	1.4E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.5E+02	mg/kg	3.5E+02	mg/kg	M	2.9E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	4.0E+00	mg/kg	4.0E+00	mg/kg	M	3.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	3.3E-09	mg/kg-day	1.6	(mg/kg/day)-1	5.3E-09
	PAHs										
	Benzo(a)pyrene	1.3E-01	mg/kg	1.3E-01	mg/kg	M	1.0E-09	mg/kg-day	7.3	(mg/kg/day)-1	7.6E-09
										Sum of Cancer Risk from Ingestion	1.1E-07
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	1.2E+04	mg/kg	1.2E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.4E+00	mg/kg	8.4E+00	mg/kg	M	3.5E-08	mg/kg-day	1.5	(mg/kg/day)-1	5.2E-08
	Chromium	2.9E+01	mg/kg	2.9E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.5E+02	mg/kg	3.5E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	4.0E+00	mg/kg	4.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	5.6E-09	mg/kg-day	1.6	(mg/kg/day)-1	9.0E-09
	PAHs										
	Benzo(a)pyrene	1.3E-01	mg/kg	1.3E-01	mg/kg	M	2.3E-09	mg/kg-day	7.3	(mg/kg/day)-1	1.7E-08
										Sum of Cancer Risk from Dermal Contact	7.8E-08
										Total Cancer Risk	1.9E-07

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.25.CT
Calculation of Cancer Hazards
Central Tendency
Dredge Spoil Soils, Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Dredge Spoil Soils
Exposure Medium: Surface Soil
Exposure Point: Dredge Spoil Soils (0-3.5 ft)
Receptor Population: Recreational
Receptor Age: Older Children (6 to < 18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	1.2E+04	mg/kg	1.2E+04	mg/kg	M	1.6E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.4E+00	mg/kg	8.4E+00	mg/kg	M	1.1E-07	mg/kg-day	1.5	(mg/kg/day)-1	1.7E-07
	Chromium	2.9E+01	mg/kg	2.9E+01	mg/kg	M	3.9E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	2.2E-04	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.5E+02	mg/kg	3.5E+02	mg/kg	M	4.6E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	4.0E+00	mg/kg	4.0E+00	mg/kg	M	5.2E-08	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	5.4E-09	mg/kg-day	1.6	(mg/kg/day)-1	8.6E-09
	PAHs										
	Benzo(a)pyrene	1.3E-01	mg/kg	1.3E-01	mg/kg	M	1.7E-09	mg/kg-day	7.3	(mg/kg/day)-1	1.2E-08
										Sum of Cancer Risk from Ingestion	1.9E-07
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	1.2E+04	mg/kg	1.2E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.4E+00	mg/kg	8.4E+00	mg/kg	M	7.1E-08	mg/kg-day	1.5	(mg/kg/day)-1	1.1E-07
	Chromium	2.9E+01	mg/kg	2.9E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.5E+02	mg/kg	3.5E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	4.0E+00	mg/kg	4.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	1.2E-08	mg/kg-day	1.6	(mg/kg/day)-1	1.9E-08
	PAHs										
	Benzo(a)pyrene	1.3E-01	mg/kg	1.3E-01	mg/kg	M	4.8E-09	mg/kg-day	7.3	(mg/kg/day)-1	3.5E-08
										Sum of Cancer Risk from Dermal Contact	1.6E-07
										Total Cancer Risk	3.5E-07

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.26.CT
Calculation of Cancer Hazards
Central Tendency
Dredge Spoil Soils, Onondaga Lake

Scenario Timeframe: Future
Medium: Dredge Spoil Soils
Exposure Medium: Surface Soil
Exposure Point: Dredge Spoil Soils (0-3.5 ft)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	1.2E+04	mg/kg	1.2E+04	mg/kg	M	4.5E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.4E+00	mg/kg	8.4E+00	mg/kg	M	3.1E-08	mg/kg-day	1.5	(mg/kg/day)-1	4.6E-08
	Chromium	2.9E+01	mg/kg	2.9E+01	mg/kg	M	1.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	6.3E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.5E+02	mg/kg	3.5E+02	mg/kg	M	1.3E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	4.0E+00	mg/kg	4.0E+00	mg/kg	M	1.5E-08	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	1.5E-09	mg/kg-day	1.6	(mg/kg/day)-1	2.4E-09
	PAHs										
	Benzo(a)pyrene	1.3E-01	mg/kg	1.3E-01	mg/kg	M	4.8E-10	mg/kg-day	7.3	(mg/kg/day)-1	3.5E-09
										Sum of Cancer Risk from Ingestion	5.2E-08
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	1.2E+04	mg/kg	1.2E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.4E+00	mg/kg	8.4E+00	mg/kg	M	3.2E-09	mg/kg-day	1.5	(mg/kg/day)-1	4.8E-09
	Chromium	2.9E+01	mg/kg	2.9E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.7E+04	mg/kg	1.7E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.5E+02	mg/kg	3.5E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	4.0E+00	mg/kg	4.0E+00	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOCs										
	Hexachlorobenzene	4.1E-01	mg/kg	4.1E-01	mg/kg	M	5.2E-10	mg/kg-day	1.6	(mg/kg/day)-1	8.4E-10
	PAHs										
	Benzo(a)pyrene	1.3E-01	mg/kg	1.3E-01	mg/kg	M	2.2E-10	mg/kg-day	7.3	(mg/kg/day)-1	1.6E-09
										Sum of Cancer Risk from Dermal Contact	7.2E-09
										Total Cancer Risk	6.0E-08

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.27.CT
Calculation of Cancer Hazards
Central Tendency
Dredge Spoil Soils (0-11.7 ft), Onondaga Lake

Scenario Timeframe: Future
Medium: Dredge Spoil Soils
Exposure Medium: Surface Soil
Exposure Point: Dredge Spoil Soils (0-11.7 ft)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Aluminum	1.0E+04	mg/kg	1.0E+04	mg/kg	M	3.8E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.7E+00	mg/kg	8.7E+00	mg/kg	M	3.2E-08	mg/kg-day	1.5	(mg/kg/day)-1	4.8E-08
	Cadmium	9.7E-01	mg/kg	9.7E-01	mg/kg	M	3.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.6E+01	mg/kg	2.6E+01	mg/kg	M	9.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	8.4E-01	mg/kg	8.4E-01	mg/kg	M	3.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.5E+04	mg/kg	1.5E+04	mg/kg	M	5.6E-05	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.8E+02	mg/kg	3.8E+02	mg/kg	M	1.4E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	4.9E-01	mg/kg	4.9E-01	mg/kg	M	1.8E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	4.8E+01	mg/kg	4.8E+01	mg/kg	M	1.8E-07	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	Hexachlorobenzene	2.3E-01	mg/kg	2.3E-01	mg/kg	M	8.3E-10	mg/kg-day	1.6	(mg/kg/day)-1	1.3E-09
	PAHs										
	Benz(a)anthracene	2.5E+00	mg/kg	2.5E+00	mg/kg	M	9.2E-09	mg/kg-day	0.73	(mg/kg/day)-1	6.7E-09
	Benzo(a)pyrene	2.6E+00	mg/kg	2.6E+00	mg/kg	M	9.7E-09	mg/kg-day	7.3	(mg/kg/day)-1	7.1E-08
	Benzo(b)fluoranthene	2.3E+00	mg/kg	2.3E+00	mg/kg	M	8.4E-09	mg/kg-day	0.73	(mg/kg/day)-1	6.1E-09
	Benzo(g,h,i)perylene	1.3E+00	mg/kg	1.3E+00	mg/kg	M	4.8E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	2.3E+00	mg/kg	2.3E+00	mg/kg	M	8.5E-09	mg/kg-day	0.073	(mg/kg/day)-1	6.2E-10
	Dibenz(a,h)anthracene	6.1E-01	mg/kg	6.1E-01	mg/kg	M	2.2E-09	mg/kg-day	7.3	(mg/kg/day)-1	1.6E-08
	Indeno(1,2,3-cd)pyrene	1.3E+00	mg/kg	1.3E+00	mg/kg	M	4.8E-09	mg/kg-day	0.73	(mg/kg/day)-1	3.5E-09
	Naphthalene	2.8E+00	mg/kg	2.8E+00	mg/kg	M	1.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	1.2E+00	mg/kg	1.2E+00	mg/kg	M	4.4E-09	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1254	2.1E-01	mg/kg	2.1E-01	mg/kg	M	7.7E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1268	3.6E-01	mg/kg	3.6E-01	mg/kg	M	1.3E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	6.3E-01	mg/kg	6.3E-01	mg/kg	M	2.3E-09	mg/kg-day	1	(mg/kg/day)-1	2.3E-09

Table 8.27.CT
Calculation of Cancer Hazards
Central Tendency
Dredge Spoil Soils (0-11.7 ft), Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	PCDD/PCDFS										
	TEQ as 2,3,7,8-TCDD	4.4E-05	mg/kg	4.4E-05	mg/kg	M	1.6E-13	mg/kg-day	150000	(mg/kg/day)-1	2.4E-08
										Sum of Cancer Risk from Ingestion	1.8E-07
Dermal	**Metals and Organometallic Compounds**										
	Aluminum	1.0E+04	mg/kg	1.0E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Arsenic	8.7E+00	mg/kg	8.7E+00	mg/kg	M	3.3E-09	mg/kg-day	1.5	(mg/kg/day)-1	5.0E-09
	Cadmium	9.7E-01	mg/kg	9.7E-01	mg/kg	M	1.2E-11	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.6E+01	mg/kg	2.6E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Cyanide	8.4E-01	mg/kg	8.4E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Iron	1.5E+04	mg/kg	1.5E+04	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	3.8E+02	mg/kg	3.8E+02	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Thallium	4.9E-01	mg/kg	4.9E-01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	4.8E+01	mg/kg	4.8E+01	mg/kg	M	NA	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	Hexachlorobenzene	2.3E-01	mg/kg	2.3E-01	mg/kg	M	2.9E-10	mg/kg-day	1.6	(mg/kg/day)-1	4.6E-10
	PAHs										
	Benz(a)anthracene	2.5E+00	mg/kg	2.5E+00	mg/kg	M	4.1E-09	mg/kg-day	0.73	(mg/kg/day)-1	3.0E-09
	Benzo(a)pyrene	2.6E+00	mg/kg	2.6E+00	mg/kg	M	4.4E-09	mg/kg-day	7.3	(mg/kg/day)-1	3.2E-08
	Benzo(b)fluoranthene	2.3E+00	mg/kg	2.3E+00	mg/kg	M	3.8E-09	mg/kg-day	0.73	(mg/kg/day)-1	2.8E-09
	Benzo(g,h,i)perylene	1.3E+00	mg/kg	1.3E+00	mg/kg	M	2.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Benzo(k)fluoranthene	2.3E+00	mg/kg	2.3E+00	mg/kg	M	3.8E-09	mg/kg-day	0.073	(mg/kg/day)-1	2.8E-10
	Dibenz(a,h)anthracene	6.1E-01	mg/kg	6.1E-01	mg/kg	M	1.0E-09	mg/kg-day	7.3	(mg/kg/day)-1	7.4E-09
	Indeno(1,2,3-cd)pyrene	1.3E+00	mg/kg	1.3E+00	mg/kg	M	2.1E-09	mg/kg-day	0.73	(mg/kg/day)-1	1.6E-09
	Naphthalene	2.8E+00	mg/kg	2.8E+00	mg/kg	M	4.7E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Phenanthrene	1.2E+00	mg/kg	1.2E+00	mg/kg	M	2.0E-09	mg/kg-day	NA	(mg/kg/day)-1	
	PCBs										
	Aroclor 1254	2.1E-01	mg/kg	2.1E-01	mg/kg	M	3.7E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Aroclor 1268	3.6E-01	mg/kg	3.6E-01	mg/kg	M	6.5E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Sum of PCBs	6.3E-01	mg/kg	6.3E-01	mg/kg	M	1.1E-09	mg/kg-day	1	(mg/kg/day)-1	1.1E-09
	PCDD/PCDFs										
	TEQ as 2,3,7,8-TCDD	4.4E-05	mg/kg	4.4E-05	mg/kg	M	1.7E-14	mg/kg-day	150000	(mg/kg/day)-1	2.5E-09
										Sum of Cancer Risk from Dermal Contact	5.6E-08
										Total of Cancer Risk	2.4E-07

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.28.CT
Calculation of Cancer Hazards
Central Tendency
Surface Water Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Onondaga Lake
Receptor Population: Recreational
Receptor Age: Adult (18 and older)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Cadmium	1.1E-03	mg/kg	1.1E-03	mg/kg	M	8.9E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.3E-03	mg/kg	2.3E-03	mg/kg	M	1.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	8.2E-02	mg/kg	8.2E-02	mg/kg	M	6.6E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	8.3E-06	mg/kg	8.3E-06	mg/kg	M	6.7E-11	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	1.3E-06	mg/kg	1.3E-06	mg/kg	M	1.1E-11	mg/kg-day	NA	(mg/kg/day)-1	
	VOC										
	Benzene	5.9E-04	mg/kg	5.9E-04	mg/kg	M	4.8E-09	mg/kg-day	0.055	(mg/kg/day)-1	2.6E-10
	Bromodichloromethane	2.4E-04	mg/kg	2.4E-04	mg/kg	M	1.9E-09	mg/kg-day	0.062	(mg/kg/day)-1	1.2E-10
	Chlorobenzene	6.4E-04	mg/kg	6.4E-04	mg/kg	M	5.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chloroform	6.6E-04	mg/kg	6.6E-04	mg/kg	M	5.3E-09	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	1,2,4-Trichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	4.7E-09	mg/kg-day	NA	(mg/kg/day)-1	
	1,2-Dichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	4.7E-09	mg/kg-day	NA	(mg/kg/day)-1	
	1,3-Dichlorobenzene	5.4E-04	mg/kg	5.4E-04	mg/kg	M	4.3E-09	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.2E-04	mg/kg	6.2E-04	mg/kg	M	5.0E-09	mg/kg-day	0.024	(mg/kg/day)-1	1.2E-10
									Sum of Cancer Risk from Ingestion		5.0E-10
Dermal	**Metals and Organometallic Compounds**										
	Cadmium	1.1E-03	mg/kg	1.1E-03	mg/kg	M	3.2E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.3E-03	mg/kg	2.3E-03	mg/kg	M	1.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	8.2E-02	mg/kg	8.2E-02	mg/kg	M	2.4E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	1.3E-06	mg/kg	1.3E-06	mg/kg	M	3.9E-12	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	8.3E-06	mg/kg	8.3E-06	mg/kg	M	2.4E-11	mg/kg-day	NA	(mg/kg/day)-1	
	VOC										
	Benzene	5.9E-04	mg/kg	5.9E-04	mg/kg	M	4.0E-08	mg/kg-day	0.055	(mg/kg/day)-1	2.2E-09
	Bromodichloromethane	2.4E-04	mg/kg	2.4E-04	mg/kg	M	8.8E-09	mg/kg-day	0.062	(mg/kg/day)-1	5.5E-10
	Chlorobenzene	6.4E-04	mg/kg	6.4E-04	mg/kg	M	9.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chloroform	6.6E-04	mg/kg	6.6E-04	mg/kg	M	2.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	1,2,4-Trichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	3.2E-07	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.28.CT
Calculation of Cancer Hazards
Central Tendency
Surface Water Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	1,2-Dichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	1.8E-07	mg/kg-day	NA	(mg/kg/day)-1	
	1,3-Dichlorobenzene	5.4E-04	mg/kg	5.4E-04	mg/kg	M	2.3E-07	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.2E-04	mg/kg	6.2E-04	mg/kg	M	1.9E-07	mg/kg-day	0.024	(mg/kg/day)-1	4.6E-09
										Sum of Cancer Risk from Dermal Contact	7.3E-09
										Total Cancer Risk	7.8E-09

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.29.CT
Calculation of Cancer Hazards
Central Tendency
Surface Water Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Onondaga Lake
Receptor Population: Recreational
Receptor Age: Young Children (less than 6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Cadmium	1.1E-03	mg/kg	1.1E-03	mg/kg	M	2.8E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.3E-03	mg/kg	2.3E-03	mg/kg	M	5.9E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	8.2E-02	mg/kg	8.2E-02	mg/kg	M	2.0E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	8.3E-06	mg/kg	8.3E-06	mg/kg	M	2.1E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	1.3E-06	mg/kg	1.3E-06	mg/kg	M	3.3E-11	mg/kg-day	NA	(mg/kg/day)-1	
	VOC										
	Benzene	5.9E-04	mg/kg	5.9E-04	mg/kg	M	1.5E-08	mg/kg-day	0.055	(mg/kg/day)-1	8.1E-10
	Bromodichloromethane	2.4E-04	mg/kg	2.4E-04	mg/kg	M	6.0E-09	mg/kg-day	0.062	(mg/kg/day)-1	3.7E-10
	Chlorobenzene	6.4E-04	mg/kg	6.4E-04	mg/kg	M	1.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chloroform	6.6E-04	mg/kg	6.6E-04	mg/kg	M	1.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	1,2,4-Trichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	1.5E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,2-Dichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	1.5E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,3-Dichlorobenzene	5.4E-04	mg/kg	5.4E-04	mg/kg	M	1.4E-08	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.2E-04	mg/kg	6.2E-04	mg/kg	M	1.5E-08	mg/kg-day	0.024	(mg/kg/day)-1	3.7E-10
										Sum of Cancer Risk from Ingestion	1.6E-09
Dermal	**Metals and Organometallic Compounds**										
	Cadmium	1.1E-03	mg/kg	1.1E-03	mg/kg	M	3.7E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.3E-03	mg/kg	2.3E-03	mg/kg	M	1.5E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	8.2E-02	mg/kg	8.2E-02	mg/kg	M	2.7E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	8.3E-06	mg/kg	8.3E-06	mg/kg	M	2.7E-11	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	1.3E-06	mg/kg	1.3E-06	mg/kg	M	4.4E-12	mg/kg-day	NA	(mg/kg/day)-1	
	VOC										
	Benzene	5.9E-04	mg/kg	5.9E-04	mg/kg	M	4.5E-08	mg/kg-day	0.055	(mg/kg/day)-1	2.5E-09
	Bromodichloromethane	2.4E-04	mg/kg	2.4E-04	mg/kg	M	1.0E-08	mg/kg-day	0.062	(mg/kg/day)-1	6.2E-10
	Chlorobenzene	6.4E-04	mg/kg	6.4E-04	mg/kg	M	1.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Chloroform	6.6E-04	mg/kg	6.6E-04	mg/kg	M	3.0E-08	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	1,2,4-Trichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	3.7E-07	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.29.CT
Calculation of Cancer Hazards
Central Tendency
Surface Water Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	1,2-Dichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	2.0E-07	mg/kg-day	NA	(mg/kg/day)-1	
	1,3-Dichlorobenzene	5.4E-04	mg/kg	5.4E-04	mg/kg	M	2.7E-07	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.2E-04	mg/kg	6.2E-04	mg/kg	M	2.2E-07	mg/kg-day	0.024	(mg/kg/day)-1	5.2E-09
										Sum of Cancer Risk from Dermal Contact	8.3E-09
										Total Cancer Risk	9.9E-09

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.30.CT
Calculation of Cancer Hazards
Central Tendency
Surface Water Onondaga Lake

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Onondaga Lake
Receptor Population: Recreational
Receptor Age: Older Children (6 to < 18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Cadmium	1.1E-03	mg/kg	1.1E-03	mg/kg	M	1.5E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.3E-03	mg/kg	2.3E-03	mg/kg	M	3.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	8.2E-02	mg/kg	8.2E-02	mg/kg	M	1.1E-06	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	8.3E-06	mg/kg	8.3E-06	mg/kg	M	1.1E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	1.3E-06	mg/kg	1.3E-06	mg/kg	M	1.7E-11	mg/kg-day	NA	(mg/kg/day)-1	
	VOC										
	Benzene	5.9E-04	mg/kg	5.9E-04	mg/kg	M	7.7E-09	mg/kg-day	0.055	(mg/kg/day)-1	4.3E-10
	Bromodichloromethane	2.4E-04	mg/kg	2.4E-04	mg/kg	M	3.1E-09	mg/kg-day	0.062	(mg/kg/day)-1	2.0E-10
	Chlorobenzene	6.4E-04	mg/kg	6.4E-04	mg/kg	M	8.3E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chloroform	6.6E-04	mg/kg	6.6E-04	mg/kg	M	8.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	1,2,4-Trichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	7.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	1,2-Dichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	7.7E-09	mg/kg-day	NA	(mg/kg/day)-1	
	1,3-Dichlorobenzene	5.4E-04	mg/kg	5.4E-04	mg/kg	M	7.1E-09	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.2E-04	mg/kg	6.2E-04	mg/kg	M	8.1E-09	mg/kg-day	0.024	(mg/kg/day)-1	1.9E-10
										Sum of Cancer Risk from Ingestion	8.1E-10
Dermal	**Metals and Organometallic Compounds**										
	Cadmium	1.1E-03	mg/kg	1.1E-03	mg/kg	M	3.8E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.3E-03	mg/kg	2.3E-03	mg/kg	M	1.6E-08	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	8.2E-02	mg/kg	8.2E-02	mg/kg	M	2.8E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	8.3E-06	mg/kg	8.3E-06	mg/kg	M	2.8E-11	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	1.3E-06	mg/kg	1.3E-06	mg/kg	M	4.5E-12	mg/kg-day	NA	(mg/kg/day)-1	
	VOC										
	Benzene	5.9E-04	mg/kg	5.9E-04	mg/kg	M	4.7E-08	mg/kg-day	0.055	(mg/kg/day)-1	2.6E-09
	Bromodichloromethane	2.4E-04	mg/kg	2.4E-04	mg/kg	M	1.0E-08	mg/kg-day	0.062	(mg/kg/day)-1	6.4E-10
	Chlorobenzene	6.4E-04	mg/kg	6.4E-04	mg/kg	M	1.2E-07	mg/kg-day	NA	(mg/kg/day)-1	
	Chloroform	6.6E-04	mg/kg	6.6E-04	mg/kg	M	3.1E-08	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	1,2,4-Trichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	3.8E-07	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.30.CT
Calculation of Cancer Hazards
Central Tendency
Surface Water Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	1,2-Dichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	2.1E-07	mg/kg-day	NA	(mg/kg/day)-1	
	1,3-Dichlorobenzene	5.4E-04	mg/kg	5.4E-04	mg/kg	M	2.8E-07	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.2E-04	mg/kg	6.2E-04	mg/kg	M	2.2E-07	mg/kg-day	0.024	(mg/kg/day)-1	5.4E-09
										Sum of Cancer Risk from Dermal Contact	8.6E-09
										Total Cancer Risk	9.4E-09

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.31.CT
Calculation of Cancer Hazards
Central Tendency
Surface Water Onondaga Lake

Scenario Timeframe: Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Onondaga Lake
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**										
	Cadmium	1.1E-03	mg/kg	1.1E-03	mg/kg	M	7.4E-11	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.3E-03	mg/kg	2.3E-03	mg/kg	M	1.6E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	8.2E-02	mg/kg	8.2E-02	mg/kg	M	5.5E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	8.3E-06	mg/kg	8.3E-06	mg/kg	M	5.6E-13	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	1.3E-06	mg/kg	1.3E-06	mg/kg	M	8.9E-14	mg/kg-day	NA	(mg/kg/day)-1	
	VOC										
	Benzene	5.9E-04	mg/kg	5.9E-04	mg/kg	M	4.0E-11	mg/kg-day	0.055	(mg/kg/day)-1	2.2E-12
	Bromodichloromethane	2.4E-04	mg/kg	2.4E-04	mg/kg	M	1.6E-11	mg/kg-day	0.062	(mg/kg/day)-1	1.0E-12
	Chlorobenzene	6.4E-04	mg/kg	6.4E-04	mg/kg	M	4.3E-11	mg/kg-day	NA	(mg/kg/day)-1	
	Chloroform	6.6E-04	mg/kg	6.6E-04	mg/kg	M	4.4E-11	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	1,2,4-Trichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	3.9E-11	mg/kg-day	NA	(mg/kg/day)-1	
	1,2-Dichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	3.9E-11	mg/kg-day	NA	(mg/kg/day)-1	
	1,3-Dichlorobenzene	5.4E-04	mg/kg	5.4E-04	mg/kg	M	3.6E-11	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.2E-04	mg/kg	6.2E-04	mg/kg	M	4.1E-11	mg/kg-day	0.024	(mg/kg/day)-1	9.9E-13
									Sum of Cancer Risk from Ingestion		4.2E-12
Dermal	**Metals and Organometallic Compounds**										
	Cadmium	1.1E-03	mg/kg	1.1E-03	mg/kg	M	3.5E-11	mg/kg-day	NA	(mg/kg/day)-1	
	Chromium	2.3E-03	mg/kg	2.3E-03	mg/kg	M	1.5E-10	mg/kg-day	NA	(mg/kg/day)-1	
	Manganese	8.2E-02	mg/kg	8.2E-02	mg/kg	M	2.6E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Total Mercury	8.3E-06	mg/kg	8.3E-06	mg/kg	M	2.6E-13	mg/kg-day	NA	(mg/kg/day)-1	
	Methylmercury	1.3E-06	mg/kg	1.3E-06	mg/kg	M	4.2E-14	mg/kg-day	NA	(mg/kg/day)-1	
	VOC										
	Benzene	5.9E-04	mg/kg	5.9E-04	mg/kg	M	6.2E-10	mg/kg-day	0.055	(mg/kg/day)-1	3.4E-11
	Bromodichloromethane	2.4E-04	mg/kg	2.4E-04	mg/kg	M	1.3E-10	mg/kg-day	0.062	(mg/kg/day)-1	8.0E-12
	Chlorobenzene	6.4E-04	mg/kg	6.4E-04	mg/kg	M	1.7E-09	mg/kg-day	NA	(mg/kg/day)-1	
	Chloroform	6.6E-04	mg/kg	6.6E-04	mg/kg	M	3.9E-10	mg/kg-day	NA	(mg/kg/day)-1	
	SVOC										
	1,2,4-Trichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	5.0E-09	mg/kg-day	NA	(mg/kg/day)-1	

Table 8.31.CT
Calculation of Cancer Hazards
Central Tendency
Surface Water Onondaga Lake

Exposure Route	Chemical of Potential Concern	Medium EPC Value[a]	Medium Units	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
	1,2-Dichlorobenzene	5.8E-04	mg/kg	5.8E-04	mg/kg	M	2.5E-09	mg/kg-day	NA	(mg/kg/day)-1	
	1,3-Dichlorobenzene	5.4E-04	mg/kg	5.4E-04	mg/kg	M	3.3E-09	mg/kg-day	NA	(mg/kg/day)-1	
	1,4-Dichlorobenzene	6.2E-04	mg/kg	6.2E-04	mg/kg	M	2.7E-09	mg/kg-day	0.024	(mg/kg/day)-1	6.5E-11
										Sum of Cancer Risk from Dermal Contact	1.1E-10
										Total Cancer Risk	1.1E-10

Please refer to Table 8.32 for footnotes, acronyms and abbreviations.

Table 8.32
Footnotes and Acronyms and Abbreviations for Tables 8.1 through 8.31

Acronyms and abbreviations

NA	-	not applicable
EPA	-	U.S. Environmental Protection Agency
EPC	-	Exposure Point Concentration
M	-	medium-specific
PAHs	-	Polycyclic aromatic hydrocarbons
PCBs	-	Polychlorinated biphenyls
PCDD/PCDFs	-	Polychlorinated dibenzo-*p*-dioxins and dibenzofurans
SVOCs	-	Semivolatile Organic Compounds
TEQ	-	Toxic equivalents (as 2,3,7,8-TCDD) (See report Section 5.2.7 and Table 5-1.)
VOCs	-	Volatile Organic Compounds

Footnotes

[a] EPCs are either the 95th percentile UCL on the mean or the maximum concentration; see RAGS Tables 3.1 - 3.10

[b] [Not used]

[c] Toxicity values (CSFs) obtained from IRIS (accessed 2002) or EPA Health Effects Assessment Summary Tables (HEAST) (USEPA, 1997b). See detailed chemical-specific discussion in Chapter 5.
Toxicity values were adjusted to account for oral absorption (ABS_{GI}) to calculate risks for dermal exposure on the basis of absorbed dose. See Section 5.1.2.
Toxicity information for chromium assume chromium in form of Chromium(VI). See discussion in Chapter 5.
Toxicity information for arsenic in fish assume inorganic arsenic. See discussion in Chapter 5.
Methylmercury toxicity value used in hazard calculations for fish tissue. See discussion in Chapter 5.
Cancer risk for ' TEQ-Dioxins (only) ' and ' TEQ-Furans (only) ' are shown for information only. 'Sum of Cancer Risk ' total includes only the ' TEQ (total) ' risk from PCDD/PCDFs.

TABLE 9.1.RME
Summary of Receptor Risks and Hazards for COPCs
Adult: Reasonable Maximum Exposure Recreational
Onondaga Lake

Scenario Timeframe: Current/Future
Receptor Population: Recreation
Receptor Age: Adult (18 and older)

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Fish	Fish Tissue	Fish Fillet	**Inorganics**					**Inorganics**					
			Antimony	NA		NA		Antimony	Whole Body/Blood	8.9E-01		NA	8.9E-01
			Arsenic (inorganic)	1.8E-05		NA	1.8E-05	Arsenic (inorganic)	Skin	9.6E-02		NA	9.6E-02
			Chromium	NA		NA		Chromium	None reported	6.7E-02		NA	6.7E-02
			Cyanide	NA		NA		Cyanide	Whole Body/Blood	1.0E-01		NA	1.0E-01
			Manganese	NA		NA		Manganese	Central Nervous System	8.2E-03		NA	8.2E-03
			Mercury (as methylmercury)	NA		NA		Mercury (as methylmercury)	Developmental Neuropsychological Impairment	3.9E+00		NA	3.9E+00
			Selenium	NA		NA		Selenium	Whole Body	1.0E-01		NA	1.0E-01
			Vanadium	NA		NA		Vanadium	Not Reported/Unknown	3.2E-02		NA	3.2E-02
			Zinc	NA		NA		Zinc	Blood	5.2E-02		NA	5.2E-02
			SVOCs	NA				**SVOCs**					
			bis(2-ethylhexyl)phthalate	4.9E-06		NA	4.9E-06	bis(2-ethylhexyl)phthalate	Liver	4.1E-02		NA	4.1E-02
			Hexachlorobenzene	3.2E-06		NA	3.2E-06	Hexachlorobenzene	Liver	5.8E-03		NA	5.8E-03
			Pesticides	NA				**Pesticides**					
			2,4'-DDE	NA		NA		2,4'-DDE		NA		NA	
			4,4'-DDD	4.9E-07		NA	4.9E-07	4,4'-DDD	Liver	1.6E-03		NA	1.6E-03
			4,4'-DDE	1.8E-06		NA	1.8E-06	4,4'-DDE	Liver	1.8E-02		NA	1.8E-02
			4,4'-DDT	4.9E-07		NA	4.9E-07	4,4'-DDT	Liver	6.8E-03		NA	6.8E-03
			Aldrin	6.6E-06		NA	6.6E-06	Aldrin	Liver	3.0E-02		NA	3.0E-02
			delta-BHC	NA		NA		delta-BHC	Liver/kidney	3.0E-03		NA	3.0E-03
			Dieldrin	9.3E-06		NA	9.3E-06	Dieldrin	Liver	2.7E-02		NA	2.7E-02
			Heptachlor epoxide	5.8E-06		NA	5.8E-06	Heptachlor epoxide	Liver	1.1E-01		NA	1.1E-01
			Sum of chlordanes	5.2E-07		NA	5.2E-07	Sum of chlordanes	Liver	6.9E-03		NA	6.9E-03
			PCBs	NA				**PCBs**					
			Aroclor 1016	NA		NA							
			Aroclor 1242	NA		NA							
			Sum of Low MW PCBs	NA		NA		Sum of Low MW PCBs	Assumed same as Ar 1016	2.4E+00		NA	2.4E+00
			Aroclor 1248	NA		NA							
			Aroclor 1260	NA		NA							
			Aroclors 1254 & 1260	NA		NA							
			Sum of High MW PCBs	NA		NA		Sum of High MW PCBs	Assumed same as Ar 1254	1.0E+01		NA	1.0E+01
			Sum of PCBs	2.8E-04		NA	2.8E-04	Sum of PCBs	NA	NA		NA	
			PCDD/PCDFs	NA				**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	4.5E-04		NA	4.5E-04	TEQ as 2,3,7,8-TCDD	NA	NA		NA	
			(Fish Tissue - Total)	7.8E-04		NA	7.8E-04	(Fish Tissue - Total)		18.2		NA	18.2
							Total Risk Across Fish Tissue: 7.8E-04						Total Hazard Across Fish Tissue: 18.2

TABLE 9.1.RME
Summary of Receptor Risks and Hazards for COPCs
Adult: Reasonable Maximum Exposure Recreational
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Northern Basin													
Sediment	Sediments	North Basin	**Inorganics**					**Inorganics**					
			Antimony	NA		NA		Antimony	Whole Body/Blood	4.0E-03		NA	4.0E-03
			Arsenic	4.3E-07		2.2E-07	6.5E-07	Arsenic	Skin	2.2E-03		1.1E-03	3.3E-03
			Barium	NA		NA		Barium	Cardiovascular System	3.7E-04		NA	3.7E-04
			Cadmium	NA		NA		Cadmium	Kidneys	3.5E-04		2.4E-04	5.9E-04
			Chromium	NA		NA		Chromium	None reported	1.9E-03		NA	1.9E-03
			Iron	NA		NA		Iron	Liver, spleen, lymph system	3.3E-03		NA	3.3E-03
			Manganese	NA		NA		Manganese	Central Nervous System	2.0E-03		NA	2.0E-03
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	3.4E-06		NA	3.4E-06
			Total Mercury	NA		NA		Total mercury	Immune System	1.1E-03		NA	1.1E-03
			Thallium	NA		NA		Thallium	NOAEL; various	7.6E-04		NA	7.6E-04
			VOCs					**VOCs**					
			Benzene	3.6E-10		NA	3.6E-10	Benzene	Immune System/Blood	5.1E-06		NA	5.1E-06
			SVOCs					**SVOCs**					
			Hexachlorobenzene	4.8E-08		8.2E-08	1.3E-07	Hexachlorobenzene	Liver	8.7E-05		1.5E-04	2.4E-04
			Benz(a)anthracene	8.8E-09		2.0E-08	2.8E-08	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	8.4E-08		1.9E-07	2.7E-07	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	1.3E-08		2.8E-08	4.1E-08	Benzo(b)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	2.6E-08		5.8E-08	8.4E-08	Dibenz(a,h)anthracene		NA		NA	
			Naphthalene	NA		NA		Naphthalene	Decreased body weight	3.4E-06		7.4E-06	1.1E-05
			PCBs					**PCBs**					
			Aroclor 1254	NA		NA		Aroclor 1254	Immune System	3.5E-04		8.5E-04	1.2E-03
			Aroclor 1268	NA		NA		Aroclor 1268	Assumed same as Ar 1254	3.0E-04		7.1E-04	1.0E-03
			Sum of PCBs	1.3E-08		3.0E-08	4.3E-08	Sum of PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	2.2E-08		1.1E-08	3.3E-08	TEQ as 2,3,7,8-TCDD		NA		NA	
			(North Basin Sediment Total)	6.4E-07		6.3E-07	1.3E-06	(North Basin Sediment Total)		0.02		0.003	0.02
Sediment	Wetland Sediments	Wetland SYW 6 (North Basin)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	1.8E-03		NA	1.8E-03
			Arsenic	7.5E-07		3.9E-07	1.1E-06	Arsenic	Skin	3.9E-03		2.0E-03	5.9E-03
			Cadmium	NA		NA		Cadmium	Kidneys	1.5E-03		1.0E-03	2.5E-03
			Chromium	NA		NA		Chromium	None reported	5.4E-03		NA	5.4E-03
			Cyanide	NA		NA		Cyanide	Whole Body/Blood	2.4E-05		NA	2.4E-05
			Iron	NA		NA		Iron	Liver, spleen, lymph system	1.6E-02		NA	1.6E-02
			Manganese	NA		NA		Manganese	Central Nervous System	3.1E-03		NA	3.1E-03
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	Immune System	1.7E-03		NA	1.7E-03
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	5.3E-05		NA	5.3E-05
			Thallium	NA		NA		Thallium	NOAEL; various	4.3E-03		NA	4.3E-03
			SVOCs					**SVOCs**					
			Benzo(a)pyrene	1.3E-05		3.0E-05	4.3E-05	Benzo(a)pyrene		NA		NA	
			2-Methylnaphthalene					2-Methylnaphthalene	Lungs/Decreased body weight	2.8E-05		6.3E-05	9.1E-05
			Acenaphthylene					Acenaphthylene	Kidney	2.2E-05		5.0E-05	7.2E-05
			Benz(a)anthracene	1.4E-06		3.0E-06	4.4E-06	Benz(a)anthracene		NA		NA	
			Benzo(b)fluoranthene	1.7E-06		3.7E-06	5.3E-06	Benzo(b)fluoranthene		NA		NA	
			Benzo(g,h,i)perylene					Benzo(g,h,i)perylene	Kidney	8.4E-05		1.9E-04	2.7E-04

TABLE 9.1.RME
Summary of Receptor Risks and Hazards for COPCs
Adult: Reasonable Maximum Exposure Recreational
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Benzo(k)fluoranthene	6.1E-08		1.4E-07	2.0E-07	Benzo(k)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	2.4E-06		5.3E-06	7.7E-06	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	7.9E-07		1.8E-06	2.6E-06	Indeno(1,2,3-cd)pyrene		NA		NA	
			Naphthalene					Naphthalene	Decreased body weight	3.7E-05		8.2E-05	1.2E-04
			Phenanthrene					Phenanthrene	Kidney	1.9E-04		4.1E-04	6.0E-04
			PCDD/PCDFs					PCDD/PCDFs					
			TEQ as 2,3,7,8-TCDD	1.3E-07		6.5E-08	1.9E-07	TEQ as 2,3,7,8-TCDD		NA		NA	
			(Wetland SYW-6 Sediment Total)	2.1E-05		4.4E-05	6.5E-05	(Wetland SYW-6 Sediment Total)		0.04		0.004	0.04
Sediment	Wetland Sediments	Wetland SYW 10 (North Basin)	Inorganics					Inorganics					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	1.6E-03		NA	1.6E-03
			Antimony	NA		NA		Antimony	Whole Body/Blood	2.2E-03		NA	2.2E-03
			Arsenic	1.3E-06		6.7E-07	2.0E-06	Arsenic	Skin	6.7E-03		3.5E-03	1.0E-02
			Chromium	NA		NA		Chromium	None reported	1.8E-03		NA	1.8E-03
			Iron	NA		NA		Iron	Liver, spleen, lymph system	9.2E-03		NA	9.2E-03
			Manganese	NA		NA		Manganese	Central Nervous System	2.9E-03		NA	2.9E-03
			Mercury(inorganic)					Mercury(inorganic)	Immune System	1.6E-03		NA	1.6E-03
			Methylmercury					Methylmercury	Developmental Neuropsychological Impairment	4.9E-05		NA	4.9E-05
			Thallium	NA		NA		Thallium	NOAEL; various	5.9E-03		NA	5.9E-03
			SVOCs					SVOCs					
			Benz(a)anthracene	5.5E-08		1.2E-07	1.8E-07	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	5.8E-07		1.3E-06	1.9E-06	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	4.8E-08		1.1E-07	1.5E-07	Benzo(b)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	1.4E-07		3.1E-07	4.4E-07	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	3.5E-08		7.8E-08	1.1E-07	Indeno(1,2,3-cd)pyrene		NA		NA	
			PCBs					PCBs					
			Aroclor 1260	NA		NA		Aroclor 1260	Assumed same as Ar 1254	1.7E-03		4.2E-03	5.9E-03
			Sum of PCBs	3.4E-08		8.1E-08	1.1E-07	Sum of PCBs		NA		NA	
			PCDD/PCDFs					PCDD/PCDFs					
			TEQ as 2,3,7,8-TCDD	1.3E-07		6.7E-08	2.0E-07	TEQ as 2,3,7,8-TCDD		NA		NA	
			(Wetland SYW-10 Sediment Total)	2.3E-06		2.7E-06	5.0E-06	(Wetland SYW-10 Sediment Total)		0.03		0.008	0.04
Southern Basin													
Sediment	Sediments	South Basin	Inorganics					Inorganics					
			Aluminum					Aluminum	Skeletal, skin	2.2E-04		NA	2.2E-04
			Antimony					Antimony	Whole Body/Blood	4.2E-04		NA	4.2E-04
			Arsenic	4.4E-07		2.2E-07	6.6E-07	Arsenic	Skin	2.3E-03		1.2E-03	3.4E-03
			Barium					Barium	Cardiovascular System	7.1E-04		NA	7.1E-04
			Cadmium					Cadmium	Kidneys	2.1E-04		1.5E-04	3.6E-04
			Chromium					Chromium	None reported	3.7E-03		NA	3.7E-03
			Copper					Copper	Liver/Kidneys/Forestomach	1.3E-04		NA	1.3E-04
			Cyanide					Cyanide	Whole Body/Blood	4.1E-06		NA	4.1E-06
			Iron					Iron	Liver, spleen, lymph system	2.2E-03		NA	2.2E-03
			Lead					Lead	CNS, blood, whole body	NA		NA	
			Manganese					Manganese	Central Nervous System	6.9E-04		NA	6.9E-04
			Methylmercury					Methylmercury	Developmental Neuropsychological Impairment	1.2E-05		NA	1.2E-05

TABLE 9.1.RME
Summary of Receptor Risks and Hazards for COPCs
Adult: Reasonable Maximum Exposure Recreational
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Total Mercury					Total mercury	Immune System	3.4E-03		NA	3.4E-03
			Nickel					Nickel	Whole Body/Major Organs	2.0E-04		NA	2.0E-04
			Thallium					Thallium	NOAEL; various	3.3E-04		NA	3.3E-04
			Vanadium					Vanadium	Not Reported/Unknown	2.3E-04		NA	2.3E-04
			VOCs					**VOCs**					
			Benzene	7.9E-08		NA	7.9E-08	Benzene	Immune System/Blood	1.1E-03		NA	1.1E-03
			Chlorobenzene					Chlorobenzene	Liver	4.9E-04		NA	4.9E-04
			Methylene chloride	1.5E-09		NA	1.5E-09	Methylene chloride	Liver	7.8E-06		NA	7.8E-06
			Xylenes					Xylenes	NOAEL; CNS	9.0E-06		NA	9.0E-06
			SVOCs					**SVOCs**					
			Dibenzofuran					Dibenzofuran	Liver	2.5E-04		4.2E-04	6.7E-04
			1,3-Dichlorobenzene					1,3-Dichlorobenzene	Liver/Pituitary Gland	2.8E-04		4.8E-04	7.7E-04
			1,4-Dichlorobenzene	3.5E-08		6.0E-08	9.6E-08	1,4-Dichlorobenzene	Skin/Blood	1.1E-04		2.0E-04	3.1E-04
			Hexachlorobenzene	2.5E-07		4.3E-07	6.8E-07	Hexachlorobenzene	Liver	4.6E-04		7.8E-04	1.2E-03
			Acenaphthylene					Acenaphthylene	Kidney	7.7E-06		1.7E-05	2.5E-05
			Benz(a)anthracene	1.7E-07		3.7E-07	5.4E-07	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	1.3E-06		2.8E-06	4.1E-06	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	1.7E-07		3.7E-07	5.4E-07	Benzo(b)fluoranthene		NA		NA	
			Benzo(ghi)perylene					Benzo(ghi)perylene	Kidney	1.2E-05		2.6E-05	3.8E-05
			Benzo(k)fluoranthene	6.1E-09		1.4E-08	2.0E-08	Benzo(k)fluoranthene		NA		NA	
			Chrysene	1.6E-09		3.7E-09	5.3E-09	Chrysene		NA		NA	
			Dibenz(a,h)anthracene	2.8E-07		6.2E-07	9.0E-07	Dibenz(a,h)anthracene		NA		NA	
			Fluoranthene					Fluoranthene	Kidney/Liver/Blood	4.6E-05		1.0E-04	1.5E-04
			Indeno(1,2,3-cd)pyrene	6.5E-08		1.4E-07	2.1E-07	Indeno(1,2,3-cd)pyrene		NA		NA	
			2-Methylnaphthalene					2-Methylnaphthalene	Lungs/Decreased body weight	4.8E-04		1.1E-03	1.6E-03
			Naphthalene					Naphthalene	Decreased body weight	2.9E-03		6.4E-03	9.3E-03
			Phenanthrene					Phenanthrene	Kidney	9.6E-05		2.1E-04	3.1E-04
			Pesticides					**Pesticides**					
			Dieldrin	3.3E-09		NA	3.3E-09	Dieldrin	Liver	9.5E-06		NA	9.5E-06
			PCBs					**PCBs**					
			Aroclor 1221					Aroclor 1221	Assumed same as Ar 1016	6.4E-05		1.5E-04	2.2E-04
			Aroclor 1242					Aroclor 1242	Assumed same as Ar 1016	2.7E-04		6.5E-04	9.2E-04
			Aroclor 1248					Aroclor 1248	Assumed same as Ar 1254	6.2E-04		1.5E-03	2.1E-03
			Aroclor 1254					Aroclor 1254	Immune System	3.8E-04		9.1E-04	1.3E-03
			Aroclor 1260					Aroclor 1260	Assumed same as Ar 1254	5.5E-04		1.3E-03	1.9E-03
			Sum of PCBs	5.0E-08		1.2E-07	1.7E-07	PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	1.3E-06		6.8E-07	2.0E-06	TEQ as 2,3,7,8-TCDD		NA		NA	
			(South Basin Sediment Total)	4.1E-06		5.9E-06	1.0E-05	(South Basin Sediment Total)		0.02		0.02	0.04
Sediment	Wetland Sediments	Wetland SYW-12 (South Basin)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	4.8E-04		NA	4.8E-04
			Arsenic	2.2E-07		1.1E-07	3.4E-07	Arsenic	Skin	1.2E-03		5.9E-04	1.7E-03
			Cadmium	NA		NA		Cadmium	Kidneys	2.2E-03		1.5E-03	3.8E-03
			Chromium	NA		NA		Chromium	None reported	5.5E-03		NA	5.5E-03
			Copper	NA		NA		Copper	Liver/Kidneys/Forestomach	3.7E-04		NA	3.7E-04
			Cyanide	NA		NA		Cyanide	Whole Body/Blood	2.3E-06		NA	2.3E-06
			Iron	NA		NA		Iron	Liver, spleen, lymph system	3.1E-03		NA	3.1E-03
			Manganese	NA		NA		Manganese	Central Nervous System	6.3E-04		NA	6.3E-04
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	Immune System	5.4E-04		NA	5.4E-04

TABLE 9.1.RME
Summary of Receptor Risks and Hazards for COPCs
Adult: Reasonable Maximum Exposure Recreational
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	1.6E-05		NA	1.6E-05
			Thallium	NA		NA		Thallium	NOAEL; various	5.5E-04		NA	5.5E-04
			SVOCs					**SVOCs**					
			Benz(a)anthracene	8.0E-08		1.8E-07	2.6E-07	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	7.8E-07		1.7E-06	2.5E-06	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	5.4E-08		1.2E-07	1.7E-07	Benzo(b)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	2.9E-08		6.5E-08	9.4E-08	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	5.2E-08		1.2E-07	1.7E-07	Indeno(1,2,3-cd)pyrene		NA		NA	
			Phenanthrene	NA		NA		Phenanthrene	Kidney	1.4E-05		3.0E-05	4.4E-05
			PCBs					**PCBs**					
			Aroclor 1242	NA		NA		Aroclor 1242	Assumed same as Ar 1016	2.2E-04		5.2E-04	7.4E-04
			Aroclor 1254	NA		NA		Aroclor 1254	Immune System	1.2E-03		2.8E-03	3.9E-03
			Aroclor 1260	NA		NA		Aroclor 1260	Assumed same as Ar 1254	6.0E-04		1.4E-03	2.0E-03
			Sum of PCBs	4.3E-08		1.0E-07	1.5E-07	Sum of PCBs		NA		NA	
			(Wetland SYW-12 Sediment Total)	1.3E-06		2.4E-06	3.7E-06	(Wetland SYW-12 Sediment Total)		0.02		0.007	0.02
Sediment	Wetland Sediments	Wetland SYW 19 (South Basin)	**Inorganics**					**Inorganics**					
			Antimony					Antimony	Whole Body/Blood	4.5E-04		NA	4.5E-04
			Arsenic	3.0E-07		1.5E-07	4.6E-07	Arsenic	Skin	1.6E-03		8.0E-04	2.4E-03
			Barium					Barium	Cardiovascular System	4.0E-04		NA	4.0E-04
			Cadmium					Cadmium	Kidneys	1.6E-04		1.1E-04	2.7E-04
			Chromium					Chromium	None reported	1.3E-03		NA	1.3E-03
			Iron					Iron	Liver, spleen, lymph system	1.9E-03		NA	1.9E-03
			Manganese					Manganese	Central Nervous System	7.1E-04		NA	7.1E-04
			Mercury(inorganic)					Mercury(inorganic)	Immune System	7.7E-03		NA	7.7E-03
			Methylmercury					Methylmercury	Developmental Neuropsychological Impairment	2.3E-04		NA	2.3E-04
			SVOCs					**SVOCs**					
			1,3-Dichlorobenzene					1,3-Dichlorobenzene	Liver/Pituitary Gland	2.3E-04		3.9E-04	6.3E-04
			1,4-Dichlorobenzene	5.0E-09		8.6E-09	1.4E-08	1,4-Dichlorobenzene	Skin/Blood	1.6E-05		2.8E-05	4.4E-05
			Hexachlorobenzene	1.0E-07		1.8E-07	2.8E-07	Hexachlorobenzene	Liver	1.9E-04		3.3E-04	5.2E-04
			Benz(a)anthracene	1.9E-07		4.3E-07	6.3E-07	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	1.8E-06		4.0E-06	5.7E-06	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	1.6E-07		3.4E-07	5.0E-07	Benzo(b)fluoranthene		NA		NA	
			Benzo(g,h,i)perylene					Benzo(g,h,i)perylene	Kidney	1.0E-05		2.3E-05	3.3E-05
			Benzo(k)fluoranthene	1.4E-08		3.0E-08	4.4E-08	Benzo(k)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	4.5E-07		1.0E-06	1.5E-06	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	1.0E-07		2.3E-07	3.3E-07	Indeno(1,2,3-cd)pyrene		NA		NA	
			Phenanthrene					Phenanthrene	Kidney	3.0E-05		6.7E-05	9.7E-05
			Pesticides					**Pesticides**					
			Aldrin	1.5E-08		NA	1.5E-08	Aldrin	Liver	7.1E-05		NA	7.1E-05
			Dieldrin	1.1E-08		NA	1.1E-08	Dieldrin	Liver	3.2E-05		NA	3.2E-05
			PCBs					**PCBs**					
			Aroclor 1242					Aroclor 1242	Assumed same as Ar 1016	5.5E-04		1.3E-03	1.9E-03
			Aroclor 1254					Aroclor 1254	Immune System	1.7E-03		4.0E-03	5.7E-03
			Aroclor 1260					Aroclor 1260	Assumed same as Ar 1254	8.6E-04		2.1E-03	2.9E-03
			Sum of PCBs	6.3E-08		1.5E-07	2.1E-07	Sum of PCBs		NA		NA	

TABLE 9.1.RME
Summary of Receptor Risks and Hazards for COPCs
Adult: Reasonable Maximum Exposure Recreational
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	3.1E-06		1.6E-06	4.7E-06	TEQ as 2,3,7,8-TCDD		NA		NA	
			(Wetland SYW-19 Sediment Total)	6.3E-06		8.1E-06	1.4E-05	(Wetland SYW-19 Sediment Total)		0.02		0.009	0.03
						Total Risk Across Sediment	9.9E-05					Total Hazard Across Sediment	0.19
Soil	Surface Soils	Dredge Spoil Soils (0-3.5 ft)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	2.1E-03		NA	2.1E-03
			Arsenic	9.3E-07		4.8E-07	1.4E-06	Arsenic	Skin	4.8E-03		2.5E-03	7.3E-03
			Chromium	NA		NA		Chromium	None reported	1.7E-03		NA	1.7E-03
			Iron	NA		NA		Iron	Liver, spleen, lymph system	9.8E-03		NA	9.8E-03
			Manganese	NA		NA		Manganese	Central Nervous System	2.6E-03		NA	2.6E-03
			Total Mercury	NA		NA		Total Mercury	Immune System	2.3E-03		NA	2.3E-03
			SVOCs					**SVOCs**					
			Hexachlorobenzene	4.8E-08		8.3E-08	1.3E-07	Hexachlorobenzene	Liver	8.8E-05		1.5E-04	2.4E-04
			Benzo(a)pyrene	7.0E-08		1.6E-07	2.3E-07	Benzo(a)pyrene		NA		NA	
			(Dredge Spoils - Surface Total)	1.0E-06		7.2E-07	1.8E-06	(Dredge Spoils - Surface Total)		0.02		0.003	0.03
Soil	Subsurface Soils	Dredge Spoil Soils (0-11.7 ft)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	NA	NA		NA	
			Arsenic	NA		NA		Arsenic	NA	NA		NA	
			Cadmium	NA		NA		Cadmium	NA	NA		NA	
			Chromium	NA		NA		Chromium	NA	NA		NA	
			Cyanide	NA		NA		Cyanide	NA	NA		NA	
			Iron	NA		NA		Iron	NA	NA		NA	
			Manganese	NA		NA		Manganese	NA	NA		NA	
			Total Mercury	NA		NA		Total Mercury	NA	NA		NA	
			Thallium	NA		NA		Thallium	NA	NA		NA	
			SVOCs					**SVOCs**					
			Hexachlorobenzene	NA		NA		Hexachlorobenzene	NA	NA		NA	
			Benz(a)anthracene	NA		NA		Benz(a)anthracene	NA	NA		NA	
			Benzo(a)pyrene	NA		NA		Benzo(a)pyrene	NA	NA		NA	
			Benzo(b)fluoranthene	NA		NA		Benzo(b)fluoranthene	NA	NA		NA	
			Benzo(g,h,i)perylene	NA		NA		Benzo(g,h,i)perylene	NA	NA		NA	
			Benzo(k)fluoranthene	NA		NA		Benzo(k)fluoranthene	NA	NA		NA	
			Dibenz(a,h)anthracene	NA		NA		Dibenz(a,h)anthracene	NA	NA		NA	
			Indeno(1,2,3-cd)pyrene	NA		NA		Indeno(1,2,3-cd)pyrene	NA	NA		NA	
			Naphthalene	NA		NA		Naphthalene	NA	NA		NA	
			Phenanthrene	NA		NA		Phenanthrene	NA	NA		NA	
			PCBs					**PCBs**					
			Aroclor 1254	NA		NA		Aroclor 1254	NA	NA		NA	
			Aroclor 1268	NA		NA		Aroclor 1268	NA	NA		NA	
			Sum of PCBs	NA		NA		Sum of PCBs	NA	NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	NA		NA		TEQ as 2,3,7,8-TCDD	NA	NA		NA	
			(Dredge Spoils - Subsurface Total)	NA		NA		(Dredge Spoils - Subsurface Total)	NA	NA		NA	
						Total Risk across Dredge Spoils	1.8E-06					Total Hazard across Dredge Spoils	0.03

TABLE 9.1.RME
Summary of Receptor Risks and Hazards for COPCs
Adult: Reasonable Maximum Exposure Recreational
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Water	Surface Water	Onondaga Lake	**Inorganics**					**Inorganics**					
			Cadmium					Cadmium	Kidneys	5.0E-04		7.1E-03	7.6E-03
			Chromium					Chromium	None reported	1.7E-04		5.0E-03	5.2E-03
			Manganese					Manganese	Central Nervous System	1.3E-04		1.2E-03	1.3E-03
			Methylmercury					Methylmercury	Developmental Neuropsychological Impairment	3.0E-06		1.1E-06	4.0E-06
			Total Mercury					Total mercury	Immune System	6.2E-06		3.2E-05	3.8E-05
			VOCs					**VOCs**					
			Benzene	3.1E-09		1.9E-08	2.3E-08	Benzene	Immune System/Blood	4.4E-05		2.7E-04	3.2E-04
			Chlorobenzene					Chlorobenzene	Liver	7.1E-06		9.3E-05	1.0E-04
			Chloroform					Chloroform	Liver	1.5E-05		5.0E-05	6.5E-05
			SVOCs					**SVOCs**					
			Bromodichloromethane	1.4E-09		4.0E-09	5.4E-09	Bromodichloromethane	Kidney	2.7E-06		7.5E-06	1.0E-05
			1,2-Dichlorobenzene					1,2-Dichlorobenzene	NOAEL	1.5E-06		3.2E-05	3.3E-05
			1,3-Dichlorobenzene					1,3-Dichlorobenzene	Liver/Pituitary Gland	1.3E-04		4.1E-03	4.3E-03
			1,4-Dichlorobenzene	1.4E-09		3.2E-08	3.3E-08	1,4-Dichlorobenzene	Skin/Blood	4.6E-06		1.0E-04	1.1E-04
			1,2,4-Trichlorobenzene					1,2,4-Trichlorobenzene	Adrenal/Liver/Kidney	1.3E-05		5.8E-04	5.9E-04
			(Surface Water - Total)	6.0E-09		5.5E-08	6.1E-08	(Surface Water - Total)		0.001		0.02	0.02
						Total Risk Across Surface Water	6.1E-08					Total Hazard Across Surface Water	0.02
						Total Risk Across All Media and All Exposure Routes	8.8E-04					Total Hazard Index Across All Media and All Exposure Routes	18.4

Total [Lungs] HI =	0.002	Total [DNI] HI =	3.87	Total [Kidney] HI =	0.01	Total [Blood] HI =	1.05
Total [Immune System] HI =	10.3	Total [Birth Weight] HI =	2.45	Total [CNS] HI =	0.02	Total [Body Weight] HI =	0.011
Total [Skin] HI =	0.14	Total [NOAEL] HI =	0.01	Total [Liver] HI =	0.31	Total [Whole Body] HI =	1.10

Note: (1) Based on an exposure of 30 years the carcinogenic risk is 2E-03.
(2) N/A = Risk or hazard not calculated
(3) Primary Target Organ for Aroclor 1016 is Reduced Birth Weight and for Aroclor 1254 is Immune System.
(4) Sediment total includes northern and southern basin sediments and all 4 wetlands
(5) Target Organ Totals: DNI: Developmental Neuropsychological Impairment
NOAEL : No Observed Adverse Effect Level
CNS: Central Nervous System

TABLE 9.2.RME
Summary of Receptor Risks and Hazards for COPCs
Reasonable Maximum Exposure
Onondaga Lake

Scenario Timeframe: Current/Future
Receptor Population: Recreation
Receptor Age: Young Child (less than 6)

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Fish	Fish Tissue	Fish Fillet	**Inorganics**					**Inorganics**					
			Antimony	NA		NA		Antimony	Whole Body/Blood	1.4E+00		NA	1.4E+00
			Arsenic (inorganic)	5.7E-06		NA	5.7E-06	Arsenic (inorganic)	Skin	1.5E-01		NA	1.5E-01
			Chromium	NA		NA		Chromium	None reported	1.0E-01		NA	1.0E-01
			Cyanide	NA		NA		Cyanide	Whole Body/Blood	1.6E-01		NA	1.6E-01
			Manganese	NA		NA		Manganese	Central Nervous System	1.3E-02		NA	1.3E-02
			Mercury (as methylmercury)	NA		NA		Mercury (as methylmercury)	Developmental Neuropsychological Impairment	6.0E+00		NA	6.0E+00
			Selenium	NA		NA		Selenium	Whole Body	1.6E-01		NA	1.6E-01
			Vanadium	NA		NA		Vanadium	Not Reported/Unknown	5.0E-02		NA	5.0E-02
			Zinc	NA		NA		Zinc	Blood	8.1E-02		NA	8.1E-02
			SVOCs					**SVOCs**					
			bis(2-ethylhexyl)phthalate	1.5E-06		NA	1.5E-06	bis(2-ethylhexyl)phthalate	Liver	6.4E-02		NA	6.4E-02
			Hexachlorobenzene	9.9E-07		NA	9.9E-07	Hexachlorobenzene	Liver	9.0E-03		NA	9.0E-03
			Pesticides					**Pesticides**					
			2,4'-DDE	NA		NA		2,4'-DDE		NA		NA	
			4,4'-DDD	1.5E-07		NA	1.5E-07	4,4'-DDD	Liver	2.5E-03		NA	2.5E-03
			4,4'-DDE	5.6E-07		NA	5.6E-07	4,4'-DDE	Liver	2.7E-02		NA	2.7E-02
			4,4'-DDT	1.5E-07		NA	1.5E-07	4,4'-DDT	Liver	1.1E-02		NA	1.1E-02
			Aldrin	2.0E-06		NA	2.0E-06	Aldrin	Liver	4.7E-02		NA	4.7E-02
			delta-BHC	NA		NA		delta-BHC	Liver/kidney	4.7E-03		NA	4.7E-03
			Dieldrin	2.9E-06		NA	2.9E-06	Dieldrin	Liver	4.2E-02		NA	4.2E-02
			Heptachlor epoxide	1.8E-06		NA	1.8E-06	Heptachlor epoxide	Liver	1.8E-01		NA	1.8E-01
			Sum of chlordanes	1.6E-07		NA	1.6E-07	Sum of chlordanes	Liver	1.1E-02		NA	1.1E-02
			PCBs					**PCBs**					
			Aroclor 1016	NA		NA							
			Aroclor 1242	NA		NA							
			Sum of Low MW PCBs	NA		NA		Sum of Low MW PCBs	Assumed same as Ar 1016	3.8E+00		NA	3.8E+00
			Aroclor 1248	NA		NA							
			Aroclor 1260	NA		NA							
			Aroclors 1254 & 1260	NA		NA							
			Sum of High MW PCBs	NA		NA		Sum of High MW PCBs	Assumed same as Ar 1254	1.6E+01		NA	1.6E+01
			Sum of PCBs	8.7E-05		NA	8.7E-05	Sum of PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	1.4E-04		NA	1.4E-04	TEQ as 2,3,7,8-TCDD		NA		NA	
			(Fish Tissue - Total)	2.4E-04		NA	2.4E-04	(Fish Tissue - Total)		28.3		NA	28.3
							Total Risk Across Fish Tissue	2.4E-04					Total Hazard Across Fish Tissue	28.3

TABLE 9.2.RME
Summary of Receptor Risks and Hazards for COPCs
Young Child: Reasonable Maximum Exposure Recreational
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Northern Basin													
Sediment	Sediments	North Basin	**Inorganics**					**Inorganics**					
			Antimony	NA		NA		Antimony	Whole Body/Blood	3.7E-02		NA	3.7E-02
			Arsenic	8.0E-07		9.0E-07	1.7E-06	Arsenic	Skin	2.1E-02		2.3E-02	4.4E-02
			Barium	NA		NA		Barium	Cardiovascular System	3.5E-03		NA	3.5E-03
			Cadmium	NA		NA		Cadmium	Kidneys	3.3E-03		4.9E-03	8.2E-03
			Chromium	NA		NA		Chromium	None reported	1.7E-02		NA	1.7E-02
			Iron	NA		NA		Iron	Liver, spleen, lymph system	3.1E-02		NA	3.1E-02
			Manganese	NA		NA		Manganese	Central Nervous System	1.9E-02		NA	1.9E-02
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	3.2E-05		NA	3.2E-05
			Total Mercury	NA		NA		Total mercury	Immune System	1.0E-02		NA	1.0E-02
			Thallium	NA		NA		Thallium	NOAEL; various	7.1E-03		NA	7.1E-03
			VOCs					**VOCs**					
			Benzene	6.8E-10		NA	6.8E-10	Benzene	Immune System/Blood	4.8E-05		NA	4.8E-05
			SVOCs					**SVOCs**					
			Hexachlorobenzene	8.9E-08		3.4E-07	4.3E-07	Hexachlorobenzene	Liver	8.2E-04		3.1E-03	3.9E-03
			Benz(a)anthracene	1.6E-08		8.1E-08	9.7E-08	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	1.6E-07		7.7E-07	9.3E-07	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	2.4E-08		1.2E-07	1.4E-07	Benzo(b)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	4.9E-08		2.4E-07	2.9E-07	Dibenz(a,h)anthracene		NA		NA	
			Naphthalene	NA		NA		Naphthalene	Decreased body weight	3.1E-05		1.5E-04	1.8E-04
			PCBs					**PCBs**					
			Aroclor 1254	NA		NA		Aroclor 1254	Immune System	3.3E-03		1.8E-02	2.1E-02
			Aroclor 1268	NA		NA		Aroclor 1268	Assumed same as Ar 1254	2.8E-03		1.5E-02	1.8E-02
			Sum of PCBs	2.4E-08		1.3E-07	1.5E-07	Sum of PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	4.0E-08		4.6E-08	8.6E-08	TEQ as 2,3,7,8-TCDD		NA		NA	
			(North Basin Sediment Total)	1.2E-06		2.6E-06	3.8E-06	(North Basin Sediment Total)		0.16		0.06	0.22
Sediment	Wetland Sediments	Wetland SYW-6 (North Basin)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	NA	NA		NA	
			Arsenic	NA		NA		Arsenic	NA	NA		NA	
			Cadmium	NA		NA		Cadmium	NA	NA		NA	
			Chromium	NA		NA		Chromium	NA	NA		NA	
			Cyanide	NA		NA		Cyanide	NA	NA		NA	
			Iron	NA		NA		Iron	NA	NA		NA	
			Manganese	NA		NA		Manganese	NA	NA		NA	
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	NA	NA		NA	
			Methylmercury	NA		NA		Methylmercury	NA	NA		NA	
			Thallium	NA		NA		Thallium	NA	NA		NA	
			SVOCs					**SVOCs**					
			Benzo(a)pyrene	NA		NA		Benzo(a)pyrene	NA	NA		NA	
			2-Methylnaphthalene	NA		NA		2-Methylnaphthalene	NA	NA		NA	
			Acenaphthylene	NA		NA		Acenaphthylene	NA	NA		NA	
			Benz(a)anthracene	NA		NA		Benz(a)anthracene	NA	NA		NA	
			Benzo(b)fluoranthene	NA		NA		Benzo(b)fluoranthene	NA	NA		NA	
			Benzo(g,h,i)perylene	NA		NA		Benzo(g,h,i)perylene	NA	NA		NA	
			Benzo(k)fluoranthene	NA		NA		Benzo(k)fluoranthene	NA	NA		NA	
			Dibenz(a,h)anthracene	NA		NA		Dibenz(a,h)anthracene	NA	NA		NA	
			Indeno(1,2,3-cd)pyrene	NA		NA		Indeno(1,2,3-cd)pyrene	NA	NA		NA	
			Naphthalene	NA		NA		Naphthalene	NA	NA		NA	

TABLE 9.2.RME
Summary of Receptor Risks and Hazards for COPCs
Young Child: Reasonable Maximum Exposure Recreational
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Phenanthrene	NA		NA		Phenanthrene	NA	NA		NA	
			PCDD/PCDFs					PCDD/PCDFs					
			TEQ as 2,3,7,8-TCDD	NA		NA		TEQ as 2,3,7,8-TCDD	NA	NA		NA	
			(Wetland SYW-6 Sediment Total)					(Wetland SYW-6 Sediment Total)	NA				
Sediment	Wetland Sediments	Wetland SYW-10 (North Basin)	Inorganics					Inorganics					
			Aluminum	NA		NA		Aluminum	NA	NA		NA	
			Antimony	NA		NA		Antimony	NA	NA		NA	
			Arsenic	NA		NA		Arsenic	NA	NA		NA	
			Chromium	NA		NA		Chromium	NA	NA		NA	
			Iron	NA		NA		Iron	NA	NA		NA	
			Manganese	NA		NA		Manganese	NA	NA		NA	
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	NA	NA		NA	
			Methylmercury	NA		NA		Methylmercury	NA	NA		NA	
			Thallium	NA		NA		Thallium	NA	NA		NA	
			SVOCs					SVOCs					
			Benz(a)anthracene	NA		NA		Benz(a)anthracene	NA	NA		NA	
			Benzo(a)pyrene	NA		NA		Benzo(a)pyrene	NA	NA		NA	
			Benzo(b)fluoranthene	NA		NA		Benzo(b)fluoranthene	NA	NA		NA	
			Dibenz(a,h)anthracene	NA		NA		Dibenz(a,h)anthracene	NA	NA		NA	
			Indeno(1,2,3-cd)pyrene	NA		NA		Indeno(1,2,3-cd)pyrene	NA	NA		NA	
			PCBs					PCBs					
			Aroclor 1260	NA		NA		Aroclor 1260	NA	NA		NA	
			Sum of PCBs	NA		NA		Sum of PCBs	NA	NA		NA	
			PCDD/PCDFs					PCDD/PCDFs					
			TEQ as 2,3,7,8-TCDD	NA		NA		TEQ as 2,3,7,8-TCDD	NA	NA		NA	
			(Wetland SYW-10 Sediment Total)					(Wetland SYW-10 Sediment Total)					
Southern Basin													
Sediment	Sediments	South Basin	Inorganics					Inorganics					
			Aluminum					Aluminum	Skeletal, skin	2.1E-03		NA	2.1E-03
			Antimony					Antimony	Whole Body/Blood	3.9E-03		NA	3.9E-03
			Arsenic	8.1E-07		9.2E-07	1.7E-06	Arsenic	Skin	2.1E-02		2.4E-02	4.5E-02
			Barium					Barium	Cardiovascular System	6.6E-03		NA	6.6E-03
			Cadmium					Cadmium	Kidneys	2.0E-03		3.0E-03	5.0E-03
			Chromium					Chromium	None reported	3.5E-02		NA	3.5E-02
			Copper					Copper	Liver/Kidneys/Forestomach	1.2E-03		NA	1.2E-03
			Cyanide					Cyanide	Whole Body/Blood	3.9E-05		NA	3.9E-05
			Iron					Iron	Liver, spleen, lymph system	2.1E-02		NA	2.1E-02
			Lead					Lead	CNS, blood, whole body	NA		NA	
			Manganese					Manganese	Central Nervous System	6.5E-03		NA	6.5E-03
			Methylmercury					Methylmercury	Developmental Neuropsychological Impairment	1.1E-04		NA	1.1E-04
			Total Mercury					Total mercury	Immune System	3.2E-02		NA	3.2E-02
			Nickel					Nickel	Whole Body/Major Organs	1.9E-03		NA	1.9E-03
			Thallium					Thallium	NOAEL; various	3.1E-03		NA	3.1E-03
			Vanadium					Vanadium	Not Reported/Unknown	2.2E-03		NA	2.2E-03
			VOCs					VOCs					
			Benzene	1.5E-07		NA	1.5E-07	Benzene	Immune System/Blood	1.0E-02		NA	1.0E-02
			Chlorobenzene					Chlorobenzene	Liver	4.6E-03		NA	4.6E-03
			Methylene chloride	2.8E-09		NA	2.8E-09	Methylene chloride	Liver	7.2E-05		NA	7.2E-05
			Xylenes					Xylenes	NOAEL; CNS	8.4E-05		NA	8.4E-05

TABLE 9.2.RME
Summary of Receptor Risks and Hazards for COPCs
Young Child: Reasonable Maximum Exposure Recreational
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			SVOCs					**SVOCs**					
			Hexachlorobenzene	4.7E-07		1.8E-06	2.2E-06	Hexachlorobenzene	Liver	4.3E-03		1.6E-02	2.0E-02
			Acenaphthylene					Acenaphthylene	Kidney	7.2E-05		3.6E-04	4.3E-04
			Benz(a)anthracene	3.1E-07		1.5E-06	1.8E-06	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	2.4E-06		1.2E-05	1.4E-05	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	3.1E-07		1.5E-06	1.9E-06	Benzo(b)fluoranthene		NA		NA	
			Benzo(ghi)perylene					Benzo(ghi)perylene	Kidney	1.1E-04		5.4E-04	6.4E-04
			Benzo(k)fluoranthene	1.1E-08		5.6E-08	6.7E-08	Benzo(k)fluoranthene		NA		NA	
			Chrysene	3.1E-09		1.5E-08	1.8E-08	Chrysene		NA		NA	
			Dibenz(a,h)anthracene	5.2E-07		2.6E-06	3.1E-06	Dibenz(a,h)anthracene		NA		NA	
			Dibenzofuran					Dibenzofuran	Liver	2.3E-03		8.7E-03	1.1E-02
			1,3-Dichlorobenzene					1,3-Dichlorobenzene	Liver/Pituitary Gland	2.6E-03		1.0E-02	1.3E-02
			1,4-Dichlorobenzene	6.6E-08		2.5E-07	3.2E-07	1,4-Dichlorobenzene	Skin/Blood	1.1E-03		4.0E-03	5.1E-03
			Fluoranthene					Fluoranthene	Kidney/Liver/Blood	4.3E-04		2.1E-03	2.5E-03
			Indeno(1,2,3-cd)pyrene	1.2E-07		5.9E-07	7.1E-07	Indeno(1,2,3-cd)pyrene		NA		NA	
			2-Methylnaphthalene					2-Methylnaphthalene	Lungs/Decreased body weight	4.5E-03		2.2E-02	2.7E-02
			Naphthalene					Naphthalene	Decreased body weight	2.7E-02		1.3E-01	1.6E-01
			Phenanthrene					Phenanthrene	Kidney	9.0E-04		4.4E-03	5.3E-03
			Pesticides					**Pesticides**					
			Dieldrin	6.1E-09		NA	6.1E-09	Dieldrin	Liver	8.9E-05		NA	8.9E-05
			PCBs					**PCBs**					
			Aroclor 1221					Aroclor 1221	Assumed same as Ar 1016	5.9E-04		3.1E-03	3.7E-03
			Aroclor 1242					Aroclor 1242	Assumed same as Ar 1016	2.5E-03		1.3E-02	1.6E-02
			Aroclor 1248					Aroclor 1248	Assumed same as Ar 1254	5.8E-03		3.0E-02	3.6E-02
			Aroclor 1254					Aroclor 1254	Immune System	3.5E-03		1.9E-02	2.2E-02
			Aroclor 1260					Aroclor 1260	Assumed same as Ar 1254	5.1E-03		2.7E-02	3.2E-02
			Sum of PCBs	9.3E-08		4.9E-07	5.9E-07	PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	2.5E-06		2.8E-06	5.3E-06	TEQ as 2,3,7,8-TCDD		NA		NA	
			(South Basin Sediment Total)	7.7E-06		2.4E-05	3.2E-05	(South Basin Sediment Total)		0.21		0.32	0.54
Sediment	Wetland Sediments	Wetland SYW-12 (South Basin)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	NA	NA		NA	
			Arsenic	NA		NA		Arsenic	NA	NA		NA	
			Cadmium	NA		NA		Cadmium	NA	NA		NA	
			Chromium	NA		NA		Chromium	NA	NA		NA	
			Copper	NA		NA		Copper	NA	NA		NA	
			Cyanide	NA		NA		Cyanide	NA	NA		NA	
			Iron	NA		NA		Iron	NA	NA		NA	
			Manganese	NA		NA		Manganese	NA	NA		NA	
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	NA	NA		NA	
			Methylmercury	NA		NA		Methylmercury	NA	NA		NA	
			Thallium	NA		NA		Thallium	NA	NA		NA	
			SVOCs					**SVOCs**					
			Benz(a)anthracene	NA		NA		Benz(a)anthracene	NA	NA		NA	
			Benzo(a)pyrene	NA		NA		Benzo(a)pyrene	NA	NA		NA	
			Benzo(b)fluoranthene	NA		NA		Benzo(b)fluoranthene	NA	NA		NA	
			Dibenz(a,h)anthracene	NA		NA		Dibenz(a,h)anthracene	NA	NA		NA	
			Indeno(1,2,3-cd)pyrene	NA		NA		Indeno(1,2,3-cd)pyrene	NA	NA		NA	
			Phenanthrene	NA		NA		Phenanthrene	NA	NA		NA	

