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Sauget Area 2 Sites Group
St. Louis, Missouri

Sauget Area 2

ENSR INTERNATIONAL

Human Health Risk Assessment
Sauget Area 2
Sauget, Illinois

Volume I: Main Text

ENSR Corporation
August 31, 2003
Document Number 06105-009-300

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St. Louis, Missouri

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LIST OF ACRONYMS

AAF	Absorption Adjustment Factor
ABRTF	American Bottoms Regional Wastewater Treatment Facility
ACGIH	American Conference of Governmental Industrial Hygienists
AOC	Administrative Order on Consent
ARAR	Applicable or Relevant and Appropriate Requirement
ASTM	American Society for Testing and Materials
ATSDR	Agency for Toxic Substances and Disease Registry
AWQC	Ambient Water Quality Criteria
bgs	below ground surface
CADD	Chronic Average Daily Dose
CAS	Chemical Abstracts Service
COC	Constituent of Concern
COPC	Constituent of Potential Concern
CSF	Cancer Slope Factor
CSM	Conceptual Site Model
DDA	Downstream of the Discharge Area
DF	Dilution Factor
DQL	Data Quality Level
EFH	Exposure Factors Handbook
ELCR	Excess Lifetime Cancer Risk
EPC	Exposure Point Concentration
HEAST	Health Effects Assessment Summary Tables
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
IEPA	Illinois Environmental Protection Agency
IRIS	Integrated Risk Information System
LADD	Lifetime Average Daily Dose
LED10	Lower 95% Limit on a Dose Associated with a 10% Response
LMS	Linearized Multi-Stage
LOAEL	Lowest Observed Adverse Effect Level
MCL	Maximum Contaminant Level
MCPA	2-Methyl-4-chlorophenoxyacetic acid
MCPP	2-(2-Methyl-4-chlorophenoxy) propionic acid (MCPP)
MLE	Most Likely Exposure
MOE	Margin of Exposure
MSL	Mean Sea Level
NCEA	National Center for Environmental Assessment
NCP	National Contingency Plan
NIOSH	National Institute of Occupational Safety and Health

LIST OF ACRONYMS (Cont'd)

NOAA	National Oceanographic and Atmospheric Administration
NOAEL	No Observed Adverse Effect Level
NWS	National Weather Service
PAH	Polycyclic Aromatic Hydrocarbon
PC	Skin Permeability Constant
PCB	Polychlorinated Biphenyl
PDA	Plume Discharge Area
PEF	Particulate Emission Factor
PM10	Particulate Matter with Mean Diameter ≤ 10 microns
PQL	Practical Quantitation Limit
PRG	Preliminary Remediation Goal
PRP	Potentially Responsible Party
QAPP	Quality Assurance Project Plan
RAGS	Risk Assessment Guidance for Superfund
RBC	Risk-Based Concentration
RfC	Reference Concentration
RfD	Reference Dose
RG	Remedial Goal
RI/FS	Remedial Investigation and Feasibility Study
RME	Reasonable Maximum Exposure
RO	Remediation Objective
SA2SG	Sauget Area 2 Sites Group
SOW	Scope of Work
SPLP	Synthetic Precipitation Leaching Procedure
SQL	Sample Quantitation Limit
SSL	Soil Screening Level
SSP	Support Sampling Plan
SVOC	Semi-Volatile Organic Compound
TACO	Tiered Approach to Corrective Action Objectives
TCDD	Tetrachlorodibenzo-p-dioxin
TCLP	Toxicity Characteristic Leaching Procedure
TEF	Toxic Equivalence Factor
TEQ	Toxic Equivalents Concentration
UCL	Upper Confidence Limit
UDA	Upstream of the Discharge Area
USACE	United States Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compound
WHO	World Health Organization

EXECUTIVE SUMMARY

This report presents the baseline Human Health Risk Assessment (HHRA) for Sauget Area 2, located in Sauget and Cahokia, Illinois. On November 20, 2000, the Sauget Area 2 Sites Group (SA2SG) Potentially Responsible Parties (PRPs) signed an Administrative Order on Consent (AOC), Docket Number V-W-01-C-622, to perform a Remedial Investigation and Feasibility Study (RI/FS) at Sauget Area 2 Sites O, P, Q, R, and S. The U.S. Environmental Protection Agency (USEPA) signed the AOC on November 24, 2000. This HHRA is submitted to partially fulfill the requirements of Section V.2. of the AOC, and of Section 2.6 of Task 3 of the Scope of Work presented as Attachment B of the AOC. The HHRA was conducted to satisfy the AOC, as well as to be compliant with the National Contingency Program (NCP) (USEPA, 1990).

The HHRA was conducted in accordance with USEPA-approved Human Health Risk Assessment Workplan (HHRA Workplan) dated May 25, 2001 (including September 2001 and May 2002 revised pages), which was submitted as Section 11 of Volume 1 of the Support Sampling Plan (SSP) for Sauget Area 2 (URS, 2001). The HHRA Workplan is provided as Appendix A to this report.

The HHRA was conducted using data from environmental samples collected from the study area in accordance with the USEPA-approved SSP. The SSP for Sauget Area 2 was designed to investigate two major areas of the Sauget Area 2 study area (the media sampled in each are identified in parentheses):

- The Sites O, P, Q, R, and S (waste, soil, groundwater, leachate, ambient air – all sites; sediment, surface water, fish tissue – Site Q Pond only); and
- Mississippi River adjacent to the Sites (sediment, surface water and fish tissue).

The baseline HHRA has been conducted in accordance with the four-step paradigm for human health risk assessments developed by USEPA (USEPA, 1989a). The risk assessment results are summarized by step below.

Data Evaluation and Hazard Identification

The purpose of the data evaluation and hazard identification process is two-fold: 1) to evaluate the nature and extent of release of constituents present at the site; and 2) to select a subset of these constituents identified as Constituents of Potential Concern (COPCs) for quantitative evaluation in the risk assessment. This step of the risk assessment involves compiling and summarizing the data for the risk assessment, and selecting COPCs based on a series of screening steps. Several factors were considered in selecting COPCs, including natural background, frequency of detection, and toxicity, and

essential nutrient status. COPC selection for evaluation in the quantitative HHRA was performed on each of the following media:

- Surface soil (0-6 inches below ground surface (bgs))
- Combined soil (combined surface, subsurface (6 feet bgs), and waste)
- Shallow groundwater, mid groundwater, and leachate
- Surface water
- Sediment
- Fish fillet

Screening was also performed for a separate analysis of deep groundwater and ambient air, which was not included in the quantitative HHRA. An evaluation of the soil-to-groundwater pathway was also performed.

COPCs were identified in Site O, Site O (North), Site P, Site Q (North), Site Q (Central), Site Q (South), and Site S surface soils. No COPCs were identified in Site R surface soils. COPCs in combined soils were identified in all sites for the construction worker direct-contact pathway. COPCs in combined soils for the ambient air pathway (non-excavation scenarios) were identified in all Sites with the exception of Site Q (Central).

The selection of COPCs for groundwater/leachate was conducted on a location-by-location basis. Samples with screening intervals or sample collection depths between 0 and 30 feet bgs were included in the evaluation. Because groundwater in the area is not used a source of drinking water, exposure to COPCs in groundwater could occur due to either volatilization of COPCs into indoor or outdoor air, or contact with COPCs in groundwater exposed in an excavation trench. Per the HHRA Workplan, a 15-foot bgs excavation depth is assumed (shallow groundwater, leachate). Moreover, volatilization from groundwater through the soil column to indoor and/or outdoor air is generally assumed to occur at depths of up to 30 feet bgs (shallow groundwater, mid groundwater/leachate). Based on these considerations, a total of 13 groundwater sampling locations were included in the evaluation. Of the 13 groundwater sampling locations and three leachate wells evaluated, COPCs were identified in only three groundwater locations and in all three leachate wells.

Arsenic was identified as the only COPC in Mississippi River sediment; no COPCs were identified in Mississippi River surface water. No COPCs were identified in Site Q Pond sediment. Several COPCs were identified in the Site Q Pond surface water. COPCs were identified in fish fillet samples from both the Mississippi River and the Site Q Ponds.

Dose-Response Assessment

The purpose of the dose-response assessment is to identify the types of adverse health effects a constituent may potentially cause, and to define the relationship between the dose of a constituent and the likelihood or magnitude of an adverse effect (response) (USEPA, 1989a). Adverse effects are classified by USEPA as potentially carcinogenic or noncarcinogenic (i.e., potential effects other than cancer). Dose-response relationships are defined by USEPA for oral exposure and for exposure by inhalation. Oral toxicity values are also used to assess dermal exposures, with appropriate adjustments, because USEPA has not yet developed values for this route of exposure. Combining the results of the toxicity assessment with information on the magnitude of potential human exposure provides an estimate of potential risk. Sources of the published toxicity values in this risk assessment include USEPA's IRIS database (USEPA, 2003a), HEAST (USEPA, 1997b), and the USEPA NCEA in Cincinnati, Ohio.

Exposure Assessment

The purpose of the exposure assessment is to predict the magnitude and frequency of potential human exposure to each of the COPCs retained for quantitative evaluation in the HHRA. The first step in the exposure assessment process is the characterization of the setting of the site and surrounding area. Current and potential future site uses and potential receptors (i.e., people who may contact the impacted environmental media of interest) are then identified. Potential exposure scenarios identifying appropriate environmental media and exposure pathways for current and potential future site uses and receptors are then developed. Those potential exposure pathways for which COPCs are identified and are judged to be complete are evaluated quantitatively in the risk assessment. Both Reasonable Maximum Exposure (RME) and Most Likely Exposure (MLE) scenarios were evaluated for each receptor in the HHRA.

To guide identification of appropriate exposure pathways and receptors for evaluation in the risk assessment, a conceptual site model (CSM) for human health was developed. The purpose of the CSM is to identify source areas, potential migration pathways of constituents from source areas to environmental media where exposure can occur, and to identify potential human receptors based on current and future site uses. Based on the CSM, the following receptors and pathways were evaluated in the HHRA:

- On-site indoor industrial worker - potential exposure to COPCs via inhalation of volatile constituents present in indoor air due to vapor intrusion from groundwater/leachate.

- On-site outdoor industrial worker - potential exposure to COPCs in surface soil via incidental ingestion and dermal contact, and via inhalation of non-volatile COPCs that may be suspended as

dusts from surface soils, and to COPCs that may volatilize into outdoor air from underlying groundwater and from soils (combined surface soil, subsurface soil, and waste).

- Trespassing teenager - potential exposure to COPCs in surface soil via incidental ingestion and dermal contact, and via inhalation of non-volatile COPCs that may be suspended as dusts from surface soils, and to COPCs that may volatilize into outdoor air from underlying groundwater and from soils (combined surface soil, subsurface soil, and waste), and to COPCs in surface water and sediment from the Site Q Pond and the Mississippi River (note, no COPCs were identified in Site Q Pond sediment).

- On-site construction/utility worker - potential exposure to COPCs in soils (combined surface soil, subsurface soil, waste) via incidental ingestion and dermal contact, and via inhalation of volatile emissions and particulates suspended during excavation activity, and to COPCs in shallow groundwater and leachate via incidental ingestion and dermal contact, and via inhalation of COPCs volatilized from standing water in an excavation trench.

- Recreational fisher - potential exposure to COPCs in surface water, sediment, and fish fillet from the Site Q Pond and the Mississippi River (note, no COPCs were identified in Site Q Pond sediment).

Exposure Point Concentrations (EPCs) were derived using both measurement (analytical) data collected during the field investigation, and modeled data (e.g., volatilization to ambient and indoor air).

Risk Characterization

The potential risk to human health associated with potential exposure to COPCs in environmental media at the site is evaluated in this step of the risk assessment process. Risk characterization is the process in which the dose-response information (Section 4.0) is integrated with quantitative estimates of human exposure derived in the Exposure Assessment (Section 5.0). The result is a quantitative estimate of the likelihood that humans will experience any adverse health effects given the exposure assumptions made. Two general types of health risk are characterized for each potential exposure pathway considered: potential carcinogenic risk and potential noncarcinogenic hazard. Carcinogenic risk is evaluated by averaging exposure over a normal human lifetime, which, based on USEPA guidance (1989a), is assumed to be 70 years. Noncarcinogenic hazard is evaluated by averaging exposure over the total exposure period.

The potential carcinogenic risk for each exposure pathway is calculated for each receptor. In current regulatory risk assessment, it is assumed that cancer risks are additive or cumulative. Pathway and area-specific risks were summed to estimate the total site potential cancer risk for each receptor. The total site cancer risks for each receptor group are compared to the USEPA's target risk range of 10^{-4} to

10^{-6}. Any COPC that causes an exceedance of the 10^{-4} risk level for a particular receptor is designated a Constituent of Concern (COC). Both RME and MLE results are considered in the identification of COCs.

The target risk levels used for the identification of COCs are based on USEPA guidance and Illinois Tiered Approach to Corrective Action Objectives (TACO) guidance. Specifically, USEPA provides the following guidance (USEPA, 1991a):

> "Where the cumulative carcinogenic site risk to an individual based on reasonable maximum exposure for both current and future land use is less than 10^{-4}, and the non-carcinogenic hazard quotient is less than 1, action generally is not warranted unless there are adverse environmental impacts." and,
>
> "The upper boundary of the risk range is not a discrete line at 1×10^{-4}, although EPA generally uses 1×10^{-4} in making risk management decisions. A specific risk estimate around 10^{-4} may be considered acceptable if justified based on site-specific conditions."

The Illinois Environmental Protection Agency (IEPA) provides the following summary for the evaluation of cumulative risk for carcinogens (IEPA, 2002b, Fact Sheet 13: Mixture Rule):

> "The cumulative risk of carcinogenic contaminants attacking the same target must not exceed 1 in 10,000 [10^{-4}]. Therefore, the risk from all on-site similar acting carcinogens must be added together. If this cumulative risk level is greater than 1 in 10,000, corrective action must be taken to reach an acceptable risk level."

The potential for exposure to a constituent to result in adverse noncarcinogenic health effects is estimated for each receptor by comparing the dose for each COPC with the RfD for that COPC. The resulting ratio, which is unitless, is known as the HQ for that constituent. The target HQ is defined as an HQ of less than or equal to one (USEPA, 1989a). When the HQ is less than or equal to 1, the RfD has not been exceeded, and no adverse noncarcinogenic effects are expected. If the HQ is greater than 1, there may be a potential for adverse noncarcinogenic health effects to occur; however, the magnitude of the HQ cannot be directly equated to a probability or effect level. HQs for a given pathway are summed to provide an HI. Pathway HIs are summed to provide a total receptor HI. When the HI is less than 1, the target has not been exceeded, and no adverse noncarcinogenic effects are expected. This initial HI summation assumes that all the COPCs are additive in their toxicity, and is considered only a screening step as additive toxicity may not be correct. If the HI is greater than 1, further evaluation is necessary to determine if the COPCs are additive in toxicity. This evaluation is termed a toxic endpoint analysis. Any COPC that causes an exceedance of a toxic-endpoint specific HI of 1 was designated a COC.

Risk Assessment Results

As previously stated, COPCs that significantly contribute to an exceedance of the 10^{-4} risk level are identified as COCs. COPCs that significantly contribute to an exceedance of the target endpoint HI of 1 are also identified as COCs. Table ES-1 presents the COCs by site and receptor. Figure ES-1 indicates the locations of the COCs. COCs were identified for the following areas and receptors:

Site	Receptor
Site O	Outdoor Industrial Worker Construction/Utility Worker
Site O (North)	Outdoor Industrial Worker Construction/Utility Worker Trespassing Teenager
Site Q (North)	Construction/Utility Worker
Site Q (Pond)	Recreational Fisher
Site R	Outdoor Industrial Worker Construction/Utility Worker
Site S	Outdoor Industrial Worker Construction/Utility Worker Trespassing Teenager

Details regarding which COCs were identified for each area/receptor are provided in Table ES-1. The majority of the areas where COCs were identified are not currently used, or are isolated, as described below. Exposure information relevant to the receptors for which COCs were identified is also discussed.

Site O and Site O (North) are located in an isolated area and are not currently used. As discussed in Section 2.3.1, former wastewater treatment lagoons in the area are covered and vegetated, and the vegetation is mowed periodically during the warmer months of the year. Therefore, the potential risks presented above for workers represent the future scenario (the only activity under the current scenario is mowing, which is limited in frequency and duration). The receptor assumptions are extremely conservative for this area, as it is unlikely that an outdoor industrial worker would access the site for 190 days per year. It is also unlikely that construction/utility work would occur in this area for the assumed 40 day period (RME) or 20 day period (MLE). Due to the isolated nature of the site, it is unlikely that trespassers would enter the site as frequently as assumed (26 days RME, 13 days MLE).

A 10-acre site on Site Q (North) is currently used by Rivercity Landscape Supply as a bulk storage terminal for lawn and garden products. Raw landscape products such as mulch, rock and soil are processed and packed on this portion of the site. Access to some portions of the site is restricted by fencing and gates. Other parts of the site have unrestricted access. As noted above, potential risk

exceedances for this area were identified for the construction/utility worker, not for the outdoor industrial worker. Therefore, these are potential risks for a future construction/utility worker, as there is no current excavation work in this area.

Fishing can occur in the Site Q Ponds; however, as noted in Section 2.3.3, fish are only present as a result of flood events. After the ponds dry out, fish are not reintroduced until another flood event, although water may collect in the ponds from precipitation. It is therefore extremely unlikely that a recreational fisher would be able to obtain 22 fish meals per year from the Site Q Ponds, as assumed by the RME scenario.

Site R is a closed industrial-waste disposal area owned by Solutia, Inc. The site is not currently used. Access to Site R is restricted by fencing and is monitored by Solutia plant personnel. Therefore, the potential risks presented above represent the future scenario. It is unlikely that an outdoor industrial worker will access the site 190 days per year in the future. Excavation is not allowed at Site R unless a permit is obtained from the plant and appropriate measures are taken to protect workers undertaking intrusive activities. Therefore, the risk assessment for the construction/utility worker represents a very conservative scenario.

Site S is an unused, 1-acre area. The northern portion of the site is grassed, and its southern portion is covered with gravel and fenced. Therefore, the potential risks presented above for workers represent the future scenario only, and the exposure frequency assumptions are very conservative given the small size of the site. Additionally, due to the fencing of portions of the site and the small size, trespassers are unlikely to access the site frequently.

In summary, several areas of Sauget Area 2 were found to pose risks above the risk management benchmarks. However, it should be noted that numerous conservative assumptions were made in the risk assessment, and actual risks are likely to be lower than predicted in this report.

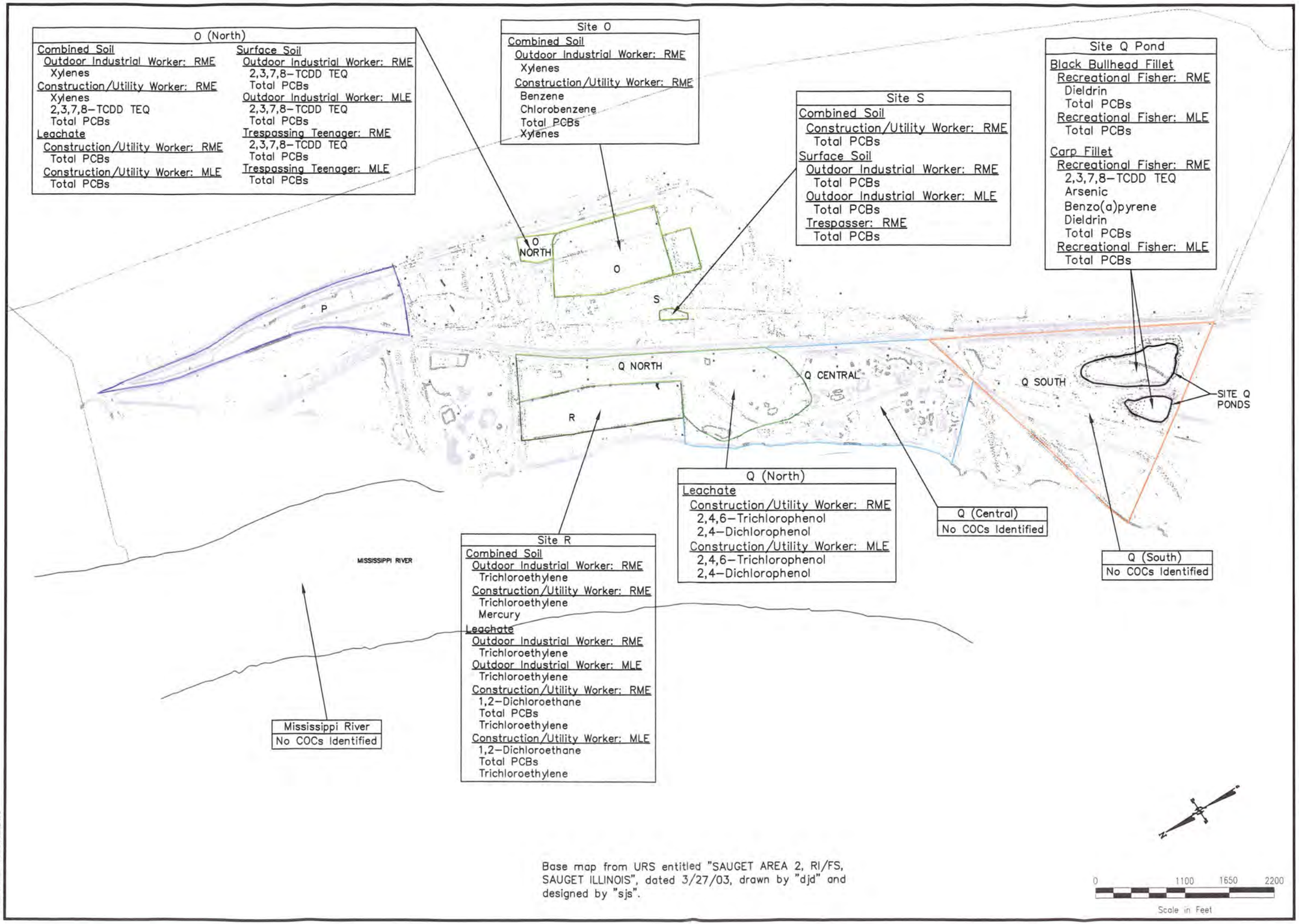
TABLE ES-1
SUMMARY OF CONSITUENTS OF CONCERN (COCs)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Receptor	Scenario	COC	Cancer (a) Potential Risk	Non-Cancer (a) HQ	Endpoint	Medium	Pathway	EPC	Units
O	Outdoor Industrial Worker	RME	Xylenes	ND	3.23	Neurological	Combined soil	Inhalation	14000	mg/kg
O	Construction/Utility Worker	RME	Chlorobenzene	ND	1	Liver	Combined soil	Inhalation	760	mg/kg
O	Construction/Utility Worker	RME	Xylenes	ND	14.2	Neurological	Combined soil	Inhalation	14000	mg/kg
O	Construction/Utility Worker	RME	Benzene	NCOC	3.16	Immune	Combined soil	Inhalation	500	mg/kg
O	Construction/Utility Worker	RME	PCBs	NCOC	2.53	Immune, skin, eye	Combined soil	Ingestion/Dermal	298	mg/kg
O North	Outdoor Industrial Worker	RME	PCBs	1.66E-04	11.6	Immune, skin, eye	Surface soil	Ingestion/Dermal	709	mg/kg
O North	Outdoor Industrial Worker	RME	2,3,7,8-TCDD TEQ	4.59E-04	ND	ND	Surface soil	Ingestion/Dermal	0.0508	mg/kg
O North	Outdoor Industrial Worker	RME	Xylenes	ND	1.23	Neurological	Combined soil	Inhalation	3900	mg/kg
O North	Outdoor Industrial Worker	MLE	PCBs	NCOC	7.27	Immune, skin, eye	Surface soil	Ingestion/Dermal	709	mg/kg
O North	Outdoor Industrial Worker	MLE	2,3,7,8-TCDD TEQ	8.32E-05	ND	ND	Surface soil	Ingestion/Dermal	0.0508	mg/kg
O North	Construction/Utility Worker	RME	2,3,7,8-TCDD TEQ	1.15E-04	ND	ND	Combined soil	Ingestion/Dermal	0.0508	mg/kg
O North	Construction/Utility Worker	RME	Xylenes	ND	3.95	Neurological	Combined soil	Inhalation	3900	mg/kg
O North	Construction/Utility Worker	RME	PCBs	NCOC	25.7	Immune, skin, eye	Combined soil	Ingestion/Dermal	3030	mg/kg
O North	Construction/Utility Worker	RME	PCBs	NCOC	2.81	Immune, skin, eye	Leachate	Ingestion/Dermal	0.055	mg/L
O North	Construction/Utility Worker	MLE	PCBs	NCOC	5.48	Immune, skin, eye	Combined soil	Ingestion/Dermal	1780	mg/kg
O North	Construction/Utility Worker	MLE	PCBs	NCOC	1.4	Immune, skin, eye	Leachate	Ingestion/Dermal	0.055	mg/L
O North	Trespassing Teenager	RME	PCBs	NCOC	4.86	Immune, skin, eye	Surface soil	Ingestion/Dermal	709	mg/kg
O North	Trespassing Teenager	RME	2,3,7,8-TCDD TEQ	8.62E-05	ND	ND	Surface soil	Ingestion/Dermal	0.0508	mg/kg
O North	Trespassing Teenager	MLE	PCBs	NCOC	1.33	Immune, skin, eye	Surface soil	Ingestion/Dermal	709	mg/kg
Q North	Construction/Utility Worker	RME	2,4,6-Trichlorophenol	NCOC	8.43	Reproductive	Leachate	Ingestion/Dermal	12.5	mg/L
Q North	Construction/Utility Worker	RME	2,4-Dichlorophenol	ND	1.82	Immune	Leachate	Ingestion/Dermal	170	mg/L
Q North	Construction/Utility Worker	MLE	2,4,6-Trichlorophenol	NCOC	4.21	Reproductive	Leachate	Ingestion/Dermal	12.5	mg/L
Q North	Construction/Utility Worker	MLE	2,4-Dichlorophenol	ND	0.907	Immune	Leachate	Ingestion/Dermal	170	mg/L
Q Pond	Recreational Fisher	RME	PCBs	3.79E-04	22.1	Immune, skin, eye	Black bullhead fillet	Ingestion	3.87	mg/kg
Q Pond	Recreational Fisher	RME	Dieldrin	7.84E-05	NCOC	NCOC	Black bullhead fillet	Ingestion	0.1	mg/kg
Q Pond	Recreational Fisher	MLE	PCBs	NCOC	2.76	Immune, skin, eye	Black bullhead fillet	Ingestion	3.87	mg/kg
Q Pond	Recreational Fisher	RME	PCBs	9.80E-04	57.1	Immune, skin, eye	Carp fillet	Ingestion	10	mg/kg
Q Pond	Recreational Fisher	RME	Dieldrin	1.49E-04	NCOC	NCOC	Carp fillet	Ingestion	0.19	mg/kg
Q Pond	Recreational Fisher	RME	2,3,7,8-TCDD TEQ	1.35E-04	ND	ND	Carp fillet	Ingestion	1.84E-05	mg/kg
Q Pond	Recreational Fisher	RME	Benzo(a)pyrene	6.44E-05	ND	ND	Carp fillet	Ingestion	0.18	mg/kg
Q Pond	Recreational Fisher	RME	Arsenic	6.02E-05	NCOC	NCOC	Carp fillet	Ingestion	0.82	mg/kg
Q Pond	Recreational Fisher	MLE	PCBs	NCOC	7.14	Immune, skin, eye	Carp fillet	Ingestion	10	mg/kg
R	Outdoor Industrial Worker	RME	Trichlororethylene	6.12E-04	NCOC	NCOC	Combined soil	Inhalation	2200	mg/kg
R	Outdoor Industrial Worker	RME	Trichlororethylene	6.93E-04	NCOC	NCOC	Leachate	Inhalation	150	mg/L
R	Outdoor Industrial Worker	MLE	Trichlororethylene	1.34E-04	NCOC	NCOC	Leachate	Inhalation	150	mg/L
R	Construction/Utility Worker	RME	Trichlororethylene	4.33E-05	1.22	Liver	Combined soil	Ingestion/Dermal	2200	mg/kg
R	Construction/Utility Worker	RME	Trichlororethylene	7.13E-04	14.43	Liver, Neurological	Leachate	Ingestion/Dermal/Inhalation	150	mg/L
R	Construction/Utility Worker	RME	PCBs	1.17E-04	204	Immune, skin, eye	Leachate	Ingestion/Dermal	3.98	mg/L
R	Construction/Utility Worker	RME	1,2-Dichloroethane	5.54E-05	8.42	Liver, kidney, GI, and skin	Leachate	Inhalation	50	mg/L
R	Construction/Utility Worker	RME	Mercury	ND	0.747	Immune	Combined soil	Ingestion/Dermal	699	mg/kg
R	Construction/Utility Worker	MLE	Trichlororethylene	2.19E-04	5.76	Liver	Leachate	Inhalation	150	mg/L
R	Construction/Utility Worker	MLE	PCBs	NCOC	102	Immune, skin, eye	Leachate	Ingestion/Dermal	3.98	mg/L
R	Construction/Utility Worker	MLE	1,2-Dichloroethane	NCOC	2.53	Liver, kidney, GI, and skin	Leachate	Inhalation	50	mg/L

TABLE ES-1
SUMMARY OF CONSITUENTS OF CONCERN (COCs)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Receptor	Scenario	COC	Cancer (a) Potential Risk	Non-Cancer (a) HQ	Non-Cancer (a) Endpoint	Medium	Pathway	EPC	Units
S	Outdoor Industrial Worker	RME	PCBs	2.37E-04	16.6	Immune, skin, eye	Surface soil	Ingestion/Dermal	1010	mg/kg
S	Outdoor Industrial Worker	MLE	PCBs	NCOC	5.17	Immune, skin, eye	Surface soil	Ingestion/Dermal	504	mg/kg
S	Construction/Utility Worker	RME	PCBs	NCOC	8.56	Immune, skin, eye	Combined soil	Ingestion/Dermal	1010	mg/kg
S	Trespassing Teenager	RME	PCBs	NCOC	6.91	Immune, skin, eye	Surface soil	Ingestion/Dermal	1010	mg/kg

Notes:
EPC - Exposure point concentration.
GI - Gastrointestinal.
HQ - Hazard Quotient.
MLE - Most Likely Exposure.
NCOC - Not a constituent of concern via this pathway.
ND - No Dose-Response value for this pathway.
PCBs - Polychlorinated Biphenyls.
RME - Reasonable Maximum Exposure.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
(a) - Only constituents driving a risk exceedance are presented on this table.



Base map from URS entitled "SAUGET AREA 2, RI/FS, SAUGET ILLINOIS", dated 3/27/03, drawn by "djd" and designed by "sjs".

FILENAME: 610501B.DWG

REVISIONS			
NO.:	DESCRIPTION:	DATE:	BY:

DESIGNED BY: KS
DRAWN BY: BLB
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CONSTITUENTS OF CONCERN (COCs)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, IL

PROJECT NUMBER: 06105-009
DATE: 7/03
SCALE: 1"=1100'

FIGURE NUMBER:
ES-1

SHEET NUMBER:
X

1.0 INTRODUCTION

This report presents the baseline human health risk assessment (HHRA) for Sauget Area 2, located in Sauget and Cahokia, Illinois. On November 20, 2000, the Sauget Area 2 Sites Group (SA2SG) Potential Responsible Parties (PRPs) signed an Administrative Order on Consent (AOC), Docket Number V-W-01-C-622, to perform a Remedial Investigation/Feasibility Study (RI/FS) at Sauget Area 2 Sites O, P, Q, R, and S. The United States Environmental Protection Agency (USEPA) signed the AOC on November 24, 2000. This HHRA is submitted to partially fulfill the requirements of Section V.2. of the AOC, and of Section 2.6 of Task 3 of the Scope of Work (SOW) presented as Attachment B of the AOC. The HHRA was conducted to satisfy the AOC, as well as to be compliant with the National Contingency Plan (NCP) (USEPA, 1990).

The HHRA was conducted in accordance with the USEPA-approved Human Health Risk Assessment Workplan (HHRA Workplan) dated May 25, 2001 (including September 2001 and May 2002 revised pages), which was submitted as Section 11 of Volume 1 of the Support Sampling Plan (SSP) for Sauget Area 2 (URS, 2001). The HHRA Workplan is provided as Appendix A to this report.

The HHRA was conducted using data from environmental samples collected from the study area in accordance with the USEPA-approved SSP. Validated laboratory analytical data are compiled in the Data Validation Report (URS, 2003a), and field data are compiled in the Field Sampling Report (URS, 2003b). In addition, data from fish fillet samples from the Mississippi River collected by Menzie-Cura (2001), in accordance with a USEPA-approved workplan, were evaluated in the HHRA.

Baseline Risk Assessment

The purpose of the baseline HHRA is to evaluate potential human health effects of chronic exposures to constituents detected in samples of environmental media collected from the study area.

The HHRA was conducted to be consistent with USEPA guidance for conducting a risk assessment including, but not limited to, the following:

- Risk Assessment Guidance for Superfund (RAGS): Volume 1 - Human Health Evaluation Manual (Parts A and D) (USEPA, 1989a and 1998a).
- Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions (USEPA, 1991a).
- USEPA Soil Screening Guidance: User's Guidance Manual, and Technical Background Document (USEPA, 1996a,b).

- Human Health Evaluation Manual Supplemental Guidance; Standard Default Exposure Factors. OSWER Directive 9285.6-03 (USEPA, 1991b).
- Exposure Factors Handbook (USEPA, 1997a).
- Land Use in CERCLA Remedy Selection Process. OSWER Directive No. 9355.7-04 (USEPA, 1995a).

In addition, elements of the Illinois Environmental Protection Agency (IEPA) Tiered Approach to Corrective Action Objectives (TACO) (IEPA, 2002b) were used in the conduct of the HHRA.

The baseline HHRA has been conducted in accordance with the four-step paradigm for human health risk assessments developed by USEPA (USEPA, 1989a); these steps are:

- Data Evaluation and Hazard Identification
- Toxicity Assessment
- Exposure Assessment
- Risk Characterization

Report Organization

A summary of the information presented in each section of the report is as follows.

- Section 2.0 – Site Characterization. This section discusses the site and its environs, describes source areas, potential migration pathways, and potentially impacted media.
- Section 3.0 – Data Evaluation and Hazard Identification. This section presents a summary of the site data for use in the HHRA, and the results of the process used for the selection of constituents of potential concern (COPCs) to be quantitatively evaluated in the baseline HHRA.
- Section 4.0 – Dose-Response Assessment. The dose-response assessment evaluates the relationship between the magnitude of exposure (dose) and the potential for occurrence of specific health effects (response) for each COPC. Both potential carcinogenic and noncarcinogenic effects are considered. This section presents the quantitative dose-response values used in the baseline HHRA. The most current USEPA verified dose-response values are used when available.
- Section 5.0 – Exposure Assessment. The purpose of the exposure assessment is to provide a quantitative estimate of the magnitude and frequency of potential exposure to COPCs by a receptor. This section presents the updated conceptual site model (CSM) originally

presented in the HHRA Workplan. Potentially exposed individuals, and the pathways through which those individuals may be exposed to COPCs are identified based on the physical characteristics of the site, as well as the current and reasonably foreseeable future uses of the site and surrounding area. The extent of a receptor's exposure is estimated by constructing exposure scenarios that describe the potential pathways of exposure to COPCs and the activities and behaviors of individuals that might lead to contact with COPCs in the environment.

- Section 6.0 – Risk Characterization. Risk characterization combines the results of the exposure assessment and the toxicity assessment to derive site-specific estimates of potentially carcinogenic and noncarcinogenic risks resulting from both current and reasonably foreseeable future potential human exposures to COPCs. The results of the risk characterization are used to identify constituents of concern (COCs), which are a subset of those COPCs whose risks result in an exceedance of the target risk range of $1x10^{-6}$ to $1x10^{-4}$ for potential carcinogens and an exceedance of a target Hazard Index of 1 for noncarcinogens (that act on the same target organ), as defined in USEPA guidance (USEPA, 1991a), and by IEPA (2002b). The target risk levels used for the identification of COCs are based on USEPA guidance and Illinois TACO guidance. Specifically, USEPA provides the following guidance (USEPA, 1991a):

  "Where the cumulative carcinogenic site risk to an individual based on reasonable maximum exposure for both current and future land use is less than 10^{-4}, and the non-carcinogenic hazard quotient is less than 1, action generally is not warranted unless there are adverse environmental impacts." and,

  "The upper boundary of the risk range is not a discrete line at 1×10^{-4}, although EPA generally uses 1×10^{-4} in making risk management decisions. A specific risk estimate around 10^{-4} may be considered acceptable if justified based on site-specific conditions."

IEPA provides the following summary for the evaluation of cumulative risk for carcinogens (IEPA, 2002b, Fact Sheet 13: Mixture Rule):

"The cumulative risk of carcinogenic contaminants attacking the same target must not exceed 1 in 10,000 [10^{-4}]. Therefore, the risk from all on-site similar acting carcinogens must be added together. If this cumulative risk level is greater than 1 in 10,000, corrective action must be taken to reach an acceptable risk level."

Within any of the steps of the risk evaluation process described above, assumptions must be made due to a lack of absolute scientific knowledge. Some of the assumptions are supported by considerable scientific evidence, while others have less support. The assumptions that introduce the greatest amount of uncertainty in this risk evaluation are discussed in Section 6.0.

- Section 7.0 – Summary and Conclusions. This section presents a summary of the results of the baseline HHRA.
- Section 8.0 – This section presents the references used in the text.

Tables and figures follow each section.

2.0 SITE CHARACTERIZATION

This HHRA addresses data from environmental samples collected in accordance with the SSP (URS, 2001) from the areas of Sauget Area 2 identified in the AOC. Specifically, the HHRA for Sauget Area 2 addresses waste, soil, groundwater, leachate, surface water, sediment, fish fillet, and air in the following areas:

- Sites O, P, Q, R and S; and
- Mississippi River adjacent to the Sites.

As discussed in Sections 1.0 and 2.0 of the SSP (URS, 2001), Sites O, P, Q, R, and S contain wastes that came from a wide variety of municipal and industrial sources. The sites are bounded to the west by the Mississippi River and to the north, east and south by industrial and commercial properties.

2.1 Study Area Description

Figure 2-1 presents the study area addressed by the RI/FS.

The Sauget Area 2 Sites are located in the City of East St. Louis and the Villages of Sauget and Cahokia in St. Clair County, Illinois. The Sauget Area 2 study area is east of the Mississippi River and south of the MacArthur bridge railroad tracks. The study area is west of Route 3 (Mississippi Avenue) and north of Cargill Road.

Sites	Former Use	Municipality
Site O	Sewage Sludge Dewatering	Village of Sauget
Site P	Municipal and Industrial Waste Disposal	City of East St. Louis Village of Sauget
Site Q	Municipal and Industrial Waste Disposal	Village of Sauget Village of Cahokia
Site R	Industrial Waste Disposal	Village of Sauget
Site S	Chemical Reprocessing Waste Disposal	Village of Sauget

These sites are located in an area historically used for heavy industry, including chemical manufacturing, metal refining and power generation, and waste disposal. Currently the area is used for

heavy industry, warehousing, bulk storage (coal, refined petroleum, lawn and garden products and grain), waste water treatment, hazardous waste treatment, waste recycling and truck terminals. Four commercial establishments are located at the north end of the study area. No residences are located within the study area. Residential areas closest to Sauget Area 2 are approximately 3,000 feet east of Site P and about 3,000 feet east of Site O. These residential areas are located, respectively, in East St. Louis and Cahokia.

Groundwater is not used as a source of drinking water in the area. Both the Village of Sauget and the Village of Cahokia have in effect ordinances that prohibit the use of groundwater as a potable water supply. Copies of these ordinances are presented in Appendix P.

2.2 Sites Location and Physical Setting

The Sauget Area 2 Sites are located in the floodplain of the Mississippi River in an area known as American Bottoms. Topographically, the area consists primarily of flat bottom land, although local topographic irregularities do occur. Generally, land surface in the American Bottoms slopes from north to south and from east to west toward the Mississippi River. Land surface elevation ranges from 400 to 410 feet above Mean Sea Level (MSL) with little topographic relief. Sauget Area 2 consists of five former disposal areas, Sites O, P, Q, R and S, adjacent, or in close proximity, to the Mississippi River. These five disposal areas were given letter designations by the Illinois Environmental Protection Agency (IEPA) in the 1980s. Two of these sites, Sites Q and R, are located on the wet side of the floodwall and levee which is operated and maintained by the United States Army Corps of Engineers (USACE) and the Metro East Sanitary District. The floodwall is designed to protect the City of East St. Louis and the Villages of Sauget and Cahokia from flooding. Sites O, P and S are located on the dry side of the floodwall and levee.

2.3 Site Descriptions

Complete site descriptions are provided in the SSP (URS, 2001). Descriptions of the sites that are germane to the HHRA are included below.

2.3.1 Site O

Site O, located on Mobile Avenue in Sauget, Illinois, occupies approximately 20 acres of land to the northeast of the American Bottoms Regional Wastewater Treatment Facility (ABRTF). An access road to the ABRTF runs across the middle of the site. In 1952, the Village of Sauget Waste Water Treatment Plant began operation at this location. Four lagoons were constructed at the wastewater treatment plant in 1965 and placed in operation in 1966/1967. The lagoons were closed in 1980 by stabilizing the sludge with lime and covering it with approximately two feet of clean low permeability soil. Currently, the lagoons are covered with clean low-permeability soil and are vegetated.

As a result of a review of historical aerial photographs and trenching work conducted as part of the SSP field program, two additional areas were added to Site O: an approximately 3-acre area adjacent to the northeast side of Site O, and an approximately 4-acre area adjacent to the southwest side of Site O (see Figure 2-1).

Based on site characteristics and a review of the analytical data for Site O, for the purposes of the HHRA, the approximately 3-acre area adjacent to the northeast side of Site O has been identified separately as Site O (North) (see Figure 2-1).

Current Use

As noted above, an access road to the ABRTF runs across the middle of the site. The site is located in an isolated area and is not currently used. The former lagoons are covered and vegetated, and the vegetation is mowed periodically during the warmer months of the year.

2.3.2 Site P

Site P, which is bounded by the Illinois Central Gulf Railroad tracks, the Terminal Railroad Association tracks and Monsanto Avenue, occupies approximately 20 acres of land located in the City of East St. Louis and the Village of Sauget.

Current Use

Site P is currently inactive and partially covered with an asphalt parking lot. Access to the site is not restricted. Currently, PT's Showclub is located on the southeastern corner of Site P, along Monsanto Avenue.

2.3.3 Site Q

Site Q is a former subsurface and surface disposal area in the Villages of Sauget and Cahokia. Based on site characteristics, including topography, evaluation of historical aerial photos and results of the magnetometer and other studies conducted as part of the SSP field program, Site Q was divided into four areas for the purposes of site characterization and risk evaluation: Site Q (North), Site Q (Central), Site Q (South), and Site Q Ponds. Refer to Figure 2-1 for delineation.

Site Q is on the west or river side of the USACE floodwall. At the time of the development of the SSP work plan, there were two ephemeral ponded areas in the southern portion of Site Q. However, by the time the field sampling occurred (summer of 2002), one of these ponded areas contained water and fish, and the other ponded area was dry. Both ponded areas were dry in the spring of 2003. In the summer of 2003, water had collected in these two areas as a result of heavy precipitation. It is

understood that flooding from the Mississippi River is responsible for bringing fish into the ponds. Based on these characteristics, Site Q Ponds are evaluated as a separate area in the HHRA (see Figure 2-1).

Current Use

Site Q (North) is covered with gravel, while Site Q (Central) is covered with highly permeable black cinders, and Site Q (South) is vegetated. Eagle Marine Industries and Peavy Company, a division of ConAgra, operate barge terminal facilities in the central part of the northern portion of Site Q. The southern portion of Site Q is used for reclaiming rebar from concrete. A 10-acre site on the northern portion of Site Q is currently used by Rivercity Landscape Supply as a bulk storage terminal for lawn and garden products. Raw landscape products such as mulch, rock and soil are processed and packed on this portion of the site. Access to some portions of the site is restricted by fencing and gates. Other parts of the site have unrestricted access.

Fishing can occur in the Site Q Ponds; however, as noted above, fish are only present as a result of flood events. After the ponds dry out, fish are not reintroduced until another flood event, although water may collect in the ponds from precipitation.

2.3.4 Site R

Site R, a closed industrial-waste disposal area owned by Solutia, Inc., is located between the flood control levee and the Mississippi River in Sauget, Illinois. Its northern border is Monsanto Avenue and its southern border is Site Q. A portion of Site Q, known as the "Dog Leg," part of Site Q (North), is located to the east of Site R. Site R occupies approximately 24 acres.

In 1979, Monsanto completed the installation of a clay cover on Site R to cover waste, limit infiltration through the landfill, and prevent direct contact with fill material. The cover's thickness ranges from 2 feet to approximately 8 feet. In 1985, Monsanto installed a 2,250-foot long rock revetment along the east bank of the Mississippi River adjacent to Site R. The purpose of the stabilization project was to prevent further erosion of the riverbank and thereby minimize potential for the surficial release of waste material from the landfill. During the 1993 flood, the clay cap on Site R was not overtopped. No erosion of the river bank or cap resulted from this flood.

Current Use

The site is not currently used. Access to Site R is restricted by fencing and is monitored by Solutia plant personnel.

2.3.5 Site S

Site S is located southwest of Site O and occupies approximately 1 acre.

Current Use

The site is currently not used. The northern portion of the site is grassed, and its southern portion is covered with gravel and fenced.

2.4 Conceptual Site Model

To guide identification of appropriate exposure pathways for evaluation in the risk assessment, a CSM for human health was developed. The purpose of the CSM is to identify source areas, potential migration pathways of constituents from source areas to environmental media where exposure can occur, and to identify potential human receptors. The CSM is meant to be a "living" model that can be updated and modified as additional data become available.

The initial CSM for the site is presented in Figure 11-1 of the HHRA Workplan presented in Appendix A and was used to guide the investigation presented in the SSP and the COPC selection process in Section 3.0. An updated CSM is presented in Section 5.0 (Exposure Assessment), based on the data evaluation and COPC selection conducted in Section 3.0. The updated CSM provides the basis for the exposure scenarios evaluated in the HHRA.

FILENAME: 610501B.DWG

Base map from URS entitled "SAUGET AREA 2, RI/FS, SAUGET ILLINOIS", dated 3/27/03, drawn by "djd" and designed by "sjs".

FIGURE NUMBER: 2-1

SHEET NUMBER: X

STUDY AREA
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, IL

SCALE:	DATE:	PROJECT NUMBER:
1"=1100'	7/03	06105-009

ENSR® INTERNATIONAL
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DESIGNED BY:	REVISIONS			
KS	NO.:	DESCRIPTION:	DATE:	BY:
DRAWN BY:				
BLB				
CHECKED BY:				
KS				
APPROVED BY:				
KS				

3.0 DATA EVALUATION AND HAZARD IDENTIFICATION

The purpose of the data evaluation and hazard identification process is two-fold: 1) to evaluate the nature and extent of release of constituents present at the site; and 2) to select a subset of these constituents identified as COPCs for quantitative evaluation in the risk assessment. This step of the risk assessment involves compiling and summarizing the data for the risk assessment, and selecting COPCs based on a series of screening steps.

3.1 Data Evaluation

The HHRA was conducted using validated data collected from the site in support of the SSP. Data used in the HHRA are presented in the Data Validation Report (URS, 2003a) and the Field Sampling Report (URS, 2003b).

3.1.1 Areas and Media

The SSP for Sauget Area 2 was designed to investigate two major areas of the Sauget Area 2 study area:

- Sites O, P, Q, R and S; and
- Mississippi River adjacent to Sites.

The sites are being evaluated in the HHRA as follows:

- Site O
- Site O (North)
- Site P
- Site Q
  - Site Q (North)
  - Site Q (Central)
  - Site Q (South)
  - Site Q Ponds
- Site R
- Site S

Of the data collected in support of the SSP, analytical data for use in the HHRA are available for the following media:

- Site waste;
- Site surface soil (0.5 feet below ground surface (bgs));
- Site subsurface soil (6 feet bgs);
- Site leachate;
- Site groundwater;
- Site Q Pond surface water;
- Site Q Pond sediment;
- Site Q Pond fish fillet; and
- Mississippi River surface water;
- Mississippi River sediment;
- Mississippi River fish fillet;
- 24-hour ambient air samples collected in the vicinity of Sites P, Q, and R/O/S.

Analytical data for use in the HHRA from background or off-site reference locations are available for the following media:

- Surface soil;
- Subsurface soil;
- Groundwater;
- Upgradient surface water; and
- Upgradient sediment.

Figure 3-1 shows the study area and the sample collection locations for soil, waste, groundwater, leachate, surface water, sediment, and fish.

3.1.2 Analytes

The SSP identified the suites of analytes for each medium. The full suite of analytes included in the risk assessment are identified as follows:

- Volatile organic compounds (VOCs);
- Semi-volatile organic compounds (SVOCs);
- Pesticides;
- Herbicides;
- Polychlorinated biphenyls (PCBs);
- Metals; and
- Dioxins and furans (referred to as Dioxin-TEQ).

All analytical data collected in support of the SSP were compiled and tabulated in a database for statistical analysis. These data are presented in the Data Validation Report (URS, 2003a).

Note that not all samples were analyzed for all analytes, per the USEPA-approved SSP. The exceptions are:

- Fish fillets were not analyzed for VOCs; these constituents are not expected to bioaccumulate, and the VOCs would be lost during sample preparation.
- Dioxins and furans were analyzed in the majority of samples, but not in all samples.

3.1.3 Sample Collection and Data Evaluation by Area and Medium

Data sets for each medium are described below. Figure 3-1 shows sample locations for the study area. Figure 3-2 shows the Mississippi River fish fillet sample locations.

3.1.3.1 Waste

Figure 3-3 identifies the location of each waste sample for each site. Note that soil and waste samples were collected from the same locations; therefore, both soil and waste locations are designated as described above on Figure 3-3 as W-site-location (e.g., W-P-1). Discrete samples were collected from various depths within the waste and analyzed for dioxins and furans and VOCs. Composite samples were collected from the top of the waste to the bottom of the waste and analyzed for metals, PCBs, pesticides, herbicides, and metals. These samples were also analyzed using the Toxicity Characteristic Leaching Procedure (TCLP). The site waste sample identification numbers have the following format: medium -- site – location – depth (or COMP for composite samples), e.g., Waste-P-1-4FT or Waste-P-1-COMP, which would have been collected at location W-P-1. TCLP samples have a "T" appended to the end of the sample identification number.

The waste samples are used in the evaluation of potential construction activities, which are assumed to occur to a depth of 15 feet bgs. If waste occurred at a depth interval wholly below a depth of 15 feet bgs, then the analytical data from the waste samples were not included for evaluation. If the waste interval started anywhere within the 0-15 feet bgs interval, then all of the waste analytical data, both composite and discrete samples, were included in the evaluation. Note that many of the discrete waste samples were collected below this range, where construction activities are not assumed to occur. However, because the composite samples were collected across the entire waste horizon, the discrete waste samples collected below 15 feet bgs are included in the HHRA as they represent potential concentrations of constituents in the waste. The TCLP samples are used in the evaluation of the potential soil-to-groundwater pathway, but are not used in the quantitative HHRA. Table B-1 of Appendix B identifies the waste samples evaluated in the HHRA.

3.1.3.2 Soil

Figure 3-3 identifies the location of each soil sample for each site. Note that soil and waste samples were collected from the same locations; therefore, both soil and waste locations have the same location identifier, following the X-Y-Z format. "X" identifies the type of sample; here "W" is used for waste/soil boring. "Y" identifies the site, and "Z" identifies the location number. Surface soil (0.5 feet bgs) and subsurface soil (6 feet bgs) samples were collected at each location. These samples were analyzed for the full suite of analytes and dioxins and furans. The site soil sample identification numbers have the following format: medium -- site – location – depth, e.g., SOIL-P-1-0.5, and that sample would have been collected at location W-P-1. Table B-1 of Appendix B identifies the soil samples evaluated in the HHRA.

3.1.3.3 Leachate

A leachate well was installed in each of Site O (North), P, Site Q (North), Site Q (Central), Site Q (South), R, and S. Leachate did not collect in the wells in P, Site Q (Central), Site Q (South) and S. However, leachate samples were collected and analyzed from Site O (North), Site Q (North), and R. These data are treated as shallow groundwater in the HHRA. Leachate well locations are indicated on Figure 3-4. The location identifiers follow the same X-Y-Z format. "X" identifies the type of sample location, in this case "L" for leachate well. "Y" identifies the site and "Z" identifies the sample location number. Table B-1 of Appendix B identifies the leachate samples evaluated in the HHRA.

3.1.3.4 Groundwater

Figure 3-4 identifies the groundwater sample locations evaluated in the risk assessment. Groundwater sample locations have a 3-part identifier: X-Y-Z. "X" identifies the type of sample location, where AA or BDRK are used for samples screened in the alluvial aquifer or bedrock, respectively. "Y" identifies

the site, e.g., P through S, and "Z" identifies the location number (e.g., AA-P-1). The piezometer locations ("PIEZ") were used only to measure groundwater elevations.

For the purposes of the risk assessment, shallow groundwater is defined as groundwater that is encountered within 15 feet bgs, and shallow/mid groundwater is defined as groundwater that is encountered within 30 feet bgs, as noted in the workplan. These depth intervals have been selected based on potential construction activities, which may occur up to 15 feet bgs, and potential for volatilization to indoor and/or outdoor air (groundwater present up to 30 feet bgs), as discussed more fully in Section 5.0.

Samples were collected from the alluvial aquifer using direct push technology. Samples were collected every 10 feet. The sample identifier appends a depth designation to the sample location (e.g., AA-P-1-20FT). The full suite of analytes were analyzed in the most shallow sample collected at each location. The analytes evaluated at the deeper samples followed the program outlined in Section 7 of the SSP (URS, 2001).

The first sample at each alluvial aquifer location was generally collected within 5 feet of encountering groundwater. To estimate the depth from the ground surface to groundwater, 5 feet is subtracted from the depth identified in the sample identification for the most shallow groundwater sample. Therefore, all samples collected to a depth of 20 feet have been defined as shallow (20 feet sample depth - 5 feet = 15 feet to groundwater), while samples collected from between 21 and 35 feet have been defined as shallow/mid depth. Samples collected from greater than 35 feet have been defined as deep. Deep groundwater samples are not included in the quantitative human health risk assessment; however, a separate comparison of deep groundwater concentrations to screening levels is included in Appendix F.

Groundwater present up to 30 feet bgs is included for evaluation of the volatilization to indoor/outdoor air pathway. However, the most shallow sample within that depth interval at a given location is used as the source term for modeling to indoor/outdoor air. Note that samples falling into the mid-depth category that have a corresponding sample collected from a more shallow depth have been defined as deep, such that the most shallow data-point collected from each location is used to evaluate potential volatilization from groundwater to air.

Table B-1 of Appendix B identifies the shallow/mid-groundwater samples evaluated in the HHRA.

3.1.3.5 Surface Water

Surface water sample locations included in the risk assessment are identified on Figure 3-5.

Per the SSP, surface water samples were analyzed for the full suite of analytes, with the exception that only a subset were analyzed for dioxins and furans. Surface water samples with a sample identifier beginning with an "R" were collected from the Mississippi River, while those beginning with a "P" were collected from the Site Q Pond. Table B-1 of Appendix B identifies the surface water samples evaluated in the HHRA.

3.1.3.6 Sediment

Sediment sample locations included in the risk assessment are identified on Figure 3-5.

Per the SSP, sediment samples were analyzed for the full suite of analytes, with the exception that only a subset was analyzed for dioxins and furans. Sediment samples with a sample identifier beginning with an "R" were collected from the Mississippi River, while the sample beginning with a "P" was collected from the Site Q Pond. Table B-1 of Appendix B identifies the sediment samples evaluated in the HHRA.

3.1.3.7 Fish

Fish samples of both whole body and fillet were submitted for analysis. Per the USEPA-approved workplan, only fillet data are used in the HHRA, as these data are more representative of potential human fish consumption exposures. Whole body fish data are evaluated in the ecological risk assessment. Fish fillet samples were analyzed for the full suite of analytes (with the exception of VOCs).

Fish fillet samples were collected as part of the SSP program from the Site Q Pond in November 2002. A sample of carp fillet and a sample of black bullhead fillet are available from the Site Q Pond. This location is indicated in Figure 3-5.

Fish fillet samples from the Mississippi River were collected by Menzie-Cura and Associates in October-November 2000 at the following locations (Menzie-Cura, 2001) (see Figure 3-2):

- the Plume Discharge Area (PDA) located adjacent to Site R;
- the Upstream of the Discharge Area (UDA) located upstream of the study area; and
- the Downstream of the Discharge Area (DDA) located downstream of the study area.

One buffalo fish fillet sample is available from the UDA and DDA, and three samples of buffalo fish fillet are available from the PDA. Table B-1 of Appendix B identifies the fish fillet samples evaluated in the HHRA.

3.1.3.8 Ambient Air

Ambient air sample locations are indicated on Figure 3-6.

Ambient air samples were collected in the vicinity of Sites P, Q, and R/O/S and analyzed for VOCs, SVOCs, pesticides, PCBs, dioxins and furans, and metals. Air samples were collected over a 24-hour period during hot, dry conditions (August, 2002) conducive to air emissions of dust and volatiles. These data are compared to chronic screening levels as discussed in the HHRA Workplan (Appendix A). However, due to the one-time sample collection, these data are not quantitatively evaluated in the HHRA. As noted in the HHRA Workplan, the air pathway is addressed in the HHRA by modeling potential sources in soil, waste and groundwater (see Section 5.0). Appendix G presents the ambient air data screen and results.

3.1.4 Summary Statistics

The data for each area and medium included in the quantitative HHRA were summarized for use in the risk assessment. The following guidance documents were used to develop the summary statistics:

- Risk Assessment Guidance for Superfund: Volume I – Human Health Evaluation Manual, Part A (USEPA, 1989a).
- Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites (USEPA, 2002a).

The steps used to summarize the data by area and medium for use in identifying COPCs in the screening process presented in this section are discussed here. The additional steps used to summarize the data for identifying exposure point concentrations (EPCs) are presented in Section 5.0.

The sequential steps used to summarize the data by area and medium are as follows:

Treatment of Duplicates: Data for samples and their duplicates were averaged before summary statistics were calculated, such that a sample and its duplicate were treated as one sample for calculation of summary statistics (including maximum detection and frequency of detection).

Treatment of Non-Detects:

- Summary statistics were not calculated for constituents that were not detected in a particular area/medium.

- Where constituents were detected in some samples and not in others in a particular area/medium, ½ the reported sample quantitation limit (SQL) was used as a proxy concentration for the samples reported as nondetect (USEPA, 1989a).

- For all non-detects for which ½ the SQL was calculated, ½ the SQL was compared to the maximum detected concentration for that area and medium. Where ½ the SQL was greater than the maximum detected concentration in a particular area/medium, the SQL value was not used in the calculation of summary statistics for that constituent in that area and medium (USEPA, 1989a). Due to the sample size, a more statistical method to evaluate results reported as not detected was not used in this HHRA.

Frequency of Detection: The frequency of detection is reported as a ratio and a percentage based on the total number of samples analyzed and the number of samples reported as detected for a specific constituent. The number of samples used to calculate statistics reflects the treatment of non-detects described above.

Maximum Detected Concentration: This is the maximum detected concentration for each constituent/area/medium combination, after duplicates have been averaged.

Average Concentration: This is the arithmetic mean concentration for each constituent/area/medium combination, after duplicates have been averaged and non-detects have been evaluated.

Appendix B presents the summary statistics for each area and medium to be quantitatively evaluated in the HHRA. The tables also present the screening described in Section 3.2. The appendix is organized as follows:

- Table B-1 - samples used in the calculation of summary statistics for each area and medium;
- Table B-2 - summary statistics and screening for groundwater (depth to water less than or equal to 30 feet below ground surface) and leachate;
- Table B-3 - summary statistics and screening for surface soil;
- Table B-4 - summary statistics and screening for combined soil (for the construction pathway, surface soil, subsurface soil, and waste were combined to evaluate the 0-15 foot bgs soil column interval);
- Table B-5 - summary statistics and screening for sediment;
- Table B-6 - summary statistics and screening for surface water; and
- Table B-7 - summary statistics and screening for fish fillet.

3.2 Methodology for Selection of Constituents of Potential Concern

COPCs are a subset of the complete list of constituents detected in site media that are carried through the quantitative risk assessment process. Selection of COPCs focuses the analysis on the most likely risk "drivers." As stated in USEPA guidance (USEPA, 1993a):

> "Most risk assessments are dominated by a few compounds and a few routes of exposure. Inclusion of all detected compounds at a site in the risk assessment has minimal influence on the total risk. Moreover, quantitative risk calculations using data from environmental media that may contain compounds present at concentrations too low to adversely affect public health have no effect on the overall risk estimate for the site. The use of a toxicity screen allows the risk assessment to focus on the compounds and media that may make significant contributions to overall risk."

Several factors are typically considered in selecting COPCs for a site, including background/upgradient concentrations, frequency of detection, toxicity, and essential nutrient status. Each of these evaluation steps is called a "screening step." Risk calculations are conducted using the COPCs identified in these steps.

The steps used to identify COPCs are presented below.

3.2.1 Evaluation of Frequency of Detection and Essential Nutrient Status

Per the HHRA Workplan (Appendix A), a frequency of detection screen was conducted on each medium (e.g., sediment, surface soil, etc.). Any constituent detected in fewer than 5% of samples, provided 20 samples are available, can be eliminated as COPCs. However, based on the frequency of detection information presented in the summary statistics/screening tables in Appendix B, no constituents were excluded from consideration as a COPC based on the frequency of detection screen with the exception of three constituents each detected in one of 36 samples in Mississippi River surface water (2,4,6-trichlorophenol, 2,6-dinitrophenol, and pentachlorophenol). Essential nutrients (i.e., calcium, iron, magnesium, sodium and potassium) were not included as COPCs (HHRA Workplan [Appendix A], and USEPA, 1989a).

3.2.2 Comparison to Background/Upgradient Data

Background/upgradient samples were collected in the vicinity of the site to provide information on levels of constituents typical for the local area. The purpose of comparing site conditions to local background is to determine if site concentrations of constituents are representative of background concentrations, i.e., do not represent a release at the site and should, therefore, not be included in risk

calculations. Background comparisons were conducted for each medium using site-specific background data and background concentrations.

3.2.2.1 Background Sample Locations

Off-site, upgradient groundwater samples were collected from four locations, as indicated on Figure 3-1 and Figure 3-4, identified as UAA-1 through UAA-5. Groundwater samples were collected from each of the upgradient locations at several depths. Five surface soil and five subsurface soil samples were collected at off-site locations, all identified in the SSP. These background locations are presented on Figure 3-1 and Figure 3-3 (Locations OS-1 through OS-5). Eight surface water samples and eight sediment samples were collected from an area of the Mississippi River upgradient of the site at location R1, indicated on Figure 3-1 and Figure 3-5.

Soil samples (0.5 feet bgs and 6 feet bgs) were collected from location OS-5, located in the field immediately south of Site Q. In initial discussions, USEPA requested that the two samples from this location be included in the HHRA risk calculations. A comparison of detected concentrations in the samples indicated that concentrations of all constituents at this location are below screening levels with the exception of arsenic. The detected concentration of arsenic in the surface soil sample at OS-5 is 7.1 mg/kg, which is below the maximum detected concentration in the surface soil background samples of 9.05 mg/kg. The detected arsenic concentration in the subsurface soil sample at OS-5 is 4.4 mg/kg, which is below the maximum detected concentration in background subsurface soil samples of 6.7 mg/kg. Therefore, this sample location (OS-5) is considered to be representative of background or reference concentrations and was included in the background dataset.

3.2.2.2 Background Comparison Procedures

The procedure for determining whether a constituent concentration is consistent with background follows that developed by USEPA Region 4 (USEPA, 2000a) and presented in the USEPA-approved HHRA Workplan (Appendix A). Maximum detected concentrations of constituents in environmental media at the site were compared to background levels, i.e., two times the arithmetic mean site-specific background concentration. USEPA Region 4 states that although RAGS (USEPA, 1989a) allows the use of statistics in data evaluation, statistics may not be sufficiently conservative at this stage of the risk evaluation; and in most cases, there are not a sufficient number of samples for conducting a statistical analysis. Therefore, if maximum concentrations in an area are found to be less than background levels, then those constituents are eliminated from quantitative evaluation in the risk assessment. Constituents whose maximum detected concentrations are above the defined background levels and not identified as an essential nutrient are retained for evaluation in the next step of the hazard identification process (Toxicity Screen).

Data from the off-site soil samples (five) were averaged together to derive the background concentrations. Separate background concentrations were derived for surface soil and subsurface soil. Data from upgradient sediment samples were averaged together to derive the background concentrations for sediment, and data from upgradient surface water samples were averaged together to derive the background concentrations for surface water. Each site groundwater location was matched to an off-site groundwater location based on location and physical characteristics of the site. Samples within each site groundwater location were then matched to the sample from the corresponding off-site groundwater location most closely matching the depth of the site sample.

The calculation of background concentrations is presented in Appendix C. Appendix C also presents a table indicating the matching of each site groundwater sample to the appropriate off-site groundwater sample.

3.2.3 Toxicity Screen

A toxicity screen was performed in accordance with USEPA Region 5 guidance (USEPA, 1998b) and IEPA regulations (IEPA, 2002a and b).

3.2.3.1 Sources of Screening Criteria

USEPA Region 5 guidance identifies the following three sources as appropriate screening levels for soil, in order of preference:

1) Most recent generic soil screening levels (SSLs) developed and presented in Appendix A of the Soil Screening Guidance (USEPA, 1996b). The SSLs are based on ingestion and inhalation (direct contact) and soil-to-groundwater exposure pathways for a residential scenario.
2) Site-specific SSLs derived using the methodology outlined in the above reference.
3) Most recent USEPA Region 9 Preliminary Remediation Goals (PRGs; USEPA, 2002b).

The USEPA Region 9 PRGs are more comprehensive than the other sources because values are provided for a longer list of constituents, and PRGs are available for both residential and industrial scenarios. Therefore, USEPA Region 9 PRGs for industrial soils and ambient air were used to identify COPCs in soil and sediment, and to evaluate the 24-hour air data, respectively. Where PRGs were not available, structural similarity was used to assign a surrogate PRG. PRGs for noncarcinogens were adjusted by a factor of 0.1 to account for potential cumulative effects in the screening process. PRGs for potential carcinogens are based on a conservative target risk level of $1x10^{-6}$ and were not adjusted. The screening values are presented in Appendix D.

The TACO program provides screening criteria for the groundwater ingestion component of the soil to groundwater pathway that were used here (IEPA, 2002b). These values conservatively address leaching of constituents from soils to underlying groundwater.

Groundwater in Sauget Area 2 is classified as Class I by IEPA. Groundwater in Sauget Area 2 is not used as a source of drinking water and there are ordinances in effect in the Villages of Sauget and Cahokia (see information provided in Appendix P) that prohibit the use of groundwater as drinking water. Therefore, groundwater will not be evaluated as a source of residential or industrial drinking water in the risk assessment. The risk assessment will evaluate potential incidental exposure to constituents in groundwater and/or leachate via volatilization of constituents to indoor and outdoor air, and via direct contact with groundwater and/or leachate during excavation activities.

To identify COPCs to be evaluated quantitatively for the groundwater and surface water scenarios addressed in the risk assessment, constituent concentrations in groundwater and surface water were compared to IEPA Class I standards (35 Ill. Adm. Code 620.410) (IEPA, 2002a). For the Class I groundwater comparison, where Class I standards were not available, federal maximum contaminant levels (MCLs) (USEPA, 2002c) were used; where MCLs were not available, the IEPA remediation objectives for Class I groundwater were used (IEPA, 2002b); where these were not available, the most current USEPA PRGs (USEPA, 2002b) for tap water were used. As discussed in Section 3.1.4, only groundwater samples collected from a depth of less than or equal to 30 feet bgs are included in the quantitative risk assessment. Groundwater samples collected from depths greater than 30 feet bgs are evaluated in Appendix F.

Ambient air concentrations were compared to USEPA Region 9 PRGs for ambient air (USEPA, 2002b).

USEPA Region 9 PRGs are not available for fish fillet. Therefore, fish fillet data were compared to the USEPA Region 3 Risk-Based Concentrations (RBCs) for fish (USEPA, 2003a). As fish fillet data were available for evaluation, a comparison of surface water data to human health Ambient Water Quality Criteria (AWQCs) for fish ingestion (USEPA, 2002d) was not required. As previously noted, surface water data were compared to the groundwater screening criteria described above.

Appendix D presents the specific screening values used in this risk assessment for the industrial soil/sediment – direct contact screen, the soil to groundwater pathway screen, the groundwater and surface water screen, the air screen, and the fish tissue screen.

3.2.3.2 Screening Methodology

Constituents in an area/medium that did not screen out based on background, essential nutrient status, and/or frequency of detection with maximum concentrations greater than the toxicity screening criteria

are included as COPCs. Where no COPCs are identified for an area/medium, that area/medium is not evaluated quantitatively in the HHRA.

3.3 Hazard Identification

This section presents the results of the COPC screening by medium and area. COPCs identified here are included in subsequent risk calculations.

3.3.1 Soils and Waste

Data for site soils were compared to background, industrial direct contact screening values and the soil to groundwater pathway screening values. Calculation of background concentrations of constituents in soils is presented in Appendix C Table C-1 for surface soils and Table C-2 for combined soils. Two screens were conducted for soil – surface soil and combined soils. The combined soil screen consists of data from surface soil, subsurface soil, and waste samples. The data collected from these three media represent the media that could potentially be contacted by a future construction worker, as well as a potential source of constituents to indoor and outdoor air. The surface soil screen consists of data collected from the top 0.5 foot bgs, and is intended to represent the portion of the soil column to which a non-excavation receptor may potentially be exposed.

Maximum constituent concentrations in surface soil and combined soil in all sites were compared to industrial screening values for direct contact. The screening tables are presented in Appendix B.

Surface Soil. COPCs in surface soil are identified in Table 3-1. COPCs were identified in Site O, Site O (North), Site P, Site Q (North), Site Q (Central), Site Q (South), and Site S. No COPCs were identified in Site R surface soils. Figure 3-7 presents the locations of the COPCs in surface soil. No constituents were screened out on the basis of frequency of detection. Arsenic was screened out based on background for O, Site O (North), Site Q (North), R and S. Benzo(a)pyrene was screened out based on background for Site Q (Central).

Combined Soil. COPCs in combined soil are identified in Table 3-2. COPCs in combined soils were identified in all sites for the construction worker direct-contact pathway. COPCs in combined soils for the ambient air pathway (non-excavation scenarios) were identified in all Sites with the exception of Site Q (Central). Figure 3-8 presents the locations of the COPCs in combined soils. No constituents were screened out on the basis of frequency of detection. Arsenic was screened out based on background for Sites O and S.

3.3.2 Groundwater and Leachate

Data for groundwater were compared to drinking water screening values. Calculation of background concentrations of constituents in groundwater is presented in Appendix C Table C-3, and the matching of site to off-site locations is presented in Table C-4. Three screens were conducted on groundwater/leachate – shallow, shallow/mid, and deep. As indicated previously, locations beginning with "AA" were screened in the alluvial aquifer, while those beginning with "BDRK" were screened in bedrock.

3.3.2.1 Leachate, Shallow and Mid Groundwater

The selection of COPCs for groundwater was conducted on a location-by-location basis. The screening tables are presented in Appendix B, which lists each location included in the analysis. Screening intervals and/or sample depths are also included. Locations with samples in the shallow groundwater range (AA-O-1 and AA-O-2, first sample within 20 feet bgs, indicating a depth to groundwater within 15 feet of ground surface) were used to select COPCs for the future construction worker scenario as well as the potential volatilization pathway. Locations with samples in the mid-depth range (AA-O-1, AA-O-2, AA-O-3, AA-P-1, AA-P-2, AA-P-3, AA-Q-6, AA-Q-7, AA-Q-8, AA-R-1, AA-S-1, AA-S-2, and AA-S-3, first sample within 35 feet bgs, indicating depth to groundwater within 30 feet bgs) were used to select COPCs for the potential volatilization pathway. Locations AA-O-1 and AA-O-2 had samples collected from both the shallow and mid-depth ranges. Therefore, the shallower sample from each location was used to select COPCs for the potential volatilization pathway. Additionally, several locations (AA-P-1, AA-P-2, AA-Q-6, AA-Q-7, AA-Q-8, AA-S-1, and AA-S-3) in the mid-depth range had multiple samples located within the mid-depth range. For these locations, the shallowest sample was used to select COPCs for the potential volatilization pathway. The deeper samples from all of these locations are screened against the IEPA Class I standards (see Appendix F).

Leachate data were treated as shallow groundwater samples in the screening process.

Ordinances are in effect that prohibit the use of groundwater as a potable water supply source (Appendix P). Therefore, a drinking water scenario is not included in the risk assessment. Groundwater COPCs were identified to evaluate potential incidental exposures to groundwater (i.e., non-drinking water scenarios), including incidental contact by a construction worker that may excavate to a depth where groundwater would be exposed in the excavation, or potential volatilization of VOCs through the soil column to indoor or outdoor air.

Data from 24 groundwater sampling locations were included in the screening evaluation. Two locations have a depth to groundwater of less than or equal to 15 feet bgs and are, therefore, included in the evaluation of potential future construction activities (AA-O-1 and AA-O-2), and 13 locations have a depth to groundwater of less than or equal to 30 feet bgs and are, therefore, included in the

evaluation of potential volatilization effects. These 13 locations are included in the quantitative HHRA. The locations are listed below:

- AA-O-1
- AA-O-2
- AA-O-3
- AA-P-1
- AA-P-2
- AA-P-3
- AA-Q-6
- AA-Q-7
- AA-Q-8
- AA-R-1
- AA-S-1
- AA-S-2
- AA-S-3

The remaining 11 locations have depths to groundwater greater than 30 feet bgs, and are not included in the quantitative risk assessment. These locations are addressed in Appendix F.

The results of the COPC selection are presented in Table 3-4 for shallow groundwater and leachate (for evaluation of the construction worker receptor), and Table 3-5 for mid/shallow groundwater and leachate (for evaluation of the air pathway). COPCs for the construction worker pathway were identified at location AA-O-1 groundwater, as well as at the Site O, Site Q, and Site R leachate wells. COPCs were identified for the volatilization pathway (indoor and outdoor air) at groundwater locations AA-Q-6 and AA-R-1, as well as leachate wells in Sites O, Q, and R. Figure 3-9 indicates the locations of the groundwater and leachate COPCs. Because the screen was conducted on a sample-by-sample basis, no constituents were screened out based on frequency of detection. Methane was the only constituent that screened out based on a comparison to background.

3.3.3 Sediment

Maximum constituent concentrations in sediment in the Site Q Pond and in the Mississippi River were compared to industrial soil screening values for direct contact, per the HHRA Workplan. The screening table is presented in Appendix B.

No COPCs were identified in Site Q Pond sediment. Arsenic was identified as a COPC in Mississippi River sediment, as shown in Table 3-5 and in Figure 3-10. The figure indicates which locations in the Mississippi River had arsenic concentrations greater than the calculated upgradient sediment concentration of 4.66 mg/kg.

3.3.4 Surface Water

Maximum constituent concentrations in surface water in the Site Q Pond and in the Mississippi River were compared to the screening values for surface water, which are the IEPA Class I standards. The screening table is presented in Appendix B.

COPCs for the Site Q Pond and the Mississippi River are shown in Table 3-6 and in Figure 3-10. The figure indicates which locations in the Mississippi River had constituent concentrations above screening levels. Constituents each detected in one of 36 samples in Mississippi River surface water (2,4,6-trichlorophenol, 2,6-dinitrophenol, and pentachlorophenol) were eliminated as COPCs based on frequency of detection.

3.3.5 Fish

Maximum constituent concentrations in fish fillet samples collected from the Site Q Pond and in the Mississippi River were compared to the USEPA Region 3 RBCs for fish tissue (USEPA, 2003a). The screening tables are presented in Appendix B.

Several COPCs were identified in fillet samples of carp and black bullhead in the Site Q Pond, and in buffalo fish fillet in the Mississippi River. These COPCs are indicated on Table 3-7. Figure 3-11 indicates the locations of the COPCs in fish fillet.

TABLE 3-1
SUMMARY OF COPCS IN SURFACE SOIL
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Site O	Site O North	Site P	Site Q North	Site Q Central	Site Q South	Site R	Site S
SVOCs									
2,4,6-Trichlorophenol	88-06-2								X
2-Nitroaniline	88-74-4								X
4-Nitroaniline	100-01-6								X
Benzo(a)anthracene	56-55-3						X		X
Benzo(a)pyrene	50-32-8			X	X		X		X
Benzo(b)fluoranthene	205-99-2						X		X
Dibenzo(a,h)anthracene	53-70-3				X				X
Pesticide									
4,4'-DDT	50-29-3								X
beta-BHC	319-85-7								X
Dieldrin	60-57-1	X					X		
gamma-BHC (Lindane)	58-89-9								X
Heptachlor	76-44-8								X
Herbicide									
Pentachlorophenol	87-86-5								X
PCBs									
Total PCBs	1336-36-3	X	X	X	X	X	X		X
Dioxin									
2,3,7,8-TCDD-TEQ	1746-01-6	X	X			X	X		
Metals									
Antimony	7440-36-0						X		
Arsenic	7440-38-2			X		X	X		
Cadmium	7440-43-9				X				
Chromium	7440-47-3						X		
Manganese	7439-96-5						X		
Mercury	7439-97-6		X						
Total:		**3**	**3**	**3**	**4**	**3**	**10**	**0**	**13**

TABLE 3-1
SUMMARY OF COPCS IN SURFACE SOIL
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Site O	Site O North	Site P	Site Q North	Site Q Central	Site Q South	Site R	Site S

Notes:

CAS - Chemical Abstracts Service.
COPC - Constituent of Potential Concern.
PCB - Polychlorinated Biphenyl.
SVOC - Semivolatile organic compound.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalent Concentration.

TABLE 3-2
SUMMARY OF COPCS IN COMBINED SOIL (SURFACE, SUBSURFACE, WASTE)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Construction Worker Pathway								Volatilization Pathway (a)							
		Site O	Site O North	Site P	Site Q North	Site Q Central	Site Q South	Site R	Site S	Site O	Site O North	Site P	Site Q North	Site Q Central	Site Q South	Site R	Site S
VOCs																	
1,1,2-Trichloroethane	79-00-5							X								X	
1,2-Dichloroethane	107-06-2				X			X					X			X	
1,2-Dichloroethene (total)	540-59-0							X								X	
4-Methyl-2-pentanone (MIBK)	108-10-1								X								X
Benzene	71-43-2	X	X	X	X		X	X	X	X	X	X	X		X	X	X
Chlorobenzene	108-90-7	X	X					X	X	X	X					X	X
Chloroform	67-66-3							X								X	
Dichloromethane	75-09-2		X						X		X						X
Ethylbenzene	100-41-4	X	X	X	X		X	X	X	X	X	X	X		X	X	X
Tetrachloroethene	127-18-4		X	X	X			X	X		X	X	X			X	X
Toluene	108-88-3	X					X	X	X	X					X	X	X
Trichloroethylene	79-01-6			X	X		X	X	X			X	X		X	X	X
Xylenes, Total	1330-20-7	X	X	X	X		X	X	X	X	X	X	X		X	X	X
SVOCs																	
1,2-Dichlorobenzene	95-50-1		X														
1,3-Dichlorobenzene	541-73-1		X						X								
1,4-Dichlorobenzene	106-46-7	X	X	X				X	X								
2,4,6-Trichlorophenol	88-06-2	X	X		X			X	X								
2,4-Dichlorophenol	120-83-2				X			X									
2-Chlorophenol	95-57-8							X									
2-Methylnaphthalene	91-57-6		X														
2-Nitroaniline	88-74-4	X	X		X			X	X								
4-Nitroaniline	100-01-6		X					X	X								
Benzo(a)anthracene	56-55-3	X	X		X	X	X		X								
Benzo(a)pyrene	50-32-8	X	X	X	X	X	X		X								
Benzo(b)fluoranthene	205-99-2	X	X		X	X	X		X								
bis(2-Chloroethyl)ether	111-44-4		X														
bis(2-Ethylhexyl)phthalate	117-81-7								X								
Dibenzo(a,h)anthracene	53-70-3	X	X		X				X								
Hexachlorobenzene	118-74-1		X														

TABLE 3-2
SUMMARY OF COPCS IN COMBINED SOIL (SURFACE, SUBSURFACE, WASTE)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Construction Worker Pathway								Volatilization Pathway (a)							
		Site O	Site O North	Site P	Site Q North	Site Q Central	Site Q South	Site R	Site S	Site O	Site O North	Site P	Site Q North	Site Q Central	Site Q South	Site R	Site S
Naphthalene	91-20-3		X					X	X								
Nitrobenzene	98-95-3		X					X									
Pesticide																	
4,4'-DDE	72-55-9		X														
4,4'-DDT	50-29-3		X						X								
Aldrin	309-00-2	X	X			X	X		X								
alpha-BHC	319-84-6		X														
beta-BHC	319-85-7		X					X	X								
delta-BHC	319-86-8	X															
Dieldrin	60-57-1	X	X	X	X	X	X	X	X								
gamma-BHC (Lindane)	58-89-9	X							X								
Heptachlor	76-44-8	X	X					X	X								
Heptachlor Epoxide	1024-57-3	X	X				X										
Herbicide																	
MCPA	94-74-6			X													
MCPP	93-65-2							X									
Pentachlorophenol	87-86-5				X	X	X		X								
PCBs																	
Total PCBs	1336-36-3	X	X	X	X	X	X	X	X								
Dioxin																	
2,3,7,8-TCDD-TEQ	1746-01-6	X	X	X	X	X	X	X	X								
Metals																	
Antimony	7440-36-0				X		X										
Arsenic	7440-38-2		X	X	X	X	X	X									
Barium	7440-39-3				X												
Cadmium	7440-43-9		X	X	X												
Chromium	7440-47-3						X		X								
Copper	7440-50-8					X											
Lead	7439-92-1				X		X		X								
Manganese	7439-96-5					X	X										
Mercury	7439-97-6		X				X	X									

TABLE 3-2
SUMMARY OF COPCS IN COMBINED SOIL (SURFACE, SUBSURFACE, WASTE)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Construction Worker Pathway								Volatilization Pathway (a)							
		Site O	Site O North	Site P	Site Q North	Site Q Central	Site Q South	Site R	Site S	Site O	Site O North	Site P	Site Q North	Site Q Central	Site Q South	Site R	Site S
Nickel	7440-02-0						X										
Total:		20	34	13	22	11	21	27	31	5	6	5	6	0	5	11	9

Notes:

CAS - Chemical Abstracts Service.

COPC - Constituent of Potential Concern.

MCPA - 2-Methyl-4-chlorophenoxyacetic acid.

MCPP - 2-(2-Methyl-4-chlorophenoxy) propionic acid.

PCB - Polychlorinated Biphenyl.

SVOC - Semivolatile organic compound.

TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalent Concentration.

VOC - Volatile Organic Compound.

(a) - Only VOCs are identified as COPCs for the volatilization pathway.

TABLE 3-3
SUMMARY OF COPCS IN SHALLOW GROUNDWATER AND LEACHATE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Shallow Groundwater/Leachate Location (a)				
		L-O-1	O - AA-O-1-16	O-AA-O-2-13	L-Q-1	L-R-1
VOCs						
1,2-Dichloroethane	107-06-2				X	X
1,2-Dichloroethene (total)	540-59-0					X
2-Butanone (MEK)	78-93-3					X
4-Methyl-2-pentanone (MIBK)	108-10-1	X			X	
Acetone	67-64-1				X	X
Benzene	71-43-2	X			X	X
Chlorobenzene	108-90-7	X			X	X
Chloroform	67-66-3					X
Dichloromethane	75-09-2				X	X
Tetrachloroethene	127-18-4				X	X
Toluene	108-88-3					X
Trichloroethylene	79-01-6				X	X
SVOCs						
2,4,6-Trichlorophenol	88-06-2	X			X	
2,4-Dichlorophenol	120-83-2	X			X	
2,4-Dimethylphenol	105-67-9				X	
2-Chlorophenol	95-57-8	X			X	X
2-Nitroaniline	88-74-4	X			X	
3-Methylphenol/4-Methylphenol	106-44-5	X			X	X
4-Chloroaniline	106-47-8	X			X	X
4-Nitroaniline	100-01-6	X			X	X
Benzo(a)pyrene	50-32-8		X			
Benzo(b)fluoranthene	205-99-2		X			
Benzo(g,h,i)perylene	191-24-2					X
Benzo(k)fluoranthene	207-08-9		X			
Dibenzo(a,h)anthracene	53-70-3		X			
Indeno(1,2,3-cd)pyrene	193-39-5		X			
Naphthalene	91-20-3	X			X	
Nitrobenzene	98-95-3	X			X	
Phenol	108-95-2	X			X	X
Pesticide						
4,4'-DDT	50-29-3					X
beta-BHC	319-85-7	X			X	X
Dieldrin	60-57-1					X
Endrin Ketone	53494-70-5				X	
gamma-BHC (Lindane)	58-89-9					X
Heptachlor	76-44-8					X
Herbicide						
2,4,5-T	93-76-5	X				
2,4-D	94-75-7	X			X	X
Pentachlorophenol	87-86-5	X			X	
PCBs						
Total PCBs	1336-36-3	X			X	X

TABLE 3-3
SUMMARY OF COPCS IN SHALLOW GROUNDWATER AND LEACHATE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Shallow Groundwater/Leachate Location (a)				
		L-O-1	O - AA-O-1-16	O-AA-O-2-13	L-Q-1	L-R-1
Dioxin						
2,3,7,8-TCDD-TEQ	1746-01-6	X				X
Metals						
Antimony	7440-36-0				X	
Arsenic	7440-38-2		X			
Beryllium	7440-41-7					X
Chromium	7440-47-3					X
Cobalt	7440-48-4					X
Lead	7439-92-1		X			
Manganese	7439-96-5	X	X		X	X
Mercury	7439-97-6					X
Nickel	7440-02-0				X	X
Thallium	7440-28-0	X				X
Vanadium	7440-62-2					X
Zinc	7440-66-6				X	X
Total:		**21**	**8**	**0**	**28**	**34**

Notes:

CAS - Chemical Abstracts Service.

COPC - Constituent of Potential Concern.

PCB - Polychlorinated Biphenyl.

SVOC - Semivolatile organic compound.

TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalence Concentration.

VOC - Volatile Organic Compound.
(a) - Shallow groundwater and leacahte evaluated for potential direct contact by construction worker.

TABLE 3-4
SUMMARY OF VOLATILE COPCS IN MID AND SHALLOW GROUNDWATER AND LEACHATE
HUMAN HEALTH RISK ASSESSMEN
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

		Mid/Shallow Groundwater/Leachate Location (a)															
Constituent	CAS	L-O-1	O - AA-O-1-16	O-AA-O-2-13	O - AA-O-3-28	P - AA-P-1-24	P - AA-P-2-24	P - AA-P-3-32	L-Q-1	Q - AA-Q-6-24	Q - AA-Q-7-24	Q - AA-Q-8-24	L-R-1	R - AA-R-1-28	S - AA-S-1-24	S - AA-S-2-28	S - AA-S-3-24
VOCs																	
1,2-Dichloroethane	107-06-2								X				X				
1,2-Dichloroethene (total)	540-59-0												X				
2-Butanone (MEK)	78-93-3												X				
4-Methyl-2-pentanone (MIBK)	108-10-1	X							X								
Acetone	67-64-1								X				X				
Benzene	71-43-2	X							X	X			X	X			
Chlorobenzene	108-90-7	X							X				X	X			
Chloroform	67-66-3												X				
Chloromethane	74-87-3													X			
Dichloromethane	75-09-2								X				X				
Tetrachloroethene	127-18-4								X				X				
Toluene	108-88-3												X				
Trichloroethylene	79-01-6								X				X				
Total:		**3**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**1**	**0**	**0**	**11**	**3**	**0**	**0**	**0**

Notes:

CAS - Chemical Abstracts Service.

COPC - Constituent of Potential Concern.

VOC - Volatile Organic Compound.

(a) AA - Designates alluvial aquifer sample.

L - Designates leachate sample.

Only VOCs are candidates for COPC selection as volatilization to indoor/outdoor air is the potential exposure pathway evalauted for this medium. COPCs for direct contact with shallow groundwater/leachate are identified in Table 3-3.

TABLE 3-5
SUMMARY OF COPCS IN SEDIMENT
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Pond (Site Q)	River
Metals			
Arsenic	7440-38-2		X
Total:		**0**	**1**

Notes:

CAS - Chemical Abstracts Service.
COPC - Constituent of Potential Concern.

TABLE 3-6
SUMMARY OF COPCS IN SURFACE WATER
HUMAN HEALTH RISK ASSESSMEN
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Pond (Site Q)	River
SVOCs			
2,4-Dichlorophenol	120-83-2		X
4-Chloroaniline	106-47-8		X
Herbicide			
MCPA	94-74-6		X
MCPP	93-65-2		X
Metals			
Lead	7439-92-1	X	
Manganese	7439-96-5	X	
Total:		**2**	**4**

Notes:

CAS - Chemical Abstracts Service.
COPC - Constituent of Potential Concern.
MCPA - 2-Methyl-4-chlorophenoxyacetic acid.
MCPP - 2-(2-Methyl-4-chlorophenoxy) propionic acid.
SVOC - Semivolatile organic compound.

TABLE 3-7
SUMMARY OF COPCS IN FISH FILLET
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Mississippi River			Pond (Site Q)	
		DDA - Buffalo Fillet	PDA - Buffalo Fillet	UDA - Buffalo Fillet	Black Bullhead Fillet	Carp Fillet
SVOCs						
Benzo(a)anthracene	56-55-3					X
Benzo(a)pyrene	50-32-8					X
bis(2-Ethylhexyl)phthalate	117-81-7					X
Dibenzo(a,h)anthracene	53-70-3					X
Pesticide						
4,4'-DDE	72-55-9			X		
4,4'-DDT	50-29-3				X	X
alpha-Chlordane	5103-71-9				X	X
beta-BHC	319-85-7					X
Dieldrin	60-57-1			X	X	X
PCBs						
Total PCBs	1336-36-3				X	X
Dioxin						
2,3,7,8-TCDD-TEQ	1746-01-6	X	X	X	X	X
Metals						
Arsenic	7440-38-2				X	X
Mercury	7439-97-6				X	X
Total:		**1**	**1**	**3**	**7**	**12**

Notes:

CAS - Chemical Abstracts Service.
COPC - Constituent of Potential Concern.
DDA - Downstream Discharge Area.
PCB - Polychlorinated Biphenyl.
PDA - Plume Discharge Area.
SVOC - Semivolatile organic compound.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalence Concentration.
UDA - Upstream Discharge Area.

LEGEND

- Off-site Soil and Upgradient/Groundwater Sampling Locations
- Site-Related Groundwater Sampling Locations
- Bedrock Monitoring Well
- Piezometer Cluster
- Air Sampling Location
- Boundary Trench Location
- Anomaly Trench Location
- Waste Characterization Boring Location
- Leachate Monitoring Well Location
- River/Pond Sediment/Surface Water Sample Location
- Stormwater Sample Locations

Base map from URS entitled "SAUGET AREA 2, RI/FS, SAUGET ILLINOIS", dated 3/27/03, drawn by "djd" and designed by "sjs".

0 1100 1650 2200
Scale in Feet

FILENAME: 610501B.DWG

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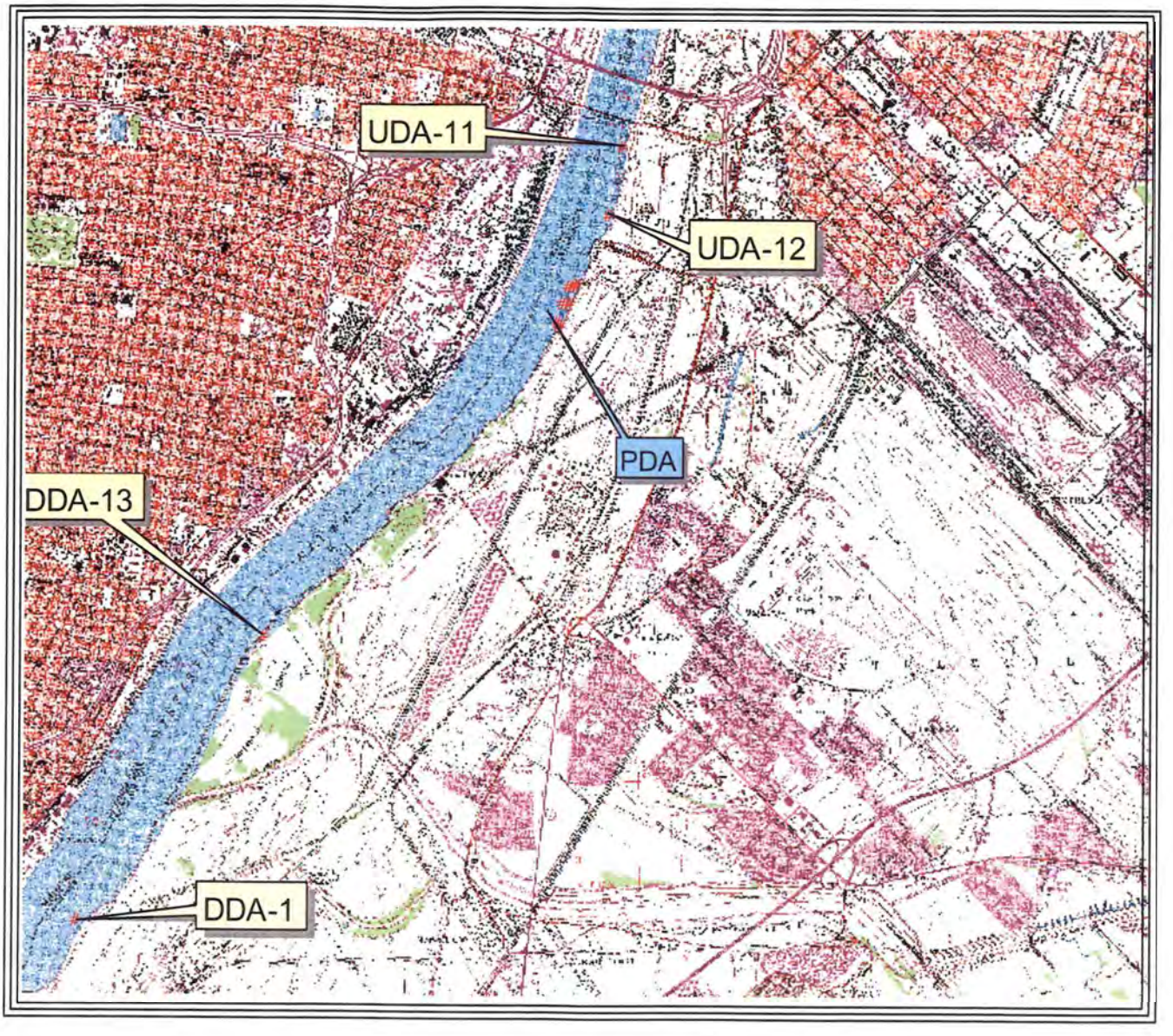
SAMPLE LOCATIONS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, IL

SCALE:	DATE:	PROJECT NUMBER:
1"=1100'	7/03	06105-009

FIGURE NUMBER:
3-1

SHEET NUMBER:
X

Figure 3-2 Mississippi River Fish Sampling Locations
Human Health Risk Assessment, Sauget Area 2 RI/FS
Sauget, Illinois



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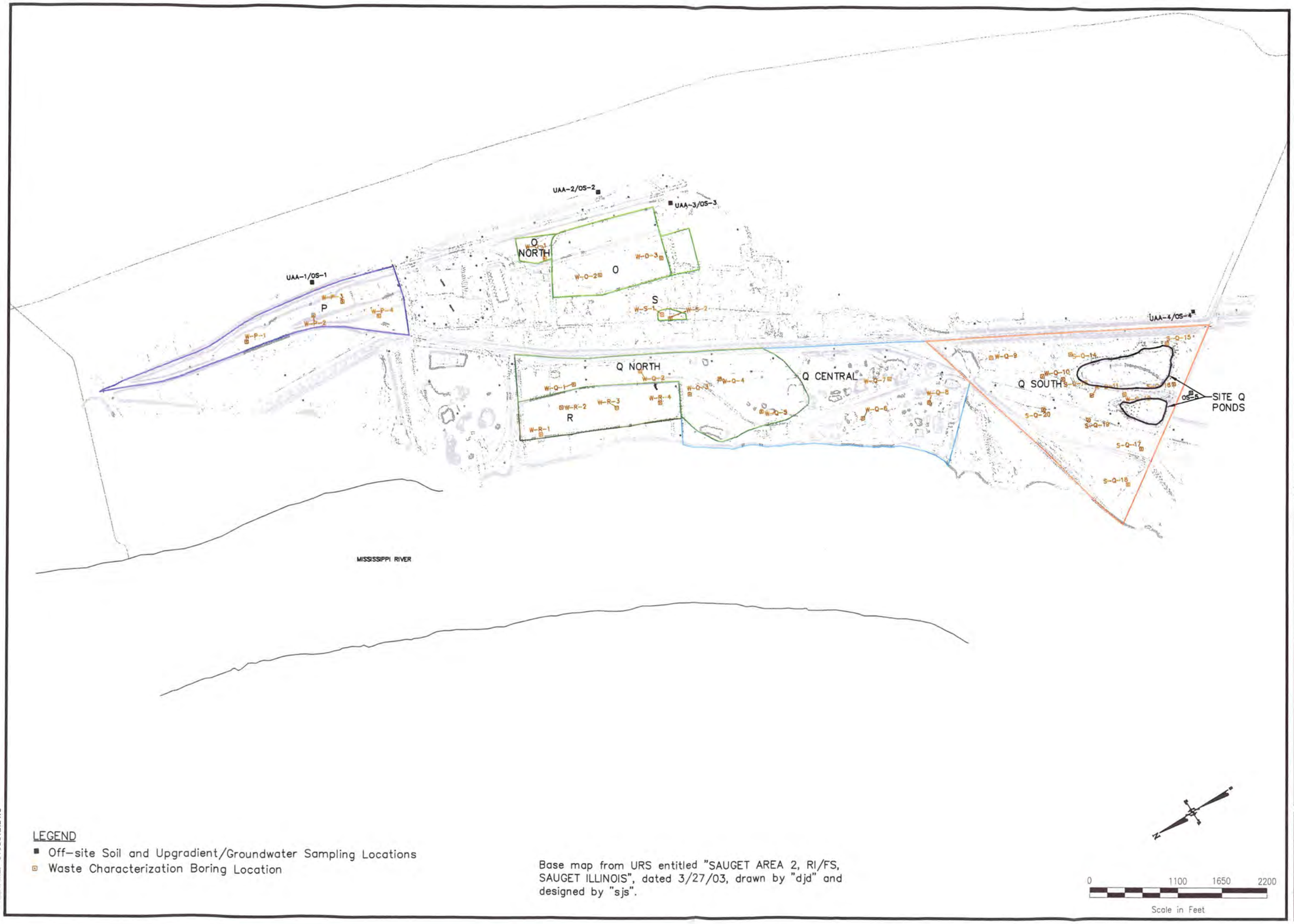

LEGEND

- ■ Off-site Soil and Upgradient/Groundwater Sampling Locations
- ⊡ Waste Characterization Boring Location

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SOIL/WASTE SAMPLE LOCATIONS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, IL

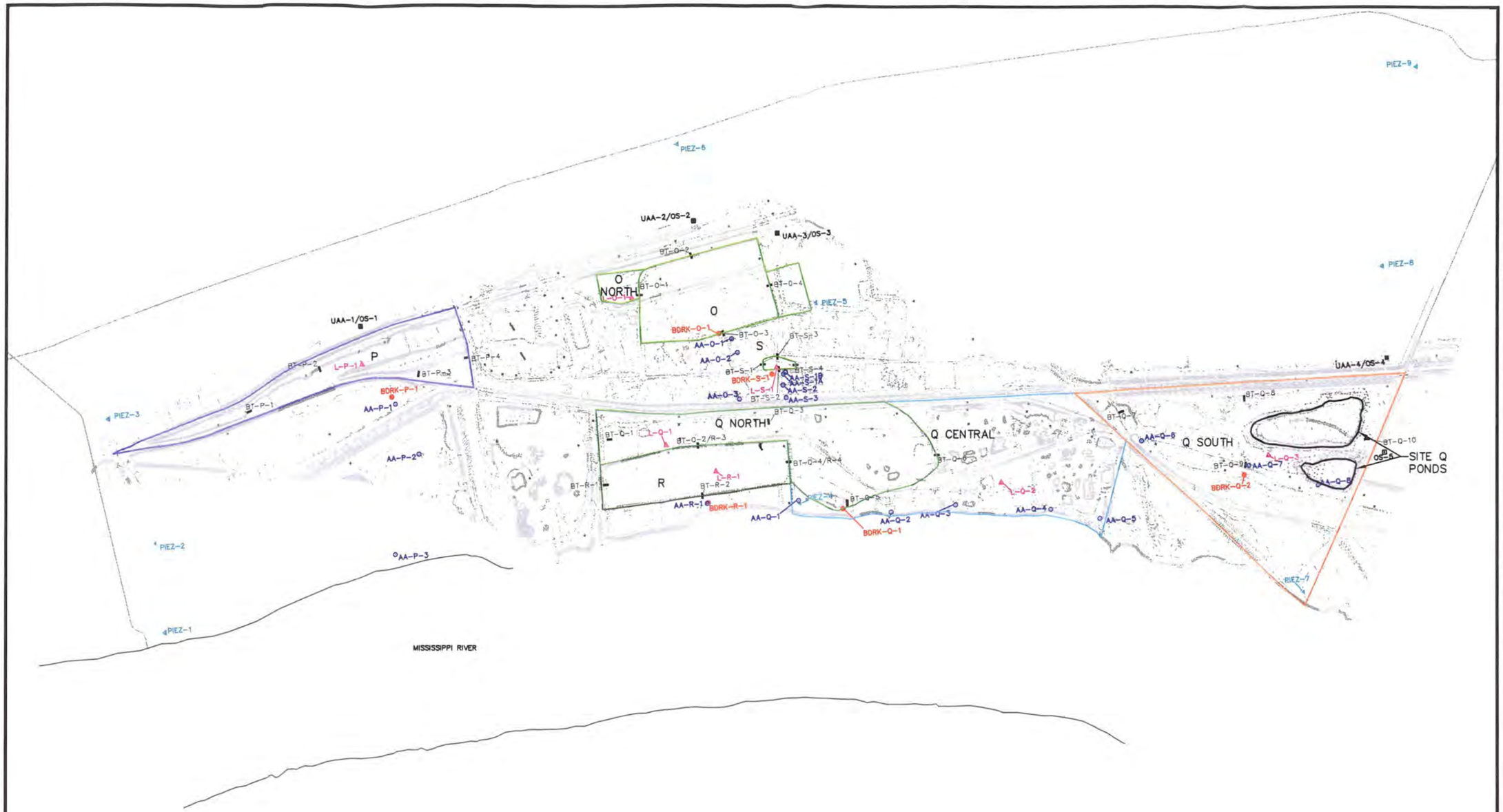
SCALE:	DATE:	PROJECT NUMBER:
1"=1100'	7/03	06105-009

FIGURE NUMBER:

3-3

SHEET NUMBER:

X



LEGEND

- Off-site Soil and Upgradient/Groundwater Sampling Locations
- Site-Related Groundwater Sampling Locations
- Bedrock Monitoring Well
- Piezometer Cluster
- Leachate Monitoring Well Location

Base map from URS entitled "SAUGET AREA 2, RI/FS, SAUGET ILLINOIS", dated 3/27/03, drawn by "djd" and designed by "sjs".

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Scale in Feet

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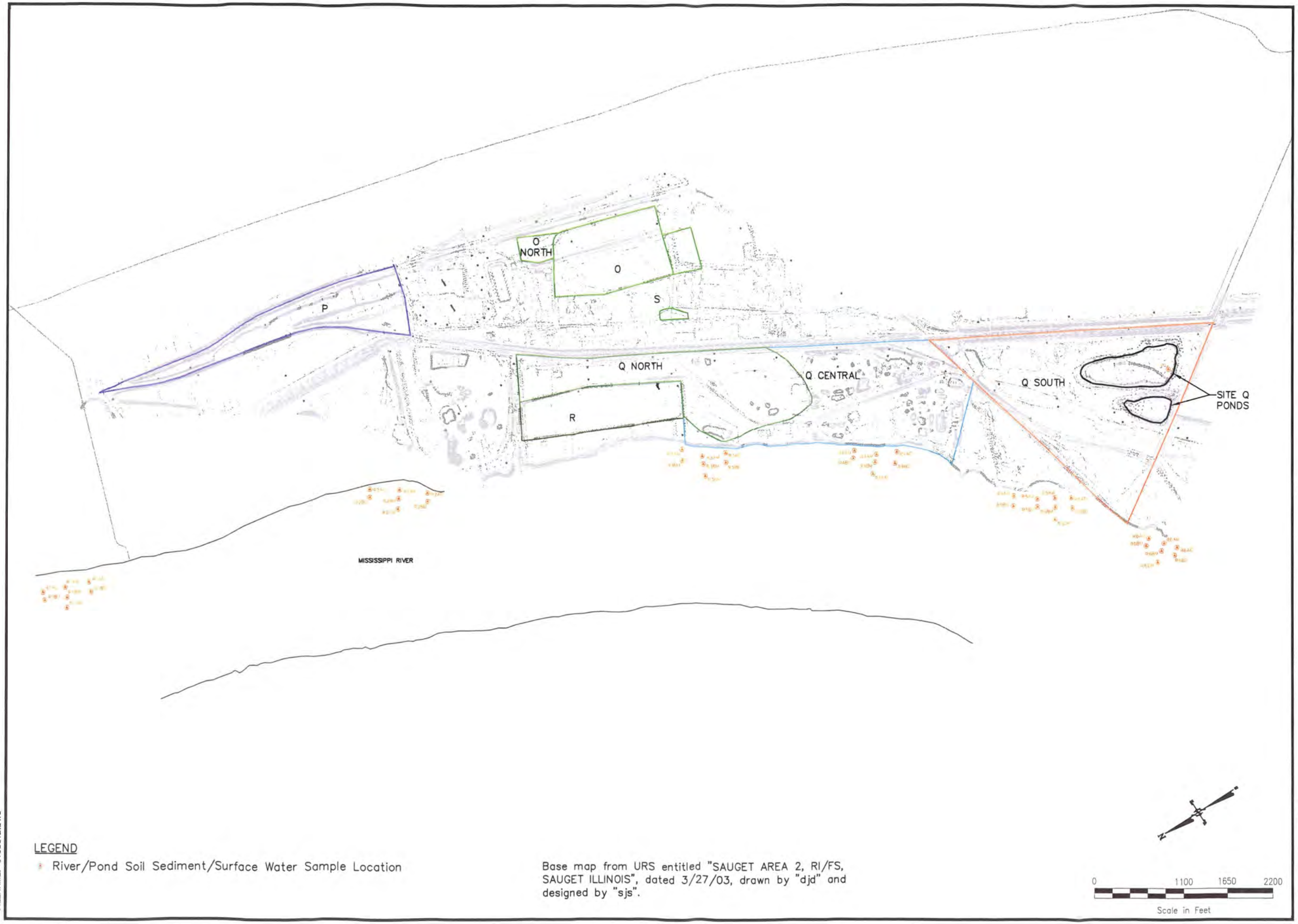
GROUNDWATER/LEACHATE SAMPLE LOCATIONS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, IL

SCALE:	DATE:	PROJECT NUMBER:
1"=1100'	7/03	06105-009

FIGURE NUMBER:
3-4

SHEET NUMBER:
X



LEGEND

River/Pond Soil Sediment/Surface Water Sample Location

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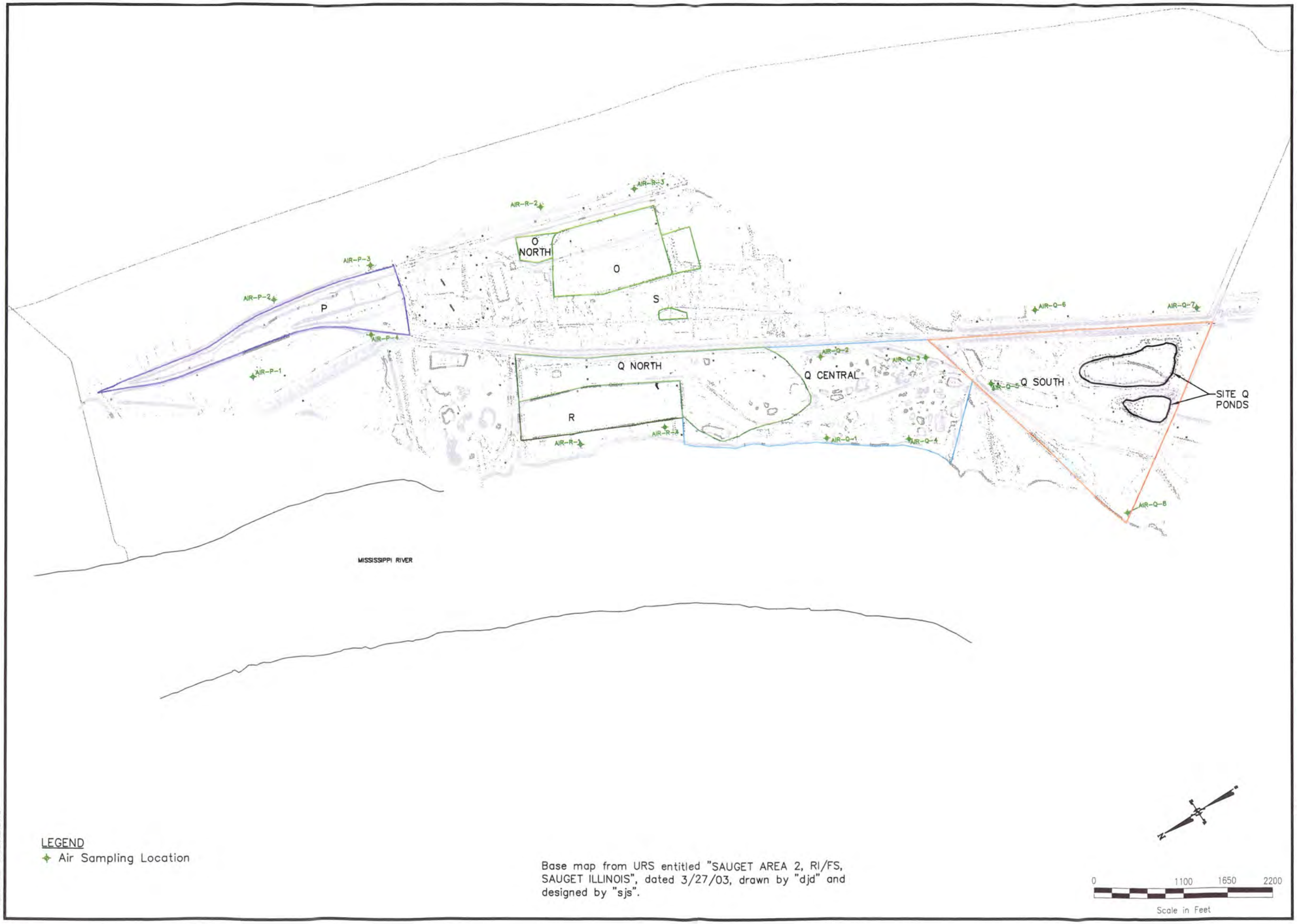
SEDIMENT/SURFACE WATER SAMPLE LOCATIONS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, IL

PROJECT NUMBER: 06105-009
DATE: 7/03
SCALE: 1"=1100'

FIGURE NUMBER: 3-5

SHEET NUMBER: X

FILENAME: 610501B.DWG



LEGEND

✦ Air Sampling Location

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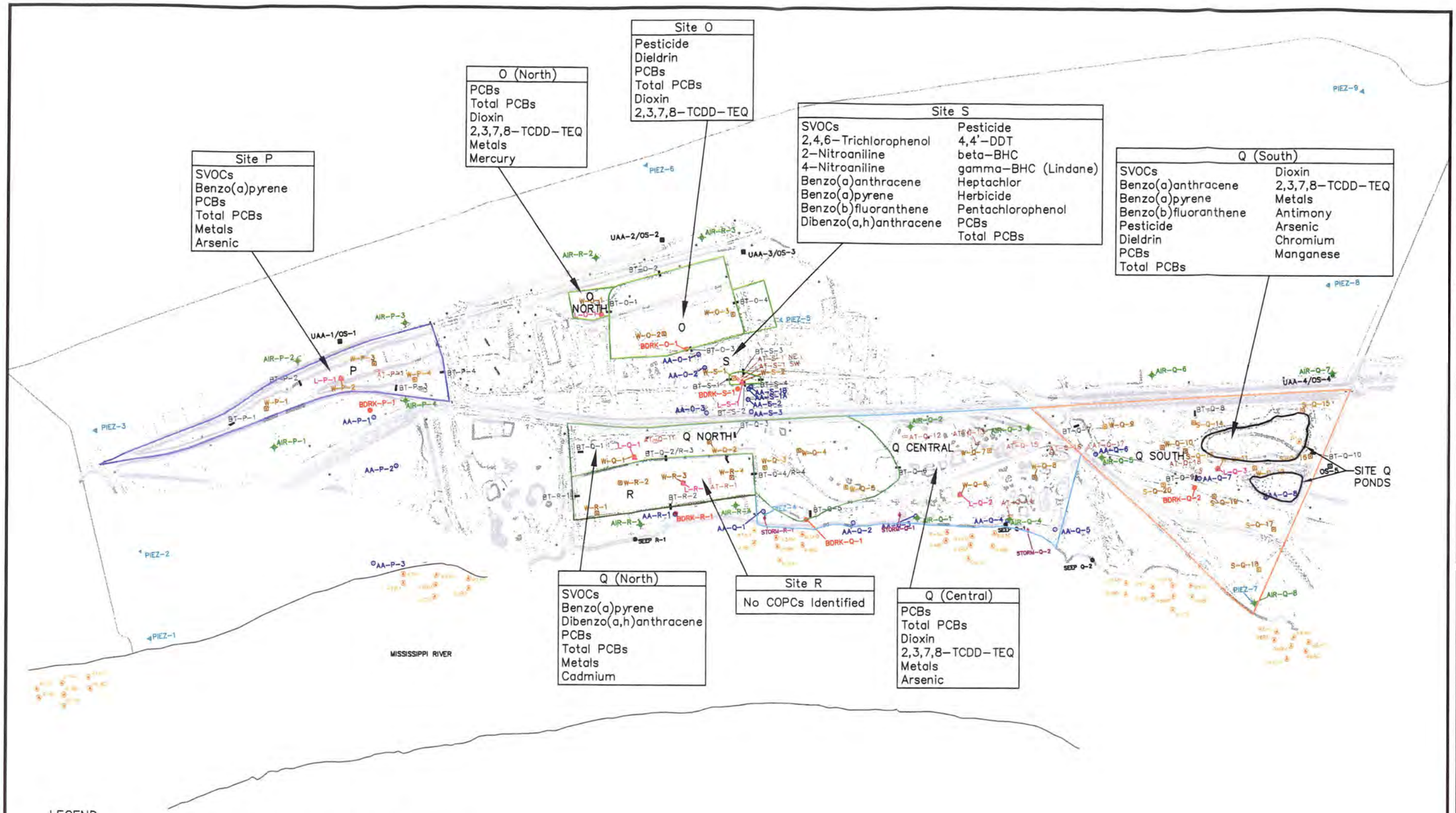
AMBIENT AIR SAMPLE LOCATIONS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, IL

SCALE: 1"=1100'
DATE: 7/03
PROJECT NUMBER: 06105-009

FIGURE NUMBER: 3-6

SHEET NUMBER: X



LEGEND

- Off-site Soil and Upgradient/Groundwater Sampling Locations
- Site-Related Groundwater Sampling Locations
- Bedrock Monitoring Well
- Piezometer Cluster
- Air Sampling Location
- Boundary Trench Location
- Anomaly Trench Location
- Waste Characterization Boring Location
- Leachate Monitoring Well Location
- River/Pond Sediment/Surface Water Sample Location
- Stormwater Sample Locations

COPC Constituent of Potential Concern

Base map from URS entitled "SAUGET AREA 2, RI/FS, SAUGET ILLINOIS", dated 3/27/03, drawn by "djd" and designed by "sjs".

FILENAME: 610501B.DWG

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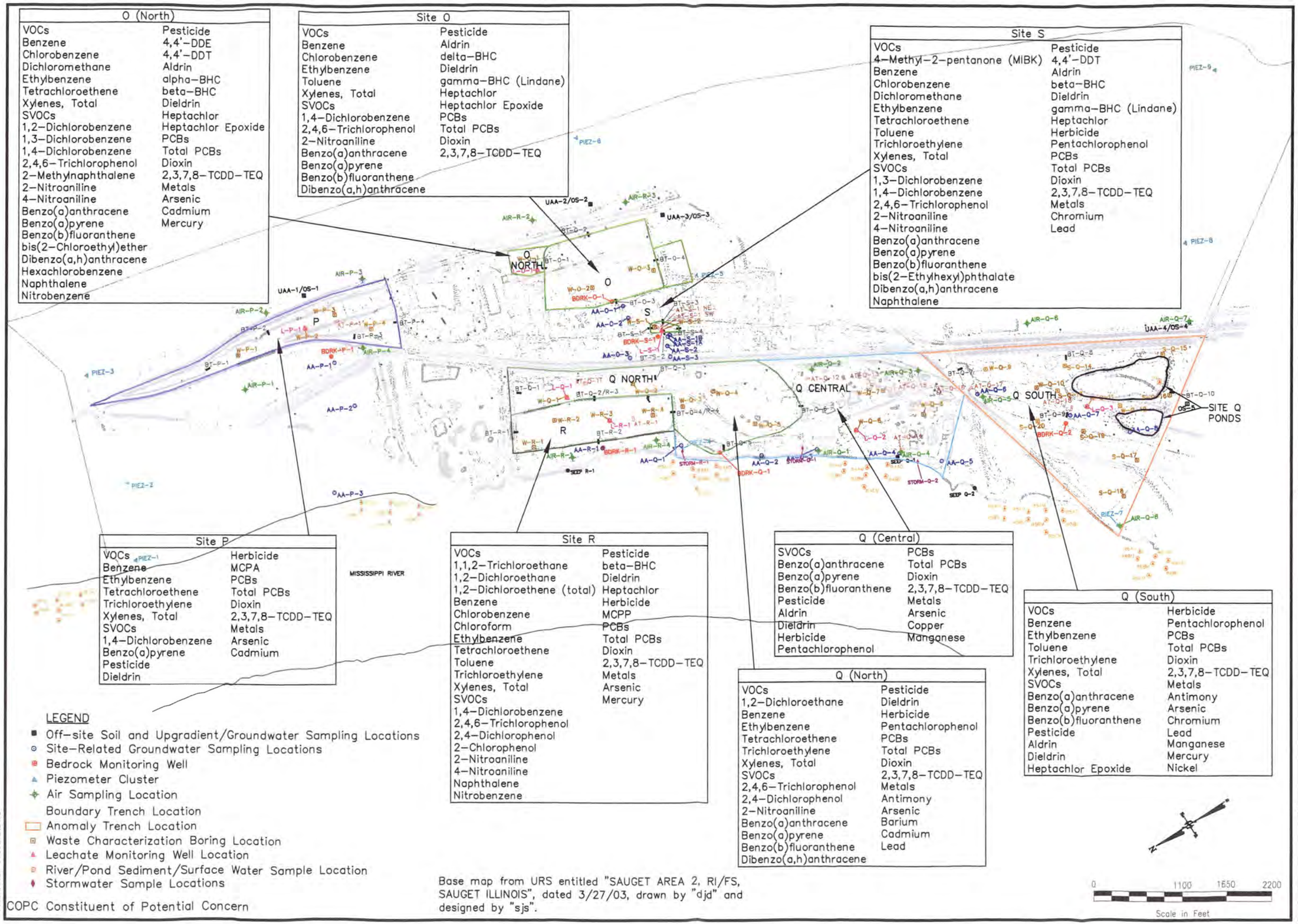
COPCs IN SURFACE SOIL
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, IL

SCALE:	DATE:	PROJECT NUMBER:
1"=1100'	7/03	06105-009

FIGURE NUMBER: 3-7

SHEET NUMBER: X



O (North)	
VOCs	Pesticide
Benzene	4,4'-DDE
Chlorobenzene	4,4'-DDT
Dichloromethane	Aldrin
Ethylbenzene	alpha-BHC
Tetrachloroethene	beta-BHC
Xylenes, Total	Dieldrin
SVOCs	Heptachlor
1,2-Dichlorobenzene	Heptachlor Epoxide
1,3-Dichlorobenzene	PCBs
1,4-Dichlorobenzene	Total PCBs
2,4,6-Trichlorophenol	Dioxin
2-Methylnaphthalene	2,3,7,8-TCDD-TEQ
2-Nitroaniline	Metals
4-Nitroaniline	Arsenic
Benzo(a)anthracene	Cadmium
Benzo(a)pyrene	Mercury
Benzo(b)fluoranthene	
bis(2-Chloroethyl)ether	
Dibenzo(a,h)anthracene	
Hexachlorobenzene	
Naphthalene	
Nitrobenzene	

Site O	
VOCs	Pesticide
Benzene	Aldrin
Chlorobenzene	delta-BHC
Ethylbenzene	Dieldrin
Toluene	gamma-BHC (Lindane)
Xylenes, Total	Heptachlor
SVOCs	Heptachlor Epoxide
1,4-Dichlorobenzene	PCBs
2,4,6-Trichlorophenol	Total PCBs
2-Nitroaniline	Dioxin
Benzo(a)anthracene	2,3,7,8-TCDD-TEQ
Benzo(a)pyrene	
Benzo(b)fluoranthene	
Dibenzo(a,h)anthracene	

Site S	
VOCs	Pesticide
4-Methyl-2-pentanone (MIBK)	4,4'-DDT
Benzene	Aldrin
Chlorobenzene	beta-BHC
Dichloromethane	Dieldrin
Ethylbenzene	gamma-BHC (Lindane)
Tetrachloroethene	Heptachlor
Toluene	Herbicide
Trichloroethylene	Pentachlorophenol
Xylenes, Total	PCBs
SVOCs	Total PCBs
1,3-Dichlorobenzene	Dioxin
1,4-Dichlorobenzene	2,3,7,8-TCDD-TEQ
2,4,6-Trichlorophenol	Metals
2-Nitroaniline	Chromium
4-Nitroaniline	Lead
Benzo(a)anthracene	
Benzo(a)pyrene	
Benzo(b)fluoranthene	
bis(2-Ethylhexyl)phthalate	
Dibenzo(a,h)anthracene	
Naphthalene	

Site P	
VOCs	Herbicide
Benzene	MCPA
Ethylbenzene	PCBs
Tetrachloroethene	Total PCBs
Trichloroethylene	Dioxin
Xylenes, Total	2,3,7,8-TCDD-TEQ
SVOCs	Metals
1,4-Dichlorobenzene	Arsenic
Benzo(a)pyrene	Cadmium
Pesticide	
Dieldrin	

Site R	
VOCs	Pesticide
1,1,2-Trichloroethane	beta-BHC
1,2-Dichloroethane	Dieldrin
1,2-Dichloroethene (total)	Heptachlor
Benzene	Herbicide
Chlorobenzene	MCPP
Chloroform	PCBs
Ethylbenzene	Total PCBs
Tetrachloroethene	Dioxin
Toluene	2,3,7,8-TCDD-TEQ
Trichloroethylene	Metals
Xylenes, Total	Arsenic
SVOCs	Mercury
1,4-Dichlorobenzene	
2,4,6-Trichlorophenol	
2,4-Dichlorophenol	
2-Chlorophenol	
2-Nitroaniline	
4-Nitroaniline	
Naphthalene	
Nitrobenzene	

Q (Central)	
SVOCs	PCBs
Benzo(a)anthracene	Total PCBs
Benzo(a)pyrene	Dioxin
Benzo(b)fluoranthene	2,3,7,8-TCDD-TEQ
Pesticide	Metals
Aldrin	Arsenic
Dieldrin	Copper
Herbicide	Manganese
Pentachlorophenol	

Q (North)	
VOCs	Pesticide
1,2-Dichloroethane	Dieldrin
Benzene	Herbicide
Ethylbenzene	Pentachlorophenol
Tetrachloroethene	PCBs
Trichloroethylene	Total PCBs
Xylenes, Total	Dioxin
SVOCs	2,3,7,8-TCDD-TEQ
2,4,6-Trichlorophenol	Metals
2,4-Dichlorophenol	Antimony
2-Nitroaniline	Arsenic
Benzo(a)anthracene	Barium
Benzo(a)pyrene	Cadmium
Benzo(b)fluoranthene	Lead
Dibenzo(a,h)anthracene	

Q (South)	
VOCs	Herbicide
Benzene	Pentachlorophenol
Ethylbenzene	PCBs
Toluene	Total PCBs
Trichloroethylene	Dioxin
Xylenes, Total	2,3,7,8-TCDD-TEQ
SVOCs	Metals
Benzo(a)anthracene	Antimony
Benzo(a)pyrene	Arsenic
Benzo(b)fluoranthene	Chromium
Pesticide	Lead
Aldrin	Manganese
Dieldrin	Mercury
Heptachlor Epoxide	Nickel

LEGEND

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- Stormwater Sample Locations

COPC Constituent of Potential Concern

Base map from URS entitled "SAUGET AREA 2, RI/FS, SAUGET ILLINOIS", dated 3/27/03, drawn by "djd" and designed by "sjs".

FILENAME: 610501B.DWG

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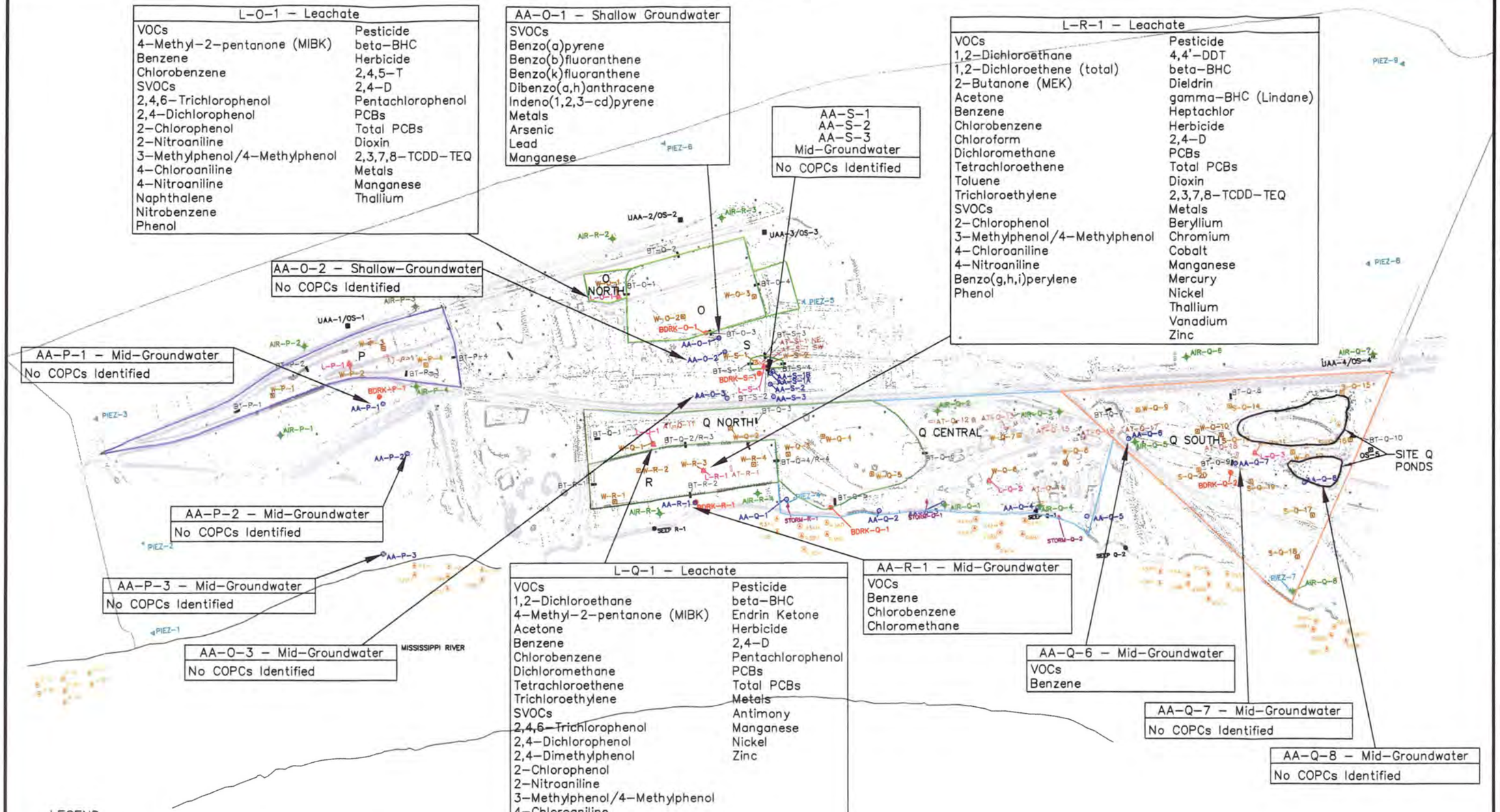
COPCs IN COMBINED SOILS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, IL

PROJECT NUMBER: 06105-009
DATE: 7/03
SCALE: 1"=1100'

FIGURE NUMBER: 3-8

SHEET NUMBER: X



L-O-1 – Leachate

VOCs	Pesticide
4-Methyl-2-pentanone (MIBK)	beta-BHC
Benzene	Herbicide
Chlorobenzene	2,4,5-T
SVOCs	2,4-D
2,4,6-Trichlorophenol	Pentachlorophenol
2,4-Dichlorophenol	PCBs
2-Chlorophenol	Total PCBs
2-Nitroaniline	Dioxin
3-Methylphenol/4-Methylphenol	2,3,7,8-TCDD-TEQ
4-Chloroaniline	Metals
4-Nitroaniline	Manganese
Naphthalene	Thallium
Nitrobenzene	
Phenol	

AA-O-1 – Shallow Groundwater

SVOCs
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Dibenzo(a,h)anthracene
Indeno(1,2,3-cd)pyrene
Metals
Arsenic
Lead
Manganese

AA-S-1, AA-S-2, AA-S-3 – Mid-Groundwater

No COPCs Identified

L-R-1 – Leachate

VOCs	Pesticide
1,2-Dichloroethane	4,4'-DDT
1,2-Dichloroethene (total)	beta-BHC
2-Butanone (MEK)	Dieldrin
Acetone	gamma-BHC (Lindane)
Benzene	Heptachlor
Chlorobenzene	Herbicide
Chloroform	2,4-D
Dichloromethane	PCBs
Tetrachloroethene	Total PCBs
Toluene	Dioxin
Trichloroethylene	2,3,7,8-TCDD-TEQ
SVOCs	Metals
2-Chlorophenol	Beryllium
3-Methylphenol/4-Methylphenol	Chromium
4-Chloroaniline	Cobalt
4-Nitroaniline	Manganese
Benzo(g,h,i)perylene	Mercury
Phenol	Nickel
	Thallium
	Vanadium
	Zinc

AA-O-2 – Shallow-Groundwater

No COPCs Identified

AA-P-1 – Mid-Groundwater

No COPCs Identified

AA-P-2 – Mid-Groundwater

No COPCs Identified

AA-P-3 – Mid-Groundwater

No COPCs Identified

AA-O-3 – Mid-Groundwater

No COPCs Identified

L-Q-1 – Leachate

VOCs	Pesticide
1,2-Dichloroethane	beta-BHC
4-Methyl-2-pentanone (MIBK)	Endrin Ketone
Acetone	Herbicide
Benzene	2,4-D
Chlorobenzene	Pentachlorophenol
Dichloromethane	PCBs
Tetrachloroethene	Total PCBs
Trichloroethylene	Metals
SVOCs	Antimony
2,4,6-Trichlorophenol	Manganese
2,4-Dichlorophenol	Nickel
2,4-Dimethylphenol	Zinc
2-Chlorophenol	
2-Nitroaniline	
3-Methylphenol/4-Methylphenol	
4-Chloroaniline	
4-Nitroaniline	
Naphthalene	
Nitrobenzene	
Phenol	

AA-R-1 – Mid-Groundwater

VOCs
Benzene
Chlorobenzene
Chloromethane

AA-Q-6 – Mid-Groundwater

VOCs
Benzene

AA-Q-7 – Mid-Groundwater

No COPCs Identified

AA-Q-8 – Mid-Groundwater

No COPCs Identified

LEGEND

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- Stormwater Sample Locations

COPC Constituent of Potential Concern

Shallow Groundwater – Less than or equal to 15 feet to water-construction worker contact and volatilization pathways

Mid Groundwater – Less than or equal to 30 feet to water-volatilization pathway only

Leachate – Construction worker contact and volatilization pathways

Base map from URS entitled "SAUGET AREA 2, RI/FS, SAUGET ILLINOIS", dated 3/27/03, drawn by "djd" and designed by "sjs".

0 1100 1650 2200
Scale in Feet

FILENAME: 61050181.DWG

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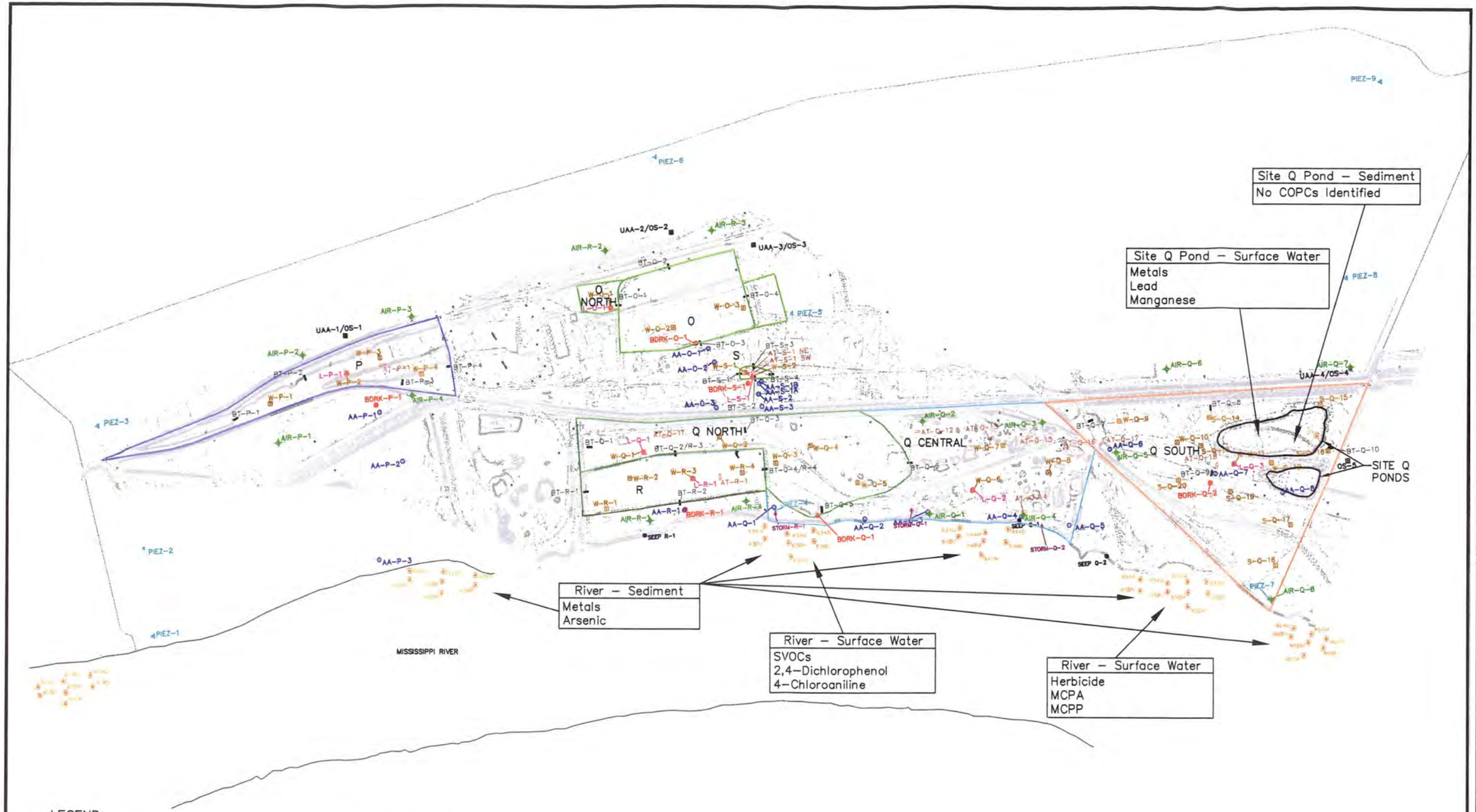
COPCs IN GROUNDWATER AND LEACHATE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, IL

PROJECT NUMBER: 06105-009
DATE: 7/03
SCALE: 1"=1100'

FIGURE NUMBER: 3-9

SHEET NUMBER: X



LEGEND

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- Stormwater Sample Locations

COPC Constituent of Potential Concern

Base map from URS entitled "SAUGET AREA 2, RI/FS, SAUGET ILLINOIS", dated 3/27/03, drawn by "djd" and designed by "sjs".

0 1100 1650 2200
Scale in Feet

FILENAME: 610501B.DWG

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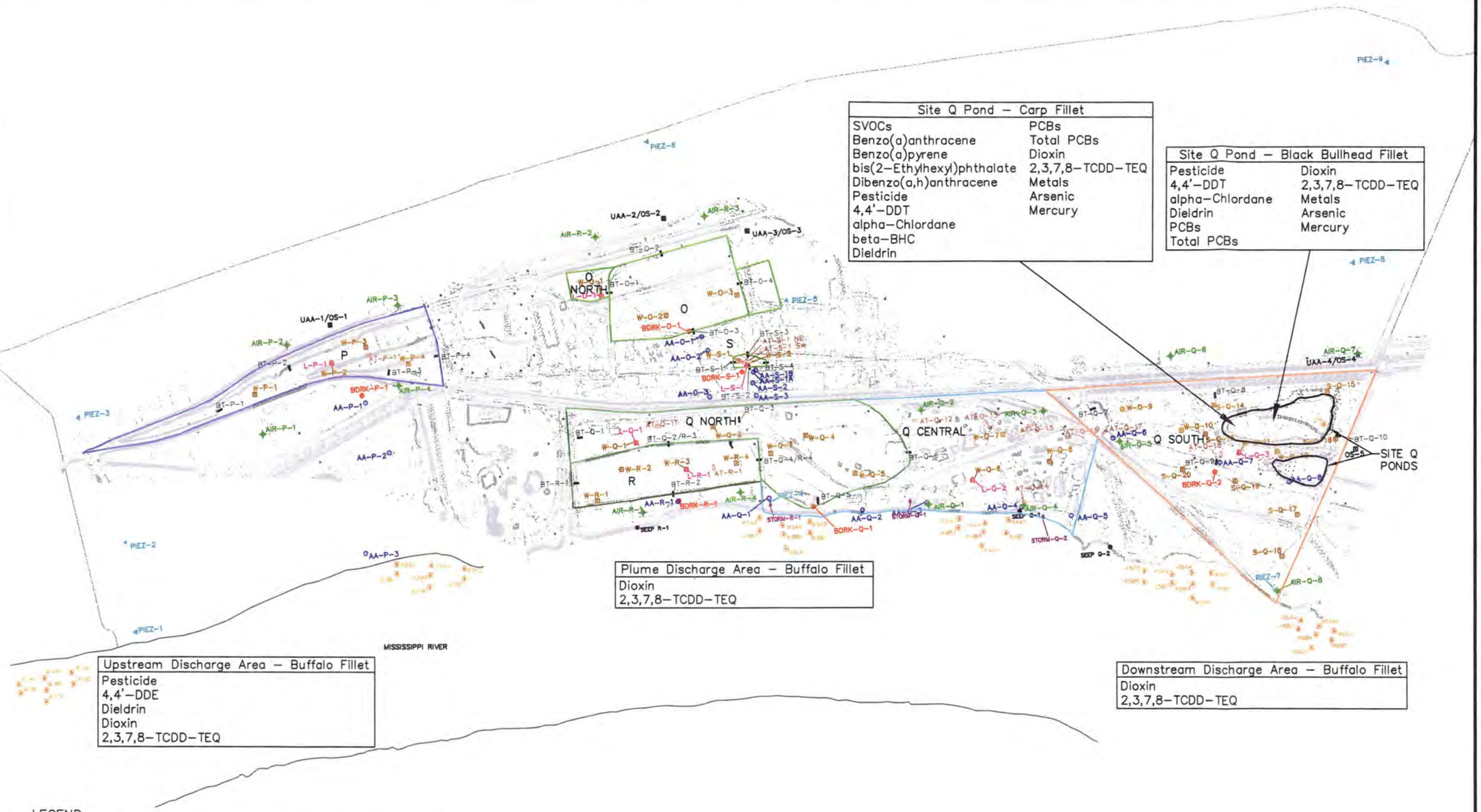
COPCs IN SURFACE WATER & SEDIMENT
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, IL

SCALE: 1"=1100'
DATE: 7/03
PROJECT NUMBER: 06105–009

FIGURE NUMBER: 3-10

SHEET NUMBER: X



LEGEND

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COPC Constituent of Potential Concern

Base map from URS entitled "SAUGET AREA 2, RI/FS, SAUGET ILLINOIS", dated 3/27/03, drawn by "djd" and designed by "sjs".

FILENAME: 610501B.DWG

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COPCs IN FISH FILLET
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, IL

SCALE:	DATE:	PROJECT NUMBER:
1"=1100'	7/03	06105–009

FIGURE NUMBER:

3-11

SHEET NUMBER:

X

4.0 DOSE-RESPONSE ASSESSMENT

The purpose of the dose-response assessment is to identify the types of adverse health effects a constituent may potentially cause, and to define the relationship between the dose of a constituent and the likelihood or magnitude of an adverse effect (response) (USEPA, 1989a). Adverse effects are classified by USEPA as potentially carcinogenic or noncarcinogenic (i.e., potential effects other than cancer). Dose-response relationships are defined by USEPA for oral exposure and for exposure by inhalation. Oral toxicity values are also used to assess dermal exposures, with appropriate adjustments, because USEPA has not yet developed values for this route of exposure. Combining the results of the toxicity assessment with information on the magnitude of potential human exposure provides an estimate of potential risk.

Numerical toxicity values are generally obtained from USEPA databases/sources. The dose-response relationship is often determined from laboratory studies conducted under controlled conditions with laboratory animals. These laboratory studies are controlled to minimize responses due to confounding variables, and are conducted at relatively high dose levels to ensure that responses can be observed using as few animals as possible in the experiments. Mathematical models or uncertainty factors are used to extrapolate the relatively high doses administered to animals to predict potential human responses at dose levels far below those tested in animals. Humans are typically exposed to constituents in the environment at levels much lower than those tested in animals. These low doses may be detoxified or rendered inactive by the myriad of protective mechanisms that are present in humans (Ames et al., 1987) and that may not function at the high dose levels used in animal experiments. Therefore, the results of these animal studies may only be of limited use in accurately predicting a dose-response relationship in humans. However, to be protective of human health, USEPA incorporates many conservative assumptions and safety factors when deriving numerical toxicity criteria from laboratory studies, as discussed below.

This section contains six subsections. Section 4.1 describes the sources of toxicity values. Section 4.2 describes USEPA's approach for developing noncarcinogenic toxicity values. Section 4.3 describes the toxicity values developed by USEPA for the evaluation of potential carcinogenic effects. Section 4.4 discusses PCB dose-response issues, and Section 4.5 discusses dioxin and furan dose-response issues. Section 4.6 introduces absorption adjustment factors (AAFs) used to account for differences in absorption in the environmental medium and in the dose-response study.

4.1 Sources of Toxicity Values

Sources of the published toxicity values in this risk assessment include USEPA's Integrated Risk Information System (IRIS) (USEPA, 2003b), the Health Effects Assessment Summary Tables (HEAST) (USEPA, 1997b), and the USEPA National Center for Environmental Assessment (NCEA) in Cincinnati, Ohio.

The primary USEPA source of toxicity values is IRIS, an on-line computer database of toxicological information (USEPA, 2003b). The IRIS toxicity value development process consists of a search of the current literature, development of health assessments and draft IRIS summaries, peer review within USEPA, peer review outside of USEPA, USEPA consensus review and management approval, preparation of final IRIS summaries and supporting documents, and entry of summaries and supporting documents into the IRIS database (USEPA, 2003b).

Another source of toxicity values is the USEPA Health Effects Assessment Summary Tables (HEAST) (USEPA, 1997b). HEAST was published annually by the USEPA and provides a compilation of toxicity values available at the time of publishing. Because HEAST is no longer updated regularly, the toxicity values provided may not represent the most current values available. In addition, the toxicity values provided by HEAST are considered to be provisional, i.e., the value has had some form of agency review, but does not appear on IRIS. The HEAST values may or may not have been generated following the IRIS process, but the values generally use all available information, use current methodology, and a consensus was reached by Agency scientists on the value. HEAST is, therefore, considered to be an unverified source of dose-response values and should be used only if no toxicity value is available on IRIS.

When a toxicity value is not available from IRIS or HEAST, the USEPA NCEA in Cincinnati may be consulted for provisional toxicity values. These toxicity values may or may not meet the HEAST criteria. The NCEA generally provides a toxicological summary for the value. The USEPA Region 3 RBC Table (USEPA, 2003a) and the USEPA Region 9 PRG Table (USEPA, 2002b) also use toxicity information from NCEA where available, and can serve as a source of these values.

Therefore, the hierarchy of toxicity value sources correlates in general with the level of confidence in the values, with the values directly provided by NCEA having the lowest level of scientific review and approval and, thus, the least level of confidence. NCEA provided toxicity values for several COPCs, as indicated in dose response tables (Table 4-1 to Table 4-4).

4.2 Noncarcinogenic Toxicity Assessment

Constituents with known or potential noncarcinogenic effects are assumed to have a dose below which no adverse effect occurs or, conversely, above which an adverse effect may be seen. This dose is called the threshold dose. A conservative estimate of the true threshold dose is called a No Observed Adverse Effect Level (NOAEL). The lowest dose at which an adverse effect has been observed is called a Lowest Observed Adverse Effect Level (LOAEL). By applying uncertainty factors to the NOAEL or the LOAEL, Reference Doses (RfDs) for chronic exposure to constituents with noncarcinogenic effects have been developed by USEPA (1997b, 2003b).

In regulatory toxicity assessment, USEPA assumes that humans are as sensitive, or more sensitive, to the toxic effects of a constituent as the most sensitive species used in the laboratory studies. Moreover, the RfD is developed based on the most sensitive or critical adverse health effect observed in the study population, with the assumption that if the most critical effect is prevented, then all other potential toxic effects are prevented. Uncertainty factors are applied to the NOAEL (or LOAEL, when a NOAEL is unavailable) for this critical effect to account for uncertainties associated with the dose-response relationship. These include using an animal study to derive a human toxicity value, extrapolating from a LOAEL to a NOAEL, extrapolating from a subchronic (partial lifetime) to a chronic lifetime exposure, and evaluating sensitive subpopulations. Generally, a 10-fold factor is used to account for each of these uncertainties; thus, the total uncertainty factor can range from 10 to 10,000. In addition, an uncertainty factor or a modifying factor of up to 10 can be used to account for inadequacies in the database or other uncertainties. The resulting RfDs are very conservative, i.e., health protective, because of the use of the large uncertainty factors. For constituents with noncarcinogenic effects, an RfD provides reasonable certainty that no noncarcinogenic health effects are expected to occur even if daily exposures were to occur at the RfD level for a lifetime. RfDs and exposure doses are expressed in units of milligrams of a constituent per kilogram of body weight per day (mg/kg-day). The lower the RfD value, the lower is the assumed threshold for effects, and the greater the assumed toxicity.

Table 4-1 summarizes the toxicity information for COPCs with potential noncarcinogenic effects for the oral route of exposure. For each COPC, the chemical abstracts service number (CAS number), the dose-response value (RfD), and the reference for the toxicity value are presented. In addition, the USEPA confidence level in the value, the uncertainty factor, the modifying factor, the study animal, study method, target organ and critical effect upon which the toxicity value is based are also presented for each COPC, where available. The confidence level is provided for constituents with toxicity values published on IRIS and for constituents with toxicity values provided by NCEA, and is based on the confidence in the study and the extent of toxicity information available for that constituent.

Table 4-2 summarizes the toxicity information for COPCs with potential noncarcinogenic effects for the inhalation route of exposure. For each COPC, the CAS number and the toxicity value are presented. Inhalation RfD (in units of mg/kg-day) values are calculated from Reference Concentrations (RfC) (in units of mg/m^3) assuming a 70 kg adult breathes 20 m^3 of air per day. Both values are presented where available. In addition, the reference for the toxicity value, the USEPA confidence level in the value, the uncertainty factor, the modifying factor, the study animal, study method, target organ and critical effect upon which the toxicity value is based are also presented for each constituent. Due to the great uncertainties involved, USEPA generally does not support use of oral toxicity values to evaluate inhalation exposures (USEPA, 1994).

4.3 Carcinogenic Toxicity Assessment

In assessing the carcinogenic potential of a constituent, the Human Health Assessment Group of USEPA has classified constituents into one of the following groups (USEPA, 1986, 1997b), according to the weight of evidence from epidemiologic and animal studies:

Group A	-	Human Carcinogen (sufficient evidence of carcinogenicity in humans)
Group B	-	Probable Human Carcinogen (B1 - limited evidence of carcinogenicity in humans; B2 - sufficient evidence of carcinogenicity in animals with inadequate or lack of evidence in humans)
Group C	-	Possible Human Carcinogen (limited evidence of carcinogenicity in animals and inadequate or lack of human data)
Group D	-	Not Classifiable as to Human Carcinogenicity (inadequate or no evidence)
Group E	-	Evidence of Noncarcinogenicity for Humans (no evidence of carcinogenicity in adequate studies)

The underlying assumption of regulatory risk characterization for constituents with known or assumed potential carcinogenic effects is that no threshold dose exists. Thus, the characterization assumes that there is some finite level of risk associated with each non-zero dose. The USEPA has developed computerized models that extrapolate dose-response relations observed at the relatively high doses used in animal studies to the low dose levels encountered by humans in environmental situations. The mathematical models developed by USEPA assume no threshold, and use both animal and human data (where available) to develop a potency estimate for a given constituent. The potency estimate, called a cancer slope factor (CSF) is expressed in units of $(mg/kg\text{-}day)^{-1}$; the higher the CSF, the greater the carcinogenic potential.

While USEPA has published drafts of revised Guidelines for Carcinogen Risk Assessment (USEPA, 1996c, 1999, 2003d), these have not yet been finalized. The major changes in the guidelines from those published in 1986 (USEPA, 1986) include:

- Replacing the alphanumeric classification system with a weight-of-evidence narrative and providing three descriptors (known/likely, cannot be determined, and not likely);
- Emphasizing the agent's mode of action;

- Use of biologically-based extrapolation models is the preferred approach where tumor response is modeled within the range of observation and an initial identification of a point of departure for low-dose extrapolation is identified (generally the dose corresponding to the lower 95% limit on a dose associated with a 10% response - the LED10); and

- Providing three default low-dose extrapolation approaches: the original linear approach, a nonlinear approach (using a margin of exposure - MOE), or both.

While these represent important advances in carcinogen risk assessment, the approach has not generally been implemented for constituents with toxicity values on IRIS. Therefore, the alphanumeric system is still presented on IRIS and is included here.

Table 4-3 summarizes the toxicity information for COPCs classified by the USEPA as potential carcinogens for the oral route of exposure. For each constituent, the CAS number, USEPA carcinogenicity class, the oral cancer-slope factor and the reference are provided. In addition, the study animal and route of exposure upon which the CSF is based are presented.

Table 4-4 summarizes the toxicity information for COPCs classified by the USEPA as potential carcinogens for the inhalation route of exposure. For each constituent, the CAS number, USEPA carcinogenicity class, the inhalation cancer slope factor and unit risk factor (provided in units of $(ug/m^3)^{-1}$) and the reference are provided. In addition, the study animal and route of exposure upon which the CSF is based are presented. The CSF is calculated from the unit risk assuming a 70 kg adult breathes 20 m^3 of air per day.

4.4 PCB Dose-Response

The biphenyl structure of PCBs consists of two aromatic 6-member rings connected by a single bond. There are five locations on each ring that can be chlorinated, and there are 209 individual PCB congeners, each identified by a unique congener number. Structurally, PCB congeners can be classified into groups based on the number of chlorines per molecule (e.g., monochloro-, dichloro-, trichloro-, up to decachloro-biphenyl). These groups are referred to as homologs.

Aroclor mixtures are the commercial mixtures of PCBs that were used in industry. The Aroclors are identified numerically (e.g., Aroclor 1260, Aroclor 1016). The higher the Aroclor number, the more enriched is the mixture in congeners containing higher numbers of chlorines. Each Aroclor mixture exhibits a characteristic, however overlapping, range of congeners, and Aroclors are identified and quantitated in samples by comparing the sample results to Aroclor standards.

Total PCBs in a sample can be calculated by summing the Aroclor concentrations. Alternatively, PCBs can be quantitated by homolog and the homolog concentrations summed to give a total PCB concentration. This latter method was used in the Sauget Area 2 risk assessment.

Risks from potential exposures to PCBs have been calculated using the most current guidance available from USEPA. Currently, USEPA-approved guidance is provided in IRIS (USEPA, 2003b). Total PCB concentrations were calculated for each sample by summing the separate homolog concentrations. The total PCB concentrations were used to calculate the PCB exposure dose to be combined with the verified cancer slope factors listed in IRIS (USEPA, 2003b). Guidance provided in IRIS specifies three tiers of human slope factors for environmental PCBs: high risk and persistence, low risk and persistence, and lowest risk and persistence. The choice of slope factors for use depends on the medium of exposure and PCB chlorine content, as outlined in IRIS (USEPA, 2003b). These values are presented in Table 4-5. Based on a review of the media evaluated in the risk assessment and the CSF selection criteria, the CSF value of 2 $(mg/kg\text{-}day)^{-1}$ was used in the Sauget Area 2 risk assessment, which is the slope factor for high risk and persistence PCBs.

Non-cancer risks from potential exposures to PCBs were calculated using the most conservative RfD for a PCB mixture, the oral reference dose for Aroclor 1254 of 2E-05 mg/kg-day.

4.5 Dioxin and Furan Dose-Response

The potential carcinogenic effects associated with exposure to dioxin and furan congeners in environmental media were assessed in accordance with the approach developed by USEPA (1989b). Risks were calculated for 2,3,7,8-tetrachloro-dibenzo-p-dioxin (2,3,7,8-TCDD) and the dioxin and furan congeners using the cancer slope factor for 2,3,7,8-TCDD listed in HEAST and using the toxic equivalency factors (TEFs) provided by World Health Organization (WHO) (Van den Berg et al., 1998). The TEFs are fractions that equate the potential toxicity of each congener to that of 2,3,7,8-TCDD. The TEFs are listed in Table 4-6. For each sample, the reported sample concentration (or half the detection limit, as appropriate, for non-detected congeners) for each dioxin and furan congener having a TEF listed by WHO was multiplied by its TEF, resulting in a dioxin toxic equivalent concentration (Dioxin TEQ). The Dioxin TEQ values for each of the congeners were then added together for each sample and treated as one sample concentration in the risk assessment. The cancer slope factor for 2,3,7,8-TCDD was used to calculate potential carcinogenic risks resulting from potential exposure to Dioxin TEQs.

4.6 Absorption Adjustment Factors

Differences exist in absorption between humans in an environmental situation and the animals generally used in the studies to develop the dose-response values. Absorption Adjustment Factors

(AAFs) are used in a risk assessment to account for these differences. AAFs are discussed in greater detail in Section 5.5.1 and Appendix H.

TABLE 4-1
DOSE-RESPONSE INFORMATION FOR CONSTITUENTS WITH POTENTIAL NONCARCINOGENIC EFFECTS FROM CHRONIC EXPOSURE THROUGH THE ORAL ROUTE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS Number	Oral Dose-Response Value (mg/kg-day)		Reference (Last Verifed) Type	EPA Confidence Level	Uncertainty Factor	Modifying Factor	Target Organ/ Critical Effect at LOAEL	Study Animal	Study Method
VOCs										
1,1,2-Trichloroethane	79-00-5	4.00E-03		IRIS (5/2003)	MEDIUM	1000	1	Clinical serum chemistry	MOUSE	ORAL:DRINKING WATER
1,2-Dichloroethane	107-06-2	2.00E-02		NCEA (10/02)	MEDIUM	3000	1	Increased kidney weight	RAT	ORAL:DRINKING WATER
1,2-Dichloroethene (total)	540-59-0	2.00E-02	(a)	IRIS (5/2003)	LOW	1000	1	Increased serum alkaline phosphatase in mice	MOUSE	ORAL:DRINKING WATER
2-Butanone (MEK)	78-93-3	6.00E-01		IRIS (5/2003)	LOW	3000	1	Decreased fetal birth weight	RAT	ORAL:DRINKING WATER
4-Methyl-2-pentanone (MIBK)	108-10-1	8.00E-02		HEAST (1997)	NA	3000	1	Increased liver and kidney weights, increased urinary protein, lethargy	RAT	ORAL:GAVAGE
Acetone	67-64-1	1.00E-01		IRIS (5/2003)	LOW	1000	1	Increased liver and kidney weights and nephrotoxicity	RAT	ORAL:GAVAGE
Benzene	71-43-2	4.00E-03		IRIS (5/2003)	MEDIUM	300	1	Decreased lymphocyte count	HUMAN	OCCUPATIONAL:INHALATION
Chlorobenzene	108-90-7	2.00E-02		IRIS (5/2003)	MEDIUM	1000	1	Histopathologic changes in liver	DOG	ORAL:CAPSULE
Chloroform	67-66-3	1.00E-02		IRIS (5/2003)	MEDIUM	1000	1	Fatty cyst formation in liver and elevated SGTP	DOG	ORAL:CAPSULE
Chloromethane	74-87-3	NA		NA	NA	NA	NA	NA	NA	NA
Dichloromethane	75-09-2	6.00E-02		IRIS (5/2003)	MEDIUM	100	1	Liver toxicity	RAT	ORAL:DRINKING WATER
Ethylbenzene	100-41-4	1.00E-01		IRIS (5/2003)	LOW	1000	1	Liver and kidney toxicity	RAT	ORAL:GAVAGE
Tetrachloroethene	127-18-4	1.00E-02		IRIS (5/2003)	MEDIUM	1000	1	Hepatotoxicity in mice, decreased weight gain in rats	MOUSE/RAT	ORAL:GAVAGE/DRINKING WATER
Toluene	108-88-3	2.00E-01		IRIS (5/2003)	MEDIUM	1000	1	Changes in liver and kidney weights	RAT	ORAL:GAVAGE
Trichloroethylene	79-01-6	3.00E-04		(b)	LOW	3000	1	Increased relative liver weight	MOUSE	ORAL:DRINKING WATER
Xylenes, Total	1330-20-7	2.00E-01		IRIS (5/2003)	MEDIUM	1000	1	Decreased body weight, increased mortality	RAT	ORAL:GAVAGE
SVOCs										
1,2-Dichlorobenzene	95-50-1	9.00E-02		IRIS (5/2003)	LOW	1000	1	No adverse effects observed	RAT	ORAL:GAVAGE
1,3-Dichlorobenzene	541-73-1	9.00E-04		NCEA (1/4/98)	LOW	10000	NA	Hematological and thyroid effects	RAT	ORAL:GAVAGE
1,4-Dichlorobenzene	106-46-7	3.00E-02		NCEA (4/29/97)	MEDIUM	1000	1	Liver perturbations and developmental toxicity effects	RAT	ORAL:GAVAGE
2,4,6-Trichlorophenol	88-06-2	1.00E-04		NCEA (9/2000)	LOW	3000	1	Reproductive effects	RAT	ORAL:DRINKING WATER
2,4-Dichlorophenol	120-83-2	3.00E-03		IRIS (5/2003)	LOW	100	1	Decreased delayed hypersensitivity response	RAT	ORAL:DRINKING WATER
2,4-Dimethylphenol	105-67-9	2.00E-02		IRIS (5/2003)	LOW	3000	1	Clinical signs (lethargy, prostration, and ataxia) and hematological changes	MOUSE	ORAL:GAVAGE
2-Chlorophenol	95-57-8	5.00E-03		IRIS (5/2003)	LOW	1000	1	Reproductive effects	RAT	ORAL:DRINKING WATER
2-Methylnaphthalene	91-57-6	2.00E-02	(c)	IRIS (5/2003)	LOW	3000	1	Decreased body weight in males	RAT	ORAL:GAVAGE
2-Nitroaniline	88-74-4	NA		NA	NA	NA	NA	NA	NA	NA
3-Methylphenol/4-Methylphenol	(d)	5.00E-02	(e)	IRIS (5/2003)	MEDIUM	1000	1	Decreased body weight, neurotoxicity	RAT	ORAL:GAVAGE
4-Chloroaniline	106-47-8	4.00E-03		IRIS (5/2003)	LOW	3000	1	Nonneoplastic lesions of splenic capsule	RAT	ORAL:DIET
4-Nitroaniline	100-01-6	3.00E-03		NCEA (11/1/02)	HIGH	100	1	Hematoiogical effects	RAT	ORAL:GAVAGE
Benzo(a)anthracene	56-55-3	NA		NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	50-32-8	NA		NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	205-99-2	NA		NA	NA	NA	NA	NA	NA	NA

TABLE 4-1
DOSE-RESPONSE INFORMATION FOR CONSTITUENTS WITH POTENTIAL NONCARCINOGENIC EFFECTS FROM CHRONIC EXPOSURE THROUGH THE ORAL ROUTE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS Number	Oral Dose-Response Value (mg/kg-day)		Reference (Last Verifed) Type	EPA Confidence Level	Uncertainty Factor	Modifying Factor	Target Organ/ Critical Effect at LOAEL	Study Animal	Study Method
SVOCs Cont.										
Benzo(g,h,i)perylene	191-24-2	3.00E-02	(f)	IRIS (5/2003)	HIGH	3000	1	Kidney effects	MOUSE	ORAL:GAVAGE
Benzo(k)fluoranthene	207-08-9	NA		NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	111-44-4	NA		NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	117-81-7	2.00E-02		IRIS (5/2003)	MEDIUM	1000	1	Increased relative liver weight	GUINEA PIG	ORAL:DIET
Dibenzo(a,h)anthracene	53-70-3	NA		NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	8.00E-04		IRIS (5/2003)	MEDIUM	100	1	Liver effects	RAT	ORAL:DIET
Indeno(1,2,3-cd)pyrene	193-39-5	NA		NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	2.00E-02		IRIS (5/2003)	LOW	3000	1	Decreased body weight in males	RAT	ORAL:GAVAGE
Nitrobenzene	98-95-3	5.00E-04		IRIS (5/2003)	LOW	10000	1	Hematologic effects, and adrenal, renal & hepatic lesions	RAT/MOUSE	INHALATION
Phenol	108-95-2	3.00E-01		IRIS (5/2003)	MEDIUM/HIGH	300	1	Decreased maternal weight gain	RAT	ORAL:GAVAGE
Pesticides										
4,4'-DDE	72-55-9	5.00E-04	(g)	IRIS (5/2003)	MEDIUM	100	1	Liver lesions	RAT	ORAL:DIET
4,4'-DDT	50-29-3	5.00E-04		IRIS (5/2003)	MEDIUM	100	1	Liver lesions	RAT	ORAL:DIET
Aldrin	309-00-2	3.00E-05		IRIS (5/2003)	MEDIUM	1000	1	Liver toxicity	RAT	ORAL:DIET
alpha-BHC	319-84-6	3.00E-04	(i)	IRIS (5/2003)	MEDIUM	1000	1	Liver and kidney toxicity	RAT	ORAL:DIET
alpha-Chlordane	5103-71-9	5.00E-04	(h)	IRIS (5/2003)	MEDIUM	300	1	Hepatic necrosis	MOUSE	ORAL:DIET
beta-BHC	319-85-7	3.00E-04	(i)	IRIS (5/2003)	MEDIUM	1000	1	Liver and kidney toxicity	RAT	ORAL:DIET
delta-BHC	319-86-8	3.00E-04	(i)	IRIS (5/2003)	MEDIUM	1000	1	Liver and kidney toxicity	RAT	ORAL:DIET
Dieldrin	60-57-1	5.00E-05		IRIS (5/2003)	MEDIUM	100	1	Liver lesions	RAT	ORAL:DIET
Endrin Ketone	53494-70-5	3.00E-04	(j)	IRIS (5/2003)	MEDIUM	100	1	Mild histological lesions in liver; occasional convulsions	DOG	ORAL:DIET
gamma-BHC (Lindane)	58-89-9	3.00E-04		IRIS (5/2003)	MEDIUM	1000	1	Liver and kidney toxicity	RAT	ORAL:DIET
Heptachlor	76-44-8	5.00E-04		IRIS (5/2003)	LOW	300	1	Increased liver weight	RAT	ORAL:DIET
Heptachlor epoxide	1024-57-3	1.30E-05		IRIS (5/2003)	LOW	1000	1	Increased liver to body-weight ratios	DOG	ORAL:DIET
Herbicides										
2,4,5-T	93-76-5	1.00E-02		IRIS (5/2003)	MEDIUM	300	1	Increased urinary coproporphyrins	RAT	ORAL:DIET
2,4-D	94-75-7	1.00E-02		IRIS (5/2003)	MEDIUM	100	1	Hematologic, hepatic and renal toxicity	RAT	ORAL:DIET
MCPA	94-74-6	5.00E-04		IRIS (5/2003)	MEDIUM	300	1	Liver and kidney toxicity	DOG	ORAL
MCPP	93-65-2	1.00E-03		IRIS (5/2003)	MEDIUM	3000	1	Increased absolute and relative kidney weights	RAT	ORAL:DIET
Pentachlorophenol	87-86-5	3.00E-02		IRIS (5/2003)	MEDIUM	100	1	Liver & kidney pathology	RAT	ORAL:DIET
PCBs										
Total PCBs	1336-36-3	2.00E-05	(k)	IRIS (5/2003)	MEDIUM	300	1	Ocular, meibomiam gland, finger and toenail, and immune effects	MONKEY	ORAL:CAPSULE
Dioxin										
2,3,7,8-TCDD-TEQ	1746-01-6	NA		NA	NA	NA	NA	NA	NA	NA

TABLE 4-1
DOSE-RESPONSE INFORMATION FOR CONSTITUENTS WITH POTENTIAL NONCARCINOGENIC EFFECTS FROM CHRONIC EXPOSURE THROUGH THE ORAL ROUTE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS Number	Oral Dose-Response Value (mg/kg-day)		Reference (Last Verifed) Type	EPA Confidence Level	Uncertainty Factor	Modifying Factor	Target Organ/ Critical Effect at LOAEL	Study Animal	Study Method
Metals										
Antimony	7440-36-0	4.00E-04		IRIS (5/2003)	LOW	1000	1	Decreased longevity, dec. blood glucose and cholesterol changes	RAT	ORAL:DRINKING WATER
Arsenic	7440-38-2	3.00E-04		IRIS (5/2003)	MEDIUM	3	1	Hyperpigmentation and keratosis of the skin and poss. vascular complications	HUMAN	ORAL:DRINKING WATER
Barium	7440-39-3	7.00E-02		IRIS (5/2003)	MEDIUM	3	1	Increased kidney weight	HUMAN	ORAL:DRINKING WATER
Beryllium	7440-41-7	2.00E-03		IRIS (5/2003)	LOW/MEDIUM	300	1	Small intestinal lesions	DOG	ORAL:DIET
Cadmium	7440-43-9	1.00E-03	(l)	IRIS (5/2003)	HIGH	10	1	Proteinuria	HUMAN	ORAL
Chromium	7440-47-3	3.00E-03	(m)	IRIS (5/2003)	LOW	300	3	None reported	RAT	ORAL:DRINKING WATER
Cobalt	7440-48-4	2.00E-02		NCEA (1/15/02)	LOW/MEDIUM	10	1	Hematological	HUMAN	INJECTION (DIALYSIS)
Copper	7440-50-8	3.70E-02		HEAST (1997)	NA	NA	NA	GI irritation	HUMAN	ORAL
Lead	7439-92-1	NA		NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	2.40E-02	(n)	IRIS (5/2003)	MEDIUM	1	3	CNS Effects	HUMAN	ORAL:DIET
Mercury	7439-97-6	3.00E-04	(o)	IRIS (5/2003)	HIGH	1000	1	Autoimmune effects	RAT	ORAL
Nickel	7440-02-0	2.00E-02		IRIS (5/2003)	MEDIUM	300	1	Decreased body & organ weights	RAT	ORAL:DIET
Thallium	7440-28-0	6.67E-05	(p)	IRIS (5/2003)	LOW	3000	1	Increased levels of SGOT and LDH	RAT	ORAL:DIET
Vanadium	7440-62-2	7.00E-03		HEAST (1997)	NA	100	1	No effects reported	RAT	ORAL:DRINKING WATER
Zinc	7440-66-6	3.00E-01		IRIS (5/2003)	MEDIUM	3	1	Hematologic effects	HUMAN	ORAL:DIET SUPPLEMENT

Notes:
CAS - Chemical Abstracts Service.
LOAEL - Lowest Observed Adverse Effects Level.
HEAST - Health Effects Assessment Summary Tables, published annually by the USEPA (1997b).
IRIS - Integrated Risk Information System, an on-line computer database of toxicological information (USEPA, 2003b).
NCEA - National Center for Environmental Assessment.
NOAEL - No Observed Adverse Effects Level.
PRG - Preliminary Remediation Goal Table (10/2002) (USEPA, 2002b).
RBC - Risk Based Concentration Table (4/2003) (USEPA, 2003a).
RfD - Reference Dose.
USEPA - United States Environmental Protection Agency.
(a) Value for trans 1,2-Dichloroethene.
(b) Trichloroethylene Health Risk Assessment Synthesis and Characterization. EPA/600/p-01/002A August 2001. Personal communication (USEPA, July 9, 2003).
(c) Value for Naphthalene.
(d) The CAS numbers for 3-Methylphenol and 4-Methylphenol are 106-44-5 and 108-39-4, respectively.
(e) Oral Dose Response value for 3-Methylphenol is used. No IRIS value available for 4-Methylphenol.
(f) Value for Pyrene.
(g) Value for DDT.
(h) Value for Chlordane.
(i) Value for gamma-BHC used due to structural similarities.
(j) Value for Endrin.
(k) Value for Aroclor 1254 (IRIS) (USEPA, 2003b).
(l) Cadmium is a constituent of potential concern in soil only. Therefore, the reference dose for food rather than the reference dose for water is used.
(m) Chromium is evaluated using the dose-response data for Hexavalent Chromium.
(n) When assessing exposure to manganese in soil or drinking water, IRIS (5/2003) recommends applying a modifying factor of 3 to the oral RfD of 0.14 mg/kg-day. The USEPA Region 9 PRG table (USEPA, 2002b) also indicates that the average dietary manganese content of the US diet (5 mg/day) be subtracted from the critical dose of 10 mg/day. Therefore, the RfD is (10 mg/day - 5 mg/day)/Modifying Factor (3) = 1.67 mg/day / 70 kg = 0.024 mg/kg-day.
(o) Value for Mercury chloride.
(p) The NOAEL of 0.25 mg/kg-day for Thallium Sulfate (IRIS, 5/2003) was adjusted for the molecular weight of Thallium (see the Thallium Acetate IRIS file (5/2003)) to 0.20 mg/kg-day. Therefore, the Thallium RfD = 0.20 mg/kg-day / UF 3000 = 6.67E-05 mg/kg-day.

TABLE 4-2
DOSE-RESPONSE INFORMATION FOR CONSTITUENTS WITH POTENTIAL NONCARCINOGENIC EFFECTS THROUGH THE INHALATION ROUTE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS Number	Inhalation Dose-Response Value (mg/kg-day)		Inhalation Reference Concentration (mg/m³)	Reference (Last Verified) Type	EPA Confidence Level	Uncertainty Factor	Modifying Factor	Target Organ/ Critical Effect at LOAEL	Study Animal	Study Method
VOCs											
1,1,2-Trichloroethane	79-00-5	NA		NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	1.40E-03	(a)	5.00E-03	NCEA (4/5/93)	LOW	3000	NA	GI, liver, kidney and mucous membrane effects	MOUSE	INHALATION
1,2-Dichloroethene (total)	540-59-0	NA		NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone (MEK)	78-93-3	2.86E-01	(a)	1.00E+00	IRIS (5/2003)	LOW	1000	3	Decreased fetal birth weight	MOUSE	INHALATION
4-Methyl-2-pentanone (MIBK)	108-10-1	8.57E-01	(a)	3.00E+00	IRIS (5/2003)	LOW/MEDIUM	300	1	Reduced fetal body wt and incr. fetal death in mice. Skeletal variations in rats and mice	RAT/MOUSE	INHALATION
Acetone	67-64-1	NA		NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	8.57E-03	(a)	3.00E-02	IRIS (5/2003)	MEDIUM	300	1	Decreased lymphocyte count	HUMAN	INHALATION:OCCUP.
Chlorobenzene	108-90-7	1.70E-02	(a)	6.00E-02	NCEA (9/18/98)	MEDIUM	1000	NA	Liver	RAT	INHALATION
Chloroform	67-66-3	1.43E-02	(a)	5.00E-02	NCEA (1/22/03)	LOW/MEDIUM	100	NA	Liver, kidney and CNS effects	MOUSE	INHALATION
Chloromethane	74-87-3	2.57E-02	(a)	9.00E-02	IRIS (5/2003)	MEDIUM	1000	1	Cerebellar lesions	MOUSE	INHALATION
Dichloromethane	75-09-2	8.60E-01	(a)	3.00E+00	HEAST (1997)	NA	100	NA	Liver toxicity	RAT	INHALATION:INTERA
Ethylbenzene	100-41-4	2.86E-01	(a)	1.00E+00	IRIS (5/2003)	LOW	300	1	Developmental toxicity	RAT/RABBIT	INHALATION
Tetrachloroethene	127-18-4	1.70E-01	(a)	6.00E-01	NCEA (6/20/97)	MEDIUM	30	1	Hepatotoxicity and renal toxicity	MOUSE	INHALATION
Toluene	108-88-3	1.14E-01	(a)	4.00E-01	IRIS (5/2003)	MEDIUM	300	1	Neurological effects	HUMAN	INHALATION:OCCUP.
Trichloroethylene	79-01-6	1.00E-02	(a)	4.00E-02	(b)	NA	1000	1	CNS	HUMAN	INHALATION:OCCUP.
Xylenes, Total	1330-20-7	2.86E-02	(a)	1.00E-01	IRIS (5/2003)	MEDIUM	300	1	Impaired motor coordination	RAT	INHALATION
SVOCs											
1,2-Dichlorobenzene	95-50-1	5.70E-02	(a)	2.00E-01	HEAST (1997)	NA	1000	1	Decreased weight gain	RAT	INHALATION:INTERA
1,3-Dichlorobenzene	541-73-1	2.29E-01	(c)	8.00E-01	IRIS (5/2003)	MEDIUM	100	1	Increased liver weight	RAT	INHALATION
1,4-Dichlorobenzene	106-46-7	2.29E-01	(a)	8.00E-01	IRIS (5/2003)	MEDIUM	100	1	Increased liver weight	RAT	INHALATION
2,4,6-Trichlorophenol	88-06-2	NA		NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	NA		NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	NA		NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	NA		NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	8.57E-04	(d)	3.00E-03	IRIS (5/2003)	MEDIUM	3000	1	Nasal effects	MOUSE	INHALATION
2-Nitroaniline	88-74-4	5.71E-05	(e)	2.00E-04	HEAST (1997)	NA	10000	1	Hematological effects	RAT	INHALATION:INTERA
3-Methylphenol/4-Methylphenol	(e)	NA		NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	106-47-8	NA		NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	1.14E-03	(a)	4.00E-03	NCEA (11/1/02)	LOW	1000	1	Hematological effects	RAT	INHALATION:INTERA
Benzo(a)anthracene	56-55-3	NA		NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	50-32-8	NA		NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	205-99-2	NA		NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	191-24-2	NA		NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	207-08-9	NA		NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	111-44-4	NA		NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	117-81-7	NA		NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	53-70-3	NA		NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	NA		NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	193-39-5	NA		NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	8.57E-04	(a)	3.00E-03	IRIS (5/2003)	MEDIUM	3000	1	Nasal effects	MOUSE	INHALATION
Nitrobenzene	98-95-3	5.70E-04	(a)	2.00E-03	HEAST (1997)	NA	10000	NA	Hematological effects and adrenal, renal, and hepatic lesions	MOUSE/RAT	INHALATION:INTERA
Phenol	108-95-2	NA		NA	NA	NA	NA	NA	NA	NA	NA
Pesticides											
4,4'-DDE	72-55-9	NA		NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	50-29-3	NA		NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	NA		NA	NA	NA	NA	NA	NA	NA	NA
alpha-BHC	319-84-6	NA		NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	5103-71-9	2.00E-04	(a,f)	7.00E-04	IRIS (5/2003)	LOW	1000	1	Hepatic effects	RAT	INHALATION
beta-BHC	319-85-7	NA		NA	NA	NA	NA	NA	NA	NA	NA
delta-BHC	319-86-8	NA		NA	NA	NA	NA	NA	NA	NA	NA

TABLE 4-2
DOSE-RESPONSE INFORMATION FOR CONSTITUENTS WITH POTENTIAL NONCARCINOGENIC EFFECTS THROUGH THE INHALATION ROUTE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS Number	Inhalation Dose-Response Value (mg/kg-day)		Inhalation Reference Concentration (mg/m^3)	Reference (Last Verified) Type	EPA Confidence Level	Uncertainty Factor	Modifying Factor	Target Organ/ Critical Effect at LOAEL	Study Animal	Study Method
Dieldrin	60-57-1	NA		NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	NA		NA	NA	NA	NA	NA	NA	NA	NA
gamma-BHC (Lindane)	58-89-9	NA		NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	NA		NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	1024-57-3	NA		NA	NA	NA	NA	NA	NA	NA	NA
Herbicides											
2,4,5-T	93-76-5	NA		NA	NA	NA	NA	NA	NA	NA	NA
2,4-D	94-75-7	NA		NA	NA	NA	NA	NA	NA	NA	NA
MCPA	94-74-6	NA		NA	NA	NA	NA	NA	NA	NA	NA
MCPP	93-65-2	NA		NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	NA		NA	NA	NA	NA	NA	NA	NA	NA
PCBs											
Total PCBs	1336-36-3	NA		NA	NA	NA	NA	NA	NA	NA	NA
Dioxin											
2,3,7,8-TCDD-TEQ	1746-01-6	NA		NA	NA	NA	NA	NA	NA	NA	NA
Metals											
Antimony	7440-36-0	NA		NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7440-38-2	NA		NA	NA	NA	NA	NA	NA	NA	NA
Barium	7440-39-3	1.40E-04	(a)	5.00E-04	HEAST (1997)	NA	1000	NA	Fetotoxicity	RAT	INHALATION:INTERM
Beryllium	7440-41-7	5.71E-06	(a)	2.00E-05	IRIS (5/2003)	MEDIUM	10	1	Beryllium sensitization and progression to CBD	HUMAN	INHALATION:OCCUP.
Cadmium	7440-43-9	NA		NA	NA	NA	NA	NA	NA	NA	NA
Chromium	7440-47-3	2.86E-05	(a,g)	1.00E-04	IRIS (5/2003)	MEDIUM	300	1	Lactate dehydrogenase in bronchioalveolar lavage fluid	RAT	INHALATION
Cobalt	7440-48-4	5.70E-06		2.00E-05	NCEA (1/15/02)	MEDIUM/LOW	100	NA	Respiratory effects	HUMAN	INHALATION:OCCUP.
Copper	7440-50-8	NA		NA	NA	NA	NA	NA	NA	NA	NA
Lead	7439-92-1	NA		NA	NA	NA	NA	NA	NA	NA	NA
Manganese	7439-96-5	1.43E-05	(a)	5.00E-05	IRIS (5/2003)	MEDIUM	1000	1	Impairment of neurobehavioral function	HUMAN	INHALATION
Mercury	7439-97-6	8.57E-05	(a)	3.00E-04	IRIS (5/2003)	MEDIUM	30	1	Hand tremor; increases in memory disturbances; evidence of autonomic dysfunction	HUMAN	INHALATION:OCCUP.
Nickel	7440-02-0	NA		NA	NA	NA	NA	NA	NA	NA	NA
Thallium	7440-28-0	NA		NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	7440-62-2	NA		NA	NA	NA	NA	NA	NA	NA	NA
Zinc	7440-66-6	NA		NA	NA	NA	NA	NA	NA	NA	NA

Notes:
CAS - Chemical Abstracts Service.
HEAST - Health Effects Assessment Summary Tables, published annually by the USEPA (1997b).
IRIS - Integrated Risk Information System, an on-line computer database of toxicological information (USEPA, 2003b).
LOAEL - Lowest Observed Adverse Effects Level.
NCEA - National Center for Environmental Assessment.
PRG - Preliminary Remediation Goal Table (10/2002) (USEPA, 2002b).
RfC - Reference Concentration.
USEPA - United States Environmental Protection Agency.
(a) Converted from reference concentration: RfC (mg/m^3) x ((20 m^3 air/day)/70kg).
(b) Trichloroethylene Health Risk Assessment Synthesis and Characterization. EPA/600/p-01/002A August 2001 (USEPA, 2001a). Personal communication (USEPA, July 9, 2003).
(c) Value for 1,4-Dichlorobenzene.
(d) Value for Naphthalene.
(e) The CAS numbers for 3-Methylphenol and 4-Methylphenol are 106-44-5 and 105-39-4, respectively.
(f) Value for Chlordane.
(g) Value for Chromium VI particulates.

TABLE 4-3
DOSE-RESPONSE INFORMATION FOR CONSTITUENTS WITH POTENTIAL CARCINOGENIC EFFECTS BY THE ORAL ROUTE OF EXPOSURE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS Number	EPA Carcinogen Class	Oral CSF $(mg/kg\text{-}day)^{-1}$	Oral CSF Reference (Last Verified)	Oral CSF Study Animal	Oral CSF Study Method
VOCs						
1,1,2-Trichloroethane	79-00-5	C	5.70E-02	IRIS (5/2003)	MOUSE	ORAL:GAVAGE
1,2-Dichloroethane	107-06-2	B2	9.10E-02	IRIS (5/2003)	RAT	ORAL:GAVAGE
1,2-Dichloroethene (total)	540-59-0	D	NA (a)	IRIS (5/2003)	NA	NA
2-Butanone (MEK)	78-93-3	D	NA	IRIS (5/2003)	NA	NA
4-Methyl-2-pentanone (MIBK)	108-10-1	NA	NA	IRIS (5/2003)	NA	NA
Acetone	67-64-1	D	NA	IRIS (5/2003)	NA	NA
Benzene	71-43-2	A	1.50E-02 (b)	IRIS (5/2003)	HUMAN	INHALATION: OCCUPATIONAL
Chlorobenzene	108-90-7	D	NA	IRIS (5/2003)	NA	NA
Chloroform	67-66-3	B2	NA (c)	IRIS (5/2003)	NA	NA
Chloromethane	74-87-3	C	1.30E-02	HEAST (1997)	MOUSE	INHALATION:INTERMITTENT
Dichloromethane	75-09-2	B2	7.50E-03	IRIS (5/2003)	MOUSE	ORAL:DRINKING WATER
Ethylbenzene	100-41-4	D	NA	IRIS (5/2003)	NA	NA
Tetrachloroethene	127-18-4	NA	5.40E-01	(i)	MOUSE	ORAL:GAVAGE
Toluene	108-88-3	D	NA	IRIS (5/2003)	NA	NA
Trichloroethylene	79-01-6	NA	4.00E-01	(d)	HUMAN	ORAL:DRINKING WATER
Xylenes, Total	1330-20-7	NA	NA	NA	NA	NA
SVOCs						
1,2-Dichlorobenzene	95-50-1	D	NA	IRIS (5/2003)	NA	NA
1,3-Dichlorobenzene	541-73-1	D	NA	IRIS (5/2003)	NA	NA
1,4-Dichlorobenzene	106-46-7	C	2.40E-02	HEAST (1997)	MOUSE	ORAL:GAVAGE
2,4,6-Trichlorophenol	88-06-2	B2	1.10E-02	IRIS (5/2003)	RAT	ORAL:DIET
2,4-Dichlorophenol	120-83-2	NA	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	NA	NA	NA	NA	NA
2-Chlorophenol	95-57-8	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	NA	NA	NA	NA	NA
2-Nitroaniline	88-74-4	NA	NA	NA	NA	NA
3-Methylphenol/4-Methylphenol	(e)	C	NA	IRIS (5/2003)	NA	NA
4-Chloroaniline	106-47-8	NA	NA	NA	NA	NA
4-Nitroaniline	100-01-6	NA	2.10E-02	NCEA (11/1/02	MOUSE	ORAL:GAVAGE
Benzo(a)anthracene	56-55-3	B2	7.30E-01 (f)	IRIS (5/2003)	MOUSE/RAT	ORAL:DIET
Benzo(a)pyrene	50-32-8	B2	7.30E+00	IRIS (5/2003)	MOUSE/RAT	ORAL:DIET
Benzo(b)fluoranthene	205-99-2	B2	7.30E-01 (f)	IRIS (5/2003)	MOUSE/RAT	ORAL:DIET
Benzo(g,h,i)perylene	191-24-2	D	NA	IRIS (5/2003)	NA	NA
Benzo(k)fluoranthene	207-08-9	B2	7.30E-02 (g)	IRIS (5/2003)	MOUSE/RAT	ORAL:DIET
bis(2-Chloroethyl)ether	111-44-4	B2	1.10E+00	IRIS (5/2003)	MOUSE	ORAL:GAVAGE/DIET
bis(2-Ethylhexyl)phthalate	117-81-7	B2	1.40E-02	IRIS (5/2003)	MOUSE	ORAL:DIET
Dibenzo(a,h)anthracene	53-70-3	B2	7.30E+00 (h)	IRIS (5/2003)	MOUSE/RAT	ORAL:DIET
Hexachlorobenzene	118-74-1	B2	1.60E+00	IRIS (5/2003)	RAT	ORAL:DIET
Indeno(1,2,3-cd)pyrene	193-39-5	B2	7.30E-01 (f)	IRIS (5/2003)	MOUSE/RAT	ORAL:DIET
Naphthalene	91-20-3	C	NA	IRIS (5/2003)	NA	NA
Nitrobenzene	98-95-3	D	NA	IRIS (5/2003)	NA	NA
Phenol	108-95-2	D	NA	IRIS (5/2003)	NA	NA
Pesticides						
4,4'-DDE	72-55-9	B2	3.40E-01	IRIS (5/2003)	MOUSE/HAMSTER	ORAL:DIET
4,4'-DDT	50-29-3	B2	3.40E-01	IRIS (5/2003)	MOUSE/RAT	ORAL:DIET
Aldrin	309-00-2	B2	1.70E+01	IRIS (5/2003)	MOUSE	ORAL:DIET
alpha-BHC	319-84-6	B2	6.30E+00	IRIS (5/2003)	MOUSE	ORAL:DIET
alpha-Chlordane	5103-71-9	B2	3.50E-01 (i)	IRIS (5/2003)	MOUSE	ORAL:DIET
beta-BHC	319-85-7	C	1.80E+00	IRIS (5/2003)	MOUSE	ORAL:DIET
delta-BHC	319-86-8	D	NA	IRIS (5/2003)	NA	NA
Dieldrin	60-57-1	B2	1.60E+01	IRIS (5/2003)	MOUSE	ORAL:DIET
Endrin Ketone	53494-70-5	NA	NA	NA	NA	NA
gamma-BHC (Lindane)	58-89-9	B2-C	1.30E+00	HEAST (1997)	MOUSE	ORAL:DIET
Heptachlor	76-44-8	B2	4.50E+00	IRIS (5/2003)	MOUSE	ORAL:DIET
Heptachlor epoxide	1024-57-3	B2	9.10E+00	IRIS (5/2003)	MOUSE	ORAL:DIET
Herbicides						
2,4,5-T	93-76-5	NA	NA	NA	NA	NA
2,4-D	94-75-7	NA	NA	NA	NA	NA
MCPA	94-74-6	NA	NA	NA	NA	NA
MCPP	93-65-2	NA	NA	NA	NA	NA
Pentachlorophenol	87-86-5	B2	1.20E-01	IRIS (5/2003)	MOUSE	ORAL:DIET

TABLE 4-3
DOSE-RESPONSE INFORMATION FOR CONSTITUENTS WITH POTENTIAL CARCINOGENIC EFFECTS BY THE ORAL ROUTE OF EXPOSURE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS Number	EPA Carcinogen Class	Oral CSF $(mg/kg\text{-}day)^{-1}$	Oral CSF Reference (Last Verified)	Oral CSF Study Animal	Oral CSF Study Method
PCBs						
Total PCBs	1336-36-3	B2	2.00E+00 (j)	IRIS (5/2003)	RAT	ORAL:DIET
Dioxin						
2,3,7,8-TCDD-TEQ	1746-01-6	B2	1.50E+05	HEAST (1997)	RAT	ORAL:DIET
Metals						
Antimony	7440-36-0	NA	NA	NA	NA	NA
Arsenic	7440-38-2	A	1.50E+00	IRIS (5/2003)	HUMAN	ORAL:DRINKING WATER
Barium	7440-39-3	D	NA	IRIS (5/2003)	NA	NA
Beryllium	7440-41-7	B1	NA	IRIS (5/2003)	NA	NA
Cadmium	7440-43-9	B1	NA	IRIS (5/2003)	NA	NA
Chromium	7440-47-3	D	NA	IRIS (5/2003)	NA	NA
Cobalt	7440-48-4	B1	NA	NCEA (1/15/02)	NA	NA
Copper	7440-50-8	D	NA	IRIS (5/2003)	NA	NA
Lead	7439-92-1	B2	NA	NA	NA	NA
Manganese	7439-96-5	D	NA	IRIS (5/2003)	NA	NA
Mercury	7439-97-6	D	NA	IRIS (5/2003)	NA	NA
Nickel	7440-02-0	NA	NA (k)	NA	NA	NA
Thallium	7440-28-0	D	NA	IRIS (5/2003)	NA	NA
Vanadium	7440-62-2	NA	NA	NA	NA	NA
Zinc	7440-66-6	D	NA	IRIS (5/2003)	NA	NA

Notes:
CAS - Chemical Abstracts Service.
CSF - Cancer Slope Factor.
HEAST - Health Effects Assessment Summary Tables, published annually by the USEPA (1997b).
IRIS - Integrated Risk Information System, an online computer database of toxicological infomation (USEPA, 2003b).
NCEA - National Center for Environmental Assessment.
PRG - Preliminary Remediation Goal Table (10/2002) (USEPA, 2002b).
USEPA - United States Environmental Protection Agency.
(a) cis-1,2-Dichloroethene has a carcinogen class of D; trans-1,2-Dichloroethene has not been classified; per IRIS.
(b) IRIS provides a range of CSF for benzene of 1.5E-02 to 5.5E-02 kg*day/mg. IRIS states that each value within this range has equal scientific plausibility.
(c) The Oral RfD can be considered protective of cancer according to IRIS (USEPA, 2003b).
(d) Trichloroethylene Health Risk Assessment synthesis and characterization. EPA/600/p-01/002A August 2001. Personal communication (USEPA, July 9, 2003).
(e) The CAS numbers for 3-Methylphenol and 4-Methylphenol are 106-44-5 and 108-39-4, respectively.
(f) CSF based on that for benzo(a)pyrene and applying a relative potency factor of 0.1 per USEPA Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons (USEPA, 1993d).
(g) CSF based on that for benzo(a)pyrene and applying a relative potency factor of 0.01 per USEPA Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons (USEPA, 1993d).
(h) CSF based on that for benzo(a)pyrene and applying a relative potency factor of 1.0 per USEPA Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons (USEPA, 1993d).
(i) Value for Chlordane.
(j) This is the upperbound CSF for high risk and persistence PCBs. USEPA provides a range of slope factor or IRIS; these will be discussed in the risk characterization.
(k) Information for nickel, soluble salts on IRIS.
(l) The NCEA has for the interim adopted the California EPA dose-response values for tetrachloroethylene. Personal communication (USEPA, July 9, 2003).

TABLE 4-4
DOSE-RESPONSE INFORMATION FOR CONSTITUENTS WITH POTENTIAL CARCINOGENIC EFFECTS BY THE INHALATION ROUTE OF EXPOSURE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS Number	EPA Carcinogen Class	Inhalation CSF $(mg/kg\text{-}day)^{-1}$ (a)		Unit Risk Factor (m^3/ug)	Inhalation CSF Reference (Last Verified)	Inhalation CSF Study Animal	Inhalation CSF Study Method
VOCs								
1,1,2-Trichloroethane	79-00-5	C	5.60E-02	(b)	1.60E-05	IRIS (5/2003)	MOUSE	ORAL:GAVAGE
1,2-Dichloroethane	107-06-2	B2	9.10E-02	(b)	2.60E-05	IRIS (5/2003)	RAT	ORAL:GAVAGE
1,2-Dichloroethene (total)	540-59-0	D	NA	(c)	NA	IRIS (5/2003)	NA	NA
2-Butanone (MEK)	78-93-3	D	NA		NA	IRIS (5/2003)	NA	NA
4-Methyl-2-pentanone (MIBK)	108-10-1	NA	NA		NA	IRIS (5/2003)	NA	NA
Acetone	67-64-1	D	NA		NA	IRIS (5/2003)	NA	NA
Benzene	71-43-2	A	7.70E-03	(b,d)	2.20E-06	IRIS (5/2003)	HUMAN	INHALATION:OCCUPATIONAL
Chlorobenzene	108-90-7	D	NA		NA	IRIS (5/2003)	NA	NA
Chloroform	67-66-3	B2	8.05E-02	(b)	2.30E-05	IRIS (5/2003)	MOUSE	ORAL:GAVAGE
Chloromethane	74-87-3	C	6.30E-03		1.80E-06	HEAST (1997)	MOUSE	INHALATION:INTERMITTENT
Dichloromethane	75-09-2	B2	1.65E-03	(b)	4.70E-07	IRIS (5/2003)	MOUSE	INHALATION
Ethylbenzene	100-41-4	D	NA		NA	(e)	NA	NA
Tetrachloroethene	127-18-4	NA	2.10E-02		5.90E-06	(f)	MOUSE	INHALATION
Toluene	108-88-3	D	NA		NA	IRIS (5/2003)	NA	NA
Trichloroethylene	79-01-6	NA	4.00E-01		NA	(g)	HUMAN	ORAL:DRINKING WATER
Xylenes, Total	1330-20-7	NA	NA		NA	NA	NA	NA
SVOCs								
1,2-Dichlorobenzene	95-50-1	D	NA		NA	IRIS (5/2003)	NA	NA
1,3-Dichlorobenzene	541-73-1	D	NA		NA	IRIS (5/2003)	NA	NA
1,4-Dichlorobenzene	106-46-7	B2	2.20E-02		NA	NCEA (6/21/93)	MOUSE	ORAL:GAVAGE
2,4,6-Trichlorophenol	88-06-2	B2	1.09E-02	(b)	3.10E-06	IRIS (5/2003)	RAT	ORAL:DIET
2,4-Dichlorophenol	120-83-2	NA	NA		NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	NA	NA		NA	NA	NA	NA
2-Chlorophenol	95-57-8	NA	NA		NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	C (h)	NA		NA	NA	NA	NA
2-Nitroaniline	88-74-4	NA	NA		NA	NA	NA	NA
3-Methylphenol/4-Methylphenol	(i)	C	NA		NA	IRIS (5/2003)	NA	NA
4-Chloroaniline	106-47-8	NA	NA		NA	NA	NA	NA
4-Nitroaniline	100-01-6	NA	NA		NA	NA	NA	NA
Benzo(a)anthracene	56-55-3	B2	3.10E-01	(m)	NA	NCEA (11/18/94)	HAMSTER	INHALATION
Benzo(a)pyrene	50-32-8	B2	3.10E+00		8.80E-01	NCEA (11/18/94)	HAMSTER	INHALATION
Benzo(b)fluoranthene	205-99-2	B2	3.10E-01	(m)	NA	NCEA (11/18/94)	HAMSTER	INHALATION
Benzo(g,h,i)perylene	191-24-2	D	NA		NA	NA	NA	NA
Benzo(k)fluoranthene	207-08-9	B2	3.10E-02	(n)	NA	NCEA (11/18/94)	HAMSTER	INHALATION
bis(2-Chloroethyl)ether	111-44-4	B2	1.16E+00	(b)	3.30E-04	IRIS (5/2003)	MOUSE	ORAL:GAVAGE
bis(2-Ethylhexyl)phthalate	117-81-7	B2	NA		NA	IRIS (5/2003)	NA	NA
Dibenzo(a,h)anthracene	53-70-3	B2	3.10E+00	(o)	NA	NCEA (11/18/94)	HAMSTER	INHALATION
Hexachlorobenzene	118-74-1	B2	1.61E+00	(b)	4.60E-04	IRIS (5/2003)	RAT	ORAL:DIET
Indeno(1,2,3-cd)pyrene	193-39-5	B2	3.10E-01	(m)	NA	NCEA (11/18/94)	HAMSTER	INHALATION
Naphthalene	91-20-3	C	NA		NA	IRIS (5/2003)	NA	NA
Nitrobenzene	98-95-3	D	NA		NA	IRIS (5/2003)	NA	NA
Phenol	108-95-2	D	NA		NA	IRIS (5/2003)	NA	NA
Pesticides								
4,4'-DDE	72-55-9	B2	NA		NA	IRIS (5/2003)	NA	NA
4,4'-DDT	50-29-3	B2	3.40E-01	(b)	9.70E-05	IRIS (5/2003)	MOUSE/RAT	ORAL:DIET
Aldrin	309-00-2	B2	1.72E+01	(b)	4.90E-03	IRIS (5/2003)	MOUSE	ORAL:DIET
alpha-BHC	319-84-6	B2	6.30E+00	(b)	1.80E-03	IRIS (5/2003)	MOUSE	ORAL:DIET
alpha-Chlordane	5103-71-9	B2	3.50E-01	(b,j)	1.00E-04	IRIS (5/2003)	MOUSE	ORAL:DIET
beta-BHC	319-85-7	C	1.86E+00	(b)	5.30E-04	IRIS (5/2003)	MOUSE	ORAL:DIET
delta-BHC	319-86-8	D	NA		NA	IRIS (5/2003)	NA	NA
Dieldrin	60-57-1	B2	1.61E+01	(b)	4.60E-03	IRIS (5/2003)	MOUSE	ORAL:DIET
Endrin Ketone	53494-70-5	NA	NA		NA	NA	NA	NA
gamma-BHC (Lindane)	58-89-9	B2-C	NA		NA	NA	NA	NA
Heptachlor	76-44-8	B2	4.55E+00	(b)	1.30E-03	IRIS (5/2003)	MOUSE	ORAL:DIET
Heptachlor epoxide	1024-57-3	B2	9.10E+00	(b)	2.60E-03	IRIS (5/2003)	MOUSE	ORAL:DIET
Herbicides								
2,4,5-T	93-76-5	NA	NA		NA	NA	NA	NA
2,4-D	94-75-7	NA	NA		NA	NA	NA	NA
MCPA	94-74-6	NA	NA		NA	NA	NA	NA
MCPP	93-65-2	NA	NA		NA	NA	NA	NA
Pentachlorophenol	87-86-5	B2	NA		NA	IRIS (5/2003)	NA	NA

TABLE 4-4
DOSE-RESPONSE INFORMATION FOR CONSTITUENTS WITH POTENTIAL CARCINOGENIC EFFECTS BY THE INHALATION ROUTE OF EXPOSURE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS Number	EPA Carcinogen Class	Inhalation CSF $(mg/kg\text{-}day)^{-1}$ (a)		Unit Risk Factor (m^3/ug)	Inhalation CSF Reference (Last Verified)	Inhalation CSF Study Animal	Inhalation CSF Study Method
PCBs								
Total PCBs	1336-36-3	B2	2.00E+00	(b,k)	NA	IRIS (5/2003)	RAT	ORAL:DIET
Dioxin								
2,3,7,8-TCDD-TEQ	1746-01-6	B2	1.50E+05		3.30E+01	HEAST (1997)	RAT	ORAL:DIET
Metals								
Antimony	7440-36-0	NA	NA		NA	NA	NA	NA
Arsenic	7440-38-2	A	1.51E+01	(b)	4.30E-03	IRIS (5/2003)	HUMAN	INHALATION:OCCUPATIONAL
Barium	7440-39-3	D	NA		NA	IRIS (5/2003)	NA	NA
Beryllium	7440-41-7	B1	8.40E+00	(b)	2.40E-03	IRIS (5/2003)	HUMAN	INHALATION:OCCUPATIONAL
Cadmium	7440-43-9	B1	6.30E+00	(b)	1.80E-03	IRIS (5/2003)	HUMAN	INHALATION:OCCUPATIONAL
Chromium	7440-47-3	A	4.20E+01	(b)	1.20E-02	IRIS (5/2003)	HUMAN	INHALATION:OCCUPATIONAL
Cobalt	7440-48-4	B1	9.80E+00	(b)	2.80E-03	NCEA (1/15/02)	MOUSE	INHALATION
Copper	7440-50-8	D	NA		NA	IRIS (5/2003)	NA	NA
Lead	7439-92-1	B2	NA		NA	NA	NA	NA
Manganese	7439-96-5	D	NA		NA	IRIS (5/2003)	NA	NA
Mercury	7439-97-6	D	NA		NA	IRIS (5/2003)	NA	NA
Nickel	7440-02-0	NA	NA	(l)	NA	NA	NA	NA
Thallium	7440-28-0	NA	NA		NA	NA	NA	NA
Vanadium	7440-62-2	NA	NA		NA	NA	NA	NA
Zinc	7440-66-6	D	NA		NA	IRIS (5/2003)	NA	NA

Notes:
CAS - Chemical Abstracts Service.
CSF - Cancer Slope Factor.
HEAST - Health Effects Assessment Summary Tables, published annually by the USEPA (1997b).
IRIS - Integrated Risk Information System, an online computer database of toxicological infomation (USEPA, 2003b).
NCEA - National Center for Environmental Assessment.
PRG - Preliminary Remediation Goal Table (10/2002) (USEPA, 2002b).
RBC - Risk Based Concentration Table (4/2003) (USEPA, 2003a).
USEPA - United States Environmental Protection Agency.
(a) Inhalation CSF calculated from the unit risk factor, where available, assuming a 70 kg adult breathes 20 m^3 of air per day.
(b) Converted from inhalation unit risk: URI m^3/ug x (70g x (1day/20m^3) x 1000 ug/mg).
(c) cis-1,2-Dichloroethene has a carcinogen class of D; trans-1,2-Dichloroethene has not been classified; per IRIS.
(d) IRIS provides a range of inhalation unit risk factors for benzene of 2.2E-06 to 7.8E-06 m^3/ug. These are equivalent to an CSF range of 7.7 E-03 to 2.7E-02 kg*day/mg. IRIS states that each value within this range has equal scientific plausibility.
(e) The NCEA has withdrawn the provisional unit risk factor (personal communication, USEPA July 9, 2003).
(f) The NCEA has for the interim adopted the California EPA dose-response values for tetrachloroethylene. Personal communication (USEPA, July 9, 2003).
(g) Trichloroethylene Health Risk Assessment Synthesis and Characterization. EPA/600/p-01/002A August 2001. Personal communication (USEPA, July 9, 2003).
(h) Based on information for naphthalene.
(i) The CAS numbers for 3-Methylphenol and 4-Methylphenol are 106-44-5 and 108-39-4, respectively.
(j) Value for Chlordane.
(k) This is the upperbound CSF for PCBs for dust/aerosol inhalation. USEPA provides a range of slope factors on IRIS; these will be discussed in the risk characterization.
(l) Information for Nickel, soluble salts, on IRIS.
(m) CSF based on that for benzo(a)pyrene and applying a relative potency factor of 0.1 per USEPA Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons (USEPA, 1993d).
(n) CSF based on that for benzo(a)pyrene and applying a relative potency factor of 0.01 per USEPA Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons (USEPA, 1993d).
(o) CSF based on that for benzo(a)pyrene and applying a relative potency factor of 1.0 per USEPA Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons (USEPA, 1993d).

TABLE 4-5
TIERS OF CANCER SLOPE FACTORS FOR ENVIRONMENTAL PCBs (a)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

HIGH RISK AND PERSISTENCE
Upper-bound slope factor: 2.0 per (mg/kg)/day Central-estimate slope factor: 1.0 per (mg/kg)/day
Criteria for use: - Food chain exposure - Sediment or soil ingestion - Dust or aerosol inhalation - Dermal exposure, if an absorption factor has been applied - Presence of dioxin-like, tumor-promoting, or persistent congeners - Early-life exposure (all pathways and mixtures)
LOW RISK AND PERSISTENCE
Upper-bound slope factor: 0.4 $(mg/kg\text{-}day)^{-1}$ Central-estimate slope factor: 0.3 $(mg/kg\text{-}day)^{-1}$
Criteria for use: - Ingestion of water-soluble congeners - Inhalation of evaporated congeners - Dermal exposure if no absorption factor has been applied
LOWEST RISK AND PERSISTENCE
Upper-bound slope factor: 0.07 $(mg/kg\text{-}day)^{-1}$ Central-estimate slope factor: 0.04 $(mg/kg\text{-}day)^{-1}$
Criteria for use: Congener or isomer analyses verify that congeners with more than 4 chlorines comprise less than 0.5% of total PCBs.
Notes: (a) - USEPA. 2003b. Integrated Risk Information System (IRIS).

TABLE 4-6
TEFs FOR DIOXIN AND FURAN CONGENERS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS NO.	TEF (a)
Dioxins		
2,3,7,8-TetraCDD	1746-01-6	1
1,2,3,7,8-PentaCDD	40321-76-4	1
1,2,3,4,7,8-HexaCDD	39227-28-6	0.1
1,2,3,6,7,8-HexaCDD	57653-85-7	0.1
1,2,3,7,8,9-HexaCDD	19408-74-3	0.1
1,2,3,4,6,7,8-HeptaCDD	35822-39-4	0.01
OctaCDD	3268-87-9	0.0001
2,3,7,8-PentaCDDs	NA	NA
2,3,7,8-HexaCDDs	NA	NA
2,3,7,8-HeptaCDDs	NA	NA
Furans		
2,3,7,8-TetraCDF	51207-31-9	0.1
1,2,3,7,8-PentaCDF	57117-41-6	0.05
2,3,4,7,8-PentaCDF	57117-31-4	0.5
1,2,3,4,7,8-HexaCDF	70648-26-9	0.1
1,2,3,6,7,8-HexaCDF	57117-44-9	0.1
1,2,3,7,8,9-HexaCDF	72918-21-9	0.1
2,3,4,6,7,8-HexaCDF	60851-34-5	0.1
1,2,3,4,6,7,8-HeptaCDF	67562-39-4	0.01
1,2,3,4,7,8,9-HeptaCDF	55673-89-7	0.01
OctaCDF	39001-02-0	0.0001
2,3,7,8-HexaCDFs	NA	NA
2,3,7,8-HeptaCDFs	NA	NA

Notes:
CAS - Chemical Abstracts Service.
CDD- Chorodibenzodioxin
CDF - Chlorodibenzofuran.
TEF - Toxicity Equivalency Factor.
(a) - "Toxic Equivalency Factors for PCBs, PCDDs, PCDFs for Humans and Wildlife." Van den Berg, et al. 1998.

5.0 EXPOSURE ASSESSMENT

The purpose of the exposure assessment is to predict the magnitude and frequency of potential human exposure to each of the COPC retained for quantitative evaluation in the HHRA. The first step in the exposure assessment process is the characterization of the setting of the site and surrounding area. Current and potential future site uses and potential receptors (i.e., people who may contact the impacted environmental media of interest) are then identified. Potential exposure scenarios identifying appropriate environmental media and exposure pathways for current and potential future site uses and receptors are then developed. Those potential exposure pathways for which COPCs are identified and are judged to be complete are evaluated quantitatively in the risk assessment. This information is used to develop or update the CSM for the site.

To estimate the potential risk to human health that may be posed by the presence of COPCs in environmental media in the study area, it is first necessary to estimate the potential exposure dose of each COPC for each receptor. The exposure dose is estimated for each constituent via each exposure route/pathway by which the receptor is assumed to be exposed. Reasonable maximum exposure (RME) scenarios, and most likely exposure (MLE) scenarios based on appropriate USEPA guidance are both evaluated in the quantitative risk assessment. Exposure dose equations combine the estimates of constituent concentration in the environmental medium of interest with assumptions regarding the type and magnitude of each receptor's potential exposure to provide a numerical estimate of the exposure dose. The exposure dose is defined as the amount of COPC taken into the receptor and is expressed in units of milligrams of COPC per kilogram of body weight per day (mg/kg-day). The exposure doses are combined with the toxicity values to estimate potential risks and hazards for each receptor.

This section contains five subsections. Section 5.1 presents the updated CSM for the site and identifies the potential exposure scenarios and receptors. Section 5.2 presents methods for quantifying potential exposures. Section 5.3 presents the receptor-specific exposure parameters. Section 5.4 identifies exposure point concentrations (EPCs). Section 5.5 presents the constituent-specific exposure parameters.

5.1 Conceptual Site Model

To guide identification of appropriate exposure pathways and receptors for evaluation in the risk assessment, a CSM for human health was developed as part of the scoping activities in the HHRA Workplan (presented in Appendix A). The purpose of the CSM is to identify source areas, potential migration pathways of constituents from source areas to environmental media where exposure can occur, and to identify potential human receptors. The CSM is meant to be a "living" model that can be updated and modified as additional data become available.

The initial CSM for the site is presented in Figure 11-2 of Appendix A. Table 11-2 of Appendix A presented the matrix of receptors and pathways by area and medium that would be considered for evaluation in the risk assessment. The CSM and the receptor area matrix have not changed based on a review of the analytical results and the COPC selection process. The CSM is presented in Figure 5-1. The receptor/area matrix is presented in Table 5-1. Both are discussed below.

5.1.1 Identification of Media for Exposure Evaluation

5.1.1.1 Sites

In Sauget Area 2, the sites are identified as Sites O, P, Q, R, and S. These are identified as source areas in the CSM (Figure 5-1). Constituents in the Sites may leach to underlying groundwater. In accordance with the SSP, samples of wastes in the sites were analyzed by TCLP to address the potential leaching to groundwater pathway.

COPCs were identified in samples of shallow groundwater in Site O, and in leachate in Sites O, Q, and R (Table 3-3). COPCs were identified in samples of mid-groundwater in Sites Q and R (Table 3-4). Groundwater, therefore, is identified as a secondary source in the CSM (Figure 5-1), and these COPCs are quantitatively evaluated in the HHRA.

VOCs identified as COPCs in shallow/mid groundwater and in leachate may volatilize and infiltrate into indoor air in overlying buildings and into outdoor air, and these potential exposure pathways (Figure 5-1) are evaluated in the HHRA. Construction work may occur to depths at which shallow groundwater may be encountered by direct contact, and this pathway is evaluated in the HHRA. It is assumed that construction could occur to depths up to 15 feet bgs. It is assumed that volatilization of VOCs to indoor or outdoor air can occur from groundwater up to 30 feet bgs, although this pathway is more commonly evaluated for groundwater less than 15 feet bgs (MADEP, 1995).

No COPCs were identified in surface soil in Site R, therefore, this medium is not further evaluated in the HHRA. COPCs were identified in surface soil for the remaining Sites. COPCs in surface soil may be suspended in dusts in outdoor air.

COPCs in combined soil (surface soil, subsurface soil, and waste) were identified in all Sites (Table 3-2). Volatile COPCs in combined soils may volatilize to ambient air. Non-volatile COPCs in combined soils may become suspended in excavation dusts.

Exposures to COPCs in outdoor air and indoor air as well as direct contact with soils are evaluated as potential exposure pathways in the HHRA (Figure 5-1).

COPCs were identified in Site Q Pond surface water (Table 3-6), as well as in fish fillet samples collected from the Site Q Pond (Table 3-7).

5.1.1.2 Mississippi River

Surface water and sediment samples in the Mississippi River were collected and analyzed and evaluated as one area in the HHRA. COPCs were identified in surface water (Table 3-6) and sediment (Table 3-7). COPCs were also identified in fish fillet samples (Table 3-7).

5.1.2 Identification of Receptors and Potential Exposure Scenarios

Exposure scenarios are developed on the basis of the CSM for a site. A general identification of exposure pathways, exposure routes, and receptors is provided in the CSM (Figure 5-1). A more detailed summary is provided in Table 5-1, the receptor/area matrix.

5.1.2.1 Sites

Sauget Area 2 sites have been used for industrial purposes for many years (since the 1930s or earlier) and use of these areas is expected to remain industrial. The sites within Sauget Area 2 are zoned commercial/industrial and it is likely that the sites will continue to be used well into the reasonably foreseeable future for commercial/industrial purposes. Therefore, the sites were evaluated for non-residential use scenarios.

Receptors were identified for the sites based on the CSM (Figure 5-1 and Table 5-1) and the COPCs identified in media in the Sites. COPCs were identified in groundwater in Sites O and R, in leachate in Sites O, Q, and R, and in soils in all Sites, except for surface soil in Site R. COPCs were identified in surface water and fish fillet in the Site Q Pond.

An on-site outdoor industrial worker and a trespassing teen are evaluated for potential exposure to COPCs in surface soil via incidental ingestion and dermal contact, and via inhalation of non-volatile COPCs that may be suspended as dusts from surface soils. Additionally, these receptors are evaluated for potential exposure and to COPCs that may volatilize into outdoor air from underlying groundwater and from soils (combined surface soil, subsurface soil, and waste).

An on-site construction/utility worker is evaluated for potential exposure to COPCs in combined soils via incidental ingestion and dermal contact, and via inhalation of particulates suspended during excavation activity as well as volatile emissions. Construction/utility work is assumed to occur up to depths of 15 feet bgs as noted above. Due to the shallow depth of groundwater in limited areas, the construction/utility worker may contact groundwater during excavation. Therefore, the construction worker is assumed to be exposed to COPCs in shallow groundwater via incidental ingestion and

dermal contact, and via inhalation of COPCs volatilized from standing water in an excavation trench. COPCs in shallow groundwater and leachate were identified in Sites O, Q, and R.

Due to the presence of VOCs in groundwater and leachate in Sites O, Q, and R, an on-site indoor industrial worker will be evaluated for potential exposure to COPCs via inhalation of volatile constituents present in indoor air due to vapor intrusion from groundwater/leachate. It is unlikely that the indoor worker receptor would be exposed to soils to the same extent as an outdoor worker, therefore, this pathway was concluded to be insignificant and was not quantitatively evaluated in the risk assessment for the indoor worker.

A recreational fisher and a trespassing teenager are evaluated for potential exposure to COPCs in surface water and fish fillet from the Site Q Pond (note, no COPCs were identified in Site Q Pond sediment).

5.1.2.2 Mississippi River

A recreational fisher and a trespassing teenager are evaluated for potential exposure to COPCs in sediment, surface water, and fish fillet from the Mississippi River.

5.2 Quantification of Potential Exposures

To estimate the potential risk to human health that may be posed by the presence of COPCs at the site, it is first necessary to estimate the potential exposure dose of each COPC. The exposure dose is estimated for each constituent via each exposure pathway by which the receptor is assumed to be exposed. Exposure dose equations combine the estimates of constituent concentration in the environmental medium of interest with assumptions regarding the type and magnitude of each receptor's potential exposure to provide a numerical estimate of the exposure dose. The exposure dose is defined as the amount of COPC taken into the receptor and is expressed in units of milligrams of COPC per kilogram of body weight per day (mg/kg-day).

Exposure doses are defined differently for potential carcinogenic and noncarcinogenic effects. The Chronic Average Daily Dose (CADD) is used to estimate a receptor's potential intake from exposure to a COPC with noncarcinogenic effects. According to USEPA (1989a), the CADD should be calculated by averaging the dose over the period of time for which the receptor is assumed to be exposed. Therefore, the averaging period is the same as the exposure duration. For COPCs with potential carcinogenic effects, however, the Lifetime Average Daily Dose (LADD) is employed to estimate potential exposures. In accordance with USEPA (1989a) guidance, the LADD is calculated by averaging exposure over the receptor's assumed lifetime (70 years). Therefore, the averaging period is the same as the receptor's assumed lifetime. The standardized equations for estimating a receptor's

average daily dose (both lifetime and chronic) are presented below, followed by descriptions of receptor-specific exposure parameters (Section 5.3) and constituent-specific parameters (Section 5.5).

5.2.1 Estimating Potential Exposure from Ingestion of and Dermal Contact with Soil or Sediment

Average Daily Dose (Lifetime and Chronic) Following Incidental Ingestion of Soil or Sediment (mg/kg-day):

$$ADD = \frac{CS \times IR \times EF \times ED \times AAF_o \times CF}{BW \times AT}$$

where:

ADD	=	Average daily dose (mg/kg-day)
CS	=	Soil concentration (mg/kg soil)
IR	=	Ingestion rate (mg soil/day)
EF	=	Exposure frequency (days/year)
ED	=	Exposure duration (year)
AAF_o	=	Oral-soil absorption adjustment factor (AAF) (unitless)
CF	=	Unit conversion factor (kg soil/10^6 mg soil)
BW	=	Body weight (kg)
AT	=	Averaging time (days)

Average Daily Dose (Lifetime and Chronic) Following Dermal Contact with Soil or Sediment (mg/kg-day):

$$ADD = \frac{CS \times SA \times AF \times EF \times ED \times AAF_d \times CF}{BW \times AT}$$

where:

ADD	=	Average daily dose (mg/kg-day)
CS	=	Soil concentration (mg/kg soil)
SA	=	Exposed skin surface area (cm^2/day)
AF	=	Soil to skin adherence factor (mg soil/cm^2)

EF	=	Exposure frequency (days)
ED	=	Exposure duration (year)
AAF_d	=	Dermal-soil AAF (unitless)
CF	=	Unit conversion factor (kg soil/10^6 mg soil)
BW	=	Body weight (kg)
AT	=	Averaging time (days)

5.2.2 Estimating Potential Exposure via Inhalation

Average Daily Dose (Lifetime and Chronic) Following Inhalation of COPC (mg/kg-day):

$$ADD = \frac{CA \times IR \times AAF_i \times ET \times EF \times ED}{BW \times AT}$$

where:

ADD	=	Average daily dose (mg/kg-day)
CA	=	Air concentration (mg/m^3)
IR	=	Inhalation rate (m^3 /hr)
AAF_i	=	Inhalation AAF (unitless)
ET	=	Exposure time (hours/day)
EF	=	Exposure frequency (days/year)
ED	=	Exposure duration (year)
BW	=	Body weight (kg)
AT	=	Averaging time (days)

5.2.3 Estimating Potential Exposure from Groundwater/Surface Water

Average Daily Dose (Lifetime and Chronic) Following Ingestion of Water (mg/kg-day):

$$ADD = \frac{CW \times IR \times EF \times ED \times AAF_o \times CF}{BW \times AT}$$

where:

ADD	=	Average daily dose (mg/kg-day)
CW	=	Water concentration (mg/L)

IR	=	Water ingestion rate (L/day)
EF	=	Exposure frequency (days/year)
ED	=	Exposure duration (year)
AAF_o	=	Oral-water AAF (unitless)
BW	=	Body weight (kg)
AT	=	Averaging time (days)

Average Daily Dose (Lifetime and Chronic) Following Dermal Contact with Water (mg/kg-day):

$$ADD = \frac{CW \times SA \times PC \times ET \times EF \times ED \times AAF_d \times CF}{BW \times AT}$$

where:

ADD	=	Average daily dose (mg/kg-day)
CW	=	Water concentration (mg/L)
SA	=	Exposed skin surface area (cm^2)
PC	=	Dermal permeability constant (cm/hr)
ET	=	Exposure time (hours/day)
EF	=	Days exposed per year (day/year)
ED	=	Years exposed (year)
AAF_d	=	Dermal-water AAF (unitless)
CF	=	Unit conversion factor ($L/10^3cm^3$)
BW	=	Body weight (kg)
AT	=	Averaging time (year)

5.2.4 Estimating Potential Exposure From Fish Consumption

Average Daily Dose (Lifetime and Chronic) Following Fish Consumption (mg/kg-day):

$$ADD = \frac{CF \times IR \times AAF \times EF \times ED}{AT \times BW}$$

where:

ADD	=	Average daily dose (mg/kg-day)

CF	=	Concentration in fish fillet (mg/kg)
IR	=	Ingestion rate (kg/day)
AAF	=	Oral-diet AAF (unitless)
EF	=	Exposure frequency (days/year)
ED	=	Exposure duration (years)
AT	=	Averaging time (days)
BW	=	Body weight (kg)

Appendix M presents the exposure dose and risk calculation spreadsheets. The risk results are discussed in Section 6.0.

5.3 Receptor-Specific Exposure Parameters

The following subsections present the parameters that were used to evaluate each of the potential receptors in the HHRA. Both RME and MLE scenarios were evaluated for each receptor. Receptor-specific exposure parameters are presented in Section 5.3.1. Exposure factors common to several of the receptors are discussed in Section 5.3.2 and 5.3.3. Both the receptor-specific and the common exposure parameters were presented in the HHRA Workplan (Appendix A).

5.3.1 Receptor-Specific Exposure Parameters

Exposure assumptions for the indoor industrial worker under the RME and MLE scenarios are shown in Table 5-2.

Exposure assumptions for the outdoor industrial worker under the RME and MLE scenarios are shown in Table 5-3.

Exposure assumptions for the trespassing teenager under the RME and MLE scenarios are shown in Table 5-4.

Exposure assumptions for the construction/utility worker under the RME and MLE scenarios are shown in Table 5-5.

The exposure assumptions for the recreational adult fish ingestion pathway for the RME and MLE receptors are summarized in Table 5-6.

Soil adherence factors for the outdoor industrial worker, the construction worker, and the trespassing teenager are calculated in Table 5-7.

5.3.2 Soil Ingestion Rate – Adult Construction Worker

Incidental soil ingestion occurs at all ages as a result of hand-to-mouth activities. Currently, there are little or no reliable quantitative data available for estimating adult soil ingestion rates. USEPA risk assessment guidance suggests a soil ingestion rate of 100 mg/day for adults in a residential scenario (USEPA, 1989a, 1991b), and a soil ingestion rate of 50 mg/day for adults in an industrial scenario (USEPA, 1991b).

USEPA presented an estimate of a soil ingestion rate for adults doing yard work of 480 mg/day in their supporting evidence for the commercial/industrial soil ingestion rate of 50 mg/day in the "Standard Default Exposure Factors" Directive (USEPA, 1991b); the 480 mg/day value was not presented in the table of default exposure factors. The Agency states: "For certain outdoor activities in the commercial/industrial setting (e.g., construction or landscaping), a soil ingestion rate of 480 mg/day may be used; however, this type of work is usually short-term and is often dictated by the weather. Thus, exposure frequency would generally be less than one year and exposure duration would vary according to site-specific construction/maintenance plans." However, some regions and state agencies have stipulated the use of this value to evaluate a construction worker exposure scenario. The Hawley (1985) study, which is the basis for the soil ingestion rate of 480 mg/day, was recently reviewed by the USEPA (USEPA, 1997a), which stated that, "Given the lack of supporting measurements, these estimates must be considered conjectural."

In the Hawley (1985) study, the author assumed that soil adheres to the surface area of the hands at a loading of 3.5 mg/cm^2. This value was based on a layer of soil on skin assumed to be 0.005 cm deep, a soil density of 1.5 g/cm^2, and 50% void space. Using the author's derived soil-to-skin adherence loading of 3.5 mg/cm^2 and assuming that the amount of soil covering a fraction of the hands (approximately 70 cm^2) is ingested twice a day, Hawley calculated a soil ingestion rate of 480 mg/day.

Hawley's 1985 analysis was one of the first published health risk assessments and was performed before any of the quantitative fecal tracer soil ingestion studies for either children or adults were conducted (Calabrese et al., 1989; Davis et al., 1990; Clausing et al., 1987; Calabrese et al., 1990). Thus, the estimate of 480 mg/day predates all of our current knowledge about soil ingestion among both children and adults, as well as recent published data on soil-to-skin adherence rates.

In 1993, USEPA sponsored a workshop to evaluate soil-to-skin adherence data. As a result, a study to determine a more accurate characterization of soil-to-skin adherence was sponsored by the USEPA and conducted by John C. Kissel and associates at the University of Washington (Kissel et al., 1996; Holmes et al., 1998). The intent of this study was to resolve uncertainties and develop more accurate measures of soil-to-skin loading rates for individuals involved in various occupational and recreational activities. As reported in the Exposure Factors Handbook (EFH) (USEPA ,1997a), soil loading on skin surfaces as a result of various occupational and recreational activities was directly measured. This

study indicates that soil loadings vary with the type of activity and the body parts contacted. As one would expect, adherence appears to be greatest during outdoor activities such as farming and gardening, and more soil/dust tends to adhere to the hands and knees than to other areas of the body.

Average hand soil loading factors are presented in the EFH (USEPA, 1997a) for the adult outdoor workers evaluated by Kissel and Holmes. In every case, soil adherence during occupational exposure was measured to be considerably lower than Hawley's estimate of 3.5 mg/cm^2. The range of soil adherence loadings measured by Kissel and Holmes falls within the USEPA range of 0.2 to 1.0 mg/cm^2 (USEPA, 1992b).

For this evaluation, the construction worker receptor is assumed to be exposed to COPCs in surface and subsurface soils during excavation activity. Based on this exposure scenario, the "farmer" receptor provided in the EFH is considered to provide an upper-bound estimate of soil adherence. A soil ingestion rate can be calculated by substituting the soil adherence value for the receptor for the estimated value derived by Hawley (1985), as follows:

$$\frac{480\ \text{mg/day}}{3.5\ \text{mg/cm}^2} = \frac{\text{ingestion rate (mg/day)}}{\text{soil adherence (mg/cm}^2)}$$

The soil adherence value for the "farmer" is 0.47 mg/cm^2. The calculated soil ingestion value is 64 mg/day.

Additional support for this value comes from an additional paper by Kissel and coworkers (Kissel et al., 1998) that presents the results of a study of the transfer of soil from hand to mouth by intentional licking. Soil was loaded onto the skin by pressing the hand onto soil, and the amount transferred to the mouth was measured. The thumb sucking, finger mouthing, and palm licking activities resulted in geometric mean soil mass transfers of 7.4 to 16 mg per event. The author concludes that "transfer of 10 mg or more of soil from a hand to the oral cavity in one event is possible, but requires moderate soil loading and more than incidental hand-to-mouth contact." However, "the fraction of soil transferred from hand to mouth that is subsequently swallowed is unknown but may be less than 100 percent." In addition, "the adult volunteers in this study reported that the presence of roughly 10 mg of soil in the mouth is readily detected (and unpleasant). Repeated unintentional ingestion of that mass of soil by adults therefore seems unlikely. In light of this observation, the 480 mg per day estimate [of Hawley, 1985] would require hundreds or perhaps thousands of hand-to-mouth contacts that resulted in soil transfer per day."

For the RME scenario, a soil ingestion rate of 100 mg/day is assumed for the construction worker. This is the adult soil ingestion rate provided by USEPA (1991b). For the MLE scenario, the soil ingestion rate of 64 mg/kg derived above was used.

5.3.3 Frequency of Exposure to COPC in Soil

A meteorological factor is generally used to account for the fraction of the year during which exposure to constituents in soils may occur (Sheehan et al., 1991; USEPA, 1989a). It is reasonable to assume that direct contact with soil or intrusive activities will not occur for non-excavation receptors (i.e., outdoor industrial worker, trespassing teenager) during inclement weather, i.e., when it is raining or snowing, when the ground is wet or frozen, or when snow or ice (32 degrees F) are covering the ground. This is not to say that workers or trespassers would not be outdoors on such days, only that the soil would not be available for significant contact either because it is wet or frozen. Thus the frequency of contact with potentially impacted soil is adjusted for these site-specific meteorological conditions (USEPA, 1989a).

There are only a few metrics that can be used to describe the fraction of the year when meteorological conditions are likely to limit exposure. These include temperature and the amount of precipitation per day and per year, which includes rain, snow and ice. While measures are collected hourly, the National Weather Service (NWS, 1986-1995) reports the number of days when precipitation is greater than 0.01 inches (one one-hundredth), greater than 0.1 inches (one tenth), and greater than 1 inch in their annual summary data. The number of days with precipitation greater than 0.1 inches is selected as the best representation of when exposure is likely to be limited by snow, rain, or ice. The National Oceanographic and Atmospheric Administration (NOAA) provides daily temperature data. It is assumed that exposure to soils is limited by temperatures less than 32 degrees F. Therefore, evaluating exposure to soils to those days with less than 0.1 inch of precipitation and temperatures above 32 degrees F is reasonable.

Based on ten years of meteorological data (1986-1995) provided by NOAA (1996), a meteorological factor is derived for use in the exposure equations. On the average, 66 days/year in this area receive 0.1 or greater inches of precipitation, and there are typically 27 days/year with a mean temperature of 32 degrees F or below. Accounting for days when both events occur (assumed to be 10% of the rain days or 6 days/year), the number of inclement days, 87, can be calculated (27 + 66 – 6 = 87). It is assumed that these days are evenly spaced throughout the course of the year. The meteorological factor is then calculated (87/365 = 24%). Thus it is assumed that exposure to soils will not occur for the "receptor" 24% of the assumed days of exposure (exposure frequency) due to weather restrictions.

The choice of a precipitation target of 0.1 inches is in keeping with guidance provided in the Compilation of Air Pollution Emission Factors, which assumes that soil suspension will not occur on days with more than 0.01 inches of precipitation (USEPA, 1995b). It is probable, however, that this

metric both over- and under-estimates the potential exposure in some conditions. For, example, it is possible that some exposure to soils may occur on days when it rains just over 0.1 inches in the early morning and then the ground dries during the course of the day. Alternatively, significant rainfall, such as greater than 1 inch, is likely to saturate the soil for consecutive days, and several inches of snow (which may fall all on one day with one storm) may cover the ground and inhibit direct contact for several days. With both of these considerations in mind, it is likely that a meteorological factor based on inclement days defined as precipitation greater than 0.1 inches and average temperatures less than 32 degrees F is reasonable.

5.4 Exposure Point Concentrations

Exposure points are located where potential receptors may contact COPCs at or from the site. The concentration of COPCs in the environmental medium that receptors may contact must be estimated in order to determine the magnitude of potential exposure. The estimation of EPCs in media evaluated for the HHRA is discussed below.

5.4.1 Measured EPCs

The EPC for a human health risk assessment is defined as the 95% upper confidence limit (UCL) on the arithmetic mean concentration, or the maximum concentration, whichever is lower (USEPA, 2002a), for the RME scenario and the arithmetic mean concentration for the MLE scenario.

Summary statistics have been calculated for each constituent in each medium, as presented in Appendix B. As discussed in Section 3.0, before summary statistics were calculated, the following steps were taken for each constituent. If a constituent was detected in at least once in an area/medium combination, one-half the constituent's quantitation limit was used as a proxy concentration in the estimation of exposure point concentrations for those instances in which the constituent was reported as not detected. However, if the proxy concentration is greater than any detected value in that area/medium, the proxy concentration was removed from the calculation. This is consistent with USEPA guidance (USEPA, 1989a) which recognizes that high sample quantitation limits can lead to unrealistic concentration estimates. Duplicate sample analytical results were averaged, and the average used as the sample point concentration (USEPA, 1989c).

For COPCs, 95% UCLs were calculated. USEPA (2002a) provides guidance on the methodology for calculating 95% UCLs. The calculation of the 95% UCL is dependent on the data distribution, which can be normal, lognormal, or nonparametric. For normally distributed datasets, the guidance recommends the use of the Student's t-statistic to calculate a 95% UCL. However, for lognormal or nonparametric datasets, a variety of methods are used, depending on the skewness and other characteristics of the data. Therefore, an ENSR-developed program has been used to implement the recommendations of the guidance. This program is described in Appendix I. The USEPA program

ProUCL, which has been developed to partially implement the guidance (USEPA, 2002a), does not always make a final selection as to which 95% UCL is appropriate. The ENSR program results were compared with the ProUCL results for several COPCs, and the 95% UCLs were similar. The input and output files for the calculation of each 95% UCL are presented in Appendix I. Note that the input file is simply a list of numbers that represent the sample concentrations for the COPC in question after non-detects were handled as discussed above and duplicates were averaged. The final table of the appendix presents the EPC selection procedure. For COPCs in areas/media with fewer than eight samples, the maximum detected concentration is selected as the EPC. For all other COPCs, the lower of the calculated 95% UCL and the maximum detect is selected as the EPC.

The EPCs for each medium and scenario are presented in Tables 5-8 through 5-18 for the RME and MLE scenarios.

5.4.2 Modeled EPCs

Some pathways required modeling to derive the EPCs. These pathways include volatile constituents in groundwater migrating upwards and infiltrating into indoor air, outdoor air and excavation air, and generation of fugitive dusts from undisturbed soils as well as during construction activities.

The model used to predict indoor air concentrations of VOCs for evaluation of the indoor worker receptor was the model of Johnson and Ettinger recommended by the USEPA (2003c) to predict concentrations of COPCs migrating from groundwater and leachate to indoor air of an overlying building. Appendix J presents the model calculations and output. EPCs are presented in Table 5-17.

Calculation of outdoor air concentrations of VOCs in groundwater and leachate due to exposure to groundwater in an excavation trench is presented in Appendix K. These concentrations were used to evaluate the construction worker receptor. EPCs are presented in Table 5-16.

Concentrations of volatile COPCs in outdoor air due to migration from groundwater and soil were estimated using the methodology recommended by the American Society for Testing and Materials (ASTM, 2000). The RBCA Toolkit for Chemical Releases, Version 1.3a (GSI, 2001) was used to implement the standard. EPCs for volatile COPCs in groundwater and leachate listed in Table 5-15 were used as the source term for the groundwater modeling. EPCs for volatile COPCs in combined soils (Table 5-9) were used as the source term for the soil modeling. Appendix L presents the model calculations and output. These concentrations were used to evaluate the outdoor worker, construction worker, and the trespasser receptors. Table 5-10 presents the outdoor air EPCs modeled from soil. Table 5-18 presents the outdoor air EPCs modeled from mid-groundwater and leachate.

The calculation of concentrations of inorganic and semivolatile organic COPCs bound to soil in fugitive dust involves multiplying the soil exposure point concentrations by the concentration of dust in air as follows:

1) Ambient Air:

COPC concentration in ambient air (mg/m^3) = Exposure point concentration in soil (mg/kg soil) x Dust concentration (kg soil/m^3)

The dust concentration in air used in the evaluation of ambient outdoor air pathways in this risk evaluation is the inverse of the particulate emission factor (PEF) derived in accordance with USEPA guidance (USEPA, 1996a). Table 5-19 presents the PEF calculations used for Site O (North), Table 5-20 presents the PEF calculations used for Site S, and Table 5-21 presents the PEF calculation for Site O, Site P, Site Q (North), Site Q (South), Site Q (Central) and Site R. Surface soil EPCs were used as the source term for modeling the dust concentration in ambient air.

2) Excavation Air (i.e., during construction activities):

COPC concentration in excavation air (mg/m^3) = Exposure point concentration in soil (mg/kg soil) x Dust concentration (mg soil/m^3) x Unit correction factor (1 kg/10^6 mg)

The dust concentration in air used in the evaluation of excavation air pathways in this risk evaluation is 60 ug/m^3. This value is the recommended concentration of respirable particulate with a mean diameter of 10 microns or less (PM10) for excavation activities (MADEP, 1995). Combined soil EPCs were used as the source term for modeling the dust concentration in excavation air.

5.5 Constituent-Specific Parameters

There are several constituent-specific parameters used in the exposure equations above. These parameters are discussed below.

5.5.1 Absorption Adjustment Factors

Bioavailability is the measure of the degree to which a constituent may be systemically absorbed following exposure. In accordance with USEPA guidance (USEPA, 1989a, 1992c), absorption adjustment factors (AAFs) for bioavailability will be used in conducting this risk evaluation. To estimate the potential risk to human health that may be posed by the presence of COPCs in various environmental media (such as soil, sediment, water or air), it is first necessary to estimate the human

exposure dose of each constituent. The exposure dose is then combined with an estimate of the toxicity of the constituent to produce an estimate of risk posed to human health.

The estimate of toxicity of a constituent, termed the toxicity value, can be derived from human epidemiological data, but it is most often derived from experiments with laboratory animals. The toxicity value can be calculated based on the administered dose of the constituent (similar to the human exposure dose) or, when data are available, based on the absorbed dose, or internal dose, of the constituent.

In animals, as in humans, the administered dose of a constituent is not necessarily completely absorbed. Moreover, differences in absorption exist between laboratory animals and humans, as well as between different media and routes of exposure. Therefore, it is not always appropriate to directly apply a toxicity value to the human exposure dose. In many cases, a correction factor in the calculation of risk is needed to account for differences between absorption in the toxicity study and absorption likely to occur upon human exposure to a constituent. Without such a correction, the estimate of human health risk could be over- or under-estimated.

This correction factor is termed the absorption adjustment factor, or AAF. The AAF is used to adjust the human exposure dose so that it is expressed in the same terms as the doses used to generate the dose-response curve in the dose-response study. The AAF is the ratio between the estimated human absorption for the specific medium and route of exposure, and the known or estimated absorption for the laboratory study from which the dose-response value was derived.

$$\text{AAF} = \frac{\text{fraction absorbed in humans for the environmental exposure}}{\text{fraction absorbed in the dose - response study}}$$

The use of an AAF allows appropriate adjustments to be made to the administered dose of a constituent when the efficiency of absorption between environmental exposure and experimental exposure is known or expected to differ because of physiological effects and/or matrix or vehicle effects.

AAFs can have numerical values less than one or greater than one. When the toxicity curve is based on administered dose data, and if it is estimated that the fraction absorbed from the site-specific exposure or medium is the same as the fraction absorbed in the laboratory study, then the AAF is 1.0. This does not mean that there is 100% absorption, only that the magnitude of absorption is the same in both cases. There are situations in which it is expected that the fraction absorbed from a site-related exposure would be higher than that in the laboratory study. There are also situations where the reverse could occur. Thus, use of AAFs provides more accurate and more realistic estimates of potential human health risk. In the absence of detailed toxicological information on a COPC, the following default AAF values are generally employed. A default AAF value of 0.01 is used for dermal

exposure to organics, a value of 0.001 is used for dermal exposure to inorganics (USEPA, 2000a), and a value of 1.0 is employed for all other routes of exposure.

Support for the Use of AAFs in Agency Guidance

The use of absorption factors is recommended by USEPA for use in risk assessment when the "medium of exposure in the site exposure assessment differs from the medium of exposure assumed by the toxicity value" (USEPA, 1989a). In more recent guidance (USEPA, 1992c), USEPA states:

> The applied dose, or the amount that reaches exchange boundaries of the skin, lung or gastrointestinal tract, may often be less than the potential dose if the material is only partly bioavailable. Where data on bioavailability are known, adjustments to the potential dose to convert it to applied dose and internal dose may be made.
>
> This may be done by adding a bioavailability factor (range: 0 to 1) to the dose equation. The bioavailability factor would then take into account the ability of the chemical to be extracted from the matrix, absorption through the exchange boundary, and any other losses between ingestion and contact with lung or gastrointestinal tract.

AAFs used in this risk assessment are presented in Table 5-22. Appendix H presents the derivations of the non-default AAFs.

5.5.2 Skin Permeability Constants

The estimation of exposure doses resulting from incidental dermal contact with groundwater requires the use of a dermal permeability constant (PC) in units of centimeters per hour (cm/hr). This method assumes that the behavior of constituents dissolved in water is described by Fick's Law. In Fick's Law, the steady-state flux of the solute across the skin ($mg/cm^2/hr$) equals the permeability constant (pc, cm/hr) multiplied by the concentration difference of the solute across the membrane (mg/cm^3). This approach is discussed by USEPA (USEPA, 1989a; 1992b).

The PC values were derived from USEPA's Guidance for Dermal Exposure Assessment: Principles and Applications (USEPA, 1992b). Tables 5-3 and 5-7 of this guidance document list PC values for constituents commonly found at disposal sites. PCs used in this risk assessment are presented in Table 5-23. For the COPCs lacking PCs in the USEPA guidance, PCs were calculated using the USEPA algorithms. The variables used and resulting calculated PCs are presented in Table 5-24.

TABLE 5-1
POTENTIAL RECEPTORS, EXPOSURE MEDIA AND EXPOSURE PATHWAYS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINIOS

Receptor	Site	Medium	Pathway
On-Site Outdoor Industrial Worker			
	O, O North, P, Q North, Q Central, Q South, R, S.	Surface Soil	Incidental Ingestion Inhalation of Particulates/Volatiles (a) Dermal Contact
6 Receptors		Groundwater/ Leachate	Inhalation of Volatiles in Outdoor Air
On-Site Indoor Industrial Worker			
6 Receptors	O, O North, P, Q North, Q Central, Q South, R, S.	Groundwater/ Leachate	Inhalation of Volatiles in Indoor Air
Construction/Utility Worker			
	O, O North, P, Q North, Q Central, Q South, R, S.	Combined Soil	Incidental Ingestion Inhalation of Particulates/Volatiles Dermal Contact
6 Receptors		Groundwater/ Leachate	Incidental Ingestion Dermal Contact Inhalation of Volatiles in Excavation Air
Trespassing Teenager			
	O, O North, P, Q North, Q Central, Q South, R, S.	Surface Soil	Incidental Ingestion Inhalation of Particulates/Volatiles (a) Dermal Contact
		Groundwater	Inhalation of Volatiles in Outdoor Air
	Mississippi River, Site Q Ponds	Surface Water	Incidental Ingestion Dermal Contact
7 Receptors		Sediment	Incidental Ingestion Dermal Contact
Recreational Fisher			
	Mississippi River, Site Q Ponds	Fish Fillets	Ingestion
		Surface Water	Incidental Ingestion Dermal Contact
2 Receptors		Sediment	Incidental Ingestion Dermal Contact

Total number of receptors = 27, each evaluated for Reasonable Maximum Exposure (RME) and Most Likely Exposure (MLE) scenarios.
(a) The inhalation of volatiles pathway was evaluated for combined soil.

TABLE 5-2

SUMMARY OF POTENTIAL EXPOSURE ASSUMPTIONS - INDOOR INDUSTRIAL WORKER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINIOS

Parameter	RME On-Site Indoor Worker		MLE On-Site Indoor Worker	
Parameters Used in the Indoor Air Pathway				
Exposure Time (hr/day)	8	(a)	8	(a)
Exposure Frequency (days/year)	250	(b)	250	(b)
Exposure Duration (yr)	25	(b)	7	(c)
Inhalation Rate (m^3/hour)	1.6	(d)	1.0	(e)
Body Weight (kg)	70	(b)	70	(b)

Notes:
MLE - Most Likely Exposure.
RME - Reasonable Maximum Exposure.
(a) - USEPA, 1997a. Exposure Factors Handbook. 50th percentile time spent at work, males and females, all ages. EFH Table 15-68.
(b) - USEPA, 1991a. Standard Default Exposure Factors.
(c) - USEPA, 1997a. Exposure Factors Handbook. Recommended value for occupational tenure listed in EFH Table 1-2.
(d) - USEPA, 1997a. Exposure Factors Handbook. Inhalation rate for moderate activity listed in EFH Table 5-23.
(e) - USEPA, 1997a. Exposure Factors Handbook. Inhalation rate for light activity listed in EFH Table 5-23.

TABLE 5-3
SUMMARY OF POTENTIAL EXPOSURE ASSUMPTIONS - OUTDOOR INDUSTRIAL WORKER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINIOS

Parameter	RME Future Outdoor Industrial Worker		MLE Future Outdoor Industrial Worker	
Parameters Used in the Outdoor Air Pathways				
Exposure Time (hr/day)	8	(a)	8	(a)
Exposure Frequency (days/year)	190	(i)	190	(i)
Exposure Duration (yr)	25	(b)	7	(c)
Inhalation Rate (m^3/hour)	1.6	(d)	1	(e)
Body Weight (kg)	70	(b)	70	(b)
Parameters Used in the Surface Soil Pathway				
Exposure Frequency (days/year)	190	(i)	190	(i)
Exposure Duration (yr)	25	(b)	7	(c)
Soil Ingestion Rate (mg/day)	50	(f)	30	(j)
Skin Contacting Medium (cm^2/day)	3339	(g)	3339	(g)
Soil on Skin (mg/cm^2)	0.02	(h)	0.02	(h)
Body Weight (kg)	70	(b)	70	(b)

Notes:
MLE - Most Likely Exposure.
RME - Reasonable Maximum Exposure.
(a) - USEPA, 1997a. Exposure Factors Handbook. 50th percentile time spent at work, males and females, all ages. EFH Table 15-68.
(b) - USEPA, 1991a. Standard Default Exposure Factors.
(c) - USEPA, 1997a. Exposure Factors Handbook. Recommended value for occupational tenure listed in EFH Table 1-2.
(d) - USEPA, 1997a. Exposure Factors Handbook. Inhalation rate for moderate activity listed in EFH Table 5-23.
(e) - USEPA, 1997a. Exposure Factors Handbook. Inhalation rate for light activity listed in EFH Table 5-23.
(f) - USEPA, 1997a. Exposure Factors Handbook. Average soil ingestion rates listed in EFH Table 1-2.
(g) - USEPA, 1997a. Exposure Factors Handbook. Represents 50th percentile values for males and females based on hands, forearms, and face listed in EFH Tables 6-2 and 6-3.
(h) - USEPA, 1997a. Exposure Factors Handbook. See Table 5-7 of this HHRA for calculation.
(i) - Exposure frequency of 250 days (USEPA, 1991a) adjusted for percentage of days with inclement weather (24%), [250-(250*0.24) = 190]; see text.
(j) - Calabrese, E.J., et. al. 1990. Preliminary adult soil ingestion estimates; results of a pilot study. Regul. Toxicol. Pharmacol. 12:88-95. As cited in USEPA, 1997a. Exposure Factors Handbook. Low end of range.

TABLE 5-4
SUMMARY OF POTENTIAL EXPOSURE ASSUMPTIONS - TRESPASSING TEENAGER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINIOS

Parameter	RME Trespassing Teenager (7 to 18 yrs)		MLE Trespassing Teenager (7 to 18 yrs)	
Parameters Used in the Surface Soil Pathway				
Exposure Frequency (days/year)	26	(a)	13	(b)
Exposure Duration (yr)	11	(c)	11	(c)
Soil Ingestion Rate (mg/day)	100	(d)	50	(e)
Skin Contacting Medium (cm^2/day)	4672	(f)	4672	(f)
Soil on Skin (mg/cm^2)	0.04	(g)	0.04	(g)
Body Weight (kg)	47	(h)	47	(h)
Parameters Used in the Outdoor Air Pathway				
Exposure Time (hr/day)	2	(i)	2	(i)
Exposure Frequency (days/year)	26	(a)	13	(b)
Exposure Duration (yr)	11	(c)	11	(c)
Inhalation Rate (m^3/hour)	1.2	(j)	1	(k)
Body Weight (kg)	47	(h)	47	(h)
Parameters Used in the Sediment Pathway (l)				
Exposure Frequency (days/year)	13	(b)	7	(m)
Exposure Duration (yr)	11	(c)	11	(c)
Soil Ingestion Rate (mg/day)	100	(d)	50	(e)
Skin Contacting Medium (cm^2/day)	6026	(f)	6026	(f)
Sediment on Skin (mg/cm^2)	1	(n)	1	(n)
Body Weight (kg)	47	(h)	47	(h)
Parameters Used in the Surface Water (l)				
Exposure Time (hr/day)	1	(o)	1	(o)
Exposure Frequency (days/year)	13	(b)	7	(m)
Exposure Duration (yr)	11	(c)	11	(c)
Water Ingestion Rate (L/day)	0.005	(p)	0.005	(p)
Skin Contacting Medium (cm^2/day)	6026	(f)	6026	(f)
Body Weight (kg)	47	(h)	47	(h)

Notes:
MLE - Most Likely Exposure.
RME - Reasonable Maximum Exposure.
(a) - 1 day per week for 26 weeks (6 months) of the year.
(b) - 1 day per 2 weeks for 26 weeks (6 months) of the year.
(c) - Trespassing teenager is assumed to range in age from 7 to 18. Therefore, total exposure duration is 11 years.
(d) - USEPA, 1991a. Standard Default Exposure Factors.
(e) - USEPA, 1997a. Exposure Factors Handbook. Average soil ingestion rate for an adult listed in EFH Table 1-2.
(f) - USEPA, 1997a. Exposure Factors Handbook. Average surface are of head, feet, hands, forearms and lower legs of males and females aged 7 to 18 listed in EFH Tables 6-6 to 6-8.
(g) - USEPA, 1997a. Exposure Factors Handbook. See Table 5-7 of this report for calculation. Data for feet are not available; therefore, this value is based on hands, forearms, lower legs, and head.
(h) - USEPA, 1997a. Exposure Factors Handbook. Body weight is the average of males and females aged 7 to 18 listed in EFH Table 7-3
(i) - The trespassing teen is assumed to be on-site for two hours.
(j) - USEPA, 1997a. Exposure Factors Handbook. Inhalation rates is the value for moderate activity (children) listed in EFH Table 5-23.
(k) - USEPA, 1997a. Exposure Factors Handbook. Inhalation rates is the value for light activity (children) listed in EFH Table 5-23.
(l) - Sediment and surface water exposures for the Mississippi River are evaluated separately from the Site Q Ponds; sediment and surface water exposures for the Site Q Ponds are evaluated in conjunction with the Site Q soil and air pathways.
(m) - One day per 4 weeks for approximately six months of the year.
(n) - USEPA, 1992b. Dermal Exposure Assessment: Principles and Applications.
(o) - Assumed duration of wading event.
(p) - USEPA, 1989a. Risk Assessment Guidance for Superfund, Volume I. Value is one-tenth of that assumed to occur during a swimming event.

TABLE 5-5
SUMMARY OF POTENTIAL EXPOSURE ASSUMPTIONS - CONSTRUCTION WORKER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINIOS

Parameter	RME Future Construction/Utility Worker		MLE Future Construction/Utility Worker	
Parameters Used in the Surface Soil, Combined Soil and Groundwater/Leachate Inhalation Pathway				
Exposure Time (hr/day)	8	(a)	8	(a)
Exposure Frequency (days/year)	40	(b)	20	(c)
Exposure Duration (yr)	1	(d)	1	(d)
Inhalation Rate (m^3/hour)	2.5	(e)	1.5	(f)
Body Weight (kg)	70	(g)	70	(g)
Parameters Used in the Surface and Combined Soil Pathway				
Exposure Frequency (days/year)	40	(b)	20	(c)
Exposure Duration (yr)	1	(d)	1	(d)
Soil Ingestion Rate (mg/day)	100	(g)	64	(h)
Skin Contacting Medium (cm^2/day)	3339	(i)	3339	(i)
Soil on Skin (mg/cm^2)	0.19	(j)	0.19	(j)
Body Weight (kg)	70	(g)	70	(g)
Parameters Used in the Groundwater/Leachate Pathway				
Exposure Time (hr/day)	1	(k)	1	(k)
Exposure Frequency (days/year)	10	(k)	5	(k)
Exposure Duration (yr)	1	(d)	1	(d)
Water Ingestion Rate (L/day)	0.005	(l)	0.005	(l)
Skin Contacting Medium (cm^2/day)	3339	(i)	3339	(i)
Body Weight (kg)	70	(g)	70	(g)

Notes:
MLE - Most Likely Exposure.
RME - Reasonable Maximum Exposure.
(a) - USEPA, 1997a. Exposure Factors Handbook. 50th percentile time spent at work, males and females, all ages. EFH Table 15-68.
(b) - Exposure frequency is equivalent to 5 days per week for 2 months.
(c) - Exposure frequency is equivalent to 5 days per week for 1 month.
(d) - Construction activities are assumed to occur within a 1 year period.
(e) - USEPA, 1997a. Exposure Factors Handbook. Inhalation rate is the value for heavy activity for an outdoor worker listed in EFH Table 5-23.
(f) - USEPA, 1997a. Exposure Factors Handbook. Inhalation rate is the value for moderate activity for an outdoor worker listed in EFH Table 5-23.
(g) - USEPA, 1991a. Standard Default Exposure Factors.
(h) - ENSR-derived value; see text.
(i) - USEPA, 1997a. Exposure Factors Handbook. Represents 50th percentile values for males and females based on hands, forearms, and face listed in EFH Tables 6-2 and 6-3.
(j) - USEPA, 1997a. Exposure Factors Handbook. See Table 5-7 of this report for calculation.
(k) - Assumes that contact with water occurs only for a fraction of the total exposure duration and time.
(l) - USEPA, 1989a. Risk Assessment Guidance for Superfund, Volume I. Value is one-tenth of that assumed to occur during a swimming event.

TABLE 5-6
SUMMARY OF POTENTIAL EXPOSURE ASSUMPTIONS - RECREATIONAL FISHER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINIOS

Parameter	RME Adult Recreational Fisher		MLE Adult Recreational Fisher	
Parameters Used in the Fish Ingestion Pathway				
Exposure Frequency (days/year)	365	(a)	365	(a)
Exposure Duration (yr)	30	(b)	9	(c)
Fish Ingestion Rate (kg/day)	0.008	(d)	0.001	(e)
Body Weight (kg)	70	(b)	70	(b)
Parameters Used in the Surface Water Pathway - Wading				
Exposure Time (hr/day)	1	(k)	1	(k)
Exposure Frequency (days/year)	22	(h)	3	(i)
Exposure Duration (yr)	30	(b)	9	(c)
Surface Water Ingestion Rate (L/day)	0.01	(f)	0.005	(j)
Skin Contacting Medium (cm^2)	6934	(g)	6934	(g)
Body Weight (kg)	70	(b)	70	(b)
Parameters Used in the Sediment Pathway - Wading				
Exposure Frequency (days/year)	22	(h)	3	(i)
Exposure Duration (yr)	30	(b)	9	(c)
Sediment Ingestion Rate (mg/day)	100	(b)	50	(m)
Skin Contacting Medium (cm^2/day)	6934	(g)	6934	(g)
Sediment on Skin (mg/cm^2)	1	(l)	1	(l)
Body Weight (kg)	70	(b)	70	(b)

Notes:
MLE - Most Likely Exposure.
RME - Reasonable Maximum Exposure.
(a) - Fish ingestion rates are based on 365 days per year.
(b) - USEPA, 1991a. Standard Default Exposure Factors.
(c) - USEPA, 1997a. Exposure Factors Handbook. Recommended average for time residing in a household. EFH Table 1-2.
(d) - USEPA, 1997a. Exposure Factors Handbook. 8 g/day is equivalent to approximately 22 fish meals of 129 g per year.
(e) - 1 g/day is equivalent to approximately three 129 g fish meals per year (equivalent to one fish meal per month in the three summer months).
(f) - USEPA, 1989a. Risk Assessment Guidance for Superfund, Volume I. Value is one-fifth of that assumed to occur during a swimming event.
(g) - USEPA, 1997a. Exposure Factors Handbook. Represents 50th percentile values for adult males and females based on hands, lower arms, lower legs, feet and head.
(h) - One day per week for 5 months.
(i) - One day per month during the three summer months.
(j) - USEPA, 1989a. Risk Assessment Guidance for Superfund, Volume I. Value is one-tenth of that assumed to occur during a swimming event.
(k) - Assumed duration of wading event.
(l) - USEPA, 1992b. Dermal Exposure Assessment: Principles and Applications.
(m) - USEPA, 1997a. Exposure Factors Handbook. Average soil ingestion rate for an adult listed in EFH Table 1-2.

TABLE 5-7
SOIL ADHERENCE FACTORS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINIOS

Body Part	Outdoor Industrial Worker Scenario		
	Surface Area 50th percentile (cm^2) (a)	Soil Loading Groundskeeper (mg/cm^2) (b)	Total Soil Mass (mg)
Head	1,205	0.005	5.543
Hands	904	0.071	64.1485
Forearms	1,230	0.009	11.1438
Total	3,339		80.8
Area-Weighted Soil Adherence factor (mg/cm2) = Soil mass/Surface area =			0.02

Notes:
(a) - Data from USEPA (1997a), Tables 6-2, 6-3. Average of 50th percentile values for men and women (1/2 arm used as proxy for female forearm).
(b) - Data from USEPA (1997a), Table 6-12. Average of Groundskeeper Nos. 1,2,3,4, and 5.

Body Part	Construction Worker Scenario		
	Surface Area 50th percentile (cm^2) (a)	Soil Loading Farmer (mg/cm^2) (a)	Total Soil Mass (mg)
Head	1,205	0.041	49.405
Hands	904	0.47	424.645
Forearms	1,230	0.13	159.9
Total	3,339		634.0
Area-Weighted Soil Adherence factor (mg/cm2) = Soil mass/Surface area =			0.19

Notes:
(a) - Data from USEPA (1997a), Tables 6-2, 6-3. Average of 50th percentile values for men and women (1/2 arm used as proxy for female forearm).
(b) - Data from USEPA (1997a), Table 6-12. Average of Farmer Nos. 1 and 2.

Body Part	Trespassing Teenager (7 to 18 years)		
	Surface Area 50th percentile (a) (cm^2)	Soil Loading Soccer No. 1 (mg/cm^2) (b)	Total Soil Mass (mg)
Hands	715	0.1100	78.65
Forearms	894	0.0110	9.83
Lower legs	2,068	0.0310	64.11
Head	995	0.0120	11.94
Total	4,672	--	164.53
Area-Weighted Soil Adherence factor (mg/cm2) = Soil mass/Surface area =			0.04

Notes:
(a) - Data from USEPA (1997a). Based on average of boys (EFH Table 6-6) and girls (EFH Table 6-7) total body surface area , and mean percentages of total surface area for individual body parts EFH Table 6-8).
(b) - Data from USEPA (1997a) Table 6-12. Soccer No. 1 (measurements of boys aged 13-15). Measurements were not collected from feet; therefore, adherence factor is based on hands, forearms, lower legs, and head. This factor is applied to the total body surface area of 6,026 cm^2 calculated in Table 5-4, which includes feet.

TABLE 5-8
EXPOSURE POINT CONCENTRATIONS - SURFACE SOIL
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	EPC - MLE Scenario (mg/kg) (a)								EPC - RME Scenario (mg/kg) (b)							
		O	O North	P	Q North	Q Central	Q South	R	S	O	O North	P	Q North	Q Central	Q South	R	S
SVOCs																	
2,4,6-Trichlorophenol	88-06-2	--	--	--	--	--	--	--	4.19E+00	--	--	--	--	--	--	--	8.20E+00
2-Nitroaniline	88-74-4	--	--	--	--	--	--	--	2.78E+00	--	--	--	--	--	--	--	4.60E+00
4-Nitroaniline	100-01-6	--	--	--	--	--	--	--	2.90E+01	--	--	--	--	--	--	--	5.70E+01
Benzo(a)anthracene	56-55-3	--	--	--	--	--	5.57E-01	--	4.05E+00	--	--	--	--	--	1.03E+00	--	8.00E+00
Benzo(a)pyrene	50-32-8	--	--	3.01E-01	1.24E+00	--	5.98E-01	--	2.77E+00	--	--	6.70E-01	1.80E+00	--	1.05E+00	--	5.40E+00
Benzo(b)fluoranthene	205-99-2	--	--	--	--	--	7.26E-01	--	3.42E+00	--	--	--	--	--	1.35E+00	--	6.60E+00
Dibenzo(a,h)anthracene	53-70-3	--	--	--	2.12E-01	--	--	--	9.93E-01	--	--	--	3.70E-01	--	--	--	1.80E+00
Pesticides																	
4,4'-DDT	50-29-3	--	--	--	--	--	--	--	8.01E+00	--	--	--	--	--	--	--	1.60E+01
beta-BHC	319-85-7	--	--	--	--	--	--	--	1.30E+01	--	--	--	--	--	--	--	2.60E+01
Dieldrin	60-57-1	9.10E-02	--	--	--	--	7.96E-02	--	--	1.80E-01	--	--	--	--	2.69E-01	--	--
gamma-BHC (Lindane)	58-89-9	--	--	--	--	--	--	--	3.75E+00	--	--	--	--	--	--	--	7.50E+00
Heptachlor	76-44-8	--	--	--	--	--	--	--	7.50E-01	--	--	--	--	--	--	--	1.50E+00
Herbicides																	
Pentachlorophenol	87-86-5	--	--	--	--	--	--	--	2.20E+02	--	--	--	--	--	--	--	4.40E+02
PCBs																	
Total PCBs	1336-36-3	5.40E+00	7.09E+02	1.78E+00	5.73E-01	1.08E+00	2.75E+00	--	5.04E+02	1.08E+01	7.09E+02	7.02E+00	1.87E+00	2.57E+00	5.10E+00	--	1.01E+03
Dioxin																	
2,3,7,8-TCDD-TEQ	1746-01-6	2.99E-03	5.08E-02	--	--	1.14E-03	6.89E-04	--	--	5.93E-03	5.08E-02	--	--	3.31E-03	1.69E-03	--	--
Metals																	
Antimony	7440-36-0	--	--	--	--	--	6.95E+00	--	--	--	--	--	--	--	1.43E+01	--	--
Arsenic	7440-38-2	--	--	1.41E+01	--	7.30E+00	9.66E+00	--	--	--	--	2.60E+01	--	1.30E+01	1.35E+01	--	--
Cadmium	7440-43-9	--	--	--	2.01E+01	--	--	--	--	--	--	--	9.20E+01	--	--	--	--
Chromium	7440-47-3	--	--	--	--	--	8.41E+01	--	--	--	--	--	--	--	1.81E+02	--	--
Manganese	7439-96-5	--	--	--	--	--	6.03E+02	--	--	--	--	--	--	--	8.60E+02	--	--
Mercury	7439-97-6	--	4.30E+01	--	--	--	--	--	--	--	4.30E+01	--	--	--	--	--	--

Notes:
"--" Not a constituent of potential concern in this location.
CAS - Chemical Abstracts Service.
EPC - Exposure Point Concentration.
MLE - Most Likely Exposure.
PCBs - Polychlorinated Biphenyls.
RME - Reasonable Maximum Exposure.
SVOCs - Semivolatile Organic Compounds.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
(a) Average concentration.
(b) Lower of the 95% upper confidence limit and the maximum detected concentration. Selection shown in Appendix I.

TABLE 5-9
EXPOSURE POINT CONCENTRATIONS - COMBINED SOIL (a)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	EPC - MLE Scenario (mg/kg) (b)								EPC - RME Scenario (mg/kg) (c)							
		O	O North	P	Q North	Q Central	Q South	R	S	O	O North	P	Q North	Q Central	Q South	R	S
VOCs																	
1,1,2-Trichloroethane	79-00-5	--	--	--	--	--	--	1.69E+00	--	--	--	--	--	--	--	3.18E+00	--
1,2-Dichloroethane	107-06-2	--	--	--	3.23E-01	--	--	1.68E+01	--	--	--	--	7.43E-01	--	--	3.28E+01	--
1,2-Dichloroethene (total)	540-59-0	--	--	--	--	--	--	6.18E+00	--	--	--	--	--	--	--	1.37E+01	--
4-Methyl-2-pentanone (MIBK)	108-10-1	--	--	--	--	--	--	--	1.03E+02	--	--	--	--	--	--	--	4.00E+02
Benzene	71-43-2	9.64E+01	4.35E+01	6.62E-01	6.77E-01	--	1.34E-01	2.62E+01	1.18E+01	5.00E+02	6.90E+01	1.12E+00	1.61E+00	--	2.98E-01	5.22E+01	3.50E+01
Chlorobenzene	108-90-7	2.20E+02	3.22E+02	--	--	--	--	2.33E+02	2.65E+02	7.60E+02	4.80E+02	--	--	--	--	5.89E+02	1.20E+03
Chloroform	67-66-3	--	--	--	--	--	--	2.79E+00	--	--	--	--	--	--	--	4.93E+00	--
Dichloromethane	75-09-2	--	3.67E+01	--	--	--	--	--	1.64E+01	--	8.70E+01	--	--	--	--	--	5.70E+01
Ethylbenzene	100-41-4	4.85E+02	5.05E+02	8.69E+00	3.47E+00	--	1.36E+01	9.04E+00	3.01E+02	2.80E+03	7.60E+02	7.80E+01	7.78E+00	--	3.53E+01	1.62E+01	1.10E+03
Tetrachloroethene	127-18-4	--	3.55E+00	1.31E+01	1.95E+00	--	--	2.25E+02	1.30E+01	--	6.80E+00	1.54E+01	4.90E+00	--	--	4.45E+02	3.30E+01
Toluene	108-88-3	6.95E+01	--	--	--	--	6.50E+01	1.78E+02	1.35E+03	3.90E+02	--	--	--	--	1.69E+02	3.15E+02	6.00E+03
Trichloroethylene	79-01-6	--	--	2.01E-01	1.07E-01	--	2.18E-02	2.53E+02	5.41E+01	--	--	9.90E-01	2.06E-01	--	5.16E-02	2.20E+03	2.40E+02
Xylenes, Total	1330-20-7	2.46E+03	2.59E+03	4.02E+01	2.55E+01	--	9.53E+01	4.53E+01	1.77E+03	1.40E+04	3.90E+03	3.80E+02	5.79E+01	--	2.52E+02	8.88E+01	7.30E+03
SVOCs																	
1,2-Dichlorobenzene	95-50-1	--	2.47E+02	--	--	--	--	--	--	--	5.20E+02	--	--	--	--	--	--
1,3-Dichlorobenzene	541-73-1	--	5.93E+00	--	--	--	--	--	3.39E+00	--	1.20E+01	--	--	--	--	--	1.20E+01
1,4-Dichlorobenzene	106-46-7	1.87E+01	6.37E+01	2.44E+01	--	--	--	2.51E+00	3.90E+01	4.70E+01	1.20E+02	6.70E+01	--	--	--	6.42E+00	2.00E+02
2,4,6-Trichlorophenol	88-06-2	2.58E+00	2.41E+01	--	3.90E+00	--	--	7.34E+01	3.03E+00	6.90E+00	6.10E+01	--	9.77E+00	--	--	1.70E+02	8.20E+00
2,4-Dichlorophenol	120-83-2	--	--	--	2.29E+01	--	--	3.27E+02	--	--	--	--	5.19E+01	--	--	8.47E+02	--
2-Chlorophenol	95-57-8	--	--	--	--	--	--	3.73E+01	--	--	--	--	--	--	--	9.51E+01	--
2-Methylnaphthalene	91-57-6	--	8.27E+01	--	--	--	--	--	--	--	2.00E+02	--	--	--	--	--	--
2-Nitroaniline	88-74-4	1.13E+00	2.30E+01	--	3.81E+00	--	--	1.52E+00	2.16E+00	2.50E+00	6.20E+01	--	6.18E+00	--	--	2.81E+00	4.60E+00
4-Nitroaniline	100-01-6	--	3.43E+02	--	--	--	--	4.12E+00	1.94E+01	--	1.00E+03	--	--	--	--	8.34E+00	5.70E+01
Benzo(a)anthracene	56-55-3	4.61E+00	1.53E+01	--	1.23E+00	6.07E-01	5.92E-01	--	2.96E+00	1.20E+01	3.60E+01	--	1.61E+00	1.07E+00	1.03E+00	--	8.00E+00
Benzo(a)pyrene	50-32-8	2.88E+00	6.52E+00	2.63E-01	1.32E+00	6.42E-01	6.83E-01	--	2.32E+00	7.10E+00	1.10E+01	6.70E-01	1.67E+00	1.24E+00	1.14E+00	--	5.40E+00
Benzo(b)fluoranthene	205-99-2	3.17E+00	6.13E+00	--	1.18E+00	7.82E-01	7.09E-01	--	2.65E+00	7.90E+00	1.20E+01	--	1.51E+00	1.60E+00	1.18E+00	--	6.60E+00
bis(2-Chloroethyl)ether	111-44-4	--	1.14E+00	--	--	--	--	--	--	--	2.10E+00	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	--	--	--	--	--	--	--	5.03E+01	--	--	--	--	--	--	--	1.30E+02
Dibenzo(a,h)anthracene	53-70-3	8.52E-01	2.13E+00	--	2.11E-01	--	--	--	9.93E-01	3.00E+00	4.60E+00	--	2.82E-01	--	--	--	1.80E+00
Hexachlorobenzene	118-74-1	--	1.94E+00	--	--	--	--	--	--	--	4.50E+00	--	--	--	--	--	--
Naphthalene	91-20-3	--	1.84E+01	--	--	--	--	1.17E+01	2.10E+01	--	4.10E+01	--	--	--	--	2.94E+01	4.80E+01
Nitrobenzene	98-95-3	--	4.11E+00	--	--	--	--	6.63E+00	--	--	1.10E+01	--	--	--	--	1.45E+01	--
Pesticides																	
4,4'-DDE	72-55-9	--	1.70E+01	--	--	--	--	--	--	--	3.30E+01	--	--	--	--	--	--
4,4'-DDT	50-29-3	--	2.04E+01	--	--	--	--	--	2.83E+00	--	5.80E+01	--	--	--	--	--	1.60E+01
Aldrin	309-00-2	1.46E-01	2.20E+00	--	--	1.89E-02	3.92E-02	--	6.05E-02	7.20E-01	4.50E+00	--	--	3.40E-02	6.78E-02	--	1.90E-01
alpha-BHC	319-84-6	--	5.99E-01	--	--	--	--	--	--	--	1.50E+00	--	--	--	--	--	--
beta-BHC	319-85-7	--	7.26E+00	--	--	--	--	3.49E-01	4.38E+00	--	2.10E+01	--	--	--	--	7.53E-01	2.60E+01
delta-BHC	319-86-8	9.17E-01	--	--	--	--	--	--	--	2.85E+00	--	--	--	--	--	--	--
Dieldrin	60-57-1	1.27E+00	1.95E+01	1.26E-01	3.45E-01	7.01E-02	1.33E-01	3.41E-01	1.13E-01	3.80E+00	5.00E+01	2.83E-01	5.84E-01	1.47E-01	5.04E-01	1.22E+00	3.80E-01
gamma-BHC (Lindane)	58-89-9	5.06E-01	--	--	--	--	--	--	1.27E+00	2.88E+00	--	--	--	--	--	--	7.50E+00
Heptachlor	76-44-8	7.86E-01	3.40E+00	--	--	--	--	1.86E-01	2.73E-01	2.78E+00	9.90E+00	--	--	--	--	4.45E-01	1.50E+00
Heptachlor Epoxide	1024-57-3	1.46E-01	1.25E+00	--	--	--	3.76E-02	--	--	4.70E-01	2.70E+00	--	--	--	1.03E-01	--	--
Herbicides																	
MCPA	94-74-6	--	--	2.16E+01	--	--	--	--	--	--	--	5.26E+01	--	--	--	--	--

TABLE 5-9
EXPOSURE POINT CONCENTRATIONS - COMBINED SOIL (a)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	EPC - MLE Scenario (mg/kg) (b)								EPC - RME Scenario (mg/kg) (c)							
		O	O North	P	Q North	Q Central	Q South	R	S	O	O North	P	Q North	Q Central	Q South	R	S
MCPP	93-65-2	--	--	--	--	--	--	4.67E+01	--	--	--	--	--	--	--	6.18E+01	--
Pentachlorophenol	87-86-5	--	--	--	6.54E+01	1.63E+00	3.57E+01	--	1.15E+02	--	--	--	1.63E+02	6.52E+00	7.74E+01	--	4.40E+02
PCBs																	
Total PCBs	1336-36-3	6.97E+01	1.78E+03	4.44E+00	2.93E+01	2.40E+00	5.66E+00	4.12E+01	1.76E+02	2.98E+02	3.03E+03	1.69E+01	5.40E+01	4.35E+00	1.90E+01	8.89E+01	1.01E+03
Dioxin																	
2,3,7,8-TCDD-TEQ	1746-01-6	6.41E-03	3.25E-01	2.83E-04	5.24E-03	2.42E-03	2.15E-03	1.31E-03	4.67E-03	3.04E-02	4.97E-01	4.42E-04	1.11E-02	3.79E-03	4.51E-03	1.78E-03	2.59E-02
Metals																	
Antimony	7440-36-0	--	--	--	7.77E+00	--	1.15E+01	--	--	--	--	--	1.66E+01	--	1.87E+01	--	--
Arsenic	7440-38-2	--	2.00E+01	1.29E+01	1.18E+01	1.47E+01	1.31E+01	6.12E+00	--	--	3.70E+01	1.69E+01	1.54E+01	2.22E+01	1.72E+01	7.32E+00	--
Barium	7440-39-3	--	--	--	1.38E+03	--	--	--	--	--	--	--	3.03E+03	--	--	--	--
Cadmium	7440-43-9	--	3.93E+01	1.07E+01	1.23E+01	--	--	--	--	--	8.60E+01	1.33E+01	1.89E+01	--	--	--	--
Chromium	7440-47-3	--	--	--	--	--	8.82E+01	--	1.79E+02	--	--	--	--	--	1.30E+02	--	4.80E+02
Copper	7440-50-8	--	--	--	--	2.29E+03	--	--	--	--	--	--	--	6.41E+03	--	--	--
Lead	7439-92-1	--	--	--	1.96E+03	--	8.28E+02	--	8.38E+02	--	--	--	1.96E+03	--	8.28E+02	--	8.38E+02
Manganese	7439-96-5	--	--	--	--	8.42E+02	7.01E+02	--	--	--	--	--	--	1.29E+03	8.53E+02	--	--
Mercury	7439-97-6	--	1.65E+02	--	--	--	2.58E+00	2.51E+02	--	--	3.60E+02	--	--	--	3.58E+00	6.99E+02	--
Nickel	7440-02-0	--	--	--	--	--	2.14E+02	--	--	--	--	--	--	--	4.31E+02	--	--

Notes:
"--" Not a constituent of potential concern in this location.
CAS - Chemical Abstracts Service.
EPC - Exposure point concentration.
MCPA - 2-Methyl-4-chlorophenoxyacetic acid.
MCPP - 2-(2-Methyl-4-chlorophenoxy) propionic acid.
MLE - Most Likely Exposure.
PCBs - Polychlorinated Biphenyls.
RME - Reasonable Maximum Exposure.
SVOCs - Semivolatile Organic Compounds.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
VOCs - Volatile Organic Compounds.
(a) Combined soil is comprised of surface soil, subsurface soil and waste.
(b) Average concentration.
(c) Lower of the 95% upper confidence limit and the maximum detected concentration. Selection shown in Appendix I. RME EPCs for Lead are averages.

TABLE 5-10
EXPOSURE POINT CONCENTRATIONS - OUTDOOR AIR CONCENTRATIONS - MODELED FROM SOIL (a) (b)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	EPC - MLE Scenario (mg/m^3)								EPC - RME Scenario (mg/m^3)							
		O	O North	P	Q North	Q Central	Q South	R	S	O	O North	P	Q North	Q Central	Q South	R	S
VOCs (a)																	
1,1,2-Trichloroethane	79-00-5	--	--	--	--	--	--	2.7E-05	--	--	--	--	--	--	--	5.0E-05	--
1,2-Dichloroethane	107-06-2	--	--	--	3.7E-05	--	--	1.5E-04	--	--	--	--	8.5E-05	--	--	2.9E-04	--
1,2-Dichloroethene (total)	540-59-0	--	--	--	--	--	--	5.4E-05	--	--	--	--	--	--	--	1.2E-04	--
4-Methyl-2-pentanone (MIBK)	108-10-1	--	--	--	--	--	--	--	5.1E-03	--	--	--	--	--	--	--	2.0E-02
Benzene	71-43-2	6.7E-03	4.1E-03	1.3E-04	7.8E-05	--	1.5E-05	2.4E-04	1.1E-04	3.5E-02	6.6E-03	2.2E-04	1.9E-04	--	3.4E-05	4.8E-04	3.2E-04
Chlorobenzene	108-90-7	1.5E-02	3.1E-02	--	--	--	--	1.1E-03	1.3E-03	5.2E-02	4.6E-02	--	--	--	--	2.8E-03	5.8E-03
Chloroform	67-66-3	--	--	--	--	--	--	2.2E-05	--	--	--	--	--	--	--	3.9E-05	--
Dichloromethane	75-09-2	--	3.5E-03	--	--	--	--	--	2.5E-04	--	8.3E-03	--	--	--	--	--	8.6E-04
Ethylbenzene	100-41-4	3.3E-02	4.8E-02	1.4E-03	4.0E-04	--	1.6E-03	3.5E-05	1.2E-03	1.9E-01	7.2E-02	1.3E-02	8.9E-04	--	4.1E-03	6.2E-05	4.2E-03
Tetrachloroethene	127-18-4	--	3.4E-04	2.5E-03	2.2E-04	--	--	1.4E-03	8.4E-05	--	6.5E-04	3.0E-03	5.6E-04	--	--	2.9E-03	2.1E-04
Toluene	108-88-3	4.8E-03	--	--	--	--	7.5E-03	1.2E-03	8.7E-03	2.7E-02	--	--	--	--	1.9E-02	2.0E-03	3.9E-02
Trichloroethylene	79-01-6	--	--	3.9E-05	1.2E-05	--	2.5E-06	5.2E-03	1.1E-03	--	--	1.9E-04	2.4E-05	--	5.9E-06	4.5E-02	5.0E-03
Xylenes, Total	1330-20-7	1.7E-01	2.5E-01	7.4E-03	2.9E-03	--	1.1E-02	2.2E-04	8.4E-03	9.7E-01	3.7E-01	7.0E-02	6.7E-03	--	2.9E-02	4.2E-05	3.5E-02
SVOCs (b)																	
2,4,6-Trichlorophenol	88-06-2	--	--	--	--	--	--	--	5.72E-09	--	--	--	--	--	--	--	1.12E-08
2-Nitroaniline	88-74-4	--	--	--	--	--	--	--	3.78E-09	--	--	--	--	--	--	--	6.27E-09
4-Nitroaniline	100-01-6	--	--	--	--	--	--	--	3.95E-08	--	--	--	--	--	--	--	7.77E-08
Benzo(a)anthracene	56-55-3	--	--	--	--	--	7.60E-10	--	5.52E-09	--	--	--	--	--	1.40E-09	--	1.09E-08
Benzo(a)pyrene	50-32-8	--	--	4.10E-10	1.69E-09	--	8.16E-10	--	3.77E-09	--	--	9.13E-10	2.45E-09	--	1.43E-09	--	7.36E-09
Benzo(b)fluoranthene	205-99-2	--	--	--	--	--	9.89E-10	--	4.66E-09	--	--	--	--	--	1.84E-09	--	9.00E-09
Dibenzo(a,h)anthracene	53-70-3	--	--	--	2.89E-10	--	--	--	1.35E-09	--	--	--	5.04E-10	--	--	--	2.45E-09
Pesticides (b)																	
4,4'-DDT	50-29-3	--	--	--	--	--	--	--	1.09E-08	--	--	--	--	--	--	--	2.18E-08
beta-BHC	319-85-7	--	--	--	--	--	--	--	1.77E-08	--	--	--	--	--	--	--	3.54E-08
Dieldrin	60-57-1	1.24E-10	--	--	--	--	1.09E-10	--	--	2.45E-10	--	--	--	--	3.67E-10	--	--
gamma-BHC (Lindane)	58-89-9	--	--	--	--	--	--	--	5.11E-09	--	--	--	--	--	--	--	1.02E-08
Heptachlor	76-44-8	--	--	--	--	--	--	--	1.02E-09	--	--	--	--	--	--	--	2.04E-09
Herbicides (b)																	
Pentachlorophenol	87-86-5	--	--	--	--	--	--	--	3.00E-07	--	--	--	--	--	--	--	6.00E-07
PCBs (b)																	
Total PCBs	1336-36-3	7.36E-09	6.43E-07	2.43E-09	7.81E-10	1.47E-09	3.75E-09	--	6.88E-07	1.47E-08	6.43E-07	9.57E-09	2.55E-09	3.51E-09	6.95E-09	--	1.37E-06
Dioxin (b)																	
2,3,7,8-TCDD-TEQ	1746-01-6	4.07E-12	4.61E-11	--	--	1.55E-12	9.40E-13	--	--	8.08E-12	4.61E-11	--	--	4.51E-12	2.30E-12	--	--

TABLE 5-10
EXPOSURE POINT CONCENTRATIONS - OUTDOOR AIR CONCENTRATIONS - MODELED FROM SOIL (a) (b)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	EPC - MLE Scenario (mg/m^3)								EPC - RME Scenario (mg/m^3)							
		O	O North	P	Q North	Q Central	Q South	R	S	O	O North	P	Q North	Q Central	Q South	R	S
Metals (b)																	
Antimony	7440-36-0	--	--	--	--	--	9.48E-09	--	--	--	--	--	--	--	1.95E-08	--	--
Arsenic	7440-38-2	--	--	1.92E-08	--	9.95E-09	1.32E-08	--	--	--	--	3.54E-08	--	1.77E-08	1.84E-08	--	--
Cadmium	7440-43-9	--	--	--	2.75E-08	--	--	--	--	--	--	--	1.25E-07	--	--	--	--
Chromium	7440-47-3	--	--	--	--	--	1.15E-07	--	--	--	--	--	--	--	2.47E-07	--	--
Manganese	7439-96-5	--	--	--	--	--	8.23E-07	--	--	--	--	--	--	--	1.17E-06	--	--
Mercury	7439-97-6	--	3.90E-08	--	--	--	--	--	--	--	3.90E-08	--	--	--	--	--	--

Notes:
"--" Not a constituent of potential concern in this location.
CAS - Chemical Abstracts Service.
EPC - Exposure Point Concentration.
MLE - Most Likely Exposure.
PCBs - Polychlorinated Biphenyls.
RME - Reasonable Maximum Exposure.
SVOCs - Semivolatile Organic Compounds.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
VOCs - Volatile Organic Compounds.
(a) Concentration of VOCs in outdoor air (mg/m^3) were modeled from EPCs in combined soil (Table 5-9) using the RBCA Tool Kit (version 1.3a) in Appendix L.
(b) Concentration of non-VOCs in outdoor air (mg/m^3) = EPCs in surface soil (mg/kg) (Table 5-8) / particulate emission factor (PEF) (m^3/kg). PEFs are calculated in Tables 5-19 through 5-21.

TABLE 5-11
EXPOSURE POINT CONCENTRATIONS - EXCAVATION AIR - MODELED FROM COMBINED SOIL
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	EPC - MLE Scenario (mg/m3)								EPC - RME Scenario (mg/m3)							
		O	O North	P	Q North	Q Central	Q South	R	S	O	O North	P	Q North	Q Central	Q South	R	S
VOCs (a)																	
1,1,2-Trichloroethane	79-00-5	--	--	--	--	--	--	1.3E-04	--	--	--	--	--	--	--	2.5E-04	--
1,2-Dichloroethane	107-06-2	--	--	--	2.9E-04	--	--	7.4E-04	--	--	--	--	6.8E-04	--	--	1.4E-03	--
1,2-Dichloroethene (total)	540-59-0	--	--	--	--	--	--	2.7E-04	--	--	--	--	--	--	--	5.9E-04	--
4-Methyl-2-pentanone (MIBK)	108-10-1	--	--	--	--	--	--	--	2.5E-02	--	--	--	--	--	--	--	9.9E-02
Benzene	71-43-2	1.7E-01	7.6E-02	1.1E-03	1.2E-03	--	2.3E-04	1.2E-03	5.4E-04	8.6E-01	1.2E-01	1.9E-03	2.8E-03	--	5.2E-04	2.4E-03	1.6E-03
Chlorobenzene	108-90-7	1.6E-01	2.3E-01	--	--	--	--	5.6E-03	6.4E-03	5.4E-01	3.4E-01	--	--	--	--	1.4E-02	2.9E-02
Chloroform	67-66-3	--	--	--	--	--	--	1.1E-04	--	--	--	--	--	--	--	1.9E-04	--
Dichloromethane	75-09-2	--	8.3E-02	--	--	--	--	--	1.2E-03	--	2.0E-01	--	--	--	--	--	4.3E-03
Ethylbenzene	100-41-4	3.9E-01	4.1E-01	7.1E-03	2.8E-03	--	1.1E-02	1.7E-04	5.8E-03	2.3E+00	6.2E-01	6.4E-02	6.3E-03	--	2.9E-02	3.1E-04	2.1E-02
Tetrachloroethene	127-18-4	--	6.3E-03	2.3E-02	3.5E-03	--	--	7.2E-03	4.2E-04	--	1.2E-02	2.8E-02	8.8E-03	--	--	1.4E-02	1.1E-03
Toluene	108-88-3	8.7E-02	--	--	--	--	8.1E-02	5.8E-03	4.4E-02	4.9E-01	--	--	--	--	2.1E-01	1.0E-02	1.9E-01
Trichloroethylene	79-01-6	--	--	3.2E-04	1.7E-04	--	3.4E-05	2.6E-02	5.6E-03	--	--	1.6E-03	3.2E-04	--	8.1E-05	2.3E-01	2.5E-02
Xylenes, Total	1330-20-7	2.3E+00	2.4E+00	3.7E-02	2.3E-02	--	8.8E-02	1.1E-03	4.2E-02	1.3E+01	3.6E+00	3.5E-01	5.3E-02	--	2.3E-01	2.1E-03	1.7E-01
SVOCs (b)																	
1,2-Dichlorobenzene	95-50-1	--	1.48E-05	--	--	--	--	--	--	--	3.12E-05	--	--	--	--	--	--
1,3-Dichlorobenzene	541-73-1	--	3.56E-07	--	--	--	--	--	2.03E-07	--	7.20E-07	--	--	--	--	--	7.20E-07
1,4-Dichlorobenzene	106-46-7	1.12E-06	3.82E-06	1.47E-06	--	--	--	1.51E-07	2.34E-06	2.82E-06	7.20E-06	4.02E-06	--	--	--	3.85E-07	1.20E-05
2,4,6-Trichlorophenol	88-06-2	1.55E-07	1.44E-06	--	2.34E-07	--	--	4.41E-06	1.82E-07	4.14E-07	3.66E-06	--	5.86E-07	--	--	1.02E-05	4.92E-07
2,4-Dichlorophenol	120-83-2	--	--	--	1.38E-06	--	--	1.96E-05	--	--	--	--	3.11E-06	--	--	5.08E-05	--
2-Chlorophenol	95-57-8	--	--	--	--	--	--	2.24E-06	--	--	--	--	--	--	--	5.71E-06	--
2-Methylnaphthalene	91-57-6	--	4.96E-06	--	--	--	--	--	--	--	1.20E-05	--	--	--	--	--	--
2-Nitroaniline	88-74-4	6.75E-08	1.38E-06	--	2.28E-07	--	--	9.12E-08	1.29E-07	1.50E-07	3.72E-06	--	3.71E-07	--	--	1.69E-07	2.76E-07
4-Nitroaniline	100-01-6	--	2.06E-05	--	--	--	--	2.47E-07	1.16E-06	--	6.00E-05	--	--	--	--	5.00E-07	3.42E-06
Benzo(a)anthracene	56-55-3	2.77E-07	9.21E-07	--	7.40E-08	3.64E-08	3.55E-08	--	1.78E-07	7.20E-07	2.16E-06	--	9.66E-08	6.42E-08	6.18E-08	--	4.80E-07
Benzo(a)pyrene	50-32-8	1.73E-07	3.91E-07	1.58E-08	7.91E-08	3.85E-08	4.10E-08	--	1.39E-07	4.26E-07	6.60E-07	4.02E-08	1.00E-07	7.44E-08	6.84E-08	--	3.24E-07
Benzo(b)fluoranthene	205-99-2	1.90E-07	3.68E-07	--	7.07E-08	4.69E-08	4.25E-08	--	1.59E-07	4.74E-07	7.20E-07	--	9.06E-08	9.60E-08	7.08E-08	--	3.96E-07
bis(2-Chloroethyl)ether	111-44-4	--	6.85E-08	--	--	--	--	--	--	--	1.26E-07	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	--	--	--	--	--	--	--	3.02E-06	--	--	--	--	--	--	--	7.80E-06
Dibenzo(a,h)anthracene	53-70-3	5.11E-08	1.28E-07	--	1.27E-08	--	--	--	5.96E-08	1.80E-07	2.76E-07	--	1.69E-08	--	--	--	1.08E-07
Hexachlorobenzene	118-74-1	--	1.17E-07	--	--	--	--	--	--	--	2.70E-07	--	--	--	--	--	--
Naphthalene	91-20-3	--	1.10E-06	--	--	--	--	7.02E-07	1.26E-06	--	2.46E-06	--	--	--	--	1.76E-06	2.88E-06
Nitrobenzene	98-95-3	--	2.47E-07	--	--	--	--	3.98E-07	--	--	6.60E-07	--	--	--	--	8.70E-07	--
Pesticides (b)																	
4,4'-DDE	72-55-9	--	1.02E-06	--	--	--	--	--	--	--	1.98E-06	--	--	--	--	--	--
4,4'-DDT	50-29-3	--	1.23E-06	--	--	--	--	--	1.70E-07	--	3.48E-06	--	--	--	--	--	9.60E-07
Aldrin	309-00-2	8.74E-09	1.32E-07	--	--	1.14E-09	2.35E-09	--	3.63E-09	4.32E-08	2.70E-07	--	--	2.04E-09	4.07E-09	--	1.14E-08
alpha-BHC	319-84-6	--	3.59E-08	--	--	--	--	--	--	--	9.00E-08	--	--	--	--	--	--
beta-BHC	319-85-7	--	4.35E-07	--	--	--	--	2.09E-08	2.63E-07	--	1.26E-06	--	--	--	--	4.52E-08	1.56E-06
delta-BHC	319-86-8	5.50E-08	--	--	--	--	--	--	--	1.71E-07	--	--	--	--	--	--	--
Dieldrin	60-57-1	7.60E-08	1.17E-06	7.53E-09	2.07E-08	4.21E-09	7.96E-09	2.04E-08	6.80E-09	2.28E-07	3.00E-06	1.70E-08	3.50E-08	8.82E-09	3.02E-08	7.32E-08	2.28E-08
gamma-BHC (Lindane)	58-89-9	3.04E-08	--	--	--	--	--	--	7.64E-08	1.73E-07	--	--	--	--	--	--	4.50E-07
Heptachlor	76-44-8	4.72E-08	2.04E-07	--	--	--	--	1.12E-08	1.64E-08	1.67E-07	5.94E-07	--	--	--	--	2.67E-08	9.00E-08
Heptachlor Epoxide	1024-57-3	8.77E-09	7.50E-08	--	--	--	2.26E-09	--	--	2.82E-08	1.62E-07	--	--	--	6.18E-09	--	--
Herbicides (b)																	
MCPA	94-74-6	--	--	1.30E-06	--	--	--	--	--	--	--	3.16E-06	--	--	--	--	--

TABLE 5-11
EXPOSURE POINT CONCENTRATIONS - EXCAVATION AIR - MODELED FROM COMBINED SOIL
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	EPC - MLE Scenario (mg/m3)								EPC - RME Scenario (mg/m3)							
		O	O North	P	Q North	Q Central	Q South	R	S	O	O North	P	Q North	Q Central	Q South	R	S
MCPP	93-65-2	--	--	--	--	--	--	2.80E-06	--	--	--	--	--	--	--	3.71E-06	--
Pentachlorophenol	87-86-5	--	--	--	3.92E-06	9.76E-08	2.14E-06	--	6.88E-06	--	--	--	9.78E-06	3.91E-07	4.64E-06	--	2.64E-05
PCBs (b)																	
Total PCBs	1336-36-3	4.18E-06	1.07E-04	2.67E-07	1.76E-06	1.44E-07	3.39E-07	2.47E-06	1.05E-05	1.79E-05	1.82E-04	1.01E-06	3.24E-06	2.61E-07	1.14E-06	5.33E-06	6.05E-05
Dioxin (b)																	
2,3,7,8-TCDD-TEQ	1746-01-6	3.85E-10	1.95E-08	1.70E-11	3.14E-10	1.45E-10	1.29E-10	7.89E-11	2.80E-10	1.82E-09	2.98E-08	2.65E-11	6.66E-10	2.27E-10	2.71E-10	1.07E-10	1.55E-09
Metals (b)																	
Antimony	7440-36-0	--	--	--	4.66E-07	--	6.89E-07	--	--	--	--	--	9.96E-07	--	1.12E-06	--	--
Arsenic	7440-38-2	--	1.20E-06	7.75E-07	7.07E-07	8.83E-07	7.88E-07	3.67E-07	--	--	2.22E-06	1.01E-06	9.24E-07	1.33E-06	1.03E-06	4.39E-07	--
Barium	7440-39-3	--	--	--	8.26E-05	--	--	--	--	--	--	--	1.82E-04	--	--	--	--
Cadmium	7440-43-9	--	2.36E-06	6.40E-07	7.36E-07	--	--	--	--	--	5.16E-06	7.98E-07	1.13E-06	--	--	--	--
Chromium	7440-47-3	--	--	--	--	--	5.29E-06	--	1.08E-05	--	--	--	--	--	7.80E-06	--	2.88E-05
Copper	7440-50-8	--	--	--	--	1.37E-04	--	--	--	--	--	--	--	3.85E-04	--	--	--
Lead	7439-92-1	--	--	--	1.17E-04	--	4.97E-05	--	5.03E-05	--	--	--	1.18E-04	--	4.97E-05	--	5.03E-05
Manganese	7439-96-5	--	--	--	--	5.05E-05	4.21E-05	--	--	--	--	--	--	7.74E-05	5.12E-05	--	--
Mercury	7439-97-6	--	9.90E-06	--	--	--	1.55E-07	1.50E-05	--	--	2.16E-05	--	--	--	2.15E-07	4.19E-05	--
Nickel	7440-02-0	--	--	--	--	--	1.28E-05	--	--	--	--	--	--	--	2.59E-05	--	--

Notes:
"--" Not a constituent of potential concern in this location.
CAS - Chemical Abstracts Service.
EPC - Exposure point concentration.
MCPA - 2-Methyl-4-chlorophenoxyacetic acid.
MCPP - 2-(2-Methyl-4-chlorophenoxy) propionic acid.
MLE - Most Likely Exposure.
PCBs - Polychlorinated Biphenyls.
RME - Reasonable Maximum Exposure.
SVOCs - Semivolatile Organic Compounds.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
VOCs - Volatile Organic Compounds.
(a) Excavation air concentrations for VOCs were modeled from combined soil EPCs (Table 5-9) using the RBCA Toolkit for Chemical Releases (Version 1.3a) (See Appendix L).
(b) Excavation air concentrations for non-VOCs are the combined soil EPC (mg/kg) (Table 5-9) multiplied by the PM10 (Particulate Matter of 10 microns in diameter) dust concentration (0.06 mg/m^3) (MADEP, 1995) and multiplied by a unit correction factor (1E-6 kg/mg).

TABLE 5-12
EXPOSURE POINT CONCENTRATIONS - SURFACE WATER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	EPC - MLE Scenario (mg/L) (a)		EPC - RME Scenario (mg/L) (b)	
		Pond (Site Q)	River	Pond (Site Q)	River
SVOCs					
2,4-Dichlorophenol	120-83-2	--	6.01E-03	--	8.95E-03
4-Chloroaniline	106-47-8	--	1.22E-02	--	1.90E-02
Herbicides					
MCPA	94-74-6	--	3.10E-02	--	3.10E-02
MCPP	93-65-2	--	5.30E-02	--	5.30E-02
Metals					
Lead	7439-92-1	1.40E-02	--	1.40E-02	--
Manganese	7439-96-5	4.60E-01	--	4.60E-01	--

Notes:
"--" Not a constituent of potential concern in this location.
CAS - Chemical Abstracts Service.
EPC - Exposure point concentration.
MCPA - 2-Methyl-4-chlorophenoxyacetic acid.
MCPP - 2-(2-Methyl-4-chlorophenoxy) propionic acid.
MLE - Most Likely Exposure.
RME - Reasonable Maximum Exposure.
SVOCs - Semivolatile Organic Compounds.
(a) Average concentration.
(b) Lower of the 95% upper confidence limit and the maximum detected concentration.
Selection shown in Appendix I.

TABLE 5-13
EXPOSURE POINT CONCENTRATIONS - SEDIMENT
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	EPC - MLE Scenario (mg/kg) (a) River	EPC - RME Scenario (mg/kg) (b) River
Metals			
Arsenic	7440-38-2	2.90E+00	3.41E+00

Notes:
CAS - Chemical Abstracts Service.
EPC - Exposure point concentration.
MLE - Most Likely Exposure.
RME - Reasonable Maximum Exposure.
(a) Average concentration.
(b) Lower of the 95% upper confidence limit and the maximum detected concentration.
Selection shown in Appendix I.

TABLE 5-14
EXPOSURE POINT CONCENTRATIONS - FISH FILLET
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	EPC - MLE Scenario (mg/kg) (a)					EPC - RME Scenario (mg/kg) (b)				
		DDA Buffalo Fillet	PDA Buffalo Fillet	UDA Buffalo Fillet	Pond (Site Q) Black Bullhead Fillet	Pond (Site Q) Carp Fillet	DDA Buffalo Fillet	PDA Buffalo Fillet	UDA Buffalo Fillet	Pond (Site Q) Black Bullhead Fillet	Pond (Site Q) Carp Fillet
SVOCs											
Benzo(a)anthracene	56-55-3	--	--	--	--	1.40E-01	--	--	--	--	1.40E-01
Benzo(a)pyrene	50-32-8	--	--	--	--	1.80E-01	--	--	--	--	1.80E-01
bis(2-Ethylhexyl)phthalate	117-81-7	--	--	--	--	5.00E-01	--	--	--	--	5.00E-01
Dibenzo(a,h)anthracene	53-70-3	--	--	--	--	1.40E-01	--	--	--	--	1.40E-01
Pesticides											
4,4'-DDE	72-55-9	--	--	1.70E-02	--	--	--	--	1.70E-02	--	--
4,4'-DDT	50-29-3	--	--	--	3.60E-01	3.30E-01	--	--	--	3.60E-01	3.30E-01
alpha-Chlordane	5103-71-9	--	--	--	1.00E-02	1.60E-02	--	--	--	1.00E-02	1.60E-02
beta-BHC	319-85-7	--	--	--	--	1.70E-02	--	--	--	--	1.70E-02
Dieldrin	60-57-1	--	--	8.10E-03	1.00E-01	1.90E-01	--	--	8.10E-03	1.00E-01	1.90E-01
PCBs											
Total PCBs	1336-36-3	--	--	--	3.87E+00	1.00E+01	--	--	--	3.87E+00	1.00E+01
							--	--	--		
Dioxin											
2,3,7,8-TCDD-TEQ	1746-01-6	7.39E-07	5.25E-07	4.57E-06	3.84E-06	1.84E-05	7.39E-07	6.25E-07	4.57E-06	3.84E-06	1.84E-05
Metals											
Arsenic	7440-38-2	--	--	--	7.80E-01	8.20E-01	--	--	--	7.80E-01	8.20E-01
Mercury	7439-97-6	--	--	--	2.50E-01	7.10E-02	--	--	--	2.50E-01	7.10E-02

Notes:
"--" Not a constituent of potential concern in this location.
CAS - Chemical Abstracts Service.
DDA - Downstream Discharge Area (Mississippi River).
EPC - Exposure point concentration.
MLE - Most Likely Exposure.
PCBs - Polychlorinated Biphenyls.
PDA - Plume Discharge Area (Mississippi River).
RME - Reasonable Maximum Exposure.
SVOCs - Semivolatile Organic Compounds.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
UDA - Upstream Discharge Area (Mississippi River).
(a) Average concentration.
(b) Maximum detected concentration.

TABLE 5-15
EXPOSURE POINT CONCENTRATIONS - MID/SHALLOW GROUNDWATER AND LEACHATE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	EPC - MLE/RME Scenario (mg/L) (a)					
		Mid (b)		Shallow	Leachate		
		Q - AA-Q-6-24	R - AA-R-1-28	O - AA-O-1-16	L-O-1	L-Q-1	L-R-1
VOCs							
1,2-Dichloroethane	107-06-2	–	–	–	–	2.15E+00	5.00E+01
1,2-Dichloroethene (total)	540-59-0	–	–	–	–	–	1.30E+01
2-Butanone (MEK)	78-93-3	–	–	–	–	–	7.90E+00
4-Methyl-2-pentanone (MIBK)	108-10-1	–	–	–	2.10E-01	7.50E-01	–
Acetone	67-64-1	–	–	–	–	1.40E+00	3.20E+01
Benzene	71-43-2	4.75E-01	5.10E-01	–	9.20E-01	4.25E-01	6.80E+00
Chlorobenzene	108-90-7	–	2.00E+00	–	1.70E+00	1.15E+00	1.30E+00
Chloroform	67-66-3	–	–	–	–	–	2.00E+00
Chloromethane	74-87-3	–	3.20E-03	–	–	–	–
Dichloromethane	75-09-2	–	–	–	–	4.70E-02	1.90E+00
Tetrachloroethene	127-18-4	–	–	–	–	8.25E-02	3.30E+01
Toluene	108-88-3	–	–	–	–	–	2.10E+01
Trichloroethylene	79-01-6	–	–	–	–	2.00E-02	1.50E+02
SVOCs							
2,4,6-Trichlorophenol	88-06-2	–	–	–	3.80E-01	1.25E+01	–
2,4-Dichlorophenol	120-83-2	–	–	–	3.20E-01	1.70E+02	–
2,4-Dimethylphenol	105-67-9	–	–	–	–	2.40E-01	–
2-Chlorophenol	95-57-8	–	–	–	3.30E-01	7.90E+00	1.10E+01
2-Nitroaniline	88-74-4	–	–	–	2.60E-01	1.55E+01	–
3-Methylphenol/4-Methylphenol	106-44-5	–	–	–	6.40E-01	1.60E+00	4.50E+00
4-Chloroaniline	106-47-8	–	–	–	4.20E+00	9.30E+00	4.20E+01
4-Nitroaniline	100-01-6	–	–	–	7.00E-01	1.07E+00	1.60E+01
Benzo(a)pyrene	50-32-8	–	–	1.60E-03	–	–	–
Benzo(b)fluoranthene	205-99-2	–	–	1.10E-03	–	–	–
Benzo(g,h,i)perylene	191-24-2	–	–	–	–	–	1.40E+00
Benzo(k)fluoranthene	207-08-9	–	–	1.20E-03	–	–	–
Dibenzo(a,h)anthracene	53-70-3	–	–	2.70E-03	–	–	–
Indeno(1,2,3-cd)pyrene	193-39-5	–	–	3.00E-03	–	–	–
Naphthalene	91-20-3	–	–	–	5.70E-01	1.20E+00	–
Nitrobenzene	98-95-3	–	–	–	8.00E-02	1.30E+00	–
Phenol	108-95-2	–	–	–	3.80E+00	8.05E+00	1.10E+03
Pesticides							
4,4'-DDT	50-29-3	–	–	–	–	–	2.10E-01
beta-BHC	319-85-7	–	–	–	2.50E-03	1.35E-02	2.00E-01
Dieldrin	60-57-1	–	–	–	–	–	1.90E-01
Endrin Ketone	53494-70-5	–	–	–	–	3.20E-03	–
gamma-BHC (Lindane)	58-89-9	–	–	–	–	–	2.80E-02
Heptachlor	76-44-8	–	–	–	–	–	2.10E-01
Herbicides							
2,4,5-T	93-76-5	–	–	–	4.80E-01	–	–
2,4-D	94-75-7	–	–	–	9.30E-01	9.65E+01	3.80E+00
Pentachlorophenol	87-86-5	–	–	–	7.80E-01	4.60E+00	–
PCBs							
Total PCBs	1336-36-3	–	–	–	5.49E-02	1.04E-03	3.98E+00
Dioxin							
2,3,7,8-TCDD-TEQ	1746-01-6	–	–	–	6.87E-07	–	3.14E-06

TABLE 5-15
EXPOSURE POINT CONCENTRATIONS - MID/SHALLOW GROUNDWATER AND LEACHATE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	EPC - MLE/RME Scenario (mg/L) (a)					
		Mid (b)		Shallow	Leachate		
		Q - AA-Q-6-24	R - AA-R-1-28	O - AA-O-1-16	L-O-1	L-Q-1	L-R-1
Metals							
Antimony	7440-36-0	--	--	--	--	1.60E-02	--
Arsenic	7440-38-2	--	--	7.00E-02	--	--	--
Beryllium	7440-41-7	--	--	--	--	--	3.10E-02
Chromium	7440-47-3	--	--	--	--	--	6.00E-01
Cobalt	7440-48-4	--	--	--	--	--	2.60E+00
Lead	7439-92-1	--	--	1.90E-02	--	--	--
Manganese	7439-96-5	--	--	4.10E+00	1.80E+01	1.80E+00	2.50E+02
Mercury	7439-97-6	--	--	--	--	--	1.30E-02
Nickel	7440-02-0	--	--	--	--	3.10E-01	1.80E+00
Thallium	7440-28-0	--	--	--	3.70E-03	--	1.20E-01
Vanadium	7440-62-2	--	--	--	--	--	3.60E-01
Zinc	7440-66-6	--	--	--	--	7.45E+00	9.90E+01

Notes:
"--" Not a constituent of potential concern in this location.
CAS - Chemical Abstracts Service.
EPC - Exposure Point Concentration.
MLE - Most Likely Exposure.
PCBs - Polychlorinated Biphenyls.
RME - Reasonable Maximum Exposure.
SVOCs - Semivolatile Organic Compounds.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
VOCs - Volatile Organic Compounds.
(a) EPCs for groundwater represent reported sample concentration. Therefore, RME and MLE EPCs are the same.
(b) EPCs in mid-groundwater are used to predict indoor and outdoor air EPCs for VOCs to be evaluated via the inhalation pathway. Receptors are not assumed to directly contact mid-groundwater.

TABLE 5-16
EXPOSURE POINT CONCENTRATIONS - EXCAVATION TRENCH AIR VOCs -
MODELED FROM SHALLOW GROUNDWATER AND LEACHATE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	EPC - MLE/RME Scenario (mg/m^3) (a) (b)			
		Shallow	Leachate		
		O - AA-O-1-16	L-O-1	L-Q-1	L-R-1
VOCs					
1,2-Dichloroethane	107-06-2	--	--	5.78E-02	1.35E+00
1,2-Dichloroethene (total)	540-59-0	--	--	--	3.86E-01
2-Butanone (MEK)	78-93-3	--	--	--	1.69E-01
4-Methyl-2-pentanone (MIBK)	108-10-1	--	4.51E-03	1.61E-02	--
Acetone	67-64-1	--	--	2.98E-02	6.81E-01
Benzene	71-43-2	--	2.49E-02	1.15E-02	1.84E-01
Chlorobenzene	108-90-7	--	4.24E-02	2.87E-02	3.25E-02
Chloroform	67-66-3	--	--	--	5.48E-02
Chloromethane	74-87-3	--	--	--	--
Dichloromethane	75-09-2	--	--	1.42E-03	5.76E-02
Tetrachloroethene	127-18-4	--	--	1.99E-03	7.95E-01
Toluene	108-88-3	--	--	--	5.22E-01
Trichloroethylene	79-01-6	--	--	5.16E-04	3.87E+00

Notes:
"--" Not a constituent of potential concern in this location.
CAS - Chemical Abstracts Service.
EPC - Exposure Point Concentration.
MLE - Most Likely Exposure.
RME - Reasonable Maximum Exposure.
VOCs - Volatile Organic Compounds.
(a) Modeled from shallow groundwater and leachate EPCs (Table 5-15) using the excavation trench model in Appendix K.
(b) EPCs for groundwater represent reported sample concentration. Therefore, RME and MLE EPCs are the same.

TABLE 5-17
EXPOSURE POINT CONCENTRATIONS - INDOOR AIR VOCs (a)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	EPC - MLE/RME Scenario (mg/m^3) (b)					
		Mid		Shallow	Leachate		
		Q - AA-Q-6-24	R - AA-R-1-28	O - AA-O-1-16	L-O-1	L-Q-1	L-R-1
VOCs							
1,2-Dichloroethane	107-06-2	--	--	--	--	7.37E-06	4.72E-07
1,2-Dichloroethene (total)	540-59-0	--	--	--	--	--	2.00E-06
2-Butanone (MEK)	78-93-3	--	--	--	--	--	2.70E-08
4-Methyl-2-pentanone (MIBK)	108-10-1	--	--	--	7.01E-07	8.28E-07	--
Acetone	67-64-1	--	--	--	--	4.65E-07	2.06E-08
Benzene	71-43-2	2.53E-05	2.51E-05	--	3.18E-05	3.66E-05	2.70E-06
Chlorobenzene	108-90-7	--	1.27E-05	--	1.62E-05	1.87E-05	1.58E-06
Chloroform	67-66-3	--	--	--	--	--	1.88E-06
Chloromethane	74-87-3	--	2.17E-04	--	--	--	--
Dichloromethane	75-09-2	--	--	--	--	1.75E-05	1.16E-06
Tetrachloroethene	127-18-4	--	--	--	--	9.29E-05	7.98E-06
Toluene	108-88-3	--	--	--	--	--	3.02E-06
Trichloroethylene	79-01-6	--	--	--	--	6.02E-05	4.82E-06

Notes:
"--" Not a constituent of potential concern in this location.
CAS - Chemical Abstracts Service.
EPC - Exposure Point Concentration.
MLE - Most Likely Exposure.
RME - Reasonable Maximum Exposure.
VOCs - Volatile Organic Compounds.
(a) Modeled from mid-groundwater and leachate EPCs (Table 5-15) using the USEPA Johnson and Ettinger Model, GW-ADV (USEPA, 2000b, 2001b) (see Appendix J).
(b) EPCs for groundwater represent sample concentrations. Therefore, RME and MLE EPCs are the same.

TABLE 5-18
EXPOSURE POINT CONCENTRATIONS - OUTDOOR AIR VOCs -
MODELED FROM MID/SHALLOW GROUNDWATER AND LEACHATE (a)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

		EPC - MLE/RME Scenario (mg/m^3) (b)					
		Mid		Shallow	Leachate		
Constituent	CAS	Q - AA-Q-6-24	R - AA-R-1-28	O - AA-O-1-16	L-O-1	L-Q-1	L-R-1
VOCs							
1,2-Dichloroethane	107-06-2	--	--	--	--	1.0E-04	2.0E-03
1,2-Dichloroethene (total)	540-59-0	--	--	--	--	--	3.8E-03
2-Butanone (MEK)	78-93-3	--	--	--	--	--	7.3E-05
4-Methyl-2-pentanone (MIBK)	108-10-1	--	--	--	3.7E-05	4.9E-05	--
Acetone	67-64-1	--	--	--	--	9.6E-06	1.0E-04
Benzene	71-43-2	4.0E-05	1.8E-07	--	9.0E-05	3.9E-05	5.7E-04
Chlorobenzene	108-90-7	--	5.8E-07	--	1.2E-04	7.2E-05	7.3E-05
Chloroform	67-66-3	--	--	--	--	--	1.4E-04
Chloromethane	74-87-3	--	1.7E-08	--	--	--	--
Dichloromethane	75-09-2	--	--	--	--	3.2E-06	1.1E-04
Tetrachloroethene	127-18-4	--	--	--	--	1.5E-05	5.6E-03
Toluene	108-88-3	--	--	--	--	--	1.9E-03
Trichloroethylene	79-01-6	--	--	--	--	8.7E-06	5.1E-02

Notes:
"--" Not a constituent of potential concern in this location.
CAS - Chemical Abstracts Service.
EPC - Exposure Point Concentration.
MLE - Most Likely Exposure.
RME - Reasonable Maximum Exposure.
VOCs - Volatile Organic Compounds.
(a) Modeled from mid/shallow groundwater and leachate EPCs (Table 5-15) using the RBCA Tool Kit (version 1.3a) in Appendix L.
(b) EPCs for groundwater represent reported sample concentration. Therefore, RME and MLE EPCs are the same.

TABLE 5-19
CALCULATION OF PARTICULATE EMISSION FACTOR - SITE O NORTH
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Parameter	Definition	Units	Value	Source
Q/C	Inverse of mean concentration at center of source	g/m^2-s per kg/m^3	76.08	(a)
V	Fraction of vegetative cover	unitless	0.5	(b)
Um	Mean annual windspeed	m/s	4.69	(b)
Ut	Equivalent threshold value of windspeed at 7 m	m/s	11.32	(b)
F(x)	Function dependent on Um/Ut	unitless	0.194	(b)
PEF	Particulate emission factor	m^3/kg	1.10E+09	(c)

Notes:
(a) USEPA, 1996a. Soil Screening Guidance: User's Guide. Exhibit 11.
Value for Chicago, Illinois, 2 acre source area.
(b) USEPA, 1996a. Soil Screening Guidance: User's Guide. Default value. Equation 5.
(c) USEPA, 1996a. Soil Screening Guidance: User's Guide. Calculated using above parameters and Equation 5:

$$PEF\ (m^3/kg) = Q/C\ (g/m^2\text{-}s\ per\ kg/m^3) \times \frac{3600 s/h}{0.036 \times (1-V) \times (Um/Ut)^3 \times F(x)}$$

TABLE 5-20
CALCULATION OF PARTICULATE EMISSION FACTOR - SITE S
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Parameter	Definition	Units	Value	Source
Q/C	Inverse of mean concentration at center of source	g/m^2-s per kg/m^3	85.81	(a)
V	Fraction of vegetative cover	unitless	0.5	(b)
Um	Mean annual windspeed	m/s	4.69	(b)
Ut	Equivalent threshold value of windspeed at 7 m	m/s	11.32	(b)
F(x)	Function dependent on Um/Ut	unitless	0.194	(b)
PEF	Particulate emission factor	m^3/kg	1.24E+09	(c)

Notes:
(a) USEPA, 1996a. Soil Screening Guidance: User's Guide. Exhibit 11.
Value for Chicago, Illinois, 1 acre source area.
(b) USEPA, 1996a. Soil Screening Guidance: User's Guide. Default value. Equation 5.
(c) USEPA, 1996a. Soil Screening Guidance: User's Guide. Calculated using above parameters and Equation 5:

$$PEF\ (m^3/kg) = Q/C\ (g/m^2\text{-}s\ per\ kg/m^3) \times \frac{3600 s/h}{0.036 \times (1-V) \times (Um/Ut)^3 \times F(x)}$$

TABLE 5-21
CALCULATION OF PARTICULATE EMISSION FACTOR - SITES O, P, Q NORTH, Q CENTRAL, Q SOUTH, R
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Parameter	Definition	Units	Value	Source
Q/C	Inverse of mean concentration at center of source	g/m^2-s per kg/m^3	50.60	(a)
V	Fraction of vegetative cover	unitless	0.5	(b)
Um	Mean annual windspeed	m/s	4.69	(b)
Ut	Equivalent threshold value of windspeed at 7 m	m/s	11.32	(b)
F(x)	Function dependent on Um/Ut	unitless	0.194	(b)
PEF	Particulate emission factor	m^3/kg	7.33E+08	(c)

Notes:
(a) USEPA, 1996a. Soil Screening Guidance: User's Guide. Exhibit 11.
Value for Chicago, Illinois, 30 acre source area.
(b) USEPA, 1996a. Soil Screening Guidance: User's Guide. Default value. Equation 5.
(c) USEPA, 1996a. Soil Screening Guidance: User's Guide. Calculated using above parameters and Equation 5:

$$PEF\ (m^3/kg) = Q/C\ (g/m^2\text{-}s\ per\ kg/m^3) \times \frac{3600s/h}{0.036 \times (1-V) \times (Um/Ut)^3 \times F(x)}$$

TABLE 5-22
ABSORPTION ADJUSTMENT FACTORS (AAFs) FOR CHRONIC EXPOSURE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

	Exposure Route (Medium) (unitless values)											
	Oral (Water)		Oral (Soil)		Oral (Diet)		Dermal (Water)		Dermal (Soil)		Inhalation	
Constituent	Carc.	Noncarc.	Carc.	Noncarc.	Carc.	Noncarc.	Carc.	Noncarc.	Carc.	Noncarc.	Carc.	Noncarc.
VOCs												
1,1,2-Trichloroethane	1	1	1	1	1	1	1	1	0.01	0.01	1	NA
1,2-Dichloroethane	1	1	1	1	1	1	1	1	0.01	0.01	1	1
1,2-Dichloroethene (total)	NA	1	NA	1	NA	1	NA	1	NA	0.01	NA	NA
2-Butanone (MEK)	NA	1	NA	1	NA	1	NA	1	NA	0.01	NA	1
4-Methyl-2-pentanone (MIBK)	NA	1	NA	1	NA	1	NA	1	NA	0.01	NA	1
Acetone	NA	1	NA	1	NA	1	NA	1	NA	0.01	NA	NA
Benzene	1	1	1	1	1	1	2.13	2.13	0.02	0.02	1	1
Chlorobenzene	NA	1	NA	1	NA	1	NA	1	NA	0.01	NA	1
Chloroform	NA	1	NA	1	NA	1	NA	1	NA	0.01	0.66	1
Chloromethane	1	NA	1	NA	1	NA	1	NA	0.01	NA	1	1
Dichloromethane	1	1	1	1	1	1	1.6	1.6	0.016	0.016	1	1
Ethylbenzene	NA	1	NA	1	NA	1	NA	1	NA	0.01	1	1
Tetrachloroethene	1	1	1	1	1	1	1	1	0.01	0.01	1	1
Toluene	NA	1	NA	1	NA	1	NA	1	NA	0.01	NA	1
Trichloroethylene	1	1	1	1	1	1	1	1	0.01	0.01	1	1
Xylenes, Total	NA	1	NA	1	NA	1	NA	1.1	NA	0.011	NA	1
SVOCs												
1,2-Dichlorobenzene	NA	1	NA	1	NA	1	NA	1	NA	0.01	NA	1
1,3-Dichlorobenzene	NA	1 (a)	NA	1 (a)	NA	1 (a)	NA	1 (a)	NA	0.01 (a)	NA	1 (a)
1,4-Dichlorobenzene	1	1	1	1	1	1	1	1	0.01	0.01	1	1
2,4,6-Trichlorophenol	1	1	1	1	1	1	1	1	0.01	0.01	1	NA
2,4-Dichlorophenol	NA	1	NA	1	NA	1	NA	1	NA	0.01	NA	NA
2,4-Dimethylphenol	NA	1	NA	1	NA	1	NA	1	NA	0.01	NA	NA
2-Chlorophenol	NA	1	NA	1	NA	1	NA	1	NA	0.01	NA	NA
2-Methylnaphthalene	NA	1	NA	0.29	NA	1	NA	1	NA	0.1	NA	1
2-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1
3-Methylphenol/4-Methylphenol	NA	1	NA	1	NA	1	NA	1	NA	0.01	NA	NA
4-Chloroaniline	NA	1	NA	1	NA	1	NA	1	NA	0.01	NA	NA
4-Nitroaniline	NA	1	NA	1	NA	1	NA	1	NA	0.01	NA	1
Benzo(a)anthracene	1	NA	0.29	NA	1	NA	1	NA	0.02	NA	1	NA
Benzo(a)pyrene	1	NA	0.29	NA	1	NA	1	NA	0.02	NA	1	NA
Benzo(b)fluoranthene	1	NA	0.29	NA	1	NA	1	NA	0.02	NA	1	NA
Benzo(g,h,i)perylene	NA	1	NA	0.29	NA	1	NA	1	NA	0.1	NA	NA
Benzo(k)fluoranthene	1	NA	0.29	NA	1	NA	1	NA	0.02	NA	1	NA
bis(2-Chloroethyl)ether	1	NA	1	NA	1	NA	1	NA	0.01	NA	1	NA
bis(2-Ethylhexyl)phthalate	1	1	1	1	1	1	1	1	0.004	0.004	NA	NA
Dibenzo(a,h)anthracene	1	NA	0.29	NA	1	NA	1	NA	0.02	NA	1	NA
Hexachlorobenzene	1	1	0.83	0.83	1	1	1.1	1.1	0.04	0.04	1	NA
Indeno(1,2,3-cd)pyrene	1	NA	0.29	NA	1	NA	1	NA	0.02	NA	1	NA
Naphthalene	NA	1	NA	0.29	NA	1	NA	1	NA	0.1	NA	1
Nitrobenzene	NA	1	NA	1	NA	1	NA	1	NA	0.01	NA	1
Phenol	NA	1	NA	1	NA	1	NA	1	NA	0.01	NA	NA

TABLE 5-22
ABSORPTION ADJUSTMENT FACTORS (AAFs) FOR CHRONIC EXPOSURE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

	Exposure Route (Medium) (unitless values)											
	Oral	(Water)	Oral	(Soil)	Oral	(Diet)	Dermal	(Water)	Dermal	(Soil)	Inhalation	
Constituent	Carc.	Noncarc.	Carc.	Noncarc.	Carc.	Noncarc.	Carc.	Noncarc.	Carc.	Noncarc.	Carc.	Noncarc.
Pesticides												
4,4'-DDE	1	1	1	1	1	1	1	1	0.01	0.01	NA	NA
4,4'-DDT	1	1	1	1	1	1	1	1	0.01	0.01	1	NA
Aldrin	1	1	1	1	1	1	1	1	0.01	0.01	1	NA
alpha-BHC	1	1	1	1	1	1	1	1	0.01	0.01	1	NA
alpha-Chlordane	1	1	1	1	1	1	1	1	0.01	0.01	1	1
beta-BHC	1	1	1	1	1	1	1	1	0.01	0.01	1	NA
delta-BHC	NA	1	NA	1	NA	1	NA	1	NA	0.01	NA	NA
Dieldrin	1	1	1	1	1	1	1	1	0.01	0.01	1	NA
Endrin Ketone	NA	1	NA	1	NA	1	NA	1	NA	0.01	NA	NA
gamma-BHC (Lindane)	1	1	1	1	1	1	1	1	0.01	0.01	NA	NA
Heptachlor	1	1	1	1	1	1	1	1	0.01	0.01	1	NA
Heptachlor epoxide	1	1	1	1	1	1	1	1	0.01	0.01	1	NA
Herbicides												
2,4,5-T	NA	1	NA	1	NA	1	NA	1	NA	0.01	NA	NA
2,4-D	NA	1	NA	1	NA	1	NA	1	NA	0.01	NA	NA
MCPA	NA	1	NA	1	NA	1	NA	1	NA	0.01	NA	NA
MCPP	NA	1	NA	1	NA	1	NA	1	NA	0.01	NA	NA
Pentachlorophenol	1	1	1	1	1	1	1	1	0.01	0.01	NA	NA
PCBs												
Total PCBs	1	1	0.83	0.83	1	1	1.1	1.1	0.04	0.04	1	NA
Dioxin												
2,3,7,8-TCDD-TEQ	1	NA	0.4	NA	1	NA	1.8	NA	0.04	NA	0.55	NA
Metals												
Antimony	NA	1	NA	1	NA	1	NA	6.7	NA	0.007	NA	NA
Arsenic	1	1	0.3	0.3	1	1	1	1	0.001	0.001	1	NA
Barium	NA	1	NA	1	NA	1	NA	1	NA	0.001	NA	1
Beryllium	NA	1	NA	1	NA	1	NA	100	NA	0.1	1	1
Cadmium	NA	1	NA	1	NA	1	NA	40	NA	0.04	1	NA
Chromium	NA	1	NA	0.3	NA	0.3	NA	40	NA	0.00	1	1
Cobalt	NA	1	NA	1	NA	1	NA	1	NA	0.01	1	1
Copper	NA	1	NA	1	NA	1	NA	1.67	NA	0.002	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1	NA	1	NA	1	NA	10	NA	0.01	NA	1
Mercury	NA	2	NA	2	NA	2	NA	13.7	NA	0.007	NA	1
Nickel	NA	1	NA	1	NA	1	NA	77	NA	0.08	NA	NA
Thallium	NA	1	NA	1	NA	1	NA	1	NA	0.001	NA	NA
Vanadium	NA	1	NA	1	NA	1	NA	10	NA	0.01	NA	NA
Zinc	NA	1.6	NA	1	NA	1	NA	3.03	NA	0.003	NA	NA

Notes:
AAFs are either default values or derived by ENSR; See Appendix H.
AAFs are only presented for constituents which have a corresponding dose response value.
Carc. - The value derived is for assessing the compound's carcinogenic potential.
Default values are used where no chemical specific values available.
Noncarc. - The value derived is for assessing the,compound's noncarcinogenic potential.
(a) All values for 1,2-Dichlorobenzene used for 1,3-Dichlorobenzene.

TABLE 5-23
DERMAL PERMEABILITY CONSTANTS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	Dermal Permeability Constant (cm/hr) (a)	
VOCs		
1,2-Dichloroethane	5.30E-03	
1,2-Dichloroethene (total)	1.00E-02	
2-Butanone (MEK)	1.10E-03	
4-Methyl-2-pentanone (MIBK)	2.77E-03	(b)
Acetone	5.69E-04	(b)
Benzene	2.10E-02	
Chlorobenzene	4.10E-02	
Chloroform	8.90E-03	
Chloromethane	4.20E-03	
Dichloromethane	4.50E-03	
Tetrachloroethene	4.80E-02	
Toluene	4.50E-02	
Trichloroethylene	1.60E-02	
SVOCs		
1,2-Dichlorobenzene	6.10E-02	
2,4,6-Trichlorophenol	5.00E-02	
2,4-Dichlorophenol	2.30E-02	
2,4-Dimethylphenol	1.50E-02	
2-Chlorophenol	1.10E-02	
2-Nitroaniline	5.45E-03	(b)
3-Methylphenol/4-Methylphenol	1.00E-02	(c)
4-Chloroaniline	6.33E-03	(b)
4-Nitroaniline	2.66E-03	(b)
Benzo(a)pyrene	1.20E+00	
Benzo(b)fluoranthene	1.20E+00	
Benzo(g,h,i)perylene	5.34E+00	(b)
Benzo(k)fluoranthene	1.20E+00	(d)
Dibenzo(a,h)anthracene	2.70E+00	
Indeno(1,2,3-cd)pyrene	1.90E+00	
Naphthalene	6.90E-02	
Nitrobenzene	6.96E-03	(b)
Phenol	5.50E-03	
Pesticides		
4,4'-DDT	4.30E-01	
beta-BHC	1.60E-02	(b)
Dieldrin	1.60E-02	
Endrin Ketone	1.60E-02	(e)
gamma-BHC (Lindane)	1.40E-02	
Heptachlor	1.10E-02	
Herbicides		
2,4,5-T	1.40E-04	(b)
2,4-D	8.45E-03	(b)
MCPA	2.31E-02	(b)
MCPP	1.56E-02	(b)
Pentachlorophenol	6.50E-01	
PCBs		
Total PCBs	7.10E-01	(f)
Dioxin		
2,3,7,8-TCDD-TEQ	1.40E+00	

TABLE 5-23
DERMAL PERMEABILITY CONSTANTS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	Dermal Permeability Constant (cm/hr) (a)	
Metals		
Antimony	1.60E-04	(g)
Arsenic	1.60E-04	(g)
Beryllium	1.60E-04	(g)
Chromium	6.67E-04	(h)
Cobalt	4.00E-04	(i)
Lead	(j)	
Manganese	1.60E-04	(g)
Mercury	1.67E-03	(k)
Nickel	5.45E-05	(l)
Thallium	1.60E-04	(g)
Vanadium	1.60E-04	(g)
Zinc	6.00E-04	(m)

Notes:
(a) All values are from USEPA, 1992b, Dermal Exposure Assessment: Principles and Applications, Table 5-7, unless otherwise noted.
(b) See Table 5-24; calculated using logKow, molecular weight, and equation 5.8 from USEPA, 1992b.
(c) Average value of 3-Methylphenol and 4-methylphenol.
(d) Due to structural similarity, the value for benzo(b)fluoranthene is used to evaluate this constituent.
(e) Value for Endrin (USEPA, 1992b, Table 5-7).
(f) Value for PCB hexachlorobiphenyl (USEPA, 1992b, Table 5-7).
(g) Value for water (USEPA, 1992b, Table 5-7).
(h) Average of values for Sodium chromate, Sodium dichromate and Chromium chloride (USEPA, 1992b, Table 5-3).
(i) Value for Cobalt Chloride (USEPA, 1992b, Table 5-3).
(j) Lead is evaluated using the adult lead model.
(k) Value for Mercuric Chloride (USEPA, 1992b, Table 5-3).
(l) Average of values for nickel chloride and nickel sulfate (USEPA, 1992b, Table 5-3).
(m) Value for zinc chloride (USEPA, 1992b, Table 5-3).