TABLE 9.2.RME
Summary of Receptor Risks and Hazards for COPCs
Young Child: Reasonable Maximum Exposure Recreational
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			PCBs					**PCBs**					
			Aroclor 1242	NA		NA		Aroclor 1242	NA	NA		NA	
			Aroclor 1254	NA		NA		Aroclor 1254	NA	NA		NA	
			Aroclor 1260	NA		NA		Aroclor 1260	NA	NA		NA	
			Sum of PCBs	NA		NA		Sum of PCBs	NA	NA		NA	
			(Wetland SYW-12 Sediment Total)					(Wetland SYW-12 Sediment Total)					
Sediment	Wetland Sediments	Wetland SYW-19 (South Basin)	**Inorganics**					**Inorganics**					
			Antimony	NA		NA		Antimony	NA	NA		NA	
			Arsenic	NA		NA		Arsenic	NA	NA		NA	
			Barium	NA		NA		Barium	NA	NA		NA	
			Cadmium	NA		NA		Cadmium	NA	NA		NA	
			Chromium	NA		NA		Chromium	NA	NA		NA	
			Iron	NA		NA		Iron	NA	NA		NA	
			Manganese	NA		NA		Manganese	NA	NA		NA	
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	NA	NA		NA	
			Methylmercury	NA		NA		Methylmercury	NA	NA		NA	
			SVOCs					**SVOCs**					
			1,3-Dichlorobenzene	NA		NA		1,3-Dichlorobenzene	NA	NA		NA	
			1,4-Dichlorobenzene	NA		NA		1,4-Dichlorobenzene	NA	NA		NA	
			Hexachlorobenzene	NA		NA		Hexachlorobenzene	NA	NA		NA	
			Benz(a)anthracene	NA		NA		Benz(a)anthracene	NA	NA		NA	
			Benzo(a)pyrene	NA		NA		Benzo(a)pyrene	NA	NA		NA	
			Benzo(b)fluoranthene	NA		NA		Benzo(b)fluoranthene	NA	NA		NA	
			Benzo(g,h,i)perylene	NA		NA		Benzo(g,h,i)perylene	NA	NA		NA	
			Benzo(k)fluoranthene	NA		NA		Benzo(k)fluoranthene	NA	NA		NA	
			Dibenz(a,h)anthracene	NA		NA		Dibenz(a,h)anthracene	NA	NA		NA	
			Indeno(1,2,3-cd)pyrene	NA		NA		Indeno(1,2,3-cd)pyrene	NA	NA		NA	
			Phenanthrene	NA		NA		Phenanthrene	NA	NA		NA	
			Pesticides					**Pesticides**					
			Aldrin	NA		NA		Aldrin	NA	NA		NA	
			Dieldrin	NA		NA		Dieldrin	NA	NA		NA	
			PCBs					**PCBs**					
			Aroclor 1242	NA		NA		Aroclor 1242	NA	NA		NA	
			Aroclor 1254	NA		NA		Aroclor 1254	NA	NA		NA	
			Aroclor 1260	NA		NA		Aroclor 1260	NA	NA		NA	
			Sum of PCBs	NA		NA		Sum of PCBs	NA	NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	NA		NA		TEQ as 2,3,7,8-TCDD	NA	NA		NA	
			(Wetland SYW-19 Sediment Total)					(Wetland SYW-19 Sediment Total)					
							Total Risk Across Sediment: 3.6E-05						Total Hazard Across Sediment: 0.76
Soil	Surface Soils	Dredge Spoil Soils (0-3.5 ft)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	NA	NA		NA	
			Arsenic	NA		NA		Arsenic	NA	NA		NA	
			Chromium	NA		NA		Chromium	NA	NA		NA	
			Iron	NA		NA		Iron	NA	NA		NA	
			Manganese	NA		NA		Manganese	NA	NA		NA	
			Total Mercury	NA		NA		Total Mercury	NA	NA		NA	

TABLE 9.2.RME
Summary of Receptor Risks and Hazards for COPCs
Young Child: Reasonable Maximum Exposure Recreational
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			SVOCs					**SVOCs**					
			Benzo(a)pyrene	NA		NA		Benzo(a)pyrene	NA	NA		NA	
			Hexachlorobenzene	NA		NA		Hexachlorobenzene	NA	NA		NA	
			(Dredge Spoils - Surface Total)					(Dredge Spoils - Surface Total)					
Soil	Subsurface Soils	Dredge Spoil Soils (0-11.7 ft)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	NA	NA		NA	
			Arsenic	NA		NA		Arsenic	NA	NA		NA	
			Cadmium	NA		NA		Cadmium	NA	NA		NA	
			Chromium	NA		NA		Chromium	NA	NA		NA	
			Cyanide	NA		NA		Cyanide	NA	NA		NA	
			Iron	NA		NA		Iron	NA	NA		NA	
			Manganese	NA		NA		Manganese	NA	NA		NA	
			Total Mercury	NA		NA		Total Mercury	NA	NA		NA	
			Thallium	NA		NA		Thallium	NA	NA		NA	
			SVOCs					**SVOCs**					
			Hexachlorobenzene	NA		NA		Hexachlorobenzene	NA	NA		NA	
			Benz(a)anthracene	NA		NA		Benz(a)anthracene	NA	NA		NA	
			Benzo(a)pyrene	NA		NA		Benzo(a)pyrene	NA	NA		NA	
			Benzo(b)fluoranthene	NA		NA		Benzo(b)fluoranthene	NA	NA		NA	
			Benzo(g,h,i)perylene	NA		NA		Benzo(g,h,i)perylene	NA	NA		NA	
			Benzo(k)fluoranthene	NA		NA		Benzo(k)fluoranthene	NA	NA		NA	
			Dibenz(a,h)anthracene	NA		NA		Dibenz(a,h)anthracene	NA	NA		NA	
			Indeno(1,2,3-cd)pyrene	NA		NA		Indeno(1,2,3-cd)pyrene	NA	NA		NA	
			Naphthalene	NA		NA		Naphthalene	NA	NA		NA	
			Phenanthrene	NA		NA		Phenanthrene	NA	NA		NA	
			PCBs					**PCBs**					
			Aroclor 1254	NA		NA		Aroclor 1254	NA	NA		NA	
			Aroclor 1268	NA		NA		Aroclor 1268	NA	NA		NA	
			Sum of PCBs	NA		NA		Sum of PCBs	NA	NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	NA		NA		TEQ as 2,3,7,8-TCDD	NA	NA		NA	
			(Dredge Spoils - Subsurface Total)	NA		NA		(Dredge Spoils - Subsurface Total)	NA	NA		NA	
			Total Risk Across Dredge Spoil Soils					Total Hazard Across Dredge Spoil Soils					
Surface Water	Surface Water	Onondaga Lake	**Inorganics**					**Inorganics**					
			Cadmium					Cadmium	Kidneys	2.3E-03		1.2E-02	1.5E-02
			Chromium					Chromium	None reported	8.2E-04		8.6E-03	9.4E-03
			Manganese					Manganese	Central Nervous System	6.1E-04		2.0E-03	2.6E-03
			Methylmercury					Methylmercury	Developmental Neuropsychological Impairment	1.4E-05		1.8E-06	1.6E-05
			Total Mercury					Total mercury	Immune System	2.9E-05		5.4E-05	8.3E-05
			VOCs					**VOCs**					
			Benzene	3.1E-09		6.6E-09	9.8E-09	Benzene	Immune System/Blood	2.1E-04		4.7E-04	6.8E-04
			Chlorobenzene					Chlorobenzene	Liver	3.3E-05		1.6E-04	1.9E-04
			Chloroform					Chloroform	Liver	6.9E-05		8.5E-05	1.5E-04
			SVOCs					**SVOCs**					
			Bromodichloromethane	1.4E-09		1.4E-09	2.8E-09	Bromodichloromethane	Kidney	1.3E-05		1.3E-05	2.5E-05
			1,2-Dichlorobenzene					1,2-Dichlorobenzene	NOAEL	6.8E-06		5.5E-05	6.1E-05
			1,3-Dichlorobenzene					1,3-Dichlorobenzene	Liver/Pituitary Gland	6.3E-04		7.0E-03	7.7E-03

TABLE 9.2.RME
Summary of Receptor Risks and Hazards for COPCs
Young Child: Reasonable Maximum Exposure Recreational
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			1,4-Dichlorobenzene	1.4E-09		1.1E-08	1.2E-08	1,4-Dichlorobenzene	Skin/Blood	2.1E-05		1.8E-04	2.0E-04
			1,2,4-Trichlorobenzene					1,2,4-Trichlorobenzene	Adrenal/Liver/Kidney	6.1E-05		9.9E-04	1.0E-03
			(Surface Water - Total)	6.0E-09		1.9E-08	2.5E-08	(Surface Water - Total)		0.005		0.03	0.04
						Total Risk Across Surface Water	2.5E-08					Total Hazard Across Surface Water	0.04
						Total Risk Across All Media and All Exposure Routes	2.8E-04					Total Hazard Index Across All Media and All Exposure Routes	29.1

Total [Lungs] HI =	0.03	Total [DNI] HI =	6.01	Total [Kidney] HI =	0.03
Total [Immune System] HI =	16.2	Total [Birth Weight] HI =	3.82	Total [CNS] HI =	0.04
Total [Skin] HI =	0.25	Total [NOAEL] HI =	0.01	Total [Liver] HI =	0.50
Total [Blood] HI =	1.68				
Total [Body Weight] HI =	0.19				
Total [Whole Body] HI =	1.74				

Note: (1) Based on an exposure of 30 years the carcinogenic risk is 2E-03.
(2) N/A = Risk or hazard not calculated
(3) Primary Target Organ for Aroclor 1016 is Reduced Birth Weight and for Aroclor 1254 is Immune System.
(4) Sediment total includes northern and southern basin sediments and all 4 wetlands
(5) Target Organ Totals: DNI: Developmental Neuropsychological Impairment
NOAEL : No Observed Adverse Effect Level
CNS: Central Nervous System

TABLE 9.3.RME
Summary of Receptor Risks and Hazards for COPCs
Reasonable Maximum Exposure
Onondaga Lake

Scenario Timeframe: Current/Future
Receptor Population: Recreation
Receptor Age: Older Child (6 to < 18)

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Fish	Fish Tissue	Fish Fillet	**Inorganics**					**Inorganics**					
			Antimony	NA		NA		Antimony	Whole Body/Blood	9.6E-01		NA	9.6E-01
			Arsenic (inorganic)	8.0E-06		NA	8.0E-06	Arsenic (inorganic)	Skin	1.0E-01		NA	1.0E-01
			Chromium	NA		NA		Chromium	None reported	7.3E-02		NA	7.3E-02
			Cyanide	NA		NA		Cyanide	Whole Body/Blood	1.1E-01		NA	1.1E-01
			Manganese	NA		NA		Manganese	Central Nervous System	8.9E-03		NA	8.9E-03
			Mercury (as methylmercury)	NA		NA		Mercury (as methylmercury)	Developmental Neuropsychological Impairment	4.2E+00		NA	4.2E+00
			Selenium	NA		NA		Selenium	Whole Body	1.1E-01		NA	1.1E-01
			Vanadium	NA		NA		Vanadium	Not Reported/Unknown	3.5E-02		NA	3.5E-02
			Zinc	NA		NA		Zinc	Blood	5.6E-02		NA	5.6E-02
			SVOCs					**SVOCs**					
			bis(2-ethylhexyl)phthalate	2.1E-06		NA	2.1E-06	bis(2-ethylhexyl)phthalate	Liver	4.5E-02		NA	4.5E-02
			Hexachlorobenzene	1.4E-06		NA	1.4E-06	Hexachlorobenzene	Liver	6.3E-03		NA	6.3E-03
			Pesticides					**Pesticides**					
			2,4'-DDE	NA		NA		2,4'-DDE		NA		NA	
			4,4'-DDD	2.1E-07		NA	2.1E-07	4,4'-DDD	Liver	1.7E-03		NA	1.7E-03
			4,4'-DDE	7.8E-07		NA	7.8E-07	4,4'-DDE	Liver	1.9E-02		NA	1.9E-02
			4,4'-DDT	2.1E-07		NA	2.1E-07	4,4'-DDT	Liver	7.4E-03		NA	7.4E-03
			Aldrin	2.9E-06		NA	2.9E-06	Aldrin	Liver	3.3E-02		NA	3.3E-02
			delta-BHC	NA		NA		delta-BHC	Liver/kidney	3.3E-03		NA	3.3E-03
			Dieldrin	4.1E-06		NA	4.1E-06	Dieldrin	Liver	3.0E-02		NA	3.0E-02
			Heptachlor epoxide	2.5E-06		NA	2.5E-06	Heptachlor epoxide	Liver	1.2E-01		NA	1.2E-01
			Sum of chlordanes	2.3E-07		NA	2.3E-07	Sum of chlordanes	Liver	7.5E-03		NA	7.5E-03
			PCBs					**PCBs**					
			Aroclor 1016	NA		NA							
			Aroclor 1242	NA		NA							
			Sum of Low MW PCBs	NA		NA		Sum of Low MW PCBs	Assumed same as Ar 1016	2.6E+00		NA	2.6E+00
			Aroclor 1248	NA		NA							
			Aroclor 1260	NA		NA							
			Aroclors 1254 & 1260	NA		NA							
			Sum of High MW PCBs	NA		NA		Sum of High MW PCBs	Assumed same as Ar 1254	1.1E+01		NA	1.1E+01
			Sum of PCBs	1.2E-04		NA	1.2E-04	Sum of PCBs	NA	NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	2.0E-04		NA	2.0E-04	TEQ as 2,3,7,8-TCDD	NA	NA		NA	
			(Fish Tissue - Total)	3.4E-04			3.4E-04	(Fish Tissue - Total)		19.8			19.8
						Total Risk Across Fish Tissue	3.4E-04					Total Hazard Across Fish Tissue	19.8

TABLE 9.3.RME
Summary of Receptor Risks and Hazards for COPCs
Reasonable Maximum Exposure
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Northern Basin													
Sediment	Sediments	North Basin	**Inorganics**					**Inorganics**					
			Antimony	NA		NA		Antimony	Whole Body/Blood	6.4E-03		NA	6.4E-03
			Arsenic	2.8E-07		1.2E-06	1.5E-06	Arsenic	Skin	3.6E-03		1.6E-02	1.9E-02
			Barium	NA		NA		Barium	Cardiovascular System	6.0E-04		NA	6.0E-04
			Cadmium	NA		NA		Cadmium	Kidneys	5.7E-04		3.3E-03	3.9E-03
			Chromium	NA		NA		Chromium	None reported	3.0E-03		NA	3.0E-03
			Iron	NA		NA		Iron	Liver, spleen, lymph system	5.4E-03		NA	5.4E-03
			Manganese	NA		NA		Manganese	Central Nervous System	3.3E-03		NA	3.3E-03
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	5.6E-06		NA	5.6E-06
			Total Mercury	NA		NA		Total mercury	Immune System	1.8E-03		NA	1.8E-03
			Thallium	NA		NA		Thallium	NOAEL; various	1.2E-03		NA	1.2E-03
			VOCs					**VOCs**					
			Benzene	2.4E-10		NA	2.4E-10	Benzene	Immune System/Blood	8.4E-06		NA	8.4E-06
			SVOCs					**SVOCs**					
			Hexachlorobenzene	3.1E-08		4.5E-07	4.9E-07	Hexachlorobenzene	Liver	1.4E-04		2.1E-03	2.2E-03
			Benz(a)anthracene	5.7E-09		1.1E-07	1.1E-07	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	5.5E-08		1.0E-06	1.1E-06	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	8.3E-09		1.6E-07	1.7E-07	Benzo(b)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	1.7E-08		3.2E-07	3.4E-07	Dibenz(a,h)anthracene		NA		NA	
			Naphthalene	NA		NA		Naphthalene	Decreased body weight	5.5E-06		1.0E-04	1.1E-04
			PCBs					**PCBs**					
			Aroclor 1254	NA		NA		Aroclor 1254	Immune System	5.8E-04		1.2E-02	1.2E-02
			Aroclor 1268	NA		NA		Aroclor 1268	Assumed same as Ar 1254	4.9E-04		9.9E-03	1.0E-02
			Sum of PCBs	8.3E-09		1.7E-07	1.8E-07	Sum of PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	1.4E-08		6.2E-08	7.6E-08	TEQ as 2,3,7,8-TCDD		NA		NA	
			(North Basin Sediment Total)	4.2E-07		3.5E-06	3.9E-06	(North Basin Sediment Total)		0.03		0.04	0.07
Sediment	Wetland Sediments	Wetland SYW-6 (North Basin)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	3.0E-03		NA	3.0E-03
			Arsenic	4.9E-07		2.1E-06	2.6E-06	Arsenic	Skin	6.4E-03		2.8E-02	3.4E-02
			Cadmium	NA		NA		Cadmium	Kidneys	2.4E-03		1.4E-02	1.6E-02
			Chromium	NA		NA		Chromium	None reported	8.8E-03		NA	8.8E-03
			Cyanide	NA		NA		Cyanide	Whole Body/Blood	4.0E-05		NA	4.0E-05
			Iron	NA		NA		Iron	Liver, spleen, lymph system	2.6E-02		NA	2.6E-02
			Manganese	NA		NA		Manganese	Central Nervous System	5.0E-03		NA	5.0E-03
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	Immune System	2.8E-03		NA	2.8E-03
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	8.6E-05		NA	8.6E-05
			Thallium	NA		NA		Thallium	NOAEL; various	7.0E-03		NA	7.0E-03
			SVOCs					**SVOCs**					
			Benzo(a)pyrene	8.8E-06		1.7E-04	1.8E-04	Benzo(a)pyrene		NA		NA	
			2-Methylnaphthalene					2-Methylnaphthalene	Lungs/Decreased body weight	4.6E-05		8.7E-04	9.2E-04
			Acenaphthylene					Acenaphthylene	Kidney	3.7E-05		6.9E-04	7.3E-04
			Benz(a)anthracene	8.9E-07		1.7E-05	1.8E-05	Benz(a)anthracene		NA		NA	

TABLE 9.3.RME
Summary of Receptor Risks and Hazards for COPCs
Reasonable Maximum Exposure
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Benzo(b)fluoranthene	1.1E-06		2.0E-05	2.2E-05	Benzo(b)fluoranthene		NA		NA	
			Benzo(g,h,i)perylene					Benzo(g,h,i)perylene	Kidney	1.4E-04		2.6E-03	2.7E-03
			Benzo(k)fluoranthene	4.0E-08		7.6E-07	8.0E-07	Benzo(k)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	1.6E-06		2.9E-05	3.1E-05	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	5.2E-07		9.8E-06	1.0E-05	Indeno(1,2,3-cd)pyrene		NA		NA	
			Naphthalene					Naphthalene	Decreased body weight	6.0E-05		1.1E-03	1.2E-03
			Phenanthrene					Phenanthrene	Kidney	3.0E-04		5.8E-03	6.1E-03
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	8.3E-08		3.6E-07	4.5E-07	TEQ as 2,3,7,8-TCDD		NA		NA	
			(Wetland SYW-6 Sediment Total)	1.3E-05		2.5E-04	2.6E-04	(Wetland SYW-6 Sediment Total)		0.06		0.05	0.12
Sediment	Wetland Sediments	Wetland SYW-10 (North Basin)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	2.6E-03		NA	2.6E-03
			Antimony	NA		NA		Antimony	Whole Body/Blood	3.6E-03		NA	3.6E-03
			Arsenic	8.5E-07		3.7E-06	4.5E-06	Arsenic	Skin	1.1E-02		4.8E-02	5.9E-02
			Chromium	NA		NA		Chromium	None reported	3.0E-03		NA	3.0E-03
			Iron	NA		NA		Iron	Liver, spleen, lymph system	1.5E-02		NA	1.5E-02
			Manganese	NA		NA		Manganese	Central Nervous System	4.7E-03		NA	4.7E-03
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	Immune System	2.6E-03		NA	2.6E-03
			Methylmercury					Methylmercury	Developmental Neuropsychological				
				NA		NA			Impairment	8.0E-05		NA	8.0E-05
			Thallium	NA		NA		Thallium	NOAEL; various	9.6E-03		NA	9.6E-03
			SVOCs					**SVOCs**					
			Benz(a)anthracene	3.6E-08		6.8E-07	7.2E-07	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	3.8E-07		7.1E-06	7.5E-06	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	3.1E-08		5.9E-07	6.2E-07	Benzo(b)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	8.9E-08		1.7E-06	1.8E-06	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	2.3E-08		4.4E-07	4.6E-07	Indeno(1,2,3-cd)pyrene		NA		NA	
			PCBs					**PCBs**					
			Aroclor 1260	NA		NA		Aroclor 1260	Assumed same as Ar 1254	2.8E-03		5.8E-02	6.0E-02
			Sum of PCBs	2.2E-08		4.5E-07	4.7E-07	Sum of PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	8.5E-08		3.7E-07	4.6E-07	TEQ as 2,3,7,8-TCDD		NA		NA	
			(Wetland SYW-10 Sediment Total)	1.5E-06		1.5E-05	1.7E-05	(Wetland SYW-10 Sediment Total)		0.05		0.11	0.16
Southern Basin													
Sediment	Sediments	South Basin	**Inorganics**					**Inorganics**					
			Aluminum					Aluminum	Skeletal, skin	3.6E-04		NA	3.6E-04
			Antimony					Antimony	Whole Body/Blood	6.8E-04		NA	6.8E-04
			Arsenic	2.8E-07		1.2E-06	1.5E-06	Arsenic	Skin	3.7E-03		1.6E-02	2.0E-02
			Barium					Barium	Cardiovascular System	1.1E-03		NA	1.1E-03
			Cadmium					Cadmium	Kidneys	3.5E-04		2.0E-03	2.4E-03
			Chromium					Chromium	None reported	6.1E-03		NA	6.1E-03
			Copper					Copper	Liver/Kidneys/Forestomach	2.1E-04		NA	2.1E-04
			Cyanide					Cyanide	Whole Body/Blood	6.8E-06		NA	6.8E-06
			Iron					Iron	Liver, spleen, lymph system	3.6E-03		NA	3.6E-03
			Lead					Lead	CNS, blood, whole body	NA		NA	
			Manganese					Manganese	Central Nervous System	1.1E-03		NA	1.1E-03

TABLE 9.3.RME
Summary of Receptor Risks and Hazards for COPCs
Reasonable Maximum Exposure
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Methylmercury					Methylmercury	Developmental Neuropsychological Impairment	2.0E-05		NA	2.0E-05
			Total Mercury					Total mercury	Immune System	5.6E-03		NA	5.6E-03
			Nickel					Nickel	Whole Body/Major Organs	3.3E-04		NA	3.3E-04
			Thallium					Thallium	NOAEL; various	5.4E-04		NA	5.4E-04
			Vanadium					Vanadium	Not Reported/Unknown	3.8E-04		NA	3.8E-04
			VOCs					**VOCs**					
			Benzene	5.2E-08		NA	5.2E-08	Benzene	Immune System/Blood	1.8E-03		NA	1.8E-03
			Chlorobenzene					Chlorobenzene	Liver	8.0E-04		NA	8.0E-04
			Methylene chloride	9.7E-10		NA	9.7E-10	Methylene chloride	Liver	1.3E-05		NA	1.3E-05
			Xylenes					Xylenes	NOAEL; CNS	1.5E-05		NA	1.5E-05
			SVOCs					**SVOCs**					
			Dibenzofuran					Dibenzofuran	Liver	4.0E-04		5.9E-03	6.3E-03
			1,3-Dichlorobenzene					1,3-Dichlorobenzene	Liver/Pituitary Gland	4.6E-04		6.7E-03	7.2E-03
			1,4-Dichlorobenzene	2.3E-08		3.4E-07	3.6E-07	1,4-Dichlorobenzene	Skin/Blood	1.9E-04		2.7E-03	2.9E-03
			Hexachlorobenzene	1.6E-07		2.4E-06	2.5E-06	Hexachlorobenzene	Liver	7.4E-04		1.1E-02	1.2E-02
			Acenaphthylene					Acenaphthylene	Kidney	1.3E-05		2.4E-04	2.5E-04
			Benz(a)anthracene	1.1E-07		2.1E-06	2.2E-06	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	8.3E-07		1.6E-05	1.6E-05	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	1.1E-07		2.1E-06	2.2E-06	Benzo(b)fluoranthene		NA		NA	
			Benzo(ghi)perylene					Benzo(ghi)perylene	Kidney	1.9E-05		3.6E-04	3.8E-04
			Benzo(k)fluoranthene	4.0E-09		7.5E-08	7.9E-08	Benzo(k)fluoranthene		NA		NA	
			Chrysene	1.1E-09		2.0E-08	2.1E-08	Chrysene		NA		NA	
			Dibenz(a,h)anthracene	1.8E-07		3.4E-06	3.6E-06	Dibenz(a,h)anthracene		NA		NA	
			Fluoranthene					Fluoranthene	Kidney/Liver/Blood	7.5E-05		1.4E-03	1.5E-03
			Indeno(1,2,3-cd)pyrene	4.2E-08		8.0E-07	8.4E-07	Indeno(1,2,3-cd)pyrene		NA		NA	
			2-Methylnaphthalene					2-Methylnaphthalene	Lungs/Decreased body weight	7.9E-04		1.5E-02	1.6E-02
			Naphthalene					Naphthalene	Decreased body weight	4.7E-03		8.9E-02	9.4E-02
			Phenanthrene					Phenanthrene	Kidney	1.6E-04		3.0E-03	3.1E-03
			Pesticides					**Pesticides**					
			Dieldrin	2.1E-09		NA	2.1E-09	Dieldrin	Liver	1.6E-05		NA	1.6E-05
			PCBs					**PCBs**					
			Aroclor 1221					Aroclor 1221	Assumed same as Ar 1016	1.0E-04		2.1E-03	2.2E-03
			Aroclor 1242					Aroclor 1242	Assumed same as Ar 1016	4.4E-04		9.0E-03	9.4E-03
			Aroclor 1248					Aroclor 1248	Assumed same as Ar 1254	1.0E-03		2.1E-02	2.2E-02
			Aroclor 1254					Aroclor 1254	Immune System	6.2E-04		1.3E-02	1.3E-02
			Aroclor 1260					Aroclor 1260	Assumed same as Ar 1254	8.9E-04		1.8E-02	1.9E-02
			Sum of PCBs	3.2E-08		6.6E-07	7.0E-07	PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	8.6E-07		3.8E-06	4.6E-06	TEQ as 2,3,7,8-TCDD		NA		NA	
			(South Basin Sediment Total)	2.7E-06		3.3E-05	3.5E-05	(South Basin Sediment Total)		0.04		0.22	0.25
Sediment	Wetland Sediments	Wetland SYW-12 (South Basin)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	7.8E-04		NA	7.8E-04
			Arsenic	1.4E-07		6.3E-07	7.8E-07	Arsenic	Skin	1.9E-03		8.2E-03	1.0E-02
			Cadmium	NA		NA		Cadmium	Kidneys	3.6E-03		2.1E-02	2.5E-02
			Chromium	NA		NA		Chromium	None reported	9.0E-03		NA	9.0E-03

TABLE 9.3.RME
Summary of Receptor Risks and Hazards for COPCs
Reasonable Maximum Exposure
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Copper	NA		NA		Copper	Liver/Kidneys/Forestomach	6.0E-04		NA	6.0E-04
			Cyanide	NA		NA		Cyanide	Whole Body/Blood	3.8E-06		NA	3.8E-06
			Iron	NA		NA		Iron	Liver, spleen, lymph system	5.1E-03		NA	5.1E-03
			Manganese	NA		NA		Manganese	Central Nervous System	1.0E-03		NA	1.0E-03
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	Immune System	8.9E-04		NA	8.9E-04
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	2.7E-05		NA	2.7E-05
			Thallium	NA		NA		Thallium	NOAEL; various	9.0E-04		NA	9.0E-04
			SVOCs					**SVOCs**					
			Benz(a)anthracene	5.2E-08		9.8E-07	1.0E-06	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	5.1E-07		9.6E-06	1.0E-05	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	3.5E-08		6.7E-07	7.0E-07	Benzo(b)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	1.9E-08		3.6E-07	3.8E-07	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	3.4E-08		6.5E-07	6.8E-07	Indeno(1,2,3-cd)pyrene		NA		NA	
			Phenanthrene	NA		NA		Phenanthrene	Kidney	2.2E-05		4.2E-04	4.4E-04
			PCBs					**PCBs**					
			Aroclor 1242	NA		NA		Aroclor 1242	Assumed same as Ar 1016	3.6E-04		7.3E-03	7.6E-03
			Aroclor 1254	NA		NA		Aroclor 1254	Immune System	1.9E-03		3.8E-02	4.0E-02
			Aroclor 1260	NA		NA		Aroclor 1260	Assumed same as Ar 1254	9.8E-04		2.0E-02	2.1E-02
			Sum of PCBs	2.8E-08		5.7E-07	6.0E-07	Sum of PCBs		NA		NA	
			(Wetland SYW-12 Sediment Total)	8.2E-07		1.3E-05	1.4E-05	(Wetland SYW-12 Sediment Total)		0.03		0.10	0.12
Sediment	Wetland Sediments	Wetland SYW-19 (South Basin)	**Inorganics**					**Inorganics**					
			Antimony					Antimony	Whole Body/Blood	7.4E-04		NA	7.4E-04
			Arsenic	2.0E-07		8.6E-07	1.1E-06	Arsenic	Skin	2.5E-03		1.1E-02	1.4E-02
			Barium					Barium	Cardiovascular System	6.5E-04		NA	6.5E-04
			Cadmium					Cadmium	Kidneys	2.6E-04		1.5E-03	1.8E-03
			Chromium					Chromium	None reported	2.1E-03		NA	2.1E-03
			Iron					Iron	Liver, spleen, lymph system	3.1E-03		NA	3.1E-03
			Manganese					Manganese	Central Nervous System	1.2E-03		NA	1.2E-03
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	Immune System	1.3E-02		NA	1.3E-02
			Methylmercury	NA		NA		Methylmercury	europsychological Impairment	3.8E-04		NA	3.8E-04
			SVOCs					**SVOCs**					
			1,3-Dichlorobenzene					1,3-Dichlorobenzene	Liver/Pituitary Gland	3.8E-04		5.5E-03	5.9E-03
			1,4-Dichlorobenzene	3.3E-09		4.8E-08	5.1E-08	1,4-Dichlorobenzene	Skin/Blood	2.6E-05		3.9E-04	4.1E-04
			Hexachlorobenzene	6.8E-08		9.9E-07	1.1E-06	Hexachlorobenzene	Liver	3.1E-04		4.5E-03	4.8E-03
			Benz(a)anthracene	1.3E-07		2.4E-06	2.5E-06	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	1.2E-06		2.2E-05	2.3E-05	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	1.0E-07		1.9E-06	2.0E-06	Benzo(b)fluoranthene		NA		NA	
			Benzo(g,h,i)perylene					Benzo(g,h,i)perylene	Kidney	1.7E-05		3.2E-04	3.3E-04
			Benzo(k)fluoranthene	8.9E-09		1.7E-07	1.8E-07	Benzo(k)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	3.0E-07		5.6E-06	5.9E-06	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	6.7E-08		1.3E-06	1.3E-06	Indeno(1,2,3-cd)pyrene		NA		NA	
			Phenanthrene					Phenanthrene	Kidney	4.9E-05		9.3E-04	9.8E-04

TABLE 9.3.RME
Summary of Receptor Risks and Hazards for COPCs
Reasonable Maximum Exposure
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Pesticides					**Pesticides**					
			Aldrin	1.0E-08		NA	1.0E-08	Aldrin	Liver	1.1E-04		NA	1.1E-04
			Dieldrin	7.2E-09		NA	7.2E-09	Dieldrin	Liver	5.2E-05		NA	5.2E-05
			PCBs					**PCBs**					
			Aroclor 1242					Aroclor 1242	Assumed same as Ar 1016	9.0E-04		1.8E-02	1.9E-02
			Aroclor 1254					Aroclor 1254	Immune System	2.7E-03		5.6E-02	5.9E-02
			Aroclor 1260					Aroclor 1260	Assumed same as Ar 1254	1.4E-03		2.9E-02	3.0E-02
			Sum of PCBs	4.1E-08		8.4E-07	8.8E-07	Sum of PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	2.0E-06		8.8E-06	1.1E-05	TEQ as 2,3,7,8-TCDD		NA		NA	
			(Wetland SYW-19 Sediment Total)	4.1E-06		4.5E-05	4.9E-05	(Wetland SYW-19 Sediment Total)		0.03		0.13	0.16
						Total Risk Across Sediment	3.8E-04					Total Hazard Across Sediment	0.88
Soil	Surface Soils	Dredge Spoil Soils (0-3.5 ft)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	3.4E-03		NA	3.4E-03
			Arsenic	6.1E-07		2.6E-06	3.3E-06	Arsenic	Skin	7.8E-03		3.4E-02	4.2E-02
			Chromium	NA		NA		Chromium	None reported	2.7E-03		NA	2.7E-03
			Iron	NA		NA		Iron	Liver, spleen, lymph system	1.6E-02		NA	1.6E-02
			Manganese	NA		NA		Manganese	Central Nervous System	4.3E-03		NA	4.3E-03
			Total Mercury	NA		NA		Total Mercury	Immune System	3.7E-03		NA	3.7E-03
			SVOCs					**SVOCs**					
			Hexachlorobenzene	3.2E-08		4.6E-07	4.9E-07	Hexachlorobenzene	Liver	1.4E-04		2.1E-03	2.2E-03
			Benzo(a)pyrene	4.6E-08		8.6E-07	9.1E-07	Benzo(a)pyrene		NA		NA	
			(Dredge Spoils - Surface Total)	6.8E-07		4.0E-06	4.7E-06	(Dredge Spoils - Surface Total)		0.04		0.04	0.07
Soil	Subsurface Soils	Dredge Spoil Soils (0-11.7 ft)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	NA	NA		NA	
			Arsenic	NA		NA		Arsenic	NA	NA		NA	
			Cadmium	NA		NA		Cadmium	NA	NA		NA	
			Chromium	NA		NA		Chromium	NA	NA		NA	
			Cyanide	NA		NA		Cyanide	NA	NA		NA	
			Iron	NA		NA		Iron	NA	NA		NA	
			Manganese	NA		NA		Manganese	NA	NA		NA	
			Total Mercury	NA		NA		Total Mercury	NA	NA		NA	
			Thallium	NA		NA		Thallium	NA	NA		NA	
			SVOCs					**SVOCs**					
			Hexachlorobenzene	NA		NA		Hexachlorobenzene	NA	NA		NA	
			Benz(a)anthracene	NA		NA		Benz(a)anthracene	NA	NA		NA	
			Benzo(a)pyrene	NA		NA		Benzo(a)pyrene	NA	NA		NA	
			Benzo(b)fluoranthene	NA		NA		Benzo(b)fluoranthene	NA	NA		NA	
			Benzo(g,h,i)perylene	NA		NA		Benzo(g,h,i)perylene	NA	NA		NA	
			Benzo(k)fluoranthene	NA		NA		Benzo(k)fluoranthene	NA	NA		NA	
			Dibenz(a,h)anthracene	NA		NA		Dibenz(a,h)anthracene	NA	NA		NA	
			Indeno(1,2,3-cd)pyrene	NA		NA		Indeno(1,2,3-cd)pyrene	NA	NA		NA	
			Naphthalene	NA		NA		Naphthalene	NA	NA		NA	
			Phenanthrene	NA		NA		Phenanthrene	NA	NA		NA	

TABLE 9.3.RME
Summary of Receptor Risks and Hazards for COPCs
Reasonable Maximum Exposure
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			PCBs					**PCBs**					
			Aroclor 1254	NA		NA		Aroclor 1254	NA	NA		NA	
			Aroclor 1268	NA		NA		Aroclor 1268	NA	NA		NA	
			Sum of PCBs	NA		NA		Sum of PCBs	NA	NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	NA		NA		TEQ as 2,3,7,8-TCDD	NA	NA		NA	
			(Dredge Spoils - Subsurface Total)					(Dredge Spoils - Subsurface Total)	NA				
						Total Risk Across Dredge Spoils	4.7E-06					Total Hazard Across Dredge Spoils	0.075
Surface Water	Surface Water	Onondaga Lake	**Inorganics**					**Inorganics**					
			Cadmium					Cadmium	Kidneys	8.1E-04		8.4E-03	9.2E-03
			Chromium					Chromium	None reported	2.8E-04		5.9E-03	6.2E-03
			Manganese					Manganese	Central Nervous System	2.1E-04		1.4E-03	1.6E-03
			Methylmercury					Methylmercury	Developmental Neuropsychological Impairment	4.8E-06		1.3E-06	6.1E-06
			Total Mercury					Total mercury	Immune System	1.0E-05		3.7E-05	4.7E-05
			VOCs					**VOCs**					
			Benzene	2.0E-09		9.1E-09	1.1E-08	Benzene	Immune System/Blood	7.2E-05		3.2E-04	3.9E-04
			Chlorobenzene					Chlorobenzene	Liver	1.2E-05		1.1E-04	1.2E-04
			Chloroform					Chloroform	Liver	2.4E-05		5.9E-05	8.3E-05
			SVOCs					**SVOCs**					
			Bromodichloromethane	9.3E-10		1.9E-09	2.8E-09	Bromodichloromethane	Kidney	4.4E-06		8.8E-06	1.3E-05
			1,2-Dichlorobenzene					1,2-Dichlorobenzene	NOAEL	2.4E-06		3.7E-05	4.0E-05
			1,3-Dichlorobenzene					1,3-Dichlorobenzene	Liver/Pituitary Gland	2.2E-04		4.8E-03	5.1E-03
			1,4-Dichlorobenzene	9.3E-10		1.5E-08	1.6E-08	1,4-Dichlorobenzene	Skin/Blood	7.5E-06		1.2E-04	1.3E-04
			1,2,4-Trichlorobenzene					1,2,4-Trichlorobenzene	Adrenal/Liver/Kidney	2.1E-05		6.8E-04	7.0E-04
			(Surface Water - Total)	3.9E-09		2.6E-08	3.0E-08	(Surface Water - Total)		0.002		0.02	0.02
						Total Risk Across Surface Water	3.0E-08					Total Hazard Across Surface Water	0.02
						Total Risk Across All Media and All Exposure Routes	7.2E-04					Total Hazard Across All Media and All Exposure Routes	20.73

Total [Lungs] HI =	0.02	Total [DNI] HI =	4.20	Total [Kidney] HI =	0.07	Total [Blood] HI =	1.15
Total [Immune System] HI =	11.5	Total [Birth Weight] HI =	2.69	Total [CNS] HI =	0.03	Total [Body Weight] HI =	0.11
Total [Skin] HI =	0.32	Total [NOAEL] HI =	0.02	Total [Liver] HI =	0.39	Total [Whole Body] HI =	1.20

Note: (1) Based on an exposure of 30 years the carcinogenic risk is 2E-03.
(2) N/A = Risk or hazard not calculated
(3) Primary Target Organ for Aroclor 1016 is Reduced Birth Weight and for Aroclor 1254 is Immune System.
(4) Sediment total includes northern and southern basin sediments and all 4 wetlands
(5) Target Organ Totals: DNI: Developmental Neuropsychological Impairment
NOAEL : No Observed Adverse Effect Level
CNS: Central Nervous System

TABLE 9.4.RME
Summary of Receptor Risks and Hazards for COPCs
Construction Worker: Reasonable Maximum Exposure
Onondaga Lake

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Fish	Fish Tissue	Fish Fillet	**Inorganics**					**Inorganics**					
			Antimony	NA		NA	NA	Antimony	NA	NA		NA	NA
			Arsenic	NA		NA	NA	Arsenic	NA	NA		NA	NA
			Chromium	NA		NA	NA	Chromium	NA	NA		NA	NA
			Cyanide	NA		NA	NA	Cyanide	NA	NA		NA	NA
			Manganese	NA		NA	NA	Manganese	NA	NA		NA	NA
			Mercury (as methylmercury)	NA		NA	NA	Mercury (as methylmercury)	NA	NA		NA	NA
			Selenium	NA		NA	NA	Selenium	NA	NA		NA	NA
			Vanadium	NA		NA	NA	Vanadium	NA	NA		NA	NA
			Zinc	NA		NA	NA	Zinc	NA	NA		NA	NA
			SVOCs					**SVOCs**					
			bis(2-ethylhexyl)phthalate	NA		NA	NA	bis(2-ethylhexyl)phthalate	NA	NA		NA	NA
			Hexachlorobenzene	NA		NA	NA	Hexachlorobenzene	NA	NA		NA	NA
			Pesticides					**Pesticides**					
			2,4'-DDE	NA		NA	NA	2,4'-DDE	NA	NA		NA	NA
			4,4'-DDD	NA		NA	NA	4,4'-DDD	NA	NA		NA	NA
			4,4'-DDE	NA		NA	NA	4,4'-DDE	NA	NA		NA	NA
			4,4'-DDT	NA		NA	NA	4,4'-DDT	NA	NA		NA	NA
			Aldrin	NA		NA	NA	Aldrin	NA	NA		NA	NA
			delta-BHC	NA		NA	NA	delta-BHC	NA	NA		NA	NA
			Dieldrin	NA		NA	NA	Dieldrin	NA	NA		NA	NA
			Heptachlor epoxide	NA		NA	NA	Heptachlor epoxide	NA	NA		NA	NA
			Sum of chlordanes	NA		NA	NA	Sum of chlordanes	NA	NA		NA	NA
			PCBs					**PCBs**					
			Aroclor 1016	NA		NA	NA	Aroclor 1016	NA	NA		NA	NA
			Aroclor 1242	NA		NA	NA	Aroclor 1242	NA	NA		NA	NA
			Sum of Low MW PCBs	NA		NA	NA	Sum of Low MW PCBs	NA	NA		NA	NA
			Aroclor 1248	NA		NA	NA	Aroclor 1248	NA	NA		NA	NA
			Aroclor 1260	NA		NA	NA	Aroclor 1260	NA	NA		NA	NA
			Aroclors 1254 & 1260	NA		NA	NA	Aroclors 1254 & 1260	NA	NA		NA	NA
			Sum of High MW PCBs	NA		NA	NA	Sum of High MW PCBs	NA	NA		NA	NA
			Sum of PCBs	NA		NA	NA	Sum of PCBs	NA	NA		NA	NA
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	NA		NA	NA	TEQ as 2,3,7,8-TCDD	NA	NA		NA	NA
						Total Risk Across Fish Tissue						Total Hazard Across Fish Tissue	

TABLE 9.4.RME
Summary of Receptor Risks and Hazards for COPCs
Reasonable Maximum Exposure
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Northern Basin													
Sediment	Sediments	North Basin	**Inorganics**					**Inorganics**					
			Antimony	NA		NA		Antimony	Whole Body/Blood	7.4E-03		NA	7.4E-03
			Arsenic	5.3E-08		2.5E-08	7.8E-08	Arsenic	Skin	4.1E-03		1.9E-03	6.1E-03
			Barium	NA		NA		Barium	Cardiovascular System	7.0E-04		NA	7.0E-04
			Cadmium	NA		NA		Cadmium	Kidneys	6.6E-04		4.1E-04	1.1E-03
			Chromium	NA		NA		Chromium	None reported	3.5E-03		NA	3.5E-03
			Iron	NA		NA		Iron	Liver, spleen, lymph system	6.2E-03		NA	6.2E-03
			Manganese	NA		NA		Manganese	Central Nervous System	3.8E-03		NA	3.8E-03
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	6.4E-06		NA	6.4E-06
			Total Mercury	NA		NA		Total mercury	Immune System	2.0E-03		NA	2.0E-03
			Thallium	NA		NA		Thallium	NOAEL; various	1.4E-03		NA	1.4E-03
			VOCs					**VOCs**					
			Benzene	4.5E-11		NA	4.5E-11	Benzene	Immune System/Blood	9.6E-06		NA	9.6E-06
			SVOCs					**SVOCs**					
			Hexachlorobenzene	6.0E-09		9.3E-09	1.5E-08	Hexachlorobenzene	Liver	1.6E-04		2.5E-04	4.2E-04
			Benz(a)anthracene	1.1E-09		2.2E-09	3.3E-09	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	1.0E-08		2.1E-08	3.2E-08	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	1.6E-09		3.2E-09	4.8E-09	Benzo(b)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	3.3E-09		6.6E-09	9.8E-09	Dibenz(a,h)anthracene		NA		NA	
			Naphthalene	NA		NA		Naphthalene	Decreased body weight	6.3E-06		1.3E-05	1.9E-05
			PCBs					**PCBs**					
			Aroclor 1254	NA		NA		Aroclor 1254	Immune System	6.7E-04		1.4E-03	2.1E-03
			Aroclor 1268	NA		NA		Aroclor 1268	Assumed same as Ar 1254	5.6E-04		1.2E-03	1.8E-03
			Sum of PCBs	1.6E-09		3.5E-09	5.1E-09	Sum of PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	2.7E-09		1.3E-09	4.0E-09	TEQ as 2,3,7,8-TCDD		NA		NA	
			(North Basin Sediment Total)	8.0E-08		7.2E-08	1.5E-07	(North Basin Sediment Total)		0.03		0.01	0.04
Sediment	Wetland Sediments	Wetland SYW-6 (North Basin)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	3.5E-03		NA	3.5E-03
			Arsenic	9.4E-08		4.4E-08	1.4E-07	Arsenic	Skin	7.3E-03		3.4E-03	1.1E-02
			Cadmium	NA		NA		Cadmium	Kidneys	2.8E-03		1.7E-03	4.5E-03
			Chromium	NA		NA		Chromium	None reported	1.0E-02		NA	1.0E-02
			Cyanide	NA		NA		Cyanide	Whole Body/Blood	4.6E-05		NA	4.6E-05
			Iron	NA		NA		Iron	Liver, spleen, lymph system	3.0E-02		NA	3.0E-02
			Manganese	NA		NA		Manganese	Central Nervous System	5.8E-03		NA	5.8E-03
			Total Mercury	NA		NA		Total Mercury	Immune System	0.0E+00		NA	
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	Immune System	3.2E-03		NA	3.2E-03
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	9.8E-05		NA	9.8E-05
			Thallium	NA		NA		Thallium	NOAEL; various	8.1E-03		NA	8.1E-03
			SVOCs					**SVOCs**					
			Benzo(a)pyrene	1.7E-06		3.4E-06	5.1E-06	Benzo(a)pyrene		NA		NA	
			2-Methylnaphthalene					2-Methylnaphthalene	Lungs/Decreased body weight	5.3E-05		1.1E-04	1.6E-04
			Acenaphthylene					Acenaphthylene	Kidney	4.2E-05		8.5E-05	1.3E-04
			Benz(a)anthracene	1.7E-07		3.5E-07	5.2E-07	Benz(a)anthracene		NA		NA	
			Benzo(b)fluoranthene	2.1E-07		4.2E-07	6.3E-07	Benzo(b)fluoranthene		NA		NA	

TABLE 9.4.RME
Summary of Receptor Risks and Hazards for COPCs
Reasonable Maximum Exposure
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Benzo(g,h,i)perylene					Benzo(g,h,i)perylene	Kidney	1.6E-04		3.2E-04	4.8E-04
			Benzo(k)fluoranthene	7.7E-09		1.5E-08	2.3E-08	Benzo(k)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	3.0E-07		6.0E-07	9.0E-07	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	9.9E-08		2.0E-07	3.0E-07	Indeno(1,2,3-cd)pyrene		NA		NA	
			Naphthalene					Naphthalene	Decreased body weight	6.9E-05		1.4E-04	2.1E-04
			Phenanthrene					Phenanthrene	Kidney	3.5E-04		7.1E-04	1.1E-03
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	1.6E-08		7.4E-09	2.3E-08	TEQ as 2,3,7,8-TCDD		NA		NA	
			(Wetland SYW-6 Sediment Total)	2.6E-06		5.0E-06	7.6E-06	(Wetland SYW-6 Sediment Total)		0.07		0.01	0.08
Sediment	Wetland Sediments	Wetland SYW-10 (North Basin)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	3.0E-03		NA	3.0E-03
			Antimony	NA		NA		Antimony	Whole Body/Blood	4.1E-03		NA	4.1E-03
			Arsenic	1.6E-07		7.6E-08	2.4E-07	Arsenic	Skin	1.3E-02		5.9E-03	1.9E-02
			Chromium	NA		NA		Chromium	None reported	3.4E-03		NA	3.4E-03
			Iron	NA		NA		Iron	Liver, spleen, lymph system	1.7E-02		NA	1.7E-02
			Manganese	NA		NA		Manganese	Central Nervous System	5.4E-03		NA	5.4E-03
			Total Mercury	NA		NA		Total Mercury	Immune System	0.0E+00		NA	
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	Immune System	3.0E-03		NA	3.0E-03
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	9.2E-05		NA	9.2E-05
			Thallium	NA		NA		Thallium	NOAEL; various	1.1E-02		NA	1.1E-02
			SVOCs					**SVOCs**					
			Benz(a)anthracene	6.9E-09		1.4E-08	2.1E-08	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	7.2E-08		1.5E-07	2.2E-07	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	6.0E-09		1.2E-08	1.8E-08	Benzo(b)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	1.7E-08		3.5E-08	5.2E-08	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	4.4E-09		8.9E-09	1.3E-08	Indeno(1,2,3-cd)pyrene		NA		NA	
			PCBs					**PCBs**					
			Aroclor 1260	NA		NA		Aroclor 1260	Assumed same as Ar 1254	3.3E-03		7.1E-03	1.0E-02
			Sum of PCBs	4.2E-09		9.2E-09	1.3E-08	Sum of PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	1.6E-08		7.6E-09	2.4E-08	TEQ as 2,3,7,8-TCDD		NA		NA	
			(Wetland SYW-10 Sediment Total	2.9E-07		3.1E-07	6.0E-07	(Wetland SYW-10 Sediment Total)		0.06		0.01	0.08
Southern Basin													
Sediment	Sediments	South Basin	**Inorganics**					**Inorganics**					
			Aluminum					Aluminum	Skeletal, skin	1.3E-03		NA	1.3E-03
			Antimony					Antimony	Whole Body/Blood	2.5E-03		NA	2.5E-03
			Arsenic	1.7E-07		8.0E-08	2.5E-07	Arsenic	Skin	1.3E-02		6.2E-03	2.0E-02
			Barium					Barium	Cardiovascular System	4.2E-03		NA	4.2E-03
			Cadmium					Cadmium	Kidneys	1.3E-03		7.8E-04	2.0E-03
			Chromium					Chromium	None reported	2.2E-02		NA	2.2E-02
			Copper					Copper	Liver/Kidneys/Forestomach	7.8E-04		NA	7.8E-04
			Cyanide					Cyanide	Whole Body/Blood	2.4E-05		NA	2.4E-05
			Iron					Iron	Liver, spleen, lymph system	1.3E-02		NA	1.3E-02
			Lead					Lead	CNS, blood, whole body	NA		NA	
			Manganese					Manganese	Central Nervous System	4.1E-03		NA	4.1E-03
			Methylmercury					Methylmercury	Developmental Neuropsychological Impairment	7.3E-05		NA	7.3E-05

TABLE 9.4.RME
Summary of Receptor Risks and Hazards for COPCs
Reasonable Maximum Exposure
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Total Mercury					Total mercury	Immune System	2.0E-02		NA	2.0E-02
			Nickel					Nickel	Whole Body/Major Organs	1.2E-03		NA	1.2E-03
			Thallium					Thallium	NOAEL; various	2.0E-03		NA	2.0E-03
			Vanadium					Vanadium	Not Reported/Unknown	1.4E-03		NA	1.4E-03
			VOCs					**VOCs**					
			Benzene	3.1E-08		NA	3.1E-08	Benzene	Immune System/Blood	6.6E-03		NA	6.6E-03
			Chlorobenzene					Chlorobenzene	Liver	2.9E-03		NA	2.9E-03
			Methylene chloride	5.9E-10		NA	5.9E-10	Methylene chloride	Liver	4.6E-05		NA	4.6E-05
			Xylenes					Xylenes	NOAEL; CNS	5.3E-05		NA	5.3E-05
			SVOCs					**SVOCs**					
			Hexachlorobenzene	9.8E-08		1.5E-07	2.5E-07	Hexachlorobenzene	Liver	2.7E-03		4.2E-03	6.9E-03
			Dibenzofuran					Dibenzofuran	Liver	1.5E-03		2.3E-03	3.7E-03
			1,3-Dichlorobenzene					1,3-Dichlorobenzene	Liver/Pituitary Gland	1.7E-03		2.6E-03	4.3E-03
			1,4-Dichlorobenzene	1.4E-08		2.2E-08	3.5E-08	1,4-Dichlorobenzene	Skin/Blood	6.8E-04		1.0E-03	1.7E-03
			Acenaphthylene					Acenaphthylene	Kidney	4.6E-05		9.2E-05	1.4E-04
			Benz(a)anthracene	6.6E-08		1.3E-07	2.0E-07	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	5.0E-07		1.0E-06	1.5E-06	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	6.6E-08		1.3E-07	2.0E-07	Benzo(b)fluoranthene		NA		NA	
			Benzo(ghi)perylene					Benzo(ghi)perylene	Kidney	6.9E-05		1.4E-04	2.1E-04
			Benzo(k)fluoranthene	2.4E-09		4.8E-09	7.2E-09	Benzo(k)fluoranthene		NA		NA	
			Chrysene	6.5E-10		1.3E-09	2.0E-09	Chrysene		NA		NA	
			Dibenz(a,h)anthracene	1.1E-07		2.2E-07	3.3E-07	Dibenz(a,h)anthracene		NA		NA	
			Fluoranthene					Fluoranthene	Kidney/Liver/Blood	2.7E-04		5.5E-04	8.2E-04
			Indeno(1,2,3-cd)pyrene	2.5E-08		5.1E-08	7.7E-08	Indeno(1,2,3-cd)pyrene		NA		NA	
			2-Methylnaphthalene					2-Methylnaphthalene	Lungs/Decreased body weight	2.8E-03		5.8E-03	8.6E-03
			Naphthalene					Naphthalene	Decreased body weight	1.7E-02		3.4E-02	5.1E-02
			Phenanthrene					Phenanthrene	Kidney	5.7E-04		1.1E-03	1.7E-03
			Pesticides					**Pesticides**					
			Dieldrin	1.3E-09		NA	1.3E-09	Dieldrin	Liver	5.6E-05		NA	5.6E-05
			PCBs					**PCBs**					
			Aroclor 1221					Aroclor 1221	Assumed same as Ar 1016	3.8E-04		8.2E-04	1.2E-03
			Aroclor 1242					Aroclor 1242	Assumed same as Ar 1016	1.6E-03		3.5E-03	5.1E-03
			Aroclor 1248					Aroclor 1248	Assumed same as Ar 1254	3.6E-03		7.9E-03	1.2E-02
			Aroclor 1254					Aroclor 1254	Immune System	2.2E-03		4.9E-03	7.1E-03
			Aroclor 1260					Aroclor 1260	Assumed same as Ar 1254	3.2E-03		7.0E-03	1.0E-02
			Sum of PCBs	2.0E-08		4.3E-08	6.2E-08	PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	5.2E-07		2.4E-07	7.6E-07	TEQ as 2,3,7,8-TCDD		NA		NA	
			(South Basin Sediment Total)	1.6E-06		2.1E-06	3.7E-06	(South Basin Sediment Total)		0.14		0.08	0.22
Sediment	Wetland Sediments	Wetland SYW-12 (South Basin)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	2.8E-03		NA	2.8E-03
			Arsenic	8.7E-08		4.1E-08	1.3E-07	Arsenic	Skin	6.8E-03		3.2E-03	9.9E-03
			Cadmium	NA		NA		Cadmium	Kidneys	1.3E-02		8.2E-03	2.1E-02
			Chromium	NA		NA		Chromium	None reported	3.3E-02		NA	3.3E-02
			Copper	NA		NA		Copper	Liver/Kidneys/Forestomach	2.2E-03		NA	2.2E-03
			Cyanide	NA		NA		Cyanide	Whole Body/Blood	1.4E-05		NA	1.4E-05
			Iron	NA		NA		Iron	Liver, spleen, lymph system	1.8E-02		NA	1.8E-02
			Manganese	NA		NA		Manganese	Central Nervous System	3.7E-03		NA	3.7E-03
			Total Mercury	NA		NA		Total Mercury	Immune System	0.0E+00		NA	

TABLE 9.4.RME
Summary of Receptor Risks and Hazards for COPCs
Reasonable Maximum Exposure
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	Immune System	3.2E-03		NA	3.2E-03
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	9.7E-05		NA	9.7E-05
			Thallium	NA		NA		Thallium	NOAEL; various	3.3E-03		NA	3.3E-03
			SVOCs					**SVOCs**					
			Benz(a)anthracene	3.1E-08		6.3E-08	9.5E-08	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	3.1E-07		6.2E-07	9.3E-07	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	2.1E-08		4.3E-08	6.4E-08	Benzo(b)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	1.1E-08		2.3E-08	3.5E-08	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	2.1E-08		4.2E-08	6.2E-08	Indeno(1,2,3-cd)pyrene		NA		NA	
			Phenanthrene	NA		NA		Phenanthrene	Kidney	8.0E-05		1.6E-04	2.4E-04
			PCBs					**PCBs**					
			Aroclor 1242	NA		NA		Aroclor 1242	Assumed same as Ar 1016	1.3E-03		2.8E-03	4.1E-03
			Aroclor 1254	NA		NA		Aroclor 1254	Immune System	6.8E-03		1.5E-02	2.2E-02
			Aroclor 1260	NA		NA		Aroclor 1260	Assumed same as Ar 1254	3.5E-03		7.7E-03	1.1E-02
			Sum of PCBs	1.7E-08		3.7E-08	5.4E-08	Sum of PCBs		NA		NA	
			(Wetland SYW-12 Sediment Total)	5.0E-07		8.7E-07	1.4E-06	(Wetland SYW-12 Sediment Total)		0.10		0.04	0.13
Sediment	Wetland Sediments	Wetland SYW-19 (South Basin)	**Inorganics**					**Inorganics**					
			Antimony	NA		NA		Antimony	Whole Body/Blood	2.7E-03		NA	2.7E-03
			Arsenic	1.2E-07		5.5E-08	1.7E-07	Arsenic	Skin	9.2E-03		4.3E-03	1.3E-02
			Barium	NA		NA		Barium	Cardiovascular System	2.4E-03		NA	2.4E-03
			Cadmium	NA		NA		Cadmium	Kidneys	9.5E-04		5.9E-04	1.5E-03
			Chromium	NA		NA		Chromium	None reported	7.6E-03		NA	7.6E-03
			Iron	NA		NA		Iron	Liver, spleen, lymph system	1.1E-02		NA	1.1E-02
			Manganese	NA		NA		Manganese	Central Nervous System	4.2E-03		NA	4.2E-03
			Total Mercury	NA		NA		Total Mercury	Immune System	0.0E+00		NA	
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	Immune System	4.5E-02		NA	4.5E-02
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	1.4E-03		NA	1.4E-03
			SVOCs	NA		NA		**SVOCs**					
			1,3-Dichlorobenzene	NA		NA		1,3-Dichlorobenzene	Liver/Pituitary Gland	1.4E-03		2.1E-03	3.5E-03
			1,4-Dichlorobenzene	2.0E-09		3.1E-09	5.0E-09	1,4-Dichlorobenzene	Skin/Blood	9.6E-05		1.5E-04	2.4E-04
			Hexachlorobenzene	4.1E-08		6.4E-08	1.0E-07	Hexachlorobenzene	Liver	1.1E-03		1.7E-03	2.9E-03
			Benz(a)anthracene	7.6E-08		1.5E-07	2.3E-07	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	7.0E-07		1.4E-06	2.1E-06	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	6.1E-08		1.2E-07	1.8E-07	Benzo(b)fluoranthene		NA		NA	
			Benzo(g,h,i)perylene	NA		NA		Benzo(g,h,i)perylene	Kidney	6.0E-05		1.2E-04	1.8E-04
			Benzo(k)fluoranthene	5.4E-09		1.1E-08	1.6E-08	Benzo(k)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	1.8E-07		3.6E-07	5.4E-07	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	4.0E-08		8.2E-08	1.2E-07	Indeno(1,2,3-cd)pyrene		NA		NA	
			Phenanthrene	NA		NA		Phenanthrene	Kidney	1.8E-04		3.6E-04	5.4E-04
			Pesticides	NA		NA		**Pesticides**					
			Aldrin	6.1E-09		NA	6.1E-09	Aldrin	Liver	4.2E-04		NA	4.2E-04
			Dieldrin	4.3E-09		NA	4.3E-09	Dieldrin	Liver	1.9E-04		NA	1.9E-04
			PCBs	NA		NA		**PCBs**					
			Aroclor 1242	NA		NA		Aroclor 1242	Assumed same as Ar 1016	3.3E-03		7.1E-03	1.0E-02
			Aroclor 1254	NA		NA		Aroclor 1254	Immune System	1.0E-02		2.2E-02	3.2E-02
			Aroclor 1260	NA		NA		Aroclor 1260	Assumed same as Ar 1254	5.1E-03		1.1E-02	1.6E-02

TABLE 9.4.RME
Summary of Receptor Risks and Hazards for COPCs
Reasonable Maximum Exposure
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Sum of PCBs	2.5E-08		5.4E-08	7.9E-08	Sum of PCBs		NA		NA	
			PCDD/PCDFs	NA		NA		PCDD/PCDFs					
			TEQ as 2,3,7,8-TCDD	1.2E-06		5.7E-07	1.8E-06	TEQ as 2,3,7,8-TCDD		NA		NA	
			(Wetland SYW-19 Sediment Total)	2.5E-06		2.9E-06	5.4E-06	(Wetland SYW-19 Sediment Total)		0.11		0.05	0.16
						Total Risk Across Sediment	1.9E-05					Total Hazard Across Sediment	0.70
Soil	Surface Soils	Dredge Spoil Soils (0-3.5 ft)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	3.9E-03		NA	3.9E-03
			Arsenic	1.2E-07		5.4E-08	1.7E-07	Arsenic	Skin	9.0E-03		4.2E-03	1.3E-02
			Chromium	NA		NA		Chromium	None reported	3.2E-03		NA	3.2E-03
			Iron	NA		NA		Iron	Liver, spleen, lymph system	1.8E-02		NA	1.8E-02
			Manganese	NA		NA		Manganese	Central Nervous System	4.9E-03		NA	4.9E-03
			Total Mercury	NA		NA		Total Mercury	Immune System	4.3E-03		NA	4.3E-03
			SVOCs					**SVOCs**					
			Hexachlorobenzene	6.1E-09		9.4E-09	1.5E-08	Hexachlorobenzene	Liver	1.7E-04		2.6E-04	4.2E-04
			Benzo(a)pyrene	8.8E-09		1.8E-08	2.6E-08	Benzo(a)pyrene		NA		NA	
			(Dredge Spoils - Surface Total)	1.3E-07		8.1E-08	2.1E-07	(Dredge Spoils - Surface Total)		0.04		0.004	0.05
Soil	Subsurface Soils	Dredge Spoil Soils (0-11.7 ft)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	3.3E-03		NA	3.3E-03
			Arsenic	1.2E-07		5.6E-08	1.8E-07	Arsenic	Skin	9.4E-03		4.4E-03	1.4E-02
			Cadmium	NA		NA		Cadmium	Kidneys	3.1E-04		1.9E-04	5.1E-04
			Chromium	NA		NA		Chromium	None reported	2.8E-03		NA	2.8E-03
			Cyanide	NA		NA		Cyanide	Whole Body/Blood	1.4E-05		NA	1.4E-05
			Iron	NA		NA		Iron	Liver, spleen, lymph system	1.6E-02		NA	1.6E-02
			Manganese	NA		NA		Manganese	Central Nervous System	5.3E-03		NA	5.3E-03
			Total Mercury	NA		NA		Total Mercury	Immune System	5.2E-02		NA	5.2E-02
			Thallium	NA		NA		Thallium	NOAEL; various	2.4E-03		NA	2.4E-03
			SVOCs					**SVOCs**					
			Benz(a)anthracene	1.7E-08		3.4E-08	5.1E-08	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	1.8E-07		3.6E-07	5.4E-07	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	1.5E-08		3.1E-08	4.6E-08	Benzo(b)fluoranthene		NA		NA	
			Benzo(g,h,i)perylene	NA		NA		Benzo(g,h,i)perylene	Kidney	1.4E-05		2.8E-05	4.2E-05
			Benzo(k)fluoranthene	1.5E-09		3.1E-09	4.7E-09	Benzo(k)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	4.1E-08		8.3E-08	1.2E-07	Dibenz(a,h)anthracene		NA		NA	
			Hexachlorobenzene	3.3E-09		5.2E-09	8.5E-09	Hexachlorobenzene	Liver	9.1E-05		1.4E-04	2.3E-04
			Indeno(1,2,3-cd)pyrene	8.7E-09		1.8E-08	2.6E-08	Indeno(1,2,3-cd)pyrene		NA		NA	
			Naphthalene	NA		NA		Naphthalene	Decreased body weight	4.6E-05		9.3E-05	1.4E-04
			Phenanthrene	NA		NA		Phenanthrene	Kidney	1.3E-05		2.6E-05	3.9E-05
			PCBs					**PCBs**					
			Aroclor 1254	NA		NA		Aroclor 1254	Immune System	3.4E-03		7.3E-03	1.1E-02
			Aroclor 1268	NA		NA		Aroclor 1268	Assumed same as Ar 1254	5.8E-03		1.3E-02	1.9E-02
			Sum of PCBs	1.2E-08		2.5E-08	3.7E-08	Sum of PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	6.1E-08		2.8E-08	8.9E-08	TEQ as 2,3,7,8-TCDD		NA		NA	
			(Dredge Spoils - Subsurface Total)	4.6E-07		6.4E-07	1.1E-06	(Dredge Spoils - Subsurface Total)		0.10		0.02	0.13
						Total Risk Across Dredge Spoils	1.1E-06					Total Hazard Across Dredge Spoils	0.13
Surface Water	Surface Water	Onondaga Lake	**Inorganics**					**Inorganics**					

TABLE 9.4.RME
Summary of Receptor Risks and Hazards for COPCs
Reasonable Maximum Exposure
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Cadmium					Cadmium	Kidneys	2.6E-05		4.9E-04	5.2E-04
			Chromium					Chromium	None reported	9.2E-06		3.5E-04	3.6E-04
			Manganese					Manganese	Central Nervous System	6.8E-06		8.1E-05	8.8E-05
			Methylmercury					Methylmercury	Developmental Neuropsychological Impairment	1.6E-07		7.4E-08	2.3E-07
			Total Mercury					Total mercury	Immune System	3.2E-07		2.2E-06	2.5E-06
			VOCs					VOCs					
			Benzene	1.1E-11		1.2E-10	1.3E-10	Benzene	Immune System/Blood	2.3E-06		2.5E-05	2.8E-05
			Chlorobenzene					Chlorobenzene	Liver	3.7E-07		9.6E-06	9.9E-06
			Chloroform					Chloroform	Liver	7.7E-07		5.0E-06	5.8E-06
			SVOCs					SVOCs					
			Bromodichloromethane	5.0E-12		3.0E-11	3.5E-11	Bromodichloromethane	Kidney	1.4E-07		8.5E-07	9.9E-07
			1,2-Dichlorobenzene					1,2-Dichlorobenzene	NOAEL	7.6E-08		3.8E-06	3.8E-06
			1,3-Dichlorobenzene					1,3-Dichlorobenzene	Liver/Pituitary Gland	7.0E-06		5.0E-04	5.1E-04
			1,4-Dichlorobenzene	5.0E-12		2.5E-10	2.6E-10	1,4-Dichlorobenzene	Skin/Blood	2.4E-07		1.2E-05	1.2E-05
			1,2,4-Trichlorobenzene					1,2,4-Trichlorobenzene	Adrenal/Liver/Kidney	6.8E-07		6.2E-05	6.3E-05
			(Surface Water - Total)	2.1E-11		4.0E-10	4.2E-10	(Surface Water - Total)		0.0001		0.002	0.002
							Total Risk Across Surface Water: 4.2E-10						Total Hazard Across Surface Water: 0.002
							Total Risk Across All Media and All Exposure Routes: 2.0E-05						Total Hazard Index Across All Media and All Exposure Routes: 0.83

Total [Lungs] HI =	0.01	Total [DNI] HI =	0.0017	Total [Kidney] HI =	0.04	Total [Blood] HI =	0.03
Total [Immune System] HI =	0.26	Total [Birth Weight] HI =	0.02	Total [CNS] HI =	0.04	Total [Body Weight] HI =	0.06
Total [Skin] HI =	0.13	Total [NOAEL] HI =	0.03	Total [Liver] HI =	0.16	Total [Whole Body] HI =	0.02

Note: (1) Based on an exposure of 30 years the carcinogenic risk is 2E-03.
(2) N/A = Risk or hazard not calculated
(3) Primary Target Organ for Aroclor 1016 is Reduced Birth Weight and for Aroclor 1254 is Immune System.
(4) Sediment total includes northern and southern basin sediments and all 4 wetlands
(5) Target Organ Totals: DNI: Developmental Neuropsychological Impairment
NOAEL : No Observed Adverse Effect Level
CNS: Central Nervous System

TABLE 9.1.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Scenario Timeframe: Current/Future
Receptor Population: Recreation
Receptor Age: Adult (18 and older)

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Fish	Fish Tissue	Fish Fillet	**Inorganics**					**Inorganics**					
			Antimony	NA		NA		Antimony	Whole Body/Blood	2.8E-01		NA	2.8E-01
			Arsenic (inorganic)	1.8E-06		NA	1.8E-06	Arsenic (inorganic)	Skin	3.1E-02			3.1E-02
			Chromium	NA		NA		Chromium	None reported	2.2E-02		NA	2.2E-02
			Cyanide	NA		NA		Cyanide	Whole Body/Blood	3.3E-02		NA	3.3E-02
			Manganese	NA		NA		Manganese	Central Nervous System	2.6E-03		NA	2.6E-03
			Mercury (as methylmercury)					Mercury (as methylmercury)	Developmental				
				NA		NA			Neuropsychological Impairment	1.2E+00			1.2E+00
			Selenium	NA		NA		Selenium	Whole Body	3.4E-02		NA	3.4E-02
			Vanadium	NA		NA		Vanadium	Not Reported/Unknown	1.0E-02		NA	1.0E-02
			Zinc	NA		NA		Zinc	Blood	1.7E-02		NA	1.7E-02
			SVOCs			NA		**SVOCs**					
			bis(2-ethylhexyl)phthalate	4.7E-07		NA	4.7E-07	bis(2-ethylhexyl)phthalate	Liver	1.3E-02		NA	1.3E-02
			Hexachlorobenzene	3.1E-07		NA	3.1E-07	Hexachlorobenzene	Liver	1.9E-03		NA	1.9E-03
			Pesticides			NA		**Pesticides**					
			2,4'-DDE	NA		NA		2,4'-DDE		NA		NA	
			4,4'-DDD	4.7E-08		NA	4.7E-08	4,4'-DDD	Liver	5.1E-04		NA	5.1E-04
			4,4'-DDE	1.7E-07		NA	1.7E-07	4,4'-DDE	Liver	5.6E-03		NA	5.6E-03
			4,4'-DDT	4.7E-08		NA	4.7E-08	4,4'-DDT	Liver	2.2E-03		NA	2.2E-03
			Aldrin	6.3E-07		NA	6.3E-07	Aldrin	Liver	9.6E-03		NA	9.6E-03
			delta-BHC	NA		NA		delta-BHC	Liver/kidney	9.6E-04		NA	9.6E-04
			Dieldrin	9.0E-07		NA	9.0E-07	Dieldrin	Liver	8.7E-03		NA	8.7E-03
			Heptachlor epoxide	5.5E-07		NA	5.5E-07	Heptachlor epoxide	Liver	3.6E-02		NA	3.6E-02
			Sum of chlordanes	5.0E-08		NA	5.0E-08	Sum of chlordanes	Liver	2.2E-03		NA	2.2E-03
			PCBs			NA		**PCBs**					
			Aroclor 1016	NA		NA							
			Aroclor 1242	NA		NA							
			Sum of Low MW PCBs	NA		NA		Sum of Low MW PCBs	Assumed same as Ar 1016	5.2E-01		NA	5.2E-01
			Aroclor 1248	NA		NA							
			Aroclor 1260	NA		NA							
			Aroclors 1254 & 1260	NA		NA							
			Sum of High MW PCBs	NA		NA		Sum of High MW PCBs	Assumed same as Ar 1254	2.2E+00		NA	2.2E+00
			Sum of PCBs	9.0E-06		NA	9.0E-06	Sum of PCBs	NA	NA		NA	
			PCDD/PCDFs			NA		**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	2.9E-05		NA	2.9E-05	TEQ as 2,3,7,8-TCDD	NA	NA			
			(Fish Tissue - Total)	4.3E-05		NA	4.3E-05	(Fish Tissue - Total)		4.48		NA	4.48
						Total Risk Across Fish Fillet	4.3E-05					Total Hazard Across Fish Fillet	4.48

TABLE 9.1.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Northern Basin													
Sediment	Sediments	North Basin	**Inorganics**					**Inorganics**					
			Antimony	NA		NA		Antimony	Whole Body/Blood	1.4E-03		NA	1.4E-03
			Arsenic	4.7E-08		2.4E-08	7.0E-08	Arsenic	Skin	8.0E-04		4.1E-04	1.2E-03
			Barium	NA		NA		Barium	Cardiovascular System	1.4E-04		NA	1.4E-04
			Cadmium	NA		NA		Cadmium	Kidneys	1.3E-04		8.7E-05	2.1E-04
			Chromium	NA		NA		Chromium	None reported	6.8E-04		NA	6.8E-04
			Iron	NA		NA		Iron	Liver, spleen, lymph system	1.2E-03		NA	1.2E-03
			Manganese	NA		NA		Manganese	Central Nervous System	7.4E-04		NA	7.4E-04
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	1.2E-06		NA	1.2E-06
			Total Mercury	NA		NA		Total mercury	Immune System	3.9E-04		NA	3.9E-04
			Thallium	NA		NA		Thallium	NOAEL; various	2.8E-04		NA	2.8E-04
			VOCs					**VOCs**					
			Benzene	4.0E-11		NA	4.0E-11	Benzene	Immune System/Blood	1.9E-06		NA	1.9E-06
			SVOCs					**SVOCs**					
			Hexachlorobenzene	5.2E-09		8.9E-09	1.4E-08	Hexachlorobenzene	Liver	3.2E-05		5.4E-05	8.6E-05
			Benz(a)anthracene	9.6E-10		2.1E-09	3.1E-09	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	9.1E-09		2.0E-08	2.9E-08	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	1.4E-09		3.1E-09	4.5E-09	Benzo(b)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	2.8E-09		6.3E-09	9.1E-09	Dibenz(a,h)anthracene		NA		NA	
			Naphthalene	NA		NA		Naphthalene	Decreased body weight	1.2E-06		2.7E-06	3.9E-06
			PCBs					**PCBs**					
			Aroclor 1254	NA		NA		Aroclor 1254	Immune System	1.3E-04		3.1E-04	4.4E-04
			Aroclor 1268	NA		NA		Aroclor 1268	Assumed same as Ar 1254	1.1E-04		2.6E-04	3.7E-04
			Sum of PCBs	6.9E-10		1.7E-09	2.4E-09	Sum of PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	2.4E-09		1.2E-09	3.6E-09	TEQ as 2,3,7,8-TCDD		NA		NA	
			(North Basin Sediment Total)	6.9E-08		6.8E-08	1.4E-07	(North Basin Sediment Total)		0.01		0.001	0.01
Sediment	Wetland Sediments	Wetland SYW-6 (North Basin)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	6.7E-04		NA	6.7E-04
			Arsenic	8.2E-08		4.2E-08	1.2E-07	Arsenic	Skin	1.4E-03		7.3E-04	2.1E-03
			Cadmium	NA		NA		Cadmium	Kidneys	5.4E-04		3.7E-04	9.1E-04
			Chromium	NA		NA		Chromium	None reported	2.0E-03		NA	2.0E-03
			Cyanide	NA		NA		Cyanide	Whole Body/Blood	8.9E-06		NA	8.9E-06
			Iron	NA		NA		Iron	Liver, spleen, lymph system	5.9E-03		NA	5.9E-03
			Manganese	NA		NA		Manganese	Central Nervous System	1.1E-03		NA	1.1E-03
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	Immune System	6.3E-04		NA	6.3E-04
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	1.9E-05		NA	1.9E-05
			Thallium	NA		NA		Thallium	NOAEL; various	1.6E-03		NA	1.6E-03
			SVOCs					**SVOCs**					
			Benzo(a)pyrene	1.5E-06		3.3E-06	4.7E-06	Benzo(a)pyrene		NA		NA	
			2-Methylnaphthalene					2-Methylnaphthalene	Lungs/Decreased body weight	1.0E-05		2.3E-05	3.3E-05
			Acenaphthylene					Acenaphthylene	Kidney	8.2E-06		1.8E-05	2.6E-05
			Benz(a)anthracene	1.5E-07		3.3E-07	4.8E-07	Benz(a)anthracene		NA		NA	
			Benzo(b)fluoranthene	1.8E-07		4.0E-07	5.8E-07	Benzo(b)fluoranthene		NA		NA	
			Benzo(g,h,i)perylene					Benzo(g,h,i)perylene	Kidney	3.1E-05		6.8E-05	9.9E-05
			Benzo(k)fluoranthene	6.7E-09		1.5E-08	2.2E-08	Benzo(k)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	2.6E-07		5.8E-07	8.4E-07	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	8.6E-08		1.9E-07	2.8E-07	Indeno(1,2,3-cd)pyrene		NA		NA	
			Naphthalene					Naphthalene	Decreased body weight	1.3E-05		3.0E-05	4.3E-05
			Phenanthrene					Phenanthrene	Kidney	6.8E-05		1.5E-04	2.2E-04