TABLE 5-24
DERMAL PERMEABILITY CONSTANTS - CALCULATED VALUES (a)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	Molecular Weight		Log Kow		Log PC	Dermal Permeability Constant (cm/hr) (d)
2,4,5- T	255.48	(b)	0.6	(b)	-3.852428	1.40E-04
2,4-D	221.04	(b)	2.81	(b)	-2.073244	8.45E-03
2-Nitroaniline	138.13	(b)	1.83	(b)	-2.263293	5.45E-03
4-Chloroaniline	127.57	(b)	1.83	(b)	-2.198877	6.33E-03
4-Methyl-2-Pentanone (MIBK)	100.16	(b)	1.09	(b)	-2.557076	2.77E-03
4-Nitroaniline	138.13	(b)	1.39	(b)	-2.575693	2.66E-03
Acetone	58.08	(b)	-0.24	(b)	-3.244688	5.69E-04
Benzo(g,h,i)perylene	276.34	(b)	7.23	(b)	0.727626	5.34E+00
Beta-BHC	290.83	(b)	3.8	(b)	-1.796063	1.60E-02
MCPA	200.62	(c)	3.25	(c)	-1.636282	2.31E-02
MCPP	214.65	(c)	3.13	(c)	-1.807065	1.56E-02
Nitrobenzene	123.11	(b)	1.85	(b)	-2.157471	6.96E-03

Notes:
Kow - Octanol-Water Partition Coefficient.
PC - Permeability Constant.
(a) Values not presented in USEPA, 1992b.
(b) Handbook of RCRA Groundwater Monitoring Constituents. Physical and Chemical Properties. USEPA. September 1992d.
(c) PhysProp database internet source, http://esc.syrres.com/interkow/physdemo.htm.
(d) USEPA, 1992b, Dermal Exposure Equation 5.8: Log Kp = -2.72 + 0.71 log Kow - 0.0061 MW

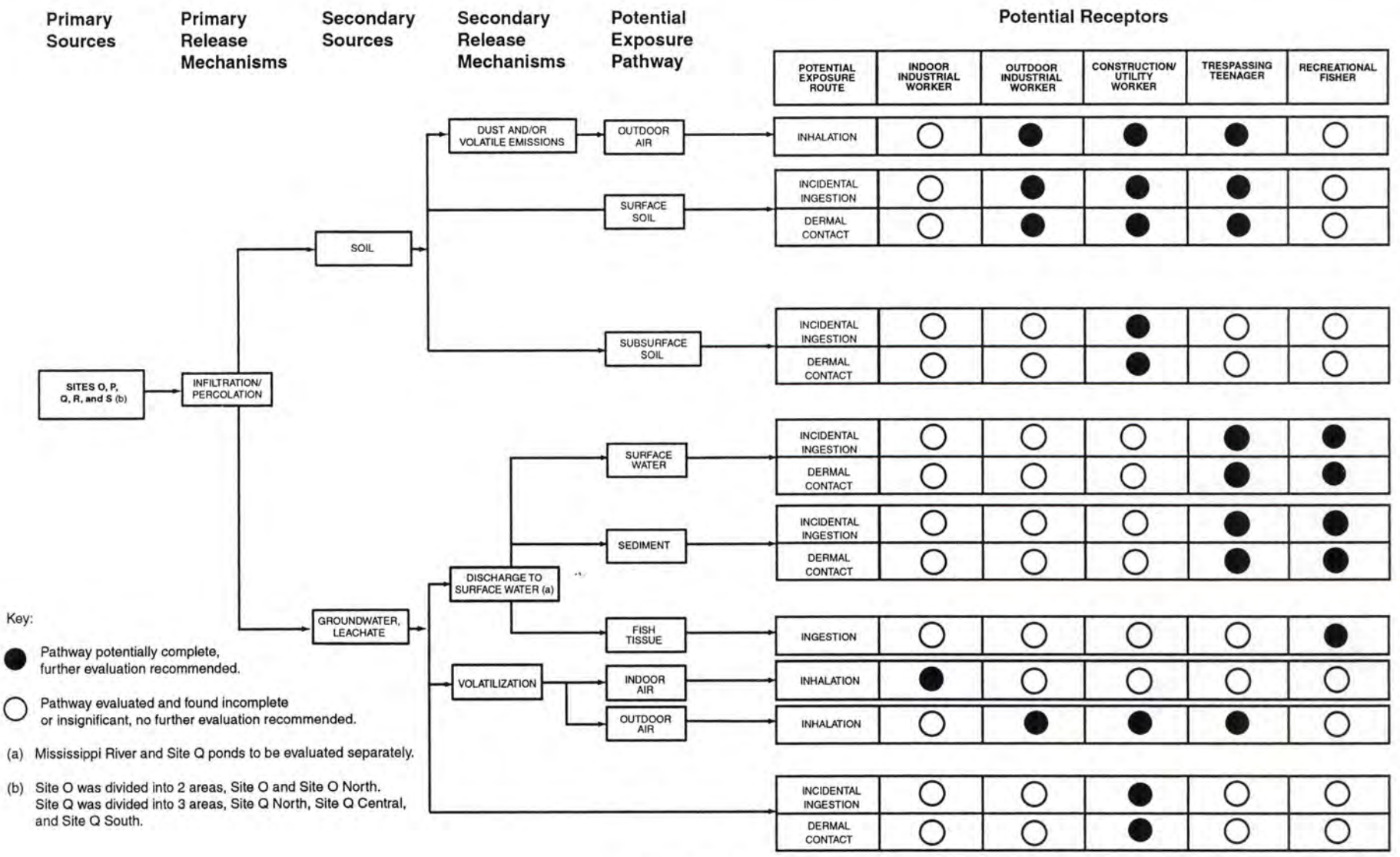

FIGURE 5-1
Conceptual Site Model
Human Health Risk Assessment
Sauget Area 2 RI/FS
Sauget, Illinois

6.0 RISK CHARACTERIZATION

The potential risk to human health associated with potential exposure to COPCs in environmental media at the site is evaluated in this step of the risk assessment process. Risk characterization is the process in which the dose-response information (Section 4.0) is integrated with quantitative estimates of human exposure derived in the Exposure Assessment (Section 5.0). The result is a quantitative estimate of the likelihood that humans will experience any adverse health effects given the exposure assumptions made. Two general types of health risk are characterized for each potential exposure pathway considered: potential carcinogenic risk and potential noncarcinogenic hazard. Carcinogenic risk is evaluated by averaging exposure over a normal human lifetime, which, based on USEPA guidance (1989a), is assumed to be 70 years. Noncarcinogenic hazard is evaluated by averaging exposure over the total exposure period.

Characterization of the potential health effects of potential carcinogenic and noncarcinogenic constituents is approached in very different ways. The difference in approaches arises from the conservative assumption that substances with possible carcinogenic action proceed by a no-threshold mechanism, whereas other toxic actions may have a threshold, i.e., a dose below which few individuals would be expected to respond. Thus, under the no-threshold assumption, it is necessary to calculate a risk, but for constituents with a threshold, it is possible to simply characterize an exposure as above or below the threshold. In risk assessment, that threshold is termed a reference dose (RfD). Reference doses as well as cancer slope factors were discussed in Section 4.0. The approach to carcinogenic risk characterization is presented in Section 6.1, and the approach to noncarcinogenic risk characterization is presented in Section 6.2. The risk characterization results are presented in Section 6.3 by receptor, and in Section 6.4 by site. Uncertainties associated with the risk characterization are presented in Section 6.5. The risk calculation spreadsheets are presented in Appendix M.

6.1 Carcinogenic Risk Characterization Methods

The purpose of carcinogenic risk characterization is to estimate the upper-bound likelihood, over and above the background cancer rate, that a receptor will develop cancer in his or her lifetime as a result of exposure to a constituent in environmental media at the site. This likelihood is a function of the dose of a constituent (described in the Exposure Assessment, Section 5.0) and the Cancer Slope Factor (CSF) (described in the Toxicity Assessment, Section 4.0) for that constituent. The Excess Lifetime Cancer Risk (ELCR) is the likelihood over and above the background cancer rate, which currently in the US is approximately 1 in 3 (Jemal, et al., 2002), that an individual will contract cancer in his or her lifetime. The risk value is expressed as a probability (e.g., 10^{-4}, or one in ten thousand). The

relationship between the ELCR and the estimated Lifetime Average Daily Dose (LADD) of a constituent may be expressed as:

$$ELCR = 1\text{-}e^{-(CSF \times LADD)}$$

When the product of the CSF and the LADD is much greater than 1, the ELCR approaches 1 (i.e., 100 percent probability). When the product is less than 0.01 (one chance in 100), the equation can be closely approximated by:

$$ELCR = LADD\ (mg/kg\text{-}day) \times CSF\ (mg/kg\text{-}day)^{-1}$$

The product of the CSF and the LADD is unitless, and provides an upper-bound estimate of the potential carcinogenic risk associated with a receptor's exposure to that constituent via that pathway.

The potential carcinogenic risk for each exposure pathway is calculated for each receptor. In current regulatory risk assessment, it is assumed that cancer risks are additive or cumulative. Pathway and area-specific risks are summed to estimate the total site potential cancer risk for each receptor. A summary of the total site cancer risks for each receptor group is presented in this section and compared to the USEPA's target risk range of 10^{-4} to 10^{-6}. Any COPC that causes an exceedance of the 10^{-4} risk level for a particular receptor is designated a COC. The target risk levels used for the identification of COCs are based on USEPA guidance and Illinois TACO guidance, and were identified in the approved HHRA workplan. Specifically, USEPA provides the following guidance (USEPA, 1991a):

> "Where the cumulative carcinogenic site risk to an individual based on reasonable maximum exposure for both current and future land use is less than 10^{-4}, and the non-carcinogenic hazard quotient is less than 1, action generally is not warranted unless there are adverse environmental impacts." and,
>
> "The upper boundary of the risk range is not a discrete line at 1×10^{-4}, although EPA generally uses 1×10^{-4} in making risk management decisions. A specific risk estimate around 10^{-4} may be considered acceptable if justified based on site-specific conditions."

IEPA provides the following summary for the evaluation of cumulative risk for carcinogens (IEPA, 2002b, Fact Sheet 13: Mixture Rule):

> "The cumulative risk of carcinogenic contaminants attacking the same target must not exceed 1 in 10,000 [10^{-4}]. Therefore, the risk from all on-site similar acting carcinogens must be added together. If this cumulative risk level is greater than 1 in 10,000, corrective action must be taken to reach an acceptable risk level."

Both RME and MLE results are considered in the identification of COCs. COCs are identified in Section 6.0.

6.2 Noncarcinogenic Risk Characterization Methods

The potential for exposure to a constituent to result in adverse noncarcinogenic health effects is estimated for each receptor by comparing the Chronic Average Daily Dose (CADD) for each COPC with the RfD for that COPC. The resulting ratio, which is unitless, is known as the Hazard Quotient (HQ) for that constituent. The HQ is calculated using the following equation:

$$HQ = \frac{CADD\ (mg/kg\text{-}day)}{RfD\ (mg/kg\text{-}day)}$$

The target HQ is defined as an HQ of less than or equal to one (USEPA, 1989a, 1991a). When the HQ is less than or equal to 1, the RfD has not been exceeded, and no adverse noncarcinogenic effects are expected. If the HQ is greater than 1, there may be a potential for adverse noncarcinogenic health effects to occur; however, the magnitude of the HQ cannot be directly equated to a probability or effect level.

The total Hazard Index (HI) is calculated for each exposure pathway by summing the HQs for each individual constituent. The total site HI is calculated for each potential receptor by summing the HIs for each pathway associated with the receptor. Where the total site HI is greater than 1 for any receptor, a more detailed evaluation of potential noncarcinogenic effects based on specific health or target endpoints (e.g., liver effects, neurotoxicity) is performed (USEPA, 1989a; IEPA, 2002b). The target HI is 1 on a per target endpoint basis.

A summary of all HIs for each receptor group is presented in this section and compared to the USEPA's target HI of 1. Each COPC that causes an exceedance of the HI of 1 for a particular receptor and for a particular target endpoint is designated a COC. Both RME and MLE results are considered in the identification of COCs.

6.3 Risk Characterization Results by Receptor

The results of the risk characterization are presented below by receptor. Tables 6-1 through 6-10 present the detailed per COPC HHRA results by receptor, location, medium, and pathway for the RME scenarios. Tables 6-11 through 6-20 provide the same for the MLE scenarios. Tables 6-21 through 6-24 provide the summarized results by receptor, location, medium, and pathway for the RME and MLE scenarios. Section 6.3 summarizes the results by receptor. Section 6.4 summarizes the results by site, receptor, and pathway, and identifies the COCs.

Site O and Site Q were divided into two and four areas, respectively. Therefore, soil and groundwater samples were divided accordingly. Appendix Table B-1 indicates which soil samples fall into each sub-area. For groundwater, location AA-O-1 falls within the boundaries of Site O, and is therefore combined with potential soil risks from Site O. Leachate location L-O-1 is located in Site O (North). Groundwater location AA-Q-6 is located in Site Q (South), and leachate location L-Q-1 is located in Site Q (North). Site R was evaluated as one area; therefore, both groundwater location AA-R-1 and leachate location L-R-1 fall within this area. Because the exposure assumptions for the receptors exposed to groundwater/leachate assume that the receptor receives a full daily dose from each area, having two groundwater/leachate locations in one area in effect double counts the receptor's potential risks from groundwater/leachate. To avoid this issue, the total tables for Site R present the potential risks from both locations, but uses the higher risk in the total.

6.3.1 Indoor Industrial Worker

Potential carcinogenic risks for the RME scenario are presented in Table 6-1, and the potential HIs for the RME scenario are presented in Table 6-2. Risks and HIs for the MLE scenario are presented in Tables 6-11 and 6-12, respectively. The indoor industrial worker is assumed to be exposed to COPCs in groundwater via inhalation of constituents volatilized into indoor air.

As indicated in Table 6-1, the potential risks for the indoor industrial worker (RME) are within or below the USEPA target risk range of 10^{-4} to 10^{-6} for all sites. Table 6-11 indicates that the potential risks for the MLE scenario are below the USEPA target risk range of 10^{-4} to 10^{-6} for all sites.

Table 6-2 indicates that the potential HIs for the indoor industrial worker (RME) are below the target HI of 1 in each area. Table 6-12 indicates that the HIs for the indoor industrial worker in the MLE scenario are also below 1 in each area.

6.3.2 Outdoor Industrial Worker

Potential carcinogenic risks for the RME scenario are presented in Table 6-3, and the potential HIs for the RME scenario are presented in Table 6-4. Risks and HIs for the MLE scenario are presented in Tables 6-13 and 6-14, respectively. The outdoor industrial worker is assumed to be exposed to COPCs in surface soil via incidental ingestion and dermal contact, to COPCs in combined soil via inhalation of volatiles and particulates in outdoor air, and to COPCs in groundwater via inhalation of constituents volatilized into outdoor air.

As indicated in Table 6-3, the potential risk for the outdoor industrial worker (RME) for all areas is within the USEPA target risk range of 10^{-4} to 10^{-6} with the exception of Site O (North), Site R and Site S. Table 6-13 indicates that the potential risks for the MLE scenario for all areas are also within or

below the USEPA target risk range of 10^{-4} to 10^{-6}, with the exception of Site O (North) and Site R, which exceed the range.

Table 6-4 indicates that the potential HIs for the outdoor industrial worker (RME) for four areas are below the target HI of 1. Site O, Site O (North), Site R and Site S have HIs above 1. The HIs for the outdoor industrial worker for the MLE scenario presented in Table 6-14 are below 1 for six areas and above 1 in Site O (North) and Site S.

6.3.3 Construction Worker

Potential carcinogenic risks for the RME scenario are presented in Table 6-5, and the potential HIs for the RME scenario are presented in Table 6-6. Risks and HIs for the MLE scenario are presented in Tables 6-15 and 6-16, respectively. The construction worker is assumed to be exposed to COPCs in combined soil via incidental ingestion and dermal contact, inhalation of particulate matter in excavation dust, and inhalation of COPCs in combined soil that may volatilize to outdoor air. The construction worker is also assumed to be exposed to COPCs in groundwater or leachate in an excavation trench via incidental ingestion and dermal contact and inhalation of constituents volatilized into excavation air. Groundwater is evaluated as a direct contact medium for the construction worker only where it is present at less than 15 feet bgs.

As indicated in Table 6-5, the potential risk for the construction worker (RME) for all areas is below or within the USEPA target risk range of 10^{-4} to 10^{-6}, with the exception of Site O (North) and Site R, which exceed the range. Table 6-15 indicates that the potential risks for the MLE scenario are also below or within the USEPA target risk range of 10^{-4} to 10^{-6}, with the exception of Site R, which exceeds the range.

Table 6-6 indicates that the potential HIs for the construction worker (RME) are below the target HI of 1 in Site P, Site Q (Central), and Site Q (South), and above 1 in Site O, Site O (North), Site Q (North), Site R and Site S. The HI for the construction worker for the MLE scenario presented in Table 6-16 is below 1 for Site P, Site Q (Central), Site Q (South), and Site S, and above 1 in Site O, Site O (North), Site Q (North) and Site R.

The evaluation of potential exposure by the construction worker to lead identified as a COPC in shallow groundwater in Site O is presented in Appendix O. As the evaluation of lead is conducted using the arithmetic mean concentration, this evaluation applies to both the RME and MLE scenarios. The results indicate that the predicted blood lead level for this receptor (2.21 ug/dl) is below regulatory target levels (Appendix O).

6.3.4 Trespassing Teen

Potential carcinogenic risks for the RME scenario are presented in Table 6-7, and the potential HIs for the RME scenario are presented in Table 6-8. Risks and HIs for the MLE scenario are presented in Tables 6-17 and 6-18, respectively. The trespassing teen is assumed to be exposed to COPCs in surface soil via incidental ingestion, dermal contact, and inhalation of particulates, and to COPCs in combined soil via inhalation of volatiles, to COPCs in groundwater via inhalation of constituents volatilized into outdoor air, to COPCs in surface water via incidental ingestion and dermal contact, and to COPCs in sediment via incidental ingestion and dermal contact.

As indicated in Table 6-7, the potential risk for the trespassing teen (RME) is below or within the USEPA target risk range of 10^{-4} to 10^{-6} with the exception of Site O (North), which was above the range. Table 6-17 indicates that the potential risks for the MLE scenario are below or within the USEPA target risk range of 10^{-4} to 10^{-6}.

Table 6-8 indicates that the potential HI for the trespassing teen (RME) is below the target HI of 1 in each area except Site O (North) and Site S, where the HIs exceed 1. The HIs for the trespassing teen in the MLE scenario presented in Table 6-18 are below 1 for all areas with the exception of Site O (North).

The evaluation of potential exposure by the trespassing teen to lead identified as a COPC in Site Q Pond surface water is presented in Appendix O. As the evaluation of lead is conducted using the arithmetic mean concentration, this evaluation applies to both the RME and MLE scenarios. The results indicate that the predicted blood lead level for this receptor (2.23 ug/dl) is below regulatory target levels (Appendix O).

6.3.5 Recreational Fisher

Potential carcinogenic risks for the RME scenario are presented in Table 6-9, and the potential HIs for the RME scenario are presented in Table 6-10. Risks and HIs for the MLE scenario are presented in Tables 6-19 and 6-20, respectively. The recreational fisher is assumed to be exposed to COPCs in sediment via incidental ingestion and dermal contact, to COPCs in surface water via incidental ingestion and dermal contact, and to COPCs in consumed fish fillet.

No COPCs were identified in sediment in the Site Q Pond. COPCs were identified in surface water and fish fillet in both the Site Q Pond and the Mississippi River. Buffalo fish fillet data were available from the following areas of the Mississippi River: the PDA, the DDA, and the UDA, as described in Section 3.0. Excluding the upstream or reference sampling location (R-1), surface water and sediment data are available from 5 areas of the Mississippi River (locations R-2 through R-6).

Surface water and sediment risks for the recreational fisher were calculated for the river in total, not for individual areas within the river. Therefore, the total potential surface water and sediment risks were totaled with the potential risks associated with consumption of buffalo fish fillet in the PDA, DDA and UDA. In the Site Q Pond, two types of fish fillet were evaluated. Therefore, two separate risk estimates were calculated for the Site Q Pond, one for black bullhead fillet and one for carp fillet. The potential surface water risk was combined with the fillet risk in each case to derive the total potential risk for the recreational fisher.

As indicated in Table 6-9, the potential risk for the recreational fisher (RME) is within the USEPA target risk range of 10^{-4} to 10^{-6} for all three areas of the Mississippi River. Potential risks in the Site Q Pond exceed the risk range for both carp fillet and black bullhead fillet. Table 6-19 indicates that the potential risks for the MLE scenario are below or within the USEPA target risk range of 10^{-4} to 10^{-6}.

Table 6-10 indicates that the potential HI for the recreational fisher (RME) is below the target HI of 1 for all three areas of the Mississippi River. Potential HIs in the Site Q Pond exceed the target HI for both carp fillet and black bullhead fillet. The HIs for the recreational fisher in the MLE scenario presented in Table 6-20 are below the target HI of 1 for all three areas of the Mississippi River. Potential MLE HIs in the Site Q Pond exceed the risk range for both carp fillet and black bullhead fillet.

The evaluation of potential exposure by the recreational fisher to lead identified as a COPC in Site Q Pond surface water is presented in Appendix O. As the evaluation of lead is conducted using the arithmetic mean concentration, this evaluation applies to both the RME and MLE scenarios. The results indicate that the predicted blood lead level for this receptor (2.23 ug/dl) is below regulatory target levels (Appendix O).

6.4 Risk Characterization Results by Site

Exceedances of USEPA's target risk range of 10^{-6} to 10^{-4} and target HI of 1 are identified by site and receptor in the following sections. Where HI exceedances are identified, a target endpoint analysis was conducted, as presented in Appendix N. COPCs that significantly contribute to an exceedance of the 10^{-4} risk level are identified as COCs. COPCs that significantly contribute to an exceedance of the target endpoint HI of 1 are also identified as COCs. Where COCs are identified, information regarding current site use is discussed for the receptors of interest.

6.4.1 Site O

As shown on Table 6-21, all potential risks calculated for both the RME and MLE receptor scenarios for Site O are within or below the USEPA's target risk range of 10^{-6} to 10^{-4}.

As shown on Table 6-23, there are exceedances of the target HI of 1 for several receptor scenarios. The target endpoint analyses are presented in Appendix N. A summary is provided below. For each

receptor, the total HI and COCs are identified (target endpoint, HQ, medium, pathway and EPC are identified for each COC):

- Outdoor Industrial Worker: RME (HI = 4.18)
  - COC: Xylenes (neurological effects, HQ = 3.23, combined soil, inhalation of VOCs, EPC = 14,000 mg/kg)

- Construction/Utility Worker: RME (HI = 21.4)
  - COC: Chlorobenzene (liver effects, HQ = 1.0, combined soil, inhalation of VOCs, EPC = 760 mg/kg)
  - COC: Xylenes (neurological effects, HQ = 14.2, combined soil, inhalation of VOCs, EPC = 14,000 mg/kg)
  - COC: Benzene (immune effects, HQ = 3.16, combined soil, inhalation of VOCs, EPC = 500 mg/kg)
  - COC: PCBs (immune, skin and eye effects, HQ = 2.53, combined soil, ingestion and dermal contact, EPC = 298 mg/kg)

- Construction/Utility Worker: MLE (1.27)
  - COCs: none identified based on target endpoint analysis.

Site O is located in an isolated area and is not currently used. As discussed in Section 2.3.1, the former ABRTF lagoons are covered and vegetated, and the vegetation is mowed periodically during the warmer months of the year. Therefore, the potential risks presented above for workers represent the future scenario (the only activity under the current scenario is mowing, which is limited in frequency and duration). The receptor assumptions are extremely conservative for this area, as it is unlikely that an outdoor industrial worker would access the site for 190 days per year. It is also unlikely that construction/utility work would occur in this area for the assumed 40 day period (RME) or 20 day period (MLE).

6.4.2 Site O (North)

As shown in Tables 6-21 and 6-23, there are exceedances of the USEPA's target risk range of 10^{-6} to 10^{-4} and target hazard index of 1 for several Site O (North) receptor scenarios. The target endpoint analyses are presented in Appendix N. A summary is provided below. For each receptor the total risk or total HI is presented. COCs are identified for both potential carcinogenic and noncarcinogenic effects. For COCs identified based on potential carcinogenic effects, the risk level, medium, pathway and EPC are identified. For potential noncarcinogenic effects, the target endpoint, HQ, medium, pathway and EPC are identified for each COC.

- Outdoor Industrial Worker: RME (Risk = 6.28E-04)

- COC: Total PCBs (Risk = 1.66E-04, surface soil, ingestion and dermal contact, EPC = 709 mg/kg)
- COC: Dioxin TEQ (Risk = 4.59E-04, surface soil, ingestion and dermal contact, EPC = 0.0508 mg/kg)

- Outdoor Industrial Worker: RME (HI = 13.3)
  - COC: Xylenes (neurological effects, HQ = 1.23, combined soil, inhalation of VOCs, EPC = 3900 mg/kg)
  - COC: Total PCBs (immune, skin and eye effects, HQ = 11.6, surface soil, ingestion and dermal contact, EPC = 709 mg/kg)

- Outdoor Industrial Worker: MLE (Risk = 1.13E-04)
  - COC: Dioxin TEQ (Risk = 8.32E-05, surface soil, ingestion and dermal contact, EPC = 0.0508 mg/kg)

- Outdoor Industrial Worker: MLE (HI = 8)
  - COC: Total PCBs (immune, skin and eye effects, HQ = 7.27, surface soil, ingestion and dermal contact, EPC = 709 mg/kg)

- Construction/Utility Worker: RME (Risk = 1.36E-04)
  - COC: Dioxin TEQ (Risk = 1.15E-04, combined soil, ingestion and dermal contact, EPC = 0.0508 mg/kg)

- Construction/Utility Worker: RME (HI = 34.8)
  - COC: Xylenes (neurological effects, HQ = 3.95, combined soil, inhalation of VOCs, EPC = 3900 mg/kg)
  - COC: Total PCBs (immune, skin and eye effects, HQ = 28.5, combined soil and leachate, ingestion and dermal contact, EPC (combined soil) = 3030 mg/kg), EPC (leachate) = 0.055 mg/L)

- Construction/Utility Worker: MLE (HI = 8.2)
  - COC: Total PCBs (immune, skin and eye effects, HQ = 6.89, combined soil and leachate, ingestion and dermal contact, EPC (combined soil) = 1780 mg/kg), EPC (leachate) = 0.055 mg/L)

- Trespassing Teenager: RME (Risk = 1.17E-04)
  - COC: Dioxin TEQ (Risk = 8.62E-05, surface soil, ingestion and dermal contact, EPC = 0.0508 mg/kg)

- Trespassing Teenager: RME (HI = 4.97)
  - COC: Total PCBs (immune, skin and eye effects, HQ = 4.86, surface soil, ingestion and dermal contact, EPC = 709 mg/kg)

- Trespassing Teenager: MLE (HI = 1.34)
  - COC: Total PCBs (immune, skin and eye effects, HQ = 1.33, surface soil, ingestion and dermal contact, EPC = 709 mg/kg)

Site O (North) is located in an isolated area and is not currently used. As discussed in Section 2.3.1, the former ABRTF lagoons are covered and vegetated, and the vegetation is mowed periodically during the warmer months of the year. Therefore, the potential risks presented above for workers represent the future scenario (the only activity under the current scenario is mowing, which is limited in frequency and duration).. The receptor assumptions are extremely conservative for this area, as it is unlikely that an outdoor industrial worker would access the site for 190 days per year. It is also unlikely that construction/utility work would occur in this area for the assumed 40 day period (RME) or 20 day period (MLE). Due to the isolated nature of the site, it is unlikely that trespassers would enter the site as frequently as assumed (26 days RME, 13 days MLE).

6.4.3 Site P

As shown on Tables 6-21 and 6-23, all potential risks and HIs calculated for both the RME and MLE receptor scenarios for Site P are within or below the USEPA's target risk range of 10^{-6} to 10^{-4} and below the target HI of 1.

6.4.4 Site Q (North)

As shown on Table 6-21, all potential risks calculated for both the RME and MLE receptor scenarios for Site Q (North) are within or below the USEPA's target risk range of 10^{-6} to 10^{-4}.

As shown in Table 6-23, there are exceedances of the USEPA's target hazard index of 1 for two Site Q (North) receptor scenarios. The target endpoint analyses are presented in Appendix N. A summary is provided below. For each receptor the total HI is presented. COCs are identified for potential noncarcinogenic effects. For each COC, the target endpoint, HQ, medium, pathway and EPC are identified.

- Construction/Utility Worker: RME (HI = 11.7)
  - COC: 2,4,6-Trichlorophenol (reproductive effects, HQ = 8.43, leachate, ingestion and dermal contact, EPC = 12.5 mg/L)
  - COC: 2,4-Dichlorophenol (immune effects, HQ = 1.82, leachate, ingestion and dermal contact, EPC = 170 mg/L)

- Construction/Utility Worker: MLE (HI = 5.55)
  - COC: 2,4,6-Trichlorophenol (reproductive effects, HQ = 4.21, leachate, ingestion and dermal contact, EPC = 12.5 mg/L)
  - COC: 2,4-Dichlorophenol (immune effects, HQ = 0.907, leachate, ingestion and dermal contact, EPC = 170 mg/L)

A 10-acre site on Site Q (North) is currently used by Rivercity Landscape Supply as a bulk storage terminal for lawn and garden products. Raw landscape products such as mulch, rock and soil are processed and packed on this portion of the site. Access to some portions of the site is restricted by fencing and gates. Other parts of the site have unrestricted access. As noted above, potential risk exceedances for this area were identified for the construction/utility worker, not for the outdoor industrial worker. Therefore, these are potential risks for a future construction/utility worker, as there is no current excavation work in this area.

6.4.5 Site Q (Central)

As shown on Tables 6-21 and 6-23, all potential risks and HIs calculated for both the RME and MLE receptor scenarios for Site Q (Central) are within or below the USEPA's target risk range of 10^{-6} to 10^{-4} and below the target HI of 1.

6.4.6 Site Q (South)

As shown on Tables 6-21 and 6-23, all potential risks and HIs calculated for both the RME and MLE receptor scenarios for Site Q (South) are within or below the USEPA's target risk range of 10^{-6} to 10^{-4} and below the target HI of 1.

6.4.7 Site Q Pond

As shown in Tables 6-21 and 6-23, there are exceedances of the USEPA's target risk range of 10^{-6} to 10^{-4} and target hazard index of 1 for several Site Q Pond receptor scenarios, due to the assumed ingestion of fish scenario. The target endpoint analyses are presented in Appendix N. A summary is provided below. For each receptor the total risk or total HI is presented. COCs are identified for both potential carcinogenic and noncarcinogenic effects. For COCs identified based on potential carcinogenic effects, the risk level, medium, pathway and EPC are identified. For potential noncarcinogenic effects, the target endpoint, HQ, medium, pathway and EPC are identified for each COC.

- Recreational Fisher - black bullhead fillet: RME (Risk = 5.49E-04)
  - COC: Total PCBs (Risk = 3.79E-04, black bullhead fillet, ingestion, EPC = 3.87 mg/kg)
  - COC: Dieldrin (Risk = 7.84E-05, black bullhead fillet, ingestion, EPC = 0.1 mg/kg)

- Recreational Fisher - black bullhead fillet: RME (HI = 22.9)
  - COC: Total PCBs (immune, skin and eye effects, HQ = 22.1, black bullhead fillet, ingestion, EPC = 3.87 mg/kg)

- Recreational Fisher - black bullhead fillet: MLE (HI = 2.86)
  - COC: Total PCBs (immune, skin and eye effects, HQ = 2.76, black bullhead fillet, ingestion, EPC = 3.87 mg/kg)

- Recreational Fisher - carp fillet: RME (Risk = 1.45E-03)
  - COC: Total PCBs (Risk = 9.8E-04, carp fillet, ingestion, EPC = 10 mg/kg)
  - COC: Dieldrin (Risk = 1.49E-04, carp fillet, ingestion, EPC = 0.19 mg/kg)
  - COC: Dioxin TEQ (Risk = 1.35E-04, carp fillet, ingestion, EPC = 1.84E-05 mg/kg)
  - COC: Benzo(a)pyrene (Risk = 6.44E-05, carp fillet, ingestion, EPC = 0.18 mg/kg)
  - COC: Arsenic (Risk = 6.02E-05, carp fillet, ingestion, EPC = 0.82 mg/kg)

- Recreational Fisher - carp fillet: RME (HI = 58)
  - COC: Total PCBs (immune, skin and eye effects, HQ = 57.1, carp fillet, ingestion, EPC = 10 mg/kg)

- Recreational Fisher - carp fillet: MLE (HI = 7.25)
  - COC: Total PCBs (immune, skin and eye effects, HQ = 7.14, carp fillet, ingestion, EPC = 10 mg/kg)

Fishing can occur in the Site Q Ponds; however, as noted in Section 2.3.3, fish are only present as a result of flood events. After the ponds dry out, fish are not reintroduced until another flood event, although water may collect in the ponds from precipitation. It is therefore extremely unlikely that a recreational fisher would be able to obtain 22 fish meals per year from the Site Q Ponds, as assumed by the RME scenario.

6.4.8 Site R

As shown in Tables 6-21 and 6-23, there are exceedances of the USEPA's target risk range of 10^{-6} to 10^{-4} and target hazard index of 1 for several Site R receptor scenarios. The target endpoint analyses are presented in Appendix N. A summary is provided below. For each receptor the total risk or total HI is presented. COCs are identified for both potential carcinogenic and noncarcinogenic effects. For COCs identified based on potential carcinogenic effects, the risk level, medium, pathway and EPC are identified. For potential noncarcinogenic effects, the target endpoint, HQ, medium, pathway and EPC are identified for each COC.

- Outdoor Industrial Worker: RME (Risk = 1.32E-03)
  - COC: Trichloroethylene (Risk = 1.31E-03, combined soil and leachate, inhalation of volatiles, EPC combined soil = 2200 mg/kg, EPC leachate = 150 mg/L)

- Outdoor Industrial Worker: RME (HI = 1.11)
  - COCs: none identified based on target endpoint analysis.

- Outdoor Industrial Worker: MLE (Risk = 1.36E-04)
  - COC: Trichloroethylene (Risk = 1.34E-04, leachate, inhalation of volatiles, EPC leachate = 150 mg/L)

- Construction/Utility Worker: RME (Risk = 9.79E-04)
  - COC: Trichloroethylene (Risk = 7.56E-04, combined soil and leachate, ingestion, dermal contact and inhalation, EPC combined soil = 2200 mg/kg mg/kg, EPC leachate = 150 mg/L)
  - COC: Total PCBs (Risk = 1.17E-04, leachate, ingestion and dermal contact, EPC = 3.98 mg/L)
  - COC: 1,2-Dichloroethane (Risk = 5.54E-05, leachate, inhalation of volatiles, EPC = 50 mg/L)

- Construction/Utility Worker: RME (HI = 232)
  - COC: Total PCBs (immune, skin and eye effects, HQ = 204, leachate, ingestion and dermal contact, EPC = 3.98 mg/L)
  - COC: Trichloroethylene (liver effects, HQ = 12.7, combined soil and leachate, ingestion and dermal contact; neurological effects, HQ = 3.75, combined soil and leachate, inhalation of volatiles; EPC combined soil = 2200 mg/kg, EPC leachate = 150 mg/L)
  - COC: 1,2-Dichloroethane (liver, kidney, GI and skin effects, HQ = 8.42, leachate, inhalation of volatiles, EPC leachate = 50 mg/L)
  - COC: Mercury (immune effects, HQ = 0.747, combined soil, ingestion and dermal contact, EPC = 699 mg/kg)

- Construction/Utility Worker: MLE (Risk = 3.17E-04)
  - COC: Trichloroethylene (Risk = 2.19E-04, leachate, inhalation of volatiles, EPC leachate = 150 mg/L)

- Construction/Utility Worker: MLE (HI = 112)
  - COC: Total PCBs (immune, skin and eye effects, HQ = 102, leachate, ingestion and dermal contact, EPC = 3.98 mg/L)

- COC: Trichloroethylene (liver effects, HQ = 5.76, leachate, ingestion and dermal contact; EPC leachate = 150 mg/L)
- COC: 1,2-Dichloroethane (liver, kidney, GI and skin effects, HQ = 2.53, leachate, inhalation of volatiles, EPC leachate = 50 mg/L)

Site R is a closed industrial-waste disposal area owned by Solutia, Inc. The site is not currently used. Access to Site R is restricted by fencing and is monitored by Solutia plant personnel. Therefore, the potential risks presented above represent the future scenario. It is unlikely that an outdoor industrial worker will access the site 190 days per year in the future. Excavation is not allowed at Site R unless a permit is obtained from the plant and appropriate measures are taken to protect workers undertaking intrusive activities. Therefore, the risk assessment for the construction/utility worker represents a very conservative scenario.

6.4.9 Site S

As shown in Tables 6-21 and 6-23, there are exceedances of the USEPA's target risk range of 10^{-6} to 10^{-4} and target hazard index of 1 for several Site S receptor scenarios. The target endpoint analyses are presented in Appendix N. A summary is provided below. For each receptor the total risk or total HI is presented. COCs are identified for both potential carcinogenic and noncarcinogenic effects. For COCs identified based on potential carcinogenic effects, the risk level, medium, pathway and EPC are identified. For potential noncarcinogenic effects, the target endpoint, HQ, medium, pathway and EPC are identified for each COC.

- Outdoor Industrial Worker: RME (Risk = 3.24E-04)
  - COC: Total PCBs (Risk = 2.37E-04, surface soil, ingestion and dermal contact, EPC = 1010 mg/kg)

- Outdoor Industrial Worker: RME (HI = 16.9)
  - COCs: Total PCBs (immune, skin and eye effects, HQ = 16.6, surface soil, ingestion and dermal contact, EPC = 1010 mg/kg)

- Outdoor Industrial Worker: MLE (HI = 5.23)
  - COCs: Total PCBs (immune, skin and eye effects, HQ = 5.17, surface soil, ingestion and dermal contact, EPC = 504 mg/kg)

- Construction/Utility Worker: RME (HI = 9.19)
  - COCs: Total PCBs (immune, skin and eye effects, HQ = 8.56, combined soil, ingestion and dermal contact, EPC = 1010 mg/kg)

- Trespasser: RME (HI = 6.96)
  - COCs: Total PCBs (immune, skin and eye effects, HQ = 6.91, surface soil, ingestion and dermal contact, EPC = 1010 mg/kg)

The 1-acre site is currently not used. The northern portion of the site is grassed, and its southern portion is covered with gravel and fenced. Therefore, the potential risks presented above for workers represent the future scenario only, and the exposure frequency assumptions are very conservative given the small size of the site. Additionally, due to the fencing of portions of the site and the small size, trespassers are unlikely to access the site frequently.

6.4.10 Mississippi River

As shown on Tables 6-22 and 6-24, all potential risks and HIs calculated for both the RME and MLE receptor scenarios for the Mississippi River recreational fisher and trespassing teenage scenarios are within or below the USEPA's target risk range of 10^{-6} to 10^{-4} and below the target HI of 1.

6.4.11 COC Summary

The COCs identified above are summarized in Table 6-25 and in Figure 6-1.

6.5 Uncertainty Analysis

Within any of the four steps of the human health risk assessment process, assumptions must be made due to a lack of absolute scientific knowledge. Some of the assumptions are supported by considerable scientific evidence, while others have less support. Every assumption introduces some degree of uncertainty into the risk assessment process. Regulatory risk assessment methodology requires that conservative assumptions be made throughout the risk assessment to ensure that public health is protected. Therefore, when all of the assumptions are combined, it is much more likely that risks are overestimated rather than underestimated.

The assumptions that introduce the greatest amount of uncertainty in this risk assessment are discussed in this section. They are discussed in qualitative terms, because for most of the assumptions there is not enough information to assign a numerical value to the uncertainty that can be factored into the calculation of risk.

6.5.1 Selection of Constituents of Potential Concern

In the Hazard Identification step, information on constituents detected at the site is combined with criteria quantifying their potential toxicity to obtain a subset of constituents for quantitative evaluation in the risk assessment, the COPCs. The goal is to include in the quantitative portion of the risk

assessment those constituents that are the most toxic, prevalent, environmentally-persistent, and mobile. The selection of the COPCs forms the basis of the quantitative risk assessment.

Generally in the site characterization phase of the site assessment, knowledge of past and current land use is used to determine which analytical parameters are analyzed and what analytical methods are employed for the detection of constituents in the relevant environmental media at the site. However, for Sauget Area 2, the knowledge of past and current industrial practices was not used to limit the analyte list. Instead, the majority of environmental samples were analyzed for a full suite of constituents including VOCs, SVOCs, metals, cyanide, PCBs, pesticides, herbicides, dioxins and furans, as detailed in Section 3.1.2.

In the Hazard Identification process, it is assumed that only those constituents detected are actually present at the site. However, it is possible that constituents not on the analyte list may be present at the site. Should this be the case, site risks may be underestimated depending on the nature of the constituents not included in the sample analyses. However, the full suite of USEPA analyte lists were used and are as inclusive as possible of constituents used in industry that are of potential public health concern. Therefore, it is unlikely that constituents not included on the analyte list would be present at the site at concentrations that would pose a risk to public health.

A subset of constituents detected at a site is generally selected for quantitative analysis for several reasons. Some constituents detected at a site may be naturally occurring and not related to site use. Other constituents may be present at concentrations that can be assumed with reasonable assurance not to pose a risk to human health. A review of the results of risk assessments demonstrate that in most cases risks are attributable only to one or a few constituents, and that many of the constituents quantitatively evaluated do not contribute significantly to total risk estimates (USEPA, 1993a). The screening process is conducted to identify the COPCs that may contribute the greatest to potential risk. The screening process used here is conservative. Although the excluded constituents may pose a finite level of risk, that risk would contribute negligibly to the total site risk. Therefore, not evaluating the excluded constituents will not measurably affect the numerical estimates of hazard or risk, and thus not affect remedial decision-making at the site.

6.5.1.1 COPCs for Groundwater Based on IEPA Groundwater Standards

COPCs for groundwater were selected using drinking water criteria, even though groundwater in the area is prohibited by ordinances from the Villages of Sauget and Cahokia (see Appendix P). Therefore, the selection of COPCs for groundwater was very conservative.

6.5.1.2 COPCs for Air

Air samples were collected in the vicinity of Sites P, Q, and R and analyzed for VOCs, SVOCs, PCBs, dioxins, and metals. Air samples were collected over a 24-hour period during hot, dry conditions (August, 2002) conducive to air emissions of dust and volatiles. These data are compared to chronic screening levels as discussed in the HHRA Workplan (Appendix A). However, due to the one-time sample collection, these data are not quantitatively evaluated in the HHRA. As noted in the HHRA Workplan, the air pathway is addressed in the HHRA by modeling potential sources in soil, waste and groundwater (see Section 5.0). Appendix G presents the relatively few COPCs identified for the air samples. Benzene was identified as a COPC in every air sample. The screening level for benzene in air is very low (the Region 9 PRG is 0.23 ug/m^3). The site sample results range from 0.37 ug/m^3 to 7.8 ug/m^3. These results are consistent with average outdoor air levels of benzene across the US of 9.1 ug/m^3 (Shah and Singh, 1988).

6.5.2 Toxicity Assessment

The purpose of the toxicity assessment is to identify the types of adverse health effects a constituent may potentially cause and to define the relationship between the dose of a constituent and the likelihood or magnitude of an adverse effect (response). Risk assessment methodologies typically divide potential health effects of concern into two general categories: effects with a threshold (noncarcinogenic) and effects assumed to be without a threshold (potentially carcinogenic). Toxicity assessments for both of these types of effects share many of the same sources of uncertainty. To compensate for these uncertainties, USEPA has developed RfDs and CSFs that are biased to overestimate rather than under-estimate human health risks. Several of the more important sources of uncertainty and the resulting biases are discussed below.

6.5.2.1 Animal-to-Human Extrapolation in Noncarcinogenic Dose-Response Evaluation

For many constituents, animal studies provide the only reliable information on which to base an estimate of adverse human health effects. Extrapolation from animals to humans introduces a great deal of uncertainty into the risk characterization. In most instances, it is not known how differently a human may react to the constituent compared to the animal species used to test the constituent. If a constituent's fate and the mechanisms by which it causes adverse effects are known in both animals and humans, uncertainty is reduced. When the fate and mechanism for the constituent are unknown, uncertainty increases.

The procedures used to extrapolate from animals to humans involve conservative assumptions and incorporate uncertainty factors such that overestimation of effects in humans is more likely than underestimation. When data are available from several species, the lowest dose that elicits effects in

the most sensitive species is used for the calculation of the RfD. To this dose are applied uncertainty factors, generally of 1 to 10 each, to account for intraspecies variability, interspecies variability, study duration, and/or extrapolation of a low effect level to a no effect level. Thus, most reference doses used in risk assessment are 100- to 10,000-fold lower than the lowest effect level found in laboratory animals.

Nevertheless, because the fate of a constituent can differ in animals and humans, it is possible that animal experiments will not reveal an adverse effect that would manifest itself in humans. This can result in an underestimation of the effects in humans. The opposite may also be true: effects observed in animals may not be observed in humans, resulting in an overestimation of potential adverse human health effects.

6.5.2.2 Evaluation of Carcinogenic Dose-Response

Significant uncertainties exist in estimating dose-response relationships for potential carcinogens. These are due to experimental and epidemiologic variability, as well as uncertainty in extrapolating both from animals to humans and from high to low doses. Three major issues affect the validity of toxicity assessments used to estimate potential excess lifetime cancer risks: (1) the selection of a study (i.e., data set, animal species, matrix the constituent is administered in) upon which to base the calculations, (2) the conversion of the animal dose used to an equivalent human dose, and (3) the mathematical model used to extrapolate from experimental observations at high doses to the very low doses potentially encountered at the site.

Study Selection

Study selection involves the identification of a data set (experimental species and specific study) that provides sufficient, well-documented dose-response information to enable the derivation of a valid CSF. Human data (e.g., from epidemiological studies) are preferable to animal data, although adequate human data sets are relatively uncommon. Therefore, it is often necessary to seek dose-response information from a laboratory species, ideally one that biologically resembles humans (e.g., with respect to metabolism, physiology, and pharmacokinetics), and where the route of administration is similar to the expected mode of human exposure (e.g., inhalation and ingestion). When multiple valid studies are available, the USEPA generally bases CSFs on the one study and site that show the most significant increase in tumor incidence with increasing dose. In some cases this selection is done in spite of significant decreases with increasing dose of tumor incidence in other organs and total tumor incidence. Consequently, the current study selection criteria are likely to lead to overestimation of potential cancer risks in humans.

Interspecies Dose Conversion

The USEPA derivation of human equivalent doses by conversion of doses administered to experimental animals requires the assumption that humans and animals are equally sensitive to the toxic effects of a substance, if the same dose per unit body surface area is absorbed by each species. Although such an assumption may hold for direct-acting genotoxicants, it is not necessarily applicable to many indirect acting carcinogens and likely overestimates potential risk by a factor of 6 to 12 depending on the study species (USEPA, 1992e). Further assumptions for dose conversions involve standardized scaling factors to account for differences between humans and experimental animals with respect to life span, body size, breathing rates, and other physiological parameters. In addition, evaluation of risks associated with one route of administration (e.g., inhalation) when tests in animals involve a different route (e.g., ingestion) requires additional assumptions with corresponding additional uncertainties. Although USEPA has formally changed its default position for scaling animal data to humans from a per surface area to a per body weight basis (USEPA, 1992e), changes to existing CSF will only be made when the USEPA commits to a formal review of a constituent's dose-response profile, and as of this writing, few have been incorporated.

High-to-Low Dose Extrapolation

The concentration of constituents to which people are potentially exposed at industrial sites is usually much lower than the levels used in the studies from which dose-response relationships are developed. Estimating potential health effects at such sites, therefore, requires the use of models that allow extrapolation of health effects from high experimental doses in animals to low environmental doses. These models are generally statistical in character and have little or no biological basis. Thus the use of a model for dose extrapolation introduces uncertainty in the dose-response estimate. In addition, these models contain assumptions that may also introduce a large amount of uncertainty. Generally the models have been developed to err on the side of over-estimating rather than under-estimating potential health risks.

Although USEPA has published draft guidance that allows consideration of other dose extrapolation models (USEPA, 2003d), the majority of USEPA CSFs are derived using the upper 95% confidence limit of the slope predicted by the linearized multi-stage (LMS) model used to extrapolate low dose risk from high dose experimental data. USEPA recognizes that this method produces very conservative risk estimates, however, LMS remains as the default model for linear extrapolation. USEPA states that the upper-bound estimate generated by the LMS model leads to a plausible upper limit to the risk that is consistent with some of the proposed mechanisms of carcinogenesis. The true risk, however, is unknown and may be as low as zero. The LMS model is very conservative as it assumes strict linearity between the lowest dose that produced an effect and zero dose. However, the body has many mechanisms to detoxify constituents, especially at low doses, and many mechanisms to repair damages if they should occur. Therefore, many scientists believe that most constituents can cause cancer only above a "threshold" dose. This phenomenon of a threshold for carcinogenic activity has recently been demonstrated for chloroform (as reviewed in Bradley, 1996).

An established policy does not yet exist for using "most likely" or "best" estimates of risk within the range of uncertainty defined by the upper- and lower-limit estimates defined by the models. USEPA has published a draft version of its cancer guidelines (USEPA, 2003d). These draft guidelines allow for much greater use of mechanistic data, however, the guidelines have not yet been finalized and it will take time before USEPA can apply the new methodology to existing CSFs.

6.5.3 Exposure Assessment

Exposure assessment consists of three basic steps: 1) development of exposure scenarios, (2) estimation of exposure point concentrations, and 3) estimation of human dose.

Exposure Scenarios

Exposure scenarios in a risk assessment are selected to be representative of potential exposures to COPCs in media that may be experienced by human receptors based on current and reasonably foreseeable land use. These exposure scenarios are developed for a hypothetical receptor, but one that would represent the RME scenario for the site. Therefore, exposure levels are assumed for these receptors, i.e., commercial/industrial, recreational, that are much greater than expected to occur in an actual population. The use of the MLE scenarios provides an estimate of exposures more likely to represent average exposures. The MLE risk estimates are used to put the RME risk estimates into context.

Estimation of Exposure Point Concentrations

Sample Statistics. Exposure to COPCs at the sites is best estimated by the use of the arithmetic mean concentration of a COPC in each medium. Because of the uncertainty associated with estimating the true average concentration at a site, the USEPA has required the use of the 95% UCL on the arithmetic mean as the EPC (USEPA, 2002a). Therefore, this is a very conservative estimate of the true arithmetic mean. RME EPCs in this risk assessment represent the lower of the maximum detected concentration or the 95% UCL on the mean (USEPA, 2002a). The appropriate UCL is selected based on the distribution of the dataset, as described in USEPA, 2002a and in Appendix I. Again to provide context, the MLE calculations have used the arithmetic mean concentration, not the upper bound, as the EPC. Note that in areas where there are fewer than 8 samples, the EPC was defaulted to the maximum detected concentration. This occurred for:

- Surface soil: Site O, Site O (North), Site P, Site Q (North), Site Q (Central), and Site S
- Combined soil: Site O, Site O (North), and Site S
- Fish tissue: River and Site Q Pond
- Leachate: Sites O, Q, and R

- Surface Water: Site Q Pond

Sample Location. In addition, the data used to calculate the EPCs are assumed to be representative of general site conditions. Sample locations in the sites were identified to be biased to represent worst-case site conditions.

Environmental Degradation. Finally, it is assumed that the EPCs calculated in the risk assessment based on current site conditions remain constant for the assumed exposure duration – for an industrial or residential scenario this is a period of 25 to 30 years. However, it is well known in the scientific community that constituents in the environment are subject to natural attenuation and biodegradation processes. Organic constituents are naturally degraded in the environment by a variety of processes (i.e., photodegradation, microbial activity, hydrolysis, etc.). USEPA has recognized the validity and utility of natural attenuation and biodegradation as a remedial option and has recently published guidance for its site-specific implementation (USEPA, 1997d). Environmental half-lives vary for specific constituents based on environmental conditions (i.e., presence of bacteria, pH, exposures to sunlight and oxygen), and there are respected literature sources of such information. However, environmental degradation is not typically accounted for in the calculation of risks for the site. This has likely resulted in an over-estimation of site risks.

Predicted EPCs. Models were used to predict the concentration of a volatile constituent in air based on its concentration in groundwater and in combined soil. Models were used to predict indoor air concentrations, outdoor air concentrations, and excavation trench air concentrations. Although assumptions are made about constituent behavior in each of these models, the assumptions used are conservative in that they tend to result in over-predictions rather than under-predictions of air concentrations.

Exposure Assumptions

When estimating potential human doses (i.e., intakes) from potential exposure to various media containing COPCs, several assumptions are made. Uncertainty may exist, for example, in assumptions concerning rates of ingestion, frequency and duration of exposure, and bioavailability of the constituents in the medium. Typically, when limited information is available to establish these assumptions, a conservative (i.e., health-protective) estimate of potential exposure is employed. Default exposure assumptions recommended by the USEPA are intended to be conservative and representative of an individual who consistently and frequently contacts environmental media at a site, a scenario that rarely occurs. Most individuals will contact media at non-site locations, while the risk assessment assumes that all exposure to environmental media will occur at the site. Moreover, it is often assumed that contact with environmental media occurs in the areas having the highest constituent concentrations for the entire exposure frequency/duration used in the risk assessment, due to both statistical handling of the data and the original sampling plan.

The assumptions regarding exposure frequency and duration are very conservative. For example, while the agency default for working tenure is 25 years, the average occupational tenure for an industrial/commercial worker is 4.2 years. The use of conservative assumptions is likely to lead to an overestimate of potential risk.

Per the USEPA-approved HHRA workplan, a meteorological factor was used in the risk assessment to account for the number of days when direct contact with soil or intrusive activities will not occur for receptors during inclement weather, i.e., when it is raining or snowing, when the ground is wet or frozen, or when snow or ice (32 degrees F) are covering the ground. This is not to say that workers or residents would not be outdoors on such days, only that the soil would not be available for significant contact either because it is wet or frozen. Thus, the exposure frequency was adjusted for these site-specific meteorological conditions. A meteorological factor of 24% was calculated (see Section 5.3.3). The meteorological factor was applied only to the outdoor industrial worker receptor (not to the indoor industrial worker, construction worker, trespassing teen, or recreational fisher receptors).

For the Site Q Pond, the RME recreational fisher receptor was assumed to ingest an average of 22 fish meals per year. However, the Site Q Ponds are ephemeral. Fish are present in the pond(s) only as a result of Mississippi River flood events; when the ponds dry up during dry weather, the fish die. This was the case during the SSP field program during the summer of 2002 - only one Site Q Pond had water and fish in it. It too subsequently dried out. Although at the time of the submission of this report there is a small amount of water in both ponds, its presence is due to heavy precipitation, and there are currently no fish in the ponds. Therefore, the assumption made for the RME receptor that the ponds can sustain a fish consumption rate of 22 fish meals per year is an overestimation of exposure.

6.5.4 Risk Characterization

The potential risk of adverse human health effects is characterized based on estimated potential exposures and potential dose-response relationships. Three areas of uncertainty are introduced in this phase of the risk assessment: the evaluation of potential exposure to multiple constituents, the combination of upper-bound exposure estimates with upper-bound toxicity estimates, and the risk to sensitive populations.

6.5.5 Risk from Multiple Constituents

Once potential exposure to and potential risk from each COPC is estimated, the total upper-bound potential risk posed by the site is determined by combining the estimated potential health risk from each of the COPC. Presently, potential carcinogenic effects are added unless evidence exists indicating that the COPC interact synergistically (a combined effect that is greater than a simple addition of potential individual effects) or antagonistically (a combined effect that is less than a simple addition of potential individual effects) with each other. For most combinations of constituents, little if

any evidence of interaction is available. Therefore, additivity is assumed. Although the IEPA TACO program provides a listing of groups of constituents that are considered to be additive in their carcinogenic potential, the USEPA approach of assuming additivity across all constituents was used in this risk assessment.

For noncarcinogenic effects, the Hazard Index (HI) should only be summed for constituents that have the same or similar toxic endpoints (USEPA, 1989a). The toxic endpoint is defined as the most sensitive noncarcinogenic health effect used to derive the RfD or other suitable toxicity value (USEPA, 1989a). Again, there is little evidence to suggest whether those COPCs associated with a common toxicity endpoint are additive, synergistic, antagonistic, or independent in terms of mechanism of action. Whether assuming additivity leads to an underestimation or overestimation of risk is unknown.

Combination of Several Upper-Bound Assumptions

Generally, the goal of a risk assessment is to estimate an upper-bound potential exposure and risk. Most of the assumptions about exposure and toxicity used in this evaluation are representative of statistical upper-bounds or even maxima for each parameter. The result of combining several such upper-bound assumptions is that the final estimate of potential exposure or potential risk is extremely conservative (health-protective).

This is best illustrated by a simple example. Assume that potential risk depends upon three variables (soil consumption rate, COPC concentration in soil and CSF). The mean, upper 95% bound and maximum are available for each variable.

One way to generate a conservative estimate of potential risk is to multiply the upper 95% bounds of the three parameters in this example. Doing so assumes that the 5% of the people who are most sensitive to the potential carcinogenic effects of a COPC will also ingest soil at a rate that exceeds the rate for 95% of the population, and that all the soil these people eat will have a constituent concentration that exceeds the concentration in 95% of the soil on site. The consequence of these assumptions is that the estimated potential risk is representative of 0.0125% of the population (0.05 x 0.05 x 0.05 = 0.000125 x 100 = 0.0125%). Put another way, these assumptions overestimate risks for 99.99% of the population or 9,999 out 10,000 people. Thus, the majority of people will have a much lower level of potential risk. The very conservative nature of the potential risks estimated by the risk assessment process is not generally recognized. In reality, the estimates are more conservative than outlined above, because usually more than three upper 95% assumptions are used to estimate potential risk(s).

Alternatively, if a single upper 95% assumption of the cancer slope factor is combined with average (50th percentile) assumptions for soil concentration and soil ingestion rate, the resulting estimates of potential risk still overpredict risk for 99% of the potentially exposed population. This is a conservative

and health protective approach that substantially overestimates the "average" level and even the reasonable maximum level of potential risk.

The risk assessment approach used here employed upper 95% bounds or maxima for most RME exposure and toxicity assumptions. Thus, it produces estimates of potential risk two to three orders of magnitude greater than the risk experienced by the average member of the potentially exposed populations. The MLE scenarios have used average estimates of exposure where possible, but still use the conservative toxicity values, thus even the MLE risk estimates are likely to overestimate total risk.

6.5.6 Risk to Sensitive Populations

The health risks estimated in the risk characterization generally apply to the receptors whose activities and locations were described in the exposure assessment. Some people will always be more sensitive than the average person and, therefore, will be at greater risk. Dose-response values used to calculate risk, however, are frequently derived to account for additional sensitivity of subpopulations (e.g., the uncertainty factor of 10 used to account for intraspecies differences). Therefore, it is unlikely that this source of uncertainty contributes significantly to the overall uncertainty of the risk assessment.

6.5.7 Summary of Sources of Uncertainty in Human Health Risk Assessment

The large number of assumptions made in the risk characterization introduces uncertainty in the results. While this could potentially lead to underestimates of potential risk, the use of numerous conservative (i.e., protective of human health) assumptions, as was done here, results in overestimates of potential risks. Any one person's potential exposure and subsequent risk are influenced by all the parameters mentioned above and will vary on a case-by-case basis. Despite inevitable uncertainties associated with the steps used to derive potential risks, the use of numerous health-protective assumptions will most likely lead to a very large overestimate of potential risks from the site. Moreover, when evaluating risk assessment results, it is important to put the risks into perspective. For example, the background rate of cancer in the US is approximately 3,333 for a population of 10,000 people (Jemal, et al., 2002). The results of the risk assessment must be carefully interpreted considering the uncertainty and conservatism associated with the analysis, especially where site management decisions are made.

TABLE 6-1
TOTAL POTENTIAL CARCINOGENIC RISK
INDOOR INDUSTRIAL WORKER - RME
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	O	O North	Q North	Q South	R	
	AA-O-1-16 (a)	Leachate L-O-1	Leachate L-Q-1	AA-Q-6-24 (b)	AA-R-1-28 (b)	Leachate L-R-1
Constituent	Inhalation Risk	Inhalation Risk	Inhalation Risk	Inhalation Risk	Inhalation Risk	Inhalation Risk
VOCs						
1,2-Dichloroethane	NCOPC	NCOPC	3.00E-08	NCOPC	NCOPC	1.92E-09
1,2-Dichloroethene (total)	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK)	NCOPC	NC	NC	NCOPC	NCOPC	NCOPC
Acetone	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Benzene	NCOPC	1.10E-08	1.26E-08	8.72E-09	8.64E-09	9.30E-10
Chlorobenzene	NCOPC	NC	NC	NCOPC	NC	NC
Chloroform	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	4.48E-09
Chloromethane	NCOPC	NCOPC	NCOPC	NCOPC	6.11E-08	NCOPC
Dichloromethane	NCOPC	NCOPC	1.29E-09	NCOPC	NCOPC	8.53E-11
Tetrachloroethene	NCOPC	NCOPC	8.73E-08	NCOPC	NCOPC	7.49E-09
Toluene	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Trichloroethylene	NCOPC	NCOPC	1.08E-06	NCOPC	NCOPC	8.62E-08
Total	**NCOPC**	**1.10E-08**	**1.21E-06**	**8.72E-09**	**6.98E-08**	**1.01E-07**

Notes:
NC - No dose-response value.
NCOPC - Not a constituent of potential concern in this area/medium.
RME - Reasonable Maximum Exposure.
VOCs - Volatile Organic Compounds.
(a) Shallow groundwater.
(b) Mid groundwater.

TABLE 6-2
TOTAL POTENTIAL HAZARD INDEX
INDOOR INDUSTRIAL WORKER - RME
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	O	O North	Q North	Q South	R	
	AA-O-1-16 (a)	Leachate L-O-1	Leachate L-Q-1	AA-Q-6-24 (b)	AA-R-1-28 (b)	Leachate L-R-1
Constituent	Inhalation HQ	Inhalation HQ	Inhalation HQ	Inhalation HQ	Inhalation HQ	Inhalation HQ
VOCs						
1,2-Dichloroethane	NCOPC	NCOPC	6.59E-04	NCOPC	NCOPC	4.23E-05
1,2-Dichloroethene (total)	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.18E-08
4-Methyl-2-pentanone (MIBK)	NCOPC	1.02E-07	1.21E-07	NCOPC	NCOPC	NCOPC
Acetone	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Benzene	NCOPC	4.65E-04	5.35E-04	3.70E-04	3.67E-04	3.94E-05
Chlorobenzene	NCOPC	1.19E-04	1.38E-04	NCOPC	9.36E-05	1.17E-05
Chloroform	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.65E-05
Chloromethane	NCOPC	NCOPC	NCOPC	NCOPC	1.06E-03	NCOPC
Dichloromethane	NCOPC	NCOPC	2.55E-06	NCOPC	NCOPC	1.69E-07
Tetrachloroethene	NCOPC	NCOPC	6.85E-05	NCOPC	NCOPC	5.88E-06
Toluene	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.32E-06
Trichloroethylene	NCOPC	NCOPC	7.54E-04	NCOPC	NCOPC	6.03E-05
Total HI	**NCOPC**	**5.84E-04**	**2.16E-03**	**3.70E-04**	**1.52E-03**	**1.80E-04**

Notes:
HI - Hazard Index.
HQ - Hazard Quotient.
NC - No dose-response value.
NCOPC - Not a constituent of potential concern in this area/medium.
RME - Reasonable Maximum Exposure.
VOCs - Volatile Organic Compounds.
(a) Shallow groundwater.
(b) Mid groundwater.

TABLE 6-3
TOTAL POTENTIAL CARCINOGENIC RISK
OUTDOOR INDUSTRIAL WORKER - RME
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	O				O North				P			Q North			
	Soil (a)		AA-O-1-16	Total	Soil (a)		Leachate	Total	Soil (a)		Total	Soil (a)		Leachate	Total
Constituent	Ing/Derm.	Inhalation	Inhalation	Risk	Ing/Derm.	Inhalation	Inhalation	Risk	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Inhalation	Risk
VOCs															
1,1,2-Trichloroethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	2.63E-07	3.09E-07	5.72E-07
1,2-Dichloroethene (total)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC
Acetone	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC
Benzene	NCOPC	9.16E-06	NCOPC	9.16E-06	NCOPC	1.73E-06	2.36E-08	1.75E-06	NCOPC	5.76E-08	5.76E-08	NCOPC	4.97E-08	1.02E-08	5.99E-08
Chlorobenzene	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC
Chloroform	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	4.64E-07	NCOPC	4.64E-07	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.79E-10	1.79E-10
Ethylbenzene	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NCOPC	NC	NCOPC	NC
Tetrachloroethene	NCOPC	NCOPC	NCOPC	NC	NCOPC	4.64E-07	NCOPC	4.64E-07	NCOPC	2.14E-06	2.14E-06	NCOPC	4.00E-07	1.07E-08	4.10E-07
Toluene	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Trichloroethylene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	2.58E-06	2.58E-06	NCOPC	3.26E-07	1.18E-07	4.45E-07
Xylenes, Total	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NCOPC	NC	NCOPC	NC
SVOCs															
2,4,6-Trichlorophenol	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
2-Nitroaniline	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
4-Nitroaniline	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Benzo(a)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Benzo(a)pyrene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	2.06E-07	9.63E-11	2.06E-07	5.53E-07	2.59E-10	NCOPC	5.53E-07
Benzo(b)fluoranthene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	1.14E-07	5.32E-11	NCOPC	1.14E-07
Pesticides															
4,4'-DDT	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
beta-BHC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Dieldrin	3.88E-07	1.34E-10	NCOPC	3.88E-07	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
gamma-BHC (Lindane)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Heptachlor	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Herbicides															
Pentachlorophenol	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
PCBs															
Total PCBs	2.53E-06	1.00E-09	NCOPC	2.53E-06	1.66E-04	4.37E-08	NCOPC	1.66E-04	1.65E-06	6.51E-10	1.65E-06	4.39E-07	1.73E-10	NCOPC	4.39E-07
Dioxin															
2,3,7,8-TCDD-TEQ	5.36E-05	2.27E-08	NCOPC	5.36E-05	4.59E-04	1.29E-07	NCOPC	4.59E-04	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Metals															
Antimony	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Arsenic	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	1.56E-06	1.82E-08	1.58E-06	NCOPC	NCOPC	NCOPC	NC
Cadmium	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	2.69E-08	NCOPC	2.69E-08
Chromium	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Manganese	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Mercury	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Total	5.65E-05	9.19E-06	NCOPC	**6.57E-05**	6.25E-04	2.83E-06	2.36E-08	**6.28E-04**	3.41E-06	4.80E-06	**8.22E-06**	1.10E-06	1.07E-06	4.49E-07	**2.62E-06**

Notes:
(a) - Surface soil for ing/derm and inhalation of nonvolatile constituents; combined soil for inhalation of volatiles.
Ing/Derm - Ingestion/Dermal Contact.
NCOPC - Not a constituent of potential concern in this area/medium.
NC - Not Calculated or no dose-response value.
PCBs - Polychlorinated Biphenyls.
RME - Reasonable Maximum Exposure.
SVOCs - Semivolatile Organic Compounds.
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
VOCs - Volatile Organic Compounds.

TABLE 6-3
TOTAL POTENTIAL CARCINOGENIC RISK
OUTDOOR INDUSTRIAL WORKER - RME
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Q Central			Q South				R						S		
	Soil (a)		Total	Soil (a)		AA-Q-6-24	Total	Soil (a)		AA-R-1-28	Leachate	Max Value	Total	Soil (a)		Total
Constituent	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Inhalation	Risk	Ing/Derm.	Inhalation	Inhalation	Inhalation	Inhalation	Risk	Ing/Derm.	Inhalation	Risk
VOCs																
1,1,2-Trichloroethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	9.52E-08	NCOPC	NCOPC	NC	9.52E-08	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	8.97E-07	NCOPC	6.19E-06	6.19E-06	7.08E-06	NCOPC	NCOPC	NC
1,2-Dichloroethene (total)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NC	NC
Acetone	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
Benzene	NCOPC	NCOPC	NC	NCOPC	8.90E-09	1.05E-08	1.94E-08	NCOPC	1.26E-07	4.71E-11	1.49E-07	1.49E-07	2.75E-07	NCOPC	8.38E-08	8.38E-08
Chlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NC	NC	NC	NC	NC	NCOPC	NC	NC
Chloroform	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	7.04E-08	NCOPC	2.53E-07	2.53E-07	3.23E-07	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	3.64E-12	NCOPC	3.64E-12	3.64E-12	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	6.15E-09	6.15E-09	6.15E-09	NCOPC	4.81E-08	4.81E-08
Ethylbenzene	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC	NC
Tetrachloroethene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	2.07E-06	NCOPC	4.00E-06	4.00E-06	6.07E-06	NCOPC	1.50E-07	1.50E-07
Toluene	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NC	NCOPC	NC	NC
Trichloroethylene	NCOPC	NCOPC	NC	NCOPC	8.02E-08	NCOPC	8.02E-08	NCOPC	6.12E-04	NCOPC	6.93E-04	6.93E-04	1.31E-03	NCOPC	6.80E-05	6.80E-05
Xylenes, Total	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC	NC
SVOCs																
2,4,6-Trichlorophenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.21E-08	4.12E-12	1.21E-08
2-Nitroaniline	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC
4-Nitroaniline	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC
Benzo(a)anthracene	NCOPC	NCOPC	NC	3.16E-08	1.48E-11	NCOPC	3.16E-08	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	2.46E-07	1.15E-10	2.46E-07
Benzo(a)pyrene	NCOPC	NCOPC	NC	3.22E-07	1.51E-10	NCOPC	3.23E-07	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.66E-06	7.76E-10	1.66E-06
Benzo(b)fluoranthene	NCOPC	NCOPC	NC	4.14E-08	1.94E-11	NCOPC	4.15E-08	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	2.03E-07	9.48E-11	2.03E-07
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	5.53E-07	2.59E-10	5.53E-07
Pesticides																
4,4'-DDT	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	7.32E-07	2.52E-10	7.32E-07
beta-BHC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	6.30E-06	2.24E-09	6.30E-06
Dieldrin	NCOPC	NCOPC	NC	5.79E-07	2.01E-10	NCOPC	5.79E-07	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
gamma-BHC (Lindane)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.31E-06	NC	1.31E-06
Heptachlor	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	9.08E-07	3.16E-10	9.09E-07
Herbicides																
Pentachlorophenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	7.11E-06	NC	7.11E-06
PCBs																
Total PCBs	6.04E-07	2.39E-10	6.04E-07	1.20E-06	4.73E-10	NCOPC	1.20E-06	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	2.37E-04	9.35E-08	2.37E-04
Dioxin																
2,3,7,8-TCDD-TEQ	2.99E-05	1.26E-08	2.99E-05	1.53E-05	6.46E-09	NCOPC	1.53E-05	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Metals																
Antimony	NCOPC	NCOPC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Arsenic	7.80E-07	9.10E-09	7.89E-07	8.10E-07	9.45E-09	NCOPC	8.20E-07	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Cadmium	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Chromium	NCOPC	NCOPC	NC	NC	3.52E-07	NCOPC	3.52E-07	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Manganese	NCOPC	NCOPC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Mercury	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Total	3.13E-05	2.20E-08	**3.13E-05**	1.82E-05	4.58E-07	1.05E-08	**1.87E-05**	NCOPC	6.15E-04	5.08E-11	7.04E-04	7.04E-04	**1.32E-03**	2.56E-04	6.84E-05	3.24E-04

Notes:
(a) - Surface soil for ing/derm and inhalation of nonvolatile constituents; combined soil for inhalation of volatiles.
Ing/Derm - Ingestion/Dermal Contact.
NCOPC - Not a constituent of potential concern in this area/medium.
NC - Not Calculated or no dose-response value.
PCBs - Polychlorinated Biphenyls.
RME - Reasonable Maximum Exposure.
SVOCs - Semivolatile Organic Compounds.
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
VOCs - Volatile Organic Compounds.

TABLE 6-4
TOTAL POTENTIAL HAZARD INDEX
OUTDOOR INDUSTRIAL WORKER - RME
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	O				O North				P			Q North			
	Soil (a)		AA-O-1-16	Total	Soil (a)		Leachate	Total	Soil (a)		Total	Soil (a)		Leachate	Total
Constituent	Ing/Derm.	Inhalation	Inhalation	HQ	Ing/Derm.	Inhalation	Inhalation	HQ	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	Inhalation	HQ
VOCs															
1,1,2-Trichloroethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	5.78E-03	6.80E-03	1.26E-02
1,2-Dichloroethene (total)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	4.11E-06	4.11E-06	NCOPC	NCOPC	NC	NCOPC	NCOPC	5.44E-06	5.44E-06
Acetone	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC
Benzene	NCOPC	3.89E-01	NCOPC	3.89E-01	NCOPC	7.33E-02	9.99E-04	7.43E-02	NCOPC	2.44E-03	2.44E-03	NCOPC	2.11E-03	4.33E-04	2.54E-03
Chlorobenzene	NCOPC	2.91E-01	NCOPC	2.91E-01	NCOPC	2.58E-01	6.72E-04	2.58E-01	NCOPC	NCOPC	NC	NCOPC	NCOPC	4.03E-04	4.03E-04
Chloroform	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	9.19E-04	NCOPC	9.19E-04	NCOPC	NCOPC	NC	NCOPC	NCOPC	3.54E-07	3.54E-07
Ethylbenzene	NCOPC	6.32E-02	NCOPC	6.32E-02	NCOPC	2.40E-02	NCOPC	2.40E-02	NCOPC	4.33E-03	4.33E-03	NCOPC	2.96E-04	NCOPC	2.96E-04
Tetrachloroethene	NCOPC	NCOPC	NCOPC	NC	NCOPC	3.64E-04	NCOPC	3.64E-04	NCOPC	1.68E-03	1.68E-03	NCOPC	3.14E-04	8.40E-06	3.22E-04
Toluene	NCOPC	2.25E-02	NCOPC	2.25E-02	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Trichloroethylene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	1.81E-03	1.81E-03	NCOPC	2.28E-04	8.28E-05	3.11E-04
Xylenes, Total	NCOPC	3.23E+00	NCOPC	3.23E+00	NCOPC	1.23E+00	NCOPC	1.23E+00	NCOPC	2.33E-01	2.33E-01	NCOPC	2.23E-02	NCOPC	2.23E-02
SVOCs															
2,4,6-Trichlorophenol	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
2-Nitroaniline	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
4-Nitroaniline	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Benzo(a)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Benzo(a)pyrene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NCOPC	NC
Benzo(b)fluoranthene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NC
Pesticides															
4,4'-DDT	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
beta-BHC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Dieldrin	1.36E-03	NC	NCOPC	1.36E-03	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
gamma-BHC (Lindane)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Heptachlor	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Herbicides															
Pentachlorophenol	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
PCBs															
Total PCBs	1.77E-01	NC	NCOPC	1.77E-01	1.16E+01	NC	NCOPC	1.16E+01	1.15E-01	NC	1.15E-01	3.07E-02	NC	NCOPC	3.07E-02
Dioxin															
2,3,7,8-TCDD-TEQ	NC	NC	NCOPC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Metals															
Antimony	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Arsenic	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	9.71E-03	NC	9.71E-03	NCOPC	NCOPC	NCOPC	NC
Cadmium	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	3.60E-02	NC	NCOPC	3.60E-02
Chromium	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Manganese	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Mercury	NCOPC	NCOPC	NCOPC	NC	1.07E-01	4.33E-05	NCOPC	1.07E-01	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Total HI	1.79E-01	4.00E+00	NCOPC	**4.18E+00**	1.18E+01	1.59E+00	1.68E-03	**1.33E+01**	1.25E-01	2.43E-01	**3.68E-01**	6.67E-02	3.10E-02	7.73E-03	**1.06E-01**

Notes:
(a) - Surface soil for Ing/derm and inhalation of nonvolatile constituents; combined soil for inhalation of volatiles.
Ing/Derm - Ingestion/Dermal Contact.
HI - Hazard Index.
HQ - Hazard Quotient.
NCOPC - Not a constituent of potential concern in this area/medium.
NC - Not Calculated or no dose-response value.
PCBs - Polychlorinated Biphenyls.
RME - Reasonable Maximum Exposure.
SVOCs - Semivolatile Organic Compounds.
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
VOCs - Volatile Organic Compounds.

TABLE 6-4
TOTAL POTENTIAL HAZARD INDEX
OUTDOOR INDUSTRIAL WORKER - RME
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Q Central			Q South				R						S		
	Soil (a)		Total	Soil (a)		AA-Q-6-24	Total	Soil (a)		AA-R-1-28	Leachate	Max Value	Total	Soil (a)		Total
Constituent	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	Inhalation	HQ	Ing/Derm.	Inhalation	Inhalation	Inhalation	Inhalation	HQ	Ing/Derm.	Inhalation	HQ
VOCs																
1,1,2-Trichloroethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	1.97E-02	NCOPC	1.36E-01	1.36E-01	1.56E-01	NCOPC	NCOPC	NC
1,2-Dichloroethene (total)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	2.43E-05	2.43E-05	2.43E-05	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	2.22E-03	2.22E-03
Acetone	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
Benzene	NCOPC	NCOPC	NC	NCOPC	3.78E-04	4.44E-04	8.22E-04	NCOPC	5.33E-03	2.00E-06	6.33E-03	6.33E-03	1.17E-02	NCOPC	3.55E-03	3.55E-03
Chlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	1.57E-02	3.25E-06	4.09E-04	4.09E-04	1.61E-02	NCOPC	3.25E-02	3.25E-02
Chloroform	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	2.60E-04	NCOPC	9.32E-04	9.32E-04	1.19E-03	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	6.29E-08	NCOPC	6.29E-08	6.29E-08	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	1.22E-05	1.22E-05	1.22E-05	NCOPC	9.52E-05	9.52E-05
Ethylbenzene	NCOPC	NCOPC	NC	NCOPC	1.36E-03	NCOPC	1.36E-03	NCOPC	2.06E-05	NCOPC	NCOPC	NC	2.06E-05	NCOPC	1.40E-03	1.40E-03
Tetrachloroethene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	1.62E-03	NCOPC	3.14E-03	3.14E-03	4.76E-03	NCOPC	1.18E-04	1.18E-04
Toluene	NCOPC	NCOPC	NC	NCOPC	1.59E-02	NCOPC	1.59E-02	NCOPC	1.67E-03	NCOPC	1.59E-03	1.59E-03	3.26E-03	NCOPC	3.26E-02	3.26E-02
Trichloroethylene	NCOPC	NCOPC	NC	NCOPC	5.62E-05	NCOPC	5.62E-05	NCOPC	4.28E-01	NCOPC	4.85E-01	4.85E-01	9.14E-01	NCOPC	4.76E-02	4.76E-02
Xylenes, Total	NCOPC	NCOPC	NC	NCOPC	9.66E-02	NCOPC	9.66E-02	NCOPC	1.40E-04	NCOPC	NCOPC	NC	1.40E-04	NCOPC	1.17E-01	1.17E-01
SVOCs																
2,4,6-Trichlorophenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	3.09E-02	NC	3.09E-02
2-Nitroaniline	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	1.04E-05	1.04E-05
4-Nitroaniline	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	7.16E-03	6.49E-06	7.17E-03
Benzo(a)anthracene	NCOPC	NCOPC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC
Benzo(a)pyrene	NCOPC	NCOPC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC
Benzo(b)fluoranthene	NCOPC	NCOPC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC
Pesticides																
4,4'-DDT	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.21E-02	NC	1.21E-02
beta-BHC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	3.27E-02	NC	3.27E-02
Dieldrin	NCOPC	NCOPC	NC	2.03E-03	NC	NCOPC	2.03E-03	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
gamma-BHC (Lindane)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	9.42E-03	NC	9.42E-03
Heptachlor	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.13E-03	NC	1.13E-03
Herbicides																
Pentachlorophenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	5.53E-03	NC	5.53E-03
PCBs																
Total PCBs	4.23E-02	NC	4.23E-02	8.38E-02	NC	NCOPC	8.38E-02	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.66E+01	NC	1.66E+01
Dioxin																
2,3,7,8-TCDD-TEQ	NC	NC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Metals																
Antimony	NCOPC	NCOPC	NC	1.34E-02	NC	NCOPC	1.34E-02	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Arsenic	4.86E-03	NC	4.86E-03	5.04E-03	NC	NCOPC	5.04E-03	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Cadmium	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Chromium	NCOPC	NCOPC	NC	6.73E-03	8.21E-04	NCOPC	7.55E-03	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Manganese	NCOPC	NCOPC	NC	1.35E-02	7.81E-03	NCOPC	2.13E-02	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Mercury	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Total HI	4.71E-02	NC	**4.71E-02**	1.24E-01	1.23E-01	4.44E-04	**2.48E-01**	NCOPC	4.73E-01	5.31E-06	6.34E-01	6.34E-01	**1.11E+00**	1.67E+01	2.37E-01	**1.69E+01**

Notes:
(a) - Surface soil for ing/derm and inhalation of nonvolatile constituents; combined soil for inhalation of volatiles.
Ing/Derm - Ingestion/Dermal Contact.
HI - Hazard Index.
HQ - Hazard Quotient.
NCOPC - Not a constituent of potential concern in this area/medium.
NC - Not Calculated or no dose-response value.
PCBs - Polychlorinated Biphenyls.
RME - Reasonable Maximum Exposure.
SVOCs - Semivolatile Organic Compounds.
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
VOCs - Volatile Organic Compounds.

TABLE 6-5
TOTAL POTENTIAL CARCINOGENIC RISK
CONSTRUCTION/UTILITY WORKER - RME
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Q					Q North					P			Q North				
	Combined Soil		AA-O-1-16		Total	Combined Soil		Leachate		Total	Combined Soil		Total	Combined Soil		Leachate		Total
Constituent	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	Risk
VOCs																		
1,1,2-Trichloroethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	1.61E-10	2.77E-08	2.48E-08	2.35E-06	2.41E-06
1,2-Dichloroethene (total)	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK)	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC
Acetone	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC
Benzene	1.89E-06	2.96E-06	NCOPC	NCOPC	2.96E-06	2.61E-09	4.13E-07	1.19E-08	8.58E-08	5.14E-07	4.23E-11	6.54E-09	6.59E-09	6.09E-11	9.64E-09	5.50E-09	3.96E-08	5.48E-08
Chlorobenzene	NC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC
Chloroform	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.61E-09	1.47E-07	NCOPC	NCOPC	1.49E-07	NCOPC	NCOPC	NC	NCOPC	NCOPC	5.72E-11	1.05E-09	1.11E-09
Ethylbenzene	NC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC
Tetrachloroethene	NCOPC	NCOPC	NCOPC	NCOPC	NC	8.73E-09	1.13E-07	NCOPC	NCOPC	1.21E-07	1.96E-08	2.63E-07	2.83E-07	6.29E-09	6.27E-08	4.12E-08	1.87E-08	1.49E-07
Toluene	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Trichloroethylene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	9.42E-10	2.86E-07	2.87E-07	1.96E-10	5.73E-08	2.81E-09	9.24E-08	1.52E-07
Xylenes, Total	NC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC
SVOCs																		
1,2-Dichlorobenzene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
1,3-Dichlorobenzene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
1,4-Dichlorobenzene	2.68E-09	2.78E-11	NCOPC	NCOPC	2.71E-09	6.85E-09	7.09E-11	NCOPC	NCOPC	6.92E-09	3.82E-09	3.96E-11	3.86E-09	NCOPC	NCOPC	NCOPC	NCOPC	NC
2,4,6-Trichlorophenol	1.81E-10	2.01E-12	NCOPC	NCOPC	1.83E-10	1.60E-09	1.78E-11	4.02E-09	NCOPC	5.63E-09	NCOPC	NCOPC	NC	2.56E-10	2.84E-12	1.32E-07	NCOPC	1.32E-07
2,4-Dichlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NC
2,4-Dimethylphenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
2-Chlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
2-Methylnaphthalene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
2-Nitroaniline	NC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NC
3-Methylphenol/4-Methylphenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
4-Chloroaniline	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
4-Nitroaniline	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
Benzo(a)anthracene	8.17E-09	9.98E-11	NCOPC	NCOPC	8.27E-09	2.45E-08	3.00E-10	NCOPC	NCOPC	2.48E-08	NCOPC	NCOPC	NC	1.10E-09	1.34E-11	NCOPC	NCOPC	1.11E-09
Benzo(a)pyrene	4.83E-08	5.91E-10	2.62E-07	NCOPC	3.11E-07	7.49E-08	9.15E-10	NCOPC	NCOPC	7.58E-08	4.56E-09	5.57E-11	4.62E-09	1.14E-08	1.39E-10	NCOPC	NCOPC	1.15E-08
Benzo(b)fluoranthene	5.38E-09	6.57E-11	1.80E-08	NCOPC	2.35E-08	8.17E-09	9.98E-11	NCOPC	NCOPC	8.27E-09	NCOPC	NCOPC	NC	1.03E-09	1.26E-11	NCOPC	NCOPC	1.04E-09
Benzo(g,h,i)perylene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Benzo(k)fluoranthene	NCOPC	NCOPC	1.96E-09	NCOPC	1.96E-09	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
bis(2-Chloroethyl)ether	NCOPC	NCOPC	NCOPC	NCOPC	NC	5.49E-09	6.51E-11	NCOPC	NCOPC	5.56E-09	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
bis(2-Ethylhexyl)phthalate	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Dibenzo(a,h)anthracene	2.04E-08	2.50E-10	9.94E-07	NCOPC	1.01E-06	3.13E-08	3.83E-10	NCOPC	NCOPC	3.17E-08	NCOPC	NCOPC	NC	1.92E-09	2.35E-11	NCOPC	NCOPC	1.94E-09
Hexachlorobenzene	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.75E-08	1.94E-10	NCOPC	NCOPC	1.76E-08	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Indeno(1,2,3-cd)pyrene	NCOPC	NCOPC	7.77E-08	NCOPC	7.77E-08	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Naphthalene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
Nitrobenzene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
Phenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
Pesticides																		
4,4'-DDE	NCOPC	NCOPC	NCOPC	NCOPC	NC	2.67E-08	NC	NCOPC	NCOPC	2.67E-08	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
4,4'-DDT	NCOPC	NCOPC	NCOPC	NCOPC	NC	4.69E-08	5.28E-10	NCOPC	NCOPC	4.74E-08	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Aldrin	2.91E-08	3.31E-10	NCOPC	NCOPC	2.94E-08	1.82E-07	2.07E-09	NCOPC	NCOPC	1.84E-07	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
alpha-BHC	NCOPC	NCOPC	NCOPC	NCOPC	NC	2.25E-08	2.54E-10	NCOPC	NCOPC	2.27E-08	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
beta-BHC	NCOPC	NCOPC	NCOPC	NCOPC	NC	8.99E-08	1.05E-09	1.47E-09	NCOPC	9.24E-08	NCOPC	NCOPC	NC	NCOPC	NCOPC	7.94E-09	NCOPC	7.94E-09
delta-BHC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Dieldrin	1.45E-07	1.64E-09	NCOPC	NCOPC	1.46E-07	1.90E-06	2.16E-08	NCOPC	NCOPC	1.92E-06	1.08E-06	1.22E-10	1.09E-06	2.22E-08	2.52E-10	NCOPC	NCOPC	2.25E-08
Endrin Ketone	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
gamma-BHC (Lindane)	8.90E-09	NC	NCOPC	NCOPC	8.90E-09	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Heptachlor	2.96E-08	3.39E-10	NCOPC	NCOPC	3.01E-08	1.06E-07	1.21E-09	NCOPC	NCOPC	1.07E-07	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Heptachlor epoxide	1.02E-08	1.15E-10	NCOPC	NCOPC	1.03E-08	5.84E-08	6.59E-10	NCOPC	NCOPC	5.91E-08	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Herbicides																		
2,4,5-T	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
2,4-D	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
MCPA	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
MCPP	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Pentachlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.14E-06	NCOPC	1.14E-06	NCOPC	NCOPC	NC	4.65E-08	NC	6.71E-06	NCOPC	6.76E-06

TABLE 6-5
TOTAL POTENTIAL CARCINOGENIC RISK
CONSTRUCTION/UTILITY WORKER - RME
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	O					O North					P			Q North				
	Combined Soil		AA-O-1-16		Total	Combined Soil		Leachate		Total	Combined Soil		Total	Combined Soil		Leachate		Total
Constituent	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	Risk
PCBs																		
Total PCBs	1.44E-06	1.60E-08	NCOPC	NCOPC	1.46E-06	1.47E-05	1.63E-07	1.60E-06	NCOPC	1.65E-05	8.19E-08	9.07E-10	8.28E-08	2.62E-07	2.90E-09	3.05E-08	NCOPC	2.95E-07
Dioxin																		
2,3,7,8-TCDD-TEQ	6.67E-06	6.73E-08	NCOPC	NCOPC	6.73E-06	1.09E-04	1.10E-06	4.85E-06	NCOPC	1.15E-04	9.69E-08	9.79E-10	9.79E-08	2.43E-06	2.46E-08	NCOPC	NCOPC	2.46E-06
Metals																		
Antimony	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NC
Arsenic	NCOPC	NCOPC	3.25E-09	NCOPC	3.25E-09	3.80E-08	1.50E-08	NCOPC	NCOPC	5.30E-08	1.74E-08	6.85E-09	2.42E-08	1.58E-08	6.24E-09	NCOPC	NCOPC	2.21E-08
Barium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
Beryllium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Cadmium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.45E-08	NCOPC	NCOPC	1.45E-08	NC	2.25E-09	2.25E-09	NC	3.20E-09	NCOPC	NCOPC	3.20E-09
Chromium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Cobalt	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Copper	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Lead	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
Manganese	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
Mercury	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Nickel	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
Thallium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Vanadium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Zinc	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
Total	8.44E-06	3.05E-06	1.36E-06	NCOPC	1.28E-05	1.26E-04	2.00E-06	7.61E-06	8.58E-08	1.36E-04	2.36E-07	5.67E-07	8.03E-07	2.80E-06	2.15E-07	6.96E-06	2.51E-06	1.25E-05

Notes:
Ing/Derm - Ingestion/Dermal Contact.
NC - Not Calculated or no dose-response value.
NCOPC - Not a constituent of potential concern in this area/medium.
PCBs - Polychlorinated Biphenyls.
RME - Reasonable Maximum Exposure.
SVOCs - Semivolatile Organic Compounds.
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
VOCs - Volatile Organic Compounds.

TABLE 6-5
TOTAL POTENTIAL CARCINOGENIC RISK
CONSTRUCTION/UTILITY WORKER - RME
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Q Central			Q South			R					S		
	Combined Soil		Total	Combined Soil		Total	Combined Soil		Leachate		Total	Combined Soil		Total
Constituent	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Risk
VOCs														
1,1,2-Trichloroethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	4.31E-10	6.26E-09	NCOPC	NCOPC	6.69E-09	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	7.10E-09	5.70E-08	5.77E-07	5.48E-05	5.54E-05	NCOPC	NCOPC	NC
1,2-Dichloroethene (total)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC
Acetone	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
Benzene	NCOPC	NCOPC	NC	1.13E-11	1.79E-09	1.80E-09	1.97E-09	8.27E-09	8.80E-08	6.34E-07	7.33E-07	1.32E-09	5.51E-09	6.83E-09
Chlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Chloroform	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	4.52E-09	NC	1.30E-06	1.31E-06	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.31E-09	4.24E-08	4.47E-08	1.05E-09	3.16E-09	4.22E-09
Ethylbenzene	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC	NC	NC	NC
Tetrachloroethene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	5.72E-07	1.32E-07	1.65E-05	7.47E-06	2.46E-05	4.24E-08	1.03E-08	5.27E-08
Toluene	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Trichloroethylene	NCOPC	NCOPC	NC	4.91E-11	1.45E-08	1.45E-08	2.09E-06	4.12E-05	1.96E-05	6.93E-04	7.56E-04	2.28E-07	4.47E-06	4.70E-06
Xylenes, Total	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC	NC	NC	NC
SVOCs														
1,2-Dichlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
1,3-Dichlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC
1,4-Dichlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	3.66E-10	3.79E-12	NCOPC	NCOPC	3.70E-10	1.14E-08	1.18E-10	1.15E-08
2,4,6-Trichlorophenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	4.45E-09	4.95E-11	NCOPC	NCOPC	4.50E-09	2.15E-10	2.39E-12	2.17E-10
2,4-Dichlorophenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2,4-Dimethylphenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2-Chlorophenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC
2-Methylnaphthalene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2-Nitroaniline	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NC	NC	NC
3-Methylphenol/4-Methylphenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
4-Chloroaniline	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
4-Nitroaniline	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NC	NC	NC	NC
Benzo(a)anthracene	7.28E-10	8.90E-12	7.37E-10	7.01E-10	8.57E-12	7.10E-10	NCOPC	NCOPC	NCOPC	NCOPC	NC	5.44E-09	6.66E-11	5.51E-09
Benzo(a)pyrene	8.44E-09	1.03E-10	8.54E-09	7.76E-09	9.48E-11	7.85E-09	NCOPC	NCOPC	NCOPC	NCOPC	NC	3.68E-08	4.49E-10	3.72E-08
Benzo(b)fluoranthene	1.09E-09	1.33E-11	1.10E-09	8.03E-10	9.82E-12	8.13E-10	NCOPC	NCOPC	NCOPC	NCOPC	NC	4.49E-09	5.49E-11	4.55E-09
Benzo(g,h,i)perylene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
Benzo(k)fluoranthene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
bis(2-Chloroethyl)ether	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
bis(2-Ethylhexyl)phthalate	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	4.17E-09	NC	4.17E-09
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.23E-08	1.50E-10	1.24E-08
Hexachlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Indeno(1,2,3-cd)pyrene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Naphthalene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NC	NC	NC
Nitrobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Phenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
Pesticides														
4,4'-DDE	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4,4'-DDT	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	5.75E-07	NCOPC	5.75E-07	1.29E-08	1.46E-10	1.31E-08
Aldrin	1.37E-09	1.56E-11	1.39E-09	2.74E-09	3.12E-11	2.77E-09	NCOPC	NCOPC	NCOPC	NCOPC	NC	7.68E-09	8.75E-11	7.77E-09
alpha-BHC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
beta-BHC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	3.22E-09	3.75E-11	1.18E-07	NCOPC	1.21E-07	1.11E-07	1.29E-09	1.13E-07
delta-BHC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dieldrin	5.59E-09	6.35E-11	5.66E-09	1.92E-08	2.18E-10	1.94E-08	4.64E-08	5.27E-10	9.93E-07	NCOPC	1.04E-06	1.45E-08	1.64E-10	1.46E-08
Endrin Ketone	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
gamma-BHC (Lindane)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.05E-08	NCOPC	1.05E-08	2.32E-08	NC	2.32E-08
Heptachlor	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	4.76E-09	5.43E-11	2.20E-07	NCOPC	2.25E-07	1.61E-08	1.83E-10	1.62E-08
Heptachlor epoxide	NCOPC	NCOPC	NC	2.23E-09	2.52E-11	2.25E-09	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Herbicides														
2,4,5-T	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2,4-D	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
MCPA	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
MCPP	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Pentachlorophenol	1.88E-09	NC	1.88E-09	2.21E-08	NC	2.21E-08	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.26E-07	NC	1.26E-07

TABLE 6-5
TOTAL POTENTIAL CARCINOGENIC RISK
CONSTRUCTION/UTILITY WORKER - RME
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Q Central			Q South			R					S		
	Combined Soil		Total	Combined Soil		Total	Combined Soil		Leachate		Total	Combined Soil		Total
Constituent	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Risk
PCBs														
Total PCBs	2.11E-08	2.33E-10	2.13E-08	9.21E-08	1.02E-09	9.31E-08	4.31E-07	4.77E-09	1.16E-04	NCOPC	1.17E-04	4.89E-06	5.41E-08	4.94E-06
Dioxin														
2,3,7,8-TCDD-TEQ	8.31E-07	8.39E-09	8.40E-07	9.89E-07	9.99E-09	9.99E-07	3.90E-07	3.94E-09	2.22E-05	NCOPC	2.26E-05	5.67E-06	5.73E-08	5.73E-06
Metals														
Antimony	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Arsenic	2.26E-08	9.00E-09	3.18E-08	1.77E-08	6.97E-09	2.46E-08	7.52E-09	2.97E-09	NCOPC	NCOPC	1.05E-08	NCOPC	NCOPC	NC
Barium	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Beryllium	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
Cadmium	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Chromium	NCOPC	NCOPC	NC	NC	1.47E-07	1.47E-07	NCOPC	NCOPC	NC	NCOPC	NC	NC	5.41E-07	5.41E-07
Cobalt	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
Copper	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Lead	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC
Manganese	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
Mercury	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC
Nickel	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
Thallium	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
Vanadium	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
Zinc	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
Total	8.94E-07	1.78E-08	9.12E-07	1.15E-06	1.81E-07	1.34E-06	3.56E-06	4.14E-05	1.77E-04	7.57E-04	9.79E-04	1.12E-05	5.15E-06	1.64E-05

Notes:
Ing/Derm - Ingestion/Dermal Contact.
NC - Not Calculated or no dose-response value.
NCOPC - Not a constituent of potential concern in this area/medium.
PCBs - Polychlorinated Biphenyls.
RME - Reasonable Maximum Exposure.
SVOCs - Semivolatile Organic Compounds.
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
VOCs - Volatile Organic Compounds.

TABLE 6-6
TOTAL POTENTIAL HAZARD INDEX
CONSTRUCTION/UTILITY WORKER - RME
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	O					O North					P			Q North				
	Combined Soil		AA-O-1-16		Total	Combined Soil		Leachate		Total	Combined Soil		Total	Combined Soil		Leachate		Total
Constituent	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	HQ
VOCs																		
1,1,2-Trichloroethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	6.19E-06	1.52E-02	9.55E-04	3.62E-01	3.78E-01
1,2-Dichloroethene (total)	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK)	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.46E-05	4.70E-05	6.17E-05	NCOPC	NCOPC	NC	NCOPC	NCOPC	5.23E-05	1.68E-04	2.20E-04
Acetone	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	3.78E-05	NC	3.78E-05
Benzene	2.21E-02	3.14E+00	NCOPC	NCOPC	3.16E+00	3.04E-03	4.38E-01	1.39E-02	2.60E-02	4.81E-01	4.94E-05	6.94E-03	6.99E-03	7.10E-05	1.02E-02	6.42E-03	1.20E-02	2.87E-02
Chlorobenzene	6.33E-03	9.95E-01	NCOPC	NCOPC	1.00E+00	4.00E-03	6.26E-01	4.72E-03	2.22E-02	6.57E-01	NCOPC	NCOPC	NC	NCOPC	NCOPC	3.19E-03	1.50E-02	1.82E-02
Chloroform	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	2.50E-04	7.28E-03	NCOPC	NCOPC	7.53E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	6.90E-06	1.49E-05	2.38E-05
Ethylbenzene	4.66E-03	2.52E-01	NCOPC	NCOPC	2.56E-01	1.27E-03	6.79E-02	NCOPC	NCOPC	6.91E-02	1.30E-04	7.01E-03	7.14E-03	1.30E-05	6.90E-04	NCOPC	NCOPC	7.03E-04
Tetrachloroethene	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.13E-04	2.21E-03	NCOPC	NCOPC	2.32E-03	2.56E-04	5.16E-03	5.41E-03	8.16E-05	1.62E-03	5.34E-04	1.04E-04	2.34E-03
Toluene	3.25E-04	1.35E-01	NCOPC	NCOPC	1.35E-01	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Trichloroethylene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	5.49E-04	5.01E-03	5.56E-03	1.14E-04	1.00E-03	1.52E-03	4.04E-04	3.04E-03
Xylenes, Total	1.17E-02	1.42E+01	NCOPC	NCOPC	1.43E+01	3.27E-03	3.95E+00	NCOPC	NCOPC	3.95E+00	3.16E-04	3.84E-01	3.84E-01	4.65E-05	5.81E-02	NCOPC	NCOPC	5.81E-02
SVOCs																		
1,2-Dichlorobenzene	NCOPC	NCOPC	NCOPC	NCOPC	NC	9.62E-04	1.71E-05	NCOPC	NCOPC	9.79E-04	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
1,3-Dichlorobenzene	NCOPC	NCOPC	NCOPC	NCOPC	NC	2.22E-03	9.86E-08	NCOPC	NCOPC	2.22E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
1,4-Dichlorobenzene	2.61E-04	3.86E-07	NCOPC	NCOPC	2.61E-04	6.68E-04	9.85E-07	NCOPC	NCOPC	6.67E-04	3.72E-04	5.51E-07	3.72E-04	NCOPC	NCOPC	NCOPC	NCOPC	NC
2,4,6-Trichlorophenol	1.15E-02	NC	NCOPC	NCOPC	1.15E-02	1.02E-01	NC	2.56E-01	NCOPC	3.57E-01	NCOPC	NCOPC	NC	1.63E-02	NC	8.41E+00	NCOPC	8.43E+00
2,4-Dichlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	3.41E-03	NCOPC	3.41E-03	NCOPC	NCOPC	NC	2.88E-03	NC	1.81E+00	NCOPC	1.82E+00
2,4-Dimethylphenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.59E-04	NCOPC	2.59E-04
2-Chlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.08E-03	NCOPC	1.08E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.58E-02	NCOPC	2.58E-02
2-Methylnaphthalene	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.45E-03	4.38E-04	NCOPC	NCOPC	1.89E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
2-Nitroaniline	NC	8.22E-05	NCOPC	NCOPC	8.22E-05	NC	2.04E-03	NC	NCOPC	2.04E-03	NCOPC	NCOPC	NC	NC	2.03E-04	NC	NCOPC	2.03E-04
3-Methylphenol/4-Methylphenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.92E-04	NCOPC	1.92E-04	NCOPC	NCOPC	NC	NCOPC	NCOPC	4.81E-04	NCOPC	4.81E-04
4-Chloroaniline	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.07E-02	NCOPC	1.07E-02	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.38E-02	NCOPC	2.38E-02
4-Nitroaniline	NCOPC	NCOPC	NCOPC	NCOPC	NC	5.55E-02	1.65E-03	1.27E-03	NCOPC	5.84E-02	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.94E-03	NCOPC	1.94E-03
Benzo(a)anthracene	NC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
Benzo(a)pyrene	NC	NC	NC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC
Benzo(b)fluoranthene	NC	NC	NC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
Benzo(g,h,i)perylene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Benzo(k)fluoranthene	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
bis(2-Chloroethyl)ether	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
bis(2-Ethylhexyl)phthalate	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Dibenzo(a,h)anthracene	NC	NC	NC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
Hexachlorobenzene	NCOPC	NCOPC	NCOPC	NCOPC	NC	9.54E-04	NC	NCOPC	NCOPC	9.54E-04	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Indeno(1,2,3-cd)pyrene	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Naphthalene	NCOPC	NCOPC	NCOPC	NCOPC	NC	2.97E-04	8.99E-05	2.63E-03	NCOPC	3.01E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	5.53E-03	NCOPC	5.53E-03
Nitrobenzene	NCOPC	NCOPC	NCOPC	NCOPC	NC	3.66E-03	3.63E-05	1.77E-03	NCOPC	5.47E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.87E-02	NCOPC	2.87E-02
Phenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.16E-04	NCOPC	1.16E-04	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.45E-04	NCOPC	2.45E-04
Pesticides																		
4,4'-DDE	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.10E-02	NC	NCOPC	NCOPC	1.10E-02	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
4,4'-DDT	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.93E-02	NC	NCOPC	NCOPC	1.93E-02	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Aldrin	4.00E-03	NC	NCOPC	NCOPC	4.00E-03	2.50E-02	NC	NCOPC	NCOPC	2.50E-02	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
alpha-BHC	NCOPC	NCOPC	NCOPC	NCOPC	NC	8.32E-04	NC	NCOPC	NCOPC	8.32E-04	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
beta-BHC	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.17E-02	NC	1.91E-04	NCOPC	1.18E-02	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.03E-03	NCOPC	1.03E-03
delta-BHC	1.58E-03	NC	NCOPC	NCOPC	1.58E-03	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Dieldrin	1.27E-02	NC	NCOPC	NCOPC	1.27E-02	1.66E-01	NC	NCOPC	NCOPC	1.66E-01	9.42E-04	NC	9.42E-04	1.94E-03	NC	NCOPC	NCOPC	1.94E-03
Endrin Ketone	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.44E-04	NCOPC	2.44E-04
gamma-BHC (Lindane)	1.60E-03	NC	NCOPC	NCOPC	1.60E-03	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Heptachlor	9.26E-04	NC	NCOPC	NCOPC	9.26E-04	3.30E-03	NC	NCOPC	NCOPC	3.30E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Heptachlor epoxide	6.02E-03	NC	NCOPC	NCOPC	6.02E-03	3.46E-02	NC	NCOPC	NCOPC	3.46E-02	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Herbicides																		
2,4,5-T	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.03E-04	NCOPC	1.03E-04	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
2,4-D	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.21E-03	NCOPC	1.21E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.25E-01	NCOPC	1.25E-01
MCPA	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.75E-02	NC	1.75E-02	NCOPC	NCOPC	NCOPC	NCOPC	NC
MCPP	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Pentachlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.21E-02	NCOPC	2.21E-02	NCOPC	NCOPC	NC	9.05E-04	NC	1.31E-01	NCOPC	1.31E-01

TABLE 6-6
TOTAL POTENTIAL HAZARD INDEX
CONSTRUCTION/UTILITY WORKER - RME
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	O					O North					P			Q North				
	Combined Soil		AA-O-1-16		Total	Combined Soil		Leachate		Total	Combined Soil		Total	Combined Soil		Leachate		Total
Constituent	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	HQ
PCBs																		
Total PCBs	2.53E+00	NC	NCOPC	NCOPC	2.53E+00	2.57E+01	NC	2.81E+00	NCOPC	2.85E+01	1.43E-01	NC	1.43E-01	4.58E-01	NC	5.34E-02	NCOPC	5.11E-01
Dioxin																		
2,3,7,8-TCDD-TEQ	NC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC
Metals																		
Antimony	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	6.79E-03	NC	1.34E-04	NCOPC	6.92E-03
Arsenic	NCOPC	NCOPC	5.05E-04	NCOPC	5.05E-04	5.92E-03	NC	NCOPC	NCOPC	5.92E-03	2.70E-03	NC	2.70E-03	2.46E-03	NC	NCOPC	NCOPC	2.46E-03
Barium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	6.82E-03	4.07E-02	NCOPC	NCOPC	4.75E-02
Beryllium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Cadmium	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.69E-02	NC	NCOPC	NCOPC	1.69E-02	2.61E-03	NC	2.61E-03	3.71E-03	NC	NCOPC	NCOPC	3.71E-03
Chromium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Cobalt	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Copper	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Lead	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
Manganese	NCOPC	NCOPC	6.92E-04	NCOPC	6.92E-04	NCOPC	NCOPC	3.04E-03	NCOPC	3.04E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	3.04E-04	NCOPC	3.04E-04
Mercury	NCOPC	NCOPC	NCOPC	NCOPC	NC	3.84E-01	7.89E-03	NCOPC	NCOPC	3.92E-01	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Nickel	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.15E-04	NCOPC	1.15E-04
Thallium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.20E-04	NCOPC	1.20E-04	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Vanadium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Zinc	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.37E-04	NCOPC	1.37E-04
Total HI	2.61E+00	1.88E+01	1.20E-03	NCOPC	**2.14E+01**	2.66E+01	5.10E+00	3.13E+00	4.82E-02	**3.48E+01**	1.69E-01	4.08E-01	**5.78E-01**	5.00E-01	1.28E-01	1.06E+01	3.90E-01	**1.17E+01**

Notes:
Ing/Derm - Ingestion/Dermal Contact.
HI - Hazard Index.
HQ - Hazard Quotient.
NC - Not Calculated or no dose-response value.
NCOPC - Not a constituent of potential concern in this area/medium.
PCBs - Polychlorinated Biphenyls.
RME - Reasonable Maximum Exposure.
SVOCs - Semivolatile Organic Compounds.
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
VOCs - Volatile Organic Compounds.

TABLE 6-6
TOTAL POTENTIAL HAZARD INDEX
CONSTRUCTION/UTILITY WORKER - RME
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Q Central			Q South			R					S		
	Combined Soil		Total	Combined Soil		Total	Combined Soil		Leachate		Total	Combined Soil		Total
Constituent	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	HQ
VOCs														
1,1,2-Trichloroethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	1.32E-04	NC	NCOPC	NCOPC	1.32E-04	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	2.73E-04	3.13E-02	2.22E-02	8.42E+00	8.48E+00	NCOPC	NCOPC	NC
1,2-Dichloroethene (total)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	1.14E-04	NC	9.77E-03	NC	9.88E-03	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	4.47E-05	5.30E-03	5.35E-03	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	8.32E-04	3.62E-03	4.45E-03
Acetone	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	8.64E-04	NC	8.64E-04	NCOPC	NCOPC	NC
Benzene	NCOPC	NCOPC	NC	1.31E-05	1.90E-03	1.91E-03	2.30E-03	8.77E-03	1.03E-01	1.92E-01	3.06E-01	1.54E-03	5.84E-03	7.39E-03
Chlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	4.90E-03	2.58E-02	3.61E-03	1.69E-02	5.12E-02	9.99E-03	5.34E-02	6.34E-02
Chloroform	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	8.21E-05	4.16E-04	2.72E-03	3.43E-02	3.76E-02	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	3.60E-04	6.01E-04	9.61E-04	1.64E-04	1.57E-04	3.20E-04
Ethylbenzene	NCOPC	NCOPC	NC	5.88E-05	3.17E-03	3.23E-03	2.70E-05	3.39E-05	NCOPC	NCOPC	6.09E-05	1.83E-03	2.30E-03	4.13E-03
Tetrachloroethene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	7.41E-03	2.58E-03	2.13E-01	4.15E-02	2.65E-01	5.49E-04	2.03E-04	7.52E-04
Toluene	NCOPC	NCOPC	NC	1.41E-04	5.77E-02	5.78E-02	2.62E-04	2.75E-03	6.38E-03	4.08E-02	5.02E-02	4.99E-03	5.22E-02	5.72E-02
Trichloroethylene	NCOPC	NCOPC	NC	2.86E-05	2.54E-04	2.82E-04	1.22E+00	7.20E-01	1.14E+01	3.03E+00	1.64E+01	1.33E-01	7.83E-02	2.11E-01
Xylenes, Total	NCOPC	NCOPC	NC	2.11E-04	2.52E-01	2.52E-01	7.44E-05	2.30E-03	NCOPC	NCOPC	2.38E-03	6.11E-03	1.86E-01	1.92E-01
SVOCs														
1,2-Dichlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
1,3-Dichlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	2.22E-03	9.66E-08	2.22E-03
1,4-Dichlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	3.56E-05	5.28E-08	NCOPC	NCOPC	3.57E-05	1.11E-03	1.64E-08	1.11E-03
2,4,6-Trichlorophenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	2.83E-01	NC	NCOPC	NCOPC	2.83E-01	1.37E-02	NC	1.37E-02
2,4-Dichlorophenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	4.70E-02	NC	NCOPC	NCOPC	4.70E-02	NCOPC	NCOPC	NC
2,4-Dimethylphenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2-Chlorophenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	3.17E-03	NC	3.59E-02	NCOPC	3.91E-02	NCOPC	NCOPC	NC
2-Methylnaphthalene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2-Nitroaniline	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	9.24E-05	NCOPC	NCOPC	9.24E-05	NC	1.51E-04	1.51E-04
3-Methylphenol/4-Methylphenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.35E-03	NCOPC	1.35E-03	NCOPC	NCOPC	NC
4-Chloroaniline	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.07E-01	NCOPC	1.07E-01	NCOPC	NCOPC	NC
4-Nitroaniline	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	4.63E-04	1.37E-05	3.26E-02	NCOPC	3.30E-02	3.16E-03	9.39E-05	3.26E-03
Benzo(a)anthracene	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC
Benzo(a)pyrene	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC
Benzo(b)fluoranthene	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC
Benzo(g,h,i)perylene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	3.26E-01	NCOPC	3.26E-01	NCOPC	NCOPC	NC
Benzo(k)fluoranthene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
bis(2-Chloroethyl)ether	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
bis(2-Ethylhexyl)phthalate	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.04E-03	NC	1.04E-03
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC
Hexachlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Indeno(1,2,3-cd)pyrene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Naphthalene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	2.13E-04	6.44E-05	NCOPC	NCOPC	2.77E-04	3.47E-04	1.05E-04	4.53E-04
Nitrobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	4.83E-03	4.78E-05	NCOPC	NCOPC	4.88E-03	NCOPC	NCOPC	NC
Phenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	3.35E-02	NCOPC	3.35E-02	NCOPC	NCOPC	NC
Pesticides														
4,4'-DDE	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4,4'-DDT	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.37E-01	NCOPC	2.37E-01	5.33E-03	NC	5.33E-03
Aldrin	1.89E-04	NC	1.89E-04	3.76E-04	NC	3.76E-04	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.05E-03	NC	1.05E-03
alpha-BHC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
beta-BHC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	4.18E-04	NC	1.52E-02	NCOPC	1.57E-02	1.44E-02	NC	1.44E-02
delta-BHC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dieldrin	4.89E-04	NC	4.89E-04	1.68E-03	NC	1.68E-03	4.06E-03	NC	8.69E-02	NCOPC	9.10E-02	1.27E-03	NC	1.27E-03
Endrin Ketone	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
gamma-BHC (Lindane)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.89E-03	NCOPC	1.89E-03	4.16E-03	NC	4.16E-03
Heptachlor	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	1.48E-04	NC	6.86E-03	NCOPC	7.01E-03	4.99E-04	NC	4.99E-04
Heptachlor epoxide	NCOPC	NCOPC	NC	1.32E-03	NC	1.32E-03	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Herbicides														
2,4,5-T	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2,4-D	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	4.94E-03	NCOPC	4.94E-03	NCOPC	NCOPC	NC
MCPA	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
MCPP	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	1.03E-02	NC	NCOPC	NCOPC	1.03E-02	NCOPC	NCOPC	NC
Pentachlorophenol	3.62E-05	NC	3.62E-05	4.30E-04	NC	4.30E-04	NCOPC	NCOPC	NCOPC	NCOPC	NC	2.44E-03	NC	2.44E-03

TABLE 6-6
TOTAL POTENTIAL HAZARD INDEX
CONSTRUCTION/UTILITY WORKER - RME
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Q Central			Q South			R					S		
	Combined Soil		Total	Combined Soil		Total	Combined Soil		Leachate		Total	Combined Soil		Total
Constituent	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	HQ
PCBs														
Total PCBs	3.69E-02	NC	3.69E-02	1.61E-01	NC	1.61E-01	7.54E-01	NC	2.04E+02	NCOPC	2.04E+02	8.56E+00	NC	8.56E+00
Dioxin														
2,3,7,8-TCDD-TEQ	NC	NC	NC	NC	NC	NC	NC	NC	NC	NCOPC	NC	NC	NC	NC
Metals														
Antimony	NCOPC	NCOPC	NC	7.64E-03	NC	7.64E-03	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Arsenic	3.55E-03	NC	3.55E-03	2.75E-03	NC	2.75E-03	1.17E-03	NC	NCOPC	NCOPC	1.17E-03	NCOPC	NCOPC	NC
Barium	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Beryllium	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	3.54E-04	NCOPC	3.54E-04	NCOPC	NCOPC	NC
Cadmium	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Chromium	NCOPC	NCOPC	NC	2.04E-03	8.54E-03	1.06E-02	NCOPC	NCOPC	7.36E-03	NCOPC	7.36E-03	7.51E-03	3.15E-02	3.90E-02
Cobalt	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	3.22E-04	NCOPC	3.22E-04	NCOPC	NCOPC	NC
Copper	2.75E-02	NC	2.75E-02	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Lead	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC
Manganese	8.95E-03	1.70E-01	1.79E-01	5.92E-03	1.12E-01	1.18E-01	NCOPC	NCOPC	4.22E-02	NCOPC	4.22E-02	NCOPC	NCOPC	NC
Mercury	NCOPC	NCOPC	NC	3.82E-03	7.85E-05	3.90E-03	7.46E-01	1.53E-02	1.47E-03	NCOPC	7.63E-01	NCOPC	NCOPC	NC
Nickel	NCOPC	NCOPC	NC	5.09E-03	NC	5.09E-03	NCOPC	NCOPC	6.70E-04	NCOPC	6.70E-04	NCOPC	NCOPC	NC
Thallium	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	3.90E-03	NCOPC	3.90E-03	NCOPC	NCOPC	NC
Vanadium	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.08E-04	NCOPC	2.08E-04	NCOPC	NCOPC	NC
Zinc	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.82E-03	NCOPC	1.82E-03	NCOPC	NCOPC	NC
Total HI	**7.75E-02**	**1.70E-01**	**2.47E-01**	**1.93E-01**	**4.36E-01**	**6.29E-01**	**3.09E+00**	**8.10E-01**	**2.18E+02**	**1.18E+01**	**2.32E+02**	**8.77E+00**	**4.14E-01**	**9.19E+00**

Notes:
Ing/Derm - Ingestion/Dermal Contact.
HI - Hazard Index.
HQ - Hazard Quotient.
NC - Not Calculated or no dose-response value.
NCOPC - Not a constituent of potential concern in this area/medium.
PCBs - Polychlorinated Biphenyls.
RME - Reasonable Maximum Exposure.
SVOCs - Semivolatile Organic Compounds.
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
VOCs - Volatile Organic Compounds.

TABLE 6-7
TOTAL POTENTIAL CARCINOGENIC RISK
TRESPASSING TEENAGER - RME
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	O				O North				P			Q North				Q Central		
	Surface Soil		AA-O-1-16	Total	Surface Soil		Leachate	Total	Surface Soil		Total	Surface Soil		Leachate	Total	Surface Soil		Total
Constituent	Ing/Derm.	Inhalation	Inhalation	Risk	Ing/Derm.	Inhalation	Inhalation	Risk	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Inhalation	Risk	Ing/Derm.	Inhalation	Risk
VOCs																		
1,1,2-Trichloroethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	4.42E-09	5.20E-09	9.62E-09	NCOPC	NCOPC	NC
1,2-Dichloroethene (total	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Acetone	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Benzene	NCOPC	1.54E-07	NCOPC	1.54E-07	NCOPC	2.90E-08	3.96E-10	2.94E-08	NCOPC	9.68E-10	9.68E-10	NCOPC	8.36E-10	1.72E-10	1.01E-09	NCOPC	NCOPC	NC
Chlorobenzene	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Chloroform	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	7.80E-09	NCOPC	7.80E-09	NCOPC	NCOPC	NC	NCOPC	NCOPC	3.01E-12	3.01E-12	NCOPC	NCOPC	NC
Ethylbenzene	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
Tetrachloroethene	NCOPC	NCOPC	NCOPC	NC	NCOPC	7.80E-09	NCOPC	7.80E-09	NCOPC	3.60E-08	3.60E-08	NCOPC	6.72E-09	1.80E-10	6.90E-09	NCOPC	NCOPC	NC
Toluene	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Trichloroethylene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	4.34E-08	4.34E-08	NCOPC	5.49E-09	1.99E-09	7.48E-09	NCOPC	NCOPC	NC
Xylenes, Tota	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
SVOCs																		
2,4,6-Trichlorophenol	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2,4-Dichlorophenol	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2-Nitroaniline	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4-Chloroaniline	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4-Nitroaniline	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Benzo(a)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Benzo(a)pyrene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	3.81E-08	1.62E-12	3.81E-08	1.02E-07	4.35E-12	NCOPC	1.02E-07	NCOPC	NCOPC	NC
Benzo(b)fluoranthene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	2.11E-08	8.94E-13	NCOPC	2.11E-08	NCOPC	NCOPC	NC
Pesticides																		
4,4'-DDT	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
beta-BHC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dieldrin	6.99E-08	2.26E-12	NCOPC	6.99E-08	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
gamma-BHC (Lindane)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Heptachlor	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Herbicides																		
MCPA	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
MCPP	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Pentachlorophenol	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
PCBs																		
Total PCBs	4.65E-07	1.68E-11	NCOPC	4.65E-07	3.06E-05	7.35E-10	NCOPC	3.06E-05	3.03E-07	1.09E-11	3.03E-07	8.06E-08	2.91E-12	NCOPC	8.06E-08	1.11E-07	4.01E-12	1.11E-07
Dioxin																		
2,3,7,8-TCDD-TEQ	1.01E-05	3.81E-10	NCOPC	1.01E-05	8.62E-05	2.17E-09	NCOPC	8.62E-05	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	5.61E-06	2.13E-10	5.61E-06
Metals																		
Antimony	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Arsenic	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	2.80E-07	3.06E-10	2.81E-07	NCOPC	NCOPC	NCOPC	NC	1.40E-07	1.53E-10	1.40E-07
Cadmium	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	4.52E-10	NCOPC	4.52E-10	NCOPC	NCOPC	NC
Chromium	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Lead	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Manganese	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Mercury	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Total	1.06E-05	1.54E-07	NC	1.07E-05	1.17E-04	4.76E-08	3.96E-10	1.17E-04	6.21E-07	8.07E-08	7.02E-07	2.04E-07	1.79E-08	7.55E-09	2.30E-07	5.86E-06	3.70E-10	5.86E-06

Notes:
Ing/Derm - Ingestion/Dermal Contact
NC - Not Calculated or no dose-response value
NCOPC - Not a constituent of potential concern in this area/medium
PCBs - Polychlorinated Biphenyls
RME - Reasonable Maximum Exposure
SVOCs - Semivolatile Organic Compounds
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration
VOCs - Volatile Organic Compounds

TABLE 6-7
TOTAL POTENTIAL CARCINOGENIC RISK
TRESPASSING TEENAGER - RME
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Q South					R						S			River		
	Surface Soil		AA-Q-6-24	Pond	Total	Surface Soil		AA-R-1-29	Leachate	Max Value	Total	Surface Soil		Total	Surface Water	Sediment	Total
Constituent	Ing/Derm.	Inhalation	Inhalation	Ing/Derm.	Risk	Ing/Derm.	Inhalation	Inhalation	Inhalation	Inhalation	Risk	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Ing/Derm.	HQ
VOCs																	
1,1,2-Trichloroethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	1.60E-09	NCOPC	NCOPC	NC	1.60E-09	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	1.51E-08	NCOPC	1.04E-07	1.04E-07	1.19E-07	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
1,2-Dichloroethene (total	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Acetone	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Benzene	NCOPC	1.50E-10	1.76E-10	NCOPC	3.26E-10	NCOPC	2.11E-09	7.92E-13	2.51E-09	2.51E-09	4.62E-09	NCOPC	1.41E-09	1.41E-09	NCOPC	NCOPC	NC
Chlorobenzene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NC	NC	NC	NC	NC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Chloroform	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	1.18E-09	NCOPC	4.25E-09	4.25E-09	5.44E-09	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	6.12E-14	NCOPC	6.12E-14	6.12E-14	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	1.03E-10	1.03E-10	1.03E-10	NCOPC	8.09E-10	8.09E-10	NCOPC	NCOPC	NC
Ethylbenzene	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Tetrachloroethene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	3.48E-08	NCOPC	6.72E-08	6.72E-08	1.02E-07	NCOPC	2.52E-09	2.52E-09	NCOPC	NCOPC	NC
Toluene	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Trichloroethylene	NCOPC	1.35E-09	NCOPC	NCOPC	1.35E-09	NCOPC	1.03E-05	NCOPC	1.17E-05	1.17E-05	2.19E-05	NCOPC	1.14E-06	1.14E-06	NCOPC	NCOPC	NC
Xylenes, Tota	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC	NC	NCOPC	NCOPC	NC
SVOCs																	NC
2,4,6-Trichlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	2.19E-09	6.93E-14	2.19E-09	NCOPC	NCOPC	NC
2,4-Dichlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC
2-Nitroaniline	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC
4-Chloroaniline	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC
4-Nitroaniline	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC
Benzo(a)anthracene	5.86E-09	2.49E-13	NCOPC	NCOPC	5.86E-09	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	4.55E-08	1.93E-12	4.55E-08	NCOPC	NCOPC	NC
Benzo(a)pyrene	5.98E-08	2.54E-12	NCOPC	NCOPC	5.98E-08	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	3.07E-07	1.30E-11	3.07E-07	NCOPC	NCOPC	NC
Benzo(b)fluoranthene	7.68E-09	3.26E-13	NCOPC	NCOPC	7.68E-09	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	3.76E-08	1.59E-12	3.76E-08	NCOPC	NCOPC	NC
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.02E-07	4.35E-12	1.02E-07	NCOPC	NCOPC	NC
Pesticides																	NC
4,4'-DDT	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.32E-07	4.23E-12	1.32E-07	NCOPC	NCOPC	NC
beta-BHC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.14E-06	3.76E-11	1.14E-06	NCOPC	NCOPC	NC
Dieldrin	1.04E-07	3.37E-12	NCOPC	NCOPC	1.04E-07	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
gamma-BHC (Lindane)	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	2.37E-07	NC	2.37E-07	NCOPC	NCOPC	NC
Heptachlor	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.64E-07	5.32E-12	1.64E-07	NCOPC	NCOPC	NC
Herbicides																	NC
MCPA	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC
MCPP	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC
Pentachlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.28E-06	NC	1.28E-06	NCOPC	NCOPC	NC
PCBs																	NC
Total PCBs	2.20E-07	7.95E-12	NCOPC	NCOPC	2.20E-07	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	4.35E-05	1.57E-09	4.35E-05	NCOPC	NCOPC	NC
Dioxin																	NC
2,3,7,8-TCDD-TEQ	2.67E-06	1.09E-10	NCOPC	NCOPC	2.67E-06	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Metals																	
Antimony	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Arsenic	1.46E-07	1.59E-10	NCOPC	NCOPC	1.46E-07	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	2.19E-08	2.19E-08
Cadmium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Chromium	NC	5.92E-09	NCOPC	NCOPC	5.92E-09	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Lead	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Manganese	NC	NC	NCOPC	NC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Mercury	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Total	**3.41E-06**	**7.70E-09**	**1.76E-10**	**NC**	**3.42E-06**	**NC**	**1.03E-05**	**8.53E-13**	**1.18E-05**	**1.18E-05**	**2.22E-05**	**4.69E-05**	**1.15E-06**	**4.81E-05**	**NC**	**2.19E-08**	**2.19E-08**

Notes:
Ing/Derm - Ingestion/Dermal Contact
NC - Not Calculated or no dose-response value
NCOPC - Not a constituent of potential concern in this area/medium
PCBs - Polychlorinated Biphenyls
RME - Reasonable Maximum Exposure
SVOCs - Semivolatile Organic Compounds
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration
VOCs - Volatile Organic Compounds

TABLE 6-8
TOTAL POTENTIAL HAZARD INDEX
TRESPASSING TEENAGER - RME
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	O				O North				P			Q North				Q Central		
	Surface Soil		AA-O-1-16	Total	Surface Soil		Leachate	Total	Surface Soil		Total	Surface Soil		Leachate	Total	Surface Soil		Total
Constituent	Ing/Derm.	Inhalation	Inhalation	HQ	Ing/Derm.	Inhalation	Inhalation	HQ	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	Inhalation	HQ	Ing/Derm.	Inhalation	HQ
VOCs																		
1,1,2-Trichloroethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	2.21E-04	2.60E-04	4.81E-04	NCOPC	NCOPC	NC
1,2-Dichloroethene (total	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.57E-07	1.57E-07	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.08E-07	2.08E-07	NCOPC	NCOPC	NC
Acetone	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Benzene	NCOPC	1.49E-02	NCOPC	1.49E-02	NCOPC	2.60E-03	3.82E-05	2.64E-03	NCOPC	9.34E-05	9.34E-05	NCOPC	8.06E-05	1.66E-05	9.72E-05	NCOPC	NCOPC	NC
Chlorobenzene	NCOPC	1.11E-02	NCOPC	1.11E-02	NCOPC	9.84E-03	2.57E-05	9.87E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.54E-05	1.54E-05	NCOPC	NCOPC	NC
Chloroform	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	3.51E-05	NCOPC	3.51E-05	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.35E-08	1.35E-08	NCOPC	NCOPC	NC
Ethylbenzene	NCOPC	2.42E-03	NCOPC	2.42E-03	NCOPC	9.16E-04	NCOPC	9.16E-04	NCOPC	1.65E-04	1.65E-04	NCOPC	1.13E-05	NCOPC	1.13E-05	NCOPC	NCOPC	NC
Tetrachloroethene	NCOPC	NCOPC	NCOPC	NC	NCOPC	1.39E-05	NCOPC	1.39E-05	NCOPC	6.42E-05	6.42E-05	NCOPC	1.20E-05	3.21E-07	1.23E-05	NCOPC	NCOPC	NC
Toluene	NCOPC	8.61E-04	NCOPC	8.61E-04	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Trichloroethylene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	6.91E-05	6.91E-05	NCOPC	8.73E-06	3.16E-06	1.19E-05	NCOPC	NCOPC	NC
Xylenes, Tota	NCOPC	1.23E-01	NCOPC	1.23E-01	NCOPC	4.71E-02	NCOPC	4.71E-02	NCOPC	8.91E-03	8.91E-03	NCOPC	8.53E-04	NCOPC	8.53E-04	NCOPC	NCOPC	NC
SVOCs																		
2,4,6-Trichlorophenol	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2,4-Dichlorophenol	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2-Nitroaniline	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4-Chloroaniline	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4-Nitroaniline	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Benzo(a)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Benzo(a)pyrene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC
Benzo(b)fluoranthene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC
Pesticides																		
4,4'-DDT	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
beta-BHC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dieldrin	5.56E-04	NC	NCOPC	5.56E-04	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
gamma-BHC (Lindane)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Heptachlor	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Herbicides																		
MCPA	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
MCPP	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Pentachlorophenol	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
PCBs																		
Total PCBs	7.40E-02	NC	NCOPC	7.40E-02	4.86E+00	NC	NCOPC	4.86E+00	4.81E-02	NC	4.81E-02	1.28E-02	NC	NCOPC	1.28E-02	1.77E-02	NC	1.77E-02
Dioxin																		
2,3,7,8-TCDD-TEQ	NC	NC	NCOPC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC
Metals																		
Antimony	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Arsenic	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	3.97E-03	NC	3.97E-03	NCOPC	NCOPC	NCOPC	NC	1.98E-03	NC	1.98E-03
Cadmium	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	1.50E-02	NC	NCOPC	1.50E-02	NCOPC	NCOPC	NC
Chromium	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Lead	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Manganese	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Mercury	NCOPC	NCOPC	NCOPC	NC	4.37E-02	1.65E-06	NCOPC	4.37E-02	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Total HI	7.46E-02	1.53E-01	NC	2.27E-01	4.90E+00	8.07E-02	8.40E-05	4.97E+00	5.21E-02	9.30E-03	6.14E-02	2.78E-02	1.19E-03	2.95E-04	2.93E-02	1.96E-02	NC	1.96E-02

Notes:
Ing/Derm - Ingestion/Dermal Contact
HI - Hazard Index
HQ - Hazard Quotient
NC - Not Calculated or no dose-response value
NCOPC - Not a constituent of potential concern in this area/medium
PCBs - Polychlorinated Biphenyls
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SVOCs - Semivolatile Organic Compounds
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration
VOCs - Volatile Organic Compounds

TABLE 6-8
TOTAL POTENTIAL HAZARD INDEX
TRESPASSING TEENAGER - RME
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Q South					R						S			River		
	Surface Soil		AA-Q-6-24	Pond SW	Total	Surface Soil		AA-R-1-25	Leachate	Max Value	Total	Surface Soil		Total	Surface Water	Sediment	Total
Constituent	Ing/Derm.	Inhalation	Inhalation	Ing/Derm.	HQ	Ing/Derm.	Inhalation	Inhalation	Inhalation	Inhalation	HQ	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Ing/Derm.	HQ
VOCs																	
1,1,2-Trichloroethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	7.53E-04	NCOPC	5.20E-03	5.20E-03	5.95E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
1,2-Dichloroethene (total	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	9.29E-07	9.29E-07	9.29E-07	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	8.49E-05	8.49E-05	NCOPC	NCOPC	NC
Acetone	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Benzene	NCOPC	1.44E-05	1.70E-05	NCOPC	3.14E-05	NCOPC	2.04E-04	7.64E-06	2.42E-04	2.42E-04	4.46E-04	NCOPC	1.36E-04	1.36E-04	NCOPC	NCOPC	NC
Chlorobenzene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	5.99E-04	1.24E-07	1.56E-05	1.56E-05	6.15E-04	NCOPC	1.24E-03	1.24E-03	NCOPC	NCOPC	NC
Chloroform	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	9.92E-06	NCOPC	3.56E-05	3.56E-05	4.55E-05	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.40E-09	NCOPC	2.40E-09	2.40E-09	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	4.65E-07	4.65E-07	4.65E-07	NCOPC	3.64E-06	3.64E-06	NCOPC	NCOPC	NC
Ethylbenzene	NCOPC	5.21E-05	NCOPC	NCOPC	5.21E-05	NCOPC	7.89E-07	NCOPC	NCOPC	NC	7.89E-07	NCOPC	5.34E-05	5.34E-05	NCOPC	NCOPC	NC
Tetrachloroethene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	6.21E-05	NCOPC	1.20E-04	1.20E-04	1.82E-04	NCOPC	4.49E-06	4.49E-06	NCOPC	NCOPC	NC
Toluene	NCOPC	6.06E-04	NCOPC	NCOPC	6.06E-04	NCOPC	6.36E-05	NCOPC	6.06E-05	6.06E-05	1.24E-04	NCOPC	1.24E-03	1.24E-03	NCOPC	NCOPC	NC
Trichloroethylene	NCOPC	2.15E-06	NCOPC	NCOPC	2.15E-06	NCOPC	1.64E-02	NCOPC	1.86E-02	1.86E-02	3.49E-02	NCOPC	1.82E-03	1.82E-03	NCOPC	NCOPC	NC
Xylenes, Tota	NCOPC	3.69E-03	NCOPC	NCOPC	3.69E-03	NCOPC	5.35E-06	NCOPC	NCOPC	NC	5.35E-06	NCOPC	4.46E-03	4.46E-03	NCOPC	NCOPC	NC
SVOCs																	
2,4,6-Trichlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.27E-02	NC	1.27E-02	NCOPC	NCOPC	NC
2,4-Dichlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	3.25E-04	NCOPC	3.25E-04
2-Nitroaniline	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	3.99E-07	3.99E-07	NCOPC	NCOPC	NC
4-Chloroaniline	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	1.55E-04	NCOPC	1.55E-04
4-Nitroaniline	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	2.93E-03	2.48E-07	2.93E-03	NCOPC	NCOPC	NC
Benzo(a)anthracene	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC
Benzo(a)pyrene	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC
Benzo(b)fluoranthene	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC
Pesticides																	
4,4'-DDT	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	4.94E-03	NC	4.94E-03	NCOPC	NCOPC	NC
beta-BHC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.34E-02	NC	1.34E-02	NCOPC	NCOPC	NC
Dieldrin	8.31E-04	NC	NCOPC	NCOPC	8.31E-04	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
gamma-BHC (Lindane)	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	3.86E-03	NC	3.86E-03	NCOPC	NCOPC	NC
Heptachlor	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	4.63E-04	NC	4.63E-04	NCOPC	NCOPC	NC
Herbicides																	
MCPA	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	6.78E-03	NCOPC	6.78E-03
MCPP	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	3.97E-03	NCOPC	3.97E-03
Pentachlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	2.26E-03	NC	2.26E-03	NCOPC	NCOPC	NC
PCBs																	
Total PCBs	3.50E-02	NC	NCOPC	NCOPC	3.50E-02	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	6.91E+00	NC	6.91E+00	NCOPC	NCOPC	NC
Dioxin																	
2,3,7,8-TCDD-TEQ	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Metals																	
Antimony	5.49E-03	NC	NCOPC	NCOPC	5.49E-03	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Arsenic	2.06E-03	NC	NCOPC	NCOPC	2.06E-03	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	3.10E-04	3.10E-04
Cadmium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Chromium	2.74E-03	3.14E-05	NCOPC	NCOPC	2.77E-03	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Lead	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Manganese	5.53E-03	2.99E-04	NCOPC	2.13E-04	6.04E-03	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Mercury	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Total HI	5.16E-02	4.70E-03	1.70E-05	2.13E-04	5.65E-02	NC	1.81E-02	2.03E-07	2.42E-02	2.42E-02	4.23E-02	6.95E+00	9.04E-03	6.96E+00	1.12E-02	3.10E-04	1.15E-02

Notes:
Ing/Derm - Ingestion/Dermal Contact
HI - Hazard Index
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NC - Not Calculated or no dose-response value
NCOPC - Not a constituent of potential concern in this area/medium
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RME - Reasonable Maximum Exposure
SVOCs - Semivolatile Organic Compounds
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration
VOCs - Volatile Organic Compounds

TABLE 6-9
TOTAL POTENTIAL CARCINOGENIC RISK
RECREATIONAL FISHER - RME
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Mississippi River - UDA				Mississippi River - PDA				Mississippi River - DDA				Pond (Site Q South)			Pond (Site Q South)		
	Buffalo Fillet	SW	Sediment	Total	Buffalo Fillet	SW	Sediment	Total	Buffalo Fillet	SW	Sediment	Total	Black Bullhead Fillet	SW	Total	Carp Fillet	SW	Total
Constituent	Ingestion	Ing/Derm.	Ing/Derm.	Risk	Ingestion	Ing/Derm.	Ing/Derm.	Risk	Ingestion	Ing/Derm.	Ing/Derm.	Risk	Ingestion	Ing/Derm.	HQ	Ingestion	Ing/Derm.	HQ
SVOCs																		
2,4-Dichlorophenol	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4-Chloroaniline	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Benzo(a)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	5.01E-06	NCOPC	5.01E-06
Benzo(a)pyrene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	6.44E-05	NCOPC	6.44E-05
bis(2-Ethylhexyl)phthalate	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	3.43E-07	NCOPC	3.43E-07
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	5.01E-05	NCOPC	5.01E-05
Pesticides																		
4,4'-DDE	2.83E-07	NCOPC	NCOPC	2.83E-07	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4,4'-DDT	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	6.00E-06	NCOPC	6.00E-06	5.50E-06	NCOPC	5.50E-06
alpha-Chlordane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	1.71E-07	NCOPC	1.71E-07	2.74E-07	NCOPC	2.74E-07
beta-BHC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	1.50E-06	NCOPC	1.50E-06
Dieldrin	6.35E-06	NCOPC	NCOPC	6.35E-06	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	7.84E-05	NCOPC	7.84E-05	1.49E-04	NCOPC	1.49E-04
Herbicides																		
MCPA	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
MCPP	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
PCBs																		
Total PCBs	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	3.79E-04	NCOPC	3.79E-04	9.80E-04	NCOPC	9.80E-04
Dioxin																		
2,3,7,8-TCDD-TEQ	3.36E-05	NCOPC	NCOPC	3.36E-05	4.59E-06	NCOPC	NCOPC	4.59E-06	5.43E-06	NCOPC	NCOPC	5.43E-06	2.82E-05	NCOPC	2.82E-05	1.35E-04	NCOPC	1.35E-04
Metals																		
Arsenic	NCOPC	NCOPC	6.97E-08	6.97E-08	NCOPC	NCOPC	6.97E-08	6.97E-08	NCOPC	NCOPC	6.97E-08	6.97E-08	5.73E-05	NCOPC	5.73E-05	6.02E-05	NCOPC	6.02E-05
Lead	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NC	NC	NCOPC	NC	NC
Manganese	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NC	NC	NCOPC	NC	NC
Mercury	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NC	NC	NCOPC	NC
Total	4.02E-05	NC	6.97E-08	**4.03E-05**	4.59E-06	NC	6.97E-08	**4.66E-06**	5.43E-06	NC	6.97E-08	**5.50E-06**	5.49E-04	NC	**5.49E-04**	1.45E-03	NC	1.45E-03

Notes:
Ing/Derm - Ingestion/Dermal Contact.
DDA - Downstream Discharge Area (Mississippi River).
NC - Not Calculated or no dose-response value.
NCOPC - Not a constituent of potential concern in this area/medium.
PCBs - Polychlorinated Biphenyls.
PDA - Plume Discharge Area (Mississippi River).
RME - Reasonable Maximum Exposure.
SVOCs - Semivolatile Organic Compounds.
SW - Surface Water.
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
UDA - Upstream Discharge Area (Mississippi River).

TABLE 6-10
TOTAL POTENTIAL HAZARD INDEX
RECREATIONAL FISHER - RME
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Mississippi River - UDA				Mississippi River - PDA				Mississippi River - DDA				Pond (Site Q South)			Pond (Site Q South)		
	Buffalo Fillet	SW	Sediment	Total	Buffalo Fillet	SW	Sediment	Total	Buffalo Fillet	SW	Sediment	Total	Black Bullhead Fillet	SW	Total	Carp Fillet	SW	Total
Constituent	Ingestion	Ing/Derm.	Ing/Derm.	Risk	Ingestion	Ing/Derm.	Ing/Derm.	Risk	Ingestion	Ing/Derm.	Ing/Derm.	Risk	Ingestion	Ing/Derm.	HQ	Ingestion	Ing/Derm.	HQ
SVOCs																		
2,4-Dichlorophenol	NCOPC	4.35E-04	NCOPC	4.35E-04	NCOPC	4.35E-04	NCOPC	4.35E-04	NCOPC	4.35E-04	NCOPC	4.35E-04	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4-Chloroaniline	NCOPC	2.21E-04	NCOPC	2.21E-04	NCOPC	2.21E-04	NCOPC	2.21E-04	NCOPC	2.21E-04	NCOPC	2.21E-04	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Benzo(a)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC
Benzo(a)pyrene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC
bis(2-Ethylhexyl)phthalate	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	2.86E-03	NCOPC	2.86E-03
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC
Pesticides																		
4,4'-DDE	3.89E-03	NCOPC	NCOPC	3.89E-03	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4,4'-DDT	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	8.23E-02	NCOPC	8.23E-02	7.54E-02	NCOPC	7.54E-02
alpha-Chlordane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	2.29E-03	NCOPC	2.29E-03	3.66E-03	NCOPC	3.66E-03
beta-BHC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	6.48E-03	NCOPC	6.48E-03
Dieldrin	1.85E-02	NCOPC	NCOPC	1.85E-02	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	2.29E-01	NCOPC	2.29E-01	4.34E-01	NCOPC	4.34E-01
Herbicides																		
MCPA	NCOPC	9.09E-03	NCOPC	9.09E-03	NCOPC	9.09E-03	NCOPC	9.09E-03	NCOPC	9.09E-03	NCOPC	9.09E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
MCPP	NCOPC	5.39E-03	NCOPC	5.39E-03	NCOPC	5.39E-03	NCOPC	5.39E-03	NCOPC	5.39E-03	NCOPC	5.39E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
PCBs																		
Total PCBs	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	2.21E+01	NCOPC	2.21E+01	5.71E+01	NCOPC	5.71E+01
Dioxin																		
2,3,7,8-TCDD-TEQ	NC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC	NC	NCOPC	NC
Metals																		
Arsenic	NCOPC	NCOPC	3.62E-04	3.62E-04	NCOPC	NCOPC	3.62E-04	3.62E-04	NCOPC	NCOPC	3.62E-04	3.62E-04	2.97E-01	NCOPC	2.97E-01	3.12E-01	NCOPC	3.12E-01
Lead	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NC	NC	NCOPC	NC	NC
Manganese	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	3.48E-04	3.48E-04	NCOPC	3.48E-04	3.48E-04
Mercury	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	1.90E-01	NCOPC	1.90E-01	5.41E-02	NCOPC	5.41E-02
Total HI	2.24E-02	1.51E-02	3.62E-04	**3.79E-02**	NC	1.51E-02	3.62E-04	**1.55E-02**	NC	1.51E-02	3.62E-04	**1.55E-02**	2.29E+01	3.48E-04	**2.29E+01**	5.80E+01	3.48E-04	**5.80E+01**

Notes:
Ing/Derm - Ingestion/Dermal Contact.
HI - Hazard Index.
HQ - Hazard Quotient.
DDA - Downstream Discharge Area (Mississippi River).
NC - Not Calculated or no dose-response value.
NCOPC - Not a constituent of potential concern in this area/medium.
PCBs - Polychlorinated Biphenyls.
PDA - Plume Discharge Area (Mississippi River).
RME - Reasonable Maximum Exposure.
SVOCs - Semivolatile Organic Compounds.
SW - Surface Water.
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
UDA - Upstream Discharge Area (Mississippi River).

TABLE 6-11
TOTAL POTENTIAL CARCINOGENIC RISK
INDOOR INDUSTRIAL WORKER - MLE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	O	O North	Q North	Q South	R	
	AA-O-1-16 (a)	Leachate L-O-1	Leachate L-Q-1	AA-Q-6-24 (b)	AA-R-1-28 (b)	Leachate L-R-1
Constituent	Inhalation Risk	Inhalation Risk	Inhalation Risk	Inhalation Risk	Inhalation Risk	Inhalation Risk
VOCs						
1,2-Dichloroethane	NCOPC	NCOPC	5.25E-09	NCOPC	NCOPC	3.37E-10
1,2-Dichloroethene (total)	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK)	NCOPC	NC	NC	NCOPC	NCOPC	NCOPC
Acetone	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Benzene	NCOPC	1.92E-09	2.21E-09	1.53E-09	1.51E-09	1.63E-10
Chlorobenzene	NCOPC	NC	NC	NCOPC	NC	NC
Chloroform	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	7.83E-10
Chloromethane	NCOPC	NCOPC	NCOPC	NCOPC	1.07E-08	NCOPC
Dichloromethane	NCOPC	NCOPC	2.26E-10	NCOPC	NCOPC	1.49E-11
Tetrachloroethene	NCOPC	NCOPC	1.53E-08	NCOPC	NCOPC	1.31E-09
Toluene	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Trichloroethylene	NCOPC	NCOPC	1.89E-07	NCOPC	NCOPC	1.51E-08
Total Risk	**NCOPC**	**1.92E-09**	**2.12E-07**	**1.53E-09**	**1.22E-08**	**1.77E-08**

Notes:
MLE - Most Likely Exposure.
NC - No dose-response value.
NCOPC - Not a constituent of potential concern in this area/medium.
VOCs - Volatile Organic Compounds.
(a) Shallow groundwater.
(b) Mid groundwater.

TABLE 6-12
TOTAL POTENTIAL HAZARD INDEX
INDOOR INDUSTRIAL WORKER - MLE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	O	O North	Q North	Q South	R	
	AA-O-1-16 (a)	Leachate L-O-1	Leachate L-Q-1	AA-Q-6-24 (b)	AA-R-1-28 (b)	Leachate L-R-1
Constituent	Inhalation HQ	Inhalation HQ	Inhalation HQ	Inhalation HQ	Inhalation HQ	Inhalation HQ
VOCs						
1,2-Dichloroethane	NCOPC	NCOPC	4.12E-04	NCOPC	NCOPC	2.64E-05
1,2-Dichloroethene (total)	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	7.40E-09
4-Methyl-2-pentanone (MIBK)	NCOPC	6.40E-08	7.56E-08	NCOPC	NCOPC	NCOPC
Acetone	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Benzene	NCOPC	2.90E-04	3.35E-04	2.31E-04	2.29E-04	2.47E-05
Chlorobenzene	NCOPC	7.46E-05	8.63E-05	NCOPC	5.85E-05	7.28E-06
Chloroform	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.03E-05
Chloromethane	NCOPC	NCOPC	NCOPC	NCOPC	6.60E-04	NCOPC
Dichloromethane	NCOPC	NCOPC	1.59E-06	NCOPC	NCOPC	1.06E-07
Tetrachloroethene	NCOPC	NCOPC	4.28E-05	NCOPC	NCOPC	3.67E-06
Toluene	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.07E-06
Trichloroethylene	NCOPC	NCOPC	4.71E-04	NCOPC	NCOPC	3.77E-05
Total HI	**NCOPC**	**3.65E-04**	**1.35E-03**	**2.31E-04**	**9.48E-04**	**1.12E-04**

Notes:
HI - Hazard Index.
HQ - Hazard Quotient.
NCOPC - Not a constituent of potential concern in this area/medium.
MLE - Most Likely Exposure.
NC - No dose-response value.
VOCs - Volatile Organic Compounds.
(a) Shallow groundwater.
(b) Mid groundwater.

TABLE 6-13
TOTAL POTENTIAL CARCINOGENIC RISK
OUTDOOR INDUSTRIAL WORKER - MLE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	O				O North				P			Q North			
	Soil (a)		AA-O-1-16	Total	Soil (a)		Leachate	Total	Soil (a)		Total	Soil (a)		Leachate	Total
Constituent	Ing/Derm.	Inhalation	Inhalation	Risk	Ing/Derm.	Inhalation	Inhalation	Risk	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Inhalation	Risk
VOCs															
1,1,2-Trichloroethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	2.00E-08	5.41E-08	7.42E-08
1,2-Dichloroethane (total)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC
Acetone	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC
Benzene	NCOPC	3.07E-07	NCOPC	3.07E-07	NCOPC	1.88E-07	4.12E-09	1.92E-07	NCOPC	5.96E-09	5.96E-09	NCOPC	3.57E-09	1.79E-09	5.36E-09
Chlorobenzene	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC
Chloroform	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	3.43E-08	NCOPC	3.43E-08	NCOPC	NCOPC	NC	NCOPC	NCOPC	3.13E-11	3.13E-11
Ethylbenzene	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NCOPC	NC	NCOPC	NC
Tetrachloroethene	NCOPC	NCOPC	NCOPC	NC	NCOPC	4.25E-08	NCOPC	4.25E-08	NCOPC	3.12E-07	3.12E-07	NCOPC	2.75E-08	1.87E-09	2.94E-08
Toluene	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Trichloroethylene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	9.28E-08	9.28E-08	NCOPC	2.86E-08	2.07E-08	4.93E-08
Xylenes, Total	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NCOPC	NC	NCOPC	NC
SVOCs															
2,4,6-Trichlorophenol	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
2-Nitroaniline	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
4-Nitroaniline	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Benzo(a)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Benzo(a)pyrene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	1.64E-08	7.56E-12	1.64E-08	6.77E-08	3.12E-11	NCOPC	6.77E-08
Benzo(b)fluoranthene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	1.16E-08	5.34E-12	NCOPC	1.16E-08
Pesticides															
4,4'-DDT	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
beta-BHC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Dieldrin	3.32E-08	1.19E-11	NCOPC	3.32E-08	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
gamma-BHC (Lindane)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Heptachlor	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Herbicides															
Pentachlorophenol	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
PCBs															
Total PCBs	2.21E-07	8.75E-11	NCOPC	2.21E-07	2.91E-05	7.65E-09	NCOPC	2.91E-05	7.32E-08	2.89E-11	7.32E-08	2.35E-08	9.29E-12	NCOPC	2.35E-08
Dioxin															
2,3,7,8-TCDD-TEQ	4.89E-06	2.00E-09	NCOPC	4.89E-06	8.31E-05	2.26E-08	NCOPC	8.32E-05	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Metals															
Antimony	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Arsenic	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	1.43E-07	1.73E-09	1.44E-07	NCOPC	NCOPC	NCOPC	NC
Cadmium	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	1.03E-09	NCOPC	1.03E-09
Chromium	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Manganese	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Mercury	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Total	5.14E-06	3.09E-07	NC	**5.45E-06**	1.12E-04	2.95E-07	4.12E-09	**1.13E-04**	2.32E-07	4.13E-07	**6.45E-07**	1.03E-07	8.07E-08	7.85E-08	**2.62E-07**

Notes:
(a) - Surface soil for ing/derm and inhalation of nonvolatile constituents; combined soil for inhalation of volatiles.
Ing/Derm - Ingestion/Dermal Contact.
MLE - Most Likely Exposure.
NC - Not Calculated or no dose-response value.
NCOPC - Not a constituent of potential concern in this area/medium.
PCBs - Polychlorinated Biphenyls.
SVOCs - Semivolatile Organic Compounds.
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
VOCs - Volatile Organic Compounds.

TABLE 6-13
TOTAL POTENTIAL CARCINOGENIC RISK
OUTDOOR INDUSTRIAL WORKER - MLE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Q Central			Q South				R						S		
	Soil (a)		Total	Soil (a)		AA-Q-6-24	Total	Soil (a)		AA-R-1-28	Leachate	Max Value	Total	Soil (a)		Total
Constituent	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Inhalation	Risk	Ing/Derm.	Inhalation	Inhalation	Inhalation	Inhalation	Risk	Ing/Derm.	Inhalation	Risk
VOCs																
1,1,2-Trichloroethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	9.00E-09	NCOPC	NCOPC	NC	9.00E-09	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	8.12E-08	NCOPC	1.08E-06	1.08E-06	1.16E-06	NCOPC	NCOPC	NC
1,2-Dichloroethane (total)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NC	NC
Acetone	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
Benzene	NCOPC	NCOPC	NC	NCOPC	6.87E-10	1.83E-09	2.52E-09	NCOPC	1.10E-08	8.25E-12	2.61E-08	2.61E-08	3.71E-08	NCOPC	5.04E-09	5.04E-09
Chlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NC	NC	NC	NC	NC	NCOPC	NC	NC
Chloroform	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	6.95E-09	NCOPC	4.43E-08	4.43E-08	5.12E-08	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	6.37E-13	NCOPC	6.37E-13	6.37E-13	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	1.08E-09	1.08E-09	1.08E-09	NCOPC	2.45E-09	2.45E-09
Ethylbenzene	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC	NC
Tetrachloroethene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	1.75E-07	NCOPC	7.00E-07	7.00E-07	8.75E-07	NCOPC	1.05E-08	1.05E-08
Toluene	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NC	NCOPC	NC	NC
Trichloroethylene	NCOPC	NCOPC	NC	NCOPC	5.95E-09	NCOPC	5.95E-09	NCOPC	1.24E-05	NCOPC	1.21E-04	1.21E-04	1.34E-04	NCOPC	2.62E-06	2.62E-06
Xylenes, Total	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC	NC
SVOCs																
2,4,6-Trichlorophenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.05E-09	3.69E-13	1.05E-09
2-Nitroaniline	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC
4-Nitroaniline	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC
Benzo(a)anthracene	NCOPC	NCOPC	NC	3.04E-09	1.40E-12	NCOPC	3.04E-09	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	2.21E-08	1.02E-11	2.21E-08
Benzo(a)pyrene	NCOPC	NCOPC	NC	3.26E-08	1.50E-11	NCOPC	3.26E-08	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.51E-07	6.95E-11	1.51E-07
Benzo(b)fluoranthene	NCOPC	NCOPC	NC	3.95E-09	1.82E-12	NCOPC	3.96E-09	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.86E-08	8.60E-12	1.86E-08
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	5.41E-08	2.50E-11	5.41E-08
Pesticides																
4,4'-DDT	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	6.21E-08	2.20E-11	6.21E-08
beta-BHC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	5.34E-07	1.96E-10	5.34E-07
Dieldrin	NCOPC	NCOPC	NC	2.91E-08	1.04E-11	NCOPC	2.91E-08	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
gamma-BHC (Lindane)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.11E-07	NC	1.11E-07
Heptachlor	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	7.70E-08	2.77E-11	7.70E-08
Herbicides																
Pentachlorophenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	6.02E-07	NC	6.02E-07
PCBs																
Total PCBs	4.42E-08	1.75E-11	4.42E-08	1.13E-07	4.46E-11	NCOPC	1.13E-07	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	2.07E-05	8.18E-09	2.07E-05
Dioxin																
2,3,7,8-TCDD-TEQ	1.86E-06	7.60E-10	1.86E-06	1.13E-06	4.61E-10	NCOPC	1.13E-06	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Metals																
Antimony	NCOPC	NCOPC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Arsenic	7.38E-08	8.94E-10	7.47E-08	9.77E-08	1.18E-09	NCOPC	9.89E-08	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Cadmium	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Chromium	NCOPC	NCOPC	NC	NC	2.86E-08	NCOPC	2.86E-08	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Manganese	NCOPC	NCOPC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Mercury	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Total	1.98E-06	1.67E-09	1.98E-06	1.41E-06	3.70E-08	1.83E-09	1.45E-06	NC	1.27E-05	8.88E-12	1.23E-04	1.23E-04	1.36E-04	2.23E-05	2.64E-06	2.50E-05

Notes:
(a) - Surface soil for ing/derm and inhalation of nonvolatile constituents; combined soil for inhalation of volatiles.
Ing/Derm - Ingestion/Dermal Contact.
MLE - Most Likely Exposure.
NC - Not Calculated or no dose-response value.
NCOPC - Not a constituent of potential concern in this area/medium.
PCBs - Polychlorinated Biphenyls.
SVOCs - Semivolatile Organic Compounds.
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
VOCs - Volatile Organic Compounds.

TABLE 6-14
TOTAL POTENTIAL HAZARD INDEX
OUTDOOR INDUSTRIAL WORKER - MLE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Q				Q North				P			Q North			
	Soil (a)		AA-O-1-16	Total	Soil (a)		Leachate	Total	Soil (a)		Total	Soil (a)		Leachate	Total
Constituent	Ing/Derm.	Inhalation	Inhalation	HQ	Ing/Derm.	Inhalation	Inhalation	HQ	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	Inhalation	HQ
VOCs															
1,1,2-Trichloroethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	1.57E-03	4.25E-03	5.82E-03
1,2-Dichloroethene (total)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.57E-06	2.57E-06	NCOPC	NCOPC	NC	NCOPC	NCOPC	3.40E-06	3.40E-06
Acetone	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC
Benzene	NCOPC	4.65E-02	NCOPC	4.65E-02	NCOPC	2.85E-02	6.25E-04	2.91E-02	NCOPC	9.02E-04	9.02E-04	NCOPC	5.41E-04	2.71E-04	8.12E-04
Chlorobenzene	NCOPC	5.25E-02	NCOPC	5.25E-02	NCOPC	1.08E-01	4.20E-04	1.09E-01	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.52E-04	2.52E-04
Chloroform	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	2.42E-04	NCOPC	2.42E-04	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.21E-07	2.21E-07
Ethylbenzene	NCOPC	6.86E-03	NCOPC	6.86E-03	NCOPC	9.98E-03	NCOPC	9.98E-03	NCOPC	2.91E-04	2.91E-04	NCOPC	8.32E-05	NCOPC	8.32E-05
Tetrachloroethene	NCOPC	NCOPC	NCOPC	NC	NCOPC	1.19E-04	NCOPC	1.19E-04	NCOPC	8.75E-04	8.75E-04	NCOPC	7.70E-05	5.25E-06	8.22E-05
Toluene	NCOPC	2.50E-03	NCOPC	2.50E-03	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Trichloroethylene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	2.32E-04	2.32E-04	NCOPC	7.14E-05	5.18E-05	1.23E-04
Xylenes, Total	NCOPC	3.54E-01	NCOPC	3.54E-01	NCOPC	5.21E-01	NCOPC	5.21E-01	NCOPC	1.54E-02	1.54E-02	NCOPC	6.04E-03	NCOPC	6.04E-03
SVOCs															
2,4,6-Trichlorophenol	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
2-Nitroaniline	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
4-Nitroaniline	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Benzo(a)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Benzo(a)pyrene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NCOPC	NC
Benzo(b)fluoranthene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NC
Pesticides															
4,4'-DDT	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
beta-BHC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Dieldrin	4.15E-04	NC	NCOPC	4.15E-04	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
gamma-BHC (Lindane)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Heptachlor	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Herbicides															
Pentachlorophenol	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
PCBs															
Total PCBs	5.53E-02	NC	NCOPC	5.53E-02	7.27E+00	NC	NCOPC	7.27E+00	1.83E-02	NC	1.83E-02	5.87E-03	NC	NCOPC	5.87E-03
Dioxin															
2,3,7,8-TCDD-TEQ	NC	NC	NCOPC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Metals															
Antimony	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Arsenic	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	3.17E-03	NC	3.17E-03	NCOPC	NCOPC	NCOPC	NC
Cadmium	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	4.89E-03	NC	NCOPC	4.89E-03
Chromium	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Manganese	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Mercury	NCOPC	NCOPC	NCOPC	NC	6.45E-02	2.71E-05	NCOPC	6.45E-02	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC
Total HI	5.57E-02	4.62E-01	NCOPC	**5.18E-01**	7.33E+00	6.68E-01	1.05E-03	**8.00E+00**	2.15E-02	1.77E-02	**3.92E-02**	1.06E-02	8.38E-03	4.83E-03	**2.40E-02**

Notes:
(a) - Surface soil for Ing/derm and inhalation of nonvolatile constituents; combined soil for inhalation of volatiles.
Ing/Derm - Ingestion/Dermal Contact.
HI - Hazard Index.
HQ - Hazard Quotient.
MLE - Most Likely Exposure.
NC - Not Calculated or no dose-response value.
NCOPC - Not a constituent of potential concern in this area/medium.
PCBs - Polychlorinated Biphenyls.
SVOCs - Semivolatile Organic Compounds.
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
VOCs - Volatile Organic Compounds.