TABLE 9.1.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	1.4E-08		7.1E-09	2.1E-08	TEQ as 2,3,7,8-TCDD		NA		NA	
			(Wetland SYW-6 Sediment Total)	2.2E-06		4.8E-06	7.1E-06	(Wetland SYW-6 Sediment Total)		0.01		0.001	0.02
Sediment	Wetland Sediments	Wetland SYW-10 (North Basin)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	5.9E-04		NA	5.9E-04
			Antimony	NA		NA		Antimony	Whole Body/Blood	8.0E-04		NA	8.0E-04
			Arsenic	1.4E-07		7.3E-08	2.1E-07	Arsenic	Skin	2.4E-03		1.3E-03	3.7E-03
			Chromium	NA		NA		Chromium	None reported	6.6E-04		NA	6.6E-04
			Iron	NA		NA		Iron	Liver, spleen, lymph system	3.4E-03		NA	3.4E-03
			Manganese	NA		NA		Manganese	Central Nervous System	1.0E-03		NA	1.0E-03
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	Immune System	5.9E-04		NA	5.9E-04
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	1.8E-05		NA	1.8E-05
			Thallium	NA		NA		Thallium	NOAEL; various	2.2E-03		NA	2.2E-03
			SVOCs					**SVOCs**					
			Benz(a)anthracene	6.0E-09		1.3E-08	1.9E-08	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	6.3E-08		1.4E-07	2.0E-07	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	5.2E-09		1.2E-08	1.7E-08	Benzo(b)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	1.5E-08		3.3E-08	4.8E-08	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	3.8E-09		8.6E-09	1.2E-08	Indeno(1,2,3-cd)pyrene		NA		NA	
			PCBs					**PCBs**					
			Aroclor 1260	NA		NA		Aroclor 1260	Assumed same as Ar 1254	6.3E-04		1.5E-03	2.1E-03
			Sum of PCBs	1.8E-09		4.4E-09	6.2E-09	Sum of PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	1.4E-08		7.3E-09	2.2E-08	TEQ as 2,3,7,8-TCDD		NA		NA	
			(Wetland SYW-10 Sediment Total)	2.5E-07		2.9E-07	5.4E-07	(Wetland SYW-10 Sediment Total)		0.01		0.003	0.02
Southern Basin													
Sediment	Sediments	South Basin	**Inorganics**					**Inorganics**					
			Aluminum					Aluminum	Skeletal, skin	4.0E-05		NA	4.0E-05
			Antimony					Antimony	Whole Body/Blood	7.5E-05		NA	7.5E-05
			Arsenic	2.3E-08		1.2E-08	3.5E-08	Arsenic	Skin	4.0E-04		2.1E-04	6.1E-04
			Barium					Barium	Cardiovascular System	1.3E-04		NA	1.3E-04
			Cadmium					Cadmium	Kidneys	3.8E-05		2.6E-05	6.4E-05
			Chromium					Chromium	None reported	6.7E-04		NA	6.7E-04
			Copper					Copper	Liver/Kidneys/Forestomach	2.4E-05		NA	2.4E-05
			Cyanide					Cyanide	Whole Body/Blood	7.4E-07		NA	7.4E-07
			Iron					Iron	Liver, spleen, lymph system	4.0E-04		NA	4.0E-04
			Lead					Lead	CNS, blood, whole body	NA		NA	
			Manganese					Manganese	Central Nervous System	1.2E-04		NA	1.2E-04
			Methylmercury					Methylmercury	Developmental Neuropsychological Impairment	2.2E-06		NA	2.2E-06
			Total Mercury					Total mercury	Immune System	6.2E-04		NA	6.2E-04
			Nickel					Nickel	Whole Body/Major Organs	3.6E-05		NA	3.6E-05
			Thallium					Thallium	NOAEL; various	5.9E-05		NA	5.9E-05
			Vanadium					Vanadium	Not Reported/Unknown	4.2E-05		NA	4.2E-05
			VOCs					**VOCs**					
			Benzene	4.2E-09		NA	4.2E-09	Benzene	Immune System/Blood	2.0E-04		NA	2.0E-04
			Chlorobenzene					Chlorobenzene	Liver	8.8E-05		NA	8.8E-05
			Methylene chloride	8.0E-11		NA	8.0E-11	Methylene chloride	Liver	1.4E-06		NA	1.4E-06
			Xylenes					Xylenes	NOAEL; CNS	1.6E-06		NA	1.6E-06
			SVOCs					**SVOCs**					
			Dibenzofuran					Dibenzofuran	Liver	4.4E-05		7.5E-05	1.2E-04
			1,3-Dichlorobenzene					1,3-Dichlorobenzene	Liver/Pituitary Gland	5.0E-05		8.6E-05	1.4E-04
			1,4-Dichlorobenzene	1.9E-09		3.2E-09	5.1E-09	1,4-Dichlorobenzene	Skin/Blood	2.0E-05		3.5E-05	5.5E-05

TABLE 9.1.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Hexachlorobenzene	1.3E-08		2.3E-08	3.6E-08	Hexachlorobenzene	Liver	8.1E-05		1.4E-04	2.2E-04
			Acenaphthylene					Acenaphthylene	Kidney	1.4E-06		3.1E-06	4.5E-06
			Benz(a)anthracene	9.0E-09		2.0E-08	2.9E-08	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	6.8E-08		1.5E-07	2.2E-07	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	9.0E-09		2.0E-08	2.9E-08	Benzo(b)fluoranthene		NA		NA	
			Benzo(ghi)perylene					Benzo(ghi)perylene	Kidney	2.1E-06		4.6E-06	6.7E-06
			Benzo(k)fluoranthene	3.3E-10		7.2E-10	1.1E-09	Benzo(k)fluoranthene		NA		NA	
			Chrysene	8.8E-11		2.0E-10	2.8E-10	Chrysene		NA		NA	
			Dibenz(a,h)anthracene	1.5E-08		3.3E-08	4.8E-08	Dibenz(a,h)anthracene		NA		NA	
			Fluoranthene					Fluoranthene	Kidney/Liver/Blood	8.2E-06		1.8E-05	2.7E-05
			Indeno(1,2,3-cd)pyrene	3.5E-09		7.7E-09	1.1E-08	Indeno(1,2,3-cd)pyrene		NA		NA	
			2-Methylnaphthalene					2-Methylnaphthalene	Lungs/Decreased body weight	8.6E-05		1.9E-04	2.8E-04
			Naphthalene					Naphthalene	Decreased body weight	5.1E-04		1.1E-03	1.7E-03
			Phenanthrene					Phenanthrene	Kidney	1.7E-05		3.8E-05	5.5E-05
			Pesticides					**Pesticides**					
			Dieldrin	1.7E-10		NA	1.7E-10	Dieldrin	Liver	1.7E-06		NA	1.7E-06
			PCBs					**PCBs**					
			Aroclor 1221					Aroclor 1221	Assumed same as Ar 1016	1.1E-05		2.7E-05	3.9E-05
			Aroclor 1242					Aroclor 1242	Assumed same as Ar 1016	4.8E-05		1.2E-04	1.6E-04
			Aroclor 1248					Aroclor 1248	Assumed same as Ar 1254	1.1E-04		2.6E-04	3.7E-04
			Aroclor 1254					Aroclor 1254	Immune System	6.8E-05		1.6E-04	2.3E-04
			Aroclor 1260					Aroclor 1260	Assumed same as Ar 1254	9.8E-05		2.3E-04	3.3E-04
			Sum of PCBs	1.3E-09		3.2E-09	4.5E-09	PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	7.1E-08		3.6E-08	1.1E-07	TEQ as 2,3,7,8-TCDD		NA		NA	
			(South Basin Sediment Total)	2.2E-07		3.1E-07	5.3E-07	(South Basin Sediment Total)		0.004		0.003	0.01
Sediment	Wetland Sediments	Wetland SYW-12 (South Basin)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	8.6E-05		NA	8.6E-05
			Arsenic	1.2E-08		6.1E-09	1.8E-08	Arsenic	Skin	2.1E-04		1.1E-04	3.1E-04
			Cadmium	NA		NA		Cadmium	Kidneys	4.0E-04		2.7E-04	6.7E-04
			Chromium	NA		NA		Chromium	None reported	9.9E-04		NA	9.9E-04
			Copper	NA		NA		Copper	Liver/Kidneys/Forestomach	6.5E-05		NA	6.5E-05
			Cyanide	NA		NA		Cyanide	Whole Body/Blood	4.2E-07		NA	4.2E-07
			Iron	NA		NA		Iron	Liver, spleen, lymph system	5.6E-04		NA	5.6E-04
			Manganese	NA		NA		Manganese	Central Nervous System	1.1E-04		NA	1.1E-04
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	Immune System	9.7E-05		NA	9.7E-05
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	2.9E-06		NA	2.9E-06
			Thallium	NA		NA		Thallium	NOAEL; various	9.9E-05		NA	9.9E-05
			SVOCs					**SVOCs**					
			Benz(a)anthracene	4.3E-09		9.5E-09	1.4E-08	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	4.2E-08		9.3E-08	1.3E-07	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	2.9E-09		6.4E-09	9.3E-09	Benzo(b)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	1.6E-09		3.5E-09	5.0E-09	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	2.8E-09		6.2E-09	9.0E-09	Indeno(1,2,3-cd)pyrene		NA		NA	
			Phenanthrene	NA		NA		Phenanthrene	Kidney	2.4E-06		5.4E-06	7.8E-06
			PCBs					**PCBs**					
			Aroclor 1242	NA		NA		Aroclor 1242	Assumed same as Ar 1016	3.9E-05		9.3E-05	1.3E-04
			Aroclor 1254	NA		NA		Aroclor 1254	Immune System	2.1E-04		4.9E-04	7.0E-04
			Aroclor 1260	NA		NA		Aroclor 1260	Assumed same as Ar 1254	1.1E-04		2.6E-04	3.6E-04
			Sum of PCBs	1.2E-09		2.8E-09	3.9E-09	Sum of PCBs		NA		NA	
			(Wetland SYW-12 Sediment Total)	6.6E-08		1.3E-07	1.9E-07	(Wetland SYW-12 Sediment Total)		0.003		0.001	0.004
Sediment	Wetland Sediments	Wetland SYW-19 (South Basin)	**Inorganics**					**Inorganics**					

TABLE 9.1.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Antimony	NA		NA		Antimony	Whole Body/Blood	8.1E-05		NA	8.1E-05
			Arsenic	1.6E-08		8.3E-09	2.4E-08	Arsenic	Skin	2.8E-04		1.4E-04	4.2E-04
			Barium	NA		NA		Barium	Cardiovascular System	7.2E-05		NA	7.2E-05
			Cadmium	NA		NA		Cadmium	Kidneys	2.9E-05		2.0E-05	4.9E-05
			Chromium	NA		NA		Chromium	None reported	2.3E-04		NA	2.3E-04
			Iron	NA		NA		Iron	Liver, spleen, lymph system	3.4E-04		NA	3.4E-04
			Manganese	NA		NA		Manganese	Central Nervous System	1.3E-04		NA	1.3E-04
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	Immune System	1.4E-03		NA	1.4E-03
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	4.2E-05		NA	4.2E-05
			SVOCs					**SVOCs**					
			1,3-Dichlorobenzene	NA		NA		1,3-Dichlorobenzene	Liver/Pituitary Gland	4.1E-05		7.0E-05	1.1E-04
			1,4-Dichlorobenzene	2.7E-10		4.6E-10	7.3E-10	1,4-Dichlorobenzene	Skin/Blood	2.9E-06		5.0E-06	7.9E-06
			Hexachlorobenzene	5.6E-09		9.6E-09	1.5E-08	Hexachlorobenzene	Liver	3.4E-05		5.8E-05	9.2E-05
			Benz(a)anthracene	1.0E-08		2.3E-08	3.4E-08	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	9.6E-08		2.1E-07	3.1E-07	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	8.3E-09		1.8E-08	2.7E-08	Benzo(b)fluoranthene		NA		NA	
			Benzo(g,h,i)perylene	NA		NA		Benzo(g,h,i)perylene	Kidney	1.8E-06		4.1E-06	5.9E-06
			Benzo(k)fluoranthene	7.3E-10		1.6E-09	2.4E-09	Benzo(k)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	2.4E-08		5.4E-08	7.8E-08	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	5.5E-09		1.2E-08	1.8E-08	Indeno(1,2,3-cd)pyrene		NA		NA	
			Phenanthrene	NA		NA		Phenanthrene	Kidney	5.4E-06		1.2E-05	1.7E-05
			Pesticides					**Pesticides**					
			Aldrin	8.3E-10		NA	8.3E-10	Aldrin	Liver	1.3E-05		NA	1.3E-05
			Dieldrin	5.9E-10		NA	5.9E-10	Dieldrin	Liver	5.7E-06		NA	5.7E-06
			PCBs					**PCBs**					
			Aroclor 1242	NA		NA		Aroclor 1242	Assumed same as Ar 1016	9.9E-05		2.4E-04	3.3E-04
			Aroclor 1254	NA		NA		Aroclor 1254	Immune System	3.0E-04		7.2E-04	1.0E-03
			Aroclor 1260	NA		NA		Aroclor 1260	Assumed same as Ar 1254	1.5E-04		3.7E-04	5.2E-04
			Sum of PCBs	1.7E-09		4.0E-09	5.7E-09	Sum of PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	1.7E-07		8.5E-08	2.5E-07	TEQ as 2,3,7,8-TCDD		NA		NA	
			(Wetland SYW-19 Sediment Total)	3.4E-07		4.3E-07	7.7E-07	(Wetland SYW-19 Sediment Total)		0.003		0.002	0.005
						Total Risk Across Sediment	9.3E-06					Total Hazard Across Sediment	0.05
Soil	Surface Soils	Dredge Spoil Soils (0-3.5 ft)	**Inorganics**	NA				**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	7.6E-04		NA	7.6E-04
			Arsenic	1.0E-07		5.2E-08	1.5E-07	Arsenic	Skin	1.8E-03		9.0E-04	2.7E-03
			Chromium	NA		NA		Chromium	None reported	6.1E-04		NA	6.1E-04
			Iron	NA		NA		Iron	Liver, spleen, lymph system	3.6E-03		NA	3.6E-03
			Manganese	NA		NA		Manganese	Central Nervous System	9.5E-04		NA	9.5E-04
			Total Mercury	NA		NA		Total Mercury	Immune System	8.3E-04		NA	8.3E-04
			SVOCs					**SVOCs**					
			Hexachlorobenzene	5.3E-09		9.0E-09	1.4E-08	Hexachlorobenzene	Liver	3.2E-05		5.5E-05	8.7E-05
			Benzo(a)pyrene	7.6E-09		1.7E-08	2.5E-08	Benzo(a)pyrene		NA		NA	
			(Dredge Spoils - Surface Total)	1.1E-07		7.8E-08	1.9E-07	(Dredge Spoils - Surface Total)		0.01		0.001	0.01
Soil	Subsurface Soils	Dredge Spoil Soils (0-11.7 ft)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	NA	NA		NA	
			Arsenic	NA		NA		Arsenic	NA	NA		NA	
			Cadmium	NA		NA		Cadmium	NA	NA		NA	
			Chromium	NA		NA		Chromium	NA	NA		NA	
			Cyanide	NA		NA		Cyanide	NA	NA		NA	
			Iron	NA		NA		Iron	NA	NA		NA	

TABLE 9.1.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Manganese	NA		NA		Manganese	NA	NA		NA	
			Total Mercury	NA		NA		Total Mercury	NA	NA		NA	
			Thallium	NA		NA		Thallium	NA	NA		NA	
			SVOCs					**SVOCs**					
			Hexachlorobenzene	NA		NA		Hexachlorobenzene	NA	NA		NA	
			Benz(a)anthracene	NA		NA		Benz(a)anthracene	NA	NA		NA	
			Benzo(a)pyrene	NA		NA		Benzo(a)pyrene	NA	NA		NA	
			Benzo(b)fluoranthene	NA		NA		Benzo(b)fluoranthene	NA	NA		NA	
			Benzo(g,h,i)perylene	NA		NA		Benzo(g,h,i)perylene	NA	NA		NA	
			Benzo(k)fluoranthene	NA		NA		Benzo(k)fluoranthene	NA	NA		NA	
			Dibenz(a,h)anthracene	NA		NA		Dibenz(a,h)anthracene	NA	NA		NA	
			Indeno(1,2,3-cd)pyrene	NA		NA		Indeno(1,2,3-cd)pyrene	NA	NA		NA	
			Naphthalene	NA		NA		Naphthalene	NA	NA		NA	
			Phenanthrene	NA		NA		Phenanthrene	NA	NA		NA	
			PCBs					**PCBs**					
			Aroclor 1254	NA		NA		Aroclor 1254	NA	NA		NA	
			Aroclor 1268	NA		NA		Aroclor 1268	NA	NA		NA	
			Sum of PCBs	NA		NA		Sum of PCBs	NA	NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	NA		NA		TEQ as 2,3,7,8-TCDD	NA	NA		NA	
			(Dredge Spoils - Subsurface Total)	NA		NA		(Dredge Spoils - Subsurface Total)	NA	NA		NA	
				Total Risk Across Dredge Spoil Soils			1.9E-07					Total Hazard Across Dredge Spoil Soils	0.01
Surface Water	Surface Water	Onondaga Lake	**Inorganics**					**Inorganics**					
			Cadmium	NA		NA		Cadmium	Kidneys	1.4E-04		2.0E-03	2.1E-03
			Chromium	NA		NA		Chromium	None reported	4.9E-05		1.4E-03	1.5E-03
			Manganese	NA		NA		Manganese	Central Nervous System	3.7E-05		3.3E-04	3.7E-04
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	8.3E-07		3.0E-07	1.1E-06
			Total Mercury	NA		NA		Total mercury	Immune System	1.7E-06		8.9E-06	1.1E-05
			VOCs					**VOCs**					
			Benzene	2.6E-10		2.2E-09	2.4E-09	Benzene	Immune System/Blood	1.2E-05		1.4E-04	1.5E-04
			Chlorobenzene	NA		NA		Chlorobenzene	Liver	2.0E-06		5.3E-05	5.5E-05
			Chloroform	NA		NA		Chloroform	Liver	4.1E-06		2.8E-05	3.2E-05
			SVOCs					**SVOCs**					
			Bromodichloromethane	1.2E-10		5.5E-10	6.7E-10	Bromodichloromethane	Kidney	7.5E-07		4.7E-06	5.5E-06
			1,2-Dichlorobenzene	NA		NA		1,2-Dichlorobenzene	NOAEL	4.1E-07		2.1E-05	2.1E-05
			1,3-Dichlorobenzene	NA		NA		1,3-Dichlorobenzene	Liver/Pituitary Gland	3.8E-05		2.8E-03	2.8E-03
			1,4-Dichlorobenzene	1.2E-10		4.6E-09	4.7E-09	1,4-Dichlorobenzene	Skin/Blood	1.3E-06		6.8E-05	6.9E-05
			1,2,4-Trichlorobenzene	NA		NA		1,2,4-Trichlorobenzene	Adrenal/Liver/Kidney	3.6E-06		3.5E-04	3.5E-04
			(Surface Water - Total)	5.0E-10		7.3E-09	7.8E-09	(Surface Water - Total)		0.0003		0.01	0.01
				Total Risk Across Surface Water			7.8E-09					Total Hazard Across Surface Water	0.01
				Total Risk Across All Media and All Exposure Routes			5.2E-05					Total Hazard Index Across All Media and All Exposure Routes	4.55

Total [Lungs] HI =	0.0003	Total [DNI] HI =	1.24	Total [Kidney] HI =	0.003	Total [Blood] HI =	0.34
Total [Immune System] HI =	2.22	Total [Birth Weight] HI =	0.52	Total [CNS] HI =	0.01	Total [Body Weight] HI =	0.002
Total [Skin] HI =	0.04	Total [NOAEL] HI =	0.0003	Total [Liver] HI =	0.10	Total [Whole Body] HI =	0.35

Note: (1) Based on an exposure of 30 years the carcinogenic risk is 2E-03.
(2) N/A = Risk or hazard not calculated
(3) Primary Target Organ for Aroclor 1016 is Reduced Birth Weight and for Aroclor 1254 is Immune System.
(4) Sediment total includes northern and southern basin sediments and all 4 wetlands
(5) Target Organ Totals: DNI: Developmental Neuropsychological Impairment
NOAEL : No Observed Adverse Effect Level
CNS: Central Nervous System

TABLE 9.2.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Scenario Timeframe: Current/Future
Receptor Population: Recreation
Receptor Age: Young Child (less than 6)

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Fish	Fish Tissue	Fish Fillet	**Inorganics**					**Inorganics**					
			Antimony	NA		NA		Antimony	Whole Body/Blood	4.4E-01		NA	4.4E-01
			Arsenic (inorganic)	1.8E-06		NA	1.8E-06	Arsenic (inorganic)	Skin	4.8E-02			4.8E-02
			Chromium	NA		NA		Chromium	None reported	3.4E-02		NA	3.4E-02
			Cyanide	NA		NA		Cyanide	Whole Body/Blood	5.1E-02		NA	5.1E-02
			Manganese	NA		NA		Manganese	Central Nervous System Developmental Neuropsychological	4.1E-03		NA	4.1E-03
			Mercury (as methylmercury)	NA		NA		Mercury (as methylmercury)	Impairment	1.9E+00			1.9E+00
			Selenium	NA		NA		Selenium	Whole Body	5.2E-02		NA	5.2E-02
			Vanadium	NA		NA		Vanadium	Not Reported/Unknown	1.6E-02		NA	1.6E-02
			Zinc	NA		NA		Zinc	Blood	2.6E-02		NA	2.6E-02
			SVOCs					**SVOCs**					
			bis(2-ethylhexyl)phthalate	4.9E-07		NA	4.9E-07	bis(2-ethylhexyl)phthalate	Liver	2.0E-02		NA	2.0E-02
			Hexachlorobenzene	3.2E-07		NA	3.2E-07	Hexachlorobenzene	Liver	2.9E-03		NA	2.9E-03
			Pesticides					**Pesticides**					
			2,4'-DDE	NA		NA		2,4'-DDE		NA		NA	
			4,4'-DDD	4.8E-08		NA	4.8E-08	4,4'-DDD	Liver	7.9E-04		NA	7.9E-04
			4,4'-DDE	1.8E-07		NA	1.8E-07	4,4'-DDE	Liver	8.7E-03		NA	8.7E-03
			4,4'-DDT	4.9E-08		NA	4.9E-08	4,4'-DDT	Liver	3.4E-03		NA	3.4E-03
			Aldrin	6.6E-07		NA	6.6E-07	Aldrin	Liver	1.5E-02		NA	1.5E-02
			delta-BHC	NA		NA		delta-BHC	Liver/kidney	1.5E-03		NA	1.5E-03
			Dieldrin	9.3E-07		NA	9.3E-07	Dieldrin	Liver	1.4E-02		NA	1.4E-02
			Heptachlor epoxide	5.7E-07		NA	5.7E-07	Heptachlor epoxide	Liver	5.7E-02		NA	5.7E-02
			Sum of chlordanes	5.2E-08		NA	5.2E-08	Sum of chlordanes	Liver	3.5E-03		NA	3.5E-03
			PCBs					**PCBs**					
			Aroclor 1016	NA		NA							
			Aroclor 1242	NA		NA							
			Sum of Low MW PCBs	NA		NA		Sum of Low MW PCBs	Assumed same as Ar 1016	8.1E-01		NA	8.1E-01
			Aroclor 1248	NA		NA							
			Aroclor 1260	NA		NA							
			Aroclors 1254 & 1260	NA		NA							
			Sum of High MW PCBs	NA		NA		Sum of High MW PCBs	Assumed same as Ar 1254	3.4E+00		NA	3.4E+00
			Sum of PCBs	9.3E-06		NA	9.3E-06	Sum of PCBs	NA	NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	3.0E-05		NA	3.0E-05	TEQ as 2,3,7,8-TCDD	NA	NA			
			(Fish Tissue - Total)	4.4E-05		NA	4.4E-05	(Fish Tissue - Total)		6.97		NA	6.97
						Total Risk Across Fish Tissue	4.4E-05					Total Hazard Across Fish Tissue	6.97

TABLE 9.2.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Northern Basin													
Sediment	Sediments	North Basin	**Inorganics**					**Inorganics**					
			Antimony	NA		NA		Antimony	Whole Body/Blood	1.3E-02		NA	1.3E-02
			Arsenic	2.9E-07		4.9E-08	3.4E-07	Arsenic	Skin	7.5E-03		1.3E-03	8.8E-03
			Barium	NA		NA		Barium	Cardiovascular System	1.3E-03		NA	1.3E-03
			Cadmium	NA		NA		Cadmium	Kidneys	1.2E-03		2.7E-04	1.5E-03
			Chromium	NA		NA		Chromium	None reported	6.3E-03		NA	6.3E-03
			Iron	NA		NA		Iron	Liver, spleen, lymph system	1.1E-02		NA	1.1E-02
			Manganese	NA		NA		Manganese	Central Nervous System Developmental Neuropsychological	6.9E-03		NA	6.9E-03
			Methylmercury	NA		NA		Methylmercury	Impairment	1.2E-05		NA	1.2E-05
			Total Mercury	NA		NA		Total mercury	Immune System	3.7E-03		NA	3.7E-03
			Thallium	NA		NA		Thallium	NOAEL; various	2.6E-03		NA	2.6E-03
			VOCs					**VOCs**					
			Benzene	2.5E-10		NA	2.5E-10	Benzene	Immune System/Blood	1.7E-05		NA	1.7E-05
			SVOCs					**SVOCs**					
			Hexachlorobenzene	3.3E-08		1.8E-08	5.1E-08	Hexachlorobenzene	Liver	3.0E-04		1.7E-04	4.6E-04
			Benz(a)anthracene	6.0E-09		4.3E-09	1.0E-08	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	5.7E-08		4.1E-08	9.8E-08	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	8.7E-09		6.3E-09	1.5E-08	Benzo(b)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	1.8E-08		1.3E-08	3.1E-08	Dibenz(a,h)anthracene		NA		NA	
			Naphthalene	NA		NA		Naphthalene	Decreased body weight	1.1E-05		8.3E-06	2.0E-05
			PCBs					**PCBs**					
			Aroclor 1254	NA		NA		Aroclor 1254	Immune System	1.2E-03		9.4E-04	2.1E-03
			Aroclor 1268	NA		NA		Aroclor 1268	Assumed same as Ar 1254	1.0E-03		7.9E-04	1.8E-03
			Sum of PCBs	4.3E-09		3.4E-09	7.7E-09	Sum of PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	1.5E-08		2.5E-09	1.7E-08	TEQ as 2,3,7,8-TCDD		NA		NA	
			(North Basin Sediment Total)	4.3E-07		1.4E-07	5.7E-07	(North Basin Sediment Total)		0.06		0.003	0.06
Sediment	Wetland Sediments	Wetland SYW-6 (North Basin)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	NA	NA		NA	
			Arsenic	NA		NA		Arsenic	NA	NA		NA	
			Cadmium	NA		NA		Cadmium	NA	NA		NA	
			Chromium	NA		NA		Chromium	NA	NA		NA	
			Cyanide	NA		NA		Cyanide	NA	NA		NA	
			Iron	NA		NA		Iron	NA	NA		NA	
			Manganese	NA		NA		Manganese	NA	NA		NA	
			Total Mercury	NA		NA		Total Mercury	NA	NA		NA	
			Thallium	NA		NA		Thallium	NA	NA		NA	
			SVOCs					**SVOCs**					
			Benzo(a)pyrene	NA		NA		Benzo(a)pyrene	NA	NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	NA		NA		TEQ as 2,3,7,8-TCDD	NA	NA		NA	
			(Wetland SYW-6 Sediment Total)					(Wetland SYW-6 Sediment Total)					
Sediment	Wetland Sediments	Wetland SYW-10 (North Basin)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	NA	NA		NA	
			Antimony	NA		NA		Antimony	NA	NA		NA	

TABLE 9.2.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Arsenic	NA		NA		Arsenic	NA	NA		NA	
			Chromium	NA		NA		Chromium	NA	NA		NA	
			Iron	NA		NA		Iron	NA	NA		NA	
			Manganese	NA		NA		Manganese	NA	NA		NA	
			Total Mercury	NA		NA		Total Mercury	NA	NA		NA	
			Thallium	NA		NA		Thallium	NA	NA		NA	
			SVOCs					**SVOCs**					
			Benz(a)anthracene	NA		NA		Benz(a)anthracene	NA	NA		NA	
			Benzo(a)pyrene	NA		NA		Benzo(a)pyrene	NA	NA		NA	
			Benzo(b)fluoranthene	NA		NA		Benzo(b)fluoranthene	NA	NA		NA	
			Dibenz(a,h)anthracene	NA		NA		Dibenz(a,h)anthracene	NA	NA		NA	
			Indeno(1,2,3-cd)pyrene	NA		NA		Indeno(1,2,3-cd)pyrene	NA	NA		NA	
			PCBs					**PCBs**					
			Aroclor 1260	NA		NA		Aroclor 1260	NA	NA		NA	
			Sum of PCBs	NA		NA		Sum of PCBs	NA	NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	NA		NA		TEQ as 2,3,7,8-TCDD	NA	NA		NA	
			(Wetland SYW-10 Sediment Total)					(Wetland SYW-10 Sediment Total)					
Southern Basin													
Sediment	Sediments	South Basin	**Inorganics**					**Inorganics**					
			Aluminum					Aluminum	Skeletal, skin	3.7E-04		NA	3.7E-04
			Antimony					Antimony	Whole Body/Blood	7.0E-04		NA	7.0E-04
			Arsenic	1.5E-07		2.4E-08	1.7E-07	Arsenic	Skin	3.8E-03		6.3E-04	4.4E-03
			Barium					Barium	Cardiovascular System	1.2E-03		NA	1.2E-03
			Cadmium					Cadmium	Kidneys	3.6E-04		8.0E-05	4.4E-04
			Chromium					Chromium	None reported	6.2E-03		NA	6.2E-03
			Copper					Copper	Liver/Kidneys/Forestomach	2.2E-04		NA	2.2E-04
			Cyanide					Cyanide	Whole Body/Blood	6.9E-06		NA	6.9E-06
			Iron					Iron	Liver, spleen, lymph system	3.7E-03		NA	3.7E-03
			Lead					Lead	CNS, blood, whole body	NA		NA	
			Manganese					Manganese	Central Nervous System Developmental Neuropsychological	1.2E-03		NA	1.2E-03
			Methylmercury					Methylmercury	Impairment	2.1E-05		NA	2.1E-05
			Total Mercury					Total mercury	Immune System	5.7E-03		NA	5.7E-03
			Nickel					Nickel	Whole Body/Major Organs	3.3E-04		NA	3.3E-04
			Thallium					Thallium	NOAEL; various	5.6E-04		NA	5.6E-04
			Vanadium					Vanadium	Not Reported/Unknown	3.9E-04		NA	3.9E-04
			VOCs					**VOCs**					
			Benzene	2.6E-08		NA	2.6E-08	Benzene	Immune System/Blood	1.9E-03		NA	1.9E-03
			Chlorobenzene					Chlorobenzene	Liver	8.2E-04		NA	8.2E-04
			Methylene chloride	5.0E-10		NA	5.0E-10	Methylene chloride	Liver	1.3E-05		NA	1.3E-05
			Xylenes					Xylenes	NOAEL; CNS	1.5E-05		NA	1.5E-05
			SVOCs					**SVOCs**					
			Hexachlorobenzene	8.3E-08		4.7E-08	1.3E-07	Hexachlorobenzene	Liver	7.6E-04		4.3E-04	1.2E-03
			Dibenzofuran					Dibenzofuran	Liver	4.1E-04		2.3E-04	6.4E-04
			1,3-Dichlorobenzene					1,3-Dichlorobenzene	Liver/Pituitary Gland	4.7E-04		2.6E-04	7.3E-04
			1,4-Dichlorobenzene	1.2E-08		6.6E-09	1.8E-08	1,4-Dichlorobenzene	Skin/Blood	1.9E-04		1.1E-04	3.0E-04
			Acenaphthylene					Acenaphthylene	Kidney	1.3E-05		9.4E-06	2.2E-05

TABLE 9.2.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Benz(a)anthracene	5.6E-08		4.1E-08	9.6E-08	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	4.2E-07		3.1E-07	7.3E-07	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	5.6E-08		4.1E-08	9.7E-08	Benzo(b)fluoranthene		NA		NA	
			Benzo(ghi)perylene					Benzo(ghi)perylene	Kidney	1.9E-05		1.4E-05	3.4E-05
			Benzo(k)fluoranthene	2.0E-09		1.5E-09	3.5E-09	Benzo(k)fluoranthene		NA		NA	
			Chrysene	5.5E-10		4.0E-10	9.5E-10	Chrysene		NA		NA	
			Dibenz(a,h)anthracene	9.3E-08		6.8E-08	1.6E-07	Dibenz(a,h)anthracene		NA		NA	
			Fluoranthene					Fluoranthene	Kidney/Liver/Blood	7.7E-05		5.6E-05	1.3E-04
			Indeno(1,2,3-cd)pyrene	2.2E-08		1.6E-08	3.7E-08	Indeno(1,2,3-cd)pyrene		NA		NA	
			2-Methylnaphthalene					2-Methylnaphthalene	Lungs/Decreased body weight	8.1E-04		5.9E-04	1.4E-03
			Naphthalene					Naphthalene	Decreased body weight	4.8E-03		3.5E-03	8.3E-03
			Phenanthrene					Phenanthrene	Kidney	1.6E-04		1.2E-04	2.8E-04
			Pesticides					**Pesticides**					
			Dieldrin	1.1E-09		NA	1.1E-09	Dieldrin	Liver	1.6E-05		NA	1.6E-05
			PCBs					**PCBs**					
			Aroclor 1221					Aroclor 1221	Assumed same as Ar 1016	1.1E-04		8.3E-05	1.9E-04
			Aroclor 1242					Aroclor 1242	Assumed same as Ar 1016	4.5E-04		3.5E-04	8.0E-04
			Aroclor 1248					Aroclor 1248	Assumed same as Ar 1254	1.0E-03		8.1E-04	1.8E-03
			Aroclor 1254					Aroclor 1254	Immune System	6.3E-04		5.0E-04	1.1E-03
			Aroclor 1260					Aroclor 1260	Assumed same as Ar 1254	9.2E-04		7.2E-04	1.6E-03
			Sum of PCBs	8.3E-09		6.5E-09	1.5E-08	PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	4.4E-07		7.4E-08	5.2E-07	TEQ as 2,3,7,8-TCDD		NA		NA	
			(South Basin Sediment Total)	1.4E-06		6.3E-07	2.0E-06	(South Basin Sediment Total)		0.04		0.01	0.05
Sediment	Wetland Sediments	Wetland SYW-12 (South Basin)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	NA	NA		NA	
			Arsenic	NA		NA		Arsenic	NA	NA		NA	
			Cadmium	NA		NA		Cadmium	NA	NA		NA	
			Chromium	NA		NA		Chromium	NA	NA		NA	
			Copper	NA		NA		Copper	NA	NA		NA	
			Cyanide	NA		NA		Cyanide	NA	NA		NA	
			Iron	NA		NA		Iron	NA	NA		NA	
			Manganese	NA		NA		Manganese	NA	NA		NA	
			Total Mercury	NA		NA		Total Mercury	NA	NA		NA	
			Thallium	NA		NA		Thallium	NA	NA		NA	
			SVOCs					**SVOCs**					
			Benz(a)anthracene	NA		NA		Benz(a)anthracene	NA	NA		NA	
			Benzo(a)pyrene	NA		NA		Benzo(a)pyrene	NA	NA		NA	
			Benzo(b)fluoranthene	NA		NA		Benzo(b)fluoranthene	NA	NA		NA	
			Dibenz(a,h)anthracene	NA		NA		Dibenz(a,h)anthracene	NA	NA		NA	
			Indeno(1,2,3-cd)pyrene	NA		NA		Indeno(1,2,3-cd)pyrene	NA	NA		NA	
			Phenanthrene	NA		NA		Phenanthrene	NA	NA		NA	
			PCBs					**PCBs**					
			Aroclor 1242	NA		NA		Aroclor 1242	NA	NA		NA	
			Aroclor 1254	NA		NA		Aroclor 1254	NA	NA		NA	
			Aroclor 1260	NA		NA		Aroclor 1260	NA	NA		NA	
			Sum of PCBs	NA		NA		Sum of PCBs	NA	NA		NA	
			(Wetland SYW-12 Sediment Total)					(Wetland SYW-12 Sediment Total)					

TABLE 9.2.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Wetland Sediments	Wetland SYW-19 (South Basin)	**Inorganics**					**Inorganics**					
			Antimony	NA		NA		Antimony	NA	NA		NA	
			Arsenic	NA		NA		Arsenic	NA	NA		NA	
			Barium	NA		NA		Barium	NA	NA		NA	
			Cadmium	NA		NA		Cadmium	NA	NA		NA	
			Chromium	NA		NA		Chromium	NA	NA		NA	
			Iron	NA		NA		Iron	NA	NA		NA	
			Manganese	NA		NA		Manganese	NA	NA		NA	
			Total Mercury	NA		NA		Total Mercury	NA	NA		NA	
			SVOCs					**SVOCs**					
			1,3-Dichlorobenzene	NA		NA		1,3-Dichlorobenzene	NA	NA		NA	
			1,4-Dichlorobenzene	NA		NA		1,4-Dichlorobenzene	NA	NA		NA	
			Hexachlorobenzene	NA		NA		Hexachlorobenzene	NA	NA		NA	
			Benz(a)anthracene	NA		NA		Benz(a)anthracene	NA	NA		NA	
			Benzo(a)pyrene	NA		NA		Benzo(a)pyrene	NA	NA		NA	
			Benzo(b)fluoranthene	NA		NA		Benzo(b)fluoranthene	NA	NA		NA	
			Benzo(g,h,i)perylene	NA		NA		Benzo(g,h,i)perylene	NA	NA		NA	
			Benzo(k)fluoranthene	NA		NA		Benzo(k)fluoranthene	NA	NA		NA	
			Dibenz(a,h)anthracene	NA		NA		Dibenz(a,h)anthracene	NA	NA		NA	
			Indeno(1,2,3-cd)pyrene	NA		NA		Indeno(1,2,3-cd)pyrene	NA	NA		NA	
			Phenanthrene	NA		NA		Phenanthrene	NA	NA		NA	
			Pesticides					**Pesticides**					
			Aldrin	NA		NA		Aldrin	NA	NA		NA	
			Dieldrin	NA		NA		Dieldrin	NA	NA		NA	
			PCBs					**PCBs**					
			Aroclor 1242	NA		NA		Aroclor 1242	NA	NA		NA	
			Aroclor 1254	NA		NA		Aroclor 1254	NA	NA		NA	
			Aroclor 1260	NA		NA		Aroclor 1260	NA	NA		NA	
			Sum of PCBs	NA		NA		Sum of PCBs	NA	NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	NA		NA		TEQ as 2,3,7,8-TCDD	NA	NA		NA	
			(Wetland SYW-19 Sediment Total)					(Wetland SYW-19 Sediment Total)					
						Total Risks Across Sediments	2.6E-06					Total Hazard Across Sediments	0.11
Soil	Surface Soils	Dredge Spoil Soils (0-3.5 ft)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	NA	NA		NA	
			Arsenic	NA		NA		Arsenic	NA	NA		NA	
			Chromium	NA		NA		Chromium	NA	NA		NA	
			Iron	NA		NA		Iron	NA	NA		NA	
			Manganese	NA		NA		Manganese	NA	NA		NA	
			Total Mercury	NA		NA		Total Mercury	NA	NA		NA	
			SVOCs					**SVOCs**					
			Hexachlorobenzene	NA		NA		Hexachlorobenzene	NA	NA		NA	
			Benzo(a)pyrene	NA		NA		Benzo(a)pyrene	NA	NA		NA	
			(Dredge Spoils - Surface Total)					(Dredge Spoils - Surface Total)					

TABLE 9.2.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Subsurface Soils	Dredge Spoil Soils (0-11.7 ft)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	NA	NA		NA	
			Arsenic	NA		NA		Arsenic	NA	NA		NA	
			Cadmium	NA		NA		Cadmium	NA	NA		NA	
			Chromium	NA		NA		Chromium	NA	NA		NA	
			Cyanide	NA		NA		Cyanide	NA	NA		NA	
			Iron	NA		NA		Iron	NA	NA		NA	
			Manganese	NA		NA		Manganese	NA	NA		NA	
			Total Mercury	NA		NA		Total Mercury	NA	NA		NA	
			Thallium	NA		NA		Thallium	NA	NA		NA	
			SVOCs					**SVOCs**					
			Hexachlorobenzene	NA		NA		Hexachlorobenzene	NA	NA		NA	
			Benz(a)anthracene	NA		NA		Benz(a)anthracene	NA	NA		NA	
			Benzo(a)pyrene	NA		NA		Benzo(a)pyrene	NA	NA		NA	
			Benzo(b)fluoranthene	NA		NA		Benzo(b)fluoranthene	NA	NA		NA	
			Benzo(g,h,i)perylene	NA		NA		Benzo(g,h,i)perylene	NA	NA		NA	
			Benzo(k)fluoranthene	NA		NA		Benzo(k)fluoranthene	NA	NA		NA	
			Dibenz(a,h)anthracene	NA		NA		Dibenz(a,h)anthracene	NA	NA		NA	
			Indeno(1,2,3-cd)pyrene	NA		NA		Indeno(1,2,3-cd)pyrene	NA	NA		NA	
			Naphthalene	NA		NA		Naphthalene	NA	NA		NA	
			Phenanthrene	NA		NA		Phenanthrene	NA	NA		NA	
			PCBs					**PCBs**					
			Aroclor 1254	NA		NA		Aroclor 1254	NA	NA		NA	
			Aroclor 1268	NA		NA		Aroclor 1268	NA	NA		NA	
			Sum of PCBs	NA		NA		Sum of PCBs	NA	NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ Furans (only)					TEQ Furans (only)	NA	NA		NA	
			TEQ as 2,3,7,8-TCDD	NA		NA		TEQ as 2,3,7,8-TCDD	NA	NA		NA	
			(Dredge Spoils - Subsurface Total)					(Dredge Spoils - Subsurface Total)					
				Total Risk Across Dredge Spoil Soils								Total Hazard Across Dredge Spoil Soils	
Surface Water	Surface Water	Onondaga Lake	**Inorganics**					**Inorganics**					
			Cadmium	NA		NA		Cadmium	Kidneys	6.5E-04		3.4E-03	4.1E-03
			Chromium	NA		NA		Chromium	None reported	2.3E-04		2.4E-03	2.6E-03
			Manganese	NA		NA		Manganese	Central Nervous System Developmental Neuropsychological	1.7E-04		5.6E-04	7.3E-04
			Methylmercury	NA		NA		Methylmercury	Impairment	3.9E-06		5.1E-07	4.4E-06
			Total Mercury	NA		NA		Total mercury	Immune System	8.1E-06		1.5E-05	2.3E-05
			VOCs					**VOCs**					
			Benzene	8.1E-10		2.5E-09	3.3E-09	Benzene	Immune System/Blood	5.8E-05		2.4E-04	3.0E-04
			Chlorobenzene	NA		NA		Chlorobenzene	Liver	9.3E-06		9.1E-05	1.0E-04
			Chloroform	NA		NA		Chloroform	Liver	1.9E-05		4.7E-05	6.7E-05
			SVOCs					**SVOCs**					
			Bromodichloromethane	3.7E-10		6.2E-10	1.0E-09	Bromodichloromethane	Kidney	3.5E-06		8.1E-06	1.2E-05
			1,2-Dichlorobenzene	NA		NA		1,2-Dichlorobenzene	NOAEL	1.9E-06		3.6E-05	3.8E-05
			1,3-Dichlorobenzene	NA		NA		1,3-Dichlorobenzene	Liver/Pituitary Gland	1.8E-04		4.8E-03	5.0E-03
			1,4-Dichlorobenzene	3.7E-10		5.2E-09	5.6E-09	1,4-Dichlorobenzene	Skin/Blood	6.0E-06		1.2E-04	1.2E-04

TABLE 9.2.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			1,2,4-Trichlorobenzene	NA		NA		1,2,4-Trichlorobenzene	Adrenal/Liver/Kidney	1.7E-05		5.9E-04	6.1E-04
			(Surface Water - Total)	1.6E-09		8.3E-09	9.9E-09	(Surface Water - Total)		0.001		0.01	0.01
							Total Risk Across Surface Water	9.9E-09				Total Hazard Across Surface Water	0.01
							Total Risk Across All Media and All Exposure Routes	4.7E-05				Total Hazard Index Across All Media and All Exposure Routes	7.09

Total [Lungs] HI =	0.001	Total [DNI] HI =	1.92	Total [Kidney] HI =	0.01	Total [Blood] HI =	0.53
Total [Immune System] HI =	3.45	Total [Birth Weight] HI =	0.82	Total [CNS] HI =	0.01	Total [Body Weight] HI =	0.010
Total [Skin] HI =	0.06	Total [NOAEL] HI =	0.003	Total [Liver] HI =	0.15	Total [Whole Body] HI =	0.56

Note: (1) Based on an exposure of 30 years the carcinogenic risk is 2E-03.
(2) N/A = Risk or hazard not calculated
(3) Primary Target Organ for Aroclor 1016 is Reduced Birth Weight and for Aroclor 1254 is Immune System.
(4) Sediment total includes northern and southern basin sediments and all 4 wetlands
(5) Target Organ Totals: DNI: Developmental Neuropsychological Impairment
NOAEL : No Observed Adverse Effect Level
CNS: Central Nervous System

TABLE 9.3.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Scenario Timeframe: Current/Future
Receptor Population: Recreation
Receptor Age: Older Child (6 to < 18)

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Fish	Fish Tissue	Fish Fillet	**Inorganics**					**Inorganics**					
			Antimony	NA		NA		Antimony	Whole Body/Blood	3.1E-01		NA	3.1E-01
			Arsenic (inorganic)	1.9E-06		NA	1.9E-06	Arsenic (inorganic)	Skin	3.3E-02			3.3E-02
			Chromium	NA		NA		Chromium	None reported	2.3E-02		NA	2.3E-02
			Cyanide	NA		NA		Cyanide	Whole Body/Blood	3.5E-02		NA	3.5E-02
			Manganese	NA		NA		Manganese	Central Nervous System	2.9E-03		NA	2.9E-03
			Mercury (as methylmercury)	NA		NA		Mercury (as methylmercury)	Developmental Neuropsychological Impairment	1.3E+00			1.3E+00
			Selenium	NA		NA		Selenium	Whole Body	3.6E-02		NA	3.6E-02
			Vanadium	NA		NA		Vanadium	Not Reported/Unknown	1.1E-02		NA	1.1E-02
			Zinc	NA		NA		Zinc	Blood	1.8E-02		NA	1.8E-02
			SVOCs					**SVOCs**					
			bis(2-ethylhexyl)phthalate	5.1E-07		NA	5.1E-07	bis(2-ethylhexyl)phthalate	Liver	1.4E-02		NA	1.4E-02
			Hexachlorobenzene	3.3E-07		NA	3.3E-07	Hexachlorobenzene	Liver	2.0E-03		NA	2.0E-03
			Pesticides					**Pesticides**					
			2,4'-DDE	NA		NA		2,4'-DDE		NA		NA	
			4,4'-DDD	5.1E-08		NA	5.1E-08	4,4'-DDD	Liver	5.5E-04		NA	5.5E-04
			4,4'-DDE	1.9E-07		NA	1.9E-07	4,4'-DDE	Liver	6.1E-03		NA	6.1E-03
			4,4'-DDT	5.1E-08		NA	5.1E-08	4,4'-DDT	Liver	2.4E-03		NA	2.4E-03
			Aldrin	6.9E-07		NA	6.9E-07	Aldrin	Liver	1.0E-02		NA	1.0E-02
			delta-BHC	NA		NA		delta-BHC	Liver/kidney	1.0E-03		NA	1.0E-03
			Dieldrin	9.7E-07		NA	9.7E-07	Dieldrin	Liver	9.5E-03		NA	9.5E-03
			Heptachlor epoxide	6.0E-07		NA	6.0E-07	Heptachlor epoxide	Liver	3.9E-02		NA	3.9E-02
			Sum of chlordanes	5.4E-08		NA	5.4E-08	Sum of chlordanes	Liver	2.4E-03		NA	2.4E-03
			PCBs					**PCBs**					
			Aroclor 1016	NA		NA							
			Aroclor 1242	NA		NA							
			Sum of Low MW PCBs	NA		NA		Sum of Low MW PCBs	Assumed same as Ar 1016	5.7E-01		NA	5.7E-01
			Aroclor 1248	NA		NA							
			Aroclor 1260	NA		NA							
			Aroclors 1254 & 1260	NA		NA							
			Sum of High MW PCBs	NA		NA		Sum of High MW PCBs	Assumed same as Ar 1254	2.4E+00		NA	2.4E+00
			Sum of PCBs	9.8E-06		NA	9.8E-06	Sum of PCBs	NA	NA		NA	
			PCDD/PCDFs			NA		**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	3.1E-05		NA	3.1E-05	TEQ as 2,3,7,8-TCDD	NA	NA			
			(Fish Tissue - Total)	4.6E-05		NA	4.6E-05	(Fish Tissue - Total)		4.86		NA	4.86
						Total Risk Across Fish Tissue	4.6E-05					Total Hazard Across Fish tissue	4.86

TABLE 9.3.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Northern Basin													
Sediment	Sediments	North Basin	**Inorganics**					**Inorganics**					
			Antimony	NA		NA		Antimony	Whole Body/Blood	2.3E-03		NA	2.3E-03
			Arsenic	7.6E-08		4.9E-08	1.2E-07	Arsenic	Skin	1.3E-03		8.5E-04	2.2E-03
			Barium	NA		NA		Barium	Cardiovascular System	2.2E-04		NA	2.2E-04
			Cadmium	NA		NA		Cadmium	Kidneys	2.1E-04		1.8E-04	3.9E-04
			Chromium	NA		NA		Chromium	None reported	1.1E-03		NA	1.1E-03
			Iron	NA		NA		Iron	Liver, spleen, lymph system	2.0E-03		NA	2.0E-03
			Manganese	NA		NA		Manganese	Central Nervous System	1.2E-03		NA	1.2E-03
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	2.0E-06		NA	2.0E-06
			Total Mercury	NA		NA		Total mercury	Immune System	6.4E-04		NA	6.4E-04
			Thallium	NA		NA		Thallium	NOAEL; various	4.5E-04		NA	4.5E-04
			VOCs					**VOCs**					
			Benzene	6.4E-11		NA	6.4E-11	Benzene	Immune System/Blood	3.0E-06		NA	3.0E-06
			SVOCs					**SVOCs**					
			Hexachlorobenzene	8.5E-09		1.8E-08	2.7E-08	Hexachlorobenzene	Liver	5.2E-05		1.1E-04	1.6E-04
			Benz(a)anthracene	1.6E-09		4.4E-09	5.9E-09	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	1.5E-08		4.2E-08	5.7E-08	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	2.3E-09		6.4E-09	8.7E-09	Benzo(b)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	4.6E-09		1.3E-08	1.8E-08	Dibenz(a,h)anthracene		NA		NA	
			Naphthalene	NA		NA		Naphthalene	Decreased body weight	2.0E-06		5.6E-06	7.6E-06
			PCBs					**PCBs**					
			Aroclor 1254	NA		NA		Aroclor 1254	Immune System	2.1E-04		6.4E-04	8.5E-04
			Aroclor 1268	NA		NA		Aroclor 1268	Assumed same as Ar 1254	1.8E-04		5.3E-04	7.1E-04
			Sum of PCBs	1.1E-09		3.4E-09	4.5E-09	Sum of PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	3.8E-09		2.5E-09	6.3E-09	TEQ as 2,3,7,8-TCDD		NA		NA	
			(North Basin Sediment Total)	1.1E-07		1.4E-07	2.5E-07	(North Basin Sediment Total)		0.01		0.002	0.01
Sediment	Wetland Sediments	Wetland SYW-6 (North Basin)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	1.1E-03		NA	1.1E-03
			Arsenic	1.3E-07		8.7E-08	2.2E-07	Arsenic	Skin	2.3E-03		1.5E-03	3.8E-03
			Cadmium	NA		NA		Cadmium	Kidneys	8.8E-04		7.6E-04	1.6E-03
			Chromium	NA		NA		Chromium	None reported	3.2E-03		NA	3.2E-03
			Cyanide	NA		NA		Cyanide	Whole Body/Blood	1.4E-05		NA	1.4E-05
			Iron	NA		NA		Iron	Liver, spleen, lymph system	9.6E-03		NA	9.6E-03
			Manganese	NA		NA		Manganese	Central Nervous System	1.8E-03		NA	1.8E-03
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	Immune System	1.0E-03		NA	1.0E-03
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	3.1E-05		NA	3.1E-05
			Thallium	NA		NA		Thallium	NOAEL; various	2.5E-03		NA	2.5E-03
			SVOCs					**SVOCs**					
			Benzo(a)pyrene	2.4E-06		6.7E-06	9.1E-06	Benzo(a)pyrene		NA		NA	
			2-Methylnaphthalene					2-Methylnaphthalene	Lungs/Decreased body weight	1.7E-05		4.7E-05	6.4E-05
			Acenaphthylene					Acenaphthylene	Kidney	1.3E-05		3.7E-05	5.1E-05

TABLE 9.3.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Benz(a)anthracene	2.4E-07		6.8E-07	9.3E-07	Benz(a)anthracene		NA		NA	
			Benzo(b)fluoranthene	2.9E-07		8.3E-07	1.1E-06	Benzo(b)fluoranthene		NA		NA	
			Benzo(g,h,i)perylene					Benzo(g,h,i)perylene	Kidney	5.0E-05		1.4E-04	1.9E-04
			Benzo(k)fluoranthene	1.1E-08		3.1E-08	4.1E-08	Benzo(k)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	4.2E-07		1.2E-06	1.6E-06	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	1.4E-07		3.9E-07	5.4E-07	Indeno(1,2,3-cd)pyrene		NA		NA	
			Naphthalene					Naphthalene	Decreased body weight	2.2E-05		6.1E-05	8.3E-05
			Phenanthrene					Phenanthrene	Kidney	1.1E-04		3.1E-04	4.2E-04
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	2.3E-08		1.5E-08	3.7E-08	TEQ as 2,3,7,8-TCDD		NA		NA	
			(Wetland SYW-6 Sediment Total)	3.7E-06		9.9E-06	1.4E-05	(Wetland SYW-6 Sediment Total)		0.02		0.003	0.03
Sediment	Wetland Sediments	Wetland SYW-10 (North Basin)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	9.5E-04		NA	9.5E-04
			Antimony	NA		NA		Antimony	Whole Body/Blood	1.3E-03		NA	1.3E-03
			Arsenic	2.3E-07		1.5E-07	3.8E-07	Arsenic	Skin	4.0E-03		2.6E-03	6.6E-03
			Chromium	NA		NA		Chromium	None reported	1.1E-03		NA	1.1E-03
			Iron	NA		NA		Iron	Liver, spleen, lymph system	5.5E-03		NA	5.5E-03
			Manganese	NA		NA		Manganese	Central Nervous System	1.7E-03		NA	1.7E-03
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	Immune System	9.6E-04		NA	9.6E-04
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	2.9E-05		NA	2.9E-05
			Thallium	NA		NA		Thallium	NOAEL; various	3.5E-03		NA	3.5E-03
			SVOCs					**SVOCs**					
			Benz(a)anthracene	9.8E-09		2.8E-08	3.7E-08	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	1.0E-07		2.9E-07	3.9E-07	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	8.5E-09		2.4E-08	3.2E-08	Benzo(b)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	2.4E-08		6.8E-08	9.3E-08	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	6.3E-09		1.8E-08	2.4E-08	Indeno(1,2,3-cd)pyrene		NA		NA	
			PCBs					**PCBs**					
			Aroclor 1260	NA		NA		Aroclor 1260	Assumed same as Ar 1254	1.0E-03		3.1E-03	4.1E-03
			Sum of PCBs	3.0E-09		9.1E-09	1.2E-08	Sum of PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	2.3E-08		1.5E-08	3.8E-08	TEQ as 2,3,7,8-TCDD		NA		NA	
			(Wetland SYW-10 Sediment Total)	4.1E-07		6.0E-07	1.0E-06	(Wetland SYW-10 Sediment Total)		0.02		0.006	0.03
Southern Basin													
Sediment	Sediments	South Basin	**Inorganics**					**Inorganics**					
			Aluminum					Aluminum	Skeletal, skin	6.5E-05		NA	6.5E-05
			Antimony					Antimony	Whole Body/Blood	1.2E-04		NA	1.2E-04
			Arsenic	3.8E-08		2.5E-08	6.3E-08	Arsenic	Skin	6.6E-04		4.3E-04	1.1E-03
			Barium					Barium	Cardiovascular System	2.1E-04		NA	2.1E-04
			Cadmium					Cadmium	Kidneys	6.2E-05		5.4E-05	1.2E-04
			Chromium					Chromium	None reported	1.1E-03		NA	1.1E-03
			Copper					Copper	Liver/Kidneys/Forestomach	3.8E-05		NA	3.8E-05
			Cyanide					Cyanide	Whole Body/Blood	1.2E-06		NA	1.2E-06
			Iron					Iron	Liver, spleen, lymph system	6.5E-04		NA	6.5E-04
			Lead					Lead	CNS, blood, whole body	NA		NA	

TABLE 9.3.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Manganese					Manganese	Central Nervous System Developmental	2.0E-04		NA	2.0E-04
			Methylmercury					Methylmercury	Neuropsychological Impairment	3.6E-06		NA	3.6E-06
			Total Mercury					Total mercury	Immune System	1.0E-03		NA	1.0E-03
			Nickel					Nickel	Whole Body/Major Organs	5.8E-05		NA	5.8E-05
			Thallium					Thallium	NOAEL; various	9.7E-05		NA	9.7E-05
			Vanadium					Vanadium	Not Reported/Unknown	6.8E-05		NA	6.8E-05
			VOCs					**VOCs**					
			Benzene	6.9E-09		NA	6.9E-09	Benzene	Immune System/Blood	3.3E-04		NA	3.3E-04
			Chlorobenzene					Chlorobenzene	Liver	1.4E-04		NA	1.4E-04
			Methylene chloride	1.3E-10		NA	1.3E-10	Methylene chloride	Liver	2.3E-06		NA	2.3E-06
			Xylenes					Xylenes	NOAEL; CNS	2.6E-06		NA	2.6E-06
			SVOCs					**SVOCs**					
			Hexachlorobenzene	2.2E-08		4.7E-08	6.9E-08	Hexachlorobenzene	Liver	1.3E-04		2.9E-04	4.2E-04
			Dibenzofuran					Dibenzofuran	Liver	7.2E-05		1.6E-04	2.3E-04
			1,3-Dichlorobenzene					1,3-Dichlorobenzene	Liver/Pituitary Gland	8.2E-05		1.8E-04	2.6E-04
			1,4-Dichlorobenzene	3.1E-09		6.7E-09	9.7E-09	1,4-Dichlorobenzene	Skin/Blood	3.3E-05		7.2E-05	1.1E-04
			Acenaphthylene					Acenaphthylene	Kidney	2.3E-06		6.3E-06	8.6E-06
			Benz(a)anthracene	1.5E-08		4.1E-08	5.6E-08	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	1.1E-07		3.1E-07	4.2E-07	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	1.5E-08		4.1E-08	5.6E-08	Benzo(b)fluoranthene		NA		NA	
			Benzo(ghi)perylene					Benzo(ghi)perylene	Kidney	3.4E-06		9.5E-06	1.3E-05
			Benzo(k)fluoranthene	5.3E-10		1.5E-09	2.0E-09	Benzo(k)fluoranthene		NA		NA	
			Chrysene	1.4E-10		4.0E-10	5.5E-10	Chrysene		NA		NA	
			Dibenz(a,h)anthracene	2.4E-08		6.8E-08	9.3E-08	Dibenz(a,h)anthracene		NA		NA	
			Fluoranthene					Fluoranthene	Kidney/Liver/Blood	1.3E-05		3.8E-05	5.1E-05
			Indeno(1,2,3-cd)pyrene	5.6E-09		1.6E-08	2.1E-08	Indeno(1,2,3-cd)pyrene		NA		NA	
			2-Methylnaphthalene					2-Methylnaphthalene	Lungs/Decreased body weight	1.4E-04		3.9E-04	5.3E-04
			Naphthalene					Naphthalene	Decreased body weight	8.4E-04		2.4E-03	3.2E-03
			Phenanthrene					Phenanthrene	Kidney	2.8E-05		7.8E-05	1.1E-04
			Pesticides					**Pesticides**					
			Dieldrin	2.8E-10		NA	2.8E-10	Dieldrin	Liver	2.8E-06		NA	2.8E-06
			PCBs					**PCBs**					
			Aroclor 1221					Aroclor 1221	Assumed same as Ar 1016	1.9E-05		5.6E-05	7.5E-05
			Aroclor 1242					Aroclor 1242	Assumed same as Ar 1016	7.9E-05		2.4E-04	3.2E-04
			Aroclor 1248					Aroclor 1248	Assumed same as Ar 1254	1.8E-04		5.4E-04	7.2E-04
			Aroclor 1254					Aroclor 1254	Immune System	1.1E-04		3.3E-04	4.4E-04
			Aroclor 1260					Aroclor 1260	Assumed same as Ar 1254	1.6E-04		4.8E-04	6.4E-04
			Sum of PCBs	2.2E-09		6.6E-09	8.8E-09	PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	1.2E-07		7.5E-08	1.9E-07	TEQ as 2,3,7,8-TCDD		NA		NA	
			(South Basin Sediment Total)	3.6E-07		6.4E-07	1.0E-06	(South Basin Sediment Total)		0.01		0.01	0.01
Sediment	Wetland Sediments	Wetland SYW-12 (South Basin)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	1.4E-04		NA	1.4E-04
			Arsenic	1.9E-08		1.3E-08	3.2E-08	Arsenic	Skin	3.3E-04		2.2E-04	5.5E-04
			Cadmium	NA		NA		Cadmium	Kidneys	6.5E-04		5.6E-04	1.2E-03
			Chromium	NA		NA		Chromium	None reported	1.6E-03		NA	1.6E-03

TABLE 9.3.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Copper	NA		NA		Copper	Liver/Kidneys/Forestomach	1.1E-04		NA	1.1E-04
			Cyanide	NA		NA		Cyanide	Whole Body/Blood	6.8E-07		NA	6.8E-07
			Iron	NA		NA		Iron	Liver, spleen, lymph system	9.1E-04		NA	9.1E-04
			Manganese	NA		NA		Manganese	Central Nervous System	1.8E-04		NA	1.8E-04
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	Immune System	1.6E-04		NA	1.6E-04
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	4.8E-06		NA	4.8E-06
			Thallium	NA		NA		Thallium	NOAEL; various	1.6E-04		NA	1.6E-04
			SVOCs					**SVOCs**					
			Benz(a)anthracene	7.0E-09		2.0E-08	2.6E-08	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	6.8E-08		1.9E-07	2.6E-07	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	4.7E-09		1.3E-08	1.8E-08	Benzo(b)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	2.5E-09		7.1E-09	9.7E-09	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	4.6E-09		1.3E-08	1.7E-08	Indeno(1,2,3-cd)pyrene		NA		NA	
			Phenanthrene	NA		NA		Phenanthrene	Kidney	4.0E-06		1.1E-05	1.5E-05
			PCBs					**PCBs**					
			Aroclor 1242	NA		NA		Aroclor 1242	Assumed same as Ar 1016	6.4E-05		1.9E-04	2.6E-04
			Aroclor 1254	NA		NA		Aroclor 1254	Immune System	3.4E-04		1.0E-03	1.4E-03
			Aroclor 1260	NA		NA		Aroclor 1260	Assumed same as Ar 1254	1.7E-04		5.3E-04	7.0E-04
			Sum of PCBs	1.9E-09		5.7E-09	7.6E-09	Sum of PCBs		NA		NA	
			(Wetland SYW-12 Sediment Total)	1.1E-07		2.6E-07	3.7E-07	(Wetland SYW-12 Sediment Total)		0.005		0.003	0.01
Sediment	Wetland Sediments	Wetland SYW-19 (South Basin)	**Inorganics**					**Inorganics**					
			Antimony	NA		NA		Antimony	Whole Body/Blood	1.3E-04		NA	1.3E-04
			Arsenic	2.6E-08		1.7E-08	4.3E-08	Arsenic	Skin	4.5E-04		2.9E-04	7.5E-04
			Barium	NA		NA		Barium	Cardiovascular System	1.2E-04		NA	1.2E-04
			Cadmium	NA		NA		Cadmium	Kidneys	4.7E-05		4.1E-05	8.8E-05
			Chromium	NA		NA		Chromium	None reported	3.7E-04		NA	3.7E-04
			Iron	NA		NA		Iron	Liver, spleen, lymph system	5.5E-04		NA	5.5E-04
			Manganese	NA		NA		Manganese	Central Nervous System	2.1E-04		NA	2.1E-04
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	Immune System	2.2E-03		NA	2.2E-03
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	6.8E-05		NA	6.8E-05
			SVOCs					**SVOCs**					
			1,3-Dichlorobenzene	NA		NA		1,3-Dichlorobenzene	Liver/Pituitary Gland	6.7E-05		1.4E-04	2.1E-04
			1,4-Dichlorobenzene	4.4E-10		9.4E-10	1.4E-09	1,4-Dichlorobenzene	Skin/Blood	4.7E-06		1.0E-05	1.5E-05
			Hexachlorobenzene	9.1E-09		2.0E-08	2.9E-08	Hexachlorobenzene	Liver	5.5E-05		1.2E-04	1.7E-04
			Benz(a)anthracene	1.7E-08		4.8E-08	6.5E-08	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	1.6E-07		4.4E-07	5.9E-07	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	1.4E-08		3.8E-08	5.2E-08	Benzo(b)fluoranthene		NA		NA	
			Benzo(g,h,i)perylene	NA		NA		Benzo(g,h,i)perylene	Kidney	3.0E-06		8.3E-06	1.1E-05
			Benzo(k)fluoranthene	1.2E-09		3.3E-09	4.5E-09	Benzo(k)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	4.0E-08		1.1E-07	1.5E-07	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	9.0E-09		2.5E-08	3.4E-08	Indeno(1,2,3-cd)pyrene		NA		NA	
			Phenanthrene	NA		NA		Phenanthrene	Kidney	8.8E-06		2.5E-05	3.3E-05

TABLE 9.3.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Pesticides					**Pesticides**					
			Aldrin	1.3E-09		NA	1.3E-09	Aldrin	Liver	2.0E-05		NA	2.0E-05
			Dieldrin	9.6E-10		NA	9.6E-10	Dieldrin	Liver	9.3E-06		NA	9.3E-06
			PCBs					**PCBs**					
			Aroclor 1242	NA		NA		Aroclor 1242	Assumed same as Ar 1016	1.6E-04		4.9E-04	6.5E-04
			Aroclor 1254	NA		NA		Aroclor 1254	Immune System	4.9E-04		1.5E-03	2.0E-03
			Aroclor 1260	NA		NA		Aroclor 1260	Assumed same as Ar 1254	2.5E-04		7.6E-04	1.0E-03
			Sum of PCBs	2.7E-09		8.3E-09	1.1E-08	Sum of PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	2.7E-07		1.8E-07	4.5E-07	TEQ as 2,3,7,8-TCDD		NA		NA	
			(Wetland SYW-19 Sediment Total	5.5E-07		8.8E-07	1.4E-06	(Wetland SYW-19 Sediment Total)		0.01		0.003	0.01
						Total Risk Across Sediment	1.8E-05					Total Hazard Across Sediment	0.09
Soil	Surface Soils	Dredge Spoil Soils (0-3.5 ft)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	1.2E-03		NA	1.2E-03
			Arsenic	1.7E-07		1.1E-07	2.7E-07	Arsenic	Skin	2.9E-03		1.8E-03	4.7E-03
			Chromium	NA		NA		Chromium	None reported	1.0E-03		NA	1.0E-03
			Iron	NA		NA		Iron	Liver, spleen, lymph system	5.8E-03		NA	5.8E-03
			Manganese	NA		NA		Manganese	Central Nervous System	1.5E-03		NA	1.5E-03
			Total Mercury	NA		NA		Total Mercury	Immune System	1.4E-03		NA	1.4E-03
			SVOCs					**SVOCs**					
			Benzo(a)pyrene	1.2E-08		3.5E-08	4.7E-08	Benzo(a)pyrene		NA		NA	
			Hexachlorobenzene	8.6E-09		1.9E-08	2.7E-08	Hexachlorobenzene	Liver	5.2E-05		1.1E-04	1.7E-04
			(Dredge Spoils - Surface Total)	1.9E-07		1.6E-07	3.5E-07	(Dredge Spoils - Surface Total)		0.01		0.002	0.02
Soil	Subsurface Soils	Dredge Spoil Soils (0-11.7 ft)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	NA	NA		NA	
			Arsenic	NA		NA		Arsenic	NA	NA		NA	
			Cadmium	NA		NA		Cadmium	NA	NA		NA	
			Chromium	NA		NA		Chromium	NA	NA		NA	
			Cyanide	NA		NA		Cyanide	NA	NA		NA	
			Iron	NA		NA		Iron	NA	NA		NA	
			Manganese	NA		NA		Manganese	NA	NA		NA	
			Total Mercury	NA		NA		Total Mercury	NA	NA		NA	
			Thallium	NA		NA		Thallium	NA	NA		NA	
			SVOCs					**SVOCs**					
			Benz(a)anthracene	NA		NA		Benz(a)anthracene	NA	NA		NA	
			Benzo(a)pyrene	NA		NA		Benzo(a)pyrene	NA	NA		NA	
			Benzo(b)fluoranthene	NA		NA		Benzo(b)fluoranthene	NA	NA		NA	
			Benzo(g,h,i)perylene	NA		NA		Benzo(g,h,i)perylene	NA	NA		NA	
			Benzo(k)fluoranthene	NA		NA		Benzo(k)fluoranthene	NA	NA		NA	
			Dibenz(a,h)anthracene	NA		NA		Dibenz(a,h)anthracene	NA	NA		NA	
			Hexachlorobenzene	NA		NA		Hexachlorobenzene	NA	NA		NA	
			Indeno(1,2,3-cd)pyrene	NA		NA		Indeno(1,2,3-cd)pyrene	NA	NA		NA	
			Naphthalene	NA		NA		Naphthalene	NA	NA		NA	
			Phenanthrene	NA		NA		Phenanthrene	NA	NA		NA	
			PCBs					**PCBs**					
			Aroclor 1254	NA		NA		Aroclor 1254	NA	NA		NA	
			Aroclor 1268	NA		NA		Aroclor 1268	NA	NA		NA	
			Sum of PCBs	NA		NA		Sum of PCBs	NA	NA		NA	

TABLE 9.3.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	NA		NA		TEQ as 2,3,7,8-TCDD	NA	NA		NA	
			(Dredge Spoils - Subsurface Total)	NA		NA		(Dredge Spoils - Subsurface Total)	NA	NA		NA	
						Total Risk Across Dredge Spoil Soils	3.5E-07					Total Hazard Across Dredge Spoil Soils	0.02
Surface Water	Surface Water	Onondaga Lake	**Inorganics**					**Inorganics**					
			Cadmium	NA		NA		Cadmium	Kidneys	2.3E-04		2.3E-03	2.6E-03
			Chromium	NA		NA		Chromium	None reported	8.0E-05		1.7E-03	1.7E-03
			Manganese	NA		NA		Manganese	Central Nervous System	5.9E-05		3.9E-04	4.5E-04
			Methylmercury	NA		NA		Methylmercury	Developmental / Neuropsychological Impairment	1.4E-06		3.5E-07	1.7E-06
			Total Mercury	NA		NA		Total mercury	Immune System	2.8E-06		1.0E-05	1.3E-05
			VOCs					**VOCs**					
			Benzene	4.3E-10		2.6E-09	3.0E-09	Benzene	Immune System/Blood	2.0E-05		1.7E-04	1.9E-04
			Chlorobenzene	NA		NA		Chlorobenzene	Liver	3.2E-06		6.2E-05	6.6E-05
			Chloroform	NA		NA		Chloroform	Liver	6.7E-06		3.3E-05	3.9E-05
			SVOCs					**SVOCs**					
			Bromodichloromethane	2.0E-10		6.4E-10	8.4E-10	Bromodichloromethane	Kidney	1.2E-06		5.6E-06	6.8E-06
			1,2-Dichlorobenzene	NA		NA		1,2-Dichlorobenzene	NOAEL	6.6E-07		2.5E-05	2.5E-05
			1,3-Dichlorobenzene	NA		NA		1,3-Dichlorobenzene	Liver/Pituitary Gland	6.1E-05		3.3E-03	3.3E-03
			1,4-Dichlorobenzene	1.9E-10		5.4E-09	5.6E-09	1,4-Dichlorobenzene	Skin/Blood	2.1E-06		8.0E-05	8.2E-05
			1,2,4-Trichlorobenzene	NA		NA		1,2,4-Trichlorobenzene	Adrenal/Liver/Kidney	5.9E-06		4.1E-04	4.1E-04
			(Surface Water - Total)	8.1E-10		8.6E-09	9.4E-09	(Surface Water - Total)		0.0005		0.008	0.01
						Total Risk Across Surface Water	9.4E-09					Total Hazard Across Surface Water	0.01
						Total Risk Across All Media and All Exposure Routes	6.4E-05					Total Hazard Index Across All Media and All Exposure Routes	4.98

Total [Lungs] HI =	0.001	Total [DNI] HI =	1.34	Total [Kidney] HI =	0.01
Total [Immune System] HI =	2.42	Total [Birth Weight] HI =	0.57	Total [CNS] HI =	0.01
Total [Skin] HI =	0.06	Total [NOAEL] HI =	0.01	Total [Liver] HI =	0.12

Total [Blood] HI =	0.37
Total [Body Weight] HI =	0.004
Total [Whole Body] HI =	0.38

Note: (1) Based on an exposure of 30 years the carcinogenic risk is 2E-03.
(2) N/A = Risk or hazard not calculated
(3) Primary Target Organ for Aroclor 1016 is Reduced Birth Weight and for Aroclor 1254 is Immune System.
(4) Sediment total includes northern and southern basin sediments and all 4 wetlands
(5) Target Organ Totals: DNI: Developmental Neuropsychological Impairment
NOAEL : No Observed Adverse Effect Level
CNS: Central Nervous System

TABLE 9.4.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Fish	Fish Tissue	Fish Fillet	**Inorganics**					**Inorganics**					
			Antimony	NA		NA		Antimony	NA	NA		NA	
			Arsenic	NA		NA		Arsenic	NA	NA		NA	
			Chromium	NA		NA		Chromium	NA	NA		NA	
			Cyanide	NA		NA		Cyanide	NA	NA		NA	
			Manganese	NA		NA		Manganese	NA	NA		NA	
			Mercury (as methylmercury)	NA		NA		Mercury (as methylmercury)	NA	NA		NA	
			Selenium	NA		NA		Selenium	NA	NA		NA	
			Vanadium	NA		NA		Vanadium	NA	NA		NA	
			Zinc	NA		NA		Zinc	NA	NA		NA	
			SVOCs					**SVOCs**					
			bis(2-ethylhexyl)phthalate	NA		NA		bis(2-ethylhexyl)phthalate	NA	NA		NA	
			Hexachlorobenzene	NA		NA		Hexachlorobenzene	NA	NA		NA	
			Pesticides					**Pesticides**					
			2,4'-DDE	NA		NA		2,4'-DDE	NA	NA		NA	
			4,4'-DDD	NA		NA		4,4'-DDD	NA	NA		NA	
			4,4'-DDE	NA		NA		4,4'-DDE	NA	NA		NA	
			4,4'-DDT	NA		NA		4,4'-DDT	NA	NA		NA	
			Aldrin	NA		NA		Aldrin	NA	NA		NA	
			delta-BHC	NA		NA		delta-BHC	NA	NA		NA	
			Dieldrin	NA		NA		Dieldrin	NA	NA		NA	
			Heptachlor epoxide	NA		NA		Heptachlor epoxide	NA	NA		NA	
			Sum of chlordanes	NA		NA		Sum of chlordanes	NA	NA		NA	
			PCBs					**PCBs**					
			Aroclor 1016	NA		NA		Aroclor 1016	NA	NA		NA	
			Aroclor 1242	NA		NA		Aroclor 1242	NA	NA		NA	
			Sum of Low MW PCBs	NA		NA		Sum of Low MW PCBs	NA	NA		NA	
			Aroclor 1248	NA		NA		Aroclor 1248	NA	NA		NA	
			Aroclor 1260	NA		NA		Aroclor 1260	NA	NA		NA	
			Aroclors 1254 & 1260	NA		NA		Aroclors 1254 & 1260	NA	NA		NA	
			Sum of High MW PCBs	NA		NA		Sum of High MW PCBs	NA	NA		NA	
			Sum of PCBs	NA		NA		Sum of PCBs	NA	NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	NA		NA		TEQ as 2,3,7,8-TCDD	NA	NA		NA	
						Total Risk Across Fish Tissue						Total Hazard Across Fish Tissue	

TABLE 9.4.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Northern Basin													
Sediment	Sediments	North Basin	**Inorganics**					**Inorganics**					
			Antimony	NA		NA		Antimony	Whole Body/Blood	3.0E-03		NA	3.0E-03
			Arsenic	2.1E-08		2.2E-09	2.4E-08	Arsenic	Skin	1.7E-03		1.7E-04	1.8E-03
			Barium	NA		NA		Barium	Cardiovascular System	2.8E-04		NA	2.8E-04
			Cadmium	NA		NA		Cadmium	Kidneys	2.6E-04		3.6E-05	3.0E-04
			Chromium	NA		NA		Chromium	None reported	1.4E-03		NA	1.4E-03
			Iron	NA		NA		Iron	Liver, spleen, lymph system	2.5E-03		NA	2.5E-03
			Manganese	NA		NA		Manganese	Central Nervous System	1.5E-03		NA	1.5E-03
			Methylmercury	NA		NA		Methylmercury	Developmental/ Neuropsychological Impairment	2.6E-06		NA	2.6E-06
			Total Mercury	NA		NA		Total mercury	Immune System	8.1E-04		NA	8.1E-04
			Thallium	NA		NA		Thallium	NOAEL; various	5.7E-04		NA	5.7E-04
			VOCs					**VOCs**					
			Benzene	1.8E-11		NA	1.8E-11	Benzene	Immune System/Blood	3.8E-06		NA	3.8E-06
			SVOCs					**SVOCs**					
			Benz(a)anthracene	4.4E-10		2.0E-10	6.4E-10	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	4.2E-09		1.9E-09	6.1E-09	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	6.4E-10		2.9E-10	9.3E-10	Benzo(b)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	1.3E-09		5.8E-10	1.9E-09	Dibenz(a,h)anthracene		NA		NA	
			Hexachlorobenzene	2.4E-09		8.3E-10	3.2E-09	Hexachlorobenzene	Liver	6.6E-05		2.3E-05	8.8E-05
			Naphthalene	NA		NA		Naphthalene	Decreased body weight	2.5E-06		1.1E-06	3.6E-06
			PCBs					**PCBs**					
			Aroclor 1254	NA		NA		Aroclor 1254	Immune System	2.7E-04		1.3E-04	3.9E-04
			Aroclor 1268	NA		NA		Aroclor 1268	Assumed same as Ar 1254	2.2E-04		1.1E-04	3.3E-04
			Sum of PCBs	3.2E-10		1.5E-10	4.7E-10	Sum of PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	1.1E-09		1.1E-10	1.2E-09	TEQ as 2,3,7,8-TCDD		NA		NA	
			(North Basin Sediment Total)	3.2E-08		6.3E-09	3.8E-08	(North Basin Sediment Total)		0.01		0.0005	0.01
Sediment	Wetland Sediments	Wetland SYW-6 (North Basin)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	1.4E-03		NA	1.4E-03
			Arsenic	3.8E-08		3.9E-09	4.2E-08	Arsenic	Skin	2.9E-03		3.0E-04	3.2E-03
			Cadmium	NA		NA		Cadmium	Kidneys	1.1E-03		1.5E-04	1.3E-03
			Chromium	NA		NA		Chromium	None reported	4.0E-03		NA	4.0E-03
			Cyanide	NA		NA		Cyanide	Whole Body/Blood	1.8E-05		NA	1.8E-05
			Iron	NA		NA		Iron	Liver, spleen, lymph system	1.2E-02		NA	1.2E-02
			Manganese	NA		NA		Manganese	Central Nervous System	2.3E-03		NA	2.3E-03
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	Immune System	1.3E-03		NA	1.3E-03
			Methylmercury	NA		NA		Methylmercury	Developmental/ Neuropsychological Impairment	3.9E-05		NA	3.9E-05
			Thallium	NA		NA		Thallium	NOAEL; various	3.2E-03		NA	3.2E-03
			SVOCs					**SVOCs**					
			Benzo(a)pyrene	6.7E-07		3.0E-07	9.8E-07	Benzo(a)pyrene		NA		NA	
			2-Methylnaphthalene					2-Methylnaphthalene	Lungs/Decreased body weight	2.1E-05		9.5E-06	3.1E-05
			Acenaphthylene					Acenaphthylene	Kidney	1.7E-05		7.6E-06	2.4E-05
			Benz(a)anthracene	6.9E-08		3.1E-08	9.9E-08	Benz(a)anthracene		NA		NA	
			Benzo(b)fluoranthene	8.3E-08		3.7E-08	1.2E-07	Benzo(b)fluoranthene		NA		NA	
			Benzo(g,h,i)perylene					Benzo(g,h,i)perylene	Kidney	6.3E-05		2.8E-05	9.2E-05
			Benzo(k)fluoranthene	3.1E-09		1.4E-09	4.4E-09	Benzo(k)fluoranthene		NA		NA	

TABLE 9.4.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Dibenz(a,h)anthracene	1.2E-07		5.4E-08	1.7E-07	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	4.0E-08		1.8E-08	5.7E-08	Indeno(1,2,3-cd)pyrene		NA		NA	
			Naphthalene					Naphthalene	Decreased body weight	2.8E-05		1.2E-05	4.0E-05
			Phenanthrene					Phenanthrene	Kidney	1.4E-04		6.3E-05	2.0E-04
			PCDD/PCDFs					PCDD/PCDFs					
			TEQ as 2,3,7,8-TCDD	6.4E-09		6.6E-10	7.0E-09	TEQ as 2,3,7,8-TCDD		NA		NA	
			(Wetland SYW-6 Sediment Total)	1.0E-06		4.5E-07	1.5E-06	(Wetland SYW-6 Sediment Total)		0.03		0.001	0.03
Sediment	Wetland Sediments	Wetland SYW-10 (North Basin)	Inorganics					Inorganics					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	1.2E-03		NA	1.2E-03
			Antimony	NA		NA		Antimony	Whole Body/Blood	1.7E-03		NA	1.7E-03
			Arsenic	6.5E-08		NA	6.5E-08	Arsenic	Skin	5.0E-03		5.2E-04	5.6E-03
			Chromium	NA		NA		Chromium	None reported	1.4E-03		NA	1.4E-03
			Iron	NA		NA		Iron	Liver, spleen, lymph system	6.9E-03		NA	6.9E-03
			Manganese	NA		NA		Manganese	Central Nervous System	2.2E-03		NA	2.2E-03
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	Immune System	1.2E-03		NA	1.2E-03
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	3.7E-05		NA	3.7E-05
			Thallium	NA		NA		Thallium	NOAEL; various	4.4E-03		NA	4.4E-03
			SVOCs					SVOCs					
			Benz(a)anthracene	2.8E-09		1.2E-09	4.0E-09	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	2.9E-08		1.3E-08	4.2E-08	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	2.4E-09		1.1E-09	3.5E-09	Benzo(b)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	6.9E-09		3.1E-09	9.9E-09	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	1.8E-09		7.9E-10	2.6E-09	Indeno(1,2,3-cd)pyrene		NA		NA	
			PCBs					PCBs					
			Aroclor 1260	NA		NA		Aroclor 1260	Assumed same as Ar 1254	1.3E-03		6.3E-04	1.9E-03
			Sum of PCBs	8.4E-10		4.1E-10	1.3E-09	Sum of PCBs		NA		NA	
			PCDD/PCDFs					PCDD/PCDFs					
			TEQ as 2,3,7,8-TCDD	6.5E-09		6.8E-10	7.2E-09	TEQ as 2,3,7,8-TCDD		NA		NA	
			(Wetland SYW-10 Sediment Total)	1.1E-07		2.0E-08	1.4E-07	(Wetland SYW-10 Sediment Total)		0.03		0.001	0.03
Southern Basin													
Sediment	Sediments	South Basin	Inorganics					Inorganics					
			Aluminum					Aluminum	Skeletal, skin	5.3E-04		NA	5.3E-04
			Antimony					Antimony	Whole Body/Blood	9.8E-04		NA	9.8E-04
			Arsenic	6.9E-08		7.1E-09	7.6E-08	Arsenic	Skin	5.3E-03		5.5E-04	5.9E-03
			Barium					Barium	Cardiovascular System	1.7E-03		NA	1.7E-03
			Cadmium					Cadmium	Kidneys	5.0E-04		7.0E-05	5.7E-04
			Chromium					Chromium	None reported	8.8E-03		NA	8.8E-03
			Copper					Copper	Liver/Kidneys/Forestomach	3.1E-04		NA	3.1E-04
			Cyanide					Cyanide	Whole Body/Blood	9.8E-06		NA	9.8E-06
			Iron					Iron	Liver, spleen, lymph system	5.3E-03		NA	5.3E-03
			Lead					Lead	CNS, blood, whole body	NA		NA	
			Manganese					Manganese	Central Nervous System	1.6E-03		NA	1.6E-03
			Methylmercury					Methylmercury	Developmental Neuropsychological Impairment	2.9E-05		NA	2.9E-05
			Total Mercury					Total mercury	Immune System	8.1E-03		NA	8.1E-03
			Nickel					Nickel	Whole Body/Major Organs	4.7E-04		NA	4.7E-04
			Thallium					Thallium	NOAEL; various	7.9E-04		NA	7.9E-04

TABLE 9.4.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Vanadium					Vanadium	Not Reported/Unknown	5.5E-04		NA	5.5E-04
			VOCs					**VOCs**					
			Benzene	1.2E-08		NA	1.2E-08	Benzene	Immune System/Blood	2.6E-03		NA	2.6E-03
			Chlorobenzene					Chlorobenzene	Liver	1.2E-03		NA	1.2E-03
			Methylene chloride	2.4E-10		NA	2.4E-10	Methylene chloride	Liver	1.8E-05		NA	1.8E-05
			Xylenes					Xylenes	NOAEL; CNS	2.1E-05		NA	2.1E-05
			SVOCs					**SVOCs**					
			Hexachlorobenzene	3.9E-08		1.4E-08	5.3E-08	Hexachlorobenzene	Liver	1.1E-03		3.7E-04	1.4E-03
			Dibenzofuran					Dibenzofuran	Liver	5.8E-04		2.0E-04	7.8E-04
			1,3-Dichlorobenzene					1,3-Dichlorobenzene	Liver/Pituitary Gland	6.7E-04		2.3E-04	9.0E-04
			1,4-Dichlorobenzene	5.6E-09		1.9E-09	7.5E-09	1,4-Dichlorobenzene	Skin/Blood	2.7E-04		9.3E-05	3.6E-04
			Acenaphthylene					Acenaphthylene	Kidney	1.8E-05		8.2E-06	2.6E-05
			Benz(a)anthracene	2.6E-08		1.2E-08	3.8E-08	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	2.0E-07		9.0E-08	2.9E-07	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	2.6E-08		1.2E-08	3.8E-08	Benzo(b)fluoranthene		NA		NA	
			Benzo(ghi)perylene					Benzo(ghi)perylene	Kidney	2.8E-05		1.2E-05	4.0E-05
			Benzo(k)fluoranthene	9.6E-10		4.3E-10	1.4E-09	Benzo(k)fluoranthene		NA		NA	
			Chrysene	2.6E-10		1.2E-10	3.8E-10	Chrysene		NA		NA	
			Dibenz(a,h)anthracene	4.4E-08		2.0E-08	6.4E-08	Dibenz(a,h)anthracene		NA		NA	
			Fluoranthene					Fluoranthene	Kidney/Liver/Blood	1.1E-04		4.9E-05	1.6E-04
			Indeno(1,2,3-cd)pyrene	1.0E-08		4.6E-09	1.5E-08	Indeno(1,2,3-cd)pyrene		NA		NA	
			2-Methylnaphthalene					2-Methylnaphthalene	Lungs/Decreased body weight	1.1E-03		5.1E-04	1.7E-03
			Naphthalene					Naphthalene	Decreased body weight	6.8E-03		3.1E-03	9.8E-03
			Phenanthrene					Phenanthrene	Kidney	2.3E-04		1.0E-04	3.3E-04
			Pesticides					**Pesticides**					
			Dieldrin	5.1E-10		NA	5.1E-10	Dieldrin	Liver	2.2E-05		NA	2.2E-05
			PCBs					**PCBs**					
			Aroclor 1221					Aroclor 1221	Assumed same as Ar 1016	1.5E-04		7.3E-05	2.2E-04
			Aroclor 1242					Aroclor 1242	Assumed same as Ar 1016	6.4E-04		3.1E-04	9.5E-04
			Aroclor 1248					Aroclor 1248	Assumed same as Ar 1254	1.5E-03		7.0E-04	2.2E-03
			Aroclor 1254					Aroclor 1254	Immune System	9.0E-04		4.3E-04	1.3E-03
			Aroclor 1260					Aroclor 1260	Assumed same as Ar 1254	1.3E-03		6.3E-04	1.9E-03
			Sum of PCBs	3.9E-09		1.9E-09	5.8E-09	PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	2.1E-07		2.2E-08	2.3E-07	TEQ as 2,3,7,8-TCDD		NA		NA	
			(South Basin Sediment Total)	6.5E-07		1.8E-07	8.3E-07	(South Basin Sediment Total)		0.05		0.007	0.06
Sediment	Wetland Sediments	Wetland SYW-12 (South Basin)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	1.1E-03		NA	1.1E-03
			Arsenic	3.5E-08		3.6E-09	3.8E-08	Arsenic	Skin	2.7E-03		2.8E-04	3.0E-03
			Cadmium	NA		NA		Cadmium	Kidneys	5.3E-03		7.3E-04	6.0E-03
			Chromium	NA		NA		Chromium	None reported	1.3E-02		NA	1.3E-02
			Copper	NA		NA		Copper	Liver/Kidneys/Forestomach	8.6E-04		NA	8.6E-04
			Cyanide	NA		NA		Cyanide	Whole Body/Blood	5.5E-06		NA	5.5E-06
			Iron	NA		NA		Iron	Liver, spleen, lymph system	7.4E-03		NA	7.4E-03
			Manganese	NA		NA		Manganese	Central Nervous System	1.5E-03		NA	1.5E-03
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	Immune System	1.3E-03		NA	1.3E-03
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	3.9E-05		NA	3.9E-05

TABLE 9.4.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Thallium	NA		NA		Thallium	NOAEL; various	1.3E-03		NA	1.3E-03
			SVOCs					**SVOCs**					
			Benz(a)anthracene	1.3E-08		5.6E-09	1.8E-08	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	1.2E-07		5.5E-08	1.8E-07	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	8.5E-09		3.8E-09	1.2E-08	Benzo(b)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	4.6E-09		2.1E-09	6.6E-09	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	8.2E-09		3.7E-09	1.2E-08	Indeno(1,2,3-cd)pyrene		NA		NA	
			Phenanthrene	NA		NA		Phenanthrene	Kidney	3.2E-05		1.4E-05	4.6E-05
			PCBs					**PCBs**					
			Aroclor 1242	NA		NA		Aroclor 1242	Assumed same as Ar 1016	5.2E-04		2.5E-04	7.6E-04
			Aroclor 1254	NA		NA		Aroclor 1254	Immune System	2.7E-03		1.3E-03	4.0E-03
			Aroclor 1260	NA		NA		Aroclor 1260	Assumed same as Ar 1254	1.4E-03		6.8E-04	2.1E-03
			Sum of PCBs	3.4E-09		1.6E-09	5.0E-09	Sum of PCBs		NA		NA	
			(Wetland SYW-12 Sediment Total)	1.9E-07		7.5E-08	2.7E-07	(Wetland SYW-12 Sediment Total)		0.04		0.003	0.04
Sediment	Wetland Sediments	Wetland SYW-19 (South Basin)	**Inorganics**					**Inorganics**					
			Antimony	NA		NA		Antimony	Whole Body/Blood	1.1E-03		NA	1.1E-03
			Arsenic	4.7E-08		4.9E-09	5.2E-08	Arsenic	Skin	3.7E-03		3.8E-04	4.1E-03
			Barium	NA		NA		Barium	Cardiovascular System	9.4E-04		NA	9.4E-04
			Cadmium	NA		NA		Cadmium	Kidneys	3.8E-04		5.3E-05	4.3E-04
			Chromium	NA		NA		Chromium	None reported	3.0E-03		NA	3.0E-03
			Iron	NA		NA		Iron	Liver, spleen, lymph system	4.5E-03		NA	4.5E-03
			Manganese	NA		NA		Manganese	Central Nervous System	1.7E-03		NA	1.7E-03
			Mercury(inorganic)	NA		NA		Mercury(inorganic)	Immune System	1.8E-02		NA	1.8E-02
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	5.5E-04		NA	5.5E-04
			SVOCs					**SVOCs**					
			1,3-Dichlorobenzene	NA		NA		1,3-Dichlorobenzene	Liver/Pituitary Gland	5.4E-04		1.9E-04	7.3E-04
			1,4-Dichlorobenzene	7.9E-10		2.7E-10	1.1E-09	1,4-Dichlorobenzene	Skin/Blood	3.8E-05		1.3E-05	5.2E-05
			Hexachlorobenzene	1.6E-08		5.7E-09	2.2E-08	Hexachlorobenzene	Liver	4.5E-04		1.6E-04	6.0E-04
			Benz(a)anthracene	3.1E-08		1.4E-08	4.4E-08	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	2.8E-07		1.3E-07	4.1E-07	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	2.4E-08		1.1E-08	3.5E-08	Benzo(b)fluoranthene		NA		NA	
			Benzo(g,h,i)perylene	NA		NA		Benzo(g,h,i)perylene	Kidney	2.4E-05		1.1E-05	3.5E-05
			Benzo(k)fluoranthene	2.1E-09		9.6E-10	3.1E-09	Benzo(k)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	7.1E-08		3.2E-08	1.0E-07	Dibenz(a,h)anthracene		NA		NA	
			Indeno(1,2,3-cd)pyrene	1.6E-08		7.3E-09	2.3E-08	Indeno(1,2,3-cd)pyrene		NA		NA	
			Phenanthrene	NA		NA		Phenanthrene	Kidney	7.1E-05		3.2E-05	1.0E-04
			Pesticides					**Pesticides**					
			Aldrin	2.4E-09		NA	2.4E-09	Aldrin	Liver	1.7E-04		NA	1.7E-04
			Dieldrin	1.7E-09		NA	1.7E-09	Dieldrin	Liver	7.6E-05		NA	7.6E-05
			PCBs					**PCBs**					
			Aroclor 1242	NA		NA		Aroclor 1242	Assumed same as Ar 1016	1.3E-03		6.3E-04	1.9E-03
			Aroclor 1254	NA		NA		Aroclor 1254	Immune System	4.0E-03		1.9E-03	5.9E-03
			Aroclor 1260	NA		NA		Aroclor 1260	Assumed same as Ar 1254	2.0E-03		9.8E-04	3.0E-03
			Sum of PCBs	4.9E-09		2.4E-09	7.3E-09	Sum of PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	4.9E-07		5.1E-08	5.4E-07	TEQ as 2,3,7,8-TCDD		NA		NA	
			(Wetland SYW-19 Sediment Total)	9.9E-07		2.5E-07	1.2E-06	(Wetland SYW-19 Sediment Total)		0.04		0.004	0.05
						Total Risk Across Seciment	4.0E-06					Total Hazard Across Sediment	0.22

TABLE 9.4.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soils	Dredge Spoil Soils (0-3.5 ft)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	1.6E-03		NA	1.6E-03
			Arsenic	4.6E-08		4.8E-09	5.1E-08	Arsenic	Skin	3.6E-03		3.7E-04	4.0E-03
			Chromium	NA		NA		Chromium	None reported	1.3E-03		NA	1.3E-03
			Iron	NA		NA		Iron	Liver, spleen, lymph system	7.4E-03		NA	7.4E-03
			Manganese	NA		NA		Manganese	Central Nervous System	2.0E-03		NA	2.0E-03
			Total Mercury	NA		NA		Total Mercury	Immune System	1.7E-03		NA	1.7E-03
			SVOCs					**SVOCs**					
			Benzo(a)pyrene	3.5E-09		1.6E-09	5.1E-09	Benzo(a)pyrene		NA		NA	
			Hexachlorobenzene	2.4E-09		8.4E-10	3.3E-09	Hexachlorobenzene	Liver	6.6E-05		2.3E-05	8.9E-05
			(Dredge Spoils - Surface Total)	5.2E-08		7.2E-09	6.0E-08	(Dredge Spoils - Surface Total)		0.02		0.0004	0.02
Soil	Subsurface Soils	Dredge Spoil Soils (0-11.7 ft)	**Inorganics**					**Inorganics**					
			Aluminum	NA		NA		Aluminum	Skeletal, skin	1.3E-03		NA	1.3E-03
			Arsenic	4.8E-08		5.0E-09	5.3E-08	Arsenic	Skin	3.8E-03		3.9E-04	4.1E-03
			Cadmium	NA		NA		Cadmium	Kidneys	1.3E-04		1.7E-05	1.4E-04
			Chromium	NA		NA		Chromium	None reported	1.1E-03		NA	1.1E-03
			Cyanide	NA		NA		Cyanide	Whole Body/Blood	5.4E-06		NA	5.4E-06
			Iron	NA		NA		Iron	Liver, spleen, lymph system	6.5E-03		NA	6.5E-03
			Manganese	NA		NA		Manganese	Central Nervous System	2.1E-03		NA	2.1E-03
			Total Mercury	NA		NA		Total Mercury	Immune System	2.1E-02		NA	2.1E-02
			Thallium	NA		NA		Thallium	NOAEL; various	9.6E-04		NA	9.6E-04
			SVOCs					**SVOCs**					
			Benz(a)anthracene	6.7E-09		3.0E-09	9.7E-09	Benz(a)anthracene		NA		NA	
			Benzo(a)pyrene	7.1E-08		3.2E-08	1.0E-07	Benzo(a)pyrene		NA		NA	
			Benzo(b)fluoranthene	6.1E-09		2.8E-09	8.9E-09	Benzo(b)fluoranthene		NA		NA	
			Benzo(g,h,i)perylene	NA		NA		Benzo(g,h,i)perylene	Kidney	5.6E-06		2.5E-06	8.1E-06
			Benzo(k)fluoranthene	6.2E-10		2.8E-10	8.9E-10	Benzo(k)fluoranthene		NA		NA	
			Dibenz(a,h)anthracene	1.6E-08		7.4E-09	2.4E-08	Dibenz(a,h)anthracene		NA		NA	
			Hexachlorobenzene	1.3E-09		4.6E-10	1.8E-09	Hexachlorobenzene	Liver	3.6E-05		1.3E-05	4.9E-05
			Indeno(1,2,3-cd)pyrene	3.5E-09		1.6E-09	5.0E-09	Indeno(1,2,3-cd)pyrene		NA		NA	
			Naphthalene	NA		NA		Naphthalene	Decreased body weight	1.8E-05		8.2E-06	2.7E-05
			Phenanthrene	NA		NA		Phenanthrene	Kidney	5.1E-06		2.3E-06	7.4E-06
			PCBs					**PCBs**					
			Aroclor 1254	NA		NA		Aroclor 1254	Immune System	1.3E-03		6.5E-04	2.0E-03
			Aroclor 1268	NA		NA		Aroclor 1268	Assumed same as Ar 1254	2.3E-03		1.1E-03	3.5E-03
			Sum of PCBs	2.3E-09		1.1E-09	3.5E-09	Sum of PCBs		NA		NA	
			PCDD/PCDFs					**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	2.4E-08		2.5E-09	2.7E-08	TEQ as 2,3,7,8-TCDD		NA		NA	
			(Dredge Spoils - Subsurface Total)	1.8E-07		5.6E-08	2.4E-07	(Dredge Spoils - Subsurface Total)		0.04		0.00	0.04
						Total Risk Across Dredge Spoils	2.4E-07					Total Hazard Across Dredge Spoils	0.04
Surface Water	Surface Water	Onondaga Lake	**Inorganics**					**Inorganics**					
			Cadmium	NA		NA		Cadmium	Kidneys	5.2E-06		9.9E-05	1.0E-04
			Chromium	NA		NA		Chromium	None reported	1.8E-06		7.0E-05	7.1E-05
			Manganese	NA		NA		Manganese	Central Nervous System	1.4E-06		1.6E-05	1.8E-05
			Methylmercury	NA		NA		Methylmercury	Developmental Neuropsychological Impairment	3.1E-08		1.5E-08	4.6E-08

TABLE 9.4.CT
Summary of Receptor Risks and Hazards for COPCs
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Total Mercury	NA		NA		Total mercury	Immune System	6.5E-08		4.4E-07	5.0E-07
			VOCs					VOCs					
			Benzene	2.2E-12		3.4E-11	3.6E-11	Benzene	Immune System/Blood	4.6E-07		1.8E-05	1.8E-05
			Chlorobenzene	NA		NA		Chlorobenzene	Liver	7.5E-08		7.3E-06	7.4E-06
			Chloroform	NA		NA		Chloroform	Liver	1.5E-07		3.4E-06	3.6E-06
			SVOCs					SVOCs					
			Bromodichloromethane	1.0E-12		8.0E-12	9.0E-12	Bromodichloromethane	Kidney	2.8E-08		5.6E-07	5.9E-07
			1,2-Dichlorobenzene	NA		NA		1,2-Dichlorobenzene	NOAEL	1.5E-08		2.4E-06	2.5E-06
			1,3-Dichlorobenzene	NA		NA		1,3-Dichlorobenzene	Liver/Pituitary Gland	1.4E-06		3.2E-04	3.2E-04
			1,4-Dichlorobenzene	9.9E-13		6.5E-11	6.6E-11	1,4-Dichlorobenzene	Skin/Blood	4.8E-08		7.9E-06	8.0E-06
			1,2,4-Trichlorobenzene	NA		NA		1,2,4-Trichlorobenzene	Adrenal/Liver/Kidney	1.4E-07		4.4E-05	4.4E-05
			(Surface Water - Total)	4.2E-12		1.1E-10	1.1E-10	(Surface Water - Total)		0.00001		0.001	0.001
							Total Risk Across Surface Water: 1.1E-10						Total Hazard Across Surface Water: 0.001
							Total Risk Across All Media and All Exposure Routes: 4.2E-06						Total Hazard Index Across All Media and All Exposure Routes: 0.26

Total [Lungs] HI =	0.002	Total [DNI] HI =	0.00070	Total [Kidney] HI =	0.01	Total [Blood] HI =	0.01
Total [Immune System] HI =	0.08	Total [Birth Weight] HI =	0.004	Total [CNS] HI =	0.01	Total [Body Weight] HI =	0.012
Total [Skin] HI =	0.04	Total [NOAEL] HI =	0.01	Total [Liver] HI =	0.06	Total [Whole Body] HI =	0.007

Note: (1) Based on an exposure of 30 years the carcinogenic risk is 2E-03.
(2) N/A = Risk or hazard not calculated
(3) Primary Target Organ for Aroclor 1016 is Reduced Birth Weight and for Aroclor 1254 is Immune System.
(4) Sediment total includes northern and southern basin sediments and all 4 wetlands
(5) Target Organ Totals: DNI: Developmental Neuropsychological Impairment
NOAEL : No Observed Adverse Effect Level
CNS: Central Nervous System

TABLE 10.1.RME
Risk Assessment Summary
Reasonable Maximum Exposure
Onondaga Lake

Scenario Timeframe: Current/Future
Receptor Population: Recreation
Receptor Age: Adult (18 and older)

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Fish	Fish Tissue	Fish Fillet	**Inorganics**					**Inorganics**					
			Arsenic (inorganic)	1.8E-05		NA	1.8E-05						
			Manganese	NA		NA							
			Mercury (as methylmercury)	NA		NA		Mercury (as methylmercury)	Developmental Neuropsychological Impairment	3.9		NA	3.9
			SVOCs	NA									
			bis(2-ethylhexyl)phthalate	4.9E-06		NA	4.9E-06						
			Hexachlorobenzene	3.2E-06		NA	3.2E-06						
			Pesticides	NA									
			4,4'-DDE	1.8E-06		NA	1.8E-06						
			Aldrin	6.6E-06		NA	6.6E-06						
			delta-BHC	NA		NA							
			Dieldrin	9.3E-06		NA	9.3E-06						
			Heptachlor epoxide	5.8E-06		NA	5.8E-06						
			PCBs	NA				**PCBs (3)**					
			Sum of Low MW PCBs	NA		NA		Sum of Low MW PCBs	Assumed same as Ar 1016	2.4		NA	2.4
			Aroclor 1248	NA		NA		Aroclor 1248	Assumed same as Ar 1254	-		-	
			Sum of High MW PCBs	NA		NA		Sum of High MW PCBs	Assumed same as Ar 1254	10.3		NA	10.3
			Sum of PCBs	2.8E-04		NA	2.8E-04						
			PCDD/PCDFs	NA									
			TEQ as 2,3,7,8-TCDD	4.5E-04		NA	4.5E-04						
			(Fish Tissue - Total)	7.8E-04		NA	7.8E-04	(Fish Tissue - Total)		16.6		NA	16.6
						Total Risk Across Fish Tissue	7.8E-04					Total Hazard Across Fish Tissue	16.6

TABLE 10.1.RME
Risk Assessment Summary
Reasonable Maximum Exposure
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Northern Basin													
Sediment	Sediments	North Basin					Note 1 1.3E-06						Note 2
Sediment	Wetland Sediments	Wetland SYW-6 (North Basin)	**Inorganics**										
			Arsenic	7.5E-07		3.9E-07	1.1E-06						
			SVOCs										
			Benzo(a)pyrene	1.3E-05		3.0E-05	4.3E-05						
			2-Methylnaphthalene										
			Acenaphthylene										
			Benz(a)anthracene	1.4E-06		3.0E-06	4.4E-06						
			Benzo(b)fluoranthene	1.7E-06		3.7E-06	5.3E-06						
			Benzo(g,h,i)perylene										
			Benzo(k)fluoranthene	6.1E-08		1.4E-07	2.0E-07						
			Dibenz(a,h)anthracene	2.4E-06		5.3E-06	7.7E-06						
			Indeno(1,2,3-cd)pyrene	7.9E-07		1.8E-06	2.6E-06						
			Naphthalene										
			Phenanthrene										
			(Wetland SYW-6 Sediment Total)	2.0E-05		4.4E-05	6.5E-05						Note 2
Sediment	Wetland Sediments	Wetland SYW-10 (North Basin)	**Inorganics**										
			Arsenic	1.3E-06		6.7E-07	2.0E-06						
			SVOCs										
			Benzo(a)pyrene	5.8E-07		1.3E-06	1.9E-06						
			(Wetland SYW-10 Sediment Total)	1.9E-06		1.9E-06	3.8E-06						Note 2
Southern Basin													
Sediment	Sediments	South Basin	**Inorganics**										
			SVOCs										
			Benzo(a)pyrene	1.3E-06		2.8E-06	4.1E-06						
			PCDD/PCDFs										
			TEQ as 2,3,7,8-TCDD	1.3E-06		6.8E-07	2.0E-06						
			(South Basin Sediment Total)	2.6E-06		3.5E-06	6.1E-06						Note 2
Sediment	Wetland Sediments	Wetland SYW-12 (South Basin)	**Inorganics**										
			SVOCs										
			Benzo(a)pyrene	7.8E-07		1.7E-06	2.5E-06						
			(Wetland SYW-12 Sediment Total)	7.8E-07		1.7E-06	2.5E-06						Note 2

TABLE 10.1.RME
Risk Assessment Summary
Reasonable Maximum Exposure
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Wetland Sediments	Wetland SYW-19 (South Basin)	**Inorganics**										
			SVOCs										
			Benzo(a)pyrene	1.8E-06		4.0E-06	5.7E-06						
			Dibenz(a,h)anthracene	4.5E-07		1.0E-06	1.5E-06						
			PCDD/PCDFs										
			TEQ as 2,3,7,8-TCDD	3.1E-06		1.6E-06	4.7E-06						
			(Wetland SYW-19 Sediment Total)	5.3E-06		6.6E-06	1.2E-05						Note 2
						Total Risk Across Sediment	8.9E-05					Total Hazard Across Sediment	Note 2
Soil	Surface Soils	Dredge Spoil Soils (0-3.5 ft)	**Inorganics**										
			Arsenic	9.3E-07		4.8E-07	1.4E-06						
			(Dredge Spoils - Surface Total)	9.3E-07		4.8E-07	1.4E-06						Note 2
Soil	Subsurface Soils	Dredge Spoil Soils (0-11.7 ft)					NA						NA
						Total Risk across Dredge Spoils	1.4E-06					Total Hazard across Dredge Spoils	Note 2
Surface Water	Surface Water	Onondaga Lake					Note 2						
						Total Risk Across Surface Water	Note 2					Total Hazard Across Surface Water	Note 2
						Total Risk Across All Media and All Exposure Routes	8.7E-04					Total Hazard Index Across All Media and All Exposure Routes	16.6

Total [Lungs] HI =		Total [DNI] HI =	3.9	Total [Kidney] HI =	Total [Blood] HI =
Total [Immune System] HI =	10.3	Total [Birth Weight] HI =	2.4	Total [CNS] HI =	Total [Body Weight] HI =
Total [Skin] HI =		Total [NOAEL] HI =		Total [Liver] HI =	Total [Whole Body] HI =

Note: (1) Total Exposure exceeds target levels, but no individual chemicals exceed target levels. Not included in risk and hazard totals
(2) Total Cancer Risk or Non-Cancer hazard does not exceed target levels
(3) Primary Target Organ for Aroclor 1016 is Reduced Birth Weight and for Aroclor 1254 is Immune System.
(4) Sediment total includes northern and southern basin sediments and all 4 wetlands
(5) Target Organ Totals: DNI: Developmental Neuropsychological Impairment
NOAEL : No Observed Adverse Effect Level
CNS: Central Nervous System

TABLE 10.2.RME
Risk Assessment Summary
Reasonable Maximum Exposure
Onondaga Lake

Scenario Timeframe: Current/Future
Receptor Population: Recreation
Receptor Age: Young Child (less than 6)

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Fish	Fish Tissue	Fish Fillet	**Inorganics**					**Inorganics**					
			Arsenic (inorganic)	5.7E-06		NA	5.7E-06	Antimony	Whole Body/Blood	1.4		NA	1.4
								Mercury (as methylmercury)	Developmental Neuropsychological Impairment	6.0		NA	6.0
			SVOCs										
			bis(2-ethylhexyl)phthalate	1.5E-06		NA	1.5E-06						
			Pesticides										
			Aldrin	2.0E-06		NA	2.0E-06						
			Dieldrin	2.9E-06		NA	2.9E-06						
			Heptachlor epoxide	1.8E-06		NA	1.8E-06						
			PCBs					**PCBs**					
								Sum of Low MW PCBs	Assumed same as Ar 1016	3.8		NA	3.8
								Sum of High MW PCBs	Assumed same as Ar 1254	16.0		NA	16.0
			Sum of PCBs	8.7E-05		NA	8.7E-05						
			PCDD/PCDFs										
			TEQ as 2,3,7,8-TCDD	1.4E-04		NA	1.4E-04						
			(Fish Tissue - Total)	2.4E-04		NA	2.4E-04	(Fish Tissue - Total)		27.2		NA	27.2
						Total Risk Across Fish Tissue	2.4E-04					Total Hazard Across Fish Tissue	27.2

TABLE 10.2.RME
Risk Assessment Summary
Reasonable Maximum Exposure
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Northern Basin													
Sediment	Sediments	North Basin	**Inorganics**										
			Arsenic	8.0E-07		9.0E-07	1.7E-06						
			(North Basin Sediment Total)	8.0E-07		9.0E-07	1.7E-06						Note 2
Sediment	Wetland Sediments	Wetland SYW 6 (North Basin)					NA						NA
Sediment	Sediments	10 (North					NA						NA
Southern Basin													
Sediment	Sediments	South Basin	**Inorganics**										
			Arsenic	8.1E-07		9.2E-07	1.7E-06						
			SVOCs										
			Hexachlorobenzene	4.7E-07		1.8E-06	2.2E-06						
			Benz(a)anthracene	3.1E-07		1.5E-06	1.8E-06						
			Benzo(a)pyrene	2.4E-06		1.2E-05	1.4E-05						
			Benzo(b)fluoranthene	3.1E-07		1.5E-06	1.9E-06						
			Dibenz(a,h)anthracene	5.2E-07		2.6E-06	3.1E-06						
			PCDD/PCDFs										
			TEQ as 2,3,7,8-TCDD	2.5E-06		2.8E-06	5.3E-06						
			(South Basin Sediment Total)	7.3E-06		2.3E-05	3.0E-05						Note 2
Sediment	Wetland Sediments	Wetland SYW 12 (South Basin)					NA						NA
Sediment	Wetland Sediments	Wetland SYW 19 (South Basin)					NA						NA
						Total Risk Across Sediment	3.2E-05					Total Hazard Across Sediment	Note 2
Soil	Surface Soils	Dredge Spoil Soils (0-3.5 ft)					NA						NA
Soil	Subsurface Soils	Dredge Spoil Soils (0-11.7 ft)					NA						NA
						Total Risk Across Dredge Spoil Soils	NA					Total Hazard Across Dredge Spoil Soils	NA
Surface Water	Surface Water	Onondaga Lake					Note 2						Note 2

TABLE 10.2.RME
Risk Assessment Summary
Reasonable Maximum Exposure
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
						Total Risk Across Surface Water	Note 2					Total Hazard Across Surface Water	Note 2
						Total Risk Across All Media and All Exposure Routes	2.7E-04					Total Hazard Index Across All Media and All Exposure Routes	27.2

Total [Lungs] HI =		Total [DNI] HI =	6.0	Total [Kidney] HI =		Total [Blood] HI =	1.4
Total [Immune System] HI =	16.0	Total [Birth Weight] HI =	3.8	Total [CNS] HI =		Total [Body Weight] HI =	
Total [Skin] HI =		Total [NOAEL] HI =		Total [Liver] HI =		Total [Whole Body] HI =	1.4

Note: (1) Total Exposure exceeds target levels, but no individual chemicals exceed target levels. Not included in risk and hazard totals
(2) Total Cancer Risk or Non-Cancer hazard does not exceed target levels
(3) Primary Target Organ for Aroclor 1016 is Reduced Birth Weight and for Aroclor 1254 is Immune System.
(4) Sediment total includes northern and southern basin sediments and all 4 wetlands
(5) Target Organ Totals: DNI: Developmental Neuropsychological Impairment
NOAEL : No Observed Adverse Effect Level
CNS: Central Nervous System

TABLE 10.3.RME
Risk Assessment Summary
Reasonable Maximum Exposure
Onondaga Lake

Scenario Timeframe: Current/Future
Receptor Population: Recreation
Receptor Age: Older Child (6 to < 18)

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Fish	Fish Tissue	Fish Fillet	**Inorganics**					**Inorganics**					
			Arsenic (inorganic)	8.0E-06		NA	8.0E-06						
								Mercury (as methylmercury)	Developmental Neuropsychological Impairment	4.2		NA	4.2
			SVOCs										
			bis(2-ethylhexyl)phthalate	2.1E-06		NA	2.1E-06						
			Hexachlorobenzene	1.4E-06		NA	1.4E-06						
			Pesticides										
			Aldrin	2.9E-06		NA	2.9E-06						
			delta-BHC	NA		NA							
			Dieldrin	4.1E-06		NA	4.1E-06						
			Heptachlor epoxide	2.5E-06		NA	2.5E-06						
			PCBs										
								Sum of Low MW PCBs	Assumed same as Ar 1016	2.6		NA	2.6
								Sum of High MW PCBs	Assumed same as Ar 1254	11.2		NA	11.2
			Sum of PCBs	1.2E-04		NA	1.2E-04	Sum of PCBs	NA	NA		NA	
			PCDD/PCDFs										
			TEQ as 2,3,7,8-TCDD	2.0E-04		NA	2.0E-04						
			(Fish Tissue - Total)	3.4E-04			3.4E-04	(Fish Tissue - Total)		18.0			18.0
						Total Risk Across Fish Tissue	3.4E-04					Total Hazard Across Fish Tissue	18.0

TABLE 10.3.RME
Risk Assessment Summary
Reasonable Maximum Exposure
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Northern Basin													
Sediment	Sediments	North Basin	**Inorganics**										
			Arsenic	2.8E-07		1.2E-06	1.5E-06						
			SVOCs										
			Benzo(a)pyrene	5.5E-08		1.0E-06	1.1E-06						
			(North Basin Sediment Total)	3.3E-07		2.3E-06	2.6E-06						Note 2
Sediment	Wetland Sediments	Wetland SYW-6 (North Basin)	**Inorganics**										
			Arsenic	4.9E-07		2.1E-06	2.6E-06						
			SVOCs										
			Benzo(a)pyrene	8.8E-06		1.7E-04	1.8E-04						
			Benz(a)anthracene	8.9E-07		1.7E-05	1.8E-05						
			Benzo(b)fluoranthene	1.1E-06		2.0E-05	2.2E-05						
			Dibenz(a,h)anthracene	1.6E-06		2.9E-05	3.1E-05						
			Indeno(1,2,3-cd)pyrene	5.2E-07		9.8E-06	1.0E-05						
			(Wetland SYW-6 Sediment Total)	1.3E-05		2.4E-04	2.6E-04						Note 2
Sediment	Wetland Sediments	Wetland SYW-10 (North Basin)	**Inorganics**										
			Arsenic	8.5E-07		3.7E-06	4.5E-06						
			SVOCs										
			Benzo(a)pyrene	3.8E-07		7.1E-06	7.5E-06						
			Dibenz(a,h)anthracene	8.9E-08		1.7E-06	1.8E-06						
			(Wetland SYW-10 Sediment Total)	1.3E-06		1.3E-05	1.4E-05						Note 2
Southern Basin													
Sediment	Sediments	South Basin	**Inorganics**										
			Arsenic	2.8E-07		1.2E-06	1.5E-06						
			SVOCs										
			Hexachlorobenzene	1.6E-07		2.4E-06	2.5E-06						
			Benz(a)anthracene	1.1E-07		2.1E-06	2.2E-06						
			Benzo(a)pyrene	8.3E-07		1.6E-05	1.6E-05						
			Benzo(b)fluoranthene	1.1E-07		2.1E-06	2.2E-06						
			Dibenz(a,h)anthracene	1.8E-07		3.4E-06	3.6E-06						
			PCDD/PCDFs										
			TEQ as 2,3,7,8-TCDD	8.6E-07		3.8E-06	4.6E-06						
			(South Basin Sediment Total)	2.5E-06		3.1E-05	3.3E-05						Note 2
Sediment	Wetland Sediments	Wetland SYW-12 (South Basin)	**Inorganics**										
			SVOCs										
			Benz(a)anthracene	5.2E-08		9.8E-07	1.0E-06						
			Benzo(a)pyrene	5.1E-07		9.6E-06	1.0E-05						
			(Wetland SYW-12 Sediment Total)	5.6E-07		1.1E-05	1.1E-05						Note 2

TABLE 10.3.RME
Risk Assessment Summary
Reasonable Maximum Exposure
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Wetland Sediments	Wetland SYW-19 (South Basin)	**Inorganics**										
			Arsenic	2.0E-07		8.6E-07	1.1E-06						
			SVOCs										
			Hexachlorobenzene	6.8E-08		9.9E-07	1.1E-06						
			Benz(a)anthracene	1.3E-07		2.4E-06	2.5E-06						
			Benzo(a)pyrene	1.2E-06		2.2E-05	2.3E-05						
			Benzo(b)fluoranthene	1.0E-07		1.9E-06	2.0E-06						
			Dibenz(a,h)anthracene	3.0E-07		5.6E-06	5.9E-06						
			Indeno(1,2,3-cd)pyrene	6.7E-08		1.3E-06	1.3E-06						
			PCDD/PCDFs										
			TEQ as 2,3,7,8-TCDD	2.0E-06		8.8E-06	1.1E-05						
			(Wetland SYW-19 Sediment Total)	4.0E-06		4.4E-05	4.8E-05						Note 2
							Total Risk Across Sediment	3.7E-04					Total Hazard Across Sediment	Note 2
Soil	Surface Soils	Dredge Spoil Soils (0-3.5 ft)	**Inorganics**										
			Arsenic	6.1E-07		2.6E-06	3.3E-06						
			(Dredge Spoils - Surface Total)	6.1E-07		2.6E-06	3.3E-06						Note 2
Soil	Subsurface Soils	Dredge Spoil Soils (0-11.7 ft)					NA						NA
							Total Risk Across Dredge Spoils	3.3E-06					Total Hazard Across Dredge Spoils	Note 2
Surface Water	Surface Water	Onondaga Lake					Note 2						Note 2
							Total Risk Across Surface Water	Note 2					Total Hazard Across Surface Water	Note 2
							Total Risk Across All Media and All Exposure Routes	7.1E-04					Total Risk Across All Media and All Exposure Routes	18.0

Total [Lungs] HI =		Total [DNI] HI =	4.2	Total [Kidney] HI =		Total [Blood] HI =	
Total [Immune System] HI =	11.2	Total [Birth Weight] HI =	2.6	Total [CNS] HI =		Total [Body Weight] HI =	
Total [Skin] HI =		Total [NOAEL] HI =		Total [Liver] HI =		Total [Whole Body] HI =	

Note: (1) Total Exposure exceeds target levels, but no individual chemicals exceed target levels. Not included in risk and hazard totals
(2) Total Cancer Risk or Non-Cancer hazard does not exceed target levels
(3) Primary Target Organ for Aroclor 1016 is Reduced Birth Weight and for Aroclor 1254 is Immune System.
(4) Sediment total includes northern and southern basin sediments and all 4 wetlands
(5) Target Organ Totals: DNI: Developmental Neuropsychological Impairment
NOAEL : No Observed Adverse Effect Level
CNS: Central Nervous System

TABLE 10.4.RME
Risk Assessment Summary
Reasonable Maximum Exposure
Onondaga Lake

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Fish	Fish Tissue	Fish Fillet					NA						NA
						Total Risk Across Fish Tissue	NA					Total Hazard Across Fish Tissue	NA
Northern Basin													
Sediment	Sediments	North Basin					Note 2						Note 2
Sediment	Wetland Sediments	Wetland SYW-6 (North Basin)	**Inorganics**										
			SVOCs										
			Benzo(a)pyrene	1.7E-06		3.4E-06	5.1E-06						
			(Wetland SYW-6 Sediment Total)	1.7E-06		3.4E-06	5.1E-06						Note 2
Sediment	Wetland Sediments	Wetland SYW-10 (North Basin)					Note 2						Note 2
Southern Basin													
Sediment	Sediments	South Basin	**Inorganics**										
			SVOCs										
			Benzo(a)pyrene	5.0E-07		1.0E-06	1.5E-06						
			(South Basin Sediment Total)	5.0E-07		1.0E-06	1.5E-06						Note 2
Sediment	Wetland Sediments	Wetland SYW-12 (South Basin)					Note 1 7.6E-06						Note 2
Sediment	Wetland Sediments	Wetland SYW-19 (South Basin)	**Inorganics**										
			SVOCs										
			Benzo(a)pyrene	7.0E-07		1.4E-06	2.1E-06						
			PCDD/PCDFs										
			TEQ as 2,3,7,8-TCDD	1.2E-06		5.7E-07	1.8E-06						
			(Wetland SYW-19 Sediment Total)	1.9E-06		2.0E-06	3.9E-06						Note 2
						Total Risk Across Sediment	1.0E-05					Total Hazard Across Sediment	Note 2
Soil	Surface Soils	Dredge Spoil Soils (0-3.5 ft)					Note 2						Note 2
Soil	Subsurface Soils	Dredge Spoil Soils (0-11.7 ft)					Note 1 1.1E-06						Note 2

TABLE 10.4.RME
Risk Assessment Summary
Reasonable Maximum Exposure
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
				Total Rick Across Dredge Spoils			1.1E-06			Total Hazard Across Dredge Spoils			Note 2
Surface Water	Surface Water	Onondaga Lake					Note 2						Note 2
				Total Risk Across Surface Water			Note 2					Total Hazard Across Surface Water	Note 2
				Total Risk Across All Media and All Exposure Routes			1.2E-05					Total Hazard Index Across All Media and All Exposure Routes	Note 2

Total [Lungs] HI =		Total [DNI] HI =		Total [Kidney] HI =		Total [Blood] HI =	
Total [Immune System] HI =		Total [Birth Weight] HI =		Total [CNS] HI =		Total [Body Weight] HI =	
Total [Skin] HI =		Total [NOAEL] HI =		Total [Liver] HI =		Total [Whole Body] HI =	

Note: (1) Total Exposure exceeds target levels, but no individual chemicals exceed target levels. Not included in risk and hazard totals
(2) Total Cancer Risk or Non-Cancer hazard does not exceed target levels
(3) Primary Target Organ for Aroclor 1016 is Reduced Birth Weight and for Aroclor 1254 is Immune System.
(4) Sediment total includes northern and southern basin sediments and all 4 wetlands
(5) Target Organ Totals: DNI: Developmental Neuropsychological Impairment
NOAEL : No Observed Adverse Effect Level
CNS: Central Nervous System

TABLE 10.1.CT
Risk Assessment Summary
Central Tendency
Onondaga Lake

Scenario Timeframe: Current/Future
Receptor Population: Recreation
Receptor Age: Adult (18 and older)

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Fish	Fish Tissue	Fish Fillet	**Inorganics**					**Inorganics**					
			Arsenic (inorganic)	1.8E-06		NA	1.8E-06						
								Mercury (as methylmercury)	Developmental Neuropsychological Impairment	1.2			1.2
						NA							
			PCBs			NA		**PCBs**					
				NA		NA		Sum of High MW PCBs	Assumed same as Ar 1254	2.2		NA	2.2
			Sum of PCBs	9.0E-06		NA	9.0E-06						
			PCDD/PCDFs			NA							
			TEQ as 2,3,7,8-TCDD	2.9E-05		NA	2.9E-05						
			(Fish Tissue - Total)	4.0E-05		NA	4.0E-05	(Fish Tissue - Total)		3.4		NA	3.4
						Total Risk Across Fish Fillet	4.0E-05					Total Hazard Across Fish Fillet	3.4
Northern Basin													
Sediment	Sediments	North Basin					Note 2						Note 2
Sediment	Wetland Sediments	Wetland SYW-6 (North Basin)											
			SVOCs										
			Benzo(a)pyrene	1.5E-06		3.3E-06	4.7E-06						
			(Wetland SYW-6 Sediment Total)	1.5E-06		3.3E-06	4.7E-06						Note 2
Sediment	Wetland Sediments	Wetland SYW-10 (North Basin)					Note 2						Note 2
Southern Basin													
Sediment	Sediments	South Basin					Note 2						Note 2
Sediment	Wetland Sediments	Wetland SYW-12 (South Basin)					Note 2						Note 2
Sediment	Wetland Sediments	Wetland SYW-19 (South Basin)					Note 2						Note 2
						Total Risk Across Sediment	4.7E-06					Total Hazard Across Sediment	Note 2
Soil	Surface Soils	Dredge Spoil Soils (0-3.5 ft)					Note 2						Note 2

TABLE 10.1.CT
Risk Assessment Summary
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Subsurface Soils	Dredge Spoil Soils (0-11.7 ft)	Inorganics				NA						NA
			Total Risk Across Dredge Spoil Soils				Note 2					Total Hazard Across Dredge Spoil Soils	Note 2
Surface Water	Surface Water	Onondaga Lake	Inorganics				Note 2						Note 2
			Total Risk Across Surface Water				Note 2					Total Hazard Across Surface Water	Note 2
			Total Risk Across All Media and All Exposure Routes				4.4E-05					Total Hazard Index Across All Media and All Exposure Routes	3.4

Total [Lungs] HI =		Total [DNI] HI =	1.2	Total [Kidney] HI =		Total [Blood] HI =	
Total [Immune System] HI =	2.2	Total [Birth Weight] HI =		Total [CNS] HI =		Total [Body Weight] HI =	
Total [Skin] HI =		Total [NOAEL] HI =		Total [Liver] HI =		Total [Whole Body] HI =	

Note: (1) Total Exposure exceeds target levels, but no individual chemicals exceed target levels. Not included in risk and hazard totals
(2) Total Cancer Risk or Non-Cancer hazard does not exceed target levels
(3) Primary Target Organ for Aroclor 1016 is Reduced Birth Weight and for Aroclor 1254 is Immune System.
(4) Sediment total includes northern and southern basin sediments and all 4 wetlands
(5) Target Organ Totals: DNI: Developmental Neuropsychological Impairment
NOAEL : No Observed Adverse Effect Level
CNS: Central Nervous System

TABLE 10.2.CT
Risk Assessment Summary
Central Tendency
Onondaga Lake

Scenario Timeframe: Current/Future
Receptor Population: Recreation
Receptor Age: Young Child (less than 6)

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Fish	Fish Tissue	Fish Fillet	**Inorganics**					**Inorganics**					
			Arsenic (inorganic)	1.8E-06		NA	1.8E-06						
			Mercury (as methylmercury)	NA		NA		Mercury (as methylmercury)	Developmental Neuropsychological Impairment	1.9			1.9
			PCBs					**PCBs**					
			Sum of Low MW PCBs	NA		NA		Sum of Low MW PCBs	Assumed same as Ar 1016	0.8		NA	0.8
			Sum of High MW PCBs	NA		NA		Sum of High MW PCBs	Assumed same as Ar 1254	3.4		NA	3.4
			Sum of PCBs	9.3E-06		NA	9.3E-06						
			PCDD/PCDFs										
			TEQ as 2,3,7,8-TCDD	3.0E-05		NA	3.0E-05						
			(Fish Tissue - Total)	4.1E-05		NA	4.1E-05	(Fish Tissue - Total)		6.2		NA	6.2
							Total Risk Across Fish Tissue						Total Hazard Across Fish Tissue
Northern Basin													
Sediment	Sediments	North Basin					Note 2						Note 2
Sediment	Wetland Sediments	Wetland SYW-6 (North Basin)					NA						NA
Sediment	Wetland Sediments	Wetland SYW-10 (North Basin)					NA						NA
Southern Basin													
Sediment	Sediments	South Basin					Note 1 2.0E-06						Note 2
Sediment	Wetland Sediments	Wetland SYW-12 (South Basin)					NA						NA
Sediment	Wetland Sediments	Wetland SYW-19 (South Basin)					NA						NA
							Total Risks Across Sediments						Total Hazard Across Sediments
Soil	Surface Soils	Dredge Spoil Soils (0-3.5 ft)					NA						NA
Soil	Subsurface Soils	Dredge Spoil Soils (0-11.7 ft)					NA						NA
							Total Risks Across Dredge Spoil Soils						Total Hazard Across Dredge Spoil Soils

TABLE 10.2.CT
Risk Assessment Summary
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Water	Surface Water	Onondaga Lake					Note 2						Note 2

Total Risk Across Surface Water	Note 2
Total Risk Across All Media and All Exposure Routes	4.1E-05

Total Hazard Across Surface Water	Note 2
Total Hazard Index Across All Media and All Exposure Routes	6.2

Total [Lungs] HI =		Total [DNI] HI =	1.9	Total [Kidney] HI =		Total [Blood] HI =	
Total [Immune System] HI =	3.4	Total [Birth Weight] HI =	0.8	Total [CNS] HI =		Total [Body Weight] HI =	
Total [Skin] HI =		Total [NOAEL] HI =		Total [Liver] HI =		Total [Whole Body] HI =	

Note: (1) Total Exposure exceeds target levels, but no individual chemicals exceed target levels. Not included in risk and hazard totals
(2) Total Cancer Risk or Non-Cancer hazard does not exceed target levels
(3) Primary Target Organ for Aroclor 1016 is Reduced Birth Weight and for Aroclor 1254 is Immune System.
(4) Sediment total includes northern and southern basin sediments and all 4 wetlands
(5) Target Organ Totals: DNI: Developmental Neuropsychological Impairment
NOAEL : No Observed Adverse Effect Level
CNS: Central Nervous System

TABLE 10.3.CT
Risk Assessment Summary
Central Tendency
Onondaga Lake

Scenario Timeframe: Current/Future
Receptor Population: Recreation
Receptor Age: Older Child (6 to < 18)

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Fish	Fish Tissue	Fish Fillet	**Inorganics**					**Inorganics**					
			Arsenic (inorganic)	1.9E-06		NA	1.9E-06						
								Mercury (as methylmercury)	Developmental Neuropsychological Impairment	1.3			1.3
			PCBs					**PCBs**					
								Sum of High MW PCBs	Assumed same as Ar 1254	2.4		NA	2.4
			Sum of PCBs	9.8E-06		NA	9.8E-06						
			PCDD/PCDFs			NA		**PCDD/PCDFs**					
			TEQ as 2,3,7,8-TCDD	3.1E-05		NA	3.1E-05						
			(Fish Tissue - Total)	4.3E-05		NA	4.3E-05	(Fish Tissue - Total)		3.7		NA	3.7
						Total Risk Across Fish Tissue	4.3E-05					Total Hazard Across Fish tissue	3.7
Northern Basin													
Sediment	Sediments	North Basin					Note 2						Note 2
Sediment	Wetland Sediments	Wetland SYW-6 (North Basin)	**Inorganics**										
			SVOCs										
			Benzo(a)pyrene	2.4E-06		6.7E-06	9.1E-06						
			Benzo(b)fluoranthene	2.9E-07		8.3E-07	1.1E-06						
			Dibenz(a,h)anthracene	4.2E-07		1.2E-06	1.6E-06						
			(Wetland SYW-6 Sediment Total)	3.1E-06		8.7E-06	1.2E-05						Note 2
Sediment	Wetland Sediments	Wetland SYW-10 (North Basin)					Note 1 1.0E-06						Note 2
Southern Basin													
Sediment	Sediments	South Basin					Note 1 1.0E-06						Note 2
Sediment	Wetland Sediments	Wetland SYW-12 (South Basin)					Note 2						Note 2
Sediment	Wetland Sediments	Wetland SYW-19 (South Basin)					Note 1 1.4E-06						Note 2
						Total Risk Across Sediment	1.2E-05					Total Hazard Across Sediment	Note 2

TABLE 10.3.CT
Risk Assessment Summary
Central Tendency
Onondaga Lake

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soils	Dredge Spoil Soils (0-3.5 ft)					Note 2						Note 2
Soil	Subsurface Soils	Dredge Spoil Soils (0-11.7 ft)					NA						NA
				Total Risk Across Dredge Spoil Soils			Note 2			Total Hazards Across Dredge Spoil Soils			Note 2
Surface Water	Surface Water	Onondaga Lake					Note 2						Note 2
				Total Risk Across Surface Water			Note 2			Total Hazard Across Surface Water			Note 2
				Total Risk Across All Media and All Exposure Routes			5.5E-05			Total Hazard Index Across All Media and All Exposure Routes			3.7

Total [Lungs] HI =		Total [DNI] HI =		Total [Kidney] HI =		Total [Blood] HI =	
Total [Immune System] HI =		Total [Birth Weight] HI =		Total [CNS] HI =		Total [Body Weight] HI =	
Total [Skin] HI =		Total [NOAEL] HI =		Total [Liver] HI =		Total [Whole Body] HI =	

Note: (1) Total Exposure exceeds target levels, but no individual chemicals exceed target levels. Not included in risk and hazard totals
(2) Total Cancer Risk or Non-Cancer hazard does not exceed target levels
(3) Primary Target Organ for Aroclor 1016 is Reduced Birth Weight and for Aroclor 1254 is Immune System.
(4) Sediment total includes northern and southern basin sediments and all 4 wetlands
(5) Target Organ Totals: DNI: Developmental Neuropsychological Impairment
NOAEL : No Observed Adverse Effect Level
CNS: Central Nervous System

TABLE 10.4.CT
Risk Assessment Summary
Central Tendency
Onondaga Lake

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Fish	Fish Tissue	Fish Fillet					NA						NA
						Total Risk Across Fish Tissue	NA					Total Hazard Across Fish Tissue	NA
Northern Basin													
Sediment	Sediments	North Basin					Note 2						Note 2
Sediment	Wetland Sediments	Wetland SYW-6 (North Basin)					Note 1 1.5E-06						Note 2
Sediment	Wetland Sediments	Wetland SYW-10 (North Basin)					Note 2						Note 2
Southern Basin													
Sediment	Sediments	South Basin					Note 2						Note 2
Sediment	Wetland Sediments	Wetland SYW-12 (South Basin)					Note 2						Note 2
Sediment	Wetland Sediments	Wetland SYW-19 (South Basin)					Note 1 1.2E-06						Note 2
						Total Risk Across Sediment	Note 1					Total Hazard Across Sediment	Note 2
Soil	Surface Soils	Dredge Spoil Soils (0-3.5 ft)					Note 2						Note 2
Soil	Subsurface Soils	Dredge Spoil Soils (0-11.7 ft)					Note 2						Note 2
						Total Risk Across Dredge Spoils	Note 2					Total Hazard Across Dredge Spoils	Note 2
Surface Water	Surface Water	Onondaga Lake					Note 2						Note 2
						Total Risk Across Surface Water	Note 2					Total Hazard Across Surface Water	Note 2
						Total Risk Across All Media and All Exposure Routes	Note 1					Total Hazard Index Across All Media and All Exposure Routes	Note 2

Total [Lungs] HI =		Total [DNI] HI =		Total [Kidney] HI =		Total [Blood] HI =	
Total [Immune System] HI =		Total [Birth Weight] HI =		Total [CNS] HI =		Total [Body Weight] HI =	
Total [Skin] HI =		Total [NOAEL] HI =		Total [Liver] HI =		Total [Whole Body] HI =	

Note: (1) Total Exposure exceeds target levels, but no individual chemicals exceed target levels. Not included in risk and hazard totals
(2) Total Cancer Risk or Non-Cancer hazard does not exceed target levels
(3) Primary Target Organ for Aroclor 1016 is Reduced Birth Weight and for Aroclor 1254 is Immune System.
(4) Sediment total includes northern and southern basin sediments and all 4 wetlands
(5) Target Organ Totals: DNI: Developmental Neuropsychological Impairment
NOAEL : No Observed Adverse Effect Level
CNS: Central Nervous System

Appendix C

USEPA Region 3 and Region 9 Screening Values

Section C.1

USEPA Region 3 Screening Values

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

SUBJECT: Risk-Based Concentration Table **DATE:** 4/2/2002

FROM: Jennifer Hubbard, Toxicologist
Superfund Technical Support Section (3HS41)

TO: RBC Table Users

Attached is the EPA Region III Risk-Based Concentration (RBC) Table, which we prepare and post periodically for all interested parties. The Table's current web address is http://www.epa.gov/reg3hwmd/risk/index.htm

For questions about the Table, please consult this memo, especially the Special Notes and Frequently Asked Questions. You can also consult the RBC Table companion documents that are posted on the website. If you don't find the answer there, and your question is about risk assessment or the science behind the RBCs, you can reach me at hubbard.jennifer@epa.gov or 215-814-3328. For technical difficulties in reading, displaying, or downloading the table from the web, please use the "Contact Us" button on the website.

CONTENTS, USES, AND LIMITATIONS OF THE RBC TABLE

The RBC Table contains Reference Doses (RfDs) and Cancer Slope Factors (CSFs) for 400-500 chemicals. These toxicity factors have been combined with "standard" exposure scenarios to calculate RBCs--chemical concentrations corresponding to fixed levels of risk (i.e., a Hazard Quotient (HQ) of 1, or lifetime cancer risk of 1E-6, whichever occurs at a lower concentration) in water, air, fish tissue, and soil.

The Region III toxicologists use RBCs to screen sites not yet on the NPL, respond rapidly to citizen inquiries, and spot-check formal baseline risk assessments. The primary use of RBCs is for chemical screening during baseline risk assessment (see EPA Regional Guidance EPA/903/R-93-001, "Selecting Exposure Routes and Contaminants of Concern by Risk-Based Screening"). The exposure equations come from EPA's Risk Assessment Guidance for Superfund (RAGS), while the exposure factors are those recommended in RAGS or supplemental guidance from the Superfund program. The attached technical background document provides

specific equations and assumptions. Simply put, RBCs are like risk assessments run in reverse. For a single contaminant in a single medium, under standard default exposure assumptions, the RBC corresponds to the target risk or hazard quotient.

RBCs also have several important limitations. Specifically excluded from consideration are (1) transfers from soil to air, (2) cumulative risk from multiple contaminants or media, and (3) dermal risk. Additionally, the risks for inhalation of vapors from water are based on a very simple model, whereas detailed risk assessments may use more detailed showering models. Many RBCs are also based on adult risks. For more information about children's risks, see the Technical Background Document and Frequently Asked Question #12. Furthermore, the toxicity information in the Table has been assembled by hand and (despite extensive checking and years of use) may contain errors. It's advisable to cross-check before relying on any RfDs or CSFs in the Table. If you note any errors, please let us know.

It is important to note that, at this time, the Table uses inhalation RfDs and CSFs rather than RfCs (Reference Concentrations) and inhalation unit cancer risks. This is because the latter factors incorporate exposure assumptions and therefore can only be used for one exposure scenario. Because risk assessors need to evaluate risks for many types of scenarios, the factors have been converted to the more traditional RfDs and CSFs. Unless otherwise indicated in the toxicity-factor source, the assumption is that RfCs and unit risks should be adjusted by a 70-kilogram body weight and a 20 m^3/day inhalation rate to generate the RfDs and CSFs.

Many users want to know if the RBCs can be used as valid no-action levels or cleanup levels, especially for soils. The answer is a bit complex. First, it is important to realize that the RBC Table does not constitute regulation or guidance, and should not be viewed as a substitute for a site-specific risk assessment. For sites where:

1. A single medium is contaminated;

2. A single contaminant contributes nearly all the health risk;

3. Volatilization, dermal contact, and other pathways not included in the RBCs are not expected to be significant;

4. The exposure scenarios and assumptions used in the RBC table are appropriate for the site;

5. The fixed risk levels used in the RBC table are appropriate for the site; and

6. Risk to ecological receptors is not expected to be significant;

the RBCs would probably be protective as no-action levels or cleanup goals. However, to the extent that a site deviates from this description, as most do, the RBCs would not necessarily be appropriate.

To summarize, the Table should generally not be used to set cleanup or no-action levels at CERCLA sites or RCRA Corrective Action sites, to substitute for EPA guidance for preparing baseline risk assessments, or to determine if a waste is hazardous under RCRA.

SPECIAL NOTES

The RBC Table was originally developed by Roy L. Smith, Ph.D., for use by risk assessors in the Region III Superfund program. Dr. Smith is no longer with Region III, and the Table continues to evolve. You may notice some modifications of formatting and conventions used in the Table.

For instance, besides formatting, the following changes are noteworthy:

As usual, updated toxicity factors have been used wherever available. However, because IRIS and provisional values are updated more frequently than the RBC Table, RBC Table users are ultimately responsible for obtaining the most up-to-date values. The RBC Table is provided as a convenience, but toxicity factors are compiled from the original sources and it is those original sources that should serve as the definitive reference.

Certain outdated and withdrawn numbers have been removed from the Table.

Changes to the table since the last semi-annual version have been marked with asterisks (**). Changes may involve a corrected CAS number or a correction in the VOC status, a change in the SSL, or changes of RfDs and CSFs on IRIS.

RBCs are not rounded to 1E6 ppm, as they were in some earlier versions of the Table. For certain low-toxicity chemicals, the RBCs exceed possible concentrations at the target risks. In such cases, Dr. Smith rounded these numbers to the highest possible concentration, or 1E6 ppm. This type of truncation has been discontinued so that Table users can adjust the RBCs to a different target risk whenever necessary. For example, when screening chemicals at a target HQ of 0.1, noncarcinogenic RBCs may simply be

divided by 10. Such scaling is not possible when RBCs are rounded. Users who are interested in truncation can also consult the Soil Screening Guidance for a discussion of "Csat," the saturation concentration.

This Table was originally compiled to assist Superfund risk assessors in screening hazardous waste sites. The large number of chemicals made the Table unwieldy and difficult to keep current. Many of the chemicals did not typically (or even occasionally) appear at Superfund sites. Starting with the April 1998 version of the Table, the 600+ chemicals were reduced to some 400-500 chemicals by eliminating many of those atypical chemicals. Through time, the Table may continue to grow or decrease in size.

At Region III Superfund sites, noncancer RBCs are typically adjusted downward to correspond to a target HQ of 0.1 rather than 1. (This is done to ensure that chemicals with additive effects are not prematurely eliminated during screening. Note that the RBCs displayed on the table are shown at an HQ of 1; to arrive at the RBC at 0.1, data users must do the conversion themselves.) However, some chemicals have RBCs at HQs of 0.1 that are lower than their RBCs at 1E-6 cancer risk. In other words, the screening RBC would change from carcinogenic to noncarcinogenic. A feature of this Table is that these chemicals are now flagged with a "!" symbol. Therefore, assessors screening with adjusted RBCs will be alerted to this situation. See the companion attachment to the RBC Table, "Alternate RBCs," for alternate values for "!" RBCs.

Earlier versions of this Table included a substitution of inhalation toxicity factors for oral factors whenever oral factors were unavailable (this applied only to groundwater and air, but not soil or fish). This practice was discontinued in order to minimize the uncertainty associated with such a conversion. The discontinuation of this practice did not significantly decrease the number of available RBCs.

The criterion for "VOC status" is in accordance with RAGS Part B: chemicals with Henry's Law constants greater than 1E-5 and molecular weight less than 200 are now marked as VOCs. This increases consistency with the national guidance and with other EPA regions that use risk-based screening numbers.

Earlier versions of this Table included soil screening levels (SSLs), when those values were available in draft form. Since the finalization of the SSL Guidance, risk assessors are urged to consult the final SSL Guidance directly. However, for generic use in Region III, the table now contains soil-to-groundwater SSLs in accordance with the new guidance. For more information, see the Region III memo on SSLs, or consult the national SSL

guidance directly (Soil Screening Guidance: User's Guide, April 1996, Publication 9355.4-23; and Soil Screening Guidance: Technical Background Document, May 1996; EPA/540/R-95/128).

You may notice there are now two rows for uranium, one reflecting the IRIS (EPA consensus) value and the other reflecting a more recent, but provisional value. Region III has shown both on this table, rather than choosing one over the other, to give Table users as much information as possible.

Vinyl chloride is handled differently from most other chemicals because of the unique aspects of its slope factor derivation. Readers are referred to the memo, "Derivation of Vinyl Chloride RBCs," which is a companion document to this RBC Table.

FREQUENTLY ASKED QUESTIONS

To help you better understand the RBC Table, here are answers to our most often-asked questions:

1. How can the age-adjusted inhalation factor (11.66) be less than the inhalation rate for either a child (12) or an adult (20)?

   Age-adjusted factors are not intake rates, but rather partial calculations which have different units from intake rates. (Therefore, they are not directly comparable.) The fact that these partial calculations have values similar to intake rates is really coincidental, an artifact of the similar magnitude of years of exposure and time-averaged body weight.

2. For manganese, IRIS shows an oral RfD of 0.14 mg/kg/day, but the RBC Table uses 2E-2 mg/kg/day. Why?

   The IRIS RfD includes manganese from all sources, including diet. The explanatory text in IRIS recommends using a modifying factor of 3 when calculating risks associated with non-food sources, and the Table follows this recommendation. IRIS also recommends subtracting dietary exposure (default assumption in this case 5 mg). Thus, the IRIS RfD has been lowered by a factor of 2 x 3, or 6. The Table now reflects manganese RBCs for both "food" and "non-food" (most environmental) sources.

3. What is the source of the child's inhalation rate of 12 m^3/day?

The calculation comes from basic physiology. It's a scaling of the mass-specific 20 m^3/day rate for adults from a body mass of 70 kg to 15 kg, using the 2/3 power of mass, as follows:

Ircm = mass-specific child inhalation rate (m^3/kg/day)
Irc = child inhalation rate (m^3/day)

20 m^3/day / 70 kg = 0.286 m^3/kg/day (mass-specific adult inhalation rate)

0.286 m^3/kg/day x $(70^{0.67})$ = (Ircm) x $(15^{0.67})$

Ircm = 0.803 m^3/kg/day

Irc = Ircm x 15 kg = 0.803 m^3/kg/day x 15 kg = 12.04 m^3/day

4. Can the oral RfDs in the RBC Table be applied to dermal exposure?

Not directly. Oral RfDs are usually based on administered dose and therefore tacitly include a GI absorption factor. Thus, any use of oral RfDs (or CSFs) in dermal risk calculations should involve removing this absorption factor. Consult the Risk Assessment Guidance for Superfund, Part A, Appendix A, for further details on how to do this.

5. The exposure variables table in the RBC background document lists the averaging time for non-carcinogens as "ED*365." What does that mean?

ED is exposure duration, in years, and * is the computer-ese symbol for multiplication. Multiplying ED by 365 simply converts the duration to days. In fact, the ED term is included in both the numerator and denominator of the RBC algorithms for non-cancer risk, canceling it altogether. See RAGS for more information.

6. Why is inorganic lead not included in the RBC Table?

EPA has no consensus RfD or CSF for inorganic lead, so it is not possible to calculate RBCs as we have done for other chemicals. EPA considers lead to be a special case because of the difficulty in identifying the classic "threshold" needed to develop an RfD.

EPA therefore evaluates lead exposure by using blood-lead modeling, such as the Integrated Exposure-Uptake Biokinetic Model (IEUBK). The EPA Office of Solid Waste has also released a detailed directive on risk assessment and cleanup of residential soil lead. The directive recommends that soil lead levels less than 400 mg/kg are generally safe for residential use. Above that level, the document suggests collecting data and modeling blood-lead levels with the IEUBK model. For the purposes of screening, therefore, 400 mg/kg is recommended for residential soils. For water, we suggest 15 ug/l (the EPA Action Level in water), and for air, the National Ambient Air Quality Standard.

7. Where did the CSFs for carcinogenic PAHs come from?

The PAH CSFs are all calculated relative to benzo[a]pyrene, which has an IRIS slope factor. The relative factors for the other PAHs can be found in "Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons," Final Draft, ECAO-CIN-842 (March, 1993).

8. May I please have a copy of a previous RBC Table?

We do not distribute outdated copies of the RBC Table. Each new version of the Table supersedes all previous versions.

9. Please elaborate on the meaning of the "W" source code in the Table.

The "W" code means that a RfD or CSF is currently not present on either IRIS or HEAST, but that it was once present on either IRIS or HEAST and was removed. Such withdrawal usually indicates that consensus on the number no longer exists among EPA scientists, but not that EPA believes the contaminant to be unimportant.

Withdrawn numbers are shown in the Table because we still need to deal with these contaminants during the long delays before replacement numbers are ready. For the purpose of screening, a "W" value is similar to a provisional value in that neither value has achieved Agency consensus. The "W" code should serve as a clear warning that before making any serious decision involving that contaminant, you will need to develop an interim value based on current scientific understanding.

If you are assessing risks at a site where a major contaminant is coded "W," consider working with your Regional EPA risk assessor to develop a current toxicity constant. If the site is being studied under CERCLA, the EPA-NCEA Regional Technical Support

group may be able to assist.

10. Can I get copies of supporting documents for interim toxicity constants which are coded "E" in the RBC Table?

Unfortunately, Region 3 does not have a complete set of supporting documents. The EPA-NCEA Superfund Technical Support Center prepares these interim toxicity constants in response to site-specific requests from Regional risk assessors, and sends the documentation only to the requestor. The RBC Tables contain only the latest interim values that we've either requested or have otherwise received. NCEA maintains the master data base of these chemicals, but will not release documentation of provisional values unless they are recent. Furthermore, since NCEA's Superfund Technical Support Center is mainly for the support of Superfund, it usually cannot develop new criteria unless authorized to do so for a specific Superfund project.

If an "E"-coded contaminant is a chemical of potential concern at your site, we urge you to work with the EPA Regional risk assessor assigned to the project in order to develop or obtain documentation for provisional values. EPA Region 3 furnishes documents only when needed to support Regional risk assessments or recommendations.

11. Why is there no oral RfD for mercury? How should I handle mercury?

IRIS gives oral RfDs for mercuric chloride and for methylmercury, but not for elemental mercury. Therefore, the RBC Table reflects this primary source. Consult your toxicologist to determine which of the available mercury numbers is suitable for the conditions at your site (e.g., whether mercury is likely to be organic or inorganic.)

12. How are children's risks considered?

The RBCs were examined to determine whether the child receptor would be expected to be more sensitive. Because most carcinogenic RBCs already include the child lifetime segment, and worker RBCs do not need to include the child, this assessment focused on non-cancer RBCs for water, air, and fish. (Residential soil non-cancer RBCs already are based on children's exposure.)

For tap water RBCs, 212 chemicals (out of about 450) had child RBCs that would be lower than adult RBCs. In all cases but one, the difference was a factor of 2.3. The single exception involved a factor of 1.24. For air RBCs, 306 chemicals had child RBCs that

would be lower than adult RBCs. In all cases the difference was a factor of 2.8. (This also applies only to the use of inhalation RfDs, not RfCs.) For fish RBCs, 286 chemicals had child RBCs that would be lower than adult RBCs. In all cases but one, the difference was a factor of 2.3. The single exception involved a factor of 1.11.

Therefore, child users could possibly have lower noncancer RBCs, but the factor is less than 3. Users of the RBC table should be aware of this issue in case they wish to consider the child receptor beyond the current standard RBCs. (Note that Region III guidance instructs users to include a tenfold screening factor for non-carcinogens when preparing a Region III risk assessment, for reasons of additivity.)

This FAQ response addresses only the differences in exposure factors between children and adults. Age-based differences in toxicity have not yet been defined for most chemicals (there are rare exceptions, such as vinyl chloride and nitrate).

13. The cadmium numbers are labeled "food" and "water." Which do I use if I have another medium, such as soil?

The cadmium RfDs on IRIS are based on the same study. The food RfD incorporates a 2.5% absorption adjustment; the water RfD incorporates a 5% absorption adjustment. For another medium such as soil, the risk assessor should choose the number whose absorption factor most closely matches the expected conditions at the site. For example, if the expected absorption of cadmium from soil is 3%, the food-based number would be a good approximation.

14. The slope factors for TCE and benzene are actually ranges, yet the RBC table shows only a single number. Which number was chosen and why?

For both chemicals, the upper end of the slope factor range was chosen. This is because the RBC Table is a screening tool, and the consequences of screening out a chemical that could pose a significant risk are more serious than the consequences of carrying the chemical through to the next step of the risk assessment. (At each step of the risk assessment, the risk is further refined using site-specific analysis. Chemicals can always be eliminated from the risk assessment at a later step than the initial screening, if appropriate.)

The RBC Table's use of the maximum factor for screening purposes does not preclude the use of a different slope factor at later stages of the risk assessment. During the site-

specific risk assessment, risk assessors may use the whole range or different parts of the range. Risk assessors should consult with their Regional EPA risk assessors when selecting slope factors from a range.

EPA REGION III RISK-BASED CONCENTRATION TABLE: TECHNICAL BACKGROUND INFORMATION

originally developed by Roy L. Smith, Ph.D., Toxicologist
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Development of Risk-Based Concentrations

General

Separate carcinogenic and non-carcinogenic risk-based concentrations were calculated for each compound for each pathway. The concentration in the table is the lower of the two, rounded to two significant figures. The following terms and values were used in the calculations:

Exposure variables	**Value**	**Symbol**
General:		
Carcinogenic potency slope oral (risk per mg/kg/d):	*	CPSo
Carcinogenic potency slope inhaled (risk per mg/kg/d):	*	CPSi
Reference dose oral (mg/kg/d):	*	RfDo
Reference dose inhaled (mg/kg/d):	*	RfDi
Target cancer risk:	1e-06	TR
Target hazard quotient:	1	THQ
Body weight, adult (kg):	70	BWa
Body weight, age 1-6 (kg):	15	BWc
Averaging time carcinogens (d):	25550	ATc
Averaging time non-carcinogens (d):	ED*365	ATn
Inhalation, adult (m3/d):	20	IRAa
Inhalation, child (m3/d):	12	IRAc
Inhalation factor, age-adjusted (m3-y/kg-d):	11.66	IFAadj
Tap water ingestion, adult (L/d):	2	IRWa
Tap water ingestion, age 1-6 (L/d):	1	IRWc
Tap water ingestion factor, age-adjusted (L-y/kg-d):	1.09	IFWadj
Fish ingestion (g/d):	54	IRF
Soil ingestion, adult (mg/d):	100	IRSa
Soil ingestion, age 1-6 (mg/d):	200	IRSc
Soil ingestion factor, age adjusted (mg-y/kg-d):	114.29	IFSadj
Residential:		
Exposure frequency (d/y):	350	EFr
Exposure duration, total (y):	30	EDtot
Exposure duration, age 1-6 (y):	6	EDc
Volatilization factor (L/m3):	0.5	K
Occupational:		
Exposure frequency (d/y):	250	EFo
Exposure duration (y):	25	EDo
Fraction of contaminated soil ingested (unitless)	0.5	FC

*: Contaminant-specific toxicological constants. The priority among sources of toxicological constants was as follows: (1) IRIS, (2) HEAST, (3) HEAST alternative method, (4) EPA-NCEA Superfund Health Risk Technical Support Center, (5) withdrawn from IRIS or HEAST, and (6) other EPA documents. Each source was used only if numbers from higher-priority sources were unavailable, unless NCEA indicated a newer provisional value was superior to an older HEAST value. The EPA Superfund Health Risk Technical Support Center, part of the EPA National Center for Environmental Assessment in Cincinnati, develops provisional RfDs and CPSs on request for contaminants not in IRIS or HEAST. These provisional values are labeled "E = EPA-NCEA provisional" in the table. It is possible they may be obsolete. If one of the "E" constants is important to a Superfund risk assessment, consider requesting, through a Regional risk assessor, a new provisional value.