TABLE 6-14
TOTAL POTENTIAL HAZARD INDEX
OUTDOOR INDUSTRIAL WORKER - MLE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Q Central			Q South				R						S		
	Soil (a)		Total	Soil (a)		AA-Q-6-24	Total	Soil (a)		AA-R-1-28	Leachate	Max Value	Total	Soil (a)		Total
Constituent	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	Inhalation	HQ	Ing/Derm.	Inhalation	Inhalation	Inhalation	Inhalation	HQ	Ing/Derm.	Inhalation	HQ
VOCs																
1,1,2-Trichloroethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	6.37E-03	NCOPC	8.50E-02	8.50E-02	9.14E-02	NCOPC	NCOPC	NC
1,2-Dichloroethane (total)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	1.52E-05	1.52E-05	1.52E-05	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	3.54E-04	3.54E-04
Acetone	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
Benzene	NCOPC	NCOPC	NC	NCOPC	1.04E-04	2.78E-04	3.82E-04	NCOPC	1.67E-03	1.25E-06	3.96E-03	3.96E-03	5.62E-03	NCOPC	7.63E-04	7.63E-04
Chlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	3.85E-03	2.03E-06	2.55E-04	2.55E-04	4.10E-03	NCOPC	4.55E-03	4.55E-03
Chloroform	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	9.15E-05	NCOPC	5.82E-04	5.82E-04	6.74E-04	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	3.93E-08	NCOPC	3.93E-08	NC	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	7.61E-06	7.61E-06	7.61E-06	NCOPC	1.73E-05	1.73E-05
Ethylbenzene	NCOPC	NCOPC	NC	NCOPC	3.33E-04	NCOPC	3.33E-04	NCOPC	7.28E-06	NCOPC	NCOPC	NC	7.28E-06	NCOPC	2.50E-04	2.50E-04
Tetrachloroethene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	4.90E-04	NCOPC	1.96E-03	1.96E-03	2.45E-03	NCOPC	2.94E-05	2.94E-05
Toluene	NCOPC	NCOPC	NC	NCOPC	3.91E-03	NCOPC	3.91E-03	NCOPC	6.26E-04	NCOPC	9.92E-04	9.92E-04	1.62E-03	NCOPC	4.54E-03	4.54E-03
Trichloroethylene	NCOPC	NCOPC	NC	NCOPC	1.49E-05	NCOPC	1.49E-05	NCOPC	3.09E-02	NCOPC	3.03E-01	3.03E-01	3.34E-01	NCOPC	6.54E-03	6.54E-03
Xylenes, Total	NCOPC	NCOPC	NC	NCOPC	2.29E-02	NCOPC	2.29E-02	NCOPC	4.58E-04	NCOPC	NCOPC	NC	4.58E-04	NCOPC	1.75E-02	1.75E-02
SVOCs																
2,4,6-Trichlorophenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	9.56E-03	NC	9.56E-03
2-Nitroaniline	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	3.94E-06	3.94E-06
4-Nitroaniline	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	2.20E-03	2.06E-06	2.20E-03
Benzo(a)anthracene	NCOPC	NCOPC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC
Benzo(a)pyrene	NCOPC	NCOPC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC
Benzo(b)fluoranthene	NCOPC	NCOPC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC
Pesticides																
4,4'-DDT	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	3.65E-03	NC	3.65E-03
beta-BHC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	9.88E-03	NC	9.88E-03
Dieldrin	NCOPC	NCOPC	NC	3.63E-04	NC	NCOPC	3.63E-04	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
gamma-BHC (Lindane)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	2.85E-03	NC	2.85E-03
Heptachlor	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	3.42E-04	NC	3.42E-04
Herbicides																
Pentachlorophenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.67E-03	NC	1.67E-03
PCBs																
Total PCBs	1.11E-02	NC	1.11E-02	2.82E-02	NC	NCOPC	2.82E-02	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	5.17E+00	NC	5.17E+00
Dioxin																
2,3,7,8-TCDD-TEQ	NC	NC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Metals																
Antimony	NCOPC	NCOPC	NC	3.94E-03	NC	NCOPC	3.94E-03	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Arsenic	1.64E-03	NC	1.64E-03	2.17E-03	NC	NCOPC	2.17E-03	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Cadmium	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Chromium	NCOPC	NCOPC	NC	1.88E-03	2.38E-04	NCOPC	2.11E-03	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Manganese	NCOPC	NCOPC	NC	5.73E-03	3.43E-03	NCOPC	9.16E-03	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Mercury	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Total HI	1.27E-02	NC	**1.27E-02**	4.23E-02	3.09E-02	2.78E-04	**7.35E-02**	NCOPC	4.45E-02	3.32E-06	3.96E-01	3.96E-01	**4.41E-01**	5.20E+00	3.45E-02	**5.23E+00**

Notes:
(a) - Surface soil for ing/derm and inhalation of nonvolatile constituents; combined soil for inhalation of volatiles.
Ing/Derm - Ingestion/Dermal Contact.
HI - Hazard Index.
HQ - Hazard Quotient.
MLE - Most Likely Exposure.
NC - Not Calculated or no dose-response value.
NCOPC - Not a constituent of potential concern in this area/medium.
PCBs - Polychlorinated Biphenyls.
SVOCs - Semivolatile Organic Compounds.
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
VOCs - Volatile Organic Compounds.

TABLE 6-15
TOTAL POTENTIAL CARCINOGENIC RISK
CONSTRUCTION/UTILITY WORKER - MLE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	O					O North					P			Q North				
	Combined Soil		AA-O-1-16		Total	Combined Soil		Leachate		Total	Combined Soil		Total	Combined Soil		Leachate		Total
Constituent	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	Risk
VOCs																		
1,1,2-Trichloroethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	2.31E-11	3.54E-09	1.24E-06	7.06E-07	7.22E-07
1,2-Dichloroethane (total)	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK)	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC
Acetone	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC
Benzene	1.24E-09	1.76E-07	NCOPC	NCOPC	1.77E-07	5.60E-10	7.85E-08	5.95E-09	2.57E-08	1.11E-07	8.51E-12	1.14E-09	1.15E-09	8.71E-12	1.24E-09	2.75E-09	1.19E-08	1.59E-08
Chlorobenzene	NC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC
Chloroform	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	2.28E-10	1.83E-08	NCOPC	NCOPC	1.86E-08	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.86E-11	3.15E-10	3.43E-10
Ethylbenzene	NC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC
Tetrachloroethene	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.51E-09	1.78E-08	NCOPC	NCOPC	1.93E-08	5.56E-09	6.48E-08	7.04E-08	8.30E-10	9.86E-09	2.06E-08	5.60E-09	3.69E-08
Toluene	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Trichloroethylene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	6.31E-11	1.72E-08	1.72E-08	3.36E-11	9.12E-09	1.31E-09	2.77E-08	3.82E-08
Xylenes, Total	NC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC
SVOCs																		
1,2-Dichlorobenzene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
1,3-Dichlorobenzene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
1,4-Dichlorobenzene	3.53E-10	3.32E-12	NCOPC	NCOPC	3.57E-10	1.20E-09	1.13E-11	NCOPC	NCOPC	1.21E-09	4.61E-10	4.33E-12	4.65E-10	NCOPC	NCOPC	NCOPC	NCOPC	NC
2,4,6-Trichlorophenol	2.23E-11	2.25E-13	NCOPC	NCOPC	2.25E-11	2.08E-10	2.10E-12	2.01E-09	NCOPC	2.22E-09	NCOPC	NCOPC	NC	3.37E-11	3.40E-13	6.61E-08	NCOPC	6.61E-08
2,4-Dichlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NC
2,4-Dimethylphenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
2-Chlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
2-Methylnaphthalene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
2-Nitroaniline	NC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NC
3-Methylphenol/4-Methylphenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
4-Chloroaniline	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
4-Nitroaniline	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
Benzo(a)anthracene	1.18E-09	1.15E-11	NCOPC	NCOPC	1.19E-09	3.91E-09	3.83E-11	NCOPC	NCOPC	3.95E-09	NCOPC	NCOPC	NC	3.15E-10	3.08E-12	NCOPC	NCOPC	3.18E-10
Benzo(a)pyrene	7.35E-09	7.20E-11	1.31E-07	NCOPC	1.38E-07	1.66E-08	1.63E-10	NCOPC	NCOPC	1.68E-08	6.71E-10	6.56E-12	6.77E-10	3.36E-09	3.29E-11	NCOPC	NCOPC	3.39E-09
Benzo(b)fluoranthene	8.09E-10	7.92E-12	9.01E-09	NCOPC	9.82E-09	1.56E-09	1.53E-11	NCOPC	NCOPC	1.56E-09	NCOPC	NCOPC	NC	3.00E-10	2.94E-12	NCOPC	NCOPC	3.03E-10
Benzo(g,h,i)perylene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Benzo(k)fluoranthene	NCOPC	NCOPC	9.82E-10	NCOPC	9.82E-10	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
bis(2-Chloroethyl)ether	NCOPC	NCOPC	NCOPC	NCOPC	NC	9.86E-10	1.06E-11	NCOPC	NCOPC	9.96E-10	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
bis(2-Ethylhexyl)phthalate	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Dibenzo(a,h)anthracene	2.17E-09	2.13E-11	4.97E-07	NCOPC	4.99E-07	5.42E-09	5.30E-11	NCOPC	NCOPC	5.47E-09	NCOPC	NCOPC	NC	5.39E-10	5.27E-12	NCOPC	NCOPC	5.44E-10
Hexachlorobenzene	NCOPC	NCOPC	NCOPC	NCOPC	NC	2.73E-09	2.52E-11	NCOPC	NCOPC	2.75E-09	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Indeno(1,2,3-cd)pyrene	NCOPC	NCOPC	3.89E-08	NCOPC	3.89E-08	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Naphthalene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
Nitrobenzene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
Pesticides																		
4,4'-DDE	NCOPC	NCOPC	NCOPC	NCOPC	NC	4.55E-09	NC	NCOPC	NCOPC	4.55E-09	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
4,4'-DDT	NCOPC	NCOPC	NCOPC	NCOPC	NC	5.47E-09	5.59E-11	NCOPC	NCOPC	5.52E-09	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Aldrin	1.95E-09	2.01E-11	NCOPC	NCOPC	1.97E-09	2.94E-08	3.04E-10	NCOPC	NCOPC	2.97E-08	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
alpha-BHC	NCOPC	NCOPC	NCOPC	NCOPC	NC	2.97E-09	3.04E-11	NCOPC	NCOPC	3.00E-09	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
beta-BHC	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.03E-08	1.08E-10	7.35E-10	NCOPC	1.11E-08	NCOPC	NCOPC	NC	NCOPC	NCOPC	3.97E-09	NCOPC	3.97E-09
delta-BHC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Dieldrin	1.59E-08	1.64E-10	NCOPC	NCOPC	1.61E-08	2.45E-07	2.52E-09	NCOPC	NCOPC	2.48E-07	1.58E-09	1.63E-11	1.60E-09	4.35E-09	4.48E-11	NCOPC	NCOPC	4.39E-09
Endrin Ketone	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
gamma-BHC (Lindane)	5.18E-10	NC	NCOPC	NCOPC	5.18E-10	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Heptachlor	2.78E-09	2.88E-11	NCOPC	NCOPC	2.81E-09	1.20E-08	1.25E-10	NCOPC	NCOPC	1.22E-08	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Heptachlor epoxide	1.05E-09	1.07E-11	NCOPC	NCOPC	1.06E-09	8.95E-09	9.16E-11	NCOPC	NCOPC	9.04E-09	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Herbicides																		
2,4,5-T	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
2,4-D	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
MCPA	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
MCPP	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Pentachlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	5.69E-07	NCOPC	5.69E-07	NCOPC	NCOPC	NC	6.17E-09	NC	3.36E-06	NCOPC	3.36E-06

TABLE 6-15
TOTAL POTENTIAL CARCINOGENIC RISK
CONSTRUCTION/UTILITY WORKER - MLE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	O					O North					P			Q North				
	Combined Soil		AA-O-1-16		Total	Combined Soil		Leachate		Total	Combined Soil		Total	Combined Soil		Leachate		Total
Constituent	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	Risk
PCBs																		
Total PCBs	1.22E-07	1.12E-09	NCOPC	NCOPC	1.24E-07	3.13E-06	2.87E-08	8.02E-07	NCOPC	3.96E-06	7.80E-09	7.15E-11	7.87E-09	5.14E-08	4.72E-10	1.52E-08	NCOPC	6.71E-08
Dioxin																		
2,3,7,8-TCDD-TEQ	5.48E-07	4.26E-09	NCOPC	NCOPC	5.52E-07	2.78E-05	2.16E-07	2.43E-06	NCOPC	3.04E-05	2.42E-08	1.88E-10	2.44E-08	4.48E-07	3.48E-09	NCOPC	NCOPC	4.52E-07
Metals																		
Antimony	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NC
Arsenic	NCOPC	NCOPC	1.62E-09	NCOPC	1.62E-09	6.65E-09	2.43E-09	NCOPC	NCOPC	9.09E-09	4.29E-09	1.57E-09	5.86E-09	3.92E-09	1.43E-09	NCOPC	NCOPC	5.35E-09
Barium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
Beryllium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Cadmium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	2.00E-09	NCOPC	NCOPC	2.00E-09	NC	5.41E-10	5.41E-10	NC	6.22E-10	NCOPC	NCOPC	6.22E-10
Chromium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Cobalt	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Copper	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Lead	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
Manganese	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
Mercury	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Nickel	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC
Total	7.06E-07	1.81E-07	6.79E-07	NCOPC	**1.57E-06**	3.13E-05	3.67E-07	3.81E-06	2.57E-08	**3.55E-05**	4.47E-08	8.55E-08	**1.30E-07**	5.19E-07	2.99E-08	3.48E-06	7.52E-07	**4.78E-06**

Notes:
Ing/Derm - Ingestion/Dermal Contact.
MLE - Most Likely Exposure.
NC - Not Calculated or no dose-response value.
NCOPC - Not a constituent of potential concern in this area/medium.
PCBs - Polychlorinated Biphenyls.
SVOCs - Semivolatile Organic Compounds.
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
VOCs - Volatile Organic Compounds.

TABLE 6-15
TOTAL POTENTIAL CARCINOGENIC RISK
CONSTRUCTION/UTILITY WORKER - MLE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Q Central			Q South			R					S		
	Combined Soil		Total	Combined Soil		Total	Combined Soil		Leachate		Total	Combined Soil		Total
Constituent	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Risk
VOCs														
1,1,2-Trichloroethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	7.57E-11	9.77E-10	NCOPC	NCOPC	1.05E-09	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	1.20E-09	9.04E-09	2.89E-07	1.64E-05	1.67E-05	NCOPC	NCOPC	NC
1,2-Dichloroethene (total)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC
Acetone	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
Benzene	NCOPC	NCOPC	NC	1.72E-12	2.38E-10	2.39E-10	3.37E-10	1.24E-09	4.40E-08	1.90E-07	2.36E-07	1.51E-10	5.58E-10	7.09E-10
Chlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Chloroform	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	7.84E-10	NC	3.91E-07	3.92E-07	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.16E-09	1.27E-08	1.39E-08	1.02E-10	2.65E-10	3.67E-10
Ethylbenzene	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC	NC	NC	NC
Tetrachloroethene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	9.54E-08	2.03E-08	8.23E-06	2.24E-06	1.06E-05	5.51E-09	1.16E-09	6.69E-09
Toluene	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Trichloroethylene	NCOPC	NCOPC	NC	6.87E-12	1.82E-09	1.83E-09	7.96E-08	1.40E-06	9.80E-06	2.06E-04	2.19E-04	1.70E-08	3.01E-07	3.18E-07
Xylenes, Total	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC	NC	NC	NC
SVOCs											NC			
1,2-Dichlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
1,3-Dichlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC
1,4-Dichlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	4.75E-11	4.45E-13	NCOPC	NCOPC	4.79E-11	7.36E-10	6.91E-12	7.43E-10
2,4,5-Trichlorophenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	6.36E-10	6.42E-12	NCOPC	NCOPC	6.42E-10	2.63E-11	2.65E-13	2.65E-11
2,4-Dichlorophenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2,4-Dimethylphenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2-Chlorophenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC
2-Methylnaphthalene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2-Nitroaniline	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NC	NC	NC
3-Methylphenol/4-Methylphenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
4-Chloroaniline	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
4-Nitroaniline	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NC	NC	NC	NC
Benzo(a)anthracene	1.55E-10	1.52E-12	1.56E-10	1.51E-10	1.48E-12	1.53E-10	NCOPC	NCOPC	NCOPC	NCOPC	NC	7.55E-10	7.39E-12	7.63E-10
Benzo(a)pyrene	1.64E-09	1.60E-11	1.65E-09	1.74E-09	1.70E-11	1.76E-09	NCOPC	NCOPC	NCOPC	NCOPC	NC	5.92E-09	5.79E-11	5.98E-09
Benzo(b)fluoranthene	2.00E-10	1.95E-12	2.02E-10	1.81E-10	1.77E-12	1.83E-10	NCOPC	NCOPC	NCOPC	NCOPC	NC	6.75E-10	6.61E-12	6.82E-10
Benzo(g,h,i)perylene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
Benzo(k)fluoranthene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
bis(2-Chloroethyl)ether	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
bis(2-Ethylhexyl)phthalate	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	5.23E-10	NC	5.23E-10
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	2.53E-09	2.48E-11	2.56E-09
Hexachlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Indeno(1,2,3-cd)pyrene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Naphthalene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NC	NC	NC
Nitrobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Pesticides											NC			
4,4'-DDE	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4,4'-DDT	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.88E-07	NCOPC	2.88E-07	7.56E-10	7.73E-12	7.64E-10
Aldrin	2.53E-10	2.61E-12	2.56E-10	5.24E-10	5.41E-12	5.30E-10	NCOPC	NCOPC	NCOPC	NCOPC	NC	8.09E-10	8.35E-12	8.17E-10
alpha-BHC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
beta-BHC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	4.94E-10	5.21E-12	5.88E-08	NCOPC	5.93E-08	6.20E-09	6.54E-11	6.26E-09
delta-BHC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dieldrin	8.82E-10	9.09E-12	8.91E-10	1.67E-09	1.72E-11	1.69E-09	4.29E-09	4.42E-11	4.97E-07	NCOPC	5.01E-07	1.43E-09	1.47E-11	1.44E-09
Endrin Ketone	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
gamma-BHC (Lindane)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	5.27E-09	NCOPC	5.27E-09	1.30E-09	NC	1.30E-09
Heptachlor	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	6.59E-10	6.82E-12	1.10E-07	NCOPC	1.11E-07	9.65E-10	9.96E-12	9.75E-10
Heptachlor epoxide	NCOPC	NCOPC	NC	2.69E-10	2.76E-12	2.72E-10	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Herbicides											NC			
2,4,5-T	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2,4-D	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
MCPA	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
MCPP	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Pentachlorophenol	1.54E-10	NC	1.54E-10	3.37E-09	NC	3.37E-09	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.08E-08	NC	1.08E-08

TABLE 6-15
TOTAL POTENTIAL CARCINOGENIC RISK
CONSTRUCTION/UTILITY WORKER - MLE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Q Central			Q South			R					S		
	Combined Soil		Total	Combined Soil		Total	Combined Soil		Leachate		Total	Combined Soil		Total
Constituent	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Risk
PCBs											NC			
Total PCBs	4.21E-09	3.86E-11	4.25E-09	9.93E-09	9.11E-11	1.00E-08	7.23E-08	6.63E-10	5.82E-05	NCOPC	5.82E-05	3.09E-07	2.83E-09	3.11E-07
Dioxin											NC			
2,3,7,8-TCDD-TEQ	2.07E-07	1.61E-09	2.09E-07	1.84E-07	1.43E-09	1.85E-07	1.12E-07	8.73E-10	1.11E-05	NCOPC	1.12E-05	3.99E-07	3.10E-09	4.03E-07
Metals											NC			
Antimony	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Arsenic	4.90E-09	1.79E-09	6.69E-09	4.37E-09	1.60E-09	5.96E-09	2.04E-09	7.44E-10	NCOPC	NCOPC	2.78E-09	NCOPC	NCOPC	NC
Barium	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Beryllium	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
Cadmium	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Chromium	NCOPC	NCOPC	NC	NC	2.98E-08	2.98E-08	NCOPC	NCOPC	NC	NCOPC	NC	NC	6.06E-08	6.06E-08
Cobalt	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
Copper	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Lead	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC
Manganese	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
Mercury	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC
Nickel	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
Total	2.20E-07	3.47E-09	**2.23E-07**	2.06E-07	3.51E-08	**2.41E-07**	3.70E-07	1.43E-06	8.86E-05	2.27E-04	**3.17E-04**	7.64E-07	3.69E-07	**1.13E-06**

Notes:
Ing/Derm - Ingestion/Dermal Contact.
MLE - Most Likely Exposure.
NC - Not Calculated or no dose-response value.
NCOPC - Not a constituent of potential concern in this area/medium.
PCBs - Polychlorinated Biphenyls.
SVOCs - Semivolatile Organic Compounds.
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
VOCs - Volatile Organic Compounds.

TABLE 6-16
TOTAL POTENTIAL HAZARD INDEX
CONSTRUCTION/UTILITY WORKER - MLE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	O					O North					P			Q North				
	Combined Soil		AA-O-1-16		Total	Combined Soil		Leachate		Total	Combined Soil		Total	Combined Soil		Leachate		Total
Constituent	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	HQ
VOCs																		
1,1,2-Trichloroethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	6.89E-07	1.95E-03	4.77E-04	1.09E-01	1.11E-01
1,2-Dichloroethene (total)	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK)	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	7.32E-06	1.41E-05	2.14E-05	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.61E-05	5.04E-05	7.65E-05
Acetone	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.89E-05	NC	1.89E-05
Benzene	1.45E-03	1.86E-01	NCOPC	NCOPC	1.88E-01	6.53E-04	8.33E-02	6.95E-03	7.80E-03	9.87E-02	9.93E-06	1.21E-03	1.22E-03	1.02E-05	1.32E-03	3.21E-03	3.60E-03	6.14E-03
Chlorobenzene	6.06E-04	8.84E-02	NCOPC	NCOPC	8.90E-02	8.86E-04	1.27E-01	2.36E-03	6.65E-03	1.37E-01	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.60E-03	4.50E-03	6.09E-03
Chloroform	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	3.55E-05	9.07E-04	NCOPC	NCOPC	9.42E-04	NCOPC	NCOPC	NC	NCOPC	NCOPC	4.45E-06	4.46E-06	8.91E-06
Ethylbenzene	2.67E-04	1.28E-02	NCOPC	NCOPC	1.31E-02	2.78E-04	1.35E-02	NCOPC	NCOPC	1.37E-02	4.79E-06	2.33E-04	2.38E-04	1.91E-06	9.20E-05	NCOPC	NCOPC	9.39E-05
Tetrachloroethene	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.95E-05	3.48E-04	NCOPC	NCOPC	3.68E-04	7.21E-05	1.27E-03	1.34E-03	1.08E-05	1.93E-04	2.67E-04	3.11E-05	5.02E-04
Toluene	1.91E-05	7.17E-03	NCOPC	NCOPC	7.19E-03	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Trichloroethylene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	3.68E-05	3.01E-04	3.37E-04	1.96E-05	1.60E-04	7.62E-04	1.21E-04	1.06E-03
Xylenes, Total	6.84E-04	7.56E-01	NCOPC	NCOPC	7.57E-01	7.20E-04	7.89E-01	NCOPC	NCOPC	7.90E-01	1.12E-05	1.22E-02	1.22E-02	7.07E-06	7.56E-03	NCOPC	NCOPC	7.57E-03
SVOCs																		
1,2-Dichlorobenzene	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.51E-04	2.44E-06	NCOPC	NCOPC	1.53E-04	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
1,3-Dichlorobenzene	NCOPC	NCOPC	NCOPC	NCOPC	NC	3.63E-04	1.46E-06	NCOPC	NCOPC	3.63E-04	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
1,4-Dichlorobenzene	3.44E-05	4.62E-08	NCOPC	NCOPC	3.44E-05	1.17E-04	1.57E-07	NCOPC	NCOPC	1.17E-04	4.48E-05	6.02E-08	4.49E-05	NCOPC	NCOPC	NCOPC	NCOPC	NC
2,4,6-Trichlorophenol	1.42E-03	NC	NCOPC	NCOPC	1.42E-03	1.32E-02	NC	1.28E-01	NCOPC	1.41E-01	NCOPC	NCOPC	NC	2.15E-03	NC	4.21E+00	NCOPC	4.21E+00
2,4-Dichlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.71E-03	NCOPC	1.71E-03	NCOPC	NCOPC	NC	4.21E-04	NC	9.07E-01	NCOPC	9.07E-01
2,4-Dimethylphenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.29E-04	NCOPC	1.29E-04
2-Chlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	5.39E-04	NCOPC	5.39E-04	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.29E-02	NCOPC	1.29E-02
2-Methylnaphthalene	NCOPC	NCOPC	NCOPC	NCOPC	NC	2.66E-04	5.44E-05	NCOPC	NCOPC	3.20E-04	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
2-Nitroaniline	NC	1.11E-05	NCOPC	NCOPC	1.11E-05	NC	2.27E-04	NC	NCOPC	2.27E-04	NCOPC	NCOPC	NC	NC	3.75E-05	NC	NCOPC	3.75E-05
3-Methylphenol/4-Methylphenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	9.62E-05	NCOPC	9.62E-05	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.40E-04	NCOPC	2.40E-04
4-Chloroaniline	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	5.37E-03	NCOPC	5.37E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.19E-02	NCOPC	1.19E-02
4-Nitroaniline	NCOPC	NCOPC	NCOPC	NCOPC	NC	6.30E-03	1.70E-04	6.33E-04	NCOPC	7.10E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	9.68E-04	NCOPC	9.68E-04
Benzo(a)anthracene	NC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
Benzo(a)pyrene	NC	NC	NC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC
Benzo(b)fluoranthene	NC	NC	NC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
Benzo(g,h,i)perylene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Benzo(k)fluoranthene	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
bis(2-Chloroethyl)ether	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
bis(2-Ethylhexyl)phthalate	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Dibenzo(a,h)anthracene	NC	NC	NC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
Hexachlorobenzene	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.49E-04	NC	NCOPC	NCOPC	1.49E-04	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Indeno(1,2,3-cd)pyrene	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Naphthalene	NCOPC	NCOPC	NCOPC	NCOPC	NC	5.90E-05	1.21E-05	1.31E-03	NCOPC	1.38E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.76E-03	NCOPC	2.76E-03
Nitrobenzene	NCOPC	NCOPC	NCOPC	NCOPC	NC	4.52E-04	4.06E-06	8.84E-04	NCOPC	1.34E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.44E-02	NCOPC	1.44E-02
Phenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	5.79E-05	NCOPC	5.79E-05	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.23E-04	NCOPC	1.23E-04
Pesticides																		
4,4'-DDE	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.87E-03	NC	NCOPC	NCOPC	1.87E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
4,4'-DDT	NCOPC	NCOPC	NCOPC	NCOPC	NC	2.25E-03	NC	NCOPC	NCOPC	2.25E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Aldrin	2.67E-04	NC	NCOPC	NCOPC	2.67E-04	4.04E-03	NC	NCOPC	NCOPC	4.04E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
alpha-BHC	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.10E-04	NC	NCOPC	NCOPC	1.10E-04	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
beta-BHC	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.33E-03	NC	9.53E-05	NCOPC	1.43E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	5.14E-04	NCOPC	5.14E-04
delta-BHC	1.66E-04	NC	NCOPC	NCOPC	1.68E-04	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Dieldrin	1.39E-03	NC	NCOPC	NCOPC	1.39E-03	2.14E-02	NC	NCOPC	NCOPC	2.14E-02	1.38E-04	NC	1.38E-04	3.80E-04	NC	NCOPC	NCOPC	3.80E-04
Endrin Ketone	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.22E-04	NCOPC	1.22E-04
gamma-BHC (Lindane)	9.29E-05	NC	NCOPC	NCOPC	9.29E-05	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Heptachlor	8.66E-05	NC	NCOPC	NCOPC	8.66E-05	3.74E-04	NC	NCOPC	NCOPC	3.74E-04	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Heptachlor epoxide	6.19E-04	NC	NCOPC	NCOPC	6.19E-04	5.30E-03	NC	NCOPC	NCOPC	5.30E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Herbicides																		
2,4,5-T	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	5.14E-05	NCOPC	5.14E-05	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
2,4-D	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	6.04E-04	NCOPC	6.04E-04	NCOPC	NCOPC	NC	NCOPC	NCOPC	6.27E-02	NCOPC	6.27E-02
MCPA	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	2.38E-03	NC	2.38E-03	NCOPC	NCOPC	NCOPC	NCOPC	NC
MCPP	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Pentachlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.11E-02	NCOPC	1.11E-02	NCOPC	NCOPC	NC	1.20E-04	NC	6.53E-02	NCOPC	6.54E-02

TABLE 6-16
TOTAL POTENTIAL HAZARD INDEX
CONSTRUCTION/UTILITY WORKER - MLE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	O					O North					P			Q North				
	Combined Soil		AA-O-1-16		Total	Combined Soil		Leachate		Total	Combined Soil		Total	Combined Soil		Leachate		Total
Constituent	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	HQ
PCBs																		
Total PCBs	2.14E-01	NC	NCOPC	NCOPC	2.14E-01	5.48E+00	NC	1.40E+00	NCOPC	6.89E+00	1.36E-02	NC	1.36E-02	9.00E-02	NC	2.67E-02	NCOPC	1.17E-01
Dioxin																		
2,3,7,8-TCDD-TEQ	NC	NC	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC
Metals																		
Antimony	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	1.04E-03	NC	6.72E-05	NCOPC	1.11E-03
Arsenic	NCOPC	NCOPC	2.53E-04	NCOPC	2.53E-04	1.04E-03	NC	NCOPC	NCOPC	1.04E-03	6.68E-04	NC	6.68E-04	6.10E-04	NC	NCOPC	NCOPC	6.10E-04
Barium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	9.95E-04	5.54E-03	NCOPC	NCOPC	6.54E-03
Beryllium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Cadmium	NCOPC	NCOPC	NCOPC	NCOPC	NC	2.75E-03	NC	NCOPC	NCOPC	2.75E-03	7.46E-04	NC	7.46E-04	8.58E-04	NC	NCOPC	NCOPC	8.58E-04
Chromium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Cobalt	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Copper	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Lead	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC
Manganese	NCOPC	NCOPC	3.46E-04	NCOPC	3.46E-04	NCOPC	NCOPC	1.52E-03	NCOPC	1.52E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.52E-04	NCOPC	1.52E-04
Mercury	NCOPC	NCOPC	NCOPC	NCOPC	NC	5.70E-02	1.08E-03	NCOPC	NCOPC	5.81E-02	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Nickel	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	5.77E-05	NCOPC	5.77E-05
Thallium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	6.01E-05	NCOPC	6.01E-05	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Vanadium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC
Zinc	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	6.84E-05	NCOPC	6.84E-05
Total HI	2.21E-01	1.05E+00	5.98E-04	NCOPC	**1.27E+00**	5.60E+00	1.02E+00	1.56E+00	1.45E-02	**8.20E+00**	1.78E-02	1.52E-02	**3.29E-02**	9.66E-02	1.68E-02	5.32E+00	1.17E-01	**5.55E+00**

Notes:
Ing/Derm - Ingestion/Dermal Contact.
HI - Hazard Index.
HQ - Hazard Quotient.
MLE - Most Likely Exposure.
NC - Not Calculated or no dose-response value.
NCOPC - Not a constituent of potential concern in this area/medium.
PCBs - Polychlorinated Biphenyls.
SVOCs - Semivolatile Organic Compounds.
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
VOCs - Volatile Organic Compounds.

TABLE 6-16
TOTAL POTENTIAL HAZARD INDEX
CONSTRUCTION/UTILITY WORKER - MLE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Q Central			Q South			R					S		
	Combined Soil		Total	Combined Soil		Total	Combined Soil		Leachate		Total	Combined Soil		Total
Constituent	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	HQ
VOCs														
1,1,2-Trichloroethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	2.33E-05	NC	NCOPC	NCOPC	2.33E-05	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	4.63E-05	4.97E-03	1.11E-02	2.53E+00	2.54E+00	NCOPC	NCOPC	NC
1,2-Dichloroethene (total)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	1.70E-05	NC	4.88E-03	NC	4.90E-03	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.23E-05	1.59E-03	1.61E-03	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	7.11E-05	2.74E-04	3.45E-04
Acetone	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	4.32E-04	NC	4.32E-04	NCOPC	NCOPC	NC
Benzene	NCOPC	NCOPC	NC	2.01E-06	2.52E-04	2.54E-04	3.93E-04	1.32E-03	5.14E-02	5.77E-02	1.11E-01	1.77E-04	5.92E-04	7.68E-04
Chlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	6.42E-04	3.09E-03	1.80E-03	5.08E-03	1.06E-02	7.30E-04	3.54E-03	4.27E-03
Chloroform	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	1.54E-05	7.23E-05	1.36E-03	1.03E-02	1.17E-02	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.80E-04	1.80E-04	3.60E-04	1.59E-05	1.31E-05	2.90E-05
Ethylbenzene	NCOPC	NCOPC	NC	7.47E-06	3.61E-04	3.69E-04	4.98E-06	5.58E-06	NCOPC	NCOPC	1.06E-05	1.66E-04	1.90E-04	3.56E-04
Tetrachloroethene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	1.24E-03	3.98E-04	1.07E-01	1.25E-02	1.21E-01	7.14E-05	2.32E-05	9.46E-05
Toluene	NCOPC	NCOPC	NC	1.79E-05	6.67E-03	6.69E-03	4.91E-05	4.78E-04	3.19E-03	1.23E-02	1.60E-02	3.71E-04	3.63E-03	4.00E-03
Trichloroethylene	NCOPC	NCOPC	NC	4.01E-06	3.19E-05	3.59E-05	4.65E-02	2.44E-02	5.72E+00	9.09E-01	6.70E+00	9.93E-03	5.26E-03	1.52E-02
Xylenes, Total	NCOPC	NCOPC	NC	2.65E-05	2.89E-02	2.90E-02	1.26E-05	3.62E-04	NCOPC	NCOPC	3.74E-04	4.91E-04	1.38E-02	1.43E-02
SVOCs														
1,2-Dichlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
1,3-Dichlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	2.07E-04	8.35E-09	2.07E-04
1,4-Dichlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	4.62E-06	6.20E-09	NCOPC	NCOPC	4.62E-06	7.16E-05	9.62E-08	7.17E-05
2,4,6-Trichlorophenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	4.04E-02	NC	NCOPC	NCOPC	4.04E-02	1.67E-03	NC	1.67E-03
2,4-Dichlorophenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	6.01E-03	NC	NCOPC	NCOPC	6.01E-03	NCOPC	NCOPC	NC
2,4-Dimethylphenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2-Chlorophenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	4.11E-04	NC	1.80E-02	NCOPC	1.84E-02	NCOPC	NCOPC	NC
2-Methylnaphthalene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2-Nitroaniline	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	1.50E-05	NCOPC	NCOPC	1.50E-05	NC	2.13E-05	2.13E-05
3-Methylphenol/4-Methylphenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	6.76E-04	NCOPC	6.76E-04	NCOPC	NCOPC	NC
4-Chloroaniline	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	5.37E-02	NCOPC	5.37E-02	NCOPC	NCOPC	NC
4-Nitroaniline	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	7.55E-05	2.03E-06	1.63E-02	NCOPC	1.64E-02	3.55E-04	9.57E-06	3.65E-04
Benzo(a)anthracene	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC
Benzo(a)pyrene	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC
Benzo(b)fluoranthene	NC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC
Benzo(g,h,i)perylene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.63E-01	NCOPC	1.63E-01	NCOPC	NCOPC	NC
Benzo(k)fluoranthene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
bis(2-Chloroethyl)ether	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
bis(2-Ethylhexyl)phthalate	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.31E-04	NC	1.31E-04
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC
Hexachlorobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Indeno(1,2,3-cd)pyrene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Naphthalene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	3.75E-05	7.69E-06	NCOPC	NCOPC	4.52E-05	6.76E-05	1.38E-05	8.14E-05
Nitrobenzene	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	7.30E-04	6.56E-06	NCOPC	NCOPC	7.37E-04	NCOPC	NCOPC	NC
Phenol	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.68E-02	NCOPC	1.68E-02	NCOPC	NCOPC	NC
Pesticides														
4,4'-DDE	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4,4'-DDT	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.18E-01	NCOPC	1.18E-01	3.11E-04	NC	3.11E-04
Aldrin	3.47E-05	NC	3.47E-05	7.20E-05	NC	7.20E-05	NCOPC	NCOPC	NCOPC	NCOPC	NC	1.11E-04	NC	1.11E-04
alpha-BHC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
beta-BHC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	6.40E-05	NC	7.62E-03	NCOPC	7.69E-03	8.03E-04	NC	8.03E-04
delta-BHC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dieldrin	7.72E-05	NC	7.72E-05	1.46E-04	NC	1.46E-04	3.75E-04	NC	4.34E-02	NCOPC	4.38E-02	1.25E-04	NC	1.25E-04
Endrin Ketone	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
gamma-BHC (Lindane)	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	9.45E-04	NCOPC	9.45E-04	2.34E-04	NC	2.34E-04
Heptachlor	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	2.05E-05	NC	3.43E-03	NCOPC	3.45E-03	3.00E-05	NC	3.00E-05
Heptachlor epoxide	NCOPC	NCOPC	NC	1.59E-04	NC	1.59E-04	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Herbicides														
2,4,5-T	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2,4-D	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.47E-03	NCOPC	2.47E-03	NCOPC	NCOPC	NC
MCPA	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
MCPP	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	2.57E-03	NC	NCOPC	NCOPC	2.57E-03	NCOPC	NCOPC	NC
Pentachlorophenol	2.99E-06	NC	2.99E-06	6.55E-05	NC	6.55E-05	NCOPC	NCOPC	NCOPC	NCOPC	NC	2.10E-04	NC	2.10E-04

TABLE 6-16
TOTAL POTENTIAL HAZARD INDEX
CONSTRUCTION/UTILITY WORKER - MLE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Q Central			Q South			R					S		
	Combined Soil		Total	Combined Soil		Total	Combined Soil		Leachate		Total	Combined Soil		Total
Constituent	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	HQ
PCBs														
Total PCBs	7.36E-03	NC	7.36E-03	1.74E-02	NC	1.74E-02	1.27E-01	NC	1.02E+02	NCOPC	1.02E+02	5.40E-01	NC	5.40E-01
Dioxin														
2,3,7,8-TCDD-TEQ	NC	NC	NC	NC	NC	NC	NC	NC	NC	NCOPC	NC	NC	NC	NC
Metals														
Antimony	NCOPC	NCOPC	NC	1.54E-03	NC	1.54E-03	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Arsenic	7.62E-04	NC	7.62E-04	6.79E-04	NC	6.79E-04	3.17E-04	NC	NCOPC	NCOPC	3.17E-04	NCOPC	NCOPC	NC
Barium	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Beryllium	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.77E-04	NCOPC	1.77E-04	NCOPC	NCOPC	NC
Cadmium	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Chromium	NCOPC	NCOPC	NC	4.42E-04	1.74E-03	2.18E-03	NCOPC	NCOPC	3.68E-03	NCOPC	3.68E-03	8.98E-04	3.53E-03	4.43E-03
Cobalt	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.61E-04	NCOPC	1.61E-04	NCOPC	NCOPC	NC
Copper	3.16E-03	NC	3.16E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Lead	NCOPC	NCOPC	NC	NC	NC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC
Manganese	1.93E-03	3.32E-02	3.51E-02	1.61E-03	2.77E-02	2.93E-02	NCOPC	NCOPC	2.11E-02	NCOPC	2.11E-02	NCOPC	NCOPC	NC
Mercury	NCOPC	NCOPC	NC	8.90E-04	1.69E-05	9.07E-04	8.66E-02	1.65E-03	7.33E-04	NCOPC	8.90E-02	NCOPC	NCOPC	NC
Nickel	NCOPC	NCOPC	NC	9.60E-04	NC	9.60E-04	NCOPC	NCOPC	3.35E-04	NCOPC	3.35E-04	NCOPC	NCOPC	NC
Thallium	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.95E-03	NCOPC	1.95E-03	NCOPC	NCOPC	NC
Vanadium	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.04E-04	NCOPC	1.04E-04	NCOPC	NCOPC	NC
Zinc	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	9.09E-04	NCOPC	9.09E-04	NCOPC	NCOPC	NC
Total HI	1.33E-02	3.32E-02	4.65E-02	2.40E-02	6.57E-02	8.97E-02	3.13E-01	3.68E-02	1.08E+02	3.54E+00	1.12E+02	5.57E-01	3.09E-02	5.88E-01

Notes:
Ing/Derm - Ingestion/Dermal Contact.
HI - Hazard Index.
HQ - Hazard Quotient.
MLE - Most Likely Exposure.
NC - Not Calculated or no dose-response value.
NCOPC - Not a constituent of potential concern in this area/medium.
PCBs - Polychlorinated Biphenyls.
SVOCs - Semivolatile Organic Compounds.
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
VOCs - Volatile Organic Compounds.

TABLE 6-17
TOTAL POTENTIAL CARCINOGENIC RISK
TRESPASSING TEENAGER - MLE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	O				O North				P			Q North				Q Central		
	Surface Soil		AA-O-1-16	Total	Surface Soil		Leachate	Total	Surface Soil		Total	Surface Soil		Leachate	Total	Surface Soil		Total
Constituent	Ing/Derm.	Inhalation	Inhalation	Risk	Ing/Derm.	Inhalation	Inhalation	Risk	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Inhalation	Inhalation	Risk	Ing/Derm.	Inhalation	Risk
VOCs																		
1,1,2-Trichloroethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	8.02E-10	2.17E-09	2.97E-09	NCOPC	NCOPC	NC
1,2-Dichloroethene (total)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Acetone	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Benzene	NCOPC	1.23E-08	NCOPC	1.23E-08	NCOPC	7.52E-09	1.65E-10	7.68E-09	NCOPC	2.38E-10	2.38E-10	NCOPC	1.43E-10	7.15E-11	2.15E-10	NCOPC	NCOPC	NC
Chlorobenzene	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Chloroform	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	1.37E-09	NCOPC	1.37E-09	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.25E-12	1.25E-12	NCOPC	NCOPC	NC
Ethylbenzene	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
Tetrachloroethene	NCOPC	NCOPC	NCOPC	NC	NCOPC	1.70E-09	NCOPC	1.70E-09	NCOPC	1.25E-08	1.25E-08	NCOPC	1.10E-09	7.50E-11	1.18E-09	NCOPC	NCOPC	NC
Toluene	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Trichloroethylene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	3.72E-09	3.72E-09	NCOPC	1.14E-09	8.29E-10	1.97E-09	NCOPC	NCOPC	NC
Xylenes, Total	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC
SVOCs																		
2,4,6-Trichlorophenol	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2,4-Dichlorophenol	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2-Nitroaniline	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4-Chloroaniline	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4-Nitroaniline	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Benzo(a)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Benzo(a)pyrene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	4.77E-09	3.03E-13	4.77E-09	1.97E-08	1.25E-12	NCOPC	1.97E-08	NCOPC	NCOPC	NC
Benzo(b)fluoranthene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	3.36E-09	2.14E-13	NCOPC	3.36E-09	NCOPC	NCOPC	NC
Pesticides																		
4,4'-DDT	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
beta-BHC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dieldrin	8.99E-09	4.75E-13	NCOPC	8.99E-09	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
gamma-BHC (Lindane)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Heptachlor	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Herbicides																		
MCPA	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
MCPP	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Pentachlorophenol	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
PCBs																		
Total PCBs	6.29E-08	3.50E-12	NCOPC	6.29E-08	8.27E-06	3.06E-10	NCOPC	8.27E-06	2.08E-08	1.16E-12	2.08E-08	6.68E-09	3.72E-13	NCOPC	6.68E-09	1.26E-08	7.00E-13	1.26E-08
Dioxin																		
2,3,7,8-TCDD-TEQ	1.47E-06	8.00E-11	NCOPC	1.47E-06	2.49E-05	9.05E-10	NCOPC	2.49E-05	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	5.58E-07	3.04E-11	5.58E-07
Metals																		
Antimony	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Arsenic	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	3.82E-08	6.91E-11	3.83E-08	NCOPC	NCOPC	NCOPC	NC	1.98E-08	3.58E-11	1.98E-08
Cadmium	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	4.12E-11	NCOPC	4.12E-11	NCOPC	NCOPC	NC
Chromium	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Lead	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Manganese	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Mercury	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Total	1.54E-06	1.24E-08	NC	1.55E-06	3.32E-05	1.18E-08	1.65E-10	3.32E-05	6.38E-08	1.65E-08	8.04E-08	2.97E-08	3.23E-09	3.14E-09	3.81E-08	5.90E-07	6.69E-11	5.90E-07

Notes:
Ing/Derm - Ingestion/Dermal Contact.
MLE - Most Likely Exposure
NC - Not Calculated or no dose-response value.
NCOPC - Not a constituent of potential concern in this area/medium.
PCBs - Polychlorinated Biphenyls.
SVOCs - Semivolatile Organic Compounds.
SW - Surface Water.
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration
VOCs - Volatile Organic Compounds.

TABLE 6-17
TOTAL POTENTIAL CARCINOGENIC RISK
TRESPASSING TEENAGER - MLE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Q South					R						S			River		
	Surface Soil		AA-Q-6-24	Pond SW	Total	Surface Soil		AA-R-1-28	Leachate	Max Value	Total	Surface Soil		Total	SW	Sediment	Total
Constituent	Ing/Derm.	Inhalation	Inhalation	Ing/Derm.	Risk	Ing/Derm.	Inhalation	Inhalation	Inhalation	Inhalation	Risk	Ing/Derm.	Inhalation	Risk	Ing/Derm.	Ing/Derm.	HQ
VOCs																	
1,1,2-Trichloroethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	3.60E-10	NCOPC	NCOPC	NC	3.60E-10	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	3.25E-09	NCOPC	4.33E-08	4.33E-08	4.66E-08	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
1,2-Dichloroethene (total)	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK)	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Acetone	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Benzene	NCOPC	2.75E-11	7.34E-11	NCOPC	1.01E-10	NCOPC	4.40E-10	3.30E-13	1.05E-09	1.05E-09	1.49E-09	NCOPC	2.02E-10	2.02E-10	NCOPC	NCOPC	NC
Chlorobenzene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NC	NC	NC	NC	NC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Chloroform	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	2.78E-10	NCOPC	1.77E-09	1.77E-09	2.05E-09	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	2.55E-14	NCOPC	2.55E-14	2.55E-14	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	4.31E-11	4.31E-11	4.31E-11	NCOPC	9.79E-11	9.79E-11	NCOPC	NCOPC	NC
Ethylbenzene	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Tetrachloroethene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	7.00E-09	NCOPC	2.80E-08	2.80E-08	3.50E-08	NCOPC	4.20E-10	4.20E-10	NCOPC	NCOPC	NC
Toluene	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Trichloroethylene	NCOPC	2.38E-10	NCOPC	NCOPC	2.38E-10	NCOPC	4.95E-07	NCOPC	4.86E-06	4.86E-06	5.35E-06	NCOPC	1.05E-07	1.05E-07	NCOPC	NCOPC	NC
Xylenes, Total	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC	NC	NCOPC	NCOPC	NC
SVOCs																	NC
2,4,6-Trichlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	2.85E-10	1.48E-14	2.85E-10	NCOPC	NCOPC	NC
2,4-Dichlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC
2-Nitroaniline	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC
4-Chloroaniline	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC
4-Nitroaniline	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC
Benzo(a)anthracene	8.83E-10	5.61E-14	NCOPC	NCOPC	8.83E-10	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	6.42E-09	4.07E-13	6.42E-09	NCOPC	NCOPC	NC
Benzo(a)pyrene	9.49E-09	6.02E-13	NCOPC	NCOPC	9.49E-09	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	4.38E-08	2.78E-12	4.38E-08	NCOPC	NCOPC	NC
Benzo(b)fluoranthene	1.15E-09	7.31E-14	NCOPC	NCOPC	1.15E-09	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	5.42E-09	3.44E-13	5.42E-09	NCOPC	NCOPC	NC
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.57E-08	9.99E-13	1.57E-08	NCOPC	NCOPC	NC
Pesticides																	NC
4,4'-DDT	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.66E-08	8.82E-13	1.66E-08	NCOPC	NCOPC	NC
beta-BHC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.45E-07	7.83E-12	1.45E-07	NCOPC	NCOPC	NC
Dieldrin	7.87E-09	4.16E-13	NCOPC	NCOPC	7.87E-09	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
gamma-BHC (Lindane)	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	3.01E-08	NC	3.01E-08	NCOPC	NCOPC	NC
Heptachlor	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	2.09E-08	1.11E-12	2.09E-08	NCOPC	NCOPC	NC
Herbicides																	NC
MCPA	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC
MCPP	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC
Pentachlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.63E-07	NC	1.63E-07	NCOPC	NCOPC	NC
PCBs																	NC
Total PCBs	3.21E-08	1.78E-12	NCOPC	NCOPC	3.21E-08	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	5.88E-06	3.27E-10	5.88E-06	NCOPC	NCOPC	NC
Dioxin																	NC
2,3,7,8-TCDD-TEQ	3.38E-07	1.85E-11	NCOPC	NCOPC	3.38E-07	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Metals																	
Antimony	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Arsenic	2.62E-08	4.74E-11	NCOPC	NCOPC	2.62E-08	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	5.87E-09	5.87E-09
Cadmium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Chromium	NC	1.15E-09	NCOPC	NCOPC	1.15E-09	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Lead	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Manganese	NC	NC	NCOPC	NC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Mercury	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Total	4.16E-07	1.48E-09	7.34E-11	NC	4.18E-07	NC	5.07E-07	3.56E-13	4.93E-08	4.93E-08	5.44E-06	6.33E-06	1.06E-07	6.44E-06	NC	5.87E-09	5.87E-09

Notes:
Ing/Derm - Ingestion/Dermal Contact.
MLE - Most Likely Exposure
NC - Not Calculated or no dose-response value.
NCOPC - Not a constituent of potential concern in this area/medium.
PCBs - Polychlorinated Biphenyls.
SVOCs - Semivolatile Organic Compounds.
SW - Surface Water.
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration
VOCs - Volatile Organic Compounds.

TABLE 6-18
TOTAL POTENTIAL HAZARD INDEX
TRESPASSING TEENAGER - MLE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	O				O North				P			Q North				Q Central		
	Surface Soil		AA-O-1-16	Total	Surface Soil		Leachate	Total	Surface Soil		Total	Surface Soil		Leachate	Total	Surface Soil		Total
Constituent	Ing/Derm.	Inhalation	Inhalation	HQ	Ing/Derm.	Inhalation	Inhalation	HQ	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Inhalation	Inhalation	HQ	Ing/Derm.	Inhalation	HQ
VOCs																		
1,1,2-Trichloroethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	4.01E-05	1.08E-04	1.48E-04	NCOPC	NCOPC	NC
1,2-Dichloroethene (total	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	6.54E-08	6.54E-08	NCOPC	NCOPC	NC	NCOPC	NCOPC	8.66E-08	8.66E-08	NCOPC	NCOPC	NC
Acetone	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC
Benzene	NCOPC	1.18E-03	NCOPC	1.18E-03	NCOPC	7.25E-04	1.59E-05	7.41E-04	NCOPC	2.30E-05	2.30E-05	NCOPC	1.38E-05	6.90E-06	2.07E-05	NCOPC	NCOPC	NC
Chlorobenzene	NCOPC	1.34E-03	NCOPC	1.34E-03	NCOPC	2.76E-03	1.07E-05	2.77E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	6.42E-06	6.42E-06	NCOPC	NCOPC	NC
Chloroform	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NCOPC	NC	NCOPC	6.17E-06	NCOPC	6.17E-06	NCOPC	NCOPC	NC	NCOPC	NCOPC	5.64E-09	5.64E-09	NCOPC	NCOPC	NC
Ethylbenzene	NCOPC	1.75E-04	NCOPC	1.75E-04	NCOPC	2.54E-04	NCOPC	2.54E-04	NCOPC	7.42E-06	7.42E-06	NCOPC	2.12E-06	NCOPC	2.12E-06	NCOPC	NCOPC	NC
Tetrachloroethene	NCOPC	NCOPC	NCOPC	NC	NCOPC	3.03E-06	NCOPC	3.03E-06	NCOPC	2.23E-05	2.23E-05	NCOPC	1.96E-06	1.34E-07	2.10E-06	NCOPC	NCOPC	NC
Toluene	NCOPC	6.38E-05	NCOPC	6.38E-05	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Trichloroethylene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	5.91E-06	5.91E-06	NCOPC	1.82E-06	1.32E-06	3.14E-06	NCOPC	NCOPC	NC
Xylenes, Tota	NCOPC	9.02E-03	NCOPC	9.02E-03	NCOPC	1.33E-02	NCOPC	1.33E-02	NCOPC	3.93E-04	3.93E-04	NCOPC	1.54E-04	NCOPC	1.54E-04	NCOPC	NCOPC	NC
SVOCs																		
2,4,6-Trichlorophenol	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2,4-Dichlorophenol	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2-Nitroaniline	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4-Chloroaniline	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4-Nitroaniline	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Benzo(a)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Benzo(a)pyrene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC
Benzo(b)fluoranthene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC
Pesticides																		
4,4'-DDT	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
beta-BHC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dieldrin	7.15E-05	NC	NCOPC	7.15E-05	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
gamma-BHC (Lindane)	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Heptachlor	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Herbicides																		
MCPA	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
MCPP	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Pentachlorophenol	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
PCBs																		
Total PCBs	1.00E-02	NC	NCOPC	1.00E-02	1.32E+00	NC	NCOPC	1.32E+00	3.31E-03	NC	3.31E-03	1.06E-03	NC	NCOPC	1.06E-03	2.00E-03	NC	2.00E-03
Dioxin																		
2,3,7,8-TCDD-TEQ	NC	NC	NCOPC	NC	NC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC
Metals																		
Antimony	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Arsenic	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	5.41E-04	NC	5.41E-04	NCOPC	NCOPC	NCOPC	NC	2.80E-04	NC	2.80E-04
Cadmium	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	8.77E-04	NC	NCOPC	8.77E-04	NCOPC	NCOPC	NC
Chromium	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Lead	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Manganese	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Mercury	NCOPC	NCOPC	NCOPC	NC	1.10E-02	6.89E-07	NCOPC	1.10E-02	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Total HI	1.01E-02	1.18E-02	NC	2.19E-02	1.33E+00	1.70E-02	2.67E-05	1.34E+00	3.85E-03	4.51E-04	4.30E-03	1.94E-03	2.14E-04	1.23E-04	2.28E-03	2.28E-03	NC	2.28E-03

Notes:
Ing/Derm - Ingestion/Dermal Contact
HI - Hazard Index
HQ - Hazard Quotient.
MLE - Most Likely Exposure
NC - Not Calculated or no dose-response value
NCOPC - Not a constituent of potential concern in this area/medium
PCBs - Polychlorinated Biphenyls
SVOCs - Semivolatile Organic Compounds
SW - Surface Water.
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration
VOCs - Volatile Organic Compounds

TABLE 6-16
TOTAL POTENTIAL HAZARD INDEX
TRESPASSING TEENAGER - MLE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Q South					R						E			River		
	Surface Soil		AA-Q-6-24	Pond SW	Total	Surface Soil		AA-R-1-28	Leachate	Max Value	Total	Surface Soil		Total	SW	Sediment	Total
Constituent	Ing/Derm.	Inhalation	Inhalation	Ing/Derm.	HQ	Ing/Derm.	Inhalation	Inhalation	Inhalation	Inhalation	HQ	Ing/Derm.	Inhalation	HQ	Ing/Derm.	Ing/Derm.	HQ
VOCs																	
1,1,2-Trichloroethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
1,2-Dichloroethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	1.62E-04	NCOPC	2.17E-03	2.17E-03	2.33E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
1,2-Dichloroethane (total	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
2-Butanone (MEK)	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	3.87E-07	3.87E-07	3.87E-07	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4-Methyl-2-pentanone (MIBK	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	9.02E-06	9.02E-06	NCOPC	NCOPC	NC
Acetone	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Benzene	NCOPC	2.65E-06	7.07E-06	NCOPC	9.73E-06	NCOPC	4.24E-05	3.18E-08	1.01E-04	1.01E-04	1.43E-04	NCOPC	1.95E-05	1.95E-05	NCOPC	NCOPC	NC
Chlorobenzene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	9.81E-05	5.17E-08	6.51E-06	6.51E-06	1.05E-04	NCOPC	1.16E-04	1.16E-04	NCOPC	NCOPC	NC
Chloroform	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	2.33E-06	NCOPC	1.48E-05	1.48E-05	1.72E-05	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Chloromethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	1.00E-09	NCOPC	1.00E-09	1.00E-09	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Dichloromethane	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	1.94E-07	1.94E-07	1.94E-07	NCOPC	4.41E-07	4.41E-07	NCOPC	NCOPC	NC
Ethylbenzene	NCOPC	8.48E-06	NCOPC	NCOPC	8.48E-06	NCOPC	1.85E-07	NCOPC	NCOPC	NC	1.85E-07	NCOPC	6.36E-06	6.36E-06	NCOPC	NCOPC	NC
Tetrachloroethene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	1.25E-05	NCOPC	4.99E-05	4.99E-05	6.24E-05	NCOPC	7.49E-07	7.49E-07	NCOPC	NCOPC	NC
Toluene	NCOPC	9.97E-05	NCOPC	NCOPC	9.97E-05	NCOPC	1.60E-05	NCOPC	2.53E-05	2.53E-05	4.12E-05	NCOPC	1.16E-04	1.16E-04	NCOPC	NCOPC	NC
Trichloroethylene	NCOPC	3.79E-07	NCOPC	NCOPC	3.79E-07	NCOPC	7.88E-04	NCOPC	7.73E-03	7.73E-03	8.52E-03	NCOPC	1.67E-04	1.67E-04	NCOPC	NCOPC	NC
Xylenes, Tota	NCOPC	5.84E-04	NCOPC	NCOPC	5.84E-04	NCOPC	1.17E-05	NCOPC	NCOPC	NC	1.17E-05	NCOPC	4.46E-04	4.46E-04	NCOPC	NCOPC	NC
SVOCs																	
2,4,6-Trichlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.85E-03	NC	1.85E-03	NCOPC	NCOPC	NC
2,4-Dichlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	1.17E-04	NCOPC	1.17E-04
2-Nitroaniline	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	1.00E-07	1.00E-07	NCOPC	NCOPC	NC
4-Chloroaniline	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	5.37E-05	NCOPC	5.37E-05
4-Nitroaniline	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	3.80E-04	5.25E-08	3.80E-04	NCOPC	NCOPC	NC
Benzo(a)anthracene	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC
Benzo(a)pyrene	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC
Benzo(b)fluoranthene	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NC	NC	NC	NCOPC	NCOPC	NC
Pesticides																	
4,4'-DDT	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	6.29E-04	NC	6.29E-04	NCOPC	NCOPC	NC
beta-BHC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	1.70E-03	NC	1.70E-03	NCOPC	NCOPC	NC
Dieldrin	6.26E-05	NC	NCOPC	NCOPC	6.26E-05	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
gamma-BHC (Lindane)	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	4.91E-04	NC	4.91E-04	NCOPC	NCOPC	NC
Heptachlor	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	5.90E-06	NC	5.90E-06	NCOPC	NCOPC	NC
Herbicides																	
MCPA	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	3.85E-03	NCOPC	3.85E-03
MCPP	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	2.14E-03	NCOPC	2.14E-03
Pentachlorophenol	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	2.88E-04	NC	2.88E-04	NCOPC	NCOPC	NC
PCBs																	
Total PCBs	5.10E-03	NC	NCOPC	NCOPC	5.10E-03	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	9.36E-01	NC	9.36E-01	NCOPC	NCOPC	NC
Dioxin																	
2,3,7,8-TCDD-TEQ	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Metals																	
Antimony	6.76E-04	NC	NCOPC	NCOPC	6.76E-04	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Arsenic	3.71E-04	NC	NCOPC	NCOPC	3.71E-04	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	8.31E-05	8.31E-05
Cadmium	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Chromium	3.18E-04	6.07E-06	NCOPC	NCOPC	3.25E-04	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Lead	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Manganese	9.88E-04	8.73E-05	NCOPC	1.15E-04	1.19E-03	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Mercury	NCOPC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Total HI	7.52E-03	7.88E-04	7.07E-06	1.15E-04	8.43E-03	NC	1.13E-03	8.45E-08	1.01E-02	1.01E-02	1.12E-02	9.41E-01	8.80E-04	9.42E-01	5.96E-03	8.31E-05	8.04E-03

Notes:
Ing/Derm - Ingestion/Dermal Contact
HI - Hazard Index
HQ - Hazard Quotient
MLE - Most Likely Exposure
NC - Not Calculated or no dose-response value
NCOPC - Not a constituent of potential concern in this area/medium
PCBs - Polychlorinated Biphenyls
SVOCs - Semivolatile Organic Compounds
SW - Surface Water.
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration
VOCs - Volatile Organic Compounds

TABLE 6-19
TOTAL POTENTIAL CARCINOGENIC RISK
RECREATIONAL FISHER - MLE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Mississippi River - UDA				Mississippi River - PDA				Mississippi River - DDA				Pond (Site Q South)			Pond (Site Q South)		
	Buffalo Fillet	SW	Sediment	Total	Buffalo Fillet	SW	Sediment	Total	Buffalo Fillet	SW	Sediment	Total	Black Bullhead Fillet	Surface Water	Total	Carp Fillet	Surface Water	Total
Constituent	Ingestion	Ing/Derm.	Ing/Derm.	Risk	Ingestion	Ing/Derm.	Ing/Derm.	Risk	Ingestion	Ing/Derm.	Ing/Derm.	Risk	Ingestion	Ing/Derm.	HQ	Ingestion	Ing/Derm.	HQ
SVOCs																		
2,4-Dichlorophenol	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4-Chloroaniline	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Benzo(a)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	1.88E-07	NCOPC	1.88E-07
Benzo(a)pyrene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	2.41E-06	NCOPC	2.41E-06
bis(2-Ethylhexyl)phthalate	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	1.29E-08	NCOPC	1.29E-08
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	1.88E-06	NCOPC	1.88E-06
Pesticides																		
4,4'-DDE	1.06E-08	NCOPC	NCOPC	1.06E-08	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4,4'-DDT	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	2.25E-07	NCOPC	2.25E-07	2.06E-07	NCOPC	2.06E-07
alpha-Chlordane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	6.43E-09	NCOPC	6.43E-09	1.03E-08	NCOPC	1.03E-08
beta-BHC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	5.62E-08	NCOPC	5.62E-08
Dieldrin	2.38E-07	NCOPC	NCOPC	2.38E-07	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	2.94E-06	NCOPC	2.94E-06	5.58E-06	NCOPC	5.58E-06
Herbicides																		
MCPA	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
MCPP	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
PCBs																		
Total PCBs	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	1.42E-05	NCOPC	1.42E-05	3.67E-05	NCOPC	3.67E-05
Dioxin																		
2,3,7,8-TCDD-TEQ	1.26E-06	NCOPC	NCOPC	1.26E-06	1.45E-07	NCOPC	NCOPC	1.45E-07	2.04E-07	NCOPC	NCOPC	2.04E-07	1.06E-06	NCOPC	1.06E-06	5.07E-06	NCOPC	5.07E-06
Metals																		
Arsenic	NCOPC	NCOPC	1.44E-09	1.44E-09	NCOPC	NCOPC	1.44E-09	1.44E-09	NCOPC	NCOPC	1.44E-09	1.44E-09	2.15E-06	NCOPC	2.15E-06	2.26E-06	NCOPC	2.26E-06
Lead	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NC	NC	NCOPC	NC	NC
Manganese	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NC	NC	NCOPC	NC	NC
Mercury	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NC	NCOPC	NC	NC	NCOPC	NC
																		NC
Total	1.51E-06	NC	1.44E-09	1.51E-06	1.45E-07	NC	1.44E-09	1.46E-07	2.04E-07	NC	1.44E-09	2.05E-07	2.08E-05	NC	2.08E-05	5.44E-05	NC	5.44E-05

Notes:
DDA - Downstream Discharge Area (Mississippi River)
Ing/Derm - Ingestion/Dermal Contact
MLE - Most Likely Exposure
NC - Not Calculated or no dose-response value
NCOPC - Not a constituent of potential concern in this area/medium
PCBs - Polychlorinated Biphenyls
PDA - Plume Discharge Area (Mississippi River)
SVOCs - Semivolatile Organic Compounds
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentratio
UDA - Upstream Discharge Area (Mississippi River)
VOCs - Volatile Organic Compounds

TABLE 6-20
TOTAL POTENTIAL HAZARD INDEX
RECREATIONAL FISHER - MLE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Mississippi River - UDA				Mississippi River - PDA				Mississippi River - DDA				Pond (Site Q South)			Pond (Site Q South)		
	Buffalo Fillet	SW	Sediment	Total	Buffalo Fillet	SW	Sediment	Total	Buffalo Fillet	SW	Sediment	Total	Black Bullhead Fillet	Surface Water	Total	Carp Fillet	Surface Water	Total
Constituent	Ingestion	Ing/Derm.	Ing/Derm.	Risk	Ingestion	Ing/Derm.	Ing/Derm.	Risk	Ingestion	Ing/Derm.	Ing/Derm.	Risk	Ingestion	Ing/Derm.	HQ	Ingestion	Ing/Derm.	HQ
SVOCs																		
2,4-Dichlorophenol	NCOPC	3.87E-05	NCOPC	3.87E-05	NCOPC	3.87E-05	NCOPC	3.87E-05	NCOPC	3.87E-05	NCOPC	3.87E-05	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4-Chloroaniline	NCOPC	1.75E-05	NCOPC	1.75E-05	NCOPC	1.75E-05	NCOPC	1.75E-05	NCOPC	1.75E-05	NCOPC	1.75E-05	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
Benzo(a)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC
Benzo(a)pyrene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC
bis(2-Ethylhexyl)phthalate	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	3.57E-04	NCOPC	3.57E-04
Dibenzo(a,h)anthracene	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC
Pesticides																		
4,4'-DDE	4.86E-04	NCOPC	NCOPC	4.86E-04	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
4,4'-DDT	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	1.03E-02	NCOPC	1.03E-02	9.43E-03	NCOPC	9.43E-03
alpha-Chlordane	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	2.86E-04	NCOPC	2.86E-04	4.57E-04	NCOPC	4.57E-04
beta-BHC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC	8.10E-04	NCOPC	8.10E-04
Dieldrin	2.31E-03	NCOPC	NCOPC	2.31E-03	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	2.86E-02	NCOPC	2.86E-02	5.43E-02	NCOPC	5.43E-02
Herbicides																		
MCPA	NCOPC	1.20E-03	NCOPC	1.20E-03	NCOPC	1.20E-03	NCOPC	1.20E-03	NCOPC	1.20E-03	NCOPC	1.20E-03	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
MCPP	NCOPC	7.04E-04	NCOPC	7.04E-04	NCOPC	7.04E-04	NCOPC	7.04E-04	NCOPC	7.04E-04	NCOPC	7.04E-04	NCOPC	NCOPC	NC	NCOPC	NCOPC	NC
PCBs			NCOPC	NC														
Total PCBs	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	2.76E+00	NCOPC	2.76E+00	7.14E+00	NCOPC	7.14E+00
Dioxin			NCOPC	NC														
2,3,7,8-TCDD-TEQ	NC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NCOPC	NC	NC	NCOPC	NC	NC	NCOPC	NC
Metals			NCOPC	NC														
Arsenic	NCOPC	NCOPC	2.49E-05	2.49E-05	NCOPC	NCOPC	2.49E-05	2.49E-05	NCOPC	NCOPC	2.49E-05	2.49E-05	3.71E-02	NCOPC	3.71E-02	3.90E-02	NCOPC	3.90E-02
Lead	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NC	NC	NCOPC	NC	NC
Manganese	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	3.62E-05	3.62E-05	NCOPC	3.62E-05	3.62E-05
Mercury	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	NCOPC	NCOPC	NCOPC	NC	2.38E-02	NCOPC	2.38E-02	6.76E-03	NCOPC	6.76E-03
Total HI	**2.80E-03**	**1.96E-03**	**2.49E-05**	**4.79E-03**	**NC**	**1.96E-03**	**2.49E-05**	**1.99E-03**	**NC**	**1.96E-03**	**2.49E-05**	**1.99E-03**	**2.86E+00**	**3.62E-05**	**2.86E+00**	**7.25E+00**	**3.62E-05**	**7.25E+00**

Notes:
DDA - Downstream Discharge Area (Mississippi River)
Ing/Derm - Ingestion/Dermal Contact
HI - Hazard Index
HQ - Hazard Quotient
MLE - Most Likely Exposure
NC - Not Calculated or no dose-response value
NCOPC - Not a constituent of potential concern in this area/medium
PCBs - Polychlorinated Biphenyls
PDA - Plume Discharge Area (Mississippi River)
SVOCs - Semivolatile Organic Compounds
TCDD - TEQ - Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentratio
UDA - Upstream Discharge Area (Mississippi River)
VOCs - Volatile Organic Compounds

TABLE 6-21
SUMMARY OF POTENTIAL CARCINOGENIC RISKS FOR ALL RECEPTORS - SITES
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Sites																	
	O		O North		P		Q North		Q Central		Q South		Q Pond		R (a)		S	
Medium (Pathways)	RME	MLE	RME	MLE	RME	MLE	RME	MLE	RME	MLE	RME	MLE	RME	MLE	RME	MLE	RME	MLE
Indoor Industrial Worker (IW)																		
Groundwater/Leachate to Indoor Air (inh)	NCOPC	NCOPC	1.10E-08	1.92E-09	NC	NC	8.72E-09	1.53E-09	NC	NC	1.21E-06	2.12E-07	NA	NA	1.01E-07	1.77E-08	NC	NC
Outdoor Industrial Worker (OW)																		
Surface Soil (ing/derm)	5.65E-05	5.14E-06	6.25E-04	1.12E-04	3.41E-06	2.32E-07	1.10E-06	1.03E-07	3.13E-05	1.96E-06	1.82E-05	1.41E-06	NA	NA	NCOPC	NC	2.56E-04	2.23E-05
Surface Soil to Outdoor Air (inh)	9.19E-06	3.09E-07	2.83E-06	2.95E-07	4.80E-06	4.13E-07	1.07E-06	8.07E-08	2.20E-08	1.67E-09	4.58E-07	3.70E-08	NA	NA	6.15E-04	1.27E-05	6.84E-05	2.64E-06
Groundwater/Leachate to Outdoor Air (inh)	NCOPC	NC	2.36E-06	4.12E-09	NC	NC	4.49E-07	7.85E-08	NC	NC	1.05E-08	1.83E-09	NA	NA	7.04E-04	1.23E-04	NC	NC
Total Potential Risk:	**6.57E-05**	**5.45E-06**	**6.28E-04**	**1.13E-04**	**8.22E-06**	**6.45E-07**	**2.62E-06**	**2.62E-07**	**3.13E-05**	**1.98E-06**	**1.87E-05**	**1.45E-06**	**NA**	**NA**	**1.32E-03**	**1.36E-04**	**3.24E-04**	**2.50E-05**
Construction/Utility Worker (CW)																		
Combined Soil (ing/derm)	8.44E-06	7.06E-07	1.26E-04	3.13E-05	2.36E-07	4.47E-08	2.80E-06	5.19E-07	8.94E-07	2.20E-07	1.15E-06	2.06E-07	NA	NA	3.56E-06	3.70E-07	1.12E-05	7.64E-07
Combined Soil to Outdoor Air (inh)	3.05E-06	1.81E-07	2.00E-06	3.67E-07	5.67E-07	8.55E-08	2.15E-07	2.99E-08	1.78E-08	3.47E-09	1.61E-07	3.51E-08	NA	NA	4.14E-05	1.43E-06	5.15E-06	3.69E-07
Groundwater (ing/derm)	1.36E-06	6.79E-07	7.61E-06	3.81E-06	NC	NC	6.96E-06	3.48E-06	NC	NC	NC	NC	NA	NA	1.77E-04	8.86E-05	NC	NC
Groundwater/Leachate to Outdoor Air (inh)	NCOPC	NCOPC	8.58E-08	2.57E-08	NC	NC	2.51E-08	7.52E-07	NC	NC	NC	NC	NA	NA	7.57E-04	2.27E-04	NC	NC
Total Potential Risk:	**1.28E-05**	**1.57E-06**	**1.36E-04**	**3.55E-05**	**8.03E-07**	**1.30E-07**	**1.25E-05**	**4.78E-06**	**9.12E-07**	**2.23E-07**	**1.34E-06**	**2.41E-07**	**NA**	**NA**	**9.79E-04**	**3.17E-04**	**1.64E-05**	**1.13E-06**
Trespassing Teenager (TT)																		
Surface Soil (ing/derm)	1.06E-05	1.54E-06	1.17E-04	3.32E-05	6.21E-07	8.38E-08	2.04E-07	2.97E-08	5.86E-06	5.90E-07	3.41E-06	4.16E-07	NA	NA	NC	NC	4.69E-05	6.33E-06
Surface Soil to Outdoor Air (inh)	1.54E-07	1.24E-08	4.76E-08	1.18E-08	8.07E-08	1.65E-08	1.79E-08	3.23E-09	3.70E-10	6.69E-11	7.70E-09	1.48E-09	NA	NA	1.03E-05	5.07E-07	1.15E-06	1.06E-07
Groundwater/Leachate to Outdoor Air (inh)	NC	NC	3.96E-10	1.65E-10	NC	NC	7.55E-09	3.14E-09	NC	NC	1.76E-10	7.34E-11	NA	NA	1.18E-05	4.93E-06	NC	NC
Surface Water (ing/derm)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NA	NA	NC	NC	NC	NC
Sediment (ing/derm)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NA	NA	NC	NC	NC	NC
Total Potential Risk:	**1.07E-05**	**1.55E-06**	**1.17E-04**	**3.32E-05**	**7.02E-07**	**8.04E-08**	**2.30E-07**	**3.61E-08**	**5.86E-06**	**5.90E-07**	**3.42E-06**	**4.16E-07**	**NA**	**NA**	**2.22E-05**	**5.44E-06**	**4.81E-05**	**6.44E-06**
Recreational Fisher																		
Surface Water (ing/derm)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NC	NC	NA	NA	NA	NA
Fish Fillet, Black Bullhead Fillet (ing)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.49E-04	2.06E-05	NA	NA	NA	NA
Fish Fillet, Carp Fillet (ing)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.45E-03	5.44E-05	NA	NA	NA	NA
Total Potential Risk (Black Bullhead Fillet):	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**5.49E-04**	**2.06E-05**	NA	NA	NA	NA
Total Potential Risk (Carp Fillet):	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.45E-03**	**5.44E-05**	NA	NA	NA	NA

Notes:
derm - dermal contact.
ing - ingestion.
inh - inhalation.
MLE - Most Likely Exposure.
NA - Not Applicable. Receptor not assumed to be exposed via this pathway.
NC - Not Calculated. No constituents of potential concern were identified for this pathway.
NCOPC - No COPCs identified for this pathway.
RME - Reasonable Maximum Exposure.
(a) - Site R has both a groundwater location and a leachate well in the mid-groundwater depth range. Potential inhalation exposures for receptors potentially exposed to mid-depth groundwater (IW, OW, TT) were calculated for both leachate and groundwater. The higher potential risk is shown here.

TABLE 6-22
SUMMARY OF POTENTIAL CARCINOGENIC RISKS FOR ALL RECEPTORS - MISSISSIPPI RIVER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	River							
	River		DDA		PDA		UDA	
Medium (Pathways)	RME	MLE	RME	MLE	RME	MLE	RME	MLE
Trespassing Teenager (TT)								
Surface Water (ing/derm)	NC	NC	NC	NC	NC	NC	NC	NC
Sediment (ing/derm)	2.19E-08	5.87E-09	NC	NC	NC	NC	NC	NC
Total Potential Risk:	**2.19E-08**	**5.87E-09**	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**
Recreational Fisher								
Surface Water (ing/derm)	NC	NC	NC	NC	NC	NC	NC	NC
Sediment (ing/derm)	NC	NC	6.97E-08	1.44E-09	6.97E-08	1.44E-09	6.97E-08	1.44E-09
Fish Fillet, Buffalo Fillet (ing)	NC	NC	4.02E-05	1.51E-06	4.59E-06	1.45E-07	5.43E-06	2.04E-07
Total Potential Risk:	**NC**	**NC**	**4.03E-05**	**1.51E-06**	**4.66E-06**	**1.46E-07**	**5.50E-06**	**2.05E-07**

Notes:
DDA - Downstream Discharge Area (Mississippi River).
derm - dermal contact.
ing - ingestion.
inh - inhalation.
MLE - Maximum Likely Exposure.
NC - Not Calculated. No constituents of potential concern were identified for this pathway.
PDA - Plume Discharge Area (Mississippi River).
RME - Reasonable Maximum Exposure.
UDA - Upstream Discharge Area (Mississippi River).

TABLE 6-23
SUMMARY OF POTENTIAL HAZARD INDICES FOR ALL RECEPTORS - SITES
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Sites																	
	O		O North		P		Q North		Q Central		Q South		Q Pond		R (a)		S	
Medium (Pathways)	RME	MLE	RME	MLE	RME	MLE	RME	MLE	RME	MLE	RME	MLE	RME	MLE	RME	MLE	RME	MLE
Indoor Industrial Worker (IW)																		
Groundwater/Leachate to Indoor Air (inh)	NCOPC	NCOPC	5.84E-04	3.65E-04	NC	NC	3.70E-04	2.31E-04	NC	NC	2.16E-03	1.35E-03	NA	NA	1.52E-03	9.48E-04	NC	NC
Outdoor Industrial Worker (OW)																		
Surface Soil (ing/derm)	1.79E-01	5.57E-02	1.18E+01	7.33E+00	1.25E-01	2.15E-02	6.67E-02	1.08E-02	4.71E-02	1.27E-02	1.24E-01	4.23E-02	NA	NA	NCOPC	NCOPC	1.87E+01	5.20E+00
Surface Soil to Outdoor Air (inh)	4.00E+00	4.62E-01	1.59E+00	6.68E-01	2.43E-01	1.77E-02	3.10E-02	8.38E-03	NC	NC	1.23E-01	3.09E-02	NA	NA	4.73E-01	4.45E-02	2.37E-01	3.45E-02
Groundwater/Leachate to Outdoor Air (inh)	NCOPC	NCOPC	1.68E-03	1.05E-03	NC	NC	7.73E-03	4.83E-03	NC	NC	4.44E-04	2.78E-04	NA	NA	6.34E-01	3.96E-01	NC	NC
Total Potential Hazard Index:	**4.18E+00**	**5.18E-01**	**1.33E+01**	**8.00E+00**	**3.68E-01**	**3.92E-02**	**1.06E-01**	**2.40E-02**	**4.71E-02**	**1.27E-02**	**2.46E-01**	**7.35E-02**	**NA**	**NA**	**1.11E+00 (b)**	**4.41E-01**	**1.69E+01**	**5.23E+00**
Construction/Utility Worker (CW)																		
Combined Soil (ing/derm)	2.61E+00	2.21E-01	2.66E+01	5.60E+00	1.69E-01	1.78E-02	5.00E-01	9.66E-02	7.76E-02	1.33E-02	1.93E-01	2.40E-02	NA	NA	3.09E+00	3.13E-01	8.77E+00	5.57E-01
Combined Soil to Outdoor Air (inh)	1.88E+01	1.05E+00	5.10E+00	1.02E+00	4.08E-01	1.52E-02	1.28E-01	1.68E-02	1.70E-01	3.32E-02	4.36E-01	6.57E-02	NA	NA	8.10E-01	3.68E-02	4.14E-01	3.09E-02
Groundwater (ing/derm)	1.20E-03	5.98E-04	3.13E+00	1.56E+00	NC	NC	1.06E+01	5.32E+00	NC	NC	NC	NC	NA	NA	2.16E+02	1.08E+02	NC	NC
Groundwater/Leachate to Outdoor Air (inh)	NCOPC	NCOPC	4.82E-02	1.45E-02	NC	NC	3.90E-01	1.17E-01	NC	NC	NC	NC	NA	NA	1.18E+01	3.54E+00	NC	NC
Total Potential Hazard Index:	**2.14E+01**	**1.27E+00 (b)**	**3.48E+01**	**8.20E+00**	**5.76E-01**	**3.29E-02**	**1.17E+01**	**5.55E+00**	**2.47E-01**	**4.65E-02**	**6.29E-01**	**8.97E-02**	**NA**	**NA**	**2.32E+02**	**1.12E+02**	**9.19E+00**	**5.88E-01**
Trespassing Teenager (TT)																		
Surface Soil (ing/derm)	7.48E-02	1.01E-02	4.90E+00	1.33E+00	5.21E-02	3.85E-03	2.78E-02	1.94E-03	1.98E-02	2.28E-03	5.16E-02	7.52E-03	NA	NA	NC	NC	6.95E+00	9.41E-01
Surface Soil to Outdoor Air (inh)	1.53E-01	1.18E-02	6.07E-02	1.70E-02	9.30E-03	4.51E-04	1.19E-03	2.14E-04	NC	NC	4.70E-03	7.88E-04	NA	NA	1.81E-02	1.13E-03	9.04E-03	8.80E-04
Groundwater/Leachate to Outdoor Air (inh)	NC	NC	6.40E-05	2.67E-05	NC	NC	2.95E-04	1.23E-04	NC	NC	1.70E-05	7.07E-06	NA	NA	2.42E-02	1.01E-02	NC	NC
Surface Water (ing/derm)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	2.13E-04	1.15E-04	NA	NA	NC	NC	NC	NC
Sediment (ing/derm)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NA	NA	NC	NC	NC	NC
Total Potential Hazard Index:	**2.27E-01**	**2.19E-02**	**4.97E+00**	**1.34E+00**	**6.14E-02**	**4.30E-03**	**2.93E-02**	**2.28E-03**	**1.98E-02**	**2.28E-03**	**5.65E-02**	**6.43E-03**	**NA**	**NA**	**4.23E-02**	**1.12E-02**	**6.96E+00**	**9.42E-01**
Recreational Fisher																		
Surface Water (ing/derm)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.48E-04	3.62E-05	NA	NA	NA	NA
Fish Fillet, Black Bullhead Fillet (ing)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.29E+01	2.86E+00	NA	NA	NA	NA
Fish Fillet, Carp Fillet (ing)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.80E+01	7.25E+00	NA	NA	NA	NA
Total Potential Hazard Index (Black Bullhead Fillet):	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.29E+01**	**2.86E+00**	NA	NA	NA	NA
Total Potential Hazard Index (Carp Fillet):	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**5.80E+01**	**7.25E+00**	**NA**	**NA**	**NA**	**NA**

Notes:
derm - dermal contact.
ing - ingestion.
inh - inhalation.
MLE - Most Likely Exposure.
NA - Not Applicable. Receptor not assumed to be exposed via this pathway.
NC - Not Calculated. No constituents of potential concern were identified for this pathway.
RME - Reasonable Maximum Exposure.
(a) - Site R has both a groundwater location and a leachate well in the mid-groundwater depth range. Potential inhalation exposures for receptors potentially exposed to mid-depth groundwater (IW, OW, TT) were calculated for both leachate and groundwater. The higher potential risk is shown here.
(b) Target endpoint analysis (Appendix N) indicates no target endpoint - based HI exceedances.

TABLE 6-24
SUMMARY OF POTENTIAL HAZARD INDICES FOR ALL RECEPTORS - MISSISSIPPI RIVER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	River							
	River		DDA		PDA		UDA	
Medium (Pathways)	RME	MLE	RME	MLE	RME	MLE	RME	MLE
Trespassing Teenager (TT)								
Surface Water (ing/derm)	1.12E-02	5.96E-03	NC	NC	NC	NC	NC	NC
Sediment (ing/derm)	3.10E-04	8.31E-05	NC	NC	NC	NC	NC	NC
Total Potential Hazard Index:	**1.15E-02**	**6.04E-03**	**NC**	**NC**	**NC**	**NC**	NC	NC
Recreational Fisher								
Surface Water (ing/derm)	NC	NC	1.51E-02	1.96E-03	1.51E-02	1.96E-03	1.51E-02	1.96E-03
Sediment (ing/derm)	NC	NC	3.62E-04	2.49E-05	3.62E-04	2.49E-05	3.62E-04	2.49E-05
Fish Fillet, Buffalo Fillet (ing)	NC	NC	2.24E-02	2.80E-03	NC	NC	NC	NC
Total Potential Hazard Index:	**NC**	**NC**	**3.79E-02**	**4.79E-03**	**1.55E-02**	**1.99E-03**	**1.55E-02**	**1.99E-03**

Notes:
DDA - Downstream Discharge Area (Mississippi River).
derm - dermal contact.
ing - ingestion.
inh - inhalation.
MLE - Maximum Likely Exposure
NC - Not Calculated. No constituents of potential concern were identified for this pathway
PDA - Plume Discharge Area (Mississippi River).
RME - Reasonable Maximum Exposure
UDA - Upstream Discharge Area (Mississippi River).

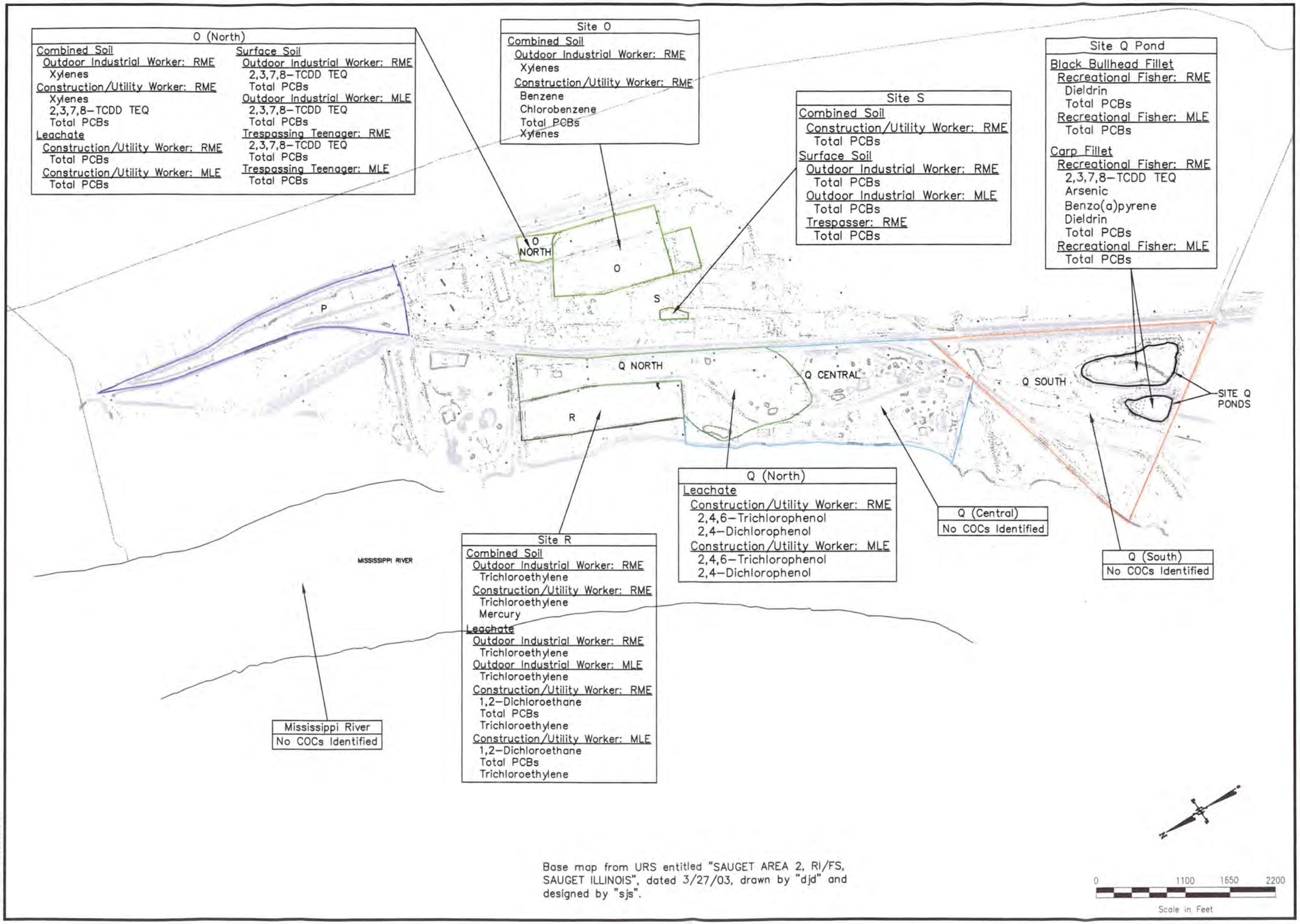
TABLE 6-25
SUMMARY OF CONSITUENTS OF CONCERN (COCs)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Receptor	Scenario	COC	Cancer (a) Potential Risk	Non-Cancer (a) HQ	Endpoint	Medium	Pathway	EPC	Units
O	Outdoor Industrial Worker	RME	Xylenes	ND	3.23	Neurological	Combined soil	Inhalation	14000	mg/kg
O	Construction/Utility Worker	RME	Chlorobenzene	ND	1	Liver	Combined soil	Inhalation	760	mg/kg
O	Construction/Utility Worker	RME	Xylenes	ND	14.2	Neurological	Combined soil	Inhalation	14000	mg/kg
O	Construction/Utility Worker	RME	Benzene	NCOC	3.16	Immune	Combined soil	Inhalation	500	mg/kg
O	Construction/Utility Worker	RME	PCBs	NCOC	2.53	Immune, skin, eye	Combined soil	Ingestion/Dermal	298	mg/kg
O North	Outdoor Industrial Worker	RME	PCBs	1.66E-04	11.6	Immune, skin, eye	Surface soil	Ingestion/Dermal	709	mg/kg
O North	Outdoor Industrial Worker	RME	2,3,7,8-TCDD TEQ	4.59E-04	ND	ND	Surface soil	Ingestion/Dermal	0.0508	mg/kg
O North	Outdoor Industrial Worker	RME	Xylenes	ND	1.23	Neurological	Combined soil	Inhalation	3900	mg/kg
O North	Outdoor Industrial Worker	MLE	PCBs	NCOC	7.27	Immune, skin, eye	Surface soil	Ingestion/Dermal	709	mg/kg
O North	Outdoor Industrial Worker	MLE	2,3,7,8-TCDD TEQ	8.32E-05	ND	ND	Surface soil	Ingestion/Dermal	0.0508	mg/kg
O North	Construction/Utility Worker	RME	2,3,7,8-TCDD TEQ	1.15E-04	ND	ND	Combined soil	Ingestion/Dermal	0.0508	mg/kg
O North	Construction/Utility Worker	RME	Xylenes	ND	3.95	Neurological	Combined soil	Inhalation	3900	mg/kg
O North	Construction/Utility Worker	RME	PCBs	NCOC	25.7	Immune, skin, eye	Combined soil	Ingestion/Dermal	3030	mg/kg
O North	Construction/Utility Worker	RME	PCBs	NCOC	2.81	Immune, skin, eye	Leachate	Ingestion/Dermal	0.055	mg/L
O North	Construction/Utility Worker	MLE	PCBs	NCOC	5.48	Immune, skin, eye	Combined soil	Ingestion/Dermal	1780	mg/kg
O North	Construction/Utility Worker	MLE	PCBs	NCOC	1.4	Immune, skin, eye	Leachate	Ingestion/Dermal	0.055	mg/L
O North	Trespassing Teenager	RME	PCBs	NCOC	4.86	Immune, skin, eye	Surface soil	Ingestion/Dermal	709	mg/kg
O North	Trespassing Teenager	RME	2,3,7,8-TCDD TEQ	8.62E-05	ND	ND	Surface soil	Ingestion/Dermal	0.0508	mg/kg
O North	Trespassing Teenager	MLE	PCBs	NCOC	1.33	Immune, skin, eye	Surface soil	Ingestion/Dermal	709	mg/kg
Q North	Construction/Utility Worker	RME	2,4,6-Trichlorophenol	NCOC	8.43	Reproductive	Leachate	Ingestion/Dermal	12.5	mg/L
Q North	Construction/Utility Worker	RME	2,4-Dichlorophenol	ND	1.82	Immune	Leachate	Ingestion/Dermal	170	mg/L
Q North	Construction/Utility Worker	MLE	2,4,6-Trichlorophenol	NCOC	4.21	Reproductive	Leachate	Ingestion/Dermal	12.5	mg/L
Q North	Construction/Utility Worker	MLE	2,4-Dichlorophenol	ND	0.907	Immune	Leachate	Ingestion/Dermal	170	mg/L
Q Pond	Recreational Fisher	RME	PCBs	3.79E-04	22.1	Immune, skin, eye	Black bullhead fillet	Ingestion	3.87	mg/kg
Q Pond	Recreational Fisher	RME	Dieldrin	7.84E-05	NCOC	NCOC	Black bullhead fillet	Ingestion	0.1	mg/kg
Q Pond	Recreational Fisher	MLE	PCBs	NCOC	2.76	Immune, skin, eye	Black bullhead fillet	Ingestion	3.87	mg/kg
Q Pond	Recreational Fisher	RME	PCBs	9.80E-04	57.1	Immune, skin, eye	Carp fillet	Ingestion	10	mg/kg
Q Pond	Recreational Fisher	RME	Dieldrin	1.49E-04	NCOC	NCOC	Carp fillet	Ingestion	0.19	mg/kg
Q Pond	Recreational Fisher	RME	2,3,7,8-TCDD TEQ	1.35E-04	ND	ND	Carp fillet	Ingestion	1.84E-05	mg/kg
Q Pond	Recreational Fisher	RME	Benzo(a)pyrene	6.44E-05	ND	ND	Carp fillet	Ingestion	0.18	mg/kg
Q Pond	Recreational Fisher	RME	Arsenic	6.02E-05	NCOC	NCOC	Carp fillet	Ingestion	0.82	mg/kg
Q Pond	Recreational Fisher	MLE	PCBs	NCOC	7.14	Immune, skin, eye	Carp fillet	Ingestion	10	mg/kg
R	Outdoor Industrial Worker	RME	Trichlororethylene	6.12E-04	NCOC	NCOC	Combined soil	Inhalation	2200	mg/kg
R	Outdoor Industrial Worker	RME	Trichlororethylene	6.93E-04	NCOC	NCOC	Leachate	Inhalation	150	mg/L
R	Outdoor Industrial Worker	MLE	Trichlororethylene	1.34E-04	NCOC	NCOC	Leachate	Inhalation	150	mg/L
R	Construction/Utility Worker	RME	Trichlororethylene	4.33E-05	1.22	Liver	Combined soil	Ingestion/Dermal	2200	mg/kg
R	Construction/Utility Worker	RME	Trichlororethylene	7.13E-04	14.43	Liver, Neurological	Leachate	Ingestion/Dermal/Inhalation	150	mg/L
R	Construction/Utility Worker	RME	PCBs	1.17E-04	204	Immune, skin, eye	Leachate	Ingestion/Dermal	3.98	mg/L
R	Construction/Utility Worker	RME	1,2-Dichloroethane	5.54E-05	8.42	Liver, kidney, GI, and skin	Leachate	Inhalation	50	mg/L
R	Construction/Utility Worker	RME	Mercury	ND	0.747	Immune	Combined soil	Ingestion/Dermal	699	mg/kg
R	Construction/Utility Worker	MLE	Trichlororethylene	2.19E-04	5.76	Liver	Leachate	Inhalation	150	mg/L
R	Construction/Utility Worker	MLE	PCBs	NCOC	102	Immune, skin, eye	Leachate	Ingestion/Dermal	3.98	mg/L
R	Construction/Utility Worker	MLE	1,2-Dichloroethane	NCOC	2.53	Liver, kidney, GI, and skin	Leachate	Inhalation	50	mg/L

TABLE 6-25
SUMMARY OF CONSITUENTS OF CONCERN (COCs)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Receptor	Scenario	COC	Cancer (a) Potential Risk	Non-Cancer (a) HQ	Non-Cancer (a) Endpoint	Medium	Pathway	EPC	Units
S	Outdoor Industrial Worker	RME	PCBs	2.37E-04	16.6	Immune, skin, eye	Surface soil	Ingestion/Dermal	1010	mg/kg
S	Outdoor Industrial Worker	MLE	PCBs	NCOC	5.17	Immune, skin, eye	Surface soil	Ingestion/Dermal	504	mg/kg
S	Construction/Utility Worker	RME	PCBs	NCOC	8.56	Immune, skin, eye	Combined soil	Ingestion/Dermal	1010	mg/kg
S	Trespassing Teenager	RME	PCBs	NCOC	6.91	Immune, skin, eye	Surface soil	Ingestion/Dermal	1010	mg/kg

Notes:
EPC - Exposure point concentration.
GI - Gastrointestinal.
HQ - Hazard Quotient.
MLE - Most Likely Exposure.
NCOC - Not a constituent of concern via this pathway.
ND - No Dose-Response value for this pathway.
PCBs - Polychlorinated Biphenyls.
RME - Reasonable Maximum Exposure.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
(a) - Only constituents driving a risk exceedance are presented on this table.



Base map from URS entitled "SAUGET AREA 2, RI/FS, SAUGET ILLINOIS", dated 3/27/03, drawn by "djd" and designed by "sjs".

FILENAME: 610501B.DWG

REVISIONS			
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CONSTITUENTS OF CONCERN (COCs)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, IL

PROJECT NUMBER: 06105-009
DATE: 7/03
SCALE: 1"=1100'

FIGURE NUMBER: 6-1

SHEET NUMBER: X

7.0 SUMMARY AND CONCLUSIONS

This report presents the baseline HHRA for Sauget Area 2, located in Sauget and Cahokia, Illinois. On November 20, 2000, the SA2SG PRPs signed an AOC, Docket Number V-W-01-C-622, to perform a RI/FS at Sauget Area 2 Sites O, P, Q, R, and S. USEPA signed the AOC on November 24, 2000. This HHRA is submitted to partially fulfill the requirements of Section V.2. of the AOC, and of Section 2.6 of Task 3 of the Scope of Work presented as Attachment B of the AOC. The HHRA was conducted to satisfy the AOC, as well as to be compliant with the NCP (USEPA, 1990).

The HHRA was conducted in accordance with the U.S. Environmental Protection Agency (USEPA)-approved Human Health Risk Assessment Workplan (HHRA Workplan) dated May 25, 2001 (including September 2001 and May 2002 revised pages), which was submitted as Section 11 of Volume 1 of the Support Sampling Plan (SSP) for Sauget Area 2 (URS, 2001). The HHRA Workplan is provided as Appendix A to this report.

The HHRA was conducted using data from environmental samples collected from the study area (shown in Figure 1-1 and described in more detail in Section 2) in accordance with the USEPA-approved SSP. The SSP for Sauget Area 2 was designed to investigate two major areas of the Sauget Area 2 study area (the media sampled in each are identified in parentheses):

- The Sites O, P, Q, R, and S (waste, soil, groundwater, leachate, ambient air – all sites; sediment, surface water, fish tissue – Site Q Pond only); and
- Mississippi River adjacent to the Sites (sediment, surface water and fish tissue).

Background or reference samples were collected for surface soil, subsurface soil, groundwater, surface water, sediment, fish tissue, and ambient air. The SSP identified the suites of analytes for each medium. The analytes included in the risk assessment are: VOCs, SVOCs, metals, mercury, cyanide, PCBs, pesticides, herbicides, and dioxins and furans. Validated laboratory analytical data are compiled in the Data Validation Report (URS, 2003a), and field data are compiled in the Field Sampling Report (URS, 2003b).

The baseline HHRA has been conducted in accordance with the four-step paradigm for human health risk assessments developed by USEPA (USEPA, 1989a); these steps are:

- Data Evaluation and Hazard Identification
- Toxicity Assessment
- Exposure Assessment
- Risk Characterization

The risk assessment results are summarized by step below.

7.1 Data Evaluation and Hazard Identification

The purpose of the data evaluation and hazard identification process is two-fold: 1) to evaluate the nature and extent of release of constituents present at the site; and 2) to select a subset of these constituents identified as COPCs for quantitative evaluation in the risk assessment. This step of the risk assessment involves compiling and summarizing the data for the risk assessment, and selecting COPCs based on a series of screening steps. Several factors are typically considered in selecting COPCs for a site, including natural background, frequency of detection, and toxicity, including essential nutrient status.

Per the HHRA Workplan, USEPA Region 9 PRGs (2002b) for industrial soils were used for the identification of COPCs for soil and sediment for quantitative evaluation in the risk assessment. The Illinois TACO program also provides screening criteria for the groundwater ingestion component of the soil to groundwater pathway that were used here. These latter values conservatively address leaching of constituents from soils to underlying groundwater.

COPCs in groundwater and surface water were identified using IEPA Class I standards (35 Ill. Adm. Code 620.410) (IEPA, 2002a). For the Class I groundwater comparison, where Class I standards were not available, federal MCLs (USEPA, 2002c) were used; where MCLs were not available, the IEPA remediation objectives for Class I groundwater were used (IEPA, 2002b); where these were not available, the most current USEPA PRGs (USEPA, 2002b) for tap water were used.

Fish tissue data were compared to the USEPA Region 3 RBCs for fish (USEPA, 2003a). Ambient air concentrations were compared to USEPA Region 9 PRGs (USEPA, 2002b) for ambient air.

Background samples were collected in the vicinity of the site to provide information on levels of constituents typical for the local area. The purpose of comparing site conditions to local background or reference locations is to determine if site concentrations of constituents are representative of background concentrations, which, therefore, should not be included in risk calculations. Background comparisons were conducted for each medium using site-specific background or reference data.

The procedure for determining whether a constituent concentration is consistent with background follows that developed by USEPA Region 4 (USEPA, 2000a) and presented in the HHRA Workplan (Appendix A). Maximum detected concentrations of constituents in environmental media at the site were compared to two times the arithmetic mean site-specific background concentration. Therefore, if maximum concentrations of constituents in an area are found to be less than two times the average background concentrations, then those constituents are eliminated from quantitative evaluation in the risk assessment.

In the screening process, constituents in an area/medium with maximum concentrations less than or equal to the screening criteria were not included as COPCs. Where no COPCs are identified for an area/medium, that area/medium was not evaluated quantitatively in the HHRA.

COPCs in surface soil are identified in Table 3-1. COPCs were identified in Site O, Site O (North), Site P, Site Q (North), Site Q (Central), Site Q (South), and Site S. No COPCs were identified in Site R surface soils. Figure 3-7 presents the locations of the COPCs in surface soil.

COPCs in combined soil are identified in Table 3-2. COPCs in combined soils were identified in all sites for the construction worker direct-contact pathway. COPCs in combined soils for the ambient air pathway (non-excavation scenarios) were identified in all Sites with the exception of Site Q (Central). Figure 3-8 presents the locations of the COPCs in combined soils.

The selection of COPCs for groundwater was conducted on a location-by-location basis. Samples with screening intervals or sample collection depths between 0 and 30 feet bgs were included in the evaluation. Because groundwater in the area is not used a source of drinking water (see Appendix P), exposure to COPCs in groundwater could occur due to either volatilization of COPCs into indoor or outdoor air, or contact with COPCs in groundwater exposed in an excavation trench. Per the HHRA Workplan, a 15-foot bgs excavation depth is assumed. Moreover, volatilization from groundwater through the soil column to indoor and/or outdoor air is generally assumed to occur at depths of up to 30 feet bgs. Based on these considerations, a total of 13 groundwater sampling locations were included in the evaluation.

The results of the COPC selection for groundwater are presented in Table 3-3 (shallow groundwater and leachate) and Table 3-4 (volatiles only, shallow/mid groundwater and leachate). Of the 13 groundwater sampling locations and three leachate wells evaluated, COPCs were identified in only three groundwater locations and in all three leachate wells. For the shallow groundwater and leachate evaluation (construction worker contact and inhalation in an excavation trench) only one groundwater location (AA-O-1) had COPCs identified. All three leachate wells had COPCs identified. For the shallow/ mid groundwater and leachate evaluation (volatilization pathways only), only two groundwater locations (AA-Q-6 and AA-R-1) had volatile COPCs identified. All three leachate wells had volatile COPCs identified. Lead was identified as a COPC in shallow groundwater at location AA-O-1 and in all three leachate locations.

Arsenic was identified as the only COPC in Mississippi River sediment, as shown in Table 3-5. No COPCs were identified in Site Q Pond sediment.

Lead and manganese were identified as COPCs in the Site Q Pond surface water (Table 3-6). COPCs in the Mississippi River surface water included 2,4-dichlorophenol, 4-chloroaniline, 2-methyl-4-chlorophenoxyacetic acid, and 2-(2-methyl-4-chlorophenoxy)propionic acid.

Table 3-7 indicates that Dioxin TEQ was identified as a COPC in buffalo fish fillet at the PDA, UDA, and DDA areas of the Mississippi River. Additionally, 4,4-DDE and dieldrin were identified in buffalo fish fillet at the UDA area. COPCs in black bullhead fish fillet in the Site Q Pond included Dioxin TEQ, 4,4-DDT, alpha-chlordane, arsenic, dieldrin, mercury, and PCBs. COPCs in carp fillet in the Site Q Pond included all of those listed for black bullhead fillet as well as benzo(a)anthracene, benzo(a)pyrene, beta-BHC, bis(2-ethylhexyl)phthalate, and dibenzo(a,h)anthracene.

7.2 Dose-Response Assessment

The purpose of the dose-response assessment is to identify the types of adverse health effects a constituent may potentially cause, and to define the relationship between the dose of a constituent and the likelihood or magnitude of an adverse effect (response) (USEPA, 1989a). Adverse effects are classified by USEPA as potentially carcinogenic or noncarcinogenic (i.e., potential effects other than cancer). Dose-response relationships are defined by USEPA for oral exposure and for exposure by inhalation. Oral toxicity values are also used to assess dermal exposures, with appropriate adjustments, because USEPA has not yet developed values for this route of exposure. Combining the results of the toxicity assessment with information on the magnitude of potential human exposure provides an estimate of potential risk.

Sources of the published toxicity values in this risk assessment include USEPA's IRIS database (USEPA, 2003a), HEAST (USEPA, 1997b), and the USEPA NCEA in Cincinnati, Ohio.

Risks were calculated for 2,3,7,8-TCDD and the dioxin and furan congeners using the cancer slope factor for 2,3,7,8-TCDD listed in HEAST and using the TEFs provided by WHO (Van den Berg et al., 1998), presented in Table 4-6. The TEFs are fractions that equate the potential toxicity of specific congeners to that of 2,3,7,8-TCDD.

7.3 Exposure Assessment

The purpose of the exposure assessment is to predict the magnitude and frequency of potential human exposure to each of the COPCs retained for quantitative evaluation in the HHRA. The first step in the exposure assessment process is the characterization of the setting of the site and surrounding area. Current and potential future site uses and potential receptors (i.e., people who may contact the impacted environmental media of interest) are then identified. Potential exposure scenarios identifying appropriate environmental media and exposure pathways for current and potential future site uses and receptors are then developed. Those potential exposure pathways for which COPCs are identified and are judged to be complete are evaluated quantitatively in the risk assessment. Both RME and MLE exposure scenarios are evaluated for each receptor in the HHRA.

7.3.1 Conceptual Site Model

To guide identification of appropriate exposure pathways and receptors for evaluation in the risk assessment, a CSM for human health was developed. The purpose of the CSM is to identify source areas, potential migration pathways of constituents from source areas to environmental media where exposure can occur, and to identify potential human receptors.

The CSM for the Sauget Area 2 HHRA is presented in Figure 5-1. The CSM identifies potential sources, constituent migration pathways from one medium to another, and potential exposure pathways (e.g., soil, groundwater), potential exposure routes (e.g., ingestion, inhalation), and potential receptors (e.g., worker, trespasser).

7.3.2 Exposure Point Concentrations

Exposure points are located where potential receptors may contact COPCs at or from the site. The concentration of COPCs in the environmental medium that receptors may contact must be estimated in order to determine the magnitude of potential exposure. Both measured and modeled EPCs have been used in this risk assessment.

Measured EPCs. The EPC for an HHRA is defined as the 95% UCL on the arithmetic mean concentration, or the maximum concentration, whichever is lower (USEPA, 2002a), for the RME scenario and the arithmetic mean concentration for the MLE scenario. Summary statistics have been calculated for each COPC in each medium, as presented in Appendix B. Calculation of the 95% UCL is dependent upon the distribution of the data set. The 95% UCL calculations were conducted as described by USEPA (2002a) in Appendix I.

Modeled EPCs. Some pathways required modeling to derive the EPCs. These pathways include volatile constituents in groundwater migrating upwards and infiltrating into indoor air, outdoor air and excavation air, volatile constituents in soil migrating upwards and infiltrating into outdoor air and excavation air, and generation of fugitive dusts from undisturbed soils as well as during construction activities. The models used are described in Section 5.0 and the appendices.

The exposure point concentrations for each COPC in each medium are presented in tables in Section 5 for both the RME and MLE scenarios.

7.3.3 Receptor Evaluation

Table 5-1 presents the detailed receptor/pathway/area matrix that summarizes the receptors evaluated in each area, by medium and exposure route. These scenarios were developed based on the data, the CSM, and the COPCs identified in each medium. RME scenarios and MLE scenarios based on appropriate USEPA guidance were both evaluated in the quantitative risk assessment.

To estimate the potential risk to human health that may be posed by the presence of COPCs in environmental media in the study area, it is first necessary to estimate the potential exposure dose of each COPC for each receptor. The exposure dose is estimated for each constituent via each exposure pathway by which the receptor is assumed to be exposed. Exposure dose equations combine the estimates of constituent concentration in the environmental medium of interest with assumptions regarding the type and magnitude of each receptor's potential exposure to provide a numerical estimate of the exposure dose. The exposure dose is defined as the amount of COPC taken into the receptor and is expressed in units of milligrams of COPC per kilogram of body weight per day (mg/kg-day). The exposure doses are combined with the toxicity values to estimate potential risks and hazards for each receptor. The exposure dose and risk calculation spreadsheets are presented in Appendix M.

7.4 Risk Characterization Methodology

The potential risk to human health associated with potential exposure to COPCs in environmental media at the site is evaluated in this step of the risk assessment process. Risk characterization is the process in which the dose-response information (Section 4.0) is integrated with quantitative estimates of human exposure derived in the Exposure Assessment (Section 5.0). The result is a quantitative estimate of the likelihood that humans will experience any adverse health effects given the exposure assumptions made. Two general types of health risk are characterized for each potential exposure pathway considered: potential carcinogenic risk and potential noncarcinogenic hazard. Carcinogenic risk is evaluated by averaging exposure over a normal human lifetime, which, based on USEPA guidance (1989a), is assumed to be 70 years. Noncarcinogenic hazard is evaluated by averaging exposure over the total exposure period.

Characterization of the potential impact of potential carcinogenic and noncarcinogenic constituents is approached in very different ways. The difference in approaches arises from the conservative assumption that substances with possible carcinogenic action proceed by a no-threshold mechanism, whereas other toxic actions may have a threshold, a dose below which few individuals would be expected to respond. Thus, under the no-threshold assumption, it is necessary to calculate a risk, but for constituents with a threshold, it is possible to simply characterize an exposure as above or below the threshold. In risk assessment, that threshold is termed an RfD.

7.4.1 Carcinogenic Risk Characterization

The purpose of carcinogenic risk characterization is to estimate the upper-bound likelihood, over and above the background cancer rate, that a receptor will develop cancer in his or her lifetime as a result of exposure to a constituent in environmental media at the site. This likelihood is a function of the dose of a constituent (described in the Exposure Assessment, Section 5.0) and the CSF (described in the Toxicity Assessment, Section 4.0) for that constituent. The ELCR is the likelihood over and above the background cancer rate, which currently in the US is approximately 1 in 3 (Jemal et al., 2002), that an

individual will contract cancer in his or her lifetime. The risk value is expressed as a probability (e.g., 10^{-6}, or one in one million). The ELCR is calculated using the following equation:

$$\textbf{ELCR} = \textbf{LADD (mg/kg - day) x CSF (mg/kg - day)}^{-1}$$

The potential carcinogenic risk for each exposure pathway is calculated for each receptor. In current regulatory risk assessment, it is assumed that cancer risks are additive or cumulative. Pathway and area-specific risks were summed to estimate the total site potential cancer risk for each receptor. A summary of the total site cancer risks for each receptor group were presented in Section 6.0 and compared to the USEPA's target risk range of 10^{-4} to 10^{-6}.

Any COPC that causes an exceedance of the 10^{-4} risk level for a particular receptor is designated a COC. Both RME and MLE results are considered in the identification of COCs. COCs are identified in Section 7.5

The target risk levels used for the identification of COCs are based on USEPA guidance and Illinois TACO guidance. Specifically, USEPA provides the following guidance (USEPA, 1991a):

> "Where the cumulative carcinogenic site risk to an individual based on reasonable maximum exposure for both current and future land use is less than 10^{-4}, and the non-carcinogenic hazard quotient is less than 1, action generally is not warranted unless there are adverse environmental impacts." and,
>
> "The upper boundary of the risk range is not a discrete line at 1 x 10^{-4}, although EPA generally uses 1 x 10^{-4} in making risk management decisions. A specific risk estimate around 10^{-4} may be considered acceptable if justified based on site-specific conditions."

IEPA provides the following summary for the evaluation of cumulative risk for carcinogens (IEPA, 2002b, Fact Sheet 13: Mixture Rule):

> "The cumulative risk of carcinogenic contaminants attacking the same target must not exceed 1 in 10,000 [10^{-4}]. Therefore, the risk from all on-site similar acting carcinogens must be added together. If this cumulative risk level is greater than 1 in 10,000, corrective action must be taken to reach an acceptable risk level."

7.4.2 Non-Carcinogenic Risk Characterization

The potential for exposure to a constituent to result in adverse noncarcinogenic health effects is estimated for each receptor by comparing the Chronic Average Daily Dose (CADD) for each COPC

with the RfD for that COPC. The resulting ratio, which is unitless, is known as the HQ for that constituent. The HQ is calculated using the following equation:

$$HQ = \frac{\textbf{CADD (mg/kg - day)}}{\textbf{RfD (mg/kg - day)}}$$

The target HQ is defined as an HQ of less than or equal to one (USEPA, 1989a). When the HQ is less than or equal to 1, the RfD has not been exceeded, and no adverse noncarcinogenic effects are expected. If the HQ is greater than 1, there may be a potential for adverse noncarcinogenic health effects to occur; however, the magnitude of the HQ cannot be directly equated to a probability or effect level. HQs for a given pathway are summed to provide an HI. Pathway HIs are summed to provide a total receptor HI. When the HI is less than 1, the target has not been exceeded, and no adverse noncarcinogenic effects are expected. This initial HI summation assumes that all the COPCs are additive in their toxicity, and is considered only a screening step as additive toxicity may not be correct. If the HI is greater than 1, further evaluation is necessary to determine if the COPCs are additive in toxicity. This evaluation is termed a toxic endpoint analysis, and is discussed in Appendix N. Any COPC that causes an exceedance of a toxic-endpoint specific HI of 1 was designated a COC.

7.5 Risk Assessment Results

Exceedances of USEPA's target risk range of 10^{-6} to 10^{-4} and target HI of 1 are identified by site and receptor in the following sections. Where HI exceedances are identified, a target endpoint analysis was conducted, as presented in Appendix N. COPCs that significantly contribute to an exceedance of the 10^{-4} risk level are identified as COCs. COPCs that significantly contribute to an exceedance of the target endpoint HI of 1 are also identified as COCs. Where COCs are identified, information regarding current site use is discussed for the receptors of interest.

7.5.1 Site O

As shown on Table 7-1, all potential risks calculated for both the RME and MLE receptor scenarios for Site O are within or below the USEPA's target risk range of 10^{-6} to 10^{-4}.

As shown on Table 7-3, there are exceedances of the target HI of 1 for several receptor scenarios. The target endpoint analyses are presented in Appendix N. A summary is provided below. For each receptor, the total HI and COCs are identified (target endpoint, HQ, medium, pathway and EPC are identified for each COC):

- Outdoor Industrial Worker: RME (HI = 4.18)
  - COC: Xylenes (neurological effects, HQ = 3.23, combined soil, inhalation of VOCs, EPC = 14,000 mg/kg)

- Construction/Utility Worker: RME (HI = 21.4)
  - COC: Chlorobenzene (liver effects, HQ = 1.0, combined soil, inhalation of VOCs, EPC = 760 mg/kg)
  - COC: Xylenes (neurological effects, HQ = 14.2, combined soil, inhalation of VOCs, EPC = 14,000 mg/kg)
  - COC: Benzene (immune effects, HQ = 3.16, combined soil, inhalation of VOCs, EPC = 500 mg/kg)
  - COC: PCBs (immune, skin and eye effects, HQ = 2.53, combined soil, ingestion and dermal contact, EPC = 298 mg/kg)

- Construction/Utility Worker: MLE (1.27)
  - COCs: none identified based on target endpoint analysis.

Site O is located in an isolated area and is not currently used. As discussed in Section 2.3.1, the former ABRTF lagoons are covered and vegetated, and the vegetation is mowed periodically during the warmer months of the year. Therefore, the potential risks presented above for workers represent the future scenario (the only activity under the current scenario is mowing, which is limited in frequency and duration). The receptor assumptions are extremely conservative for this area, as it is unlikely that an outdoor industrial worker would access the site for 190 days per year. It is also unlikely that construction/utility work would occur in this area for the assumed 40 day period (RME) or 20 day period (MLE).

7.5.2 Site O (North)

As shown in Tables 7-1 and 7-3, there are exceedances of the USEPA's target risk range of 10^{-6} to 10^{-4} and target hazard index of 1 for several Site O (North) receptor scenarios. The target endpoint analyses are presented in Appendix N. A summary is provided below. For each receptor the total risk or total HI is presented. COCs are identified for both potential carcinogenic and noncarcinogenic effects. For COCs identified based on potential carcinogenic effects, the risk level, medium, pathway and EPC are identified. For potential noncarcinogenic effects, the target endpoint, HQ, medium, pathway and EPC are identified for each COC.

- Outdoor Industrial Worker: RME (Risk = 6.28E-04)
  - COC: Total PCBs (Risk = 1.66E-04, surface soil, ingestion and dermal contact, EPC = 709 mg/kg)
  - COC: Dioxin TEQ (Risk = 4.59E-04, surface soil, ingestion and dermal contact, EPC = 0.0508 mg/kg)

- Outdoor Industrial Worker: RME (HI = 13.3)

- COC: Xylenes (neurological effects, HQ = 1.23, combined soil, inhalation of VOCs, EPC = 3900 mg/kg)
- COC: Total PCBs (immune, skin and eye effects, HQ = 11.6, surface soil, ingestion and dermal contact, EPC = 709 mg/kg)

- Outdoor Industrial Worker: MLE (Risk = 1.13E-04)
  - COC: Dioxin TEQ (Risk = 8.32E-05, surface soil, ingestion and dermal contact, EPC = 0.0508 mg/kg)

- Outdoor Industrial Worker: MLE (HI = 8)
  - COC: Total PCBs (immune, skin and eye effects, HQ = 7.27, surface soil, ingestion and dermal contact, EPC = 709 mg/kg)

- Construction/Utility Worker: RME (Risk = 1.36E-04)
  - COC: Dioxin TEQ (Risk = 1.15E-04, combined soil, ingestion and dermal contact, EPC = 0.0508 mg/kg)

- Construction/Utility Worker: RME (HI = 34.8)
  - COC: Xylenes (neurological effects, HQ = 3.95, combined soil, inhalation of VOCs, EPC = 3900 mg/kg)
  - COC: Total PCBs (immune, skin and eye effects, HQ = 28.5, combined soil and leachate, ingestion and dermal contact, EPC (combined soil) = 3030 mg/kg), EPC (leachate) = 0.055 mg/L)

- Construction/Utility Worker: MLE (HI = 8.2)
  - COC: Total PCBs (immune, skin and eye effects, HQ = 6.89, combined soil and leachate, ingestion and dermal contact, EPC (combined soil) = 1780 mg/kg), EPC (leachate) = 0.055 mg/L)

- Trespassing Teenager: RME (Risk = 1.17E-04)
  - COC: Dioxin TEQ (Risk = 8.62E-05, surface soil, ingestion and dermal contact, EPC = 0.0508 mg/kg)

- Trespassing Teenager: RME (HI = 4.97)
  - COC: Total PCBs (immune, skin and eye effects, HQ = 4.86, surface soil, ingestion and dermal contact, EPC = 709 mg/kg)

- Trespassing Teenager: MLE (HI = 1.34)

- COC: Total PCBs (immune, skin and eye effects, HQ = 1.33, surface soil, ingestion and dermal contact, EPC = 709 mg/kg)

Site O (North) is located in an isolated area and is not currently used. As discussed in Section 2.3.1, the former ABRTF lagoons are covered and vegetated, and the vegetation is mowed periodically during the warmer months of the year. Therefore, the potential risks presented above for workers represent the future scenario (the only activity under the current scenario is mowing, which is limited in frequency and duration).. The receptor assumptions are extremely conservative for this area, as it is unlikely that an outdoor industrial worker would access the site for 190 days per year. It is also unlikely that construction/utility work would occur in this area for the assumed 40 day period (RME) or 20 day period (MLE). Due to the isolated nature of the site, it is unlikely that trespassers would enter the site as frequently as assumed (26 days RME, 13 days MLE).

7.5.3 Site P

As shown on Tables 7-1 and 7-3, all potential risks and HIs calculated for both the RME and MLE receptor scenarios for Site P are within or below the USEPA's target risk range of 10^{-6} to 10^{-4} and below the target HI of 1.

7.5.4 Site Q (North)

As shown on Table 7-1, all potential risks calculated for both the RME and MLE receptor scenarios for Site Q (North) are within or below the USEPA's target risk range of 10^{-6} to 10^{-4}.

As shown in Table 7-3, there are exceedances of the USEPA's target hazard index of 1 for two Site Q (North) receptor scenarios. The target endpoint analyses are presented in Appendix N. A summary is provided below. For each receptor the total HI is presented. COCs are identified for potential noncarcinogenic effects. For each COC, the target endpoint, HQ, medium, pathway and EPC are identified.

- Construction/Utility Worker: RME (HI = 11.7)
  - COC: 2,4,6-Trichlorophenol (reproductive effects, HQ = 8.43, leachate, ingestion and dermal contact, EPC = 12.5 mg/L)
  - COC: 2,4-Dichlorophenol (immune effects, HQ = 1.82, leachate, ingestion and dermal contact, EPC = 170 mg/L)

- Construction/Utility Worker: MLE (HI = 5.55)
  - COC: 2,4,6-Trichlorophenol (reproductive effects, HQ = 4.21, leachate, ingestion and dermal contact, EPC = 12.5 mg/L)

- COC: 2,4-Dichlorophenol (immune effects, HQ = 0.907, leachate, ingestion and dermal contact, EPC = 170 mg/L)

A 10-acre site on Site Q (North) is currently used by Rivercity Landscape Supply as a bulk storage terminal for lawn and garden products. Raw landscape products such as mulch, rock and soil are processed and packed on this portion of the site. Access to some portions of the site is restricted by fencing and gates. Other parts of the site have unrestricted access. As noted above, potential risk exceedances for this area were identified for the construction/utility worker, not for the outdoor industrial worker. Therefore, these are potential risks for a future construction/utility worker, as there is no current excavation work in this area.

7.5.5 Site Q (Central)

As shown on Tables 7-1 and 7-3, all potential risks and HIs calculated for both the RME and MLE receptor scenarios for Site Q (Central) are within or below the USEPA's target risk range of 10^{-6} to 10^{-4} and below the target HI of 1.

7.5.6 Site Q (South)

As shown on Tables 7-1 and 7-3, all potential risks and HIs calculated for both the RME and MLE receptor scenarios for Site Q (South) are within or below the USEPA's target risk range of 10^{-6} to 10^{-4} and below the target HI of 1.

7.5.7 Site Q Pond

As shown in Tables 7-1 and 7-3, there are exceedances of the USEPA's target risk range of 10^{-6} to 10^{-4} and target hazard index of 1 for several Site Q Pond receptor scenarios, due to the assumed ingestion of fish scenario. The target endpoint analyses are presented in Appendix N. A summary is provided below. For each receptor the total risk or total HI is presented. COCs are identified for both potential carcinogenic and noncarcinogenic effects. For COCs identified based on potential carcinogenic effects, the risk level, medium, pathway and EPC are identified. For potential noncarcinogenic effects, the target endpoint, HQ, medium, pathway and EPC are identified for each COC.

- Recreational Fisher - black bullhead fillet: RME (Risk = 5.49E-04)
  - COC: Total PCBs (Risk = 3.79E-04, black bullhead fillet, ingestion, EPC = 3.87 mg/kg)
  - COC: Dieldrin (Risk = 7.84E-05, black bullhead fillet, ingestion, EPC = 0.1 mg/kg)

- Recreational Fisher - black bullhead fillet: RME (HI = 22.9)
  - COC: Total PCBs (immune, skin and eye effects, HQ = 22.1, black bullhead fillet, ingestion, EPC = 3.87 mg/kg)

- Recreational Fisher - black bullhead fillet: MLE (HI = 2.86)
  - COC: Total PCBs (immune, skin and eye effects, HQ = 2.76, black bullhead fillet, ingestion, EPC = 3.87 mg/kg)

- Recreational Fisher - carp fillet: RME (Risk = 1.45E-03)
  - COC: Total PCBs (Risk = 9.8E-04, carp fillet, ingestion, EPC = 10 mg/kg)
  - COC: Dieldrin (Risk = 1.49E-04, carp fillet, ingestion, EPC = 0.19 mg/kg)
  - COC: Dioxin TEQ (Risk = 1.35E-04, carp fillet, ingestion, EPC = 1.84E-05 mg/kg)
  - COC: Benzo(a)pyrene (Risk = 6.44E-05, carp fillet, ingestion, EPC = 0.18 mg/kg)
  - COC: Arsenic (Risk = 6.02E-05, carp fillet, ingestion, EPC = 0.82 mg/kg)

- Recreational Fisher - carp fillet: RME (HI = 58)
  - COC: Total PCBs (immune, skin and eye effects, HQ = 57.1, carp fillet, ingestion, EPC = 10 mg/kg)

- Recreational Fisher - carp fillet: MLE (HI = 7.25)
  - COC: Total PCBs (immune, skin and eye effects, HQ = 7.14, carp fillet, ingestion, EPC = 10 mg/kg)

Fishing can occur in the Site Q Ponds; however, as noted in Section 2.3.3, fish are only present as a result of flood events. After the ponds dry out, fish are not reintroduced until another flood event, although water may collect in the ponds from precipitation. It is therefore extremely unlikely that a recreational fisher would be able to obtain 22 fish meals per year from the Site Q Ponds, as assumed by the RME scenario.

7.5.8 Site R

As shown in Tables 7-1 and 7-3, there are exceedances of the USEPA's target risk range of 10^{-6} to 10^{-4} and target hazard index of 1 for several Site R receptor scenarios. The target endpoint analyses are presented in Appendix N. A summary is provided below. For each receptor the total risk or total HI is presented. COCs are identified for both potential carcinogenic and noncarcinogenic effects. For COCs identified based on potential carcinogenic effects, the risk level, medium, pathway and EPC are identified. For potential noncarcinogenic effects, the target endpoint, HQ, medium, pathway and EPC are identified for each COC.

- Outdoor Industrial Worker: RME (Risk = 1.32E-03)
  - COC: Trichloroethylene (Risk = 1.31E-03, combined soil and leachate, inhalation of volatiles, EPC combined soil = 2200 mg/kg, EPC leachate = 150 mg/L)

- Outdoor Industrial Worker: RME (HI = 1.11)
  - COCs: none identified based on target endpoint analysis.

- Outdoor Industrial Worker: MLE (Risk = 1.36E-04)
  - COC: Trichloroethylene (Risk = 1.34E-04, leachate, inhalation of volatiles, EPC leachate = 150 mg/L)

- Construction/Utility Worker: RME (Risk = 9.79E-04)
  - COC: Trichloroethylene (Risk = 7.56E-04, combined soil and leachate, ingestion, dermal contact and inhalation, EPC combined soil = 2200 mg/kg, EPC leachate = 150 mg/L)
  - COC: Total PCBs (Risk = 1.17E-04, leachate, ingestion and dermal contact, EPC = 3.98 mg/L)
  - COC: 1,2-Dichloroethane (Risk = 5.54E-05, leachate, inhalation of volatiles, EPC = 50 mg/L)

- Construction/Utility Worker: RME (HI = 232)
  - COC: Total PCBs (immune, skin and eye effects, HQ = 204, leachate, ingestion and dermal contact, EPC = 3.98 mg/L)
  - COC: Trichloroethylene (liver effects, HQ = 12.7, combined soil and leachate, ingestion and dermal contact; neurological effects, HQ = 3.75, combined soil and leachate, inhalation of volatiles; EPC combined soil = 2200 mg/kg, EPC leachate = 150 mg/L)
  - COC: 1,2-Dichloroethane (liver, kidney, GI and skin effects, HQ = 8.42, leachate, inhalation of volatiles, EPC leachate = 50 mg/L)
  - COC: Mercury (immune effects, HQ = 0.747, combined soil, ingestion and dermal contact, EPC = 699 mg/kg)

- Construction/Utility Worker: MLE (Risk = 3.17E-04)
  - COC: Trichloroethylene (Risk = 2.19E-04, leachate, inhalation of volatiles, EPC leachate = 150 mg/L)

- Construction/Utility Worker: MLE (HI = 112)
  - COC: Total PCBs (immune, skin and eye effects, HQ = 102, leachate, ingestion and dermal contact, EPC = 3.98 mg/L)
  - COC: Trichloroethylene (liver effects, HQ = 5.76, leachate, ingestion and dermal contact; EPC leachate = 150 mg/L)
  - COC: 1,2-Dichloroethane (liver, kidney, GI and skin effects, HQ = 2.53, leachate, inhalation of volatiles, EPC leachate = 50 mg/L)

Site R is a closed industrial-waste disposal area owned by Solutia, Inc. The site is not currently used. Access to Site R is restricted by fencing and is monitored by Solutia plant personnel. Therefore, the potential risks presented above represent the future scenario. It is unlikely that an outdoor industrial worker will access the site 190 days per year in the future. Excavation is not allowed at Site R unless a permit is obtained from the plant and appropriate measures are taken to protect workers undertaking intrusive activities. Therefore, the risk assessment for the construction/utility worker represents a very conservative scenario.

7.5.9 Site S

As shown in Tables 7-1 and 7-3, there are exceedances of the USEPA's target risk range of 10^{-6} to 10^{-4} and target hazard index of 1 for several Site S receptor scenarios. The target endpoint analyses are presented in Appendix N. A summary is provided below. For each receptor the total risk or total HI is presented. COCs are identified for both potential carcinogenic and noncarcinogenic effects. For COCs identified based on potential carcinogenic effects, the risk level, medium, pathway and EPC are identified. For potential noncarcinogenic effects, the target endpoint, HQ, medium, pathway and EPC are identified for each COC.

- Outdoor Industrial Worker: RME (Risk = 3.24E-04)
  - COC: Total PCBs (Risk = 2.37E-04, surface soil, ingestion and dermal contact, EPC = 1010 mg/kg)

- Outdoor Industrial Worker: RME (HI = 16.9)
  - COCs: Total PCBs (immune, skin and eye effects, HQ = 16.6, surface soil, ingestion and dermal contact, EPC = 1010 mg/kg)

- Outdoor Industrial Worker: MLE (HI = 5.23)
  - COCs: Total PCBs (immune, skin and eye effects, HQ = 5.17, surface soil, ingestion and dermal contact, EPC = 504 mg/kg)

- Construction/Utility Worker: RME (HI = 9.19)
  - COCs: Total PCBs (immune, skin and eye effects, HQ = 8.56, combined soil, ingestion and dermal contact, EPC = 1010 mg/kg)

- Trespasser: RME (HI = 6.96)
  - COCs: Total PCBs (immune, skin and eye effects, HQ = 6.91, surface soil, ingestion and dermal contact, EPC = 1010 mg/kg)

The 1-acre site is currently not used. The northern portion of the site is grassed, and its southern portion is covered with gravel and fenced. Therefore, the potential risks presented above for workers

represent the future scenario only, and the exposure frequency assumptions are very conservative given the small size of the site. Additionally, due to the fencing of portions of the site and the small size, trespassers are unlikely to access the site frequently.

7.5.10 Mississippi River

As shown on Tables 7-2 and 7-4 all potential risks and HIs calculated for both the RME and MLE receptor scenarios for the Mississippi River recreational fisher and trespassing teenage scenarios are within or below the USEPA's target risk range of 10^{-6} to 10^{-4} and below the target HI of 1.

7.5.11 COC Summary

The COCs identified above are summarized in Table 7-5 and in Figure 7-1.

TABLE 7-1
SUMMARY OF POTENTIAL CARCINOGENIC RISKS FOR ALL RECEPTORS - SITES
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	Sites																	
	O		O North		P		Q North		Q Central		Q South		Q Pond		R (a)		S	
Medium (Pathways)	RME	MLE	RME	MLE	RME	MLE	RME	MLE	RME	MLE	RME	MLE	RME	MLE	RME	MLE	RME	MLE
Indoor Industrial Worker (IW)																		
Groundwater/Leachate to Indoor Air (inh)	NCOPC	NCOPC	1.10E-08	1.92E-09	NC	NC	8.72E-09	1.53E-09	NC	NC	1.21E-06	2.12E-07	NA	NA	1.01E-07	1.77E-08	NC	NC
Outdoor Industrial Worker (OW)																		
Surface Soil (ing/derm)	5.65E-05	5.14E-06	6.25E-04	1.12E-04	3.41E-06	2.32E-07	1.10E-06	1.03E-07	3.13E-05	1.98E-06	1.82E-05	1.41E-06	NA	NA	NCOPC	NC	2.56E-04	2.23E-05
Surface Soil to Outdoor Air (inh)	9.19E-06	3.09E-07	2.83E-06	2.95E-07	4.80E-06	4.13E-07	1.07E-06	8.07E-08	2.20E-08	1.67E-09	4.58E-07	3.70E-08	NA	NA	8.15E-04	1.27E-05	6.84E-05	2.64E-06
Groundwater/Leachate to Outdoor Air (inh)	NCOPC	NC	2.36E-08	4.12E-09	NC	NC	4.49E-07	7.85E-08	NC	NC	1.05E-08	1.83E-09	NA	NA	7.04E-04	1.23E-04	NC	NC
Total Potential Risk:	**6.57E-05**	**5.45E-06**	**6.28E-04**	**1.13E-04**	**8.22E-06**	**6.45E-07**	**2.82E-06**	**2.62E-07**	**3.13E-05**	**1.98E-06**	**1.87E-05**	**1.45E-06**	**NA**	**NA**	**1.32E-03**	**1.36E-04**	**3.24E-04**	**2.50E-05**
Construction/Utility Worker (CW)																		
Combined Soil (ing/derm)	8.44E-06	7.06E-07	1.26E-04	3.13E-05	2.36E-07	4.47E-08	2.80E-06	5.19E-07	8.94E-07	2.20E-07	1.15E-06	2.06E-07	NA	NA	3.56E-06	3.70E-07	1.12E-05	7.64E-07
Combined Soil to Outdoor Air (inh)	3.05E-06	1.81E-07	2.00E-06	3.67E-07	5.67E-07	8.55E-08	2.15E-07	2.99E-08	1.78E-08	3.47E-09	1.81E-07	3.51E-08	NA	NA	4.14E-05	1.43E-06	5.15E-06	3.69E-07
Groundwater (ing/derm)	1.36E-06	6.79E-07	7.61E-06	3.81E-06	NC	NC	6.96E-06	3.48E-06	NC	NC	NC	NC	NA	NA	1.77E-04	8.86E-05	NC	NC
Groundwater/Leachate to Outdoor Air (inh)	NCOPC	NCOPC	8.58E-08	2.57E-08	NC	NC	2.51E-06	7.52E-07	NC	NC	NC	NC	NA	NA	7.57E-04	2.27E-04	NC	NC
Total Potential Risk:	**1.28E-05**	**1.57E-06**	**1.36E-04**	**3.55E-05**	**8.03E-07**	**1.30E-07**	**1.25E-05**	**4.78E-06**	**9.12E-07**	**2.23E-07**	**1.34E-06**	**2.41E-07**	**NA**	**NA**	**9.79E-04**	**3.17E-04**	**1.64E-05**	**1.13E-06**
Trespassing Teenager (TT)																		
Surface Soil (ing/derm)	1.06E-05	1.54E-06	1.17E-04	3.32E-05	6.21E-07	6.38E-08	2.04E-07	2.97E-08	5.86E-06	5.90E-07	3.41E-06	4.16E-07	NA	NA	NC	NC	4.69E-05	6.33E-06
Surface Soil to Outdoor Air (inh)	1.54E-07	1.24E-08	4.76E-08	1.18E-08	8.07E-08	1.65E-08	1.79E-08	3.23E-09	3.70E-10	6.69E-11	7.70E-09	1.48E-09	NA	NA	1.03E-05	5.07E-07	1.15E-06	1.06E-07
Groundwater/Leachate to Outdoor Air (inh)	NC	NC	3.96E-10	1.65E-10	NC	NC	7.55E-09	3.14E-09	NC	NC	1.76E-10	7.34E-11	NA	NA	1.18E-05	4.93E-06	NC	NC
Surface Water (ing/derm)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NA	NA	NC	NC	NC	NC
Sediment (ing/derm)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NA	NA	NC	NC	NC	NC
Total Potential Risk:	**1.07E-05**	**1.55E-06**	**1.17E-04**	**3.32E-05**	**7.02E-07**	**8.04E-08**	**2.30E-07**	**3.61E-08**	**5.86E-06**	**5.90E-07**	**3.42E-06**	**4.18E-07**	**NA**	**NA**	**2.22E-05**	**5.44E-06**	**4.81E-05**	**6.44E-06**
Recreational Fisher																		
Surface Water (ing/derm)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NC	NC	NA	NA	NA	NA
Fish Fillet, Black Bullhead Fillet (ing)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.49E-04	2.06E-05	NA	NA	NA	NA
Fish Fillet, Carp Fillet (ing)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.45E-03	5.44E-05	NA	NA	NA	NA
Total Potential Risk (Black Bullhead Fillet):	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**5.49E-04**	**2.06E-05**	NA	NA	NA	NA
Total Potential Risk (Carp Fillet):	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.45E-03**	**5.44E-05**	NA	NA	NA	NA

Notes:
derm - dermal contact.
ing - ingestion.
inh - inhalation.
MLE - Most Likely Exposure.
NA - Not Applicable. Receptor not assumed to be exposed via this pathway.
NC - Not Calculated. No constituents of potential concern were identified for this pathway.
NCOPC - No COPCs identified for this pathway.
RME - Reasonable Maximum Exposure.
(a) - Site R has both a groundwater location and a leachate well in the mid-groundwater depth range. Potential inhalation exposures for receptors potentially exposed to mid-depth groundwater (IW, OW, TT) were calculated for both leachate and groundwater. The higher potential risk is shown here.

TABLE 7-2
SUMMARY OF POTENTIAL CARCINOGENIC RISKS FOR ALL RECEPTORS - MISSISSIPPI RIVER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	River							
	River		DDA		PDA		UDA	
Medium (Pathways)	RME	MLE	RME	MLE	RME	MLE	RME	MLE
Trespassing Teenager (TT)								
Surface Water (ing/derm)	NC	NC	NC	NC	NC	NC	NC	NC
Sediment (ing/derm)	2.19E-08	5.87E-09	NC	NC	NC	NC	NC	NC
Total Potential Risk:	**2.19E-08**	**5.87E-09**	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**
Recreational Fisher								
Surface Water (ing/derm)	NC	NC	NC	NC	NC	NC	NC	NC
Sediment (ing/derm)	NC	NC	6.97E-08	1.44E-09	6.97E-08	1.44E-09	6.97E-08	1.44E-09
Fish Fillet, Buffalo Fillet (ing)	NC	NC	4.02E-05	1.51E-06	4.59E-06	1.45E-07	5.43E-06	2.04E-07
Total Potential Risk:	**NC**	**NC**	**4.03E-05**	**1.51E-06**	**4.66E-06**	**1.46E-07**	**5.50E-06**	**2.05E-07**

Notes:
DDA - Downstream Discharge Area (Mississippi River).
derm - dermal contact.
ing - ingestion.
inh - inhalation.
MLE - Maximum Likely Exposure.
NC - Not Calculated. No constituents of potential concern were identified for this pathway.
PDA - Plume Discharge Area (Mississippi River).
RME - Reasonable Maximum Exposure.
UDA - Upstream Discharge Area (Mississippi River).

TABLE 7-3
SUMMARY OF POTENTIAL HAZARD INDICES FOR ALL RECEPTORS - SITES
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

Medium (Pathways)	Sites																	
	O		O North		P		Q North		Q Central		Q South		Q Pond		R (a)		S	
	RME	MLE	RME	MLE	RME	MLE	RME	MLE	RME	MLE	RME	MLE	RME	MLE	RME	MLE	RME	MLE
Indoor Industrial Worker (IW)																		
Groundwater/Leachate to Indoor Air (inh)	NCOPC	NCOPC	5.84E-04	3.65E-04	NC	NC	3.70E-04	2.31E-04	NC	NC	2.16E-03	1.35E-03	NA	NA	1.52E-03	9.48E-04	NC	NC
Outdoor Industrial Worker (OW)																		
Surface Soil (ing/derm)	1.79E-01	5.57E-02	1.18E+01	7.33E+00	1.25E-01	2.15E-02	6.67E-02	1.08E-02	4.71E-02	1.27E-02	1.24E-01	4.23E-02	NA	NA	NCOPC	NCOPC	1.67E+01	5.20E+00
Surface Soil to Outdoor Air (inh)	4.00E+00	4.82E-01	1.59E+00	6.68E-01	2.43E-01	1.77E-02	3.10E-02	8.38E-03	NC	NC	1.23E-01	3.09E-02	NA	NA	4.73E-01	4.45E-02	2.37E-01	3.45E-02
Groundwater/Leachate to Outdoor Air (inh)	NCOPC	NCOPC	1.68E-03	1.05E-03	NC	NC	7.73E-03	4.83E-03	NC	NC	4.44E-04	2.78E-04	NA	NA	6.34E-01	3.96E-01	NC	NC
Total Potential Hazard Index:	**4.18E+00**	**5.18E-01**	**1.33E+01**	**8.00E+00**	**3.68E-01**	**3.92E-02**	**1.06E-01**	**2.40E-02**	**4.71E-02**	**1.27E-02**	**2.48E-01**	**7.35E-02**	**NA**	**NA**	**1.11E+00 (b)**	**4.41E-01**	**1.69E+01**	**5.23E+00**
Construction/Utility Worker (CW)																		
Combined Soil (ing/derm)	2.61E+00	2.21E-01	2.86E+01	5.60E+00	1.69E-01	1.78E-02	5.00E-01	9.66E-02	7.78E-02	1.33E-02	1.93E-01	2.40E-02	NA	NA	3.09E+00	3.13E-01	8.77E+00	5.57E-01
Combined Soil to Outdoor Air (inh)	1.88E+01	1.05E+00	5.10E+00	1.02E+00	4.08E-01	1.52E-02	1.28E-01	1.68E-02	1.70E-01	3.32E-02	4.36E-01	6.57E-02	NA	NA	8.10E-01	3.68E-02	4.14E-01	3.09E-02
Groundwater (ing/derm)	1.20E-03	5.98E-04	3.13E+00	1.56E+00	NC	NC	1.06E+01	5.32E+00	NC	NC	NC	NC	NA	NA	2.16E+02	1.08E+02	NC	NC
Groundwater/Leachate to Outdoor Air (inh)	NCOPC	NCOPC	4.82E-02	1.45E-02	NC	NC	3.90E-01	1.17E-01	NC	NC	NC	NC	NA	NA	1.18E+01	3.54E+00	NC	NC
Total Potential Hazard Index:	**2.14E+01**	**1.27E+00 (b)**	**3.48E+01**	**8.20E+00**	**5.76E-01**	**3.29E-02**	**1.17E+01**	**5.55E+00**	**2.47E-01**	**4.65E-02**	**6.29E-01**	**8.97E-02**	**NA**	**NA**	**2.32E+02**	**1.12E+02**	**9.19E+00**	**5.88E-01**
Trespassing Teenager (TT)																		
Surface Soil (ing/derm)	7.46E-02	1.01E-02	4.90E+00	1.33E+00	5.21E-02	3.85E-03	2.78E-02	1.94E-03	1.96E-02	2.28E-03	5.16E-02	7.52E-03	NA	NA	NC	NC	6.95E+00	9.41E-01
Surface Soil to Outdoor Air (inh)	1.53E-01	1.18E-02	6.07E-02	1.70E-02	9.30E-03	4.51E-04	1.19E-03	2.14E-04	NC	NC	4.70E-03	7.88E-04	NA	NA	1.81E-02	1.13E-03	9.04E-03	8.80E-04
Groundwater/Leachate to Outdoor Air (inh)	NC	NC	6.40E-05	2.67E-05	NC	NC	2.95E-04	1.23E-04	NC	NC	1.70E-05	7.07E-06	NA	NA	2.42E-02	1.01E-02	NC	NC
Surface Water (ing/derm)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	2.13E-04	1.15E-04	NA	NA	NC	NC	NC	NC
Sediment (ing/derm)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NA	NA	NC	NC	NC	NC
Total Potential Hazard Index:	**2.27E-01**	**2.19E-02**	**4.97E+00**	**1.34E+00**	**6.14E-02**	**4.30E-03**	**2.93E-02**	**2.28E-03**	**1.96E-02**	**2.28E-03**	**5.65E-02**	**8.43E-03**	**NA**	**NA**	**4.23E-02**	**1.12E-02**	**6.96E+00**	**9.42E-01**
Recreational Fisher																		
Surface Water (ing/derm)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.48E-04	3.62E-05	NA	NA	NA	NA
Fish Fillet, Black Bullhead Fillet (ing)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.29E+01	2.86E+00	NA	NA	NA	NA
Fish Fillet, Carp Fillet (ing)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.80E+01	7.25E+00	NA	NA	NA	NA
Total Potential Hazard Index (Black Bullhead Fillet):	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.29E+01**	**2.86E+00**	NA	NA	NA	NA
Total Potential Hazard Index (Carp Fillet):	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**5.80E+01**	**7.25E+00**	**NA**	**NA**	**NA**	**NA**

Notes:
derm - dermal contact.
ing - ingestion.
inh - inhalation.
MLE - Most Likely Exposure.
NA - Not Applicable. Receptor not assumed to be exposed via this pathway.
NC - Not Calculated. No constituents of potential concern were identified for this pathway.
RME - Reasonable Maximum Exposure.
(a) - Site R has both a groundwater location and a leachate well in the mid-groundwater depth range. Potential inhalation exposures for receptors potentially exposed to mid-depth groundwater (IW, OW, TT) were calculated for both leachate and groundwater. The higher potential risk is shown here.
(b) Target endpoint analysis (Appendix N) indicates no target endpoint - based HI exceedances.

TABLE 7-4
SUMMARY OF POTENTIAL HAZARD INDICES FOR ALL RECEPTORS - MISSISSIPPI RIVER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

	River							
	River		DDA		PDA		UDA	
Medium (Pathways)	RME	MLE	RME	MLE	RME	MLE	RME	MLE
Trespassing Teenager (TT)								
Surface Water (ing/derm)	1.12E-02	5.96E-03	NC	NC	NC	NC	NC	NC
Sediment (ing/derm)	3.10E-04	8.31E-05	NC	NC	NC	NC	NC	NC
Total Potential Hazard Index:	**1.15E-02**	**6.04E-03**	**NC**	**NC**	**NC**	**NC**	NC	NC
Recreational Fisher								
Surface Water (ing/derm)	NC	NC	1.51E-02	1.96E-03	1.51E-02	1.96E-03	1.51E-02	1.96E-03
Sediment (ing/derm)	NC	NC	3.62E-04	2.49E-05	3.62E-04	2.49E-05	3.62E-04	2.49E-05
Fish Fillet, Buffalo Fillet (ing)	NC	NC	2.24E-02	2.80E-03	NC	NC	NC	NC
Total Potential Hazard Index:	**NC**	**NC**	**3.79E-02**	**4.79E-03**	**1.55E-02**	**1.99E-03**	**1.55E-02**	**1.99E-03**

Notes:
DDA - Downstream Discharge Area (Mississippi River).
derm - dermal contact.
ing - ingestion.
inh - inhalation.
MLE - Maximum Likely Exposure
NC - Not Calculated. No constituents of potential concern were identified for this pathway
PDA - Plume Discharge Area (Mississippi River).
RME - Reasonable Maximum Exposure
UDA - Upstream Discharge Area (Mississippi River).

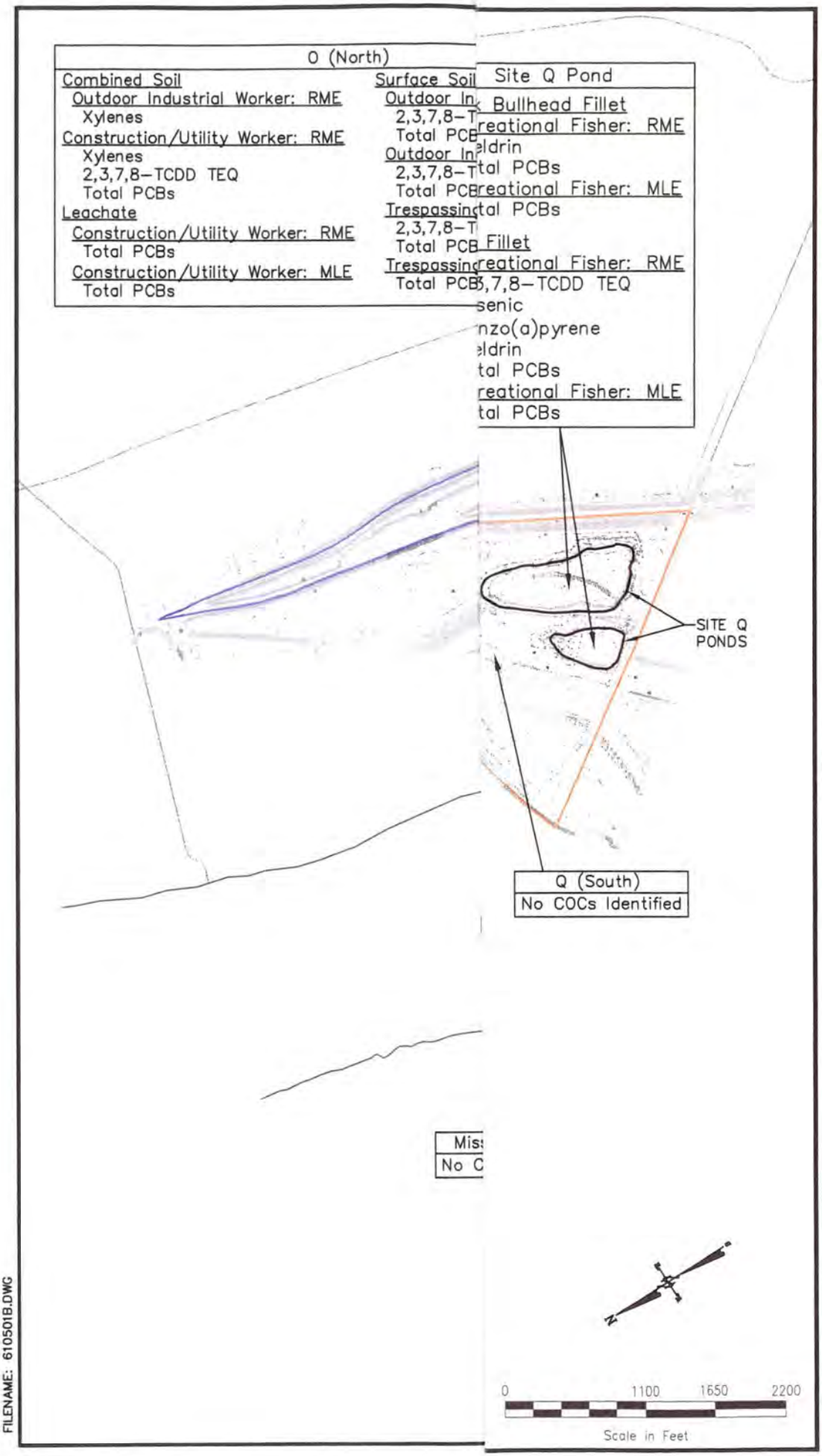
TABLE 7-5
SUMMARY OF CONSITUENTS OF CONCERN (COCs)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Receptor	Scenario	COC	Cancer (a) Potential Risk	Non-Cancer (a) HQ	Endpoint	Medium	Pathway	EPC	Units
O	Outdoor Industrial Worker	RME	Xylenes	ND	3.23	Neurological	Combined soil	Inhalation	14000	mg/kg
O	Construction/Utility Worker	RME	Chlorobenzene	ND	1	Liver	Combined soil	Inhalation	760	mg/kg
O	Construction/Utility Worker	RME	Xylenes	ND	14.2	Neurological	Combined soil	Inhalation	14000	mg/kg
O	Construction/Utility Worker	RME	Benzene	NCOC	3.16	Immune	Combined soil	Inhalation	500	mg/kg
O	Construction/Utility Worker	RME	PCBs	NCOC	2.53	Immune, skin, eye	Combined soil	Ingestion/Dermal	298	mg/kg
O North	Outdoor Industrial Worker	RME	PCBs	1.66E-04	11.6	Immune, skin, eye	Surface soil	Ingestion/Dermal	709	mg/kg
O North	Outdoor Industrial Worker	RME	2,3,7,8-TCDD TEQ	4.59E-04	ND	ND	Surface soil	Ingestion/Dermal	0.0508	mg/kg
O North	Outdoor Industrial Worker	RME	Xylenes	ND	1.23	Neurological	Combined soil	Inhalation	3900	mg/kg
O North	Outdoor Industrial Worker	MLE	PCBs	NCOC	7.27	Immune, skin, eye	Surface soil	Ingestion/Dermal	709	mg/kg
O North	Outdoor Industrial Worker	MLE	2,3,7,8-TCDD TEQ	8.32E-05	ND	ND	Surface soil	Ingestion/Dermal	0.0508	mg/kg
O North	Construction/Utility Worker	RME	2,3,7,8-TCDD TEQ	1.15E-04	ND	ND	Combined soil	Ingestion/Dermal	0.0508	mg/kg
O North	Construction/Utility Worker	RME	Xylenes	ND	3.95	Neurological	Combined soil	Inhalation	3900	mg/kg
O North	Construction/Utility Worker	RME	PCBs	NCOC	25.7	Immune, skin, eye	Combined soil	Ingestion/Dermal	3030	mg/kg
O North	Construction/Utility Worker	RME	PCBs	NCOC	2.81	Immune, skin, eye	Leachate	Ingestion/Dermal	0.055	mg/L
O North	Construction/Utility Worker	MLE	PCBs	NCOC	5.48	Immune, skin, eye	Combined soil	Ingestion/Dermal	1780	mg/kg
O North	Construction/Utility Worker	MLE	PCBs	NCOC	1.4	Immune, skin, eye	Leachate	Ingestion/Dermal	0.055	mg/L
O North	Trespassing Teenager	RME	PCBs	NCOC	4.86	Immune, skin, eye	Surface soil	Ingestion/Dermal	709	mg/kg
O North	Trespassing Teenager	RME	2,3,7,8-TCDD TEQ	8.62E-05	ND	ND	Surface soil	Ingestion/Dermal	0.0508	mg/kg
O North	Trespassing Teenager	MLE	PCBs	NCOC	1.33	Immune, skin, eye	Surface soil	Ingestion/Dermal	709	mg/kg
Q North	Construction/Utility Worker	RME	2,4,6-Trichlorophenol	NCOC	8.43	Reproductive	Leachate	Ingestion/Dermal	12.5	mg/L
Q North	Construction/Utility Worker	RME	2,4-Dichlorophenol	ND	1.82	Immune	Leachate	Ingestion/Dermal	170	mg/L
Q North	Construction/Utility Worker	MLE	2,4,6-Trichlorophenol	NCOC	4.21	Reproductive	Leachate	Ingestion/Dermal	12.5	mg/L
Q North	Construction/Utility Worker	MLE	2,4-Dichlorophenol	ND	0.907	Immune	Leachate	Ingestion/Dermal	170	mg/L
Q Pond	Recreational Fisher	RME	PCBs	3.79E-04	22.1	Immune, skin, eye	Black bullhead fillet	Ingestion	3.87	mg/kg
Q Pond	Recreational Fisher	RME	Dieldrin	7.84E-05	NCOC	NCOC	Black bullhead fillet	Ingestion	0.1	mg/kg
Q Pond	Recreational Fisher	MLE	PCBs	NCOC	2.76	Immune, skin, eye	Black bullhead fillet	Ingestion	3.87	mg/kg
Q Pond	Recreational Fisher	RME	PCBs	9.80E-04	57.1	Immune, skin, eye	Carp fillet	Ingestion	10	mg/kg
Q Pond	Recreational Fisher	RME	Dieldrin	1.49E-04	NCOC	NCOC	Carp fillet	Ingestion	0.19	mg/kg
Q Pond	Recreational Fisher	RME	2,3,7,8-TCDD TEQ	1.35E-04	ND	ND	Carp fillet	Ingestion	1.84E-05	mg/kg
Q Pond	Recreational Fisher	RME	Benzo(a)pyrene	6.44E-05	ND	ND	Carp fillet	Ingestion	0.18	mg/kg
Q Pond	Recreational Fisher	RME	Arsenic	6.02E-05	NCOC	NCOC	Carp fillet	Ingestion	0.82	mg/kg
Q Pond	Recreational Fisher	MLE	PCBs	NCOC	7.14	Immune, skin, eye	Carp fillet	Ingestion	10	mg/kg
R	Outdoor Industrial Worker	RME	Trichlororethylene	6.12E-04	NCOC	NCOC	Combined soil	Inhalation	2200	mg/kg
R	Outdoor Industrial Worker	RME	Trichlororethylene	6.93E-04	NCOC	NCOC	Leachate	Inhalation	150	mg/L
R	Outdoor Industrial Worker	MLE	Trichlororethylene	1.34E-04	NCOC	NCOC	Leachate	Inhalation	150	mg/L
R	Construction/Utility Worker	RME	Trichlororethylene	4.33E-05	1.22	Liver	Combined soil	Ingestion/Dermal	2200	mg/kg
R	Construction/Utility Worker	RME	Trichlororethylene	7.13E-04	14.43	Liver, Neurological	Leachate	Ingestion/Dermal/Inhalation	150	mg/L
R	Construction/Utility Worker	RME	PCBs	1.17E-04	204	Immune, skin, eye	Leachate	Ingestion/Dermal	3.98	mg/L
R	Construction/Utility Worker	RME	1,2-Dichloroethane	5.54E-05	8.42	Liver, kidney, GI, and skin	Leachate	Inhalation	50	mg/L
R	Construction/Utility Worker	RME	Mercury	ND	0.747	Immune	Combined soil	Ingestion/Dermal	699	mg/kg
R	Construction/Utility Worker	MLE	Trichlororethylene	2.19E-04	5.76	Liver	Leachate	Inhalation	150	mg/L
R	Construction/Utility Worker	MLE	PCBs	NCOC	102	Immune, skin, eye	Leachate	Ingestion/Dermal	3.98	mg/L
R	Construction/Utility Worker	MLE	1,2-Dichloroethane	NCOC	2.53	Liver, kidney, GI, and skin	Leachate	Inhalation	50	mg/L

TABLE 7-5
SUMMARY OF CONSITUENTS OF CONCERN (COCs)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Receptor	Scenario	COC	Cancer (a) Potential Risk	Non-Cancer (a) HQ	Endpoint	Medium	Pathway	EPC	Units
S	Outdoor Industrial Worker	RME	PCBs	2.37E-04	16.6	Immune, skin, eye	Surface soil	Ingestion/Dermal	1010	mg/kg
S	Outdoor Industrial Worker	MLE	PCBs	NCOC	5.17	Immune, skin, eye	Surface soil	Ingestion/Dermal	504	mg/kg
S	Construction/Utility Worker	RME	PCBs	NCOC	8.56	Immune, skin, eye	Combined soil	Ingestion/Dermal	1010	mg/kg
S	Trespassing Teenager	RME	PCBs	NCOC	6.91	Immune, skin, eye	Surface soil	Ingestion/Dermal	1010	mg/kg

Notes:
EPC - Exposure point concentration.
GI - Gastrointestinal.
HQ - Hazard Quotient.
MLE - Most Likely Exposure.
NCOC - Not a constituent of concern via this pathway.
ND - No Dose-Response value for this pathway.
PCBs - Polychlorinated Biphenyls.
RME - Reasonable Maximum Exposure.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalents Concentration.
(a) - Only constituents driving a risk exceedance are presented on this table.



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SAUGET AREA 2 RI/FS
SAUGET, IL

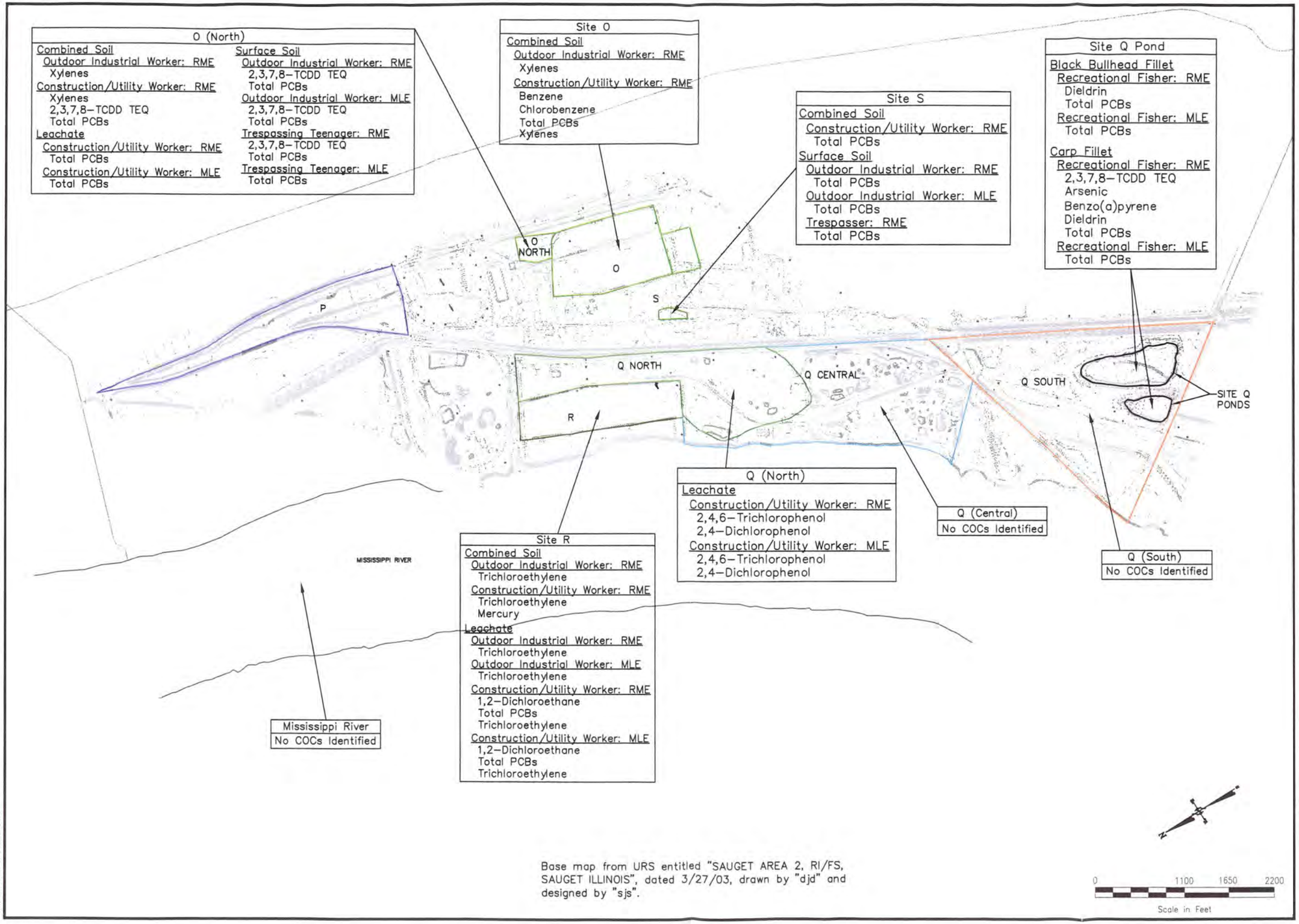
SCALE:	DATE:	PROJECT NUMBER:
1"=1100'	7/03	06105-009

FIGURE NUMBER:

7-1

SHEET NUMBER:

X



Base map from URS entitled "SAUGET AREA 2, RI/FS, SAUGET ILLINOIS", dated 3/27/03, drawn by "djd" and designed by "sjs".

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CONSTITUENTS OF CONCERN (COCs)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, IL

SCALE: 1"=1100'
DATE: 7/03
PROJECT NUMBER: 06105-009

FIGURE NUMBER: 7-1

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Human Health Risk Assessment
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APPENDIX A

HUMAN HEALTH RISK ASSESSMENT WORKPLAN –

Section 11 and Appendix 5 of:

RI/FS Support Sampling Plan
Sauget Area 2 Sites
Sauget, Illinois
Volume 1
Support Sampling Plan
May 25, 2001
(including revisions: September 2001, May 2002)

RI/FS Support Sampling Plan

Sauget Area 2 Sites

Sauget, Illinois

Volume 1

Support Sampling Plan

May 25, 2001

Submitted To:

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LIST OF ACRONYMS

AAF	Absorption Adjustment Factors
AOC	Administrative Order by Consent
ASTM	American Society for Testing and Materials
BAF	Bioaccumulation Factor
bgs	below ground surface
BSAF	Biota-sediment Accumulation Factor
CADD	Chronic Average Daily Dose
CAS	Chemical Abstracts Service
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	Constituent of Concern
COPC	Constituent of Potential Concern
CSF	Cancer Slope Factor
CSM	Conceptual Site Model
DQL	Data Quality Level
EFH	Exposure Factors Handbook
ELCR	Excess Lifetime Cancer Risk
EPC	Exposure Point Concentration
HEAST	Health Effects Assessment Summary Tables
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
IEPA	Illinois Environmental Protection Agency
IRIS	Integrated Risk Information System
LADD	Lifetime Average Daily Dose
MCL	Maximum Contaminant Level
MLE	Most Likely Exposure
NCEA	National Center for Environmental Assessment
NCP	National Contingency Plan
NOAA	National Oceanographic and Atmospheric Administration
NWS	National Weather Service
PCB	Polychlorinated Biphenyls
PM10	Particulate Matter of 10 Microns or Less in Diameter
PQL	Practical Quantitation Limit
PRG	Preliminary Remediation Goal

QAPP	Quality Assurance Project Plan
RAGS	Risk Assessment Guidance for Superfund
RBC	Risk-Based Concentration
RfC	Reference Concentration
RfD	Reference Dose
RG	Remedial Goal
RI/FS	Remedial Investigation/Feasibility Study
RME	Reasonable Maximum Exposure
SOW	Scope of Work
SSL	Soil Screening Level
SSP	Site Sampling Plan
SVOC	Semi-Volatile Organic Compound
TACO	Tiered Approach to Corrective Action Objectives
TCDD	Tetrachlorodibenzo-p-dioxin
TEF	Toxic Equivalency Factor
TEQ	Toxic Equivalence Concentration
UCL	Upper Confidence Limit
USEPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compound
WHO	World Health Organization

11.0 HUMAN HEALTH RISK ASSESSMENT WORK PLAN

This section of the Support Sampling Plan (SSP) presents a work plan for evaluating human health risks using data collected as part of the Remedial Investigation and Feasibility Study (RI/FS) for the Sauget Area 2 Site located in Sauget and Cahokia, IL. In addition, this work plan has been developed to satisfy the Scope of Work (SOW) for the RI/FS, provided as an attachment to the Administrative Order by Consent (AOC) entered into by the U.S. Environmental Protection Agency (USEPA) and the Sauget Area 2 Sites Group, as well as to be compliant with the National Contingency Plan (NCP) (USEPA, 1990). Specifically, the order requires the following:

> "The risk assessment shall focus on actual and potential risks to persons coming into contact with on-site contaminants as well as risks to the surrounding residential and industrial worker populations from exposure to contaminated soils, sediments, surface water, air, and ingestion of contaminated organisms in surrounding impacted ecosystems. Reasonable maximum estimates of exposure shall be defined for both current land use conditions and reasonable future land use conditions. It shall use data from the Site to identify the chemicals of concern, provide an estimate of how and to what extent human receptors might be exposed to these chemicals, and provide an assessment of the health effects associated with these chemicals. The evaluation shall project the potential risk of health problems occurring if no cleanup action is taken at the Site and establish target action levels for COCs (carcinogenic and non-carcinogenic). The risk evaluation shall be conducted in accordance with U.S. EPA guidance including, at a minimum: Risk Assessment Guidance for Superfund (RAGS) (EPA/540/1-89/002, December 1989) and RAGS Part D (EPA 540/R/97/033, January 1998). The risk assessment shall also include the following elements:
>
> - Hazard Identification (sources). The Respondents shall review available information on the hazardous substances present at the Site and identify the major contaminants of concern.
> - Dose-Response Assessment. Contaminants of concern should be selected based on their intrinsic toxicological properties.
> - Conceptual Exposure/Pathway Analysis.
> - Characterization of Site and Potential Receptors.
> - Exposure Assessment. Respondents shall develop reasonable maximum estimates of exposure for both current land use conditions and potential land use conditions at the Site.
> - Risk Characterization.
> - Identification of Limitations/Uncertainties."

An evaluation of human health risks will be conducted to satisfy the AOC SOW following available guidance from the USEPA.

11.1 Risk Assessment Overview

A human health risk assessment (HHRA) will be conducted to address the aforementioned objectives and to comply with USEPA guidance for conducting a risk assessment including, but not limited to, the following:

- Risk Assessment Guidance for Superfund (RAGS): Volume 1 - Human Health Evaluation Manual (Part A) (USEPA, 1989a);
- Risk Assessment Guidance for Superfund (RAGS): Volume 1 - Human Health Evaluation Manual (Part D) (USEPA, 1998a);
- Human Health Evaluation Manual Supplemental Guidance; Standard Default Exposure Factors (USEPA, 1991a);
- Guidelines for Exposure Assessment (USEPA, 1992a);
- Land Use in the CERCLA Remedy Selection Process (USEPA, 1995a);
- USEPA Soil Screening Guidance: User's Guide and the Technical Background Document (USEPA, 1996a, b); and
- Exposure Factors Handbook (EFH) (USEPA, 1997a).

The HHRA will evaluate potential human health effects using the four step paradigm as identified by the USEPA (USEPA, 1989a). The steps are:

- Data Evaluation and Hazard Identification
- Toxicity Assessment
- Exposure Assessment
- Risk Characterization

Work Plan Organization

The HHRA work plan is organized into the following sections:

- Site Characterization – Section 11.2 of this work plan discusses the site and its environs, and presents a conceptual site model describing sources, potential migration pathways, and potentially impacted media.

- Hazard Identification – Section 11.3 of this work plan presents a discussion of how site data will be summarized, and a description of the process used for the selection of constituents of potential concern (COPCs) to be evaluated quantitatively in the risk assessment.

- Dose-Response Assessment – Section 11.4 of this work plan presents a discussion of the dose-response assessment process. The dose-response assessment evaluates the relationship between the magnitude of exposure (dose) and the potential for occurrence of specific health effects (response) for each COPC. Both potential carcinogenic and noncarcinogenic effects will be considered. The most current USEPA-verified dose-response values will be used when available.

- Exposure Assessment - Section 11.5 of this work plan presents a discussion of the exposure assessment process. The purpose of the exposure assessment is to provide a quantitative estimate of the magnitude and frequency of potential exposure to COPCs by a receptor. Potentially exposed individuals, and the pathways through which those individuals may be exposed to COPCs are identified based on the physical characteristics of the site, as well as the current and reasonably foreseeable future uses of the site and surrounding area. The extent of a receptor's exposure is estimated by constructing exposure scenarios that describe the potential pathways of exposure to COPCs and the activities and behaviors of individuals that might lead to contact with COPCs in the environment.

- Risk Characterization – Section 11.6 of this work plan presents a discussion of the risk characterization process and uncertainties associated with the risk assessment process. Risk characterization combines the results of the exposure assessment and the toxicity assessment to derive site-specific estimates of potentially carcinogenic and noncarcinogenic risks resulting from both current and reasonably foreseeable future potential human exposures to COPCs. The results of the risk characterization will be used to identify constituents of concern (COCs), which are the subset of those COPCs whose risks result in an exceedance of the target risk range of 10^{-6} to 10^{-4} for potential carcinogens and a target Hazard Index of 1 for noncarcinogens (that act on the same target organ) (USEPA, 1990; 1991b).

  Within any of the steps of the risk assessment process described above, assumptions must be made due to a lack of absolute scientific knowledge. Some of the assumptions are supported by considerable scientific evidence, while others have less support. The assumptions that introduce the greatest amount of uncertainty in this risk evaluation will be discussed in the Risk Characterization section of the HHRA report.

- Summary and Conclusions - Section 11.7 discusses the summary and conclusions section of the final report.

- References - Section 11.8 presents the references used in this work plan.

11.2 Site Characterization

The Sauget Area 2 Sites as defined in the AOC, encompass Sites O, P, Q, R, and S located within the Villages of Sauget and Cahokia, St. Clair County, Illinois. In addition, a field area immediately south of Site Q will be investigated. A detailed description is presented in Section 2 of this RI/FS SSP. This work plan addresses the following media:

- Groundwater and leachate as identified in the SSP;
- Surface and subsurface soil as identified in the SSP;
- Surface water and sediment collected from the Mississippi River and Site Q, if present, as identified in the SSP; and
- Game fish collected from the Mississippi River and Site Q, if present, as identified in the SSP.

To guide identification of appropriate exposure pathways for evaluation in the risk assessment, a conceptual site model (CSM) for human health has been developed. The purpose of the CSM is to identify sources, potential migration pathways of constituents from sources to media where exposure can occur, and to identify potential human receptors. Potential exposure pathways and potential receptors are discussed in Section 11.5.

Conceptual Site Model

For the purposes of this CSM, the sources of constituents in environmental media are assumed to be the Sauget Area 2 Sites O, P, Q, R, and S.

Constituents in the Sites may have discharged to soils and from there leached to underlying groundwater. Volatile organic compounds (VOCs) in groundwater and/or leachate may volatilize into outdoor air and may infiltrate into indoor air in overlying buildings. Constituents in groundwater may discharge to the Mississippi River and to the Site Q ponds. Game fish in these water bodies may have accumulated constituents present in surface water and/or sediments. Figure 11-1 presents a CSM for Sauget Area 2. The CSM identifies potential sources, potential environmental release mechanisms, potential exposure pathways, potential exposure routes, and potential human receptors. Those potentially complete exposure pathways to be considered for further evaluation in the risk assessment are identified. Receptors and pathways are discussed in more detail in Section 11.5.

USEPA states that, "Sites that are surrounded by operating industrial facilities can be assumed to remain as industrial areas unless there is an indication that this is not appropriate" (USEPA, 1991b).

This is consistent with the statement in the NCP that "... the assumption of future residential land use may not be justifiable if the probability that the site will support residential use in the future is small" (USEPA, 1990).

The Sites covered by the AOC have been used for industrial purposes for many years and use of these areas is expected to remain industrial. Therefore, receptors have been identified in the CSM based on an industrial land use scenario.

The CSM is meant to be a "living" model that can be updated and modified as additional data become available. The exposure scenarios proposed for quantitative evaluation in the risk assessment (see Section 11.5) have been identified based on this current CSM. However, the CSM will be reviewed and modified as necessary once the analytical data from the SSP program have become available. Any substantial changes in the CSM and, subsequently, the pathways for quantitative evaluation, will be discussed with USEPA prior to conduct of the risk assessment.

11.3 Hazard Identification

The purpose of the hazard identification process is two-fold: 1) to evaluate the nature and extent of release of constituents present at the site; and 2) to select a subset of constituents identified as COPCs for quantitative evaluation in the risk assessment. This step of the risk assessment will involve compiling and summarizing the RI/FS SSP data for the risk assessment, and selecting COPCs based on a series of screening steps.

11.3.1 Data Compilation

The RI/FS SSP has been developed to address the potential media and migration pathways identified in Section 11.2. Sampling to be conducted in support of the HHRA include the following:

- Shallow groundwater (the uppermost interval sampled from each groundwater sampling location);
- Leachate;
- Surface soil (0 - 0.5 feet below ground surface – bgs);
- Subsurface soil (unsaturated soil 0.5 feet bgs to 6 feet bgs);
- Surface water;
- Sediment;
- Game fish fillet tissue; and
- 24-hour air samples.

Analytical data for use in the HHRA from background or reference locations will be available for the following media:

- Surface soil;
- Subsurface soil;
- Upgradient groundwater;
- Upstream surface water;
- Upstream sediment;
- Fish tissue; and
- Upwind 24-hour air samples.

The RI/FS SSP identifies the suites of analytes for each medium. Groundwater, leachate, surface water, sediment, soil and air samples will be analyzed for VOCs, semi-volatile organic compounds (SVOCs), pesticides, herbicides, polychlorinated biphenyls (PCBs), metals, and dioxins. Game fish filet tissue will be analyzed for SVOCs, pesticides, herbicides, PCBs, metals, and dioxins. The sampling program is discussed in detail in Sections 6.0, 7.0, 8.0, and 9.0 of this RI/FS SSP.

Because the air samples are 24-hour samples collected at a single time point, they will not be used in the calculation of risks in the HHRA. However, the data will be compared to USEPA Region 9 Preliminary Remediation Goals (PRGs) for air (USEPA, 2000a).

All analytical data collected in support of the SSP will be compiled and tabulated in a database for statistical analysis. Summary statistics tables will be developed for each medium in each area, and will present for each constituent the minimum and maximum detected values, the arithmetic mean, the 95th percentile upper confidence limit (95% UCL) on the arithmetic mean (USEPA, 1992b), and the frequency of detection.

The following guidance documents will be used to calculate summary statistics and select exposure point concentrations (EPCs) for the COPCs:

- Risk Assessment Guidance for Superfund: Volume I - Human Health Evaluation Manual, Part A (USEPA, 1989a);
- Supplemental Guidance to RAGS: Calculating the Concentration Term (USEPA, 1992b).

The EPC is defined as the 95% UCL or the maximum concentration, whichever is lower (USEPA, 1992b), or the arithmetic mean concentration, depending on the exposure scenario (see Section 11.3.1.2). Several statistics for the data must be calculated before the EPC can be determined.

Section 3.1.1 describes how these summary statistics are calculated. Section 11.3.1.2 describes how this information is used to select EPCs for the risk assessment.

11.3.1.1 Summary Statistics

Summary statistics will be calculated based on the following. Constituents analyzed but never detected in a particular medium will not be included in the summary statistics for that medium. For constituents detected at least once in a particular medium, samples reported as "non-detect" by the laboratory will be assigned a value of one-half the sample quantitation limit in calculating summary statistics (USEPA, 1989a). Duplicate sample results will be averaged and treated as a single sample result when compiling summary statistics (USEPA, 1989b).

The calculation of the 95% UCL for a dataset appropriate for a risk assessment is dependent on the distribution of the data (USEPA, 1992b). If the data are normally distributed, the 95% UCL is calculated using the t-statistic (USEPA, 1992b) as follows:

$$95\%\text{UCL} = \bar{x} + t\frac{SD}{\sqrt{n}}$$

where:

x = arithmetic mean of the untransformed data

t = the student-t statistic for n-1 degrees of freedom

n = the number of samples in the population

SD = the standard deviation of the untransformed data

However, if the data are lognormally distributed, the 95% UCL is calculated using the transformed data set and the H-statistic (USEPA, 1992b). The data are "transformed" by using the natural logarithmic function, i.e., by calculating ln(x) for each x value in the data set.

$$95\%\text{UCL} = e^{(\bar{x}+0.5SD^2+SD(H)/(\sqrt{n}-1)}$$

where:

e = base of the natural log, equal to 2.718

x = mean of the transformed data

SD = standard deviation of the transformed data

H = H-statistic

n = the number of samples in the population

The t-statistic and H-statistic values will be obtained from Gilbert (1987). There is currently a debate within USEPA on whether the H-statistic is an appropriate metric to be used to describe the upperbound of a non-normally distributed sample population for environmental programs (USEPA, 1998b). USEPA Regions 4 and 6 have recently accepted alternative methods for defining the upperbound concentration; these and the most current guidance available at the time of the conduct of the risk evaluation will be considered in the development of summary statistics for use in the HHRA.

The W-statistic test (Gilbert, 1987) is one test that can be used to determine whether a dataset is either more normally or lognormally distributed (USEPA, 1992b). The W-statistic will be calculated for each COPC in each medium for both the transformed and untransformed datasets. This information will be used as described below.

11.3.1.2 Selection of Exposure Point Concentrations

Because in many instances the W-statistic can not definitively describe the distribution as either normal or lognormal, and because there is no guidance as to how to choose an EPC when the dataset is neither normal nor lognormal, EPCs for upperbound or reasonable maximum exposure (RME) scenarios will be chosen using the following steps for each COPC in each medium if the t-statistic and H-statistic approach is used:

- The maximum value, the 95% UCL (untransformed) and the 95% UCL (transformed) will be calculated;
- The W-test will be performed on the untransformed and the transformed data;
- The W-test values will be compared;
- If the untransformed data have the higher W-statistic, the lower of the 95% UCL (untransformed) and the maximum value will be chosen as the EPC; and,
- If the transformed data have the higher W-statistic, the lower of the 95% UCL (transformed) and the maximum value will be chosen as the EPC.

Arithmetic mean concentrations will be used as EPCs for COPCs for the most likely exposure (MLE) scenarios. Tables presenting the EPC selection data for each medium will be presented in the report.

11.3.2 Selection of Constituents of Potential Concern

COPCs are a subset of the complete list of constituents detected in site media that are carried through the quantitative risk assessment process. Selection of COPCs focuses the analysis on the most likely risk "drivers." As stated in USEPA guidance (USEPA, 1993):

> "Most risk assessments are dominated by a few compounds and a few routes of exposure. Inclusion of all detected compounds at a site in the risk assessment has minimal influence on the total risk. Moreover, quantitative risk calculations using data from environmental media that may contain compounds present at concentrations too low to adversely affect public health have no effect on the overall risk estimate for the site. The use of a toxicity screen allows the risk assessment to focus on the compounds and media that may make significant contributions to overall risk."

Therefore, COPCs will be identified by comparing constituent-specific analytical data for environmental media to appropriate screening criteria and conducting a quantitative risk assessment for those constituents detected in an environmental medium in excess of the screening criteria.

Several factors are typically considered in selecting COPCs for a site, including background, frequency of detection, and toxicity, including essential nutrient status. Risk calculations will be conducted using the COPCs identified in this step.

COCs will then be identified in the risk characterization of the HHRA as those constituents whose risks result in an exceedance of the target risk range of 10^{-6} to 10^{-4} for potential carcinogens and a target Hazard Index of 1 for noncarcinogens (that act on the same target organ), (USEPA, 1990, 1991b). Remedial goals will be developed for COCs based on the exposure pathways evaluated in the risk assessment.

The steps to be used to identify COPCs are presented below.

11.3.2.1 Evaluation of Frequency of Detection and Essential Nutrient Status

A frequency of detection screen will be conducted on each medium (e.g., surface soil, subsurface soil, etc.). Constituents that are detected in fewer than 5% of samples, provided 20 samples are available, will not be included as COPCs. However, some of these constituents may be retained as COPCs based on professional judgment, considering factors such as the presence of a hotspot. In addition to the frequency of detection screen, essential nutrients (i.e., calcium, iron, magnesium, sodium and potassium) will not be included as COPCs (USEPA, 1989a).

11.3.2.2 Comparison to Background

Background and upgradient samples to be collected in the vicinity of the Sites present information on levels of constituents typical for the local area. The purpose of comparing site conditions to local background is to determine if site concentrations of constituents are representative of background concentrations, which, therefore, should not be included in risk calculations. Background comparisons will be conducted for each medium using site-specific background data. These background data will be evaluated in the context of the background concentrations for rural and urban areas of Illinois published by the Illinois Environmental Protection Agency (IEPA, 1994, 1998).

The procedure for determining whether a constituent concentration is consistent with background will follow that developed by USEPA Region 4 (USEPA, 2000b). Maximum detected concentrations of constituents in environmental media at the site will be compared against two times the arithmetic mean site-specific background concentration. USEPA Region 4 states that although RAGS (USEPA, 1989a) allows the use of statistics in data evaluation, statistics may not be sufficiently conservative at this stage of the risk evaluation; and in most cases, there are not a sufficient number of samples for conducting a statistical analysis. Therefore, if maximum concentrations of constituents in an area are found to be less than two times the average background concentrations, then those constituents can be eliminated from quantitative evaluation in the risk assessment. Constituents whose concentrations are found to be above typical local background levels will be retained for evaluation in the next step of the hazard identification process (Toxicity Screen).

11.3.2.3 Toxicity Screen

A toxicity screen will be performed in accordance with USEPA Region 5 guidance (USEPA, 1998c). USEPA Region 5 guidance identifies the following three sources as appropriate screening levels for soil, in order of preference:

1) Most recent generic soil screening levels (SSLs) developed and presented in Appendix A of the Soil Screening Guidance (USEPA, 1996b). The SSLs are based on ingestion and inhalation (direct contact) and soil-to-groundwater exposure pathways for a residential scenario.
2) Site-specific SSLs derived using the methodology outlined in the above reference.
3) Most recent USEPA Region 9 PRGs (USEPA, 2000a).

The USEPA Region 9 PRGs are more comprehensive because values are provided for a longer list of constituents, and PRGs are available for both residential and industrial scenarios. Therefore, USEPA Region 9 PRGs for industrial soils and ambient air will be used to identify COPCs in soil and sediment, and to evaluate the 24-hour air data, respectively.

Groundwater in Sauget Area 2 is classified as Class I by IEPA. Groundwater in Sauget Area 2 is not used as a source of drinking water and there are ordinances in effect in the Villages of Sauget and Cahokia (see information provided in Appendix 2-1) that prohibit the use of groundwater as drinking water. Therefore, groundwater will not be evaluated as a source of residential or industrial drinking water in the risk assessment. The risk assessment will evaluate potential incidental exposure to constituents in groundwater and/or leachate via volatilization of constituents to indoor and outdoor air, and via direct contact with groundwater and/or leachate during excavation activities. To provide a Class I evaluation of groundwater in Sauget Area 2, and for the identification of COPCs to be evaluated quantitatively for the groundwater and surface water scenarios addressed in the risk assessment, constituent concentrations in groundwater will be compared to IEPA Class I standards (35 Ill. Adm. Code 620.410).

For the Class I groundwater comparison, where Class I standards are not available, federal maximum contaminant levels (MCLs) (USEPA, 2000c) will be used; where MCLs are not available, the IEPA remediation objectives for Class I groundwater will be used (IEPA, 1998); where these are not available, the most current USEPA PRGs (USEPA, 2000a) for tap water will be used.

Fish tissue data will be compared to the USEPA Region 3 Risk-Based Concentrations (RBCs) for fish (USEPA, 2000d).

The PRGs and RBCs are periodically updated by USEPA. The most current criteria available will be used in the selection of COPCs. Constituents with maximum concentrations less than or equal to the screening criteria will not be included as COPCs. If no COPCs are identified for a medium, that medium will not be evaluated quantitatively in the HHRA.

Tables presenting the results of each screening step will be presented in the risk assessment report. The final list of COPCs for inclusion in the risk assessment will also be presented in the risk assessment and included in all subsequent risk calculations.

11.3.2.4 Data Quality Levels

The criteria identified in Section 11.3.2.3 have been used to develop the data quality levels (DQLs) to be used to identify appropriate practical quantitation limits (PQLs) for laboratory methods for the analytical program. The DQLs and PQLs are discussed in greater detail in the Quality Assurance Project Plan (QAPP) for the site (see Volume 5 of the RI/FS SSP). The DQLs for the HHRA are presented in Appendix 11-1. The DQLs for soil and sediment are based on USEPA Region 9 PRGs (USEPA, 2000a) for residential soil, the DQLs for surface water and groundwater are based on the Class I groundwater standards (35 Ill. Adm. Code 620.410) and the hierarchy identified in the previous section. The DQLs for fish tissue are based on the USEPA Region 3 RBCs (USEPA, 2000d) for fish, and the DQLs for air are based on the USEPA Region 9 PRGs (USEPA, 2000a) for ambient air.

11.4 Dose-Response Assessment

The purpose of the dose-response assessment is to identify the types of adverse health effects a constituent may potentially cause, and to define the relationship between the dose of a constituent and the likelihood or magnitude of an adverse effect (response).

Adverse effects are defined by USEPA as potentially carcinogenic or noncarcinogenic (i.e., potential effects other than cancer). Dose-response relationships are defined by USEPA. The dose-response values for potentially carcinogenic effects are termed Cancer Slope Factors (CSFs) or Unit Risk Factors, and dose-response values for noncarcinogenic effects are termed Reference Doses (RfDs) or Reference Concentrations (RfCs). These values are available from USEPA sources, such as USEPA's Integrated Risk Information System (IRIS), an on-line computer database (USEPA, 2000e), and the Health Effects Assessment Summary Tables (HEAST) (USEPA, 1997b). Both sets of potential health effects will be evaluated in the risk assessment. The USEPA National Center for Environmental Assessment (NCEA) will be consulted if a constituent does not have a dose-response value in either IRIS or HEAST. Appropriate criteria may also be derived by qualified toxicologists using current USEPA-approved methodologies.

Dose-response values used in the risk assessment will be presented in tabular format. For each constituent the table will present the Chemical Abstracts Service (CAS) registry number, dose-response value, source, study animal, study method, and where appropriate, target organ, critical effect, uncertainty factors, and confidence level.

Dose-response values are available for inhalation and oral exposures. Oral dose-response values will be used to evaluate dermal exposures, provided appropriate dermal absorption values are available. COPCs will be evaluated quantitatively for the dermal exposure pathway. For inhalation pathways, reference concentrations (in units of mg/m^3) will be converted to reference doses (in units of mg/kg-day) for calculating risk for systemic toxicants. For direct acting toxicants, the oral, dermal, and inhalation pathways will be evaluated separately.

11.4.1 PCB Dose-Response

Risks from potential exposures to PCBs will be calculated using the most current guidance available from USEPA. Currently, USEPA-approved guidance is provided in IRIS (USEPA, 2000e). Total PCB concentrations will be calculated by summing the separate homolog concentrations. The total PCB concentrations will be multiplied by the verified cancer slope factors listed in IRIS (USEPA, 2000e). Guidance provided in IRIS specifies three tiers of human slope factors for environmental PCBs: high risk and persistence, low risk and persistence, and lowest risk and persistence. The choice of slope factors for use depends on the medium of exposure and PCB chlorine content, as outlined in IRIS

(USEPA, 2000e). Thus, a slightly differing approach to calculating potential cancer risks will be taken for different media.

Non-cancer risks from potential exposures to PCBs will be calculated using the most conservative RfD for a PCB mixture. In addition, uncertainty surrounding the use of USEPA-verified toxicity criteria will be discussed.

11.4.2 Dioxin Dose-Response

The potential carcinogenic effects associated with exposure to dioxin and furan congeners in environmental media will be assessed in accordance with the approach developed by USEPA (1989c) or final guidance available at the time the risk assessment is conducted. Risks will be calculated for 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) and the dioxin and furan congeners using the cancer slope factor for 2,3,7,8-TCDD listed in HEAST (USEPA, 1997b) and using toxic equivalency factors (TEFs). TEFs are fractions that equate the potential toxicity of each congener to that of 2,3,7,8-TCDD. The World Health Organization (WHO) (Van den Berg et al., 1998) has assigned a TEF to each of the dioxin and furan congeners. The TEFs are listed in Table 11-1. The exposure point concentration for each dioxin and furan congener will be multiplied by its TEF, resulting in a TCDD toxic equivalence concentration (TCDD-TEQ). The TCDD-TEQ values for each of the congeners will then be added together. The cancer slope factor for 2,3,7,8-TCDD will then be used to calculate potential carcinogenic risks resulting from potential exposure to 2,3,7,8-TCDD, and the dioxin and furan congeners.

11.5 Exposure Assessment

The purpose of the exposure assessment is to predict the magnitude and frequency of potential human exposure to each of the COPCs retained for quantitative evaluation in the HHRA. The first step in the exposure assessment process is the characterization of the setting of the site and surrounding area. Current and potential future site uses and potential receptors (i.e., people who may contact the impacted environmental media of interest) are then identified. Potential exposure scenarios appropriate to current and potential future site uses and receptors are then developed. Those potential exposure pathways for which COPCs are identified and are judged to be complete will be evaluated quantitatively in the risk assessment. Reasonable maximum exposure (RME) assumptions, and most likely exposure (MLE) assumptions based on appropriate USEPA guidance, will be employed in the quantitative risk assessment.

11.5.1 Identification of Potential Exposure Scenarios

Exposure scenarios are developed on the basis of the CSM for a site. The CSM for this study was presented in Section 11.2 (Figure 11-1). The CSM was used to develop the potential exposure scenarios identified below. The receptor scenarios are summarized on Table 11-2.

Sauget Area 2, as identified by the AOC, has been used for industrial purposes for many years and use of these areas is expected to remain industrial. Therefore, industrial/commercial receptors will be evaluated for each site. Access to Sites O, P, Q, and part of S is unrestricted. Site R is fenced and monitored by a 24-hour security camera. The southern portion of Site S is fenced. Although access is restricted in some areas, a trespasser receptor will be evaluated for each site as well as for the Mississippi River. Recreational use of the Mississippi River and the Site Q ponds for fishing will also be evaluated. If COPCs are identified for soils in the field area located just south of Site Q, the industrial/commercial receptors and the trespasser receptor will be evaluated for this area.

An on-site outdoor industrial worker will be evaluated at each Site for potential exposure to COPCs where identified in surface soil, and to COPCs that may volatilize into outdoor air from subsurface soil and underlying groundwater. Therefore, a total of 6 outdoor industrial worker receptors will be evaluated in the risk assessment.

A construction/utility worker will be evaluated for potential exposure at each Site to constituents in surface and subsurface soils. Construction/utility work is assumed to occur to a depth of 12 to 15 feet bgs. This depth is based on the depth of utilities in the area. This depth will be adjusted if necessary based on results of the RI. Where the water table surface lies within this interval, the construction worker will be evaluated for potential contact with COPCs in groundwater during excavation. The construction worker will also be evaluated for potential contact with COPCs in leachate during excavation. Therefore, a total of 6 construction/utility worker receptors will be evaluated in the risk assessment.

An on-site indoor industrial worker will be evaluated at each Site for potential exposure to COPCs via inhalation of volatile constituents present in indoor air due to vapor intrusion from groundwater and/or leachate. Analytical data for shallow groundwater collected from the RI/FS SSP wells will be used in the risk assessment. Therefore, a total of 6 indoor industrial worker receptors will be evaluated in this risk assessment.

A trespassing teenager will be evaluated at each Site for potential exposure to COPCs where identified in surface soil, and to COPCs that may volatilize into outdoor air from subsurface soil and underlying groundwater. The trespasser receptor for Site Q will also be evaluated for potential exposure to COPCs where identified in surface water and sediment in the Site Q ponds. In addition, a trespasser receptor will be evaluated for potential exposure to COPCs where identified in surface water and

sediment in the Mississippi River. Analytical data for the Mississippi River surface water and sediment transect points located closest to the shore will be used in the risk assessment. Therefore, a total of 7 trespasser receptors will be evaluated in the risk assessment. The trespasser risks will be evaluated separately as well as each in conjunction with the Mississippi River trespasser risks.

Incidental ingestion and dermal contact with surface water and sediment and ingestion of game fish will be evaluated for two recreational fisher receptors: a Mississippi River fisher and a Site Q ponds fisher. The Mississippi River fisher will be evaluated using analytical data for fillets of game fish (catfish) collected in the Mississippi River, and analytical data for surface water and sediments from the transect points located closest to the shoreline. The Site Q ponds fisher will be evaluated using analytical data for surface water and sediment collected from the ponds, and for game fish fillets, if appropriate fish are located for collection in the ponds. There are historical reports of fishing activity in these ponds; therefore, if fish are not captured, models will be used to predict fish tissue concentration from surface water or sediment data (see Section 11.5.5).

Groundwater is not used as a source of drinking water in the area. Surface water serves as the source of the municipal water supply, and groundwater use is prohibited by the Villages of Sauget and Cahokia (see the information provided in Appendix 2-1). Therefore, groundwater will not be evaluated as a source of residential or industrial drinking water in the risk assessment. However, as noted in Section 11.3.2.3, groundwater analytical data will be compared to Illinois Class I groundwater standards as part of the risk assessment.

Final receptor selection will be made once site analytical data have been evaluated and COPCs identified. If no COPCs are identified in a particular medium (e.g., fish), and/or the potential exposure pathway, upon further investigation, is judged to be incomplete (e.g., recreational fishing), then the exposure scenarios associated with that medium/pathway will not be quantitatively evaluated in the HHRA. The potential receptors and their associated exposure scenarios are discussed below and summarized in Table 11-2.

11.5.2 Receptor Identification

The following subsections discuss the parameters that will be used to evaluate each of the potential receptors in the HHRA. Both RME and MLE scenarios will be evaluated for each receptor. As noted in Table 11-2, a total of 27 receptors will each be evaluated for RME and MLE scenarios. Exposure factors common to several of the receptors are discussed in Section 11.5.3.

11.5.2.1 Indoor Industrial Worker

Exposure assumptions for the indoor industrial worker under the RME and MLE scenarios are shown in Table 11-3. Where depth to groundwater is shallow (less than 25 to 30 feet bgs), it is possible an

indoor industrial worker may be exposed indirectly to shallow groundwater/leachate via inhalation of volatile COPCs migrating from groundwater and the subsurface to indoor air of an industrial/commercial building.

11.5.2.2 Outdoor Industrial Worker

Exposure assumptions for the outdoor industrial worker under the RME and MLE scenarios are shown in Table 11-4. The outdoor industrial worker may contact COPCs in surface soil via incidental ingestion and dermal contact, and may inhale COPCs via volatilization from the surface and subsurface, and via particulate emissions from the surface. In addition, where depth to groundwater is shallow (less than 25 to 30 feet bgs), it is possible an outdoor industrial worker may be exposed indirectly to shallow groundwater/leachate via inhalation of volatile COPCs migrating from groundwater and the subsurface to outdoor air.

11.5.2.3 Construction/Utility Worker

Exposure assumptions for the construction/utility worker under the RME and MLE scenarios are shown in Table 11-5. Exposure media of interest in the evaluation of potential risk to a future construction/utility worker will potentially include surface soil, subsurface soil, leachate, and groundwater. Construction/utility work is assumed to occur to a depth of 12 to 15 feet bgs. Where the water table surface lies within this interval, the construction worker will be evaluated for potential contact with COPCs in groundwater during excavation. Data for shallow groundwater and leachate will be combined and evaluated as one medium. Exposure could occur via incidental ingestion of and dermal contact with soil and shallow groundwater and/or leachate and via inhalation of fugitive dust and/or vapors from soil and groundwater and/or leachate. The soil ingestion rate listed in Table 11-5 for the construction worker under the MLE scenario is discussed in Section 11.5.3.

11.5.2.4 Trespassing Teenager

Exposure assumptions for the trespassing teenager under the RME and MLE scenarios are shown in Table 11-6. It is assumed that this receptor can be exposed to COPCs in surface soil via incidental ingestion, dermal contact, and inhalation of volatiles and particulates, and can be exposed indirectly to subsurface soil and/or groundwater via inhalation of volatile COPCs. Due to the remoteness of the sites, it is assumed that this receptor may be on the site for two hours per event; however, the receptor's entire daily exposure to soil via ingestion and dermal contact is assumed to come from the Sites. In addition, this receptor may be exposed to COPCs in sediment and surface water in the Mississippi River or the Site Q ponds. It is assumed that contact with surface water and sediment occurs continuously for 1 hour per event.

11.5.2.5 Recreational Fisher

Recreational fishing takes place in the Mississippi River and there are reports of fishing occurring in the Site Q ponds. As constituents in groundwater may discharge to these water bodies, COPCs may be present in surface water, sediment, and fish tissue. Therefore, a recreational fisher has the potential to be exposed to site-related COPCs through ingestion of fish and incidental ingestion and dermal contact with surface water and sediment. Recreational fishing will be evaluated separately for the Mississippi River and the Site Q ponds. The exposure assumptions for the fisher for the RME and MLE receptors are summarized in Table 11-7.

11.5.3 Exposure Parameters

11.5.3.1 Soil Ingestion Rate – Adult Construction Worker

Incidental soil ingestion occurs at all ages as a result of hand-to-mouth activities. Currently, there are little or no reliable quantitative data available for estimating adult soil ingestion rates. USEPA risk assessment guidance suggests a soil ingestion rate of 50 mg/day for adults in an industrial scenario (USEPA, 1991a).

USEPA presented an estimate of a soil ingestion rate for adults doing yard work of 480 mg/day in their supporting evidence for the commercial/industrial soil ingestion rate of 50 mg/day in the "Standard Default Exposure Factors" Directive (USEPA, 1991a); the 480 mg/day value was not presented in the table of default exposure factors. The Agency states: "For certain outdoor activities in the commercial/industrial setting (e.g., construction or landscaping), a soil ingestion rate of 480 mg/day may be used; however, this type of work is usually short-term and is often dictated by the weather. Thus, exposure duration would generally be less than one year and exposure frequency would vary according to site-specific construction/maintenance plans." However, some regions and state agencies have stipulated the use of this value to evaluate a construction worker exposure scenario. The Hawley (1985) study, which is the basis for the soil ingestion rate of 480 mg/day, was recently reviewed by the USEPA (USEPA, 1997a), which stated that, "Given the lack of supporting measurements, these estimates must be considered conjectural."

In the Hawley (1985) study, the author assumed that soil adheres to the surface area of the hands at a loading of 3.5 mg/cm^2. This value was based on a layer of soil on skin assumed to be 0.005 cm deep, a soil density of 1.5 g/cm^2, and 50% void space. Using the author's derived soil-to-skin adherence loading of 3.5 mg/cm^2 and assuming that the amount of soil covering a fraction of the hands (approximately 70 cm^2) is ingested twice a day, Hawley calculated a soil ingestion rate of 480 mg/day.

Hawley's 1985 analysis was one of the first published health risk assessments and was performed before any of the quantitative fecal tracer soil ingestion studies for either children or adults were conducted (Calabrese et al., 1989; Davis et al., 1990; Clausing et al., 1987; Calabrese et al., 1990).

Thus, the estimate of 480 mg/day predates all of our current knowledge about soil ingestion among both children and adults, as well as recent published data on soil-to-skin adherence rates.

In 1993, USEPA sponsored a workshop to evaluate soil-to-skin adherence data. As a result, a study to determine a more accurate characterization of soil-to-skin adherence was sponsored by the USEPA and conducted by John C. Kissel and associates at the University of Washington (Kissel et al., 1996; Holmes et al., 1998). The intent of this study was to resolve uncertainties and develop more accurate measures of soil-to-skin loading rates for individuals involved in various occupational and recreational activities. As reported in the Exposure Factors Handbook (EFH) (USEPA ,1997a), soil loading on skin surfaces as a result of various occupational and recreational activities was directly measured. This study indicates that soil loadings vary with the type of activity and the body parts contacted. As one would expect, adherence appears to be greatest during outdoor activities such as farming and gardening, and more soil/dust tends to adhere to the hands and knees than to other areas of the body.

Average hand soil loading factors are as presented in the EFH (USEPA, 1997a) for the adult outdoor workers evaluated by Kissel and Holmes. In every case, soil adherence during occupational exposure was measured to be considerably lower than Hawley's estimate of 3.5 mg/cm^2. The range of soil adherence loadings measured by Kissel and Holmes falls within the USEPA range of 0.2 to 1.0 mg/cm^2 (USEPA, 1992c).

For this evaluation, the construction worker receptor is assumed to be exposed to COPCs in surface and subsurface soils during excavation activity. Based on this exposure scenario, the "farmer" receptor provided in the EFH is considered to provide an upper-bound estimate of soil adherence. A soil ingestion rate can be calculated by substituting the soil adherence value for the receptor for the estimated value derived by Hawley (1985), as follows:

$$\frac{480\ \text{mg/day}}{3.5\,\text{mg/cm}^2} = \frac{\text{ingestion rate (mg/day)}}{\text{soil adherence (mg/cm}^2)}$$

The soil to hand adherence value for the "farmer" is 0.47 mg/cm^2. The calculated soil ingestion value is 64 mg/day; therefore, a soil ingestion rate of 64 mg/day is used for the MLE construction worker receptor in this risk evaluation.

Additional support for this value comes from a new paper by Kissel and coworkers (Kissel et al., 1998) that presents the results of a study of the transfer of soil from hand to mouth by intentional licking. Soil was loaded onto the skin by pressing the hand onto soil, and the amount transferred to the mouth was measured. The thumb sucking, finger mouthing, and palm licking activities resulted in geometric mean soil mass transfers of 7.4 to 16 mg per event. The author concludes that "transfer of 10 mg or more of soil from a hand to the oral cavity in one event is possible, but requires moderate soil loading and more than incidental hand-to-mouth contact." However, "the fraction of soil transferred from hand to mouth

that is subsequently swallowed is unknown but may be less than 100 percent." In addition, "the adult volunteers in this study reported that the presence of roughly 10 mg of soil in the mouth is readily detected (and unpleasant). Repeated unintentional ingestion of that mass of soil by adults therefore seems unlikely. In light of this observation, the 480 mg per day estimate [of Hawley, 1985] would require hundreds or perhaps thousands of hand-to-mouth contacts that resulted in soil transfer per day."

Therefore, for the MLE scenario, a soil ingestion rate of 64 mg/day is used for the construction worker. For the RME scenario, a soil ingestion rate of 100 mg/day is assumed for the construction worker. This is the adult soil ingestion rate provided by USEPA (1991a).

11.5.3.2 Frequency of Exposure to COPCs in Soil

A meteorological factor is generally used to account for the fraction of the year during which exposure to constituents in soils may occur (Sheehan et al., 1991; USEPA, 1989a). It is reasonable to assume that direct contact with soil or intrusive activities will not occur for residential receptors during inclement weather, i.e., when it is raining or snowing, when the ground is wet or frozen, or when snow or ice (32 degrees F) are covering the ground. Thus the frequency of contact with potentially impacted soil is adjusted for these site-specific meteorological conditions (USEPA, 1989a).

There are only a few metrics that can be used to describe the fraction of the year when meteorological conditions are likely to limit exposure. These include temperature and the amount of precipitation per day and per year, which includes rain, snow and ice. While measures are collected hourly, the National Weather Service (NWS) reports the number of days when precipitation is greater than 0.01 inches (one one-hundredth), greater than 0.1 inches (one tenth), and greater than 1 inch in their annual summary data. The number of days with precipitation greater than 0.1 inches is selected as the best representation of when exposure is likely to be limited by snow, rain, or ice. The National Oceanographic and Atmospheric Administration (NOAA) provides daily temperature data. It is assumed that exposure to soils is limited by temperatures less than 32 degrees F. Therefore, limiting the assumption of exposure to soils to those days with less than 0.1 inch of precipitation and temperatures above 32 degrees F is reasonable.

Based on ten years of meteorological data (1986-1995) for St. Louis provided by NOAA (1996) and the NWS (1986-1995), a meteorological factor is derived for use in the exposure equations. On the average, 66 days/year in this area receive 0.1 or greater inches of precipitation, and there are typically 27 days/year with a mean temperature of 32 degrees F or below. Accounting for days when both events occur (assumed to be 10% of the rain days or 6 days/year), the number of inclement days, 87, can be calculated (27 + 66 – 6 = 87). It is assumed that these days are evenly spaced throughout the course of the year. The meteorological factor is then calculated (87/365 = 24%). Thus it is assumed

that exposure to soils will not occur for the "receptor" 24% of the assumed days of exposure (exposure frequency) due to weather restrictions.

The choice of a precipitation target of 0.1 inches is in keeping with guidance provided in the Compilation of Air Pollution Emission Factors, which assumes that soil suspension will not occur on days with more than 0.01 inches of precipitation (USEPA, 1995b). It is probable, however, that this metric both over- and under-estimates the potential exposure in some conditions. For, example, it is possible that some exposure to soils may occur on days when it rains just over 0.1 inches in the early morning and then the ground dries during the course of the day. Alternatively, significant rainfall, such as greater than 1 inch, is likely to saturate the soil for consecutive days, and several inches of snow (which may fall all on one day with one storm) may cover the ground and inhibit direct contact for several days. With both of these considerations in mind, it is likely that a meteorological factor based on inclement days defined as precipitation greater than 0.1 inches and average temperatures less than 32 degrees F is reasonable.

11.5.4 Quantification of Potential Exposures

To estimate the potential risk to human health that may be posed by the presence of COPCs at Sauget Area 2, it is first necessary to estimate the potential exposure dose of each COPC. The exposure dose is estimated for each constituent via each exposure pathway by which the receptor is assumed to be exposed. Exposure dose equations combine the estimates of constituent concentration in the environmental medium of interest with assumptions regarding the type and magnitude of each receptor's potential exposure to provide a numerical estimate of the exposure dose. The exposure dose is defined as the amount of COPC taken into the receptor and is expressed in units of milligrams of COPC per kilogram of body weight per day (mg/kg-day).

Exposure doses are defined differently for potential carcinogenic and noncarcinogenic effects. The Chronic Average Daily Dose (CADD) is used to estimate a receptor's potential intake from exposure to a COPC with noncarcinogenic effects. According to USEPA (1989a), the CADD should be calculated by averaging the dose over the period of time for which the receptor is assumed to be exposed. Therefore, the averaging period is the same as the exposure duration. For COPC with potential carcinogenic effects, however, the Lifetime Average Daily Dose (LADD) is employed to estimate potential exposures. In accordance with USEPA (1989a) guidance, the LADD is calculated by averaging exposure over the receptor's assumed lifetime (70 years). Therefore, the averaging period is the same as the receptor's assumed lifetime. The standardized equations for estimating a receptor's average daily dose (both lifetime and chronic) are presented below, followed by descriptions of receptor-specific exposure parameters and constituent-specific parameters.

11.5.4.1 Estimating Potential Exposure to COPCs in Soil

Both incidental ingestion of, and dermal contact with, COPCs in soil are assumed to occur for many of the receptors. The following equations are used to calculate the estimated exposure.

Average Daily Dose (Lifetime and Chronic) Following Incidental Ingestion of Soil (mg/kg-day):

$$ADD = \frac{CS \times SIR \times EF \times ED \times AAF_d \times CF}{BW \times AT}$$

where:

ADD	=	Average Daily Dose (mg/kg-day)
CS	=	Soil Concentration (mg/kg soil)
SIR	=	Soil Ingestion Rate (mg soil/day)
EF	=	Exposure Frequency (days/year)
ED	=	Exposure Duration (year)
AAF_o	=	Oral-Soil Absorption Adjustment Factor (AAF) (chemical-specific) (unitless)
CF	=	Unit Conversion Factor (kg soil/10^6 mg soil)
BW	=	Body Weight (kg)
AT	=	Averaging Time (days)

Average Daily Dose (Lifetime and Chronic) Following Dermal Contact with Soil (mg/kg-day):

$$ADD = \frac{CS \times SA \times AF \times EF \times ED \times AAF_d \times CF}{BW \times AT}$$

where:

ADD	=	Average Daily Dose (mg/kg-day)
CS	=	Soil Concentration (mg/kg soil)
SA	=	Exposed Skin Surface Area (cm^2/day)
AF	=	Soil to Skin Adherence Factor (mg soil/cm^2)
EF	=	Exposure Frequency (days/year)
ED	=	Exposure Duration (year)
AAF_d	=	Dermal-Soil AAF (chemical-specific) (unitless)
CF	=	Unit Conversion Factor (kg soil/10^6 mg soil)
BW	=	Body Weight (kg)

AT = Averaging Time (days)

11.5.4.2 Estimating Potential Exposure via Inhalation

Exposure to COPCs migrating from soil or groundwater to air is assumed to occur for many of the potential receptors. The equation used to estimate exposure to COPCs via inhalation is as follows:

Average Daily Dose (Lifetime and Chronic) Following Inhalation of COPC (mg/kg-day):

$$ADD = \frac{CA \times IR \times AAF_i \times ET \times EF \times ED}{BW \times AT}$$

where:

ADD	=	Average Daily Dose (mg/kg-day)
CA	=	Air Concentration (mg/m^3)
IR	=	Inhalation Rate (m^3 /hr)
AAF_i	=	Inhalation AAF (chemical-specific) (unitless)
ET	=	Exposure Time (hours/day)
EF	=	Exposure Frequency (days/year)
ED	=	Exposure Duration (year)
BW	=	Body Weight (kg)
AT	=	Averaging Time (days)

11.5.4.3 Estimating Potential Exposure to COPCs from Groundwater

Incidental contact with groundwater or surface water is assumed for several receptors. The equation used to estimate a receptor's potential exposure via incidental ingestion of groundwater is:

Average Daily Dose (Lifetime and Chronic) Following Ingestion of Water (mg/kg-day):

$$ADD = \frac{CW \times IR \times EF \times ED \times AAF_o}{BW \times AT}$$

where:

ADD	=	Average Daily Dose (mg/kg-day)
CW	=	Water Concentration (mg/L)
IR	=	Water Ingestion Rate (L/day)

EF	=	Exposure Frequency (days/year)
ED	=	Exposure Duration (year)
AAF_o	=	Oral-Water AAF (chemical-specific) (unitless)
BW	=	Body Weight (kg)
AT	=	Averaging Time (days)

The equation used to estimate a receptor's potential exposure via dermal contact with groundwater is as follows:

Average Daily Dose (Lifetime and Chronic) Following Dermal Contact with Water (mg/kg-day):

$$ADD = \frac{CW \times SA \times PC \times ET \times EF \times ED \times AAF_d \times CF}{BW \times AT}$$

where:

ADD	=	Average Daily Dose (mg/kg-day)
CW	=	Water Concentration (mg/L)
SA	=	Exposed Skin Surface Area (cm^2)
PC	=	Dermal Permeability Constant (cm/hr) (chemical-specific)
ET	=	Exposure Time (hours/day)
EF	=	Exposure Frequency (days/year)
ED	=	Years Exposed (year)
AAF_d	=	Dermal-Water AAF (chemical-specific) (unitless)
CF	=	Unit Conversion Factor ($L/10^3cm^3$)
BW	=	Body Weight (kg)
AT	=	Averaging Time (days)

11.5.4.4 Estimating Potential Exposure From Food Consumption

A recreational fisher may be exposed to COPCs through ingestion of fish obtained from the Mississippi River or the Site Q ponds. The equation used to estimate a receptor's potential exposure via food consumption is:

Average Daily Dose (Lifetime and Chronic) Following Food Consumption (mg/kg-day):

$$ADD = \frac{CF \times IR \times AAF \times EF \times ED}{AT \times BW}$$

where:

ADD	=	Average Daily Dose (mg/kg-day)
CF	=	Concentration in Food (mg/kg)
IR	=	Ingestion Rate (kg/day)
AAF	=	Oral-diet AAF (chemical-specific) (unitless)
EF	=	Exposure Frequency (days/year)
ED	=	Exposure Duration (years)
AT	=	Averaging Time (days)
BW	=	Body Weight (kg)

11.5.4.5 Absorption Adjustment Factors

Absorption adjustment factors (AAFs) are used in risk assessment to account for absorption differences between humans exposed to substances in environmental situations and experimental animals in the studies used to derive dose-response values.

To estimate the potential risk to human health that may be posed by the presence of substances in various environmental media (such as soil or groundwater) it is first necessary to estimate the human exposure dose, of each compound. The exposure dose is then combined with an estimate of the toxicity of the substance to produce an estimate of risk posed to human health.

The estimate of toxicity of a substance, termed the dose-response value, can be derived from human epidemiological data, but it is most often derived from experiments with laboratory animals. The dose-response value can be calculated based on the administered dose of the substance (similar to the human exposure dose) or, when data are available, based on the absorbed dose, or internal dose, of the substance.

In animals, as in humans, the administered dose of a substance is not necessarily completely absorbed. Moreover, differences in absorption exist between laboratory animals and humans, as well as between different media and routes of exposure. Therefore, it is not always appropriate to directly apply a dose-response value to the human exposure dose. In many cases, a correction factor in the calculation of risk is needed to account for differences between absorption in the dose-response study and absorption likely to occur upon human exposure to a substance. Without such a correction, the estimate of human health risk could be over- or under-estimated.

This correction factor is termed the absorption adjustment factor, or AAF. The AAF is used to adjust the human exposure dose so that it is expressed in the same terms as the doses used to generate the dose-response curve in the dose-response study. The AAF is the ratio between the estimated human

absorption factor for the specific medium and route of exposure, and the known or estimated absorption factor for the laboratory study from which the dose-response value was derived.

$$AAF = \frac{\text{(fraction absorbed in humans for the environmental exposure)}}{\text{(fraction absorbed in the dose - response study)}}$$

The use of an AAF allows the risk assessor to make appropriate adjustments if the efficiency of absorption between environmental exposure and experimental exposure is known or expected to differ because of physiological effects and/or matrix or vehicle effects.

AAFs can have numerical values less than one or greater than one, depending on the particular circumstances at hand. When the dose-response curve is based on administered dose data, and if it is estimated that the fraction absorbed from the site-specific exposure is the same as the fraction absorbed in the laboratory study, then the AAF is 1. In the absence of detailed toxicological information on every compound of interest, it has been common practice for risk assessors to use a default AAF value of 1. This approach is not necessarily protective of public health, in some cases, because there are situations in which it is expected that the fraction absorbed from a site-related exposure would be higher than that in the laboratory study. There are also situations where the reverse could occur. Thus, use of AAFs in standard risk assessment calculations can provide more accurate and more realistic estimates of potential human health risk. The derivation of each AAF used in the risk assessment will be provided in an appendix to the risk assessment report.

11.5.5 Calculation of Exposure Point Concentrations

Exposure points are located where potential receptors may contact COPCs at or from the site. The concentration of COPCs in the environmental medium that receptors may contact must be estimated in order to determine the magnitude of potential exposure.

Measured data will be available for surface soil, subsurface soil, groundwater, leachate, and fish tissue (for the Mississippi River; fish tissue data may not be available for the Site Q ponds). Groundwater will be evaluated on a plume or well-by-well basis as appropriate. The exposure point concentration is defined as the lower of the maximum or 95th percentile UCL on the arithmetic mean concentrations (USEPA, 1992a) or other appropriate metric for the RME scenario and the arithmetic mean concentration for the MLE scenario.

Other pathways will require modeling to derive exposure point concentrations. These pathways include volatile chemicals in groundwater/leachate and the subsurface migrating upwards and infiltrating into indoor and outdoor air, generation of fugitive dust and volatiles from undisturbed soils as well as during construction activities, and potentially calculation of game fish fillet constituent concentrations in the Site Q ponds.

The model to be used to predict indoor air concentrations of VOCs will be the model of Johnson and Ettinger recommended by the USEPA (1996a and 1997c) to predict concentrations of COPCs migrating from groundwater or soil to indoor air of an overlying building. Concentrations of volatile COPCs in outdoor air due to migration from subsurface soil and/or groundwater will be estimated using the methodology recommended by the American Society for Testing and Materials (ASTM, 1998).

The calculation of concentrations of non-VOC COPCs bound to soil in fugitive dust involves multiplying the soil exposure point concentrations by the concentration of dust in air as follows:

1) Ambient Air:

   COPC concentration in ambient air (mg/m^3) = Exposure point concentration in soil (mg/kg soil) x Dust concentration (kg soil/m^3)

   The dust concentration in air to be used in the evaluation of ambient outdoor air pathways in this risk evaluation is the inverse of the particulate emission factor derived in accordance with USEPA guidance (USEPA, 1996a).

2) Excavation Air (i.e., during construction activities):

   COPC concentration in excavation air (mg/m^3) = Exposure point concentration in soil (mg/kg soil) x Dust concentration (mg soil/m^3) x Unit correction factor (1 kg/10^6 mg)

   The dust concentration in air to be used in the evaluation of excavation air pathways in this risk evaluation is 60 ug/m^3. This value is the recommended concentration of respirable particulate with a mean diameter of 10 microns or less (PM10) for excavation activities (MADEP, 1995).

The concentrations of constituents in Site Q ponds game fish fillet tissue may be calculated using bioaccumulation factors. Bioaccumulation factors will be obtained from USEPA sources current at the time the risk assessment is conducted, or from scientific literature sources. The following equations will be used to predict fish fillet tissue concentrations:

1) Calculation of fish tissue concentration based on sediment concentrations:

$$C_F = C_{SED} \times BSAF \times [f_{LIPID}/f_{oc}]$$

where:

C_F = constituent concentration in fish tissue, wet weight (mg/kg)

C_{SED} = constituent concentration in sediment, dry weight (mg/kg)

BSAF = biota-sediment accumulation factor (kg organic carbon in sediment/kg lipid in fish)

f_{LIPID} = fraction of lipid in fish (kg lipid/kg wet weight fish)

f_{oc} = fraction of organic carbon in sediment (kg organic carbon/kg dry weight sediment)

2) Calculation of fish tissue concentration based on surface water concentration:

$$C_F = C_{W\text{-}D} \times BAF$$

where:

C_F = constituent concentration in fish tissue, wet weight (mg/kg)

$C_{W\text{-}D}$ = constituent concentration in surface water, dissolved (mg/L)

BAF = bioaccumulation factor (L/kg)

11.6 Risk Characterization

The purpose of the risk characterization is to provide estimates of the potential risk to human health from exposure to COPCs at or from a site by receptors at or near a site. To accomplish this objective, this section will include quantitative estimates of potential carcinogenic and noncarcinogenic risk.

The results of the exposure assessment are combined with the results of the dose-response assessment to derive quantitative estimates of risk, or the probability of adverse health effects following assumed potential exposure to the COPCs. Using the exposure point concentrations derived in the exposure assessment, each exposure pathway for each receptor will be evaluated for both potential carcinogenic and noncarcinogenic effects.

11.6.1 Carcinogenic Risk Characterization

The purpose of carcinogenic risk characterization is to estimate the upper-bound likelihood, over and above the background cancer rate, that a receptor will develop cancer in his or her lifetime as a result of exposure to a constituent in environmental media at the site. This likelihood is a function of the dose of a constituent (described in the Exposure Assessment) and the Cancer Slope Factor (CSF) (described in the Toxicity Assessment) for that constituent. The Excess Lifetime Cancer Risk (ELCR) is the likelihood over and above the background cancer rate, which currently in the U.S. is between 1 in 3 and 1 in 4 (Landis et al., 1998), that an individual will contract cancer in his or her lifetime. The risk value is expressed as a probability (e.g., 10^{-6}, or one in one million). The relationship between the ELCR and the estimated Lifetime Average Daily Dose (LADD) of a chemical may be expressed as:

$$ELCR = 1-e^{-(CSF \times LADD)}$$

When the product of the CSF and the LADD is much greater than 1, the ELCR approaches 1 (i.e., 100 percent probability). When the product is less than 0.01 (one chance in 100), the equation can be closely approximated by:

$$ELCR = LADD\ (mg/kg\text{-}day) \times CSF\ (mg/kg\text{-}day)^{-1}$$

The product of the CSF and the LADD is unitless, and provides an upper-bound estimate of the potential carcinogenic risk associated with a receptor's exposure to that constituent via that pathway.

The potential carcinogenic risk for each exposure pathway will be calculated for each receptor. In current regulatory risk assessment, it is assumed that cancer risks are additive or cumulative. Pathway and area-specific risks will be summed to estimate the total site potential cancer risk for each receptor. A summary of the total cancer risks for each receptor group for each site will be presented in this section.

The results will be compared to the USEPA's target risk range of 10^{-4} to 10^{-6}. USEPA has established target risk ranges under the National Contingency Plan (NCP) or Superfund program (USEPA, 1990). Target risk levels refer to levels of cancer risk or hazard indices that are deemed acceptable by the USEPA or other regulatory agencies. These are levels below which the potential for adverse effects to humans are assumed to be negligible or inconsequential. The NCP establishes a target cancer risk range of 10^{-4} to 10^{-6} and a target hazard index of less than or equal to one (USEPA, 1990). The USEPA subsequently clarified that, "Where the cumulative carcinogenic site risk to an individual based on reasonable maximum exposure for both current and future land use is less than 10^{-4}, and the non-carcinogenic hazard quotient is less than 1, action generally is not warranted, unless there are adverse environmental impacts" (USEPA, 1991b).

Therefore, the screening criteria used to identify COPC are based on a 10^{-6} risk level, and a cumulative target risk level of 10^{-4} will be used to evaluate the risk assessment results. Any COPC that causes an exceedance of the 10^{-4} risk level for a particular receptor will be designated a COC. Both RME and MLE results will be considered in the identification of COCs. Remedial goals (RGs) will be calculated for each COC, based on the scenarios used in the risk assessment.

11.6.2 Noncarcinogenic Risk Characterization

The potential for exposure to a constituent to result in adverse noncarcinogenic health effects is estimated for each receptor by comparing the Chronic Average Daily Dose (CADD) for each COPC with the RfD for that COPC. The resulting ratio, which is unitless, is known as the Hazard Quotient (HQ) for that chemical. The HQ is calculated using the following equation:

$$HQ = \frac{CADD\ (mg/kg\text{ - }day)}{RfD\ (mg/kg - day)}$$

The target HQ is defined as an HQ of less than or equal to one (USEPA, 1989). When the HQ is less than or equal to one, the RfD has not been exceeded, and no adverse noncarcinogenic effects are expected. If the HQ is greater than one, there may be a potential for adverse noncarcinogenic health effects to occur; however, the magnitude of the HQ cannot be directly equated to a probability or effect level.

The total Hazard Index (HI) is calculated for each exposure pathway by summing the HQs for each individual chemical. The total site HI will be calculated for each potential receptor by summing the HIs for each pathway associated with the receptor. If the total site HI is greater than one for any receptor, a more detailed evaluation of potential noncarcinogenic effects based on specific health endpoints will be performed (USEPA, 1989a).

A summary of all HI for each receptor group for each site will be presented and compared to the USEPA's target hazard index of one. Any COPC that causes an exceedance of the Hazard Index of 1 for a particular receptor and target endpoint will be designated a COC. Both RME and MLE results will be considered in the identification of COCs. Remedial goals will be calculated for each COC, based on the scenarios used in the risk assessment.

11.6.3 Risk Assessment Refinement

The HHRA, as described, utilizes conservative exposure and toxicity parameters. The results of the HHRA will be reviewed and the risk drivers identified. The Sauget Area 2 Sites Group may choose to refine the risk estimates by using, for example, the following: site-specific exposure data (e.g., creel census), site-specific bioavailability factors, or probabilistic (or Monte Carlo) analysis. Use of such refinements, such as a probabilistic risk assessment, will allow the public to put the risks in perspective and provide information that the risk manager needs to more accurately characterize risks on a site-specific basis and to communicate the nature of the risks to the public.

11.6.4 Cumulative Risk

The risk assessment will be conducted for all media, and total site risks will be calculated for each receptor for each site. COCs for potentially carcinogenic and noncarcinogenic effects will be identified, and pathways that contribute significantly to target risk exceedances will be identified. RGs will be calculated for appropriate COCs in the appropriate medium.

11.6.5 Uncertainty Analysis

Uncertainty is introduced into the risk assessment in several places throughout the process. Every time an assumption is made, some level of uncertainty is introduced into the risk assessment. In accordance with USEPA guidance (USEPA, 1989a), the uncertainty associated with each step of the risk characterization process will be discussed in this section of the report.

There are many potential sources of uncertainty in the risk assessment process; some are more important than others. The major areas of uncertainty include: the adequacy of the sampling plan, the quality of the analytical data, assumptions about the frequency, duration, and magnitude of exposure, the receptors identified, assumptions made in the modeling performed to predict concentrations at locations where measurement data are lacking, and the availability and accuracy of dose-response data. The uncertainties will be discussed qualitatively in the report, including steps taken to compensate for uncertainty, and the impact on the risk assessment results.

11.7 Summary and Conclusions

A summary and conclusions section will contain discussions of the results of the risk assessment. The selection of final COC and the remedial goals for each COC will be presented.

11.8 References

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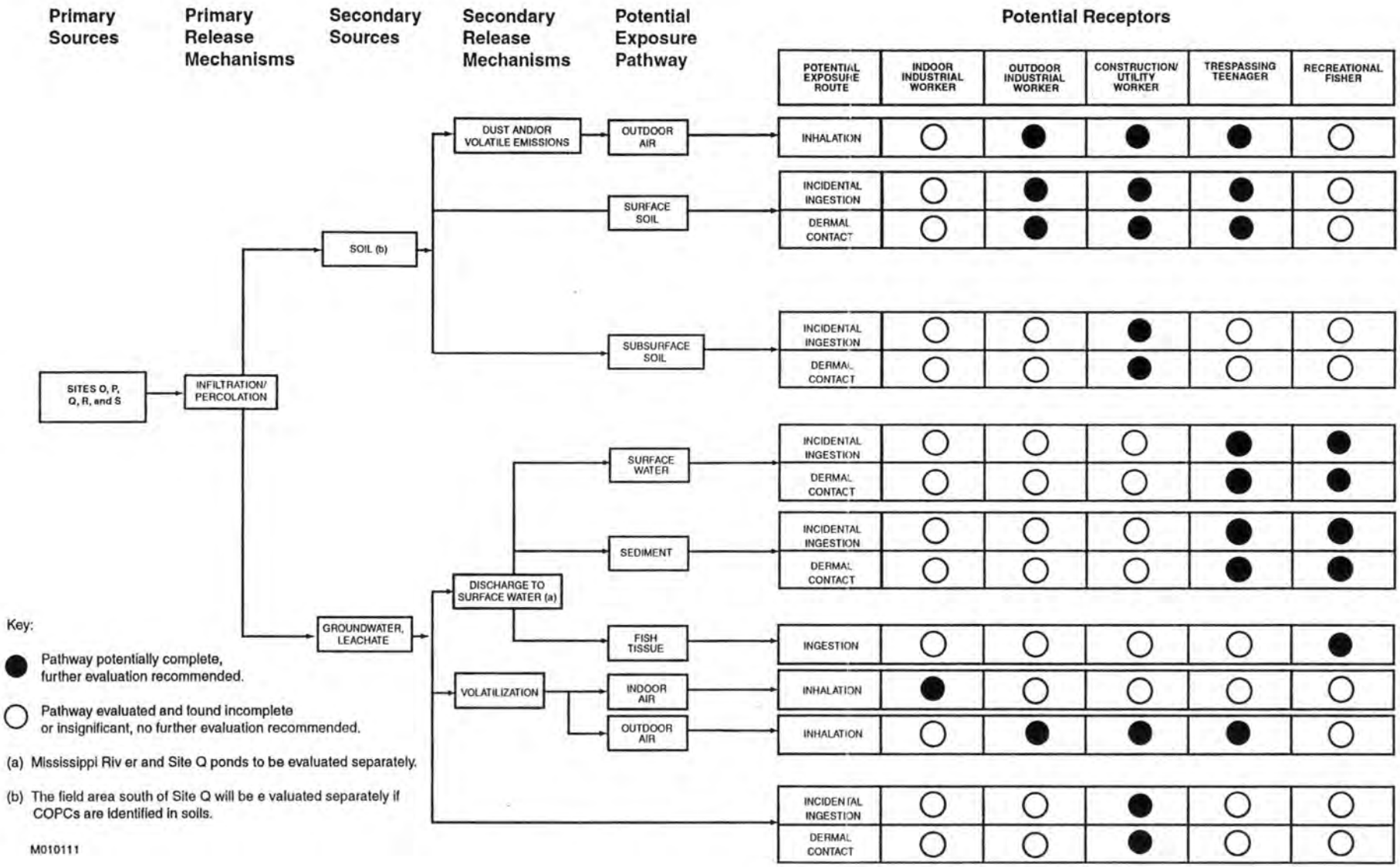

FIGURE 11-1
Conceptual Site Model for Human Health Risk Assessment
Sauget Area 2 RI/FS SSP
Sauget Area 2 Sites Group

TABLE 11-1
TEFs FOR DIOXIN AND FURAN CONGENERS
SAUGET AREA 2 RI/FS SSP
SAUGET AND CAHOKIA, ILLINOIS
SAUGET AREA 2 SITES GROUP

CONSTITUENT	CAS NUMBER	TEF (a)
Dioxins		
2,3,7,8-TCDD	1746-01-6	1.0
1,2,3,7,8-PentaCDD	40321-76-4	1.0
1,2,3,4,7,8-HexaCDD	39227-28-6	0.1
1,2,3,6,7,8-HexaCDD	57653-85-7	0.1
1,2,3,7,8,9-HexaCDD	19408-74-3	0.1
1,2,3,4,6,7,8-HeptaCDD	35822-39-4	0.01
OctaCDD	3268-87-9	0.0001
Furans		
2,3,7,8-TetraCDF	51207-31-9	0.1
1,2,3,7,8-PentaCDF	57117-41-6	0.05
2,3,4,7,8-PentaCDF	57117-31-4	0.5
1,2,3,4,7,8-HexaCDF	70648-26-9	0.1
1,2,3,6,7,8-HexaCDF	57117-44-9	0.1
1,2,3,7,8,9-HexaCDF	72918-21-9	0.1
2,3,4,6,7,8-HexaCDF	60851-34-5	0.1
1,2,3,4,6,7,8-HeptaCDF	67562-39-4	0.01
1,2,3,4,7,8,9-HeptaCDF	55673-89-7	0.01
OctaCDF	39001-02-0	0.0001

Notes:
CAS- Chemical Abstracts Service.
CDD - Chlorodibenzodioxin.
CDF - Chlorodibenzofuran.
TEF - Toxicity Equivalency Factor.
(a) - Toxic Equivalency Factors for PCBs, PCDDs, PCDFs for Humans and Wildlife. Van den Berg, et al. December, 1998.

TABLE 11-2
POTENTIAL RECEPTORS, EXPOSURE MEDIA AND EXPOSURE PATHWAYS
SAUGET AREA 2 RI/FS SSP
SAUGET AND CAHOKIA, IL
SAUGET AREA 2 SITES GROUP

Receptor	Site	Medium	Pathway
On-Site Outdoor Industrial Worker			
	O,P,Q,R,S, South of Site Q	Surface Soil	Incidental Ingestion Inhalation of Particulates/Volatiles Dermal Contact
6 Receptors		Groundwater	Inhalation of Volatiles in Outdoor Air
On-Site Indoor Industrial Worker			
6 Receptors	O,P,Q,R,S, South of Site Q	Groundwater	Inhalation of Volatiles in Indoor Air
Construction/Utility Worker			
	O,P,Q,R,S, South of Site Q	Surface Soil	Incidental Ingestion Inhalation of Particulates/Volatiles Dermal Contact
		Subsurface Soil	Incidental Ingestion Inhalation of Particulates/Volatiles Dermal Contact
6 Receptors		Groundwater/ Leachate	Incidental Ingestion Dermal Contact Inhalation of Volatiles in Outdoor Air
Trespassing Teenager			
	O,P,Q,R,S, South of Site Q	Surface Soil	Incidental Ingestion Inhalation of Particulates/Volatiles Dermal Contact
		Groundwater	Inhalation of Volatiles in Outdoor Air
	Q, Mississippi River	Surface Water	Incidental Ingestion Dermal Contact
		Sediment	Incidental Ingestion Dermal Contact
7 Receptors			
Recreational Fisher			
	Mississippi River, Site Q Ponds	Fish Fillets	Ingestion
		Surface Water	Incidental Ingestion Dermal Contact
2 Receptors		Sediment	Incidental Ingestion Dermal Contact

Total number of receptors = 27, each evaluated for Reasonable Maximum Exposure (RME) and Most Likely Exposure (MLE) scenarios.

TABLE 11-3
SUMMARY OF POTENTIAL EXPOSURE ASSUMPTIONS - INDOOR INDUSTRIAL WORKER
SAUGET AREA 2 RI/FS SSP
SAUGET AND CAHOKIA, IL
SAUGET AREA 2 SITES GROUP

Parameter	RME On-Site Indoor Worker		MLE On-Site Indoor Worker	
Parameters Used in the Indoor Air Pathway				
Exposure Time (hr/day)	8	(a)	8	(a)
Exposure Frequency (days/year)	250	(b)	250	(b)
Exposure Duration (yr)	25	(b)	7	(c)
Inhalation Rate (m^3/hour)	1.6	(d)	1.0	(e)
Body Weight (kg)	70	(b)	70	(b)

Notes:
MLE - Most Likely Exposure.
RME - Reasonable Maximum Exposure.
(a) - USEPA, 1997a. Exposure Factors Handbook. 50th percentile time spent at work, males and females, all ages. EFH Table 15-68.
(b) - USEPA, 1991a. Standard Default Exposure Factors.
(c) - USEPA, 1997a. Exposure Factors Handbook. Recommended value for occupational tenure listed in EFH Table 1-2.
(d) - USEPA, 1997a. Exposure Factors Handbook. Inhalation rate for moderate activity listed in EFH Table 5-23.
(e) - USEPA, 1997a. Exposure Factors Handbook. Inhalation rate for light activity listed in EFH Table 5-23.

TABLE 11-4
SUMMARY OF POTENTIAL EXPOSURE ASSUMPTIONS - OUTDOOR INDUSTRIAL WORKER
SAUGET AREA 2 RI/FS SSP
SAUGET AND CAHOKIA, IL
SAUGET AREA 2 SITES GROUP

Parameter	RME Future Outdoor Industrial Worker		MLE Future Outdoor Industrial Worker	
Parameters Used in the Outdoor Air Pathways				
Exposure Time (hr/day)	8	(a)	8	(a)
Exposure Frequency (days/year)	190	(i)	190	(i)
Exposure Duration (yr)	25	(b)	7	(c)
Inhalation Rate (m^3/hour)	1.6	(d)	1	(e)
Body Weight (kg)	70	(b)	70	(b)
Parameters Used in the Surface Soil Pathway				
Exposure Frequency (days/year)	190	(i)	190	(i)
Exposure Duration (yr)	25	(b)	7	(c)
Soil Ingestion Rate (mg/day)	50	(f)	30	(j)
Skin Contacting Medium (cm^2)	3339	(g)	3339	(g)
Soil on Skin (mg/cm^2)	0.02	(h)	0.02	(h)
Body Weight (kg)	70	(b)	70	(b)

Notes:
MLE - Most Likely Exposure.
RME - Reasonable Maximum Exposure.
(a) - USEPA, 1997a. Exposure Factors Handbook. 50th percentile time spent at work, males and females, all ages. EFH Table 15-68.
(b) - USEPA, 1991a. Standard Default Exposure Factors.
(c) - USEPA, 1997a. Exposure Factors Handbook. Recommended value for occupational tenure listed in EFH Table 1-2.
(d) - USEPA, 1997a. Exposure Factors Handbook. Inhalation rate for moderate activity listed in EFH Table 5-23.
(e) - USEPA, 1997a. Exposure Factors Handbook. Inhalation rate for light activity listed in EFH Table 5-23.
(f) - USEPA, 1997a. Exposure Factors Handbook. Average soil ingestion rates listed in EFH Table 1-2.
(g) - USEPA, 1997a. Exposure Factors Handbook. Represents 50th percentile values for males and females based on hands, forearms, and face listed in EFH Tables 6-2 and 6-3.
(h) - USEPA, 1997a. Exposure Factors Handbook. See Table 11-8 of this workplan for calculation.
(i) - Exposure frequency of 250 days (USEPA, 1991a) adjusted for percentage of days with inclement weather (24%), [250-(250*0.24) = 190]; see text.
(j) - Calabrese, E.J., et. al. 1990. Preliminary adult soil ingestion estimates; results of a pilot study. Regul. Toxicol. Pharmacol. 12:88-95. As cited in USEPA, 1997a. Exposure Factors Handbook. Low end of range.

TABLE 11-5
SUMMARY OF POTENTIAL EXPOSURE ASSUMPTIONS - CONSTRUCTION WORKER
SAUGET AREA 2 RI/FS SSP
SAUGET AND CAHOKIA, IL
SAUGET AREA 2 SITES GROUP

Parameter	RME Future Construction/Utility Worker		MLE Future Construction/Utility Worker	
Parameters Used in the Surface Soil, Subsurface Soil and Groundwater/Leachate Inhalation Pathway				
Exposure Time (hr/day)	8	(a)	8	(a)
Exposure Frequency (days/year)	40	(b)	20	(c)
Exposure Duration (yr)	1	(d)	1	(d)
Inhalation Rate (m^3/hour)	2.5	(e)	1.5	(f)
Body Weight (kg)	70	(g)	70	(g)
Parameters Used in the Surface and Subsurface Soil Pathway				
Exposure Frequency (days/year)	40	(b)	20	(c)
Exposure Duration (yr)	1	(d)	1	(d)
Soil Ingestion Rate (mg/day)	100	(g)	64	(h)
Skin Contacting Medium (cm^2)	3339	(i)	3339	(i)
Soil on Skin (mg/cm^2)	0.19	(j)	0.19	(j)
Body Weight (kg)	70	(g)	70	(g)
Parameters Used in the Groundwater/Leachate Pathway				
Exposure Time (hr/event)	1	(k)	1	(k)
Exposure Frequency (days/year)	10	(k)	5	(k)
Exposure Duration (yr)	1	(d)	1	(d)
Water Ingestion Rate (l/event)	0.005	(l)	0.005	(l)
Skin Contacting Medium (cm^2)	3339	(i)	3339	(i)
Body Weight (kg)	70	(g)	70	(g)

Notes:
MLE - Most Likely Exposure.
RME - Reasonable Maximum Exposure.
(a) - USEPA, 1997a. Exposure Factors Handbook. 50th percentile time spent at work, males and females, all ages. EFH Table 15-68.
(b) - Exposure frequency is equivalent to 5 days per week for 2 months.
(c) - Exposure frequency is equivalent to 5 days per week for 1 month.
(d) - Construction activities are assumed to occur within a 1 year period.
(e) - USEPA, 1997a. Exposure Factors Handbook. Inhalation rate is the value for heavy activity for an outdoor worker listed in EFH Table 5-23.
(f) - USEPA, 1997a. Exposure Factors Handbook. Inhalation rate is the value for moderate activity for an outdoor worker listed in EFH Table 5-23.
(g) - USEPA, 1991a. Standard Default Exposure Factors.
(h) - ENSR-derived value; see text.
(i) - USEPA, 1997a. Exposure Factors Handbook. Represents 50th percentile values for males and females based on hands, forearms, and face listed listed in EFH Tables 6-2 and 6-3.
(j) - USEPA, 1997a. Exposure Factors Handbook. See Table 11-9 of this workplan for calculation.
(k) - Assumes that contact with water occurs only for a fraction of the total exposure duration and time.
(l) - USEPA, 1989a. Risk Assessment Guidance for Superfund, Volume I. Value is one-tenth of that assumed to occur during a swimming event.

TABLE 11-6
SUMMARY OF POTENTIAL EXPOSURE ASSUMPTIONS - TRESPASSING TEENAGER
SAUGET AREA 2 RI/FS SSP
SAUGET AND CAHOKIA, IL
SAUGET AREA 2 SITES GROUP

Parameter	RME Trespassing Teenager (7 to 18 yrs)		MLE Trespassing Teenager (7 to 18 yrs)	
Parameters Used in the Surface Soil Pathway				
Exposure Frequency (days/year)	26	(a)	13	(b)
Exposure Duration (yr)	11	(c)	11	(c)
Soil Ingestion Rate (mg/day)	100	(d)	50	(e)
Skin Contacting Medium (cm^2)	4672	(f)	4672	(f)
Soil on Skin (mg/cm^2)	0.04	(g)	0.04	(g)
Body Weight (kg)	47	(h)	47	(h)
Parameters Used in the Outdoor Air Pathway				
Exposure Time (hr/day)	2	(i)	2	(i)
Exposure Frequency (days/year)	26	(a)	13	(b)
Exposure Duration (yr)	11	(c)	11	(c)
Inhalation Rate (m^3/hour)	1.2	(j)	1	(k)
Body Weight (kg)	47	(h)	47	(h)
Parameters Used in the Sediment Pathway (l)				
Exposure Frequency (days/year)	13	(b)	7	(m)
Exposure Duration (yr)	11	(c)	11	(c)
Soil Ingestion Rate (mg/day)	100	(d)	50	(e)
Skin Contacting Medium (cm^2)	6026	(f)	6026	(f)
Sediment on Skin (mg/cm^2)	1	(n)	1	(n)
Body Weight (kg)	47	(h)	47	(h)
Parameters Used in the Surface Water (l)				
Exposure Time (hr/event)	1	(o)	1	(o)
Exposure Frequency (days/year)	13	(b)	7	(m)
Exposure Duration (yr)	11	(c)	11	(c)
Water Ingestion Rate (l/event)	0.005	(p)	0.005	(p)
Skin Contacting Medium (cm^2)	6026	(f)	6026	(f)
Body Weight (kg)	47	(h)	47	(h)

Notes:
MLE - Most Likely Exposure.
RME - Reasonable Maximum Exposure.
(a) - 1 day per week for 26 weeks (6 months) of the year.
(b) - 1 day per 2 weeks for 26 weeks (6 months) of the year.
(c) - Trespassing teenager is assumed to range in age from 7 to 18. Therefore, total exposure duration is 11 years.
(d) - USEPA, 1991a. Standard Default Exposure Factors.
(e) - USEPA, 1997a. Exposure Factors Handbook. Average soil ingestion rate for an adult listed in EFH Table 1-2.
(f) - USEPA, 1997a. Exposure Factors Handbook. Average surface are of head, feet, hands, forearms and lower legs of males and females aged 7 to 18 listed in EFH Tables 6-6 to 6-8
(g) - USEPA, 1997a. Exposure Factors Handbook. See Table 11-10 of this workplan for calculation. Data for feet are not available; therefore, this value is based on hands, forearms, lower legs, and head.
(h) - USEPA, 1997a. Exposure Factors Handbook. Body weight is the average of males and females aged 7 to 18 listed in EFH Table 7-3
(i) - The trespassing teen is assumed to be on-site for two hours.
(j) - USEPA, 1997a. Exposure Factors Handbook. Inhalation rates is the value for moderate activity (children) listed in EFH Table 5-23.
(k) - USEPA, 1997a. Exposure Factors Handbook. Inhalation rates is the value for light activity (children) listed in EFH Table 5-23.
(l) - Sediment and surface water exposures for the Mississippi River will be evaluated separately; sediment and surface water exposures for the Site Q Ponds will be evaluated in conjunction with the Site Q soil and air pathways.
(m) - One day per 4 weeks for approximately six months of the year.
(n) - USEPA, 1992c. Dermal Exposure Assessment: Principles and Applications.
(o) - Assumed duration of wading event.
(p) - USEPA, 1989a. Risk Assessment Guidance for Superfund, Volume I. Value is one-tenth of that assumed to occur during a swimming event.

TABLE 11-7
SUMMARY OF POTENTIAL EXPOSURE ASSUMPTIONS - RECREATIONAL FISHER
SAUGET AREA 2 RI/FS SSP
SAUGET AND CAHOKIA, IL
SAUGET AREA 2 SITES GROUP

Parameter	RME Adult Recreational Fisher		MLE Adult Recreational Fisher	
Parameters Used in the Fish Ingestion Pathway				
Exposure Frequency (days/year)	365	(a)	365	(a)
Exposure Duration (yr)	30	(b)	9	(c)
Fish Ingestion Rate (g/day)	8	(d)	1	(e)
Body Weight (kg)	70	(b)	70	(b)
Parameters Used in the Surface Water Pathway - Wading				
Exposure Time (hr/event)	1	(k)	1	(k)
Exposure Frequency (days/year)	22	(h)	3	(i)
Exposure Duration (yr)	30	(b)	9	(c)
Surface Water Ingestion Rate (l/event)	0.01	(f)	0.005	(j)
Skin Contacting Medium (cm^2)	6934	(g)	6934	(g)
Body Weight (kg)	70	(b)	70	(b)
Parameters Used in the Sediment Pathway - Wading				
Exposure Frequency (days/year)	22	(h)	3	(i)
Exposure Duration (yr)	30	(b)	9	(c)
Sediment Ingestion Rate (mg/day)	100	(b)	50	(m)
Skin Contacting Medium (cm^2)	6934	(g)	6934	(g)
Sediment on Skin (mg/cm^2)	1	(l)	1	(l)
Body Weight (kg)	70	(b)	70	(b)

Notes:
MLE - Most Likely Exposure.
RME - Reasonable Maximum Exposure.
(a) - Fish ingestion rates are based on 365 days per year.
(b) - USEPA, 1991a. Standard Default Exposure Factors.
(c) - USEPA, 1997a. Exposure Factors Handbook. Recommended average for time residing in a household. EFH Table 1-2.
(d) - USEPA, 1997a. Exposure Factors Handbook. 8 g/day is equivalent to approximately 22 fish meals of 129 g per year.
(e) - 1 g/day is equivalent to approximately three 129 g fish meals per year (equivalent to one fish meal per month in the three summer months).
(f) - USEPA, 1989a. Risk Assessment Guidance for Superfund, Volume I. Value is one-fifth of that assumed to occur during a swimming event.
(g) - USEPA, 1997a. Exposure Factors Handbook. Represents 50th percentile values for adult males and females based on hands, lower arms, lower legs, feet and head.
(h) - One day per week for 5 months.
(i) - One day per month during the three summer months.
(j) - USEPA, 1989a. Risk Assessment Guidance for Superfund, Volume I. Value is one-tenth of that assumed to occur during a swimming event.
(k) - Assumed duration of wading event.
(l) - USEPA, 1992c. Dermal Exposure Assessment: Principles and Applications.
(m) - USEPA, 1997a. Exposure Factors Handbook. Average soil ingestion rate for an adult listed in EFH Table 1-2.

TABLE 11-8
SOIL ADHERENCE FACTORS- OUTDOOR INDUSTRIAL WORKER
SAUGET AREA 2 RI/FS SSP
SAUGET AND CAHOKIA, IL
SAUGET AREA 2 SITES GROUP

	Outdoor Industrial Worker Scenario		
Body Part	**Surface Area 50th percentile (cm^2) (a)**	**Soil Loading Groundskeeper (mg/cm^2) (b)**	**Total Soil Mass (mg)**
Head	1,205	0.005	5.543
Hands	904	0.071	64.1485
Forearms	1,230	0.009	11.1438
Total	3,339		80.8
Area-Weighted Soil Adherence factor (mg/cm2) = Soil mass/Surface area =			0.02

Notes:
(a) - Data from USEPA (1997a), Tables 6-2, 6-3. Average of 50th percentile values for men and women (1/2 arm used as proxy for female forearm).
(b) - Data from USEPA (1997a), Table 6-12. Average of Groundskeeper Nos. 1,2,3,4, and 5.

TABLE 11-9
SOIL ADHERENCE FACTORS- CONSTRUCTION WORKER
SAUGET AREA 2 RI/FS SSP
SAUGET AND CAHOKIA, IL
SAUGET AREA 2 SITES GROUP

	Construction Worker Scenario		
Body Part	**Surface Area 50th percentile (cm^2) (a)**	**Soil Loading Farmer (mg/cm^2) (a)**	**Total Soil Mass (mg)**
Head	1,205	0.041	49.405
Hands	904	0.47	424.645
Forearms	1,230	0.13	159.9
Total	3,339		634.0
Area-Weighted Soil Adherence factor (mg/cm2) = Soil mass/Surface area =			0.19

Notes:
(a) - Data from USEPA (1997a), Tables 6-2, 6-3. Average of 50th percentile values for men and women (1/2 arm used as proxy for female forearm).
(b) - Data from USEPA (1997a), Table 6-12. Average of Farmer Nos. 1 and 2.

TABLE 11-10
SOIL ADHERENCE FACTORS- TRESPASSING TEENAGER (7 TO 18 YEARS)
SAUGET AREA 2 RI/FS SSP
SAUGET AND CAHOKIA, IL
SAUGET AREA 2 SITES GROUP

	Trespassing Teenager (7 to 18 years)		
Body Part	**Surface Area 50th percentile (a) (cm^2)**	**Soil Loading Soccer No. 1 (mg/cm^2) (b)**	**Total Soil Mass (mg)**
Hands	715	0.1100	78.65
Forearms	894	0.0110	9.83
Lower legs	2,068	0.0310	64.11
Head	995	0.0120	11.94
Total	4,672	--	164.53
Area-Weighted Soil Adherence factor (mg/cm2) = Soil mass/Surface area =			0.04

Notes:
(a) - Data from USEPA (1997a). Based on average of boys (EFH Table 6-6) and girls (EFH Table 6-7) total body surface area , and mean percentages of total surface area for individual body parts EFH Table 6-8).
(b) - Data from USEPA (1997a) Table 6-12. Soccer No. 1 (measurements of boys aged 13-15). Measurements were not collected from feet; therefore, adherence factor is based on hands, forearms, lower legs, and head. This factor will be applied to the total body surface area of 6,026 cm^2 calculated in Table 11-6, which includes feet.

Appendix 5

Human Health Risk Assessment DQL Tables

TABLE 1
DATA QUALITY LEVELS (DQLs) FOR SOIL AND SEDIMENT
SAUGET AREA 2 - REMEDIAL INVESTIGATION
SAUGET AND CAHOKIA, ILLINOIS
SAUGET AREA 2 SITE GROUP

CONSTITUENT	CAS NO.	REGION 9 SOIL PRGS (mg/kg) (c)		DQL BASIS
TCL Volatiles				
1,1,1-Trichloroethane	71-55-6	6.35E+02		PRG
1,1,2,2-Tetrachloroethane	79-34-5	3.84E-01		PRG
1,1,2-Trichloroethane	79-00-5	8.43E-01		PRG
1,1-Dichloroethane	75-34-3	5.89E+02		PRG
1,1-Dichloroethylene	75-35-4	5.36E-02		PRG
1,2-Dichloroethane	107-06-2	3.46E-01		PRG
1,2-Dichloroethylene (total)	540-59-0	4.30E+01	(p)	PRG
1,2-Dichloropropane	78-87-5	3.51E-01		PRG
2-Butanone	78-93-3	7.33E+03		PRG
2-Hexanone	591-78-6	7.87E+02	(m)	PRG
4-Methyl-2-pentanone	108-10-1	7.87E+02		PRG
Acetone	67-64-1	1.57E+03		PRG
Benzene	71-43-2	6.54E-01		PRG
Bromodichloromethane	75-27-4	1.02E+00		PRG
Bromoform	75-25-2	6.16E+01		PRG
Bromomethane	74-83-9	3.90E+00		PRG
Carbon Disulfide	75-15-0	3.55E+02		PRG
Carbon tetrachloride	56-23-5	2.39E-01		PRG
Chlorobenzene	108-90-7	1.52E+02		PRG
Chloroethane	75-00-3	3.03E+00		PRG
Chloroform	67-66-3	2.44E-01		PRG
Chloromethane	74-87-3	1.23E+00		PRG
cis-1,3-Dichloropropene	10061-01-5	7.00E-01	(g)	PRG
Dibromochloromethane	124-48-1	1.11E+00		PRG
Ethyl Benzene	100-41-4	1.50E+03		PRG
Methylene chloride	75-09-2	8.88E+00		PRG
Styrene	100-42-5	4.60E+03		PRG
Tetrachloroethene	127-18-4	5.69E+00		PRG
Toluene	108-88-3	5.90E+02		PRG
Total Xylenes	1330-20-7	1.40E+03		PRG
trans-1,3-Dichloropropene	10061-02-6	7.00E-01	(g)	PRG
Trichloroethene	79-01-6	2.77E+00		PRG
Vinyl chloride	75-01-4	1.47E-01		PRG
TCL Semi-Volatiles				
1,2,4-Trichlorobenzene	120-82-1	6.46E+02		PRG
1,2-Dichlorobenzene	95-50-1	9.00E+02		PRG
1,3-Dichlorobenzene	541-73-1	1.32E+01		PRG

TABLE 1
DATA QUALITY LEVELS (DQLs) FOR SOIL AND SEDIMENT
SAUGET AREA 2 - REMEDIAL INVESTIGATION
SAUGET AND CAHOKIA, ILLINOIS
SAUGET AREA 2 SITE GROUP

CONSTITUENT	CAS NO.	REGION 9 SOIL PRGS (mg/kg) (c)		DQL BASIS
1,4-Dichlorobenzene	106-46-7	3.44E+00		PRG
2,2'-oxybis(1-Chloropropane) (s)	108-60-1	2.88E+00	(s)	PRG
2,4,5-Trichlorophenol	95-95-4	6.11E+03		PRG
2,4,6-Trichlorophenol	88-06-2	4.42E+01		PRG
2,4-Dichlorophenol	120-83-2	1.83E+02		PRG
2,4-Dimethylphenol	105-67-9	1.22E+03		PRG
2,4-Dinitrophenol	51-28-5	1.22E+02		PRG
2,4-Dinitrotoluene	121-14-2	1.22E+02		PRG
2,6-Dinitrotoluene	606-20-2	6.11E+01		PRG
2-Chloronaphthalene	91-58-7	3.85E+03		PRG
2-Chlorophenol	95-57-8	6.34E+01		PRG
2-Methylnaphthalene	91-57-6	5.60E+01	(f)	PRG
2-Methylphenol	95-48-7	3.06E+03		PRG
2-Nitroaniline	88-74-4	3.49E+00		PRG
2-Nitrophenol	88-75-5	4.89E+02	(n)	PRG
3,3'-Dichlorobenzidine	91-94-1	1.08E+00		PRG
3-Nitroaniline	99-09-2	3.49E+00	(o)	PRG
4,6-Dinitro-2-methylphenol	534-52-1	NA		NA
4-Bromophenyl phenyl ether	101-55-3	NA		NA
4-Chloraniline	106-47-8	2.44E+02		PRG
4-Chloro-3-methylphenol	59-50-7	NA		NA
4-Chlorophenol phenyl ether	7005-72-3	NA		NA
4-Methylphenol	106-44-5	3.06E+02		PRG
4-Nitroaniline	100-01-6	3.49E+00	(o)	PRG
4-Nitrophenol	100-02-7	4.89E+02		PRG
Acenaphthene	83-32-9	3.68E+03		PRG
Acenaphthylene	208-96-8	3.68E+03	(h)	PRG
Anthracene	120-12-7	2.19E+04		PRG
Benz[a]anthracene	56-55-3	6.21E-01		PRG
Benzo[a]pyrene	50-32-8	6.21E-02		PRG
Benzo[b]fluoranthene	205-99-2	6.21E-01		PRG
Benzo[g,h,i]perylene	191-24-2	2.30E+03	(a)	PRG
Benzo[k]fluoranthene	207-08-9	6.21E+00		PRG
bis(2-Chloroethoxy)methane	111-91-1	NA		NA
bis(2-Chloroethyl)ether	111-44-4	2.11E-01		PRG
bis(2-Ethylhexyl)phthalate	117-81-7	3.47E+01		PRG
Butyl benzyl phthalate	85-68-7	1.22E+04		PRG
Carbazole	86-74-8	2.43E+01		PRG
Chrysene	218-01-9	6.21E+01		PRG

TABLE 1
DATA QUALITY LEVELS (DQLs) FOR SOIL AND SEDIMENT
SAUGET AREA 2 - REMEDIAL INVESTIGATION
SAUGET AND CAHOKIA, ILLINOIS
SAUGET AREA 2 SITE GROUP

CONSTITUENT	CAS NO.	REGION 9 SOIL PRGS (mg/kg) (c)	DQL BASIS
Dibenz[a,h]anthracene	53-70-3	6.21E-02	PRG
Dibenzofuran	132-64-9	2.91E+02	PRG
Diethylphthalate	84-66-2	4.89E+04	PRG
Dimethyl phthalate	131-11-3	6.10E+05	PRG
Di-n-butyl phthalate	84-74-2	6.11E+03	PRG
Di-n-octyl phthalate	117-84-0	1.22E+03	PRG
Fluoranthene	206-44-0	2.29E+03	PRG
Fluorene	86-73-7	2.64E+03	PRG
Hexachlorobenzene	118-74-1	3.04E-01	PRG
Hexachlorobutadiene	87-68-3	6.24E+00	PRG
Hexachlorocyclopentadiene	77-47-4	4.23E+02	PRG
Hexachloroethane	67-72-1	3.47E+01	PRG
Indeno[1,2,3-cd]pyrene	193-39-5	6.21E-01	PRG
Isophorone	78-59-1	5.12E+02	PRG
Naphthalene	91-20-3	5.59E+01	PRG
Nitrobenzene	98-95-3	1.96E+01	PRG
N-Nitroso-di-n-propylamine	621-64-7	6.95E-02	PRG
N-Nitrosodiphenylamine	86-30-6	9.93E+01	PRG
Pentachlorophenol	87-86-5	2.98E+00	PRG
Phenanthrene	85-01-8	2.20E+04 (b)	PRG
Phenol	108-95-2	3.67E+04	PRG
Pyrene	129-00-0	2.31E+03	PRG
TAL Metals			
Aluminum	7429-90-5	7.61E+04	PRG
Antimony	7440-36-0	3.13E+01	PRG
Arsenic	7440-38-2	3.90E-01	PRG
Barium	7440-39-3	5.37E+03	PRG
Beryllium	7440-41-7	1.54E+02	PRG
Cadmium	7440-43-9	3.70E+01	PRG
Calcium	7440-70-2	NA	NA
Chromium	7440-47-3	2.10E+02 (e)	PRG
Cobalt	7440-48-4	4.69E+03	PRG
Iron	7439-89-6	2.35E+04	PRG
Lead	7439-92-1	4.00E+02	PRG
Magnesium	7439-95-4	NA	NA
Manganese	7439-96-5	1.76E+03	PRG
Nickel	7440-02-0	1.56E+03	PRG
Potassium	7440-09-7	NA	NA

TABLE 1
DATA QUALITY LEVELS (DQLs) FOR SOIL AND SEDIMENT
SAUGET AREA 2 - REMEDIAL INVESTIGATION
SAUGET AND CAHOKIA, ILLINOIS
SAUGET AREA 2 SITE GROUP

CONSTITUENT	CAS NO.	REGION 9 SOIL PRGS (mg/kg) (c)		DQL BASIS
Selenium	7782-49-2	3.91E+02		PRG
Silver	7440-22-4	3.91E+02		PRG
Sodium	7440-23-5	NA		NA
Thallium	7440-28-0	5.20E+00		PRG
Vanadium	7440-62-2	5.47E+02		PRG
Copper	7440-50-8	2.91E+03		PRG
Zinc	7440-66-6	2.35E+04		PRG
Pesticides				
Alpha-BHC	319-84-6	9.02E-02		PRG
Beta-BHC	319-85-7	3.16E-01		PRG
Delta-BHC	319-86-8	4.37E-01	(j)	PRG
Gamma-BHC (Lindane)	58-89-9	4.37E-01		PRG
Aldrin	309-00-2	2.86E-02		PRG
alpha-Chlordane	5103-71-9	1.60E+00	(i)	PRG
gamma-Chlordane	5103-74-2	1.60E+00	(i)	PRG
Chlordane	57-74-9	1.60E+00		PRG
Chlorobenzilate	510-15-6	1.80E+00		PRG
1,2-Dibromo-3-Chloropropane	96-12-8	4.54E-01		PRG
4,4'-DDD	72-54-8	2.44E+00		PRG
4,4'-DDE	72-55-9	1.72E+00		PRG
4,4'-DDT	50-29-3	1.72E+00		PRG
Diallate	2303-16-4	7.97E+00		PRG
Dieldrin	60-57-1	3.04E-02		PRG
Endosulfan I	959-98-8	3.70E+02	(k)	PRG
Endosulfan II	33213-65-9	3.70E+02	(k)	PRG
Endosulfan sulfate	1031-07-8	3.70E+02	(k)	PRG
Endrin	72-20-8	1.83E+01		PRG
Endrin aldehyde	7421-93-4	1.83E+01	(l)	PRG
Endrin Ketone	53494-70-5	1.83E+01	(l)	PRG
Heptachlor	76-44-8	1.08E-01		PRG
Heptachlor epoxide	1024-57-3	5.34E-02		PRG
Hexachlorobenzene	118-74-1	3.04E-01		PRG
Hexachlorocyclopentadiene	77-47-4	4.23E+02		PRG
Isodrin	465-73-6	NA		NA
Methoxychlor	72-43-5	3.06E+02		PRG
Toxaphene	8001-35-2	4.42E-01		PRG

TABLE 1
DATA QUALITY LEVELS (DQLs) FOR SOIL AND SEDIMENT
SAUGET AREA 2 - REMEDIAL INVESTIGATION
SAUGET AND CAHOKIA, ILLINOIS
SAUGET AREA 2 SITE GROUP

CONSTITUENT	CAS NO.	REGION 9 SOIL PRGS (mg/kg) (c)		DQL BASIS
Herbicides				
2,4-D	94-75-7	6.86E+02		PRG
2,4-DB	94-82-6	4.89E+02		PRG
2,4,5-TP	93-72-1	4.89E+02		PRG
2,4,5-T	93-76-5	6.11E+02		PRG
Dalapon	75-99-0	1.83E+03		PRG
Dicamba	1918-00-9	1.83E+03	(d)	PRG
Dichloroprop	120-36-5	NA		NA
Dinoseb	88-85-7	6.11E+01		PRG
MCPA	94-74-6	3.06E+01		PRG
MCPP	93-65-2	6.11E+01		PRG
4-Nitrophenol	100-02-7	4.89E+02		PRG
Pentachlorophenol	87-86-5	2.98E+00		PRG
Dioxins and Furans				
2,3,7,8-TCDD	1746-01-6	1.00E-03	(q)	USEPA, 1998
1,2,3,7,8-PentaCDD	40321-76-4	1.00E-03	(q)	USEPA, 1998
1,2,3,4,7,8-HexaCDD	39227-28-6	1.00E-03	(q)	USEPA, 1998
1,2,3,6,7,8-HexaCDD	57653-85-7	1.00E-03	(q)	USEPA, 1998
1,2,3,7,8,9-HexaCDD	19408-74-3	1.00E-03	(q)	USEPA, 1998
1,2,3,4,6,7,8-HeptaCDD	35822-39-4	1.00E-03	(q)	USEPA, 1998
OctaCDD	3268-87-9	1.00E-03	(q)	USEPA, 1998
2,3,7,8-TetraCDF	51207-31-9	1.00E-03	(q)	USEPA, 1998
1,2,3,7,8-PentaCDF	57117-41-6	1.00E-03	(q)	USEPA, 1998
2,3,4,7,8-PentaCDF	57117-31-4	1.00E-03	(q)	USEPA, 1998
1,2,3,4,7,8-HexaCDF	70648-26-9	1.00E-03	(q)	USEPA, 1998
1,2,3,6,7,8-HexaCDF	57117-44-9	1.00E-03	(q)	USEPA, 1998
1,2,3,7,8,9-HexaCDF	72918-21-9	1.00E-03	(q)	USEPA, 1998
2,3,4,6,7,8-HexaCDF	60851-34-5	1.00E-03	(q)	USEPA, 1998
1,2,3,4,6,7,8-HeptaCDF	67562-39-4	1.00E-03	(q)	USEPA, 1998
1,2,3,4,7,8,9-HeptaCDF	55673-89-7	1.00E-03	(q)	USEPA, 1998
OctaCDF	39001-02-0	1.00E-03	(q)	USEPA, 1998
PCBs				
Total PCBs	NA	1.00E+00	(r)	TSCA

TABLE 1
DATA QUALITY LEVELS (DQLs) FOR SOIL AND SEDIMENT
SAUGET AREA 2 - REMEDIAL INVESTIGATION
SAUGET AND CAHOKIA, ILLINOIS
SAUGET AREA 2 SITE GROUP

CONSTITUENT	CAS NO.	REGION 9 SOIL PRGS (mg/kg) (c)	DQL BASIS

Notes:
(a) Due to structural similarities, the value for Pyrene was used.
(b) Due to structural similarities, the value for Anthracene was used.
(c) USEPA Region 9 Preliminary Remediation Goals Table. November, 2000.
Value for residential soil was used.
(d) A PRG for residential soil not provided; because Dicamba and Dalapon have the same toxicity values, the PRG for Dalapon was used here.
(e) Value for total Chromium.
(f) Due to structural similarities, the value for Naphthalene was used.
(g) Value for 1,3-Dichloropropene used.
(h) Due to structural similarities, the value for Acenaphthene was used.
(i) Due to structural similarities, the value for Chlordane was used.
(j) Due to structural similarities, the value for gamma-BHC was used.
(k) Due to structural similarities, the value for Endosulfan was used.
(l) Due to structural similarities, the value for Endrin was used.
(m) Due to structural similarities, the value for 4-Methyl-2-Pentanone was used.
(n) Due to structural similarities, the value for 4-Nitrophenol was used.
(o) Due to structural similarities, the value for 2-Nitroaniline was used.
(p) Value for cis-1,2-Dichloroethylene used.
(q) USEPA, 1998. Approach for Addressing Dioxin in Soil at CERCLA and RCRA Sites.
Value for dioxins. [OSWER Directive 9200.4-26].
(r) Disposal of Polychlorinated Biphenyl (PCBs) Final Rule. (Mega Rule);
Federal Register 63 (124): 35384-35474 (June 29, 1998).
(s) Synonym of bis(2-chloroisopropyl)ether.
CAS = Chemical Abstracts Service.
CDD = Chlorodibenzodioxin.
CDF = Chlorodibenzofuran.
DQL = Data Quality Level.
NA - Not Available.
PCB = Polychlorinated Biphenyl.
PRG = USEPA Region 9 Preliminary Remediation Goal (USEPA, 2000b).
TAL = Target Analyte List.
TCL = Target Compound List.
TSCA = Toxic Substances Control Act.

TABLE 2
DATA QUALITY LEVELS (DQLs) FOR SURFACE WATER AND GROUNDWATER
SAUGET AREA 2 - REMEDIAL INVESTIGATION
SAUGET AND CAHOKIA, ILLINOIS
SAUGET AREA 2 SITE GROUP

CONSTITUENT	CAS NO.	Selected DQL (a) (mg/L)	DQL Basis
TCL Volatiles			
1,1,1-Trichloroethane	71-55-6	2.0E-01	CLASS I
1,1,2,2-Tetrachloroethane	79-34-5	5.5E-05	PRG
1,1,2-Trichloroethane	79-00-5	5.0E-03	CLASS I
1,1-Dichloroethane	75-34-3	7.0E-01	TACO
1,1-Dichloroethylene	75-35-4	7.0E-03	CLASS I
1,2-Dichloroethane	107-06-2	5.0E-03	CLASS I
1,2-Dichloroethylene (total)	540-59-0	7.0E-02 (c)	CLASS I
1,2-Dichloropropane	78-87-5	5.0E-03	CLASS I
2-Butanone	78-93-3	1.9E+00	PRG
2-Hexanone	591-78-6	1.6E-01 (g)	PRG
4-Methyl-2-pentanone	108-10-1	1.6E-01	PRG
Acetone	67-64-1	7.0E-01	TACO
Benzene	71-43-2	5.0E-03	CLASS I
Bromodichloromethane	75-27-4	8.0E-02	MCL
Bromoform	75-25-2	8.0E-02	MCL
Bromomethane	74-83-9	9.8E-03	TACO
Carbon Disulfide	75-15-0	7.0E-01	TACO
Carbon tetrachloride	56-23-5	5.0E-03	CLASS I
Chlorobenzene	108-90-7	1.0E-01	TACO
Chloroethane	75-00-3	4.6E-03	PRG
Chloroform	67-66-3	8.0E-02	MCL
Chloromethane	74-87-3	1.5E-03	PRG
cis-1,3-Dichloropropene	10061-01-5	1.0E-03	TACO
Dibromochloromethane	124-48-1	8.0E-02	MCL
Ethyl Benzene	100-41-4	7.0E-01	MCL
Methylene chloride	75-09-2	5.0E-03	CLASS I
Styrene	100-42-5	1.0E-01	CLASS I
Tetrachloroethene	127-18-4	5.0E-03	CLASS I
Toluene	108-88-3	1.0E+00	CLASS I
Total Xylenes	1330-20-7	1.0E+01	CLASS I
trans-1,3-Dichloropropene	10061-02-6	1.0E-03	TACO
Trichloroethene	79-01-6	5.0E-03	CLASS I
Vinyl chloride	75-01-4	2.0E-03	CLASS I
TCL Semi-Volatiles			
1,2,4-Trichlorobenzene	120-82-1	7.0E-02	CLASS I
1,2-Dichlorobenzene	95-50-1	6.0E-01	CLASS I
1,3-Dichlorobenzene	541-73-1	6.0E-01 (p)	CLASS I
1,4-Dichlorobenzene	106-46-7	7.5E-02	CLASS I
2,2'-oxybis(1-Chloropropane) (o)	108-60-1	2.7E-04	PRG
2,4,5-Trichlorophenol	95-95-4	7.0E-01	TACO
2,4,6-Trichlorophenol	88-06-2	6.4E-03	TACO
2,4-Dichlorophenol	120-83-2	2.1E-02	TACO
2,4-Dimethylphenol	105-67-9	1.4E-01	TACO

TABLE 2
DATA QUALITY LEVELS (DQLs) FOR SURFACE WATER AND GROUNDWATER
SAUGET AREA 2 - REMEDIAL INVESTIGATION
SAUGET AND CAHOKIA, ILLINOIS
SAUGET AREA 2 SITE GROUP

CONSTITUENT	CAS NO.	Selected DQL (a) (mg/L)		DQL Basis
2,4-Dinitrophenol	51-28-5	1.4E-02		TACO
2,4-Dinitrotoluene	121-14-2	2.0E-05		TACO
2,6-Dinitrotoluene	606-20-2	1.0E-04		TACO
2-Chloronaphthalene	91-58-7	4.9E-01		PRG
2-Chlorophenol	95-57-8	3.5E-02		TACO
2-Methylnaphthalene	91-57-6	2.5E-02	(d)	TACO
2-Methylphenol	95-48-7	3.5E-01		TACO
2-Nitroaniline	88-74-4	2.1E-03		PRG
2-Nitrophenol	88-75-5	2.9E-01	(h)	PRG
3,3'-Dichlorobenzidine	91-94-1	2.0E-02		TACO
3-Nitroaniline	99-09-2	2.1E-03	(i)	PRG
4,6-Dinitro-2-methylphenol	534-52-1	NA		NA
4-Bromophenyl phenyl ether	101-55-3	NA		NA
4-Chloraniline	106-47-8	2.8E-02		TACO
4-Chloro-3-methylphenol	59-50-7	NA		NA
4-Chlorophenol phenyl ether	7005-72-3	NA		NA
4-Methylphenol	106-44-5	3.5E-01	(n)	TACO
4-Nitroaniline	100-01-6	2.1E-03	(i)	PRG
4-Nitrophenol	100-02-7	2.9E-01		PRG
Acenaphthene	83-32-9	4.2E-01		TACO
Acenaphthylene	208-96-8	4.2E-01	(b)	TACO
Anthracene	120-12-7	2.1E+00		TACO
Benz[a]anthracene	56-55-3	1.3E-04		TACO
Benzo[a]pyrene	50-32-8	2.0E-04		CLASS I
Benzo[b]fluoranthene	205-99-2	1.8E-04		TACO
Benzo[g,h,i]perylene	191-24-2	2.1E-01	(e)	TACO
Benzo[k]fluoranthene	207-08-9	1.7E-04		TACO
bis(2-Chloroethoxy)methane	111-91-1	NA		NA
bis(2-Chloroethyl)ether	111-44-4	1.0E-02		TACO
bis(2-Ethylhexyl)phthalate	117-81-7	6.0E-03		CLASS I
Butyl benzyl phthalate	85-68-7	1.4E+00		TACO
Carbazole	86-74-8	3.4E-03		PRG
Chrysene	218-01-9	1.5E-03		TACO
Dibenz[a,h]anthracene	53-70-3	3.0E-04		TACO
Dibenzofuran	132-64-9	2.4E-02		PRG
Diethylphthalate	84-66-2	5.6E+00		TACO
Dimethyl phthalate	131-11-3	3.6E+02		PRG
Di-n-butyl phthalate	84-74-2	7.0E-01		TACO
Di-n-octyl phthalate	117-84-0	1.4E-01		TACO
Fluoranthene	206-44-0	2.8E-01		TACO
Fluorene	86-73-7	2.8E-01		TACO
Hexachlorobenzene	118-74-1	1.0E-03		MCL
Hexachlorobutadiene	87-68-3	8.6E-04		PRG
Hexachlorocyclopentadiene	77-47-4	5.0E-02		CLASS I
Hexachloroethane	67-72-1	7.0E-03		TACO

TABLE 2
DATA QUALITY LEVELS (DQLs) FOR SURFACE WATER AND GROUNDWATER
SAUGET AREA 2 - REMEDIAL INVESTIGATION
SAUGET AND CAHOKIA, ILLINOIS
SAUGET AREA 2 SITE GROUP

CONSTITUENT	CAS NO.	Selected DQL (a) (mg/L)		DQL Basis
Indeno[1,2,3-cd]pyrene	193-39-5	4.3E-04		TACO
Isophorone	78-59-1	1.4E+00		TACO
Naphthalene	91-20-3	2.5E-02		TACO
Nitrobenzene	98-95-3	3.5E-03		TACO
N-Nitroso-di-n-propylamine	621-64-7	1.0E-02		TACO
N-Nitrosodiphenylamine	86-30-6	1.0E-02		TACO
Pentachlorophenol	87-86-5	1.0E-03		CLASS I
Phenanthrene	85-01-8	2.1E+00	(f)	TACO
Phenol	108-95-2	1.0E-01		CLASS I
Pyrene	129-00-0	2.1E-01		TACO
TAL Metals				
Aluminum	7429-90-5	5.0E+01		MCL
Antimony	7440-36-0	6.0E-03		CLASS I
Arsenic	7440-38-2	5.0E-02		CLASS I
Barium	7440-39-3	2.0E+00		CLASS I
Beryllium	7440-41-7	4.0E-03		CLASS I
Cadmium	7440-43-9	5.0E-03		CLASS I
Calcium	7440-70-2	NA		NA
Chromium	7440-47-3	1.0E-01	(r)	CLASS I
Cobalt	7440-48-4	1.0E+00		CLASS I
Iron	7439-89-6	5.0E+00		CLASS I
Lead	7439-92-1	7.5E-03		CLASS I
Magnesium	7439-95-4	NA		NA
Manganese	7439-96-5	1.5E-01		CLASS I
Nickel	7440-02-0	1.0E-01		CLASS I
Potassium	7440-09-7	NA		NA
Selenium	7782-49-2	5.0E-02		CLASS I
Silver	7440-22-4	5.0E-02		CLASS I
Sodium	7440-23-5	NA		NA
Thallium	7440-28-0	2.0E-03		CLASS I
Vanadium	7440-62-2	4.9E-02		TACO
Copper	7440-50-8	6.5E-01		CLASS I
Zinc	7440-66-6	5.0E+00		CLASS I
Pesticides				
Alpha-BHC	319-84-6	3.0E-05		TACO
Beta-BHC	319-85-7	2.0E-04	(m)	CLASS I
Delta-BHC	319-86-8	2.0E-04	(m)	CLASS I
Gamma-BHC (Lindane)	58-89-9	2.0E-04		CLASS I
Aldrin	309-00-2	4.0E-05		TACO
alpha-Chlordane	5103-71-9	2.0E-03	(j)	CLASS I
gamma-Chlordane	5103-74-2	2.0E-03	(j)	CLASS I
Chlordane	57-74-9	2.0E-03		CLASS I
Chlorobenzilate	510-15-6	2.5E-04		PRG

TABLE 2
DATA QUALITY LEVELS (DQLs) FOR SURFACE WATER AND GROUNDWATER
SAUGET AREA 2 - REMEDIAL INVESTIGATION
SAUGET AND CAHOKIA, ILLINOIS
SAUGET AREA 2 SITE GROUP

CONSTITUENT	CAS NO.	Selected DQL (a) (mg/L)		DQL Basis
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	2.0E-04		TACO
4,4'-DDD	72-54-8	1.1E-04		TACO
4,4'-DDE	72-55-9	4.0E-05		TACO
4,4'-DDT	50-29-3	1.2E-04		TACO
Diallate	2303-16-4	1.1E-03		PRG
Dieldrin	60-57-1	2.0E-05		TACO
Endosulfan I	959-98-8	4.2E-02	(k)	TACO
Endosulfan II	33213-65-9	4.2E-02	(k)	TACO
Endosulfan sulfate	1031-07-8	4.2E-02	(k)	TACO
Endrin	72-20-8	2.0E-03		CLASS I
Endrin aldehyde	7421-93-4	2.0E-03	(l)	CLASS I
Endrin Ketone	53494-70-5	2.0E-03	(l)	CLASS I
Heptachlor	76-44-8	4.0E-04		CLASS I
Heptachlor epoxide	1024-57-3	2.0E-04		CLASS I
Hexachlorobenzene	118-74-1	1.0E-03		MCL
Hexachlorocyclopentadiene	77-47-4	5.0E-02		CLASS I
Isodrin	465-73-6	NA		NA
Methoxychlor	72-43-5	4.0E-02		CLASS I
Toxaphene	8001-35-2	3.0E-03		CLASS I
Herbicides				
2,4-D	94-75-7	7.0E-02		CLASS I
2,4-DB	94-82-6	2.9E-01		PRG
2,4,5-TP	93-72-1	5.0E-02		CLASS I
2,4,5-T	93-76-5	3.6E-01		PRG
Dalapon	75-99-0	2.0E-01		CLASS I
Dicamba	1918-00-9	1.1E+00		PRG
Dichloroprop	120-36-5	NA		NA
Dinoseb	88-85-7	7.0E-03		CLASS I
MCPA	94-74-6	1.8E-02		PRG
MCPP	93-65-2	3.6E-02		PRG
4-Nitrophenol	100-02-7	2.9E-01		PRG
Pentachlorophenol	87-86-5	1.0E-03		CLASS I
Dioxins and Furans				
2,3,7,8-TCDD	1746-01-6	3.00E-08		MCL
1,2,3,7,8-PentaCDD	40321-76-4	3.00E-08		MCL
1,2,3,4,7,8-HexaCDD	39227-28-6	3.00E-08		MCL
1,2,3,6,7,8-HexaCDD	57653-85-7	3.00E-08		MCL
1,2,3,7,8,9-HexaCDD	19408-74-3	3.00E-08		MCL
1,2,3,4,6,7,8-HeptaCDD	35822-39-4	3.00E-08		MCL
OctaCDD	3268-87-9	3.00E-08		MCL
2,3,7,8-TetraCDF	51207-31-9	3.00E-08		MCL
1,2,3,7,8-PentaCDF	57117-41-6	3.00E-08		MCL
2,3,4,7,8-PentaCDF	57117-31-4	3.00E-08		MCL

TABLE 2
DATA QUALITY LEVELS (DQLs) FOR SURFACE WATER AND GROUNDWATER
SAUGET AREA 2 - REMEDIAL INVESTIGATION
SAUGET AND CAHOKIA, ILLINOIS
SAUGET AREA 2 SITE GROUP

CONSTITUENT	CAS NO.	Selected DQL (a) (mg/L)	DQL Basis
1,2,3,4,7,8-HexaCDF	70648-26-9	3.00E-08	MCL
1,2,3,6,7,8-HexaCDF	57117-44-9	3.00E-08	MCL
1,2,3,7,8,9-HexaCDF	72918-21-9	3.00E-08	MCL
2,3,4,6,7,8-HexaCDF	60851-34-5	3.00E-08	MCL
1,2,3,4,6,7,8-HeptaCDF	67562-39-4	3.00E-08	MCL
1,2,3,4,7,8,9-HeptaCDF	55673-89-7	3.00E-08	MCL
OctaCDF	39001-02-0	3.00E-08	MCL
PCBs			
Total PCBs	NA	5.0E-04	CLASS I

Notes:
(a) - The DQL was determined by taking the Illinois Groundwater Quality Standards for Class I: Potable Resource Groundwater (35 Ill. Adm. Code 620.410). Where a Class I value is not available, the MCL value is used (USEPA, 2000a). Where a MCL is not available a TACO Class I value is used (IEPA, 1998). Where a TACO Class I value is not available, the USEPA Resion 9 PRG (USEPA, 2000b) for Tapwater is used. Surface water will be evaluated for incidential ingestion of water only - fish tissue will be collected. Therefore, ambient water quality criteria for ingestion of organisms were not used in the developement of DQLs.
(b) Due to structural similarities, the value for Acenaphthene was used.
(c) Value for cis-1,2-Dichloroethylene.
(d) Due to structural similarities, the value for Naphthalene was used.
(e) Due to structural similarities, the value for Pyrene was used.
(f) Due to structural similarities, the value for Anthracene was used.
(g) Due to structural similarities, the value for 4-Methyl-2-Pentanone was used.
(h) Due to structural similarities, the value for 4-Nitrophenol was used.
(i) Due to structural similarities, the value for 2-Nitroaniline was used.
(j) Due to structural similarities, the value for Chlordane was used.
(k) Due to structural similarities, the value for Endosulfan was used.
(l) Due to structural similarities, the value for Endrin was used.
(m) Due to structural similarities, the value for gamma-BHC was used.
(n) Due to structural similarities, value for 2-Methylphenol was used.
(o) Synonym of Bis(2-chloroisopropyl)ether.
(p) Due to structural similarities, value for 1,2-Dichlorobenzene was used.
CAS = Chemical Abstracts Service.
CDD = Chlorodibenzodioxin.
CDF = Chlorodibenzofuran.
CLASS I = Groundwater Quality Standards for Class I: Potable Resource Groundwater. 35 Ill. Adm. Code 620.410.
DQL = Data Quality Level.
MCL - Maximum Contaminant Level. (USEPA, 2000a)
PCB = Polychlorinated Biphenyl.
PRG = USEPA Region 9 Preliminary Remediation Goal (USEPA, 2000b).
TACO - Tiered Approach to Corrective Action Objectives (IEPA, 1998).
TAL = Target Analyte List.
TCL = Target Compound List.
NA = Not available.

TABLE 3
DATA QUALITY LEVELS (DQLs) FOR FISH TISSUE
SAUGET AREA 2 - REMEDIAL INVESTIGATION
SAUGET AND CAHOKIA, ILLINOIS
SAUGET AREA 2 SITE GROUP

CONSTITUENT	CAS NO.		DQL (n) (mg/kg)	Basis
TCL Semi-Volatiles				
1,2,4-Trichlorobenzene	120-82-1		1.4E+01	N
1,2-Dichlorobenzene	95-50-1		1.2E+02	N
1,3-Dichlorobenzene	541-73-1		1.2E+00	N
1,4-Dichlorobenzene	106-46-7		1.3E-01	C
2,2'-oxybis(1-Chloropropane)	108-60-1	(m)	4.5E-02	C
2,4,5-Trichlorophenol	95-95-4		1.4E+02	N
2,4,6-Trichlorophenol	88-06-2		2.9E-01	C
2,4-Dichlorophenol	120-83-2		4.1E+00	N
2,4-Dimethylphenol	105-67-9		2.7E+01	N
2,4-Dinitrophenol	51-28-5		2.7E+00	N
2,4-Dinitrotoluene	121-14-2		2.7E+00	N
2,6-Dinitrotoluene	606-20-2		1.4E+00	N
2-Chloronaphthalene	91-58-7		1.1E+02	N
2-Chlorophenol	95-57-8		6.8E+00	N
2-Methylnaphthalene	91-57-6		2.7E+01	N
2-Methylphenol	95-48-7		6.8E+01	N
2-Nitroaniline	88-74-4		NA	O
2-Nitrophenol	88-75-5	(a)	1.1E+01	N
3,3'-Dichlorobenzidine	91-94-1		7.0E-03	C
3-Nitroaniline	99-09-2		NA	O
4,6-Dinitro-2-methylphenol	534-52-1		1.4E-01	N
4-Bromophenyl phenyl ether	101-55-3		NA	O
4-Chloraniline	106-47-8		5.4E+00	N
4-Chloro-3-methylphenol	59-50-7		NA	O
4-Chlorophenol phenyl ether	7005-72-3		NA	O
4-Methylphenol	106-44-5		6.8E+00	N
4-Nitroaniline	100-01-6		NA	O
4-Nitrophenol	100-02-7		1.1E+01	N
Acenaphthene	83-32-9		8.1E+01	N
Acenaphthylene	208-96-8	(b)	8.1E+01	N
Anthracene	120-12-7		4.1E+02	N
Benz[a]anthracene	56-55-3		4.3E-03	C
Benzo[a]pyrene	50-32-8		4.3E-04	C
Benzo[b]fluoranthene	205-99-2		4.3E-03	C
Benzo[g,h,i]perylene	191-24-2	(c)	4.1E+01	N
Benzo[k]fluoranthene	207-08-9		4.3E-02	C
bis(2-Chloroethoxy)methane	111-91-1		NA	O
bis(2-Chloroethyl)ether	111-44-4		2.9E-03	C
bis(2-Ethylhexyl)phthalate	117-81-7		2.3E-01	C
Butyl benzyl phthalate	85-68-7		2.7E+02	N
Carbazole	86-74-8		1.6E-01	C
Chrysene	218-01-9		4.3E-01	C
Dibenz[a,h]anthracene	53-70-3		4.3E-04	C
Dibenzofuran	132-64-9		5.4E+00	N

TABLE 3
DATA QUALITY LEVELS (DQLs) FOR FISH TISSUE
SAUGET AREA 2 - REMEDIAL INVESTIGATION
SAUGET AND CAHOKIA, ILLINOIS
SAUGET AREA 2 SITE GROUP

CONSTITUENT	CAS NO.	DQL (n) (mg/kg)	Basis
Diethylphthalate	84-66-2	1.1E+03	N
Dimethyl phthalate	131-11-3	1.4E+04	N
Di-n-butyl phthalate	84-74-2	1.4E+02	N
Di-n-octyl phthalate	117-84-0	2.7E+01	N
Fluoranthene	206-44-0	5.4E+01	N
Fluorene	86-73-7	5.4E+01	N
Hexachlorobenzene	118-74-1	2.0E-03	C
Hexachlorobutadiene	87-68-3	4.0E-02	C
Hexachlorocyclopentadiene	77-47-4	9.5E+00	N
Hexachloroethane	67-72-1	2.3E-01	C
Indeno[1,2,3-cd]pyrene	193-39-5	4.3E-03	C
Isophorone	78-59-1	3.3E+00	C
Naphthalene	91-20-3	2.7E+01	N
Nitrobenzene	98-95-3	6.8E-01	N
N-Nitroso-di-n-propylamine	621-64-7	4.5E-04	C
N-Nitrosodiphenylamine	86-30-6	6.4E-01	C
Pentachlorophenol	87-86-5	2.6E-02	C
Phenanthrene	85-01-8 (d)	4.1E+02	N
Phenol	108-95-2	8.1E+02	N
Pyrene	129-00-0	4.1E+01	N
TAL Metals			
Aluminum	7429-90-5	1.4E+03	N
Antimony	7440-36-0	5.4E-01	N
Arsenic	7440-38-2	2.1E-03	C
Barium	7440-39-3	9.5E+01	N
Beryllium	7440-41-7	2.7E+00	N
Cadmium	7440-43-9 (f)	1.4E+00	N
Calcium	7440-70-2	NA	B
Chromium	7440-47-3 (g)	2.0E+03	N
Cobalt	7440-48-4	8.1E+01	N
Iron	7439-89-6	4.1E+02	N
Lead	7439-92-1	NA	O
Magnesium	7439-95-4	NA	O
Manganese	7439-96-5 (h)	1.9E+02	N
Nickel	7440-02-0	2.7E+01	N
Potassium	7440-09-7	NA	B
Selenium	7782-49-2	6.8E+00	N
Silver	7440-22-4	6.8E+00	N
Sodium	7440-23-5	NA	B
Thallium	7440-28-0	9.5E-02	N
Vanadium	7440-62-2	9.5E+00	N
Copper	7440-50-8	5.4E+01	N
Zinc	7440-66-6	4.1E+02	N

TABLE 3
DATA QUALITY LEVELS (DQLs) FOR FISH TISSUE
SAUGET AREA 2 - REMEDIAL INVESTIGATION
SAUGET AND CAHOKIA, ILLINOIS
SAUGET AREA 2 SITE GROUP

CONSTITUENT	CAS NO.		DQL (n) (mg/kg)	Basis
PCBs				
Total PCBs	NA		1.6E-03	C
Pesticides				
Alpha-BHC	319-84-6		5.0E-04	C
Beta-BHC	319-85-7		1.8E-03	C
Delta-BHC	319-86-8	(i)	1.8E-03	C
Gamma-BHC (Lindane)	58-89-9		2.4E-03	C
Aldrin	309-00-2		1.9E-04	C
alpha-Chlordane	5103-71-9	(j)	9.0E-03	C
gamma-Chlordane	5103-74-2	(j)	9.0E-03	C
Chlordane	57-74-9		9.0E-03	C
Chlorobenzilate	510-15-6		1.2E-02	C
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8		2.3E-03	C
4,4'-DDD	72-54-8		1.3E-02	C
4,4'-DDE	72-55-9		9.3E-03	C
4,4'-DDT	50-29-3		9.3E-03	C
Diallate	2303-16-4		NA	O
Dieldrin	60-57-1		2.0E-04	C
Endosulfan I	959-98-8	(k)	8.1E+00	N
Endosulfan II	33213-65-9	(k)	8.1E+00	N
Endosulfan sulfate	1031-07-8	(k)	8.1E+00	N
Endrin	72-20-8		4.1E-01	N
Endrin aldehyde	7421-93-4	(l)	4.1E-01	N
Endrin Ketone	53494-70-5	(l)	4.1E-01	N
Heptachlor	76-44-8		7.0E-04	C
Heptachlor epoxide	1024-57-3		3.5E-04	C
Hexachlorobenzene	118-74-1		2.0E-03	C
Hexachlorocyclopentadiene	77-47-4		9.5E+00	N
Isodrin	465-73-6		NA	O
Methoxychlor	72-43-5		6.8E+00	N
Toxaphene	8001-35-2		2.9E-03	C
Herbicides				
2,4-D	94-75-7		1.4E+01	N
2,4-DB	94-82-6		1.1E+01	N
2,4,5-TP	93-72-1		1.1E+01	N
2,4,5-T	93-76-5		1.4E+01	N
Dalapon	75-99-0		4.1E+01	N
Dicamba	1918-00-9		4.1E+01	N
Dichloroprop	120-36-5		NA	O
Dinoseb	88-85-7		1.4E+00	N
MCPA	94-74-6		6.8E-01	N
MCPP	93-65-2		1.4E+00	N
4-Nitrophenol	100-02-7		1.1E+01	N

TABLE 3
DATA QUALITY LEVELS (DQLs) FOR FISH TISSUE
SAUGET AREA 2 - REMEDIAL INVESTIGATION
SAUGET AND CAHOKIA, ILLINOIS
SAUGET AREA 2 SITE GROUP

CONSTITUENT	CAS NO.	DQL (n) (mg/kg)	Basis
Pentachlorophenol	87-86-5	2.6E-02	C
Dioxins and Furans			
2,3,7,8-TCDD	1746-01-6	2.5E-05	(o)
1,2,3,7,8-PentaCDD	40321-76-4	2.5E-05	(o)
1,2,3,4,7,8-HexaCDD	39227-28-6	2.5E-05	(o)
1,2,3,6,7,8-HexaCDD	57653-85-7	2.5E-05	(o)
1,2,3,7,8,9-HexaCDD	19408-74-3	2.5E-05	(o)
1,2,3,4,6,7,8-HeptaCDD	35822-39-4	2.5E-05	(o)
OctaCDD	3268-87-9	2.5E-05	(o)
2,3,7,8-TetraCDF	51207-31-9	2.5E-05	(o)
1,2,3,7,8-PentaCDF	57117-41-6	2.5E-05	(o)
2,3,4,7,8-PentaCDF	57117-31-4	2.5E-05	(o)
1,2,3,4,7,8-HexaCDF	70648-26-9	2.5E-05	(o)
1,2,3,6,7,8-HexaCDF	57117-44-9	2.5E-05	(o)
1,2,3,7,8,9-HexaCDF	72918-21-9	2.5E-05	(o)
2,3,4,6,7,8-HexaCDF	60851-34-5	2.5E-05	(o)
1,2,3,4,6,7,8-HeptaCDF	67562-39-4	2.5E-05	(o)

TABLE 3
DATA QUALITY LEVELS (DQLs) FOR FISH TISSUE
SAUGET AREA 2 - REMEDIAL INVESTIGATION
SAUGET AND CAHOKIA, ILLINOIS
SAUGET AREA 2 SITE GROUP

CONSTITUENT	CAS NO.	DQL (n) (mg/kg)	Basis
1,2,3,4,7,8,9-HeptaCDF	55673-89-7	2.5E-05	(o)
OctaCDF	39001-02-0	2.5E-05	(o)

Notes:
C = USEPA, 2000e, Based on carcinogenic USEPA Region 3 RBC value.
N = USEPA, 2000e, Based on non-carcinogenic USEPA Region 3 RBC value.
O = No RBC available; therefore, no DQL developed.
CAS = Chemical Abstracts Service.
CB = Chlorobiphenyl.
CDD = Chlorodibenzodioxin.
CDF = Chlorodibenzofuran.
DQL = Data Quality Level.
NA = Not Available.
PCB = Polychlorinated Biphenyl.
RBC = USEPA Region 3 Risk Based Concentration (USEPA, 2000d).
TAL = Target Analyte List.
TCL = Target Compound List.
(a) Due to structural similarities, the value for 4-Nitrophenol was used.
(b) Due to structural similarities, the value for Acenaphthene was used.
(c) Due to structural similarities, the value for Pyrene was used.
(d) Due to structural similarities, the value for Anthracene was used.
(f) Value for Cadmium-food.
(g) Value for Chromium III.
(h) Value for Manganese-food.
(i) Due to structural similarities, the value for Beta BHC was used.
(j) Due to structural similarities, the value for Chlordane was used.
(k) Due to structural similarities, the value for Endosulfan was used.
(l) Due to structural similarities, the value for Endrin was used.
(m) Synonym of Bis(2-Chloroisopropyl) ether.
(n) DQLs for fish tissue based on USEPA Region 3 RBCs (USEPA, 2000d).
(o) - Food and Drug Administration (FDA) Action Level; as reported in:
USEPA. 1984. Ambient Water Quality Criteria Document for 2,3,7,8-Tetrachlorodibenzo-p-dioxin. EPA 440/5-84-007.
Cordel, Frank. 1981. The Use of Epidemiology in The Regulation of Dioxins in The Food Supply. Regulatory Toxicology and Pharmacology 1:379-387.

TABLE 4
DATA QUALITY LEVELS (DQLs) FOR AIR
SAUGET AREA 2 - REMEDIAL INVESTIGATION
SAUGET AND CAHOKIA, ILLINOIS
SAUGET AREA 2 SITE GROUP

CONSTITUENT	CAS NO.	DQL (a) (ug/m^3)	
TCL Volatiles			
1,1,1-Trichloroethane	71-55-6	1.0E+03	NC
1,1,2,2-Tetrachloroethane	79-34-5	3.3E-02	C
1,1,2-Trichloroethane	79-00-5	1.2E-01	C
1,1-Dichloroethane	75-34-3	5.2E+02	NC
1,1-Dichloroethylene	75-35-4	3.8E-02	C
1,2-Dichloroethane	107-06-2	7.4E-02	C
1,2-Dichloroethylene (total)	540-59-0 (c)	3.7E+01	NC
1,2-Dichloropropane	78-87-5	9.9E-02	C
2-Butanone	78-93-3	1.0E+03	NC
2-Hexanone	591-78-6 (d)	8.3E+01	NC
4-Methyl-2-pentanone	108-10-1	8.3E+01	NC
Acetone	67-64-1	3.7E+02	NC
Benzene	71-43-2	2.5E-01	C
Bromodichloromethane	75-27-4	1.1E-01	C
Bromoform	75-25-2	1.7E+00	C
Bromomethane	74-83-9	5.2E+00	NC
Carbon Disulfide	75-15-0	7.3E+02	NC
Carbon tetrachloride	56-23-5	1.3E-01	C
Chlorobenzene	108-90-7	6.2E+01	NC
Chloroethane	75-00-3	2.3E+00	C
Chloroform	67-66-3	8.4E-02	C
Chloromethane	74-87-3	1.1E+00	C
cis-1,3-Dichloropropene	10061-01-5 (e)	4.8E-01	C
Dibromochloromethane	124-48-1	8.0E-02	C
Ethyl Benzene	100-41-4	1.1E+03	NC
Methylene chloride	75-09-2	4.1E+00	C
Styrene	100-42-5	1.1E+03	NC
Tetrachloroethene	127-18-4	3.3E+00	C
Toluene	108-88-3	4.0E+02	NC
Total Xylenes	1330-20-7	7.3E+02	NC
trans-1,3-Dichloropropene	10061-02-6 (e)	4.8E-01	C
Trichloroethene	79-01-6	1.1E+00	C
Vinyl chloride	75-01-4	2.2E-01	C
TCL Semi-Volatiles			
1,2,4-Trichlorobenzene	120-82-1	2.1E+02	NC
1,2-Dichlorobenzene	95-50-1	2.1E+02	NC
1,3-Dichlorobenzene	541-73-1	3.3E+00	NC
1,4-Dichlorobenzene	106-46-7	3.1E-01	C
2,2'-oxybis(1-Chloropropane)	108-60-1 (b)	1.9E-01	C
2,4,5-Trichlorophenol	95-95-4	3.7E+02	NC
2,4,6-Trichlorophenol	88-06-2	6.2E-01	C
2,4-Dichlorophenol	120-83-2	1.1E+01	NC
2,4-Dimethylphenol	105-67-9	7.3E+01	NC

TABLE 4
DATA QUALITY LEVELS (DQLs) FOR AIR
SAUGET AREA 2 - REMEDIAL INVESTIGATION
SAUGET AND CAHOKIA, ILLINOIS
SAUGET AREA 2 SITE GROUP

CONSTITUENT	CAS NO.		DQL (a) (ug/m^3)	
2,4-Dinitrophenol	51-28-5		7.3E+00	NC
2,4-Dinitrotoluene	121-14-2		7.3E+00	NC
2,6-Dinitrotoluene	606-20-2		3.7E+00	NC
2-Chloronaphthalene	91-58-7		2.9E+02	NC
2-Chlorophenol	95-57-8		1.8E+01	NC
2-Methylnaphthalene	91-57-6	(f)	3.1E+00	NC
2-Methylphenol	95-48-7		1.8E+02	NC
2-Nitroaniline	88-74-4		2.1E-01	NC
2-Nitrophenol	88-75-5	(g)	2.9E+01	NC
3,3'-Dichlorobenzidine	91-94-1		1.5E-02	C
3-Nitroaniline	99-09-2	(h)	2.1E-01	NC
4,6-Dinitro-2-methylphenol	534-52-1		NA	-
4-Bromophenyl phenyl ether	101-55-3		NA	-
4-Chloraniline	106-47-8		1.5E+01	NC
4-Chloro-3-methylphenol	59-50-7		NA	-
4-Chlorophenol phenyl ether	7005-72-3		NA	-
4-Methylphenol	106-44-5		1.8E+01	NC
4-Nitroaniline	100-01-6	(h)	2.1E-01	NC
4-Nitrophenol	100-02-7		2.9E+01	NC
Acenaphthene	83-32-9		2.2E+02	NC
Acenaphthylene	208-96-8	(i)	2.2E+02	NC
Anthracene	120-12-7		1.1E+03	NC
Benz[a]anthracene	56-55-3		2.2E-02	C
Benzo[a]pyrene	50-32-8		2.2E-03	C
Benzo[b]fluoranthene	205-99-2		2.2E-02	C
Benzo[g,h,i]perylene	191-24-2	(j)	1.1E+02	NC
Benzo[k]fluoranthene	207-08-9		2.2E-01	C
bis(2-Chloroethoxy)methane	111-91-1		NA	-
bis(2-Chloroethyl)ether	111-44-4		5.8E-03	C
bis(2-Ethylhexyl)phthalate	117-81-7		4.8E-01	C
Butyl benzyl phthalate	85-68-7		7.3E+02	NC
Carbazole	86-74-8		3.4E-01	C
Chrysene	218-01-9		2.2E+00	C
Dibenz[a,h]anthracene	53-70-3		2.2E-03	C
Dibenzofuran	132-64-9		1.5E+01	NC
Diethylphthalate	84-66-2		2.9E+03	NC
Dimethyl phthalate	131-11-3		3.7E+04	NC
Di-n-butyl phthalate	84-74-2		3.7E+02	NC
Di-n-octyl phthalate	117-84-0		7.3E+01	NC
Fluoranthene	206-44-0		1.5E+02	NC
Fluorene	86-73-7		1.5E+02	NC
Hexachlorobenzene	118-74-1		4.2E-03	C
Hexachlorobutadiene	87-68-3		8.6E-02	C
Hexachlorocyclopentadiene	77-47-4		7.3E-02	NC
Hexachloroethane	67-72-1		4.8E-01	C

TABLE 4
DATA QUALITY LEVELS (DQLs) FOR AIR
SAUGET AREA 2 - REMEDIAL INVESTIGATION
SAUGET AND CAHOKIA, ILLINOIS
SAUGET AREA 2 SITE GROUP

CONSTITUENT	CAS NO.	DQL (a) (ug/m^3)	
Indeno[1,2,3-cd]pyrene	193-39-5	2.2E-02	C
Isophorone	78-59-1	7.1E+00	C
Naphthalene	91-20-3	3.1E+00	NC
Nitrobenzene	98-95-3	2.1E+00	NC
N-Nitroso-di-n-propylamine	621-64-7	9.6E-04	C
N-Nitrosodiphenylamine	86-30-6	1.4E+00	C
Pentachlorophenol	87-86-5	5.6E-02	C
Phenanthrene	85-01-8 (k)	1.1E+03	NC
Phenol	108-95-2	2.2E+03	NC
Pyrene	129-00-0	1.1E+02	NC
TAL Metals			
Aluminum	7429-90-5	5.1E+00	NC
Antimony	7440-36-0	NA	-
Arsenic	7440-38-2	4.5E-04	C
Barium	7440-39-3	5.2E-01	NC
Beryllium	7440-41-7	8.0E-04	C
Cadmium	7440-43-9	1.1E-03	C
Calcium	7440-70-2	NA	-
Chromium	7440-47-3 (l)	2.3E-05	C
Cobalt	7440-48-4	NA	-
Iron	7439-89-6	NA	-
Lead	7439-92-1	NA	-
Magnesium	7439-95-4	NA	-
Manganese	7439-96-5	5.1E-02	NC
Nickel	7440-02-0 (m)	8.0E-03	C
Potassium	7440-09-7	NA	-
Selenium	7782-49-2	NA	-
Silver	7440-22-4	NA	-
Sodium	7440-23-5	NA	-
Thallium	7440-28-0	NA	-
Vanadium	7440-62-2	NA	-
Copper	7440-50-8	NA	-
Zinc	7440-66-6	NA	-
PCBs			
Total PCBs	NA	3.4E-03	C
Dioxins and Furans			
2,3,7,8-TCDD	1746-01-6	4.5E-08	C
1,2,3,7,8-PentaCDD	40321-76-4 (n)	4.5E-08	C
1,2,3,4,7,8-HexaCDD	39227-28-6 (n)	4.5E-08	C
1,2,3,6,7,8-HexaCDD	57653-85-7 (n)	4.5E-08	C
1,2,3,7,8,9-HexaCDD	19408-74-3 (n)	4.5E-08	C
1,2,3,4,6,7,8-HeptaCDD	35822-39-4 (n)	4.5E-08	C

TABLE 4
DATA QUALITY LEVELS (DQLs) FOR AIR
SAUGET AREA 2 - REMEDIAL INVESTIGATION
SAUGET AND CAHOKIA, ILLINOIS
SAUGET AREA 2 SITE GROUP

CONSTITUENT	CAS NO.		DQL (a) (ug/m^3)	
OctaCDD	3268-87-9	(n)	4.5E-08	C
2,3,7,8-TetraCDF	51207-31-9	(n)	4.5E-08	C
1,2,3,7,8-PentaCDF	57117-41-6	(n)	4.5E-08	C
2,3,4,7,8-PentaCDF	57117-31-4	(n)	4.5E-08	C
1,2,3,4,7,8-HexaCDF	70648-26-9	(n)	4.5E-08	C
1,2,3,6,7,8-HexaCDF	57117-44-9	(n)	4.5E-08	C
1,2,3,7,8,9-HexaCDF	72918-21-9	(n)	4.5E-08	C
2,3,4,6,7,8-HexaCDF	60851-34-5	(n)	4.5E-08	C
1,2,3,4,6,7,8-HeptaCDF	67562-39-4	(n)	4.5E-08	C
1,2,3,4,7,8,9-HeptaCDF	55673-89-7	(n)	4.5E-08	C
OctaCDF	39001-02-0	(n)	4.5E-08	C
Pesticides				
Alpha-BHC	319-84-6		1.1E-03	C
Beta-BHC	319-85-7		3.7E-03	C
Delta-BHC	319-86-8	(o)	3.7E-03	C
Gamma-BHC (Lindane)	58-89-9		5.2E-03	C
Aldrin	309-00-2		3.9E-04	C
alpha-Chlordane	5103-71-9	(p)	1.9E-02	C
gamma-Chlordane	5103-74-2	(p)	1.9E-02	C
Chlordane	57-74-9		1.9E-02	C
Chlorobenzilate	510-15-6		2.5E-02	C
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8		2.1E-01	NC
4,4'-DDD	72-54-8		2.8E-02	C
4,4'-DDE	72-55-9		2.0E-02	C
4,4'-DDT	50-29-3		2.0E-02	C
Diallate	2303-16-4		1.1E-01	C
Dieldrin	60-57-1		4.2E-04	C
Endosulfan I	959-98-8	(q)	2.2E+01	NC
Endosulfan II	33213-65-9	(q)	2.2E+01	NC
Endosulfan sulfate	1031-07-8	(q)	2.2E+01	NC
Endrin	72-20-8		1.1E+00	NC
Endrin aldehyde	7421-93-4	(r)	1.1E+00	NC
Endrin Ketone	53494-70-5	(r)	1.1E+00	NC
Heptachlor	76-44-8		1.5E-03	C
Heptachlor epoxide	1024-57-3		7.4E-04	C
Hexachlorobenzene	118-74-1		4.2E-03	C
Hexachlorocyclopentadiene	77-47-4		7.3E-02	NC
Isodrin	465-73-6		NA	-
Methoxychlor	72-43-5		1.8E+01	NC
Toxaphene	8001-35-2		6.0E-03	C
Herbicides				
2,4-D	94-75-7		3.7E+01	NC
2,4-DB	94-82-6		2.9E+01	NC

TABLE 4
DATA QUALITY LEVELS (DQLs) FOR AIR
SAUGET AREA 2 - REMEDIAL INVESTIGATION
SAUGET AND CAHOKIA, ILLINOIS
SAUGET AREA 2 SITE GROUP

CONSTITUENT	CAS NO.	DQL (a) (ug/m^3)	
2,4,5-TP	93-72-1	2.9E+01	NC
2,4,5-T	93-76-5	3.7E+01	NC
Dalapon	75-99-0	1.1E+02	NC
Dicamba	1918-00-9	1.1E+02	NC
Dichloroprop	120-36-5	NA	-
Dinoseb	88-85-7	3.7E+00	NC
MCPA	94-74-6	1.8E+00	NC
MCPP	93-65-2	3.7E+00	NC

Notes:
CAS = Chemical Abstracts Service.
CDD = Chlorodibenzodioxin.
CDF = Chlorodibenzofuran.
DQL = Data Quality Level.
NA = Not available.
PCB = Polychlorinated Biphenyl.
PRG = Preliminary Remedial Goal.
TAL = Target Analyte List.
TCL = Target Compound List.
(a) Air DQLs are based on USEPA Region IX PRG Table. (USEPA, 2000b)
(b) Synonym of Bis(2-Chloroisopropyl ether)
(c) Value for cis-1,2-Dichloroethylene used.
(d) Due to structural similarities, the value for 4-Methyl-2-Pentanone was used.
(e) Value for 1,3-Dichloropropene.
(f) Due to structural similarities, the value for Naphthalene was used.
(g) Due to structural similarities, the value for 4-Nitrophenol was used.
(h) Due to structural similarities, the value for 2-Nitroaniline was used.
(i) Due to structural similarities, the value for Acenaphthene was used.
(j) Due to structural similarities, the value for Pyrene was used.
(k) Due to structural similarities, the value for Anthracene was used.
(l) Value for Chromium VI.
(m) Value for Nickel Refinery Dust.
(n) Value for 2,3,7,8-TCDD.
(o) Due to structural similarities, the value for Beta-BHC was used.
(p) Due to structural similarities, the value for Chlordane was used.
(q) Due to structural similarities, the value for Endosulfan was used.
(r) Due to structural similarities, the value for Endrin was used.
C = Value Based on potential carcinogenic effects.
NC = Value based on noncancer effects.

APPENDIX B

SUMMARY STATISTICS AND SCREENING TABLES

APPENDIX B
SUMMARY STATISTICS AND SCREENING TABLES

This appendix provides the summary statistics for each area and medium that were quantitatively evaluated in the HHRA. The tables also present the screening and COPC selection as described in Section 3.2. The tables are provided in the following order:

- **Table B-1** - samples used in the calculation of summary statistics for each area and medium;
- **Table B-2** - summary statistics and screening for groundwater (depth to water less than or equal to 30 feet below ground surface) and leachate;
- **Table B-3** - summary statistics and screening for surface soil;
- **Table B-4** - summary statistics and screening for combined soil (for the construction pathway, surface soil, subsurface soil, and waste were combined to evaluate the 0-15 foot bgs soil column interval);
- **Table B-5** - summary statistics and screening for sediment;
- **Table B-6** - summary statistics and screening for surface water; and
- **Table B-7** - summary statistics and screening for fish fillet.

TABLE B-1
SAMPLES USED TO CALCULATE STATISTICS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Sample	Depth (ft bgs)	Parent Sample (b)
Shallow Groundwater				
O - AA-O-1-16	AA-O-1	GW-AA-O-1-16	16	
O - AA-O-2-13	AA-O-2	GW-AA-O-2-13	13	
OS - UAA-1/OS-1-20	UAA-1/OS-1	GW-UAA-1-20FT	20	
OS - UAA-2/OS-2-20	UAA-2/OS-2	GW-UAA-2-20FT	20	
OS - UAA-4/OS-4-20	UAA-4/OS-4	GW-AA-UAA-4-20-DUP	20	GW-AA-UAA-4-20
OS - UAA-4/OS-4-20	UAA-4/OS-4	GW-AA-UAA-4-20	20	
Leachate				
O	LEACH-O-1	LEACH-O-1	--	
Q	LEACH-Q-1	LEACH-Q-1-DUP	--	LEACH-Q-1
Q	LEACH-Q-1	LEACH-Q-1	--	
R	LEACH-R-1	LEACH-R-1	--	
Mid Groundwater				
O - AA-O-3-28	AA-O-3	GW-AA-O-3-28FT	28	
OS - UAA-1/OS-1-30	UAA-1/OS-1	GW-UAA-1-30FT	30	
OS - UAA-2/OS-2-30	UAA-2/OS-2	GW-UAA-2-30FT-DUP	30	GW-UAA-2-30FT
OS - UAA-2/OS-2-30	UAA-2/OS-2	GW-UAA-2-30FT	30	
OS - UAA-3/OS-3-24	UAA-3/OS-3	GW-UAA-3-24FT-R	24	
OS - UAA-3/OS-3-34	UAA-3/OS-3	GW-UAA-3-34FT-R	34	
OS - UAA-4/OS-4-30	UAA-4/OS-4	GW-AA-UAA-4-30	30	
P - AA-P-1-24	AA-P-1	GW-AA-P-1-24FT	24	
P - AA-P-1-24	AA-P-1	GW-AA-P-1-24FT-DUP	24	GW-AA-P-1-24FT
P - AA-P-1-34	AA-P-1	GW-AA-P-1-34FT	34	
P - AA-P-2-24	AA-P-2	GW-AA-P-2-24	24	
P - AA-P-2-34	AA-P-2	GW-AA-P-2-34	34	
P - AA-P-2-34	AA-P-2	GW-AA-P-2-34-DUP	34	GW-AA-P-2-34
P - AA-P-3-32	AA-P-3	GW-AA-P-3-32	32	
Q - AA-Q-6-24	AA-Q-6	GW-AA-Q-6-24-DUP	24	GW-AA-Q-6-24
Q - AA-Q-6-24	AA-Q-6	GW-AA-Q-6-24-Filter	24	
Q - AA-Q-6-24	AA-Q-6	GW-AA-Q-6-24	24	
Q - AA-Q-6-24	AA-Q-6	GW-AA-Q-6-24-DUP-Filter	24	GW-AA-Q-6-24-Filter
Q - AA-Q-6-34	AA-Q-6	GW-AA-Q-6-34	34	
Q - AA-Q-6-34	AA-Q-6	GW-AA-Q-6-34-DUP	34	GW-AA-Q-6-34
Q - AA-Q-7-24	AA-Q-7	GW-AA-Q-7-24	24	
Q - AA-Q-7-34	AA-Q-7	GW-AA-Q-7-34	34	
Q - AA-Q-8-24	AA-Q-8	GW-AA-Q-8-24	24	
Q - AA-Q-8-34	AA-Q-8	GW-AA-Q-8-34	34	
Q - AA-Q-8-34	AA-Q-8	GW-AA-Q-8-34-DUP	34	GW-AA-Q-8-34
R - AA-R-1-28	AA-R-1	GW-AA-R-1-28	28	
S - AA-S-1-24	AA-S-1	GW-AA-S-1-24FT	24	
S - AA-S-1-34	AA-S-1	GW-AA-S-1-34FT	34	
S - AA-S-2-28	AA-S-2	GW-AA-S-2-28	28	
S - AA-S-3-24	AA-S-3	GW-AA-S-3-24FT	24	
S - AA-S-3-34	AA-S-3	GW-AA-S-3-34FT	34	

TABLE B-1
SAMPLES USED TO CALCULATE STATISTICS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Sample	Depth (ft bgs)	Parent Sample (b)
Surface Soil (a)				
O	SOIL-O-2	SOIL-O-2-0.5	0.5	
O	SOIL-O-3	SOIL-O-3-0.5	0.5	
O North	SOIL-O-1	SOIL-O-1-0.5	0.5	
OS	OS-5	SOIL-OS-5-0.5ft	0.5	
OS	UAA-1/OS-1	SOIL-OS-1-0.5FT	0.5	
OS	UAA-2/OS-2	SOIL-OS-2-0.5FT	0.5	
OS	UAA-2/OS-2	SOIL-OS-2-0.5FT DUP	0.5	SOIL-OS-2-0.5FT
OS	UAA-3/OS-3	SOIL-OS-3-0.5FT	0.5	
OS	UAA-4/OS-4	SOIL-OS-4-0.5FT	0.5	
P	SOIL-P-1	SOIL-P-1-0.5	0.5	
P	SOIL-P-2	SOIL-P-2-0.5	0.5	
P	SOIL-P-3	SOIL-P-3-0.5	0.5	
P	SOIL-P-4	SOIL-P-4-0.5	0.5	
Q Central	SOIL-Q-6	SOIL-Q-6-0.5	0.5	
Q Central	SOIL-Q-7	SOIL-Q-7-0.5	0.5	
Q Central	SOIL-Q-7	SOIL-Q-7-0.5-DUP	0.5	SOIL-Q-7-0.5
Q Central	SOIL-Q-8	SOIL-Q-8-0.5	0.5	
Q North	SOIL-Q-1	SOIL-Q-1-0.5FT	0.5	
Q North	SOIL-Q-2	SOIL-Q-2-0.5	0.5	
Q North	SOIL-Q-3	SOIL-Q-3-0.5	0.5	
Q North	SOIL-Q-4	SOIL-Q-4-0.5	0.5	
Q North	SOIL-Q-5	SOIL-Q-5-0.5	0.5	
Q South	SOIL-Q-10	SOIL-Q-10-0.5	0.5	
Q South	SOIL-Q-10	SOIL-Q-10-0.5-DUP	0.5	SOIL-Q-10-0.5
Q South	SOIL-Q-11	SOIL-Q-11-0.5	0.5	
Q South	SOIL-Q-11	SOIL-Q-11-0.5-DUP	0.5	SOIL-Q-11-0.5
Q South	SOIL-Q-12	SOIL-Q-12-0.5	0.5	
Q South	SOIL-Q-13	SOIL-Q-13-0.5	0.5	
Q South	SOIL-Q-14	SOIL-Q-14-0.5	0.5	
Q South	SOIL-Q-15	SOIL-Q-15-0.5	0.5	
Q South	SOIL-Q-16	SOIL-Q-16-0.5	0.5	
Q South	SOIL-Q-17	SOIL-Q-17-0.5	0.5	
Q South	SOIL-Q-18	SOIL-Q-18-0.5	0.5	
Q South	SOIL-Q-19	SOIL-Q-19-0.5	0.5	
Q South	SOIL-Q-20	SOIL-Q-20-0.5	0.5	
Q South	SOIL-Q-9	SOIL-Q-9-0.5	0.5	
R	SOIL-R-1	SOIL-R-1-0.5	0.5	
R	SOIL-R-2	SOIL-R-2-0.5	0.5	
R	SOIL-R-3	SOIL-R-3-0.5FT	0.5	
R	SOIL-R-4	SOIL-R-4-0.5FT	0.5	
S	SOIL-S-1	SOIL-S-1-0.5	0.5	
S	SOIL-S-2	SOIL-S-2-0.5	0.5	

TABLE B-1
SAMPLES USED TO CALCULATE STATISTICS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Sample	Depth (ft bgs)	Parent Sample (b)
Subsurface Soil (a)				
O	SOIL-O-2	SOIL-O-2-6FT	6	
O	SOIL-O-3	SOIL-O-3-6FT	6	
O	SOIL-O-3	SOIL-O-3-6FT-DUP	6	SOIL-O-3-6FT
O North	SOIL-O-1	SOIL-O-1-6FT	6	
OS	OS-5	SOIL-OS-5-6ft	6	
OS	UAA-1/OS-1	SOIL-OS-1-6FT	6	
OS	UAA-2/OS-2	SOIL-OS-2-6FT	6	
OS	UAA-2/OS-2	SOIL-OS-2-6FT DUP	6	SOIL-OS-2-6FT
OS	UAA-3/OS-3	SOIL-OS-3-6FT	6	
OS	UAA-4/OS-4	SOIL-OS-4-6FT	6	
OS	UAA-4/OS-4	SOIL-OS-4-6FT-DUP	6	SOIL-OS-4-6FT
P	SOIL-P-1	SOIL-P-1-6FT	6	
P	SOIL-P-2	SOIL-P-2-6FT	6	
P	SOIL-P-3	SOIL-P-3-6FT	6	
P	SOIL-P-4	SOIL-P-4-6FT	6	
Q Central	SOIL-Q-6	SOIL-Q-6-6	6	
Q Central	SOIL-Q-7	SOIL-Q-7-6	6	
Q Central	SOIL-Q-8	SOIL-Q-8-6	6	
Q Central	SOIL-Q-8	SOIL-Q-8-6-DUP	6	SOIL-Q-8-6
Q North	SOIL-Q-1	SOIL-Q-1-6FT	6	
Q North	SOIL-Q-2	SOIL-Q-2-6FT	6	
Q North	SOIL-Q-3	SOIL-Q-3-6	6	
Q North	SOIL-Q-4	SOIL-Q-4-6	6	
Q North	SOIL-Q-5	SOIL-Q-5-6FT	6	
Q South	SOIL-Q-10	SOIL-Q-10-6	6	
Q South	SOIL-Q-11	SOIL-Q-11-6	6	
Q South	SOIL-Q-12	SOIL-Q-12-6	6	
Q South	SOIL-Q-9	SOIL-Q-9-6	6	
R	SOIL-R-1	SOIL-R-1-6FT	6	
R	SOIL-R-2	SOIL-R-2-6	6	
R	SOIL-R-3	SOIL-R-3-6FT	6	
R	SOIL-R-4	SOIL-R-4-6FT	6	
S	SOIL-S-1	SOIL-S-1-6FT	6	
S	SOIL-S-2	SOIL-S-2-6FT	6	

TABLE B-1
SAMPLES USED TO CALCULATE STATISTICS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Sample	Depth (ft bgs)	Parent Sample (b)
Waste (a)				
O	Waste-O-2	Waste-O-2-7FT	7	
O	Waste-O-2	Waste-O-2-COMP	6-11	
O	Waste-O-3	Waste-O-3-9FT	9	
O	Waste-O-3	Waste-O-3-COMP	4-10	
O North	Waste-O-1	WASTE-O-1-4FT	4	
O North	Waste-O-1	Waste-O-1-COMP	0.5-15	
P	WASTE-P-1	WASTE-P-1-15FT	15	
P	WASTE-P-1	WASTE-P-1-COMP	0-18	
P	WASTE-P-2	WASTE-P-2-6FT	6	
P	WASTE-P-2	WASTE-P-2-COMP	0-30	
P	WASTE-P-3	WASTE-P-3-22FT	22	
P	WASTE-P-3	WASTE-P-3-COMP	0-24	
P	WASTE-P-4	WASTE-P-4-17	17	
P	WASTE-P-4	WASTE-P-4-COMP	1-19	
Q Central	WASTE-Q-6	WASTE-Q-6-15	15	
Q Central	WASTE-Q-6	WASTE-Q-6-15-DUP	15	WASTE-Q-6-15
Q Central	WASTE-Q-6	WASTE-Q-6-COMP	0-16	
Q Central	WASTE-Q-6	WASTE-Q-6-COMP-DUP	0-16	WASTE-Q-6-COMP
Q Central	WASTE-Q-7	WASTE-Q-7-9	9	
Q Central	WASTE-Q-7	WASTE-Q-7-COMP	0-16	
Q Central	WASTE-Q-8	WASTE-Q-8-7	7	
Q Central	WASTE-Q-8	WASTE-Q-8-COMP	0-18	
Q North	WASTE-Q-1	WASTE-Q-1-5FT	5	
Q North	WASTE-Q-1	WASTE-Q-1-COMP	1-12	
Q North	WASTE-Q-2	WASTE-Q-2-8FT	8	
Q North	WASTE-Q-2	WASTE-Q-2-COMP	0-18	
Q North	WASTE-Q-3	WASTE-Q-3-6FT	6	
Q North	WASTE-Q-3	WASTE-Q-3-COMP	0-9	
Q North	WASTE-Q-4	WASTE-Q-4-9	9	
Q North	WASTE-Q-4	WASTE-Q-4-COMP	0-13	
Q North	WASTE-Q-5	WASTE-Q-5-8	8	
Q North	WASTE-Q-5	WASTE-Q-5-COMP	0-12	
Q South	WASTE-Q-10	WASTE-Q-10-8	8	
Q South	WASTE-Q-10	WASTE-Q-10-8-DUP	8	WASTE-Q-10-8
Q South	WASTE-Q-10	WASTE-Q-10-COMP	0-18	
Q South	WASTE-Q-10	WASTE-Q-10-COMP-DUP	0-18	WASTE-Q-10-COMP
Q South	WASTE-Q-11	WASTE-Q-11-8	8	
Q South	WASTE-Q-11	WASTE-Q-11-COMP	0-9	
Q South	WASTE-Q-12	WASTE-Q-12-4	4	
Q South	WASTE-Q-12	WASTE-Q-12-4-DUP	4	WASTE-Q-12-4
Q South	WASTE-Q-12	WASTE-Q-12-COMP	0-5	
Q South	WASTE-Q-12	WASTE-Q-12-COMP-DUP	0-5	WASTE-Q-12-COMP
Q South	WASTE-Q-9	WASTE-Q-9-8	8	
Q South	WASTE-Q-9	WASTE-Q-9-COMP	0-9	
R	WASTE-R-1	WASTE-R-1-19FT	19	
R	WASTE-R-1	WASTE-R-1-COMP	6-25	
R	WASTE-R-2	WASTE-R-2-20FT	20	
R	WASTE-R-2	WASTE-R-2-COMP	6-21	
R	WASTE-R-3	WASTE-R-3-22FT	22	
R	WASTE-R-3	WASTE-R-3-COMP	4.5-26	
R	WASTE-R-4	WASTE-R-4-24FT	24	
R	WASTE-R-4	WASTE-R-4-COMP	13-19	
S	WASTE-S-1	WASTE-S-1-6FT	6	
S	WASTE-S-1	WASTE-S-1-COMP	0.5-10	
S	WASTE-S-2	WASTE-S-2-6FT	6	
S	WASTE-S-2	WASTE-S-2-COMP	0.5-7	

TABLE B-1
SAMPLES USED TO CALCULATE STATISTICS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Sample	Depth (ft bgs)	Parent Sample (b)
Sediment				
Pond (Site Q)	P1	P11S	--	
Pond (Site Q)	P1	P12S	--	P11S
River	R2CM	R2CM1S	--	
River	R2AU	R2AU1S	--	
River	R2AM	R2AM1S	--	
River	R4CM	R4CM2S	--	R4CM1S
River	R2AD	R2AD1S	--	
River	R2BD	R2BD1S	--	
River	R4CM	R4CM1S	--	
River	R4AD	R4AD1S	--	
River	R4BU	R4BU1S	--	
River	R2BU	R2BU1S	--	
River	R3BM	R3BM1S	--	
River	R4BM	R4BM1S	--	
River	R4AM	R4AM1S	--	
River	R4AU	R4AU1S	--	
River	R3CM	R3CM1S	--	
River	R3BU	R3BU1S	--	
River	R3AD	R3AD1S	--	
River	R3AM	R3AM1S	--	
River	R3AU	R3AU1S	--	
River	R4BD	R4BD1S	--	
River	R3BD	R3BD1S	--	
River	R2BM	R2BM1S	--	
River	R6AU	R6AU1S	--	
River	R5AM	R5AM1S	--	
River	R6BU	R6BU1S	--	
River	R6BM	R6BM1S	--	
River	R6CM	R6CM1S	--	
River	R6AM	R6AM2S	--	R6AM1S
River	R6AM	R6AM1S	--	
River	R6AD	R6AD1S	--	
River	R5CM	R5CM1S	--	
River	R5BU	R5BU1S	--	
River	R5BN	R5BN1S	--	
River	R5AU	R5AU1S	--	
River	R5AN	R5AN1S	--	
River	R2AM	R2AM2S	--	R2AM1S
River	R5BM	R5BM1S	--	

Site	Location	Sample	Depth (ft bgs)	Parent Sample (b)
Surface Water				
Upgradient	R1AU	R1AU1S	--	
Upgradient	R1BD	R1BD1S	--	
Upgradient	R1AM	R1AM1S	--	
Upgradient	R1AD	R1AD1S	--	
Upgradient	R1CM	R1CM1S	--	
Upgradient	R1BM	R1BM2S	--	R1BM1S
Upgradient	R1BU	R1BU1S	--	
Upgradient	R1BM	R1BM1S	--	
Pond (Site Q)	P1	P11W	--	
River	R4CM	R4CM2W	--	R4CM1W
River	R4CM	R4CM1W	--	
River	R6BU	R6BU1W	--	
River	R4BU	R4BU1W	--	
River	R4BM	R4BM1W	--	
River	R4BD	R4BD1W	--	
River	R6CM	R6CM1W	--	
River	R2AM	R2AM2W	--	R2AM1W
River	R5CM	R5CM1W	--	
River	R6AD	R6AD1W	--	
River	R6AM	R6AM1W	--	
River	R4AM	R4AM1W	--	
River	R6AM	R6AM2W	--	R6AM1W
River	R4AD	R4AD1W	--	
River	R5AD	R5AD1W	--	
River	R6AU	R6AU1W	--	
River	R6BM	R6BM1W	--	
River	R5BM	R5BM1W	--	
River	R5BD	R5BD1W	--	
River	R5AU	R5AU1W	--	
River	R5AN	R5AN1W	--	
River	R5AM	R5AM1W	--	
River	R5BU	R5BU1W	--	
River	R5BN	R5BN1W	--	
River	R3AD	R3AD1W	--	
River	R2AM	R2AM1W	--	
River	R2BM	R2BM1W	--	
River	R3AM	R3AM1W	--	
River	R2CM	R2CM1W	--	
River	R4AU	R4AU1W	--	
River	R2BU	R2BU1W	--	
River	R3CM	R3CM1W	--	
River	R3BU	R3BU1W	--	
River	R3BM	R3BM1W	--	
River	R2AD	R2AD1W	--	
River	R3AU	R3AU1W	--	
River	R2BD	R2BD1W	--	
River	R2AU	R2AU1W	--	
River	R3BD	R3BD1W	--	
Upgradient	R1AD	R1AD1W	--	
Upgradient	R1AU	R1AU1W	--	
Upgradient	R1AM	R1AM1W	--	
Upgradient	R1BD	R1BD1W	--	
Upgradient	R1BM	R1BM1W	--	
Upgradient	R1CM	R1CM1W	--	
Upgradient	R1BU	R1BU1W	--	
Upgradient	R1BM	R1BM2W	--	R1BM1W

TABLE B-1
SAMPLES USED TO CALCULATE STATISTICS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Sample	Depth (ft bgs)	Parent Sample (b)
Fish Fillet				
DDA (Buffalo Fillet)	Buffalo	DDA DA-1 Buffalo Fillet	--	
PDA (Buffalo Fillet)	Buffalo	PDA Buffalo Fillet Comp#3	--	
PDA (Buffalo Fillet)	Buffalo	PDA Buffalo Fillet Comp#2	--	
PDA (Buffalo Fillet)	Buffalo	PDA Buffalo Fillet Comp#1	--	
UDA (Buffalo Fillet)	Buffalo	UDA Buffalo Fillet	--	
Pond (Site Q) (Black Bullhead Fillet)	Black Bullhead	Black Bullhead - Fillets	--	
Pond (Site Q) (Carp - Fillet)	Carp	Carp - Fillets	--	

Notes:
DDA - Downstream Discharge Area (Mississippi River).
ft bgs - feet below ground surface
OS - Off-Site (used in calculation of background statistics).
PDA - Plume Discharge Area (Mississippi River).
UDA - Upstream Discharge Area (Mississippi River).
(a) - Combined soil statistics include surface soil, subsurface soil, and waste samples.
(b) - Parent of duplicate sample. Duplicates are average prior to running statistics, and are treated as one sample in deriving frequency of detection, minimum, maximum, mean, and upper confidence levels.