Age-adjusted factors

Because contact rates with tap water, ambient air, and residential soil are different for children and adults, carcinogenic risks during the first 30 years of life were calculated using age-adjusted factors. These factors approximated the integrated exposure from birth until age 30 by combining contact rates, body weights, and exposure durations for two age groups - small children and adults. The age-adjusted factor for soil was obtained from RAGS IB; the others were developed by analogy.

(1) Air inhalation

$$IFAadj \left(\frac{m^3}{kg \cdot d}\right) = \frac{EDc \cdot IRAc}{BWc} + \frac{(EDtot - EDc) \cdot IRAa}{BWa}$$

(2) Tap water ingestion

$$IFWadj \left(\frac{L}{kg \cdot d}\right) = \frac{EDc \cdot IRWc}{BWc} + \frac{(EDtot - EDc) \cdot IRWa}{BWa}$$

(3) Soil ingestion

$$IFSadj \left(\frac{mg}{kg \cdot d}\right) = \frac{EDc \cdot IRSc}{BWc} + \frac{(EDtot - EDc) \cdot IRSa}{BWa}$$

Residential water

Volatilization terms were calculated only for compounds with a mark in the "VOC" column. Compounds having a Henry's Law constant greater than 10^{-5} and a molecular weight less than 200 were considered volatile. The list may be incomplete, but is unlikely to include false positives. The equations and the volatilization factor (K, above) were obtained from RAGS IB. Oral potency slopes and reference doses were used for both oral and inhaled exposures for volatile compounds lacking inhalation values. RBCs for carcinogens were based on combined childhood and adult exposure; for non-carcinogens RBCs were based on adult exposure.

(4) Carcinogens

$$RBC\ \frac{\mu g}{L} = \frac{TR \times ATc \times 1000\frac{\mu g}{mg}}{EFr \times ([K \times IFAadj \times CPSi] + [IFWadj \times CPSo])}$$

(5) Non-carcinogens

$$RBC\ \frac{\mu g}{L} = \frac{THQ \times BWa \times ATn \times 1000\frac{\mu g}{mg}}{EFr \times EDtot \times \left(\frac{K \times IRAa}{RfDi} + \frac{IRWa}{RfDo}\right)}$$

Ambient air

Oral potency slopes and references were used where inhalation values were not available. RBCs for carcinogens were based on combined childhood and adult exposure; for non-carcinogens RBCs were based on adult exposure.

(6) Carcinogens

$$RBC\ \frac{\mu g}{m^3} = \frac{TR \times ATc \times 1000\frac{\mu g}{mg}}{EFr \times IFAadj \times CPSi}$$

(7) Non-carcinogens

$$RBC\ \frac{\mu g}{m^3} = \frac{THQ \times RfDi \times BWa \times ATn \times 1000\frac{\mu g}{mg}}{EFr \times EDtot \times IRAa}$$

Edible fish

All RBCs were based on adult exposure.

(8) Carcinogens

$$RBC\ \frac{mg}{kg} = \frac{TR \times BWa \times ATc}{EFr \times EDtot \times \frac{IRF}{1000\frac{g}{kg}} \times CPSo}$$

(9) Non-carcinogens

$$RBC\ \frac{mg}{kg} = \frac{THQ \times RfDo \times BWa \times ATn}{EFr \times EDtot \times \frac{IRF}{1000\frac{g}{kg}}}$$

Commercial/industrial soil ingestion

RBCs were based on adult occupational exposure, including an assumption that only 50% of total soil ingestion is work-related.

(10) Carcinogens

$$RBC\ \frac{mg}{kg} = \frac{TR \times BWa \times ATc}{EFo \times EDo \times \frac{IRSa}{10^6\ \frac{mg}{kg}} \times FC \times CPSo}$$

(11) Non-carcinogens

$$RBC\ \frac{mg}{kg} = \frac{THQ \times RfDo \times BWa \times ATn}{EFo \times EDo \times \frac{IRSa}{10^6\ \frac{mg}{kg}} \times FC}$$

Residential soil ingestion

RBCs for carcinogens were based on combined childhood and adult exposure; RBCs for non-carcinogens were based on childhood exposure only.

(12) Carcinogens

$$RBC\ \frac{mg}{kg} = \frac{TR \times ATc}{EFr \times \frac{IFSadj}{10^6\ \frac{mg}{kg}} \times CPSo}$$

(13) Non-carcinogens

$$RBC\ \frac{mg}{kg} = \frac{THQ \times RfDo \times BWc \times ATn}{EFr \times EDc \times \frac{IRSc}{10^6\ \frac{mg}{kg}}}$$

Sources: I = IRIS H = HEAST A = HEAST Alternate W = Withdrawn from IRIS or HEAST
E = EPA-NCEA provisional value O = other

Basis: C = Carcinogenic effects N = Noncarcinogenic effects I = RBC at HI of 0.1 < RBC-c

Chemical	CAS	RfDo mg/kg/d	CSFo 1/mg/kg/d	RfDi mg/kg/d	CSFi 1/mg/kg/d	VOC	Risk-based concentrations: Tap water ug/l	Ambient air ug/m3	Fish mg/kg	Soil Industrial mg/kg	Residential mg/kg	Region III SSLs: Soil, for groundwater migration DAF 1 mg/kg	DAF 20 mg/kg
ACETALDEHYDE	75070			2.57E-003 I	7.7E-003 I	y	1.6E+000 C	8.1E-001 C				3.8E-004	7.7E-003 C
ACETOCHLOR	34256821	2E-002 I					7.3E+002 N	7.3E+001 N	2.7E+001 N	4.1E+004 N	1.6E+003 N		
ACETONE	67641	1.00E-001 I				y	6.1E+002 N	3.7E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N	1.2E-001	2.5E+000 N
ACETONITRILE	75058			1.7E-002 I		y	1.2E+002 N	6.2E+001 N				2.9E-002	5.8E-001 N
ACETOPHENONE	98862	1.00E-001 I		5.70E-006 W		y	4.2E-002 N	2.1E-002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N	1.1E-005	2.2E-004 N
ACROLEIN	107028	2.00E-002 H		5.70E-006 I		y	4.2E-002 N	2.1E-002 N	2.7E+001 N	4.1E+004 N	1.6E+003 N	1.0E-005	2.0E-004 N
ACRYLAMIDE	79061	2.00E-004 I	4.50E+000 I		4.50E+000 I		1.5E-002 C	1.4E-003 C	7.0E-004 C	1.3E+000 C	1.4E-001 C	3.7E-006	7.4E-005 C
ACRYLONITRILE	107131	1.00E-003 H	5.40E-001 I	5.70E-004 I	2.40E-001 I	y	3.7E-002 C	2.6E-002 C	5.8E-003 C	1.1E+001 C	1.2E+000 C	7.4E-006	1.5E-004 C
ALACHLOR	15972608	1.00E-002 I	8.00E-002 H				8.4E-001 C	7.8E-002 C	3.9E-002 C	7.2E+001 C	8.0E+000 C	3.5E-004	7.0E-003 C
ALAR	1596845	1.50E-001 I					5.5E+003 N	5.5E+002 N	2.0E+002 N	3.1E+005 N	1.2E+004 N		
ALDICARB	116063	1.00E-003 I					3.7E+001 N	3.7E+000 N	1.4E+000 N	2.0E+003 N	7.8E+001 N	1.0E-002	2.1E-001 N
ALDICARB SULFONE	1646884	1.00E-003 I					3.7E+001 N	3.7E+000 N	1.4E+000 N	2.0E+003 N	7.8E+001 N	7.5E-003	1.5E-001 N
ALDRIN	309002	3.00E-005 I	1.70E+001 I		1.70E+001 I		3.9E-003 C	3.7E-004 C	1.9E-004 C	3.4E-001 C	3.8E-002 C	3.8E-004	7.7E-003 C
ALUMINUM	7429905	1.00E+000 E		1.00E-003 E			3.7E+004 N	3.7E+000 N	1.4E+003 N	2.0E+006 N	7.8E+004 N		
AMINODINITROTOLUENES		6.00E-005 E					2.2E+000 N	2.2E-001 N	8.1E-002 N	1.2E+002 N	4.7E+000 N		
4-AMINOPYRIDINE	504245	2.00E-005 H					7.3E-001 N	7.3E-002 N	2.7E-002 N	4.1E+001 N	1.6E+000 N		
AMMONIA	7664417			2.86E-002 I		y	2.1E+002 N	1.0E+002 N					
ANILINE	62533	7.00E-003 E	5.70E-003 I	2.90E-004 I			1.2E+001 C	1.1E+000 N	5.5E-001 C	1.0E+003 C	1.1E+002 C I	6.8E-003	1.4E-001 C
ANTIMONY	7440360	4.00E-004 I					1.5E+001 N	1.5E+000 N	5.4E-001 N	8.2E+002 N	3.1E+001 N	6.6E-001	1.3E+001 N
ANTIMONY PENTOXIDE	1314609	5.00E-004 H					1.8E+001 N	1.8E+000 N	6.8E-001 N	1.0E+003 N	3.9E+001 N		
ANTIMONY TETROXIDE	1332816	4.00E-004 H					1.5E+001 N	1.5E+000 N	5.4E-001 N	8.2E+002 N	3.1E+001 N		
ANTIMONY TRIOXIDE	1309644	4.00E-004 H		5.70E-005 I			1.5E+001 N	2.1E-001 N	5.4E-001 N	8.2E+002 N	3.1E+001 N		
ARSENIC	7440382	3.00E-004 I	1.50E+000 I		1.51E+001 I		4.5E-002 C	4.1E-004 C	2.1E-003 C	3.8E+000 C	4.3E-001 C	1.3E-003	2.6E-002 C
ARSINE	7784421			1.40E-005 I		y	1.0E-001 N	5.1E-002 N					
ASSURE	76578148	9.00E-003 I					3.3E+002 N	3.3E+001 N	1.2E+001 N	1.8E+004 N	7.0E+002 N		
ATRAZINE	1912249	3.50E-002 I	2.20E-001 H				3.0E-001 C	2.8E-002 C	1.4E-002 C	2.6E+001 C	2.9E+000 C	4.4E-004	8.8E-003 C
AZOBENZENE	103333		1.10E-001 I		1.10E-001 I		6.1E-001 C	5.7E-002 C	2.9E-002 C	5.2E+001 C	5.8E+000 C	1.8E-003	3.5E-002 C
BARIUM	7440393	7.00E-002 I		1.40E-004 A			2.6E+003 N	5.1E-001 N	9.5E+001 N	1.4E+005 N	5.5E+003 N	1.1E+002	2.1E+003 N
BAYGON	114261	4.00E-003 I					1.5E+002 N	1.5E+001 N	5.4E+000 N	8.2E+003 N	3.1E+002 N		
BAYTHROID	68359375	2.50E-002 I					9.1E+002 N	9.1E+001 N	3.4E+001 N	5.1E+004 N	2.0E+003 N		
BENTAZON	25057890	3.00E-002 I					1.1E+003 N	1.1E+002 N	4.1E+001 N	6.1E+004 N	2.3E+003 N		
BENZALDEHYDE	100527	1.00E-001 I					3.7E+003 N	3.7E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N		
BENZENE	71432	3.00E-003 E	5.5E-002 I	1.70E-003 E	2.90E-002 I	y	3.2E-001 C	2.2E-001 C	5.7E-002 C	1.0E+002 C	1.2E+001 C	9.0E-005	1.8E-003 C
BENZENETHIOL	108985	1.00E-005 H				y	6.1E-002 N	3.7E-002 N	1.4E-002 N	2.0E+001 N	7.8E-001 N		
BENZIDINE	92875	3.00E-003 I	2.30E+002 I		2.30E+002 I		2.9E-004 C	2.7E-005 C	1.4E-005 C	2.5E-002 C	2.8E-003 C		
BENZOIC ACID	65850	4.00E+000 I					1.5E+005 N	1.5E+004 N	5.4E+003 N	8.2E+006 N	3.1E+005 N		
BENZYL ALCOHOL	100516	3.00E-001 H					1.1E+004 N	1.1E+003 N	4.1E+002 N	6.1E+005 N	2.3E+004 N	4.4E+000	8.8E+001 N
BENZYL CHLORIDE	100447		0.17 I			y	6.2E-002 C	3.7E-002 C	1.9E-002 C	3.4E+001 C	3.8E+000 C	1.9E-005	3.7E-004 C
BERYLLIUM	7440417	2.00E-003 I		5.7E-006 I	8.40E+000 I		7.3E+001 N	7.5E-004 C	2.7E+000 N	4.1E+003 N	1.6E+002 N	5.8E+001	1.2E+003 N
BIPHENYL	92524	5.00E-002 I				y	3.0E+002 N	1.8E+002 N	6.8E+001 N	1.0E+005 N	3.9E+003 N	4.8E+000	9.6E+001 N
BIS(2-CHLOROETHYL)ETHER	111444		1.10E+000 I		1.10E+000 I	y	9.6E-003 C	5.7E-003 C	2.9E-003 C	5.2E+000 C	5.8E-001 C	2.2E-006	4.4E-005 C
BIS(2-CHLOROISOPROPYL)ETHER	108601	4.00E-002 I	7.00E-002 H		3.50E-002 H	y	2.6E-001 C	1.8E-001 C	4.5E-002 C	8.2E+001 C	9.1E+000 C	8.4E-005	1.7E-003 C
BIS(CHLOROMETHYL)ETHER	542881		2.20E+002 I		2.20E+002 I	y	4.8E-005 C	2.8E-005 C	1.4E-005 C	2.6E-002 C	2.9E-003 C	9.7E-009	1.9E-007 C
BIS(2-ETHYLHEXYL)PHTHALATE	117817	2.00E-002 I	1.40E-002 I		1.40E-002 E		4.8E+000 C	4.5E-001 C	2.3E-001 C	4.1E+002 C	4.6E+001 C	1.4E+002	2.9E+003 C
BORON	7440428	9.00E-002 I		5.70E-003 H			3.3E+003 N	2.1E+001 N	1.2E+002 N	1.8E+005 N	7.0E+003 N		

Sources: I = IRIS H = HEAST A = HEAST Alternate W = Withdrawn from IRIS or HEAST E = EPA-NCEA provisional value O = other							Basis: C = Carcinogenic effects N = Noncarcinogenic effects I = RBC at HI of 0.1 < RBC-c Risk-based concentrations					Region III SSLs	
							Tap	Ambient		Soil		Soil, for groundwater migration	
Chemical	CAS	RfDo mg/kg/d	CSFo 1/mg/kg/d	RfDi mg/kg/d	CSFi 1/mg/kg/d	VOC	water ug/l	air ug/m3	Fish mg/kg	Industrial mg/kg	Residential mg/kg	DAF 1 mg/kg	DAF 20 mg/kg
BROMODICHLOROMETHANE	75274	2.00E-002 I	6.20E-002 I			y	1.7E-001 C	1.0E-001 C	5.1E-002 C	9.2E+001 C	1.0E+001 C	5.4E-005	1.1E-003 C
BROMOETHENE	593602			8.6E-004 I	1.10E-001 H	y	1.1E-001 C	5.7E-002 C				5.4E-005	1.1E-003 C
BROMOFORM	75252	2.00E-002 I	7.90E-003 I		3.90E-003 I		8.5E+000 C	1.6E+000 C	4.0E-001 C	7.2E+002 C	8.1E+001 C	3.3E-003	6.7E-002 C
BROMOMETHANE	74839	1.40E-003 I		1.40E-003 I		y	8.5E+000 N	5.1E+000 N	1.9E+000 N	2.9E+003 N	1.1E+002 N	2.1E-003	4.1E-002 N
BROMOPHOS	2104963	5.00E-003 H					1.8E+002 N	1.8E+001 N	6.8E+000 N	1.0E+004 N	3.9E+002 N		
1,3-BUTADIENE	106990				1.80E+000 H	y	7.0E-003 C	3.5E-003 C				3.9E-006	7.8E-005 C
1-BUTANOL	71363	1.00E-001 I					3.7E+003 N	3.7E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N	7.8E-001	1.6E+001 N
BUTYLBENZYLPHTHALATE	85687	2.00E-001 I					7.3E+003 N	7.3E+002 N	2.7E+002 N	4.1E+005 N	1.6E+004 N	8.4E+002	1.7E+004 N
BUTYLATE	2008415	5.00E-002 I					1.8E+003 N	1.8E+002 N	6.8E+001 N	1.0E+005 N	3.9E+003 N		
N-BUTYLBENZENE	104518	4.00E-002 E				y	2.4E+002 N	1.5E+002 N	5.4E+001 N	8.2E+004 N	3.1E+003 N		
SEC-BUTYLBENZENE	135988	4.00E-002 E				y	2.4E+002 N	1.5E+002 N	5.4E+001 N	8.2E+004 N	3.1E+003 N		
TERT-BUTYLBENZENE	98066	4.00E-002 E				y	2.4E+002 N	1.5E+002 N	5.4E+001 N	8.2E+004 N	3.1E+003 N		
CADMIUM-WATER	7440439	5.00E-004 I		5.7E-005 E	6.30E+000 I		1.8E+001 N	9.9E-004 C	6.8E-001 N	1.0E+003 N	3.9E+001 N	1.4E+000	2.7E+001 N
CADMIUM-FOOD	7440439	1.00E-003 I		5.7E-005 E	6.30E+000 I		3.7E+001 N	9.9E-004 C	1.4E+000 N	2.0E+003 N	7.8E+001 N	2.7E+000	5.5E+001 N
CAPROLACTAM	105602	5.00E-001 I					1.8E+004 N	1.8E+003 N	6.8E+002 N	1.0E+006 N	3.9E+004 N		
CARBARYL	63252	1.00E-001 I					3.7E+003 N	3.7E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N	1.5E+000	3.0E+001 N
CARBON DISULFIDE	75150	1.00E-001 I		2.00E-001 I		y	1.0E+003 N	7.3E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N	9.5E-001	1.9E+001 N
CARBON TETRACHLORIDE	56235	7.00E-004 I	1.30E-001 I	5.71E-004 E	5.30E-002 I	y	1.6E-001 C	1.2E-001 C	2.4E-002 C	4.4E+001 C	4.9E+000 C	1.1E-004	2.1E-003 C
CARBOSULFAN	55285148	1.00E-002 I					3.7E+002 N	3.7E+001 N	1.4E+001 N	2.0E+004 N	7.8E+002 N		
CHLORAL HYDRATE	302170	1.00E-001 I					3.7E+003 N	3.7E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N		
CHLORANIL	118752		4.00E-001 H				1.7E-001 C	1.6E-002 C	7.9E-003 C	1.4E+001 C	1.6E+000 C		
CHLORDANE	57749	5.00E-004 I	3.5E-001 I	2.00E-004 I	3.5E-001 I		1.9E-001 C	1.8E-002 C	9.0E-003 C	1.6E+001 C	1.8E+000 C	4.6E-002	9.2E-001 C
CHLORINE	7782505	1.00E-001 I		5.7E-005 E		y	4.2E-001 N	2.1E-001 N	1.4E+002 N	2.0E+005 N	7.8E+003 N		
CHLORINE DIOXIDE	10049044	3.00E-002 I		5.70E-005 I		y	4.2E-001 N	2.1E-001 N	4.1E+001 N	6.1E+004 N	2.3E+003 N		
CHLOROACETIC ACID	79118	2.00E-003 H					7.3E+001 N	7.3E+000 N	2.7E+000 N	4.1E+003 N	1.6E+002 N		
4-CHLOROANILINE	106478	4.00E-003 I					1.5E+002 N	1.5E+001 N	5.4E+000 N	8.2E+003 N	3.1E+002 N	4.8E-002	9.7E-001 N
CHLOROBENZENE	108907	2.00E-002 I		1.7E-002 E		y	1.1E+002 N	6.2E+001 N	2.7E+001 N	4.1E+004 N	1.6E+003 N	4.0E-002	8.0E-001 N
CHLOROBENZILATE	510156	2.00E-002 I	2.70E-001 H		2.70E-001 H		2.5E-001 C	2.3E-002 C	1.2E-002 C	2.1E+001 C	2.4E+000 C	1.3E-003	2.7E-002 C
P-CHLOROBENZOIC ACID	74113	2.00E-001 H					7.3E+003 N	7.3E+002 N	2.7E+002 N	4.1E+005 N	1.6E+004 N		
2-CHLORO-1,3-BUTADIENE	126998	2.00E-002 A		2.00E-003 H		y	1.4E+001 N	7.3E+000 N	2.7E+001 N	4.1E+004 N	1.6E+003 N	6.0E-003	1.2E-001 N
1-CHLOROBUTANE	109693	4.00E-001 H				y	2.4E+003 N	1.5E+003 N	5.4E+002 N	8.2E+005 N	3.1E+004 N	1.0E+000	2.0E+001 N
1-CHLORO-1,1-DIFLUOROETHANE	75683			1.40E+001 I		y	1.0E+005 N	5.1E+004 N				7.0E+001	1.4E+003 N
CHLORODIFLUOROMETHANE	75456			1.40E+001 I		y	1.0E+005 N	5.1E+004 N				7.0E+001	1.4E+003 N
CHLOROETHANE	75003	4.00E-001 E	2.90E-003 E	2.90E+000 I		y	3.6E+000 C	2.2E+000 C	1.1E+000 C	2.0E+003 C	2.2E+002 C	9.6E-004	1.9E-002 C
**CHLOROFORM	67663	1.00E-002 I		8.6E-005 E	8.10E-002 I	y	1.5E-001 C !	7.7E-002 C !	1.4E+001 N	2.0E+004 N	7.8E+002 N	4.5E-005	9.1E-004 C
CHLOROMETHANE	74873		1.30E-002 H	2.6E-002 I	3.5E-003 E	y	2.1E+000 C	1.8E+000 C	2.4E-001 C	4.4E+002 C	4.9E+001 C	5.2E-004	1.0E-002 C
4-CHLORO-2-METHYLANILINE	95692		5.80E-001 H				1.2E-001 C	1.1E-002 C	5.4E-003 C	9.9E+000 C	1.1E+000 C		
BETA-CHLORONAPHTHALENE	91587	8.00E-002 I				y	4.9E+002 N	2.9E+002 N	1.1E+002 N	1.6E+005 N	6.3E+003 N	1.6E+000	3.2E+001 N
O-CHLORONITROBENZENE	88733		2.50E-002 H			y	4.2E-001 C	2.5E-001 C	1.3E-001 C	2.3E+002 C	2.6E+001 C		
P-CHLORONITROBENZENE	100005		1.80E-002 H			y	5.9E-001 C	3.5E-001 C	1.8E-001 C	3.2E+002 C	3.5E+001 C		
2-CHLOROPHENOL	95578	5.00E-003 I				y	3.0E+001 N	1.8E+001 N	6.8E+000 N	1.0E+004 N	3.9E+002 N		
2-CHLOROPROPANE	75296			2.90E-002 H		y	2.1E+002 N	1.1E+002 N				6.6E-002	1.3E+000 N
O-CHLOROTOLUENE	95498	2.00E-002 I				y	1.2E+002 N	7.3E+001 N	2.7E+001 N	4.1E+004 N	1.6E+003 N	6.5E-002	1.3E+000 N
CHLORPYRIFOS	2921882	3.00E-003 I					1.1E+002 N	1.1E+001 N	4.1E+000 N	6.1E+003 N	2.3E+002 N	3.2E+000	6.3E+001 N
CHLORPYRIFOS-METHYL	5598130	1.00E-002 H					3.7E+002 N	3.7E+001 N	1.4E+001 N	2.0E+004 N	7.8E+002 N		

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E = EPA-NCEA provisional value O = other

Basis: C = Carcinogenic effects N = Noncarcinogenic effects ! = RBC at HI of 0.1 < RBC-c

Chemical	CAS	RfDo mg/kg/d	CSFo 1/mg/kg/d	RfDi mg/kg/d	CSFi 1/mg/kg/d	VOC	Risk-based concentrations: Tap water ug/l	Ambient air ug/m3	Fish mg/kg	Soil Industrial mg/kg	Residential mg/kg	Region III SSLs: Soil, for groundwater migration DAF 1 mg/kg	DAF 20 mg/kg
CHROMIUM III	16065831	1.50E+000 I					5.5E+004 N	5.5E+003 N	2.0E+003 N	3.1E+006 N	1.2E+005 N	9.9E+007	2.0E+009 N
CHROMIUM VI	18540299	3.00E-003 I		3.00E-005 I	4.10E+001 H		1.1E+002 N	1.5E-004 C	4.1E+000 N	6.1E+003 N	2.3E+002 N	2.1E+000	4.2E+001 N
**COBALT	7440484	2.00E-002 E		5.7E-006 E			7.3E+002 N	2.1E-002 N	2.7E+001 N	4.1E+004 N	1.6E+003 N		
COKE OVEN EMISSIONS (COAL TAR)	8007452				2.2 I			2.8E-003 C					
COPPER	7440508	4.00E-002 H					1.5E+003 N	1.5E+002 N	5.4E+001 N	8.2E+004 N	3.1E+003 N	5.3E+002	1.1E+004 N
CROTONALDEHYDE	123739		1.90E+000 H			y	5.6E-003 C	3.3E-003 C	1.7E-003 C	3.0E+000 C	3.4E-001 C	1.5E-005	3.1E-004 C
CUMENE	98828	1.00E-001 I		1.10E-001 I		y	6.6E+002 N	4.0E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N	3.2E+000	6.4E+001 N
CYANIDE (FREE)	57125	2.00E-002 I					7.3E+002 N	7.3E+001 N	2.7E+001 N	4.1E+004 N	1.6E+003 N	7.4E+000	1.5E+002 N
CALCIUM CYANIDE	592018	4E-002 I					1.5E+003 N	1.5E+002 N	5.4E+001 N	8.2E+004 N	3.1E+003 N		
COPPER CYANIDE	544923	5.00E-003 I					1.8E+002 N	1.8E+001 N	6.8E+000 N	1.0E+004 N	3.9E+002 N		
CYANAZINE	21725462	2.00E-003 H	8.40E-001 H				8.0E-002 C	7.5E-003 C	3.8E-003 C	6.8E+000 C	7.6E-001 C	2.6E-005	5.3E-004 C
CYANOGEN	460195	4.00E-002 I				y	2.4E+002 N	1.5E+002 N	5.4E+001 N	8.2E+004 N	3.1E+003 N		
CYANOGEN BROMIDE	506683	9.00E-002 I					3.3E+003 N	3.3E+002 N	1.2E+002 N	1.8E+005 N	7.0E+003 N		
CYANOGEN CHLORIDE	506774	5.00E-002 I					1.8E+003 N	1.8E+002 N	6.8E+001 N	1.0E+005 N	3.9E+003 N		
HYDROGEN CYANIDE	74908	2.00E-002 I		8.60E-004 I		y	6.2E+000 N	3.1E+000 N	2.7E+001 N	4.1E+004 N	1.6E+003 N	1.1E-001	2.2E+000 N
POTASSIUM CYANIDE	151508	5.00E-002 I					1.8E+003 N	1.8E+002 N	6.8E+001 N	1.0E+005 N	3.9E+003 N		
POTASSIUM SILVER CYANIDE	506616	2.00E-001 I					7.3E+003 N	7.3E+002 N	2.7E+002 N	4.1E+005 N	1.6E+004 N		
SILVER CYANIDE	506649	1.00E-001 I					3.7E+003 N	3.7E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N	3.1E+001	6.2E+002 N
SODIUM CYANIDE	143339	4.00E-002 I					1.5E+003 N	1.5E+002 N	5.4E+001 N	8.2E+004 N	3.1E+003 N		
THIOCYANATE		5.00E-002 E					1.8E+003 N	1.8E+002 N	6.8E+001 N	1.0E+005 N	3.9E+003 N		
ZINC CYANIDE	557211	5.00E-002 I					1.8E+003 N	1.8E+002 N	6.8E+001 N	1.0E+005 N	3.9E+003 N	1.1E+002	2.3E+003 N
CYCLOHEXANONE	108941	5.00E+000 I					1.8E+005 N	1.8E+004 N	6.8E+003 N	1.0E+007 N	3.9E+005 N	6.1E+001	1.2E+003 N
CYHALOTHRIN/KARATE	68085858	5.00E-003 I					1.8E+002 N	1.8E+001 N	6.8E+000 N	1.0E+004 N	3.9E+002 N		
CYPERMETHRIN	52315078	1.00E-002 I					3.7E+002 N	3.7E+001 N	1.4E+001 N	2.0E+004 N	7.8E+002 N		
DACTHAL	1861321	1.00E-002 I					3.7E+002 N	3.7E+001 N	1.4E+001 N	2.0E+004 N	7.8E+002 N		
DALAPON	75990	3.00E-002 I					1.1E+003 N	1.1E+002 N	4.1E+001 N	6.1E+004 N	2.3E+003 N	3.5E-001	7.1E+000 N
DDD	72548		2.40E-001 I				2.8E-001 C	2.6E-002 C	1.3E-002 C	2.4E+001 C	2.7E+000 C	5.6E-001	1.1E+001 C
DDE	72559		3.40E-001 I				2.0E-001 C	1.8E-002 C	9.3E-003 C	1.7E+001 C	1.9E+000 C	1.8E+000	3.5E+001 C
DDT	50293	5.00E-004 I	3.40E-001 I		3.40E-001 I		2.0E-001 C	1.8E-002 C	9.3E-003 C	1.7E+001 C	1.9E+000 C	5.8E-002	1.2E+000 C
DIAZINON	333415	9.00E-004 H					3.3E+001 N	3.3E+000 N	1.2E+000 N	1.8E+003 N	7.0E+001 N	2.1E-002	4.3E-001 N
DIBENZOFURAN	132649	4.00E-003 E				y	2.4E+001 N	1.5E+001 N	5.4E+000 N	8.2E+003 N	3.1E+002 N	3.8E-001	7.7E+000 N
1,4-DIBROMOBENZENE	106376	1.00E-002 I					3.7E+002 N	3.7E+001 N	1.4E+001 N	2.0E+004 N	7.8E+002 N		
DIBROMOCHLOROMETHANE	124481	2.00E-002 I	8.40E-002 I			y	1.3E-001 C	7.5E-002 C	3.8E-002 C	6.8E+001 C	7.6E+000 C	4.1E-005	8.3E-004 C
1,2-DIBROMO-3-CHLOROPROPANE	96128		1.40E+000 H	5.70E-005 I	2.40E-003 H	y	4.7E-002 C !	2.1E-001 N	2.3E-003 C	4.1E+000 C	4.6E-001 C	4.4E-005	8.7E-004 C
1,2-DIBROMOETHANE	106934		8.50E+001 I	5.70E-005 H	7.60E-001 I	y	7.5E-004 C	8.2E-003 C	3.7E-005 C	6.7E-002 C	7.5E-003 C	4.3E-007	8.5E-006 C
DIBUTYLPHTHALATE	84742	1.00E-001 I					3.7E+003 N	3.7E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N	2.5E+002	5.0E+003 N
DICAMBA	1918009	3.00E-002 I					1.1E+003 N	1.1E+002 N	4.1E+001 N	6.1E+004 N	2.3E+003 N	2.2E-001	4.5E+000 N
1,2-DICHLOROBENZENE	95501	9.00E-002 I		4.00E-002 H		y	2.7E+002 N	1.5E+002 N	1.2E+002 N	1.8E+005 N	7.0E+003 N	2.3E-001	4.6E+000 N
1,3-DICHLOROBENZENE	541731	3.00E-002 E				y	1.8E+002 N	1.1E+002 N	4.1E+001 N	6.1E+004 N	2.3E+003 N	1.5E-001	2.9E+000 N
1,4-DICHLOROBENZENE	106467	3.00E-002 E	2.40E-002 H	2.29E-001 I	2.2E-002 E	y	4.7E-001 C	2.8E-001 C	1.3E-001 C	2.4E+002 C	2.7E+001 C	3.6E-004	7.1E-003 C
3,3'-DICHLOROBENZIDINE	91941		4.50E-001 I				1.5E-001 C	1.4E-002 C	7.0E-003 C	1.3E+001 C	1.4E+000 C	2.5E-004	4.9E-003 C
1,4-DICHLORO-2-BUTENE	764410				9.30E+000 H	y	1.3E-003 C	6.7E-004 C				4.0E-007	8.0E-006 C
DICHLORODIFLUOROMETHANE	75718	2.00E-001 I		5.00E-002 A		y	3.5E+002 N	1.8E+002 N	2.7E+002 N	4.1E+005 N	1.6E+004 N	5.5E-001	1.1E+001 N
1,1-DICHLOROETHANE	75343	1.00E-001 H		1.40E-001 A		y	8.0E+002 N	5.1E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N	2.3E-001	4.5E+000 N
1,2-DICHLOROETHANE	107062	3.00E-002 E	9.10E-002 I	1.40E-003 E	9.10E-002 I	y	1.2E-001 C	6.9E-002 C	3.5E-002 C	6.3E+001 C	7.0E+000 C	5.2E-005	1.0E-003 C

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												Soil, for groundwater migration	
Chemical	CAS	RfDo mg/kg/d	CSFo 1/mg/kg/d	RfDi mg/kg/d	CSFi 1/mg/kg/d	VOC	Tap water ug/l	Ambient air ug/m3	Fish mg/kg	Soil Industrial mg/kg	Residential mg/kg	DAF 1 mg/kg	DAF 20 mg/kg
1,1-DICHLOROETHENE	75354	9.00E-003 I	6.00E-001 I		1.75E-001 I	y	4.4E-002 C	3.6E-002 C	5.3E-003 C	9.5E+000 C	1.1E+000 C	1.8E-005	3.6E-004 C
CIS-1,2-DICHLOROETHENE	156592	1.00E-002 H				y	6.1E+001 N	3.7E+001 N	1.4E+001 N	2.0E+004 N	7.8E+002 N	1.7E-002	3.5E-001 N
TRANS-1,2-DICHLOROETHENE	156605	2.00E-002 I				y	1.2E+002 N	7.3E+001 N	2.7E+001 N	4.1E+004 N	1.6E+003 N	4.1E-002	8.2E-001 N
TOTAL 1,2-DICHLOROETHENE	540590	9.00E-003 H				y	5.5E+001 N	3.3E+001 N	1.2E+001 N	1.8E+004 N	7.0E+002 N	1.9E-002	3.7E-001 N
2,4-DICHLOROPHENOL	120832	3.00E-003 I					1.1E+002 N	1.1E+001 N	4.1E+000 N	6.1E+003 N	2.3E+002 N	6.0E-002	1.2E+000 N
2,4-D	94757	1.00E-002 I					3.7E+002 N	3.7E+001 N	1.4E+001 N	2.0E+004 N	7.8E+002 N	4.5E-001	9.0E+000 N
4-(2,4-DICHLOROPHENOXY)BUTYRIC ACID	94826	8E-003 I					2.9E+002 N	2.9E+001 N	1.1E+001 N	1.6E+004 N	6.3E+002 N		
1,2-DICHLOROPROPANE	78875		6.80E-002 H	1.14E-003 I		y	1.6E-001 C	9.2E-002 C	4.6E-002 C	8.4E+001 C	9.4E+000 C	1.0E-004	2.1E-003 C
2,3-DICHLOROPROPANOL	616239	3.00E-003 I					1.1E+002 N	1.1E+001 N	4.1E+000 N	6.1E+003 N	2.3E+002 N		
1,3-DICHLOROPROPENE	542756	3.00E-002 I	1.00E-001 I	5.71E-003 I	1.00E-002 I	y	4.4E-001 C	6.3E-001 C	3.2E-002 C	5.7E+001 C	6.4E+000 C	1.6E-004	3.1E-003 C
DICHLORVOS	62737	5E-004 I	0.29 I	1.43E-004 I			2.3E-001 C	2.2E-002 C	1.1E-002 C	2.0E+001 C	2.2E+000 C	5.5E-005	1.1E-003 C
DICOFOL	115322		4.4E-001 W				1.5E-001 C	1.4E-002 C	7.2E-003 C	1.3E+001 C	1.5E+000 C	9.3E-004	1.9E-002 C
DICYCLOPENTADIENE	77736	3E-002 H		6.00E-005 A		y	4.4E-001 N	2.2E-001 N	4.1E+001 N	6.1E+004 N	2.3E+003 N		
DIELDRIN	60571	5.00E-005 I	1.60E+001 I		1.60E+001 I		4.2E-003 C	3.9E-004 C	2.0E-004 C	3.6E-001 C	4.0E-002 C	1.1E-004	2.2E-003 C
DIESEL EMISSIONS				1.40E-003 I				5.1E+000 N					
DIETHYLPHTHALATE	84662	8.00E-001 I					2.9E+004 N	2.9E+003 N	1.1E+003 N	1.6E+006 N	6.3E+004 N	2.3E+001	4.5E+002 N
DIETHYLENE GLYCOL, MONOBUTYL ETHER	112345			5.70E-003 H				2.1E+001 N					
DIETHYLENE GLYCOL, MONOETHYL ETHER	111900	2.00E+000 H					7.3E+004 N	7.3E+003 N	2.7E+003 N	4.1E+006 N	1.6E+005 N		
DI(2-ETHYLHEXYL)ADIPATE	103231	6.00E-001 I	1.20E-003 I				5.6E+001 C	5.2E+000 C	2.6E+000 C	4.8E+003 C	5.3E+002 C		
DIETHYLSTILBESTROL	56531		4.70E+003 H				1.4E-005 C	1.3E-006 C	6.7E-007 C	1.2E-003 C	1.4E-004 C		
DIFENZOQUAT (AVENGE)	43222486	8.00E-002 I					2.9E+003 N	2.9E+002 N	1.1E+002 N	1.6E+005 N	6.3E+003 N		
1,1-DIFLUOROETHANE	75376			1.10E+001 I		y	8.0E+004 N	4.0E+004 N					
DIISOPROPYL METHYLPHOSPHONATE (DIMP)	1445756	8.00E-002 I					2.9E+003 N	2.9E+002 N	1.1E+002 N	1.6E+005 N	6.3E+003 N		
3,3'-DIMETHOXYBENZIDINE	119904		1.40E-002 H				4.8E+000 C	4.5E-001 C	2.3E-001 C	4.1E+002 C	4.6E+001 C		
DIMETHYLAMINE	124403			5.70E-006 W		y	4.2E-002 N	2.1E-002 N				8.5E-006	1.7E-004 N
2,4-DIMETHYLANILINE HYDROCHLORIDE	21436964		5.80E-001 H				1.2E-001 C	1.1E-002 C	5.4E-003 C	9.9E+000 C	1.1E+000 C		
2,4-DIMETHYLANILINE	95681		7.50E-001 H				8.9E-002 C	8.3E-003 C	4.2E-003 C	7.6E+000 C	8.5E-001 C		
N,N-DIMETHYLANILINE	121697	2.00E-003 I					7.3E+001 N	7.3E+000 N	2.7E+000 N	4.1E+003 N	1.6E+002 N		
3,3'-DIMETHYLBENZIDINE	119937		9.20E+000 H				7.3E-003 C	6.8E-004 C	3.4E-004 C	6.2E-001 C	6.9E-002 C		
1,1-DIMETHYLHYDRAZINE	57147		2.60E+000 W		3.50E+000 W		2.6E-002 C	1.8E-003 C	1.2E-003 C	2.2E+000 C	2.5E-001 C		
1,2-DIMETHYLHYDRAZINE	540738		3.70E+001 W		3.70E+001 W		1.8E-003 C	1.7E-004 C	8.5E-005 C	1.5E-001 C	1.7E-002 C		
2,4-DIMETHYLPHENOL	105679	2.00E-002 I					7.3E+002 N	7.3E+001 N	2.7E+001 N	4.1E+004 N	1.6E+003 N	3.4E-001	6.7E+000 N
2,6-DIMETHYLPHENOL	576261	6.00E-004 I					2.2E+001 N	2.2E+000 N	8.1E-001 N	1.2E+003 N	4.7E+001 N		
3,4-DIMETHYLPHENOL	95658	1.00E-003 I					3.7E+001 N	3.7E+000 N	1.4E+000 N	2.0E+003 N	7.8E+001 N		
DIMETHYLPHTHALATE	131113	1.00E+001 W					3.7E+005 N	3.7E+004 N	1.4E+004 N	2.0E+007 N	7.8E+005 N		
1,2-DINITROBENZENE	528290	4.00E-004 H					1.5E+001 N	1.5E+000 N	5.4E-001 N	8.2E+002 N	3.1E+001 N		
1,3-DINITROBENZENE	99650	1.00E-004 I					3.7E+000 N	3.7E-001 N	1.4E-001 N	2.0E+002 N	7.8E+000 N	1.8E-003	3.7E-002 N
1,4-DINITROBENZENE	100254	4.00E-004 H					1.5E+001 N	1.5E+000 N	5.4E-001 N	8.2E+002 N	3.1E+001 N		
4,6-DINITRO-O-CYCLOHEXYL PHENOL	131895	2.00E-003 I					7.3E+001 N	7.3E+000 N	2.7E+000 N	4.1E+003 N	1.6E+002 N		
4,6-DINITRO-2-METHYLPHENOL	534521	1.00E-003 E					3.7E+001 N	3.7E+000 N	1.4E+000 N	2.0E+003 N	7.8E+001 N		
2,4-DINITROPHENOL	51285	2.00E-003 I					7.3E+001 N	7.3E+000 N	2.7E+000 N	4.1E+003 N	1.6E+002 N		
DINITROTOLUENE MIX			6.80E-001 I				9.8E-002 C	9.2E-003 C	4.6E-003 C	8.4E+000 C	9.4E-001 C		
2,4-DINITROTOLUENE	121142	2.00E-003 I					7.3E+001 N	7.3E+000 N	2.7E+000 N	4.1E+003 N	1.6E+002 N	2.9E-002	5.7E-001 N
2,6-DINITROTOLUENE	606202	1.00E-003 H					3.7E+001 N	3.7E+000 N	1.4E+000 N	2.0E+003 N	7.8E+001 N	1.2E-002	2.5E-001 N
DINOSEB	88857	1.00E-003 I					3.7E+001 N	3.7E+000 N	1.4E+000 N	2.0E+003 N	7.8E+001 N	8.7E-003	1.7E-001 N

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Chemical	CAS	RfDo mg/kg/d		CSFo 1/mg/kg/d		RfDi mg/kg/d		CSFi 1/mg/kg/d		VOC	Risk-based concentrations: Tap water ug/l		Ambient air ug/m3		Fish mg/kg		Soil Industrial mg/kg		Residential mg/kg		Region III SSLs: Soil, for groundwater migration DAF 1 mg/kg	DAF 20 mg/kg
DIOCTYLPHTHALATE	117840	2.00E-002	H								7.3E+002	N	7.3E+001	N	2.7E+001	N	4.1E+004	N	1.6E+003	N	1.2E+005	2.4E+006 N
1,4-DIOXANE	123911			1.10E-002	I						6.1E+000	C	5.7E-001	C	2.9E-001	C	5.2E+002	C	5.8E+001	C	1.3E-003	2.6E-002 C
DIPHENYLAMINE	122394	2.50E-002	I								9.1E+002	N	9.1E+001	N	3.4E+001	N	5.1E+004	N	2.0E+003	N	1.3E+000	2.5E+001 N
1,2-DIPHENYLHYDRAZINE	122667			8.00E-001	I			8.00E-001	I		8.4E-002	C	7.8E-003	C	3.9E-003	C	7.2E+000	C	8.0E-001	C	1.3E-004	2.5E-003 C
DIQUAT	85007	2.20E-003	I								8.0E+001	N	8.0E+000	N	3.0E+000	N	4.5E+003	N	1.7E+002	N	1.7E-002	3.3E-001 N
DISULFOTON	298044	4.00E-005	I								1.5E+000	N	1.5E-001	N	5.4E-002	N	8.2E+001	N	3.1E+000	N	3.2E-003	6.4E-002 N
1,4-DITHIANE	505293	1.00E-002	I								3.7E+002	N	3.7E+001	N	1.4E+001	N	2.0E+004	N	7.8E+002	N		
DIURON	330541	2.00E-003	I								7.3E+001	N	7.3E+000	N	2.7E+000	N	4.1E+003	N	1.6E+002	N	5.8E-002	1.2E+000 N
ENDOSULFAN	115297	6.00E-003	I								2.2E+002	N	2.2E+001	N	8.1E+000	N	1.2E+004	N	4.7E+002	N	9.8E-001	2.0E+001 N
ENDRIN	72208	3.00E-004	I								1.1E+001	N	1.1E+000	N	4.1E-001	N	6.1E+002	N	2.3E+001	N	2.7E-001	5.4E+000 N
EPICHLOROHYDRIN	106898	2.00E-003	H	9.90E-003	I	2.86E-004	I	4.20E-003	I	y	2.0E+000	N	1.0E+000	N	3.2E-001	C !	5.8E+002	C !	6.5E+001	C !	4.2E-004	8.4E-003 N
ETHION	563122	5.00E-004	I								1.8E+001	N	1.8E+000	N	6.8E-001	N	1.0E+003	N	3.9E+001	N	3.2E-001	6.4E+000 N
2-ETHOXYETHANOL	110805	4.00E-001	H			5.70E-002	I				1.5E+004	N	2.1E+002	N	5.4E+002	N	8.2E+005	N	3.1E+004	N	3.3E+000	6.5E+001 N
ETHYL ACETATE	141786	9.00E-001	I							y	5.5E+003	N	3.3E+003	N	1.2E+003	N	1.8E+006	N	7.0E+004	N	1.7E+000	3.5E+001 N
**ETHYLBENZENE	100414	1.00E-001	I			2.90E-001	I	3.85E-003	E	y	3.3E+000	C	1.6E+000	C	1.4E+002	N	2.0E+005	N	7.8E+003	N	1.8E-003	3.6E-002 C
ETHYLENE DIAMINE	107153	2.00E-002	H								7.3E+002	N	7.3E+001	N	2.7E+001	N	4.1E+004	N	1.6E+003	N		
ETHYLENE GLYCOL	107211	2.00E+000	I								7.3E+004	N	7.3E+003	N	2.7E+003	N	4.1E+006	N	1.6E+005	N	1.5E+001	3.0E+002 N
ETHYLENE GLYCOL, MONOBUTYL ETHER	111762	5.00E-001	I			3.70E+000	I				1.8E+004	N	1.4E+004	N	6.8E+002	N	1.0E+006	N	3.9E+004	N		
ETHYLENE OXIDE	75218			1.00E+000	H			3.50E-001	H	y	2.3E-002	C	1.8E-002	C	3.2E-003	C	5.7E+000	C	6.4E-001	C	4.8E-006	9.5E-005 C
ETHYLENE THIOUREA	96457	8.00E-005	I	1.1E-001	H						6.1E-001	C !	5.7E-002	C !	2.9E-002	C !	5.2E+001	C !	5.8E+000	C !		
ETHYL ETHER	60297	2.00E-001	I							y	1.2E+003	N	7.3E+002	N	2.7E+002	N	4.1E+005	N	1.6E+004	N	4.2E-001	8.5E+000 N
ETHYL METHACRYLATE	97632	9.00E-002	H							y	5.5E+002	N	3.3E+002	N	1.2E+002	N	1.8E+005	N	7.0E+003	N	1.0E+000	2.1E+001 N
FENAMIPHOS	22224926	2.50E-004	I								9.1E+000	N	9.1E-001	N	3.4E-001	N	5.1E+002	N	2.0E+001	N	7.8E-003	1.6E-001 N
FLUOMETURON	2164172	1.30E-002	I								4.7E+002	N	4.7E+001	N	1.8E+001	N	2.7E+004	N	1.0E+003	N		
FLUORINE	7782414	6.00E-002	I								2.2E+003	N	2.2E+002	N	8.1E+001	N	1.2E+005	N	4.7E+003	N		
FOMESAFEN	72178020			1.90E-001	I						3.5E-001	C	3.3E-002	C	1.7E-002	C	3.0E+001	C	3.4E+000	C		
FONOFOS	944229	2.00E-003	I								7.3E+001	N	7.3E+000	N	2.7E+000	N	4.1E+003	N	1.6E+002	N	1.8E-001	3.5E+000 N
FORMALDEHYDE	50000	2.00E-001	I					4.50E-002	I		7.3E+003	N	1.4E-001	C	2.7E+002	N	4.1E+005	N	1.6E+004	N	1.5E+000	3.0E+001 N
FORMIC ACID	64186	2.00E+000	H								7.3E+004	N	7.3E+003	N	2.7E+003	N	4.1E+006	N	1.6E+005	N		
FURAN	110009	1.00E-003	I							y	6.1E+000	N	3.7E+000	N	1.4E+000	N	2.0E+003	N	7.8E+001	N	1.5E-003	3.0E-002 N
FURAZOLIDONE	67458			3.80E+000	H						1.8E-002	C	1.6E-003	C	8.3E-004	C	1.5E+000	C	1.7E-001	C		
FURFURAL	98011	3.00E-003	I			1.00E-002	A				1.1E+002	N	3.7E+001	N	4.1E+000	N	6.1E+003	N	2.3E+002	N	2.3E-002	4.6E-001 N
GLYCIDALDEHYDE	765344	4.00E-004	I			2.90E-004	H				1.5E+001	N	1.1E+000	N	5.4E-001	N	8.2E+002	N	3.1E+001	N		
GLYPHOSATE	1071836	1.00E-001	I								3.7E+003	N	3.7E+002	N	1.4E+002	N	2.0E+005	N	7.8E+003	N	2.6E+001	5.3E+002 N
HEPTACHLOR	76448	5.00E-004	I	4.50E+000	I			4.50E+000	I		1.5E-002	C	1.4E-003	C	7.0E-004	C	1.3E+000	C	1.4E-001	C	4.2E-002	8.4E-001 C
HEPTACHLOR EPOXIDE	1024573	1.30E-005	I	9.10E+000	I			9.10E+000	I		7.4E-003	C	6.9E-004	C	3.5E-004	C	6.3E-001	C	7.0E-002	C	1.2E-003	2.5E-002 C
HEXABROMOBENZENE	87821	2.00E-003	I								7.3E+001	N	7.3E+000	N	2.7E+000	N	4.1E+003	N	1.6E+002	N		
HEXACHLOROBENZENE	118741	8.00E-004	I	1.60E+000	I			1.60E+000	I		4.2E-002	C	3.9E-003	C	2.0E-003	C	3.6E+000	C	4.0E-001	C	2.6E-003	5.2E-002 C
HEXACHLOROBUTADIENE	87683	2.00E-004	H	7.80E-002	I			7.80E-002	I		8.6E-001	C !	8.0E-002	C !	4.0E-002	C !	7.3E+001	C !	8.2E+000	C !	9.2E-002	1.8E+000 C
ALPHA-HCH	319846			6.30E+000	I			6.30E+000	I		1.1E-002	C	9.9E-004	C	5.0E-004	C	9.1E-001	C	1.0E-001	C	4.5E-005	8.9E-004 C
BETA-HCH	319857			1.80E+000	I			1.80E+000	I		3.7E-002	C	3.5E-003	C	1.8E-003	C	3.2E+000	C	3.5E-001	C	1.6E-004	3.1E-003 C
GAMMA-HCH (LINDANE)	58899	3.00E-004	I	1.30E+000	H						5.2E-002	C	4.8E-003	C	2.4E-003	C	4.4E+000	C	4.9E-001	C	2.2E-004	4.3E-003 C
TECHNICAL HCH	608731			1.80E+000	I			1.80E+000	I		3.7E-002	C	3.5E-003	C	1.8E-003	C	3.2E+000	C	3.5E-001	C		
HEXACHLOROCYCLOPENTADIENE	77474	6.00E-003	I			5.7E-005	I				2.2E+002	N	2.1E-001	N	8.1E+000	N	1.2E+004	N	4.7E+002	N	8.8E+001	1.8E+003 N
HEXACHLORODIBENZODIOXIN MIX	19408743			6.20E+003	I			4.55E+003	I		1.1E-005	C	1.4E-006	C	5.1E-007	C	9.2E-004	C	1.0E-004	C		

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							Tap	Ambient		Soil		Soil, for groundwater migration	
Chemical	CAS	RfDo mg/kg/d	CSFo 1/mg/kg/d	RfDi mg/kg/d	CSFi 1/mg/kg/d	VOC	water ug/l	air ug/m3	Fish mg/kg	Industrial mg/kg	Residential mg/kg	DAF 1 mg/kg	DAF 20 mg/kg
HEXACHLOROETHANE	67721	1.00E-003 I	1.40E-002 I		1.40E-002 I		4.8E+000 C !	4.5E-001 C !	2.3E-001 C !	4.1E+002 C !	4.6E+001 C !	1.8E-002	3.6E-001 C
HEXACHLOROPHENE	70304	3.00E-004 I					1.1E+001 N	1.1E+000 N	4.1E-001 N	6.1E+002 N	2.3E+001 N	1.0E+002	2.0E+003 N
1,6-HEXAMETHYLENE DIISOCYANATE	822060			2.90E-006 I				1.1E-002 N					
HEXANE	110543	6.00E-002 H		5.71E-002 I		y	3.5E+002 N	2.1E+002 N	8.1E+001 N	1.2E+005 N	4.7E+003 N	6.9E-001	1.4E+001 N
2-HEXANONE	591786	4.00E-002 E		1.4E-003 E			1.5E+003 N	5.1E+000 N	5.4E+001 N	8.2E+004 N	3.1E+003 N		
HEXAZINONE	51235042	3.30E-002 I					1.2E+003 N	1.2E+002 N	4.5E+001 N	6.7E+004 N	2.6E+003 N		
HMX	2691410	5.00E-002 I					1.8E+003 N	1.8E+002 N	6.8E+001 N	1.0E+005 N	3.9E+003 N		
HYDRAZINE	302012		3.00E+000 I		1.70E+001 I		2.2E-002 C	3.7E-004 C	1.1E-003 C	1.9E+000 C	2.1E-001 C		
HYDROGEN CHLORIDE	7647010			5.70E-003 I				2.1E+001 N					
HYDROGEN SULFIDE	7783064	3.00E-003 I		2.85E-004 I			1.1E+002 N	1.0E+000 N	4.1E+000 N	6.1E+003 N	2.3E+002 N		
HYDROQUINONE	123319	4.00E-002 H					1.5E+003 N	1.5E+002 N	5.4E+001 N	8.2E+004 N	3.1E+003 N		
**IRON	7439896	3.00E-001 E					1.1E+004 N	1.1E+003 N	4.1E+002 N	6.1E+005 N	2.3E+004 N		
ISOBUTANOL	78831	3.00E-001 I				y	1.8E+003 N	1.1E+003 N	4.1E+002 N	6.1E+005 N	2.3E+004 N	5.9E-001	1.2E+001 N
ISOPHORONE	78591	2.00E-001 I	9.50E-004 I				7.0E+001 C	6.6E+000 C	3.3E+000 C	6.0E+003 C	6.7E+002 C	2.1E-002	4.1E-001 C
ISOPROPALIN	33820530	1.50E-002 I					5.5E+002 N	5.5E+001 N	2.0E+001 N	3.1E+004 N	1.2E+003 N		
ISOPROPYL METHYL PHOSPHONIC ACID	1832548	1.00E-001 I					3.7E+003 N	3.7E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N		
TETRAETHYLLEAD	78002	1.00E-007 I					3.7E-003 N	3.7E-004 N	1.4E-004 N	2.0E-001 N	7.8E-003 N	4.6E-005	9.2E-004 N
LITHIUM	7439932	2.00E-002 E					7.3E+002 N	7.3E+001 N	2.7E+001 N	4.1E+004 N	1.6E+003 N		
MALATHION	121755	2.00E-002 I					7.3E+002 N	7.3E+001 N	2.7E+001 N	4.1E+004 N	1.6E+003 N	4.0E-001	8.1E+000 N
MALEIC ANHYDRIDE	108316	1.00E-001 I					3.7E+003 N	3.7E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N		
MANGANESE-NONFOOD	7439965	2.00E-002 I		1.43E-005 I			7.3E+002 N	5.2E-002 N	2.7E+001 N	4.1E+004 N	1.6E+003 N	4.8E+001	9.5E+002 N
MANGANESE-FOOD	7439965	1.40E-001 I		1.43E-005 I			5.1E+003 N	5.2E-002 N	1.9E+002 N	2.9E+005 N	1.1E+004 N	3.3E+002	6.7E+003 N
MEPHOSFOLAN	950107	9.00E-005 H					3.3E+000 N	3.3E-001 N	1.2E-001 N	1.8E+002 N	7.0E+000 N		
MEPIQUAT CHLORIDE	24307264	3.00E-002 I					1.1E+003 N	1.1E+002 N	4.1E+001 N	6.1E+004 N	2.3E+003 N		
MERCURIC CHLORIDE	7487947	3.00E-004 I					1.1E+001 N	1.1E+000 N	4.1E-001 N	6.1E+002 N	2.3E+001 N		
MERCURY (INORGANIC)	7439976			8.60E-005 I				3.1E-001 N					
METHYLMERCURY	22967926	1.00E-004 I					3.7E+000 N	3.7E-001 N	1.4E-001 N	2.0E+002 N	7.8E+000 N		
METHACRYLONITRILE	126987	1.00E-004 I		2.00E-004 A		y	1.0E+000 N	7.3E-001 N	1.4E-001 N	2.0E+002 N	7.8E+000 N	2.1E-004	4.2E-003 N
METHANOL	67561	5.00E-001 I					1.8E+004 N	1.8E+003 N	6.8E+002 N	1.0E+006 N	3.9E+004 N	3.8E+000	7.5E+001 N
METHIDATHION	950378	1.00E-003 I					3.7E+001 N	3.7E+000 N	1.4E+000 N	2.0E+003 N	7.8E+001 N		
METHOXYCHLOR	72435	5.00E-003 I					1.8E+002 N	1.8E+001 N	6.8E+000 N	1.0E+004 N	3.9E+002 N	1.5E+001	3.1E+002 N
METHYL ACETATE	79209	1.00E+000 H				y	6.1E+003 N	3.7E+003 N	1.4E+003 N	2.0E+006 N	7.8E+004 N	1.2E+000	2.5E+001 N
METHYL ACRYLATE	96333	3.00E-002 A				y	1.8E+002 N	1.1E+002 N	4.1E+001 N	6.1E+004 N	2.3E+003 N	5.0E-001	1.0E+001 N
2-METHYLANILINE	95534		2.40E-001 H				2.8E-001 C	2.6E-002 C	1.3E-002 C	2.4E+001 C	2.7E+000 C	2.8E-004	5.7E-003 C
4-(2-METHYL-4-CHLOROPHENOXY) BUTYRIC ACID	94815	1.00E-002 I					3.7E+002 N	3.7E+001 N	1.4E+001 N	2.0E+004 N	7.8E+002 N		
2-METHYL-4-CHLOROPHENOXYACETIC ACID (MCPA)	94746	5.00E-004 I					1.8E+001 N	1.8E+000 N	6.8E-001 N	1.0E+003 N	3.9E+001 N		
2-(2-METHYL-4-CHLOROPHENOXY)PROPIONIC ACID (MCP	93652	1.00E-003 I					3.7E+001 N	3.7E+000 N	1.4E+000 N	2.0E+003 N	7.8E+001 N		
METHYLCYCLOHEXANE	108872			8.60E-001 H		y	6.3E+003 N	3.1E+003 N					
METHYLENE BROMIDE	74953	1.00E-002 A				y	6.1E+001 N	3.7E+001 N	1.4E+001 N	2.0E+004 N	7.8E+002 N	1.5E-002	3.0E-001 N
METHYLENE CHLORIDE	75092	6.00E-002 I	7.50E-003 I	8.60E-001 H	1.65E-003 I	y	4.1E+000 C	3.8E+000 C	4.2E-001 C	7.6E+002 C	8.5E+001 C	9.5E-004	1.9E-002 C
4,4'-METHYLENE BIS(2-CHLOROANILINE)	101144	7.00E-004 H	1.30E-001 H		1.30E-001 H		5.2E-001 C	4.8E-002 C	2.4E-002 C	4.4E+001 C	4.9E+000 C		
4,4'-METHYLENE BIS(N,N'-DIMETHYL)ANILINE	101611		4.60E-002 I				1.5E+000 C	1.4E-001 C	6.9E-002 C	1.2E+002 C	1.4E+001 C		
4,4'-METHYLENEDIPHENYL ISOCYANATE	101688			1.7E-004 I				6.2E-001 N					
METHYL ETHYL KETONE (2-BUTANONE)	78933	6.00E-001 I		2.86E-001 I		y	1.9E+003 N	1.0E+003 N	8.1E+002 N	1.2E+006 N	4.7E+004 N	4.0E-001	7.9E+000 N
METHYL HYDRAZINE	60344		1.10E+000 W				6.1E-002 C	5.7E-003 C	2.9E-003 C	5.2E+000 C	5.8E-001 C		

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Chemical	CAS	RfDo mg/kg/d	CSFo 1/mg/kg/d	RfDi mg/kg/d	CSFi 1/mg/kg/d	VOC	Risk-based concentrations: Tap water ug/L	Ambient air ug/m3	Fish mg/kg	Soil Industrial mg/kg	Residential mg/kg	Region III SSLs: Soil, for groundwater migration DAF 1 mg/kg	DAF 20 mg/kg
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	108101	8.00E-002 H		2.00E-002 A		y	1.4E+002 N	7.3E+001 N	1.1E+002 N	1.6E+005 N	6.3E+003 N	6.5E-002	1.3E+000 N
METHYL METHACRYLATE	80626	1.40E+000 I		2.00E-001 I		y	1.4E+003 N	7.3E+002 N	1.9E+003 N	2.9E+006 N	1.1E+005 N	3.2E-001	6.5E+000 N
2-METHYL-5-NITROANILINE	99558		3.30E-002 H				2.0E+000 C	1.9E-001 C	9.6E-002 C	1.7E+002 C	1.9E+001 C		
METHYL PARATHION	298000	2.50E-004 I					9.1E+000 N	9.1E-001 N	3.4E-001 N	5.1E+002 N	2.0E+001 N	4.3E-003	8.5E-002 N
2-METHYLPHENOL	95487	5.00E-002 I					1.8E+003 N	1.8E+002 N	6.8E+001 N	1.0E+005 N	3.9E+003 N		
3-METHYLPHENOL	108394	5.00E-002 I					1.8E+003 N	1.8E+002 N	6.8E+001 N	1.0E+005 N	3.9E+003 N		
4-METHYLPHENOL	106445	5.00E-003 H					1.8E+002 N	1.8E+001 N	6.8E+000 N	1.0E+004 N	3.9E+002 N		
METHYLSTYRENE MIX	25013154	6.00E-003 A		1.00E-002 A		y	5.5E+001 N	3.7E+001 N	8.1E+000 N	1.2E+004 N	4.7E+002 N	5.1E-002	1.0E+000 N
ALPHA-METHYLSTYRENE	98839	7.00E-002 A				y	4.3E+002 N	2.6E+002 N	9.5E+001 N	1.4E+005 N	5.5E+003 N	4.0E-001	7.9E+000 N
**METHYL TERT-BUTYL ETHER	1634044		4.00E-003 O	8.57E-001 I		y	2.6E+000 C	1.6E+000 C	7.9E-001 C	1.4E+003 C	1.6E+002 C	5.9E-004	1.2E-002 C
METOLACHLOR (DUAL)	51218452	1.50E-001 I					5.5E+003 N	5.5E+002 N	2.0E+002 N	3.1E+005 N	1.2E+004 N		
MIREX	2385855	2.00E-004 I					7.3E+000 N	7.3E-001 N	2.7E-001 N	4.1E+002 N	1.6E+001 N		
MOLYBDENUM	7439987	5E-003 I					1.8E+002 N	1.8E+001 N	6.8E+000 N	1.0E+004 N	3.9E+002 N		
MONOCHLORAMINE	10599903	1E-001 I		1.00E-001 H			3.7E+003 N	3.7E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N		
NALED	300765	2E-003 I					7.3E+001 N	7.3E+000 N	2.7E+000 N	4.1E+003 N	1.6E+002 N		
NICKEL REFINERY DUST					8.4E-001 I			7.5E-003 C					
NICKEL	7440020	2.00E-002 I					7.3E+002 N	7.3E+001 N	2.7E+001 N	4.1E+004 N	1.6E+003 N		
NITRATE	14797558	1.60E+000 I					5.8E+004 N	5.8E+003 N	2.2E+003 N	3.3E+006 N	1.3E+005 N		
NITRIC OXIDE	10102439	1.00E-001 W				y	6.1E+002 N	3.7E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N		
NITRITE	14797650	1.00E-001 I					3.7E+003 N	3.7E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N		
2-NITROANILINE	88744			5.70E-005 H				2.1E-001 N					
NITROBENZENE	98953	5.00E-004 I		6.00E-004 A		y	3.5E+000 N	2.2E+000 N	6.8E-001 N	1.0E+003 N	3.9E+001 N	1.2E-003	2.3E-002 N
NITROFURANTOIN	67209	7.00E-002 H					2.6E+003 N	2.6E+002 N	9.5E+001 N	1.4E+005 N	5.5E+003 N		
NITROFURAZONE	59870		1.50E+000 H				4.5E-002 C	4.2E-003 C	2.1E-003 C	3.8E+000 C	4.3E-001 C		
NITROGEN DIOXIDE	10102440	1.00E+000 W				y	6.1E+003 N	3.7E+003 N	1.4E+003 N	2.0E+006 N	7.8E+004 N		
NITROGLYCERIN	55630		1.4E-002 E				4.8E+000 C	4.5E-001 C	2.3E-001 C	4.1E+002 C	4.6E+001 C		
4-NITROPHENOL	100027	8.00E-003 E					2.9E+002 N	2.9E+001 N	1.1E+001 N	1.6E+004 N	6.3E+002 N	8.7E-002	1.7E+000 N
2-NITROPROPANE	79469			5.70E-003 I	9.40E+000 H	y	1.3E-003 C	6.7E-004 C				3.2E-007	6.4E-006 C
N-NITROSO-DI-N-BUTYLAMINE	924163		5.40E+000 I		5.60E+000 I	y	1.9E-003 C	1.1E-003 C	5.8E-004 C	1.1E+000 C	1.2E-001 C	1.4E-006	2.7E-005 C
N-NITROSODIETHANOLAMINE	1116547		2.80E+000 I				2.4E-002 C	2.2E-003 C	1.1E-003 C	2.0E+000 C	2.3E-001 C		
N-NITROSODIETHYLAMINE	55185		1.50E+002 I		1.50E+002 I		4.5E-004 C	4.2E-005 C	2.1E-005 C	3.8E-002 C	4.3E-003 C	1.1E-007	2.3E-006 C
N-NITROSODIMETHYLAMINE	62759		5.10E+001 I		5.10E+001 I		1.3E-003 C	1.2E-004 C	6.2E-005 C	1.1E-001 C	1.3E-002 C	2.8E-007	5.7E-006 C
N-NITROSODIPHENYLAMINE	86306		4.90E-003 I				1.4E+001 C	1.3E+000 C	6.4E-001 C	1.2E+003 C	1.3E+002 C	3.8E-002	7.6E-001 C
N-NITROSODIPROPYLAMINE	621647		7.00E+000 I				9.6E-003 C	8.9E-004 C	4.5E-004 C	8.2E-001 C	9.1E-002 C	2.4E-006	4.7E-005 C
N-NITROSO-N-ETHYLUREA	759739		1.40E+002 H				4.8E-004 C	4.5E-005 C	2.3E-005 C	4.1E-002 C	4.6E-003 C		
N-NITROSO-N-METHYLETHYLAMINE	10595956		2.20E+001 I				3.0E-003 C	2.8E-004 C	1.4E-004 C	2.6E-001 C	2.9E-002 C		
N-NITROSOPYRROLIDINE	930552		2.10E+000 I		2.10E+000 I		3.2E-002 C	3.0E-003 C	1.5E-003 C	2.7E+000 C	3.0E-001 C		
M-NITROTOLUENE	99081	2.00E-002 E				y	1.2E+002 N	7.3E+001 N	2.7E+001 N	4.1E+004 N	1.6E+003 N		
O-NITROTOLUENE	88722	1.00E-002 H				y	6.1E+001 N	3.7E+001 N	1.4E+001 N	2.0E+004 N	7.8E+002 N		
P-NITROTOLUENE	99990	1.00E-002 H				y	6.1E+001 N	3.7E+001 N	1.4E+001 N	2.0E+004 N	7.8E+002 N		
NUSTAR	85509199	7.00E-004 I					2.6E+001 N	2.6E+000 N	9.5E-001 N	1.4E+003 N	5.5E+001 N		
ORYZALIN	19044883	5.00E-002 I					1.8E+003 N	1.8E+002 N	6.8E+001 N	1.0E+005 N	3.9E+003 N		
OXADIAZON	19666309	5.00E-003 I					1.8E+002 N	1.8E+001 N	6.8E+000 N	1.0E+004 N	3.9E+002 N		
OXAMYL	23135220	2.50E-002 I					9.1E+002 N	9.1E+001 N	3.4E+001 N	5.1E+004 N	2.0E+003 N	1.9E-001	3.8E+000 N
OXYFLUORFEN	42874033	3.00E-003 I					1.1E+002 N	1.1E+001 N	4.1E+000 N	6.1E+003 N	2.3E+002 N		

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Chemical	CAS	RfDo mg/kg/d	CSFo 1/mg/kg/d	RfDi mg/kg/d	CSFi 1/mg/kg/d	VOC	Risk-based concentrations: Tap water ug/l	Ambient air ug/m3	Fish mg/kg	Soil Industrial mg/kg	Residential mg/kg	Region III SSLs: Soil, for groundwater migration DAF 1 mg/kg	DAF 20 mg/kg
PARAQUAT DICHLORIDE	1910425	4.50E-003 I					1.6E+002 N	1.6E+001 N	6.1E+000 N	9.2E+003 N	3.5E+002 N		
PARATHION	56382	6.00E-003 H					2.2E+002 N	2.2E+001 N	8.1E+000 N	1.2E+004 N	4.7E+002 N	5.0E-001	1.0E+001 N
PENTACHLOROBENZENE	608935	8.00E-004 I					2.9E+001 N	2.9E+000 N	1.1E+000 N	1.6E+003 N	6.3E+001 N	1.0E+000	2.0E+001 N
PENTACHLORONITROBENZENE	82688	3.00E-003 I	2.60E-001 H				2.6E-001 C	2.4E-002 C	1.2E-002 C	2.2E+001 C	2.5E+000 C	4.1E-003	8.2E-002 C
PENTACHLOROPHENOL	87865	3.00E-002 I	1.20E-001 I				5.6E-001 C	5.2E-002 C	2.6E-002 C	4.8E+001 C	5.3E+000 C		
PERMETHRIN	52645531	5.00E-002 I					1.8E+003 N	1.8E+002 N	6.8E+001 N	1.0E+005 N	3.9E+003 N	1.2E+002	2.4E+003 N
PHENOL	108952	6.00E-001 I					2.2E+004 N	2.2E+003 N	8.1E+002 N	1.2E+006 N	4.7E+004 N	6.7E+000	1.3E+002 N
M-PHENYLENEDIAMINE	108452	6.00E-003 I					2.2E+002 N	2.2E+001 N	8.1E+000 N	1.2E+004 N	4.7E+002 N	4.9E-002	9.8E-001 N
O-PHENYLENEDIAMINE	95545		4.70E-002 H				1.4E+000 C	1.3E-001 C	6.7E-002 C	1.2E+002 C	1.4E+001 C		
P-PHENYLENEDIAMINE	106503	1.90E-001 H					6.9E+003 N	6.9E+002 N	2.6E+002 N	3.9E+005 N	1.5E+004 N		
2-PHENYLPHENOL	90437		1.90E-003 H				3.5E+001 C	3.3E+000 C	1.7E+000 C	3.0E+003 C	3.4E+002 C		
PHOSPHINE	7803512	3.00E-004 I		8.60E-005 I			1.1E+001 N	3.1E-001 N	4.1E-001 N	6.1E+002 N	2.3E+001 N		
PHOSPHORIC ACID	7664382			2.90E-003 I				1.1E+001 N					
PHOSPHORUS (WHITE)	7723140	2.00E-005 I					7.3E-001 N	7.3E-002 N	2.7E-002 N	4.1E+001 N	1.6E+000 N		
P-PHTHALIC ACID	100210	1.00E+000 H					3.7E+004 N	3.7E+003 N	1.4E+003 N	2.0E+006 N	7.8E+004 N		
PHTHALIC ANHYDRIDE	85449	2.00E+000 I		3.43E-002 H			7.3E+004 N	1.3E+002 N	2.7E+003 N	4.1E+006 N	1.6E+005 N	2.6E+001	5.2E+002 N
POLYBROMINATED BIPHENYLS		7.00E-006 H	8.90E+000 H				7.5E-003 C	7.0E-004 C	3.5E-004 C	6.4E-001 C	7.2E-002 C !		
POLYCHLORINATED BIPHENYLS	1336363		2.00E+000 I		2.00E+000 I		3.3E-002 C	3.1E-003 C	1.6E-003 C	2.9E+000 C	3.2E-001 C	2.1E-002	4.1E-001 C
AROCLOR-1016	12674112	7.00E-005 I	7.00E-002 I		7.00E-002 I		9.6E-001 C !	8.9E-002 C !	4.5E-002 C !	8.2E+001 C !	5.5E+000 N	2.1E-001	4.2E+000 C
AROCLOR-1221	11104282		2.00E+000 I		2.00E+000 I		3.3E-002 C	3.1E-003 C	1.6E-003 C	2.9E+000 C	3.2E-001 C		
AROCLOR-1232	11141165		2.00E+000 I		2.00E+000 I		3.3E-002 C	3.1E-003 C	1.6E-003 C	2.9E+000 C	3.2E-001 C		
AROCLOR-1242	53469219		2.00E+000 I		2.00E+000 I		3.3E-002 C	3.1E-003 C	1.6E-003 C	2.9E+000 C	3.2E-001 C		
AROCLOR-1248	12672296		2.00E+000 I		2.00E+000 I		3.3E-002 C	3.1E-003 C	1.6E-003 C	2.9E+000 C	3.2E-001 C		
AROCLOR-1254	11097691	2.00E-005 I	2.00E+000 I		2.00E+000 I		3.3E-002 C	3.1E-003 C	1.6E-003 C	2.9E+000 C	3.2E-001 C !	5.4E-002	1.1E+000 C
AROCLOR-1260	11096825		2.00E+000 I		2.00E+000 I		3.3E-002 C	3.1E-003 C	1.6E-003 C	2.9E+000 C	3.2E-001 C		
POLYCHLORINATED TERPHENYLS	61788338		4.50E+000 E				1.5E-002 C	1.4E-003 C	7.0E-004 C	1.3E+000 C	1.4E-001 C		
POLYNUCLEAR AROMATIC HYDROCARBONS:													
ACENAPHTHENE	83329	6.00E-002 I				y	3.7E+002 N	2.2E+002 N	8.1E+001 N	1.2E+005 N	4.7E+003 N	5.2E+000	1.0E+002 N
ANTHRACENE	120127	3.00E-001 I				y	1.8E+003 N	1.1E+003 N	4.1E+002 N	6.1E+005 N	2.3E+004 N	2.3E+001	4.7E+002 N
BENZ[A]ANTHRACENE	56553		7.30E-001 E				9.2E-002 C	8.6E-003 C	4.3E-003 C	7.8E+000 C	8.7E-001 C	7.3E-002	1.5E+000 C
BENZO[B]FLUORANTHENE	205992		7.30E-001 E				9.2E-002 C	8.6E-003 C	4.3E-003 C	7.8E+000 C	8.7E-001 C	2.3E-001	4.5E+000 C
BENZO[K]FLUORANTHENE	207089		7.30E-002 E				9.2E-001 C	8.6E-002 C	4.3E-002 C	7.8E+001 C	8.7E+000 C	2.3E+000	4.5E+001 C
BENZO[A]PYRENE	50328		7.30E+000 I		3.10E+000 E		9.2E-003 C	2.0E-003 C	4.3E-004 C	7.8E-001 C	8.7E-002 C	1.9E-002	3.7E-001 C
CARBAZOLE	86748		2.00E-002 H				3.3E+000 C	3.1E-001 C	1.6E-001 C	2.9E+002 C	3.2E+001 C	2.3E-002	4.7E-001 C
CHRYSENE	218019		7.30E-003 E				9.2E+000 C	8.6E-001 C	4.3E-001 C	7.8E+002 C	8.7E+001 C	7.3E+000	1.5E+002 C
DIBENZ[A,H]ANTHRACENE	53703		7.30E+000 E				9.2E-003 C	8.6E-004 C	4.3E-004 C	7.8E-001 C	8.7E-002 C	7.0E-002	1.4E+000 C
DIBENZOFURAN	132649	4.00E-003 E				y	2.4E+001 N	1.5E+001 N	5.4E+000 N	8.2E+003 N	3.1E+002 N	3.8E-001	7.7E+000 N
FLUORANTHENE	206440	4.00E-002 I					1.5E+003 N	1.5E+002 N	5.4E+001 N	8.2E+004 N	3.1E+003 N	3.1E+002	6.3E+003 N
FLUORENE	86737	4.00E-002 I				y	2.4E+002 N	1.5E+002 N	5.4E+001 N	8.2E+004 N	3.1E+003 N	6.8E+000	1.4E+002 N
INDENO[1,2,3-C,D]PYRENE	193395		7.30E-001 E				9.2E-002 C	8.6E-003 C	4.3E-003 C	7.8E+000 C	8.7E-001 C	6.4E-001	1.3E+001 C
2-METHYLNAPHTHALENE	91576	2.00E-002 E				y	1.2E+002 N	7.3E+001 N	2.7E+001 N	4.1E+004 N	1.6E+003 N	1.1E+000	2.2E+001 N
NAPHTHALENE	91203	2.00E-002 I		9.00E-004 I		y	6.5E+000 N	3.3E+000 N	2.7E+001 N	4.1E+004 N	1.6E+003 N	7.7E-003	1.5E-001 N
PYRENE	129000	3.00E-002 I				y	1.8E+002 N	1.1E+002 N	4.1E+001 N	6.1E+004 N	2.3E+003 N	3.4E+001	6.8E+002 N
PROMETON	1610180	1.50E-002 I					5.5E+002 N	5.5E+001 N	2.0E+001 N	3.1E+004 N	1.2E+003 N		
PROMETRYN	7287196	4.00E-003 I					1.5E+002 N	1.5E+001 N	5.4E+000 N	8.2E+003 N	3.1E+002 N		