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
Leachate - O															
VOCs															
1,1,1-Trichloroethane	71-55-6	ug/L	1 : 1 : 1	100	9.60E+00	No	NA		–	2.00E+02	No	No	</=Screening Level	No	</=Screening Level
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	3.20E+00	No	NA		–	7.00E+02	No	No	</=Screening Level	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	2.00E+00	No	NA		–	7.00E+01	No	No	</=Screening Level	No	</=Screening Level
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	2.00E+01	No	NA		–	1.90E+03	No	No	</=Screening Level	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	1 : 1 : 1	100	2.10E+02	No	NA		–	1.60E+02	Yes	Yes	>Screening Level	Yes	>Screening Level
Acetone	67-64-1	ug/L	1 : 1 : 1	100	1.60E+02	No	NA		–	7.00E+02	No	No	</=Screening Level	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	9.20E+02	No	NA		–	5.00E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	2.10E+00	No	NA		–	7.00E+02	No	No	</=Screening Level	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.70E+03	No	NA		–	1.00E+02	Yes	Yes	>Screening Level	Yes	>Screening Level
Chloroform	67-66-3	ug/L	1 : 1 : 1	100	8.00E+00	No	NA		–	8.00E+01	No	No	</=Screening Level	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	2.90E+02	No	NA		–	7.00E+02	No	No	</=Screening Level	No	</=Screening Level
Tetrachloroethene	127-18-4	ug/L	1 : 1 : 1	100	2.10E+00	No	NA		–	5.00E+00	No	No	</=Screening Level	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	1.00E+02	No	NA		–	1.00E+03	No	No	</=Screening Level	No	</=Screening Level
Trichloroethylene	79-01-6	ug/L	1 : 1 : 1	100	2.10E+00	No	NA		–	5.00E+00	No	No	</=Screening Level	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	1.50E+00	No	NA		–	2.00E+00	No	No	</=Screening Level	No	</=Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	1.70E+03	No	NA		–	1.00E+04	No	No	</=Screening Level	No	</=Screening Level
SVOCs															
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	3.80E+02	No	NA		–	6.00E+02	No	No	</=Screening Level	No	Non-volatile
2,4,5-Trichlorophenol	95-95-4	ug/L	1 : 1 : 1	100	4.30E+01	No	NA		–	7.00E+02	No	No	</=Screening Level	No	Non-volatile
2,4,6-Trichlorophenol	88-06-2	ug/L	1 : 1 : 1	100	3.80E+02	No	NA		–	1.00E+01	Yes	Yes	>Screening Level	No	Non-volatile
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	3.20E+02	No	NA		–	2.10E+01	Yes	Yes	>Screening Level	No	Non-volatile
2,4-Dimethylphenol	105-67-9	ug/L	1 : 1 : 1	100	6.30E+01	No	NA		–	1.40E+02	No	No	</=Screening Level	No	Non-volatile
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	3.30E+02	No	NA		–	3.50E+01	Yes	Yes	>Screening Level	No	Non-volatile
2-Nitroaniline	88-74-4	ug/L	1 : 1 : 1	100	2.60E+02	No	NA		–	1.00E+00	Yes	Yes	>Screening Level	No	Non-volatile
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	1 : 1 : 1	100	6.40E+02	No	NA		–	3.50E+02	Yes	Yes	>Screening Level	No	Non-volatile
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	4.20E+03	No	NA		–	2.80E+01	Yes	Yes	>Screening Level	No	Non-volatile
4-Nitroaniline	100-01-6	ug/L	1 : 1 : 1	100	7.00E+02	No	NA		–	1.00E+00	Yes	Yes	>Screening Level	No	Non-volatile
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	5.70E+02	No	NA		–	1.40E+02	Yes	Yes	>Screening Level	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
Nitrobenzene	98-95-3	ug/L	1 : 1 : 1	100	8.00E+01	No	NA		–	3.50E+00	Yes	Yes	>Screening Level	No	Non-volatile
Phenol	108-95-2	ug/L	1 : 1 : 1	100	3.80E+03	No	NA		–	1.00E+02	Yes	Yes	>Screening Level	No	Non-volatile
Pesticide															
beta-BHC	319-85-7	ug/L	1 : 1 : 1	100	2.50E+00	No	NA		–	2.00E-01	Yes	Yes	>Screening Level	No	Non-volatile
Dieldrin	60-57-1	ug/L	1 : 1 : 1	100	2.60E-01	No	NA		–	9.00E+00	No	No	</=Screening Level	No	Non-volatile
Heptachlor	76-44-8	ug/L	1 : 1 : 1	100	2.30E-01	No	NA		–	4.00E-01	No	No	</=Screening Level	No	Non-volatile
Herbicide															
2,4,5-T	93-76-5	ug/L	1 : 1 : 1	100	4.80E+02	No	NA		–	3.60E+02	Yes	Yes	>Screening Level	No	Non-volatile
2,4-D	94-75-7	ug/L	1 : 1 : 1	100	9.30E+02	No	NA		–	7.00E+01	Yes	Yes	>Screening Level	No	Non-volatile
Dichlorprop	120-36-5	ug/L	1 : 1 : 1	100	9.70E+01	No	NA		–	2.92E+02	No	No	</=Screening Level	No	Non-volatile
Pentachlorophenol	87-86-5	ug/L	1 : 1 : 1	100	7.80E+02	No	NA		–	1.00E+00	Yes	Yes	>Screening Level	No	Non-volatile
PCBs															
Total PCBs	1336-36-3	ug/L	1 : 1 : 1	100	5.49E+01	No	NA		–	5.00E-01	Yes	Yes	>Screening Level	No	Non-volatile
Dioxin															
2,3,7,8-TCDD-TEQ	1746-01-6	ug/L	1 : 1 : 1	100	6.87E-04	No	NA		–	3.00E-05	Yes	Yes	>Screening Level	No	Non-volatile
Metals															
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	6.00E+02	No	NA		–	3.60E+04	No	No	</=Screening Level	No	Non-volatile
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	2.80E+01	No	NA		–	5.00E+01	No	No	</=Screening Level	No	Non-volatile
Barium	7440-39-3	ug/L	1 : 1 : 1	100	2.30E+02	No	NA		–	2.00E+03	No	No	</=Screening Level	No	Non-volatile
Cadmium	7440-43-9	ug/L	1 : 1 : 1	100	1.00E+00	No	NA		–	5.00E+00	No	No	</=Screening Level	No	Non-volatile
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	4.60E+05	Yes	NA		–	NA	–	No	EN	No	Non-volatile
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	2.40E+00	No	NA		–	1.00E+03	No	No	</=Screening Level	No	Non-volatile
Copper	7440-50-8	ug/L	1 : 1 : 1	100	1.00E+01	No	NA		–	6.50E+02	No	No	</=Screening Level	No	Non-volatile
Iron	7439-89-6	ug/L	1 : 1 : 1	100	2.70E+03	Yes	NA		–	5.00E+03	No	No	EN	No	Non-volatile
Lead	7439-92-1	ug/L	1 : 1 : 1	100	4.50E+00	No	NA		–	7.50E+00	No	No	</=Screening Level	No	Non-volatile
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	2.00E+05	Yes	NA		–	NA	–	No	EN	No	Non-volatile
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	1.80E+04	No	NA		–	1.50E+02	Yes	Yes	>Screening Level	No	Non-volatile
Mercury	7439-97-6	ug/L	1 : 1 : 1	100	1.20E+00	No	NA		–	2.00E+00	No	No	</=Screening Level	No	Non-volatile
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.40E+01	No	NA		–	1.00E+02	No	No	</=Screening Level	No	Non-volatile
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.60E+04	Yes	NA		–	NA	–	No	EN	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
Silver	7440-22-4	ug/L	1 : 1 : 1	100	8.00E-01	No	NA		–	5.00E+01	No	No	</=Screening Level	No	Non-volatile
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	7.00E+04	Yes	NA		–	NA	–	No	EN	No	Non-volatile
Thallium	7440-28-0	ug/L	1 : 1 : 1	100	3.70E+00	No	NA		–	2.00E+00	Yes	Yes	>Screening Level	No	Non-volatile
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	2.20E+02	No	NA		–	5.00E+03	No	No	</=Screening Level	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
Leachate - Q															
VOCs															
1,1,1-Trichloroethane	71-55-6	ug/L	1 : 1 : 1	100	1.20E+01	No	NA		–	2.00E+02	No	No	</=Screening Level	No	</=Screening Level
1,2-Dichloroethane	107-06-2	ug/L	1 : 1 : 1	100	2.15E+03	No	NA		–	5.00E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	1.10E+01	No	NA		–	7.00E+01	No	No	</=Screening Level	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	1 : 1 : 1	100	7.50E+02	No	NA		–	1.60E+02	Yes	Yes	>Screening Level	Yes	>Screening Level
Acetone	67-64-1	ug/L	1 : 1 : 1	100	1.40E+03	No	NA		–	7.00E+02	Yes	Yes	>Screening Level	Yes	>Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	4.25E+02	No	NA		–	5.00E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	2.15E+01	No	NA		–	7.00E+02	No	No	</=Screening Level	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.15E+03	No	NA		–	1.00E+02	Yes	Yes	>Screening Level	Yes	>Screening Level
Chloroform	67-66-3	ug/L	1 : 1 : 1	100	5.30E+01	No	NA		–	8.00E+01	No	No	</=Screening Level	No	</=Screening Level
Dichloromethane	75-09-2	ug/L	1 : 1 : 1	100	4.70E+01	No	NA		–	5.00E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	3.25E+01	No	NA		–	7.00E+02	No	No	</=Screening Level	No	</=Screening Level
Tetrachloroethene	127-18-4	ug/L	1 : 1 : 1	100	8.25E+01	No	NA		–	5.00E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	9.25E+02	No	NA		–	1.00E+03	No	No	</=Screening Level	No	</=Screening Level
Trichloroethylene	79-01-6	ug/L	1 : 1 : 1	100	2.00E+01	No	NA		–	5.00E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	3.05E+02	No	NA		–	1.00E+04	No	No	</=Screening Level	No	</=Screening Level
SVOCs															
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	2.80E+02	No	NA		–	6.00E+02	No	No	</=Screening Level	No	Non-volatile
2,4,6-Trichlorophenol	88-06-2	ug/L	1 : 1 : 1	100	1.25E+04	No	NA		–	1.00E+01	Yes	Yes	>Screening Level	No	Non-volatile
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	1.70E+05	No	NA		–	2.10E+01	Yes	Yes	>Screening Level	No	Non-volatile
2,4-Dimethylphenol	105-67-9	ug/L	1 : 1 : 1	100	2.40E+02	No	NA		–	1.40E+02	Yes	Yes	>Screening Level	No	Non-volatile
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	7.90E+03	No	NA		–	3.50E+01	Yes	Yes	>Screening Level	No	Non-volatile
2-Nitroaniline	88-74-4	ug/L	1 : 1 : 1	100	1.55E+04	No	NA		–	1.00E+00	Yes	Yes	>Screening Level	No	Non-volatile
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	1 : 1 : 1	100	1.60E+03	No	NA		–	3.50E+02	Yes	Yes	>Screening Level	No	Non-volatile
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	9.30E+03	No	NA		–	2.80E+01	Yes	Yes	>Screening Level	No	Non-volatile
4-Nitroaniline	100-01-6	ug/L	1 : 1 : 1	100	1.07E+03	No	NA		–	1.00E+00	Yes	Yes	>Screening Level	No	Non-volatile
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	1.20E+03	No	NA		–	1.40E+02	Yes	Yes	>Screening Level	No	Non-volatile
Nitrobenzene	98-95-3	ug/L	1 : 1 : 1	100	1.30E+03	No	NA		–	3.50E+00	Yes	Yes	>Screening Level	No	Non-volatile
Phenol	108-95-2	ug/L	1 : 1 : 1	100	8.05E+03	No	NA		–	1.00E+02	Yes	Yes	>Screening Level	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
Pesticide															
beta-BHC	319-85-7	ug/L	1 : 1 : 1	100	1.35E+01	No	NA		–	2.00E-01	Yes	Yes	>Screening Level	No	Non-volatile
Endrin Ketone	53494-70-5	ug/L	1 : 1 : 1	100	3.20E+00	No	NA		–	2.00E+00	Yes	Yes	>Screening Level	No	Non-volatile
Herbicide															
2,4-D	94-75-7	ug/L	1 : 1 : 1	100	9.65E+04	No	NA		–	7.00E+01	Yes	Yes	>Screening Level	No	Non-volatile
Pentachlorophenol	87-86-5	ug/L	1 : 1 : 1	100	4.60E+03	No	NA		–	1.00E+00	Yes	Yes	>Screening Level	No	Non-volatile
PCBs															
Total PCBs	1336-36-3	ug/L	1 : 1 : 1	100	1.04E+00	No	NA		–	5.00E-01	Yes	Yes	>Screening Level	No	Non-volatile
Dioxin															
2,3,7,8-TCDD-TEQ	1746-01-6	ug/L	1 : 1 : 1	100	2.00E-06	No	NA		–	3.00E-05	No	No	</=Screening Level	No	Non-volatile
Metals															
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	1.15E+02	No	NA		–	3.60E+04	No	No	</=Screening Level	No	Non-volatile
Antimony	7440-36-0	ug/L	1 : 1 : 1	100	1.60E+01	No	NA		–	6.00E+00	Yes	Yes	>Screening Level	No	Non-volatile
Barium	7440-39-3	ug/L	1 : 1 : 1	100	1.30E+02	No	NA		–	2.00E+03	No	No	</=Screening Level	No	Non-volatile
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.70E+05	Yes	NA		–	NA	–	No	EN	No	Non-volatile
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	1.80E+01	No	NA		–	1.00E+02	No	No	</=Screening Level	No	Non-volatile
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	7.95E+01	No	NA		–	1.00E+03	No	No	</=Screening Level	No	Non-volatile
Iron	7439-89-6	ug/L	1 : 1 : 1	100	2.25E+04	Yes	NA		–	5.00E+03	Yes	No	EN	No	Non-volatile
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	2.70E+04	Yes	NA		–	NA	–	No	EN	No	Non-volatile
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	1.80E+03	No	NA		–	1.50E+02	Yes	Yes	>Screening Level	No	Non-volatile
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	3.10E+02	No	NA		–	1.00E+02	Yes	Yes	>Screening Level	No	Non-volatile
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.40E+04	Yes	NA		–	NA	–	No	EN	No	Non-volatile
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	8.00E+04	Yes	NA		–	NA	–	No	EN	No	Non-volatile
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.80E+01	No	NA		–	4.90E+01	No	No	</=Screening Level	No	Non-volatile
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	7.45E+03	No	NA		–	5.00E+03	Yes	Yes	>Screening Level	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
Leachate - R															
VOCs															
1,2-Dichloroethane	107-06-2	ug/L	1 : 1 : 1	100	5.00E+04	No	NA		–	5.00E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	1.30E+04	No	NA		–	7.00E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	7.90E+03	No	NA		–	1.90E+03	Yes	Yes	>Screening Level	Yes	>Screening Level
Acetone	67-64-1	ug/L	1 : 1 : 1	100	3.20E+04	No	NA		–	7.00E+02	Yes	Yes	>Screening Level	Yes	>Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	6.80E+03	No	NA		–	5.00E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.30E+03	No	NA		–	1.00E+02	Yes	Yes	>Screening Level	Yes	>Screening Level
Chloroform	67-66-3	ug/L	1 : 1 : 1	100	2.00E+03	No	NA		–	8.00E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
Dichloromethane	75-09-2	ug/L	1 : 1 : 1	100	1.90E+03	No	NA		–	5.00E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
Tetrachloroethene	127-18-4	ug/L	1 : 1 : 1	100	3.30E+04	No	NA		–	5.00E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	2.10E+04	No	NA		–	1.00E+03	Yes	Yes	>Screening Level	Yes	>Screening Level
Trichloroethylene	79-01-6	ug/L	1 : 1 : 1	100	1.50E+05	No	NA		–	5.00E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
SVOCs															
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	1.10E+04	No	NA		–	3.50E+01	Yes	Yes	>Screening Level	No	Non-volatile
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	1 : 1 : 1	100	4.50E+03	No	NA		–	3.50E+02	Yes	Yes	>Screening Level	No	Non-volatile
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	4.20E+04	No	NA		–	2.80E+01	Yes	Yes	>Screening Level	No	Non-volatile
4-Nitroaniline	100-01-6	ug/L	1 : 1 : 1	100	1.80E+04	No	NA		–	1.00E+00	Yes	Yes	>Screening Level	No	Non-volatile
Benzo(g,h,i)perylene	191-24-2	ug/L	1 : 1 : 1	100	1.40E+03	No	NA		–	2.10E+02	Yes	Yes	>Screening Level	No	Non-volatile
Dimethyl Phthalate	131-11-3	ug/L	1 : 1 : 1	100	4.20E+03	No	NA		–	3.60E+05	No	No	</=Screening Level	No	Non-volatile
Phenol	108-95-2	ug/L	1 : 1 : 1	100	1.10E+06	No	NA		–	1.00E+02	Yes	Yes	>Screening Level	No	Non-volatile
Pesticide															
4,4'-DDT	50-29-3	ug/L	1 : 1 : 1	100	2.10E+02	No	NA		–	6.00E+00	Yes	Yes	>Screening Level	No	Non-volatile
beta-BHC	319-85-7	ug/L	1 : 1 : 1	100	2.00E+02	No	NA		–	2.00E-01	Yes	Yes	>Screening Level	No	Non-volatile
Dieldrin	60-57-1	ug/L	1 : 1 : 1	100	1.90E+02	No	NA		–	9.00E+00	Yes	Yes	>Screening Level	No	Non-volatile
Endosulfan II	33213-65-9	ug/L	1 : 1 : 1	100	3.10E+01	No	NA		–	4.20E+01	No	No	</=Screening Level	No	Non-volatile
gamma-BHC (Lindane)	58-89-9	ug/L	1 : 1 : 1	100	2.80E+01	No	NA		–	2.00E-01	Yes	Yes	>Screening Level	No	Non-volatile
Heptachlor	76-44-8	ug/L	1 : 1 : 1	100	2.10E+02	No	NA		–	4.00E-01	Yes	Yes	>Screening Level	No	Non-volatile
Herbicide															
2,4-D	94-75-7	ug/L	1 : 1 : 1	100	3.80E+03	No	NA		–	7.00E+01	Yes	Yes	>Screening Level	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
PCBs															
Total PCBs	1336-36-3	ug/L	1 : 1 : 1	100	3.98E+03	No	NA		–	5.00E-01	Yes	Yes	>Screening Level	No	Non-volatile
Dioxin															
2,3,7,8-TCDD-TEQ	1746-01-6	ug/L	1 : 1 : 1	100	3.14E-03	No	NA		–	3.00E-05	Yes	Yes	>Screening Level	No	Non-volatile
Metals															
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	1.50E+04	No	NA		–	3.60E+04	No	No	</=Screening Level	No	Non-volatile
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	2.10E+01	No	NA		–	5.00E+01	No	No	</=Screening Level	No	Non-volatile
Barium	7440-39-3	ug/L	1 : 1 : 1	100	1.40E+02	No	NA		–	2.00E+03	No	No	</=Screening Level	No	Non-volatile
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	3.10E+01	No	NA		–	4.00E+00	Yes	Yes	>Screening Level	No	Non-volatile
Cadmium	7440-43-9	ug/L	1 : 1 : 1	100	3.20E+00	No	NA		–	5.00E+00	No	No	</=Screening Level	No	Non-volatile
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.70E+06	Yes	NA		–	NA	–	No	EN	No	Non-volatile
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	6.00E+02	No	NA		–	1.00E+02	Yes	Yes	>Screening Level	No	Non-volatile
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	2.60E+03	No	NA		–	1.00E+03	Yes	Yes	>Screening Level	No	Non-volatile
Copper	7440-50-8	ug/L	1 : 1 : 1	100	2.60E+01	No	NA		–	6.50E+02	No	No	</=Screening Level	No	Non-volatile
Iron	7439-89-6	ug/L	1 : 1 : 1	100	3.70E+05	Yes	NA		–	5.00E+03	Yes	No	EN	No	Non-volatile
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	2.20E+05	Yes	NA		–	NA	–	No	EN	No	Non-volatile
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	2.50E+05	No	NA		–	1.50E+02	Yes	Yes	>Screening Level	No	Non-volatile
Mercury	7439-97-6	ug/L	1 : 1 : 1	100	1.30E+01	No	NA		–	2.00E+00	Yes	Yes	>Screening Level	No	Non-volatile
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.80E+03	No	NA		–	1.00E+02	Yes	Yes	>Screening Level	No	Non-volatile
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	4.20E+05	Yes	NA		–	NA	–	No	EN	No	Non-volatile
Silver	7440-22-4	ug/L	1 : 1 : 1	100	8.80E+00	No	NA		–	5.00E+01	No	No	</=Screening Level	No	Non-volatile
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	3.00E+06	Yes	NA		–	NA	–	No	EN	No	Non-volatile
Thallium	7440-28-0	ug/L	1 : 1 : 1	100	1.20E+02	No	NA		–	2.00E+00	Yes	Yes	>Screening Level	No	Non-volatile
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	3.60E+02	No	NA		–	4.90E+01	Yes	Yes	>Screening Level	No	Non-volatile
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	9.90E+04	No	NA		–	5.00E+03	Yes	Yes	>Screening Level	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
Mid Groundwater - O - AA-O-3-28															
VOCs															
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	4.80E-01	No	NA	OS - UAA-2/OS-2-30	–	1.00E+02	No	No	Not Shallow/Leachate	No	<=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	1.00E+00	No	NA	OS - UAA-2/OS-2-30	–	NA	–	No	Not Shallow/Leachate	No	No Dose-Response Valu
Metals															
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	1.80E+02	No	NA	OS - UAA-2/OS-2-30	–	3.60E+04	No	No	Not Shallow/Leachate	No	Non-volatile
Barium	7440-39-3	ug/L	1 : 1 : 1	100	1.90E+02	No	NA	OS - UAA-2/OS-2-30	–	2.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.40E+05	Yes	NA	OS - UAA-2/OS-2-30	–	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	9.40E-01	No	NA	OS - UAA-2/OS-2-30	–	1.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Iron	7439-89-6	ug/L	1 : 1 : 1	100	2.00E+03	Yes	NA	OS - UAA-2/OS-2-30	–	5.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Iron, Ferrous (2+)	C-FE+2	ug/L	1 : 1 : 1	100	8.40E+02	Yes	NA	OS - UAA-2/OS-2-30	–	5.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	3.80E+04	Yes	NA	OS - UAA-2/OS-2-30	–	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	5.30E+01	No	NA	OS - UAA-2/OS-2-30	–	1.50E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.50E+01	No	NA	OS - UAA-2/OS-2-30	–	1.00E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	5.60E+03	Yes	NA	OS - UAA-2/OS-2-30	–	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	5.80E+04	Yes	NA	OS - UAA-2/OS-2-30	–	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.90E+00	No	NA	OS - UAA-2/OS-2-30	–	4.90E+01	No	No	Not Shallow/Leachate	No	Non-volatile
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	8.90E+00	No	NA	OS - UAA-2/OS-2-30	–	5.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC In Shallow Groundwater? (g)	Reason	COPC In Shallow and Mid Groundwater? (h)	Reason
Mid Groundwater - P - AA-P-1-24															
VOCs															
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	6.25E+00	No	NA	OS - UAA-1/OS-1-20	–	1.90E+03	No	No	Not Shallow/Leachate	No	</=Screening Level
Acetone	67-64-1	ug/L	1 : 1 : 1	100	3.40E+01	No	NA	OS - UAA-1/OS-1-20	–	7.00E+02	No	No	Not Shallow/Leachate	No	</=Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	3.30E-01	No	NA	OS - UAA-1/OS-1-20	–	1.50E+00	No	No	Not Shallow/Leachate	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	3.45E-01	No	9.20E-01	OS - UAA-1/OS-1-20	No	NA	–	No	Not Shallow/Leachate	No	</=BKG
Herbicide															
2,4,5-T	93-76-5	ug/L	1 : 1 : 1	100	2.20E-01	No	NA	OS - UAA-1/OS-1-20	–	3.60E+02	No	No	Not Shallow/Leachate	No	Non-volatile
2,4-D	94-75-7	ug/L	1 : 1 : 1	100	5.25E-01	No	NA	OS - UAA-1/OS-1-20	–	7.00E+01	No	No	Not Shallow/Leachate	No	Non-volatile
Pentachlorophenol	87-86-5	ug/L	1 : 1 : 1	100	2.10E-01	No	NA	OS - UAA-1/OS-1-20	–	1.00E+00	No	No	Not Shallow/Leachate	No	Non-volatile
PCBs															
Total PCBs	1336-36-3	ug/L	1 : 1 : 1	100	1.45E-01	No	NA	OS - UAA-1/OS-1-20	–	5.00E-01	No	No	Not Shallow/Leachate	No	Non-volatile
Metals															
Barium	7440-39-3	ug/L	1 : 1 : 1	100	1.20E+02	No	6.00E+02	OS - UAA-1/OS-1-20	No	2.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.30E+05	Yes	3.60E+05	OS - UAA-1/OS-1-20	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Copper	7440-50-8	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-1/OS-1-20	–	6.50E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Iron	7439-89-6	ug/L	1 : 1 : 1	100	2.10E+03	Yes	9.40E+03	OS - UAA-1/OS-1-20	No	5.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	3.15E+04	Yes	8.60E+04	OS - UAA-1/OS-1-20	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	3.00E+01	No	3.40E+03	OS - UAA-1/OS-1-20	No	1.50E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	8.85E+00	No	4.20E+01	OS - UAA-1/OS-1-20	No	1.00E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	4.70E+03	Yes	1.72E+04	OS - UAA-1/OS-1-20	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	1.75E+04	Yes	9.60E+04	OS - UAA-1/OS-1-20	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.70E+00	No	NA	OS - UAA-1/OS-1-20	–	4.90E+01	No	No	Not Shallow/Leachate	No	Non-volatile
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	3.20E+00	No	4.40E+01	OS - UAA-1/OS-1-20	No	5.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
Mid Groundwater - P - AA-P-2-24															
VOCs															
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	3.40E-01	No	NA	OS - UAA-1/OS-1-20	–	1.50E+00	No	No	Not Shallow/Leachate	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	8.60E-01	No	NA	OS - UAA-1/OS-1-20	–	7.00E+02	No	No	Not Shallow/Leachate	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	9.30E-01	No	9.20E-01	OS - UAA-1/OS-1-20	Yes	NA	–	No	Not Shallow/Leachate	No	No Dose-Response Valu
Metals															
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	1.30E+02	No	2.80E+03	OS - UAA-1/OS-1-20	No	3.60E+04	No	No	Not Shallow/Leachate	No	Non-volatile
Barium	7440-39-3	ug/L	1 : 1 : 1	100	6.20E+01	No	6.00E+02	OS - UAA-1/OS-1-20	No	2.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	7.90E+04	Yes	3.80E+05	OS - UAA-1/OS-1-20	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	1.00E+00	No	9.20E+00	OS - UAA-1/OS-1-20	No	1.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Copper	7440-50-8	ug/L	1 : 1 : 1	100	1.90E+00	No	NA	OS - UAA-1/OS-1-20	–	6.50E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Iron	7439-89-6	ug/L	1 : 1 : 1	100	1.30E+03	Yes	9.40E+03	OS - UAA-1/OS-1-20	No	5.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	1.40E+04	Yes	8.60E+04	OS - UAA-1/OS-1-20	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	3.20E+01	No	3.40E+03	OS - UAA-1/OS-1-20	No	1.50E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	3.00E+03	Yes	1.72E+04	OS - UAA-1/OS-1-20	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	9.70E+03	Yes	9.60E+04	OS - UAA-1/OS-1-20	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	3.60E+00	No	4.40E+01	OS - UAA-1/OS-1-20	No	5.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
Mid Groundwater - P - AA-P-3-32															
VOCs															
Methane	74-82-8	ug/L	1 : 1 : 1	100	4.70E+01	No	NA	OS - UAA-1/OS-1-30	--	NA	--	No	Not Shallow/Leachate	No	No Dose-Response Val
Metals															
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	7.90E+04	No	NA	OS - UAA-1/OS-1-30	--	3.60E+04	Yes	No	Not Shallow/Leachate	No	Non-volatile
Antimony	7440-36-0	ug/L	1 : 1 : 1	100	8.60E+00	No	NA	OS - UAA-1/OS-1-30	--	6.00E+00	Yes	No	Not Shallow/Leachate	No	Non-volatile
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	7.70E+01	No	NA	OS - UAA-1/OS-1-30	--	5.00E+01	Yes	No	Not Shallow/Leachate	No	Non-volatile
Barium	7440-39-3	ug/L	1 : 1 : 1	100	1.90E+03	No	NA	OS - UAA-1/OS-1-30	--	2.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	4.80E+00	No	NA	OS - UAA-1/OS-1-30	--	4.00E+00	Yes	No	Not Shallow/Leachate	No	Non-volatile
Cadmium	7440-43-9	ug/L	1 : 1 : 1	100	1.50E+00	No	NA	OS - UAA-1/OS-1-30	--	5.00E+00	No	No	Not Shallow/Leachate	No	Non-volatile
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	5.70E+05	Yes	NA	OS - UAA-1/OS-1-30	--	NA	--	No	Not Shallow/Leachate	No	Non-volatile
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	5.70E+02	No	NA	OS - UAA-1/OS-1-30	--	1.00E+02	Yes	No	Not Shallow/Leachate	No	Non-volatile
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	8.10E+01	No	NA	OS - UAA-1/OS-1-30	--	1.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Copper	7440-50-8	ug/L	1 : 1 : 1	100	9.50E+01	No	NA	OS - UAA-1/OS-1-30	--	6.50E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Iron	7439-89-6	ug/L	1 : 1 : 1	100	2.10E+05	Yes	NA	OS - UAA-1/OS-1-30	--	5.00E+03	Yes	No	Not Shallow/Leachate	No	Non-volatile
Lead	7439-92-1	ug/L	1 : 1 : 1	100	9.00E+01	No	NA	OS - UAA-1/OS-1-30	--	7.50E+00	Yes	No	Not Shallow/Leachate	No	Non-volatile
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	1.50E+05	Yes	NA	OS - UAA-1/OS-1-30	--	NA	--	No	Not Shallow/Leachate	No	Non-volatile
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	8.60E+03	No	NA	OS - UAA-1/OS-1-30	--	1.50E+02	Yes	No	Not Shallow/Leachate	No	Non-volatile
Mercury	7439-97-6	ug/L	1 : 1 : 1	100	1.60E-01	No	NA	OS - UAA-1/OS-1-30	--	2.00E+00	No	No	Not Shallow/Leachate	No	Non-volatile
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	3.40E+02	No	NA	OS - UAA-1/OS-1-30	--	1.00E+02	Yes	No	Not Shallow/Leachate	No	Non-volatile
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	2.60E+04	Yes	NA	OS - UAA-1/OS-1-30	--	NA	--	No	Not Shallow/Leachate	No	Non-volatile
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	1.50E+04	Yes	NA	OS - UAA-1/OS-1-30	--	NA	--	No	Not Shallow/Leachate	No	Non-volatile
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	2.40E+02	No	NA	OS - UAA-1/OS-1-30	--	4.90E+01	Yes	No	Not Shallow/Leachate	No	Non-volatile
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	4.20E+02	No	NA	OS - UAA-1/OS-1-30	--	5.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
Mid Groundwater - Q - AA-Q-6-24															
VOCs															
Acetone	67-64-1	ug/L	1 : 1 : 1	100	5.70E+01	No	NA	OS - UAA-4/OS-4-20	–	7.00E+02	No	No	Not Shallow/Leachate	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	4.75E+02	No	NA	OS - UAA-4/OS-4-20	–	5.00E+00	Yes	No	Not Shallow/Leachate	Yes	>Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	6.10E+01	No	NA	OS - UAA-4/OS-4-20	–	7.00E+02	No	No	Not Shallow/Leachate	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	2.80E+02	No	3.99E+01	OS - UAA-4/OS-4-20	Yes	NA	–	No	Not Shallow/Leachate	No	No Dose-Response Valu
Toluene	108-88-3	ug/L	1 : 1 : 1	100	6.80E+01	No	NA	OS - UAA-4/OS-4-20	–	1.00E+03	No	No	Not Shallow/Leachate	No	</=Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	2.55E+01	No	NA	OS - UAA-4/OS-4-20	–	1.00E+04	No	No	Not Shallow/Leachate	No	</=Screening Level
SVOCs															
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	7.20E+00	No	NA	OS - UAA-4/OS-4-20	–	2.10E+01	No	No	Not Shallow/Leachate	No	Non-volatile
2-Methylnaphthalene	91-57-6	ug/L	1 : 1 : 1	100	4.55E+02	No	NA	OS - UAA-4/OS-4-20	–	1.40E+02	Yes	No	Not Shallow/Leachate	No	Non-volatile
Acenaphthene	83-32-9	ug/L	1 : 1 : 1	100	7.40E+00	No	NA	OS - UAA-4/OS-4-20	–	4.20E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Anthracene	120-12-7	ug/L	1 : 1 : 1	100	6.50E-01	No	NA	OS - UAA-4/OS-4-20	–	2.10E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Benzo(a)pyrene	50-32-8	ug/L	1 : 1 : 1	100	1.40E+00	No	NA	OS - UAA-4/OS-4-20	–	2.00E-01	Yes	No	Not Shallow/Leachate	No	Non-volatile
Benzo(k)fluoranthene	207-08-9	ug/L	1 : 1 : 1	100	1.40E+00	No	NA	OS - UAA-4/OS-4-20	–	1.70E-01	Yes	No	Not Shallow/Leachate	No	Non-volatile
Carbazole	86-74-8	ug/L	1 : 1 : 1	100	1.15E+01	No	NA	OS - UAA-4/OS-4-20	–	3.40E+00	Yes	No	Not Shallow/Leachate	No	Non-volatile
Dibenzo(a,h)anthracene	53-70-3	ug/L	1 : 1 : 1	100	3.20E+00	No	NA	OS - UAA-4/OS-4-20	–	3.00E-01	Yes	No	Not Shallow/Leachate	No	Non-volatile
Dibenzofuran	132-64-9	ug/L	1 : 1 : 1	100	4.90E+00	No	NA	OS - UAA-4/OS-4-20	–	2.40E+01	No	No	Not Shallow/Leachate	No	Non-volatile
Fluorene	86-73-7	ug/L	1 : 1 : 1	100	9.10E+00	No	NA	OS - UAA-4/OS-4-20	–	2.80E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	9.55E+01	No	NA	OS - UAA-4/OS-4-20	–	1.40E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Phenanthrene	85-01-8	ug/L	1 : 1 : 1	100	1.70E+01	No	NA	OS - UAA-4/OS-4-20	–	2.10E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Phenol	108-95-2	ug/L	1 : 1 : 1	100	9.00E+00	No	NA	OS - UAA-4/OS-4-20	–	1.00E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Pesticide															
4,4'-DDD	72-54-8	ug/L	1 : 1 : 1	100	2.80E-02	No	NA	OS - UAA-4/OS-4-20	–	1.40E+01	No	No	Not Shallow/Leachate	No	Non-volatile
4,4'-DDE	72-55-9	ug/L	1 : 1 : 1	100	1.90E-02	No	NA	OS - UAA-4/OS-4-20	–	1.00E+01	No	No	Not Shallow/Leachate	No	Non-volatile
4,4'-DDT	50-29-3	ug/L	1 : 1 : 1	100	2.95E-02	No	NA	OS - UAA-4/OS-4-20	–	6.00E+00	No	No	Not Shallow/Leachate	No	Non-volatile
alpha-BHC	319-84-6	ug/L	1 : 1 : 1	100	6.00E-01	No	NA	OS - UAA-4/OS-4-20	–	1.10E-01	Yes	No	Not Shallow/Leachate	No	Non-volatile
alpha-Chlordane	5103-71-9	ug/L	1 : 1 : 1	100	1.65E-02	No	NA	OS - UAA-4/OS-4-20	–	2.00E+00	No	No	Not Shallow/Leachate	No	Non-volatile
Endosulfan I	959-98-8	ug/L	1 : 1 : 1	100	8.10E-03	No	NA	OS - UAA-4/OS-4-20	–	4.20E+01	No	No	Not Shallow/Leachate	No	Non-volatile
Endrin Ketone	53494-70-5	ug/L	1 : 1 : 1	100	1.40E-02	No	NA	OS - UAA-4/OS-4-20	–	2.00E+00	No	No	Not Shallow/Leachate	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
gamma-BHC (Lindane)	58-89-9	ug/L	1 : 1 : 1	100	1.80E-01	No	NA	OS - UAA-4/OS-4-20	--	2.00E-01	No	No	Not Shallow/Leachate	No	Non-volatile
gamma-Chlordane	5103-74-2	ug/L	1 : 1 : 1	100	2.55E-02	No	NA	OS - UAA-4/OS-4-20	--	2.00E+00	No	No	Not Shallow/Leachate	No	Non-volatile
Heptachlor	76-44-8	ug/L	1 : 1 : 1	100	1.80E-01	No	NA	OS - UAA-4/OS-4-20	--	4.00E-01	No	No	Not Shallow/Leachate	No	Non-volatile
Heptachlor Epoxide	1024-57-3	ug/L	1 : 1 : 1	100	2.00E-02	No	NA	OS - UAA-4/OS-4-20	--	2.00E-01	No	No	Not Shallow/Leachate	No	Non-volatile
Herbicide															
MCPA	94-74-6	ug/L	1 : 1 : 1	100	1.90E+01	No	NA	OS - UAA-4/OS-4-20	--	1.80E+01	Yes	No	Not Shallow/Leachate	No	Non-volatile
Metals															
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	4.20E+02	No	6.90E+02	OS - UAA-4/OS-4-20	No	3.60E+04	No	No	Not Shallow/Leachate	No	Non-volatile
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	7.90E+01	No	NA	OS - UAA-4/OS-4-20	--	5.00E+01	Yes	No	Not Shallow/Leachate	No	Non-volatile
Barium	7440-39-3	ug/L	1 : 1 : 1	100	2.85E+02	No	3.60E+02	OS - UAA-4/OS-4-20	No	2.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.30E+05	Yes	2.60E+05	OS - UAA-4/OS-4-20	No	NA	--	No	Not Shallow/Leachate	No	Non-volatile
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	1.60E+00	No	4.80E+00	OS - UAA-4/OS-4-20	No	1.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Iron	7439-89-6	ug/L	1 : 1 : 1	100	4.00E+04	Yes	4.60E+03	OS - UAA-4/OS-4-20	Yes	5.00E+03	Yes	No	Not Shallow/Leachate	No	Non-volatile
Lead	7439-92-1	ug/L	1 : 1 : 1	100	5.10E+00	No	NA	OS - UAA-4/OS-4-20	--	7.50E+00	No	No	Not Shallow/Leachate	No	Non-volatile
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	3.00E+04	Yes	5.80E+04	OS - UAA-4/OS-4-20	No	NA	--	No	Not Shallow/Leachate	No	Non-volatile
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	5.00E+03	No	2.80E+03	OS - UAA-4/OS-4-20	Yes	1.50E+02	Yes	No	Not Shallow/Leachate	No	Non-volatile
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	4.10E+00	No	2.50E+01	OS - UAA-4/OS-4-20	No	1.00E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	8.15E+03	Yes	1.16E+04	OS - UAA-4/OS-4-20	No	NA	--	No	Not Shallow/Leachate	No	Non-volatile
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	2.25E+04	Yes	2.30E+04	OS - UAA-4/OS-4-20	No	NA	--	No	Not Shallow/Leachate	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
Mid Groundwater - Q - AA-Q-7-24															
VOCs															
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	2.20E-01	No	NA	OS - UAA-4/OS-4-20	–	7.00E+01	No	No	Not Shallow/Leachate	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	7.10E-01	No	NA	OS - UAA-4/OS-4-20	–	5.00E+00	No	No	Not Shallow/Leachate	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	9.50E+01	No	NA	OS - UAA-4/OS-4-20	–	1.00E+02	No	No	Not Shallow/Leachate	No	</=Screening Level
Chloroethane	75-00-3	ug/L	1 : 1 : 1	100	8.70E-01	No	NA	OS - UAA-4/OS-4-20	–	4.60E+00	No	No	Not Shallow/Leachate	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	8.80E-01	No	NA	OS - UAA-4/OS-4-20	–	7.00E+02	No	No	Not Shallow/Leachate	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	7.80E+01	No	3.99E+01	OS - UAA-4/OS-4-20	Yes	NA	–	No	Not Shallow/Leachate	No	No Dose-Response Val
SVOCs															
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	3.60E+00	No	NA	OS - UAA-4/OS-4-20	–	3.50E+01	No	No	Not Shallow/Leachate	No	Non-volatile
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	2.20E+00	No	NA	OS - UAA-4/OS-4-20	–	1.40E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Metals															
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	1.90E+03	No	6.90E+02	OS - UAA-4/OS-4-20	Yes	3.60E+04	No	No	Not Shallow/Leachate	No	Non-volatile
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	1.10E+02	No	NA	OS - UAA-4/OS-4-20	–	5.00E+01	Yes	No	Not Shallow/Leachate	No	Non-volatile
Barium	7440-39-3	ug/L	1 : 1 : 1	100	4.70E+02	No	3.60E+02	OS - UAA-4/OS-4-20	Yes	2.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.80E+05	Yes	2.60E+05	OS - UAA-4/OS-4-20	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	8.00E+00	No	NA	OS - UAA-4/OS-4-20	–	1.00E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	1.10E+01	No	4.80E+00	OS - UAA-4/OS-4-20	Yes	1.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Iron	7439-89-6	ug/L	1 : 1 : 1	100	2.50E+04	Yes	4.60E+03	OS - UAA-4/OS-4-20	Yes	5.00E+03	Yes	No	Not Shallow/Leachate	No	Non-volatile
Lead	7439-92-1	ug/L	1 : 1 : 1	100	3.20E+00	No	NA	OS - UAA-4/OS-4-20	–	7.50E+00	No	No	Not Shallow/Leachate	No	Non-volatile
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	3.50E+04	Yes	5.80E+04	OS - UAA-4/OS-4-20	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	2.30E+03	No	2.80E+03	OS - UAA-4/OS-4-20	No	1.50E+02	Yes	No	Not Shallow/Leachate	No	Non-volatile
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.40E+01	No	2.50E+01	OS - UAA-4/OS-4-20	No	1.00E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	8.30E+03	Yes	1.16E+04	OS - UAA-4/OS-4-20	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	2.90E+04	Yes	2.30E+04	OS - UAA-4/OS-4-20	Yes	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	4.60E+00	No	3.20E+00	OS - UAA-4/OS-4-20	Yes	4.90E+01	No	No	Not Shallow/Leachate	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
Mid Groundwater - Q - AA-Q-8-24															
VOCs															
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	2.80E+00	No	NA	OS - UAA-4/OS-4-20	–	7.00E+01	No	No	Not Shallow/Leachate	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	4.80E+00	No	3.99E+01	OS - UAA-4/OS-4-20	No	NA	–	No	Not Shallow/Leachate	No	</=BKG
Trichloroethylene	79-01-6	ug/L	1 : 1 : 1	100	1.70E-01	No	NA	OS - UAA-4/OS-4-20	–	5.00E+00	No	No	Not Shallow/Leachate	No	</=Screening Level
Pesticide															
beta-BHC	319-85-7	ug/L	1 : 1 : 1	100	1.20E-02	No	NA	OS - UAA-4/OS-4-20	–	2.00E-01	No	No	Not Shallow/Leachate	No	Non-volatile
Endosulfan I	959-98-8	ug/L	1 : 1 : 1	100	4.90E-03	No	NA	OS - UAA-4/OS-4-20	–	4.20E+01	No	No	Not Shallow/Leachate	No	Non-volatile
Methoxychlor	72-43-5	ug/L	1 : 1 : 1	100	1.00E-02	No	NA	OS - UAA-4/OS-4-20	–	4.00E+01	No	No	Not Shallow/Leachate	No	Non-volatile
Metals															
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	2.00E+02	No	6.90E+02	OS - UAA-4/OS-4-20	No	3.60E+04	No	No	Not Shallow/Leachate	No	Non-volatile
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	3.50E+01	No	NA	OS - UAA-4/OS-4-20	–	5.00E+01	No	No	Not Shallow/Leachate	No	Non-volatile
Barium	7440-39-3	ug/L	1 : 1 : 1	100	4.10E+02	No	3.60E+02	OS - UAA-4/OS-4-20	Yes	2.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.30E+05	Yes	2.60E+05	OS - UAA-4/OS-4-20	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	1.60E+00	No	4.80E+00	OS - UAA-4/OS-4-20	No	1.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Copper	7440-50-8	ug/L	1 : 1 : 1	100	1.00E+01	No	NA	OS - UAA-4/OS-4-20	–	6.50E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Iron	7439-89-6	ug/L	1 : 1 : 1	100	2.40E+04	Yes	4.60E+03	OS - UAA-4/OS-4-20	Yes	5.00E+03	Yes	No	Not Shallow/Leachate	No	Non-volatile
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	2.20E+04	Yes	5.80E+04	OS - UAA-4/OS-4-20	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	1.40E+03	No	2.80E+03	OS - UAA-4/OS-4-20	No	1.50E+02	Yes	No	Not Shallow/Leachate	No	Non-volatile
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.10E+04	Yes	1.16E+04	OS - UAA-4/OS-4-20	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	2.20E+04	Yes	2.30E+04	OS - UAA-4/OS-4-20	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	1.00E+01	No	NA	OS - UAA-4/OS-4-20	–	5.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
Mid Groundwater - R - AA-R-1-28															
VOCs															
Benzene	71-43-2	ug/L	1 : 1 : 1	100	5.10E+02	No	NA	OS - UAA-2/OS-2-30	–	5.00E+00	Yes	No	Not Shallow/Leachate	Yes	>Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	2.00E+03	No	NA	OS - UAA-2/OS-2-30	–	1.00E+02	Yes	No	Not Shallow/Leachate	Yes	>Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	3.20E+00	No	NA	OS - UAA-2/OS-2-30	–	1.50E+00	Yes	No	Not Shallow/Leachate	Yes	>Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	4.60E+01	No	NA	OS - UAA-2/OS-2-30	–	7.00E+02	No	No	Not Shallow/Leachate	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	1.00E+03	No	NA	OS - UAA-2/OS-2-30	–	NA	–	No	Not Shallow/Leachate	No	No Dose-Response Val
Toluene	108-88-3	ug/L	1 : 1 : 1	100	1.10E+01	No	NA	OS - UAA-2/OS-2-30	–	1.00E+03	No	No	Not Shallow/Leachate	No	</=Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	1.20E+01	No	NA	OS - UAA-2/OS-2-30	–	1.00E+04	No	No	Not Shallow/Leachate	No	</=Screening Level
SVOCs															
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	1.10E+04	No	NA	OS - UAA-2/OS-2-30	–	2.80E+01	Yes	No	Not Shallow/Leachate	No	Non-volatile
bis(2-Chloroethyl)ether	111-44-4	ug/L	1 : 1 : 1	100	3.60E+02	No	NA	OS - UAA-2/OS-2-30	–	1.00E+01	Yes	No	Not Shallow/Leachate	No	Non-volatile
Pesticide															
Aldrin	309-00-2	ug/L	1 : 1 : 1	100	3.30E-02	No	NA	OS - UAA-2/OS-2-30	–	1.40E+01	No	No	Not Shallow/Leachate	No	Non-volatile
alpha-Chlordane	5103-71-9	ug/L	1 : 1 : 1	100	1.40E-01	No	NA	OS - UAA-2/OS-2-30	–	2.00E+00	No	No	Not Shallow/Leachate	No	Non-volatile
beta-BHC	319-85-7	ug/L	1 : 1 : 1	100	1.60E-01	No	NA	OS - UAA-2/OS-2-30	–	2.00E-01	No	No	Not Shallow/Leachate	No	Non-volatile
delta-BHC	319-86-8	ug/L	1 : 1 : 1	100	1.50E-02	No	NA	OS - UAA-2/OS-2-30	–	2.00E-01	No	No	Not Shallow/Leachate	No	Non-volatile
Endosulfan I	959-98-8	ug/L	1 : 1 : 1	100	3.10E-02	No	NA	OS - UAA-2/OS-2-30	–	4.20E+01	No	No	Not Shallow/Leachate	No	Non-volatile
Endosulfan Sulfate	1031-07-8	ug/L	1 : 1 : 1	100	1.80E-02	No	NA	OS - UAA-2/OS-2-30	–	4.20E+01	No	No	Not Shallow/Leachate	No	Non-volatile
Endrin Aldehyde	7421-93-4	ug/L	1 : 1 : 1	100	4.20E-02	No	NA	OS - UAA-2/OS-2-30	–	2.00E+00	No	No	Not Shallow/Leachate	No	Non-volatile
gamma-BHC (Lindane)	58-89-9	ug/L	1 : 1 : 1	100	4.30E-02	No	NA	OS - UAA-2/OS-2-30	–	2.00E-01	No	No	Not Shallow/Leachate	No	Non-volatile
gamma-Chlordane	5103-74-2	ug/L	1 : 1 : 1	100	1.50E-01	No	NA	OS - UAA-2/OS-2-30	–	2.00E+00	No	No	Not Shallow/Leachate	No	Non-volatile
Herbicide															
MCPA	94-74-6	ug/L	1 : 1 : 1	100	1.10E+02	No	NA	OS - UAA-2/OS-2-30	–	1.80E+01	Yes	No	Not Shallow/Leachate	No	Non-volatile
Dioxin															
2,3,7,8-TCDD-TEQ	1746-01-6	ug/L	1 : 1 : 1	100	1.90E-08	No	NA	OS - UAA-2/OS-2-30	–	3.00E-05	No	No	Not Shallow/Leachate	No	Non-volatile
Metals															
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	5.30E+04	No	NA	OS - UAA-2/OS-2-30	–	3.60E+04	Yes	No	Not Shallow/Leachate	No	Non-volatile
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	2.90E+01	No	NA	OS - UAA-2/OS-2-30	–	5.00E+01	No	No	Not Shallow/Leachate	No	Non-volatile
Barium	7440-39-3	ug/L	1 : 1 : 1	100	1.20E+03	No	NA	OS - UAA-2/OS-2-30	–	2.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	2.30E+00	No	NA	OS - UAA-2/OS-2-30	--	4.00E+00	No	No	Not Shallow/Leachate	No	Non-volatile
Cadmium	7440-43-9	ug/L	1 : 1 : 1	100	1.40E+00	No	NA	OS - UAA-2/OS-2-30	--	5.00E+00	No	No	Not Shallow/Leachate	No	Non-volatile
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	4.50E+05	Yes	NA	OS - UAA-2/OS-2-30	--	NA	--	No	Not Shallow/Leachate	No	Non-volatile
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	8.40E+01	No	NA	OS - UAA-2/OS-2-30	--	1.00E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	2.10E+01	No	NA	OS - UAA-2/OS-2-30	--	1.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Copper	7440-50-8	ug/L	1 : 1 : 1	100	6.70E+01	No	NA	OS - UAA-2/OS-2-30	--	6.50E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Iron	7439-89-6	ug/L	1 : 1 : 1	100	6.60E+04	Yes	NA	OS - UAA-2/OS-2-30	--	5.00E+03	Yes	No	Not Shallow/Leachate	No	Non-volatile
Lead	7439-92-1	ug/L	1 : 1 : 1	100	3.40E+01	No	NA	OS - UAA-2/OS-2-30	--	7.50E+00	Yes	No	Not Shallow/Leachate	No	Non-volatile
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	7.80E+04	Yes	NA	OS - UAA-2/OS-2-30	--	NA	--	No	Not Shallow/Leachate	No	Non-volatile
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	7.20E+03	No	NA	OS - UAA-2/OS-2-30	--	1.50E+02	Yes	No	Not Shallow/Leachate	No	Non-volatile
Mercury	7439-97-6	ug/L	1 : 1 : 1	100	1.10E-01	No	NA	OS - UAA-2/OS-2-30	--	2.00E+00	No	No	Not Shallow/Leachate	No	Non-volatile
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	5.70E+01	No	NA	OS - UAA-2/OS-2-30	--	1.00E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	3.80E+04	Yes	NA	OS - UAA-2/OS-2-30	--	NA	--	No	Not Shallow/Leachate	No	Non-volatile
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	5.90E+05	Yes	NA	OS - UAA-2/OS-2-30	--	NA	--	No	Not Shallow/Leachate	No	Non-volatile
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.40E+02	No	NA	OS - UAA-2/OS-2-30	--	4.90E+01	Yes	No	Not Shallow/Leachate	No	Non-volatile
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	1.90E+02	No	NA	OS - UAA-2/OS-2-30	--	5.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
Mid Groundwater - S - AA-S-1-24															
VOCs															
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	3.00E-01	No	NA	OS - UAA-3/OS-3-24	–	7.00E+01	No	No	Not Shallow/Leachate	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	3.00E+00	No	NA	OS - UAA-3/OS-3-24	–	5.00E+00	No	No	Not Shallow/Leachate	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	1.70E+01	No	4.40E+00	OS - UAA-3/OS-3-24	Yes	NA	–	No	Not Shallow/Leachate	No	No Dose-Response Valu
Toluene	108-88-3	ug/L	1 : 1 : 1	100	4.10E-01	No	NA	OS - UAA-3/OS-3-24	–	1.00E+03	No	No	Not Shallow/Leachate	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	3.20E-01	No	NA	OS - UAA-3/OS-3-24	–	2.00E+00	No	No	Not Shallow/Leachate	No	</=Screening Level
SVOCs															
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	1.50E+00	No	NA	OS - UAA-3/OS-3-24	–	6.00E+02	No	No	Not Shallow/Leachate	No	Non-volatile
bis(2-Chloroethyl)ether	111-44-4	ug/L	1 : 1 : 1	100	1.80E+00	No	NA	OS - UAA-3/OS-3-24	–	1.00E+01	No	No	Not Shallow/Leachate	No	Non-volatile
Pesticide															
alpha-Chlordane	5103-71-9	ug/L	1 : 1 : 1	100	2.40E-02	No	NA	OS - UAA-3/OS-3-24	–	2.00E+00	No	No	Not Shallow/Leachate	No	Non-volatile
delta-BHC	319-86-8	ug/L	1 : 1 : 1	100	1.60E-02	No	NA	OS - UAA-3/OS-3-24	–	2.00E-01	No	No	Not Shallow/Leachate	No	Non-volatile
Endrin Aldehyde	7421-93-4	ug/L	1 : 1 : 1	100	3.20E-02	No	NA	OS - UAA-3/OS-3-24	–	2.00E+00	No	No	Not Shallow/Leachate	No	Non-volatile
Dioxin															
2,3,7,8-TCDD-TEQ	1746-01-6	ug/L	1 : 1 : 1	100	6.40E-09	No	NA	OS - UAA-3/OS-3-24	–	3.00E-05	No	No	Not Shallow/Leachate	No	Non-volatile
Metals															
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	1.30E+02	No	NA	OS - UAA-3/OS-3-24	–	3.60E+04	No	No	Not Shallow/Leachate	No	Non-volatile
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	4.10E+00	No	NA	OS - UAA-3/OS-3-24	–	5.00E+01	No	No	Not Shallow/Leachate	No	Non-volatile
Barium	7440-39-3	ug/L	1 : 1 : 1	100	2.90E+02	No	3.60E+02	OS - UAA-3/OS-3-24	No	2.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.30E+05	Yes	2.00E+05	OS - UAA-3/OS-3-24	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	3.10E+00	No	NA	OS - UAA-3/OS-3-24	–	1.00E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	8.30E+00	No	1.78E+00	OS - UAA-3/OS-3-24	Yes	1.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Iron	7439-89-6	ug/L	1 : 1 : 1	100	1.00E+04	Yes	4.00E+03	OS - UAA-3/OS-3-24	Yes	5.00E+03	Yes	No	Not Shallow/Leachate	No	Non-volatile
Lead	7439-92-1	ug/L	1 : 1 : 1	100	2.60E+00	No	NA	OS - UAA-3/OS-3-24	–	7.50E+00	No	No	Not Shallow/Leachate	No	Non-volatile
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	9.80E+03	Yes	6.40E+04	OS - UAA-3/OS-3-24	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	2.80E+03	No	1.84E+02	OS - UAA-3/OS-3-24	Yes	1.50E+02	Yes	No	Not Shallow/Leachate	No	Non-volatile
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	3.10E+01	No	1.44E+01	OS - UAA-3/OS-3-24	Yes	1.00E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	7.50E+03	Yes	8.80E+04	OS - UAA-3/OS-3-24	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	1.60E+05	Yes	4.80E+03	OS - UAA-3/OS-3-24	Yes	NA	–	No	Not Shallow/Leachate	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	2.50E+01	No	1.88E+01	OS - UAA-3/OS-3-24	Yes	5.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
Mid Groundwater - S - AA-S-2-28															
VOCs															
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	6.80E+00	No	NA	OS - UAA-3/OS-3-24	–	1.90E+03	No	No	Not Shallow/Leachate	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	1 : 1 : 1	100	1.80E+00	No	NA	OS - UAA-3/OS-3-24	–	1.60E+02	No	No	Not Shallow/Leachate	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	2.80E-01	No	4.40E+00	OS - UAA-3/OS-3-24	No	NA	–	No	Not Shallow/Leachate	No	</=BKG
Methyl N-Butyl Ketone	591-78-6	ug/L	1 : 1 : 1	100	2.00E+00	No	NA	OS - UAA-3/OS-3-24	–	1.60E+02	No	No	Not Shallow/Leachate	No	</=Screening Level
Metals															
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	5.50E+03	No	NA	OS - UAA-3/OS-3-24	–	3.60E+04	No	No	Not Shallow/Leachate	No	Non-volatile
Barium	7440-39-3	ug/L	1 : 1 : 1	100	2.80E+02	No	3.60E+02	OS - UAA-3/OS-3-24	No	2.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	2.10E-01	No	NA	OS - UAA-3/OS-3-24	–	4.00E+00	No	No	Not Shallow/Leachate	No	Non-volatile
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.20E+05	Yes	2.00E+05	OS - UAA-3/OS-3-24	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	1.10E+01	No	NA	OS - UAA-3/OS-3-24	–	1.00E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	5.40E+00	No	1.78E+00	OS - UAA-3/OS-3-24	Yes	1.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Iron	7439-89-6	ug/L	1 : 1 : 1	100	1.00E+04	Yes	4.00E+03	OS - UAA-3/OS-3-24	Yes	5.00E+03	Yes	No	Not Shallow/Leachate	No	Non-volatile
Lead	7439-92-1	ug/L	1 : 1 : 1	100	3.90E+00	No	NA	OS - UAA-3/OS-3-24	–	7.50E+00	No	No	Not Shallow/Leachate	No	Non-volatile
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	1.90E+04	Yes	6.40E+04	OS - UAA-3/OS-3-24	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	2.00E+02	No	1.84E+02	OS - UAA-3/OS-3-24	Yes	1.50E+02	Yes	No	Not Shallow/Leachate	No	Non-volatile
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.60E+01	No	1.44E+01	OS - UAA-3/OS-3-24	Yes	1.00E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.10E+04	Yes	8.80E+04	OS - UAA-3/OS-3-24	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Selenium	7782-49-2	ug/L	1 : 1 : 1	100	9.20E+00	No	1.84E+01	OS - UAA-3/OS-3-24	No	5.00E+01	No	No	Not Shallow/Leachate	No	Non-volatile
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	2.60E+03	Yes	4.80E+03	OS - UAA-3/OS-3-24	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.20E+01	No	4.00E+00	OS - UAA-3/OS-3-24	Yes	4.90E+01	No	No	Not Shallow/Leachate	No	Non-volatile
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	3.00E+01	No	1.88E+01	OS - UAA-3/OS-3-24	Yes	5.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
Mid Groundwater - S - AA-S-3-24															
VOCs															
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	6.80E+00	No	NA	OS - UAA-3/OS-3-24	–	1.90E+03	No	No	Not Shallow/Leachate	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	1 : 1 : 1	100	1.30E+00	No	NA	OS - UAA-3/OS-3-24	–	1.60E+02	No	No	Not Shallow/Leachate	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	1.80E-01	No	NA	OS - UAA-3/OS-3-24	–	5.00E+00	No	No	Not Shallow/Leachate	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.80E+00	No	NA	OS - UAA-3/OS-3-24	–	1.00E+02	No	No	Not Shallow/Leachate	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	2.70E-01	No	4.40E+00	OS - UAA-3/OS-3-24	No	NA	–	No	Not Shallow/Leachate	No	</=BKG
Methyl N-Butyl Ketone	591-78-6	ug/L	1 : 1 : 1	100	1.90E+00	No	NA	OS - UAA-3/OS-3-24	–	1.60E+02	No	No	Not Shallow/Leachate	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	4.10E-01	No	NA	OS - UAA-3/OS-3-24	–	1.00E+03	No	No	Not Shallow/Leachate	No	</=Screening Level
PCBs															
Total PCBs	1336-36-3	ug/L	1 : 1 : 1	100	1.00E-01	No	NA	OS - UAA-3/OS-3-24	–	5.00E-01	No	No	Not Shallow/Leachate	No	Non-volatile
Metals															
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	3.80E+00	No	NA	OS - UAA-3/OS-3-24	–	5.00E+01	No	No	Not Shallow/Leachate	No	Non-volatile
Barium	7440-39-3	ug/L	1 : 1 : 1	100	1.20E+02	No	3.60E+02	OS - UAA-3/OS-3-24	No	2.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.70E+05	Yes	2.00E+05	OS - UAA-3/OS-3-24	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Iron	7439-89-6	ug/L	1 : 1 : 1	100	2.10E+03	Yes	4.00E+03	OS - UAA-3/OS-3-24	No	5.00E+03	No	No	Not Shallow/Leachate	No	Non-volatile
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	2.60E+04	Yes	6.40E+04	OS - UAA-3/OS-3-24	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	3.00E+01	No	1.84E+02	OS - UAA-3/OS-3-24	No	1.50E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	7.60E+00	No	1.44E+01	OS - UAA-3/OS-3-24	No	1.00E+02	No	No	Not Shallow/Leachate	No	Non-volatile
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	5.20E+03	Yes	8.80E+04	OS - UAA-3/OS-3-24	No	NA	–	No	Not Shallow/Leachate	No	Non-volatile
Selenium	7782-49-2	ug/L	1 : 1 : 1	100	5.10E+00	No	1.84E+01	OS - UAA-3/OS-3-24	No	5.00E+01	No	No	Not Shallow/Leachate	No	Non-volatile
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	1.20E+04	Yes	4.80E+03	OS - UAA-3/OS-3-24	Yes	NA	–	No	Not Shallow/Leachate	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
Shallow Groundwater - O - AA-O-1-16															
VOCs															
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	2.40E+00	No	NA	OS - UAA-2/OS-2-20	–	7.00E+02	No	No	</=Screening Level	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	3.00E+00	No	NA	OS - UAA-2/OS-2-20	–	7.00E+01	No	No	</=Screening Level	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	1.00E-01	No	NA	OS - UAA-2/OS-2-20	–	5.00E+00	No	No	</=Screening Level	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	7.80E+00	No	NA	OS - UAA-2/OS-2-20	–	1.00E+02	No	No	</=Screening Level	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	7.00E+00	No	2.20E+01	OS - UAA-2/OS-2-20	No	NA	–	No	</=BKG	No	</=BKG
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	3.50E-01	No	NA	OS - UAA-2/OS-2-20	–	2.00E+00	No	No	</=Screening Level	No	</=Screening Level
SVOCs															
Benzo(a)pyrene	50-32-8	ug/L	1 : 1 : 1	100	1.60E+00	No	NA	OS - UAA-2/OS-2-20	–	2.00E-01	Yes	Yes	>Screening Level	No	Non-volatile
Benzo(b)fluoranthene	205-99-2	ug/L	1 : 1 : 1	100	1.10E+00	No	NA	OS - UAA-2/OS-2-20	–	1.80E-01	Yes	Yes	>Screening Level	No	Non-volatile
Benzo(g,h,i)perylene	191-24-2	ug/L	1 : 1 : 1	100	2.80E+00	No	NA	OS - UAA-2/OS-2-20	–	2.10E+02	No	No	</=Screening Level	No	Non-volatile
Benzo(k)fluoranthene	207-08-9	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-2/OS-2-20	–	1.70E-01	Yes	Yes	>Screening Level	No	Non-volatile
Dibenzo(a,h)anthracene	53-70-3	ug/L	1 : 1 : 1	100	2.70E+00	No	NA	OS - UAA-2/OS-2-20	–	3.00E-01	Yes	Yes	>Screening Level	No	Non-volatile
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	1 : 1 : 1	100	3.00E+00	No	NA	OS - UAA-2/OS-2-20	–	4.30E-01	Yes	Yes	>Screening Level	No	Non-volatile
Pesticide															
alpha-BHC	319-84-6	ug/L	1 : 1 : 1	100	8.30E-02	No	NA	OS - UAA-2/OS-2-20	–	1.10E-01	No	No	</=Screening Level	No	Non-volatile
beta-BHC	319-85-7	ug/L	1 : 1 : 1	100	2.70E-02	No	NA	OS - UAA-2/OS-2-20	–	2.00E-01	No	No	</=Screening Level	No	Non-volatile
delta-BHC	319-86-8	ug/L	1 : 1 : 1	100	1.70E-02	No	NA	OS - UAA-2/OS-2-20	–	2.00E-01	No	No	</=Screening Level	No	Non-volatile
Dieldrin	60-57-1	ug/L	1 : 1 : 1	100	6.50E-03	No	NA	OS - UAA-2/OS-2-20	–	9.00E+00	No	No	</=Screening Level	No	Non-volatile
gamma-BHC (Lindane)	58-89-9	ug/L	1 : 1 : 1	100	6.70E-03	No	NA	OS - UAA-2/OS-2-20	–	2.00E-01	No	No	</=Screening Level	No	Non-volatile
Herbicide															
2,4,5-T	93-76-5	ug/L	1 : 1 : 1	100	7.20E-01	No	NA	OS - UAA-2/OS-2-20	–	3.60E+02	No	No	</=Screening Level	No	Non-volatile
Metals															
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	5.00E+03	No	1.62E+01	OS - UAA-2/OS-2-20	Yes	3.60E+04	No	No	</=Screening Level	No	Non-volatile
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	7.00E+01	No	NA	OS - UAA-2/OS-2-20	–	5.00E+01	Yes	Yes	>Screening Level	No	Non-volatile
Barium	7440-39-3	ug/L	1 : 1 : 1	100	3.00E+02	No	2.40E+02	OS - UAA-2/OS-2-20	Yes	2.00E+03	No	No	</=Screening Level	No	Non-volatile
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	3.00E+05	Yes	2.60E+05	OS - UAA-2/OS-2-20	Yes	NA	–	No	EN	No	Non-volatile
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	8.90E+00	No	NA	OS - UAA-2/OS-2-20	–	1.00E+02	No	No	</=Screening Level	No	Non-volatile
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	2.10E+01	No	NA	OS - UAA-2/OS-2-20	–	1.00E+03	No	No	</=Screening Level	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
Copper	7440-50-8	ug/L	1 : 1 : 1	100	4.30E+00	No	NA	OS - UAA-2/OS-2-20	--	6.50E+02	No	No	</=Screening Level	No	Non-volatile
Iron	7439-89-6	ug/L	1 : 1 : 1	100	4.10E+04	Yes	3.80E+03	OS - UAA-2/OS-2-20	Yes	5.00E+03	Yes	No	EN	No	Non-volatile
Iron, Ferrous (2+)	C-FE+2	ug/L	1 : 1 : 1	100	1.10E+04	Yes	1.02E+02	OS - UAA-2/OS-2-20	Yes	5.00E+03	Yes	No	EN	No	Non-volatile
Lead	7439-92-1	ug/L	1 : 1 : 1	100	1.90E+01	No	NA	OS - UAA-2/OS-2-20	--	7.50E+00	Yes	Yes	>Screening Level	No	Non-volatile
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	5.70E+04	Yes	7.20E+04	OS - UAA-2/OS-2-20	No	NA	--	No	EN	No	Non-volatile
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	4.10E+03	No	3.60E+01	OS - UAA-2/OS-2-20	Yes	1.50E+02	Yes	Yes	>Screening Level	No	Non-volatile
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	4.80E+01	No	1.44E+01	OS - UAA-2/OS-2-20	Yes	1.00E+02	No	No	</=Screening Level	No	Non-volatile
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	6.00E+03	Yes	2.60E+03	OS - UAA-2/OS-2-20	Yes	NA	--	No	EN	No	Non-volatile
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	1.30E+05	Yes	1.62E+04	OS - UAA-2/OS-2-20	Yes	NA	--	No	EN	No	Non-volatile
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.60E+01	No	NA	OS - UAA-2/OS-2-20	--	4.90E+01	No	No	</=Screening Level	No	Non-volatile
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	6.50E+01	No	5.20E+01	OS - UAA-2/OS-2-20	Yes	5.00E+03	No	No	</=Screening Level	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason
Shallow Groundwater - O - AA-O-2-13															
VOCs															
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	1.90E-01	No	NA	OS - UAA-2/OS-2-20	–	7.00E+02	No	No	</=Screening Level	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	3.30E+00	No	2.20E+01	OS - UAA-2/OS-2-20	No	NA	–	No	</=BKG	No	</=BKG
Toluene	108-88-3	ug/L	1 : 1 : 1	100	3.60E-01	No	NA	OS - UAA-2/OS-2-20	–	1.00E+03	No	No	</=Screening Level	No	</=Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	4.90E-01	No	NA	OS - UAA-2/OS-2-20	–	1.00E+04	No	No	</=Screening Level	No	</=Screening Level
Metals															
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	1.90E+03	No	1.62E+01	OS - UAA-2/OS-2-20	Yes	3.60E+04	No	No	</=Screening Level	No	Non-volatile
Barium	7440-39-3	ug/L	1 : 1 : 1	100	1.30E+02	No	2.40E+02	OS - UAA-2/OS-2-20	No	2.00E+03	No	No	</=Screening Level	No	Non-volatile
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.90E+05	Yes	2.60E+05	OS - UAA-2/OS-2-20	No	NA	–	No	EN	No	Non-volatile
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	8.90E+00	No	NA	OS - UAA-2/OS-2-20	–	1.00E+02	No	No	</=Screening Level	No	Non-volatile
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	1.30E+00	No	NA	OS - UAA-2/OS-2-20	–	1.00E+03	No	No	</=Screening Level	No	Non-volatile
Iron	7439-89-6	ug/L	1 : 1 : 1	100	2.90E+03	Yes	3.80E+03	OS - UAA-2/OS-2-20	No	5.00E+03	No	No	EN	No	Non-volatile
Iron, Ferrous (2+)	C-FE+2	ug/L	1 : 1 : 1	100	1.40E+01	Yes	1.02E+02	OS - UAA-2/OS-2-20	No	5.00E+03	No	No	EN	No	Non-volatile
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	2.90E+04	Yes	7.20E+04	OS - UAA-2/OS-2-20	No	NA	–	No	EN	No	Non-volatile
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	6.50E+01	No	3.60E+01	OS - UAA-2/OS-2-20	Yes	1.50E+02	No	No	</=Screening Level	No	Non-volatile
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.20E+01	No	1.44E+01	OS - UAA-2/OS-2-20	No	1.00E+02	No	No	</=Screening Level	No	Non-volatile
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	7.00E+03	Yes	2.60E+03	OS - UAA-2/OS-2-20	Yes	NA	–	No	EN	No	Non-volatile
Selenium	7782-49-2	ug/L	1 : 1 : 1	100	2.20E+01	No	NA	OS - UAA-2/OS-2-20	–	5.00E+01	No	No	</=Screening Level	No	Non-volatile
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	2.90E+05	Yes	1.62E+04	OS - UAA-2/OS-2-20	Yes	NA	–	No	EN	No	Non-volatile
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	6.30E+00	No	NA	OS - UAA-2/OS-2-20	–	4.90E+01	No	No	</=Screening Level	No	Non-volatile
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	1.10E+01	No	5.20E+01	OS - UAA-2/OS-2-20	No	5.00E+03	No	No	</=Screening Level	No	Non-volatile

TABLE B-2
MID/SHALLOW GROUNDWATER AND LEACHATE SCREEN
HUMAN HEALTH RISK ASSESSMEN
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location (e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC in Shallow Groundwater? (g)	Reason	COPC in Shallow and Mid Groundwater? (h)	Reason

Notes:

BKG - Background concentration.
CAS - Chemical Abstracts Service.
COPC - Constituent of potential concern.
EN - Essential nutrient.
FOD - Frequency of detection.
NA - Not available.
PCB - Polychlorinated Biphenyl.
SVOC - Semivolatile organic compound.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalent Concentration.
USEPA - United States Environmental Protection Agency.
VOC - Volatile Organic Compound.
-- Not applicable.
(a) Frequency of Detection = Number of detected samples: Number of samples used to calculate statistics: Total number of samples.
(b) Percent of detected samples out of samples used to calculate statistics. Constituents detected in fewer than 5 percent of samples, provided 20 samples are available, will not be included as COPCs.
(c) The detected concentration for a constituent for each medium/area combination after sample/duplicate pairs were averaged and high non-detected values were excluded.
(d) Equal to two times the average concentration for the constituent in mid and shallow groundwater in an off-site sampling location.
(e) Off-site locations used to calculate background concentration for mid/shallow groundwater locations.
(f) Groundwater screening levels were used according to the following hierarchy:
Illinois Groundwater Quality Standards for Class I: Potable Resource Groundwater. 35 Ill. Adm. Code 620.410. February 2, 2002.
USEPA, 2002. 2002 Edition of the Drinking Water Standards and Health Advisories. Office of Water. EPA 822-R-02-038. Maximum Contaminant Levels. Summer 2002.
IEPA, 2002. Tiered Approach to Corrective Action Objectives. Appendix B, Table E. Tier 1 Groundwater Remediation Objectives for the Groundwater Component of the Groundwater Ingestion Route. Class I values. February 5, 2002.
USEPA, 2002. Region 9 Preliminary Remediation Goal (PRG) Table. October 1, 2002. Value for Tap Water.
(g) A constituent is identified as a COPC in shallow groundwater/leachate if it is detected in shallow groundwater and/or leachate in greater than 5 percent of samples, provided 20 samples are available, if it is not an essential nutrient, if the maximum detected concentration is greater than the background concentration and if the maximum detected concentration is greater than the groundwater screening level.
(h) A constituent is identified as a COPC in mid/shallow groundwater/leachate if it is a VOC, is detected in shallow or mid groundwater and/or leachate in greater than 5 percent of samples, provided 20 samples are available, if it is not an essential nutrient, if the detected concentration is greater than the background concentration and if the detected concentration is greater than the groundwater screening level.

TABLE B-3
SURFACE SOIL SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Site O													
VOCs													
2-Butanone (MEK)	78-93-3	mg/kg	1 : 1 : 2	100	1.70E-02	1.70E-02	No	NA	--	2.70E+03	No	No	</=Screening Level
Acetone	67-64-1	mg/kg	1 : 2 : 2	50	8.95E-02	1.30E-01	No	NA	--	6.00E+02	No	No	</=Screening Level
Ethylbenzene	100-41-4	mg/kg	1 : 1 : 2	100	3.80E-04	3.80E-04	No	1.07E-03	No	2.00E+01	No	No	</=Screening Level
Tetrachloroethene	127-18-4	mg/kg	1 : 1 : 2	100	1.00E-03	1.00E-03	No	8.80E-04	Yes	3.40E+00	No	No	</=Screening Level
Trichloroethylene	79-01-6	mg/kg	1 : 1 : 2	100	5.80E-04	5.80E-04	No	NA	--	1.10E-01	No	No	</=Screening Level
Xylenes, Total	1330-20-7	mg/kg	1 : 1 : 2	100	1.30E-03	1.30E-03	No	1.61E-03	No	9.00E+01	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	mg/kg	1 : 1 : 2	100	3.60E-02	3.60E-02	No	NA	--	4.10E+02	No	No	</=Screening Level
2,4-Dichlorophenol	120-83-2	mg/kg	1 : 1 : 2	100	3.50E-02	3.50E-02	No	NA	--	1.80E+02	No	No	</=Screening Level
2-Nitroaniline	88-74-4	mg/kg	1 : 1 : 2	100	5.30E-02	5.30E-02	No	NA	--	1.80E+00	No	No	</=Screening Level
Benzo(a)anthracene	56-55-3	mg/kg	1 : 1 : 2	100	6.30E-02	6.30E-02	No	2.76E-01	No	2.10E+00	No	No	</=Screening Level
Benzo(b)fluoranthene	205-99-2	mg/kg	2 : 2 : 2	100	1.19E-01	1.40E-01	No	3.66E-01	No	2.10E+00	No	No	</=Screening Level
Benzo(g,h,i)perylene	191-24-2	mg/kg	1 : 2 : 2	50	6.95E-01	1.20E+00	No	4.14E-01	Yes	2.90E+03	No	No	</=Screening Level
Benzo(k)fluoranthene	207-08-9	mg/kg	1 : 1 : 2	100	1.00E-01	1.00E-01	No	2.83E-01	No	2.10E+01	No	No	</=Screening Level
Benzyl Butyl Phthalate	85-68-7	mg/kg	1 : 1 : 2	100	3.50E-02	3.50E-02	No	NA	--	1.20E+04	No	No	</=Screening Level
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	2 : 2 : 2	100	4.25E-02	6.20E-02	No	3.53E-01	No	1.20E+02	No	No	</=Screening Level
Chrysene	218-01-9	mg/kg	1 : 2 : 2	50	1.95E-01	2.00E-01	No	2.99E-01	No	2.10E+02	No	No	</=Screening Level
Di-n-butylphthalate	84-74-2	mg/kg	1 : 1 : 2	100	4.90E-02	4.90E-02	No	NA	--	6.20E+03	No	No	</=Screening Level
Dibenzo(a,h)anthracene	53-70-3	mg/kg	2 : 2 : 2	100	1.04E-01	1.30E-01	No	1.20E-01	Yes	2.10E-01	No	No	</=Screening Level
Hexachlorobenzene	118-74-1	mg/kg	1 : 1 : 2	100	1.10E-01	1.10E-01	No	NA	--	1.10E+00	No	No	</=Screening Level
Phenanthrene	85-01-8	mg/kg	1 : 1 : 2	100	4.00E-02	4.00E-02	No	3.31E-01	No	2.40E+04	No	No	</=Screening Level
Pyrene	129-00-0	mg/kg	1 : 1 : 2	100	1.30E-01	1.30E-01	No	4.30E-01	No	2.90E+03	No	No	</=Screening Level
Pesticide													
4,4'-DDD	72-54-8	mg/kg	1 : 2 : 2	50	4.39E-02	8.60E-02	No	7.04E-03	Yes	1.00E+01	No	No	</=Screening Level
4,4'-DDT	50-29-3	mg/kg	2 : 2 : 2	100	1.15E-01	2.30E-01	No	4.04E-02	Yes	7.00E+00	No	No	</=Screening Level
alpha-Chlordane	5103-71-9	mg/kg	1 : 2 : 2	50	5.17E-03	9.40E-03	No	6.15E-03	Yes	6.50E+00	No	No	</=Screening Level
Dieldrin	60-57-1	mg/kg	1 : 2 : 2	50	9.10E-02	1.80E-01	No	1.13E-02	Yes	1.10E-01	Yes	Yes	>Screening Level
Endosulfan II	33213-65-9	mg/kg	1 : 2 : 2	50	6.45E-03	1.10E-02	No	1.16E-03	Yes	3.70E+02	No	No	</=Screening Level

TABLE B-3
SURFACE SOIL SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Endosulfan Sulfate	1031-07-8	mg/kg	1 : 2 : 2	50	8.60E-02	1.70E-01	No	1.81E-03	Yes	3.70E+02	No	No	</=Screening Level
Endrin Aldehyde	7421-93-4	mg/kg	1 : 1 : 2	100	3.40E-03	3.40E-03	No	5.88E-03	No	1.80E+01	No	No	</=Screening Level
Endrin Ketone	53494-70-5	mg/kg	1 : 2 : 2	50	1.19E-02	2.20E-02	No	NA	--	1.80E+01	No	No	</=Screening Level
gamma-BHC (Lindane)	58-89-9	mg/kg	1 : 2 : 2	50	1.65E-02	3.20E-02	No	NA	--	1.70E+00	No	No	</=Screening Level
gamma-Chlordane	5103-74-2	mg/kg	1 : 2 : 2	50	9.05E-02	1.80E-01	No	4.11E-02	Yes	6.50E+00	No	No	</=Screening Level
Heptachlor	76-44-8	mg/kg	1 : 2 : 2	50	8.47E-03	1.60E-02	No	3.12E-02	No	3.80E-01	No	No	</=Screening Level
Methoxychlor	72-43-5	mg/kg	1 : 1 : 2	100	8.80E-04	8.80E-04	No	5.60E-03	No	3.10E+02	No	No	</=Screening Level
Herbicide													
2,4,5-T	93-76-5	mg/kg	1 : 2 : 2	50	1.09E-02	1.70E-02	No	NA	--	6.20E+02	No	No	</=Screening Level
2,4-D	94-75-7	mg/kg	2 : 2 : 2	100	4.05E-02	5.00E-02	No	9.96E-03	Yes	7.70E+02	No	No	</=Screening Level
2,4-DB	94-82-6	mg/kg	2 : 2 : 2	100	1.60E-02	1.90E-02	No	NA	--	4.90E+02	No	No	</=Screening Level
Dicamba	1918-00-9	mg/kg	1 : 1 : 2	100	2.40E-03	2.40E-03	No	NA	--	1.80E+03	No	No	</=Screening Level
Dichlorprop	120-36-5	mg/kg	2 : 2 : 2	100	2.35E-02	3.70E-02	No	1.14E-01	No	4.92E+02	No	No	</=Screening Level
MCPP	93-65-2	mg/kg	2 : 2 : 2	100	1.15E+01	1.20E+01	No	3.60E+00	Yes	6.20E+01	No	No	</=Screening Level
Pentachlorophenol	87-86-5	mg/kg	2 : 2 : 2	100	1.01E+00	2.00E+00	No	4.57E-03	Yes	9.00E+00	No	No	</=Screening Level
PCBs													
Total PCBs	1336-36-3	mg/kg	2 : 2 : 2	100	5.40E+00	1.08E+01	No	1.65E-01	Yes	1.00E+00	Yes	Yes	>Screening Level
Dioxin													
2,3,7,8-TCDD-TEQ	1746-01-6	mg/kg	2 : 2 : 2	100	2.99E-03	5.93E-03	No	1.69E-05	Yes	1.00E-03	Yes	Yes	>Screening Level
Metals													
Aluminum	7429-90-5	mg/kg	2 : 2 : 2	100	8.00E+03	8.60E+03	No	1.38E+04	No	9.20E+04	No	No	</=Screening Level
Antimony	7440-36-0	mg/kg	1 : 1 : 2	100	7.40E-01	7.40E-01	No	2.33E+00	No	4.10E+01	No	No	</=Screening Level
Arsenic	7440-38-2	mg/kg	2 : 2 : 2	100	5.70E+00	6.30E+00	No	1.24E+01	No	1.60E+00	Yes	No	</=BKG
Barium	7440-39-3	mg/kg	2 : 2 : 2	100	1.15E+02	1.30E+02	No	3.07E+02	No	6.70E+03	No	No	</=Screening Level
Beryllium	7440-41-7	mg/kg	2 : 2 : 2	100	5.00E-01	5.40E-01	No	9.02E-01	No	1.90E+02	No	No	</=Screening Level
Cadmium	7440-43-9	mg/kg	2 : 2 : 2	100	1.12E+00	1.70E+00	No	3.34E+00	No	4.50E+01	No	No	</=Screening Level
Calcium	7440-70-2	mg/kg	2 : 2 : 2	100	1.63E+04	2.60E+04	Yes	9.74E+04	No	NA	--	No	EN
Chromium	7440-47-3	mg/kg	2 : 2 : 2	100	1.40E+01	1.50E+01	No	2.21E+01	No	4.50E+02	No	No	</=Screening Level
Cobalt	7440-48-4	mg/kg	2 : 2 : 2	100	6.75E+00	6.90E+00	No	9.40E+00	No	1.30E+03	No	No	</=Screening Level
Copper	7440-50-8	mg/kg	2 : 2 : 2	100	3.30E+01	4.00E+01	No	8.58E+01	No	4.10E+03	No	No	</=Screening Level

TABLE B-3
SURFACE SOIL SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Iron	7439-89-6	mg/kg	2 : 2 : 2	100	1.55E+04	1.60E+04	Yes	2.33E+04	No	3.10E+04	No	No	EN
Lead	7439-92-1	mg/kg	2 : 2 : 2	100	1.70E+01	2.00E+01	No	1.30E+02	No	7.50E+02	No	No	</=Screening Level
Magnesium	7439-95-4	mg/kg	2 : 2 : 2	100	6.30E+03	8.50E+03	Yes	1.23E+04	No	NA	--	No	EN
Manganese	7439-96-5	mg/kg	2 : 2 : 2	100	5.10E+02	5.30E+02	No	5.52E+02	No	1.90E+03	No	No	</=Screening Level
Mercury	7439-97-6	mg/kg	2 : 2 : 2	100	1.47E+00	2.90E+00	No	1.34E-01	Yes	3.10E+01	No	No	</=Screening Level
Nickel	7440-02-0	mg/kg	2 : 2 : 2	100	1.80E+01	1.80E+01	No	3.30E+01	No	2.00E+03	No	No	</=Screening Level
Potassium	7440-09-7	mg/kg	2 : 2 : 2	100	8.55E+02	8.60E+02	Yes	3.01E+03	No	NA	--	No	EN
Sodium	7440-23-5	mg/kg	2 : 2 : 2	100	9.75E+01	1.10E+02	Yes	1.58E+02	No	NA	--	No	EN
Vanadium	7440-62-2	mg/kg	2 : 2 : 2	100	2.80E+01	2.80E+01	No	3.89E+01	No	7.20E+02	No	No	</=Screening Level
Zinc	7440-66-6	mg/kg	2 : 2 : 2	100	1.00E+02	1.30E+02	No	3.90E+02	No	3.10E+04	No	No	</=Screening Level

TABLE B-3
SURFACE SOIL SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Site O North													
VOCs													
Benzene	71-43-2	mg/kg	1 : 1 : 1	100	5.90E-01	5.90E-01	No	NA	--	1.30E+00	No	No	</=Screening Level
Carbon Disulfide	75-15-0	mg/kg	1 : 1 : 1	100	1.80E-01	1.80E-01	No	NA	--	1.20E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	mg/kg	1 : 1 : 1	100	5.80E+00	5.80E+00	No	NA	--	5.30E+01	No	No	</=Screening Level
Ethylbenzene	100-41-4	mg/kg	1 : 1 : 1	100	4.40E+00	4.40E+00	No	1.07E-03	Yes	2.00E+01	No	No	</=Screening Level
Tetrachloroethene	127-18-4	mg/kg	1 : 1 : 1	100	2.90E-01	2.90E-01	No	8.80E-04	Yes	3.40E+00	No	No	</=Screening Level
Toluene	108-88-3	mg/kg	1 : 1 : 1	100	8.70E-01	8.70E-01	No	NA	--	2.20E+02	No	No	</=Screening Level
Xylenes, Total	1330-20-7	mg/kg	1 : 1 : 1	100	8.00E+01	8.00E+01	No	1.61E-03	Yes	9.00E+01	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	mg/kg	1 : 1 : 1	100	3.40E-02	3.40E-02	No	NA	--	4.10E+02	No	No	</=Screening Level
Benzo(a)anthracene	56-55-3	mg/kg	1 : 1 : 1	100	4.10E-02	4.10E-02	No	2.76E-01	No	2.10E+00	No	No	</=Screening Level
Benzo(a)pyrene	50-32-8	mg/kg	1 : 1 : 1	100	4.60E-02	4.60E-02	No	4.06E-01	No	2.10E-01	No	No	</=Screening Level
Benzo(b)fluoranthene	205-99-2	mg/kg	1 : 1 : 1	100	8.90E-02	8.90E-02	No	3.66E-01	No	2.10E+00	No	No	</=Screening Level
Benzo(g,h,i)perylene	191-24-2	mg/kg	1 : 1 : 1	100	4.20E-02	4.20E-02	No	4.14E-01	No	2.90E+03	No	No	</=Screening Level
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	1 : 1 : 1	100	2.50E-01	2.50E-01	No	3.53E-01	No	1.20E+02	No	No	</=Screening Level
Chrysene	218-01-9	mg/kg	1 : 1 : 1	100	6.70E-02	6.70E-02	No	2.99E-01	No	2.10E+02	No	No	</=Screening Level
Fluoranthene	206-44-0	mg/kg	1 : 1 : 1	100	8.20E-02	8.20E-02	No	4.50E-01	No	2.20E+03	No	No	</=Screening Level
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	1 : 1 : 1	100	3.20E-02	3.20E-02	No	NA	--	2.10E+00	No	No	</=Screening Level
Phenanthrene	85-01-8	mg/kg	1 : 1 : 1	100	3.20E-02	3.20E-02	No	3.31E-01	No	2.40E+04	No	No	</=Screening Level
Pyrene	129-00-0	mg/kg	1 : 1 : 1	100	7.80E-02	7.80E-02	No	4.30E-01	No	2.90E+03	No	No	</=Screening Level
Pesticide													
Dieldrin	60-57-1	mg/kg	1 : 1 : 1	100	1.40E-03	1.40E-03	No	1.13E-02	No	1.10E-01	No	No	</=Screening Level
gamma-Chlordane	5103-74-2	mg/kg	1 : 1 : 1	100	3.30E-04	3.30E-04	No	4.11E-02	No	6.50E+00	No	No	</=Screening Level
Herbicide													
Dichlorprop	120-36-5	mg/kg	1 : 1 : 1	100	1.10E-02	1.10E-02	No	1.14E-01	No	4.92E+02	No	No	</=Screening Level
MCPP	93-65-2	mg/kg	1 : 1 : 1	100	4.30E+01	4.30E+01	No	3.60E+00	Yes	6.20E+01	No	No	</=Screening Level
Pentachlorophenol	87-86-5	mg/kg	1 : 1 : 1	100	6.10E-02	6.10E-02	No	4.57E-03	Yes	9.00E+00	No	No	</=Screening Level
PCBs													
Total PCBs	1336-36-3	mg/kg	1 : 1 : 1	100	7.09E+02	7.09E+02	No	1.85E-01	Yes	1.00E+00	Yes	Yes	>Screening Level

TABLE B-3
SURFACE SOIL SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Dioxin													
2,3,7,8-TCDD-TEQ	1746-01-6	mg/kg	1 : 1 : 1	100	5.08E-02	5.08E-02	No	1.69E-05	Yes	1.00E-03	Yes	Yes	>Screening Level
Metals													
Aluminum	7429-90-5	mg/kg	1 : 1 : 1	100	5.20E+03	5.20E+03	No	1.38E+04	No	9.20E+04	No	No	</=Screening Level
Antimony	7440-36-0	mg/kg	1 : 1 : 1	100	8.10E-01	8.10E-01	No	2.33E+00	No	4.10E+01	No	No	</=Screening Level
Arsenic	7440-38-2	mg/kg	1 : 1 : 1	100	1.10E+01	1.10E+01	No	1.24E+01	No	1.60E+00	Yes	No	</=BKG
Barium	7440-39-3	mg/kg	1 : 1 : 1	100	3.40E+02	3.40E+02	No	3.07E+02	Yes	6.70E+03	No	No	</=Screening Level
Beryllium	7440-41-7	mg/kg	1 : 1 : 1	100	3.90E-01	3.90E-01	No	9.02E-01	No	1.90E+02	No	No	</=Screening Level
Cadmium	7440-43-9	mg/kg	1 : 1 : 1	100	1.70E+01	1.70E+01	No	3.34E+00	Yes	4.50E+01	No	No	</=Screening Level
Calcium	7440-70-2	mg/kg	1 : 1 : 1	100	4.90E+03	4.90E+03	Yes	9.74E+04	No	NA	--	No	EN
Chromium	7440-47-3	mg/kg	1 : 1 : 1	100	1.60E+01	1.60E+01	No	2.21E+01	No	4.50E+02	No	No	</=Screening Level
Cobalt	7440-48-4	mg/kg	1 : 1 : 1	100	5.90E+00	5.90E+00	No	9.40E+00	No	1.30E+03	No	No	</=Screening Level
Copper	7440-50-8	mg/kg	1 : 1 : 1	100	2.70E+02	2.70E+02	No	8.58E+01	Yes	4.10E+03	No	No	</=Screening Level
Iron	7439-89-6	mg/kg	1 : 1 : 1	100	1.10E+04	1.10E+04	Yes	2.33E+04	No	3.10E+04	No	No	EN
Lead	7439-92-1	mg/kg	1 : 1 : 1	100	1.30E+02	1.30E+02	No	1.30E+02	No	7.50E+02	No	No	</=Screening Level
Magnesium	7439-95-4	mg/kg	1 : 1 : 1	100	2.30E+03	2.30E+03	Yes	1.23E+04	No	NA	--	No	EN
Manganese	7439-96-5	mg/kg	1 : 1 : 1	100	4.20E+02	4.20E+02	No	5.52E+02	No	1.90E+03	No	No	</=Screening Level
Mercury	7439-97-6	mg/kg	1 : 1 : 1	100	4.30E+01	4.30E+01	No	1.34E-01	Yes	3.10E+01	Yes	Yes	>Screening Level
Nickel	7440-02-0	mg/kg	1 : 1 : 1	100	2.80E+01	2.80E+01	No	3.30E+01	No	2.00E+03	No	No	</=Screening Level
Potassium	7440-09-7	mg/kg	1 : 1 : 1	100	7.20E+02	7.20E+02	Yes	3.01E+03	No	NA	--	No	EN
Silver	7440-22-4	mg/kg	1 : 1 : 1	100	2.90E+00	2.90E+00	No	9.90E-01	Yes	5.10E+02	No	No	</=Screening Level
Sodium	7440-23-5	mg/kg	1 : 1 : 1	100	9.60E+01	9.60E+01	Yes	1.58E+02	No	NA	--	No	EN
Vanadium	7440-62-2	mg/kg	1 : 1 : 1	100	1.90E+01	1.90E+01	No	3.89E+01	No	7.20E+02	No	No	</=Screening Level
Zinc	7440-66-6	mg/kg	1 : 1 : 1	100	9.40E+02	9.40E+02	No	3.90E+02	Yes	3.10E+04	No	No	</=Screening Level

TABLE B-3
SURFACE SOIL SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Site P													
VOCs													
2-Butanone (MEK)	78-93-3	mg/kg	1 : 1 : 4	100	7.10E-03	7.10E-03	No	NA	--	2.70E+03	No	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	mg/kg	2 : 3 : 4	67	1.87E-02	2.10E-02	No	NA	--	2.80E+02	No	No	</=Screening Level
Benzene	71-43-2	mg/kg	2 : 4 : 4	50	5.37E-03	9.40E-03	No	NA	--	1.30E+00	No	No	</=Screening Level
Carbon Disulfide	75-15-0	mg/kg	2 : 2 : 4	100	1.40E-03	1.40E-03	No	NA	--	1.20E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	mg/kg	1 : 2 : 4	50	3.78E-03	4.00E-03	No	NA	--	5.30E+01	No	No	</=Screening Level
Ethylbenzene	100-41-4	mg/kg	2 : 2 : 4	100	1.33E-03	2.40E-03	No	1.07E-03	Yes	2.00E+01	No	No	</=Screening Level
Methyl N-Butyl Ketone	591-78-6	mg/kg	1 : 1 : 4	100	5.90E-03	5.90E-03	No	NA	--	2.70E+03	No	No	</=Screening Level
Styrene (Monomer)	100-42-5	mg/kg	1 : 1 : 4	100	3.40E-04	3.40E-04	No	4.47E-03	No	1.80E+03	No	No	</=Screening Level
Tetrachloroethene	127-18-4	mg/kg	3 : 4 : 4	75	3.94E-03	6.00E-03	No	8.80E-04	Yes	3.40E+00	No	No	</=Screening Level
Toluene	108-88-3	mg/kg	1 : 4 : 4	25	1.18E-02	3.20E-02	No	NA	--	2.20E+02	No	No	</=Screening Level
Trichloroethylene	79-01-6	mg/kg	2 : 2 : 4	100	1.15E-03	1.50E-03	No	NA	--	1.10E-01	No	No	</=Screening Level
Xylenes, Total	1330-20-7	mg/kg	1 : 1 : 4	100	9.70E-04	9.70E-04	No	1.61E-03	No	9.00E+01	No	No	</=Screening Level
SVOCs													
Acenaphthene	83-32-9	mg/kg	1 : 1 : 4	100	7.50E-02	7.50E-02	No	4.20E-02	Yes	2.90E+03	No	No	</=Screening Level
Anthracene	120-12-7	mg/kg	1 : 3 : 4	33	2.08E-01	2.30E-01	No	1.20E-01	Yes	2.40E+04	No	No	</=Screening Level
Benzo(a)anthracene	56-55-3	mg/kg	2 : 3 : 4	67	3.00E-01	6.80E-01	No	2.76E-01	Yes	2.10E+00	No	No	</=Screening Level
Benzo(a)pyrene	50-32-8	mg/kg	2 : 3 : 4	67	3.01E-01	6.70E-01	No	4.06E-01	Yes	2.10E-01	Yes	Yes	>Screening Level
Benzo(b)fluoranthene	205-99-2	mg/kg	2 : 3 : 4	67	3.01E-01	6.80E-01	No	3.66E-01	Yes	2.10E+00	No	No	</=Screening Level
Benzo(g,h,i)perylene	191-24-2	mg/kg	2 : 3 : 4	67	1.94E-01	3.20E-01	No	4.14E-01	No	2.90E+03	No	No	</=Screening Level
Benzo(k)fluoranthene	207-08-9	mg/kg	2 : 3 : 4	67	2.63E-01	5.70E-01	No	2.63E-01	Yes	2.10E+01	No	No	</=Screening Level
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	3 : 3 : 4	100	4.03E-02	5.00E-02	No	3.53E-01	No	1.20E+02	No	No	</=Screening Level
Carbazole	86-74-8	mg/kg	1 : 1 : 4	100	7.30E-02	7.30E-02	No	NA	--	8.60E+01	No	No	</=Screening Level
Chrysene	218-01-9	mg/kg	2 : 3 : 4	67	3.31E-01	7.70E-01	No	2.99E-01	Yes	2.10E+02	No	No	</=Screening Level
Dibenzo(a,h)anthracene	53-70-3	mg/kg	2 : 2 : 4	100	8.45E-02	1.10E-01	No	1.20E-01	No	2.10E-01	No	No	</=Screening Level
Dibenzofuran	132-64-9	mg/kg	1 : 1 : 4	100	2.90E-02	2.90E-02	No	NA	--	3.10E+02	No	No	</=Screening Level
Fluoranthene	206-44-0	mg/kg	2 : 4 : 4	50	7.08E-01	1.70E+00	No	4.50E-01	Yes	2.20E+03	No	No	</=Screening Level
Fluorene	86-73-7	mg/kg	1 : 1 : 4	100	6.50E-02	6.50E-02	No	NA	--	2.60E+03	No	No	</=Screening Level
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	2 : 3 : 4	67	1.65E-01	2.40E-01	No	NA	--	2.10E+00	No	No	</=Screening Level

TABLE B-3
SURFACE SOIL SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Phenanthrene	85-01-8	mg/kg	2 : 4 : 4	50	5.53E-01	1.10E+00	No	3.31E-01	Yes	2.40E+04	No	No	</=Screening Level
Phenol	108-95-2	mg/kg	1 : 3 : 4	33	2.52E-01	3.60E-01	No	NA	--	3.70E+04	No	No	</=Screening Level
Pyrene	129-00-0	mg/kg	2 : 4 : 4	50	7.35E-01	1.80E+00	No	4.30E-01	Yes	2.90E+03	No	No	</=Screening Level
Pesticide													
4,4'-DDE	72-55-9	mg/kg	1 : 1 : 4	100	3.00E-03	3.00E-03	No	1.23E-02	No	7.00E+00	No	No	</=Screening Level
4,4'-DDT	50-29-3	mg/kg	4 : 4 : 4	100	2.84E-01	1.10E+00	No	4.04E-02	Yes	7.00E+00	No	No	</=Screening Level
alpha-Chlordane	5103-71-9	mg/kg	2 : 3 : 4	67	9.67E-03	1.80E-02	No	6.15E-03	Yes	6.50E+00	No	No	</=Screening Level
Dieldrin	60-57-1	mg/kg	2 : 2 : 4	100	2.50E-03	3.00E-03	No	1.13E-02	No	1.10E-01	No	No	</=Screening Level
Endosulfan Sulfate	1031-07-8	mg/kg	1 : 3 : 4	33	1.88E-02	3.60E-02	No	1.81E-03	Yes	3.70E+02	No	No	</=Screening Level
Endrin Aldehyde	7421-93-4	mg/kg	1 : 4 : 4	25	5.03E-02	1.40E-01	No	5.88E-03	Yes	1.80E+01	No	No	</=Screening Level
Endrin Ketone	53494-70-5	mg/kg	1 : 2 : 4	50	5.88E-03	9.70E-03	No	NA	--	1.80E+01	No	No	</=Screening Level
Heptachlor Epoxide	1024-57-3	mg/kg	1 : 3 : 4	33	8.52E-03	1.50E-02	No	1.05E-02	Yes	1.90E-01	No	No	</=Screening Level
Herbicide													
2,4,5-T	93-76-5	mg/kg	1 : 1 : 4	100	1.40E-03	1.40E-03	No	NA	--	6.20E+02	No	No	</=Screening Level
2,4-D	94-75-7	mg/kg	2 : 4 : 4	50	6.06E-03	1.00E-02	No	9.96E-03	Yes	7.70E+02	No	No	</=Screening Level
Dichlorprop	120-36-5	mg/kg	3 : 3 : 4	100	4.37E-03	9.50E-03	No	1.14E-01	No	4.92E+02	No	No	</=Screening Level
MCPP	93-65-2	mg/kg	2 : 4 : 4	50	1.34E+00	2.30E+00	No	3.60E+00	No	6.20E+01	No	No	</=Screening Level
Pentachlorophenol	87-86-5	mg/kg	4 : 4 : 4	100	1.26E-02	2.80E-02	No	4.57E-03	Yes	9.00E+00	No	No	</=Screening Level
PCBs													
Total PCBs	1336-36-3	mg/kg	3 : 4 : 4	75	1.78E+00	7.02E+00	No	1.85E-01	Yes	1.00E+00	Yes	Yes	>Screening Level
Dioxin													
2,3,7,8-TCDD-TEQ	1746-01-6	mg/kg	3 : 4 : 4	75	7.90E-05	2.59E-04	No	1.69E-05	Yes	1.00E-03	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	mg/kg	4 : 4 : 4	100	4.80E+03	6.00E+03	No	1.38E+04	No	9.20E+04	No	No	</=Screening Level
Antimony	7440-36-0	mg/kg	3 : 4 : 4	75	9.33E-01	1.60E+00	No	2.33E+00	No	4.10E+01	No	No	</=Screening Level
Arsenic	7440-38-2	mg/kg	4 : 4 : 4	100	1.41E+01	2.60E+01	No	1.24E+01	Yes	1.60E+00	Yes	Yes	>Screening Level
Barium	7440-39-3	mg/kg	4 : 4 : 4	100	1.16E+02	1.80E+02	No	3.07E+02	No	6.70E+03	No	No	</=Screening Level
Beryllium	7440-41-7	mg/kg	4 : 4 : 4	100	1.14E+00	1.80E+00	No	9.02E-01	Yes	1.90E+02	No	No	</=Screening Level
Cadmium	7440-43-9	mg/kg	4 : 4 : 4	100	1.66E+00	3.00E+00	No	3.34E+00	No	4.50E+01	No	No	</=Screening Level
Calcium	7440-70-2	mg/kg	4 : 4 : 4	100	2.32E+04	7.00E+04	Yes	9.74E+04	No	NA	--	No	EN

TABLE B-3
SURFACE SOIL SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Chromium	7440-47-3	mg/kg	4 : 4 : 4	100	1.55E+01	1.90E+01	No	2.21E+01	No	4.50E+02	No	No	</=Screening Level
Cobalt	7440-48-4	mg/kg	4 : 4 : 4	100	9.13E+00	1.30E+01	No	9.40E+00	Yes	1.30E+03	No	No	</=Screening Level
Copper	7440-50-8	mg/kg	4 : 4 : 4	100	4.88E+01	6.40E+01	No	8.58E+01	No	4.10E+03	No	No	</=Screening Level
Iron	7439-89-6	mg/kg	4 : 4 : 4	100	9.88E+03	1.20E+04	Yes	2.33E+04	No	3.10E+04	No	No	EN
Lead	7439-92-1	mg/kg	4 : 4 : 4	100	7.90E+01	1.70E+02	No	1.30E+02	Yes	7.50E+02	No	No	</=Screening Level
Magnesium	7439-95-4	mg/kg	4 : 4 : 4	100	3.36E+03	7.90E+03	Yes	1.23E+04	No	NA	--	No	EN
Manganese	7439-96-5	mg/kg	4 : 4 : 4	100	2.15E+02	3.90E+02	No	5.52E+02	No	1.90E+03	No	No	</=Screening Level
Mercury	7439-97-6	mg/kg	4 : 4 : 4	100	1.15E-01	2.30E-01	No	1.34E-01	Yes	3.10E+01	No	No	</=Screening Level
Nickel	7440-02-0	mg/kg	4 : 4 : 4	100	2.75E+01	4.70E+01	No	3.30E+01	Yes	2.00E+03	No	No	</=Screening Level
Potassium	7440-09-7	mg/kg	4 : 4 : 4	100	9.08E+02	1.40E+03	Yes	3.01E+03	No	NA	--	No	EN
Selenium	7782-49-2	mg/kg	2 : 4 : 4	50	2.41E+00	7.00E+00	No	1.08E+00	Yes	5.10E+02	No	No	</=Screening Level
Silver	7440-22-4	mg/kg	3 : 3 : 4	100	1.93E-01	2.30E-01	No	9.90E-01	No	5.10E+02	No	No	</=Screening Level
Sodium	7440-23-5	mg/kg	3 : 4 : 4	75	1.78E+02	2.60E+02	Yes	1.58E+02	Yes	NA	--	No	EN
Thallium	7440-28-0	mg/kg	1 : 4 : 4	25	7.06E-01	1.30E+00	No	NA	--	6.70E+00	No	No	</=Screening Level
Vanadium	7440-62-2	mg/kg	4 : 4 : 4	100	2.90E+01	4.40E+01	No	3.89E+01	Yes	7.20E+02	No	No	</=Screening Level
Zinc	7440-66-6	mg/kg	4 : 4 : 4	100	2.16E+02	3.90E+02	No	3.90E+02	No	3.10E+04	No	No	</=Screening Level

TABLE B-3
SURFACE SOIL SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Site Q Central													
VOCs													
2-Butanone (MEK)	78-93-3	mg/kg	3 : 3 : 3	100	1.34E-02	2.45E-02	No	NA	--	2.70E+03	No	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	mg/kg	1 : 1 : 3	100	1.02E-02	1.02E-02	No	NA	--	2.80E+02	No	No	</=Screening Level
Acetone	67-64-1	mg/kg	3 : 3 : 3	100	1.92E-01	4.85E-01	No	NA	--	6.00E+02	No	No	</=Screening Level
Benzene	71-43-2	mg/kg	1 : 3 : 3	33	4.68E-03	7.85E-03	No	NA	--	1.30E+00	No	No	</=Screening Level
Carbon Disulfide	75-15-0	mg/kg	3 : 3 : 3	100	2.52E-03	5.40E-03	No	NA	--	1.20E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	mg/kg	3 : 3 : 3	100	4.46E-02	1.31E-01	No	NA	--	5.30E+01	No	No	</=Screening Level
Ethylbenzene	100-41-4	mg/kg	3 : 3 : 3	100	1.19E-02	3.50E-02	No	1.07E-03	Yes	2.00E+01	No	No	</=Screening Level
Tetrachloroethene	127-18-4	mg/kg	3 : 3 : 3	100	1.42E-03	3.40E-03	No	8.80E-04	Yes	3.40E+00	No	No	</=Screening Level
Trichloroethylene	79-01-6	mg/kg	3 : 3 : 3	100	8.37E-04	1.00E-03	No	NA	--	1.10E-01	No	No	</=Screening Level
Xylenes, Total	1330-20-7	mg/kg	3 : 3 : 3	100	5.95E-02	1.75E-01	No	1.61E-03	Yes	9.00E+01	No	No	</=Screening Level
SVOCs													
1,4-Dichlorobenzene	106-46-7	mg/kg	3 : 3 : 3	100	1.62E-01	3.00E-01	No	NA	--	7.90E+00	No	No	</=Screening Level
2-Methylnaphthalene	91-57-6	mg/kg	2 : 2 : 3	100	5.20E-02	6.90E-02	No	NA	--	1.90E+01	No	No	</=Screening Level
3-Methylphenol/4-Methylphenol	106-44-5	mg/kg	1 : 1 : 3	100	6.60E-02	6.60E-02	No	NA	--	3.10E+02	No	No	</=Screening Level
Acenaphthene	83-32-9	mg/kg	3 : 3 : 3	100	4.17E-02	5.30E-02	No	4.20E-02	Yes	2.90E+03	No	No	</=Screening Level
Anthracene	120-12-7	mg/kg	3 : 3 : 3	100	9.90E-02	1.30E-01	No	1.20E-01	Yes	2.40E+04	No	No	</=Screening Level
Benzo(a)anthracene	56-55-3	mg/kg	3 : 3 : 3	100	3.22E-01	4.25E-01	No	2.76E-01	Yes	2.10E+00	No	No	</=Screening Level
Benzo(a)pyrene	50-32-8	mg/kg	3 : 3 : 3	100	3.28E-01	4.05E-01	No	4.06E-01	No	2.10E-01	Yes	No	</=BKG
Benzo(b)fluoranthene	205-99-2	mg/kg	3 : 3 : 3	100	4.02E-01	4.95E-01	No	3.66E-01	Yes	2.10E+00	No	No	</=Screening Level
Benzo(g,h,i)perylene	191-24-2	mg/kg	2 : 3 : 3	67	1.97E-01	2.30E-01	No	4.14E-01	No	2.90E+03	No	No	</=Screening Level
Benzo(k)fluoranthene	207-08-9	mg/kg	3 : 3 : 3	100	3.13E-01	3.70E-01	No	2.83E-01	Yes	2.10E+01	No	No	</=Screening Level
Benzyl Butyl Phthalate	85-68-7	mg/kg	2 : 3 : 3	67	1.41E-01	2.20E-01	No	NA	--	1.20E+04	No	No	</=Screening Level
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	3 : 3 : 3	100	4.74E-01	1.22E+00	No	3.53E-01	Yes	1.20E+02	No	No	</=Screening Level
Carbazole	86-74-8	mg/kg	1 : 1 : 3	100	6.50E-02	6.50E-02	No	NA	--	8.60E+01	No	No	</=Screening Level
Chrysene	218-01-9	mg/kg	3 : 3 : 3	100	3.93E-01	5.70E-01	No	2.99E-01	Yes	2.10E+02	No	No	</=Screening Level
Di-n-butylphthalate	84-74-2	mg/kg	1 : 3 : 3	33	2.07E-01	2.40E-01	No	NA	--	6.20E+03	No	No	</=Screening Level
Dibenzo(a,h)anthracene	53-70-3	mg/kg	2 : 2 : 3	100	6.35E-02	7.20E-02	No	1.20E-01	No	2.10E-01	No	No	</=Screening Level
Dibenzofuran	132-64-9	mg/kg	3 : 3 : 3	100	3.70E-02	4.60E-02	No	NA	--	3.10E+02	No	No	</=Screening Level

TABLE B-3
SURFACE SOIL SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Fluoranthene	206-44-0	mg/kg	3 : 3 : 3	100	6.78E-01	1.08E+00	No	4.50E-01	Yes	2.20E+03	No	No	</=Screening Level
Fluorene	86-73-7	mg/kg	3 : 3 : 3	100	4.87E-02	6.40E-02	No	NA	--	2.60E+03	No	No	</=Screening Level
Hexachlorobenzene	118-74-1	mg/kg	1 : 1 : 3	100	2.90E-02	2.90E-02	No	NA	--	1.10E+00	No	No	</=Screening Level
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	3 : 3 : 3	100	1.18E-01	1.45E-01	No	NA	--	2.10E+00	No	No	</=Screening Level
Naphthalene	91-20-3	mg/kg	2 : 2 : 3	100	5.50E-02	6.40E-02	No	NA	--	1.90E+01	No	No	</=Screening Level
Phenanthrene	85-01-8	mg/kg	3 : 3 : 3	100	4.60E-01	6.40E-01	No	3.31E-01	Yes	2.40E+04	No	No	</=Screening Level
Pyrene	129-00-0	mg/kg	3 : 3 : 3	100	7.87E-01	1.19E+00	No	4.30E-01	Yes	2.90E+03	No	No	</=Screening Level
Pesticide													
4,4'-DDD	72-54-8	mg/kg	1 : 3 : 3	33	8.53E-03	2.00E-02	No	7.04E-03	Yes	1.00E+01	No	No	</=Screening Level
4,4'-DDT	50-29-3	mg/kg	1 : 3 : 3	33	3.67E-02	1.05E-01	No	4.04E-02	Yes	7.00E+00	No	No	</=Screening Level
Aldrin	309-00-2	mg/kg	1 : 2 : 3	50	1.98E-03	2.10E-03	No	3.56E-03	No	1.00E-01	No	No	</=Screening Level
alpha-BHC	319-84-6	mg/kg	1 : 3 : 3	33	2.11E-02	6.05E-02	No	4.96E-02	Yes	3.60E-01	No	No	</=Screening Level
alpha-Chlordane	5103-71-9	mg/kg	1 : 3 : 3	33	2.25E-03	3.85E-03	No	6.15E-03	No	6.50E+00	No	No	</=Screening Level
Dieldrin	60-57-1	mg/kg	2 : 3 : 3	67	1.89E-02	4.80E-02	No	1.13E-02	Yes	1.10E-01	No	No	</=Screening Level
Endosulfan Sulfate	1031-07-8	mg/kg	1 : 2 : 3	50	2.20E-03	2.40E-03	No	1.81E-03	Yes	3.70E+02	No	No	</=Screening Level
Endrin Ketone	53494-70-5	mg/kg	1 : 1 : 3	100	1.10E-03	1.10E-03	No	NA	--	1.80E+01	No	No	</=Screening Level
Herbicide													
2,4,5-T	93-76-5	mg/kg	1 : 1 : 3	100	3.55E-03	3.55E-03	No	NA	--	6.20E+02	No	No	</=Screening Level
2,4-D	94-75-7	mg/kg	1 : 1 : 3	100	4.70E-03	4.70E-03	No	9.96E-03	No	7.70E+02	No	No	</=Screening Level
2,4-DB	94-82-6	mg/kg	1 : 2 : 3	50	1.25E-02	2.00E-02	No	NA	--	4.90E+02	No	No	</=Screening Level
Pentachlorophenol	87-86-5	mg/kg	3 : 3 : 3	100	7.95E-01	2.30E+00	No	4.57E-03	Yes	9.00E+00	No	No	</=Screening Level
PCBs													
Total PCBs	1336-36-3	mg/kg	3 : 3 : 3	100	1.08E+00	2.57E+00	No	1.85E-01	Yes	1.00E+00	Yes	Yes	>Screening Level
Dioxin													
2,3,7,8-TCDD-TEQ	1746-01-6	mg/kg	3 : 3 : 3	100	1.14E-03	3.31E-03	No	1.69E-05	Yes	1.00E-03	Yes	Yes	>Screening Level
Metals													
Aluminum	7429-90-5	mg/kg	3 : 3 : 3	100	4.42E+03	5.20E+03	No	1.38E+04	No	9.20E+04	No	No	</=Screening Level
Antimony	7440-36-0	mg/kg	3 : 3 : 3	100	2.03E+00	3.25E+00	No	2.33E+00	Yes	4.10E+01	No	No	</=Screening Level
Arsenic	7440-38-2	mg/kg	3 : 3 : 3	100	7.30E+00	1.30E+01	No	1.24E+01	Yes	1.60E+00	Yes	Yes	>Screening Level
Barium	7440-39-3	mg/kg	3 : 3 : 3	100	1.94E+02	3.80E+02	No	3.07E+02	Yes	6.70E+03	No	No	</=Screening Level

TABLE B-3
SURFACE SOIL SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Beryllium	7440-41-7	mg/kg	3 : 3 : 3	100	3.77E-01	6.40E-01	No	9.02E-01	No	1.90E+02	No	No	</=Screening Level
Cadmium	7440-43-9	mg/kg	3 : 3 : 3	100	1.43E+00	2.00E+00	No	3.34E+00	No	4.50E+01	No	No	</=Screening Level
Calcium	7440-70-2	mg/kg	3 : 3 : 3	100	1.76E+05	2.40E+05	Yes	9.74E+04	Yes	NA	--	No	EN
Chromium	7440-47-3	mg/kg	3 : 3 : 3	100	1.43E+01	2.00E+01	No	2.21E+01	No	4.50E+02	No	No	</=Screening Level
Cobalt	7440-48-4	mg/kg	3 : 3 : 3	100	3.35E+00	5.00E+00	No	9.40E+00	No	1.30E+03	No	No	</=Screening Level
Copper	7440-50-8	mg/kg	3 : 3 : 3	100	3.82E+01	5.40E+01	No	8.58E+01	No	4.10E+03	No	No	</=Screening Level
Iron	7439-89-6	mg/kg	3 : 3 : 3	100	1.03E+04	1.60E+04	Yes	2.33E+04	No	3.10E+04	No	No	EN
Lead	7439-92-1	mg/kg	3 : 3 : 3	100	1.62E+02	3.60E+02	No	1.30E+02	Yes	7.50E+02	No	No	</=Screening Level
Magnesium	7439-95-4	mg/kg	3 : 3 : 3	100	1.06E+04	1.70E+04	Yes	1.23E+04	Yes	NA	--	No	EN
Manganese	7439-96-5	mg/kg	3 : 3 : 3	100	1.87E+02	2.40E+02	No	5.52E+02	No	1.90E+03	No	No	</=Screening Level
Mercury	7439-97-6	mg/kg	3 : 3 : 3	100	1.50E-01	2.70E-01	No	1.34E-01	Yes	3.10E+01	No	No	</=Screening Level
Nickel	7440-02-0	mg/kg	3 : 3 : 3	100	1.15E+01	1.40E+01	No	3.30E+01	No	2.00E+03	No	No	</=Screening Level
Potassium	7440-09-7	mg/kg	3 : 3 : 3	100	1.00E+03	1.10E+03	Yes	3.01E+03	No	NA	--	No	EN
Silver	7440-22-4	mg/kg	3 : 3 : 3	100	1.42E-01	1.75E-01	No	9.90E-01	No	5.10E+02	No	No	</=Screening Level
Sodium	7440-23-5	mg/kg	3 : 3 : 3	100	3.32E+02	3.85E+02	Yes	1.58E+02	Yes	NA	--	No	EN
Vanadium	7440-62-2	mg/kg	3 : 3 : 3	100	1.72E+01	2.05E+01	No	3.89E+01	No	7.20E+02	No	No	</=Screening Level
Zinc	7440-66-6	mg/kg	3 : 3 : 3	100	5.00E+02	1.06E+03	No	3.90E+02	Yes	3.10E+04	No	No	</=Screening Level

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SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Site Q North													
VOCs													
2-Butanone (MEK)	78-93-3	mg/kg	1 : 1 : 5	100	1.50E-03	1.50E-03	No	NA	--	2.70E+03	No	No	</=Screening Level
Acetone	67-64-1	mg/kg	1 : 1 : 5	100	2.30E-02	2.30E-02	No	NA	--	6.00E+02	No	No	</=Screening Level
Benzene	71-43-2	mg/kg	1 : 1 : 5	100	7.60E-04	7.60E-04	No	NA	--	1.30E+00	No	No	</=Screening Level
Carbon Disulfide	75-15-0	mg/kg	2 : 2 : 5	100	1.82E-03	2.80E-03	No	NA	--	1.20E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	mg/kg	1 : 1 : 5	100	5.20E-04	5.20E-04	No	NA	--	5.30E+01	No	No	</=Screening Level
Ethylbenzene	100-41-4	mg/kg	2 : 2 : 5	100	2.65E-04	3.40E-04	No	1.07E-03	No	2.00E+01	No	No	</=Screening Level
Methyl N-Butyl Ketone	591-78-6	mg/kg	1 : 1 : 5	100	3.10E-03	3.10E-03	No	NA	--	2.70E+03	No	No	</=Screening Level
Tetrachloroethene	127-18-4	mg/kg	4 : 4 : 5	100	1.79E-03	2.80E-03	No	8.80E-04	Yes	3.40E+00	No	No	</=Screening Level
Trichloroethylene	79-01-6	mg/kg	4 : 4 : 5	100	9.75E-04	1.50E-03	No	NA	--	1.10E-01	No	No	</=Screening Level
Xylenes, Total	1330-20-7	mg/kg	4 : 4 : 5	100	1.26E-03	2.20E-03	No	1.61E-03	Yes	9.00E+01	No	No	</=Screening Level
SVOCs													
1,4-Dichlorobenzene	106-46-7	mg/kg	2 : 4 : 5	50	2.95E-01	6.30E-01	No	NA	--	7.90E+00	No	No	</=Screening Level
2,4-Dichlorophenol	120-83-2	mg/kg	1 : 5 : 5	20	3.51E-01	1.00E+00	No	NA	--	1.80E+02	No	No	</=Screening Level
2-Methylnaphthalene	91-57-6	mg/kg	4 : 4 : 5	100	1.01E-01	2.40E-01	No	NA	--	1.90E+01	No	No	</=Screening Level
Acenaphthene	83-32-9	mg/kg	4 : 5 : 5	80	1.65E-01	2.00E-01	No	4.20E-02	Yes	2.90E+03	No	No	</=Screening Level
Anthracene	120-12-7	mg/kg	4 : 5 : 5	80	3.91E-01	6.10E-01	No	1.20E-01	Yes	2.40E+04	No	No	</=Screening Level
Benzo(a)anthracene	56-55-3	mg/kg	5 : 5 : 5	100	1.20E+00	1.70E+00	No	2.76E-01	Yes	2.10E+00	No	No	</=Screening Level
Benzo(a)pyrene	50-32-8	mg/kg	5 : 5 : 5	100	1.24E+00	1.80E+00	No	4.06E-01	Yes	2.10E-01	Yes	Yes	>Screening Level
Benzo(b)fluoranthene	205-99-2	mg/kg	5 : 5 : 5	100	1.20E+00	1.80E+00	No	3.66E-01	Yes	2.10E+00	No	No	</=Screening Level
Benzo(g,h,i)perylene	191-24-2	mg/kg	5 : 5 : 5	100	6.90E-01	1.10E+00	No	4.14E-01	Yes	2.90E+03	No	No	</=Screening Level
Benzo(k)fluoranthene	207-08-9	mg/kg	5 : 5 : 5	100	1.12E+00	1.90E+00	No	2.83E-01	Yes	2.10E+01	No	No	</=Screening Level
Benzyl Butyl Phthalate	85-68-7	mg/kg	1 : 1 : 5	100	3.30E-02	3.30E-02	No	NA	--	1.20E+04	No	No	</=Screening Level
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	4 : 4 : 5	100	5.38E-02	7.90E-02	No	3.53E-01	No	1.20E+02	No	No	</=Screening Level
Carbazole	86-74-8	mg/kg	3 : 4 : 5	75	1.88E-01	2.80E-01	No	NA	--	8.60E+01	No	No	</=Screening Level
Chrysene	218-01-9	mg/kg	5 : 5 : 5	100	1.33E+00	1.80E+00	No	2.99E-01	Yes	2.10E+02	No	No	</=Screening Level
Dibenzo(a,h)anthracene	53-70-3	mg/kg	4 : 5 : 5	80	2.12E-01	3.70E-01	No	1.20E-01	Yes	2.10E-01	Yes	Yes	>Screening Level
Dibenzofuran	132-64-9	mg/kg	3 : 3 : 5	100	1.23E-01	1.80E-01	No	NA	--	3.10E+02	No	No	</=Screening Level
Fluoranthene	206-44-0	mg/kg	5 : 5 : 5	100	2.06E+00	3.80E+00	No	4.50E-01	Yes	2.20E+03	No	No	</=Screening Level

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Fluorene	86-73-7	mg/kg	3 : 4 : 5	75	1.62E-01	2.10E-01	No	NA	--	2.60E+03	No	No	</=Screening Level
Hexachlorobenzene	118-74-1	mg/kg	1 : 1 : 5	100	3.00E-02	3.00E-02	No	NA	--	1.10E+00	No	No	</=Screening Level
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	5 : 5 : 5	100	5.56E-01	1.00E+00	No	NA	--	2.10E+00	No	No	</=Screening Level
Naphthalene	91-20-3	mg/kg	3 : 4 : 5	75	1.48E-01	2.60E-01	No	NA	--	1.90E+01	No	No	</=Screening Level
Phenanthrene	85-01-8	mg/kg	5 : 5 : 5	100	1.65E+00	2.70E+00	No	3.31E-01	Yes	2.40E+04	No	No	</=Screening Level
Pyrene	129-00-0	mg/kg	5 : 5 : 5	100	2.29E+00	3.80E+00	No	4.30E-01	Yes	2.90E+03	No	No	</=Screening Level
Pesticide													
4,4'-DDD	72-54-8	mg/kg	2 : 5 : 5	40	1.81E-02	3.90E-02	No	7.04E-03	Yes	1.00E+01	No	No	</=Screening Level
4,4'-DDE	72-55-9	mg/kg	2 : 3 : 5	67	3.37E-02	5.00E-02	No	1.23E-02	Yes	7.00E+00	No	No	</=Screening Level
4,4'-DDT	50-29-3	mg/kg	3 : 5 : 5	60	9.18E-02	2.60E-01	No	4.04E-02	Yes	7.00E+00	No	No	</=Screening Level
alpha-Chlordane	5103-71-9	mg/kg	3 : 3 : 5	100	6.92E-02	2.00E-01	No	6.15E-03	Yes	6.50E+00	No	No	</=Screening Level
beta-BHC	319-85-7	mg/kg	2 : 5 : 5	40	9.22E-03	4.00E-02	No	NA	--	1.30E+00	No	No	</=Screening Level
Dieldrin	60-57-1	mg/kg	3 : 5 : 5	60	2.18E-02	7.70E-02	No	1.13E-02	Yes	1.10E-01	No	No	</=Screening Level
Endosulfan II	33213-65-9	mg/kg	1 : 5 : 5	20	6.67E-03	1.40E-02	No	1.16E-03	Yes	3.70E+02	No	No	</=Screening Level
Endrin	72-20-8	mg/kg	2 : 5 : 5	40	5.95E-03	1.80E-02	No	5.02E-03	Yes	1.80E+01	No	No	</=Screening Level
Endrin Aldehyde	7421-93-4	mg/kg	1 : 1 : 5	100	1.60E-03	1.60E-03	No	5.88E-03	No	1.80E+01	No	No	</=Screening Level
Endrin Ketone	53494-70-5	mg/kg	2 : 4 : 5	50	4.00E-03	6.10E-03	No	NA	--	1.80E+01	No	No	</=Screening Level
gamma-BHC (Lindane)	58-89-9	mg/kg	1 : 5 : 5	20	3.10E-03	5.70E-03	No	NA	--	1.70E+00	No	No	</=Screening Level
gamma-Chlordane	5103-74-2	mg/kg	3 : 5 : 5	60	4.72E-02	2.10E-01	No	4.11E-02	Yes	6.50E+00	No	No	</=Screening Level
Heptachlor	76-44-8	mg/kg	2 : 5 : 5	40	4.17E-03	1.10E-02	No	3.12E-02	No	3.80E-01	No	No	</=Screening Level
Heptachlor Epoxide	1024-57-3	mg/kg	1 : 3 : 5	33	2.55E-03	3.80E-03	No	1.05E-02	No	1.90E-01	No	No	</=Screening Level
Herbicide													
2,4,5-T	93-76-5	mg/kg	2 : 2 : 5	100	2.05E-03	2.10E-03	No	NA	--	6.20E+02	No	No	</=Screening Level
2,4-D	94-75-7	mg/kg	3 : 5 : 5	60	5.61E-03	8.90E-03	No	9.96E-03	No	7.70E+02	No	No	</=Screening Level
MCPP	93-65-2	mg/kg	2 : 5 : 5	40	9.62E-01	1.20E+00	No	3.60E+00	No	6.20E+01	No	No	</=Screening Level
Pentachlorophenol	87-86-5	mg/kg	5 : 5 : 5	100	1.34E-01	4.20E-01	No	4.57E-03	Yes	9.00E+00	No	No	</=Screening Level
PCBs													
Total PCBs	1336-36-3	mg/kg	5 : 5 : 5	100	5.73E-01	1.87E+00	No	1.85E-01	Yes	1.00E+00	Yes	Yes	>Screening Level
Dioxin													
2,3,7,8-TCDD-TEQ	1746-01-6	mg/kg	4 : 5 : 5	80	1.37E-04	6.03E-04	No	1.69E-05	Yes	1.00E-03	No	No	</=Screening Level

TABLE B-3
SURFACE SOIL SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Metals													
Aluminum	7429-90-5	mg/kg	5 : 5 : 5	100	4.18E+03	1.10E+04	No	1.38E+04	No	9.20E+04	No	No	</=Screening Level
Antimony	7440-36-0	mg/kg	4 : 5 : 5	80	9.54E-01	1.60E+00	No	2.33E+00	No	4.10E+01	No	No	</=Screening Level
Arsenic	7440-38-2	mg/kg	5 : 5 : 5	100	6.92E+00	1.10E+01	No	1.24E+01	No	1.60E+00	Yes	No	</=BKG
Barium	7440-39-3	mg/kg	5 : 5 : 5	100	6.43E+02	2.90E+03	No	3.07E+02	Yes	6.70E+03	No	No	</=Screening Level
Beryllium	7440-41-7	mg/kg	5 : 5 : 5	100	5.68E-01	9.50E-01	No	9.02E-01	Yes	1.90E+02	No	No	</=Screening Level
Cadmium	7440-43-9	mg/kg	5 : 5 : 5	100	2.01E+01	9.20E+01	No	3.34E+00	Yes	4.50E+01	Yes	Yes	>Screening Level
Calcium	7440-70-2	mg/kg	5 : 5 : 5	100	8.44E+04	2.30E+05	Yes	9.74E+04	Yes	NA	--	No	EN
Chromium	7440-47-3	mg/kg	5 : 5 : 5	100	1.30E+01	2.00E+01	No	2.21E+01	No	4.50E+02	No	No	</=Screening Level
Cobalt	7440-48-4	mg/kg	5 : 5 : 5	100	7.80E+00	1.60E+01	No	9.40E+00	Yes	1.30E+03	No	No	</=Screening Level
Copper	7440-50-8	mg/kg	5 : 5 : 5	100	7.12E+01	2.30E+02	No	8.58E+01	Yes	4.10E+03	No	No	</=Screening Level
Iron	7439-89-6	mg/kg	5 : 5 : 5	100	1.38E+04	2.40E+04	Yes	2.33E+04	Yes	3.10E+04	No	No	EN
Lead	7439-92-1	mg/kg	4 : 4 : 5	100	1.10E+02	2.70E+02	No	1.30E+02	Yes	7.50E+02	No	No	</=Screening Level
Magnesium	7439-95-4	mg/kg	5 : 5 : 5	100	5.49E+03	9.70E+03	Yes	1.23E+04	No	NA	--	No	EN
Manganese	7439-96-5	mg/kg	5 : 5 : 5	100	3.32E+02	5.30E+02	No	5.52E+02	No	1.90E+03	No	No	</=Screening Level
Mercury	7439-97-6	mg/kg	5 : 5 : 5	100	1.45E-01	4.00E-01	No	1.34E-01	Yes	3.10E+01	No	No	</=Screening Level
Nickel	7440-02-0	mg/kg	5 : 5 : 5	100	1.79E+01	3.10E+01	No	3.30E+01	No	2.00E+03	No	No	</=Screening Level
Potassium	7440-09-7	mg/kg	5 : 5 : 5	100	8.84E+02	2.30E+03	Yes	3.01E+03	No	NA	--	No	EN
Selenium	7782-49-2	mg/kg	1 : 5 : 5	20	5.69E-01	7.10E-01	No	1.08E+00	No	5.10E+02	No	No	</=Screening Level
Silver	7440-22-4	mg/kg	2 : 5 : 5	40	1.42E+00	5.20E+00	No	9.90E-01	Yes	5.10E+02	No	No	</=Screening Level
Sodium	7440-23-5	mg/kg	4 : 5 : 5	80	2.69E+02	5.60E+02	Yes	1.58E+02	Yes	NA	--	No	EN
Vanadium	7440-62-2	mg/kg	5 : 5 : 5	100	1.65E+01	2.80E+01	No	3.89E+01	No	7.20E+02	No	No	</=Screening Level
Zinc	7440-66-6	mg/kg	5 : 5 : 5	100	1.88E+03	8.00E+03	No	3.90E+02	Yes	3.10E+04	No	No	</=Screening Level

TABLE B-3
SURFACE SOIL SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Site Q South													
VOCs													
2-Butanone (MEK)	78-93-3	mg/kg	6 : 11 : 12	55	1.38E-02	2.40E-02	No	NA	--	2.70E+03	No	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	mg/kg	4 : 4 : 12	100	6.06E-03	7.50E-03	No	NA	--	2.80E+02	No	No	</=Screening Level
Acetone	67-64-1	mg/kg	5 : 12 : 12	42	8.04E-02	2.60E-01	No	NA	--	6.00E+02	No	No	</=Screening Level
Benzene	71-43-2	mg/kg	5 : 12 : 12	42	3.09E-03	5.35E-03	No	NA	--	1.30E+00	No	No	</=Screening Level
Carbon Disulfide	75-15-0	mg/kg	5 : 11 : 12	45	3.40E-03	4.80E-03	No	NA	--	1.20E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	mg/kg	4 : 12 : 12	33	4.77E-03	2.75E-02	No	NA	--	5.30E+01	No	No	</=Screening Level
Chloroform	67-66-3	mg/kg	1 : 1 : 12	100	1.80E-03	1.80E-03	No	NA	--	1.20E+00	No	No	</=Screening Level
Dichloromethane	75-09-2	mg/kg	1 : 8 : 12	13	3.23E-03	3.60E-03	No	NA	--	2.10E+01	No	No	</=Screening Level
Ethylbenzene	100-41-4	mg/kg	9 : 12 : 12	75	2.33E-03	1.30E-02	No	1.07E-03	Yes	2.00E+01	No	No	</=Screening Level
Methyl N-Butyl Ketone	591-78-6	mg/kg	6 : 12 : 12	50	5.29E-02	1.90E-01	No	NA	--	2.70E+03	No	No	</=Screening Level
Tetrachloroethene	127-18-4	mg/kg	3 : 3 : 12	100	1.20E-03	2.10E-03	No	8.80E-04	Yes	3.40E+00	No	No	</=Screening Level
Toluene	108-88-3	mg/kg	8 : 12 : 12	67	4.42E-03	1.80E-02	No	NA	--	2.20E+02	No	No	</=Screening Level
Trichloroethylene	79-01-6	mg/kg	2 : 2 : 12	100	1.48E-03	1.70E-03	No	NA	--	1.10E-01	No	No	</=Screening Level
Xylenes, Total	1330-20-7	mg/kg	11 : 12 : 12	92	1.48E-02	1.59E-01	No	1.61E-03	Yes	9.00E+01	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	mg/kg	1 : 1 : 12	100	3.10E-02	3.10E-02	No	NA	--	4.10E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	mg/kg	1 : 12 : 12	8	2.20E-01	3.50E-01	No	NA	--	7.90E+00	No	No	</=Screening Level
2-Methylnaphthalene	91-57-6	mg/kg	1 : 1 : 12	100	5.50E-02	5.50E-02	No	NA	--	1.90E+01	No	No	</=Screening Level
Acenaphthene	83-32-9	mg/kg	3 : 12 : 12	25	1.81E-01	1.48E-01	No	4.20E-02	Yes	2.90E+03	No	No	</=Screening Level
Anthracene	120-12-7	mg/kg	4 : 12 : 12	33	2.82E-01	8.00E-01	No	1.20E-01	Yes	2.40E+04	No	No	</=Screening Level
Benzo(a)anthracene	56-55-3	mg/kg	10 : 12 : 12	83	5.57E-01	2.52E+00	No	2.76E-01	Yes	2.10E+00	Yes	Yes	>Screening Level
Benzo(a)pyrene	50-32-8	mg/kg	9 : 12 : 12	75	5.98E-01	2.98E+00	No	4.06E-01	Yes	2.10E-01	Yes	Yes	>Screening Level
Benzo(b)fluoranthene	205-99-2	mg/kg	8 : 12 : 12	67	7.26E-01	3.30E+00	No	3.66E-01	Yes	2.10E+00	Yes	Yes	>Screening Level
Benzo(g,h,i)perylene	191-24-2	mg/kg	8 : 12 : 12	67	3.19E-01	2.09E+00	No	4.14E-01	Yes	2.90E+03	No	No	</=Screening Level
Benzo(k)fluoranthene	207-08-9	mg/kg	10 : 12 : 12	83	3.93E-01	2.50E+00	No	2.83E-01	Yes	2.10E+01	No	No	</=Screening Level
Benzyl Butyl Phthalate	85-68-7	mg/kg	2 : 12 : 12	17	2.77E-01	8.70E-01	No	NA	--	1.20E+04	No	No	</=Screening Level
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	9 : 12 : 12	75	9.28E-01	8.60E+00	No	3.53E-01	Yes	1.20E+02	No	No	</=Screening Level
Carbazole	86-74-8	mg/kg	3 : 12 : 12	25	2.09E-01	3.76E-01	No	NA	--	8.60E+01	No	No	</=Screening Level

TABLE B-3
SURFACE SOIL SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Chrysene	218-01-9	mg/kg	12 : 12 : 12	100	6.10E-01	2.85E+00	No	2.99E-01	Yes	2.10E+02	No	No	</=Screening Level
Di-n-butylphthalate	84-74-2	mg/kg	4 : 4 : 12	100	8.23E-02	1.13E-01	No	NA	--	6.20E+03	No	No	</=Screening Level
Dibenzo(a,h)anthracene	53-70-3	mg/kg	1 : 12 : 12	8	2.07E-01	1.83E-01	No	1.20E-01	Yes	2.10E-01	No	No	</=Screening Level
Dibenzofuran	132-64-9	mg/kg	3 : 3 : 12	100	4.53E-02	8.30E-02	No	NA	--	3.10E+02	No	No	</=Screening Level
Diethyl Phthalate	84-66-2	mg/kg	1 : 1 : 12	100	7.80E-02	7.80E-02	No	NA	--	4.90E+04	No	No	</=Screening Level
Fluoranthene	206-44-0	mg/kg	10 : 12 : 12	83	1.00E+00	4.48E+00	No	4.50E-01	Yes	2.20E+03	No	No	</=Screening Level
Fluorene	86-73-7	mg/kg	3 : 12 : 12	25	1.79E-01	1.68E-01	No	NA	--	2.60E+03	No	No	</=Screening Level
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	4 : 12 : 12	33	1.84E-01	3.10E-01	No	NA	--	2.10E+00	No	No	</=Screening Level
Naphthalene	91-20-3	mg/kg	1 : 12 : 12	8	2.19E-01	3.30E-01	No	NA	--	1.90E+01	No	No	</=Screening Level
Phenanthrene	85-01-8	mg/kg	9 : 12 : 12	75	6.60E-01	3.62E+00	No	3.31E-01	Yes	2.40E+04	No	No	</=Screening Level
Pyrene	129-00-0	mg/kg	7 : 12 : 12	58	1.08E+00	4.95E+00	No	4.30E-01	Yes	2.90E+03	No	No	</=Screening Level
Pesticide													
4,4'-DDD	72-54-8	mg/kg	2 : 6 : 12	33	2.65E-03	5.70E-03	No	7.04E-03	No	1.00E+01	No	No	</=Screening Level
4,4'-DDE	72-55-9	mg/kg	5 : 11 : 12	45	6.10E-02	5.65E-01	No	1.23E-02	Yes	7.00E+00	No	No	</=Screening Level
4,4'-DDT	50-29-3	mg/kg	10 : 12 : 12	83	4.68E-01	2.60E+00	No	4.04E-02	Yes	7.00E+00	No	No	</=Screening Level
alpha-BHC	319-84-6	mg/kg	1 : 12 : 12	8	2.10E-02	1.85E-01	No	4.96E-02	Yes	3.60E-01	No	No	</=Screening Level
alpha-Chlordane	5103-71-9	mg/kg	7 : 12 : 12	58	1.12E-02	5.65E-02	No	6.15E-03	Yes	6.50E+00	No	No	</=Screening Level
beta-BHC	319-85-7	mg/kg	1 : 8 : 12	13	2.86E-03	1.10E-02	No	NA	--	1.30E+00	No	No	</=Screening Level
Dieldrin	60-57-1	mg/kg	9 : 12 : 12	75	7.96E-02	3.75E-01	No	1.13E-02	Yes	1.10E-01	Yes	Yes	>Screening Level
Endosulfan II	33213-65-9	mg/kg	1 : 1 : 12	100	1.25E-03	1.25E-03	No	1.16E-03	Yes	3.70E+02	No	No	</=Screening Level
Endosulfan Sulfate	1031-07-8	mg/kg	3 : 12 : 12	25	1.08E-02	3.75E-02	No	1.81E-03	Yes	3.70E+02	No	No	</=Screening Level
Endrin	72-20-8	mg/kg	2 : 12 : 12	17	2.72E-02	1.70E-01	No	5.02E-03	Yes	1.80E+01	No	No	</=Screening Level
Endrin Aldehyde	7421-93-4	mg/kg	4 : 9 : 12	44	6.25E-03	1.70E-02	No	5.88E-03	Yes	1.80E+01	No	No	</=Screening Level
Endrin Ketone	53494-70-5	mg/kg	5 : 12 : 12	42	1.98E-02	1.10E-01	No	NA	--	1.80E+01	No	No	</=Screening Level
gamma-Chlordane	5103-74-2	mg/kg	5 : 12 : 12	42	5.14E-02	4.00E-01	No	4.11E-02	Yes	6.50E+00	No	No	</=Screening Level
Heptachlor Epoxide	1024-57-3	mg/kg	6 : 12 : 12	50	1.36E-02	7.60E-02	No	1.05E-02	Yes	1.90E-01	No	No	</=Screening Level
Methoxychlor	72-43-5	mg/kg	1 : 4 : 12	25	3.22E-02	9.20E-02	No	5.60E-03	Yes	3.10E+02	No	No	</=Screening Level
Herbicide													
2,4,5-T	93-76-5	mg/kg	2 : 12 : 12	17	5.27E-03	7.40E-03	No	NA	--	6.20E+02	No	No	</=Screening Level
2,4-D	94-75-7	mg/kg	10 : 12 : 12	83	8.16E-03	1.40E-02	No	9.96E-03	Yes	7.70E+02	No	No	</=Screening Level

TABLE B-3
SURFACE SOIL SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
2,4-DB	94-82-6	mg/kg	1 : 12 : 12	8	6.27E-03	1.65E-02	No	NA	--	4.90E+02	No	No	</=Screening Level
Dichlorprop	120-36-5	mg/kg	4 : 4 : 12	100	4.38E-03	6.20E-03	No	1.14E-01	No	4.92E+02	No	No	</=Screening Level
MCPA	94-74-6	mg/kg	7 : 12 : 12	58	1.47E+00	3.70E+00	No	NA	--	3.10E+01	No	No	</=Screening Level
MCPP	93-65-2	mg/kg	8 : 12 : 12	67	1.99E+00	5.20E+00	No	3.60E+00	Yes	6.20E+01	No	No	</=Screening Level
Pentachlorophenol	87-86-5	mg/kg	9 : 12 : 12	75	2.54E-01	2.95E+00	No	4.57E-03	Yes	9.00E+00	No	No	</=Screening Level
PCBs													
Total PCBs	1336-36-3	mg/kg	9 : 12 : 12	75	2.75E+00	1.34E+01	No	1.85E-01	Yes	1.00E+00	Yes	Yes	>Screening Level
Dioxin													
2,3,7,8-TCDD-TEQ	1746-01-6	mg/kg	12 : 12 : 12	100	6.89E-04	6.82E-03	No	1.69E-05	Yes	1.00E-03	Yes	Yes	>Screening Level
Metals													
Aluminum	7429-90-5	mg/kg	12 : 12 : 12	100	9.00E+03	1.40E+04	No	1.38E+04	Yes	9.20E+04	No	No	</=Screening Level
Antimony	7440-36-0	mg/kg	3 : 12 : 12	25	6.95E+00	4.70E+01	No	2.33E+00	Yes	4.10E+01	Yes	Yes	>Screening Level
Arsenic	7440-38-2	mg/kg	12 : 12 : 12	100	9.66E+00	3.30E+01	No	1.24E+01	Yes	1.60E+00	Yes	Yes	>Screening Level
Barium	7440-39-3	mg/kg	12 : 12 : 12	100	3.82E+02	1.40E+03	No	3.07E+02	Yes	6.70E+03	No	No	</=Screening Level
Beryllium	7440-41-7	mg/kg	12 : 12 : 12	100	6.34E-01	9.90E-01	No	9.02E-01	Yes	1.90E+02	No	No	</=Screening Level
Cadmium	7440-43-9	mg/kg	12 : 12 : 12	100	6.33E+00	2.95E+01	No	3.34E+00	Yes	4.50E+01	No	No	</=Screening Level
Calcium	7440-70-2	mg/kg	12 : 12 : 12	100	1.62E+04	7.15E+04	Yes	9.74E+04	No	NA	--	No	EN
Chromium	7440-47-3	mg/kg	12 : 12 : 12	100	8.41E+01	6.60E+02	No	2.21E+01	Yes	4.50E+02	Yes	Yes	>Screening Level
Cobalt	7440-48-4	mg/kg	12 : 12 : 12	100	9.57E+00	2.00E+01	No	9.40E+00	Yes	1.30E+03	No	No	</=Screening Level
Copper	7440-50-8	mg/kg	12 : 12 : 12	100	2.56E+02	1.74E+03	No	8.58E+01	Yes	4.10E+03	No	No	</=Screening Level
Iron	7439-89-6	mg/kg	12 : 12 : 12	100	2.89E+04	9.00E+04	Yes	2.33E+04	Yes	3.10E+04	Yes	No	EN
Lead	7439-92-1	mg/kg	12 : 12 : 12	100	5.15E+02	3.10E+03	No	1.30E+02	Yes	7.50E+02	No	No	</=Screening Level
Magnesium	7439-95-4	mg/kg	12 : 12 : 12	100	4.05E+03	5.00E+03	Yes	1.23E+04	No	NA	--	No	EN
Manganese	7439-96-5	mg/kg	12 : 12 : 12	100	6.03E+02	2.10E+03	No	5.52E+02	Yes	1.90E+03	Yes	Yes	>Screening Level
Mercury	7439-97-6	mg/kg	12 : 12 : 12	100	6.28E-01	3.20E+00	No	1.34E-01	Yes	3.10E+01	No	No	</=Screening Level
Nickel	7440-02-0	mg/kg	12 : 12 : 12	100	6.73E+01	5.00E+02	No	3.30E+01	Yes	2.00E+03	No	No	</=Screening Level
Potassium	7440-09-7	mg/kg	12 : 12 : 12	100	1.29E+03	2.30E+03	Yes	3.01E+03	No	NA	--	No	EN
Selenium	7782-49-2	mg/kg	1 : 12 : 12	8	8.31E-01	2.75E+00	No	1.08E+00	Yes	5.10E+02	No	No	</=Screening Level
Silver	7440-22-4	mg/kg	5 : 12 : 12	42	2.62E+00	1.27E+01	No	9.90E-01	Yes	5.10E+02	No	No	</=Screening Level
Sodium	7440-23-5	mg/kg	2 : 12 : 12	17	1.26E+02	5.50E+02	Yes	1.58E+02	Yes	NA	--	No	EN

TABLE B-3
SURFACE SOIL SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Thallium	7440-28-0	mg/kg	4 : 12 : 12	33	8.32E-01	1.90E+00	No	NA	--	6.70E+00	No	No	</=Screening Level
Vanadium	7440-62-2	mg/kg	12 : 12 : 12	100	2.50E+01	3.60E+01	No	3.89E+01	No	7.20E+02	No	No	</=Screening Level
Zinc	7440-66-6	mg/kg	12 : 12 : 12	100	7.90E+02	3.50E+03	No	3.90E+02	Yes	3.10E+04	No	No	</=Screening Level

TABLE B-3
SURFACE SOIL SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Site R													
VOCs													
1,2-Dichloroethane	107-06-2	mg/kg	2 : 2 : 4	100	2.05E-03	2.60E-03	No	NA	--	6.00E-01	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	mg/kg	1 : 1 : 4	100	9.40E-04	9.40E-04	No	NA	--	1.50E+01	No	No	</=Screening Level
2-Butanone (MEK)	78-93-3	mg/kg	4 : 4 : 4	100	1.23E-02	1.60E-02	No	NA	--	2.70E+03	No	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	mg/kg	1 : 1 : 4	100	1.00E-02	1.00E-02	No	NA	--	2.80E+02	No	No	</=Screening Level
Acetone	67-64-1	mg/kg	4 : 4 : 4	100	9.73E-02	1.50E-01	No	NA	--	6.00E+02	No	No	</=Screening Level
Benzene	71-43-2	mg/kg	4 : 4 : 4	100	1.45E-03	2.10E-03	No	NA	--	1.30E+00	No	No	</=Screening Level
Chlorobenzene	108-90-7	mg/kg	3 : 4 : 4	75	1.80E-02	6.40E-02	No	NA	--	5.30E+01	No	No	</=Screening Level
Ethylbenzene	100-41-4	mg/kg	4 : 4 : 4	100	7.08E-04	1.90E-03	No	1.07E-03	Yes	2.00E+01	No	No	</=Screening Level
Tetrachloroethene	127-18-4	mg/kg	3 : 4 : 4	75	7.04E-03	1.20E-02	No	8.80E-04	Yes	3.40E+00	No	No	</=Screening Level
Toluene	108-88-3	mg/kg	1 : 1 : 4	100	1.80E-03	1.80E-03	No	NA	--	2.20E+02	No	No	</=Screening Level
Trichloroethylene	79-01-6	mg/kg	3 : 4 : 4	75	8.71E-03	1.90E-02	No	NA	--	1.10E-01	No	No	</=Screening Level
Xylenes, Total	1330-20-7	mg/kg	3 : 4 : 4	75	4.59E-03	9.10E-03	No	1.61E-03	Yes	9.00E+01	No	No	</=Screening Level
SVOCs													
Benzo(a)anthracene	56-55-3	mg/kg	2 : 2 : 4	100	3.15E-02	3.30E-02	No	2.76E-01	No	2.10E+00	No	No	</=Screening Level
Benzo(a)pyrene	50-32-8	mg/kg	2 : 2 : 4	100	2.95E-02	3.30E-02	No	4.06E-01	No	2.10E-01	No	No	</=Screening Level
Benzo(b)fluoranthene	205-99-2	mg/kg	2 : 2 : 4	100	3.10E-02	3.20E-02	No	3.66E-01	No	2.10E+00	No	No	</=Screening Level
Benzo(g,h,i)perylene	191-24-2	mg/kg	2 : 2 : 4	100	3.50E-02	4.50E-02	No	4.14E-01	No	2.90E+03	No	No	</=Screening Level
Benzo(k)fluoranthene	207-08-9	mg/kg	2 : 2 : 4	100	3.05E-02	3.50E-02	No	2.83E-01	No	2.10E+01	No	No	</=Screening Level
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	1 : 1 : 4	100	7.80E-02	7.80E-02	No	3.53E-01	No	1.20E+02	No	No	</=Screening Level
Chrysene	218-01-9	mg/kg	3 : 3 : 4	100	3.43E-02	5.10E-02	No	2.99E-01	No	2.10E+02	No	No	</=Screening Level
Fluoranthene	206-44-0	mg/kg	1 : 1 : 4	100	3.90E-02	3.90E-02	No	4.50E-01	No	2.20E+03	No	No	</=Screening Level
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	1 : 1 : 4	100	4.30E-02	4.30E-02	No	NA	--	2.10E+00	No	No	</=Screening Level
Phenanthrene	85-01-8	mg/kg	2 : 2 : 4	100	2.55E-02	3.00E-02	No	3.31E-01	No	2.40E+04	No	No	</=Screening Level
Pyrene	129-00-0	mg/kg	1 : 1 : 4	100	4.80E-02	4.80E-02	No	4.30E-01	No	2.90E+03	No	No	</=Screening Level
Pesticide													
4,4'-DDT	50-29-3	mg/kg	1 : 4 : 4	25	2.02E-03	2.70E-03	No	4.04E-02	No	7.00E+00	No	No	</=Screening Level
Dieldrin	60-57-1	mg/kg	3 : 3 : 4	100	9.23E-04	1.40E-03	No	1.13E-02	No	1.10E-01	No	No	</=Screening Level
gamma-Chlordane	5103-74-2	mg/kg	1 : 1 : 4	100	2.30E-04	2.30E-04	No	4.11E-02	No	6.50E+00	No	No	</=Screening Level

TABLE B-3
SURFACE SOIL SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Herbicide													
2,4,5-TP (Silvex)	93-72-1	mg/kg	1 : 1 : 4	100	9.30E-03	9.30E-03	No	NA	--	4.90E+02	No	No	</=Screening Level
2,4-D	94-75-7	mg/kg	1 : 4 : 4	25	2.62E-02	5.50E-02	No	9.96E-03	Yes	7.70E+02	No	No	</=Screening Level
2,4-DB	94-82-6	mg/kg	3 : 4 : 4	75	3.44E-02	6.00E-02	No	NA	--	4.90E+02	No	No	</=Screening Level
Dichlorprop	120-36-5	mg/kg	4 : 4 : 4	100	7.75E-02	1.00E-01	No	1.14E-01	No	4.92E+02	No	No	</=Screening Level
MCPP	93-65-2	mg/kg	4 : 4 : 4	100	3.70E+01	5.10E+01	No	3.60E+00	Yes	6.20E+01	No	No	</=Screening Level
PCBs													
Total PCBs	1336-36-3	mg/kg	1 : 1 : 1	100	6.62E-03	6.62E-03	No	1.85E-01	No	1.00E+00	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	mg/kg	4 : 4 : 4	100	8.75E+03	1.00E+04	No	1.38E+04	No	9.20E+04	No	No	</=Screening Level
Antimony	7440-36-0	mg/kg	1 : 1 : 4	100	4.40E-01	4.40E-01	No	2.33E+00	No	4.10E+01	No	No	</=Screening Level
Arsenic	7440-38-2	mg/kg	4 : 4 : 4	100	6.35E+00	7.20E+00	No	1.24E+01	No	1.60E+00	Yes	No	</=BKG
Barium	7440-39-3	mg/kg	4 : 4 : 4	100	1.25E+02	1.50E+02	No	3.07E+02	No	6.70E+03	No	No	</=Screening Level
Beryllium	7440-41-7	mg/kg	4 : 4 : 4	100	5.63E-01	6.80E-01	No	9.02E-01	No	1.90E+02	No	No	</=Screening Level
Cadmium	7440-43-9	mg/kg	2 : 4 : 4	50	4.44E-01	7.60E-01	No	3.34E+00	No	4.50E+01	No	No	</=Screening Level
Calcium	7440-70-2	mg/kg	4 : 4 : 4	100	5.60E+03	6.40E+03	Yes	9.74E+04	No	NA	--	No	EN
Chromium	7440-47-3	mg/kg	4 : 4 : 4	100	1.53E+01	1.70E+01	No	2.21E+01	No	4.50E+02	No	No	</=Screening Level
Cobalt	7440-48-4	mg/kg	4 : 4 : 4	100	9.25E+00	1.50E+01	No	9.40E+00	Yes	1.30E+03	No	No	</=Screening Level
Copper	7440-50-8	mg/kg	4 : 4 : 4	100	1.95E+01	2.50E+01	No	8.58E+01	No	4.10E+03	No	No	</=Screening Level
Iron	7439-89-6	mg/kg	4 : 4 : 4	100	1.68E+04	1.80E+04	Yes	2.33E+04	No	3.10E+04	No	No	EN
Lead	7439-92-1	mg/kg	4 : 4 : 4	100	1.76E+01	3.30E+01	No	1.30E+02	No	7.50E+02	No	No	</=Screening Level
Magnesium	7439-95-4	mg/kg	4 : 4 : 4	100	4.33E+03	4.80E+03	Yes	1.23E+04	No	NA	--	No	EN
Manganese	7439-96-5	mg/kg	4 : 4 : 4	100	7.50E+02	1.20E+03	No	5.52E+02	Yes	1.90E+03	No	No	</=Screening Level
Mercury	7439-97-6	mg/kg	4 : 4 : 4	100	5.90E-02	7.60E-02	No	1.34E-01	No	3.10E+01	No	No	</=Screening Level
Nickel	7440-02-0	mg/kg	4 : 4 : 4	100	1.90E+01	2.10E+01	No	3.30E+01	No	2.00E+03	No	No	</=Screening Level
Potassium	7440-09-7	mg/kg	4 : 4 : 4	100	8.73E+02	1.00E+03	Yes	3.01E+03	No	NA	--	No	EN
Sodium	7440-23-5	mg/kg	4 : 4 : 4	100	1.02E+02	1.20E+02	Yes	1.58E+02	No	NA	--	No	EN
Vanadium	7440-62-2	mg/kg	4 : 4 : 4	100	3.00E+01	3.40E+01	No	3.89E+01	No	7.20E+02	No	No	</=Screening Level
Zinc	7440-66-6	mg/kg	4 : 4 : 4	100	7.53E+01	1.20E+02	No	3.90E+02	No	3.10E+04	No	No	</=Screening Level

TABLE B-3
SURFACE SOIL SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Site S													
VOCs													
1,1-Dichloroethane	75-34-3	mg/kg	1 : 1 : 2	100	6.60E-04	6.60E-04	No	NA	--	1.70E+02	No	No	</=Screening Level
2-Butanone (MEK)	78-93-3	mg/kg	1 : 1 : 2	100	2.40E-03	2.40E-03	No	NA	--	2.70E+03	No	No	</=Screening Level
Acetone	67-64-1	mg/kg	1 : 1 : 2	100	1.40E-02	1.40E-02	No	NA	--	6.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	mg/kg	1 : 1 : 2	100	4.70E-04	4.70E-04	No	NA	--	5.30E+01	No	No	</=Screening Level
Ethylbenzene	100-41-4	mg/kg	1 : 1 : 2	100	1.10E-03	1.10E-03	No	1.07E-03	Yes	2.00E+01	No	No	</=Screening Level
Styrene (Monomer)	100-42-5	mg/kg	1 : 1 : 2	100	3.70E-04	3.70E-04	No	4.47E-03	No	1.80E+03	No	No	</=Screening Level
Tetrachloroethene	127-18-4	mg/kg	1 : 1 : 2	100	8.30E-04	8.30E-04	No	8.80E-04	No	3.40E+00	No	No	</=Screening Level
Trichloroethylene	79-01-6	mg/kg	1 : 1 : 2	100	4.70E-04	4.70E-04	No	NA	--	1.10E-01	No	No	</=Screening Level
Xylenes, Total	1330-20-7	mg/kg	1 : 1 : 2	100	4.20E-03	4.20E-03	No	1.61E-03	Yes	9.00E+01	No	No	</=Screening Level
SVOCs													
1,2,4-Trichlorobenzene	120-82-1	mg/kg	1 : 2 : 2	50	1.81E+01	3.60E+01	No	NA	--	5.60E+02	No	No	</=Screening Level
1,2-Dichlorobenzene	95-50-1	mg/kg	1 : 2 : 2	50	1.86E+01	3.70E+01	No	NA	--	4.10E+02	No	No	</=Screening Level
1,3-Dichlorobenzene	541-73-1	mg/kg	1 : 2 : 2	50	5.93E-01	1.00E+00	No	NA	--	6.30E+00	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	mg/kg	1 : 2 : 2	50	3.84E+00	7.50E+00	No	NA	--	7.90E+00	No	No	</=Screening Level
2,4,5-Trichlorophenol	95-95-4	mg/kg	1 : 2 : 2	50	6.43E-01	1.10E+00	No	NA	--	6.20E+03	No	No	</=Screening Level
2,4,6-Trichlorophenol	88-06-2	mg/kg	1 : 2 : 2	50	4.19E+00	8.20E+00	No	NA	--	6.20E+00	Yes	Yes	>Screening Level
2,4-Dichlorophenol	120-83-2	mg/kg	1 : 2 : 2	50	1.24E+00	2.30E+00	No	NA	--	1.80E+02	No	No	</=Screening Level
2-Methylnaphthalene	91-57-6	mg/kg	1 : 2 : 2	50	5.59E+00	1.10E+01	No	NA	--	1.90E+01	No	No	</=Screening Level
2-Nitroaniline	88-74-4	mg/kg	1 : 2 : 2	50	2.77E+00	4.60E+00	No	NA	--	1.80E+00	Yes	Yes	>Screening Level
4-Nitroaniline	100-01-6	mg/kg	1 : 2 : 2	50	2.90E+01	5.70E+01	No	NA	--	1.80E+00	Yes	Yes	>Screening Level
Acenaphthene	83-32-9	mg/kg	1 : 2 : 2	50	6.93E-01	1.20E+00	No	4.20E-02	Yes	2.90E+03	No	No	</=Screening Level
Benzo(a)anthracene	56-55-3	mg/kg	2 : 2 : 2	100	4.05E+00	8.00E+00	No	2.76E-01	Yes	2.10E+00	Yes	Yes	>Screening Level
Benzo(a)pyrene	50-32-8	mg/kg	2 : 2 : 2	100	2.77E+00	5.40E+00	No	4.06E-01	Yes	2.10E-01	Yes	Yes	>Screening Level
Benzo(b)fluoranthene	205-99-2	mg/kg	2 : 2 : 2	100	3.42E+00	6.60E+00	No	3.66E-01	Yes	2.10E+00	Yes	Yes	>Screening Level
Benzo(g,h,i)perylene	191-24-2	mg/kg	2 : 2 : 2	100	2.16E+00	4.20E+00	No	4.14E-01	Yes	2.90E+03	No	No	</=Screening Level
Benzo(k)fluoranthene	207-08-9	mg/kg	1 : 2 : 2	50	3.29E+00	6.40E+00	No	2.83E-01	Yes	2.10E+01	No	No	</=Screening Level
Benzyl Butyl Phthalate	85-68-7	mg/kg	1 : 2 : 2	50	6.01E+01	1.20E+02	No	NA	--	1.20E+04	No	No	</=Screening Level
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	2 : 2 : 2	100	2.75E+00	3.90E+00	No	3.53E-01	Yes	1.20E+02	No	No	</=Screening Level

TABLE B-3
SURFACE SOIL SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Chrysene	218-01-9	mg/kg	2 : 2 : 2	100	1.01E+01	2.00E+01	No	2.99E-01	Yes	2.10E+02	No	No	</=Screening Level
Di-n-butylphthalate	84-74-2	mg/kg	1 : 1 : 2	100	4.10E-02	4.10E-02	No	NA	--	6.20E+03	No	No	</=Screening Level
Di-n-octylphthalate	117-84-0	mg/kg	2 : 2 : 2	100	6.64E-01	1.30E+00	No	NA	--	2.50E+03	No	No	</=Screening Level
Dibenzo(a,h)anthracene	53-70-3	mg/kg	1 : 2 : 2	50	9.93E-01	1.80E+00	No	1.20E-01	Yes	2.10E-01	Yes	Yes	>Screening Level
Dinoseb	88-85-7	mg/kg	1 : 2 : 2	50	9.43E-01	1.70E+00	No	NA	--	6.20E+01	No	No	</=Screening Level
Fluoranthene	206-44-0	mg/kg	2 : 2 : 2	100	2.18E+00	4.20E+00	No	4.50E-01	Yes	2.20E+03	No	No	</=Screening Level
Fluorene	86-73-7	mg/kg	1 : 2 : 2	50	6.93E-01	1.20E+00	No	NA	--	2.60E+03	No	No	</=Screening Level
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	2 : 2 : 2	100	7.05E-01	1.30E+00	No	NA	--	2.10E+00	No	No	</=Screening Level
Naphthalene	91-20-3	mg/kg	1 : 2 : 2	50	1.14E+00	2.10E+00	No	NA	--	1.90E+01	No	No	</=Screening Level
Phenanthrene	85-01-8	mg/kg	2 : 2 : 2	100	4.63E+00	9.20E+00	No	3.31E-01	Yes	2.40E+04	No	No	</=Screening Level
Pyrene	129-00-0	mg/kg	2 : 2 : 2	100	1.41E+01	2.80E+01	No	4.30E-01	Yes	2.90E+03	No	No	</=Screening Level
Pesticide													
4,4'-DDD	72-54-8	mg/kg	2 : 2 : 2	100	8.51E-01	1.70E+00	No	7.04E-03	Yes	1.00E+01	No	No	</=Screening Level
4,4'-DDE	72-55-9	mg/kg	2 : 2 : 2	100	1.65E+00	3.30E+00	No	1.23E-02	Yes	7.00E+00	No	No	</=Screening Level
4,4'-DDT	50-29-3	mg/kg	2 : 2 : 2	100	8.01E+00	1.60E+01	No	4.04E-02	Yes	7.00E+00	Yes	Yes	>Screening Level
beta-BHC	319-85-7	mg/kg	2 : 2 : 2	100	1.30E+01	2.60E+01	No	NA	--	1.30E+00	Yes	Yes	>Screening Level
delta-BHC	319-86-8	mg/kg	1 : 2 : 2	50	3.70E-01	7.40E-01	No	1.52E-02	Yes	1.70E+00	No	No	</=Screening Level
Dieldrin	60-57-1	mg/kg	1 : 1 : 2	100	1.40E-02	1.40E-02	No	1.13E-02	Yes	1.10E-01	No	No	</=Screening Level
Endosulfan II	33213-65-9	mg/kg	2 : 2 : 2	100	2.70E+00	5.40E+00	No	1.16E-03	Yes	3.70E+02	No	No	</=Screening Level
Endrin	72-20-8	mg/kg	2 : 2 : 2	100	5.00E+00	1.00E+01	No	5.02E-03	Yes	1.80E+01	No	No	</=Screening Level
Endrin Aldehyde	7421-93-4	mg/kg	1 : 1 : 2	100	7.40E-03	7.40E-03	No	5.83E-03	Yes	1.80E+01	No	No	</=Screening Level
gamma-BHC (Lindane)	58-89-9	mg/kg	1 : 2 : 2	50	3.75E+00	7.50E+00	No	NA	--	1.70E+00	Yes	Yes	>Screening Level
gamma-Chlordane	5103-74-2	mg/kg	2 : 2 : 2	100	1.35E+00	2.70E+00	No	4.11E-02	Yes	6.50E+00	No	No	</=Screening Level
Heptachlor	76-44-8	mg/kg	1 : 2 : 2	50	7.50E-01	1.50E+00	No	3.12E-02	Yes	3.80E-01	Yes	Yes	>Screening Level
Herbicide													
2,4,5-TP (Silvex)	93-72-1	mg/kg	1 : 2 : 2	50	1.27E-01	2.50E-01	No	NA	--	4.90E+02	No	No	</=Screening Level
2,4-D	94-75-7	mg/kg	1 : 2 : 2	50	1.65E+00	3.30E+00	No	9.93E-03	Yes	7.70E+02	No	No	</=Screening Level
Pentachlorophenol	87-86-5	mg/kg	2 : 2 : 2	100	2.20E+02	4.40E+02	No	4.57E-03	Yes	9.00E+00	Yes	Yes	>Screening Level
PCBs													
Total PCBs	1336-36-3	mg/kg	2 : 2 : 2	100	5.04E+02	1.01E+03	No	1.85E-01	Yes	1.00E+00	Yes	Yes	>Screening Level

TABLE B-3
SURFACE SOIL SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Dioxin													
2,3,7,8-TCDD-TEQ	1746-01-6	mg/kg	2 : 2 : 2	100	8.22E-05	1.60E-04	No	1.69E-05	Yes	1.00E-03	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	mg/kg	2 : 2 : 2	100	6.30E+03	7.30E+03	No	1.38E+04	No	9.20E+04	No	No	</=Screening Level
Antimony	7440-36-0	mg/kg	2 : 2 : 2	100	6.90E-01	8.00E-01	No	2.33E+00	No	4.10E+01	No	No	</=Screening Level
Arsenic	7440-38-2	mg/kg	2 : 2 : 2	100	5.80E+00	5.80E+00	No	1.24E+01	No	1.60E+00	Yes	No	</=BKG
Barium	7440-39-3	mg/kg	2 : 2 : 2	100	1.02E+02	1.20E+02	No	3.07E+02	No	6.70E+03	No	No	</=Screening Level
Beryllium	7440-41-7	mg/kg	2 : 2 : 2	100	4.00E-01	4.60E-01	No	9.02E-01	No	1.90E+02	No	No	</=Screening Level
Cadmium	7440-43-9	mg/kg	2 : 2 : 2	100	1.23E+00	1.60E+00	No	3.34E+00	No	4.50E+01	No	No	</=Screening Level
Calcium	7440-70-2	mg/kg	2 : 2 : 2	100	1.02E+05	2.00E+05	Yes	9.74E+04	Yes	NA	--	No	EN
Chromium	7440-47-3	mg/kg	2 : 2 : 2	100	2.25E+01	2.30E+01	No	2.21E+01	Yes	4.50E+02	No	No	</=Screening Level
Cobalt	7440-48-4	mg/kg	2 : 2 : 2	100	6.75E+00	9.40E+00	No	9.40E+00	No	1.30E+03	No	No	</=Screening Level
Copper	7440-50-8	mg/kg	2 : 2 : 2	100	3.45E+01	4.60E+01	No	8.58E+01	No	4.10E+03	No	No	</=Screening Level
Iron	7439-89-6	mg/kg	2 : 2 : 2	100	1.12E+04	1.30E+04	Yes	2.33E+04	No	3.10E+04	No	No	EN
Lead	7439-92-1	mg/kg	2 : 2 : 2	100	6.90E+01	7.50E+01	No	1.30E+02	No	7.50E+02	No	No	</=Screening Level
Magnesium	7439-95-4	mg/kg	2 : 2 : 2	100	5.75E+03	8.90E+03	Yes	1.23E+04	No	NA	--	No	EN
Manganese	7439-96-5	mg/kg	2 : 2 : 2	100	4.85E+02	6.70E+02	No	5.52E+02	Yes	1.90E+03	No	No	</=Screening Level
Mercury	7439-97-6	mg/kg	2 : 2 : 2	100	1.22E-01	1.70E-01	No	1.34E-01	Yes	3.10E+01	No	No	</=Screening Level
Nickel	7440-02-0	mg/kg	2 : 2 : 2	100	1.65E+01	2.00E+01	No	3.30E+01	No	2.00E+03	No	No	</=Screening Level
Potassium	7440-09-7	mg/kg	2 : 2 : 2	100	8.90E+02	9.10E+02	Yes	3.01E+03	No	NA	--	No	EN
Sodium	7440-23-5	mg/kg	2 : 2 : 2	100	1.25E+02	1.70E+02	Yes	1.58E+02	Yes	NA	--	No	EN
Vanadium	7440-62-2	mg/kg	2 : 2 : 2	100	2.05E+01	2.40E+01	No	3.89E+01	No	7.20E+02	No	No	</=Screening Level
Zinc	7440-66-6	mg/kg	2 : 2 : 2	100	1.65E+02	2.20E+02	No	3.90E+02	No	3.10E+04	No	No	</=Screening Level

TABLE B-3
SURFACE SOIL SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Soil Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason

Notes:

BKG - Background concentration.
CAS - Chemical Abstracts Service.
COPC - Constituent of potential concern.
EN - Essential nutrient.
FOD - Frequency of detection.
NA - Not available.
MCPP - 2-(2-Methyl-4-chlorophenoxy) propionic acid.
PCB - Polychlorinated Biphenyl.
SVOC - Semivolatile organic compound.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalent Concentration.
USEPA - United States Environmental Protection Agency.
VOC - Volatile Organic Compound.
-- Not applicable.
(a) Frequency of Detection = Number of detected samples: Number of samples used to calculate statistics: Total number of samples.
(b) Percent of detected samples out of samples used to calculate statistics. Constituents detected in fewer than 5 percent of samples, provided 20 samples are available, will not be included as COPCs.
(c) The arithmetic mean concentration for a constituent for each medium/area combination after sample/duplicate pairs were averaged and high non-detected values were excluded. (If one-half the detection limit was greater than the maximum detected concentration, the non-detect was not used). A proxy concentration of half the detection limit was used for non-detected results.
(d) The maximum detected concentration for a constituent for each medium/area combination after sample/duplicate pairs were averaged and high non-detected values were excluded. (If one-half the detection limit was greater than the maximum detected concentration, the non-detect was not used).
(e) Equal to two times the average concentration for the constituent in surface soil in off-site sampling locations.
(f) USEPA, 2002. Region 9 Preliminary Remediation Goal (PRG) Table. October 1, 2002. Value for industrial soil. PRGs for noncarcinogenic constituents were adjusted for a hazard index of 0.1 to account for cumulative effects.
(g) For all constituents with the exception of lead, the maximum detected concentration is compared to the screening level. For lead, the mean concentration was compared to the screening level.
(h) A constituent is identified as a COPC if it is detected in greater than 5 percent of samples, provided 20 samples are available, if it is not an essential nutrient, if the maximum detected concentration is greater than the background concentration and if the maximum detected concentration is greater than the surface soil screening level.

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Site O															
VOCs															
1,1,1-Trichloroethane	71-55-6	mg/kg	4 : 6 : 6	67	3.15E+00	1.70E+01	No	NA	--	6.90E+02	No	No	</=Screening Level	No	</=Screening Level
2-Butanone (MEK)	78-93-3	mg/kg	3 : 4 : 6	75	1.76E-02	2.30E-02	No	NA	--	2.70E+03	No	No	</=Screening Level	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	mg/kg	1 : 4 : 6	25	6.94E-02	2.21E-01	No	2.00E-03	Yes	2.80E+02	No	No	</=Screening Level	No	</=Screening Level
Acetone	67-64-1	mg/kg	3 : 4 : 6	75	3.37E-01	1.15E+00	No	NA	--	6.00E+02	No	No	</=Screening Level	No	</=Screening Level
Benzene	71-43-2	mg/kg	4 : 6 : 6	67	9.64E+01	5.00E+02	No	NA	--	1.30E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
Chlorobenzene	108-90-7	mg/kg	4 : 6 : 6	67	2.20E+02	7.60E+02	No	NA	--	5.30E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
Chloroform	67-66-3	mg/kg	2 : 4 : 6	50	3.90E-03	4.90E-03	No	NA	--	1.20E+00	No	No	</=Screening Level	No	</=Screening Level
Chloromethane	74-87-3	mg/kg	1 : 5 : 6	20	3.66E-01	1.80E+00	No	9.00E-04	Yes	2.60E+00	No	No	</=Screening Level	No	</=Screening Level
Dichloromethane	75-09-2	mg/kg	2 : 6 : 6	33	3.87E+00	1.40E+01	No	5.73E-03	Yes	2.10E+01	No	No	</=Screening Level	No	</=Screening Level
Ethylbenzene	100-41-4	mg/kg	5 : 6 : 6	83	4.85E+02	2.80E+03	No	9.52E-04	Yes	2.00E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
Tetrachloroethene	127-18-4	mg/kg	3 : 6 : 6	50	9.02E-01	3.00E+00	No	9.50E-04	Yes	3.40E+00	No	No	</=Screening Level	No	</=Screening Level
Toluene	108-88-3	mg/kg	4 : 6 : 6	67	6.95E+01	3.90E+02	No	NA	--	2.20E+02	Yes	Yes	>Screening Level	Yes	>Screening Level
Trichloroethylene	79-01-6	mg/kg	1 : 1 : 6	100	5.80E-04	5.80E-04	No	NA	--	1.10E-01	No	No	</=Screening Level	No	</=Screening Level
Xylenes, Total	1330-20-7	mg/kg	5 : 6 : 6	83	2.46E+03	1.40E+04	No	1.54E-03	Yes	9.00E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
SVOCs															
1,2,4-Trichlorobenzene	120-82-1	mg/kg	2 : 5 : 6	40	9.12E+00	2.30E+01	No	NA	--	5.60E+02	No	No	</=Screening Level	No	Not Volatile
1,2-Dichlorobenzene	95-50-1	mg/kg	3 : 5 : 6	60	3.10E+01	7.85E+01	No	NA	--	4.10E+02	No	No	</=Screening Level	No	Not Volatile
1,3-Dichlorobenzene	541-73-1	mg/kg	2 : 5 : 6	40	1.76E+00	5.20E+00	No	NA	--	6.30E+00	No	No	</=Screening Level	No	Not Volatile
1,4-Dichlorobenzene	106-46-7	mg/kg	2 : 5 : 6	40	1.87E+01	4.70E+01	No	NA	--	7.90E+00	Yes	Yes	>Screening Level	No	Not Volatile
2,4,5-Trichlorophenol	95-95-4	mg/kg	1 : 4 : 6	25	2.71E-01	5.00E-01	No	NA	--	6.20E+03	No	No	</=Screening Level	No	Not Volatile
2,4,6-Trichlorophenol	88-06-2	mg/kg	2 : 5 : 6	40	2.58E+00	6.90E+00	No	NA	--	6.20E+00	Yes	Yes	>Screening Level	No	Not Volatile
2,4-Dichlorophenol	120-83-2	mg/kg	3 : 5 : 6	60	3.15E+00	8.10E+00	No	NA	--	1.80E+02	No	No	</=Screening Level	No	Not Volatile
2-Chlorophenol	95-57-8	mg/kg	2 : 5 : 6	40	3.00E+00	9.60E+00	No	NA	--	2.40E+01	No	No	</=Screening Level	No	Not Volatile
2-Methylnaphthalene	91-57-6	mg/kg	3 : 5 : 6	60	7.21E+00	1.80E+01	No	NA	--	1.90E+01	No	No	</=Screening Level	No	Not Volatile
2-Nitroaniline	88-74-4	mg/kg	2 : 4 : 6	50	1.13E+00	2.50E+00	No	NA	--	1.80E+00	Yes	Yes	>Screening Level	No	Not Volatile
3-Methylphenol/4-Methylphenol	106-44-5	mg/kg	1 : 4 : 6	25	3.39E-01	7.70E-01	No	NA	--	3.10E+02	No	No	</=Screening Level	No	Not Volatile
4-Nitroaniline	100-01-6	mg/kg	1 : 4 : 6	25	1.19E+00	1.80E+00	No	NA	--	1.80E+00	No	No	</=Screening Level	No	Not Volatile
Acenaphthene	83-32-9	mg/kg	1 : 4 : 6	25	3.89E-01	9.70E-01	No	4.20E-02	Yes	2.90E+03	No	No	</=Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Anthracene	120-12-7	mg/kg	1:4:6	25	5.21E-01	1.50E+00	No	1.20E-01	Yes	2.40E+04	No	No	</=Screening Level	No	Not Volatile
Benzo(a)anthracene	56-55-3	mg/kg	4:5:6	80	4.61E+00	1.20E+01	No	3.25E-01	Yes	2.10E+00	Yes	Yes	>Screening Level	No	Not Volatile
Benzo(a)pyrene	50-32-8	mg/kg	3:5:6	60	2.88E+00	7.10E+00	No	3.90E-01	Yes	2.10E-01	Yes	Yes	>Screening Level	No	Not Volatile
Benzo(b)fluoranthene	205-99-2	mg/kg	5:5:6	100	3.17E+00	7.90E+00	No	3.70E-01	Yes	2.10E+00	Yes	Yes	>Screening Level	No	Not Volatile
Benzo(g,h,i)perylene	191-24-2	mg/kg	4:5:6	80	2.51E+00	6.00E+00	No	3.94E-01	Yes	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Benzo(k)fluoranthene	207-08-9	mg/kg	1:1:6	100	1.00E-01	1.00E-01	No	3.28E-01	No	2.10E+01	No	No	</=Screening Level	No	Not Volatile
Benzyl Butyl Phthalate	85-68-7	mg/kg	2:4:6	50	3.21E-01	8.60E-01	No	NA	--	1.20E+04	No	No	</=Screening Level	No	Not Volatile
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	4:4:6	100	4.38E-01	1.60E+00	No	3.35E-01	Yes	1.20E+02	No	No	</=Screening Level	No	Not Volatile
Chrysene	218-01-9	mg/kg	4:5:6	80	9.57E+00	2.40E+01	No	3.36E-01	Yes	2.10E+02	No	No	</=Screening Level	No	Not Volatile
Di-n-butylphthalate	84-74-2	mg/kg	1:1:6	100	4.90E-02	4.90E-02	No	NA	--	6.20E+03	No	No	</=Screening Level	No	Not Volatile
Dibenzo(a,h)anthracene	53-70-3	mg/kg	3:4:6	75	8.52E-01	3.00E+00	No	1.20E-01	Yes	2.10E-01	Yes	Yes	>Screening Level	No	Not Volatile
Fluoranthene	206-44-0	mg/kg	3:5:6	60	1.47E+00	4.40E+00	No	4.11E-01	Yes	2.20E+03	No	No	</=Screening Level	No	Not Volatile
Fluorene	86-73-7	mg/kg	1:4:6	25	6.21E-01	1.90E+00	No	NA	--	2.60E+03	No	No	</=Screening Level	No	Not Volatile
Hexachlorobenzene	118-74-1	mg/kg	2:4:6	50	3.75E-01	1.00E+00	No	NA	--	1.10E+00	No	No	</=Screening Level	No	Not Volatile
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	1:4:6	25	5.21E-01	1.50E+00	No	NA	--	2.10E+00	No	No	</=Screening Level	No	Not Volatile
Naphthalene	91-20-3	mg/kg	2:5:6	40	2.82E+00	7.70E+00	No	NA	--	1.90E+01	No	No	</=Screening Level	No	Not Volatile
Nitrobenzene	98-95-3	mg/kg	1:4:6	25	5.46E-01	1.60E+00	No	NA	--	1.00E+01	No	No	</=Screening Level	No	Not Volatile
Phenanthrene	85-01-8	mg/kg	4:5:6	80	5.79E+00	1.54E+01	No	3.52E-01	Yes	2.40E+04	No	No	</=Screening Level	No	Not Volatile
Phenol	108-95-2	mg/kg	2:5:6	40	2.84E+00	7.90E+00	No	NA	--	3.70E+04	No	No	</=Screening Level	No	Not Volatile
Pyrene	129-00-0	mg/kg	4:5:6	80	8.46E+00	2.10E+01	No	4.01E-01	Yes	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Pesticide															
4,4'-DDD	72-54-8	mg/kg	2:4:6	50	2.56E-02	8.60E-02	No	5.39E-03	Yes	1.00E+01	No	No	</=Screening Level	No	Not Volatile
4,4'-DDE	72-55-9	mg/kg	2:6:6	33	1.63E-01	6.90E-01	No	8.02E-03	Yes	7.00E+00	No	No	</=Screening Level	No	Not Volatile
4,4'-DDT	50-29-3	mg/kg	6:6:6	100	9.63E-01	3.02E+00	No	2.18E-02	Yes	7.00E+00	No	No	</=Screening Level	No	Not Volatile
Aldrin	309-00-2	mg/kg	2:6:6	33	1.46E-01	7.20E-01	No	2.75E-03	Yes	1.00E-01	Yes	Yes	>Screening Level	No	Not Volatile
alpha-Chlordane	5103-71-9	mg/kg	1:4:6	25	4.08E-03	9.40E-03	No	4.04E-03	Yes	6.50E+00	No	No	</=Screening Level	No	Not Volatile
beta-BHC	319-85-7	mg/kg	2:6:6	33	1.71E-01	8.94E-01	No	NA	--	1.30E+00	No	No	</=Screening Level	No	Not Volatile
delta-BHC	319-86-8	mg/kg	4:6:6	67	9.17E-01	2.85E+00	No	8.57E-03	Yes	1.70E+00	Yes	Yes	>Screening Level	No	Not Volatile
Dieldrin	60-57-1	mg/kg	5:6:6	83	1.27E+00	3.80E+00	No	7.51E-03	Yes	1.10E-01	Yes	Yes	>Screening Level	No	Not Volatile
Endosulfan II	33213-65-	mg/kg	3:6:6	50	1.15E-01	4.20E-01	No	1.16E-03	Yes	3.70E+02	No	No	</=Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Endosulfan Sulfate	1031-07-8	mg/kg	3:6:6	50	8.40E-02	2.20E-01	No	1.81E-03	Yes	3.70E+02	No	No	</=Screening Level	No	Not Volatile
Endrin Aldehyde	7421-93-4	mg/kg	2:6:6	33	1.81E-01	8.50E-01	No	4.81E-03	Yes	1.80E+01	No	No	</=Screening Level	No	Not Volatile
Endrin Ketone	53494-70-	mg/kg	2:4:6	50	8.75E-03	2.20E-02	No	NA	--	1.80E+01	No	No	</=Screening Level	No	Not Volatile
gamma-BHC (Lindane)	58-89-9	mg/kg	3:6:6	50	5.06E-01	2.88E+00	No	NA	--	1.70E+00	Yes	Yes	>Screening Level	No	Not Volatile
gamma-Chlordane	5103-74-2	mg/kg	1:6:6	17	5.70E-02	1.80E-01	No	2.13E-02	Yes	6.50E+00	No	No	</=Screening Level	No	Not Volatile
Heptachlor	76-44-8	mg/kg	5:6:6	83	7.86E-01	2.77E+00	No	1.66E-02	Yes	3.80E-01	Yes	Yes	>Screening Level	No	Not Volatile
Heptachlor Epoxide	1024-57-3	mg/kg	2:6:6	33	1.46E-01	4.70E-01	No	6.10E-03	Yes	1.90E-01	Yes	Yes	>Screening Level	No	Not Volatile
Methoxychlor	72-43-5	mg/kg	1:1:6	100	8.80E-04	8.80E-04	No	3.31E-03	No	3.10E+02	No	No	</=Screening Level	No	Not Volatile
Herbicide															
2,4,5-T	93-76-5	mg/kg	4:5:6	80	6.55E-01	3.10E+00	No	NA	--	6.20E+02	No	No	</=Screening Level	No	Not Volatile
2,4-D	94-75-7	mg/kg	5:6:6	83	8.23E+00	2.70E+01	No	9.66E-03	Yes	7.70E+02	No	No	</=Screening Level	No	Not Volatile
2,4-DB	94-82-6	mg/kg	2:2:6	100	1.60E-02	1.90E-02	No	NA	--	4.90E+02	No	No	</=Screening Level	No	Not Volatile
Dicamba	1918-00-9	mg/kg	1:1:6	100	2.40E-03	2.40E-03	No	NA	--	1.80E+03	No	No	</=Screening Level	No	Not Volatile
Dichlorprop	120-36-5	mg/kg	2:2:6	100	2.35E-02	3.70E-02	No	1.03E-01	No	4.92E+02	No	No	</=Screening Level	No	Not Volatile
MCPP	93-65-2	mg/kg	3:3:6	100	8.93E+00	1.20E+01	No	2.92E+00	Yes	6.20E+01	No	No	</=Screening Level	No	Not Volatile
Pentachlorophenol	87-86-5	mg/kg	2:3:6	67	1.11E+00	2.00E+00	No	4.57E-03	Yes	9.00E+00	No	No	</=Screening Level	No	Not Volatile
PCBs															
Total PCBs	1336-36-3	mg/kg	6:6:6	100	6.97E+01	2.98E+02	No	1.28E-01	Yes	1.00E+00	Yes	Yes	>Screening Level	No	Not Volatile
Dioxin															
2,3,7,8-TCDD-TEQ	1746-01-6	mg/kg	6:6:6	100	6.41E-03	3.04E-02	No	8.93E-06	Yes	1.00E-03	Yes	Yes	>Screening Level	No	Not Volatile
Metals															
Aluminum	7429-90-5	mg/kg	6:6:6	100	8.08E+03	9.30E+03	No	1.09E+04	No	9.20E+04	No	No	</=Screening Level	No	Not Volatile
Antimony	7440-36-0	mg/kg	1:1:6	100	7.40E-01	7.40E-01	No	2.05E+00	No	4.10E+01	No	No	</=Screening Level	No	Not Volatile
Arsenic	7440-38-2	mg/kg	6:6:6	100	5.93E+00	7.30E+00	No	1.08E+01	No	1.60E+00	Yes	No	</=BKG	No	Not Volatile
Barium	7440-39-3	mg/kg	6:6:6	100	1.28E+02	1.85E+02	No	3.17E+02	No	6.70E+03	No	No	</=Screening Level	No	Not Volatile
Beryllium	7440-41-7	mg/kg	6:6:6	100	5.37E-01	6.50E-01	No	7.65E-01	No	1.90E+02	No	No	</=Screening Level	No	Not Volatile
Cadmium	7440-43-9	mg/kg	6:6:6	100	1.01E+00	1.70E+00	No	1.81E+00	No	4.50E+01	No	No	</=Screening Level	No	Not Volatile
Calcium	7440-70-2	mg/kg	6:6:6	100	1.13E+04	2.60E+04	Yes	6.11E+04	No	NA	--	No	EN	No	Not Volatile
Chromium	7440-47-3	mg/kg	6:6:6	100	1.48E+01	1.75E+01	No	1.89E+01	No	4.50E+02	No	No	</=Screening Level	No	Not Volatile
Cobalt	7440-48-4	mg/kg	6:6:6	100	7.17E+00	1.00E+01	No	9.27E+00	Yes	1.30E+03	No	No	</=Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Copper	7440-50-8	mg/kg	6 : 6 : 6	100	2.44E+01	4.00E+01	No	4.96E+01	No	4.10E+03	No	No	</=Screening Level	No	Not Volatile
Iron	7439-89-6	mg/kg	6 : 6 : 6	100	1.54E+04	1.70E+04	Yes	2.10E+04	No	3.10E+04	No	No	EN	No	Not Volatile
Lead	7439-92-1	mg/kg	6 : 6 : 6	100	1.56E+01	2.10E+01	No	7.18E+01	No	7.50E+02	No	No	</=Screening Level	No	Not Volatile
Magnesium	7439-95-4	mg/kg	6 : 6 : 6	100	5.30E+03	8.50E+03	Yes	1.13E+04	No	NA	--	No	EN	No	Not Volatile
Manganese	7439-96-5	mg/kg	6 : 6 : 6	100	5.12E+02	7.30E+02	No	5.01E+02	Yes	1.90E+03	No	No	</=Screening Level	No	Not Volatile
Mercury	7439-97-6	mg/kg	6 : 6 : 6	100	2.46E+00	1.00E+01	No	7.72E-02	Yes	3.10E+01	No	No	</=Screening Level	No	Not Volatile
Nickel	7440-02-0	mg/kg	6 : 6 : 6	100	1.83E+01	2.10E+01	No	2.83E+01	No	2.00E+03	No	No	</=Screening Level	No	Not Volatile
Potassium	7440-09-7	mg/kg	6 : 6 : 6	100	9.10E+02	1.30E+03	Yes	2.38E+03	No	NA	--	No	EN	No	Not Volatile
Sodium	7440-23-5	mg/kg	5 : 6 : 6	83	1.27E+02	2.35E+02	Yes	1.41E+02	Yes	NA	--	No	EN	No	Not Volatile
Vanadium	7440-62-2	mg/kg	6 : 6 : 6	100	2.67E+01	2.80E+01	No	3.44E+01	No	7.20E+02	No	No	</=Screening Level	No	Not Volatile
Zinc	7440-66-6	mg/kg	6 : 6 : 6	100	8.74E+01	1.30E+02	No	2.24E+02	No	3.10E+04	No	No	</=Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Site O North															
VOCs															
1,1,1-Trichloroethane	71-55-6	mg/kg	1:2:3	50	2.15E+00	4.10E+00	No	NA	--	6.90E+02	No	No	</=Screening Level	No	</=Screening Level
Benzene	71-43-2	mg/kg	3:3:3	100	4.35E+01	6.90E+01	No	NA	--	1.30E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
Carbon Disulfide	75-15-0	mg/kg	2:2:3	100	1.19E+00	2.20E+00	No	NA	--	1.20E+02	No	No	</=Screening Level	No	</=Screening Level
Chlorobenzene	108-90-7	mg/kg	3:3:3	100	3.22E+02	4.80E+02	No	NA	--	5.30E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
Dichloromethane	75-09-2	mg/kg	2:3:3	67	3.67E+01	8.70E+01	No	5.73E-03	Yes	2.10E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
Ethylbenzene	100-41-4	mg/kg	3:3:3	100	5.05E+02	7.60E+02	No	9.52E-04	Yes	2.00E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
Tetrachloroethene	127-18-4	mg/kg	2:2:3	100	3.54E+00	6.80E+00	No	9.50E-04	Yes	3.40E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
Toluene	108-88-3	mg/kg	3:3:3	100	6.00E+01	9.00E+01	No	NA	--	2.20E+02	No	No	</=Screening Level	No	</=Screening Level
Xylenes, Total	1330-20-7	mg/kg	3:3:3	100	2.59E+03	3.90E+03	No	1.54E-03	Yes	9.00E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
SVOCs															
1,2,4-Trichlorobenzene	120-82-1	mg/kg	2:3:3	67	1.25E+02	2.90E+02	No	NA	--	5.60E+02	No	No	</=Screening Level	No	Not Volatile
1,2-Dichlorobenzene	95-50-1	mg/kg	3:3:3	100	2.47E+02	5.20E+02	No	NA	--	4.10E+02	Yes	Yes	>Screening Level	No	Not Volatile
1,3-Dichlorobenzene	541-73-1	mg/kg	2:3:3	67	5.92E+00	1.20E+01	No	NA	--	6.30E+00	Yes	Yes	>Screening Level	No	Not Volatile
1,4-Dichlorobenzene	106-46-7	mg/kg	2:3:3	67	6.37E+01	1.20E+02	No	NA	--	7.90E+00	Yes	Yes	>Screening Level	No	Not Volatile
2,4,5-Trichlorophenol	95-95-4	mg/kg	1:3:3	33	2.93E+00	8.10E+00	No	NA	--	6.20E+03	No	No	</=Screening Level	No	Not Volatile
2,4,6-Trichlorophenol	88-06-2	mg/kg	2:3:3	67	2.41E+01	6.10E+01	No	NA	--	6.20E+00	Yes	Yes	>Screening Level	No	Not Volatile
2,4-Dichlorophenol	120-83-2	mg/kg	2:3:3	67	1.47E+01	3.30E+01	No	NA	--	1.80E+02	No	No	</=Screening Level	No	Not Volatile
2-Chlorophenol	95-57-8	mg/kg	2:3:3	67	3.13E+00	6.20E+00	No	NA	--	2.40E+01	No	No	</=Screening Level	No	Not Volatile
2-Methylnaphthalene	91-57-6	mg/kg	2:3:3	67	8.27E+01	2.00E+02	No	NA	--	1.90E+01	Yes	Yes	>Screening Level	No	Not Volatile
2-Methylphenol	95-48-7	mg/kg	1:3:3	33	1.78E+00	4.00E+00	No	NA	--	3.10E+03	No	No	</=Screening Level	No	Not Volatile
2-Nitroaniline	88-74-4	mg/kg	1:3:3	33	2.30E+01	6.20E+01	No	NA	--	1.80E+00	Yes	Yes	>Screening Level	No	Not Volatile
2-Nitrophenol	88-75-5	mg/kg	2:3:3	67	4.79E+00	1.20E+01	No	NA	--	NA	--	No	Screening Level NA	No	Not Volatile
3-Methylphenol/4-Methylphenol	106-44-5	mg/kg	2:3:3	67	5.79E+00	1.40E+01	No	NA	--	3.10E+02	No	No	</=Screening Level	No	Not Volatile
4-Nitroaniline	100-01-6	mg/kg	2:3:3	67	3.43E+02	1.00E+03	No	NA	--	1.80E+00	Yes	Yes	>Screening Level	No	Not Volatile
Acenaphthene	83-32-9	mg/kg	2:3:3	67	4.66E+00	1.20E+01	No	4.20E-02	Yes	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Anthracene	120-12-7	mg/kg	2:3:3	67	1.27E+01	2.80E+01	No	1.20E-01	Yes	2.40E+04	No	No	</=Screening Level	No	Not Volatile
Benzo(a)anthracene	56-55-3	mg/kg	3:3:3	100	1.53E+01	3.60E+01	No	3.25E-01	Yes	2.10E+00	Yes	Yes	>Screening Level	No	Not Volatile
Benzo(a)pyrene	50-32-8	mg/kg	3:3:3	100	6.52E+00	1.10E+01	No	3.90E-01	Yes	2.10E-01	Yes	Yes	>Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Benzo(b)fluoranthene	205-99-2	mg/kg	3:3:3	100	6.13E+00	1.20E+01	No	3.70E-01	Yes	2.10E+00	Yes	Yes	>Screening Level	No	Not Volatile
Benzo(g,h,i)perylene	191-24-2	mg/kg	3:3:3	100	2.45E+00	4.70E+00	No	3.94E-01	Yes	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Benzo(k)fluoranthene	207-08-9	mg/kg	1:3:3	33	1.71E+00	3.80E+00	No	3.28E-01	Yes	2.10E+01	No	No	</=Screening Level	No	Not Volatile
Benzyl Butyl Phthalate	85-68-7	mg/kg	2:3:3	67	2.44E+01	3.80E+01	No	NA	--	1.20E+04	No	No	</=Screening Level	No	Not Volatile
bis(2-Chloroethyl)ether	111-44-4	mg/kg	1:3:3	33	1.14E+00	2.10E+00	No	NA	--	5.50E-01	Yes	Yes	>Screening Level	No	Not Volatile
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	2:3:3	67	2.96E+00	8.20E+00	No	3.35E-01	Yes	1.20E+02	No	No	</=Screening Level	No	Not Volatile
Carbazole	86-74-8	mg/kg	1:3:3	33	2.08E+00	4.90E+00	No	NA	--	8.60E+01	No	No	</=Screening Level	No	Not Volatile
Chrysene	218-01-9	mg/kg	3:3:3	100	3.07E+01	6.90E+01	No	3.36E-01	Yes	2.10E+02	No	No	</=Screening Level	No	Not Volatile
Di-n-octylphthalate	117-84-0	mg/kg	1:3:3	33	1.58E+00	3.40E+00	No	NA	--	2.50E+03	No	No	</=Screening Level	No	Not Volatile
Dibenzo(a,h)anthracene	53-70-3	mg/kg	2:3:3	67	2.12E+00	4.60E+00	No	1.20E-01	Yes	2.10E-01	Yes	Yes	>Screening Level	No	Not Volatile
Fluoranthene	206-44-0	mg/kg	3:3:3	100	5.49E+00	1.30E+01	No	4.11E-01	Yes	2.20E+03	No	No	</=Screening Level	No	Not Volatile
Fluorene	86-73-7	mg/kg	2:3:3	67	7.86E+00	2.00E+01	No	NA	--	2.60E+03	No	No	</=Screening Level	No	Not Volatile
Hexachlorobenzene	118-74-1	mg/kg	1:3:3	33	1.94E+00	4.50E+00	No	NA	--	1.10E+00	Yes	Yes	>Screening Level	No	Not Volatile
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	2:2:3	100	3.26E-01	6.20E-01	No	NA	--	2.10E+00	No	No	</=Screening Level	No	Not Volatile
Naphthalene	91-20-3	mg/kg	2:3:3	67	1.84E+01	4.10E+01	No	NA	--	1.90E+01	Yes	Yes	>Screening Level	No	Not Volatile
Nitrobenzene	98-95-3	mg/kg	1:3:3	33	4.11E+00	1.10E+01	No	NA	--	1.00E+01	Yes	Yes	>Screening Level	No	Not Volatile
Phenanthrene	85-01-8	mg/kg	3:3:3	100	3.87E+01	9.30E+01	No	3.52E-01	Yes	2.40E+04	No	No	</=Screening Level	No	Not Volatile
Phenol	108-95-2	mg/kg	2:3:3	67	9.96E+00	2.20E+01	No	NA	--	3.70E+04	No	No	</=Screening Level	No	Not Volatile
Pyrene	129-00-0	mg/kg	3:3:3	100	4.87E+01	1.20E+02	No	4.01E-01	Yes	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Pesticide															
4,4'-DDE	72-55-9	mg/kg	2:3:3	67	1.70E+01	3.30E+01	No	8.02E-03	Yes	7.00E+00	Yes	Yes	>Screening Level	No	Not Volatile
4,4'-DDT	50-29-3	mg/kg	2:3:3	67	2.04E+01	5.80E+01	No	2.18E-02	Yes	7.00E+00	Yes	Yes	>Screening Level	No	Not Volatile
Aldrin	309-00-2	mg/kg	2:3:3	67	2.20E+00	4.50E+00	No	2.75E-03	Yes	1.00E-01	Yes	Yes	>Screening Level	No	Not Volatile
alpha-BHC	319-84-6	mg/kg	1:3:3	33	5.99E-01	1.50E+00	No	2.58E-02	Yes	3.60E-01	Yes	Yes	>Screening Level	No	Not Volatile
beta-BHC	319-85-7	mg/kg	2:3:3	67	7.26E+00	2.10E+01	No	NA	--	1.30E+00	Yes	Yes	>Screening Level	No	Not Volatile
Dieldrin	60-57-1	mg/kg	3:3:3	100	1.95E+01	5.00E+01	No	7.51E-03	Yes	1.10E-01	Yes	Yes	>Screening Level	No	Not Volatile
Endosulfan II	33213-65-	mg/kg	2:3:3	67	5.33E+00	9.60E+00	No	1.16E-03	Yes	3.70E+02	No	No	</=Screening Level	No	Not Volatile
Endosulfan Sulfate	1031-07-8	mg/kg	2:3:3	67	1.50E+01	2.40E+01	No	1.81E-03	Yes	3.70E+02	No	No	</=Screening Level	No	Not Volatile
gamma-Chlordane	5103-74-2	mg/kg	1:1:3	100	3.30E-04	3.30E-04	No	2.13E-02	No	6.50E+00	No	No	</=Screening Level	No	Not Volatile
Heptachlor	76-44-8	mg/kg	1:3:3	33	3.40E+00	9.90E+00	No	1.66E-02	Yes	3.80E-01	Yes	Yes	>Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Heptachlor Epoxide	1024-57-3	mg/kg	1:3:3	33	1.25E+00	2.70E+00	No	6.10E-03	Yes	1.90E-01	Yes	Yes	>Screening Level	No	Not Volatile
Herbicide															
2,4,5-T	93-76-5	mg/kg	2:3:3	67	8.24E+00	1.70E+01	No	NA	--	6.20E+02	No	No	</=Screening Level	No	Not Volatile
2,4-D	94-75-7	mg/kg	2:3:3	67	2.20E+01	4.60E+01	No	9.66E-03	Yes	7.70E+02	No	No	</=Screening Level	No	Not Volatile
Dichlorprop	120-36-5	mg/kg	1:1:3	100	1.10E-02	1.10E-02	No	1.03E-01	No	4.92E+02	No	No	</=Screening Level	No	Not Volatile
MCPP	93-65-2	mg/kg	1:1:3	100	4.30E+01	4.30E+01	No	2.92E+00	Yes	6.20E+01	No	No	</=Screening Level	No	Not Volatile
Pentachlorophenol	87-86-5	mg/kg	1:1:3	100	6.10E-02	6.10E-02	No	4.57E-03	Yes	9.00E+00	No	No	</=Screening Level	No	Not Volatile
PCBs															
Total PCBs	1336-36-3	mg/kg	3:3:3	100	1.78E+03	3.03E+03	No	1.28E-01	Yes	1.00E+00	Yes	Yes	>Screening Level	No	Not Volatile
Dioxin															
2,3,7,8-TCDD-TEQ	1746-01-6	mg/kg	3:3:3	100	3.25E-01	4.97E-01	No	8.93E-06	Yes	1.00E-03	Yes	Yes	>Screening Level	No	Not Volatile
Metals															
Aluminum	7429-90-5	mg/kg	3:3:3	100	5.47E+03	9.70E+03	No	1.09E+04	No	9.20E+04	No	No	</=Screening Level	No	Not Volatile
Antimony	7440-36-0	mg/kg	3:3:3	100	1.25E+00	2.40E+00	No	2.05E+00	Yes	4.10E+01	No	No	</=Screening Level	No	Not Volatile
Arsenic	7440-38-2	mg/kg	3:3:3	100	2.00E+01	3.70E+01	No	1.08E+01	Yes	1.60E+00	Yes	Yes	>Screening Level	No	Not Volatile
Barium	7440-39-3	mg/kg	3:3:3	100	6.63E+02	1.20E+03	No	3.17E+02	Yes	6.70E+03	No	No	</=Screening Level	No	Not Volatile
Beryllium	7440-41-7	mg/kg	3:3:3	100	4.00E-01	6.70E-01	No	7.65E-01	No	1.90E+02	No	No	</=Screening Level	No	Not Volatile
Cadmium	7440-43-9	mg/kg	3:3:3	100	3.93E+01	8.60E+01	No	1.81E+00	Yes	4.50E+01	Yes	Yes	>Screening Level	No	Not Volatile
Calcium	7440-70-2	mg/kg	3:3:3	100	1.09E+04	2.00E+04	Yes	6.11E+04	No	NA	--	No	EN	No	Not Volatile
Chromium	7440-47-3	mg/kg	3:3:3	100	3.33E+01	6.20E+01	No	1.89E+01	Yes	4.50E+02	No	No	</=Screening Level	No	Not Volatile
Cobalt	7440-48-4	mg/kg	3:3:3	100	5.63E+00	6.90E+00	No	9.27E+00	No	1.30E+03	No	No	</=Screening Level	No	Not Volatile
Copper	7440-50-8	mg/kg	3:3:3	100	9.57E+02	1.50E+03	No	4.96E+01	Yes	4.10E+03	No	No	</=Screening Level	No	Not Volatile
Iron	7439-89-6	mg/kg	3:3:3	100	1.18E+04	1.60E+04	Yes	2.10E+04	No	3.10E+04	No	No	EN	No	Not Volatile
Lead	7439-92-1	mg/kg	3:3:3	100	5.03E+02	1.20E+03	No	7.18E+01	Yes	7.50E+02	No	No	</=Screening Level	No	Not Volatile
Magnesium	7439-95-4	mg/kg	3:3:3	100	2.72E+03	4.90E+03	Yes	1.13E+04	No	NA	--	No	EN	No	Not Volatile
Manganese	7439-96-5	mg/kg	3:3:3	100	1.06E+03	1.80E+03	No	5.01E+02	Yes	1.90E+03	No	No	</=Screening Level	No	Not Volatile
Mercury	7439-97-6	mg/kg	3:3:3	100	1.65E+02	3.60E+02	No	7.72E-02	Yes	3.10E+01	Yes	Yes	>Screening Level	No	Not Volatile
Nickel	7440-02-0	mg/kg	3:3:3	100	2.57E+01	2.80E+01	No	2.83E+01	No	2.00E+03	No	No	</=Screening Level	No	Not Volatile
Potassium	7440-09-7	mg/kg	3:3:3	100	1.05E+03	2.00E+03	Yes	2.38E+03	No	NA	--	No	EN	No	Not Volatile
Selenium	7782-49-2	mg/kg	2:3:3	67	1.01E+01	2.40E+01	No	1.07E+00	Yes	5.10E+02	No	No	</=Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Silver	7440-22-4	mg/kg	3 : 3 : 3	100	7.23E+00	1.50E+01	No	1.02E+00	Yes	5.10E+02	No	No	</=Screening Level	No	Not Volatile
Sodium	7440-23-5	mg/kg	3 : 3 : 3	100	1.62E+02	2.20E+02	Yes	1.41E+02	Yes	NA	--	No	EN	No	Not Volatile
Vanadium	7440-62-2	mg/kg	3 : 3 : 3	100	1.93E+01	2.80E+01	No	3.44E+01	No	7.20E+02	No	No	</=Screening Level	No	Not Volatile
Zinc	7440-66-6	mg/kg	3 : 3 : 3	100	1.88E+03	3.90E+03	No	2.24E+02	Yes	3.10E+04	No	No	</=Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Site P															
VOCs															
1,1-Dichloroethane	75-34-3	mg/kg	1 : 1 : 11	100	2.40E-03	2.40E-03	No	NA	--	1.70E+02	No	No	</=Screening Level	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	mg/kg	2 : 10 : 11	20	2.18E-01	7.50E-01	No	NA	--	1.50E+01	No	No	</=Screening Level	No	</=Screening Level
2-Butanone (MEK)	78-93-3	mg/kg	6 : 11 : 11	55	7.49E-01	2.50E+00	No	NA	--	2.70E+03	No	No	</=Screening Level	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	mg/kg	6 : 9 : 11	67	4.27E-01	1.20E+00	No	2.00E-03	Yes	2.80E+02	No	No	</=Screening Level	No	</=Screening Level
Acetone	67-64-1	mg/kg	6 : 10 : 11	60	1.39E+00	4.30E+00	No	NA	--	6.00E+02	No	No	</=Screening Level	No	</=Screening Level
Benzene	71-43-2	mg/kg	8 : 11 : 11	73	6.62E-01	2.30E+00	No	NA	--	1.30E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
Carbon Disulfide	75-15-0	mg/kg	3 : 11 : 11	27	3.22E-01	2.00E+00	No	NA	--	1.20E+02	No	No	</=Screening Level	No	</=Screening Level
Chlorobenzene	108-90-7	mg/kg	6 : 11 : 11	55	9.66E-01	3.50E+00	No	NA	--	5.30E+01	No	No	</=Screening Level	No	</=Screening Level
Chloroform	67-66-3	mg/kg	1 : 1 : 11	100	2.00E-03	2.00E-03	No	NA	--	1.20E+00	No	No	</=Screening Level	No	</=Screening Level
Dichloromethane	75-09-2	mg/kg	2 : 11 : 11	18	4.05E-01	2.30E+00	No	5.73E-03	Yes	2.10E+01	No	No	</=Screening Level	No	</=Screening Level
Ethylbenzene	100-41-4	mg/kg	9 : 11 : 11	82	8.69E+00	7.80E+01	No	9.52E-04	Yes	2.00E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
Methyl N-Butyl Ketone	591-78-6	mg/kg	2 : 5 : 11	40	2.61E-02	4.80E-02	No	NA	--	2.70E+03	No	No	</=Screening Level	No	</=Screening Level
Styrene (Monomer)	100-42-5	mg/kg	1 : 1 : 11	100	3.40E-04	3.40E-04	No	4.10E-03	No	1.80E+03	No	No	</=Screening Level	No	</=Screening Level
Tetrachloroethene	127-18-4	mg/kg	9 : 11 : 11	82	1.31E+01	1.40E+02	No	9.50E-04	Yes	3.40E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
Toluene	108-88-3	mg/kg	8 : 11 : 11	73	7.31E+00	3.30E+01	No	NA	--	2.20E+02	No	No	</=Screening Level	No	</=Screening Level
Trichloroethylene	79-01-6	mg/kg	6 : 11 : 11	55	2.01E-01	9.90E-01	No	NA	--	1.10E-01	Yes	Yes	>Screening Level	Yes	>Screening Level
Xylenes, Total	1330-20-7	mg/kg	8 : 11 : 11	73	4.02E+01	3.80E+02	No	1.54E-03	Yes	9.00E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
SVOCs															
1,2,4-Trichlorobenzene	120-82-1	mg/kg	1 : 1 : 12	100	1.00E-01	1.00E-01	No	NA	--	5.60E+02	No	No	</=Screening Level	No	Not Volatile
1,2-Dichlorobenzene	95-50-1	mg/kg	5 : 11 : 12	45	2.76E+00	1.40E+01	No	NA	--	4.10E+02	No	No	</=Screening Level	No	Not Volatile
1,3-Dichlorobenzene	541-73-1	mg/kg	1 : 4 : 12	25	2.65E-01	4.60E-01	No	NA	--	6.30E+00	No	No	</=Screening Level	No	Not Volatile
1,4-Dichlorobenzene	106-46-7	mg/kg	5 : 12 : 12	42	2.44E+01	1.60E+02	No	NA	--	7.90E+00	Yes	Yes	>Screening Level	No	Not Volatile
2,4-Dichlorophenol	120-83-2	mg/kg	2 : 11 : 12	18	2.51E+00	1.60E+01	No	NA	--	1.80E+02	No	No	</=Screening Level	No	Not Volatile
2-Chlorophenol	95-57-8	mg/kg	1 : 4 : 12	25	2.58E-01	4.30E-01	No	NA	--	2.40E+01	No	No	</=Screening Level	No	Not Volatile
2-Methylnaphthalene	91-57-6	mg/kg	1 : 4 : 12	25	2.67E-01	4.70E-01	No	NA	--	1.90E+01	No	No	</=Screening Level	No	Not Volatile
4-Chloroaniline	106-47-8	mg/kg	2 : 11 : 12	18	3.45E+00	1.50E+01	No	NA	--	2.50E+02	No	No	</=Screening Level	No	Not Volatile
Acenaphthene	83-32-9	mg/kg	2 : 4 : 12	50	2.97E-01	7.20E-01	No	4.20E-02	Yes	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Anthracene	120-12-7	mg/kg	2 : 4 : 12	50	2.41E-01	3.40E-01	No	1.20E-01	Yes	2.40E+04	No	No	</=Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Benzo(a)anthracene	56-55-3	mg/kg	4 : 5 : 12	80	3.10E-01	6.80E-01	No	3.25E-01	Yes	2.10E+00	No	No	</=Screening Level	No	Not Volatile
Benzo(a)pyrene	50-32-8	mg/kg	3 : 4 : 12	75	2.63E-01	6.70E-01	No	3.90E-01	Yes	2.10E-01	Yes	Yes	>Screening Level	No	Not Volatile
Benzo(b)fluoranthene	205-99-2	mg/kg	4 : 5 : 12	80	3.34E-01	6.80E-01	No	3.70E-01	Yes	2.10E+00	No	No	</=Screening Level	No	Not Volatile
Benzo(g,h,i)perylene	191-24-2	mg/kg	4 : 5 : 12	80	2.02E-01	3.20E-01	No	3.94E-01	No	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Benzo(k)fluoranthene	207-08-9	mg/kg	4 : 5 : 12	80	2.78E-01	5.70E-01	No	3.28E-01	Yes	2.10E+01	No	No	</=Screening Level	No	Not Volatile
Benzyl Butyl Phthalate	85-68-7	mg/kg	2 : 10 : 12	20	1.13E+00	3.60E+00	No	NA	--	1.20E+04	No	No	</=Screening Level	No	Not Volatile
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	7 : 10 : 12	70	9.41E-01	2.40E+00	No	3.35E-01	Yes	1.20E+02	No	No	</=Screening Level	No	Not Volatile
Carbazole	86-74-8	mg/kg	1 : 1 : 12	100	7.30E-02	7.30E-02	No	NA	--	8.60E+01	No	No	</=Screening Level	No	Not Volatile
Chrysene	218-01-9	mg/kg	4 : 5 : 12	80	4.13E-01	7.70E-01	No	3.36E-01	Yes	2.10E+02	No	No	</=Screening Level	No	Not Volatile
Di-n-butylphthalate	84-74-2	mg/kg	1 : 1 : 12	100	1.70E-01	1.70E-01	No	NA	--	6.20E+03	No	No	</=Screening Level	No	Not Volatile
Di-n-octylphthalate	117-84-0	mg/kg	1 : 4 : 12	25	2.97E-01	5.90E-01	No	NA	--	2.50E+03	No	No	</=Screening Level	No	Not Volatile
Dibenzo(a,h)anthracene	53-70-3	mg/kg	2 : 2 : 12	100	8.45E-02	1.10E-01	No	1.20E-01	No	2.10E-01	No	No	</=Screening Level	No	Not Volatile
Dibenzofuran	132-64-9	mg/kg	4 : 7 : 12	57	4.58E-01	9.80E-01	No	NA	--	3.10E+02	No	No	</=Screening Level	No	Not Volatile
Diethyl Phthalate	84-66-2	mg/kg	1 : 11 : 12	9	2.72E+00	1.60E+01	No	NA	--	4.90E+04	No	No	</=Screening Level	No	Not Volatile
Fluoranthene	206-44-0	mg/kg	4 : 8 : 12	50	8.51E-01	1.70E+00	No	4.11E-01	Yes	2.20E+03	No	No	</=Screening Level	No	Not Volatile
Fluorene	86-73-7	mg/kg	2 : 4 : 12	50	2.72E-01	6.30E-01	No	NA	--	2.60E+03	No	No	</=Screening Level	No	Not Volatile
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	2 : 3 : 12	67	1.65E-01	2.40E-01	No	NA	--	2.10E+00	No	No	</=Screening Level	No	Not Volatile
Naphthalene	91-20-3	mg/kg	2 : 11 : 12	18	1.80E+00	8.00E+00	No	NA	--	1.90E+01	No	No	</=Screening Level	No	Not Volatile
Phenanthrene	85-01-8	mg/kg	8 : 10 : 12	80	6.94E-01	1.80E+00	No	3.52E-01	Yes	2.40E+04	No	No	</=Screening Level	No	Not Volatile
Phenol	108-95-2	mg/kg	5 : 10 : 12	50	1.07E+00	3.20E+00	No	NA	--	3.70E+04	No	No	</=Screening Level	No	Not Volatile
Pyrene	129-00-0	mg/kg	5 : 8 : 12	63	7.96E-01	1.80E+00	No	4.01E-01	Yes	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Pesticide															
4,4'-DDD	72-54-8	mg/kg	1 : 5 : 12	20	1.36E-02	1.90E-02	No	5.39E-03	Yes	1.00E+01	No	No	</=Screening Level	No	Not Volatile
4,4'-DDE	72-55-9	mg/kg	5 : 11 : 12	45	9.00E-02	4.10E-01	No	8.02E-03	Yes	7.00E+00	No	No	</=Screening Level	No	Not Volatile
4,4'-DDT	50-29-3	mg/kg	7 : 12 : 12	58	3.47E-01	1.70E+00	No	2.18E-02	Yes	7.00E+00	No	No	</=Screening Level	No	Not Volatile
Aldrin	309-00-2	mg/kg	1 : 11 : 12	9	2.71E-02	8.90E-02	No	2.75E-03	Yes	1.00E-01	No	No	</=Screening Level	No	Not Volatile
alpha-BHC	319-84-6	mg/kg	4 : 9 : 12	44	1.55E-02	3.30E-02	No	2.58E-02	Yes	3.60E-01	No	No	</=Screening Level	No	Not Volatile
alpha-Chlordane	5103-71-9	mg/kg	4 : 6 : 12	67	1.58E-02	2.80E-02	No	4.04E-03	Yes	6.50E+00	No	No	</=Screening Level	No	Not Volatile
beta-BHC	319-85-7	mg/kg	5 : 12 : 12	42	6.18E-02	2.60E-01	No	NA	--	1.30E+00	No	No	</=Screening Level	No	Not Volatile
Dieldrin	60-57-1	mg/kg	8 : 12 : 12	67	1.26E-01	5.60E-01	No	7.51E-03	Yes	1.10E-01	Yes	Yes	>Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Endosulfan I	959-98-8	mg/kg	3 : 11 : 12	27	2.62E-02	1.00E-01	No	2.14E-03	Yes	3.70E+02	No	No	</=Screening Level	No	Not Volatile
Endosulfan Sulfate	1031-07-8	mg/kg	5 : 11 : 12	45	4.18E-02	9.50E-02	No	1.81E-03	Yes	3.70E+02	No	No	</=Screening Level	No	Not Volatile
Endrin	72-20-8	mg/kg	1 : 9 : 12	11	3.20E-02	6.80E-02	No	4.38E-03	Yes	1.80E+01	No	No	</=Screening Level	No	Not Volatile
Endrin Aldehyde	7421-93-4	mg/kg	2 : 11 : 12	18	5.15E-02	1.40E-01	No	4.81E-03	Yes	1.80E+01	No	No	</=Screening Level	No	Not Volatile
Endrin Ketone	53494-70-	mg/kg	2 : 5 : 12	40	1.21E-02	2.10E-02	No	NA	--	1.80E+01	No	No	</=Screening Level	No	Not Volatile
gamma-BHC (Lindane)	58-89-9	mg/kg	3 : 12 : 12	25	3.12E-02	8.40E-02	No	NA	--	1.70E+00	No	No	</=Screening Level	No	Not Volatile
gamma-Chlordane	5103-74-2	mg/kg	6 : 12 : 12	50	7.51E-02	2.30E-01	No	2.13E-02	Yes	6.50E+00	No	No	</=Screening Level	No	Not Volatile
Heptachlor Epoxide	1024-57-3	mg/kg	1 : 5 : 12	20	7.99E-03	1.50E-02	No	6.10E-03	Yes	1.90E-01	No	No	</=Screening Level	No	Not Volatile
Methoxychlor	72-43-5	mg/kg	2 : 5 : 12	40	7.01E-02	1.00E-01	No	3.31E-03	Yes	3.10E+02	No	No	</=Screening Level	No	Not Volatile
Herbicide															
2,4,5-T	93-76-5	mg/kg	4 : 10 : 12	40	1.73E-02	8.80E-02	No	NA	--	6.20E+02	No	No	</=Screening Level	No	Not Volatile
2,4-D	94-75-7	mg/kg	6 : 10 : 12	60	2.09E-02	5.50E-02	No	9.66E-03	Yes	7.70E+02	No	No	</=Screening Level	No	Not Volatile
Dalapon	75-99-0	mg/kg	4 : 4 : 12	100	6.90E-03	8.30E-03	No	NA	--	1.80E+03	No	No	</=Screening Level	No	Not Volatile
Dicamba	1918-00-9	mg/kg	2 : 2 : 12	100	3.20E-03	3.30E-03	No	NA	--	1.80E+03	No	No	</=Screening Level	No	Not Volatile
Dichlorprop	120-36-5	mg/kg	4 : 4 : 12	100	3.55E-03	9.50E-03	No	1.03E-01	No	4.92E+02	No	No	</=Screening Level	No	Not Volatile
MCPA	94-74-6	mg/kg	1 : 12 : 12	8	2.16E+01	2.10E+02	No	NA	--	3.10E+01	Yes	Yes	>Screening Level	No	Not Volatile
MCPP	93-65-2	mg/kg	4 : 9 : 12	44	2.27E+00	1.00E+01	No	2.92E+00	Yes	6.20E+01	No	No	</=Screening Level	No	Not Volatile
Pentachlorophenol	87-86-5	mg/kg	12 : 12 : 12	100	7.30E-01	3.20E+00	No	4.57E-03	Yes	9.00E+00	No	No	</=Screening Level	No	Not Volatile
PCBs															
Total PCBs	1336-36-3	mg/kg	10 : 12 : 12	83	4.44E+00	2.68E+01	No	1.28E-01	Yes	1.00E+00	Yes	Yes	>Screening Level	No	Not Volatile
Dioxin															
2,3,7,8-TCDD-TEQ	1746-01-6	mg/kg	11 : 12 : 12	92	2.83E-04	1.26E-03	No	8.93E-06	Yes	1.00E-03	Yes	Yes	>Screening Level	No	Not Volatile
Metals															
Aluminum	7429-90-5	mg/kg	12 : 12 : 12	100	4.90E+03	8.80E+03	No	1.09E+04	No	9.20E+04	No	No	</=Screening Level	No	Not Volatile
Antimony	7440-36-0	mg/kg	9 : 12 : 12	75	1.14E+00	2.10E+00	No	2.05E+00	Yes	4.10E+01	No	No	</=Screening Level	No	Not Volatile
Arsenic	7440-38-2	mg/kg	12 : 12 : 12	100	1.29E+01	2.70E+01	No	1.08E+01	Yes	1.60E+00	Yes	Yes	>Screening Level	No	Not Volatile
Barium	7440-39-3	mg/kg	12 : 12 : 12	100	1.19E+02	1.90E+02	No	3.17E+02	No	6.70E+03	No	No	</=Screening Level	No	Not Volatile
Beryllium	7440-41-7	mg/kg	12 : 12 : 12	100	7.67E-01	1.80E+00	No	7.65E-01	Yes	1.90E+02	No	No	</=Screening Level	No	Not Volatile
Cadmium	7440-43-9	mg/kg	12 : 12 : 12	100	1.07E+01	9.30E+01	No	1.81E+00	Yes	4.50E+01	Yes	Yes	>Screening Level	No	Not Volatile
Calcium	7440-70-2	mg/kg	12 : 12 : 12	100	6.87E+04	3.00E+05	Yes	6.11E+04	Yes	NA	--	No	EN	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Chromium	7440-47-3	mg/kg	12 : 12 : 12	100	1.96E+01	3.90E+01	No	1.89E+01	Yes	4.50E+02	No	No	</=Screening Level	No	Not Volatile
Cobalt	7440-48-4	mg/kg	12 : 12 : 12	100	6.72E+00	1.30E+01	No	9.27E+00	Yes	1.30E+03	No	No	</=Screening Level	No	Not Volatile
Copper	7440-50-8	mg/kg	12 : 12 : 12	100	7.61E+01	2.70E+02	No	4.96E+01	Yes	4.10E+03	No	No	</=Screening Level	No	Not Volatile
Iron	7439-89-6	mg/kg	12 : 12 : 12	100	1.42E+04	4.20E+04	Yes	2.10E+04	Yes	3.10E+04	Yes	No	EN	No	Not Volatile
Lead	7439-92-1	mg/kg	12 : 12 : 12	100	9.70E+01	2.50E+02	No	7.18E+01	Yes	7.50E+02	No	No	</=Screening Level	No	Not Volatile
Magnesium	7439-95-4	mg/kg	12 : 12 : 12	100	4.90E+03	2.20E+04	Yes	1.13E+04	Yes	NA	--	No	EN	No	Not Volatile
Manganese	7439-96-5	mg/kg	12 : 12 : 12	100	2.42E+02	5.30E+02	No	5.01E+02	Yes	1.90E+03	No	No	</=Screening Level	No	Not Volatile
Mercury	7439-97-6	mg/kg	12 : 12 : 12	100	4.03E+00	1.90E+01	No	7.72E-02	Yes	3.10E+01	No	No	</=Screening Level	No	Not Volatile
Nickel	7440-02-0	mg/kg	12 : 12 : 12	100	2.43E+01	4.70E+01	No	2.83E+01	Yes	2.00E+03	No	No	</=Screening Level	No	Not Volatile
Potassium	7440-09-7	mg/kg	12 : 12 : 12	100	1.11E+03	2.50E+03	Yes	2.38E+03	Yes	NA	--	No	EN	No	Not Volatile
Selenium	7782-49-2	mg/kg	8 : 12 : 12	67	2.04E+00	7.00E+00	No	1.07E+00	Yes	5.10E+02	No	No	</=Screening Level	No	Not Volatile
Silver	7440-22-4	mg/kg	9 : 12 : 12	75	5.70E-01	2.10E+00	No	1.02E+00	Yes	5.10E+02	No	No	</=Screening Level	No	Not Volatile
Sodium	7440-23-5	mg/kg	11 : 12 : 12	92	1.73E+03	1.00E+04	Yes	1.41E+02	Yes	NA	--	No	EN	No	Not Volatile
Thallium	7440-28-0	mg/kg	3 : 12 : 12	25	7.04E-01	1.50E+00	No	NA	--	6.70E+00	No	No	</=Screening Level	No	Not Volatile
Vanadium	7440-62-2	mg/kg	12 : 12 : 12	100	2.44E+01	4.40E+01	No	3.44E+01	Yes	7.20E+02	No	No	</=Screening Level	No	Not Volatile
Zinc	7440-66-6	mg/kg	12 : 12 : 12	100	9.46E+02	4.70E+03	No	2.24E+02	Yes	3.10E+04	No	No	</=Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Site Q Central															
VOCs															
1,2-Dichloroethene (total)	540-59-0	mg/kg	2:8:9	25	2.31E-02	1.20E-01	No	NA	--	1.50E+01	No	No	</=Screening Level	No	</=Screening Level
2-Butanone (MEK)	78-93-3	mg/kg	7:8:9	88	2.12E-02	3.85E-02	No	NA	--	2.70E+03	No	No	</=Screening Level	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	mg/kg	2:8:9	25	2.12E-02	4.30E-02	No	2.00E-03	Yes	2.80E+02	No	No	</=Screening Level	No	</=Screening Level
Acetone	67-64-1	mg/kg	8:9:9	89	2.97E-01	1.55E+00	No	NA	--	6.00E+02	No	No	</=Screening Level	No	</=Screening Level
Benzene	71-43-2	mg/kg	7:9:9	78	9.92E-02	3.35E-01	No	NA	--	1.30E+00	No	No	</=Screening Level	No	</=Screening Level
Carbon Disulfide	75-15-0	mg/kg	9:9:9	100	3.11E-02	1.95E-01	No	NA	--	1.20E+02	No	No	</=Screening Level	No	</=Screening Level
Chlorobenzene	108-90-7	mg/kg	9:9:9	100	5.19E+00	4.00E+01	No	NA	--	5.30E+01	No	No	</=Screening Level	No	</=Screening Level
Ethylbenzene	100-41-4	mg/kg	9:9:9	100	2.62E-01	1.40E+00	No	9.52E-04	Yes	2.00E+01	No	No	</=Screening Level	No	</=Screening Level
Tetrachloroethene	127-18-4	mg/kg	7:8:9	88	3.40E-03	1.50E-02	No	9.50E-04	Yes	3.40E+00	No	No	</=Screening Level	No	</=Screening Level
Toluene	108-88-3	mg/kg	4:9:9	44	1.38E+00	6.30E+00	No	NA	--	2.20E+02	No	No	</=Screening Level	No	</=Screening Level
Trichloroethylene	79-01-6	mg/kg	7:8:9	88	5.07E-03	2.90E-02	No	NA	--	1.10E-01	No	No	</=Screening Level	No	</=Screening Level
Vinyl chloride	75-01-4	mg/kg	1:1:9	100	3.10E-03	3.10E-03	No	NA	--	7.50E-01	No	No	</=Screening Level	No	</=Screening Level
Xylenes, Total	1330-20-7	mg/kg	9:9:9	100	2.74E+00	1.00E+01	No	1.54E-03	Yes	9.00E+01	No	No	</=Screening Level	No	</=Screening Level
SVOCs															
1,2,4-Trichlorobenzene	120-82-1	mg/kg	1:1:9	100	2.70E-02	2.70E-02	No	NA	--	5.60E+02	No	No	</=Screening Level	No	Not Volatile
1,2-Dichlorobenzene	95-50-1	mg/kg	1:8:9	13	2.04E-01	2.20E-01	No	NA	--	4.10E+02	No	No	</=Screening Level	No	Not Volatile
1,4-Dichlorobenzene	106-46-7	mg/kg	9:9:9	100	1.07E+00	5.80E+00	No	NA	--	7.90E+00	No	No	</=Screening Level	No	Not Volatile
2,4,5-Trichlorophenol	95-95-4	mg/kg	1:1:9	100	1.34E-01	1.34E-01	No	NA	--	6.20E+03	No	No	</=Screening Level	No	Not Volatile
2,4,6-Trichlorophenol	88-06-2	mg/kg	1:7:9	14	3.53E-01	1.17E+00	No	NA	--	6.20E+00	No	No	</=Screening Level	No	Not Volatile
2,4-Dichlorophenol	120-83-2	mg/kg	1:7:9	14	2.34E-01	3.40E-01	No	NA	--	1.80E+02	No	No	</=Screening Level	No	Not Volatile
2-Chlorophenol	95-57-8	mg/kg	1:1:9	100	3.40E-02	3.40E-02	No	NA	--	2.40E+01	No	No	</=Screening Level	No	Not Volatile
2-Methylnaphthalene	91-57-6	mg/kg	8:9:9	89	4.13E-01	1.30E+00	No	NA	--	1.90E+01	No	No	</=Screening Level	No	Not Volatile
3-Methylphenol/4-Methylphenol	106-44-5	mg/kg	3:8:9	38	2.28E-01	5.50E-01	No	NA	--	3.10E+02	No	No	</=Screening Level	No	Not Volatile
Acenaphthene	83-32-9	mg/kg	5:9:9	56	6.55E-01	2.00E+00	No	4.20E-02	Yes	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Acenaphthylene	208-96-8	mg/kg	1:2:9	50	1.75E-01	1.70E-01	No	NA	--	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Anthracene	120-12-7	mg/kg	4:9:9	44	8.85E-01	3.20E+00	No	1.20E-01	Yes	2.40E+04	No	No	</=Screening Level	No	Not Volatile
Benzo(a)anthracene	56-55-3	mg/kg	8:9:9	89	6.07E-01	3.15E+00	No	3.25E-01	Yes	2.10E+00	Yes	Yes	>Screening Level	No	Not Volatile
Benzo(a)pyrene	50-32-8	mg/kg	7:9:9	78	6.42E-01	2.65E+00	No	3.90E-01	Yes	2.10E-01	Yes	Yes	>Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Benzo(b)fluoranthene	205-99-2	mg/kg	6:9:9	67	7.82E-01	2.45E+00	No	3.70E-01	Yes	2.10E+00	Yes	Yes	>Screening Level	No	Not Volatile
Benzo(g,h,i)perylene	191-24-2	mg/kg	6:9:9	67	3.20E-01	1.18E+00	No	3.94E-01	Yes	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Benzo(k)fluoranthene	207-08-9	mg/kg	5:9:9	56	8.75E-01	2.65E+00	No	3.28E-01	Yes	2.10E+01	No	No	</=Screening Level	No	Not Volatile
Benzyl Butyl Phthalate	85-68-7	mg/kg	6:9:9	67	8.25E-01	3.05E+00	No	NA	--	1.20E+04	No	No	</=Screening Level	No	Not Volatile
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	9:9:9	100	5.48E+00	2.20E+01	No	3.35E-01	Yes	1.20E+02	No	No	</=Screening Level	No	Not Volatile
Carbazole	86-74-8	mg/kg	2:9:9	22	8.19E-01	2.30E+00	No	NA	--	8.60E+01	No	No	</=Screening Level	No	Not Volatile
Chrysene	218-01-9	mg/kg	9:9:9	100	6.28E-01	3.00E+00	No	3.36E-01	Yes	2.10E+02	No	No	</=Screening Level	No	Not Volatile
Di-n-butylphthalate	84-74-2	mg/kg	4:9:9	44	5.28E-01	2.60E+00	No	NA	--	6.20E+03	No	No	</=Screening Level	No	Not Volatile
Di-n-octylphthalate	117-84-0	mg/kg	1:8:9	13	2.56E-01	5.50E-01	No	NA	--	2.50E+03	No	No	</=Screening Level	No	Not Volatile
Dibenzo(a,h)anthracene	53-70-3	mg/kg	2:2:9	100	6.35E-02	7.20E-02	No	1.20E-01	No	2.10E-01	No	No	</=Screening Level	No	Not Volatile
Dibenzofuran	132-64-9	mg/kg	6:9:9	67	5.02E-01	1.65E+00	No	NA	--	3.10E+02	No	No	</=Screening Level	No	Not Volatile
Dinoseb	88-85-7	mg/kg	1:1:9	100	8.80E-02	8.80E-02	No	NA	--	6.20E+01	No	No	</=Screening Level	No	Not Volatile
Fluoranthene	206-44-0	mg/kg	9:9:9	100	1.18E+00	7.25E+00	No	4.11E-01	Yes	2.20E+03	No	No	</=Screening Level	No	Not Volatile
Fluorene	86-73-7	mg/kg	6:9:9	67	7.34E-01	2.80E+00	No	NA	--	2.60E+03	No	No	</=Screening Level	No	Not Volatile
Hexachlorobenzene	118-74-1	mg/kg	1:1:9	100	2.90E-02	2.90E-02	No	NA	--	1.10E+00	No	No	</=Screening Level	No	Not Volatile
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	4:7:9	57	2.53E-01	8.05E-01	No	NA	--	2.10E+00	No	No	</=Screening Level	No	Not Volatile
Naphthalene	91-20-3	mg/kg	8:9:9	89	8.19E-01	4.35E+00	No	NA	--	1.90E+01	No	No	</=Screening Level	No	Not Volatile
Phenanthrene	85-01-8	mg/kg	9:9:9	100	1.90E+00	1.35E+01	No	3.52E-01	Yes	2.40E+04	No	No	</=Screening Level	No	Not Volatile
Phenol	108-95-2	mg/kg	2:8:9	25	2.26E-01	4.30E-01	No	NA	--	3.70E+04	No	No	</=Screening Level	No	Not Volatile
Pyrene	129-00-0	mg/kg	9:9:9	100	1.47E+00	8.75E+00	No	4.01E-01	Yes	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Pesticide															
4,4'-DDD	72-54-8	mg/kg	4:9:9	44	2.96E-02	8.90E-02	No	5.39E-03	Yes	1.00E+01	No	No	</=Screening Level	No	Not Volatile
4,4'-DDE	72-55-9	mg/kg	1:7:9	14	1.61E-02	4.90E-02	No	8.02E-03	Yes	7.00E+00	No	No	</=Screening Level	No	Not Volatile
4,4'-DDT	50-29-3	mg/kg	3:9:9	33	4.01E-02	1.05E-01	No	2.18E-02	Yes	7.00E+00	No	No	</=Screening Level	No	Not Volatile
Aldrin	309-00-2	mg/kg	2:9:9	22	1.89E-02	1.10E-01	No	2.75E-03	Yes	1.00E-01	Yes	Yes	>Screening Level	No	Not Volatile
alpha-BHC	319-84-6	mg/kg	2:9:9	22	1.88E-02	6.05E-02	No	2.58E-02	Yes	3.60E-01	No	No	</=Screening Level	No	Not Volatile
alpha-Chlordane	5103-71-9	mg/kg	6:9:9	67	8.31E-03	3.10E-02	No	4.04E-03	Yes	6.50E+00	No	No	</=Screening Level	No	Not Volatile
beta-BHC	319-85-7	mg/kg	1:7:9	14	4.54E-03	1.60E-02	No	NA	--	1.30E+00	No	No	</=Screening Level	No	Not Volatile
delta-BHC	319-86-8	mg/kg	1:8:9	13	7.09E-03	2.30E-02	No	8.57E-03	Yes	1.70E+00	No	No	</=Screening Level	No	Not Volatile
Dieldrin	60-57-1	mg/kg	6:9:9	67	7.01E-02	3.90E-01	No	7.51E-03	Yes	1.10E-01	Yes	Yes	>Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Endosulfan Sulfate	1031-07-8	mg/kg	3:8:9	38	1.15E-02	3.80E-02	No	1.81E-03	Yes	3.70E+02	No	No	</=Screening Level	No	Not Volatile
Endrin Aldehyde	7421-93-4	mg/kg	3:8:9	38	1.51E-02	4.80E-02	No	4.81E-03	Yes	1.80E+01	No	No	</=Screening Level	No	Not Volatile
Endrin Ketone	53494-70-	mg/kg	4:8:9	50	1.78E-02	7.03E-02	No	NA	--	1.80E+01	No	No	</=Screening Level	No	Not Volatile
gamma-Chlordane	5103-74-2	mg/kg	2:8:9	25	9.39E-03	4.05E-02	No	2.13E-02	Yes	6.50E+00	No	No	</=Screening Level	No	Not Volatile
Methoxychlor	72-43-5	mg/kg	1:7:9	14	3.04E-02	5.50E-02	No	3.31E-03	Yes	3.10E+02	No	No	</=Screening Level	No	Not Volatile
Herbicide															
2,4,5-T	93-76-5	mg/kg	3:5:9	60	6.10E-03	9.10E-03	No	NA	--	6.20E+02	No	No	</=Screening Level	No	Not Volatile
2,4-D	94-75-7	mg/kg	3:5:9	60	5.27E-03	7.50E-03	No	9.66E-03	No	7.70E+02	No	No	</=Screening Level	No	Not Volatile
2,4-DB	94-82-6	mg/kg	1:6:9	17	9.62E-03	2.00E-02	No	NA	--	4.90E+02	No	No	</=Screening Level	No	Not Volatile
Dalapon	75-99-0	mg/kg	3:3:9	100	3.11E-02	6.80E-02	No	NA	--	1.80E+03	No	No	</=Screening Level	No	Not Volatile
Dicamba	1918-00-9	mg/kg	1:1:9	100	2.90E-03	2.90E-03	No	NA	--	1.80E+03	No	No	</=Screening Level	No	Not Volatile
MCPP	93-65-2	mg/kg	1:1:9	100	1.10E+00	1.10E+00	No	2.92E+00	No	6.20E+01	No	No	</=Screening Level	No	Not Volatile
Pentachlorophenol	87-86-5	mg/kg	8:9:9	89	1.63E+00	1.02E+01	No	4.57E-03	Yes	9.00E+00	Yes	Yes	>Screening Level	No	Not Volatile
PCBs															
Total PCBs	1336-36-3	mg/kg	8:9:9	89	2.40E+00	8.74E+00	No	1.28E-01	Yes	1.00E+00	Yes	Yes	>Screening Level	No	Not Volatile
Dioxin															
2,3,7,8-TCDD-TEQ	1746-01-6	mg/kg	8:9:9	89	2.42E-03	1.64E-02	No	8.93E-06	Yes	1.00E-03	Yes	Yes	>Screening Level	No	Not Volatile
Metals															
Aluminum	7429-90-5	mg/kg	9:9:9	100	5.90E+03	8.30E+03	No	1.09E+04	No	9.20E+04	No	No	</=Screening Level	No	Not Volatile
Antimony	7440-36-0	mg/kg	7:9:9	78	2.39E+00	5.80E+00	No	2.05E+00	Yes	4.10E+01	No	No	</=Screening Level	No	Not Volatile
Arsenic	7440-38-2	mg/kg	9:9:9	100	1.47E+01	5.70E+01	No	1.08E+01	Yes	1.60E+00	Yes	Yes	>Screening Level	No	Not Volatile
Barium	7440-39-3	mg/kg	9:9:9	100	2.05E+02	3.95E+02	No	3.17E+02	Yes	6.70E+03	No	No	</=Screening Level	No	Not Volatile
Beryllium	7440-41-7	mg/kg	9:9:9	100	7.55E-01	2.60E+00	No	7.65E-01	Yes	1.90E+02	No	No	</=Screening Level	No	Not Volatile
Cadmium	7440-43-9	mg/kg	9:9:9	100	2.35E+00	9.65E+00	No	1.81E+00	Yes	4.50E+01	No	No	</=Screening Level	No	Not Volatile
Calcium	7440-70-2	mg/kg	9:9:9	100	7.96E+04	2.40E+05	Yes	6.11E+04	Yes	NA	--	No	EN	No	Not Volatile
Chromium	7440-47-3	mg/kg	9:9:9	100	2.84E+01	9.75E+01	No	1.89E+01	Yes	4.50E+02	No	No	</=Screening Level	No	Not Volatile
Cobalt	7440-48-4	mg/kg	9:9:9	100	6.84E+00	1.50E+01	No	9.27E+00	Yes	1.30E+03	No	No	</=Screening Level	No	Not Volatile
Copper	7440-50-8	mg/kg	9:9:9	100	2.29E+03	2.00E+04	No	4.96E+01	Yes	4.10E+03	Yes	Yes	>Screening Level	No	Not Volatile
Iron	7439-89-6	mg/kg	9:9:9	100	2.01E+04	5.40E+04	Yes	2.10E+04	Yes	3.10E+04	Yes	No	EN	No	Not Volatile
Lead	7439-92-1	mg/kg	9:9:9	100	1.91E+02	5.80E+02	No	7.18E+01	Yes	7.50E+02	No	No	</=Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Magnesium	7439-95-4	mg/kg	9 : 9 : 9	100	6.27E+03	1.70E+04	Yes	1.13E+04	Yes	NA	--	No	EN	No	Not Volatile
Manganese	7439-96-5	mg/kg	9 : 9 : 9	100	8.42E+02	5.45E+03	No	5.01E+02	Yes	1.90E+03	Yes	Yes	>Screening Level	No	Not Volatile
Mercury	7439-97-6	mg/kg	9 : 9 : 9	100	6.64E-01	1.80E+00	No	7.72E-02	Yes	3.10E+01	No	No	</=Screening Level	No	Not Volatile
Nickel	7440-02-0	mg/kg	9 : 9 : 9	100	3.98E+01	1.60E+02	No	2.83E+01	Yes	2.00E+03	No	No	</=Screening Level	No	Not Volatile
Potassium	7440-09-7	mg/kg	9 : 9 : 9	100	1.03E+03	1.60E+03	Yes	2.38E+03	No	NA	--	No	EN	No	Not Volatile
Selenium	7782-49-2	mg/kg	2 : 9 : 9	22	1.44E+00	6.40E+00	No	1.07E+00	Yes	5.10E+02	No	No	</=Screening Level	No	Not Volatile
Silver	7440-22-4	mg/kg	9 : 9 : 9	100	8.59E-01	3.75E+00	No	1.02E+00	Yes	5.10E+02	No	No	</=Screening Level	No	Not Volatile
Sodium	7440-23-5	mg/kg	8 : 9 : 9	89	3.83E+02	1.35E+03	Yes	1.41E+02	Yes	NA	--	No	EN	No	Not Volatile
Thallium	7440-28-0	mg/kg	1 : 9 : 9	11	1.16E+00	4.10E+00	No	NA	--	6.70E+00	No	No	</=Screening Level	No	Not Volatile
Vanadium	7440-62-2	mg/kg	9 : 9 : 9	100	2.37E+01	5.60E+01	No	3.44E+01	Yes	7.20E+02	No	No	</=Screening Level	No	Not Volatile
Zinc	7440-66-6	mg/kg	9 : 9 : 9	100	3.74E+02	1.06E+03	No	2.24E+02	Yes	3.10E+04	No	No	</=Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Site Q North															
VOCs															
1,1,1-Trichloroethane	71-55-6	mg/kg	1 : 14 : 15	7	3.51E-02	2.50E-01	No	NA	--	6.90E+02	No	No	</=Screening Level	No	</=Screening Level
1,1-Dichloroethane	75-34-3	mg/kg	1 : 15 : 15	7	7.87E-02	6.60E-01	No	NA	--	1.70E+02	No	No	</=Screening Level	No	</=Screening Level
1,1-Dichloroethylene	75-35-4	mg/kg	1 : 15 : 15	7	6.94E-02	5.20E-01	No	NA	--	4.10E+01	No	No	</=Screening Level	No	</=Screening Level
1,2-Dichloroethane	107-06-2	mg/kg	1 : 15 : 15	7	3.23E-01	4.00E+00	No	NA	--	6.00E-01	Yes	Yes	>Screening Level	Yes	>Screening Level
1,2-Dichloroethene (total)	540-59-0	mg/kg	1 : 15 : 15	7	1.62E-01	1.40E+00	No	NA	--	1.50E+01	No	No	</=Screening Level	No	</=Screening Level
2-Butanone (MEK)	78-93-3	mg/kg	5 : 15 : 15	33	3.19E-01	2.00E+00	No	NA	--	2.70E+03	No	No	</=Screening Level	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	mg/kg	2 : 13 : 15	15	6.13E-02	5.80E-01	No	2.00E-03	Yes	2.80E+02	No	No	</=Screening Level	No	</=Screening Level
Acetone	67-64-1	mg/kg	6 : 14 : 15	43	4.37E-01	3.00E+00	No	NA	--	6.00E+02	No	No	</=Screening Level	No	</=Screening Level
Benzene	71-43-2	mg/kg	8 : 15 : 15	53	6.77E-01	8.80E+00	No	NA	--	1.30E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
Carbon Disulfide	75-15-0	mg/kg	9 : 15 : 15	60	9.87E-02	9.70E-01	No	NA	--	1.20E+02	No	No	</=Screening Level	No	</=Screening Level
Chlorobenzene	108-90-7	mg/kg	6 : 15 : 15	40	4.68E+00	3.60E+01	No	NA	--	5.30E+01	No	No	</=Screening Level	No	</=Screening Level
Chloroform	67-66-3	mg/kg	1 : 1 : 15	100	9.00E-04	9.00E-04	No	NA	--	1.20E+00	No	No	</=Screening Level	No	</=Screening Level
Chloromethane	74-87-3	mg/kg	1 : 15 : 15	7	1.29E-01	9.00E-01	No	9.00E-04	Yes	2.60E+00	No	No	</=Screening Level	No	</=Screening Level
cis-1,3-Dichloropropene	10061-01-	mg/kg	1 : 15 : 15	7	5.87E-02	3.60E-01	No	NA	--	1.80E+00	No	No	</=Screening Level	No	</=Screening Level
Dichloromethane	75-09-2	mg/kg	1 : 12 : 15	8	4.20E-03	9.10E-03	No	5.73E-03	Yes	2.10E+01	No	No	</=Screening Level	No	</=Screening Level
Ethylbenzene	100-41-4	mg/kg	8 : 15 : 15	53	3.47E+00	4.00E+01	No	9.52E-04	Yes	2.00E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
Methyl N-Butyl Ketone	591-78-6	mg/kg	2 : 13 : 15	15	5.49E-02	5.00E-01	No	NA	--	2.70E+03	No	No	</=Screening Level	No	</=Screening Level
Styrene (Monomer)	100-42-5	mg/kg	2 : 2 : 15	100	5.40E-04	6.90E-04	No	4.10E-03	No	1.80E+03	No	No	</=Screening Level	No	</=Screening Level
Tetrachloroethene	127-18-4	mg/kg	13 : 15 : 15	87	1.95E+00	2.80E+01	No	9.50E-04	Yes	3.40E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
Toluene	108-88-3	mg/kg	4 : 15 : 15	27	4.23E+00	4.70E+01	No	NA	--	2.20E+02	No	No	</=Screening Level	No	</=Screening Level
trans-1,3-Dichloropropene	10061-02-	mg/kg	1 : 15 : 15	7	5.54E-02	3.10E-01	No	NA	--	1.80E+00	No	No	</=Screening Level	No	</=Screening Level
Trichloroethylene	79-01-6	mg/kg	13 : 15 : 15	87	1.07E-01	7.30E-01	No	NA	--	1.10E-01	Yes	Yes	>Screening Level	Yes	>Screening Level
Vinyl chloride	75-01-4	mg/kg	1 : 15 : 15	7	1.09E-01	6.00E-01	No	NA	--	7.50E-01	No	No	</=Screening Level	No	</=Screening Level
Xylenes, Total	1330-20-7	mg/kg	10 : 15 : 15	67	2.55E+01	3.00E+02	No	1.54E-03	Yes	9.00E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
SVOCs															
1,2,4-Trichlorobenzene	120-82-1	mg/kg	4 : 14 : 15	29	1.47E+00	1.00E+01	No	NA	--	5.60E+02	No	No	</=Screening Level	No	Not Volatile
1,2-Dichlorobenzene	95-50-1	mg/kg	3 : 14 : 15	21	1.17E+00	9.70E+00	No	NA	--	4.10E+02	No	No	</=Screening Level	No	Not Volatile
1,3-Dichlorobenzene	541-73-1	mg/kg	3 : 3 : 15	100	6.07E-02	1.10E-01	No	NA	--	6.30E+00	No	No	</=Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
1,4-Dichlorobenzene	106-46-7	mg/kg	6 : 14 : 15	43	9.15E-01	3.20E+00	No	NA	--	7.90E+00	No	No	</=Screening Level	No	Not Volatile
2,4,5-Trichlorophenol	95-95-4	mg/kg	1 : 2 : 15	50	1.77E-01	1.80E-01	No	NA	--	6.20E+03	No	No	</=Screening Level	No	Not Volatile
2,4,6-Trichlorophenol	88-06-2	mg/kg	2 : 14 : 15	14	3.90E+00	4.70E+01	No	NA	--	6.20E+00	Yes	Yes	>Screening Level	No	Not Volatile
2,4-Dichlorophenol	120-83-2	mg/kg	5 : 15 : 15	33	2.29E+01	2.70E+02	No	NA	--	1.80E+02	Yes	Yes	>Screening Level	No	Not Volatile
2,4-Dimethylphenol	105-67-9	mg/kg	1 : 1 : 15	100	3.70E-02	3.70E-02	No	NA	--	1.20E+03	No	No	</=Screening Level	No	Not Volatile
2-Chlorophenol	95-57-8	mg/kg	2 : 14 : 15	14	6.83E-01	1.70E+00	No	NA	--	2.40E+01	No	No	</=Screening Level	No	Not Volatile
2-Methylnaphthalene	91-57-6	mg/kg	9 : 10 : 15	90	1.81E-01	5.90E-01	No	NA	--	1.90E+01	No	No	</=Screening Level	No	Not Volatile
2-Nitroaniline	88-74-4	mg/kg	1 : 14 : 15	7	3.81E+00	2.00E+01	No	NA	--	1.80E+00	Yes	Yes	>Screening Level	No	Not Volatile
3-Methylphenol/4-Methylphenol	106-44-5	mg/kg	1 : 1 : 15	100	1.70E-01	1.70E-01	No	NA	--	3.10E+02	No	No	</=Screening Level	No	Not Volatile
4-Chloroaniline	106-47-8	mg/kg	3 : 14 : 15	21	5.28E+00	3.00E+01	No	NA	--	2.50E+02	No	No	</=Screening Level	No	Not Volatile
Acenaphthene	83-32-9	mg/kg	10 : 12 : 15	83	2.22E-01	4.70E-01	No	4.20E-02	Yes	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Acenaphthylene	208-96-8	mg/kg	1 : 1 : 15	100	6.90E-02	6.90E-02	No	NA	--	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Anthracene	120-12-7	mg/kg	11 : 13 : 15	85	5.45E-01	1.20E+00	No	1.20E-01	Yes	2.40E+04	No	No	</=Screening Level	No	Not Volatile
Benzo(a)anthracene	56-55-3	mg/kg	13 : 14 : 15	93	1.23E+00	2.90E+00	No	3.25E-01	Yes	2.10E+00	Yes	Yes	>Screening Level	No	Not Volatile
Benzo(a)pyrene	50-32-8	mg/kg	13 : 14 : 15	93	1.32E+00	2.70E+00	No	3.90E-01	Yes	2.10E-01	Yes	Yes	>Screening Level	No	Not Volatile
Benzo(b)fluoranthene	205-99-2	mg/kg	14 : 14 : 15	100	1.18E+00	2.20E+00	No	3.70E-01	Yes	2.10E+00	Yes	Yes	>Screening Level	No	Not Volatile
Benzo(g,h,i)perylene	191-24-2	mg/kg	13 : 13 : 15	100	6.49E-01	1.20E+00	No	3.94E-01	Yes	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Benzo(k)fluoranthene	207-08-9	mg/kg	14 : 14 : 15	100	1.07E+00	2.20E+00	No	3.28E-01	Yes	2.10E+01	No	No	</=Screening Level	No	Not Volatile
Benzyl Butyl Phthalate	85-68-7	mg/kg	3 : 3 : 15	100	5.87E-02	1.20E-01	No	NA	--	1.20E+04	No	No	</=Screening Level	No	Not Volatile
bis(2-Chloroethyl)ether	111-44-4	mg/kg	1 : 1 : 15	100	4.40E-02	4.40E-02	No	NA	--	5.50E-01	No	No	</=Screening Level	No	Not Volatile
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	10 : 14 : 15	71	1.44E+00	1.00E+01	No	3.35E-01	Yes	1.20E+02	No	No	</=Screening Level	No	Not Volatile
Carbazole	86-74-8	mg/kg	8 : 9 : 15	89	2.35E-01	5.50E-01	No	NA	--	8.60E+01	No	No	</=Screening Level	No	Not Volatile
Chrysene	218-01-9	mg/kg	13 : 14 : 15	93	1.38E+00	3.10E+00	No	3.36E-01	Yes	2.10E+02	No	No	</=Screening Level	No	Not Volatile
Di-n-butylphthalate	84-74-2	mg/kg	1 : 1 : 15	100	3.60E-02	3.60E-02	No	NA	--	6.20E+03	No	No	</=Screening Level	No	Not Volatile
Dibenzo(a,h)anthracene	53-70-3	mg/kg	8 : 9 : 15	89	2.11E-01	4.00E-01	No	1.20E-01	Yes	2.10E-01	Yes	Yes	>Screening Level	No	Not Volatile
Dibenzofuran	132-64-9	mg/kg	8 : 10 : 15	80	1.98E-01	4.10E-01	No	NA	--	3.10E+02	No	No	</=Screening Level	No	Not Volatile
Diethyl Phthalate	84-66-2	mg/kg	2 : 14 : 15	14	6.08E-01	1.60E+00	No	NA	--	4.90E+04	No	No	</=Screening Level	No	Not Volatile
Fluoranthene	206-44-0	mg/kg	14 : 14 : 15	100	2.36E+00	5.70E+00	No	4.11E-01	Yes	2.20E+03	No	No	</=Screening Level	No	Not Volatile
Fluorene	86-73-7	mg/kg	8 : 10 : 15	80	2.40E-01	4.90E-01	No	NA	--	2.60E+03	No	No	</=Screening Level	No	Not Volatile
Hexachlorobenzene	118-74-1	mg/kg	1 : 1 : 15	100	3.00E-02	3.00E-02	No	NA	--	1.10E+00	No	No	</=Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	12 : 13 : 15	92	5.85E-01	1.20E+00	No	NA	--	2.10E+00	No	No	</=Screening Level	No	Not Volatile
Naphthalene	91-20-3	mg/kg	6 : 14 : 15	43	8.09E-01	5.60E+00	No	NA	--	1.90E+01	No	No	</=Screening Level	No	Not Volatile
Nitrobenzene	98-95-3	mg/kg	1 : 14 : 15	7	6.04E-01	1.90E+00	No	NA	--	1.00E+01	No	No	</=Screening Level	No	Not Volatile
Phenanthrene	85-01-8	mg/kg	14 : 14 : 15	100	2.05E+00	5.50E+00	No	3.52E-01	Yes	2.40E+04	No	No	</=Screening Level	No	Not Volatile
Phenol	108-95-2	mg/kg	6 : 15 : 15	40	2.40E+00	2.90E+01	No	NA	--	3.70E+04	No	No	</=Screening Level	No	Not Volatile
Pyrene	129-00-0	mg/kg	13 : 14 : 15	93	2.76E+00	6.70E+00	No	4.01E-01	Yes	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Pesticide															
4,4'-DDD	72-54-8	mg/kg	3 : 11 : 15	27	1.85E-02	3.90E-02	No	5.39E-03	Yes	1.00E+01	No	No	</=Screening Level	No	Not Volatile
4,4'-DDE	72-55-9	mg/kg	7 : 11 : 15	64	4.76E-01	4.90E+00	No	8.02E-03	Yes	7.00E+00	No	No	</=Screening Level	No	Not Volatile
4,4'-DDT	50-29-3	mg/kg	12 : 15 : 15	80	4.87E-01	5.00E+00	No	2.18E-02	Yes	7.00E+00	No	No	</=Screening Level	No	Not Volatile
alpha-BHC	319-84-6	mg/kg	3 : 15 : 15	20	2.26E-02	9.00E-02	No	2.58E-02	Yes	3.60E-01	No	No	</=Screening Level	No	Not Volatile
alpha-Chlordane	5103-71-9	mg/kg	5 : 9 : 15	56	3.86E-02	2.00E-01	No	4.04E-03	Yes	6.50E+00	No	No	</=Screening Level	No	Not Volatile
beta-BHC	319-85-7	mg/kg	8 : 15 : 15	53	1.24E-01	1.30E+00	No	NA	--	1.30E+00	No	No	</=Screening Level	No	Not Volatile
delta-BHC	319-86-8	mg/kg	1 : 15 : 15	7	8.32E-02	6.60E-01	No	8.57E-03	Yes	1.70E+00	No	No	</=Screening Level	No	Not Volatile
Dieldrin	60-57-1	mg/kg	10 : 15 : 15	67	3.45E-01	3.20E+00	No	7.51E-03	Yes	1.10E-01	Yes	Yes	>Screening Level	No	Not Volatile
Endosulfan II	33213-65-	mg/kg	3 : 13 : 15	23	3.61E-02	2.20E-01	No	1.16E-03	Yes	3.70E+02	No	No	</=Screening Level	No	Not Volatile
Endosulfan Sulfate	1031-07-8	mg/kg	2 : 15 : 15	13	1.22E-01	1.00E+00	No	1.81E-03	Yes	3.70E+02	No	No	</=Screening Level	No	Not Volatile
Endrin	72-20-8	mg/kg	4 : 15 : 15	27	2.01E-01	1.70E+00	No	4.38E-03	Yes	1.80E+01	No	No	</=Screening Level	No	Not Volatile
Endrin Aldehyde	7421-93-4	mg/kg	4 : 15 : 15	27	1.24E-01	7.30E-01	No	4.81E-03	Yes	1.80E+01	No	No	</=Screening Level	No	Not Volatile
Endrin Ketone	53494-70-	mg/kg	6 : 15 : 15	40	9.35E-02	6.30E-01	No	NA	--	1.80E+01	No	No	</=Screening Level	No	Not Volatile
gamma-BHC (Lindane)	58-89-9	mg/kg	3 : 15 : 15	20	5.08E-02	3.10E-01	No	NA	--	1.70E+00	No	No	</=Screening Level	No	Not Volatile
gamma-Chlordane	5103-74-2	mg/kg	10 : 15 : 15	67	1.22E-01	1.20E+00	No	2.13E-02	Yes	6.50E+00	No	No	</=Screening Level	No	Not Volatile
Heptachlor	76-44-8	mg/kg	3 : 10 : 15	30	6.07E-03	1.10E-02	No	1.66E-02	No	3.80E-01	No	No	</=Screening Level	No	Not Volatile
Heptachlor Epoxide	1024-57-3	mg/kg	3 : 13 : 15	23	3.20E-02	1.50E-01	No	6.10E-03	Yes	1.90E-01	No	No	</=Screening Level	No	Not Volatile
Methoxychlor	72-43-5	mg/kg	6 : 14 : 15	43	1.97E-01	1.80E+00	No	3.31E-03	Yes	3.10E+02	No	No	</=Screening Level	No	Not Volatile
Herbicide															
2,4,5-T	93-76-5	mg/kg	3 : 12 : 15	25	4.93E-03	1.00E-02	No	NA	--	6.20E+02	No	No	</=Screening Level	No	Not Volatile
2,4-D	94-75-7	mg/kg	6 : 15 : 15	40	1.90E+01	1.70E+02	No	9.66E-03	Yes	7.70E+02	No	No	</=Screening Level	No	Not Volatile
Dalapon	75-99-0	mg/kg	1 : 1 : 15	100	9.20E-03	9.20E-03	No	NA	--	1.80E+03	No	No	</=Screening Level	No	Not Volatile
Dichlorprop	120-36-5	mg/kg	1 : 1 : 15	100	2.70E-03	2.70E-03	No	1.03E-01	No	4.92E+02	No	No	</=Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
MCPA	94-74-6	mg/kg	1 : 1 : 15	100	2.50E-01	2.50E-01	No	NA	--	3.10E+01	No	No	</=Screening Level	No	Not Volatile
MCPP	93-65-2	mg/kg	3 : 12 : 15	25	1.31E+00	3.60E+00	No	2.92E+00	Yes	6.20E+01	No	No	</=Screening Level	No	Not Volatile
Pentachlorophenol	87-86-5	mg/kg	13 : 15 : 15	87	6.54E+01	5.10E+02	No	4.57E-03	Yes	9.00E+00	Yes	Yes	>Screening Level	No	Not Volatile
PCBs															
Total PCBs	1336-36-3	mg/kg	13 : 15 : 15	87	2.93E+01	1.90E+02	No	1.28E-01	Yes	1.00E+00	Yes	Yes	>Screening Level	No	Not Volatile
Dioxin															
2,3,7,8-TCDD-TEQ	1746-01-6	mg/kg	13 : 15 : 15	87	5.24E-03	5.51E-02	No	8.93E-06	Yes	1.00E-03	Yes	Yes	>Screening Level	No	Not Volatile
Metals															
Aluminum	7429-90-5	mg/kg	15 : 15 : 15	100	5.52E+03	1.10E+04	No	1.09E+04	Yes	9.20E+04	No	No	</=Screening Level	No	Not Volatile
Antimony	7440-36-0	mg/kg	13 : 15 : 15	87	7.77E+00	8.40E+01	No	2.05E+00	Yes	4.10E+01	Yes	Yes	>Screening Level	No	Not Volatile
Arsenic	7440-38-2	mg/kg	15 : 15 : 15	100	1.18E+01	4.00E+01	No	1.08E+01	Yes	1.60E+00	Yes	Yes	>Screening Level	No	Not Volatile
Barium	7440-39-3	mg/kg	15 : 15 : 15	100	1.38E+03	7.20E+03	No	3.17E+02	Yes	6.70E+03	Yes	Yes	>Screening Level	No	Not Volatile
Beryllium	7440-41-7	mg/kg	15 : 15 : 15	100	7.08E-01	1.60E+00	No	7.65E-01	Yes	1.90E+02	No	No	</=Screening Level	No	Not Volatile
Cadmium	7440-43-9	mg/kg	15 : 15 : 15	100	1.23E+01	9.20E+01	No	1.81E+00	Yes	4.50E+01	Yes	Yes	>Screening Level	No	Not Volatile
Calcium	7440-70-2	mg/kg	15 : 15 : 15	100	5.51E+04	2.30E+05	Yes	6.11E+04	Yes	NA	--	No	EN	No	Not Volatile
Chromium	7440-47-3	mg/kg	15 : 15 : 15	100	3.26E+01	1.40E+02	No	1.89E+01	Yes	4.50E+02	No	No	</=Screening Level	No	Not Volatile
Cobalt	7440-48-4	mg/kg	15 : 15 : 15	100	8.90E+00	2.10E+01	No	9.27E+00	Yes	1.30E+03	No	No	</=Screening Level	No	Not Volatile
Copper	7440-50-8	mg/kg	15 : 15 : 15	100	3.78E+02	3.80E+03	No	4.96E+01	Yes	4.10E+03	No	No	</=Screening Level	No	Not Volatile
Iron	7439-89-6	mg/kg	15 : 15 : 15	100	2.95E+04	8.30E+04	Yes	2.10E+04	Yes	3.10E+04	Yes	No	EN	No	Not Volatile
Lead	7439-92-1	mg/kg	14 : 15 : 15	93	1.96E+03	2.40E+04	No	7.18E+01	Yes	7.50E+02	Yes	Yes	>Screening Level	No	Not Volatile
Magnesium	7439-95-4	mg/kg	15 : 15 : 15	100	4.11E+03	9.70E+03	Yes	1.13E+04	No	NA	--	No	EN	No	Not Volatile
Manganese	7439-96-5	mg/kg	15 : 15 : 15	100	3.51E+02	6.60E+02	No	5.01E+02	Yes	1.90E+03	No	No	</=Screening Level	No	Not Volatile
Mercury	7439-97-6	mg/kg	15 : 15 : 15	100	1.57E+00	1.50E+01	No	7.72E-02	Yes	3.10E+01	No	No	</=Screening Level	No	Not Volatile
Nickel	7440-02-0	mg/kg	15 : 15 : 15	100	3.31E+01	1.10E+02	No	2.83E+01	Yes	2.00E+03	No	No	</=Screening Level	No	Not Volatile
Potassium	7440-09-7	mg/kg	15 : 15 : 15	100	8.51E+02	2.30E+03	Yes	2.38E+03	No	NA	--	No	EN	No	Not Volatile
Selenium	7782-49-2	mg/kg	2 : 15 : 15	13	6.00E-01	1.10E+00	No	1.07E+00	Yes	5.10E+02	No	No	</=Screening Level	No	Not Volatile
Silver	7440-22-4	mg/kg	10 : 15 : 15	67	1.21E+00	5.20E+00	No	1.02E+00	Yes	5.10E+02	No	No	</=Screening Level	No	Not Volatile
Sodium	7440-23-5	mg/kg	14 : 15 : 15	93	4.28E+02	1.40E+03	Yes	1.41E+02	Yes	NA	--	No	EN	No	Not Volatile
Vanadium	7440-62-2	mg/kg	15 : 15 : 15	100	4.09E+01	2.80E+02	No	3.44E+01	Yes	7.20E+02	No	No	</=Screening Level	No	Not Volatile
Zinc	7440-66-6	mg/kg	15 : 15 : 15	100	1.77E+03	1.10E+04	No	2.24E+02	Yes	3.10E+04	No	No	</=Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Site Q South															
VOCs															
1,1,1-Trichloroethane	71-55-6	mg/kg	1 : 20 : 20	5	2.80E-02	4.70E-01	No	NA	--	6.90E+02	No	No	</=Screening Level	No	</=Screening Level
1,1-Dichloroethane	75-34-3	mg/kg	2 : 20 : 20	10	4.22E-02	7.60E-01	No	NA	--	1.70E+02	No	No	</=Screening Level	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	mg/kg	3 : 20 : 20	15	4.33E-01	8.50E+00	No	NA	--	1.50E+01	No	No	</=Screening Level	No	</=Screening Level
2-Butanone (MEK)	78-93-3	mg/kg	11 : 19 : 20	58	2.00E-02	7.10E-02	No	NA	--	2.70E+03	No	No	</=Screening Level	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	mg/kg	4 : 4 : 20	100	6.06E-03	7.50E-03	No	2.00E-03	Yes	2.80E+02	No	No	</=Screening Level	No	</=Screening Level
Acetone	67-64-1	mg/kg	9 : 19 : 20	47	8.45E-02	2.60E-01	No	NA	--	6.00E+02	No	No	</=Screening Level	No	</=Screening Level
Benzene	71-43-2	mg/kg	12 : 20 : 20	60	1.34E-01	2.00E+00	No	NA	--	1.30E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
Carbon Disulfide	75-15-0	mg/kg	9 : 19 : 20	47	4.01E-03	7.80E-03	No	NA	--	1.20E+02	No	No	</=Screening Level	No	</=Screening Level
Chlorobenzene	108-90-7	mg/kg	10 : 20 : 20	50	2.95E-01	3.50E+00	No	NA	--	5.30E+01	No	No	</=Screening Level	No	</=Screening Level
Chloroethane	75-00-3	mg/kg	3 : 20 : 20	15	1.94E-02	1.90E-01	No	NA	--	6.50E+00	No	No	</=Screening Level	No	</=Screening Level
Chloroform	67-66-3	mg/kg	2 : 2 : 20	100	1.55E-03	1.80E-03	No	NA	--	1.20E+00	No	No	</=Screening Level	No	</=Screening Level
Dichloromethane	75-09-2	mg/kg	1 : 10 : 20	10	3.27E-03	3.60E-03	No	5.73E-03	No	2.10E+01	No	No	</=Screening Level	No	</=Screening Level
Ethylbenzene	100-41-4	mg/kg	16 : 20 : 20	80	1.36E+01	2.70E+02	No	9.52E-04	Yes	2.00E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
Methyl N-Butyl Ketone	591-78-6	mg/kg	6 : 19 : 20	32	4.54E-02	1.90E-01	No	NA	--	2.70E+03	No	No	</=Screening Level	No	</=Screening Level
Styrene (Monomer)	100-42-5	mg/kg	3 : 3 : 20	100	9.78E-04	1.13E-03	No	4.10E-03	No	1.80E+03	No	No	</=Screening Level	No	</=Screening Level
Tetrachloroethene	127-18-4	mg/kg	10 : 20 : 20	50	5.13E-02	9.60E-01	No	9.50E-04	Yes	3.40E+00	No	No	</=Screening Level	No	</=Screening Level
Toluene	108-88-3	mg/kg	12 : 20 : 20	60	6.50E+01	1.30E+03	No	NA	--	2.20E+02	Yes	Yes	>Screening Level	Yes	>Screening Level
Trichloroethylene	79-01-6	mg/kg	10 : 20 : 20	50	2.18E-02	3.80E-01	No	NA	--	1.10E-01	Yes	Yes	>Screening Level	Yes	>Screening Level
Xylenes, Total	1330-20-7	mg/kg	18 : 20 : 20	90	9.53E+01	1.90E+03	No	1.54E-03	Yes	9.00E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
SVOCs															
1,2,4-Trichlorobenzene	120-82-1	mg/kg	3 : 3 : 20	100	7.67E-02	1.05E-01	No	NA	--	5.60E+02	No	No	</=Screening Level	No	Not Volatile
1,2-Dichlorobenzene	95-50-1	mg/kg	1 : 1 : 20	100	3.10E-02	3.10E-02	No	NA	--	4.10E+02	No	No	</=Screening Level	No	Not Volatile
1,4-Dichlorobenzene	106-46-7	mg/kg	3 : 18 : 20	17	2.66E-01	1.20E+00	No	NA	--	7.90E+00	No	No	</=Screening Level	No	Not Volatile
2,4,5-Trichlorophenol	95-95-4	mg/kg	1 : 18 : 20	6	2.66E-01	1.10E+00	No	NA	--	6.20E+03	No	No	</=Screening Level	No	Not Volatile
2-Methylnaphthalene	91-57-6	mg/kg	3 : 18 : 20	17	2.37E-01	5.40E-01	No	NA	--	1.90E+01	No	No	</=Screening Level	No	Not Volatile
3-Methylphenol/4-Methylphenol	106-44-5	mg/kg	1 : 17 : 20	6	2.26E-01	3.80E-01	No	NA	--	3.10E+02	No	No	</=Screening Level	No	Not Volatile
4-Chloroaniline	106-47-8	mg/kg	1 : 1 : 20	100	1.60E-01	1.60E-01	No	NA	--	2.50E+02	No	No	</=Screening Level	No	Not Volatile
Acenaphthene	83-32-9	mg/kg	5 : 19 : 20	26	2.74E-01	1.30E+00	No	4.20E-02	Yes	2.90E+03	No	No	</=Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Anthracene	120-12-7	mg/kg	9 : 19 : 20	47	3.69E-01	2.00E+00	No	1.20E-01	Yes	2.40E+04	No	No	</=Screening Level	No	Not Volatile
Benzo(a)anthracene	56-55-3	mg/kg	17 : 20 : 20	85	5.92E-01	2.52E+00	No	3.25E-01	Yes	2.10E+00	Yes	Yes	>Screening Level	No	Not Volatile
Benzo(a)pyrene	50-32-8	mg/kg	14 : 20 : 20	70	6.83E-01	2.98E+00	No	3.90E-01	Yes	2.10E-01	Yes	Yes	>Screening Level	No	Not Volatile
Benzo(b)fluoranthene	205-99-2	mg/kg	13 : 20 : 20	65	7.09E-01	3.30E+00	No	3.70E-01	Yes	2.10E+00	Yes	Yes	>Screening Level	No	Not Volatile
Benzo(g,h,i)perylene	191-24-2	mg/kg	11 : 20 : 20	55	4.74E-01	2.09E+00	No	3.94E-01	Yes	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Benzo(k)fluoranthene	207-08-9	mg/kg	16 : 20 : 20	80	4.95E-01	2.50E+00	No	3.28E-01	Yes	2.10E+01	No	No	</=Screening Level	No	Not Volatile
Benzyl Butyl Phthalate	85-68-7	mg/kg	10 : 20 : 20	50	1.25E+00	1.00E+01	No	NA	--	1.20E+04	No	No	</=Screening Level	No	Not Volatile
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	17 : 20 : 20	85	2.66E+00	1.80E+01	No	3.35E-01	Yes	1.20E+02	No	No	</=Screening Level	No	Not Volatile
Carbazole	86-74-8	mg/kg	3 : 17 : 20	18	2.16E-01	3.76E-01	No	NA	--	8.60E+01	No	No	</=Screening Level	No	Not Volatile
Chrysene	218-01-9	mg/kg	19 : 20 : 20	95	6.68E-01	2.85E+00	No	3.36E-01	Yes	2.10E+02	No	No	</=Screening Level	No	Not Volatile
Di-n-butylphthalate	84-74-2	mg/kg	9 : 20 : 20	45	4.41E-01	2.30E+00	No	NA	--	6.20E+03	No	No	</=Screening Level	No	Not Volatile
Dibenzo(a,h)anthracene	53-70-3	mg/kg	1 : 17 : 20	6	2.14E-01	1.83E-01	No	1.20E-01	Yes	2.10E-01	No	No	</=Screening Level	No	Not Volatile
Dibenzofuran	132-64-9	mg/kg	4 : 18 : 20	22	2.22E-01	8.20E-01	No	NA	--	3.10E+02	No	No	</=Screening Level	No	Not Volatile
Diethyl Phthalate	84-66-2	mg/kg	2 : 2 : 20	100	5.45E-02	7.80E-02	No	NA	--	4.90E+04	No	No	</=Screening Level	No	Not Volatile
Dimethyl Phthalate	131-11-3	mg/kg	1 : 1 : 20	100	2.60E-02	2.60E-02	No	NA	--	6.20E+05	No	No	</=Screening Level	No	Not Volatile
Fluoranthene	206-44-0	mg/kg	17 : 20 : 20	85	1.13E+00	4.50E+00	No	4.11E-01	Yes	2.20E+03	No	No	</=Screening Level	No	Not Volatile
Fluorene	86-73-7	mg/kg	6 : 19 : 20	32	2.83E-01	1.40E+00	No	NA	--	2.60E+03	No	No	</=Screening Level	No	Not Volatile
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	4 : 17 : 20	24	1.98E-01	3.10E-01	No	NA	--	2.10E+00	No	No	</=Screening Level	No	Not Volatile
Naphthalene	91-20-3	mg/kg	3 : 19 : 20	16	7.35E-01	5.20E+00	No	NA	--	1.90E+01	No	No	</=Screening Level	No	Not Volatile
Phenanthrene	85-01-8	mg/kg	17 : 20 : 20	85	9.82E-01	6.10E+00	No	3.52E-01	Yes	2.40E+04	No	No	</=Screening Level	No	Not Volatile
Phenol	108-95-2	mg/kg	2 : 18 : 20	11	2.59E-01	1.00E+00	No	NA	--	3.70E+04	No	No	</=Screening Level	No	Not Volatile
Pyrene	129-00-0	mg/kg	14 : 20 : 20	70	1.28E+00	5.20E+00	No	4.01E-01	Yes	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Pesticide															
4,4'-DDD	72-54-8	mg/kg	5 : 20 : 20	25	9.66E-02	1.40E+00	No	5.39E-03	Yes	1.00E+01	No	No	</=Screening Level	No	Not Volatile
4,4'-DDE	72-55-9	mg/kg	11 : 17 : 20	65	1.43E-01	1.20E+00	No	8.02E-03	Yes	7.00E+00	No	No	</=Screening Level	No	Not Volatile
4,4'-DDT	50-29-3	mg/kg	18 : 20 : 20	90	6.62E-01	3.75E+00	No	2.18E-02	Yes	7.00E+00	No	No	</=Screening Level	No	Not Volatile
Aldrin	309-00-2	mg/kg	3 : 20 : 20	15	3.92E-02	3.00E-01	No	2.75E-03	Yes	1.00E-01	Yes	Yes	>Screening Level	No	Not Volatile
alpha-BHC	319-84-6	mg/kg	4 : 20 : 20	20	2.28E-02	1.85E-01	No	2.58E-02	Yes	3.60E-01	No	No	</=Screening Level	No	Not Volatile
alpha-Chlordane	5103-71-9	mg/kg	13 : 19 : 20	68	2.12E-02	1.11E-01	No	4.04E-03	Yes	6.50E+00	No	No	</=Screening Level	No	Not Volatile
beta-BHC	319-85-7	mg/kg	2 : 11 : 20	18	3.26E-03	1.10E-02	No	NA	--	1.30E+00	No	No	</=Screening Level	No	Not Volatile

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SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
delta-BHC	319-86-8	mg/kg	2 : 20 : 20	10	2.52E-02	2.40E-01	No	8.57E-03	Yes	1.70E+00	No	No	</=Screening Level	No	Not Volatile
Dieldrin	60-57-1	mg/kg	16 : 20 : 20	80	1.33E-01	8.25E-01	No	7.51E-03	Yes	1.10E-01	Yes	Yes	>Screening Level	No	Not Volatile
Endosulfan I	959-98-8	mg/kg	2 : 20 : 20	10	2.53E-02	2.25E-01	No	2.14E-03	Yes	3.70E+02	No	No	</=Screening Level	No	Not Volatile
Endosulfan II	33213-65-	mg/kg	7 : 20 : 20	35	4.01E-02	3.55E-01	No	1.16E-03	Yes	3.70E+02	No	No	</=Screening Level	No	Not Volatile
Endosulfan Sulfate	1031-07-8	mg/kg	7 : 20 : 20	35	7.06E-02	9.55E-01	No	1.81E-03	Yes	3.70E+02	No	No	</=Screening Level	No	Not Volatile
Endrin	72-20-8	mg/kg	6 : 20 : 20	30	5.33E-02	3.45E-01	No	4.38E-03	Yes	1.80E+01	No	No	</=Screening Level	No	Not Volatile
Endrin Aldehyde	7421-93-4	mg/kg	8 : 20 : 20	40	2.29E-01	2.60E+00	No	4.81E-03	Yes	1.80E+01	No	No	</=Screening Level	No	Not Volatile
Endrin Ketone	53494-70-	mg/kg	8 : 20 : 20	40	6.33E-02	4.15E-01	No	NA	--	1.80E+01	No	No	</=Screening Level	No	Not Volatile
gamma-BHC (Lindane)	58-89-9	mg/kg	4 : 20 : 20	20	1.65E-02	9.60E-02	No	NA	--	1.70E+00	No	No	</=Screening Level	No	Not Volatile
gamma-Chlordane	5103-74-2	mg/kg	11 : 20 : 20	55	1.06E-01	7.40E-01	No	2.13E-02	Yes	6.50E+00	No	No	</=Screening Level	No	Not Volatile
Heptachlor	76-44-8	mg/kg	1 : 10 : 20	10	2.01E-03	5.80E-03	No	1.66E-02	No	3.80E-01	No	No	</=Screening Level	No	Not Volatile
Heptachlor Epoxide	1024-57-3	mg/kg	11 : 20 : 20	55	3.76E-02	2.30E-01	No	6.10E-03	Yes	1.90E-01	Yes	Yes	>Screening Level	No	Not Volatile
Methoxychlor	72-43-5	mg/kg	2 : 6 : 20	33	2.51E-02	9.20E-02	No	3.31E-03	Yes	3.10E+02	No	No	</=Screening Level	No	Not Volatile
Herbicide															
2,4,5-T	93-76-5	mg/kg	2 : 17 : 20	12	5.38E-03	7.40E-03	No	NA	--	6.20E+02	No	No	</=Screening Level	No	Not Volatile
2,4-D	94-75-7	mg/kg	13 : 18 : 20	72	9.12E-03	1.84E-02	No	9.66E-03	Yes	7.70E+02	No	No	</=Screening Level	No	Not Volatile
2,4-DB	94-82-6	mg/kg	1 : 18 : 20	6	6.97E-03	1.65E-02	No	NA	--	4.90E+02	No	No	</=Screening Level	No	Not Volatile
Dichlorprop	120-36-5	mg/kg	4 : 4 : 20	100	4.38E-03	6.20E-03	No	1.03E-01	No	4.92E+02	No	No	</=Screening Level	No	Not Volatile
MCPA	94-74-6	mg/kg	8 : 17 : 20	47	1.37E+00	3.70E+00	No	NA	--	3.10E+01	No	No	</=Screening Level	No	Not Volatile
MCPP	93-65-2	mg/kg	11 : 17 : 20	65	1.70E+00	5.20E+00	No	2.92E+00	Yes	6.20E+01	No	No	</=Screening Level	No	Not Volatile
Pentachlorophenol	87-86-5	mg/kg	14 : 20 : 20	70	3.57E+01	4.70E+02	No	4.57E-03	Yes	9.00E+00	Yes	Yes	>Screening Level	No	Not Volatile
PCBs															
Total PCBs	1336-36-3	mg/kg	16 : 20 : 20	80	5.66E+00	3.21E+01	No	1.28E-01	Yes	1.00E+00	Yes	Yes	>Screening Level	No	Not Volatile
Dioxin															
2,3,7,8-TCDD-TEQ	1746-01-6	mg/kg	20 : 20 : 20	100	2.15E-03	2.87E-02	No	8.93E-06	Yes	1.00E-03	Yes	Yes	>Screening Level	No	Not Volatile
Metals															
Aluminum	7429-90-5	mg/kg	20 : 20 : 20	100	9.71E+03	1.70E+04	No	1.09E+04	Yes	9.20E+04	No	No	</=Screening Level	No	Not Volatile
Antimony	7440-36-0	mg/kg	10 : 20 : 20	50	1.15E+01	4.70E+01	No	2.05E+00	Yes	4.10E+01	Yes	Yes	>Screening Level	No	Not Volatile
Arsenic	7440-38-2	mg/kg	20 : 20 : 20	100	1.31E+01	3.30E+01	No	1.08E+01	Yes	1.60E+00	Yes	Yes	>Screening Level	No	Not Volatile
Barium	7440-39-3	mg/kg	20 : 20 : 20	100	7.03E+02	2.80E+03	No	3.17E+02	Yes	6.70E+03	No	No	</=Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Beryllium	7440-41-7	mg/kg	20 : 20 : 20	100	5.56E-01	9.90E-01	No	7.65E-01	Yes	1.90E+02	No	No	</=Screening Level	No	Not Volatile
Cadmium	7440-43-9	mg/kg	20 : 20 : 20	100	1.10E+01	4.30E+01	No	1.81E+00	Yes	4.50E+01	No	No	</=Screening Level	No	Not Volatile
Calcium	7440-70-2	mg/kg	20 : 20 : 20	100	1.70E+04	7.15E+04	Yes	6.11E+04	Yes	NA	--	No	EN	No	Not Volatile
Chromium	7440-47-3	mg/kg	20 : 20 : 20	100	8.82E+01	6.60E+02	No	1.89E+01	Yes	4.50E+02	Yes	Yes	>Screening Level	No	Not Volatile
Cobalt	7440-48-4	mg/kg	20 : 20 : 20	100	1.38E+01	4.20E+01	No	9.27E+00	Yes	1.30E+03	No	No	</=Screening Level	No	Not Volatile
Copper	7440-50-8	mg/kg	20 : 20 : 20	100	5.84E+02	3.70E+03	No	4.96E+01	Yes	4.10E+03	No	No	</=Screening Level	No	Not Volatile
Iron	7439-89-6	mg/kg	20 : 20 : 20	100	5.67E+04	2.10E+05	Yes	2.10E+04	Yes	3.10E+04	Yes	No	EN	No	Not Volatile
Lead	7439-92-1	mg/kg	20 : 20 : 20	100	8.28E+02	3.10E+03	No	7.18E+01	Yes	7.50E+02	Yes	Yes	>Screening Level	No	Not Volatile
Magnesium	7439-95-4	mg/kg	20 : 20 : 20	100	3.73E+03	6.70E+03	Yes	1.13E+04	No	NA	--	No	EN	No	Not Volatile
Manganese	7439-96-5	mg/kg	20 : 20 : 20	100	7.01E+02	2.10E+03	No	5.01E+02	Yes	1.90E+03	Yes	Yes	>Screening Level	No	Not Volatile
Mercury	7439-97-6	mg/kg	20 : 20 : 20	100	2.58E+00	3.60E+01	No	7.72E-02	Yes	3.10E+01	Yes	Yes	>Screening Level	No	Not Volatile
Nickel	7440-02-0	mg/kg	20 : 20 : 20	100	2.14E+02	2.73E+03	No	2.83E+01	Yes	2.00E+03	Yes	Yes	>Screening Level	No	Not Volatile
Potassium	7440-09-7	mg/kg	20 : 20 : 20	100	1.22E+03	2.30E+03	Yes	2.38E+03	No	NA	--	No	EN	No	Not Volatile
Selenium	7782-49-2	mg/kg	5 : 20 : 20	25	1.12E+00	3.70E+00	No	1.07E+00	Yes	5.10E+02	No	No	</=Screening Level	No	Not Volatile
Silver	7440-22-4	mg/kg	12 : 20 : 20	60	4.41E+00	2.70E+01	No	1.02E+00	Yes	5.10E+02	No	No	</=Screening Level	No	Not Volatile
Sodium	7440-23-5	mg/kg	7 : 20 : 20	35	2.87E+02	2.25E+03	Yes	1.41E+02	Yes	NA	--	No	EN	No	Not Volatile
Thallium	7440-28-0	mg/kg	4 : 19 : 20	21	8.49E-01	1.90E+00	No	NA	--	6.70E+00	No	No	</=Screening Level	No	Not Volatile
Vanadium	7440-62-2	mg/kg	20 : 20 : 20	100	2.33E+01	3.60E+01	No	3.44E+01	Yes	7.20E+02	No	No	</=Screening Level	No	Not Volatile
Zinc	7440-66-6	mg/kg	20 : 20 : 20	100	1.45E+03	6.40E+03	No	2.24E+02	Yes	3.10E+04	No	No	</=Screening Level	No	Not Volatile

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Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Site R															
VOCs															
1,1,2-Trichloroethane	79-00-5	mg/kg	1 : 12 : 12	8	1.69E+00	9.50E+00	No	NA	--	1.60E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
1,1-Dichloroethane	75-34-3	mg/kg	1 : 12 : 12	8	1.81E+00	1.10E+01	No	NA	--	1.70E+02	No	No	</=Screening Level	No	</=Screening Level
1,1-Dichloroethylene	75-35-4	mg/kg	1 : 11 : 12	9	9.29E-01	3.90E+00	No	NA	--	4.10E+01	No	No	</=Screening Level	No	</=Screening Level
1,2-Dichloroethane	107-06-2	mg/kg	7 : 12 : 12	58	1.68E+01	8.70E+01	No	NA	--	6.00E-01	Yes	Yes	>Screening Level	Yes	>Screening Level
1,2-Dichloroethene (total)	540-59-0	mg/kg	5 : 12 : 12	42	6.18E+00	5.10E+01	No	NA	--	1.50E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
2-Butanone (MEK)	78-93-3	mg/kg	11 : 12 : 12	92	1.06E+01	8.40E+01	No	NA	--	2.70E+03	No	No	</=Screening Level	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	mg/kg	4 : 12 : 12	33	7.54E+00	4.30E+01	No	2.00E-03	Yes	2.80E+02	No	No	</=Screening Level	No	</=Screening Level
Acetone	67-64-1	mg/kg	9 : 10 : 12	90	2.50E+01	1.80E+02	No	NA	--	6.00E+02	No	No	</=Screening Level	No	</=Screening Level
Benzene	71-43-2	mg/kg	12 : 12 : 12	100	2.62E+01	1.50E+02	No	NA	--	1.30E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
Chlorobenzene	108-90-7	mg/kg	11 : 12 : 12	92	2.33E+02	2.40E+03	No	NA	--	5.30E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
Chloroform	67-66-3	mg/kg	5 : 12 : 12	42	2.79E+00	1.10E+01	No	NA	--	1.20E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
Ethylbenzene	100-41-4	mg/kg	12 : 12 : 12	100	9.04E+00	4.20E+01	No	9.52E-04	Yes	2.00E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
Tetrachloroethene	127-18-4	mg/kg	10 : 12 : 12	83	2.25E+02	1.20E+03	No	9.50E-04	Yes	3.40E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
Toluene	108-88-3	mg/kg	8 : 12 : 12	67	1.78E+02	8.30E+02	No	NA	--	2.20E+02	Yes	Yes	>Screening Level	Yes	>Screening Level
Trichloroethylene	79-01-6	mg/kg	9 : 12 : 12	75	2.53E+02	2.20E+03	No	NA	--	1.10E-01	Yes	Yes	>Screening Level	Yes	>Screening Level
Xylenes, Total	1330-20-7	mg/kg	11 : 12 : 12	92	4.53E+01	2.80E+02	No	1.54E-03	Yes	9.00E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
SVOCs															
1,2,4-Trichlorobenzene	120-82-1	mg/kg	3 : 12 : 12	25	1.20E+01	1.20E+02	No	NA	--	5.60E+02	No	No	</=Screening Level	No	Not Volatile
1,2-Dichlorobenzene	95-50-1	mg/kg	5 : 12 : 12	42	1.43E+01	1.20E+02	No	NA	--	4.10E+02	No	No	</=Screening Level	No	Not Volatile
1,4-Dichlorobenzene	106-46-7	mg/kg	3 : 11 : 12	27	2.51E+00	2.40E+01	No	NA	--	7.90E+00	Yes	Yes	>Screening Level	No	Not Volatile
2,4,5-Trichlorophenol	95-95-4	mg/kg	1 : 9 : 12	11	3.64E-01	1.80E+00	No	NA	--	6.20E+03	No	No	</=Screening Level	No	Not Volatile
2,4,6-Trichlorophenol	88-06-2	mg/kg	5 : 12 : 12	42	7.34E+01	6.50E+02	No	NA	--	6.20E+00	Yes	Yes	>Screening Level	No	Not Volatile
2,4-Dichlorophenol	120-83-2	mg/kg	6 : 12 : 12	50	3.27E+02	3.50E+03	No	NA	--	1.80E+02	Yes	Yes	>Screening Level	No	Not Volatile
2,4-Dimethylphenol	105-67-9	mg/kg	1 : 1 : 12	100	1.00E-01	1.00E-01	No	NA	--	1.20E+03	No	No	</=Screening Level	No	Not Volatile
2-Chlorophenol	95-57-8	mg/kg	4 : 12 : 12	33	3.73E+01	3.90E+02	No	NA	--	2.40E+01	Yes	Yes	>Screening Level	No	Not Volatile
2-Methylnaphthalene	91-57-6	mg/kg	1 : 9 : 12	11	1.04E+00	7.90E+00	No	NA	--	1.90E+01	No	No	</=Screening Level	No	Not Volatile
2-Nitroaniline	88-74-4	mg/kg	2 : 9 : 12	22	1.52E+00	7.00E+00	No	NA	--	1.80E+00	Yes	Yes	>Screening Level	No	Not Volatile
3-Methylphenol/4-Methylphenol	106-44-5	mg/kg	5 : 12 : 12	42	2.52E+00	2.10E+01	No	NA	--	3.10E+02	No	No	</=Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
4-Chloroaniline	106-47-8	mg/kg	6 : 12 : 12	50	7.31E+00	3.60E+01	No	NA	--	2.50E+02	No	No	</=Screening Level	No	Not Volatile
4-Nitroaniline	100-01-6	mg/kg	1 : 10 : 12	10	4.12E+00	2.30E+01	No	NA	--	1.80E+00	Yes	Yes	>Screening Level	No	Not Volatile
Benzo(a)anthracene	56-55-3	mg/kg	2 : 2 : 12	100	3.15E-02	3.30E-02	No	3.25E-01	No	2.10E+00	No	No	</=Screening Level	No	Not Volatile
Benzo(a)pyrene	50-32-8	mg/kg	2 : 2 : 12	100	2.95E-02	3.30E-02	No	3.90E-01	No	2.10E-01	No	No	</=Screening Level	No	Not Volatile
Benzo(b)fluoranthene	205-99-2	mg/kg	2 : 2 : 12	100	3.10E-02	3.20E-02	No	3.70E-01	No	2.10E+00	No	No	</=Screening Level	No	Not Volatile
Benzo(g,h,i)perylene	191-24-2	mg/kg	3 : 10 : 12	30	5.20E-01	2.00E+00	No	3.94E-01	Yes	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Benzo(k)fluoranthene	207-08-9	mg/kg	2 : 2 : 12	100	3.05E-02	3.50E-02	No	3.28E-01	No	2.10E+01	No	No	</=Screening Level	No	Not Volatile
Benzyl Butyl Phthalate	85-68-7	mg/kg	2 : 10 : 12	20	9.33E-01	6.00E+00	No	NA	--	1.20E+04	No	No	</=Screening Level	No	Not Volatile
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	7 : 12 : 12	58	3.20E+00	2.30E+01	No	3.35E-01	Yes	1.20E+02	No	No	</=Screening Level	No	Not Volatile
Chrysene	218-01-9	mg/kg	4 : 9 : 12	44	1.51E-01	3.20E-01	No	3.36E-01	No	2.10E+02	No	No	</=Screening Level	No	Not Volatile
Di-n-butylphthalate	84-74-2	mg/kg	2 : 10 : 12	20	9.54E-01	6.20E+00	No	NA	--	6.20E+03	No	No	</=Screening Level	No	Not Volatile
Diethyl Phthalate	84-66-2	mg/kg	2 : 11 : 12	18	3.13E+00	2.00E+01	No	NA	--	4.90E+04	No	No	</=Screening Level	No	Not Volatile
Dimethyl Phthalate	131-11-3	mg/kg	2 : 10 : 12	20	9.52E-01	6.20E+00	No	NA	--	6.20E+05	No	No	</=Screening Level	No	Not Volatile
Fluoranthene	206-44-0	mg/kg	1 : 1 : 12	100	3.90E-02	3.90E-02	No	4.11E-01	No	2.20E+03	No	No	</=Screening Level	No	Not Volatile
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	2 : 10 : 12	20	5.35E-01	2.00E+00	No	NA	--	2.10E+00	No	No	</=Screening Level	No	Not Volatile
N-Nitrosodiphenylamine	86-30-6	mg/kg	1 : 9 : 12	11	4.64E-01	2.70E+00	No	NA	--	3.50E+02	No	No	</=Screening Level	No	Not Volatile
Naphthalene	91-20-3	mg/kg	4 : 12 : 12	33	1.17E+01	1.20E+02	No	NA	--	1.90E+01	Yes	Yes	>Screening Level	No	Not Volatile
Nitrobenzene	98-95-3	mg/kg	3 : 12 : 12	25	6.63E+00	4.80E+01	No	NA	--	1.00E+01	Yes	Yes	>Screening Level	No	Not Volatile
Phenanthrene	85-01-8	mg/kg	2 : 2 : 12	100	2.55E-02	3.00E-02	No	3.52E-01	No	2.40E+04	No	No	</=Screening Level	No	Not Volatile
Phenol	108-95-2	mg/kg	4 : 12 : 12	33	9.15E+01	8.00E+02	No	NA	--	3.70E+04	No	No	</=Screening Level	No	Not Volatile
Pyrene	129-00-0	mg/kg	1 : 1 : 12	100	4.80E-02	4.80E-02	No	4.01E-01	No	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Pesticide															
4,4'-DDE	72-55-9	mg/kg	2 : 2 : 12	100	1.13E-03	1.60E-03	No	8.02E-03	No	7.00E+00	No	No	</=Screening Level	No	Not Volatile
4,4'-DDT	50-29-3	mg/kg	2 : 7 : 12	29	3.42E-03	1.20E-02	No	2.18E-02	No	7.00E+00	No	No	</=Screening Level	No	Not Volatile
Aldrin	309-00-2	mg/kg	1 : 7 : 12	14	1.79E-03	6.00E-03	No	2.75E-03	Yes	1.00E-01	No	No	</=Screening Level	No	Not Volatile
alpha-BHC	319-84-6	mg/kg	1 : 1 : 12	100	6.10E-04	6.10E-04	No	2.58E-02	No	3.60E-01	No	No	</=Screening Level	No	Not Volatile
alpha-Chlordane	5103-71-9	mg/kg	3 : 8 : 12	38	1.44E-03	5.50E-03	No	4.04E-03	Yes	6.50E+00	No	No	</=Screening Level	No	Not Volatile
beta-BHC	319-85-7	mg/kg	2 : 11 : 12	18	3.49E-01	2.20E+00	No	NA	--	1.30E+00	Yes	Yes	>Screening Level	No	Not Volatile
Dieldrin	60-57-1	mg/kg	7 : 11 : 12	64	3.41E-01	1.80E+00	No	7.51E-03	Yes	1.10E-01	Yes	Yes	>Screening Level	No	Not Volatile
Endosulfan I	959-98-8	mg/kg	2 : 11 : 12	18	2.05E-01	1.80E+00	No	2.14E-03	Yes	3.70E+02	No	No	</=Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Endosulfan II	33213-65-	mg/kg	1 : 8 : 12	13	2.52E-02	1.70E-01	No	1.16E-03	Yes	3.70E+02	No	No	</=Screening Level	No	Not Volatile
Endosulfan Sulfate	1031-07-8	mg/kg	2 : 11 : 12	18	2.57E-01	2.00E+00	No	1.81E-03	Yes	3.70E+02	No	No	</=Screening Level	No	Not Volatile
Endrin	72-20-8	mg/kg	1 : 4 : 12	25	1.82E-03	1.90E-03	No	4.38E-03	No	1.80E+01	No	No	</=Screening Level	No	Not Volatile
Endrin Aldehyde	7421-93-4	mg/kg	1 : 7 : 12	14	4.11E-03	1.60E-02	No	4.81E-03	Yes	1.80E+01	No	No	</=Screening Level	No	Not Volatile
Endrin Ketone	53494-70-	mg/kg	2 : 12 : 12	17	4.72E-01	4.80E+00	No	NA	--	1.80E+01	No	No	</=Screening Level	No	Not Volatile
gamma-BHC (Lindane)	58-89-9	mg/kg	2 : 11 : 12	18	1.16E-01	6.80E-01	No	NA	--	1.70E+00	No	No	</=Screening Level	No	Not Volatile
gamma-Chlordane	5103-74-2	mg/kg	5 : 11 : 12	45	9.76E-02	5.30E-01	No	2.13E-02	Yes	6.50E+00	No	No	</=Screening Level	No	Not Volatile
Heptachlor	76-44-8	mg/kg	1 : 11 : 12	9	1.86E-01	1.60E+00	No	1.66E-02	Yes	3.80E-01	Yes	Yes	>Screening Level	No	Not Volatile
Heptachlor Epoxide	1024-57-3	mg/kg	3 : 8 : 12	38	5.51E-03	3.60E-02	No	6.10E-03	Yes	1.90E-01	No	No	</=Screening Level	No	Not Volatile
Methoxychlor	72-43-5	mg/kg	1 : 1 : 12	100	7.20E-03	7.20E-03	No	3.31E-03	Yes	3.10E+02	No	No	</=Screening Level	No	Not Volatile
Herbicide															
2,4,5-T	93-76-5	mg/kg	1 : 2 : 12	50	6.05E-03	7.60E-03	No	NA	--	6.20E+02	No	No	</=Screening Level	No	Not Volatile
2,4,5-TP (Silvex)	93-72-1	mg/kg	1 : 1 : 12	100	9.30E-03	9.30E-03	No	NA	--	4.90E+02	No	No	</=Screening Level	No	Not Volatile
2,4-D	94-75-7	mg/kg	8 : 12 : 12	67	6.76E+01	5.80E+02	No	9.66E-03	Yes	7.70E+02	No	No	</=Screening Level	No	Not Volatile
2,4-DB	94-82-6	mg/kg	5 : 8 : 12	63	3.46E-02	6.00E-02	No	NA	--	4.90E+02	No	No	</=Screening Level	No	Not Volatile
Dichlorprop	120-36-5	mg/kg	12 : 12 : 12	100	3.85E+00	3.90E+01	No	1.03E-01	Yes	4.92E+02	No	No	</=Screening Level	No	Not Volatile
MCPP	93-65-2	mg/kg	8 : 9 : 12	89	4.67E+01	8.50E+01	No	2.92E+00	Yes	6.20E+01	Yes	Yes	>Screening Level	No	Not Volatile
Pentachlorophenol	87-86-5	mg/kg	2 : 9 : 12	22	4.19E-01	3.30E+00	No	4.57E-03	Yes	9.00E+00	No	No	</=Screening Level	No	Not Volatile
PCBs															
Total PCBs	1336-36-3	mg/kg	8 : 12 : 12	67	4.12E+01	2.65E+02	No	1.28E-01	Yes	1.00E+00	Yes	Yes	>Screening Level	No	Not Volatile
Dioxin															
2,3,7,8-TCDD-TEQ	1746-01-6	mg/kg	5 : 12 : 12	42	1.31E-03	1.22E-02	No	8.93E-06	Yes	1.00E-03	Yes	Yes	>Screening Level	No	Not Volatile
Metals															
Aluminum	7429-90-5	mg/kg	12 : 12 : 12	100	7.20E+03	1.00E+04	No	1.09E+04	No	9.20E+04	No	No	</=Screening Level	No	Not Volatile
Antimony	7440-36-0	mg/kg	2 : 12 : 12	17	1.29E+00	4.00E+00	No	2.05E+00	Yes	4.10E+01	No	No	</=Screening Level	No	Not Volatile
Arsenic	7440-38-2	mg/kg	12 : 12 : 12	100	6.12E+00	1.20E+01	No	1.08E+01	Yes	1.60E+00	Yes	Yes	>Screening Level	No	Not Volatile
Barium	7440-39-3	mg/kg	12 : 12 : 12	100	1.44E+02	2.20E+02	No	3.17E+02	No	6.70E+03	No	No	</=Screening Level	No	Not Volatile
Beryllium	7440-41-7	mg/kg	12 : 12 : 12	100	5.52E-01	7.80E-01	No	7.65E-01	Yes	1.90E+02	No	No	</=Screening Level	No	Not Volatile
Cadmium	7440-43-9	mg/kg	9 : 12 : 12	75	7.77E-01	3.80E+00	No	1.81E+00	Yes	4.50E+01	No	No	</=Screening Level	No	Not Volatile
Calcium	7440-70-2	mg/kg	12 : 12 : 12	100	9.53E+03	3.80E+04	Yes	6.11E+04	No	NA	--	No	EN	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Chromium	7440-47-3	mg/kg	12 : 12 : 12	100	3.91E+01	2.60E+02	No	1.89E+01	Yes	4.50E+02	No	No	</=Screening Level	No	Not Volatile
Cobalt	7440-48-4	mg/kg	12 : 12 : 12	100	2.20E+01	7.80E+01	No	9.27E+00	Yes	1.30E+03	No	No	</=Screening Level	No	Not Volatile
Copper	7440-50-8	mg/kg	12 : 12 : 12	100	3.70E+01	1.30E+02	No	4.96E+01	Yes	4.10E+03	No	No	</=Screening Level	No	Not Volatile
Iron	7439-89-6	mg/kg	12 : 12 : 12	100	1.68E+04	3.90E+04	Yes	2.10E+04	Yes	3.10E+04	Yes	No	EN	No	Not Volatile
Lead	7439-92-1	mg/kg	12 : 12 : 12	100	2.26E+01	1.10E+02	No	7.18E+01	Yes	7.50E+02	No	No	</=Screening Level	No	Not Volatile
Magnesium	7439-95-4	mg/kg	12 : 12 : 12	100	3.69E+03	5.50E+03	Yes	1.13E+04	No	NA	--	No	EN	No	Not Volatile
Manganese	7439-96-5	mg/kg	12 : 12 : 12	100	4.70E+02	1.20E+03	No	5.01E+02	Yes	1.90E+03	No	No	</=Screening Level	No	Not Volatile
Mercury	7439-97-6	mg/kg	12 : 12 : 12	100	2.51E+02	3.00E+03	No	7.72E-02	Yes	3.10E+01	Yes	Yes	>Screening Level	No	Not Volatile
Nickel	7440-02-0	mg/kg	12 : 12 : 12	100	3.20E+01	1.50E+02	No	2.83E+01	Yes	2.00E+03	No	No	</=Screening Level	No	Not Volatile
Potassium	7440-09-7	mg/kg	12 : 12 : 12	100	9.31E+02	2.20E+03	Yes	2.38E+03	No	NA	--	No	EN	No	Not Volatile
Silver	7440-22-4	mg/kg	1 : 12 : 12	8	5.89E-01	1.10E+00	No	1.02E+00	Yes	5.10E+02	No	No	</=Screening Level	No	Not Volatile
Sodium	7440-23-5	mg/kg	12 : 12 : 12	100	4.42E+02	1.70E+03	Yes	1.41E+02	Yes	NA	--	No	EN	No	Not Volatile
Vanadium	7440-62-2	mg/kg	12 : 12 : 12	100	2.62E+01	3.60E+01	No	3.44E+01	Yes	7.20E+02	No	No	</=Screening Level	No	Not Volatile
Zinc	7440-66-6	mg/kg	12 : 12 : 12	100	6.32E+02	5.90E+03	No	2.24E+02	Yes	3.10E+04	No	No	</=Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Site S															
VOCs															
1,1,1-Trichloroethane	71-55-6	mg/kg	4:6:6	67	4.83E+01	2.20E+02	No	NA	--	6.90E+02	No	No	</=Screening Level	No	</=Screening Level
1,1-Dichloroethane	75-34-3	mg/kg	3:6:6	50	2.16E+00	6.60E+00	No	NA	--	1.70E+02	No	No	</=Screening Level	No	</=Screening Level
1,1-Dichloroethylene	75-35-4	mg/kg	1:6:6	17	1.41E+00	4.80E+00	No	NA	--	4.10E+01	No	No	</=Screening Level	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	mg/kg	3:5:6	60	1.34E+00	3.10E+00	No	NA	--	1.50E+01	No	No	</=Screening Level	No	</=Screening Level
2-Butanone (MEK)	78-93-3	mg/kg	4:6:6	67	9.67E+01	2.90E+02	No	NA	--	2.70E+03	No	No	</=Screening Level	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	mg/kg	3:6:6	50	1.03E+02	4.00E+02	No	2.00E-03	Yes	2.80E+02	Yes	Yes	>Screening Level	Yes	>Screening Level
Acetone	67-64-1	mg/kg	4:5:6	80	5.40E+01	1.50E+02	No	NA	--	6.00E+02	No	No	</=Screening Level	No	</=Screening Level
Benzene	71-43-2	mg/kg	2:6:6	33	1.18E+01	3.50E+01	No	NA	--	1.30E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
Chlorobenzene	108-90-7	mg/kg	4:6:6	67	2.65E+02	1.20E+03	No	NA	--	5.30E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
Dichloromethane	75-09-2	mg/kg	4:6:6	67	1.64E+01	5.70E+01	No	5.73E-03	Yes	2.10E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
Ethylbenzene	100-41-4	mg/kg	5:6:6	83	3.01E+02	1.10E+03	No	9.52E-04	Yes	2.00E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
Styrene (Monomer)	100-42-5	mg/kg	1:1:6	100	3.70E-04	3.70E-04	No	4.10E-03	No	1.80E+03	No	No	</=Screening Level	No	</=Screening Level
Tetrachloroethene	127-18-4	mg/kg	5:6:6	83	1.30E+01	3.30E+01	No	9.50E-04	Yes	3.40E+00	Yes	Yes	>Screening Level	Yes	>Screening Level
Toluene	108-88-3	mg/kg	4:6:6	67	1.35E+03	6.00E+03	No	NA	--	2.20E+02	Yes	Yes	>Screening Level	Yes	>Screening Level
Trichloroethylene	79-01-6	mg/kg	5:6:6	83	5.41E+01	2.40E+02	No	NA	--	1.10E-01	Yes	Yes	>Screening Level	Yes	>Screening Level
Xylenes, Total	1330-20-7	mg/kg	5:6:6	83	1.77E+03	7.30E+03	No	1.54E-03	Yes	9.00E+01	Yes	Yes	>Screening Level	Yes	>Screening Level
SVOCs															
1,2,4-Trichlorobenzene	120-82-1	mg/kg	2:6:6	33	1.12E+01	3.60E+01	No	NA	--	5.60E+02	No	No	</=Screening Level	No	Not Volatile
1,2-Dichlorobenzene	95-50-1	mg/kg	3:6:6	50	2.87E+01	1.10E+02	No	NA	--	4.10E+02	No	No	</=Screening Level	No	Not Volatile
1,3-Dichlorobenzene	541-73-1	mg/kg	2:5:6	40	3.39E+00	1.20E+01	No	NA	--	6.30E+00	Yes	Yes	>Screening Level	No	Not Volatile
1,4-Dichlorobenzene	106-46-7	mg/kg	3:6:6	50	3.90E+01	2.00E+02	No	NA	--	7.90E+00	Yes	Yes	>Screening Level	No	Not Volatile
2,4,5-Trichlorophenol	95-95-4	mg/kg	1:2:6	50	6.43E-01	1.10E+00	No	NA	--	6.20E+03	No	No	</=Screening Level	No	Not Volatile
2,4,6-Trichlorophenol	88-06-2	mg/kg	1:4:6	25	3.03E+00	8.20E+00	No	NA	--	6.20E+00	Yes	Yes	>Screening Level	No	Not Volatile
2,4-Dichlorophenol	120-83-2	mg/kg	1:4:6	25	1.56E+00	2.30E+00	No	NA	--	1.80E+02	No	No	</=Screening Level	No	Not Volatile
2-Methylnaphthalene	91-57-6	mg/kg	5:6:6	83	5.78E+00	1.10E+01	No	NA	--	1.90E+01	No	No	</=Screening Level	No	Not Volatile
2-Methylphenol	95-48-7	mg/kg	2:3:6	67	7.42E-01	1.60E+00	No	NA	--	3.10E+03	No	No	</=Screening Level	No	Not Volatile
2-Nitroaniline	88-74-4	mg/kg	2:3:6	67	2.16E+00	4.60E+00	No	NA	--	1.80E+00	Yes	Yes	>Screening Level	No	Not Volatile
3-Methylphenol/4-Methylphenol	106-44-5	mg/kg	2:3:6	67	1.50E+00	2.50E+00	No	NA	--	3.10E+02	No	No	</=Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
4-Chloroaniline	106-47-8	mg/kg	2:6:6	33	2.27E+01	7.00E+01	No	NA	--	2.50E+02	No	No	</=Screening Level	No	Not Volatile
4-Nitroaniline	100-01-6	mg/kg	1:4:6	25	1.94E+01	5.70E+01	No	NA	--	1.80E+00	Yes	Yes	>Screening Level	No	Not Volatile
Acenaphthene	83-32-9	mg/kg	1:2:6	50	6.93E-01	1.20E+00	No	4.20E-02	Yes	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Anthracene	120-12-7	mg/kg	1:2:6	50	6.43E-01	1.10E+00	No	1.20E-01	Yes	2.40E+04	No	No	</=Screening Level	No	Not Volatile
Benzo(a)anthracene	56-55-3	mg/kg	2:4:6	50	2.96E+00	8.00E+00	No	3.25E-01	Yes	2.10E+00	Yes	Yes	>Screening Level	No	Not Volatile
Benzo(a)pyrene	50-32-8	mg/kg	2:4:6	50	2.32E+00	5.40E+00	No	3.90E-01	Yes	2.10E-01	Yes	Yes	>Screening Level	No	Not Volatile
Benzo(b)fluoranthene	205-99-2	mg/kg	2:4:6	50	2.65E+00	6.60E+00	No	3.70E-01	Yes	2.10E+00	Yes	Yes	>Screening Level	No	Not Volatile
Benzo(g,h,i)perylene	191-24-2	mg/kg	2:4:6	50	2.02E+00	4.20E+00	No	3.94E-01	Yes	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Benzo(k)fluoranthene	207-08-9	mg/kg	1:4:6	25	2.58E+00	6.40E+00	No	3.28E-01	Yes	2.10E+01	No	No	</=Screening Level	No	Not Volatile
Benzyl Butyl Phthalate	85-68-7	mg/kg	3:6:6	50	2.76E+01	1.20E+02	No	NA	--	1.20E+04	No	No	</=Screening Level	No	Not Volatile
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	6:6:6	100	5.03E+01	1.30E+02	No	3.35E-01	Yes	1.20E+02	Yes	Yes	>Screening Level	No	Not Volatile
Chrysene	218-01-9	mg/kg	2:5:6	40	8.78E+00	2.00E+01	No	3.36E-01	Yes	2.10E+02	No	No	</=Screening Level	No	Not Volatile
Di-n-butylphthalate	84-74-2	mg/kg	4:6:6	67	1.18E+01	2.30E+01	No	NA	--	6.20E+03	No	No	</=Screening Level	No	Not Volatile
Di-n-octylphthalate	117-84-0	mg/kg	3:4:6	75	1.28E+00	1.90E+00	No	NA	--	2.50E+03	No	No	</=Screening Level	No	Not Volatile
Dibenzo(a,h)anthracene	53-70-3	mg/kg	1:2:6	50	9.93E-01	1.80E+00	No	1.20E-01	Yes	2.10E-01	Yes	Yes	>Screening Level	No	Not Volatile
Diethyl Phthalate	84-66-2	mg/kg	1:2:6	50	4.58E-01	7.30E-01	No	NA	--	4.90E+04	No	No	</=Screening Level	No	Not Volatile
Dinoseb	88-85-7	mg/kg	1:2:6	50	9.43E-01	1.70E+00	No	NA	--	6.20E+01	No	No	</=Screening Level	No	Not Volatile
Fluoranthene	206-44-0	mg/kg	2:4:6	50	2.03E+00	4.20E+00	No	4.11E-01	Yes	2.20E+03	No	No	</=Screening Level	No	Not Volatile
Fluorene	86-73-7	mg/kg	1:2:6	50	6.93E-01	1.20E+00	No	NA	--	2.60E+03	No	No	</=Screening Level	No	Not Volatile
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	2:2:6	100	7.05E-01	1.30E+00	No	NA	--	2.10E+00	No	No	</=Screening Level	No	Not Volatile
Isophorone	78-59-1	mg/kg	4:6:6	67	1.97E+01	7.10E+01	No	NA	--	1.80E+03	No	No	</=Screening Level	No	Not Volatile
N-Nitrosodiphenylamine	86-30-6	mg/kg	1:2:6	50	3.33E-01	4.80E-01	No	NA	--	3.50E+02	No	No	</=Screening Level	No	Not Volatile
Naphthalene	91-20-3	mg/kg	5:6:6	83	2.10E+01	4.80E+01	No	NA	--	1.90E+01	Yes	Yes	>Screening Level	No	Not Volatile
Phenanthrene	85-01-8	mg/kg	4:4:6	100	2.67E+00	9.20E+00	No	3.52E-01	Yes	2.40E+04	No	No	</=Screening Level	No	Not Volatile
Phenol	108-95-2	mg/kg	2:3:6	67	1.20E+00	1.80E+00	No	NA	--	3.70E+04	No	No	</=Screening Level	No	Not Volatile
Pyrene	129-00-0	mg/kg	3:6:6	50	1.21E+01	2.80E+01	No	4.01E-01	Yes	2.90E+03	No	No	</=Screening Level	No	Not Volatile
Pesticide															
4,4'-DDD	72-54-8	mg/kg	3:6:6	50	3.12E-01	1.70E+00	No	5.39E-03	Yes	1.00E+01	No	No	</=Screening Level	No	Not Volatile
4,4'-DDE	72-55-9	mg/kg	4:6:6	67	5.95E-01	3.30E+00	No	8.02E-03	Yes	7.00E+00	No	No	</=Screening Level	No	Not Volatile
4,4'-DDT	50-29-3	mg/kg	5:6:6	83	2.83E+00	1.60E+01	No	2.18E-02	Yes	7.00E+00	Yes	Yes	>Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Aldrin	309-00-2	mg/kg	2:5:6	40	6.05E-02	1.90E-01	No	2.75E-03	Yes	1.00E-01	Yes	Yes	>Screening Level	No	Not Volatile
alpha-BHC	319-84-6	mg/kg	1:3:6	33	4.25E-03	6.80E-03	No	2.58E-02	No	3.60E-01	No	No	</=Screening Level	No	Not Volatile
beta-BHC	319-85-7	mg/kg	4:6:6	67	4.38E+00	2.60E+01	No	NA	--	1.30E+00	Yes	Yes	>Screening Level	No	Not Volatile
delta-BHC	319-86-8	mg/kg	5:6:6	83	1.87E-01	7.40E-01	No	8.57E-03	Yes	1.70E+00	No	No	</=Screening Level	No	Not Volatile
Dieldrin	60-57-1	mg/kg	4:5:6	80	1.13E-01	3.80E-01	No	7.51E-03	Yes	1.10E-01	Yes	Yes	>Screening Level	No	Not Volatile
Endosulfan II	33213-65-	mg/kg	4:6:6	67	9.38E-01	5.40E+00	No	1.16E-03	Yes	3.70E+02	No	No	</=Screening Level	No	Not Volatile
Endosulfan Sulfate	1031-07-8	mg/kg	1:5:6	20	1.26E-01	4.90E-01	No	1.81E-03	Yes	3.70E+02	No	No	</=Screening Level	No	Not Volatile
Endrin	72-20-8	mg/kg	2:6:6	33	1.69E+00	1.00E+01	No	4.38E-03	Yes	1.80E+01	No	No	</=Screening Level	No	Not Volatile
Endrin Aldehyde	7421-93-4	mg/kg	1:1:6	100	7.40E-03	7.40E-03	No	4.81E-03	Yes	1.80E+01	No	No	</=Screening Level	No	Not Volatile
gamma-BHC (Lindane)	58-89-9	mg/kg	2:6:6	33	1.27E+00	7.50E+00	No	NA	--	1.70E+00	Yes	Yes	>Screening Level	No	Not Volatile
gamma-Chlordane	5103-74-2	mg/kg	5:6:6	83	4.79E-01	2.70E+00	No	2.13E-02	Yes	6.50E+00	No	No	</=Screening Level	No	Not Volatile
Heptachlor	76-44-8	mg/kg	4:6:6	67	2.73E-01	1.50E+00	No	1.66E-02	Yes	3.80E-01	Yes	Yes	>Screening Level	No	Not Volatile
Heptachlor Epoxide	1024-57-3	mg/kg	3:5:6	60	4.84E-02	1.20E-01	No	6.10E-03	Yes	1.90E-01	No	No	</=Screening Level	No	Not Volatile
Herbicide															
2,4,5-T	93-76-5	mg/kg	3:5:6	60	9.85E-01	2.50E+00	No	NA	--	6.20E+02	No	No	</=Screening Level	No	Not Volatile
2,4,5-TP (Silvex)	93-72-1	mg/kg	2:5:6	40	1.24E-01	3.50E-01	No	NA	--	4.90E+02	No	No	</=Screening Level	No	Not Volatile
2,4-D	94-75-7	mg/kg	3:6:6	50	1.25E+00	3.30E+00	No	9.66E-03	Yes	7.70E+02	No	No	</=Screening Level	No	Not Volatile
MCPP	93-65-2	mg/kg	1:1:6	100	2.40E-01	2.40E-01	No	2.92E+00	No	6.20E+01	No	No	</=Screening Level	No	Not Volatile
Pentachlorophenol	87-86-5	mg/kg	2:6:6	33	1.15E+02	4.40E+02	No	4.57E-03	Yes	9.00E+00	Yes	Yes	>Screening Level	No	Not Volatile
PCBs															
Total PCBs	1336-36-3	mg/kg	6:6:6	100	1.76E+02	1.01E+03	No	1.28E-01	Yes	1.00E+00	Yes	Yes	>Screening Level	No	Not Volatile
Dioxin															
2,3,7,8-TCDD-TEQ	1746-01-6	mg/kg	6:6:6	100	4.67E-03	2.59E-02	No	8.93E-06	Yes	1.00E-03	Yes	Yes	>Screening Level	No	Not Volatile
Metals															
Aluminum	7429-90-5	mg/kg	6:6:6	100	4.45E+03	7.30E+03	No	1.09E+04	No	9.20E+04	No	No	</=Screening Level	No	Not Volatile
Antimony	7440-36-0	mg/kg	6:6:6	100	2.15E+00	4.10E+00	No	2.05E+00	Yes	4.10E+01	No	No	</=Screening Level	No	Not Volatile
Arsenic	7440-38-2	mg/kg	6:6:6	100	4.28E+00	5.80E+00	No	1.08E+01	No	1.60E+00	Yes	No	</=BKG	No	Not Volatile
Barium	7440-39-3	mg/kg	6:6:6	100	1.57E+02	2.90E+02	No	3.17E+02	No	6.70E+03	No	No	</=Screening Level	No	Not Volatile
Beryllium	7440-41-7	mg/kg	6:6:6	100	3.28E-01	4.60E-01	No	7.65E-01	No	1.90E+02	No	No	</=Screening Level	No	Not Volatile
Cadmium	7440-43-9	mg/kg	6:6:6	100	7.92E+00	3.20E+01	No	1.81E+00	Yes	4.50E+01	No	No	</=Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason
Calcium	7440-70-2	mg/kg	6:6:6	100	1.66E+05	2.20E+05	Yes	6.11E+04	Yes	NA	--	No	EN	No	Not Volatile
Chromium	7440-47-3	mg/kg	6:6:6	100	1.79E+02	4.80E+02	No	1.89E+01	Yes	4.50E+02	Yes	Yes	>Screening Level	No	Not Volatile
Cobalt	7440-48-4	mg/kg	6:6:6	100	5.95E+00	9.40E+00	No	9.27E+00	Yes	1.30E+03	No	No	</=Screening Level	No	Not Volatile
Copper	7440-50-8	mg/kg	6:6:6	100	6.90E+01	2.00E+02	No	4.96E+01	Yes	4.10E+03	No	No	</=Screening Level	No	Not Volatile
Iron	7439-89-6	mg/kg	6:6:6	100	8.15E+03	1.30E+04	Yes	2.10E+04	No	3.10E+04	No	No	EN	No	Not Volatile
Lead	7439-92-1	mg/kg	6:6:6	100	8.38E+02	2.40E+03	No	7.18E+01	Yes	7.50E+02	Yes	Yes	>Screening Level	No	Not Volatile
Magnesium	7439-95-4	mg/kg	6:6:6	100	8.65E+03	1.60E+04	Yes	1.13E+04	Yes	NA	--	No	EN	No	Not Volatile
Manganese	7439-96-5	mg/kg	6:6:6	100	2.57E+02	6.70E+02	No	5.01E+02	Yes	1.90E+03	No	No	</=Screening Level	No	Not Volatile
Mercury	7439-97-6	mg/kg	6:6:6	100	6.87E-01	2.60E+00	No	7.72E-02	Yes	3.10E+01	No	No	</=Screening Level	No	Not Volatile
Nickel	7440-02-0	mg/kg	6:6:6	100	1.37E+01	2.00E+01	No	2.83E+01	No	2.00E+03	No	No	</=Screening Level	No	Not Volatile
Potassium	7440-09-7	mg/kg	6:6:6	100	8.28E+02	9.50E+02	Yes	2.38E+03	No	NA	--	No	EN	No	Not Volatile
Selenium	7782-49-2	mg/kg	4:6:6	67	8.51E-01	1.80E+00	No	1.07E+00	Yes	5.10E+02	No	No	</=Screening Level	No	Not Volatile
Silver	7440-22-4	mg/kg	1:6:6	17	9.16E-01	2.80E+00	No	1.02E+00	Yes	5.10E+02	No	No	</=Screening Level	No	Not Volatile
Sodium	7440-23-5	mg/kg	6:6:6	100	2.23E+02	3.40E+02	Yes	1.41E+02	Yes	NA	--	No	EN	No	Not Volatile
Vanadium	7440-62-2	mg/kg	6:6:6	100	1.42E+01	2.40E+01	No	3.44E+01	No	7.20E+02	No	No	</=Screening Level	No	Not Volatile
Zinc	7440-66-6	mg/kg	6:6:6	100	4.52E+02	1.80E+03	No	2.24E+02	Yes	3.10E+04	No	No	</=Screening Level	No	Not Volatile

TABLE B-4
COMBINED SOIL (SURFACE SOIL, SUBSURFACE SOIL, WASTE) SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Soil Screening Level (f)	Is Max Concentration > Screening Value?	COPC for CW Pathway ? (g)	Reason	COPC for Volatilization Pathway? (h)	Reason

Notes:

BKG - Background concentration.
CAS - Chemical Abstracts Service.
COPC - Constituent of potential concern.
CW - Construction Worker.
EN - Essential nutrient.
FOD - Frequency of detection.
MCPA - 2-Methyl-4-chlorophenoxyacetic acid.
MCPP - 2-(2-Methyl-4-chlorophenoxy) propionic acid.
NA - Not available.
-- Not applicable.
PCB - Polychlorinated Biphenyl.
USEPA - United States Environmental Protection Agency.
SVOC - Semivolatile organic compound.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalent Concentration.
VOC - Volatile Organic Compound.
(a) Frequency of Detection = Number of detected samples: Number of samples used to calculate statistics: Total number of samples.
(b) Percent of detected samples out of samples used to calculate statistics. Constituents detected in fewer than 5 percent of samples, provided 20 samples are available, will not be included as COPCs.
(c) The arithmetic mean concentration for a constituent for each medium/area combination after sample/duplicate pairs were averaged and high non-detected values were excluded. (If one-half the detection limit was greater than the maximum detected concentration, the non-detect was not used). A proxy concentration of half the detection limit was used for non-detected results.
(d) The maximum detected concentration for a constituent for each medium/area combination after sample/duplicate pairs were averaged and high non-detected values were excluded. (If one-half the detection limit was greater than the maximum detected concentration, the non-detect was not used).
(e) Equal to two times the average concentration for the constituent in surface soil, subsurface soil, and waste combined in off-site sampling locations.
(f) USEPA, 2002. Region 9 Preliminary Remediation Goal (PRG) Table. October 1, 2002. Value for industrial soil. PRGs for noncarcinogenic constituents were adjusted for a hazard index of 0.1 to account for cumulative effects.
(g) A constituent is identified as a COPC for the construction worker pathway if it is detected in greater than 5 percent of samples, provided 20 samples are available, if it is not an essential nutrient, if the maximum detected concentration is greater than the background concentration and if the maximum detected concentration is greater than the soil screening level.
(h) A constituent is identified as a COPC for the volatilization pathway if it is identified as a COPC (as described in (g)) and if it is volatile.