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PROPACHLOR	1918167	1.30E-002 I					4.7E+002 N	4.7E+001 N	1.8E+001 N	2.7E+004 N	1.0E+003 N		
PROPANIL	709988	5.00E-003 I					1.8E+002 N	1.8E+001 N	6.8E+000 N	1.0E+004 N	3.9E+002 N		
PROPARGITE	2312358	2.00E-002 I					7.3E+002 N	7.3E+001 N	2.7E+001 N	4.1E+004 N	1.6E+003 N		
N-PROPYLBENZENE	103651	4.00E-002 E				y	2.4E+002 N	1.5E+002 N	5.4E+001 N	8.2E+004 N	3.1E+003 N	1.4E+000	2.8E+001 N
PROPYLENE GLYCOL	57556	2.00E+001 H					7.3E+005 N	7.3E+004 N	2.7E+004 N	4.1E+007 N	1.6E+006 N		
PROPYLENE GLYCOL, MONOETHYL ETHER	52125538	7.00E-001 H					2.6E+004 N	2.6E+003 N	9.5E+002 N	1.4E+006 N	5.5E+004 N		
PROPYLENE GLYCOL, MONOMETHYL ETHER	107982	7.00E-001 H		5.70E-001 I			2.6E+004 N	2.1E+003 N	9.5E+002 N	1.4E+006 N	5.5E+004 N		
PURSUIT	81335775	2.50E-001 I					9.1E+003 N	9.1E+002 N	3.4E+002 N	5.1E+005 N	2.0E+004 N		
PYRIDINE	110861	1.00E-003 I					3.7E+001 N	3.7E+000 N	1.4E+000 N	2.0E+003 N	7.8E+001 N		
**QUINOLINE	91225		3.00E+000 I				2.2E-002 C	2.1E-003 C	1.1E-003 C	1.9E+000 C	2.1E-001 C		
RDX	121824	3.00E-003 I	1.10E-001 I				6.1E-001 C	5.7E-002 C	2.9E-002 C	5.2E+001 C	5.8E+000 C		
RESMETHRIN	10453868	3.00E-002 I					1.1E+003 N	1.1E+002 N	4.1E+001 N	6.1E+004 N	2.3E+003 N		
RONNEL	299843	5.00E-002 H					1.8E+003 N	1.8E+002 N	6.8E+001 N	1.0E+005 N	3.9E+003 N		
ROTENONE	83794	4.00E-003 I					1.5E+002 N	1.5E+001 N	5.4E+000 N	8.2E+003 N	3.1E+002 N		
SELENIOUS ACID	7783008	5.00E-003 I					1.8E+002 N	1.8E+001 N	6.8E+000 N	1.0E+004 N	3.9E+002 N		
SELENIUM	7782492	5.00E-003 I					1.8E+002 N	1.8E+001 N	6.8E+000 N	1.0E+004 N	3.9E+002 N	9.5E-001	1.9E+001 N
SILVER	7440224	5.00E-003 I					1.8E+002 N	1.8E+001 N	6.8E+000 N	1.0E+004 N	3.9E+002 N	1.6E+000	3.1E+001 N
SIMAZINE	122349	5.00E-003 I	1.20E-001 H				5.6E-001 C	5.2E-002 C	2.6E-002 C	4.8E+001 C	5.3E+000 C	1.7E-004	3.3E-003 C
SODIUM AZIDE	26628228	4.00E-003 I					1.5E+002 N	1.5E+001 N	5.4E+000 N	8.2E+003 N	3.1E+002 N		
SODIUM DIETHYLDITHIOCARBAMATE	148185	3.00E-002 I	2.70E-001 H				2.5E-001 C	2.3E-002 C	1.2E-002 C	2.1E+001 C	2.4E+000 C		
STRONTIUM, STABLE	7440246	6.00E-001 I					2.2E+004 N	2.2E+003 N	8.1E+002 N	1.2E+006 N	4.7E+004 N	7.7E+002	1.5E+004 N
STRYCHNINE	57249	3.00E-004 I					1.1E+001 N	1.1E+000 N	4.1E-001 N	6.1E+002 N	2.3E+001 N	8.3E-003	1.7E-001 N
STYRENE	100425	2.00E-001 I		2.86E-001 I		y	1.6E+003 N	1.0E+003 N	2.7E+002 N	4.1E+005 N	1.6E+004 N	2.9E+000	5.7E+001 N
2,3,7,8-TETRACHLORODIBENZODIOXIN	1746016		1.50E+005 H		1.50E+005 H		4.5E-007 C	4.2E-008 C	2.1E-008 C	3.8E-005 C	4.3E-006 C	4.3E-007	8.6E-006 C
1,2,4,5-TETRACHLOROBENZENE	95943	3.00E-004 I					1.1E+001 N	1.1E+000 N	4.1E-001 N	6.1E+002 N	2.3E+001 N	3.3E-002	6.6E-001 N
1,1,1,2-TETRACHLOROETHANE	630206	3.00E-002 I	2.60E-002 I		2.60E-002 I	y	4.1E-001 C	2.4E-001 C	1.2E-001 C	2.2E+002 C	2.5E+001 C	2.0E-004	4.0E-003 C
1,1,2,2-TETRACHLOROETHANE	79345	6.00E-002 E	2.00E-001 I		2.00E-001 I	y	5.3E-002 C	3.1E-002 C	1.6E-002 C	2.9E+001 C	3.2E+000 C	3.4E-005	6.8E-004 C
**TETRACHLOROETHENE	127184	1.00E-002 I	5.2E-002 E	1.4E-001 E	1.00E-002 E	y	6.3E-001 C	6.3E-001 C	6.1E-002 C	1.1E+002 C	1.2E+001 C	1.4E-003	2.9E-002 C
2,3,4,6-TETRACHLOROPHENOL	58902	3.00E-002 I					1.1E+003 N	1.1E+002 N	4.1E+001 N	6.1E+004 N	2.3E+003 N		
P,A,A,A-TETRACHLOROTOLUENE	5216251		2.00E+001 H				3.3E-003 C	3.1E-004 C	1.6E-004 C	2.9E-001 C	3.2E-002 C		
1,1,1,2-TETRAFLUOROETHANE	811972			2.29E+001 I		y	1.7E+005 N	8.4E+004 N					
TETRAHYDROFURAN	109999	2.00E-001 E	7.6E-003 E	8.6E-002 E	6.8E-003 E		8.8E+000 C	9.2E-001 C	4.2E-001 C	7.5E+002 C	8.4E+001 C		
TETRYL	479458	1.00E-002 H					3.7E+002 N	3.7E+001 N	1.4E+001 N	2.0E+004 N	7.8E+002 N		
THALLIC OXIDE	1314325	7.00E-005 W					2.6E+000 N	2.6E-001 N	9.5E-002 N	1.4E+002 N	5.5E+000 N		
THALLIUM	7440280	7.00E-005 O					2.6E+000 N	2.6E-001 N	9.5E-002 N	1.4E+002 N	5.5E+000 N	1.8E-001	3.6E+000 N
THALLIUM ACETATE	563688	9.00E-005 I					3.3E+000 N	3.3E-001 N	1.2E-001 N	1.8E+002 N	7.0E+000 N		
THALLIUM CARBONATE	6533739	8.00E-005 I					2.9E+000 N	2.9E-001 N	1.1E-001 N	1.6E+002 N	6.3E+000 N		
THALLIUM CHLORIDE	7791120	8.00E-005 I					2.9E+000 N	2.9E-001 N	1.1E-001 N	1.6E+002 N	6.3E+000 N		
THALLIUM NITRATE	10102451	9.00E-005 I					3.3E+000 N	3.3E-001 N	1.2E-001 N	1.8E+002 N	7.0E+000 N		
THALLIUM SULFATE (2:1)	7446186	8.00E-005 I					2.9E+000 N	2.9E-001 N	1.1E-001 N	1.6E+002 N	6.3E+000 N		
THIOBENCARB	28249776	1.00E-002 I					3.7E+002 N	3.7E+001 N	1.4E+001 N	2.0E+004 N	7.8E+002 N		
TIN	7440315	6.00E-001 H					2.2E+004 N	2.2E+003 N	8.1E+002 N	1.2E+006 N	4.7E+004 N		

Sources: I = IRIS H = HEAST A = HEAST Alternate W = Withdrawn from IRIS or HEAST E = EPA-NCEA provisional value O = other							Basis: C = Carcinogenic effects N = Noncarcinogenic effects ! = RBC at HI of 0.1 < RBC-c Risk-based concentrations					Region III SSLs	
							Tap	Ambient		Soil		Soil, for groundwater migration	
		RfDo	CSFo	RfDi	CSFi		water	air	Fish	Industrial	Residential	DAF 1	DAF 20
Chemical	CAS	mg/kg/d	1/mg/kg/d	mg/kg/d	1/mg/kg/d	VOC	ug/l	ug/m3	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
TITANIUM	7440326	4.00E+000 E		8.60E-003 E			1.5E+005 N	3.1E+001 N	5.4E+003 N	8.2E+006 N	3.1E+005 N		
TITANIUM DIOXIDE	13463677	4.00E+000 E		8.60E-003 E			1.5E+005 N	3.1E+001 N	5.4E+003 N	8.2E+006 N	3.1E+005 N		
TOLUENE	108883	2.00E-001 I		1.14E-001 I		y	7.5E+002 N	4.2E+002 N	2.7E+002 N	4.1E+005 N	1.6E+004 N	4.4E-001	8.8E+000 N
TOLUENE-2,4-DIAMINE	95807		3.20E+000 H				2.1E-002 C	2.0E-003 C	9.9E-004 C	1.8E+000 C	2.0E-001 C		
TOLUENE-2,5-DIAMINE	95705	6.00E-001 H					2.2E+004 N	2.2E+003 N	8.1E+002 N	1.2E+006 N	4.7E+004 N		
TOLUENE-2,6-DIAMINE	823405	2.00E-001 H					7.3E+003 N	7.3E+002 N	2.7E+002 N	4.1E+005 N	1.6E+004 N		
P-TOLUIDINE	106490		1.90E-001 H				3.5E-001 C	3.3E-002 C	1.7E-002 C	3.0E+001 C	3.4E+000 C	3.0E-004	5.9E-003 C
TOXAPHENE	8001352		1.10E+000 I		1.10E+000 I		6.1E-002 C	5.7E-003 C	2.9E-003 C	5.2E+000 C	5.8E-001 C	3.1E-002	6.3E-001 C
1,2,4-TRIBROMOBENZENE	615543	5.00E-003 I					1.8E+002 N	1.8E+001 N	6.8E+000 N	1.0E+004 N	3.9E+002 N		
TRIBUTYLTIN OXIDE	56359	3.00E-004 I					1.1E+001 N	1.1E+000 N	4.1E-001 N	6.1E+002 N	2.3E+001 N		
2,4,6-TRICHLOROANILINE	634935		3.40E-002 H				2.0E+000 C	1.8E-001 C	9.3E-002 C	1.7E+002 C	1.9E+001 C		
1,2,4-TRICHLOROBENZENE	120821	1.00E-002 I		5.70E-002 H		y	1.9E+002 N	2.1E+002 N	1.4E+001 N	2.0E+004 N	7.8E+002 N	3.8E-001	7.5E+000 N
1,1,1-TRICHLOROETHANE	71556	2.80E-001 E		6.30E-001 E		y	3.2E+003 N	2.3E+003 N	3.8E+002 N	5.7E+005 N	2.2E+004 N	3.0E+000	6.0E+001 N
1,1,2-TRICHLOROETHANE	79005	4.00E-003 I	5.70E-002 I		5.60E-002 I	y	1.9E-001 C	1.1E-001 C	5.5E-002 C	1.0E+002 C	1.1E+001 C	3.9E-005	7.8E-004 C
**TRICHLOROETHENE	79016	3.00E-004 E	4.00E-001 E	1.00E-002 E	4.00E-001 E	y	2.6E-002 C	1.6E-002 C	7.9E-003 C	1.4E+001 C	1.6E+000 C	1.3E-005	2.6E-004 C
TRICHLOROFLUOROMETHANE	75694	3.00E-001 I		2.00E-001 A		y	1.3E+003 N	7.3E+002 N	4.1E+002 N	6.1E+005 N	2.3E+004 N	1.1E+000	2.3E+001 N
2,4,5-TRICHLOROPHENOL	95954	1.00E-001 I					3.7E+003 N	3.7E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N		
2,4,6-TRICHLOROPHENOL	88062		1.10E-002 I		1.00E-002 I		6.1E+000 C	6.3E-001 C	2.9E-001 C	5.2E+002 C	5.8E+001 C		
2,4,5-T	93765	1.00E-002 I					3.7E+002 N	3.7E+001 N	1.4E+001 N	2.0E+004 N	7.8E+002 N	9.8E-002	2.0E+000 N
2-(2,4,5-TRICHLOROPHENOXY)PROPIONIC ACID	93721	8.00E-003 I					2.9E+002 N	2.9E+001 N	1.1E+001 N	1.6E+004 N	6.3E+002 N	1.1E+000	2.1E+001 N
1,1,2-TRICHLOROPROPANE	598776	5.00E-003 I				y	3.0E+001 N	1.8E+001 N	6.8E+000 N	1.0E+004 N	3.9E+002 N	1.2E-002	2.5E-001 N
1,2,3-TRICHLOROPROPANE	96184	6.00E-003 I	2.00E+000 E	1.4E-003 E		y	5.3E-003 C	3.1E-003 C	1.6E-003 C	2.9E+000 C	3.2E-001 C	1.8E-006	3.6E-005 C
1,2,3-TRICHLOROPROPENE	96195	5.00E-003 H				y	3.0E+001 N	1.8E+001 N	6.8E+000 N	1.0E+004 N	3.9E+002 N	1.2E-002	2.5E-001 N
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76131	3.00E+001 I		8.60E+000 H		y	5.9E+004 N	3.1E+004 N	4.1E+004 N	6.1E+007 N	2.3E+006 N	1.2E+002	2.3E+003 N
1,2,4-TRIMETHYLBENZENE	95636	5.00E-002 E		1.70E-003 E		y	1.2E+001 N	6.2E+000 N	6.8E+001 N	1.0E+005 N	3.9E+003 N		
1,3,5-TRIMETHYLBENZENE	108678	5.00E-002 E		1.70E-003 E		y	1.2E+001 N	6.2E+000 N	6.8E+001 N	1.0E+005 N	3.9E+003 N		
TRIMETHYL PHOSPHATE	512561		3.70E-002 H				1.8E+000 C	1.7E-001 C	8.5E-002 C	1.5E+002 C	1.7E+001 C		
1,3,5-TRINITROBENZENE	99354	3.00E-002 I					1.1E+003 N	1.1E+002 N	4.1E+001 N	6.1E+004 N	2.3E+003 N		
2,4,6-TRINITROTOLUENE	118967	5.00E-004 I	3.00E-002 I				2.2E+000 C !	2.1E-001 C !	1.1E-001 C !	1.9E+002 C !	2.1E+001 C !		
URANIUM (SOLUBLE SALTS; from IRIS)	7440611	3.00E-003 I					1.1E+002 N	1.1E+001 N	4.1E+000 N	6.1E+003 N	2.3E+002 N		
URANIUM (SOLUBLE SALTS; provisional)	7440611	2.00E-004 E					7.3E+000 N	7.3E-001 N	2.7E-001 N	4.1E+002 N	1.6E+001 N		
VANADIUM	7440622	7.00E-003 H					2.6E+002 N	2.6E+001 N	9.5E+000 N	1.4E+004 N	5.5E+002 N	2.6E+002	5.1E+003 N
VANADIUM PENTOXIDE	1314621	9.00E-003 I					3.3E+002 N	3.3E+001 N	1.2E+001 N	1.8E+004 N	7.0E+002 N		
VANADIUM SULFATE	16785812	2.00E-002 H					7.3E+002 N	7.3E+001 N	2.7E+001 N	4.1E+004 N	1.6E+003 N		
VINCLOZOLIN	50471448	2.50E-002 I					9.1E+002 N	9.1E+001 N	3.4E+001 N	5.1E+004 N	2.0E+003 N		
VINYL ACETATE	108054	1.00E+000 H		5.71E-002 I		y	4.1E+002 N	2.1E+002 N	1.4E+003 N	2.0E+006 N	7.8E+004 N	8.7E-002	1.7E+000 N
VINYL CHLORIDE inc earlylife(see cover memos)	75014	3.00E-003 I	1.40E+000 I	2.8E-002 I	3.00E-002 I	y	1.5E-002 C	7.2E-002 C			9.0E-002 C	1.7E-005	3.3E-004 C
VINYL CHLORIDE: adult (see cover memos)	75014	3.00E-003 I	7.20E-001 I	2.8E-002 I	1.5E-002 I	y			4.4E-003 C	7.9E+000 C			
WARFARIN	81812	3.00E-004 I					1.1E+001 N	1.1E+000 N	4.1E-001 N	6.1E+002 N	2.3E+001 N	2.2E-002	4.4E-001 N
M-XYLENE	108383	2.00E+000 H				y	1.2E+004 N	7.3E+003 N	2.7E+003 N	4.1E+006 N	1.6E+005 N	1.3E+001	2.5E+002 N
O-XYLENE	95476	2.00E+000 H				y	1.2E+004 N	7.3E+003 N	2.7E+003 N	4.1E+006 N	1.6E+005 N	1.1E+001	2.3E+002 N
P-XYLENE	106423					y							

Sources: I = IRIS H = HEAST A = HEAST Alternate W = Withdrawn from IRIS or HEAST E = EPA-NCEA provisional value O = other							Basis: C = Carcinogenic effects N = Noncarcinogenic effects 1 = RBC at HI of 0.1 < RBC-c Risk-based concentrations					Region III SSLs Soil, for groundwater migration	
Chemical	CAS	RfDo mg/kg/d	CSFo 1/mg/kg/d	RfDi mg/kg/d	CSFi 1/mg/kg/d	VOC	Tap water ug/l	Ambient air ug/m3	Fish mg/kg	Soil Industrial mg/kg	Residential mg/kg	DAF 1 mg/kg	DAF 20 mg/kg
XYLENES	1330207	2.00E+000 I				y	1.2E+004 N	7.3E+003 N	2.7E+003 N	4.1E+006 N	1.6E+005 N	8.5E+000	1.7E+002 N
ZINC	7440666	3.00E-001 I					1.1E+004 N	1.1E+003 N	4.1E+002 N	6.1E+005 N	2.3E+004 N	6.8E+002	1.4E+004 N
ZINC PHOSPHIDE	1314847	3E-004 I					1.1E+001 N	1.1E+000 N	4.1E-001 N	6.1E+002 N	2.3E+001 N		
ZINEB	12122677	5E-002 I					1.8E+003 N	1.8E+002 N	6.8E+001 N	1.0E+005 N	3.9E+003 N		

Section C.2

USEPA Region 9 Screening Values

U.S. Environmental Protection Agency

Region 9: Superfund

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Preliminary Remediation Goals

Preliminary Remediation Goals (PRGs) are tools for evaluating and cleaning up contaminated sites. They are risk-based concentrations that are intended to assist risk assessors and others in initial screening-level evaluations of environmental measurements. The PRGs contained in the Region 9 PRG Table are generic; they are calculated without site specific information. However, they may be re-calculated using site specific data.

PRGs should be viewed as Agency guidelines, not legally enforceable standards. They are used for site "screening" and as initial cleanup goals if applicable. PRGs are not *de facto* cleanup standards and should not be applied as such. However, they are helpful in providing long-term targets to use during the analysis of different remedial alternatives. By developing PRGs early in the decision-making process, design staff may be able to streamline the consideration of remedial alternatives.

- **What's New in 2002**
- **User's Guide/Technical Background Document** (158 K PDF)
- **Frequently Asked Questions About the PRG Tables**
- **Useful Toxicology/Risk Assessment Links**

Region 9 PRGs 2002 Table (130 K PDF)
A summary table that presents the final list of generic PRG (for soil, air, and water) selected for site screening in Region 9. Also available as a Microsoft Excel file (1.1 M XLS).

InterCalc Tables (144 K PDF): present additional information not available in the R9 PRG Table above.

- **Soil Calculations** (74 K PDF): lists pathway-specific values for soils under residential and industrial land-use scenarios.
- **Air-Water Calculations** (50 K PDF): lists pathway-specific values for air and water assuming a residential exposure scenario
- **Phys-Chem Data** (23 K PDF): includes volatilization factors (VF) and soil saturation values (SAT) for VOCs only.

Last updated on Thursday, October 3rd, 2002
URL: http://www.epa.gov/region09/waste/sfund/prg/index.htm

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Preliminary Remediation Goals: What's New in 2002

October 1, 2002

The PRGs table contains over 600 preliminary remediation goals (PRGs) for contaminants in soil, air, and tap water. Region 9 PRGs are risk-based concentrations that are intended to assist risk assessors and others in initial screening-level evaluations of environmental measurements. As their name implies, Region 9 PRGs may also be viewed as preliminary cleanup goals for an individual chemical, but in this context, they are best viewed as dynamic and subject to change because they are generic and based on direct contact exposures which may not address site-specific conditions and/or indirect exposure pathways at sites (See Exhibit 1-1 in "Region 9 PRGs Table Users Guide/Technical Background Document").

Also for planning purposes, these human health based PRGs should always be considered in conjunction with ARAR-based PRGs (e.g. MCLs), ecological benchmarks, and "background" conditions before establishing a final cleanup level for a particular site.

We view risk-based PRGs as "evergreen". Ongoing changes to the PRGs reflect continuing improvements in our scientific knowledge base and state-of-the-art approaches to risk assessment. In the new Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (Supplemental SSL Guidance, EPA 2001a), two different soil ingestion rates are assumed for nonconstruction workers: 100 mg/day is assumed for outdoor workers whereas 50 mg/day is assumed for indoor workers. The default value of 100 mg/day for outdoor workers is also recommended by EPA's Technical Review Workgroup for Lead (TRW), and it reflects increased exposures to soils for outdoor workers relative to their indoor counterparts. For more on this, please see Section 4.1 of the "Region 9 PRGs Table Users Guide/Technical Background Document" or refer to the Supplemental SSL Guidance.

Because the Region 9 PRGs are generic and intended for screening sites early in the investigation process (often before site-specific information is available), we have chosen to use the 100 mg/day soil ingestion (i.e. outdoor worker) assumption to calculate industrial soil PRGs. Please note that previous issues of the Region 9 PRGs table assumed 50 mg/day soil ingestion rate for workers. This change in soil ingestion rates is reflected in a somewhat lower (more stringent) industrial soils PRG for many contaminants. The appropriateness of this assumption for a particular site may be evaluated when additional information becomes available regarding site conditions or site development. In addition to changes in exposure factor assumptions, several chemicals have new or revised toxicity values that results in changes to the PRG calculations.

To facilitate the user's review, chemicals with new and revised toxicological

criteria are presented in bold in the 2002 table and also listed here for convenience: acetonitrile, benzyl chloride, boron, bromate, 1,3-butadiene, 1-butanol, butylbenzenes, cacodylic acid, cadmium (California State value), chloroform, chloronitrobenzenes, chrysene (California State value), cobalt, 1,2-dibromo-3-chloropropane (California State value), 1,1-dichloroethylene, diethylene glycol ethers, diethylformamide, dinitrobenzenes, di-n-octyl phthalate, diphenyl sulfone, ethylbenzene, HCH, hexachlorocyclopentadiene, kepone, lead (California State value), MTBE, 2-nitroaniline, carcinogenic PAHs, perchlorate, polychlorinated terphenyls, benzo(k)fluoranthene (California State value), propylbenzene, propylene glycol, quinoline, tetrachloroethylene, tetrahydrofuran, thiocyanate, 1,1,1-trichloroethane, trichloroethylene, 2,4,6-trichlorophenol, 1,2,3- trichloropropane, triphenylphosphine oxide, tris(2-chloroethyl) phosphate, vinyl chloride, and xylene.

Also in this update to the "Region 9 PRGs Table User's Guide/Technical Background Document", we have added a brief discussion of special case chemicals for which an alternate approach was applied in the derivation of the Region 9 PRGs (Section 2.3). Increasingly, chemical-specific approaches are being used that do not lend themselves to a single PRG model. Special case chemicals that are discussed include: cadmium, chromium 6, lead, manganese, nitrate/nitrite, thallium, and vinyl chloride.

Finally, it should be recognized by all that use the PRGs table that not all PRG values in the table are "created equal". For some chemicals, a robust data set exists upon which the toxicological criteria are based whereas for others, there may be relatively few studies that form the basis of the PRG calculation. Also, PRGs for some chemicals are based on withdrawn toxicity values or route extrapolated values. Withdrawn and route-extrapolated numbers are shown in the table because we still need to deal with these contaminants during the long delays before replacement numbers are ready. Please consult with your toxicologist or agency risk assessor to best address potential uncertainties associated with chemical-specific PRGs, especially if the chemical is a risk driver at your site.

As with any risk-based tool, there exists the potential for misuse. We try to highlight potential problems in Section 3.8. However, it should be noted that the use of PRGs at a particular site becomes the responsibility of the user. It is recommended that the user verify the numbers with an agency toxicologist or risk assessor because the toxicity / exposure information in the table may contain errors or default assumptions that need to be refined based on further evaluation. If you find an error please contact Stan Smucker via e-mail at smucker.stan@epa.gov.

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Last updated on Thursday, October 3rd, 2002
URL: http://www.epa.gov/region09/waste/sfund/prg/whatsnew.htm

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

October 1, 2002

Subject: Region 9 PRGs Table 2002 Update

From: Stanford J. Smucker, Ph.D.
Regional Toxicologist (SFD-8-B)
Technical Support Team

To: PRGs Table Users

With this cover letter, we announce the update to the Region 9 PRGs table for 2002. The PRGs table contains over 600 preliminary remediation goals (PRGs) for contaminants in soil, air, and tap water. Region 9 PRGs are risk-based concentrations that are intended to assist risk assessors and others in initial screening-level evaluations of environmental measurements.

As their name implies, Region 9 PRGs may also be viewed as preliminary cleanup goals for an individual chemical, but in this context, they are best viewed as dynamic and subject to change because they are generic and based on direct contact exposures which may not address site-specific conditions and/or indirect exposure pathways at sites (See Exhibit 1-1 in "Region 9 PRGs Table Users Guide/Technical Background Document"). Also for planning purposes, these human health based PRGs should always be considered in conjunction with ARAR-based PRGs (e.g. MCLs), ecological benchmarks, and "background" conditions before establishing a final cleanup level for a particular site.

You can find the PRGs 2002 table, InterCalc tables, "Region 9 PRGs Table Users Guide/Technical Background Document", and additional helpful toxicological and risk assessment information at:

http://www.epa.gov/region09/waste/sfund/prg/ .

We view risk-based PRGs as "evergreen". Ongoing changes to the PRGs reflect continuing improvements in our scientific knowledge base and state-of-the-art approaches to risk assessment. In the new *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites* (Supplemental SSL Guidance, EPA 2001a), two different soil ingestion rates are assumed for non-construction workers: 100 mg/day is assumed for outdoor workers whereas 50 mg/day is assumed for indoor workers. The default value of 100 mg/day for outdoor workers is also recommended by EPA's Technical Review Workgroup for Lead (TRW), and it reflects increased exposures to soils for outdoor workers relative to their indoor counterparts. For more on this, please see Section 4.1 of the "Region 9 PRGs Table Users Guide/Technical Background Document" or refer to the Supplemental SSL Guidance available at the following website:

http://www.epa.gov/superfund/resources/soil/index.htm

Because the Region 9 PRGs are generic and intended for screening sites early in the investigation process (often before site-specific information is available), we have chosen to use the 100 mg/day soil ingestion (i.e. outdoor worker) assumption to calculate industrial soil PRGs. Please note that previous issues of the Region 9 PRGs table assumed 50 mg/day soil ingestion rate for workers. This change in soil ingestion rates is reflected in a somewhat lower (more stringent) industrial soils PRG for many contaminants. The appropriateness of this assumption for a particular site may be evaluated when additional information becomes available regarding site conditions or site development.

In addition to changes in exposure factor assumptions, several chemicals have new or revised toxicity values that results in changes to the PRG calculations. To facilitate the users review, chemicals with new and revised toxicological criteria are presented in bold in the 2002 table and also listed here for convenience: **acetonitrile, benzyl chloride, boron, bromate, 1,3-butadiene, 1-butanol, butylbenzenes, cacodylic acid, cadmium (California State value), chloroform, chloronitrobenzenes, chrysene (California State value), cobalt, 1,2-dibromo-3-chloropropane (California State value), 1,1-dichloroethylene, diethylene glycol ethers, diethylformamide, dinitrobenzenes, di-n-octyl phthalate, diphenyl sulfone, ethylbenzene, HCH, hexachlorocyclopentadiene, kepone, lead (California State value), MTBE, 2-nitroaniline, carcinogenic PAHs, perchlorate, polychlorinated terphenyls, benzo(k)fluoranthene (California State value), propylbenzene, propylene glycol, quinoline, tetrachloroethylene, tetrahydrofuran, thiocyanate, 1,1,1-trichloroethane, trichloroethylene, 2,4,6-trichlorophenol, 1,2,3-trichloropropane, triphenylphosphine oxide, tris(2-chloroethyl) phosphate, vinyl chloride, and xylene.**

Also in this update to the "Region 9 PRGs Table User's Guide/Technical Background Document", we have added a brief discussion of special case chemicals for which an alternate approach was applied in the derivation of the Region 9 PRGs (Section 2.3). Increasingly, chemical-specific approaches are being used that do not lend themselves to a single PRG model. Special case chemicals that are discussed include: cadmium, chromium 6, lead, manganese, nitrate/nitrite, thallium, and vinyl chloride.

Finally it should be recognized by all that use the PRGs table that not all PRG values in the table are "created equal". For some chemicals, a robust data set exists upon which the toxicological criteria are based whereas for others, there may be relatively few studies that form the basis of the PRG calculation. Also, PRGs for some chemicals are based on withdrawn toxicity values or route-extrapolated values. Withdrawn and route-extrapolated numbers are shown in the table because we still need to deal with these contaminants during the long delays before replacement numbers are ready. Please consult with your toxicologist or agency risk assessor to best address potential uncertainties associated with chemical-specific PRGs, especially if the chemical is a risk driver at your site.

As with any risk-based tool, there exists the potential for misuse. We try to highlight potential problems in Section 3.8. However, it should be noted that the use of PRGs at a particular site becomes the responsibility of the user. It is recommended that the user verify the numbers with an agency toxicologist or risk assessor because the toxicity / exposure information in the table may contain errors or default assumptions that need to be refined based on further evaluation. If you find an error please send me a note via email at smucker.stan@epa.gov.

DISCLAIMER

Preliminary remediation goals (PRGs) focus on common exposure pathways and may not consider all exposure pathways encountered at CERCLA / RCRA sites (Exhibit 1-1). PRGs do not consider impact to groundwater or address ecological concerns. The PRG table is specifically not intended as a (1) stand-alone decision-making tool, (2) as a substitute for EPA guidance for preparing baseline risk assessments, (3) a rule to determine if a waste is hazardous under RCRA, or (4) set of final cleanup or action levels to be applied at contaminated sites.

The guidance set out in this document is not final Agency action. It is not intended, nor can it be relied upon to create any rights enforceable by any party in litigation with the United States. EPA officials may decide to follow the guidance provided herein, or act at variance with the guidance, based on an analysis of specific circumstances. The Agency also reserves the right to change this guidance at any time without public notice.

1.0 INTRODUCTION

Region 9 Preliminary Remediation Goals (PRGs) are risk-based tools for evaluating and cleaning up contaminated sites. They are being used to streamline and standardize all stages of the risk decision-making process.

The Region 9 PRG table combines current EPA toxicity values with "standard" exposure factors to estimate contaminant concentrations in environmental media (soil, air, and water) that the agency considers protective of humans (including sensitive groups), over a lifetime. Chemical concentrations above these levels would not automatically designate a site as "dirty" or trigger a response action. However, exceeding a PRG suggests that further evaluation of the potential risks that may be posed by site contaminants is appropriate. Further evaluation may include additional sampling, consideration of ambient levels in the environment, or a reassessment of the assumptions contained in these screening-level estimates (e.g. appropriateness of route-to-route extrapolations, appropriateness of using chronic toxicity values to evaluate childhood exposures, appropriateness of generic exposure factors for a specific site etc.).

The PRG concentrations presented in the table can be used to screen pollutants in environmental media, trigger further investigation, and provide an initial cleanup goal if applicable. When considering PRGs as cleanup goals, residential concentrations should be used for maximum beneficial uses of a property. Industrial concentrations are included in the table as an alternative cleanup goal for soils. **In general, it recommended that industrial PRGs not be used for screening sites unless they are used in conjunction with residential values.**

Before applying PRGs as screening tools or initial goals, the user of the table should consider whether the exposure pathways and exposure scenarios at the site are fully accounted for in the PRG calculations. Region 9 PRG concentrations are based on direct contact pathways for which generally accepted methods, models, and assumptions have been developed (i.e. ingestion, dermal contact, and inhalation) for specific land-use conditions and do not consider impact to groundwater or ecological receptors (see Developing a Conceptual Site Model below).

EXHIBIT 1-1
TYPICAL EXPOSURE PATHWAYS BY MEDIUM
FOR RESIDENTIAL AND INDUSTRIAL LAND USES[a]

EXPOSURE PATHWAYS, ASSUMING:		
MEDIUM	RESIDENTIAL LAND USE	INDUSTRIAL LAND USE
Ground Water	***Ingestion from drinking***	Ingestion from drinking
	Inhalation of volatiles	Inhalation of volatiles
	Dermal absorption from bathing	Dermal absorption
Surface Water	***Ingestion from drinking***	Ingestion from drinking
	Inhalation of volatiles	Inhalation of volatiles
	Dermal absorption from bathing	Dermal absorption
	Ingestion during swimming	
	Ingestion of contaminated fish	
Soil	***Ingestion***	***Ingestion***
	Inhalation of particulates	***Inhalation of particulates***
	Inhalation of volatiles	***Inhalation of volatiles***
	Exposure to indoor air from soil gas	Exposure to indoor air from soil gas
	Exposure to ground water contaminated by soil leachate	Exposure to ground water contaminated by soil leachate
	Ingestion via plant, meat, or dairy products	Inhalation of particulates from trucks and heavy equipment
	Dermal absorption	***Dermal absorption***

Footnote:
[a]Exposure pathways considered in the PRG calculations are indicated in boldface italics.

2.0 READING THE PRG TABLE

2.1 General Considerations

With the exceptions described below, PRGs are chemical concentrations that correspond to fixed levels of risk (i.e. either a one-in-one million [10^{-6}] cancer risk or a noncarcinogenic hazard quotient of 1) in soil, air, and water. In most cases, where a substance causes both cancer and noncancer (systemic) effects, the 10^{-6} cancer risk will result in a more stringent criteria and consequently this value is presented in the printed copy of the table. PRG concentrations that equate to a 10^{-6} cancer risk are indicated by "ca". PRG concentrations that equate to a hazard quotient of 1 for noncarcinogenic concerns are indicated by "nc".

If the risk-based concentrations are to be used for site screening, it is recommended that both cancer and noncancer-based PRGs be used. Both carcinogenic and noncarcinogenic values may be obtained at the Region 9 PRG homepage at:

http://www.epa.gov/region09/waste/sfund/prg/

It has come to my attention that some users have been multiplying the cancer PRG concentrations by 10 or 100 to set "action levels" for triggering remediation or to set less stringent cleanup levels for a specific site after considering non-risk-based factors such as ambient levels, detection limits, or technological feasibility. This risk management practice recognizes that there may be a range of values that may be "acceptable" for carcinogenic risk (EPA's risk management range is one-in-a-million [10^{-6}] to one-in-ten thousand [10^{-4}]). However, this practice could lead one to overlook serious noncancer health threats and it is strongly recommended that the user consult with a toxicologist or regional risk assessor before doing this. For carcinogens, I have indicated by asterisk ("ca*") in the PRG table where the noncancer PRGs would be exceeded if the cancer value that is displayed is multiplied by 100. Two stars ("ca**") indicate that the noncancer values would be exceeded if the cancer PRG were multiplied by 10. There is no range of "acceptable" noncarcinogenic "risk" so that under no circumstances should noncancer PRGs be multiplied by 10 or 100, when setting final cleanup criteria. In the rare case where noncancer PRGs are more stringent than cancer PRGs set at one-in-one-million risk, a similar approach has been applied (e.g. "nc**").

In general, PRG concentrations in the printed table are risk-based but for soil there are two important exceptions: (1) for several volatile chemicals, PRGs are based on the soil saturation equation ("sat") and (2) for relatively less toxic inorganic and semivolatile contaminants, a non-risk based "ceiling limit" concentration is given as 10^{+5} mg/kg ("max"). At the Region 9 PRG website, the risk-based calculations for these same chemicals are also available in the "InterCalc Tables" if the user wants to view the risk-based concentrations prior to the application of "sat" or "max". For more information on why the "sat" value and not a risk-based value is presented for several volatile chemicals in the PRGs table, please see the discussion in Section 4.5.

With respect to applying a "ceiling limit" for chemicals other than volatiles, it is recognized that this is not a universally accepted approach. Some within the agency argue that all values should be risk-based to allow for scaling (for example, if the risk-based PRG is set at a hazard quotient = 1.0, and the user would like to set the hazard quotient to 0.1 to take into account multiple chemicals, then this is as simple as multiplying the risk-based PRG by 1/10th). If scaling is necessary, PRG users can do

this simply by referring to the "InterCalc Tables" at our website where risk-based soil concentrations are presented for all chemicals (see soil calculations, "combined" pathways column).
In spite of the fact that applying a ceiling limit is not a universally accepted approach, we have opted to continue applying a "max"soil concentration to the PRGs table for the following reasons:

- Risk-based PRGs for some chemicals in soil exceed unity (>1,000,000 mg/kg) which is not possible.
- The ceiling limit of 10^{+5} mg/kg is equivalent to a chemical representing 10% by weight of the soil sample. At this contaminant concentration (and higher), the assumptions for soil contact may be violated (for example, soil adherence and windborne dispersion assumptions) due to the presence of the foreign substance itself.
- PRGs currently do not address short-term exposures (e.g. pica children and construction workers). Although extremely high soil PRGs are likely to represent relatively non-toxic chemicals, such high values may not be justified if in fact more toxicological data were available for evaluating short-term and/or acute exposures.

In addition to Region 9 PRG values, the PRGs table also includes California EPA PRGs ("CAL-Modified PRGs") for specific chemicals where CAL-EPA screening values may be "significantly" more restrictive than the federal values (see Section 2.4) and EPA OSWER soil screening levels (SSLs) for protection of groundwater (see Section 2.5).

2.2 Toxicity Values

Hierarchy of Toxicity Values

EPA toxicity values, known as noncarcinogenic reference doses (RfD) and carcinogenic slope factors (SF) were obtained from IRIS, NCEA through September 2002, and HEAST (1997). The priority among sources of toxicological constants in order of preference is as follows: (1) IRIS (indicated by "i"), (2) NCEA ("n"), (3) HEAST ("h"), (4) withdrawn from IRIS or HEAST and under review ("x") or obtained from other EPA documents ("o"). This hierarchy is subject to change once the HEAST tables are updated.

Inhalation Conversion Factors

As of January 1991, IRIS and NCEA databases no longer present RfDs or SFs for the inhalation route. These criteria have been replaced with reference concentrations (RfC) for noncarcinogenic effects and unit risk factors (URF) for carcinogenic effects. However, for purposes of estimating risk and calculating risk-based concentrations, inhalation reference doses (RfDi) and inhalation slope factors (SFi) are preferred. This is not a problem for most chemicals because the inhalation toxicity criteria are easily converted. To calculate an RfDi from an RfC, the following equation and assumptions may be used for most chemicals:

$$RfDi\ \frac{mg}{(kg\text{-}day)} = RfC\ (mg/m^3) \times \frac{20 m^3}{day} \times \frac{1}{70 kg}$$

Likewise, to calculate an SFi from an inhalation URF, the following equation and assumptions may be used:

$$SFi\ \frac{(kg\text{-}day)}{(mg)} = URF(m^3/ug) \times \frac{day}{20m^3} \times 70kg \times \frac{10^3\ ug}{mg}$$

Substances with New or Withdrawn Toxicity Values

To help users rapidly identify substances with new or revised toxicity values, these chemicals are listed in boldface type in the PRGs table. This issue of the table contains new or revised toxicity values for: **acetonitrile, benzyl chloride, boron, bromate, 1,3-butadiene, 1-butanol, butylbenzenes, cacodylic acid, cadmium (California State value), chloroform, chloronitrobenzenes, chrysene (California State value), cobalt, 1,2-dibromo-3-chloropropane (California State value), 1,1-dichloroethylene, diethylene glycol ethers, diethylformamide, dinitrobenzenes, di-n-octyl phthalate, diphenyl sulfone, ethylbenzene, HCH, hexachlorocyclopentadiene, kepone, lead (California State value), MTBE, 2-nitroaniline, carcinogenic PAHs, perchlorate, polychlorinated terphenyls, benzo(k)fluoranthene (California State value), propylbenzene, propylene glycol, quinoline, tetrachloroethylene, tetrahydrofuran, thiocyanate, 1,1,1-trichloroethane, trichloroethylene, 2,4,6-trichlorophenol, 1,2,3-trichloropropane, triphenylphosphine oxide, tris(2-chloroethyl) phosphate, vinyl chloride, and xylene.**

Chemicals that have been delisted because they are outdated, undocumented, or derived from a data base other than IRIS, HEAST or NCEA include: acifluorfen, 4-bromophenyl phenyl ether, chloroacetaldehyde, 2-chloroethyl vinyl ether, hexachlorodibenzo-p-dioxin mixture (HxCDD), maneb, methyl chlorocarbonate, nitrapyrin, nitric oxide, and 4-nitrophenol.

Route-to-Route Methods

Route-to-route extrapolations ("r") were frequently used when there were no toxicity values available for a given route of exposure. Oral cancer slope factors ("SFo") and reference doses ("RfDo") were used for both oral and inhaled exposures for organic compounds lacking inhalation values. Inhalation slope factors ("SFi") and inhalation reference doses ("RfDi") were used for both inhaled and oral exposures for organic compounds lacking oral values. Route extrapolations were not performed for inorganics due to portal of entry effects and known differences in absorption efficiency for the two routes of exposure.

An additional route extrapolation is the use of oral toxicity values for evaluating dermal exposures. For many chemicals, a scientifically defensible data base does not exist for making an adjustment to the oral slope factor/RfD to estimate a dermal toxicity value. Based on the current guidance (USEPA 2001b), the only chemical for which an adjustment is recommended is cadmium. An oral absorption efficiency of 5% is assumed for cadmium which leads to an estimated dermal reference dose (RfDd) of 2.5E-05 that was used in the soil PRG calculations for cadmium.

Although route-to-route methods may be a useful screening procedure, the appropriateness of these default assumptions for specific contaminants should be verified by a toxicologist or regional risk assessor. Please note that whenever route-extrapolated values are used to calculate risk-based PRGs, additional uncertainties are introduced in the calculation.

2.3 Region 9 PRGs Derived with Special Considerations

Most of the Region 9 PRGs are readily derived by referring to Equations 4-1 thru 4-8 contained in this "User's Guide/Technical Background Document" to the Region 9 PRGs. However, there are some chemicals for which the standard equations do no apply and/or adjustments to the toxicity values are recommended. These special case chemicals are discussed below.

Cadmium The PRGs for Cadmium are based on the oral RfD for water which is slightly more conservative (by a factor of 2) than the RfD for food. Because the PRGs are considered screening values, we elected to use the more conservative RfD for cadmium. However, reasonable arguments could be made for applying an RfD for food (instead of the oral RfD for water) for some media such as soils.

The water RfD for cadmium assumes a 5% oral absorption factor. The assumption of an oral absorption efficiency of 5% for Cadmium leads to an estimated dermal RfD of 2.5E-05. The PRG calculations incorporate these adjustments per recent guidance (USEPA 2001b).

Chromium 6 For Chromium 6 (Cr6), IRIS shows an air unit risk of 1.2E-2 per (ug/cu.m) or expressed as an inhalation cancer slope factor (adjusting for inhalation/body weight) of 42 $(mg/kg\text{-}day)^{-1}$. However, the supporting documentation in the IRIS file states that these toxicity values are based on an assumed 1:6 ratio of Cr6:Cr3. Because of this assumption, we in Region 9 prefer to present PRGs based on these cancer toxicity values as "total chromium" numbers.

In the PRG tables, we also include a Cr6 specific value (assuming 100% Cr6) that is derived by multiplying the "total chromium" value by 7, yielding a cancer potency factor of 290 $(mg/kg\text{-}day)^{-1}$. This is considered to be an overly conservative assumption by some within the Agency. However, this calculation is also consistent with the State of California's interpretation of the Mancuso study that forms the basis of Cr6's toxicity values.

If you are working on a project outside of California (and outside of Region 9), you may want to contact the appropriate regulatory officials to determine what their position is on this issue. As mentioned, Region 9 also includes PRGs for "total chromium" which is based on the same ratio (1:6 ratio Cr6:Cr3) that forms the basis of the cancer slope factor of 42 $(mg/kg\text{-}day)^{-1}$ presented in IRIS.

Lead Residential PRGs for Lead (Region 9 EPA and California EPA) are derived based on pharmacokinetic models. Both EPA's Integrated Exposure Uptake Biokinetic (IEUBK) Model and California's LeadSpread model are designed to predict the probable blood lead concentrations for children between six months and seven years of age who have been exposed to lead through various sources (air, water, soil, dust, diet and *in utero* contributions from the mother). Run in the reverse, these models also allow the user to calculate lead PRGs that are considered "acceptable" by EPA or the State of California.

The California LeadSpread model can also estimate PRGs for non-residential exposures (e.g. worker) whereas EPA uses a second Adult Lead Model to estimate PRGs for an industrial setting.

For more information on EPA' Lead models used to estimate residential and industrial PRGs, please refer to the following website:

http://www.epa.gov/oerrpage/superfund/programs/lead/

For more information on California's LeadSpread Model and Cal-Modified PRGs for lead, please go to:
http://www.dtsc.ca.gov/ScienceTechnology/ledspred.html

Manganese The IRIS RfD (0.14 mg/kg-day) includes manganese from all sources, including diet. The author of the IRIS assessment for manganese recommends that the dietary contribution from the normal U.S. diet (an upper limit of 5 mg/day) be subtracted when evaluating non-food (e.g. drinking water or soil) exposures to manganese, leading to a RfD of 0.071 mg/kg-day for non-food items. The explanatory text in IRIS further recommends using a modifying factor of 3 when calculating risks associated with non-food sources due to a number of uncertainties that are discussed in the IRIS file for manganese, leading to a RfD of 0.024 mg/kg-day. This modified RfD is applied in the derivation of the Region 9 PRGs for soil and water. For more information regarding the Manganese RfD, you may want to contact Dr. Bob Benson at (303) 312-7070.

Nitrates/Nitrates Tap water PRGs for Nitrates/Nitrites are based on the MCL as there is no available RfD for these compounds. For more information, please see IRIS at:
http://www.epa.gov/iriswebp/iris/index.html

Thallium IRIS has many values for the different salts of thallium. However, our analytical data packages typically report "thallium". Therefore, as a practical matter it makes more sense to report a PRG for plain thallium. We have done this by making the adjustment contained in the IRIS file for thallium sulfate based on the molecular weight of the thallium in the thallium salt. The adjusted oral RfD for plain thallium is 6.6 E-05 mg/kg-day which we use to calculate a thallium PRG.

Vinyl Chloride In EPA's recent reassessment of vinyl chloride toxicity, IRIS presents two cancer slope factors for vinyl chloride (VC): one that is intended to be applied towards evaluating adult risks and a second more protective slope factor that takes into account the unique susceptibility of developing infants and young children. For residential PRGs, the Region 9 PRGs table applies the more conservative cancer potency factor that addresses exposures to both children and adults whereas for the industrial soils PRG, the adult only cancer slope factor is applied.

Because of the age-dependent vulnerability associated with vinyl chloride exposures, and due to the method that is applied in deriving the cancer slope factor for VC, an assumption of a 70 year exposure over the lifetime is assumed, consistent with the way that the toxicity value for VC was derived. Therefore, instead of the usual exposure assumption of 6 years as a child and 24 years as an adult that is assumed for carcinogenic substances, we have revised the exposure assumption for VC to 6 years as a child and 64 years as adult. Since most of the cancer risk is associated with the first 30 years of exposure to VC, there is actually little difference between a 30 year exposure assumption (typically assumed for Superfund risk assessments) and the 70 year exposure assumption that is assumed in calculating the PRG for VC.

2.4 "Cal-Modified PRGs"

When EPA Region 9 first came out with a Draft of the PRGs table in 1992, there was concern expressed by California EPA's Department of Toxic Substances and Control (DTSC) that for some chemicals the risk-based concentrations calculated using Cal-EPA toxicity values were "significantly" more protective than the risk-based PRGs calculated by Region 9. At an interagency meeting

comprised of mostly toxicologists, it was agreed that PRG values are at best order-of-magnitude estimates, so that if we assume a logarithmic scale, then a difference greater than 3.3 (½ log above or below) would be considered a significant difference. Therefore, for individual chemicals where California PRG values are significantly more protective than Region 9 EPA PRGs, Cal-Modified PRGs are included in the Region 9 PRGs table. For more information on Cal-Modified PRGs, the reader may want to contact Dr. Michael Wade in Cal-EPA's Department of Toxic Substances (DTSC) at (916) 255-6653.

Please note that in the State of California, Cal-Modified PRGs should be used as screening levels for contaminated sites because they are more stringent than the Federal numbers.

2.5 Soil Screening Levels

Generic, soil screening levels (SSLs) for the protection of groundwater have been included in the PRG table for 100 of the most common contaminants at Superfund sites. Generic SSLs are derived using default values in standardized equations presented in EPA OSWER's *Soil Screening Guidance* series, available on the web at http://www.epa.gov/superfund/resources/soil/index.htm .

The SSLs were developed using a default dilution-attenuation factor (DAF) of 20 to account for natural processes that reduce contaminant concentrations in the subsurface. Also included are generic SSLs that assume no dilution or attenuation between the source and the receptor well (i.e., a DAF of 1). These values can be used at sites where little or no dilution or attenuation of soil leachate concentrations is expected at a site (e.g., sites with shallow water tables, fractured media, karst topography, or source size greater than 30 acres).

In general, if an SSL is not exceeded for the migration to groundwater pathway, the user may eliminate this pathway from further investigation.

It should be noted that in the State of California, the California Regional Water Quality Control Board has derived "California SSLs" for a number of pathways including migration to groundwater. These are not included in the Region 9 PRGs table, but may be accessed at the following website:

http://www.swrcb.ca.gov/rwqcb2/rbsl.htm

Or, for more information on the "California SSLs", please contact Dr Roger Brewer at: (510) 622-2374.

2.6 Miscellaneous

Volatile organic compounds (VOCs) are indicated by "1" in the VOC column of the table and in general, are defined as those chemicals having a Henry's Law constant greater than 10^{-5} (atm-m^3/mol) and a molecular weight less than 200 g/mole). Three borderline chemicals (dibromochloromethane, 1,2-dibromochloropropane, and pyrene) which do not strictly meet these criteria of volatility have also been included based upon discussions with other state and federal agencies and after a consideration of vapor pressure characteristics etc. Volatile organic chemicals are evaluated for potential volatilization from soil/water to air using volatilization factors (see Section 4.1).

Chemical-specific dermal absorption values for contaminants in soil and dust are presented for arsenic, cadmium, chlordane, 2,4-D, DDT, lindane, TCDD, PAHs, PCBs, and pentachlorophenols as recommended in the "Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim Guidance" (USEPA 2001b). Otherwise, default skin absorption fractions are assumed to be 0.10 for nonvolatile organics. Please note that previous defaults of 0.01 and 0.10 for inorganics and VOCs respectively, have been withdrawn per new guidance.

3.0 USING THE PRG TABLE

The decision to use PRGs at a site will be driven by the potential benefits of having generic risk-based concentrations in the absence of site-specific risk assessments. The original intended use of PRGs was to provide initial cleanup goals for individual chemicals given specific medium and land-use combinations (see RAGS Part B, 1991), however risk-based concentrations have several applications. They can also be used for:

- Setting health-based detection limits for chemicals of potential concern
- Screening sites to determine whether further evaluation is appropriate
- Calculating cumulative risks associated with multiple contaminants

A few basic procedures are recommended for using PRGs properly. These are briefly described below. Potential problems with the use of PRGs are also identified.

3.1 Developing a Conceptual Site Model

The primary condition for use of PRGs is that exposure pathways of concern and conditions at the site match those taken into account by the PRG framework. Thus, it is always necessary to develop a conceptual site model (CSM) to identify likely contaminant source areas, exposure pathways, and potential receptors. This information can be used to determine the applicability of PRGs at the site and the need for additional information. For those pathways not covered by PRGs, a risk assessment specific to these additional pathways may be necessary. Nonetheless, the PRG lookup values will still be useful in such situations for focusing further investigative efforts on the exposure pathways not addressed.

To develop a site-specific CSM, perform an extensive records search and compile existing data (e.g. available site sampling data, historical records, aerial photographs, and hydrogeologic information). Once this information is obtained, CSM worksheets such as those provided in ASTM's *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites* (1995) can be used to tailor the generic worksheet model to a site-specific CSM. The final CSM diagram represents linkages among contaminant sources, release mechanisms, exposure pathways and routes and receptors. It summarizes our understanding of the contamination problem.

As a final check, the CSM should answer the following questions:

- Are there potential ecological concerns?
- Is there potential for land use other than those covered by the PRGs (that is, residential and industrial)?

- Are there other likely human exposure pathways that were not considered in development of the PRGs (e.g. impact to groundwater, local fish consumption, raising beef, dairy, or other livestock)?

- Are there unusual site conditions (e.g. large areas of contamination, high fugitive dust levels, potential for indoor air contamination)?

If any of these four conditions exist, the PRG may need to be adjusted to reflect this new information. Suggested websites for the evaluation of pathways not currently addressed by Region 9 PRG's are presented in Exhibit 3-1.

EXHIBIT 3-1
SUGGESTED WEBSITES FOR EVALUATING EXPOSURE PATHWAYS NOT CURRENTLY ADDRESSED BY REGION 9 PRGs

EXPOSURE PATHWAY	WEBSITE
Migration of contaminants to an underlying potable aquifer	EPA Soil Screening Guidance: http://www.epa.gov/superfund/resources/soil/index.htm California Water Board Guidance: http://www.swrcb.ca.gov/rwqcb2/rbsl.htm
Ingestion via plant uptake	EPA Soil Screening Guidance: http://www.epa.gov/superfund/resources/soil/index.htm EPA Fertilizer Risk Assessment: http://www.epa.gov/epaoswer/hazwaste/recycle/fertiliz/risk/
Ingestion via meat, dairy products, human milk	EPA Protocol for Combustion Facilities: http://www.epa.gov/epaoswer/hazwaste/combust/riskvol.htm#volume1 California "Hot Spots" Risk Guidelines: http://www.oehha.ca.gov/air/hot_spots/HRSguide.html
Inhalation of volatiles that have migrated into basements or other enclosed spaces.	EPA's Version of Johnson & Ettinger Model: http://www.epa.gov/oerrpage/superfund/programs/risk/airmodel/johnson_ettinger.htm
Ecological pathways	EPA Ecological Soil Screening Guidance: http://www.epa.gov/superfund/programs/risk/ecorisk/ecossl.htm NOAA Sediment Screening Table: http://response.restoration.noaa.gov/cpr/sediment/squirt/squirt.html

3.2 Background Levels Evaluation

A necessary step in determining the applicability of Region 9 risk-based PRGs is the consideration of background contaminant concentrations. There is new EPA guidance on determining background at sites. *Guidance for Characterizing Background Chemicals in Soil at Superfund Sites* (USEPA 2001c) is available on the web at: http://www.epa.gov/superfund/programs/risk/background.pdf .

EPA may be concerned with two types of background at sites: naturally occurring and anthropogenic. Natural background is usually limited to metals whereas anthropogenic (i.e. human-made) "background" includes both organic and inorganic contaminants. Before embarking on an extensive sampling and analysis program to determine local background concentrations in the area, one should first compile existing data on the subject. Far too often there is pertinent information in the literature that gets ignored, resulting in needless expenditures of time and money.

Generally EPA does not clean up below natural background. In some cases, the predictive risk-based models generate PRG levels that lie within or even below typical background. If natural background concentrations are higher than the risk-based PRGs, an adjustment of the PRG is probably needed. Exhibit 3-2 presents summary statistics for selected elements in soils that have background levels that may exceed risk-based PRGs. An illustrative example of this is naturally occurring arsenic in soils which frequently is higher than the risk-based concentration set at a one-in-one-million cancer risk (the PRG for residential soils is 0.39 mg/kg). After considering background concentrations in a local area, EPA Region 9 has at times used the non-cancer PRG (22 mg/kg) to evaluate sites recognizing that this value tends to be above background levels yet still falls within the range of soil concentrations (0.39-39 mg/kg) that equates to EPA's "acceptable" cancer risk range of 10E-6 to 10E-4.

Where anthropogenic "background" levels exceed PRGs and EPA has determined that a response action is necessary and feasible, EPA's goal will be to develop a comprehensive response to the widespread contamination. This will often require coordination with different authorities that have jurisdiction over the sources of contamination in the area.

EXHIBIT 3-2
BACKGROUND CONCENTRATIONS OF SELECTED ELEMENTS IN SOILS

TRACE	U.S. STUDY DATA[1]			CALIFORNIA DATA[2]		
ELEMENT	Range	GeoMean	ArMean	Range	GeoMean	ArMean
Arsenic	<.1-97	5.2 mg/kg	7.2 mg/kg	0.59-11	2.75 mg/kg	3.54 mg/kg
Beryllium	<1-15	0.63 "	0.92 "	0.10-2.7	1.14 "	1.28 "
Cadmium	<1-10	--	<1	0.05-1.7	0.26	0.36
Chromium	1-2000	37	54	23-1579	76.25	122.08
Nickel	<5-700	13	19	9.0-509	35.75	56.60

[1]Shacklette and Hansford, "Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States",USGS Professional Paper 1270, 1984.

[2]Bradford et. al, "Background Concentrations of Trace and Major Elements in California Soils", Kearney Foundation Special Report, UC-Riverside and CAL-EPA DTSC, March 1996.

3.3 Screening Sites with Multiple Pollutants

A suggested stepwise approach for PRG-screening of sites with multiple pollutants is as follows:

- Perform an extensive records search and compile existing data.

- Identify site contaminants in the PRG table. Record the PRG concentrations for various media and note whether PRG is based on cancer risk (indicated by "ca") or noncancer hazard (indicated by "nc"). Segregate cancer PRGs from non-cancer PRGs and exclude (but don't eliminate) non-risk based PRGs ("sat" or "max").

- For cancer risk estimates, take the site-specific concentration (maximum or 95 UCL) and divide by the PRG concentrations that are designated for cancer evaluation ("ca"). Multiply this ratio by 10^{-6} to estimate chemical-specific risk for a reasonable maximum exposure (RME). For multiple pollutants, simply add the risk for each chemical:

$$Risk = \left[\left(\frac{conc_x}{PRG_x}\right) + \left(\frac{conc_y}{PRG_y}\right) + \left(\frac{conc_z}{PRG_z}\right)\right] \times 10^{-6}$$

- For non-cancer hazard estimates. Divide the concentration term by its respective non-cancer PRG designated as "nc" and sum the ratios for multiple contaminants. The cumulative ratio represents a non-carcinogenic hazard index (HI). A hazard index of 1 or less is generally considered "safe". A ratio greater than 1 suggests further evaluation. **[Note that carcinogens may also have an associated non-cancer PRG that is not listed in the printed copy of the table sent to folks on the mailing list. To obtain these values, the user should view or download the PRG table at our website and display the appropriate sections.]**

$$Hazard\ Index = \left[\left(\frac{conc_x}{PRG_x}\right) + \left(\frac{conc_y}{PRG_y}\right) + \left(\frac{conc_z}{PRG_z}\right)\right]$$

For more information on screening site risks, the reader should contact EPA Region 9's Technical Support Team.

3. 4 Potential Problems

As with any risk-based tool, the potential exists for misapplication. In most cases the root cause will be a lack of understanding of the intended use of Region 9 PRGs. In order to prevent misuse of PRGs, the following should be avoided:

- Applying PRGs to a site without adequately developing a conceptual site model that identifies relevant exposure pathways and exposure scenarios,

- Not considering background concentrations when choosing PRGs as cleanup goals,

- Use of PRGs as cleanup levels without the nine-criteria analysis specified in the

National Contingency Plan (or, comparable analysis for programs outside of Superfund),

- Use of PRGs as cleanup levels without verifying numbers with a toxicologist or regional risk assessor,

Use of antiquated PRG tables that have been superseded by more recent publications,

- Not considering the effects of additivity when screening multiple chemicals, and
- Adjusting PRGs upward by factors of 10 or 100 without consulting a toxicologist or regional risk assessor.

4.0 TECHNICAL SUPPORT DOCUMENTATION

Region 9 PRGs consider human exposure hazards to chemicals from contact with contaminated soils, air, and water. The emphasis of the PRG equations and technical discussion are aimed at developing screening criteria for soils, since this is an area where few standards exist. For air and water, additional reference concentrations or standards are available for many chemicals (e.g. MCLs, non-zero MCLGs, AWQC, and NAAQS) and consequently the discussion of these media are brief.

4.1 Soils - Direct Ingestion

Calculation of risk-based PRGs for direct ingestion of soil is based on methods presented in RAGS HHEM, Part B (USEPA 1991a) and *Soil Screening Guidance* (USEPA 1996a,b, USEPA 2001a). Briefly, these methods backcalculate a soil concentration level from a target risk (for carcinogens) or hazard quotient (for noncarcinogens).

Residential Soil PRGs

A number of studies have shown that inadvertent ingestion of soil is common among children 6 years old and younger (Calabrese et al. 1989, Davis et al. 1990, Van Wijnen et al. 1990). To take into account the higher soil intake rate for children, two different approaches are used to estimate PRGs, depending on whether the adverse health effect is cancer or some effect other than cancer.

For carcinogens, the method for calculating PRGs uses an age-adjusted soil ingestion factor that takes into account the difference in daily soil ingestion rates, body weights, and exposure duration for children from 1 to 6 years old and others from 7 to 31 years old. This health-protective approach is chosen to take into account the higher daily rates of soil ingestion in children as well as the longer duration of exposure that is anticipated for a long-term resident. For more on this method, see USEPA RAGs Part B (1991a).

For noncarcinogenic concerns, the more protective method of calculating a soil PRG is to evaluate childhood exposures separately from adult exposures. In other words, an age-adjustment factor is not applied as was done for carcinogens. This approach is considered conservative because it combines the higher 6-year exposure for children with chronic toxicity criteria. In their analysis of the method, the Science Advisory Board (SAB) indicated that, for most chemicals, the approach may be overly

protective. However, they noted that there are specific instances when the chronic RfD may be based on endpoints of toxicity that are specific to children (e.g. fluoride and nitrates) or when the dose-response is steep (i.e., the dosage difference between the no-observed-adverse-effects level [NOAEL] and an adverse effects level is small). Thus, for the purposes of screening, EPA Region 9 has adopted this approach for calculating soil PRGs for noncarcinogenic health concerns.

Industrial Soil PRGs

In the new *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites* (Supplemental SSL Guidance, EPA 2001a), two different soil ingestion rates are assumed for non-construction workers: 100 mg/day is assumed for outdoor workers whereas 50 mg/day is assumed for indoor workers. The default value of 100 mg/day for outdoor workers is also recommended by EPA's Technical Review Workgroup for Lead (TRW), and it reflects increased exposures to soils for outdoor workers relative to their indoor counterparts. For more on this, please see the Supplemental SSL Guidance available at the following website:

http://www.epa.gov/superfund/resources/soil/index.htm

Because the Region 9 PRGs are generic and intended for screening sites early in the investigation process (often before site-specific information is available), we have chosen to use the 100 mg/day soil ingestion (i.e. outdoor worker) assumption to calculate industrial soil PRGs. Please note that previous issues of the Region 9 PRGs table assumed 50 mg/day soil ingestion rate for workers. This change in soil ingestion rates is reflected in a somewhat lower (more stringent) industrial soils PRG for many contaminants. The appropriateness of this assumption for a particular site may be evaluated when additional information becomes available regarding site conditions or site development.

4.2 Soils - Vapor and Particulate Inhalation

Agency toxicity criteria indicate that risks from exposure to some chemicals via inhalation far outweigh the risk via ingestion; therefore soil PRGs have been designed to address this pathway as well. The models used to calculate PRGs for inhalation of volatiles/particulates are updates of risk assessment methods presented in RAGS Part B (USEPA 1991a) and are identical to the *Soil Screening Guidance: User's Guide and Technical Background Document* (USEPA 1996a,b).

It should be noted that the soil-to-air pathway that is evaluated in the PRGs calculations is based on direct inhalation exposures that result from the volatilization or particulate emissions of chemicals from soil to outdoor air. The soil PRG calculations currently do not evaluate potential for volatile contaminants in soil to migrate indoors. For this evaluation, a site-specific assessment is required because the applicable model, the Johnson and Ettinger model, is extremely sensitive to a number of model parameters that do not lend themselves to standardization on a national basis. For more information on the indoor air model and/or to download a copy, please go to:

http://www.epa.gov/oerrpage/superfund/programs/risk/airmodel/johnson_ettinger.htm

To address the soil-to-outdoor air pathways, the PRG calculations incorporate volatilization factors (VF_s) for volatile contaminants and particulate emission factors (PEF) for nonvolatile contaminants. These factors relate soil contaminant concentrations to air contaminant concentrations that may be inhaled on-site. The VF_s and PEF equations can be broken into two separate models: an emission model to estimate emissions of the contaminant from the soil and a dispersion model to simulate the dispersion of the contaminant in the atmosphere.

The box model in RAGS Part B has been replaced with a dispersion term (Q/C) derived from a modeling exercise using meteorological data from 29 locations across the United States because the box model may not be applicable to a broad range of site types and meteorology and does not utilize state-of-the-art techniques developed for regulatory dispersion modeling. The dispersion model for both volatiles and particulates is the AREA-ST, an updated version of the Office of Air Quality Planning and Standards, Industrial Source Complex Model, ISC2. However, different Q/C terms are used in the VF and PEF equations. Los Angeles was selected as the 90th percentile data set for volatiles and Minneapolis was selected as the 90th percentile data set for fugitive dusts (USEPA1996 a,b). A default source size of 0.5 acres was chosen for the PRG calculations. This is consistent with the default exposure area over which Region 9 typically averages contaminant concentrations in soils. If unusual site conditions exist such that the area source is substantially larger than the default source size assumed here, an alternative Q/C could be applied (see USEPA 1996a,b).

Volatilization Factor for Soils

Volatile chemicals, defined as those chemicals having a Henry's Law constant greater than 10^{-5} (atm-m^3/mol) and a molecular weight less than 200 g/mole, were screened for inhalation exposures using a volatilization factor for soils (VF_s). Please note that VF_s's are available at our website.

The emission terms used in the VF_s are chemical-specific and were calculated from physical-chemical information obtained from several sources. The priority of these sources were as follows: *Soil Screening Guidance* (USEPA 1996a,b), *Superfund Chemical Data Matrix* (USEPA 1996c), *Fate and Exposure Data* (Howard 1991), *Subsurface Contamination Reference Guide* (EPA 1990a), and *Superfund Exposure Assessment Manual* (SEAM, EPA 1988). When there was a choice between a measured or a modeled value (e.g. Koc), we went with modeled values. In those cases where Diffusivity Coefficients (Di) were not provided in existing literature, Di's were calculated using Fuller's Method described in SEAM. A surrogate term was required for some chemicals that lacked physico-chemical information. In these cases, a proxy chemical of similar structure was used that may over- or under-estimate the PRG for soils.

Equation 4-9 forms the basis for deriving generic soil PRGs for the inhalation pathway. The following parameters in the standardized equation can be replaced with specific site data to develop a simple site-specific PRG

- Source area
- Average soil moisture content
- Average fraction organic carbon content
- Dry soil bulk density

The basic principle of the VF_s model (Henry's law) is applicable only if the soil contaminant concentration is at or below soil saturation "sat". Above the soil saturation limit, the model cannot predict an accurate VF-based PRG. How these particular cases are handled, depends on whether the contaminant is liquid or solid at ambient soil temperatures (see Section 4.5).

Particulate Emission Factor for Soils

Inhalation of chemicals adsorbed to respirable particles (PM_{10}) were assessed using a default PEF equal to 1. 316 x 10^9 m^3/kg that relates the contaminant concentration in soil with the concentration of respirable particles in the air due to fugitive dust emissions from contaminated soils. The generic PEF was derived using default values in Equation 4-11, which corresponds to a receptor point concentration of approximately 0.76 ug/m^3. The relationship is derived by Cowherd (1985) for a rapid assessment procedure applicable to a typical hazardous waste site where the surface contamination provides a relatively continuous and constant potential for emission over an extended period of time (e.g. years). This represents an annual average emission rate based on wind erosion that should be compared with chronic health criteria; it is not appropriate for evaluating the potential for more acute exposures.

The impact of the PEF on the resultant PRG concentration (that combines soil exposure pathways for ingestion, skin contact, and inhalation) can be assessed by accessing the Region 9 PRG website and viewing the pathway-specific soil concentrations. Equation 4-11 forms the basis for deriving a generic PEF for the inhalation pathway. For more details regarding specific parameters used in the PEF model, the reader is referred to *Soil Screening Guidance: Technical Background Document* (USEPA 1996a).

Note: the generic PEF evaluates windborne emissions and does not consider dust emissions from traffic or other forms of mechanical disturbance that could lead to greater emissions than assumed here.

4.3 Soils - Dermal Exposure

Dermal Contact Assumptions

Exposure factors for dermal contact with soil are based on recommendations in "Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim Guidance" (USEPA 2001b). Recommended RME (reasonable maximum exposure) defaults for adult workers' skin surface areas (3300 cm^2/day) and soil adherence factors (0.2 mg/cm^2) now differ from the defaults recommended for adult residents (5700 cm^2/day, 0.07 mg/cm^2) as noted in Exhibit 4-1. This is due to differences in the range of activities experienced by workers versus residents.

Dermal Absorption

Chemical-specific skin absorption values recommended by the Superfund Dermal Workgroup were applied when available. Chemical-specific values are included for the following chemicals: arsenic, cadmium, chlordane, 2,4-D, DDT, lindane, TCDD, PAHs, PCBs, and pentachlorophenols.

The "Supplemental Guidance for Dermal Risk Assessment" (USEPA 2001b) recommends a default dermal absorption factor for semivolatile organic compounds of 10% as a screening method for the majority of SVOCs without dermal absorption factors. Default dermal absorption values for other chemicals (VOCs and inorganics) are not recommended in this new guidance. Therefore, the assumption of 1% for inorganics and 10% for volatiles is no longer included in the Region 9 PRG table. This change has minimal impact on the final risk-based calculations because human exposure to VOCs and inorganics in soils is generally driven by other pathways of exposure.

4.4 Soils - Migration to Groundwater

The methodology for calculating SSLs for the migration to groundwater was developed to identify chemical concentrations in soil that have the potential to contaminate groundwater. Migration of contaminants from soil to groundwater can be envisioned as a two-stage process: (1) release of contaminant in soil leachate and (2) transport of the contaminant through the underlying soil and aquifer to a receptor well. The SSL methodology considers both of these fate and transport mechanisms.

SSLs are backcalculated from acceptable ground water concentrations (i.e. nonzero MCLGs, MCLs, or risk-based PRGs). First, the acceptable groundwater concentration is multiplied by a dilution factor to obtain a target leachate concentration. For example, if the dilution factor is 10 and the acceptable ground water concentration is 0.05 mg/L, the target soil leachate concentration would be 0.5 mg/L. The partition equation (presented in the *Soil Screening Guidance* document) is then used to calculate the total soil concentration (i.e. SSL) corresponding to this soil leachate concentration.

The SSL methodology was designed for use during the early stages of a site evaluation when information about subsurface conditions may be limited. Because of this constraint, the methodology is based on conservative, simplifying assumptions about the release and transport of contaminants in the subsurface. For more on SSLs, and how to calculate site-specific SSLs versus generic SSLs presented in the PRG table, the reader is referred to the *Soil Screening Guidance* document (USEPA 1996a,b).

4.5 Soil Saturation Limit

The soil saturation concentration "sat" corresponds to the contaminant concentration in soil at which the absorptive limits of the soil particles, the solubility limits of the soil pore water, and saturation of soil pore air have been reached. Above this concentration, the soil contaminant may be present in free phase, i.e., nonaqueous phase liquids (NAPLs) for contaminants that are liquid at ambient soil temperatures and pure solid phases for compounds that are solid at ambient soil temperatures.

Equation 4-10 is used to calculate "sat" for each volatile contaminant. As an update to RAGS HHEM, Part B (USEPA 1991a), this equation takes into account the amount of contaminant that is in the vapor phase in soil in addition to the amount dissolved in the soil's pore water and sorbed to soil particles.

Chemical-specific "sat" concentrations must be compared with each VF-based PRG because a basic principle of the PRG volatilization model is not applicable when free-phase contaminants are present. How these cases are handled depends on whether the contaminant is liquid or solid at ambient

temperatures. Liquid contaminant that have a VF-based PRG that exceeds the "sat" concentration are set equal to "sat" whereas for solids (e.g., PAHs), soil screening decisions are based on the appropriate PRGs for other pathways of concern at the site (e.g., ingestion).

4.6 Tap Water - Ingestion and Inhalation

Calculation of PRGs for ingestion and inhalation of contaminants in domestic water is based on the methodology presented in RAGS HHEM, Part B (USEPA 1991a). Ingestion of drinking water is an appropriate pathway for all chemicals. For the purposes of this guidance, however, inhalation of volatile chemicals from water is considered routinely only for chemicals with a Henry's Law constant of 1 x 10^{-5} atm-m^3/mole or greater and with a molecular weight of less than 200 g/mole.

For volatile chemicals, an upperbound volatilization constant (VF_w) is used that is based on all uses of household water (e.g showering, laundering, and dish washing). Certain assumptions were made. For example, it is assumed that the volume of water used in a residence for a family of four is 720 L/day, the volume of the dwelling is 150,000 L and the air exchange rate is 0.25 air changes/hour (Andelman in RAGS Part B). Furthermore, it is assumed that the average transfer efficiency weighted by water use is 50 percent (i.e. half of the concentration of each chemical in water will be transferred into air by all water uses). Note: the range of transfer efficiencies extends from 30% for toilets to 90% for dishwashers.

4.7 Default Exposure Factors

Default exposure factors were obtained primarily from RAGS Supplemental Guidance Standard Default *Exposure Factors* (OSWER Directive, 9285.6-03) dated March 25, 1991 and more recent information from U.S. EPA's Office of Solid Waste and Emergency Response, U.S. EPA's Office of Research and Development, and California EPA's Department of Toxic Substances Control (see Exhibit 4-1).

Because contact rates may be different for children and adults, carcinogenic risks during the first 30 years of life were calculated using age-adjusted factors ("adj"). Use of age-adjusted factors are especially important for soil ingestion exposures, which are higher during childhood and decrease with age. However, for purposes of combining exposures across pathways, additional age-adjusted factors are used for inhalation and dermal exposures. These factors approximate the integrated exposure from birth until age 30 combining contact rates, body weights, and exposure durations for two age groups - small children and adults. Age-adjusted factors were obtained from RAGS PART B or developed by analogy (see derivations next page).

For soils only, noncarcinogenic contaminants are evaluated in children separately from adults. No age-adjustment factor is used in this case. The focus on children is considered protective of the higher daily intake rates of soil by children and their lower body weight. For maintaining consistency when evaluating soils, dermal and inhalation exposures are also based on childhood contact rates.

(1) ingestion([mg-yr]/[kg-d]:

$$IFS_{adj} = \frac{ED_c \times IRS_c}{BW_c} + \frac{(ED_r - ED_c) \times IRS_a}{BW_a}$$

(2) skin contact([mg-yr]/[kg-d]:

$$SFS_{adj} = \frac{ED_c \times AF \times SA_c}{BW_c} + \frac{(ED_r - ED_c) \times AF \times SA_a}{BW_a}$$

(3) inhalation ([m^3-yr]/[kg-d]):

$$InhF_{adj} = \frac{ED_c \times IRA_c}{BW_c} + \frac{(ED_r - ED_c) \times IRA_a}{BW_a}$$

EXHIBIT 4-1
STANDARD DEFAULT FACTORS

Symbol	Definition (units)	Default	Reference
CSFo	Cancer slope factor oral (mg/kg-d)-1	--	IRIS, HEAST, or NCEA
CSFi	Cancer slope factor inhaled (mg/kg-d)-1	--	IRIS, HEAST, or NCEA
RfDo	Reference dose oral (mg/kg-d)	--	IRIS, HEAST, or NCEA
RfDi	Reference dose inhaled (mg/kg-d)	--	IRIS, HEAST, or NCEA
TR	Target cancer risk	10^{-6}	--
THQ	Target hazard quotient	1	--
BWa	Body weight, adult (kg)	70	RAGS (Part A), EPA 1989 (EPA/540/1-89/002)
BWc	Body weight, child (kg)	15	Exposure Factors, EPA 1991 (OSWER No. 9285.6-03)
ATc	Averaging time - carcinogens (days)	25550	RAGS(Part A), EPA 1989 (EPA/540/1-89/002)
ATn	Averaging time - noncarcinogens (days)	ED*365	
SAa	Exposed surface area for soil/dust (cm^2/day)		Dermal Assessment, EPA 2000 (EPA/540/R-99/005)
	– adult resident	5700	
	– adult worker	3300	
SAc	Exposed surface area, child in soil (cm^2/day)	2800	Dermal Assessment, EPA 2000 (EPA/540/R-99/005)
AFa	Adherence factor, soils (mg/cm^2)		Dermal Assessment, EPA 2000 (EPA/540/R-99/005)
	– adult resident	0.07	
	– adult worker	0.2	
AFc	Adherence factor, child (mg/cm^2)	0.2	Dermal Assessment, EPA 2000 (EPA/540/R-99/005)
ABS	Skin absorption defaults (unitless):		
	– semi-volatile organics	0.1	Dermal Assessment, EPA 2000 (EPA/540/R-99/005)
	– volatile organics	--	Dermal Assessment, EPA 2000 (EPA/540/R-99/005)
	– inorganics	--	Dermal Assessment, EPA 2000 (EPA/540/R-99/005)
IRAa	Inhalation rate - adult (m^3/day)	20	Exposure Factors, EPA 1991 (OSWER No. 9285.6-03)
IRAc	Inhalation rate - child (m^3/day)	10	Exposure Factors, EPA 1997 (EPA/600/P-95/002Fa)
IRWa	Drinking water ingestion - adult (L/day	2	RAGS(Part A), EPA 1989 (EPA/540/1-89/002)
IRWc	Drinking water ingestion - child (L/day)	1	PEA, Cal-EPA (DTSC, 1994)
IRSa	Soil ingestion - adult (mg/day)	100	Exposure Factors, EPA 1991 (OSWER No. 9285.6-03)
IRSc	Soil ingestion - child (mg/day),	200	Exposure Factors, EPA 1991 (OSWER No. 9285.6-03)
IRSo	Soil ingestion - occupational (mg/day)	100	Soil Screening Guidance (EPA 2001a)
EFr	Exposure frequency - residential (d/y)	350	Exposure Factors, EPA 1991 (OSWER No. 9285.6-03)
EFo	Exposure frequency - occupational (d/y)	250	Exposure Factors, EPA 1991 (OSWER No. 9285.6-03)
EDr	Exposure duration - residential (years)	30[a]	Exposure Factors, EPA 1991 (OSWER No. 9285.6-03)
EDc	Exposure duration - child (years)	6	Exposure Factors, EPA 1991 (OSWER No. 9285.6-03)
EDo	Exposure duration - occupational (years)	25	Exposure Factors, EPA 1991 (OSWER No. 9285.6-03)
	Age-adjusted factors for carcinogens:		
IFSadj	Ingestion factor, soils ([mg-yr]/[kg-d])	114	RAGS(Part B), EPA 1991 (OSWER No. 9285.7-01B)
SFSadj	Dermal factor, soils ([mg-yr]/[kg-d])	361	By analogy to RAGS (Part B)
InhFadj	Inhalation factor, air ([m^3-yr]/[kg-d])	11	By analogy to RAGS (Part B)
IFWadj	Ingestion factor, water ([L-yr]/[kg-d])	1.1	By analogy to RAGS (Part B)
VFw	Volatilization factor for water (L/m^3)	0.5	RAGS(Part B), EPA 1991 (OSWER No. 9285.7-01B)
PEF	Particulate emission factor (m^3/kg)	See below	Soil Screening Guidance (EPA 1996a,b)
VFs	Volatilization factor for soil (m^3/kg)	See below	Soil Screening Guidance (EPA 1996a,b)
sat	Soil saturation concentration (mg/kg)	See below	Soil Screening Guidance (EPA 1996a,b)

Footnote:
[a]Exposure duration for lifetime residents is assumed to be 30 years total. For carcinogens, exposures are combined for children (6 years) and adults (24 years).

4.8 Standardized Equations

The equations used to calculate the PRGs for carcinogenic and noncarcinogenic contaminants are presented in Equations 4-1 through 4-8. The PRG equations update RAGS Part B equations. The methodology backcalculates a soil, air, or water concentration level from a target risk (for carcinogens) or hazard quotient (for noncarcinogens). For completeness, the soil equations combine risks from ingestion, skin contact, and inhalation simultaneously. **Note: the electronic version of the table also includes pathway-specific PRGs, should the user decide against combining specific exposure pathways; or, the user wants to identify the relative contribution of each pathway to exposure.**

To calculate PRGs for volatile chemicals in soil, a chemical-specific volatilization factor is calculated per Equation 4-9. Because of its reliance on Henry's law, the VF_s model is applicable only when the contaminant concentration in soil is at or below saturation (i.e. there is no free-phase contaminant present). Soil saturation ("sat") corresponds to the contaminant concentration in soil at which the adsorptive limits of the soil particles and the solubility limits of the available soil moisture have been reached. Above this point, pure liquid-phase contaminant is expected in the soil. If the PRG calculated using VF_s was greater than the calculated sat, the PRG was set equal to sat, in accordance with *Soil Screening Guidance* (USEPA 1996 a,b). The equation for deriving sat is presented in Equation 4-10.

PRG EQUATIONS

Soil Equations: For soils, equations were based on three exposure routes (ingestion, skin contact, and inhalation).

Equation 4-1: Combined Exposures to Carcinogenic Contaminants in Residential Soil

$$C(mg/kg) = \frac{TR \times AT_c}{EF_r \left[\left(\frac{IFS_{adj} \times CSF_o}{10^6 mg/kg}\right) + \left(\frac{SFS_{adj} \times ABS \times CSF_o}{10^6 mg/kg}\right) + \left(\frac{InhF_{adj} \times CSF_i}{VF_c^a}\right)\right]}$$

Equation 4-2: Combined Exposures to Noncarcinogenic Contaminants in Residential Soil

$$C(mg/kg) = \frac{THQ \times BW_c \times AT_n}{EF_r \times ED_c \left[\left(\frac{1}{RfD_o} \times \frac{IRS_c}{10^6 mg/kg}\right) + \left(\frac{1}{RfD_o} \times \frac{SA_c \times AF \times ABS}{10^6 mg/kg}\right) + \left(\frac{1}{RfD_i} \times \frac{IRA_c}{VF_c^a}\right)\right]}$$

Equation 4-3: Combined Exposures to Carcinogenic Contaminants in Industrial Soil

$$C(mg/kg) = \frac{TR \times BW_a \times AT_c}{EF_o \times ED_o \left[\left(\frac{IRS_o \times CSF_o}{10^6 mg/kg}\right) + \left(\frac{SA_a \times AF \times ABS \times CSF_o}{10^6 mg/kg}\right) + \left(\frac{IRA_a \times CSF_i}{VF_s^a}\right)\right]}$$

Footnote:
[a]Use VF_s for volatile chemicals (defined as having a Henry's Law Constant [atm-m^3/mol] greater than 10^{-5} and a molecular weight less than 200 grams/mol) or PEF for non-volatile chemicals.

Equation 4-4: Combined Exposures to Noncarcinogenic Contaminants in Industrial Soil

$$C(mg/kg) = \frac{THQ \times BW_a \times AT_n}{EF_o \times ED_o \left[\left(\frac{1}{RfD_o} \times \frac{IRS_o}{10^6 mg/kg} \right) + \left(\frac{1}{RfD_o} \times \frac{SA_a \times AF \times ABS}{10^6 mg/kg} \right) + \left(\frac{1}{RfD_i} \times \frac{IRA_a}{VF_s^a} \right) \right]}$$

Tap Water Equations:

Equation 4-5: Ingestion and Inhalation Exposures to Carcinogenic Contaminants in Water

$$C(ug/L) = \frac{TR \times AT_c \times 1000 ug/mg}{EF_r \left[(IFW_{adj} \times CSF_o) + (VF_w \times InhF_{adj} \times CSF_i) \right]}$$

Equation 4-6: Ingestion and Inhalation Exposures to Noncarcinogenic Contaminants in Water

$$C(ug/L) = \frac{THQ \times BW_a \times AT_n \times 1000 ug/mg}{EF_r \times ED_r \left[\left(\frac{IRW_a}{RfD_o} \right) + \left(\frac{VF_w \times IRA_a}{RfD_i} \right) \right]}$$

Air Equations:

Equation 4-7: Inhalation Exposures to Carcinogenic Contaminants in Air

$$C(ug/m^3) = \frac{TR \times AT_c \times 1000 ug/mg}{EF_r \times InhF_{adj} \times CSF_i}$$

Equation 4-8: Inhalation Exposures to Noncarcinogenic Contaminants in Air

$$C(ug/m^3) = \frac{THQ \times RfD_i \times BW_a \times AT_n \times 1000 ug/mg}{EF_r \times ED_r \times IRA_a}$$

Footnote:
[a]Use VF_s for volatile chemicals (defined as having a Henry's Law Constant [atm-m^3/mol] greater than 10^{-5} and a molecular weight less than 200 grams/mol) or PEF for non-volatile chemicals.

SOIL-TO-AIR VOLATILIZATION FACTOR (VF_s)

Equation 4-9: Derivation of the Volatilization Factor

$$VF_s\,(m^3/kg) = (Q/C) \times \frac{(3.14 \times D_A \times T)^{1/2}}{(2 \times \rho_b \times D_A)} \times 10^{-4}\,(m^2/cm^2)$$

where:

$$D_A = \frac{[(\Theta_a^{10/3} D_i H' + \Theta_w^{10/3} D_w)/n^2]}{\rho_B K_d + \Theta_w + \Theta_a H'}$$

Parameter	Definition (units)	Default
VF_s	Volatilization factor (m^3/kg)	--
D_A	Apparent diffusivity (cm^2/s)	--
Q/C	Inverse of the mean conc. at the center of a 0.5-acre square source ($g/^{M2}$-s per kg/m^3)	68.81
T	Exposure interval (s)	9.5×10^8
ρ_b	Dry soil bulk density (g/cm^3)	1.5
Θ_a	Air filled soil porosity (L_{air}/L_{soil})	0.28 or n-Θ_w
n	Total soil porosity (L_{pore}/L_{soil})	0.43 or 1 - (ρ_b/ρ_s)
Θ_w	Water-filled soil porosity (L_{water}/L_{soil})	0.15
ρ_s	Soil particle density (g/cm^3)	2.65
Di	Diffusivity in air (cm^2/s)	Chemical-specific
H	Henry's Law constant (atm-m^3/mol)	Chemical-specific
H'	Dimensionless Henry's Law constant	Calculated from H by multiplying by 41 (USEPA 1991a)
D_w	Diffusivity in water (cm^2/s)	Chemical-specific
K_d	Soil-water partition coefficient (cm^3/g) = $K_{oc}f_{oc}$	Chemical-specific
K_{oc}	Soil organic carbon-water partition coefficient (cm^3/g)	Chemical-specific
f_{oc}	Fraction organic carbon in soil (g/g)	0.006 (0.6%)

SOIL SATURATION CONCENTRATION (sat)

Equation 4-10: Derivation of the Soil Saturation Limit

$$sat = \frac{S}{\rho_b} (K_d \rho_b + \Theta_w + H' \Theta_a)$$

Parameter	Definition (units)	Default
sat	Soil saturation concentration (mg/kg)	--
S	Solubility in water (mg/L-water)	Chemical-specific
ρ_b	Dry soil bulk density (kg/L)	1.5
n	Total soil porosity (L_{pore}/L_{soil})	0.43 or 1 - (ρ_b/ρ_s)
ρ_s	Soil particle density (kg/L)	2.65
K_d	Soil-water partition coefficient (L/kg)	K_{oc} x f_{oc} (chemical-specific)
k_{oc}	Soil organic carbon/water partition coefficient (L/kg)	Chemical-specific
f_{oc}	Fraction organic carbon content of soil (g/g)	0.006 or site-specific
Θ_w	Water-filled soil porosity (L_{water}/L_{soil})	0.15
Θ_a	Air filled soil porosity (L_{air}/L_{soil})	0.28 or n-Θ_w
w	Average soil moisture content (kg_{water}/kg_{soil} or L_{water}/kg_{soil})	0.1
H	Henry's Law constant (atm-m^3/mol)	Chemical-specific
H'	Dimensionless Henry's Law constant	H x 41, where 41 is a units conversion factor

SOIL-TO-AIR PARTICULATE EMISSION FACTOR (PEF)

Equation 4-11: Derivation of the Particulate Emission Factor

$$PEF(m^3/kg) = Q/C \times \frac{3600 s/h}{0.036 \times (1-V) \times (U_m/U_t)^3 \times F(x)}$$

Parameter	Definition (units)	Default
PEF	Particulate emission factor (m^3/kg)	1.316×10^9
Q/C	Inverse of the mean concentration at the center of a 0.5-acre-square source ($g/^{M2}$-s per kg/m^3)	90.80
V	Fraction of vegetative cover (unitless)	0.5
U_m	Mean annual windspeed (m/s)	4.69
U_t	Equivalent threshold value of windspeed at 7 m (m/s)	11.32
F(x)	Function dependent on U_m/U_t derived using Cowherd (1985) (unitless)	0.194

REFERENCES

ASTM. 1995. *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites.* Designation E 1739 - 95. Philadelphia, Pennsylvania.

Calabrese, E.J., H. Pastides, R. Barnes, et al. 1989. How much soil do young children ingest: an epidemiologic study. In: *Petroleum Contaminated Soils*, Vol. 2. E.J. Calabrese and P.T. Kostecki, eds. pp. 363-417. Chelsea, MI, Lewis Publishers.

California EPA. 1994. *Preliminary Endangerment Assessment Guidance Manual.* (PEA) Department of Toxic Substances Control, Sacramento, California.

California EPA. 1996. *Guidance for Ecological Risk Assessment at Hazardous Waste Sites and Permitted Facilities, Part A: Overview.* Department of Toxic Substances Control, Sacramento, California.

Cowherd, C., G. Muleski, P. Engelhart, and D. Gillette. 1985. *Rapid Assessment of Exposure to Particulate Emission from Surface Contamination.* EPA/600/8-85/002. Prepared for Office of Health and Environmental Assessment, U.S. Environmental Protection Agency, Washington, DC. NTIS PB85-1922197AS.

Davis, S., P. Waller, R. Buschom, J. Ballou, and P. White. 1990. Quantitative estimates of soil ingestion in normal children between the ages of 2 and 7 years: population-based estimates using Al, Si, and Ti as soil tracer elements. *Archives of Environmental Health* 45:112-122.

Howard, P.H. 1990. *Handbook of Environmental Fate and Exposure Data for Organic Chemicals.* Lewis Publishers, Chelsea Michigan.

U.S. EPA. 1988. *Superfund Exposure Assessment Manual.* EPA/540/1-88/001. Office of Emergency and Remedial Response, Washington, DC.

U.S. EPA. 1990a. *Subsurface Contamination Reference Guide.* EPA/540/2-90/011. Office of Emergency and Remedial Response, Washington, DC.

U.S. EPA 1990b. *Exposure Factors Handbook.* EPA/600/8089/043. Office of Health and Environmental Assessment, Washington, DC.

U.S. EPA. 1991a. *Risk Assessment Guidance for Superfund Volume 1: Human Health Evaluation Manual (Part B, Development of Risk-Based Preliminary Remediation Goals).* Publication 9285.7-01B. Office of Emergency and Remedial Response, Washington, DC. NTIS PB92-963333.

U.S. EPA. 1991b. *Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors.* Publication 9285.6-03. Office of Emergency and Remedial Response, Washington, DC. NTIS PB91-921314.

U.S. EPA. 1992a *Technical Support Document for Land Application of Sewage Sludge; Volumes I and II.* Office of Water, Washington, DC. 822/R-93-001a,b.

U.S. EPA. 1992b *Dermal Exposure Assessment: Principles and Applications.* EPA/600/8-91/011B. Office of Health and Environmental Assessment, Washington, DC.

U.S. EPA 1994a. *Estimating Exposure to Dioxin-Like Compounds.* U.S. EPA Office of Research and Development, EPA/600/6-88/005B.

U.S. EPA 1994b. *Role of Ecological Assessment in the Baseline Risk Assessment.* OSWER Directive No. 9285.7-17. Office of Solid Waste and Emergency Response, Washington, DC.

U.S. EPA. 1996a. *Soil Screening Guidance: Technical Background Document.* EPA/540/R-95/128. Office of Emergency and Remedial Response, Washington, DC. PB96-963502.

U.S. EPA. 1996b. *Soil Screening Guidance: User's Guide.* EPA/540/R-96/018. Office of Emergency and Remedial Response, Washington, DC. PB96-963505.

U.S. EPA 1996c. *Superfund Chemical Data Matrix*. EPA/540/R-96/028. Office of Solid Waste and Emergency Response, Washington, DC. PB94-963506.

U.S. EPA. 1997a. *Health Effects Assessment Summary Tables* (HEAST): Annual Update, FY 1997. National Center For Environmental Assessment (NCEA), Office of Research and Development and Office of Emergency and Remedial Response, Washington, DC.

U.S. EPA. 1997b. *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments, Interim Final*. EPA/540/R-97/006. Office of Solid Waste and Emergency Response, Washington, DC. PB97-963211.

U.S. EPA. 2001a. *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites, Interim Guidance*. OSWER 9355.4-24.

U.S. EPA. 2001b. *Risk Assessment Guidance for Superfund Volume I:. Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), Interim Guidance*. EPA/540/R-99/005. Office of Solid Waste and Emergency Response, Washington, DC. PB99-963312.

U.S. EPA. 2001c. *Guidance for Characterizing Background Chemicals in Soil at Superfund Sites* (Draft) June 2001, EPA/540/R-01/003. Office of Solid Waste and Emergency Response, Washington, DC.

U.S. EPA. 2002. *Integrated Risk Information System* (IRIS). Duluth, MN.

Van Wijnen, J.H., P. Clausing and B. Brunekreef. 1990. Estimated soil ingestion by children. *Environmental Research*, 51:147-162.

Key : SFo,I=Cancer Slope Factor oral, Inhalation RfDo,I=Reference Dose oral, Inhalation I=IRIS h=HEAST n=NCEA x=Withdrawn o=Other EPA Source r=Route-extrapolation ca=Cancer PRG nc=Noncancer PRG ca* (where: nc < 100X ca) ca**(where: nc < 10X ca)
++++=Non-Standard Method Applied (See Section 2.3 of the "Region 9 PRGs Table User's Guide") sat=Soil Saturation (See Section 4.5) max=Ceiling limit (See Section 2.1) DAF=Dilution Attenuation Factor (See Section 2.5) CAS=Chemical Abstract Services

TOXICITY INFORMATION										CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFI 1/(mg/kg-d)		RfDI (mg/kg-d)		V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
											Acephate	5.6E+01	ca**	2.0E+02	ca*	7.7E-01	ca*	7.7E+00	ca*		
8.7E-03	I	4.0E-03	I	8.7E-03	r	4.0E-03	r	0	0.10	30560-19-1	Acetaldehyde	1.1E+01	ca**	2.3E+01	ca**	8.7E-01	ca*	1.7E+00	ca		
				7.7E-03	I	2.6E-03	I	1		75-07-0	Acetochlor	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		2.0E-02	I			2.0E-02	r	0	0.10	34256-82-1	Acetone	1.6E+03	nc	6.0E+03	nc	3.7E+02	nc	6.1E+02	nc	1.6E+01	8.0E-01
		1.0E-01	I			1.0E-01	r	1		67-64-1	Acetone cyanohydrin	4.9E+01	nc	4.9E+02	nc	2.9E+00	nc	2.9E+01	nc		
		8.0E-04	h			8.0E-04	r	0	0.10	75-86-5	Acetonitrile	4.2E+02	nc	1.8E+03	nc	6.2E+01	nc	1.0E+02	nc		
		1.7E-02	r			1.7E-02	I	1		75-05-8	Acrolein	1.0E-01	nc	3.4E-01	nc	2.1E-02	nc	4.2E-02	nc		
		2.0E-02	h			5.7E-06	I	1		107-02-8	Acrylamide	1.1E-01	ca	3.8E-01	ca	1.5E-03	ca	1.5E-02	ca		
4.5E+00	I	2.0E-04	I	4.5E+00	I	2.0E-04	r	0	0.10	79-06-1	Acrylic acid	2.9E+04	nc	1.0E+05	max	1.0E+00	nc	1.8E+04	nc		
		5.0E-01	I			2.9E-04	I	0	0.10	79-10-7	Acrylonitrile	2.1E-01	ca*	4.9E-01	ca*	2.8E-02	ca*	3.9E-02	ca*		
5.4E-01	I	1.0E-03	h	2.4E-01	I	5.7E-04	I	1		107-13-1	Alachlor	6.0E+00	ca	2.1E+01	ca	8.4E-02	ca	8.4E-01	ca		
8.1E-02	h	1.0E-02	I	8.0E-02	r	1.0E-02	r	0	0.10	15972-60-8	Alar	9.2E+03	nc	9.2E+04	nc	5.5E+02	nc	5.5E+03	nc		
		1.5E-01	I			1.5E-01	r	0	0.10	1596-84-5	Aldicarb	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		1.0E-03	I			1.0E-03	r	0	0.10	116-06-3	Aldicarb sulfone	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		1.0E-03	I			1.0E-03	r	0	0.10	1646-88-4	Aldrin	2.9E-02	ca*	1.0E-01	ca	3.9E-04	ca	4.0E-03	ca	5.0E-01	2.0E-02
1.7E+01	I	3.0E-05	I	1.7E+01	I	3.0E-05	r	0	0.10	309-00-2	Ally	1.5E+04	nc	1.0E+05	max	9.1E+02	nc	9.1E+03	nc		
		2.5E-01	I			2.5E-01	r	0	0.10	74223-64-6	Allyl alcohol	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc		
		5.0E-03	I			5.0E-03	r	0	0.10	107-18-6	Allyl chloride	3.0E+03	nc	3.0E+04	nc	1.0E+00	nc	1.8E+03	nc		
		5.0E-02	h			2.9E-04	I	0	0.10	107-05-1	Aluminum	7.6E+04	nc	1.0E+05	max	5.1E+00	nc	3.6E+04	nc		
		1.0E+00	n			1.4E-03	n	0		7429-90-5	Aluminum phosphide	3.1E+01	nc	4.1E+02	nc			1.5E+01	nc		
		4.0E-04	I					0		20859-73-8	Amdro	1.8E+01	nc	1.8E+02	nc	1.1E+00	nc	1.1E+01	nc		
		3.0E-04	I			3.0E-04	r	0	0.10	67485-29-4	Ametryn	5.5E+02	nc	5.5E+03	nc	3.3E+01	nc	3.3E+02	nc		
		9.0E-03	I			9.0E-03	r	0	0.10	834-12-8	m-Aminophenol	4.3E+03	nc	4.3E+04	nc	2.6E+02	nc	2.6E+03	nc		
		7.0E-02	h			7.0E-02	r	0	0.10	591-27-5	4-Aminopyridine	1.2E+00	nc	1.2E+01	nc	7.3E-02	nc	7.3E-01	nc		
		2.0E-05	h			2.0E-05	r	0	0.10	504-24-5	Amitraz	1.5E+02	nc	1.5E+03	nc	9.1E+00	nc	9.1E+01	nc		
		2.5E-03	I			2.5E-03	r	0	0.10	33089-61-1	Ammonia					1.0E+02	nc				
						2.9E-02	I			7664-41-7	Ammonium sulfamate	1.2E+04	nc	1.0E+05	max			7.3E+03	nc		
		2.0E-01	I					0	0.10	7773-06-0	Aniline	8.5E+01	ca**	3.0E+02	ca*	1.0E+00	nc	1.2E+01	ca*		
5.7E-03	I	7.0E-03	n	5.7E-03	r	2.9E-04	I	0	0.10	62-53-3	Antimony and compounds	3.1E+01	nc	4.1E+02	nc			1.5E+01	nc	5.0E+00	3.0E-01
		4.0E-04	I					0		7440-36-0	Antimony pentoxide	3.9E+01	nc	5.1E+02	nc			1.8E+01	nc		
		5.0E-04	h					0		1314-60-9	Antimony potassium tartrate	7.0E+01	nc	9.2E+02	nc			3.3E+01	nc		
		9.0E-04	h					0		28300-74-5	Antimony tetroxide	3.1E+01	nc	4.1E+02	nc			1.5E+01	nc		
		4.0E-04	h					0		1332-81-6	Antimony trioxide	3.1E+01	nc	4.1E+02	nc	2.1E-01	nc	1.5E+01	nc		
		4.0E-04	h			5.7E-05	I	0		1309-64-4	Apollo	7.9E+02	nc	8.0E+03	nc	4.7E+01	nc	4.7E+02	nc		
		1.3E-02	I			1.3E-02	r	0	0.10	74115-24-5	Aramite	1.9E+01	ca	6.9E+01	ca	2.7E-01	ca	2.7E+00	ca		
2.5E-02	I	5.0E-02	h	2.5E-02	I	5.0E-02	r	0	0.10	140-57-8	Arsenic (noncancer endpoint)	2.2E+01	nc	2.6E+02	nc						
		3.0E-04	I					0	0.03	7440-38-2											

Key : SFo,I=Cancer Slope Factor oral, Inhalation RfDo,I=Reference Dose oral, Inhalation I=IRIS h=HEAST n=NCEA x=Withdrawn o=Other EPA Source r=Route-extrapolation ca=Cancer PRG nc=Noncancer PRG ca* (where: nc < 100X ca) ca**(where: nc < 10X ca)
+++=Non-Standard Method Applied (See Section 2.3 of the "Region 9 PRGs Table User's Guide") sat=Soil Saturation (See Section 4.5) max=Ceiling limit (See Section 2.1) DAF=Dilution Attenuation Factor (See Section 2.5) CAS=Chemical Abstract Services

TOXICITY INFORMATION										CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		VOC	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
1.5E+00	I	3.0E-04	I	1.5E+01	I			0	0.03	7440-38-2	Arsenic (cancer endpoint)	3.9E-01	ca*	1.6E+00	ca	4.5E-04	ca	4.5E-02	ca	2.9E+01	1.0E+00
						1.4E-05	I	0		7784-42-1	Arsine (see arsenic for cancer endpoint)					5.2E-02	nc				
		9.0E-03	I			9.0E-03	r		0.10	76578-12-6	Assure	5.5E+02	nc	5.5E+03	nc	3.3E+01	nc	3.3E+02	nc		
		5.0E-02	I			5.0E-02	r	0	0.10	3337-71-1	Asulam	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
2.2E-01	h	3.5E-02	h	2.2E-01	r	3.5E-02	r	0	0.10	1912-24-9	Atrazine	2.2E+00	ca	7.8E+00	ca	3.1E-02	ca	3.0E-01	ca		
		4.0E-04	I			4.0E-04	r	0	0.10	71751-41-2	Avermectin B1	2.4E+01	nc	2.5E+02	nc	1.5E+00	nc	1.5E+01	nc		
1.1E-01	I			1.1E-01	I			0	0.10	103-33-3	Azobenzene	4.4E+00	ca	1.6E+01	ca	6.2E-02	ca	6.1E-01	ca		
		7.0E-02	I			1.4E-04	h	0		7440-39-3	Barium and compounds	5.4E+03	nc	6.7E+04	nc	5.2E-01	nc	2.6E+03	nc	1.6E+03	8.2E+01
		4.0E-03	I			4.0E-03	r	0	0.10	114-26-1	Baygon	2.4E+02	nc	2.5E+03	nc	1.5E+01	nc	1.5E+02	nc		
		3.0E-02	I			3.0E-02	r	0	0.10	43121-43-3	Bayleton	1.8E+03	nc	1.8E+04	nc	1.1E+02	nc	1.1E+03	nc		
		2.5E-02	I			2.5E-02	r	0	0.10	68359-37-5	Baythroid	1.5E+03	nc	1.5E+04	nc	9.1E+01	nc	9.1E+02	nc		
		3.0E-01	I			3.0E-01	r	0	0.10	1861-40-1	Benefin	1.8E+04	nc	1.0E+05	max	1.1E+03	nc	1.1E+04	nc		
		5.0E-02	I			5.0E-02	r	0	0.10	17804-35-2	Benomyl	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
		3.0E-02	I			3.0E-02	r	0	0.10	25057-89-0	Bentazon	1.8E+03	nc	1.8E+04	nc	1.1E+02	nc	1.1E+03	nc		
		1.0E-01	I			1.0E-01	r	0	0.10	100-52-7	Benzaldehyde	6.1E+03	nc	6.2E+04	nc	3.7E+02	nc	3.6E+03	nc		
5.5E-02	I	3.0E-03	n	2.9E-02	I	1.7E-03	n	1		71-43-2	Benzene	6.0E-01	ca*	1.3E+00	ca*	2.3E-01	ca*	3.4E-01	ca*	3.0E-02	2.0E-03
2.3E+02	I	3.0E-03	I	2.3E+02	I	3.0E-03	r	0	0.10	92-87-5	Benzidine	2.1E-03	ca	7.5E-03	ca	2.9E-05	ca	2.9E-04	ca		
		4.0E+00	I			4.0E+00	r	0	0.10	65-85-0	Benzoic acid	1.0E+05	max	1.0E+05	max	1.5E+04	nc	1.5E+05	nc	4.0E+02	2.0E+01
1.3E+01	I			1.3E+01	r			0	0.10	98-07-7	Benzotrichloride	3.7E-02	ca	1.3E-01	ca	5.2E-04	ca	5.2E-03	ca		
		3.0E-01	h			3.0E-01	r	0	0.10	100-51-6	Benzyl alcohol	1.8E+04	nc	1.0E+05	max	1.1E+03	nc	1.1E+04	nc		
1.7E-01	I	2.9E-03	r	1.7E-01	r	2.9E-03	n	1		100-44-7	**Benzyl chloride**	8.9E-01	ca*	2.2E+00	ca	4.0E-02	ca	6.6E-02	ca		
		2.0E-03	I	8.4E+00	I	5.7E-06	I	0		7440-41-7	Beryllium and compounds	1.5E+02	nc	1.9E+03	ca**	8.0E-04	ca*	7.3E+01	nc	6.3E+01	3.0E+00
		1.0E-04	I			1.0E-04	r	0	0.10	141-66-2	Bidrin	6.1E+00	nc	6.2E+01	nc	3.7E-01	nc	3.6E+00	nc		
		1.5E-02	I			1.5E-02	r	0	0.10	82657-04-3	Biphenthrin (Talstar)	9.2E+02	nc	9.2E+03	nc	5.5E+01	nc	5.5E+02	nc		
		5.0E-02	I			5.0E-02	r	1		92-52-4	1,1-Biphenyl	3.5E+02	sat	3.5E+02	sat	1.8E+02	nc	3.0E+02	nc		
1.1E+00	I			1.2E+00	I			1		111-44-4	Bis(2-chloroethyl)ether	2.1E-01	ca	5.5E-01	ca	5.8E-03	ca	9.8E-03	ca	4.0E-04	2.0E-05
7.0E-02	x	4.0E-02	I	3.5E-02	x	4.0E-02	r	1		39638-32-9	Bis(2-chloroisopropyl)ether	2.9E+00	ca	7.4E+00	ca	1.9E-01	ca	2.7E-01	ca		
2.2E+02	I			2.2E+02	I			1		542-88-1	Bis(chloromethyl)ether	1.9E-04	ca	4.3E-04	ca	3.1E-05	ca	5.2E-05	ca		
7.0E-02	x	4.0E-02	I	3.5E-02	x	4.0E-02	r	1		108-60-1	Bis(2-chloro-1-methylethyl)ether	2.9E+00	ca	7.4E+00	ca	1.9E-01	ca	2.7E-01	ca		
1.4E-02	I	2.0E-02	I	1.4E-02	r	2.2E-02	r	0	0.10	117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)	3.5E+01	ca*	1.2E+02	ca	4.8E-01	ca	4.8E+00	ca		
		5.0E-02	I			5.0E-02	r	0	0.10	80-05-7	Bisphenol A	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
		2.0E-01	I			5.7E-03	x	0		7440-42-8	**Boron**	1.6E+04	nc	1.0E+05	max	2.1E+01	nc	7.3E+03	nc		
						2.0E-04	h	0		7637-07-2	Boron trifluoride					7.3E-01	nc				
		4.00E-03	I							15541-45-4	**Bromate**	3.1E+02	nc	4.1E+03	nc	0.0E+00		1.5E+02	nc		
		2.0E-02	n			2.9E-03	n	1		108-86-1	Bromobenzene	2.8E+01	nc	9.2E+01	nc	1.0E+01	nc	2.0E+01	nc		
6.2E-02	I	2.0E-02	I	6.2E-02	r	2.0E-02	r	1		75-27-4	Bromodichloromethane	8.2E-01	ca	1.8E+00	ca	1.1E-01	ca	1.8E-01	ca	6.0E-01	3.0E-02

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TOXICITY INFORMATION										CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
7.9E-03	I	2.0E-02	I	3.9E-03	I	2.0E-02	r	0	0.10	75-25-2	Bromoform (tribromomethane)	6.2E+01	ca*	2.2E+02	ca*	1.7E+00	ca*	8.5E+00	ca*	8.0E-01	4.0E-02
		1.4E-03	I			1.4E-03	I	1		74-83-9	Bromomethane (Methyl bromide)	3.9E+00	nc	1.3E+01	nc	5.2E+00	nc	8.7E+00	nc	2.0E-01	1.0E-02
		5.0E-03	h			5.0E-03	r	0	0.10	2104-96-3	Bromophos	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc		
		2.0E-02	I			2.0E-02	r	0	0.10	1689-84-5	Bromoxynil	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		2.0E-02	I			2.0E-02	r	0	0.10	1689-99-2	Bromoxynil octanoate	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
9.8E-01	r			9.8E-01	I			1		106-99-0	**1,3-Butadiene**	6.5E-03	ca	1.4E-02	ca	6.9E-03	ca	1.1E-02	ca		
		1.0E-01	I			2.6E-03	n	0	0.10	71-36-3	**1-Butanol**	6.1E+03	nc	6.1E+04	nc	9.5E+00	nc	3.6E+03	nc	1.7E+01	9.0E-01
		5.0E-02	I			5.0E-02	r	0	0.10	2008-41-5	Butylate	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
		4.00E-02	n			4.00E-02	r	1		104-51-8	**n-Butylbenzene**	2.4E+02	sat	2.4E+02	sat	1.5E+02	nc	2.4E+02	nc		
		4.00E-02	n			4.00E-02	r	1		135-9-88	**sec-Butylbenzene**	2.2E+02	sat	2.2E+02	sat	1.5E+02	nc	2.4E+02	nc		
		4.00E-02	n			4.00E-02	r	1		98-06-6	**tert-Butylbenzene**	3.9E+02	sat	3.9E+02	sat	1.5E+02	nc	2.4E+02	nc		
		2.0E-01	I			2.0E-01	r	0	0.10	85-68-7	Butyl benzyl phthalate	1.2E+04	nc	1.0E+05	max	7.3E+02	nc	7.3E+03	nc	9.3E+02	8.1E+02
		1.0E+00	I			1.0E+00	r	0	0.10	85-70-1	Butylphthalyl butylglycolate	6.1E+04	nc	1.0E+05	max	3.7E+03	nc	3.6E+04	nc		
2.5E-01	h	3.0E-04	h	2.5E-01	r	3.0E-04	r	0	0.10	75-60-5	**Cacodylic acid**	1.9E+00	ca**	6.9E+00	ca*	2.7E-02	ca*	2.7E-01	ca*		
		5.0E-04	I	6.3E+00	I			0	0.001	7440-43-9	Cadmium and compounds	3.7E+01	nc	4.5E+02	nc	1.1E-03	ca	1.8E+01	nc	8.0E+00	4.0E-01
3.8E-01				1.5E+01					0.001		**Cadmium "CAL-Modified PRG"**	1.7E+00	ca	7.4E+00	ca	4.5E-04	ca	1.8E-01	ca		
		5.0E-01	I			5.0E-01	r	0	0.10	105-60-2	Caprolactam	3.1E+04	nc	1.0E+05	max	1.8E+03	nc	1.8E+04	nc		
8.6E-03	h	2.0E-03	I	8.6E-03	r	2.0E-03	r	0	0.10	2425-06-1	Captafol	5.7E+01	ca**	2.0E+02	ca**	7.8E-01	ca**	7.8E+00	ca**		
3.5E-03	h	1.3E-01	I	3.5E-03	r	1.3E-01	r	0	0.10	133-06-2	Captan	1.4E+02	ca*	4.9E+02	ca	1.9E+00	ca	1.9E+01	ca		
		1.0E-01	I			1.1E-01	r	0	0.10	63-25-2	Carbaryl	6.1E+03	nc	6.2E+04	nc	4.0E+02	nc	3.6E+03	nc		
2.0E-02	h			2.0E-02	r			0	0.10	86-74-8	Carbazole	2.4E+01	ca	8.6E+01	ca	3.4E-01	ca	3.4E+00	ca	6.0E-01	3.0E-02
		5.0E-03	I			5.0E-03	r	0	0.10	1563-66-2	Carbofuran	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc		
		1.0E-01	I			2.0E-01	I	1		75-15-0	Carbon disulfide	3.6E+02	nc	7.2E+02	sat	7.3E+02	nc	1.0E+03	nc	3.2E+01	2.0E+00
1.3E-01	I	7.0E-04	I	5.3E-02	I	7.0E-04	r	1		56-23-5	Carbon tetrachloride	2.5E-01	ca**	5.5E-01	ca*	1.3E-01	ca*	1.7E-01	ca*	7.0E-02	3.0E-03
		1.0E-02	I			1.0E-02	r	0	0.10	55285-14-8	Carbosulfan	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
		1.0E-01	I			1.0E-01	r	0	0.10	5234-68-4	Carboxin	6.1E+03	nc	6.2E+04	nc	3.7E+02	nc	3.6E+03	nc		
		1.5E-02	I			1.5E-02	r	0	0.10	133-90-4	Chloramben	9.2E+02	nc	9.2E+03	nc	5.5E+01	nc	5.5E+02	nc		
4.0E-01	h			4.0E-01	r			0	0.10	118-75-2	Chloranil	1.2E+00	ca	4.3E+00	ca	1.7E-02	ca	1.7E-01	ca		
3.5E-01	I	5.0E-04	I	3.5E-01	I	2.0E-04	I	0	0.04	12789-03-6	Chlordane	1.6E+00	ca*	6.5E+00	ca*	1.9E-02	ca*	1.9E-01	ca*	1.0E+01	5.0E-01
		2.0E-02	I			2.0E-02	r	0	0.10	90982-32-4	Chlorimuron-ethyl	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		1.0E-01	I			5.71E-05	n			7782-50-5	Chlorine					2.1E-01	nc				
						5.7E-05	I			10049-04-4	Chlorine dioxide					2.1E-01	nc				
		2.0E-03	h			2.0E-03	r	0	0.10	79-11-8	Chloroacetic acid	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
		8.6E-06	r			8.6E-06	I	1		532-27-4	2-Chloroacetophenone	3.3E-02	nc	1.1E-01	nc	3.1E-02	nc	5.2E-02	nc		
		4.0E-03	I			4.0E-03	r	0	0.10	106-47-8	4-Chloroaniline	2.4E+02	nc	2.5E+03	nc	1.5E+01	nc	1.5E+02	nc	7.0E-01	3.0E-02
		2.0E-02	I			1.7E-02	n	1		108-90-7	Chlorobenzene	1.5E+02	nc	5.3E+02	nc	6.2E+01	nc	1.1E+02	nc	1.0E+00	7.0E-02

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SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFI 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
2.7E-01	h	2.0E-02	I	2.7E-01	h	2.0E-02	r	0	0.10	510-15-6	Chlorobenzilate	1.8E+00	ca	6.4E+00	ca	2.5E-02	ca	2.5E-01	ca		
		2.0E-01	h			2.0E-01	r	0	0.10	74-11-3	p-Chlorobenzoic acid	1.2E+04	nc	1.0E+05	max	7.3E+02	nc	7.3E+03	nc		
		2.0E-02	h			2.0E-02	r	0	0.10	98-56-6	4-Chlorobenzotrifluoride	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		2.0E-02	h			2.0E-03	h	1		126-99-8	2-Chloro-1,3-butadiene	3.6E+00	nc	1.2E+01	nc	7.3E+00	nc	1.4E+01	nc		
		4.0E-01	h			4.0E-01	r	1		109-69-3	1-Chlorobutane	4.8E+02	sat	4.8E+02	sat	1.5E+03	nc	2.4E+03	nc		
		1.4E+01	r			1.4E+01	I	1		75-68-3	1-Chloro-1,1-difluoroethane (HCFC-142b)	3.4E+02	sat	3.4E+02	sat	5.2E+04	nc	8.7E+04	nc		
		1.4E+01	r			1.4E+01	I	1		75-45-6	Chlorodifluoromethane	3.4E+02	sat	3.4E+02	sat	5.1E+04	nc	8.5E+04	nc		
2.9E-03	n	4.0E-01	n	2.9E-03	r	2.9E+00	I	1		75-00-3	Chloroethane	3.0E+00	ca	6.5E+00	ca	2.3E+00	ca	4.6E+00	ca		
		1.0E-02	I			8.6E-04	n	1		67-66-3	**Chloroform**	3.6E+00	ca/nc	1.2E+01	ca/nc	3.1E+00	ca/nc	6.2E+00	ca/nc	6.0E-01	3.0E-02
3.1E-02				1.9E-02				1			**Chloroform "CAL-Modified PRG"**	9.4E-01	ca	2.0E+00	ca	3.5E-01	ca	5.3E-01	ca		
1.3E-02	h			6.3E-03	h	8.6E-02	n	1		74-87-3	Chloromethane	1.2E+00	ca	2.6E+00	ca	1.1E+00	ca	1.5E+00	ca		
5.8E-01	h			5.8E-01	r			0	0.10	95-69-2	4-Chloro-2-methylaniline	8.4E-01	ca	3.0E+00	ca	1.2E-02	ca	1.2E-01	ca		
4.6E-01	h			4.6E-01	r			0	0.10	3165-93-3	4-Chloro-2-methylaniline hydrochloride	1.1E+00	ca	3.7E+00	ca	1.5E-02	ca	1.5E-01	ca		
		8.0E-02	I			8.0E-02	r	1		91-58-7	beta-Chloronaphthalene	4.9E+03	nc	2.3E+04	nc	2.9E+02	nc	4.9E+02	nc		
9.7E-03	h	1.0E-03	h	9.7E-03	r	2.0E-05	h	1		88-73-3	**o-Chloronitrobenzene**	1.4E+00	nc**	4.5E+00	nc**	7.3E-02	nc**	1.5E-01	nc**		
6.7E-03	h	1.0E-03	h	6.7E-03	r	1.7E-04	h	1		100-00-5	**p-Chloronitrobenzene**	1.0E+01	nc**	3.7E+01	nc**	6.2E-01	nc**	1.2E+00	nc**		
		5.0E-03	I			5.0E-03	r	1		95-57-8	2-Chlorophenol	6.3E+01	nc	2.4E+02	nc	1.8E+01	nc	3.0E+01	nc	4.0E+00	2.0E-01
		2.9E-02	r			2.9E-02	h	1		75-29-6	2-Chloropropane	1.7E+02	nc	5.9E+02	nc	1.0E+02	nc	1.7E+02	nc		
1.1E-02	h	1.5E-02	I	1.1E-02	r	1.5E-02	r	0	0.10	1897-45-6	Chlorothalonil	4.4E+01	ca*	1.6E+02	ca*	6.1E-01	ca*	6.1E+00	ca*		
		2.0E-02	I			2.0E-02	r	1		95-49-8	o-Chlorotoluene	1.6E+02	nc	5.6E+02	nc	7.3E+01	nc	1.2E+02	nc		
		2.0E-01	I			2.0E-01	r	0	0.10	101-21-3	Chlorpropham	1.2E+04	nc	1.0E+05	max	7.3E+02	nc	7.3E+03	nc		
		3.0E-03	I			3.0E-03	r	0	0.10	2921-88-2	Chlorpyrifos	1.8E+02	nc	1.8E+03	nc	1.1E+01	nc	1.1E+02	nc		
		1.0E-02	h			1.0E-02	r	0	0.10	5598-13-0	Chlorpyrifos-methyl	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
		5.0E-02	I			5.0E-02	r	0	0.10	64902-72-3	Chlorsulfuron	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
		8.0E-04	h			8.0E-04	r	0	0.10	60238-56-4	Chlorthiophos	4.9E+01	nc	4.9E+02	nc	2.9E+00	nc	2.9E+01	nc		
				4.2E+01	I			0			Total Chromium (1:6 ratio Cr VI:Cr III)+++	2.1E+02	ca	4.5E+02	ca	1.6E-04	ca			3.8E+01	2.0E+00
		1.5E+00	I							16065-83-1	Chromium III	1.0E+05	max	1.0E+05	max	0.0E+00		5.5E+04	nc		
		3.0E-03	I	2.9E+02	I	2.2E-06	I	0		18540-29-9	Chromium VI+++	3.0E+01	ca**	6.4E+01	ca	2.3E-05	ca	1.1E+02	nc	3.8E+01	2.0E+00
		2.00E-02	n	9.8E+00	n	5.7E-06	n			7440-48-4	**Cobalt**	9.0E+02	ca**	1.9E+03	ca*	6.9E-04	ca*	7.3E+02	nc		
				2.2E+00	I			0		8007-45-2	Coke Oven Emissions					3.1E-03	ca				
		4.00E-02	h					0		7440-50-8	Copper and compounds	3.1E+03	nc	4.1E+04	nc			1.5E+03	nc		
1.9E+00	h			1.9E+00	r			1		123-73-9	Crotonaldehyde	5.3E-03	ca	1.1E-02	ca	3.5E-03	ca	5.9E-03	ca		
		1.0E-01	I			1.1E-01	I	1		98-82-8	Cumene (isopropylbenzene)	5.7E+02	nc	2.0E+03	nc	4.0E+02	nc	6.6E+02	nc		
8.4E-01	h	2.0E-03	h	8.4E-01	r	2.0E-03	r	0	0.10	21725-46-2	Cyanazine	5.8E-01	ca	2.1E+00	ca	8.0E-03	ca	8.0E-02	ca		
		2.0E-02	I					0	0.10	57-12-5	Cyanide (free)	1.2E+03	nc	1.2E+04	nc			7.3E+02	nc		
		2.0E-02	I			8.6E-04	I	1		74-90-8	Cyanide (hydrogen)	1.1E+01	nc	3.5E+01	nc	3.1E+00	nc	6.2E+00	nc		

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TOXICITY INFORMATION										CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
		4.0E-02	I			4.0E-02	r	1		460-19-5	Cyanogen	1.3E+02	nc	4.3E+02	nc	1.5E+02	nc	2.4E+02	nc		
		9.0E-02	I			9.0E-02	r	1		506-68-3	Cyanogen bromide	2.9E+02	nc	9.7E+02	nc	3.3E+02	nc	5.5E+02	nc		
		5.0E-02	I			5.0E-02	r	1		506-77-4	Cyanogen chloride	1.6E+02	nc	5.4E+02	nc	1.8E+02	nc	3.0E+02	nc		
		5.7E+00	r			5.7E+00	n	1		110-82-7	Cyclohexane	1.4E+02	sat	1.4E+02	sat	2.1E+04	nc	3.5E+04	nc		
		5.0E+00	I			5.0E+00	r	0	0.10	108-94-1	Cyclohexanone	1.0E+05	max	1.0E+05	max	1.8E+04	nc	1.8E+05	nc		
		2.0E-01	I			2.0E-01	r	0	0.10	108-91-8	Cyclohexylamine	1.2E+04	nc	1.0E+05	max	7.3E+02	nc	7.3E+03	nc		
		5.0E-03	I			5.0E-03	r	0	0.10	68085-85-8	Cyhalothrin/Karate	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc		
		1.0E-02	I			1.0E-02	r	0	0.10	52315-07-8	Cypermethrin	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
		7.5E-03	I			7.5E-03	r	0	0.10	66215-27-8	Cyromazine	4.6E+02	nc	4.6E+03	nc	2.7E+01	nc	2.7E+02	nc		
		1.0E-02	i			1.0E-02	r	0	0.10	1861-32-1	Dacthal	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
		3.0E-02	I			3.0E-02	r	0	0.10	75-99-0	Dalapon	1.8E+03	nc	1.8E+04	nc	1.1E+02	nc	1.1E+03	nc		
		2.5E-02	i			2.5E-02	r	0	0.10	39515-41-8	Danitol	1.5E+03	nc	1.5E+04	nc	9.1E+01	nc	9.1E+02	nc		
2.4E-01	I			2.4E-01	r			0	0.03	72-54-8	DDD	2.4E+00	ca	1.0E+01	ca	2.8E-02	ca	2.8E-01	ca	1.6E+01	8.0E-01
3.4E-01	I			3.4E-01	r			0	0.03	72-55-9	DDE	1.7E+00	ca	7.0E+00	ca	2.0E-02	ca	2.0E-01	ca	5.4E+01	3.0E+00
3.4E-01	I	5.0E-04	i	3.4E-01	i	5.0E-04	r	0	0.03	50-29-3	DDT	1.7E+00	ca*	7.0E+00	ca*	2.0E-02	ca*	2.0E-01	ca*	3.2E+01	2.0E+00
		1.0E-02	I			1.0E-02	r	0	0.10	1163-19-5	Decabromodiphenyl ether	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
		4.0E-05	I			4.0E-05	r	0	0.10	8065-48-3	Demeton	2.4E+00	nc	2.5E+01	nc	1.5E-01	nc	1.5E+00	nc		
6.1E-02	h			6.1E-02	r			0	0.10	2303-16-4	Diallate	8.0E+00	ca	2.8E+01	ca	1.1E-01	ca	1.1E+00	ca		
		9.0E-04	h			9.0E-04	r	0	0.10	333-41-5	Diazinon	5.5E+01	nc	5.5E+02	nc	3.3E+00	nc	3.3E+01	nc		
		4.0E-03	n			4.0E-03	r	1		132-64-9	Dibenzofuran	2.9E+02	nc	3.1E+03	nc	1.5E+01	nc	2.4E+01	nc		
		1.0E-02	I			1.0E-02	r	0	0.10	106-37-6	1,4-Dibromobenzene	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
8.4E-02	I	2.0E-02	I	8.4E-02	r	2.0E-02	r	1		124-48-1	Dibromochloromethane	1.1E+00	ca	2.6E+00	ca	8.0E-02	ca	1.3E-01	ca	4.0E-01	2.0E-02
1.4E+00	h	5.7E-05	r	2.4E-03	x	5.7E-05	I	1		96-12-8	1,2-Dibromo-3-chloropropane	4.5E-01	ca**	2.0E+00	ca**	2.1E-01	nc	4.8E-02	ca**		
7.0E+00				7.0E+00				1		96-12-8	"CAL-Modified PRG"	1.9E-02	ca	4.6E-02	ca	9.6E-04	ca	1.6E-03	ca		
8.5E+01	I	5.7E-05	r	7.7E-01	I	5.7E-05	h	1		106-93-4	1,2-Dibromoethane	6.9E-03	ca	2.8E-02	ca*	8.7E-03	ca*	7.6E-04	ca		
		1.0E-01	I			1.0E-01	r	0	0.10	84-74-2	Dibutyl phthalate	6.1E+03	nc	6.2E+04	nc	3.7E+02	nc	3.6E+03	nc	2.3E+03	2.7E+02
		3.0E-02	I			3.0E-02	r	0	0.10	1918-00-9	Dicamba	1.8E+03	nc	1.8E+04	nc	1.1E+02	nc	1.1E+03	nc		
		9.0E-02	I			5.7E-02	h	1		95-50-1	1,2-Dichlorobenzene	3.7E+02	sat	3.7E+02	sat	2.1E+02	nc	3.7E+02	nc	1.7E+01	9.0E-01
		9.00E-04	n			9.00E-04	r	1		541-73-1	1,3-Dichlorobenzene	1.6E+01	nc	6.3E+01	nc	3.3E+00	nc	5.5E+00	nc		
2.4E-02	h	3.00E-02	n	2.2E-02	n	3.00E-02	I	1		106-46-7	1,4-Dichlorobenzene	3.4E+00	ca	7.9E+00	ca	3.1E-01	ca	5.0E-01	ca	2.0E+00	1.0E-01
4.5E-01	I			4.5E-01	r			0	0.10	91-94-1	3,3-Dichlorobenzidine	1.1E+00	ca	3.8E+00	ca	1.5E-02	ca	1.5E-01	ca	7.0E-03	3.0E-04
		3.00E-02	n			3.00E-02	r		0.10	90-98-2	4,4'-Dichlorobenzophenone	1.8E+03	nc	1.8E+04	nc	1.1E+02	nc	1.1E+03	nc		
9.3E+00	r			9.3E+00	h			1		764-41-0	1,4-Dichloro-2-butene	7.9E-03	ca	1.8E-02	ca	7.2E-04	ca	1.2E-03	ca		
		2.0E-01	I			5.7E-02	h	1		75-71-8	Dichlorodifluoromethane	9.4E+01	nc	3.1E+02	nc	2.1E+02	nc	3.9E+02	nc		
		1.0E-01	h			1.4E-01	h	1		75-34-3	1,1-Dichloroethane	5.1E+02	nc	1.7E+03	nc	5.2E+02	nc	8.1E+02	nc	2.3E+01	1.0E+00
5.7E-03				5.7E-03				1			"CAL-Modified PRG"	2.8E+00	ca	6.0E+00	ca	1.2E+00	ca	2.0E+00	ca		

Key : SFo,I=Cancer Slope Factor oral, Inhalation RfDo,I=Reference Dose oral, Inhalation i=IRIS h=HEAST n=NCEA x=Withdrawn o=Other EPA Source r=Route-extrapolation ca=Cancer PRG nc=Noncancer PRG ca* (where: nc < 100X ca) ca**(where: nc < 10X ca)
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TOXICITY INFORMATION										CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
9.1E-02	I	3.0E-02	n	9.1E-02	I	1.4E-03	n	1		107-06-2	1,2-Dichloroethane (EDC)	2.8E-01	ca*	6.0E-01	ca*	7.4E-02	ca*	1.2E-01	ca*	2.0E-02	1.0E-03
		5.0E-02	I			5.7E-02	I	1		75-35-4	1,1-Dichloroethylene	1.2E+02	nc	4.1E+02	nc	2.1E+02	nc	3.4E+02	nc	6.0E-02	3.0E-03
		1.0E-02	h			1.0E-02	r	1		156-59-2	1,2-Dichloroethylene (cis)	4.3E+01	nc	1.5E+02	nc	3.7E+01	nc	6.1E+01	nc	4.0E-01	2.0E-02
		2.0E-02	I			2.0E-02	r	1		156-60-5	1,2-Dichloroethylene (trans)	6.9E+01	nc	2.3E+02	nc	7.3E+01	nc	1.2E+02	nc	7.0E-01	3.0E-02
		3.0E-03	I			3.0E-03	r	0	0.10	120-83-2	2,4-Dichlorophenol	1.8E+02	nc	1.8E+03	nc	1.1E+01	nc	1.1E+02	nc	1.0E+00	5.0E-02
		8.0E-03	I			8.0E-03	r	0	0.10	94-82-6	4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)	4.9E+02	nc	4.9E+03	nc	2.9E+01	nc	2.9E+02	nc		
		1.0E-02	I			1.0E-02	r	0	0.05	94-75-7	2,4-Dichlorophenoxyacetic Acid (2,4-D)	6.9E+02	nc	7.7E+03	nc	3.7E+01	nc	3.6E+02	nc		
6.8E-02	h	1.1E-03	r	6.8E-02	r	1.1E-03	I	1		78-87-5	1,2-Dichloropropane	3.4E-01	ca*	7.4E-01	ca*	9.9E-02	ca*	1.6E-01	ca*	3.0E-02	1.0E-03
1.0E-01	I	3.00E-02	I	1.4E-02	I	5.7E-03	I	1		542-75-6	1,3-Dichloropropene	7.8E-01	ca	1.8E+00	ca	4.8E-01	ca	4.0E-01	ca	4.0E-03	2.0E-04
		3.0E-03	I			3.0E-03	r	0	0.10	616-23-9	2,3-Dichloropropanol	1.8E+02	nc	1.8E+03	nc	1.1E+01	nc	1.1E+02	nc		
2.9E-01	I	5.0E-04	I	2.9E-01	r	1.4E-04	I	0	0.10	62-73-7	Dichlorvos	1.7E+00	ca*	5.9E+00	ca*	2.3E-02	ca*	2.3E-01	ca*		
4.4E-01	x			4.4E-01	r			0	0.10	115-32-2	Dicofol	1.1E+00	ca	3.9E+00	ca	1.5E-02	ca	1.5E-01	ca		
		3.0E-02	h			5.7E-05	x	1		77-73-6	Dicyclopentadiene	5.4E-01	nc	1.8E+00	nc	2.1E-01	nc	4.2E-01	nc		
1.6E+01	I	5.0E-05	I	1.6E+01	I	5.0E-05	r	0	0.10	60-57-1	Dieldrin	3.0E-02	ca	1.1E-01	ca	4.2E-04	ca	4.2E-03	ca	4.0E-03	2.0E-04
		1.0E-02	h			5.7E-03	h	0	0.10	112-34-5	Diethylene glycol, monobutyl ether	6.1E+02	nc	6.2E+03	nc	2.1E+01	nc	3.6E+02	nc		
		6.0E-02	h			8.6E-04	h	0	0.10	111-90-0	Diethylene glycol, monomethyl ether	3.7E+03	nc	3.7E+04	nc	3.1E+00	nc	2.2E+03	nc		
		4.0E-03	h			4.0E-03	r	0	0.10	617-84-5	Diethylformamide	2.4E+02	nc	2.5E+03	nc	1.5E+01	nc	1.5E+02	nc		
1.2E-03	I	6.0E-01	I	1.2E-03	r	6.0E-01	r	0	0.10	103-23-1	Di(2-ethylhexyl)adipate	4.1E+02	ca	1.4E+03	ca	5.6E+00	ca	5.6E+01	ca		
		8.0E-01	I			8.0E-01	r	0	0.10	84-66-2	Diethyl phthalate	4.9E+04	nc	1.0E+05	max	2.9E+03	nc	2.9E+04	nc		
4.7E+03	h			4.7E+03	r			0	0.10	56-53-1	Diethylstilbestrol	1.0E-04	ca	3.7E-04	ca	1.4E-06	ca	1.4E-05	ca		
		8.0E-02	I			8.0E-02	r	0	0.10	43222-48-6	Difenzoquat (Avenge)	4.9E+03	nc	4.9E+04	nc	2.9E+02	nc	2.9E+03	nc		
		2.0E-02	I			2.0E-02	r	0	0.10	35367-38-5	Diflubenzuron	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		1.1E+01	r			1.1E+01	I	1		75-37-6	1,1-Difluoroethane					4.2E+04	nc	6.9E+04	nc		
		2.00E-02	n			2.00E-02	r		0.10	28553-12-0	Diisononyl phthalate	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		8.0E-02	I			8.0E-02	r	0	0.10	1445-75-6	Diisopropyl methylphosphonate	4.9E+03	nc	4.9E+04	nc	2.9E+02	nc	2.9E+03	nc		
		2.0E-02	I			2.0E-02	r	0	0.10	55290-64-7	Dimethipin	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		2.0E-04	I			2.0E-04	r	0	0.10	60-51-5	Dimethoate	1.2E+01	nc	1.2E+02	nc	7.3E-01	nc	7.3E+00	nc		
1.4E-02	h			1.4E-02	r			0	0.10	119-90-4	3,3'-Dimethoxybenzidine	3.5E+01	ca	1.2E+02	ca	4.8E-01	ca	4.8E+00	ca		
		5.7E-06	r			5.7E-06	x	1		124-40-3	Dimethylamine	6.7E-02	nc	2.5E-01	nc	2.1E-02	nc	3.5E-02	nc		
		2.0E-03	I			2.0E-03	r	0	0.10	121-69-7	N-N-Dimethylaniline	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
7.5E-01	h			7.5E-01	r			0	0.10	95-68-1	2,4-Dimethylaniline	6.5E-01	ca	2.3E+00	ca	9.0E-03	ca	9.0E-02	ca		
5.8E-01	h			5.8E-01	r			0	0.10	21436-96-4	2,4-Dimethylaniline hydrochloride	8.4E-01	ca	3.0E+00	ca	1.2E-02	ca	1.2E-01	ca		
9.2E+00	h			9.2E+00	r			0	0.10	119-93-7	3,3'-Dimethylbenzidine	5.3E-02	ca	1.9E-01	ca	7.3E-04	ca	7.3E-03	ca		
		1.0E-01	h			8.6E-03	I	0	0.10	68-12-2	N,N-Dimethylformamide	6.1E+03	nc	6.2E+04	nc	3.1E+01	nc	3.6E+03	nc		
		1.0E-03	n			1.0E-03	r	0	0.10	122-09-8	Dimethylphenethylamine	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		2.0E-02	I			2.0E-02	r	0	0.10	105-67-9	2,4-Dimethylphenol	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc	9.0E+00	4.0E-01

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TOXICITY INFORMATION									CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C / skin abs. soils / CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
		6.0E-04	I			6.0E-04	r	0 0.10 576-26-1	2,6-Dimethylphenol	3.7E+01	nc	3.7E+02	nc	2.2E+00	nc	2.2E+01	nc		
		1.0E-03	I			1.0E-03	r	0 0.10 95-65-8	3,4-Dimethylphenol	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		1.0E+01	h			1.0E+01	r	0 0.10 131-11-3	Dimethyl phthalate	1.0E+05	max	1.0E+05	max	3.7E+04	nc	3.6E+05	nc		
		1.0E-01	I			1.0E-01	r	0 0.10 120-61-6	Dimethyl terephthalate	6.1E+03	nc	6.2E+04	nc	3.7E+02	nc	3.6E+03	nc		
		2.0E-03	I			2.0E-03	r	0 0.10 131-89-5	4,6-Dinitro-o-cyclohexyl phenol	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
		1.0E-04	h			1.0E-04	r	0 0.10 528-29-0	**1,2-Dinitrobenzene**	6.1E+00	nc	6.2E+01	nc	3.7E-01	nc	3.6E+00	nc		
		1.0E-04	I			1.0E-04	r	0 0.10 99-65-0	1,3-Dinitrobenzene	6.1E+00	nc	6.2E+01	nc	3.7E-01	nc	3.6E+00	nc		
		1.0E-04	h			1.0E-04	r	0 0.10 100-25-4	**1,4-Dinitrobenzene**	6.1E+00	nc	6.2E+01	nc	3.7E-01	nc	3.6E+00	nc		
		2.0E-03	I			2.0E-03	r	0 0.10 51-28-5	2,4-Dinitrophenol	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc	3.0E-01	1.0E-02
6.8E-01	I			6.8E-01	r			0 0.10 25321-14-6	Dinitrotoluene mixture	7.2E-01	ca	2.5E+00	ca	9.9E-03	ca	9.9E-02	ca	8.0E-04	4.0E-05
		2.0E-03	I			2.0E-03	r	0 0.10 121-14-2	2,4-Dinitrotoluene (see DNT mixture for "ca")	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc	8.0E-04	4.0E-05
		1.0E-03	h			1.0E-03	r	0 0.10 606-20-2	2,6-Dinitrotoluene (see DNT mixture for "ca")	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc	7.0E-04	3.0E-05
		1.0E-03	I			1.0E-03	r	0 0.10 88-85-7	Dinoseb	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		4.0E-02	h			4.0E-02	r	0 0.10 117-84-0	**di-n-Octyl phthalate**	2.4E+03	nc	2.5E+04	nc	1.5E+02	nc	1.5E+03	nc	1.0E+04	1.0E+04
1.1E-02	I			1.1E-02	r			0 0.10 123-91-1	1,4-Dioxane	4.4E+01	ca	1.6E+02	ca	6.1E-01	ca	6.1E+00	ca		
1.5E+05	h			1.5E+05	h			0 0.03 1746-01-6	Dioxin (2,3,7,8-TCDD)	3.9E-06	ca	1.6E-05	ca	4.5E-08	ca	4.5E-07	ca		
		3.0E-02	I			3.0E-02	r	0 0.10 957-51-7	Diphenamid	1.8E+03	nc	1.8E+04	nc	1.1E+02	nc	1.1E+03	nc		
		2.5E-02	I			2.5E-02	r	0 0.10 122-39-4	Diphenylamine	1.5E+03	nc	1.5E+04	nc	9.1E+01	nc	9.1E+02	nc		
		3.00E-04	n			3.00E-04	r	0.10 74-31-7	N,N-Diphenyl-1,4 benzenediamine (DPPD)	1.8E+01	nc	1.8E+02	nc	1.1E+00	nc	1.1E+01	nc		
8.0E-01	I			7.7E-01	I			0 0.10 122-66-7	1,2-Diphenylhydrazine	6.1E-01	ca	2.2E+00	ca	8.7E-03	ca	8.4E-02	ca		
		3.0E-03	n			3.0E-03	r	0 0.10 127-63-9	**Diphenyl sulfone**	1.8E+02	nc	1.8E+03	nc	1.1E+01	nc	1.1E+02	nc		
		2.2E-03	I			2.2E-03	r	0 0.10 85-00-7	Diquat	1.3E+02	nc	1.4E+03	nc	8.0E+00	nc	8.0E+01	nc		
8.6E+00	h			8.6E+00	r			0 0.10 1937-37-7	Direct black 38	5.7E-02	ca	2.0E-01	ca	7.8E-04	ca	7.8E-03	ca		
8.1E+00	h			8.1E+00	r			0 0.10 2602-46-2	Direct blue 6	6.0E-02	ca	2.1E-01	ca	8.3E-04	ca	8.3E-03	ca		
9.3E+00	h			9.3E+00	r			0 0.10 16071-86-6	Direct brown 95	5.2E-02	ca	1.9E-01	ca	7.2E-04	ca	7.2E-03	ca		
		4.0E-05	I			4.0E-05	r	0 0.10 298-04-4	Disulfoton	2.4E+00	nc	2.5E+01	nc	1.5E-01	nc	1.5E+00	nc		
		1.0E-02	I			1.0E-02	r	0 0.10 505-29-3	1,4-Dithiane	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
		2.0E-03	I			2.0E-03	r	0 0.10 330-54-1	Diuron	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
		4.0E-03	I			4.0E-03	r	0 0.10 2439-10-3	Dodine	2.4E+02	nc	2.5E+03	nc	1.5E+01	nc	1.5E+02	nc		
		2.0E-01	n					7429-91-6	Dysprosium	1.6E+04	nc	1.0E+05	max			7.3E+03	nc		
		6.0E-03	I			6.0E-03	r	0 0.10 115-29-7	Endosulfan	3.7E+02	nc	3.7E+03	nc	2.2E+01	nc	2.2E+02	nc	1.8E+01	9.0E-01
		2.0E-02	I			2.0E-02	r	0 0.10 145-73-3	Endothall	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		3.0E-04	I			3.0E-04	r	0 0.10 72-20-8	Endrin	1.8E+01	nc	1.8E+02	nc	1.1E+00	nc	1.1E+01	nc	1.0E+00	5.0E-02
9.9E-03	I	2.0E-03	h	4.2E-03	h	2.9E-04	I	1 106-89-8	Epichlorohydrin	7.6E+00	nc	2.6E+01	nc	1.0E+00	nc	2.0E+00	nc		
		5.7E-03	r			5.7E-03	I	0 0.10 106-88-7	1,2-Epoxybutane	3.5E+02	nc	3.5E+03	nc	2.1E+01	nc	2.1E+02	nc		
		2.5E-02	I			2.5E-02	r	0 0.10 759-94-4	EPTC (S-Ethyl dipropylthiocarbamate)	1.5E+03	nc	1.5E+04	nc	9.1E+01	nc	9.1E+02	nc		

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TOXICITY INFORMATION										CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
		5.0E-03	I			5.0E-03	r	0	0.10	16672-87-0	Ethephon (2-chloroethyl phosphonic acid)	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc		
		5.0E-04	I			5.0E-04	r	0	0.10	563-12-2	Ethion	3.1E+01	nc	3.1E+02	nc	1.8E+00	nc	1.8E+01	nc		
		4.0E-01	h			5.7E-02	I	0	0.10	110-80-5	2-Ethoxyethanol	2.4E+04	nc	1.0E+05	max	2.1E+02	nc	1.5E+04	nc		
		3.0E-01	h			3.0E-01	r	0	0.10	111-15-9	2-Ethoxyethanol acetate	1.8E+04	nc	1.0E+05	max	1.1E+03	nc	1.1E+04	nc		
		9.0E-01	I			9.0E-01	r	1		141-78-6	Ethyl acetate	1.9E+04	nc	3.7E+04	sat	3.3E+03	nc	5.5E+03	nc		
4.8E-02	h			4.8E-02	r			1		140-88-5	Ethyl acrylate	2.1E-01	ca	4.5E-01	ca	1.4E-01	ca	2.3E-01	ca		
3.85E-03	r	1.0E-01	I	3.85E-03	n	2.9E-01	I	1		100-41-4	**Ethylbenzene**	8.9E+00	ca	2.0E+01	ca	1.7E+00	ca	2.9E+00	ca	1.3E+01	7.0E-01
2.9E-03	n	4.0E-01	n	2.9E-03	r	2.9E+00	I	1		75-00-3	Ethyl chloride	3.0E+00	ca	6.5E+00	ca	2.3E+00	ca	4.6E+00	ca		
		3.0E-01	h			3.0E-01	r	0	0.10	109-78-4	Ethylene cyanohydrin	1.8E+04	nc	1.0E+05	max	1.1E+03	nc	1.1E+04	nc		
		2.0E-02	h			2.0E-02	r	0	0.10	107-15-3	Ethylene diamine	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		2.0E+00	I			2.0E+00	r	0	0.10	107-21-1	Ethylene glycol	1.0E+05	max	1.0E+05	max	7.3E+03	nc	7.3E+04	nc		
		5.0E-01	I			3.7E+00	I	0	0.10	111-76-2	Ethylene glycol, monobutyl ether	3.1E+04	nc	1.0E+05	max	1.4E+04	nc	1.8E+04	nc		
1.0E+00	h			3.5E-01	h			1		75-21-8	Ethylene oxide	1.4E-01	ca	3.4E-01	ca	1.9E-02	ca	2.4E-02	ca		
1.1E-01	h	8.0E-05	I	1.1E-01	r	8.0E-05	r	0	0.10	96-45-7	Ethylene thiourea (ETU)	4.4E+00	ca**	1.6E+01	ca**	6.1E-02	ca**	6.1E-01	ca**		
		2.0E-01	I			2.0E-01	r	1		60-29-7	Ethyl ether	1.8E+03	sat	1.8E+03	sat	7.3E+02	nc	1.2E+03	nc		
		9.0E-02	h			9.0E-02	r	1		97-63-2	Ethyl methacrylate	1.4E+02	sat	1.4E+02	sat	3.3E+02	nc	5.5E+02	nc		
		1.0E-05	I			1.0E-05	r	0	0.10	2104-64-5	Ethyl p-nitrophenyl phenylphosphorothioate	6.1E-01	nc	6.2E+00	nc	3.7E-02	nc	3.6E-01	nc		
		3.0E+00	I			3.0E+00	r	0	0.10	84-72-0	Ethylphthalyl ethyl glycolate	1.0E+05	max	1.0E+05	max	1.1E+04	nc	1.1E+05	nc		
		8.0E-03	I			8.0E-03	r	0	0.10	101200-48-0	Express	4.9E+02	nc	4.9E+03	nc	2.9E+01	nc	2.9E+02	nc		
		2.5E-04	I			2.5E-04	r	0	0.10	22224-92-6	Fenamiphos	1.5E+01	nc	1.5E+02	nc	9.1E-01	nc	9.1E+00	nc		
		1.3E-02	I			1.3E-02	r	0	0.10	2164-17-2	Fluometuron	7.9E+02	nc	8.0E+03	nc	4.7E+01	nc	4.7E+02	nc		
		6.0E-02	I					0	0.10	16984-48-8	Flouride	3.7E+03	nc	3.7E+04	nc			2.2E+03	nc		
		8.0E-02	I			8.0E-02	r	0	0.10	59756-60-4	Fluoridone	4.9E+03	nc	4.9E+04	nc	2.9E+02	nc	2.9E+03	nc		
		2.0E-02	I			2.0E-02	r	0	0.10	56425-91-3	Flurprimidol	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		6.0E-02	I			6.0E-02	r	0	0.10	66332-96-5	Flutolanil	3.7E+03	nc	3.7E+04	nc	2.2E+02	nc	2.2E+03	nc		
		1.0E-02	I			1.0E-02	r	0	0.10	69409-94-5	Fluvalinate	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
3.5E-03	I	1.0E-01	I	3.5E-03	r	1.0E-01	r	0	0.10	133-07-3	Folpet	1.4E+02	ca*	4.9E+02	ca	1.9E+00	ca	1.9E+01	ca		
1.9E-01	I			1.9E-01	r			0	0.10	72178-02-0	Fomesafen	2.6E+00	ca	9.1E+00	ca	3.5E-02	ca	3.5E-01	ca		
		2.0E-03	I			2.0E-03	r	0	0.10	944-22-9	Fonofos	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
		1.5E-01	I	4.6E-02	I			0	0.10	50-00-0	Formaldehyde	9.2E+03	nc	1.0E+05	nc	1.5E-01	ca	5.5E+03	nc		
		2.0E+00	h			2.0E+00	r	0	0.10	64-18-6	Formic Acid	1.0E+05	max	1.0E+05	max	7.3E+03	nc	7.3E+04	nc		
		3.0E+00	I			3.0E+00	r	0	0.10	39148-24-8	Fosetyl-al	1.0E+05	max	1.0E+05	max	1.1E+04	nc	1.1E+05	nc		
		3.0E+01	I			8.6E+00	h	1		76-13-1	Freon 113	5.6E+03	sat	5.6E+03	sat	3.1E+04	nc	5.9E+04	nc		
		1.0E-03	I			1.0E-03	r	1		110-00-9	Furan	2.5E+00	nc	8.5E+00	nc	3.7E+00	nc	6.1E+00	nc		
3.8E+00	h			3.8E+00	r			0	0.10	67-45-8	Furazolidone	1.3E-01	ca	4.5E-01	ca	1.8E-03	ca	1.8E-02	ca		
		3.0E-03	I			1.4E-02	h	0	0.10	98-01-1	Furfural	1.8E+02	nc	1.8E+03	nc	5.2E+01	nc	1.1E+02	nc		

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SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
5.0E+01	h			5.0E+01	r			0	0.10	531-82-8	Furium	9.7E-03	ca	3.4E-02	ca	1.3E-04	ca	1.3E-03	ca		
3.0E-02	I			3.0E-02	r			0	0.10	60568-05-0	Furmecyclox	1.6E+01	ca	5.7E+01	ca	2.2E-01	ca	2.2E+00	ca		
		4.0E-04	I			4.0E-04	r	0	0.10	77182-82-2	Glufosinate-ammonium	2.4E+01	nc	2.5E+02	nc	1.5E+00	nc	1.5E+01	nc		
		4.0E-04	I			2.9E-04	h	0	0.10	765-34-4	Glycidaldehyde	2.4E+01	nc	2.5E+02	nc	1.0E+00	nc	1.5E+01	nc		
		1.0E-01	I			1.0E-01	r	0	0.10	1071-83-6	Glyphosate	6.1E+03	nc	6.2E+04	nc	3.7E+02	nc	3.6E+03	nc		
		5.0E-05	I			5.0E-05	r	0	0.10	69806-40-2	Haloxyfop-methyl	3.1E+00	nc	3.1E+01	nc	1.8E-01	nc	1.8E+00	nc		
		1.3E-02	I			1.3E-02	r	0	0.10	79277-27-3	Harmony	7.9E+02	nc	8.0E+03	nc	4.7E+01	nc	4.7E+02	nc		
4.5E+00	I	5.0E-04	I	4.6E+00	I	5.0E-04	r	0	0.10	76-44-8	Heptachlor	1.1E-01	ca	3.8E-01	ca	1.5E-03	ca	1.5E-02	ca	2.3E+01	1.0E+00
9.1E+00	I	1.3E-05	I	9.1E+00	I	1.3E-05	r	0	0.10	1024-57-3	Heptachlor epoxide	5.3E-02	ca*	1.9E-01	ca*	7.4E-04	ca*	7.4E-03	ca*	7.0E-01	3.0E-02
		2.0E-03	I			2.0E-03	r	0	0.10	87-82-1	Hexabromobenzene	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
1.6E+00	I	8.0E-04	I	1.6E+00	I	8.0E-04	r	0	0.10	118-74-1	Hexachlorobenzene	3.0E-01	ca	1.1E+00	ca	4.2E-03	ca	4.2E-02	ca	2.0E+00	1.0E-01
7.8E-02	I	3.00E-04	n	7.8E-02	I	3.00E-04	r	0	0.10	87-68-3	Hexachlorobutadiene	6.2E+00	ca**	2.2E+01	ca**	8.6E-02	ca*	8.6E-01	ca*	2.0E+00	1.0E-01
6.3E+00	I	5.0E-04	n	6.3E+00	I	5.0E-04	r	0	0.04	319-84-6	**HCH (alpha)**	9.0E-02	ca	3.6E-01	ca	1.1E-03	ca	1.1E-02	ca	5.0E-04	3.0E-05
1.8E+00	I	2.0E-04	n	1.8E+00	I	2.0E-04	r	0	0.04	319-85-7	**HCH (beta)**	3.2E-01	ca	1.3E+00	ca	3.7E-03	ca	3.7E-02	ca	3.0E-03	1.0E-04
1.3E+00	h	3.0E-04	I	1.3E+00	r	3.0E-04	r	0	0.04	58-89-9	HCH (gamma) Lindane	4.4E-01	ca*	1.7E+00	ca	5.2E-03	ca	5.2E-02	ca	9.0E-03	5.0E-04
1.8E+00	I			1.8E+00	I			0	0.04	608-73-1	HCH-technical	3.2E-01	ca	1.3E+00	ca	3.8E-03	ca	3.7E-02	ca	3.0E-03	1.0E-04
		6.0E-03	I			5.7E-05	I	0	0.10	77-47-4	**Hexachlorocyclopentadiene**	3.7E+02	nc	3.7E+03	nc	2.1E-01	nc	2.2E+02	nc	4.0E+02	2.0E+01
1.4E-02	I	1.0E-03	I	1.4E-02	I	1.0E-03	r	0	0.10	67-72-1	Hexachloroethane	3.5E+01	ca**	1.2E+02	ca**	4.8E-01	ca**	4.8E+00	ca**	5.0E-01	2.0E-02
		3.0E-04	I			3.0E-04	r	0	0.10	70-30-4	Hexachlorophene	1.8E+01	nc	1.8E+02	nc	1.1E+00	nc	1.1E+01	nc		
1.1E-01	I	3.0E-03	I	1.1E-01	r	3.0E-03	r	0	0.10	121-82-4	Hexahydro-1,3,5-trinitro-1,3,5-triazine	4.4E+00	ca*	1.6E+01	ca	6.1E-02	ca	6.1E-01	ca		
		2.9E-06	r			2.9E-06	I	0	0.10	822-06-0	1,6-Hexamethylene diisocyanate	1.7E-01	nc	1.8E+00	nc	1.0E-02	nc	1.0E-01	nc		
		6.0E-02	h			5.7E-02	I	1		110-54-3	n-Hexane	1.1E+02	sat	1.1E+02	sat	2.1E+02	nc	3.5E+02	nc		
		3.3E-02	I			3.3E-02	r	0	0.10	51235-04-2	Hexazinone	2.0E+03	nc	2.0E+04	nc	1.2E+02	nc	1.2E+03	nc		
3.0E+00	I			1.7E+01	I			0	0.10	302-01-2	Hydrazine, hydrazine sulfate	1.6E-01	ca	5.7E-01	ca	3.9E-04	ca	2.2E-02	ca		
3.0E+00	n			1.7E+01	n				0.10	60-34-4	Hydrazine, monomethyl	1.6E-01	ca	5.7E-01	ca	4.0E-04	ca	2.2E-02	ca		
3.0E+00	n			1.7E+01	n				0.10	57-14-7	Hydrazine, dimethyl	1.6E-01	ca	5.7E-01	ca	4.0E-04	ca	2.2E-02	ca		
						5.7E-03	I			7647-01-0	Hydrogen chloride					2.1E+01	nc				
		2.0E-02	I			8.6E-04	I	1		74-90-8	Hydrogen cyanide	1.1E+01	nc	3.5E+01	nc	3.1E+00	nc	6.2E+00	nc		
		3.0E-03	I			2.9E-04	I			7783-06-4	Hydrogen sulfide					1.0E+00	nc	1.1E+02	nc		
		4.0E-02	h			4.0E-02	r	0	0.10	123-31-9	p-Hydroquinone	2.4E+03	nc	2.5E+04	nc	1.5E+02	nc	1.5E+03	nc		
		1.3E-02	I			1.3E-02	r	0	0.10	35554-44-0	Imazalil	7.9E+02	nc	8.0E+03	nc	4.7E+01	nc	4.7E+02	nc		
		2.5E-01	I			2.5E-01	r	0	0.10	81335-37-7	Imazaquin	1.5E+04	nc	1.0E+05	max	9.1E+02	nc	9.1E+03	nc		
		4.0E-02	I			4.0E-02	r	0	0.10	36734-19-7	Iprodione	2.4E+03	nc	2.5E+04	nc	1.5E+02	nc	1.5E+03	nc		
		3.0E-01	n					0		7439-89-6	Iron	2.3E+04	nc	1.0E+05	max			1.1E+04	nc		
		3.0E-01	I			3.0E-01	r	1		78-83-1	Isobutanol	1.3E+04	nc	4.0E+04	sat	1.1E+03	nc	1.8E+03	nc		
9.5E-04	I	2.0E-01	I	9.5E-04	r	2.0E-01	r	0	0.10	78-59-1	Isophorone	5.1E+02	ca*	1.8E+03	ca*	7.1E+00	ca	7.1E+01	ca	5.0E-01	3.0E-02

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++=Non-Standard Method Applied (See Section 2.3 of the "Region 9 PRGs Table User's Guide") sat=Soil Saturation (See Section 4.5) max=Ceiling limit (See Section 2.1) DAF=Dilution Attenuation Factor (See Section 2.5) CAS=Chemical Abstract Services

TOXICITY INFORMATION										CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFI 1/(mg/kg-d)		RfDI (mg/kg-d)		V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
		1.5E-02	i			1.5E-02	r	0	0.10	33820-53-0	Isopropalin	9.2E+02	nc	9.2E+03	nc	5.5E+01	nc	5.5E+02	nc		
		1.0E-01	i			1.1E-01	r	0	0.10	1832-54-8	Isopropyl methyl phosphonic acid	6.1E+03	nc	6.2E+04	nc	4.0E+02	nc	3.6E+03	nc		
		5.0E-02	i			5.0E-02	r	0	0.10	82558-50-7	Isoxaben	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
8.0E+00	n	3.0E-04	n	8.0E+00	r	3.0E-04	r	0	0.10	143-50-0	**Kepone**	6.1E-02	ca	2.2E-01	ca	8.4E-04	ca	8.4E-03	ca		
		2.0E-03	i			2.0E-03	r	0	0.10	77501-63-4	Lactofen	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
For info see:		www.epa.gov/oerrpage/superfund/programs/lead/prods.htm#guidance								7439-92-1	Lead+++	4.0E+02	nc	7.5E+02	nc						
For info see:		www.dtsc.ca.gov/ScienceTechnology/tedspred.html									**Lead "CAL-Modified PRG"+++**	1.5E+02									
		1.0E-07	i					0	0.10	78-00-2	Lead (tetraethyl)	6.1E-03	nc	6.2E-02	nc			3.6E-03	nc		
		2.0E-03	i			2.0E-03	r	0	0.10	330-55-2	Linuron	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
		2.0E-02	x					0		7439-93-2	Lithium	1.6E+03	nc	2.0E+04	nc			7.3E+02	nc		
		2.0E-01	i			2.0E-01	r	0	0.10	83055-99-6	Londax	1.2E+04	nc	1.0E+05	max	7.3E+02	nc	7.3E+03	nc		
		2.0E-02	i			2.0E-02	r	0	0.10	121-75-5	Malathion	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		1.0E-01	i			1.0E-01	r	0	0.10	108-31-6	Maleic anhydride	6.1E+03	nc	6.2E+04	nc	3.7E+02	nc	3.6E+03	nc		
		5.0E-01	i			5.0E-01	r	1		123-33-1	Maleic hydrazide	1.7E+03	nc	2.4E+03	sat	1.8E+03	nc	3.0E+03	nc		
		2.0E-05	h			2.0E-05	r	0	0.10	109-77-3	Malononitrile	1.2E+00	nc	1.2E+01	nc	7.3E-02	nc	7.3E-01	nc		
		3.0E-02	h			3.0E-02	r	0	0.10	8018-01-7	Mancozeb	1.8E+03	nc	1.8E+04	nc	1.1E+02	nc	1.1E+03	nc		
6.0E-02	o	5.0E-03	i	6.0E-02	r	5.0E-03	r	0	0.10	12427-38-2	Maneb	8.1E+00	ca*	2.9E+01	ca	1.1E-01	ca	1.1E+00	ca		
		2.4E-02	i			1.4E-05	i	0		7439-96-5	Manganese and compounds+++	1.8E+03	nc	1.9E+04	nc	5.1E-02	nc	8.8E+02	nc		
		9.0E-05	h			9.0E-05	r	0	0.10	950-10-7	Mephosfolan	5.5E+00	nc	5.5E+01	nc	3.3E-01	nc	3.3E+00	nc		
		3.0E-02	i			3.0E-02	r	0	0.10	24307-26-4	Mepiquat chloride	1.8E+03	nc	1.8E+04	nc	1.1E+02	nc	1.1E+03	nc		
2.9E-02	n	1.0E-01	n	2.9E-02	r	1.0E-01	r	0	0.10	149-30-4	2-Mercaptobenzothiazole	1.7E+01	ca	5.9E+01	ca	2.3E-01	ca	2.3E+00	ca		
		3.0E-04	i					0		7487-94-7	Mercury chloride	2.3E+01	nc	3.1E+02	nc			1.1E+01	nc		
						8.6E-05	i			7439-97-6	Mercury (elemental)	0.0E+00		0.0E+00		3.1E-01	nc				
		1.0E-04	i					0	0.10	22967-92-6	Mercury (methyl)	6.1E+00	nc	6.2E+01	nc			3.6E+00	nc		
		3.0E-05	i			3.0E-05	r	0	0.10	150-50-5	Merphos	1.8E+00	nc	1.8E+01	nc	1.1E-01	nc	1.1E+00	nc		
		3.0E-05	i			3.0E-05	r	0	0.10	78-48-8	Merphos oxide	1.8E+00	nc	1.8E+01	nc	1.1E-01	nc	1.1E+00	nc		
		6.0E-02	i			6.0E-02	r	0	0.10	57837-19-1	Metalaxyl	3.7E+03	nc	3.7E+04	nc	2.2E+02	nc	2.2E+03	nc		
		1.0E-04	i			2.0E-04	h	1		126-98-7	Methacrylonitrile	2.1E+00	nc	8.4E+00	nc	7.3E-01	nc	1.0E+00	nc		
		5.0E-05	i			5.0E-05	r	0	0.10	10265-92-6	Methamidophos	3.1E+00	nc	3.1E+01	nc	1.8E-01	nc	1.8E+00	nc		
		5.0E-01	i			5.0E-01	r	0	0.10	67-56-1	Methanol	3.1E+04	nc	1.0E+05	max	1.8E+03	nc	1.8E+04	nc		
		1.0E-03	i			1.0E-03	r	0	0.10	950-37-8	Methidathion	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		2.5E-02	i			2.5E-02	r	1		16752-77-5	Methomyl	4.4E+01	nc	1.5E+02	nc	9.1E+01	nc	1.5E+02	nc		
		5.0E-03	i			5.0E-03	r	0	0.10	72-43-5	Methoxychlor	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc	1.6E+02	8.0E+00
		1.0E-03	h			5.7E-03	i	0	0.10	109-86-4	2-Methoxyethanol	6.1E+01	nc	6.2E+02	nc	2.1E+01	nc	3.6E+01	nc		
		2.0E-03	h			2.0E-03	r	0	0.10	110-49-6	2-Methoxyethanol acetate	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
4.6E-02	h			4.6E-02	r			0	0.10	99-59-2	2-Methoxy-5-nitroaniline	1.1E+01	ca	3.7E+01	ca	1.5E-01	ca	1.5E+00	ca		

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TOXICITY INFORMATION										CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		VOC	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
		1.0E+00	h			1.0E+00	r	1		79-20-9	Methyl acetate	2.2E+04	nc	9.2E+04	nc	3.7E+03	nc	6.1E+03	nc		
		3.0E-02	h			3.0E-02	r	1		96-33-3	Methyl acrylate	7.0E+01	nc	2.3E+02	nc	1.1E+02	nc	1.8E+02	nc		
2.4E-01	h			2.4E-01	r			0	0.10	95-53-4	2-Methylaniline (o-toluidine)	2.0E+00	ca	7.2E+00	ca	2.8E-02	ca	2.8E-01	ca		
1.8E-01	h			1.8E-01	r			0	0.10	636-21-5	2-Methylaniline hydrochloride	2.7E+00	ca	9.6E+00	ca	3.7E-02	ca	3.7E-01	ca		
		5.0E-04	I			5.0E-04	r	0	0.10	94-74-6	2-Methyl-4-chlorophenoxyacetic acid	3.1E+01	nc	3.1E+02	nc	1.8E+00	nc	1.8E+01	nc		
		1.0E-02	I			1.0E-02	r	0	0.10	94-81-5	4-(2-Methyl-4-chlorophenoxy) butyric acid	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
		1.0E-03	I			1.0E-03	r	0	0.10	93-65-2	2-(2-Methyl-4-chlorophenoxy) propionic acid	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		1.0E-03	I			1.0E-03	r	0	0.10	16484-77-8	2-(2-Methyl-1,4-chlorophenoxy) propionic acid	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		8.6E-01	r			8.6E-01	h	1		108-87-2	Methylcyclohexane	2.6E+03	nc	8.7E+03	nc	3.1E+03	nc	5.2E+03	nc		
2.5E-01	h			2.5E-01	r			0	0.10	101-77-9	4,4'-Methylenebisbenzeneamine	1.9E+00	ca	6.9E+00	ca	2.7E-02	ca	2.7E-01	ca		
1.3E-01	h	7.0E-04	h	1.3E-01	h	7.0E-04	r	0	0.10	101-14-4	4,4'-Methylene bis(2-chloroaniline)	3.7E+00	ca*	1.3E+01	ca*	5.2E-02	ca*	5.2E-01	ca*		
4.6E-02	I			4.6E-02	r			0	0.10	101-61-1	4,4'-Methylene bis(N,N'-dimethyl)aniline	1.1E+01	ca	3.7E+01	ca	1.5E-01	ca	1.5E+00	ca		
		1.0E-02	h			1.0E-02	r	1		74-95-3	Methylene bromide	6.7E+01	nc	2.3E+02	nc	3.7E+01	nc	6.1E+01	nc		
7.5E-03	I	6.0E-02	I	1.6E-03	I	8.6E-01	h	1		75-09-2	Methylene chloride	9.1E+00	ca	2.1E+01	ca	4.1E+00	ca	4.3E+00	ca	2.0E-02	1.0E-03
		1.7E-04	r			1.7E-04	I	0	0.10	101-68-8	4,4'-Methylene diphenyl diisocyanate	1.0E+01	nc	1.0E+02	nc	6.2E-01	nc	6.2E+00	nc		
		6.0E-01	I			2.9E-01	I	1		78-93-3	Methyl ethyl ketone	7.3E+03	nc	2.7E+04	nc	1.0E+03	nc	1.9E+03	nc		
		8.0E-02	h			2.3E-02	h	1		108-10-1	Methyl isobutyl ketone	7.9E+02	nc	2.8E+03	nc	8.3E+01	nc	1.6E+02	nc		
		5.7E-04	r			5.7E-04	n	0	0.10	74-93-1	Methyl Mercaptan	3.5E+01	nc	3.5E+02	nc	2.1E+00	nc	2.1E+01	nc		
		1.4E+00	I			2.0E-01	I	1		80-62-6	Methyl methacrylate	2.2E+03	nc	2.7E+03	sat	7.3E+02	nc	1.4E+03	nc		
3.3E-02	h			3.3E-02	r			0	0.10	99-55-8	2-Methyl-5-nitroaniline	1.5E+01	ca	5.2E+01	ca	2.0E-01	ca	2.0E+00	ca		
		2.5E-04	I			2.5E-04	r	0	0.10	298-00-0	Methyl parathion	1.5E+01	nc	1.5E+02	nc	9.1E-01	nc	9.1E+00	nc		
		5.0E-02	I			5.0E-02	r	0	0.10	95-48-7	2-Methylphenol	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc	1.5E+01	8.0E-01
		5.0E-02	I			5.0E-02	r	0	0.10	108-39-4	3-Methylphenol	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
		5.0E-03	h			5.0E-03	r	0	0.10	106-44-5	4-Methylphenol	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc		
		2.0E-02	n			2.0E-02	r	0	0.10	993-13-5	Methyl phosphonic acid	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		6.0E-03	h			1.1E-02	h	1		25013-15-4	Methyl styrene (mixture)	1.3E+02	nc	5.4E+02	nc	4.2E+01	nc	6.0E+01	nc		
		7.0E-02	h			7.0E-02	r	1		98-83-9	Methyl styrene (alpha)	6.8E+02	sat	6.8E+02	sat	2.6E+02	nc	4.3E+02	nc		
3.3E-03	n	8.6E-01	r	3.5E-04	n	8.6E-01	I	1		1634-04-4	**Methyl tertbutyl ether (MTBE)**	6.2E+01	ca*	1.6E+02	ca	1.9E+01	ca	1.3E+01	ca		
1.8E-03				1.8E-03				1			"CAL-Modified PRG"	1.7E+01	ca	3.6E+01	ca	3.7E+00	ca	6.2E+00	ca		
		1.5E-01	I			1.5E-01	r	0	0.10	51218-45-2	Metolachlor (Dual)	9.2E+03	nc	9.2E+04	nc	5.5E+02	nc	5.5E+03	nc		
		2.5E-02	I			2.5E-02	r	0	0.10	21087-64-9	Metribuzin	1.5E+03	nc	1.5E+04	nc	9.1E+01	nc	9.1E+02	nc		
1.8E+00	x	2.0E-04	I	1.8E+00	r	2.0E-04	r	0	0.10	2385-85-5	Mirex	2.7E-01	ca*	9.6E-01	ca	3.7E-03	ca	3.7E-02	ca		
		2.0E-03	I			2.0E-03	r	0	0.10	2212-67-1	Molinate	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
		5.0E-03	I					0		7439-98-7	Molybdenum	3.9E+02	nc	5.1E+03	nc			1.8E+02	nc		
		1.0E-01	I			1.0E-01	r	0	0.10	10599-90-3	Monochloramine	6.1E+03	nc	6.2E+04	nc	3.7E+02	nc	3.6E+03	nc		
		2.0E-03	I			2.0E-03	r	0	0.10	300-76-5	Naled	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		

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TOXICITY INFORMATION									CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFI 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C / skin abs. soils / CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
		1.0E-01	I			1.0E-01	r	0 / 0.10 / 15299-99-7	Napropamide	6.1E+03	nc	6.2E+04	nc	3.7E+02	nc	3.6E+03	nc		
		2.0E-02	I					0 / 7440-02-0	Nickel (soluble salts)	1.6E+03	nc	2.0E+04	nc			7.3E+02	nc	1.3E+02	7.0E+00
				8.4E-01	I			0 /	Nickel refinery dust					8.0E-03	ca				
				1.7E+00	I			0 / 12035-72-2	Nickel subsulfide			1.1E+04	ca	4.0E-03	ca				
Tap Water PRG Based on Infant NOAEL (see IRIS)								14797-55-8	Nitrate+++							1.0E+04	nc		
Tap Water PRG Based on Infant NOAEL (see IRIS)								14797-65-0	Nitrite+++							1.0E+03	nc		
		2.86E-05	r			2.86E-05	h	0 / 0.10 / 88-74-4	**2-Nitroaniline**	1.7E+00	nc	1.8E+01	nc	1.0E-01	nc	1.0E+00	nc		
		5.0E-04	I			5.7E-04	h	1 / 98-95-3	Nitrobenzene	2.0E+01	nc	1.0E+02	nc	2.1E+00	nc	3.4E+00	nc	1.0E-01	7.0E-03
		7.0E-02	h			7.0E-02	r	0 / 0.10 / 67-20-9	Nitrofurantoin	4.3E+03	nc	4.3E+04	nc	2.6E+02	nc	2.6E+03	nc		
1.5E+00	h			1.5E+00	r			0 / 0.10 / 59-87-0	Nitrofurazone	3.2E-01	ca	1.1E+00	ca	4.5E-03	ca	4.5E-02	ca		
1.4E-02	n			1.4E-02	r			0 / 0.10 / 55-63-0	Nitroglycerin	3.5E+01	ca	1.2E+02	ca	4.8E-01	ca	4.8E+00	ca		
		1.0E-01	I			1.0E-01	r	0 / 0.10 / 556-88-7	Nitroguanidine	6.1E+03	nc	6.2E+04	nc	3.7E+02	nc	3.6E+03	nc		
9.4E+00	r	5.7E-03	r	9.4E+00	h	5.7E-03	I	1 / 79-46-9	2-Nitropropane					7.2E-04	ca	1.2E-03	ca		
5.4E+00	I			5.6E+00	I			1 / 924-16-3	N-Nitrosodi-n-butylamine	2.4E-02	ca	5.8E-02	ca	1.2E-03	ca	2.0E-03	ca		
2.8E+00	I			2.8E+00	r			0 / 0.10 / 1116-54-7	N-Nitrosodiethanolamine	1.7E-01	ca	6.2E-01	ca	2.4E-03	ca	2.4E-02	ca		
1.5E+02	I			1.5E+02	I			0 / 0.10 / 55-18-5	N-Nitrosodiethylamine	3.2E-03	ca	1.1E-02	ca	4.5E-05	ca	4.5E-04	ca		
5.1E+01	I			4.9E+01	I			0 / 0.10 / 62-75-9	N-Nitrosodimethylamine	9.5E-03	ca	3.4E-02	ca	1.4E-04	ca	1.3E-03	ca		
4.9E-03	I			4.9E-03	r			0 / 0.10 / 86-30-6	N-Nitrosodiphenylamine	9.9E+01	ca	3.5E+02	ca	1.4E+00	ca	1.4E+01	ca	1.0E+00	6.0E-02
7.0E+00	I			7.0E+00	r			0 / 0.10 / 621-64-7	N-Nitroso di-n-propylamine	6.9E-02	ca	2.5E-01	ca	9.6E-04	ca	9.6E-03	ca	5.0E-05	2.0E-06
2.2E+01	I			2.2E+01	r			0 / 0.10 / 10595-95-6	N-Nitroso-N-methylethylamine	2.2E-02	ca	7.8E-02	ca	3.1E-04	ca	3.1E-03	ca		
2.1E+00	I			2.1E+00	I			0 / 0.10 / 930-55-2	N-Nitrosopyrrolidine	2.3E-01	ca	8.2E-01	ca	3.1E-03	ca	3.2E-02	ca		
		1.0E-02	h			1.0E-02	r	1 / 99-08-1	m-Nitrotoluene	3.7E+02	nc	1.0E+03	sat	3.7E+01	nc	6.1E+01	nc		
		1.0E-02	h			1.0E-02	r	1 / 99-08-1	o-Nitrotoluene	3.7E+02	nc	1.0E+03	sat	3.7E+01	nc	6.1E+01	nc		
		1.0E-02	h			1.0E-02	r	1 / 99-99-0	p-Nitrotoluene	3.7E+02	nc	1.0E+03	sat	3.7E+01	nc	6.1E+01	nc		
		4.0E-02	I			4.0E-02	r	0 / 0.10 / 27314-13-2	Norflurazon	2.4E+03	nc	2.5E+04	nc	1.5E+02	nc	1.5E+03	nc		
		7.0E-04	I			7.0E-04	r	0 / 0.10 / 85509-19-9	NuStar	4.3E+01	nc	4.3E+02	nc	2.6E+00	nc	2.6E+01	nc		
		3.0E-03	I			3.0E-03	r	0 / 0.10 / 32536-52-0	Octabromodiphenyl ether	1.8E+02	nc	1.8E+03	nc	1.1E+01	nc	1.1E+02	nc		
		5.0E-02	I			5.0E-02	r	0 / 0.10 / 2691-41-0	Octahydro-1357-tetranitro-1357- tetrazocine (HMX)	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
		2.0E-03	h			2.0E-03	r	0 / 0.10 / 152-16-9	Octamethylpyrophosphoramide	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
		5.0E-02	I			5.0E-02	r	0 / 0.10 / 19044-88-3	Oryzalin	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
		5.0E-03	I			5.0E-03	r	0 / 0.10 / 19666-30-9	Oxadiazon	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc		
		2.5E-02	I			2.5E-02	r	0 / 0.10 / 23135-22-0	Oxamyl	1.5E+03	nc	1.5E+04	nc	9.1E+01	nc	9.1E+02	nc		
		3.0E-03	I			3.0E-03	r	0 / 0.10 / 42874-03-3	Oxyfluorfen	1.8E+02	nc	1.8E+03	nc	1.1E+01	nc	1.1E+02	nc		
		1.3E-02	I			1.3E-02	r	0 / 0.10 / 76738-62-0	Paclobutrazol	7.9E+02	nc	8.0E+03	nc	4.7E+01	nc	4.7E+02	nc		
		4.5E-03	I			4.5E-03	r	0 / 0.10 / 4685-14-7	Paraquat	2.7E+02	nc	2.8E+03	nc	1.6E+01	nc	1.6E+02	nc		
		6.0E-03	h			6.0E-03	r	0 / 0.10 / 56-38-2	Parathion	3.7E+02	nc	3.7E+03	nc	2.2E+01	nc	2.2E+02	nc		

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TOXICITY INFORMATION										CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
		5.0E-02	h			5.0E-02	r	0	0.10	1114-71-2	Pebulate	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
		4.0E-02	i			4.0E-02	r	0	0.10	40487-42-1	Pendimethalin	2.4E+03	nc	2.5E+04	nc	1.5E+02	nc	1.5E+03	nc		
2.3E-02	h			2.3E-02	r			0	0.10	87-84-3	Pentabromo-6-chloro cyclohexane	2.1E+01	ca	7.5E+01	ca	2.9E-01	ca	2.9E+00	ca		
		2.0E-03	i			2.0E-03	r	0	0.10	32534-81-9	Pentabromodiphenyl ether	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
		8.0E-04	i			8.0E-04	r	0	0.10	608-93-5	Pentachlorobenzene	4.9E+01	nc	4.9E+02	nc	2.9E+00	nc	2.9E+01	nc		
2.6E-01	h	3.0E-03	i	2.6E-01	r	3.0E-03	r	0	0.10	82-68-8	Pentachloronitrobenzene	1.9E+00	ca*	6.6E+00	ca	2.6E-02	ca	2.6E-01	ca		
1.2E-01	i	3.0E-02	i	1.2E-01	r	3.0E-02	r	0	0.25	87-86-5	Pentachlorophenol	3.0E+00	ca	9.0E+00	ca	5.6E-02	ca	5.6E-01	ca	3.0E-02	1.0E-03
		1.00E-04	x					0		7601-90-3	Perchlorate	7.8E+00	ca/nc	1.0E+02	ca/nc			3.6E+00	ca/nc		
		5.0E-02	i			5.0E-02	r	0	0.10	52645-53-1	Permethrin	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
		2.5E-01	i			2.5E-01	r	0	0.10	13684-63-4	Phenmedipham	1.5E+04	nc	1.0E+05	max	9.1E+02	nc	9.1E+03	nc		
		6.0E-01	i			6.0E-01	r	0	0.10	108-95-2	Phenol	3.7E+04	nc	1.0E+05	max	2.2E+03	nc	2.2E+04	nc	1.0E+02	5.0E+00
		2.0E-03	n			2.0E-03	r	0	0.10	92-84-2	Phenothiazine	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
		6.0E-03	i			6.0E-03	r	0	0.10	108-45-2	m-Phenylenediamine	3.7E+02	nc	3.7E+03	nc	2.2E+01	nc	2.2E+02	nc		
		1.9E-01	h			1.9E-01	r	0	0.10	106-50-3	p-Phenylenediamine	1.2E+04	nc	1.0E+05	max	6.9E+02	nc	6.9E+03	nc		
		8.0E-05	i			8.0E-05	r	0	0.10	62-38-4	Phenylmercuric acetate	4.9E+00	nc	4.9E+01	nc	2.9E-01	nc	2.9E+00	nc		
1.9E-03	h			1.9E-03	r			0	0.10	90-43-7	2-Phenylphenol	2.5E+02	ca	8.9E+02	ca	3.5E+00	ca	3.5E+01	ca		
		2.0E-04	h			2.0E-04	r	0	0.10	298-02-2	Phorate	1.2E+01	nc	1.2E+02	nc	7.3E-01	nc	7.3E+00	nc		
		2.0E-02	i			2.0E-02	r	0	0.10	732-11-6	Phosmet	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		3.0E-04	i			8.6E-05	i	0	0.10	7803-51-2	Phosphine	1.8E+01	nc	1.8E+02	nc	3.1E-01	nc	1.1E+01	nc		
						2.9E-03	i			7664-38-2	Phosphoric acid					1.0E+01	nc				
		2.0E-05	i					0		7723-14-0	Phosphorus (white)	1.6E+00	nc	2.0E+01	nc			7.3E-01	nc		
		1.0E+00	h			1.0E+00	r	0	0.10	100-21-0	p-Phthalic acid	6.1E+04	nc	1.0E+05	max	3.7E+03	nc	3.6E+04	nc		
		2.0E+00	i			3.4E-02	h	0	0.10	85-44-9	Phthalic anhydride	1.0E+05	max	1.0E+05	max	1.2E+02	nc	7.3E+04	nc		
		7.0E-02	i			7.0E-02	r	0	0.10	1918-02-1	Picloram	4.3E+03	nc	4.3E+04	nc	2.6E+02	nc	2.6E+03	nc		
		1.0E-02	i			1.0E-02	r	0	0.10	29232-93-7	Pirimiphos-methyl	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
											Polybrominated biphenyls	5.5E-02	ca**	1.9E-01	ca*	7.6E-04	ca*	7.6E-03	ca*		
8.9E+00	h	7.0E-06	h	8.9E+00	r	7.0E-06	r	0	0.10		Polychlorinated biphenyls (PCBs)	2.2E-01	ca	7.4E-01	ca	3.4E-03	ca	3.4E-02	ca		
2.0E+00	i			2.0E+00	i			0	0.14	1336-36-3	Aroclor 1016	3.9E+00	nc	2.1E+01	ca**	9.6E-02	ca**	9.6E-01	ca**		
7.0E-02	i	7.0E-05	i	7.0E-02	i	7.0E-05	r	0	0.14	12674-11-2	Aroclor 1221	2.2E-01	ca	7.4E-01	ca	3.4E-03	ca	3.4E-02	ca		
2.0E+00	i			2.0E+00	i			0	0.14	11104-28-2	Aroclor 1232	2.2E-01	ca	7.4E-01	ca	3.4E-03	ca	3.4E-02	ca		
2.0E+00	i			2.0E+00	i			0	0.14	11141-16-5	Aroclor 1242	2.2E-01	ca	7.4E-01	ca	3.4E-03	ca	3.4E-02	ca		
2.0E+00	i			2.0E+00	i			0	0.14	53469-21-9	Aroclor 1248	2.2E-01	ca	7.4E-01	ca	3.4E-03	ca	3.4E-02	ca		
2.0E+00	i			2.0E+00	i			0	0.14	12672-29-6	Aroclor 1254	2.2E-01	ca**	7.4E-01	ca*	3.4E-03	ca*	3.4E-02	ca*		
2.0E+00	i	2.0E-05	i	2.0E+00	i	2.0E-05	r	0	0.14	11097-69-1	Aroclor 1260	2.2E-01	ca	7.4E-01	ca	3.4E-03	ca	3.4E-02	ca		
2.0E+00	i			2.0E+00	i			0	0.14	11096-82-5											

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TOXICITY INFORMATION								CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)	RfDo (mg/kg-d)		SFI 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
4.5E+00	n		4.5E+00	r				0.10	61788-33-8	**Polychlorinated terphenyls**	1.1E-01	ca	3.8E-01	ca	1.5E-03	ca	1.5E-02	ca		
								0.13		Polynuclear aromatic hydrocarbons (PAHs)										
	6.0E-02	I			6.0E-02	r	1		83-32-9	Acenaphthene	3.7E+03	nc	2.9E+04	nc	2.2E+02	nc	3.7E+02	nc	5.7E+02	2.9E+01
	3.0E-01	I			3.0E-01	r	1		120-12-7	Anthracene	2.2E+04	nc	1.0E+05	max	1.1E+03	nc	1.8E+03	nc	1.2E+04	5.9E+02
7.3E-01	n		7.3E-01	r			0	0.13	56-55-3	**Benz[a]anthracene**	6.2E-01	ca	2.1E+00	ca	9.2E-03	ca	9.2E-02	ca	2.0E+00	8.0E-02
7.3E-01	n		7.3E-01	r			0	0.13	205-99-2	**Benzo[b]fluoranthene**	6.2E-01	ca	2.1E+00	ca	9.2E-03	ca	9.2E-02	ca	5.0E+00	2.0E-01
7.3E-02	n		7.3E-02	r			0	0.13	207-08-9	**Benzo[k]fluoranthene**	6.2E+00	ca	2.1E+01	ca	9.2E-02	ca	9.2E-01	ca	4.9E+01	2.0E+00
1.2E+00			3.9E-01					0.13	207-08-9	**"CAL-Modified PRG"**	3.8E-01	ca	1.3E+00	ca	1.7E-02	ca	5.6E-02	ca		
7.3E+00	I		7.3E+00	r			0	0.13	50-32-8	**Benzo[a]pyrene**	6.2E-02	ca	2.1E-01	ca	9.2E-04	ca	9.2E-03	ca	8.0E+00	4.0E-01
7.3E-03	n		7.3E-03	r			0	0.13	218-01-9	**Chrysene**	6.2E+01	ca	2.1E+02	ca	9.2E-01	ca	9.2E+00	ca	1.6E+02	8.0E+00
1.2E-01			3.9E-02					0.13		**"CAL-Modified PRG"**	3.8E+00	ca	1.3E+01	ca	1.7E-01	ca	5.6E-01	ca		
7.3E+00	n		7.3E+00	r			0	0.13	53-70-3	**Dibenz[ah]anthracene**	6.2E-02	ca	2.1E-01	ca	9.2E-04	ca	9.2E-03	ca	2.0E+00	8.0E-02
	4.0E-02	I			4.0E-02	r	0	0.13	206-44-0	Fluoranthene	2.3E+03	nc	2.2E+04	nc	1.5E+02	nc	1.5E+03	nc	4.3E+03	2.1E+02
	4.0E-02	I			4.0E-02	r	1		86-73-7	Fluorene	2.7E+03	nc	2.6E+04	nc	1.5E+02	nc	2.4E+02	nc	5.6E+02	2.8E+01
7.3E-01	n		7.3E-01	r			0	0.13	193-39-5	**Indeno[1,2,3-cd]pyrene**	6.2E-01	ca	2.1E+00	ca	9.2E-03	ca	9.2E-02	ca	1.4E+01	7.0E-01
	2.0E-02	I			8.6E-04	I	1		91-20-3	Naphthalene	5.6E+01	nc	1.9E+02	nc	3.1E+00	nc	6.2E+00	nc	8.4E+01	4.0E+00
	3.0E-02	I			3.0E-02	r	1		129-00-0	Pyrene	2.3E+03	nc	2.9E+04	nc	1.1E+02	nc	1.8E+02	nc	4.2E+03	2.1E+02
1.5E-01	I	9.0E-03	I	1.5E-01	r	9.0E-03	r	0	0.10	67747-09-5	Prochloraz	3.2E+00	ca	1.1E+01	ca	4.5E-02	ca	4.5E-01	ca		
		6.0E-03	h			6.0E-03	r	0	0.10	26399-36-0	Profluralin	3.7E+02	nc	3.7E+03	nc	2.2E+01	nc	2.2E+02	nc		
		1.5E-02	I			1.5E-02	r	0	0.10	1610-18-0	Prometon	9.2E+02	nc	9.2E+03	nc	5.5E+01	nc	5.5E+02	nc		
		4.0E-03	I			4.0E-03	r	0	0.10	7287-19-6	Prometryn	2.4E+02	nc	2.5E+03	nc	1.5E+01	nc	1.5E+02	nc		
		7.5E-02	I			7.5E-02	r	0	0.10	23950-58-5	Pronamide	4.6E+03	nc	4.6E+04	nc	2.7E+02	nc	2.7E+03	nc		
		1.3E-02	I			1.3E-02	r	0	0.10	1918-16-7	Propachlor	7.9E+02	nc	8.0E+03	nc	4.7E+01	nc	4.7E+02	nc		
		5.0E-03	I			5.0E-03	r	0	0.10	709-98-8	Propanil	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc		
		2.0E-02	I			2.0E-02	r	0	0.10	2312-35-8	Propargite	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		2.0E-03	I			2.0E-03	r	0	0.10	107-19-7	Propargyl alcohol	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
		2.0E-02	I			2.0E-02	r	0	0.10	139-40-2	Propazine	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		2.0E-02	I			2.0E-02	r	0	0.10	122-42-9	Propham	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		1.3E-02	I			1.3E-02	r	0	0.10	60207-90-1	Propiconazole	7.9E+02	nc	8.0E+03	nc	4.7E+01	nc	4.7E+02	nc		
		1.0E-01	I			1.1E-01	I	1		98-82-8	Isopropylbenzene (Cumene)	1.6E+02	nc	5.2E+02	nc	4.0E+02	nc	6.6E+02	nc		
		4.00E-02	n			4.00E-02	r	1		103-65-1	**n-Propylbenzene**	2.4E+02	sat	2.4E+02	sat	1.5E+02	nc	2.4E+02	nc		
		5.0E-01	h			8.6E-04	h	0	0.10	57-55-6	**Propylene glycol**	3.0E+04	nc	1.0E+05	max	3.1E+00	nc	1.8E+04	nc		
		7.0E-01	h			7.0E-01	r	0	0.10	52125-53-8	Propylene glycol, monoethyl ether	4.3E+04	nc	1.0E+05	max	2.6E+03	nc	2.6E+04	nc		
		7.0E-01	h			5.7E-01	I	0	0.10	107-98-2	Propylene glycol, monomethyl ether	4.3E+04	nc	1.0E+05	max	2.1E+03	nc	2.6E+04	nc		
2.4E-01	I	8.6E-03	r	1.3E-02	I	8.6E-03	I	1		75-56-9	Propylene oxide	1.9E+00	ca*	6.6E+00	ca*	5.2E-01	ca*	2.2E-01	ca		

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TOXICITY INFORMATION										CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		VOC	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
		2.5E-01	I			2.5E-01	r	0	0.10	81335-77-5	Pursuit	1.5E+04	nc	1.0E+05	max	9.1E+02	nc	9.1E+03	nc		
		2.5E-02	I			2.5E-02	r	0	0.10	51630-58-1	Pydrin	1.5E+03	nc	1.5E+04	nc	9.1E+01	nc	9.1E+02	nc		
		1.0E-03	I			1.0E-03	r	0	0.10	110-86-1	Pyridine	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		5.0E-04	I			5.0E-04	r	0	0.10	13593-03-8	Quinalphos	3.1E+01	nc	3.1E+02	nc	1.8E+00	nc	1.8E+01	nc		
3.0E+00	I			3.0E+00	r			0	0.10	91-22-5	**Quinoline**	1.6E-01	ca	5.7E-01	ca	2.2E-03	ca	2.2E-02	ca		
1.1E-01	I	3.0E-03	I	1.1E-01	r	3.0E-03	r	0	0.10	121-82-4	RDX (Cyclonite)	4.4E+00	ca*	1.6E+01	ca	6.1E-02	ca	6.1E-01	ca		
		3.0E-02	I			3.0E-02	r	0	0.10	10453-86-8	Resmethrin	1.8E+03	nc	1.8E+04	nc	1.1E+02	nc	1.1E+03	nc		
		5.0E-02	h			5.0E-02	r	0	0.10	299-84-3	Ronnel	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
		4.0E-03	I			4.0E-03	r	0	0.10	83-79-4	Rotenone	2.4E+02	nc	2.5E+03	nc	1.5E+01	nc	1.5E+02	nc		
		2.5E-02	I			2.5E-02	r	0	0.10	78587-05-0	Savey	1.5E+03	nc	1.5E+04	nc	9.1E+01	nc	9.1E+02	nc		
		5.0E-03	I					0	0.10	7783-00-8	Selenious Acid	3.1E+02	nc	3.1E+03	nc			1.8E+02	nc		
		5.0E-03	I					0		7782-49-2	Selenium	3.9E+02	nc	5.1E+03	nc			1.8E+02	nc	5.0E+00	3.0E-01
		5.0E-03	h					0	0.10	630-10-4	Selenourea	3.1E+02	nc	3.1E+03	nc			1.8E+02	nc		
		9.0E-02	I			9.0E-02	r	0	0.10	74051-80-2	Sethoxydim	5.5E+03	nc	5.5E+04	nc	3.3E+02	nc	3.3E+03	nc		
		5.0E-03	I					0		7440-22-4	Silver and compounds	3.9E+02	nc	5.1E+03	nc			1.8E+02	nc	3.4E+01	2.0E+00
1.2E-01	h	5.0E-03	I	1.2E-01	r	2.0E-03	r	0	0.10	122-34-9	Simazine	4.1E+00	ca*	1.4E+01	ca	5.6E-02	ca	5.6E-01	ca		
		4.0E-03	I							26628-22-8	Sodium azide										
2.7E-01	h	3.0E-02	I	2.7E-01	r	3.0E-02	r	0	0.10	148-18-5	Sodium diethyldithiocarbamate	1.8E+00	ca	6.4E+00	ca	2.5E-02	ca	2.5E-01	ca		
		2.0E-05	I			2.0E-05	r	0	0.10	62-74-8	Sodium fluoroacetate	1.2E+00	nc	1.2E+01	nc	7.3E-02	nc	7.3E-01	nc		
		1.0E-03	h			1.0E-03	r	0	0.10	13718-26-8	Sodium metavanadate	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		6.0E-01	I					0		7440-24-6	Strontium, stable	4.7E+04	nc	1.0E+05	max			2.2E+04	nc		
		3.0E-04	I			3.0E-04	r	0	0.10	57-24-9	Strychnine	1.8E+01	nc	1.8E+02	nc	1.1E+00	nc	1.1E+01	nc		
		2.0E-01	I			2.9E-01	I	1		100-42-5	Styrene	1.7E+03	sat	1.7E+03	sat	1.1E+03	nc	1.6E+03	nc	4.0E+00	2.0E-01
		1.00E-03	n			1.00E-03	r			80-07-9	1,1'-Sulfonylbis (4-chlorobenzene)	7.8E+01	nc	1.0E+03	nc	3.7E+00	nc	3.6E+01	nc		
		2.5E-02	I			2.5E-02	r	0	0.10	88671-89-0	Systhane	1.5E+03	nc	1.5E+04	nc	9.1E+01	nc	9.1E+02	nc		
1.5E+05	h			1.5E+05	h			0	0.03	1746-01-6	2,3,7,8-TCDD (dioxin)	3.9E-06	ca	1.6E-05	ca	4.5E-08	ca	4.5E-07	ca		
		7.0E-02	I			7.0E-02	r	0	0.10	34014-18-1	Tebuthiuron	4.3E+03	nc	4.3E+04	nc	2.6E+02	nc	2.6E+03	nc		
		2.0E-02	h			2.0E-02	r	0	0.10	3383-96-8	Temephos	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		1.3E-02	I			1.3E-02	r	0	0.10	5902-51-2	Terbacil	7.9E+02	nc	8.0E+03	nc	4.7E+01	nc	4.7E+02	nc		
		2.5E-05	h			2.5E-05	r	0	0.10	13071-79-9	Terbufos	1.5E+00	nc	1.5E+01	nc	9.1E-02	nc	9.1E-01	nc		
		1.0E-03	I			1.0E-03	r	0	0.10	886-50-0	Terbutryn	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		3.0E-04	I			3.0E-04	r	0	0.10	95-94-3	1,2,4,5-Tetrachlorobenzene	1.8E+01	nc	1.8E+02	nc	1.1E+00	nc	1.1E+01	nc		
2.6E-02	I	3.0E-02	I	2.6E-02	I	3.0E-02	r	1		630-20-6	1,1,1,2-Tetrachloroethane	3.2E+00	ca	7.3E+00	ca	2.6E-01	ca	4.3E-01	ca		
2.0E-01	I	6.00E-02	n	2.0E-01	I	6.00E-02	r	1		79-34-5	1,1,2,2-Tetrachloroethane	4.1E-01	ca	9.3E-01	ca	3.3E-02	ca	5.5E-02	ca	3.0E-03	2.0E-04
5.2E-02	n	1.0E-02	I	1.00E-02	n	1.7E-01	n	1		127-18-4	**Tetrachloroethylene (PCE)**	1.5E+00	ca*	3.4E+00	ca*	6.7E-01	ca	6.6E-01	ca	6.0E-02	3.0E-03
		3.0E-02	I			3.0E-02	r	0	0.10	58-90-2	2,3,4,6-Tetrachlorophenol	1.6E+03	nc	1.8E+04	nc	1.1E+02	nc	1.1E+03	nc		

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SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
2.0E+01	h			2.0E+01	r			0	0.10	5216-25-1	p,a,a,a-Tetrachlorotoluene	2.4E-02	ca	8.6E-02	ca	3.4E-04	ca	3.4E-03	ca		
2.4E-02	h	3.0E-02	I	2.4E-02	r	3.0E-02	r	0	0.10	961-11-5	Tetrachlorovinphos	2.0E+01	ca*	7.2E+01	ca	2.8E-01	ca	2.8E+00	ca		
		5.0E-04	I			5.0E-04	r	0	0.10	3689-24-5	Tetraethyldithiopyrophosphate	3.1E+01	nc	3.1E+02	nc	1.8E+00	nc	1.8E+01	nc		
7.6E-03	n	2.1E-01	n	6.8E-03	n	8.6E-02	n	1		109-99-9	**Tetrahydrofuran**	9.4E+00	ca	2.1E+01	ca	9.9E-01	ca	1.6E+00	ca		
		6.6E-05	I					0		7440-28-0	Thallium and compounds+++	5.2E+00	nc	6.7E+01	nc			2.4E+00	nc		
		1.0E-02	I			1.0E-02	r	0	0.10	28249-77-6	Thiobencarb	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
		5.0E-02	n			5.0E-02	r	0	0.10	N/A	**Thiocyanate**	3.1E+03	nc	1.0E+05	max	1.8E+02	nc	1.8E+03	nc		
		3.0E-04	h			3.0E-04	r	0	0.10	39196-18-4	Thiofanox	1.8E+01	nc	1.8E+02	nc	1.1E+00	nc	1.1E+01	nc		
		8.0E-02	I			8.0E-02	r	0	0.10	23564-05-8	Thiophanate-methyl	4.9E+03	nc	4.9E+04	nc	2.9E+02	nc	2.9E+03	nc		
		5.0E-03	I			5.0E-03	r	0	0.10	137-26-8	Thiram	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc		
		6.0E-01	h					0			Tin (inorganic, see tributyltin oxide for organic tin)	4.7E+04	nc	1.0E+05	max			2.2E+04	nc		
		2.0E-01	I			1.1E-01	I	1		108-88-3	Toluene	5.2E+02	sat	5.2E+02	sat	4.0E+02	nc	7.2E+02	nc	1.2E+01	6.0E-01
3.2E+00	h			3.2E+00	r			0	0.10	95-80-7	Toluene-2,4-diamine	1.5E-01	ca	5.4E-01	ca	2.1E-03	ca	2.1E-02	ca		
		6.0E-01	h			6.0E-01	r	0	0.10	95-70-5	Toluene-2,5-diamine	3.7E+04	nc	1.0E+05	max	2.2E+03	nc	2.2E+04	nc		
		2.0E-01	h			2.0E-01	r	0	0.10	823-40-5	Toluene-2,6-diamine	1.2E+04	nc	1.0E+05	max	7.3E+02	nc	7.3E+03	nc		
2E-01	I			2E-01	r			0	0.10	106-49-0	p-Toluidine	2.6E+00	ca	9.1E+00	ca	3.5E-02	ca	3.5E-01	ca		
1.1E+00	I			1.1E+00	I			0	0.10	8001-35-2	Toxaphene	4.4E-01	ca	1.6E+00	ca	6.0E-03	ca	6.1E-02	ca	3.1E+01	2.0E+00
		7.5E-03	I			7.5E-03	r	0	0.10	66841-25-6	Tralomethrin	4.6E+02	nc	4.6E+03	nc	2.7E+01	nc	2.7E+02	nc		
		1.3E-02	I			1.3E-02	r	0	0.10	2303-17-5	Triallate	7.9E+02	nc	8.0E+03	nc	4.7E+01	nc	4.7E+02	nc		
		1.0E-02	I			1.0E-02	r	0	0.10	82097-50-5	Triasulfuron	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
		5.0E-03	I			5.0E-03	r	0	0.10	615-54-3	1,2,4-Tribromobenzene	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc		
		3.0E-04	I					0	0.10	56-35-9	Tributyltin oxide (TBTO)	1.8E+01	nc	1.8E+02	nc			1.1E+01	nc		
3.4E-02	h			3.4E-02	r			0	0.10	634-93-5	2,4,6-Trichloroaniline	1.4E+01	ca	5.1E+01	ca	2.0E-01	ca	2.0E+00	ca		
2.9E-02	h			2.9E-02	r			0	0.10	33663-50-2	2,4,6-Trichloroaniline hydrochloride	1.7E+01	ca	5.9E+01	ca	2.3E-01	ca	2.3E+00	ca		
		1.0E-02	I			5.7E-02	h	1		120-82-1	1,2,4-Trichlorobenzene	6.5E+02	nc	3.0E+03	sat	2.1E+02	nc	1.9E+02	nc	5.0E+00	3.0E-01
		2.8E-01	n			6.3E-01	n	1		71-55-6	**1,1,1-Trichloroethane**	1.2E+03	sat	1.2E+03	sat	2.3E+03	nc	3.2E+03	nc	2.0E+00	1.0E-01
5.7E-02	I	4.0E-03	I	5.6E-02	I	4.0E-03	r	1		79-00-5	1,1,2-Trichloroethane	7.3E-01	ca*	1.6E+00	ca*	1.2E-01	ca	2.0E-01	ca	2.0E-02	9.0E-04
4.00E-01	n	3.00E-04	n	4.00E-01	n	1.00E-02	n	1		79-01-6	**Trichloroethylene (TCE)**	5.3E-02	ca	1.1E-01	ca	1.7E-02	ca	2.8E-02	ca	6.0E-02	3.0E-03
		3.0E-01	I			2.0E-01	h	1		75-69-4	Trichlorofluoromethane	3.9E+02	nc	2.0E+03	sat	7.3E+02	nc	1.3E+03	nc		
		1.0E-01	I			1.0E-01	r	0	0.10	95-95-4	2,4,5-Trichlorophenol	6.1E+03	nc	6.2E+04	nc	3.7E+02	nc	3.6E+03	nc	2.7E+02	1.4E+01
1.1E-02	I	1.0E-04	n	1.1E-02	I	1.0E-04	r	0	0.10	88-06-2	**2,4,6-Trichlorophenol**	6.1E+00	nc**	6.2E+01	nc**	3.7E-01	nc**	3.6E+00	nc**	2.0E-01	8.0E-03
7.0E-02				7.0E-02					0.10	88-06-2	**"CAL-Modified PRG"**	6.9E+00	ca	2.5E+01	ca	9.6E-02	ca	9.6E-01	ca		
		1.0E-02	I			1.0E-02	r	0	0.10	93-76-5	2,4,5-Trichlorophenoxyacetic Acid	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
		8.0E-03	I			8.0E-03	r	0	0.10	93-72-1	2-(2,4,5-Trichlorophenoxy) propionic acid	4.9E+02	nc	4.9E+03	nc	2.9E+01	nc	2.9E+02	nc		
		5.0E-03	I			5.0E-03	r	1		598-77-6	1,1,2-Trichloropropane	1.5E+01	nc	5.1E+01	nc	1.8E+01	nc	3.0E+01	nc		
2.0E+00	n	6.0E-03	I	2.0E+00	r	1.4E-03	n	1		96-18-4	**1,2,3-Trichloropropane**	5.0E-03	ca	1.1E-02	ca	3.4E-03	ca	5.6E-03	ca		

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SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
		5.0E-03	h			5.0E-03	r	1		96-19-5	1,2,3-Trichloropropene	1.2E+01	nc	3.8E+01	nc	1.8E+01	nc	3.0E+01	nc		
		3.0E-03	I			3.0E-03	r	0	0.10	58138-08-2	Tridiphane	1.8E+02	nc	1.8E+03	nc	1.1E+01	nc	1.1E+02	nc		
		2.0E-03	r			2.0E-03	I	1		121-44-8	Triethylamine	2.3E+01	nc	8.6E+01	nc	7.3E+00	nc	1.2E+01	nc		
7.7E-03	I	7.5E-03	I	7.7E-03	r	7.5E-03	r	0	0.10	1582-09-8	Trifluralin	6.3E+01	ca**	2.2E+02	ca*	8.7E-01	ca*	8.7E+00	ca*		
		1.400E-04	r			1.400E-04	n		0.10	552-30-7	Trimellitic Anhydride (TMAN)	8.6E+00	nc	8.6E+01	nc	5.1E-01	nc	5.1E+00			
		5.0E-02	n			1.7E-03	n	1		95-63-6	1,2,4-Trimethylbenzene	5.2E+01	nc	1.7E+02	nc	6.2E+00	nc	1.2E+01	nc		
		5.0E-02	n			1.7E-03	n	1		108-67-8	1,3,5-Trimethylbenzene	2.1E+01	nc	7.0E+01	nc	6.2E+00	nc	1.2E+01	nc		
								0	0.10	512-56-1	Trimethyl phosphate	1.3E+01	ca	4.7E+01	ca	1.8E-01	ca	1.8E+00	ca		
3.7E-02	h			3.7E-02	r																
		3.0E-02	I			3.0E-02	r	0	0.10	99-35-4	1,3,5-Trinitrobenzene	1.8E+03	nc	1.8E+04	nc	1.1E+02	nc	1.1E+03	nc		
		1.0E-02	h			1.0E-02	r	0	0.10	479-45-8	Trinitrophenylmethylnitramine	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
3E-02	I	5.0E-04	I	3E-02	r	5.0E-04	r	0	0.10	118-96-7	2,4,6-Trinitrotoluene	1.6E+01	ca**	5.7E+01	ca**	2.2E-01	ca**	2.2E+00	ca**		
		5.00E-03	n			5.00E-03	r		0.10	791-28-6	**Triphenylphosphine oxide**	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc		
3.2E-03	n	1.1E-01	n	3.2E-03	r	1.1E-01	r		0.10	115-96-8	**Tris(2-chloroethyl) phosphate**	1.5E+02	ca*	5.4E+02	ca	2.1E+00	ca	2.1E+01	ca		
		2.00E-04	n							7440-61-0	Uranium (chemical toxicity only)	1.6E+01	nc	2.0E+02	nc			7.3E+00	nc		
		7.0E-03	h					0		7440-62-2	Vanadium and compounds	5.5E+02	nc	7.2E+03	nc			2.6E+02	nc	6.0E+03	3.0E+02
		1.0E-03	I			1.0E-03	r	0	0.10	1929-77-7	Vernam	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		2.5E-02	I			2.5E-02	r	0	0.10	50471-44-8	Vinclozolin	1.5E+03	nc	1.5E+04	nc	9.1E+01	nc	9.1E+02	nc		
		1.0E+00	h			5.7E-02	I	1		108-05-4	Vinyl acetate	4.3E+02	nc	1.4E+03	nc	2.1E+02	nc	4.1E+02	nc	1.7E+02	8.0E+00
1.1E-01	r	8.6E-04	r	1.1E-01	h	8.6E-04	I	1		593-60-2	Vinyl bromide (bromoethene)	1.9E-01	ca*	4.2E-01	ca*	6.1E-02	ca*	1.0E-01	ca*		
1.5E+00	I	3.00E-03	I	3.1E-02	I	2.86E-02	I	1		75-01-4	**Vinyl chloride (child/adult)+++**	7.9E-02	ca			1.1E-01	ca	2.0E-02	ca	1.0E-02	7.0E-04
7.5E-01	I	3.00E-03	I	1.6E-02	I	2.86E-02	I	1		75-01-4	Vinyl chloride (adult)			7.5E-01	ca						
		3.0E-04	I			3.0E-04	r	0	0.10	81-81-2	Warfarin	1.8E+01	nc	1.8E+02	nc	1.1E+00	nc	1.1E+01	nc		
		7.0E-01	I			2.9E-02	I	1	0.10	1330-20-7	**Xylenes**	2.7E+02	nc	4.2E+02	sat	1.1E+02	nc	2.1E+02	nc	2.1E+02	1.0E+01
		3.0E-01	I					0		7440-66-6	Zinc	2.3E+04	nc	1.0E+05	max			1.1E+04	nc	1.2E+04	6.2E+02
		3.0E-04	I					0		1314-84-7	Zinc phosphide	2.3E+01	nc	3.1E+02	nc			1.1E+01	nc		
		5.0E-02	I			5.0E-02	r	0	0.10	12122-67-7	Zineb	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		

Appendix D

Comparison of ProUCL and Default Data Distributions for Calculation of Exposure Point Concentrations and Risks

APPENDIX D. COMPARISON OF PROUCL AND DEFAULT DATA DISTRIBUTIONS FOR CALCULATION OF EXPOSURE POINT CONCENTRATIONS AND RISKS

D.1 Introduction

Historically, US Environmental Protection Agency (USEPA) risk assessment protocols have assigned data sets of sufficient quantity (taken as at least ten data points for this HHRA) to either a normal or lognormal distribution (USEPA, 1989). (For smaller data sets, the maximum detected value is used as the exposure point concentration [EPC].) This Onondaga Lake HHRA currently uses a "best-fit" approach to assign a normal or a lognormal distribution to each data set and subsequently to calculate the 95 percent upper confidence limit (UCL) on the mean. (The 95 percent UCL is used as an estimator of the arithmetic mean of the data set, and is used as the EPC for risk calculations, using equations specific to either normal or lognormal distributions [USEPA, 1992d].) However, USEPA has recently been moving toward using non-parametric tests to calculate the UCL on the mean where the data set does not fit either a normal or lognormal distribution. USEPA Las Vegas has developed software (ProUCL 2.1; USEPA, 2002c) that performs the statistical tests to determine the data distribution type (i.e., tests for normal and lognormal distribution) and also calculates the UCL by a number of different statistical techniques.

ProUCL software calculates multiple 95 percent UCLs on the mean based on several statistical methods. The distribution and skew of any given data set dictate which of the values calculated by the software should be applied. Unless otherwise noted, the 95 percent UCLs for the lognormal data sets were calculated using Land's H statistic (USEPA, 1992). The non-parametric UCLs were estimated using the Chebyshev (mean, std) method. Depending on the skew of the data set, the EPC may be estimated with the 95 percent Chebyshev (mean, std) UCL, the 97.5 percent Chebyshev (mean, std) UCL, or the 99 percent Chebyshev (mean, std) UCL (for discussion see USEPA, 2002]). Unless otherwise noted, the 95 percent Chebyshev (mean, std) UCL was used to estimate the non-parametric EPCs.

To assess the potential impact of the initial forcing of all data into either normal or lognormal distribution, a number of the data sets (focusing on contaminants of potential concern [COPCs] responsible for a significant percent of the overall risks calculated for individual matrices) were run through USEPA's ProUCL software. The purpose of this was to:

- Confirm the distribution of the data.
- Recalculate, if necessary, the 95 percent UCL on the mean (and corresponding EPC) based on the new (i.e., non-parametric) distribution.
- Recalculate the associated cancer risk or non-cancer hazard based on new UCL/EPC calculations.

D.2 Data Distribution

Previous calculations had determined, using the best-fit method, that the majority of the data for all matrices for which there are at least ten samples (which is considered the minimum number of samples for usable statistical analysis) had a lognormal distribution. Running the data through ProUCL confirmed that the majority of the data sets reviewed, which were initially identified as lognormal (11 out of 16), do fit a lognormal distribution (Table D-1). One data set initially evaluated as normal and one data set for which the maximum value had been used as the EPC were also assessed by ProUCL and found to have non-parametric distributions for which the ProUCL software calculated UCLs.

Except as noted specifically in the discussion in Section D.3 below, the data in all three matrices assessed (fish, northern basin sediments, and southern basin sediments) were determined by ProUCL to be lognormally distributed, confirming the assumption previously made; therefore, those EPCs are the same as those calculated previously.

D.3 Recalculation of UCLs using ProUCL 2.1

D.3.1 Scope and Rationale of Data Sets Selected for Recalculation

The fish tissue and the lake bottom (northern basin and southern basin) sediment pathways were evaluated. It was not necessary to perform this analysis on the wetland or dredge spoils data because there are fewer than ten data points available. As risks and hazards associated with the surface water pathway were low (i.e., hazard index [HI] less than 1.0, and cancer risk less than 10^{-6}), the surface water data were not recalculated. For all matrices where the chemical was not detected, half of the quantitation limit was used as the concentration. This convention has been used consistently throughout this project. The COPCs evaluated are listed in Table D-1 by matrix.

D.3.2 Fish Tissue

Using ProUCL 2.1, mercury and PCB fish tissue data sets were determined to have non-parametric distributions. (ProUCL 2.1 confirmed the initial assignment of lognormal distributions to the arsenic and PCDD/PCDF [toxicity equivalence quotient, or TEQ] data sets.) The non-parametric 95 percent UCLs on the mean calculated were similar to (within 10 percent of) the original UCLs (Table D-1). The non-parametric UCL on the mean for mercury is 1.13 mg/kg, slightly higher than the original UCL, based on a normal distribution, of 1.08 mg/kg. PCBs have a non-parametric (97.5 percent Chebyshev [mean, std]) UCL of 1.0 mg/kg versus the original lognormal 95 percent UCL on the mean of 0.91 mg/kg.

D.3.3 Sediment – General

For sediment, the 0 to 0.3 meter (m) depth samples or the length-weighted average of samples in this interval were used to calculate the 95 percent UCLs on the mean.

D.3.4 Northern Basin Sediments

In the northern basin sediments, antimony, benzo(a)pyrene, and hexachlorobenzene were determined by ProUCL to have non-parametric distributions, and the resulting EPCs were noticeably different (Table D-1). The EPCs for antimony (97.5 percent Chebyshev [mean, std] UCL) and hexachlorobenzene (99 percent Chebyshev [mean, std] UCL) decreased, going from 9.2 to 6.78 mg/kg and 0.41 to 0.22 mg/kg, respectively. (The original lognormal UCL calculated for antimony was greater than the maximum value of 9.2 mg/kg, so the maximum was used as the EPC.)

The EPC for benzo(a)pyrene (97.5 percent Chebyshev [mean, std] UCL) went from 0.156 to 0.345 mg/kg, more than double the original EPC. It should be noted that the northern basin data set has fewer data points than the southern basin data set, with an average of 29 values (ranging from 25 to 36) for each COPC evaluated.

D.3.5 Southern Basin Sediments

Seven COPCs, consisting of two metals (arsenic and chromium), one SVOC (hexachlorobenzene), and four PAHs (benzo[a]pyrene, benzo[b]fluoranthene, dibenz[a,h]anthracene, and naphthalene) were reevaluated using the ProUCL 2.1 software. The initial assignment of a lognormal distribution was confirmed for all seven COPCs. However, the ProUCL software provides a recommendation of the UCL value to use for lognormal data sets. This recommendation is based on the degree of skew in the data, and for data sets with extremely high skew values (defined as standard deviations greater than 2.0), ProUCL no longer recommends the H-statistic-based UCL calculation (which is the USEPA default calculation method [USEPA, 1992d]).

Two of the southern basin sediments, naphthalene and hexachlorobenzene, had high skew values (standard deviations between 2.5 and 3.0), and for these the ProUCL software recommended use of the greater of the 95 percent Chebyshev (mean, std) UCL and the 95 percent Chebyshev (minimum variance unbiased estimator [MVUE]) UCL. Using the recommended UCL calculation, the ProUCL-based EPC for naphthalene approximately doubled, from 1,050 to 2,190 mg/kg; whereas the EPC for hexachlorobenzene decreased by more than half, from 10.5 to 3.8 mg/kg.

The ProUCL documentation identifies data sets with a standard deviation approaching or exceeding 3 as "badly behaved" and requiring further investigation before the EPC can be accurately estimated. The standard deviations for hexachlorobenzene (2.73) and naphthalene (2.95) approached this value. In addition, the maximum naphthalene concentration was 26,000 mg/kg, while the next highest concentration was 145 mg/kg. (When the 26,000 is removed from the data set, the EPC changes from 2,190 to 52.5 mg/kg; the skew is still high, with a standard deviation of 2.7.) Hexachlorobenzene data are lognormally distributed, but because the data has high skew, the 95 percent Chebyshev (MVUE) UCL was applied.

D.4 Recalculation of Risk and Hazard Using ProUCL-Generated Exposure Point Concentrations

The non-parametric UCLs generated using ProUCL were used to recalculate the overall risks in the fish tissue and lake bottom sediments (see Table D-2).

There are no significant changes to the overall cancer risks and non-cancer hazards in fish tissue based on the use of the non-parametric UCLs. Changes to the non-cancer HIs for fish ingestion increased only minimally (by less than 1 percent) for both the RME and CT scenarios. Minimal increases (about 1 to 2 percent) were noted for RME and CT cancer risks calculated using the ProUCL-generated EPCs.

In the southern basin sediments, the cancer risks decreased slightly as a result of the change in the hexachlorobenzene EPC. (Naphthalene has no cancer slope factor, and therefore changes to the naphthalene EPC do not impact the cancer risk.) The non-cancer hazards in the southern basin did increase based on the change in the naphthalene EPC. The most significant difference from the previous calculations is that the non-cancer hazard increased from 0.54 to 0.70 (but is still below 1.0) for young children in the southern basin.

The overall cancer risks calculated in the northern basin were slightly higher (because of the increase in benzo[a]pyrene EPC) and non-cancer hazards were slightly lower (due to a decrease in the antimony and hexachlorobenzene EPCs), but the change in these values did not affect whether or not there was a risk exceeding target levels for a particular pathway.

D.5 References

US Environmental Protection Agency (USEPA). 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A); Section 6.4. EPA/540/1-89/002. December. Interim Final.

USEPA. 1992. Supplemental Guidance to RAGS: Calculating the Concentration Term. USEPA Office of Solid Waste and Emergency Response Publication 9285.7-08I (NTIS number PB-92-963373). May.

USEPA. 2002. ProUCL Version 2.1. Software and User's Guide. Prepared for USEPA Region 3 by Lockheed-Martin Environmental Systems and distributed by USEPA National Exposure Research Laboratory, Las Vegas, NV. July.

Table D-1. Exposure Point Concentrations for Key COPCs Evaluated by ProUCL 2.1 (listed by matrix)

FISH	HHRA Default Values (distribution forced to normal or lognormal)		Values and distribution calculated by ProUCL 2.1 software				General Statistics	
Chemical of Potential Concern	Best-Fit UCL (mg/kg)	Best-Fit Distribution (normal, lognormal, or maximum)	ProUCL (mg/kg)	ProUCL Distribution	Standard deviation (of logtransformed variable)	Skew	Percent Difference [(ProUCL/Original) x 100%]	Number of data points (n)
Arsenic	8.0E-01	lognormal	8.0E-01	lognormal	0.95	mild to moderate	**-0.1%**	11
Mercury (as MeHg)	**1.08E+00**	**normal**	**1.13E+00**	**non-parametric**	**0.56**	**mild to moderate**	**4.6%**	**728**
PCBs[1]	**9.13E-01**	**lognormal**	**1.00E+00**	**non-parametric**	**1.01**	**moderate to high**	**9.7%**	**130**
High MW PCBs[1]	**4.79E-01**	**lognormal**	**4.52E-01**	**non-parametric**	**1.35**	**moderate to high**	**-5.6%**	**120**
Low MW PCBs[1]	**5.77E-01**	**lognormal**	**6.25E-01**	**non-parametric**	**1.03**	**moderate to high**	**8.4%**	**130**
PCDD/PDCF (TEQ-Total)	1.96E-05	lognormal	1.96E-05	lognormal	1.26	moderate to high	**-0.2%**	30

NORTHERN BASIN SEDIMENT	HHRA Default Values (distribution forced to normal or lognormal)		Values and distribution calculated by ProUCL 2.1 software				General Statistics	
Chemical of Potential Concern	Best-Fit UCL (mg/kg)	Best-Fit Distribution (normal, lognormal, or maximum)	ProUCL (mg/kg)	ProUCL Distribution	Standard deviation (of logtransformed variable)	Skew	Percent Difference [(ProUCL/Original) x 100%]	Number of data points (n)
Arsenic	3.86E+00	lognormal	3.86E+00	lognormal	1.11	moderate to high	**0.0%**	25
Antimony[1]	**9.20E+00**	**Max concentration**	**6.78E+00**	**non-parametric**	**1.93**	**moderate to high**	**-26.3%**	**25**
Iron	5.79E+03	lognormal	5.79E+03	lognormal	0.72	mild to moderate	**0.1%**	25
Benzo (a) pyrene[1]	**1.56E-01**	**lognormal**	**3.45E-01**	**non-parametric**	**1.12**	**moderate to high**	**121.2%**	**36**
Hexachlorobenzene[3]	**4.06E-01**	**lognormal**	**2.21E-01**	**non-parametric**	**2.14**	**extremely high**	**-45.6%**	**32**

SOUTHERN BASIN SEDIMENT	HHRA Default Values (distribution forced to normal or lognormal)		Values and distribution calculated by ProUCL 2.1 software				General Statistics	
Chemical of Potential Concern	Best-Fit UCL (mg/kg)	Best-Fit Distribution (normal, lognormal, or maximum)	ProUCL (mg/kg)	ProUCL Distribution	Standard deviation (of logtransformed variable)	Skew	Percent Difference [(ProUCL/Original) x 100%]	Number of data points (n)
Arsenic	1.24E+01	lognormal	1.24E+01	lognormal	1.15	moderate to high	**0.0%**	51
Chromium	2.05E+02	lognormal	2.05E+02	lognormal	1.32	moderate to high	**0.0%**	66
Hexachlorobenzene[2]	**1.05E+01**	**lognormal**	**3.83E+00**	**lognormal**	**2.73**	**extremely high**	**-63.5%**	**63**
Benzo (a) pyrene	7.36E+00	lognormal	7.36E+00	lognormal	1.97	high	**0.0%**	62
Dibenz (a,h) anthracene	1.62E+00	lognormal	1.62E+00	lognormal	1.89	high	**0.0%**	62
Benzo (b) fluoranthene	9.75E+00	lognormal	9.75E+00	lognormal	1.93	high	**0.0%**	62
Naphthalene[2]	**1.05E+03**	**lognormal**	**2.19E+03**	**lognormal**	**2.95**	**extremely high**	**108.8%**	**64**

Notes:
HHRA default values as shown on RAGS Tables 3.1, 3.2, and 3.3 except as noted. Data distribution assigned using best-fit methodology as described in HHRA Section 4.7.3.
Highlighting (and bold text) indicates UCL changed based on the determination of the data distribution.
Unless otherwise noted, lognormal UCLs were calculated with Land's H Statistic and non-parametric UCLs used 95% Chebyshev(mean,std) UCL; for detailed discussion of UCL selection see the ProUCL manual, "Recommendations to Compute a 95th Percentile UCL of the Population Mean."
* EPC values from RAGS Table 7.1.

[1] Chebyshev (mean, std) 97.5% UCL used to estimate the Exposure Point Concentration (EPC).

[2] ProUCL software recommendation is based on skew and sample size; the Land's H Statistic was determined not to be the appropriate estimator of the 95%UCL, the greater of the 95% Chebyshev (MVUE) UCL and 95% Chebyshev (mean, std) UCL was used.

[3] Chebyshev (mean, std) 99% UCL used to estimate the Exposure Point Concentration (EPC).

Table D-2. Comparison of Cancer Risk and Non-Cancer Hazard Calculations using Default Distributions and ProUCL Software

Pathway	Non-Cancer Hazard Index				Cancer Risk			
	RME		Central Tendency		RME		Central Tendency	
	Original	ProUCL Updated	Original	ProUCL Updated	Original	ProUCL Updated	Original	ProUCL updated
Fish Ingestion - Adult Angler	**18.2**	**19.1**	**4.48**	**4.70**	**7.8E-04**	**8.1E-04**	**4.3E-05**	**4.4E-05**
Fish Ingestion - Young Child Angler	**28.3**	**29.8**	**6.97**	**7.31**	**2.4E-04**	**2.5E-04**	**4.4E-05**	**4.5E-05**
Fish Ingestion - Older Child Angler	**19.8**	**20.8**	**4.86**	**5.10**	**3.4E-04**	**3.5E-04**	**4.6E-05**	**4.7E-05**
Sediments - Northern Basin - Adult Recreational	0.020	0.019	0.007	0.007	**1.3E-06**	**1.5E-06**	1.4E-07	1.7E-07
Sediments - Northern Basin - Young Child Recreational	0.221	0.217	0.060	0.058	**3.8E-06**	**4.7E-06**	5.7E-07	6.7E-07
Sediments - Northern Basin - Older Child Recreational	0.070	0.071	0.012	0.012	**3.9E-06**	**5.0E-06**	2.5E-07	3.1E-07
Sediments - Northern Basin - Construction Worker	0.037	0.036	0.013	0.013	1.5E-07	1.8E-07	3.8E-08	4.4E-08
Sediments - Southern Basin - Adult Recreational	0.039	0.048	0.007	0.009	**1.0E-05**	**9.6E-06**	5.3E-07	5.1E-07
Sediments - Southern Basin - Young Child Recreational	0.535	0.704	0.047	0.056	**3.2E-05**	**3.1E-05**	**2.0E-06**	**1.9E-06**
Sediments - Southern Basin - Older Child Recreational	0.253	0.352	0.012	0.016	**3.5E-05**	**3.4E-05**	**1.0E-06**	9.6E-07
Sediments - Southern Basin - Construction Worker	0.219	0.273	0.062	0.072	**3.7E-06**	**3.6E-06**	8.3E-07	8.0E-07
Sediments - Wetland #6 (North) - Adult Recreational	0.042	n<10	0.015	n<10	**6.5E-05**	**n<10**	**7.1E-06**	**n<10**
Sediments - Wetland #6 (North) - Older Child Recreational	0.115	n<10	0.026	n<10	**2.6E-04**	**n<10**	**1.4E-05**	**n<10**
Sediments - Wetland #6 (North) - Construction Worker	0.078	n<10	0.029	n<10	**7.6E-06**	**n<10**	**1.5E-06**	**n<10**
Sediments - Wetland #10 (North) - Adult Recreational	0.041	n<10	0.015	n<10	**5.0E-06**	**n<10**	5.4E-07	n<10
Sediments - Wetland #10 (North) - Older Child Recreational	0.161	n<10	0.026	n<10	**1.7E-05**	**n<10**	**1.0E-06**	**n<10**
Sediments - Wetland #10 (North) - Construction Worker	0.076	n<10	0.026	n<10	6.0E-07	n<10	1.4E-07	n<10
Sediments - Wetland #12 (South) - Adult Recreational	0.023	n<10	0.004	n<10	**3.7E-06**	**n<10**	**1.9E-07**	n<10
Sediments - Wetland #12 (South) - Older Child Recreational	0.122	n<10	0.007	n<10	**1.4E-05**	**n<10**	**3.7E-07**	n<10
Sediments - Wetland #12 (South) - Construction Worker	0.135	n<10	0.042	n<10	**1.4E-06**	**n<10**	**2.7E-07**	n<10
Sediments - Wetland #19 (South) - Adult Recreational	0.027	n<10	0.005	n<10	**1.4E-05**	**n<10**	7.7E-07	n<10
Sediments - Wetland #19 (South) - Older Child Recreational	0.157	n<10	0.009	n<10	**4.9E-05**	**n<10**	**1.4E-06**	**n<10**
Sediments - Wetland #19 (South) - Construction Worker	0.156	n<10	0.047	n<10	**5.4E-06**	**n<10**	**1.2E-06**	**n<10**
Soils - Dredge Spoils (Surface) - Adult Recreational	0.026	n<10	0.009	n<10	**1.8E-06**	**n<10**	1.9E-07	n<10
Soils - Dredge Spoils (Surface) - Older Child Recreational	0.075	n<10	0.016	n<10	**4.7E-06**	**n<10**	3.5E-07	n<10
Soils - Dredge Spoils (Surface) - Construction Worker	0.048	n<10	0.018	n<10	2.1E-07	n<10	6.0E-08	n<10
Soils - Dredge Spoils (Subsurface) - Construction Worker	0.126	n<10	0.043	n<10	**1.1E-06**	**n<10**	2.4E-07	n<10
Surface Water - Adult Recreational	0.020	n<10	0.007	n<10	6.1E-08	n<10	7.8E-09	n<10
Surface Water - Young Child Recreational	0.037	n<10	0.014	n<10	2.5E-08	n<10	9.9E-09	n<10
Surface Water - Older Child Recreational	0.024	n<10	0.009	n<10	3.0E-08	n<10	9.4E-09	n<10
Surface Water - Construction Worker	0.002	n<10	0.001	n<10	4.2E-10	n<10	1.1E-10	n<10

Notes:

Hazard Indices and Cancer Risks in **boldface** exceed target levels (HI > 1, cancer risk > 10^{-6})

For data sets where N <10, the maximum concentration was used as the EPC in the HHRA. The data set is too small for meaningful statistical analysis (and no ProUCL calculation was attempted).