TABLE B-5
SEDIMENT SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Sediment Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Pond (Site Q)													
VOCs													
2-Butanone (MEK)	78-93-3	mg/kg	1 : 1 : 1	100	1.47E-02	1.47E-02	No	NA	--	2.70E+03	No	No	</=Screening Level
Acetone	67-64-1	mg/kg	1 : 1 : 1	100	1.46E+00	1.46E+00	No	NA	--	6.00E+02	No	No	</=Screening Level
Ethylbenzene	100-41-4	mg/kg	1 : 1 : 1	100	2.28E-03	2.28E-03	No	1.07E-03	Yes	2.00E+01	No	No	</=Screening Level
Xylenes, Total	1330-20-7	mg/kg	1 : 1 : 1	100	9.90E-03	9.90E-03	No	1.61E-03	Yes	9.00E+01	No	No	</=Screening Level
Pesticide													
4,4'-DDT	50-29-3	mg/kg	1 : 1 : 1	100	5.70E-02	5.70E-02	No	4.04E-02	Yes	7.00E+00	No	No	</=Screening Level
Herbicide													
Dichlorprop	120-36-5	mg/kg	1 : 1 : 1	100	3.70E-03	3.70E-03	No	1.14E-01	No	4.92E+02	No	No	</=Screening Level
MCPP	93-65-2	mg/kg	1 : 1 : 1	100	6.30E-01	6.30E-01	No	3.60E+00	No	6.20E+01	No	No	</=Screening Level
Pentachlorophenol	87-86-5	mg/kg	1 : 1 : 1	100	2.50E-03	2.50E-03	No	4.57E-03	No	9.00E+00	No	No	</=Screening Level
PCBs													
Total PCBs	1336-36-3	mg/kg	1 : 1 : 1	100	6.75E-01	6.75E-01	No	1.85E-01	Yes	1.00E+00	No	No	</=Screening Level
Dioxin													
2,3,7,8-TCDD-TEQ	1746-01-6	mg/kg	1 : 1 : 1	100	8.91E-05	8.91E-05	No	1.63E-05	Yes	1.00E-03	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	mg/kg	1 : 1 : 1	100	1.25E+04	1.25E+04	No	1.38E+04	No	9.20E+04	No	No	</=Screening Level
Arsenic	7440-38-2	mg/kg	1 : 1 : 1	100	6.25E+00	6.25E+00	No	1.24E+01	No	1.60E+00	Yes	No	</=BKG
Barium	7440-39-3	mg/kg	1 : 1 : 1	100	2.30E+02	2.30E+02	No	3.07E+02	No	6.70E+03	No	No	</=Screening Level
Beryllium	7440-41-7	mg/kg	1 : 1 : 1	100	8.50E-01	8.50E-01	No	9.02E-01	No	1.90E+02	No	No	</=Screening Level
Cadmium	7440-43-9	mg/kg	1 : 1 : 1	100	1.50E+00	1.50E+00	No	3.34E+00	No	4.50E+01	No	No	</=Screening Level
Calcium	7440-70-2	mg/kg	1 : 1 : 1	100	1.45E+04	1.45E+04	Yes	9.74E+04	No	NA	--	No	EN
Chromium	7440-47-3	mg/kg	1 : 1 : 1	100	2.15E+01	2.15E+01	No	2.21E+01	No	4.50E+02	No	No	</=Screening Level
Cobalt	7440-48-4	mg/kg	1 : 1 : 1	100	9.90E+00	9.90E+00	No	9.40E+00	Yes	1.30E+03	No	No	</=Screening Level
Copper	7440-50-8	mg/kg	1 : 1 : 1	100	3.45E+01	3.45E+01	No	8.58E+01	No	4.10E+03	No	No	</=Screening Level
Iron	7439-89-6	mg/kg	1 : 1 : 1	100	2.25E+04	2.25E+04	Yes	2.33E+04	No	3.10E+04	No	No	EN
Lead	7439-92-1	mg/kg	1 : 1 : 1	100	4.80E+01	4.80E+01	No	1.30E+02	No	7.50E+02	No	No	</=Screening Level
Magnesium	7439-95-4	mg/kg	1 : 1 : 1	100	4.85E+03	4.85E+03	Yes	1.23E+04	No	NA	--	No	EN
Manganese	7439-96-5	mg/kg	1 : 1 : 1	100	6.90E+02	6.90E+02	No	5.52E+02	Yes	1.90E+03	No	No	</=Screening Level

TABLE B-5
SEDIMENT SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Sediment Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Mercury	7439-97-6	mg/kg	1 : 1 : 1	100	1.30E-01	1.30E-01	No	1.31E-01	No	3.10E+01	No	No	</=Screening Level
Nickel	7440-02-0	mg/kg	1 : 1 : 1	100	2.45E+01	2.45E+01	No	3.30E+01	No	2.00E+03	No	No	</=Screening Level
Potassium	7440-09-7	mg/kg	1 : 1 : 1	100	1.80E+03	1.80E+03	Yes	3.01E+03	No	NA	--	No	EN
Sodium	7440-23-5	mg/kg	1 : 1 : 1	100	9.85E+01	9.85E+01	Yes	1.50E+02	No	NA	--	No	EN
Vanadium	7440-62-2	mg/kg	1 : 1 : 1	100	3.35E+01	3.35E+01	No	3.89E+01	No	7.20E+02	No	No	</=Screening Level
Zinc	7440-66-6	mg/kg	1 : 1 : 1	100	2.15E+02	2.15E+02	No	3.90E+02	No	3.10E+04	No	No	</=Screening Level

TABLE B-5
SEDIMENT SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Sediment Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
River													
VOCs													
1,1-Dichloroethane	75-34-3	mg/kg	1 : 34 : 34	3	1.87E-03	8.00E-03	No	NA	--	1.70E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	mg/kg	1 : 4 : 34	25	1.39E-03	1.60E-03	No	NA	--	1.50E+01	No	No	</=Screening Level
2-Butanone (MEK)	78-93-3	mg/kg	5 : 28 : 34	18	6.20E-03	7.50E-03	No	6.80E-03	Yes	2.70E+03	No	No	</=Screening Level
Acetone	67-64-1	mg/kg	28 : 34 : 34	82	2.48E-02	2.90E-01	No	7.20E-02	Yes	6.00E+02	No	No	</=Screening Level
Benzene	71-43-2	mg/kg	3 : 34 : 34	9	4.10E-03	4.90E-02	No	NA	--	1.30E+00	No	No	</=Screening Level
Chlorobenzene	108-90-7	mg/kg	7 : 34 : 34	21	5.11E-01	1.10E+01	No	NA	--	5.30E+01	No	No	</=Screening Level
Ethylbenzene	100-41-4	mg/kg	25 : 34 : 34	74	2.19E-03	1.50E-02	No	NA	--	2.00E+01	No	No	</=Screening Level
Styrene (Monomer)	100-42-5	mg/kg	4 : 34 : 34	12	2.25E-03	2.10E-02	No	NA	--	1.80E+03	No	No	</=Screening Level
Toluene	108-88-3	mg/kg	11 : 34 : 34	32	2.36E-03	1.30E-02	No	NA	--	2.20E+02	No	No	</=Screening Level
Xylenes, Total	1330-20-7	mg/kg	31 : 34 : 34	91	1.07E-02	7.70E-02	No	5.63E-03	Yes	9.00E+01	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	mg/kg	3 : 31 : 34	10	2.08E-01	3.30E-01	No	NA	--	4.10E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	mg/kg	1 : 32 : 34	3	2.40E-01	7.40E-01	No	NA	--	7.90E+00	No	No	</=Screening Level
4-Chloroaniline	106-47-8	mg/kg	2 : 32 : 34	6	5.66E-01	3.00E+00	No	NA	--	2.50E+02	No	No	</=Screening Level
Anthracene	120-12-7	mg/kg	1 : 1 : 34	100	1.00E-01	1.00E-01	No	NA	--	2.40E+04	No	No	</=Screening Level
Benzo(a)anthracene	56-55-3	mg/kg	3 : 3 : 34	100	4.97E-02	9.10E-02	No	NA	--	2.10E+00	No	No	</=Screening Level
Benzo(a)pyrene	50-32-8	mg/kg	6 : 6 : 34	100	5.60E-02	7.20E-02	No	NA	--	2.10E-01	No	No	</=Screening Level
Benzo(b)fluoranthene	205-99-2	mg/kg	3 : 3 : 34	100	5.80E-02	7.50E-02	No	NA	--	2.10E+00	No	No	</=Screening Level
Benzo(g,h,i)perylene	191-24-2	mg/kg	5 : 5 : 34	100	4.30E-02	7.90E-02	No	NA	--	2.90E+03	No	No	</=Screening Level
Benzo(k)fluoranthene	207-08-9	mg/kg	6 : 6 : 34	100	5.98E-02	8.30E-02	No	NA	--	2.10E+01	No	No	</=Screening Level
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	5 : 5 : 34	100	5.79E-02	8.80E-02	No	NA	--	1.20E+02	No	No	</=Screening Level
Chrysene	218-01-9	mg/kg	7 : 7 : 34	100	4.07E-02	9.20E-02	No	6.20E-02	Yes	2.10E+02	No	No	</=Screening Level
Di-n-octylphthalate	117-84-0	mg/kg	1 : 1 : 34	100	4.10E-02	4.10E-02	No	NA	--	2.50E+03	No	No	</=Screening Level
Dibenzo(a,h)anthracene	53-70-3	mg/kg	1 : 1 : 34	100	6.50E-02	6.50E-02	No	NA	--	2.10E-01	No	No	</=Screening Level
Fluoranthene	206-44-0	mg/kg	5 : 5 : 34	100	7.22E-02	1.60E-01	No	7.70E-02	Yes	2.20E+03	No	No	</=Screening Level
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	1 : 1 : 34	100	2.90E-02	2.90E-02	No	NA	--	2.10E+00	No	No	</=Screening Level
Isophorone	78-59-1	mg/kg	1 : 32 : 34	3	2.34E-01	3.90E-01	No	NA	--	1.80E+03	No	No	</=Screening Level
Phenanthrene	85-01-8	mg/kg	3 : 3 : 34	100	4.67E-02	7.20E-02	No	7.20E-02	No	2.40E+04	No	No	</=Screening Level

TABLE B-5
SEDIMENT SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Sediment Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Pyrene	129-00-0	mg/kg	1 : 1 : 34	100	1.50E-01	1.50E-01	No	1.34E-01	Yes	2.90E+03	No	No	</=Screening Level
Pesticide													
4,4'-DDD	72-54-8	mg/kg	2 : 2 : 34	100	1.09E-03	1.20E-03	No	NA	--	1.00E+01	No	No	</=Screening Level
4,4'-DDE	72-55-9	mg/kg	9 : 33 : 34	27	1.86E-03	4.90E-03	No	NA	--	7.00E+00	No	No	</=Screening Level
4,4'-DDT	50-29-3	mg/kg	3 : 28 : 34	11	2.15E-03	3.30E-03	No	NA	--	7.00E+00	No	No	</=Screening Level
Aldrin	309-00-2	mg/kg	1 : 33 : 34	3	1.19E-03	2.00E-03	No	NA	--	1.00E-01	No	No	</=Screening Level
alpha-Chlordane	5103-71-9	mg/kg	1 : 20 : 34	5	1.04E-03	1.10E-03	No	NA	--	6.50E+00	No	No	</=Screening Level
beta-BHC	319-85-7	mg/kg	2 : 2 : 34	100	4.65E-04	6.70E-04	No	NA	--	1.30E+00	No	No	</=Screening Level
delta-BHC	319-86-8	mg/kg	1 : 1 : 34	100	7.20E-04	7.20E-04	No	NA	--	1.70E+00	No	No	</=Screening Level
Dieldrin	60-57-1	mg/kg	3 : 32 : 34	9	2.11E-03	2.90E-03	No	NA	--	1.10E-01	No	No	</=Screening Level
Endosulfan I	959-98-8	mg/kg	1 : 8 : 34	13	9.75E-04	1.00E-03	No	NA	--	3.70E+02	No	No	</=Screening Level
Endrin Aldehyde	7421-93-4	mg/kg	9 : 33 : 34	27	2.24E-03	4.10E-03	No	NA	--	1.80E+01	No	No	</=Screening Level
Endrin Ketone	53494-70-5	mg/kg	8 : 8 : 34	100	7.36E-04	1.20E-03	No	NA	--	1.80E+01	No	No	</=Screening Level
gamma-BHC (Lindane)	58-89-9	mg/kg	1 : 1 : 34	100	1.80E-04	1.80E-04	No	NA	--	1.70E+00	No	No	</=Screening Level
gamma-Chlordane	5103-74-2	mg/kg	7 : 33 : 34	21	1.12E-03	3.00E-03	No	NA	--	6.50E+00	No	No	</=Screening Level
Heptachlor	76-44-8	mg/kg	5 : 7 : 34	71	6.07E-04	9.80E-04	No	NA	--	3.80E-01	No	No	</=Screening Level
Heptachlor Epoxide	1024-57-3	mg/kg	3 : 34 : 34	9	1.40E-03	1.10E-02	No	NA	--	1.90E-01	No	No	</=Screening Level
Methoxychlor	72-43-5	mg/kg	2 : 2 : 34	100	2.07E-03	3.30E-03	No	NA	--	3.10E+02	No	No	</=Screening Level
Herbicide													
2,4-D	94-75-7	mg/kg	5 : 33 : 34	15	6.64E-03	2.00E-02	No	1.04E-02	Yes	7.70E+02	No	No	</=Screening Level
Dalapon	75-99-0	mg/kg	2 : 2 : 34	100	7.30E-03	9.90E-03	No	NA	--	1.80E+03	No	No	</=Screening Level
Dichlorprop	120-36-5	mg/kg	2 : 2 : 34	100	4.95E-03	6.80E-03	No	3.50E-02	No	4.92E+02	No	No	</=Screening Level
MCPA	94-74-6	mg/kg	1 : 1 : 34	100	3.80E-01	3.80E-01	No	NA	--	3.10E+01	No	No	</=Screening Level
MCPP	93-65-2	mg/kg	2 : 31 : 34	6	1.38E+00	2.50E+00	No	8.30E-01	Yes	6.20E+01	No	No	</=Screening Level
Pentachlorophenol	87-86-5	mg/kg	6 : 6 : 34	100	2.35E-03	3.60E-03	No	NA	--	9.00E+00	No	No	</=Screening Level
PCBs													
Total PCBs	1336-36-3	mg/kg	5 : 34 : 34	15	1.86E-02	6.94E-02	No	NA	--	1.00E+00	No	No	</=Screening Level
Dioxin													
2,3,7,8-TCDD-TEQ	1746-01-6	mg/kg	5 : 5 : 5	100	2.97E-07	9.21E-07	No	4.70E-09	Yes	1.00E-03	No	No	</=Screening Level
Metals													

TABLE B-5
SEDIMENT SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Sediment Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason
Aluminum	7429-90-5	mg/kg	34 : 34 : 34	100	2.68E+03	8.30E+03	No	3.60E+03	Yes	9.20E+04	No	No	</=Screening Level
Arsenic	7440-38-2	mg/kg	34 : 34 : 34	100	2.90E+00	7.50E+00	No	4.66E+00	Yes	1.60E+00	Yes	Yes	>Screening Level
Barium	7440-39-3	mg/kg	34 : 34 : 34	100	8.38E+01	3.00E+02	No	9.26E+01	Yes	6.70E+03	No	No	</=Screening Level
Beryllium	7440-41-7	mg/kg	25 : 34 : 34	74	2.32E-01	5.60E-01	No	5.29E-01	Yes	1.90E+02	No	No	</=Screening Level
Cadmium	7440-43-9	mg/kg	16 : 34 : 34	47	4.73E-01	1.40E+00	No	8.03E-01	Yes	4.50E+01	No	No	</=Screening Level
Calcium	7440-70-2	mg/kg	34 : 34 : 34	100	5.69E+03	1.55E+04	Yes	6.08E+03	Yes	NA	--	No	EN
Chromium	7440-47-3	mg/kg	34 : 34 : 34	100	6.50E+00	1.65E+01	No	9.66E+00	Yes	4.50E+02	No	No	</=Screening Level
Cobalt	7440-48-4	mg/kg	34 : 34 : 34	100	3.85E+00	8.65E+00	No	6.40E+00	Yes	1.30E+03	No	No	</=Screening Level
Copper	7440-50-8	mg/kg	29 : 34 : 34	85	5.68E+00	1.90E+01	No	6.19E+00	Yes	4.10E+03	No	No	</=Screening Level
Iron	7439-89-6	mg/kg	34 : 34 : 34	100	7.88E+03	1.80E+04	Yes	1.07E+04	Yes	3.10E+04	No	No	EN
Lead	7439-92-1	mg/kg	34 : 34 : 34	100	1.64E+01	4.70E+01	No	9.46E+00	Yes	7.50E+02	No	No	</=Screening Level
Magnesium	7439-95-4	mg/kg	34 : 34 : 34	100	2.08E+03	5.50E+03	Yes	2.68E+03	Yes	NA	--	No	EN
Manganese	7439-96-5	mg/kg	34 : 34 : 34	100	2.56E+02	8.90E+02	No	3.78E+02	Yes	1.90E+03	No	No	</=Screening Level
Mercury	7439-97-6	mg/kg	23 : 34 : 34	68	1.81E-02	6.70E-02	No	6.74E-02	No	3.10E+01	No	No	</=Screening Level
Nickel	7440-02-0	mg/kg	34 : 34 : 34	100	8.54E+00	1.80E+01	No	1.49E+01	Yes	2.00E+03	No	No	</=Screening Level
Potassium	7440-09-7	mg/kg	34 : 34 : 34	100	4.21E+02	1.30E+03	Yes	5.58E+02	Yes	NA	--	No	EN
Silver	7440-22-4	mg/kg	1 : 1 : 34	100	1.30E-01	1.30E-01	No	NA	--	5.10E+02	No	No	</=Screening Level
Sodium	7440-23-5	mg/kg	19 : 34 : 34	56	7.77E+01	2.90E+02	Yes	8.30E+01	Yes	NA	--	No	EN
Thallium	7440-28-0	mg/kg	1 : 34 : 34	3	6.60E-01	1.30E+00	No	NA	--	6.70E+00	No	No	</=Screening Level
Vanadium	7440-62-2	mg/kg	34 : 34 : 34	100	9.35E+00	2.20E+01	No	1.37E+01	Yes	7.20E+02	No	No	</=Screening Level
Zinc	7440-66-6	mg/kg	33 : 34 : 34	97	8.97E+01	3.10E+02	No	4.59E+01	Yes	3.10E+04	No	No	</=Screening Level

TABLE B-5
SEDIMENT SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Sediment Screening Level (f)	Is Max Concentration > Screening Value? (g)	COPC? (h)	Reason

Notes:

BKG - Background concentration.
CAS - Chemical Abstracts Service.
COPC - Constituent of potential concern.
EN - Essential nutrient.
FOD - Frequency of detection.
NA - Not available.
MCPA - 2-Methyl-4-chlorophenoxyacetic acid.
MCPP - : 2-(2-Methyl-4-chlorophenoxy) propionic acid.
PCB - Polychlorinated Biphenyl.
SVOC - Semivolatile organic compound.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalent Concentration.
USEPA - United States Environmental Protection Agency.
VOC - Volatile Organic Compound.
-- Not applicable.
(a) Frequency of Detection = Number of detected samples: Number of samples used to calculate statistics: Total number of samples.
(b) Percent of detected samples out of samples used to calculate statistics. Constituents detected in fewer than 5 percent of samples, provided 20 samples are available, will not be included as COPCs.
(c) The arithmetic mean concentration for a constituent for each medium/area combination after sample/duplicate pairs were averaged and high non-detected values were excluded. (If one-half the detection limit was greater than the maximum detected concentration, the non-detect was not used). A proxy concentration of half the detection limit was used for non-detected results.
(d) The maximum detected concentration for a constituent for each medium/area combination after sample/duplicate pairs were averaged and high non-detected values were excluded. (If one-half the detection limit was greater than the maximum detected concentration, the non-detect was not used).
(e) Equal to two times the average concentration for the constituent in sediment in upgradiente sampling locations for samples in the river. Since the pond is dry, for samples in the pond, background is equal to two times the average concentration for the constituent in surface soil in off-site sampling locations.
(f) USEPA, 2002. Region 9 Preliminary Remediation Goal (PRG) Table. October 1, 2002. Value for industrial soil. PRGs for noncarcinogenic constituents were adjusted for a hazard index of 0.1 to account for cumulative effects.
(g) For all constituents with the exception of lead, the maximum detected concentration is compared to the screening level. For lead, the mean concentration was compared to the screening level. The screening level for lead is based on an adult lead model (USEPA, 1996) which is based on average lead concentrations.
(h) A constituent is identified as a COPC if it is detected in greater than 5 percent of samples, provided 20 samples are available, if it is not an essential nutrient, if the maximum detected concentration is greater than the background concentration and if the maximum detected concentration is greater than the sediment screening level.

TABLE B-6
SURFACE WATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Water Screening Level (f)	Is Max Concentration > Screening Value?	COPC? (g)	Reason
Pond (Site Q)													
Pesticide													
4,4'-DDT	50-29-3	ug/L	1 : 1 : 1	100	2.80E-02	2.80E-02	No	NA	--	6.00E+00	No	No	</=Screening Level
Dieldrin	60-57-1	ug/L	1 : 1 : 1	100	1.00E-02	1.00E-02	No	NA	--	9.00E+00	No	No	</=Screening Level
Dioxin													
2,3,7,8-TCDD-TEQ	1746-01-6	ug/L	1 : 1 : 1	100	4.60E-06	4.60E-06	No	NA	--	3.00E-05	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	7.70E+03	7.70E+03	No	NA	--	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	5.40E+00	5.40E+00	No	NA	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	2.00E+02	2.00E+02	No	NA	--	2.00E+03	No	No	</=Screening Level
Cadmium	7440-43-9	ug/L	1 : 1 : 1	100	6.50E-01	6.50E-01	No	NA	--	5.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	5.70E+04	5.70E+04	Yes	NA	--	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	1.00E+01	1.00E+01	No	NA	--	1.00E+02	No	No	</=Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	3.60E+00	3.60E+00	No	NA	--	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	1.30E+01	1.30E+01	No	NA	--	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	8.90E+03	8.90E+03	Yes	NA	--	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	1.40E+01	1.40E+01	No	NA	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	1.50E+04	1.50E+04	Yes	NA	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	4.60E+02	4.60E+02	No	NA	--	1.50E+02	Yes	Yes	>Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	9.30E+00	9.30E+00	No	NA	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	5.60E+03	5.60E+03	Yes	NA	--	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	6.70E+03	6.70E+03	Yes	NA	--	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	2.30E+01	2.30E+01	No	NA	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	5.20E+01	5.20E+01	No	NA	--	5.00E+03	No	No	</=Screening Level

TABLE B-6
SURFACE WATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Water Screening Level (f)	Is Max Concentration > Screening Value?	COPC? (g)	Reason
River													
VOCs													
1,1-Dichloroethylene	75-35-4	ug/L	3 : 3 : 36	100	3.57E-01	4.20E-01	No	NA	--	7.00E+00	No	No	</=Screening Level
1,2-Dichloroethane	107-06-2	ug/L	11 : 36 : 36	31	4.48E-01	7.00E-01	No	NA	--	5.00E+00	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	3 : 3 : 36	100	2.73E-01	3.60E-01	No	NA	--	7.00E+01	No	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	1 : 1 : 36	100	3.80E+00	3.80E+00	No	NA	--	1.60E+02	No	No	</=Screening Level
Acetone	67-64-1	ug/L	1 : 36 : 36	3	1.33E+01	4.00E+01	No	NA	--	7.00E+02	No	No	</=Screening Level
Benzene	71-43-2	ug/L	13 : 36 : 36	36	5.57E-01	4.50E+00	No	NA	--	5.00E+00	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	5 : 36 : 36	14	4.86E-01	6.90E-01	No	NA	--	7.00E+02	No	No	</=Screening Level
Carbon Tetrachloride	56-23-5	ug/L	1 : 1 : 36	100	1.70E-01	1.70E-01	No	NA	--	5.00E+00	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	26 : 36 : 36	72	3.35E+00	5.60E+01	No	NA	--	1.00E+02	No	No	</=Screening Level
Chloromethane	74-87-3	ug/L	5 : 36 : 36	14	5.03E-01	9.60E-01	No	9.29E-01	Yes	1.50E+00	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 36 : 36	3	5.22E-01	1.30E+00	No	NA	--	7.00E+02	No	No	</=Screening Level
Methyl N-Butyl Ketone	591-78-6	ug/L	1 : 1 : 36	100	3.30E-01	3.30E-01	No	NA	--	1.60E+02	No	No	</=Screening Level
Tetrachloroethene	127-18-4	ug/L	1 : 1 : 36	100	4.50E-01	4.50E-01	No	NA	--	5.00E+00	No	No	</=Screening Level
Toluene	108-88-3	ug/L	10 : 36 : 36	28	6.24E-01	4.50E+00	No	NA	--	1.00E+03	No	No	</=Screening Level
Trichloroethylene	79-01-6	ug/L	1 : 36 : 36	3	5.02E-01	5.80E-01	No	NA	--	5.00E+00	No	No	</=Screening Level
Xylenes, Total	1330-20-7	ug/L	3 : 36 : 36	8	1.03E+00	3.00E+00	No	NA	--	1.00E+04	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	2 : 36 : 36	6	5.87E+00	4.00E+01	No	NA	--	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 36	100	3.90E+00	3.90E+00	No	NA	--	7.50E+01	No	No	</=Screening Level
2,4,6-Trichlorophenol	88-06-2	ug/L	1 : 36 : 36	3	5.33E+00	1.70E+01	No	NA	--	1.00E+01	Yes	No	<5%FOD
2,4-Dichlorophenol	120-83-2	ug/L	11 : 36 : 36	31	6.01E+00	6.90E+01	No	NA	--	2.10E+01	Yes	Yes	>Screening Level
2,4-Dimethylphenol	105-67-9	ug/L	1 : 36 : 36	3	5.09E+00	8.30E+00	No	NA	--	1.40E+02	No	No	</=Screening Level
2,6-Dinitrotoluene	606-20-2	ug/L	1 : 36 : 36	3	5.17E+00	1.10E+01	No	NA	--	3.10E-01	Yes	No	<5%FOD
2-Chlorophenol	95-57-8	ug/L	6 : 36 : 36	17	5.30E+00	3.10E+01	No	NA	--	3.50E+01	No	No	</=Screening Level
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	2 : 36 : 36	6	5.51E+00	2.70E+01	No	NA	--	3.50E+02	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	17 : 36 : 36	47	1.22E+01	1.60E+02	No	NA	--	2.80E+01	Yes	Yes	>Screening Level
bis(2-Ethylhexyl)phthalate	117-81-7	ug/L	1 : 1 : 36	100	1.70E+00	1.70E+00	No	1.13E+01	No	6.00E+00	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 36 : 36	3	5.44E+00	2.10E+01	No	NA	--	1.40E+02	No	No	</=Screening Level

TABLE B-6
SURFACE WATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	Surface Water Screening Level (f)	Is Max Concentration > Screening Value?	COPC? (g)	Reason

Notes:

BKG - Background concentration.
CAS - Chemical Abstracts Service.
COPC - Constituent of potential concern.
EN - Essential nutrient.
FOD - Frequency of detection.
NA - Not available.
-- Not applicable.
IEPA - Illinois Environmental Protection Agency.
MCPA - 2-Methyl-4-chlorophenoxyacetic acid.
MCPP - 2-(2-Methyl-4-chlorophenoxy) propionic acid.
SVOC - Semivolatile organic compound.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalent Concentration.
USEPA - United States Environmental Protection Agency.
VOC - Volatile Organic Compound.
(a) Frequency of Detection = Number of detected samples: Number of samples used to calculate statistics: Total number of samples.
(b) Percent of detected samples out of samples used to calculate statistics. Constituents detected in fewer than 5 percent of samples, provided 20 samples are available, will not be included as COPCs.
(c) The arithmetic mean concentration for a constituent for each medium/area combination after sample/duplicate pairs were averaged and high non-detected values were excluded. (If one-half the detection limit was greater than the maximum detected concentration, the non-detect was not used). A proxy concentration of half the detection limit was used for non-detected results.
(d) The maximum detected concentration for a constituent for each medium/area combination after sample/duplicate pairs were averaged and high non-detected values were excluded. (If one-half the detection limit was greater than the maximum detected concentration, the non-detect was not used).
(e) Equal to two times the average concentration for the constituent in surface water in an upgradient sampling location for samples in the river. There are no background concentrations available for the Pond.
(f) Surface water screening levels were used according to the following hierarchy:
Illinois Groundwater Quality Standards for Class I: Potable Resource Groundwater. 35 Ill. Adm. Code 620.410. February 2, 2002.
USEPA, 2002. 2002 Edition of the Drinking Water Standards and Health Advisories. Office of Water. EPA 822-R-02-038. Maximum Contaminant Levels. Summer 2002.
IEPA, 2002. Tiered Approach to Corrective Action Objectives. Appendix B, Table E. Tier 1 Groundwater Remediation Objectives for the Groundwater Component of the Groundwater Ingestion Route. Class I values. February 5, 2002.
USEPA, 2002. Region 9 Preliminary Remediation Goal (PRG) Table. October 1, 2002. Value for Tap Water.
(g) A constituent is identified as a COPC if it is detected in greater than 5 percent of samples, provided 20 samples are available, if it is not an essential nutrient, if the maximum detected concentration is greater than the background concentration and if the maximum detected concentration is greater than the surface water screening level.

TABLE B-7
FISH TISSUE SCREEN (g)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Maximum Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Is Max Concentration > Background?	Fish Tissue Screening Level (e)	Is Max Concentration > Screening Value?	COPC? (f)	Reason
DDA (Buffalo Fillet)												
Pesticide												
4,4'-DDE	72-55-9	mg/kg	1 : 1 : 1	100	7.30E-03	No	NA	--	9.28E-03	No	No	</=Screening Level
Dioxin												
2,3,7,8-TCDD-TEQ	1746-01-6	mg/kg	1 : 1 : 1	100	7.39E-07	No	NA	--	2.10E-08	Yes	Yes	>Screening Level

TABLE B-7
FISH TISSUE SCREEN (g)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Maximum Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Is Max Concentration > Background?	Fish Tissue Screening Level (e)	Is Max Concentration > Screening Value?	COPC? (f)	Reason
PDA (Buffalo Fillet)												
Pesticide												
4,4'-DDE	72-55-9	mg/kg	2 : 2 : 3	100	8.20E-03	No	NA	--	9.28E-03	No	No	</=Screening Level
Methoxychlor	72-43-5	mg/kg	1 : 1 : 3	100	4.40E-02	No	NA	--	6.76E-01	No	No	</=Screening Level
Herbicide												
2,4,5-T	93-76-5	mg/kg	1 : 3 : 3	33	4.80E-03	No	NA	--	1.35E+00	No	No	</=Screening Level
Dioxin												
2,3,7,8-TCDD-TEQ	1746-01-6	mg/kg	3 : 3 : 3	100	6.25E-07	No	NA	--	2.10E-08	Yes	Yes	>Screening Level

TABLE B-7
FISH TISSUE SCREEN (g)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Maximum Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Is Max Concentration > Background?	Fish Tissue Screening Level (e)	Is Max Concentration > Screening Value?	COPC? (f)	Reason
Pond (Site Q) (Black Bullhead Fillet)												
Pesticide												
4,4'-DDT	50-29-3	mg/kg	1 : 1 : 1	100	3.60E-01	No	NA	--	9.28E-03	Yes	Yes	>Screening Level
alpha-Chlordane	5103-71-9	mg/kg	1 : 1 : 1	100	1.00E-02	No	NA	--	9.01E-03	Yes	Yes	>Screening Level
Dieldrin	60-57-1	mg/kg	1 : 1 : 1	100	1.00E-01	No	NA	--	1.97E-04	Yes	Yes	>Screening Level
PCBs												
Total PCBs	1336-36-3	mg/kg	1 : 1 : 1	100	3.87E+00	No	NA	--	1.58E-03	Yes	Yes	>Screening Level
Dioxin												
2,3,7,8-TCDD-TEQ	1746-01-6	mg/kg	1 : 1 : 1	100	3.84E-06	No	NA	--	2.10E-08	Yes	Yes	>Screening Level
Metals												
Aluminum	7429-90-5	mg/kg	1 : 1 : 1	100	2.40E+01	No	NA	--	1.35E+02	No	No	</=Screening Level
Arsenic	7440-38-2	mg/kg	1 : 1 : 1	100	7.80E-01	No	NA	--	2.10E-03	Yes	Yes	>Screening Level
Calcium	7440-70-2	mg/kg	1 : 1 : 1	100	8.80E+01	Yes	NA	--	NA	--	No	EN
Copper	7440-50-8	mg/kg	1 : 1 : 1	100	2.40E-01	No	NA	--	5.41E+00	No	No	</=Screening Level
Iron	7439-89-6	mg/kg	1 : 1 : 1	100	4.20E+00	Yes	NA	--	4.06E+01	No	No	EN
Magnesium	7439-95-4	mg/kg	1 : 1 : 1	100	2.20E+02	Yes	NA	--	NA	--	No	EN
Mercury	7439-97-6	mg/kg	1 : 1 : 1	100	2.50E-01	No	NA	--	1.35E-02	Yes	Yes	>Screening Level
Potassium	7440-09-7	mg/kg	1 : 1 : 1	100	4.00E+03	Yes	NA	--	NA	--	No	EN
Sodium	7440-23-5	mg/kg	1 : 1 : 1	100	3.90E+02	Yes	NA	--	NA	--	No	EN

TABLE B-7
FISH TISSUE SCREEN (g)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Maximum Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Is Max Concentration > Background?	Fish Tissue Screening Level (e)	Is Max Concentration > Screening Value?	COPC? (f)	Reason
Pond (Site Q) (Carp - Fillet)												
SVOCs												
Benzo(a)anthracene	56-55-3	mg/kg	1 : 1 : 1	100	1.40E-01	No	NA	--	4.32E-03	Yes	Yes	>Screening Level
Benzo(a)pyrene	50-32-8	mg/kg	1 : 1 : 1	100	1.80E-01	No	NA	--	4.32E-04	Yes	Yes	>Screening Level
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	1 : 1 : 1	100	5.00E-01	No	NA	--	2.25E-01	Yes	Yes	>Screening Level
Chrysene	218-01-9	mg/kg	1 : 1 : 1	100	1.40E-01	No	NA	--	4.32E-01	No	No	</=Screening Level
Dibenzo(a,h)anthracene	53-70-3	mg/kg	1 : 1 : 1	100	1.40E-01	No	NA	--	4.32E-04	Yes	Yes	>Screening Level
Fluoranthene	206-44-0	mg/kg	1 : 1 : 1	100	1.10E-01	No	NA	--	5.41E+00	No	No	</=Screening Level
Pesticide												
4,4'-DDT	50-29-3	mg/kg	1 : 1 : 1	100	3.30E-01	No	NA	--	9.28E-03	Yes	Yes	>Screening Level
alpha-Chlordane	5103-71-9	mg/kg	1 : 1 : 1	100	1.60E-02	No	NA	--	9.01E-03	Yes	Yes	>Screening Level
beta-BHC	319-85-7	mg/kg	1 : 1 : 1	100	1.70E-02	No	NA	--	1.75E-03	Yes	Yes	>Screening Level
Dieldrin	60-57-1	mg/kg	1 : 1 : 1	100	1.90E-01	No	NA	--	1.97E-04	Yes	Yes	>Screening Level
Methoxychlor	72-43-5	mg/kg	1 : 1 : 1	100	3.50E-02	No	NA	--	6.76E-01	No	No	</=Screening Level
Herbicide												
2,4-DB	94-82-6	mg/kg	1 : 1 : 1	100	2.50E-02	No	NA	--	1.08E+00	No	No	</=Screening Level
PCBs												
Total PCBs	1336-36-3	mg/kg	1 : 1 : 1	100	1.00E+01	No	NA	--	1.58E-03	Yes	Yes	>Screening Level
Dioxin												
2,3,7,8-TCDD-TEQ	1746-01-6	mg/kg	1 : 1 : 1	100	1.84E-05	No	NA	--	2.10E-08	Yes	Yes	>Screening Level
Metals												
Arsenic	7440-38-2	mg/kg	1 : 1 : 1	100	8.20E-01	No	NA	--	2.10E-03	Yes	Yes	>Screening Level
Calcium	7440-70-2	mg/kg	1 : 1 : 1	100	2.20E+02	Yes	NA	--	NA	--	No	EN
Copper	7440-50-8	mg/kg	1 : 1 : 1	100	3.70E-01	No	NA	--	5.41E+00	No	No	</=Screening Level
Iron	7439-89-6	mg/kg	1 : 1 : 1	100	1.10E+01	Yes	NA	--	4.06E+01	No	No	EN
Magnesium	7439-95-4	mg/kg	1 : 1 : 1	100	2.10E+02	Yes	NA	--	NA	--	No	EN
Manganese	7439-96-5	mg/kg	1 : 1 : 1	100	2.00E-01	No	NA	--	1.90E+01	No	No	</=Screening Level
Mercury	7439-97-6	mg/kg	1 : 1 : 1	100	7.10E-02	No	NA	--	1.35E-02	Yes	Yes	>Screening Level
Potassium	7440-09-7	mg/kg	1 : 1 : 1	100	3.60E+03	Yes	NA	--	NA	--	No	EN
Sodium	7440-23-5	mg/kg	1 : 1 : 1	100	4.00E+02	Yes	NA	--	NA	--	No	EN

TABLE B-7
FISH TISSUE SCREEN (g)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Maximum Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Is Max Concentration > Background?	Fish Tissue Screening Level (e)	Is Max Concentration > Screening Value?	COPC? (f)	Reason
UDA (Buffalo Fillet)												
Pesticide												
4,4'-DDE	72-55-9	mg/kg	1 : 1 : 1	100	1.70E-02	No	NA	--	9.28E-03	Yes	Yes	>Screening Level
4,4'-DDT	50-29-3	mg/kg	1 : 1 : 1	100	8.60E-03	No	NA	--	9.28E-03	No	No	</=Screening Level
alpha-Chlordane	5103-71-9	mg/kg	1 : 1 : 1	100	5.80E-03	No	NA	--	9.01E-03	No	No	</=Screening Level
Dieldrin	60-57-1	mg/kg	1 : 1 : 1	100	8.10E-03	No	NA	--	1.97E-04	Yes	Yes	>Screening Level
Endrin Aldehyde	7421-93-4	mg/kg	1 : 1 : 1	100	7.30E-03	No	NA	--	4.06E-02	No	No	</=Screening Level
gamma-BHC (Lindane)	58-89-9	mg/kg	1 : 1 : 1	100	1.20E-03	No	NA	--	2.43E-03	No	No	</=Screening Level
gamma-Chlordane	5103-74-2	mg/kg	1 : 1 : 1	100	5.20E-03	No	NA	--	9.01E-03	No	No	</=Screening Level
Dioxin												
2,3,7,8-TCDD-TEQ	1746-01-6	mg/kg	1 : 1 : 1	100	4.57E-06	No	NA	--	2.10E-08	Yes	Yes	>Screening Level

TABLE B-7
FISH FILLET SCREEN (g)
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Maximum Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Is Max Concentration > Background?	Fish Tissue Screening Level (e)	Is Max Concentration > Screening Value?	COPC? (f)	Reason

Notes:

BKG - Background concentration.
CAS - Chemical Abstracts Service.
COPC - Constituent of potential concern.
DDA - Downstream Discharge Area (Mississippi River).
EN - Essential nutrient.
FOD - Frequency of detection.
NA - Not available.
PCB - Polychlorinated Biphenyl.
PDA - Plume Discharge Area (Mississippi River).
SVOC - Semivolatile organic compound.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalent Concentration.
UDA - Upstream Discharge Area (Mississippi River).
USEPA - United States Environmental Protection Agency.
VOC - Volatile Organic Compound.
-- Not applicable.
(a) Frequency of Detection = Number of detected samples: Number of samples used to calculate statistics: Total number of samples.
(b) Percent of detected samples out of samples used to calculate statistics. Constituents detected in fewer than 5 percent of samples, provided 20 samples are available, will not be included as COPCs.
(c) The maximum detected concentration for a constituent for each medium/area combination after sample/duplicate pairs were averaged and high non-detected values were excluded. (If one-half the detection limit was greater than the maximum detected concentration, the non-detect was not used).
(d) Background concentrations are not available for fish tissue.
(e) USEPA, 2003. Region 3 Risk-Based Concentration (RBC) Table. April 25, 2003. Value for Fish.
(f) A constituent is identified as a COPC if it is detected in greater than 5 percent of samples, provided 20 samples are available, if it is not an essential nutrient, if the detected concentration is greater than the background concentration and if the detected concentration is greater than the fish screening level.

APPENDIX C

BACKGROUND CALCULATIONS

APPENDIX C
BACKGROUND CALCULATIONS

Table C-1 provides the background calculations for combined soil, surface soil, groundwater (shallow, mid, and deep), sediment, and surface water. Per the method identified in the USEPA-approved workplan, background concentrations are defined as two times the arithmetic mean concentration.

Table C-2 lists in the first column all the site groundwater locations for which constituents were detected. The second column lists the background location for the site location. Site groundwater concentrations were compared to the selected background location concentration.

TABLE C-1
CALCULATION OF BACKGROUND CONCENTRATIONS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Average	2xAverage
Combined Soil			
VOCs			
4-Methyl-2-pentanone (MIBK)	108-10-1	0.001	0.002
Chloromethane	74-87-3	0.00045	0.0009
Dichloromethane	75-09-2	0.002864286	0.005728571
Ethylbenzene	100-41-4	0.000475833	0.000951667
Styrene (Monomer)	100-42-5	0.00205	0.0041
Tetrachloroethene	127-18-4	0.000475	0.00095
Xylenes, Total	1330-20-7	0.000772143	0.001544286
SVOCs			
Acenaphthene	83-32-9	0.021	0.042
Anthracene	120-12-7	0.06	0.12
Benzo(a)anthracene	56-55-3	0.16225	0.3245
Benzo(a)pyrene	50-32-8	0.19475	0.3895
Benzo(b)fluoranthene	205-99-2	0.18475	0.3695
Benzo(g,h,i)perylene	191-24-2	0.19675	0.3935
Benzo(k)fluoranthene	207-08-9	0.1639	0.3278
bis(2-Ethylhexyl)phthalate	117-81-7	0.16725	0.3345
Chrysene	218-01-9	0.16795	0.3359
Dibenzo(a,h)anthracene	53-70-3	0.06	0.12
Fluoranthene	206-44-0	0.20575	0.4115
Phenanthrene	85-01-8	0.1761	0.3522
Pyrene	129-00-0	0.2007	0.4014
Pesticide			
4,4'-DDD	72-54-8	0.0026935	0.005387
4,4'-DDE	72-55-9	0.0040125	0.008025
4,4'-DDT	50-29-3	0.0108845	0.021769
Aldrin	309-00-2	0.001375	0.00275
alpha-BHC	319-84-6	0.012885	0.02577
alpha-Chlordane	5103-71-9	0.002022	0.004044
delta-BHC	319-86-8	0.004285	0.00857
Dieldrin	60-57-1	0.0037525	0.007505
Endosulfan I	959-98-8	0.001068889	0.002137778
Endosulfan II	33213-65-9	0.00058	0.00116
Endosulfan Sulfate	1031-07-8	0.000905	0.00181
Endrin	72-20-8	0.0021875	0.004375
Endrin Aldehyde	7421-93-4	0.0024025	0.004805
gamma-Chlordane	5103-74-2	0.010664	0.021328
Heptachlor	76-44-8	0.008285	0.01657
Heptachlor Epoxide	1024-57-3	0.0030505	0.006101
Methoxychlor	72-43-5	0.001655	0.00331
Herbicide			
2,4-D	94-75-7	0.00483	0.00966
Dichlorprop	120-36-5	0.05173	0.10346
MCPP	93-65-2	1.4625	2.925
Pentachlorophenol	87-86-5	0.002283333	0.004566667
PCBs			
Total PCBs	1336-36-3	0.06413	0.12826
Dioxin			
2,3,7,8-TCDD-TEQ	1746-01-6	4.46583E-06	8.93166E-06
Metals			
Aluminum	7429-90-5	5425	10850
Antimony	7440-36-0	1.027	2.054

TABLE C-1
CALCULATION OF BACKGROUND CONCENTRATIONS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Average	2xAverage
Arsenic	7440-38-2	5.41	10.82
Barium	7440-39-3	158.7	317.4
Beryllium	7440-41-7	0.3825	0.765
Cadmium	7440-43-9	0.9068	1.8136
Calcium	7440-70-2	30545	61090
Chromium	7440-47-3	9.45	18.9
Cobalt	7440-48-4	4.635	9.27
Copper	7440-50-8	24.815	49.63
Iron	7439-89-6	10520	21040
Lead	7439-92-1	35.885	71.77
Magnesium	7439-95-4	5625	11250
Manganese	7439-96-5	250.6	501.2
Mercury	7439-97-6	0.03858	0.07716
Nickel	7440-02-0	14.13	28.26
Potassium	7440-09-7	1190.5	2381
Selenium	7782-49-2	0.5345	1.069
Silver	7440-22-4	0.512	1.024
Sodium	7440-23-5	70.55	141.1
Vanadium	7440-62-2	17.18	34.36
Zinc	7440-66-6	112.2	224.4
Surface Soil			
VOCs			
Chloromethane	74-87-3	0.00045	0.0009
Ethylbenzene	100-41-4	0.000533333	0.001066667
Styrene (Monomer)	100-42-5	0.0022325	0.004465
Tetrachloroethene	127-18-4	0.00044	0.00088
Xylenes, Total	1330-20-7	0.000803333	0.001606667
SVOCs			
Acenaphthene	83-32-9	0.021	0.042
Anthracene	120-12-7	0.06	0.12
Benzo(a)anthracene	56-55-3	0.138	0.276
Benzo(a)pyrene	50-32-8	0.203	0.406
Benzo(b)fluoranthene	205-99-2	0.183	0.366
Benzo(g,h,i)perylene	191-24-2	0.207	0.414
Benzo(k)fluoranthene	207-08-9	0.1413	0.2826
bis(2-Ethylhexyl)phthalate	117-81-7	0.1766	0.3532
Chrysene	218-01-9	0.1494	0.2988
Dibenzo(a,h)anthracene	53-70-3	0.06	0.12
Fluoranthene	206-44-0	0.225	0.45
Phenanthrene	85-01-8	0.1657	0.3314
Pyrene	129-00-0	0.2149	0.4298
Pesticide			
4,4'-DDD	72-54-8	0.003522	0.007044
4,4'-DDE	72-55-9	0.00616	0.01232
4,4'-DDT	50-29-3	0.02018	0.04036
Aldrin	309-00-2	0.00178	0.00356
alpha-BHC	319-84-6	0.0248	0.0496
alpha-Chlordane	5103-71-9	0.003074	0.006148
delta-BHC	319-86-8	0.0076	0.0152
Dieldrin	60-57-1	0.00564	0.01128
Endosulfan I	959-98-8	0.0011925	0.002385
Endosulfan II	33213-65-9	0.00058	0.00116
Endosulfan Sulfate	1031-07-8	0.000905	0.00181

TABLE C-1
CALCULATION OF BACKGROUND CONCENTRATIONS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

	Constituent	CAS	Average	2xAverage
	Endrin	72-20-8	0.00251	0.00502
	Endrin Aldehyde	7421-93-4	0.00294	0.00588
	gamma-Chlordane	5103-74-2	0.020534	0.041068
	Heptachlor	76-44-8	0.0156	0.0312
	Heptachlor Epoxide	1024-57-3	0.005267	0.010534
	Methoxychlor	72-43-5	0.0028	0.0056
	Herbicide			
	2,4-D	94-75-7	0.00498	0.00996
	Dichlorprop	120-36-5	0.05688	0.11376
	MCPP	93-65-2	1.8	3.6
	Pentachlorophenol	87-86-5	0.002283333	0.004566667
	PCBs			
	Total PCBs	1336-36-3	0.09227	0.18454
	Dioxin			
	2,3,7,8-TCDD-TEQ	1746-01-6	0.000008432	0.000016864
	Metals			
	Aluminum	7429-90-5	6920	13840
	Antimony	7440-36-0	1.166	2.332
	Arsenic	7440-38-2	6.19	12.38
	Barium	7440-39-3	153.4	306.8
	Beryllium	7440-41-7	0.451	0.902
	Cadmium	7440-43-9	1.668	3.336
	Calcium	7440-70-2	48710	97420
	Chromium	7440-47-3	11.06	22.12
	Cobalt	7440-48-4	4.7	9.4
	Copper	7440-50-8	42.9	85.8
	Iron	7439-89-6	11660	23320
	Lead	7439-92-1	65.1	130.2
	Magnesium	7439-95-4	6140	12280
	Manganese	7439-96-5	276.2	552.4
	Mercury	7439-97-6	0.0668	0.1336
	Nickel	7440-02-0	16.5	33
	Potassium	7440-09-7	1506	3012
	Selenium	7782-49-2	0.54	1.08
	Silver	7440-22-4	0.495	0.99
	Sodium	7440-23-5	78.75	157.5
	Vanadium	7440-62-2	19.46	38.92
	Zinc	7440-66-6	195	390
Shallow Groundwater				
	OS - UAA-1/OS-1-20			
	VOCs			
	Methane	74-82-8	0.46	0.92
	Metals			
	Aluminum	7429-90-5	1400	2800
	Barium	7440-39-3	300	600
	Calcium	7440-70-2	190000	380000
	Chromium	7440-47-3	7.1	14.2
	Cobalt	7440-48-4	4.6	9.2
	Iron	7439-89-6	4700	9400
	Lead	7439-92-1	3	6
	Magnesium	7439-95-4	43000	86000
	Manganese	7439-96-5	1700	3400
	Nickel	7440-02-0	21	42

TABLE C-1
CALCULATION OF BACKGROUND CONCENTRATIONS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Average	2xAverage
Potassium	7440-09-7	8600	17200
Sodium	7440-23-5	48000	96000
Zinc	7440-66-6	22	44
OS - UAA-2/OS-2-20			
VOCs			
Methane	74-82-8	11	22
Metals			
Aluminum	7429-90-5	8.1	16.2
Barium	7440-39-3	120	240
Calcium	7440-70-2	130000	260000
Iron	7439-89-6	1900	3800
Magnesium	7439-95-4	36000	72000
Manganese	7439-96-5	18	36
Nickel	7440-02-0	7.2	14.4
Potassium	7440-09-7	1300	2600
Sodium	7440-23-5	8100	16200
Zinc	7440-66-6	26	52
OS - UAA-4/OS-4-20			
VOCs			
Dichloromethane	75-09-2	1	2
Methane	74-82-8	19.95	39.9
Metals			
Aluminum	7429-90-5	345	690
Barium	7440-39-3	180	360
Calcium	7440-70-2	130000	260000
Cobalt	7440-48-4	2.4	4.8
Iron	7439-89-6	2300	4600
Magnesium	7439-95-4	29000	58000
Manganese	7439-96-5	1400	2800
Nickel	7440-02-0	12.5	25
Potassium	7440-09-7	5800	11600
Sodium	7440-23-5	11500	23000
Vanadium	7440-62-2	1.6	3.2
Mid Groundwater			
OS - UAA-2/OS-2-30			
VOCs			
1,1-Dichloroethane	75-34-3	4.85	9.7
1,1-Dichloroethylene	75-35-4	3.45	6.9
1,2-Dichloroethene (total)	540-59-0	17	34
Vinyl chloride	75-01-4	0.4	0.8
OS - UAA-3/OS-3-24			
VOCs			
Methane	74-82-8	2.2	4.4
Metals			
Barium	7440-39-3	180	360
Calcium	7440-70-2	100000	200000
Cobalt	7440-48-4	0.89	1.78
Copper	7440-50-8	1.9	3.8
Iron	7439-89-6	2000	4000
Magnesium	7439-95-4	32000	64000
Manganese	7439-96-5	92	184
Nickel	7440-02-0	7.2	14.4
Potassium	7440-09-7	44000	88000

	Constituent	CAS	Average	2xAverage
	Selenium	7782-49-2	9.2	18.4
	Sodium	7440-23-5	2400	4800
	Thallium	7440-28-0	4.1	8.2
	Vanadium	7440-62-2	2	4
	Zinc	7440-66-6	9.4	18.8
	OS - UAA-4/OS-4-30			
	VOCs			
	Dichloromethane	75-09-2	1.1	2.2
Deep Groundwater				
	OS - UAA-1/OS-1-100			
	VOCs			
	1,2-Dichloroethene (total)	540-59-0	1.3	2.6
	Benzene	71-43-2	2.5	5
	Chlorobenzene	108-90-7	400	800
	Ethylbenzene	100-41-4	0.31	0.62
	Methane	74-82-8	960	1920
	Toluene	108-88-3	0.31	0.62
	SVOCs			
	1,2-Dichlorobenzene	95-50-1	3.8	7.6
	1,4-Dichlorobenzene	106-46-7	18	36
	2-Chlorophenol	95-57-8	1.7	3.4
	Benzo(g,h,i)perylene	191-24-2	0.84	1.68
	Dibenzo(a,h)anthracene	53-70-3	0.68	1.36
	Pesticide			
	beta-BHC	319-85-7	0.02	0.04
	Metals			
	Aluminum	7429-90-5	520	1040
	Arsenic	7440-38-2	18	36
	Barium	7440-39-3	51	102
	Cadmium	7440-43-9	1900	3800
	Calcium	7440-70-2	670000	1340000
	Chromium	7440-47-3	13	26
	Cobalt	7440-48-4	200	400
	Copper	7440-50-8	1.5	3
	Iron	7439-89-6	81000	162000
	Magnesium	7439-95-4	170000	340000
	Manganese	7439-96-5	21000	42000
	Nickel	7440-02-0	93	186
	Potassium	7440-09-7	30000	60000
	Sodium	7440-23-5	200000	400000
	Zinc	7440-66-6	230000	460000
	OS - UAA-1/OS-1-110			
	VOCs			
	Benzene	71-43-2	3.4	6.8
	Chlorobenzene	108-90-7	710	1420
	Ethylbenzene	100-41-4	0.38	0.76
	Methane	74-82-8	940	1880
	SVOCs			
	1,2-Dichlorobenzene	95-50-1	6.3	12.6
	1,4-Dichlorobenzene	106-46-7	36	72
	2-Chlorophenol	95-57-8	6.4	12.8
	Pesticide			
	beta-BHC	319-85-7	0.0089	0.0178

TABLE C-1
CALCULATION OF BACKGROUND CONCENTRATIONS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Average	2xAverage
gamma-BHC (Lindane)	58-89-9	0.0084	0.0168
Metals			
Aluminum	7429-90-5	6300	12600
Arsenic	7440-38-2	36	72
Barium	7440-39-3	150	300
Cadmium	7440-43-9	2700	5400
Calcium	7440-70-2	720000	1440000
Chromium	7440-47-3	120	240
Cobalt	7440-48-4	260	520
Copper	7440-50-8	38	76
Iron	7439-89-6	150000	300000
Lead	7439-92-1	5.2	10.4
Magnesium	7439-95-4	200000	400000
Manganese	7439-96-5	28000	56000
Nickel	7440-02-0	150	300
Potassium	7440-09-7	33000	66000
Sodium	7440-23-5	200000	400000
Vanadium	7440-62-2	18	36
Zinc	7440-66-6	300000	600000
OS - UAA-1/OS-1-50			
VOCs			
1,2-Dichloroethene (total)	540-59-0	0.82	1.64
Chlorobenzene	108-90-7	0.42	0.84
OS - UAA-1/OS-1-60			
VOCs			
1,2-Dichloroethene (total)	540-59-0	1.3	2.6
Chlorobenzene	108-90-7	2	4
Methane	74-82-8	9.1	18.2
Pesticide			
gamma-BHC (Lindane)	58-89-9	0.0085	0.017
Heptachlor Epoxide	1024-57-3	0.006	0.012
Herbicide			
Pentachlorophenol	87-86-5	0.05	0.1
Metals			
Aluminum	7429-90-5	950	1900
Arsenic	7440-38-2	4.7	9.4
Barium	7440-39-3	130	260
Cadmium	7440-43-9	1.2	2.4
Calcium	7440-70-2	330000	660000
Chromium	7440-47-3	6.8	13.6
Cobalt	7440-48-4	0.86	1.72
Iron	7439-89-6	59000	118000
Magnesium	7439-95-4	69000	138000
Manganese	7439-96-5	4200	8400
Nickel	7440-02-0	8.6	17.2
Potassium	7440-09-7	14000	28000
Sodium	7440-23-5	120000	240000
Zinc	7440-66-6	34	68
OS - UAA-1/OS-1-70			
VOCs			
1,2-Dichloroethene (total)	540-59-0	1.7	3.4
Chlorobenzene	108-90-7	2.4	4.8
OS - UAA-1/OS-1-80			

TABLE C-1
CALCULATION OF BACKGROUND CONCENTRATIONS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Average	2xAverage
VOCs			
1,2-Dichloroethene (total)	540-59-0	1.4	2.8
Chlorobenzene	108-90-7	280	560
SVOCs			
1,4-Dichlorobenzene	106-46-7	1.8	3.6
2-Chlorophenol	95-57-8	3.3	6.6
OS - UAA-1/OS-1-90			
VOCs			
1,2-Dichloroethene (total)	540-59-0	1.5	3
Benzene	71-43-2	0.23	0.46
Chlorobenzene	108-90-7	450	900
SVOCs			
1,2-Dichlorobenzene	95-50-1	1.4	2.8
1,4-Dichlorobenzene	106-46-7	9.8	19.6
2-Chlorophenol	95-57-8	5.4	10.8
OS - UAA-2/OS-2-100			
VOCs			
1,2-Dichloroethene (total)	540-59-0	11	22
Benzene	71-43-2	20	40
Chlorobenzene	108-90-7	2600	5200
Methane	74-82-8	53	106
Vinyl chloride	75-01-4	7.2	14.4
SVOCs			
1,2-Dichlorobenzene	95-50-1	9.8	19.6
1,4-Dichlorobenzene	106-46-7	370	740
2,4-Dichlorophenol	120-83-2	8	16
2,4-Dimethylphenol	105-67-9	10	20
2-Chlorophenol	95-57-8	18	36
4-Chloroaniline	106-47-8	3.1	6.2
Pesticide			
beta-BHC	319-85-7	0.052	0.104
gamma-BHC (Lindane)	58-89-9	0.037	0.074
Herbicide			
2,4,5-TP (Silvex)	93-72-1	0.056	0.112
Dicamba	1918-00-9	0.16	0.32
Metals			
Aluminum	7429-90-5	520	1040
Barium	7440-39-3	120	240
Calcium	7440-70-2	260000	520000
Chromium	7440-47-3	15	30
Copper	7440-50-8	5.9	11.8
Iron	7439-89-6	28000	56000
Magnesium	7439-95-4	36000	72000
Manganese	7439-96-5	1600	3200
Potassium	7440-09-7	10000	20000
Sodium	7440-23-5	33000	66000
Vanadium	7440-62-2	1.6	3.2
Zinc	7440-66-6	54	108
OS - UAA-2/OS-2-110			
VOCs			
1,1-Dichloroethane	75-34-3	8	16
1,2-Dichloroethene (total)	540-59-0	17	34
Benzene	71-43-2	17	34

TABLE C-1
CALCULATION OF BACKGROUND CONCENTRATIONS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Average	2xAverage
Chlorobenzene	108-90-7	2500	5000
Chloromethane	74-87-3	9.3	18.6
Dichloromethane	75-09-2	19	38
Vinyl chloride	75-01-4	9.5	19
SVOCs			
1,2-Dichlorobenzene	95-50-1	16	32
1,3-Dichlorobenzene	541-73-1	49	98
1,4-Dichlorobenzene	106-46-7	1200	2400
2,4-Dichlorophenol	120-83-2	16	32
2,4-Dimethylphenol	105-67-9	14	28
2-Chlorophenol	95-57-8	32	64
4-Chloroaniline	106-47-8	9.7	19.4
OS - UAA-2/OS-2-120			
VOCs			
1,2-Dichloroethene (total)	540-59-0	5.3	10.6
Chlorobenzene	108-90-7	760	1520
SVOCs			
1,2-Dichlorobenzene	95-50-1	14	28
1,3-Dichlorobenzene	541-73-1	26	52
1,4-Dichlorobenzene	106-46-7	860	1720
2,4-Dichlorophenol	120-83-2	12	24
2,4-Dimethylphenol	105-67-9	12	24
2-Chlorophenol	95-57-8	9.6	19.2
4-Chloroaniline	106-47-8	2.8	5.6
OS - UAA-2/OS-2-124			
VOCs			
1,1-Dichloroethane	75-34-3	16	32
1,1-Dichloroethylene	75-35-4	17	34
1,2-Dichloroethene (total)	540-59-0	77	154
Benzene	71-43-2	24	48
Chlorobenzene	108-90-7	2000	4000
Chloromethane	74-87-3	9.7	19.4
Methane	74-82-8	100	200
Vinyl chloride	75-01-4	6.5	13
SVOCs			
1,2-Dichlorobenzene	95-50-1	7.4	14.8
1,3-Dichlorobenzene	541-73-1	32	64
1,4-Dichlorobenzene	106-46-7	410	820
2,4-Dichlorophenol	120-83-2	8.3	16.6
2-Chlorophenol	95-57-8	20	40
4-Chloroaniline	106-47-8	2.4	4.8
Fluorene	86-73-7	2.9	5.8
Naphthalene	91-20-3	12	24
Pesticide			
beta-BHC	319-85-7	0.17	0.34
Herbicide			
2,4-DB	94-82-6	0.18	0.36
MCPP	93-65-2	87	174
Metals			
Barium	7440-39-3	98	196
Calcium	7440-70-2	340000	680000
Iron	7439-89-6	37000	74000
Magnesium	7439-95-4	50000	100000

Constituent	CAS	Average	2xAverage
Manganese	7439-96-5	1600	3200
Potassium	7440-09-7	11000	22000
Sodium	7440-23-5	37000	74000
Vanadium	7440-62-2	1.2	2.4
Zinc	7440-66-6	42	84
OS - UAA-2/OS-2-40			
VOCs			
1,1-Dichloroethane	75-34-3	24	48
1,1-Dichloroethylene	75-35-4	19	38
1,2-Dichloroethene (total)	540-59-0	81	162
Benzene	71-43-2	0.27	0.54
Vinyl chloride	75-01-4	2.1	4.2
OS - UAA-2/OS-2-50			
VOCs			
1,1-Dichloroethane	75-34-3	230	460
1,1-Dichloroethylene	75-35-4	250	500
1,2-Dichloroethene (total)	540-59-0	930	1860
Benzene	71-43-2	12	24
Chlorobenzene	108-90-7	52	104
Trichloroethylene	79-01-6	2.3	4.6
Vinyl chloride	75-01-4	29	58
OS - UAA-2/OS-2-60			
VOCs			
1,1-Dichloroethane	75-34-3	230	460
1,1-Dichloroethylene	75-35-4	290	580
1,2-Dichloroethene (total)	540-59-0	890	1780
Benzene	71-43-2	15	30
Chlorobenzene	108-90-7	79	158
Methane	74-82-8	980	1960
Vinyl chloride	75-01-4	32	64
SVOCs			
2-Chlorophenol	95-57-8	2.4	4.8
4-Chloroaniline	106-47-8	4.4	8.8
Metals			
Arsenic	7440-38-2	5.9	11.8
Barium	7440-39-3	350	700
Calcium	7440-70-2	230000	460000
Iron	7439-89-6	30000	60000
Magnesium	7439-95-4	55000	110000
Manganese	7439-96-5	2200	4400
Potassium	7440-09-7	10000	20000
Sodium	7440-23-5	100000	200000
Zinc	7440-66-6	14	28
OS - UAA-2/OS-2-70			
VOCs			
1,1-Dichloroethane	75-34-3	300	600
1,1-Dichloroethylene	75-35-4	410	820
1,2-Dichloroethene (total)	540-59-0	1400	2800
Benzene	71-43-2	24	48
Chlorobenzene	108-90-7	81	162
Vinyl chloride	75-01-4	46	92
SVOCs			
2,4-Dimethylphenol	105-67-9	2.2	4.4

TABLE C-1
CALCULATION OF BACKGROUND CONCENTRATIONS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Average	2xAverage
2-Chlorophenol	95-57-8	1.6	3.2
4-Chloroaniline	106-47-8	3.7	7.4
OS - UAA-2/OS-2-80			
VOCs			
1,1-Dichloroethane	75-34-3	330	660
1,1-Dichloroethylene	75-35-4	440	880
1,2-Dichloroethene (total)	540-59-0	1800	3600
Benzene	71-43-2	55	110
Chlorobenzene	108-90-7	62	124
Vinyl chloride	75-01-4	52	104
SVOCs			
2,4-Dimethylphenol	105-67-9	9.6	19.2
4-Chloroaniline	106-47-8	6	12
OS - UAA-2/OS-2-90			
VOCs			
1,1-Dichloroethane	75-34-3	13	26
1,2-Dichloroethene (total)	540-59-0	57	114
Benzene	71-43-2	13	26
Chlorobenzene	108-90-7	1800	3600
Trichloroethylene	79-01-6	17	34
Vinyl chloride	75-01-4	10	20
SVOCs			
1,2-Dichlorobenzene	95-50-1	7.3	14.6
1,3-Dichlorobenzene	541-73-1	16	32
1,4-Dichlorobenzene	106-46-7	240	480
2,4-Dichlorophenol	120-83-2	8.7	17.4
2,4-Dimethylphenol	105-67-9	9.5	19
2-Chlorophenol	95-57-8	24	48
4-Chloroaniline	106-47-8	8.6	17.2
OS - UAA-3/OS-3-104			
VOCs			
Benzene	71-43-2	24	48
Chlorobenzene	108-90-7	2100	4200
Methane	74-82-8	170	340
SVOCs			
1,2-Dichlorobenzene	95-50-1	25	50
1,3-Dichlorobenzene	541-73-1	28	56
1,4-Dichlorobenzene	106-46-7	2200	4400
2,4,6-Trichlorophenol	88-06-2	7.8	15.6
2,4-Dichlorophenol	120-83-2	52	104
2-Chlorophenol	95-57-8	14	28
4-Chloroaniline	106-47-8	2100	4200
4-Nitroaniline	100-01-6	1.5	3
Benzo(a)pyrene	50-32-8	1.4	2.8
Benzo(b)fluoranthene	205-99-2	1.3	2.6
Benzo(g,h,i)perylene	191-24-2	1.6	3.2
Chrysene	218-01-9	0.69	1.38
Dibenzo(a,h)anthracene	53-70-3	1.5	3
Diethyl Phthalate	84-66-2	3.2	6.4
Pesticide			
gamma-BHC (Lindane)	58-89-9	0.039	0.078
Heptachlor	76-44-8	0.029	0.058
Herbicide			

TABLE C-1
CALCULATION OF BACKGROUND CONCENTRATIONS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Average	2xAverage
2,4,5-TP (Silvex)	93-72-1	0.07	0.14
2,4-D	94-75-7	0.63	1.26
2,4-DB	94-82-6	0.6	1.2
Metals			
Aluminum	7429-90-5	3100	6200
Barium	7440-39-3	1000	2000
Cadmium	7440-43-9	0.74	1.48
Calcium	7440-70-2	260000	520000
Chromium	7440-47-3	74	148
Cobalt	7440-48-4	3.3	6.6
Copper	7440-50-8	55	110
Iron	7439-89-6	25000	50000
Lead	7439-92-1	3.1	6.2
Magnesium	7439-95-4	74000	148000
Manganese	7439-96-5	1100	2200
Nickel	7440-02-0	27	54
Potassium	7440-09-7	12000	24000
Sodium	7440-23-5	80000	160000
Zinc	7440-66-6	360	720
OS - UAA-3/OS-3-114			
VOCs			
Benzene	71-43-2	4.3	8.6
Chlorobenzene	108-90-7	570	1140
SVOCs			
1,2-Dichlorobenzene	95-50-1	23	46
1,3-Dichlorobenzene	541-73-1	18	36
1,4-Dichlorobenzene	106-46-7	1800	3600
2,4,6-Trichlorophenol	88-06-2	1	2
2,4-Dichlorophenol	120-83-2	59	118
2-Chlorophenol	95-57-8	17	34
Dibenzo(a,h)anthracene	53-70-3	0.67	1.34
OS - UAA-3/OS-3-116			
VOCs			
Benzene	71-43-2	1.8	3.6
Chlorobenzene	108-90-7	360	720
Methane	74-82-8	14	28
SVOCs			
1,2-Dichlorobenzene	95-50-1	16	32
1,3-Dichlorobenzene	541-73-1	13	26
1,4-Dichlorobenzene	106-46-7	1500	3000
2,4,6-Trichlorophenol	88-06-2	1.5	3
2,4-Dichlorophenol	120-83-2	53	106
2-Chlorophenol	95-57-8	9.7	19.4
4-Chloroaniline	106-47-8	9.8	19.6
Benzo(g,h,i)perylene	191-24-2	0.69	1.38
Pesticide			
Aldrin	309-00-2	0.018	0.036
beta-BHC	319-85-7	0.016	0.032
Herbicide			
2,4,5-TP (Silvex)	93-72-1	0.086	0.172
PCBs			
Total PCBs	1336-36-3	0.06	0.12
Metals			

TABLE C-1
CALCULATION OF BACKGROUND CONCENTRATIONS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Average	2xAverage
Aluminum	7429-90-5	1200	2400
Barium	7440-39-3	150	300
Cadmium	7440-43-9	2	4
Calcium	7440-70-2	340000	680000
Chromium	7440-47-3	38	76
Cobalt	7440-48-4	1.5	3
Copper	7440-50-8	25	50
Iron	7439-89-6	61000	122000
Magnesium	7439-95-4	120000	240000
Manganese	7439-96-5	1200	2400
Nickel	7440-02-0	11	22
Potassium	7440-09-7	11000	22000
Sodium	7440-23-5	61000	122000
Zinc	7440-66-6	230	460
OS - UAA-3/OS-3-44			
VOCs			
1,1-Dichloroethylene	75-35-4	0.22	0.44
1,2-Dichloroethene (total)	540-59-0	1.3	2.6
Benzene	71-43-2	3.6	7.2
Chlorobenzene	108-90-7	160	320
OS - UAA-3/OS-3-54			
VOCs			
1,1-Dichloroethane	75-34-3	0.52	1.04
1,1-Dichloroethylene	75-35-4	0.22	0.44
1,2-Dichloroethene (total)	540-59-0	1.4	2.8
Benzene	71-43-2	1.2	2.4
Chlorobenzene	108-90-7	160	320
OS - UAA-3/OS-3-64			
VOCs			
1,2-Dichloroethene (total)	540-59-0	1.3	2.6
Benzene	71-43-2	0.14	0.28
Carbon Disulfide	75-15-0	0.35	0.7
Chlorobenzene	108-90-7	31	62
Methane	74-82-8	170	340
Vinyl chloride	75-01-4	0.31	0.62
Herbicide			
2,4-D	94-75-7	0.23	0.46
PCBs			
Total PCBs	1336-36-3	0.08	0.16
Metals			
Aluminum	7429-90-5	250	500
Barium	7440-39-3	100	200
Calcium	7440-70-2	220000	440000
Chromium	7440-47-3	8.2	16.4
Cobalt	7440-48-4	5.4	10.8
Iron	7439-89-6	9800	19600
Magnesium	7439-95-4	63000	126000
Manganese	7439-96-5	4100	8200
Nickel	7440-02-0	13	26
Potassium	7440-09-7	50000	100000
Sodium	7440-23-5	88000	176000
Zinc	7440-66-6	45	90
OS - UAA-3/OS-3-74			

TABLE C-1
CALCULATION OF BACKGROUND CONCENTRATIONS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Average	2xAverage
VOCs			
1,1-Dichloroethane	75-34-3	0.44	0.88
1,1-Dichloroethylene	75-35-4	0.42	0.84
1,2-Dichloroethene (total)	540-59-0	3.5	7
Benzene	71-43-2	7.4	14.8
Chlorobenzene	108-90-7	150	300
Toluene	108-88-3	0.3	0.6
Vinyl chloride	75-01-4	0.97	1.94
OS - UAA-3/OS-3-84			
VOCs			
Benzene	71-43-2	63	126
Chlorobenzene	108-90-7	1300	2600
SVOCs			
1,2-Dichlorobenzene	95-50-1	5	10
1,4-Dichlorobenzene	106-46-7	170	340
2,4-Dichlorophenol	120-83-2	2.2	4.4
2-Chlorophenol	95-57-8	14	28
4-Chloroaniline	106-47-8	470	940
OS - UAA-3/OS-3-94			
VOCs			
Benzene	71-43-2	55	110
Chlorobenzene	108-90-7	2100	4200
SVOCs			
1,2-Dichlorobenzene	95-50-1	17	34
1,3-Dichlorobenzene	541-73-1	20	40
1,4-Dichlorobenzene	106-46-7	1000	2000
2,4-Dichlorophenol	120-83-2	9.4	18.8
2-Chlorophenol	95-57-8	9.5	19
4-Chloroaniline	106-47-8	800	1600
Diethyl Phthalate	84-66-2	17	34
OS - UAA-4/OS-4-100			
VOCs			
Chloromethane	74-87-3	0.38	0.76
Methane	74-82-8	13	26
PCBs			
Total PCBs	1336-36-3	0.038	0.076
Metals			
Aluminum	7429-90-5	2100	4200
Arsenic	7440-38-2	4.9	9.8
Barium	7440-39-3	340	680
Calcium	7440-70-2	150000	300000
Chromium	7440-47-3	19	38
Cobalt	7440-48-4	1.9	3.8
Copper	7440-50-8	6.8	13.6
Iron	7439-89-6	20000	40000
Lead	7439-92-1	3.4	6.8
Magnesium	7439-95-4	39000	78000
Manganese	7439-96-5	770	1540
Nickel	7440-02-0	9	18
Potassium	7440-09-7	6200	12400
Sodium	7440-23-5	18000	36000
Vanadium	7440-62-2	6.7	13.4
Zinc	7440-66-6	23	46

TABLE C-1
CALCULATION OF BACKGROUND CONCENTRATIONS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Average	2xAverage
OS - UAA-4/OS-4-110			
VOCs			
Carbon Disulfide	75-15-0	0.32	0.64
Chloromethane	74-87-3	0.59	1.18
Ethylbenzene	100-41-4	0.92	1.84
Toluene	108-88-3	0.36	0.72
OS - UAA-4/OS-4-113			
VOCs			
1,2-Dichloroethene (total)	540-59-0	0.24	0.48
Carbon Disulfide	75-15-0	0.72	1.44
Ethylbenzene	100-41-4	0.9	1.8
Methane	74-82-8	11	22
Toluene	108-88-3	0.29	0.58
Metals			
Aluminum	7429-90-5	8300	16600
Arsenic	7440-38-2	17	34
Barium	7440-39-3	500	1000
Beryllium	7440-41-7	0.67	1.34
Calcium	7440-70-2	160000	320000
Chromium	7440-47-3	230	460
Cobalt	7440-48-4	16	32
Copper	7440-50-8	94	188
Iron	7439-89-6	86000	172000
Lead	7439-92-1	22	44
Magnesium	7439-95-4	42000	84000
Manganese	7439-96-5	3600	7200
Nickel	7440-02-0	73	146
Potassium	7440-09-7	7900	15800
Sodium	7440-23-5	16000	32000
Vanadium	7440-62-2	26	52
Zinc	7440-66-6	310	620
OS - UAA-4/OS-4-40			
VOCs			
Dichloromethane	75-09-2	1.2	2.4
OS - UAA-4/OS-4-50			
VOCs			
Ethylbenzene	100-41-4	0.89	1.78
Toluene	108-88-3	0.45	0.9
Xylenes, Total	1330-20-7	2	4
OS - UAA-4/OS-4-60			
VOCs			
Methane	74-82-8	440	880
Toluene	108-88-3	0.36	0.72
SVOCs			
Benzo(a)pyrene	50-32-8	1.5	3
Benzo(b)fluoranthene	205-99-2	1.3	2.6
Benzo(k)fluoranthene	207-08-9	1.3	2.6
Chrysene	218-01-9	0.65	1.3
Metals			
Aluminum	7429-90-5	690	1380
Barium	7440-39-3	570	1140
Calcium	7440-70-2	130000	260000
Chromium	7440-47-3	7.8	15.6

	Constituent	CAS	Average	2xAverage
	Iron	7439-89-6	21000	42000
	Magnesium	7439-95-4	39000	78000
	Manganese	7439-96-5	1900	3800
	Nickel	7440-02-0	13	26
	Potassium	7440-09-7	7000	14000
	Sodium	7440-23-5	14000	28000
	Vanadium	7440-62-2	1.2	2.4
	OS - UAA-4/OS-4-80			
	VOCs			
	Carbon Disulfide	75-15-0	0.6	1.2
	OS - UAA-4/OS-4-90			
	VOCs			
	Carbon Disulfide	75-15-0	0.5	1
Sediment				
	VOCs			
	2-Butanone (MEK)	78-93-3	0.0034	0.0068
	Acetone	67-64-1	0.036007143	0.072014286
	Xylenes, Total	1330-20-7	0.0028375	0.005675
	SVOCs			
	Chrysene	218-01-9	0.031	0.062
	Fluoranthene	206-44-0	0.0385	0.077
	Phenanthrene	85-01-8	0.036	0.072
	Pyrene	129-00-0	0.067	0.134
	Herbicide			
	2,4-D	94-75-7	0.0052	0.0104
	Dichlorprop	120-36-5	0.0175	0.035
	MCPP	93-65-2	0.415	0.83
	Dioxin			
	2,3,7,8-TCDD-TEQ	1746-01-6	2.35E-09	4.7E-09
	Metals			
	Aluminum	7429-90-5	1800.714286	3601.428571
	Arsenic	7440-38-2	2.328571429	4.657142857
	Barium	7440-39-3	46.28571429	92.57142857
	Beryllium	7440-41-7	0.264285714	0.528571429
	Cadmium	7440-43-9	0.401428571	0.802857143
	Calcium	7440-70-2	3038.571429	6077.142857
	Chromium	7440-47-3	4.828571429	9.657142857
	Cobalt	7440-48-4	3.2	6.4
	Copper	7440-50-8	3.094285714	6.188571429
	Iron	7439-89-6	5357.142857	10714.28571
	Lead	7439-92-1	4.728571429	9.457142857
	Magnesium	7439-95-4	1338.571429	2677.142857
	Manganese	7439-96-5	189	378
	Mercury	7439-97-6	0.033714286	0.067428571
	Nickel	7440-02-0	7.471428571	14.94285714
	Potassium	7440-09-7	278.7857143	557.5714286
	Sodium	7440-23-5	41.5	83
	Vanadium	7440-62-2	6.828571429	13.65714286
	Zinc	7440-66-6	22.95714286	45.91428571
Surface Water				
	VOCs			
	Chloromethane	74-87-3	0.464285714	0.928571429
	SVOCs			

TABLE C-1
CALCULATION OF BACKGROUND CONCENTRATIONS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Average	2xAverage
bis(2-Ethylhexyl)phthalate	117-81-7	5.642857143	11.28571429
Pesticide			
Endrin Ketone	53494-70-5	0.0187	0.0374
Herbicide			
Pentachlorophenol	87-86-5	0.3	0.6
Aluminum	7429-90-5	704.2857143	1408.571429
Barium	7440-39-3	58.71428571	117.4285714
Calcium	7440-70-2	51071.42857	102142.8571
Cobalt	7440-48-4	1.1	2.2
Iron	7439-89-6	969.2857143	1938.571429
Magnesium	7439-95-4	20571.42857	41142.85714
Manganese	7439-96-5	81.21428571	162.4285714
Potassium	7440-09-7	3364.285714	6728.571429
Sodium	7440-23-5	18428.57143	36857.14286
Thallium	7440-28-0	5.028571429	10.05714286
Vanadium	7440-62-2	3.3	6.6
Zinc	7440-66-6	4.6	9.2

Notes:
CAS - Chemical Abstract Service.
NA - Not available.
PCB - Polychlorinated Biphenyl.
SVOC - Semivolatile Organic Compound.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalence Concentration.

TABLE C-2
MATCHING OF SITE GROUNDWATER LOCATIONS TO BACKGROUND GROUNDWATER LOCATIONS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site Location	Corresponding Background Location	Medium
S - BDRK-S-1-165	OS - UAA-3/OS-3-116	Deep Groundwater
S - AA-S-3-94	OS - UAA-3/OS-3-94	Deep Groundwater
S - AA-S-3-84	OS - UAA-3/OS-3-84	Deep Groundwater
S - AA-S-3-74	OS - UAA-3/OS-3-74	Deep Groundwater
S - AA-S-3-64	OS - UAA-3/OS-3-64	Deep Groundwater
S - AA-S-3-54	OS - UAA-3/OS-3-54	Deep Groundwater
S - AA-S-3-44	OS - UAA-3/OS-3-44	Deep Groundwater
S - AA-S-3-34	OS - UAA-3/OS-3-34	Deep Groundwater
S - AA-S-3-24	OS - UAA-3/OS-3-24	Mid Groundwater
S - AA-S-3-132	OS - UAA-3/OS-3-116	Deep Groundwater
S - AA-S-3-124	OS - UAA-3/OS-3-116	Deep Groundwater
S - AA-S-3-114	OS - UAA-3/OS-3-114	Deep Groundwater
S - AA-S-3-104	OS - UAA-3/OS-3-104	Deep Groundwater
S - AA-S-2-98	OS - UAA-3/OS-3-94	Deep Groundwater
S - AA-S-2-88	OS - UAA-3/OS-3-84	Deep Groundwater
S - AA-S-2-78	OS - UAA-3/OS-3-74	Deep Groundwater
S - AA-S-2-68	OS - UAA-3/OS-3-64	Deep Groundwater
S - AA-S-2-58	OS - UAA-3/OS-3-54	Deep Groundwater
S - AA-S-2-48	OS - UAA-3/OS-3-44	Deep Groundwater
S - AA-S-2-38	OS - UAA-3/OS-3-34	Deep Groundwater
S - AA-S-2-28	OS - UAA-3/OS-3-24	Mid Groundwater
S - AA-S-2-118.5	OS - UAA-3/OS-3-116	Deep Groundwater
S - AA-S-2-118	OS - UAA-3/OS-3-116	Deep Groundwater
S - AA-S-2-108	OS - UAA-3/OS-3-104	Deep Groundwater
S - AA-S-1-94	OS - UAA-3/OS-3-94	Deep Groundwater
S - AA-S-1-84	OS - UAA-3/OS-3-84	Deep Groundwater
S - AA-S-1-74	OS - UAA-3/OS-3-74	Deep Groundwater
S - AA-S-1-64	OS - UAA-3/OS-3-64	Deep Groundwater
S - AA-S-1-54	OS - UAA-3/OS-3-54	Deep Groundwater
S - AA-S-1-44	OS - UAA-3/OS-3-44	Deep Groundwater
S - AA-S-1-34	OS - UAA-3/OS-3-34	Deep Groundwater
S - AA-S-1-24	OS - UAA-3/OS-3-24	Mid Groundwater
S - AA-S-1-124	OS - UAA-3/OS-3-116	Deep Groundwater
S - AA-S-1-114	OS - UAA-3/OS-3-114	Deep Groundwater
S - AA-S-1-104	OS - UAA-3/OS-3-104	Deep Groundwater
R - BDRK-R-1-163	OS - UAA-2/OS-2-124	Deep Groundwater
R - AA-R-1-98	OS - UAA-2/OS-2-100	Deep Groundwater
R - AA-R-1-88	OS - UAA-2/OS-2-90	Deep Groundwater
R - AA-R-1-78	OS - UAA-2/OS-2-80	Deep Groundwater
R - AA-R-1-68	OS - UAA-2/OS-2-70	Deep Groundwater
R - AA-R-1-58	OS - UAA-2/OS-2-60	Deep Groundwater
R - AA-R-1-48	OS - UAA-2/OS-2-50	Deep Groundwater
R - AA-R-1-28	OS - UAA-2/OS-2-30	Mid Groundwater
R - AA-R-1-131	OS - UAA-2/OS-2-124	Deep Groundwater
R - AA-R-1-128	OS - UAA-2/OS-2-124	Deep Groundwater
R - AA-R-1-118	OS - UAA-2/OS-2-120	Deep Groundwater
R - AA-R-1-108	OS - UAA-2/OS-2-110	Deep Groundwater
Q - BDRK-Q-2-143	OS - UAA-4/OS-4-113	Deep Groundwater

TABLE C-2
MATCHING OF SITE GROUNDWATER LOCATIONS TO BACKGROUND GROUNDWATER LOCATIONS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site Location	Corresponding Background Location	Medium
Q - BDRK-Q-1-163	OS - UAA-3/OS-3-116	Deep Groundwater
Q - AA-Q-8-94	OS - UAA-4/OS-4-90	Deep Groundwater
Q - AA-Q-8-84	OS - UAA-4/OS-4-80	Deep Groundwater
Q - AA-Q-8-74	OS - UAA-4/OS-4-70	Deep Groundwater
Q - AA-Q-8-64	OS - UAA-4/OS-4-60	Deep Groundwater
Q - AA-Q-8-54	OS - UAA-4/OS-4-50	Deep Groundwater
Q - AA-Q-8-44	OS - UAA-4/OS-4-40	Deep Groundwater
Q - AA-Q-8-34	OS - UAA-4/OS-4-30	Deep Groundwater
Q - AA-Q-8-24	OS - UAA-4/OS-4-20	Mid Groundwater
Q - AA-Q-8-111	OS - UAA-4/OS-4-110	Deep Groundwater
Q - AA-Q-8-104	OS - UAA-4/OS-4-100	Deep Groundwater
Q - AA-Q-7-94	OS - UAA-4/OS-4-90	Deep Groundwater
Q - AA-Q-7-84	OS - UAA-4/OS-4-80	Deep Groundwater
Q - AA-Q-7-74	OS - UAA-4/OS-4-70	Deep Groundwater
Q - AA-Q-7-64	OS - UAA-4/OS-4-60	Deep Groundwater
Q - AA-Q-7-54	OS - UAA-4/OS-4-50	Deep Groundwater
Q - AA-Q-7-44	OS - UAA-4/OS-4-40	Deep Groundwater
Q - AA-Q-7-34	OS - UAA-4/OS-4-30	Deep Groundwater
Q - AA-Q-7-24	OS - UAA-4/OS-4-20	Mid Groundwater
Q - AA-Q-7-104	OS - UAA-4/OS-4-100	Deep Groundwater
Q - AA-Q-6-94	OS - UAA-4/OS-4-90	Deep Groundwater
Q - AA-Q-6-84	OS - UAA-4/OS-4-80	Deep Groundwater
Q - AA-Q-6-74	OS - UAA-4/OS-4-70	Deep Groundwater
Q - AA-Q-6-64	OS - UAA-4/OS-4-60	Deep Groundwater
Q - AA-Q-6-54	OS - UAA-4/OS-4-50	Deep Groundwater
Q - AA-Q-6-44	OS - UAA-4/OS-4-40	Deep Groundwater
Q - AA-Q-6-34	OS - UAA-4/OS-4-30	Deep Groundwater
Q - AA-Q-6-34	OS - UAA-4/OS-4-30	Mid Groundwater
Q - AA-Q-6-24	OS - UAA-4/OS-4-20	Mid Groundwater
Q - AA-Q-6-110	OS - UAA-4/OS-4-110	Deep Groundwater
Q - AA-Q-6-104	OS - UAA-4/OS-4-100	Deep Groundwater
Q - AA-Q-5-95	OS - UAA-3/OS-3-94	Deep Groundwater
Q - AA-Q-5-85	OS - UAA-3/OS-3-84	Deep Groundwater
Q - AA-Q-5-75	OS - UAA-3/OS-3-74	Deep Groundwater
Q - AA-Q-5-65	OS - UAA-3/OS-3-64	Deep Groundwater
Q - AA-Q-5-55	OS - UAA-3/OS-3-54	Deep Groundwater
Q - AA-Q-5-45	OS - UAA-3/OS-3-44	Deep Groundwater
Q - AA-Q-5-106	OS - UAA-3/OS-3-104	Deep Groundwater
Q - AA-Q-5-105	OS - UAA-3/OS-3-104	Deep Groundwater
Q - AA-Q-4-90	OS - UAA-3/OS-3-94	Deep Groundwater
Q - AA-Q-4-80	OS - UAA-3/OS-3-84	Deep Groundwater
Q - AA-Q-4-70	OS - UAA-3/OS-3-74	Deep Groundwater
Q - AA-Q-4-60	OS - UAA-3/OS-3-64	Deep Groundwater
Q - AA-Q-4-50	OS - UAA-3/OS-3-54	Deep Groundwater
Q - AA-Q-4-110	OS - UAA-3/OS-3-114	Deep Groundwater
Q - AA-Q-4-100	OS - UAA-3/OS-3-104	Deep Groundwater
Q - AA-Q-3-90	OS - UAA-3/OS-3-94	Deep Groundwater
Q - AA-Q-3-80	OS - UAA-3/OS-3-84	Deep Groundwater

TABLE C-2
MATCHING OF SITE GROUNDWATER LOCATIONS TO BACKGROUND GROUNDWATER LOCATIONS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site Location	Corresponding Background Location	Medium
Q - AA-Q-3-70	OS - UAA-3/OS-3-74	Deep Groundwater
Q - AA-Q-3-60	OS - UAA-3/OS-3-64	Deep Groundwater
Q - AA-Q-3-50	OS - UAA-3/OS-3-54	Deep Groundwater
Q - AA-Q-3-120	OS - UAA-3/OS-3-116	Deep Groundwater
Q - AA-Q-3-110	OS - UAA-3/OS-3-114	Deep Groundwater
Q - AA-Q-3-100	OS - UAA-3/OS-3-104	Deep Groundwater
Q - AA-Q-2-90	OS - UAA-3/OS-3-94	Deep Groundwater
Q - AA-Q-2-80	OS - UAA-3/OS-3-84	Deep Groundwater
Q - AA-Q-2-70	OS - UAA-3/OS-3-74	Deep Groundwater
Q - AA-Q-2-60	OS - UAA-3/OS-3-64	Deep Groundwater
Q - AA-Q-2-130B	OS - UAA-3/OS-3-116	Deep Groundwater
Q - AA-Q-2-130	OS - UAA-3/OS-3-116	Deep Groundwater
Q - AA-Q-2-120	OS - UAA-3/OS-3-116	Deep Groundwater
Q - AA-Q-2-110	OS - UAA-3/OS-3-114	Deep Groundwater
Q - AA-Q-2-100	OS - UAA-3/OS-3-104	Deep Groundwater
Q - AA-Q-1-90	OS - UAA-3/OS-3-94	Deep Groundwater
Q - AA-Q-1-80	OS - UAA-3/OS-3-84	Deep Groundwater
Q - AA-Q-1-70	OS - UAA-3/OS-3-74	Deep Groundwater
Q - AA-Q-1-60	OS - UAA-3/OS-3-64	Deep Groundwater
Q - AA-Q-1-50	OS - UAA-3/OS-3-54	Deep Groundwater
Q - AA-Q-1-127.5	OS - UAA-3/OS-3-116	Deep Groundwater
Q - AA-Q-1-127	OS - UAA-3/OS-3-116	Deep Groundwater
Q - AA-Q-1-120	OS - UAA-3/OS-3-116	Deep Groundwater
Q - AA-Q-1-110	OS - UAA-3/OS-3-114	Deep Groundwater
Q - AA-Q-1-100	OS - UAA-3/OS-3-104	Deep Groundwater
P - BDRK-P-1-158	OS - UAA-1/OS-1-110	Deep Groundwater
P - AA-P-3-92	OS - UAA-1/OS-1-90	Deep Groundwater
P - AA-P-3-82	OS - UAA-1/OS-1-80	Deep Groundwater
P - AA-P-3-72	OS - UAA-1/OS-1-70	Deep Groundwater
P - AA-P-3-62	OS - UAA-1/OS-1-60	Deep Groundwater
P - AA-P-3-52	OS - UAA-1/OS-1-50	Deep Groundwater
P - AA-P-3-42	OS - UAA-1/OS-1-40	Deep Groundwater
P - AA-P-3-32	OS - UAA-1/OS-1-30	Mid Groundwater
P - AA-P-3-126	OS - UAA-1/OS-1-110	Deep Groundwater
P - AA-P-3-122	OS - UAA-1/OS-1-110	Deep Groundwater
P - AA-P-3-112	OS - UAA-1/OS-1-110	Deep Groundwater
P - AA-P-3-102	OS - UAA-1/OS-1-100	Deep Groundwater
P - AA-P-2-94	OS - UAA-1/OS-1-90	Deep Groundwater
P - AA-P-2-84	OS - UAA-1/OS-1-80	Deep Groundwater
P - AA-P-2-74	OS - UAA-1/OS-1-70	Deep Groundwater
P - AA-P-2-64	OS - UAA-1/OS-1-60	Deep Groundwater
P - AA-P-2-54	OS - UAA-1/OS-1-50	Deep Groundwater
P - AA-P-2-44	OS - UAA-1/OS-1-40	Deep Groundwater
P - AA-P-2-34	OS - UAA-1/OS-1-30	Deep Groundwater
P - AA-P-2-24	OS - UAA-1/OS-1-20	Mid Groundwater
P - AA-P-2-122	OS - UAA-1/OS-1-110	Deep Groundwater
P - AA-P-2-114	OS - UAA-1/OS-1-110	Deep Groundwater
P - AA-P-2-104	OS - UAA-1/OS-1-100	Deep Groundwater

TABLE C-2
MATCHING OF SITE GROUNDWATER LOCATIONS TO BACKGROUND GROUNDWATER LOCATIONS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site Location	Corresponding Background Location	Medium
P - AA-P-1-94	OS - UAA-1/OS-1-90	Deep Groundwater
P - AA-P-1-84	OS - UAA-1/OS-1-80	Deep Groundwater
P - AA-P-1-74	OS - UAA-1/OS-1-70	Deep Groundwater
P - AA-P-1-64	OS - UAA-1/OS-1-60	Deep Groundwater
P - AA-P-1-54	OS - UAA-1/OS-1-50	Deep Groundwater
P - AA-P-1-44	OS - UAA-1/OS-1-40	Deep Groundwater
P - AA-P-1-34	OS - UAA-1/OS-1-40	Deep Groundwater
P - AA-P-1-24	OS - UAA-1/OS-1-20	Mid Groundwater
P - AA-P-1-120	OS - UAA-1/OS-1-110	Deep Groundwater
P - AA-P-1-114	OS - UAA-1/OS-1-110	Deep Groundwater
P - AA-P-1-104	OS - UAA-1/OS-1-100	Deep Groundwater
O - BDRK-O-1-153	OS - UAA-2/OS-2-124	Deep Groundwater
O - AA-O-3-98	OS - UAA-2/OS-2-100	Deep Groundwater
O - AA-O-3-88	OS - UAA-2/OS-2-90	Deep Groundwater
O - AA-O-3-78	OS - UAA-2/OS-2-80	Deep Groundwater
O - AA-O-3-68	OS - UAA-2/OS-2-70	Deep Groundwater
O - AA-O-3-58	OS - UAA-2/OS-2-60	Deep Groundwater
O - AA-O-3-48	OS - UAA-2/OS-2-50	Deep Groundwater
O - AA-O-3-38	OS - UAA-2/OS-2-40	Deep Groundwater
O - AA-O-3-28	OS - UAA-2/OS-2-30	Mid Groundwater
O - AA-O-3-128	OS - UAA-2/OS-2-124	Deep Groundwater
O - AA-O-3-118	OS - UAA-2/OS-2-120	Deep Groundwater
O - AA-O-3-108	OS - UAA-2/OS-2-110	Deep Groundwater
O - AA-O-2-93	OS - UAA-2/OS-2-90	Deep Groundwater
O - AA-O-2-83	OS - UAA-2/OS-2-80	Deep Groundwater
O - AA-O-2-73	OS - UAA-2/OS-2-70	Deep Groundwater
O - AA-O-2-63	OS - UAA-2/OS-2-60	Deep Groundwater
O - AA-O-2-53	OS - UAA-2/OS-2-50	Deep Groundwater
O - AA-O-2-43	OS - UAA-2/OS-2-40	Deep Groundwater
O - AA-O-2-33	OS - UAA-2/OS-2-30	Deep Groundwater
O - AA-O-2-23	OS - UAA-2/OS-2-20	Deep Groundwater
O - AA-O-2-13	OS - UAA-2/OS-2-20	Shallow Groundwater
O - AA-O-2-124	OS - UAA-2/OS-2-124	Deep Groundwater
O - AA-O-2-121	OS - UAA-2/OS-2-120	Deep Groundwater
O - AA-O-2-113	OS - UAA-2/OS-2-110	Deep Groundwater
O - AA-O-2-103	OS - UAA-2/OS-2-100	Deep Groundwater
O - AA-O-1-96	OS - UAA-2/OS-2-100	Deep Groundwater
O - AA-O-1-86	OS - UAA-2/OS-2-90	Deep Groundwater
O - AA-O-1-76	OS - UAA-2/OS-2-80	Deep Groundwater
O - AA-O-1-66	OS - UAA-2/OS-2-70	Deep Groundwater
O - AA-O-1-56	OS - UAA-2/OS-2-60	Deep Groundwater
O - AA-O-1-46	OS - UAA-2/OS-2-50	Deep Groundwater
O - AA-O-1-36	OS - UAA-2/OS-2-40	Deep Groundwater
O - AA-O-1-26	OS - UAA-2/OS-2-30	Deep Groundwater
O - AA-O-1-16	OS - UAA-2/OS-2-20	Shallow Groundwater
O - AA-O-1-120	OS - UAA-2/OS-2-120	Deep Groundwater
O - AA-O-1-116	OS - UAA-2/OS-2-120	Deep Groundwater
O - AA-O-1-106	OS - UAA-2/OS-2-110	Deep Groundwater

APPENDIX D

SCREENING VALUES

APPENDIX D
SCREENING VALUES

This appendix presents the screening values used to identify constituents of potential concern (COPC) in each area/medium evaluated in the risk assessment. Screening values are presented for each media only for constituents detected in that media at the site. The sources and selection of the screening values are discussed in detail in the text in Section 3.0. The screening value tables include the following:

Industrial Soil and Sediment

The USEPA Region 9 PRGs (USEPA, 2002b) for industrial soil were used to identify COPCs in soil and sediment. Where PRGs were not available, structural similarity was used to assign a surrogate PRG. Screening values for industrial soil and sediment are presented in Table D-1. PRGs are based on a target risk level of 1×10^{-6} for potential carcinogens and a target hazard quotient of one for noncarcinogens. To account for potentially cumulative effects, PRGs for noncarcinogens have been adjusted to a hazard quotient of 0.1.

Shallow Groundwater/Leachate and Surface Water

To provide a Class I evaluation of groundwater in Sauget Area 2, and for the identification of COPCs to be evaluated quantitatively for the groundwater and surface water scenarios addressed in the risk assessment, constituent concentrations in groundwater and surface water were compared to IEPA Class I standards (35 Ill. Adm. Code 620.410) (IEPA, 2002a). Where Class I standards are not available, federal maximum contaminant levels (MCLs) (USEPA, 2002c) were used; where MCLs are not available, the IEPA remediation objectives for Class I groundwater were used (IEPA, 2002b); where these are not available, the most current USEPA PRGs (USEPA, 2002b) for tap water were used. Screening values for Shallow Groundwater/Leachate and Surface Water are presented in Table D-2. PRGs are based on a target risk level of 1×10^{-6} for potential carcinogens and a target hazard quotient of one for noncarcinogens. To account for potentially cumulative effects, PRGs for noncarcinogens have been adjusted to a hazard quotient of 0.1.

Fish Tissue

Fish tissue data were compared to the USEPA Region 3 Risk-Based Concentrations (RBCs) for fish (USEPA, 2003a). Screening values for fish tissue are presented in Table D-3. RBCs are based on a target risk level of 1×10^{-6} for potential carcinogens and a target hazard quotient of one for noncarcinogens. To account for potentially cumulative effects, RBCs for noncarcinogens have been adjusted to a hazard quotient of 0.1.

Air

The USEPA Region 9 PRGs (USEPA, 2002b) for ambient air were used to identify COPCs in

ambient air. Where PRGs were not available, structural similarity was used to assign a surrogate PRG. Screening values for air are presented in Table D-4. PRGs are based on a target risk level of 1×10^{-6} for potential carcinogens and a target hazard quotient of one for noncarcinogens. To account for potentially cumulative effects, PRGs for noncarcinogens have been adjusted to a hazard quotient of 0.1.

References sited in this appendix are presented in Section 8 of the main text of this report.

TABLE D-1
SCREENING VALUES FOR SOIL AND SEDIMENT
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

CAS Number	Constituent	Screening Value (mg/kg) (a)		
	VOCs			
71-55-6	1,1,1-Trichloroethane	6.90E+02	nc	
79-00-5	1,1,2-Trichloroethane	1.60E+00	ca	
75-34-3	1,1-Dichloroethane	1.70E+02	nc	
75-35-4	1,1-Dichloroethylene	4.10E+01	nc	
107-06-2	1,2-Dichloroethane	6.00E-01	ca	
540-59-0	1,2-Dichloroethene (total)	1.50E+01	nc	(b)
78-93-3	2-Butanone (MEK)	2.70E+03	nc	
108-10-1	4-Methyl-2-pentanone (MIBK)	2.80E+02	nc	
67-64-1	Acetone	6.00E+02	nc	
71-43-2	Benzene	1.30E+00	ca	
75-15-0	Carbon Disulfide	1.20E+02	nc	
108-90-7	Chlorobenzene	5.30E+01	nc	
75-00-3	Chloroethane	6.50E+00	ca	
67-66-3	Chloroform	1.20E+00	ca/nc	
74-87-3	Chloromethane	2.60E+00	ca	
10061-01-5	cis-1,3-Dichloropropene	1.80E+00	ca	(j)
75-09-2	Dichloromethane	2.10E+01	ca	
100-41-4	Ethylbenzene	2.00E+01	ca	
591-78-6	Methyl N-Butyl Ketone	2.70E+03	nc	(o)
100-42-5	Styrene (Monomer)	1.80E+03	nc	
127-18-4	Tetrachloroethene	3.40E+00	ca	
108-88-3	Toluene	2.20E+02	nc	
10061-02-6	trans-1,3-Dichloropropene	1.80E+00	ca	(j)
79-01-6	Trichloroethylene	1.10E-01	ca	
75-01-4	Vinyl chloride	7.50E-01	ca	
1330-20-7	Xylenes, Total	9.00E+01	nc	
	SVOCs			
120-82-1	1,2,4-Trichlorobenzene	5.60E+02	nc	
95-50-1	1,2-Dichlorobenzene	4.10E+02	nc	
541-73-1	1,3-Dichlorobenzene	6.30E+00	nc	
106-46-7	1,4-Dichlorobenzene	7.90E+00	ca	
95-95-4	2,4,5-Trichlorophenol	6.20E+03	nc	
88-06-2	2,4,6-Trichlorophenol	6.20E+00	nc	
120-83-2	2,4-Dichlorophenol	1.80E+02	nc	
105-67-9	2,4-Dimethylphenol	1.20E+03	nc	
95-57-8	2-Chlorophenol	2.40E+01	nc	
91-57-6	2-Methylnaphthalene	1.90E+01	nc	(d)
95-48-7	2-Methylphenol	3.10E+03	nc	
88-74-4	2-Nitroaniline	1.80E+00	nc	
88-75-5	2-Nitrophenol	NA		
106-44-5	3-Methylphenol/4-Methylphenol	3.10E+02	nc	
106-47-8	4-Chloroaniline	2.50E+02	nc	
100-01-6	4-Nitroaniline	1.80E+00	nc	(e)
83-32-9	Acenaphthene	2.90E+03	nc	
208-96-8	Acenaphthylene	2.90E+03	nc	(f)

TABLE D-1
SCREENING VALUES FOR SOIL AND SEDIMENT
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

CAS Number	Constituent	Screening Value (mg/kg) (a)		
120-12-7	Anthracene	2.40E+04	nc	
56-55-3	Benzo(a)anthracene	2.10E+00	ca	
50-32-8	Benzo(a)pyrene	2.10E-01	ca	
205-99-2	Benzo(b)fluoranthene	2.10E+00	ca	
191-24-2	Benzo(g,h,i)perylene	2.90E+03	nc	(h)
207-08-9	Benzo(k)fluoranthene	2.10E+01	ca	
85-68-7	Benzyl Butyl Phthalate	1.20E+04	nc	
111-44-4	bis(2-Chloroethyl)ether	5.50E-01	ca	
117-81-7	bis(2-Ethylhexyl)phthalate	1.20E+02	ca	
86-74-8	Carbazole	8.60E+01	ca	
218-01-9	Chrysene	2.10E+02	ca	
53-70-3	Dibenzo(a,h)anthracene	2.10E-01	ca	
132-64-9	Dibenzofuran	3.10E+02	nc	
84-66-2	Diethyl Phthalate	4.90E+04	nc	
131-11-3	Dimethyl Phthalate	6.20E+05	nc	
84-74-2	Di-n-butylphthalate	6.20E+03	nc	
117-84-0	Di-n-octylphthalate	2.50E+03	nc	
88-85-7	Dinoseb	6.20E+01	nc	
206-44-0	Fluoranthene	2.20E+03	nc	
86-73-7	Fluorene	2.60E+03	nc	
118-74-1	Hexachlorobenzene	1.10E+00	ca	
193-39-5	Indeno(1,2,3-cd)pyrene	2.10E+00	ca	
78-59-1	Isophorone	1.80E+03	ca	
91-20-3	Naphthalene	1.90E+01	nc	
98-95-3	Nitrobenzene	1.00E+01	nc	
86-30-6	N-Nitrosodiphenylamine	3.50E+02	ca	
85-01-8	Phenanthrene	2.40E+04	nc	(p)
108-95-2	Phenol	3.70E+04	nc	
129-00-0	Pyrene	2.90E+03	nc	
	Pesticide			
72-54-8	4,4'-DDD	1.00E+01	ca	
72-55-9	4,4'-DDE	7.00E+00	ca	
50-29-3	4,4'-DDT	7.00E+00	ca	
309-00-2	Aldrin	1.00E-01	ca	
319-84-6	alpha-BHC	3.60E-01	ca	
5103-71-9	alpha-Chlordane	6.50E+00	ca	(g)
319-85-7	beta-BHC	1.30E+00	ca	
319-86-8	delta-BHC	1.70E+00	ca	(k)
60-57-1	Dieldrin	1.10E-01	ca	
959-98-8	Endosulfan I	3.70E+02	nc	(m)
33213-65-9	Endosulfan II	3.70E+02	nc	(m)
1031-07-8	Endosulfan Sulfate	3.70E+02	nc	(m)
72-20-8	Endrin	1.80E+01	nc	
7421-93-4	Endrin Aldehyde	1.80E+01	nc	(n)
53494-70-5	Endrin Ketone	1.80E+01	nc	(n)
58-89-9	gamma-BHC (Lindane)	1.70E+00	ca	

TABLE D-1
SCREENING VALUES FOR SOIL AND SEDIMENT
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

CAS Number	Constituent	Screening Value (mg/kg) (a)		
5103-74-2	gamma-Chlordane	6.50E+00	ca	(g)
76-44-8	Heptachlor	3.80E-01	ca	
1024-57-3	Heptachlor Epoxide	1.90E-01	ca	
72-43-5	Methoxychlor	3.10E+02	nc	
	Herbicide			
93-76-5	2,4,5-T	6.20E+02	nc	
93-72-1	2,4,5-TP (Silvex)	4.90E+02	nc	
94-75-7	2,4-D	7.70E+02	nc	
94-82-6	2,4-DB	4.90E+02	nc	
75-99-0	Dalapon	1.80E+03	nc	
1918-00-9	Dicamba	1.80E+03	nc	
120-36-5	Dichlorprop	4.92E+02	nc	(l)
94-74-6	MCPA	3.10E+01	nc	
93-65-2	MCPP	6.20E+01	nc	
87-86-5	Pentachlorophenol	9.00E+00	ca	
	PCBs			
1336-36-3	Total PCBs	1.00E+00	ca	(q)
	Dioxin			
1746-01-6	2,3,7,8-TCDD-TEQ	1.00E-03	ca	(c)
	Metals			
7429-90-5	Aluminum	9.20E+04	nc	
7440-36-0	Antimony	4.10E+01	nc	
7440-38-2	Arsenic	1.60E+00	ca	
7440-39-3	Barium	6.70E+03	nc	
7440-41-7	Beryllium	1.90E+02	nc	
7440-43-9	Cadmium	4.50E+01	nc	
7440-70-2	Calcium	EN		
7440-47-3	Chromium	4.50E+02	ca	(i)
7440-48-4	Cobalt	1.30E+03	nc	
7440-50-8	Copper	4.10E+03	nc	
7439-89-6	Iron	3.10E+04	nc	
7439-92-1	Lead	7.50E+02	trw	
7439-95-4	Magnesium	EN		
7439-96-5	Manganese	1.90E+03	nc	
7439-97-6	Mercury	3.10E+01	nc	
7440-02-0	Nickel	2.00E+03	nc	
7440-09-7	Potassium	EN		
7782-49-2	Selenium	5.10E+02	nc	
7440-22-4	Silver	5.10E+02	nc	
7440-23-5	Sodium	EN		
7440-28-0	Thallium	6.70E+00	nc	
7440-62-2	Vanadium	7.20E+02	nc	
7440-66-6	Zinc	3.10E+04	nc	

TABLE D-1
SCREENING VALUES FOR SOIL AND SEDIMENT
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

CAS Number	Constituent	Screening Value (mg/kg) (a)

Notes:
CAS - Chemical Abstract Service.
EN - Essential Nutrient.
NA - Not available.
PCB - Polychlorinated Biphenyl.
SVOC - Semivolatile Organic Compound.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalent Concentration.
VOC - Volatile Organic Compound.
(a) USEPA. 2002b. Region 9 Preliminary Remediation Goals (PRGs). October 1, 2002. Value for Industrial Soil. Values for noncarcinogenic constituents were adjusted for a hazard index of 0.1 to account for cumulative effects.
(b) Due to structural similarities, the value for cis-1,2-dichloroethene was used.
(c) USEPA. 1998d. Approach for Addressing Dioxin in Soil at CERCLA and RCRA Sites. OSWER Directive 9200.4-26. April 13, 1998. U.S. Environmental Protection Agency, Washington, D.C.
(d) Due to structural similarities, the value for naphthalene was used.
(e) Due to structural similarities, the value for 2-nitroaniline was used.
(f) Due to structural similarities, the value for acenaphthene was used.
(g) Due to structural similarities, the value for chlordane was used.
(h) Due to structural similarities, the value for pyrene was used.
(i) Due to structural similarities, the value for total chromium was used.
(j) Due to structural similarities, the value for total 1,3-dichloropropene was used.
(k) Due to structural similarities, the value for gamma-BHC was used.
(l) Due to structural similarities, the value for 4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB) was used.
(m) Due to structural similarities, the value for endosulfan was used.
(n) Due to structural similarities, the value for endrin was used.
(o) Due to structural similarities, the value for 2-butanone was used.
(p) Due to structural similarities, the value for anthracene was used.
(q) USEPA. 1998c. Disposal of Polychlorinated Biphenyls (PCBs); Final Rule. June 29, 1998.

TABLE D-2
SCREENING VALUES FOR GROUNDWATER/LEACHATE AND SURFACE WATER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

CAS Number	Constituent	Screening Value (ug/L) (a)	
	VOCs		
71-55-6	1,1,1-Trichloroethane	2.00E+02	
79-34-5	1,1,2,2-Tetrachloroethane	5.50E-02	(cc)
79-00-5	1,1,2-Trichloroethane	5.00E+00	
75-34-3	1,1-Dichloroethane	7.00E+02	(bb)
75-35-4	1,1-Dichloroethylene	7.00E+00	
107-06-2	1,2-Dichloroethane	5.00E+00	
540-59-0	1,2-Dichloroethene (total)	7.00E+01	(b)
78-93-3	2-Butanone (MEK)	1.90E+03	(cc)
108-10-1	4-Methyl-2-pentanone (MIBK)	1.60E+02	(cc)
67-64-1	Acetone	7.00E+02	(bb)
71-43-2	Benzene	5.00E+00	
75-27-4	Bromodichloromethane	8.00E+01	(aa)
75-15-0	Carbon Disulfide	7.00E+02	(bb)
56-23-5	Carbon Tetrachloride	5.00E+00	
108-90-7	Chlorobenzene	1.00E+02	
75-00-3	Chloroethane	4.60E+00	(cc)
67-66-3	Chloroform	8.00E+01	(aa)
74-87-3	Chloromethane	1.50E+00	(cc)
10061-01-5	cis-1,3-Dichloropropene	1.00E+00	(bb)
75-09-2	Dichloromethane	5.00E+00	
100-41-4	Ethylbenzene	7.00E+02	
74-82-8	Methane	NA	
591-78-6	Methyl N-Butyl Ketone	1.60E+02	(m)(cc)
127-18-4	Tetrachloroethene	5.00E+00	
108-88-3	Toluene	1.00E+03	
79-01-6	Trichloroethylene	5.00E+00	
75-01-4	Vinyl chloride	2.00E+00	
1330-20-7	Xylenes, Total	1.00E+04	
	SVOCs		
120-82-1	1,2,4-Trichlorobenzene	7.00E+01	
95-50-1	1,2-Dichlorobenzene	6.00E+02	
541-73-1	1,3-Dichlorobenzene	6.00E+02	(c)
106-46-7	1,4-Dichlorobenzene	7.50E+01	
95-95-4	2,4,5-Trichlorophenol	7.00E+02	(bb)
88-06-2	2,4,6-Trichlorophenol	1.00E+01	(bb)
120-83-2	2,4-Dichlorophenol	2.10E+01	(bb)
105-67-9	2,4-Dimethylphenol	1.40E+02	(bb)
606-20-2	2,6-Dinitrotoluene	3.10E-01	(bb)
95-57-8	2-Chlorophenol	3.50E+01	(bb)
91-57-6	2-Methylnaphthalene	1.40E+02	(d)(bb)
95-48-7	2-Methylphenol	3.50E+02	(bb)
88-74-4	2-Nitroaniline	1.00E+00	(cc)
88-75-5	2-Nitrophenol	NA	
106-44-5	3-Methylphenol/4-Methylphenol	3.50E+02	(e)(bb)
534-52-1	4,6-Dinitro-2-methylphenol	NA	
59-50-7	4-Chloro-3-methylphenol	NA	

TABLE D-2
SCREENING VALUES FOR GROUNDWATER/LEACHATE AND SURFACE WATER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

CAS Number	Constituent	Screening Value (ug/L) (a)	
106-47-8	4-Chloroaniline	2.80E+01	(bb)
100-01-6	4-Nitroaniline	1.00E+00	(f)(cc)
100-02-7	4-Nitrophenol	NA	
83-32-9	Acenaphthene	4.20E+02	(bb)
120-12-7	Anthracene	2.10E+03	(bb)
56-55-3	Benzo(a)anthracene	1.30E-01	(bb)
50-32-8	Benzo(a)pyrene	2.00E-01	
205-99-2	Benzo(b)fluoranthene	1.80E-01	(bb)
191-24-2	Benzo(g,h,i)perylene	2.10E+02	(h)(bb)
207-08-9	Benzo(k)fluoranthene	1.70E-01	(bb)
85-68-7	Benzyl Butyl Phthalate	1.40E+03	(bb)
111-44-4	bis(2-Chloroethyl)ether	1.00E+01	(bb)
117-81-7	bis(2-Ethylhexyl)phthalate	6.00E+00	
86-74-8	Carbazole	3.40E+00	(cc)
218-01-9	Chrysene	1.50E+00	(bb)
1319-77-3	Cresol o,m,p	3.50E+02	(e)(bb)
53-70-3	Dibenzo(a,h)anthracene	3.00E-01	(bb)
132-64-9	Dibenzofuran	2.40E+01	(cc)
84-66-2	Diethyl Phthalate	5.60E+03	(bb)
131-11-3	Dimethyl Phthalate	3.60E+05	(cc)
84-74-2	Di-n-butylphthalate	7.00E+02	(bb)
117-84-0	Di-n-octylphthalate	1.40E+02	(bb)
86-73-7	Fluorene	2.80E+02	(bb)
193-39-5	Indeno(1,2,3-cd)pyrene	4.30E-01	(bb)
78-59-1	Isophorone	1.40E+03	(bb)
91-20-3	Naphthalene	1.40E+02	(bb)
98-95-3	Nitrobenzene	3.50E+00	(bb)
621-64-7	N-Nitroso-di-n-propylamine	1.80E+00	(bb)
86-30-6	N-Nitrosodiphenylamine	3.20E+00	(bb)
85-01-8	Phenanthrene	2.10E+03	(n)(bb)
108-95-2	Phenol	1.00E+02	
	Pesticide		
72-54-8	4,4'-DDD	1.40E+01	(bb)
72-55-9	4,4'-DDE	1.00E+01	(bb)
50-29-3	4,4'-DDT	6.00E+00	(bb)
309-00-2	Aldrin	1.40E+01	(bb)
319-84-6	alpha-BHC	1.10E-01	(bb)
5103-71-9	alpha-Chlordane	2.00E+00	(g)
319-85-7	beta-BHC	2.00E-01	(i)
319-86-8	delta-BHC	2.00E-01	(i)
60-57-1	Dieldrin	9.00E+00	(bb)
959-98-8	Endosulfan I	4.20E+01	(k)(bb)
33213-65-9	Endosulfan II	4.20E+01	(k)(bb)
1031-07-8	Endosulfan Sulfate	4.20E+01	(k)(bb)
72-20-8	Endrin	2.00E+00	
7421-93-4	Endrin Aldehyde	2.00E+00	(l)
53494-70-5	Endrin Ketone	2.00E+00	(l)

TABLE D-2
SCREENING VALUES FOR GROUNDWATER/LEACHATE AND SURFACE WATER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

CAS Number	Constituent	Screening Value (ug/L) (a)	
58-89-9	gamma-BHC (Lindane)	2.00E-01	
5103-74-2	gamma-Chlordane	2.00E+00	(g)
76-44-8	Heptachlor	4.00E-01	
1024-57-3	Heptachlor Epoxide	2.00E-01	
72-43-5	Methoxychlor	4.00E+01	
	Herbicide		
93-76-5	2,4,5-T	3.60E+02	(cc)
93-72-1	2,4,5-TP (Silvex)	5.00E+01	
94-75-7	2,4-D	7.00E+01	
94-82-6	2,4-DB	2.90E+02	(cc)
1918-00-9	Dicamba	1.10E+03	(cc)
120-36-5	Dichlorprop	2.92E+02	(j)(cc)
94-74-6	MCPA	1.80E+01	(cc)
93-65-2	MCPP	3.60E+01	(cc)
87-86-5	Pentachlorophenol	1.00E+00	
	PCBs		
1336-36-3	Total PCBs	5.00E-01	
	Dioxin		
1746-01-6	2,3,7,8-TCDD-TEQ	3.00E-05	(aa)
	Metals		
7429-90-5	Aluminum	3.60E+04	(cc)
7440-36-0	Antimony	6.00E+00	
7440-38-2	Arsenic	5.00E+01	
7440-39-3	Barium	2.00E+03	
7440-41-7	Beryllium	4.00E+00	
7440-43-9	Cadmium	5.00E+00	
7440-70-2	Calcium	EN	
7440-47-3	Chromium	1.00E+02	
7440-48-4	Cobalt	1.00E+03	
7440-50-8	Copper	6.50E+02	
7439-89-6	Iron	5.00E+03	
C-FE+2	Iron, Ferrous (2+)	5.00E+03	
7439-92-1	Lead	7.50E+00	
7439-95-4	Magnesium	EN	
7439-96-5	Manganese	1.50E+02	
7439-97-6	Mercury	2.00E+00	
7440-02-0	Nickel	1.00E+02	
7440-09-7	Potassium	EN	
7782-49-2	Selenium	5.00E+01	
7440-22-4	Silver	5.00E+01	
7440-23-5	Sodium	EN	
7440-28-0	Thallium	2.00E+00	
7440-62-2	Vanadium	4.90E+01	(bb)
7440-66-6	Zinc	5.00E+03	

TABLE D-2
SCREENING VALUES FOR GROUNDWATER/LEACHATE AND SURFACE WATER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

CAS Number	Constituent	Screening Value (ug/L) (a)

Notes:
CAS - Chemical Abstract Service.
EN - Essential Nutrient.
IEPA - Illinois Environmental Protection Agency.
NA - Not available.
PCB - Polychlorinated Biphenyl.
SVOC - Semivolatile Organic Compound.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalent Concentration.
VOC - Volatile Organic Compound.
(a) Screening values for groundwater, leachate and surface water are from IEPA, 2002a. IEPA Class I standards (35 Ill. Adm. Code 620.410). February 2, 2002 unless other wise noted. If the Class I standard is not available, screening values are equal to the following in order of preference:
(aa) USEPA. 2002c. Drinking Water Standards and Health Advisories. EPA 822-R-02-038. Summer 2002.
(bb) IEPA, 2002b. Tiered Approach to Corrective Action Objectives. Title 35, Subtitle G, Chapter I. Remediation objectives for Class I groundwater. February 5, 2002.
(cc) USEPA. 2002b. Preliminary Remediation Goals (PRGs). October 1, 2002 (with 2/10/03 revisions).
(b) Due to structural similarities, the value for cis-1,2-dichloroethene was used.
(c) Due to structural similarities, the value for 1,2-dichlorobenzene was used.
(d) Due to structural similarities, the value for naphthalene was used.
(e) Due to structural similarities, the value for 2-methylphenol was used.
(f) Due to structural similarities, the value for 2-nitroaniline was used.
(g) Due to structural similarities, the value for chlordane was used.
(h) Due to structural similarities, the value for pyrene was used.
(i) Due to structural similarities, the value for gamma-BHC was used.
(j) Due to structural similarities, the value for 4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB) was used.
(k) Due to structural similarities, the value for endosulfan was used.
(l) Due to structural similarities, the value for endrin was used.
(m) Due to structural similarities, the value for 4-methyl-2-pentanone was used.
(n) Due to structural similarities, the value for anthracene was used.

TABLE D-3
SCREENING VALUES FOR FISH TISSUE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

CAS Number	Constituent	Screening Value (mg/kg) (a)		
	SVOCs			
95-50-1	1,2-Dichlorobenzene	1.22E+01	nc	
106-46-7	1,4-Dichlorobenzene	1.31E-01	c	
120-83-2	2,4-Dichlorophenol	4.06E-01	nc	
95-48-7	2-Methylphenol	6.76E+00	nc	
56-55-3	Benzo(a)anthracene	4.32E-03	c	
50-32-8	Benzo(a)pyrene	4.32E-04	c	
117-81-7	bis(2-Ethylhexyl)phthalate	2.25E-01	c	
218-01-9	Chrysene	4.32E-01	c	
53-70-3	Dibenzo(a,h)anthracene	4.32E-04	c	
84-66-2	Diethyl Phthalate	1.08E+02	nc	
206-44-0	Fluoranthene	5.41E+00	nc	
	Pesticide			
72-54-8	4,4'-DDD	1.31E-02	c	
72-55-9	4,4'-DDE	9.28E-03	c	
50-29-3	4,4'-DDT	9.28E-03	c	
319-84-6	alpha-BHC	5.01E-04	c	
5103-71-9	alpha-Chlordane	9.01E-03	c	(b)
319-85-7	beta-BHC	1.75E-03	c	
319-86-8	delta-BHC	1.75E-03	c	(d)
60-57-1	Dieldrin	1.97E-04	c	
959-98-8	Endosulfan I	8.10E-01	nc	(e)
1031-07-8	Endosulfan Sulfate	8.10E-01	nc	(e)
72-20-8	Endrin	4.06E-02	nc	
7421-93-4	Endrin Aldehyde	4.06E-02	nc	(f)
53494-70-5	Endrin Ketone	4.06E-02	nc	(f)
58-89-9	gamma-BHC (Lindane)	2.43E-03	c	
5103-74-2	gamma-Chlordane	9.01E-03	c	(b)
1024-57-3	Heptachlor Epoxide	3.47E-04	c	
72-43-5	Methoxychlor	6.76E-01	nc	
	Herbicide			
93-76-5	2,4,5-T	1.35E+00	nc	
93-72-1	2,4,5-TP (Silvex)	1.08E+00	nc	
94-82-6	2,4-DB	1.08E+00	nc	
1918-00-9	Dicamba	4.06E+00	nc	
93-65-2	MCPP	1.35E-01	nc	
	PCBs			
1336-36-3	Total PCBs	1.58E-03	c	
	Dioxin			
1746-01-6	2,3,7,8-TCDD-TEQ	2.10E-08	c	
	Metals			
7429-90-5	Aluminum	1.35E+02	nc	
7440-38-2	Arsenic	2.10E-03	c	
7440-39-3	Barium	9.46E+00	nc	
7440-70-2	Calcium	EN		
7440-47-3	Chromium	2.00E+02	nc	(c)
7440-50-8	Copper	5.41E+00	nc	
7439-89-6	Iron	4.06E+01	nc	

TABLE D-3
SCREENING VALUES FOR FISH TISSUE
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

CAS Number	Constituent	Screening Value (mg/kg) (a)		
7439-95-4	Magnesium	EN		
7439-96-5	Manganese	1.90E+01	nc	(g)
7439-97-6	Mercury	1.35E-02	nc	(h)
7440-09-7	Potassium	EN		
7440-23-5	Sodium	EN		
7440-66-6	Zinc	4.06E+01	nc	

Notes:
CAS - Chemical Abstract Service.
EN - Essential Nutrient.
NA - Not available.
PCB - Polychlorinated Biphenyl.
SVOC - Semivolatile Organic Compound.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalent Concentration.
(a) USEPA. 2003a. Risk-Based Concentration (RBC) Table. April 25, 2003. Values for noncarcinogenic constituents were adjusted for a hazard index of 0.1 to account for cumulative effects.
(b) Due to structural similarities, the value for chlordane was used.
(c) Due to structural similarities, the value for chromium III was used.
(d) Due to structural similarities, the value for beta-BHC was used.
(e) Due to structural similarities, the value for endosulfan was used.
(f) Due to structural similarities, the value for endrin was used.
(g) Value for food.
(h) Value for methyl mercury.

TABLE D-4
SCREENING VALUES FOR AIR
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

CAS Number	Constituent	Screening Value (mg/kg) (a)		
	VOCs			
71-55-6	1,1,1-Trichloroethane	2.30E+02	nc	
107-06-2	1,2-Dichloroethane	7.40E-02	ca	
78-93-3	2-Butanone (MEK)	1.00E+02	nc	
108-10-1	4-Methyl-2-pentanone (MIBK)	8.30E+00	nc	
67-64-1	Acetone	3.70E+01	nc	
71-43-2	Benzene	2.30E-01	ca	
108-90-7	Chlorobenzene	6.20E+00	nc	
67-66-3	Chloroform	3.10E-01	ca/nc	
74-87-3	Chloromethane	1.10E+00	ca	
75-09-2	Dichloromethane	4.10E+00	ca	
100-41-4	Ethylbenzene	1.70E+00	ca	
1634-04-4	Methyl tert-butyl ether (MTBE)	1.92E+01	ca	
95-47-6	o-Xylene	1.10E+01	nc	
106-42-3	p-Xylene/m-Xylene	1.10E+01	nc	
100-42-5	Styrene (Monomer)	1.10E+02	nc	
127-18-4	Tetrachloroethene	6.70E-01	ca	
108-88-3	Toluene	4.00E+01	nc	
79-01-6	Trichloroethylene	1.70E-02	ca	
	SVOCs			
83-32-9	Acenaphthene	2.20E+01	nc	
120-12-7	Anthracene	1.10E+02	nc	
206-44-0	Fluoranthene	1.50E+01	nc	
86-73-7	Fluorene	1.50E+01	nc	
91-20-3	Naphthalene	3.10E-01	nc	
85-01-8	Phenanthrene	1.10E+02	nc	(b)
	Pesticide			
319-84-6	alpha-BHC	1.10E-03	ca	
319-85-7	beta-BHC	3.70E-03	ca	
319-86-8	delta-BHC	5.20E-03	ca	(c)
7421-93-4	Endrin Aldehyde	1.10E-01	nc	(d)
5103-74-2	gamma-Chlordane	1.90E-02	ca	(e)
76-44-8	Heptachlor	1.50E-03	ca	
1024-57-3	Heptachlor Epoxide	7.40E-04	ca	
	PCBs			
1336-36-3	Total PCBs	3.40E-03	ca	
	Dioxin			
1746-01-6	2,3,7,8-TCDD-TEQ	4.50E-08	ca	

TABLE D-4
SCREENING VALUES FOR AIR
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS

CAS Number	Constituent	Screening Value (mg/kg) (a)	
	Metals		
7440-39-3	Barium	5.20E-02	nc
7440-70-2	Calcium	NA	
7440-50-8	Copper	1.46E+01	nc
7439-89-6	Iron	NA	
7439-92-1	Lead	1.50E+00	
7440-23-5	Sodium	NA	
7440-66-6	Zinc	1.10E+02	nc

Notes:
CAS - Chemical Abstract Service.
NA - Not available.
PCB - Polychlorinated Biphenyl.
SVOC - Semivolatile Organic Compound.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalent Concentration.
(a) USEPA, 2002b. Region 9 Preliminary Remediation Goals (PRGs). October 1, 2002. Value for Industrial Soil. Values for noncarcinogenic constituents were adjusted for a hazard index of 0.1 to account for cumulative effects.
(b) Due to structural similarities, the value for anthracene was used.
(c) Due to structural similarities, the value for gamma-BHC was used.
(d) Due to structural similarities, the value for endrin was used.
(e) Due to structural similarities, the value for chlordane was used.

APPENDIX E

EVALUATION OF SOIL TO GROUNDWATER PATHWAY

APPENDIX E: EVALUATION OF SOIL TO GROUNDWATER PATHWAY

As a component of the risk assessment for Sauget Area 2, the soil to groundwater pathway was evaluated. The purpose of this analysis was to provide a preliminary evaluation of the potential for soils and/or wastes to leach constituents to groundwater at concentrations in excess of drinking water standards. The soil to groundwater pathway is complex, including cross-media transfer and attenuation in both the unsaturated and saturated zones. Only a preliminary, conservative evaluation is presented here. References sited in this appendix are presented in Section 8 of the main text of this report.

E.1 Evaluation of Waste Samples

Waste samples collected at Sauget Area 2 were analyzed using the Toxicity Characteristic Leaching Procedure (TCLP). Although this method is intended to determine whether wastes are classified as hazardous, the results can be used as an estimate of concentrations that may leach from the waste material to porewater. This porewater then may potentially migrate downward through the unsaturated zone to underlying groundwater. Therefore, the TCLP results can be used as the basis for a conservative evaluation of potential leaching to groundwater.

To evaluate the waste samples, the maximum TCLP result for each constituent at each Site was identified. To identify constituents of potential concern (COPCs) for the TCLP samples, constituent concentrations from the TCLP sample results are compared to IEPA Class I standards (35 Ill. Adm. Code 620.410) (IEPA, 2002a). For the Class I groundwater comparison, where Class I standards are not available, federal maximum contaminant levels (MCLs) (USEPA, 2002b) are used; where MCLs are not available, the IEPA remediation objectives for Class I groundwater are used (IEPA, 2002b); where these are not available, the most current USEPA PRGs (USEPA, 2002a) for tap water are used.

The screening results are presented on Table E-1. The screening results indicate the identification of many COPCs, especially in Sites O, R, and S. Note that these areas are located upgradient from the planned barrier wall at Site R, and within the capture zone of the wall (see Figure E-1) so that impacts to groundwater from these three sites (as well as the northern portion of Site Q, Q (North)) will be contained. COPCs for the remaining areas (P, Q (Central), and Q (South)) include benzene, phenol, some chlorinated volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs) (including pentachlorophenol), nitroanilines, selected metals, and one pesticide (heptachlor).

The TCLP results can be used to evaluate partitioning between soil and aqueous matrices. However, screening of these results against groundwater standards neglects a significant portion of the soil-to-groundwater pathway, the mixing of the infiltrating water with the underlying groundwater. This mixing is incorporated into most screening level evaluations by using a standard Dilution Factor (DF). Under

the Illinois TACO regulations, the default DF is 20, indicating a conservative dilution of 20 times when soil pore water reaches the underlying groundwater. Thus, the TCLP screening presented in Table E-1 is conservative in that it does not incorporate a DF value and, therefore, does not account for mixing between infiltrating water and groundwater.

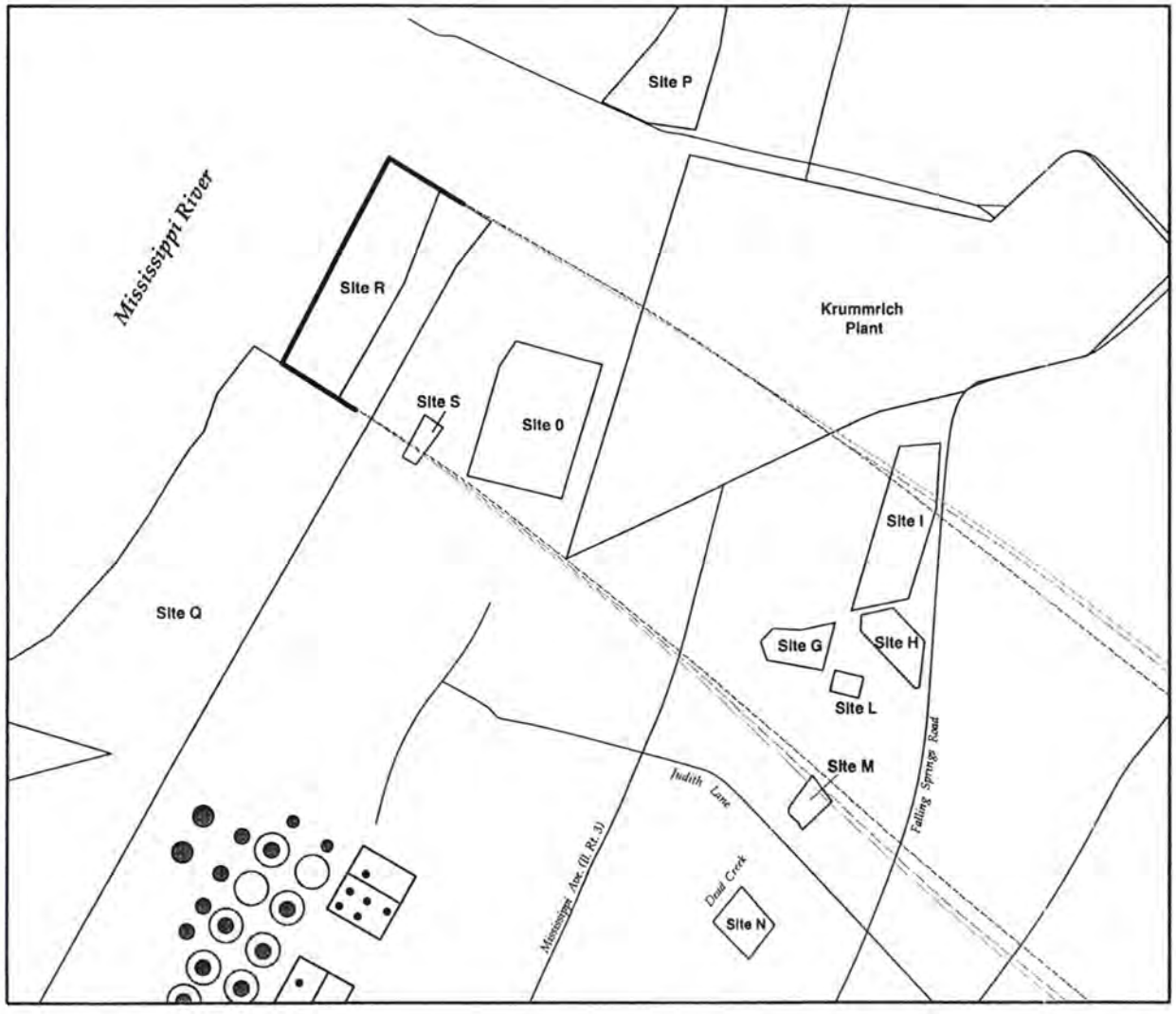
E.2 Evaluation of Soil Samples

Soil samples from Sauget Area 2 were analyzed for the full parameter list using standard analytical methods. None of the samples was analyzed using leachate tests (such as TCLP or the Synthetic Precipitation Leaching Test (SPLP)). The analytical results were screened against TACO Tier 1 remediation objectives (ROs) for the soil component of the groundwater ingestion pathway for Class I groundwater (drinking water) (IEPA, 2002b). The TACO Tier 1 values incorporate default assumptions about partitioning between soil and liquid in the unsaturated zone, and mixing with underlying groundwater.

The results of the Tier 1 screening for soils are presented in Table E-2. Sites O, R, S, and most of Q (North) are located upgradient from and within the capture zone of the planned barrier wall, so that any impacts to groundwater in these areas will be contained. At the other areas, the Tier 1 screening values were exceeded for constituents such as chlorinated VOCs and SVOCs, aromatics (benzene, toluene, xylenes), pesticides (predominantly BHCs), and metals. For most constituents, there were only one or two exceedances in any of the areas; therefore, it is unlikely that these constituents would result in significant impacts to groundwater. Constituents that were detected above the screening values at greater frequency include antimony, barium, copper, nickel, and zinc at Q (South), and silver, cadmium, chromium, and mercury at Site P, Q (Central) and Q (South).

E.3 Summary

Table E-3 provides a summary of exceedances of the soil-to-groundwater and TCLP screening results.



N

LEGEND

- Shallow Hydrogeologic Unit Capture Zone Boundary
- Middle Hydrogeologic Unit Capture Zone Boundary
- Deep Hydrogeologic Unit Capture Zone Boundary
- Jet-Grouted Barrier Wall
- Sauget Area 1
- Sauget Area 2

NOTES:

1) Based on MODFLOW modeling described in Focused Feasibility Study, Volume 1, Interim Groundwater Remedy Sauget Area 2 Sites O, Q, R and S. Solutia, Inc., March 31, 2002, "Groundwater Interim Remedy Design Basis"; and MODPATH modeling.

2) Physical barrier includes 3 partially extraction pumping wells pumping at combined pumping rate of 535 gpm.

3) Modeling performed using average river stage (391 ft. AMSL). All other values from baseline modeling run.

4) Base map from Figure 1, Focused Feasibility Study, Volume 1, Interim Groundwater Remedy Sauget Area 2 Sites O, Q, R and S. Solutia, Inc., March 31, 2002.

5) River boundary changes with river stage. River boundary on this map is approximate.

SCALE (ft.)
0 500 1000

PRELIMINARY

FIGURE 1

GROUNDWATER SERVICES, INC.

GSI Job No.	G-2561	Drawn By:	CCJ
Issued:	4/01/02	Ch'k'd By:	CJN
Revised:	———	Aprv'd By:	
Scale:	As Shown	FIGURE 1	

CAPTURE ZONE MAPS FOR GROUNDWATER ALTERNATIVE B-PHYSICAL BARRIER
Sauget Area 2, Sauget Illinois

TABLE E-1
COMPARISON OF TCLP DATA TO GROUNDWATER STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	TCLP Screening Level (f)	Is Max Concentration > Screening Value?	COPC? (g)	Reason
Site O													
VOCs													
1,1,1-Trichloroethane	71-55-6	ug/L	2 : 3 : 3	67	1.86E+01	3.60E+01	No	NA	--	2.00E+02	No	No	</=Screening Level
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	1 : 1 : 3	100	5.70E+00	5.70E+00	No	NA	--	5.50E-02	Yes	Yes	>Screening Level
2-Butanone (MEK)	78-93-3	ug/L	2 : 3 : 3	67	2.03E+02	2.40E+02	No	NA	--	1.90E+03	No	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	3 : 3 : 3	100	6.90E+02	1.50E+03	No	NA	--	1.60E+02	Yes	Yes	>Screening Level
Acetone	67-64-1	ug/L	1 : 3 : 3	33	5.78E+02	7.35E+02	No	NA	--	7.00E+02	Yes	Yes	>Screening Level
Benzene	71-43-2	ug/L	3 : 3 : 3	100	1.36E+03	3.30E+03	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
Chlorobenzene	108-90-7	ug/L	3 : 3 : 3	100	1.46E+03	3.60E+03	No	NA	--	1.00E+02	Yes	Yes	>Screening Level
Chloroform	67-66-3	ug/L	1 : 3 : 3	33	1.90E+01	2.70E+01	No	NA	--	8.00E+01	No	No	</=Screening Level
Dichloromethane	75-09-2	ug/L	1 : 1 : 3	100	1.20E+01	1.20E+01	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
Ethylbenzene	100-41-4	ug/L	3 : 3 : 3	100	3.73E+02	5.80E+02	No	NA	--	7.00E+02	No	No	</=Screening Level
Methyl N-Butyl Ketone	591-78-6	ug/L	1 : 1 : 3	100	6.50E+01	6.50E+01	No	NA	--	1.60E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	3 : 3 : 3	100	2.61E+02	4.60E+02	No	NA	--	1.00E+03	No	No	</=Screening Level
Trichloroethylene	79-01-6	ug/L	1 : 1 : 3	100	7.50E+00	7.50E+00	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
Xylenes, Total	1330-20-7	ug/L	3 : 3 : 3	100	1.80E+03	2.40E+03	No	NA	--	1.00E+04	No	No	</=Screening Level
SVOCs													
1,2,4-Trichlorobenzene	120-82-1	ug/L	2 : 3 : 3	67	5.07E+01	9.50E+01	No	NA	--	7.00E+01	Yes	Yes	>Screening Level
1,2-Dichlorobenzene	95-50-1	ug/L	3 : 3 : 3	100	7.43E+02	1.65E+03	No	NA	--	6.00E+02	Yes	Yes	>Screening Level
1,3-Dichlorobenzene	541-73-1	ug/L	2 : 3 : 3	67	2.77E+01	4.00E+01	No	NA	--	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	3 : 3 : 3	100	2.46E+02	4.50E+02	No	NA	--	7.50E+01	Yes	Yes	>Screening Level
2,4,5-Trichlorophenol	95-95-4	ug/L	2 : 2 : 3	100	1.70E+01	1.80E+01	No	NA	--	7.00E+02	No	No	</=Screening Level
2,4,6-Trichlorophenol	88-06-2	ug/L	3 : 3 : 3	100	1.48E+02	3.05E+02	No	NA	--	1.00E+01	Yes	Yes	>Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	3 : 3 : 3	100	2.46E+02	4.50E+02	No	NA	--	2.10E+01	Yes	Yes	>Screening Level
2,4-Dimethylphenol	105-67-9	ug/L	1 : 3 : 3	33	3.78E+01	6.35E+01	No	NA	--	1.40E+02	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	2 : 3 : 3	67	1.83E+02	3.05E+02	No	NA	--	3.50E+01	Yes	Yes	>Screening Level
2-Methylnaphthalene	91-57-6	ug/L	3 : 3 : 3	100	3.19E+01	6.15E+01	No	NA	--	1.40E+02	No	No	</=Screening Level
2-Methylphenol	95-48-7	ug/L	1 : 1 : 3	100	1.95E+01	1.95E+01	No	NA	--	3.50E+02	No	No	</=Screening Level
2-Nitroaniline	88-74-4	ug/L	2 : 3 : 3	67	2.80E+02	6.50E+02	No	NA	--	1.00E+00	Yes	Yes	>Screening Level
2-Nitrophenol	88-75-5	ug/L	1 : 3 : 3	33	8.33E+01	2.00E+02	No	NA	--	NA	--	No	Screening Level NA
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	2 : 3 : 3	67	9.77E+01	2.35E+02	No	NA	--	3.50E+02	No	No	</=Screening Level

TABLE E-1
COMPARISON OF TCLP DATA TO GROUNDWATER STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	TCLP Screening Level (f)	Is Max Concentration > Screening Value?	COPC? (g)	Reason
4-Chloro-3-methylphenol	59-50-7	ug/L	1 : 1 : 3	100	9.10E+00	9.10E+00	No	NA	--	NA	--	No	Screening Level NA
4-Chloroaniline	106-47-8	ug/L	2 : 3 : 3	67	1.24E+02	3.10E+02	No	NA	--	2.80E+01	Yes	Yes	>Screening Level
4-Nitroaniline	100-01-6	ug/L	2 : 3 : 3	67	7.92E+02	2.20E+03	No	NA	--	1.00E+00	Yes	Yes	>Screening Level
4-Nitrophenol	100-02-7	ug/L	2 : 3 : 3	67	1.46E+02	2.90E+02	No	NA	--	NA	--	No	Screening Level NA
Benzo(g,h,i)perylene	191-24-2	ug/L	1 : 1 : 3	100	4.00E+00	4.00E+00	No	NA	--	2.10E+02	No	No	</=Screening Level
Benzyl Butyl Phthalate	85-68-7	ug/L	1 : 1 : 3	100	1.30E+01	1.30E+01	No	NA	--	1.40E+03	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	2 : 3 : 3	67	1.02E+02	2.00E+02	No	NA	--	1.40E+02	Yes	Yes	>Screening Level
Nitrobenzene	98-95-3	ug/L	2 : 3 : 3	67	1.28E+02	3.10E+02	No	NA	--	3.50E+00	Yes	Yes	>Screening Level
Phenanthrene	85-01-8	ug/L	2 : 2 : 3	100	5.25E+00	5.50E+00	No	NA	--	2.10E+03	No	No	</=Screening Level
Phenol	108-95-2	ug/L	3 : 3 : 3	100	3.76E+02	8.15E+02	No	NA	--	1.00E+02	Yes	Yes	>Screening Level
Pesticide													
beta-BHC	319-85-7	ug/L	1 : 3 : 3	33	3.97E+00	9.40E+00	No	NA	--	2.00E-01	Yes	Yes	>Screening Level
Methoxychlor	72-43-5	ug/L	1 : 1 : 3	100	6.00E+00	6.00E+00	No	NA	--	4.00E+01	No	No	</=Screening Level
Herbicide													
2,4,5-T	93-76-5	ug/L	3 : 3 : 3	100	4.09E+02	8.20E+02	No	NA	--	3.60E+02	Yes	Yes	>Screening Level
2,4,5-TP (Silvex)	93-72-1	ug/L	2 : 2 : 3	100	5.80E+00	6.10E+00	No	NA	--	5.00E+01	No	No	</=Screening Level
2,4-D	94-75-7	ug/L	3 : 3 : 3	100	1.10E+03	1.90E+03	No	NA	--	7.00E+01	Yes	Yes	>Screening Level
Pentachlorophenol	87-86-5	ug/L	3 : 3 : 3	100	2.56E+03	5.00E+03	No	NA	--	1.00E+00	Yes	Yes	>Screening Level
PCBs													
Total PCBs	1336-36-3	ug/L	3 : 3 : 3	100	3.53E+01	5.89E+01	No	NA	--	5.00E-01	Yes	Yes	>Screening Level
Dioxin													
2,3,7,8-TCDD-TEQ	1746-01-6	ug/L	3 : 3 : 3	100	1.54E-04	4.35E-04	No	NA	--	3.00E-05	Yes	Yes	>Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 3	100	1.10E+02	1.10E+02	No	NA	--	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 3	100	7.70E+01	7.70E+01	No	NA	--	5.00E+01	Yes	Yes	>Screening Level
Barium	7440-39-3	ug/L	3 : 3 : 3	100	1.00E+03	1.45E+03	No	NA	--	2.00E+03	No	No	</=Screening Level
Cadmium	7440-43-9	ug/L	1 : 3 : 3	33	9.17E+01	1.75E+02	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
Calcium	7440-70-2	ug/L	3 : 3 : 3	100	3.82E+05	4.30E+05	Yes	NA	--	NA	--	No	EN
Copper	7440-50-8	ug/L	1 : 1 : 3	100	1.10E+01	1.10E+01	No	NA	--	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	3 : 3 : 3	100	1.75E+03	4.70E+03	Yes	NA	--	5.00E+03	No	No	EN
Lead	7439-92-1	ug/L	2 : 3 : 3	67	1.10E+02	2.10E+02	No	NA	--	7.50E+00	Yes	Yes	>Screening Level

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HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	TCLP Screening Level (f)	Is Max Concentration > Screening Value?	COPC? (g)	Reason
Magnesium	7439-95-4	ug/L	3 : 3 : 3	100	6.90E+04	1.10E+05	Yes	NA	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	3 : 3 : 3	100	1.14E+04	2.00E+04	No	NA	--	1.50E+02	Yes	Yes	>Screening Level
Nickel	7440-02-0	ug/L	3 : 3 : 3	100	1.18E+02	1.65E+02	No	NA	--	1.00E+02	Yes	Yes	>Screening Level
Potassium	7440-09-7	ug/L	3 : 3 : 3	100	6.27E+03	1.25E+04	Yes	NA	--	NA	--	No	EN
Zinc	7440-66-6	ug/L	2 : 3 : 3	67	5.37E+03	1.05E+04	No	NA	--	5.00E+03	Yes	Yes	>Screening Level

TABLE E-1
COMPARISON OF TCLP DATA TO GROUNDWATER STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	TCLP Screening Level (f)	Is Max Concentration > Screening Value?	COPC? (g)	Reason
Site P													
VOCs													
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 4 : 4	25	2.23E+01	2.90E+01	No	NA	--	7.00E+01	No	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	3 : 3 : 4	100	2.57E+01	3.70E+01	No	NA	--	1.60E+02	No	No	</=Screening Level
Benzene	71-43-2	ug/L	4 : 4 : 4	100	4.45E+01	1.40E+02	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
Carbon Disulfide	75-15-0	ug/L	2 : 4 : 4	50	1.38E+01	2.80E+01	No	NA	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	2 : 4 : 4	50	1.75E+01	3.40E+01	No	NA	--	1.00E+02	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	4 : 4 : 4	100	7.04E+01	2.20E+02	No	NA	--	7.00E+02	No	No	</=Screening Level
Tetrachloroethene	127-18-4	ug/L	2 : 4 : 4	50	6.08E+01	2.10E+02	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
Toluene	108-88-3	ug/L	2 : 4 : 4	50	1.33E+02	4.30E+02	No	NA	--	1.00E+03	No	No	</=Screening Level
Trichloroethylene	79-01-6	ug/L	2 : 4 : 4	50	1.16E+01	1.80E+01	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
Xylenes, Total	1330-20-7	ug/L	4 : 4 : 4	100	3.01E+02	1.00E+03	No	NA	--	1.00E+04	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	3 : 4 : 4	75	2.44E+01	4.40E+01	No	NA	--	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	3 : 4 : 4	75	1.63E+02	4.30E+02	No	NA	--	7.50E+01	Yes	Yes	>Screening Level
2,4,6-Trichlorophenol	88-06-2	ug/L	2 : 2 : 4	100	1.07E+01	1.90E+01	No	NA	--	1.00E+01	Yes	Yes	>Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	3 : 4 : 4	75	1.29E+02	4.40E+02	No	NA	--	2.10E+01	Yes	Yes	>Screening Level
2,4-Dimethylphenol	105-67-9	ug/L	1 : 1 : 4	100	6.80E+00	6.80E+00	No	NA	--	1.40E+02	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 4	100	1.70E+01	1.70E+01	No	NA	--	3.50E+01	No	No	</=Screening Level
2-Methylphenol	95-48-7	ug/L	1 : 1 : 4	100	1.90E+00	1.90E+00	No	NA	--	3.50E+02	No	No	</=Screening Level
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	4 : 4 : 4	100	2.70E+01	6.20E+01	No	NA	--	3.50E+02	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	4 : 4 : 4	100	5.93E+01	1.60E+02	No	NA	--	2.80E+01	Yes	Yes	>Screening Level
4-Nitroaniline	100-01-6	ug/L	1 : 1 : 4	100	9.10E+00	9.10E+00	No	NA	--	1.00E+00	Yes	Yes	>Screening Level
Diethyl Phthalate	84-66-2	ug/L	1 : 4 : 4	25	6.69E+02	2.60E+03	No	NA	--	5.60E+03	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	3 : 4 : 4	75	2.55E+01	3.10E+01	No	NA	--	1.40E+02	No	No	</=Screening Level
Phenol	108-95-2	ug/L	4 : 4 : 4	100	2.08E+02	4.50E+02	No	NA	--	1.00E+02	Yes	Yes	>Screening Level
Pesticide													
Heptachlor	76-44-8	ug/L	1 : 1 : 4	100	6.80E-01	6.80E-01	No	NA	--	4.00E-01	Yes	Yes	>Screening Level
Herbicide													
2,4,5-T	93-76-5	ug/L	1 : 4 : 4	25	1.26E+01	1.30E+01	No	NA	--	3.60E+02	No	No	</=Screening Level
2,4-DB	94-82-6	ug/L	1 : 4 : 4	25	1.76E+01	3.30E+01	No	NA	--	2.90E+02	No	No	</=Screening Level

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HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	TCLP Screening Level (f)	Is Max Concentration > Screening Value?	COPC? (g)	Reason
Pentachlorophenol	87-86-5	ug/L	4 : 4 : 4	100	1.70E+02	5.10E+02	No	NA	--	1.00E+00	Yes	Yes	>Screening Level
PCBs													
Total PCBs	1336-36-3	ug/L	1 : 1 : 1	100	2.20E-01	2.20E-01	No	NA	--	5.00E-01	No	No	</=Screening Level
Metals													
Arsenic	7440-38-2	ug/L	1 : 1 : 4	100	7.60E+01	7.60E+01	No	NA	--	5.00E+01	Yes	Yes	>Screening Level
Barium	7440-39-3	ug/L	4 : 4 : 4	100	4.01E+02	9.40E+02	No	NA	--	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	4 : 4 : 4	100	1.05E+06	1.10E+06	Yes	NA	--	NA	--	No	EN
Cobalt	7440-48-4	ug/L	4 : 4 : 4	100	3.10E+01	7.10E+01	No	NA	--	1.00E+03	No	No	</=Screening Level
Iron	7439-89-6	ug/L	4 : 4 : 4	100	2.55E+04	1.00E+05	Yes	NA	--	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 4	100	2.90E+01	2.90E+01	No	NA	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	4 : 4 : 4	100	1.68E+04	2.50E+04	Yes	NA	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	4 : 4 : 4	100	3.05E+03	3.90E+03	No	NA	--	1.50E+02	Yes	Yes	>Screening Level
Nickel	7440-02-0	ug/L	4 : 4 : 4	100	1.01E+02	1.70E+02	No	NA	--	1.00E+02	Yes	Yes	>Screening Level
Potassium	7440-09-7	ug/L	4 : 4 : 4	100	1.20E+04	2.00E+04	Yes	NA	--	NA	--	No	EN
Vanadium	7440-62-2	ug/L	2 : 2 : 4	100	2.70E+01	3.70E+01	No	NA	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	4 : 4 : 4	100	1.99E+04	7.40E+04	No	NA	--	5.00E+03	Yes	Yes	>Screening Level

TABLE E-1
COMPARISON OF TCLP DATA TO GROUNDWATER STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	TCLP Screening Level (f)	Is Max Concentration > Screening Value?	COPC? (g)	Reason
Site Q Central													
VOCs													
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 3	100	4.70E+00	4.70E+00	No	NA	--	7.00E+01	No	No	</=Screening Level
2-Butanone (MEK)	78-93-3	ug/L	3 : 3 : 3	100	7.48E+01	8.55E+01	No	NA	--	1.90E+03	No	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	1 : 1 : 3	100	1.55E+01	1.55E+01	No	NA	--	1.60E+02	No	No	</=Screening Level
Acetone	67-64-1	ug/L	2 : 2 : 3	100	2.25E+02	2.40E+02	No	NA	--	7.00E+02	No	No	</=Screening Level
Benzene	71-43-2	ug/L	3 : 3 : 3	100	7.47E+00	7.90E+00	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 3 : 3	33	1.37E+01	2.10E+01	No	NA	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	2 : 3 : 3	67	2.20E+01	3.00E+01	No	NA	--	1.00E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	3 : 3 : 3	100	8.32E+00	9.30E+00	No	NA	--	1.00E+03	No	No	</=Screening Level
Xylenes, Total	1330-20-7	ug/L	2 : 3 : 3	67	3.97E+01	5.20E+01	No	NA	--	1.00E+04	No	No	</=Screening Level
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	2 : 3 : 3	67	1.82E+01	2.55E+01	No	NA	--	7.50E+01	No	No	</=Screening Level
2,4,6-Trichlorophenol	88-06-2	ug/L	1 : 3 : 3	33	2.53E+01	2.60E+01	No	NA	--	1.00E+01	Yes	Yes	>Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 3	100	6.10E+00	6.10E+00	No	NA	--	2.10E+01	No	No	</=Screening Level
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	1 : 1 : 3	100	4.10E+00	4.10E+00	No	NA	--	3.50E+02	No	No	</=Screening Level
Acenaphthene	83-32-9	ug/L	1 : 1 : 3	100	8.60E+00	8.60E+00	No	NA	--	4.20E+02	No	No	</=Screening Level
Benzyl Butyl Phthalate	85-68-7	ug/L	1 : 1 : 3	100	3.80E+00	3.80E+00	No	NA	--	1.40E+03	No	No	</=Screening Level
Diethyl Phthalate	84-66-2	ug/L	1 : 1 : 3	100	9.70E+00	9.70E+00	No	NA	--	5.60E+03	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	2 : 3 : 3	67	4.50E+01	9.10E+01	No	NA	--	1.40E+02	No	No	</=Screening Level
Phenanthrene	85-01-8	ug/L	1 : 1 : 3	100	9.50E+00	9.50E+00	No	NA	--	2.10E+03	No	No	</=Screening Level
Herbicide													
Pentachlorophenol	87-86-5	ug/L	2 : 3 : 3	67	1.18E+02	3.10E+02	No	NA	--	1.00E+00	Yes	Yes	>Screening Level
Metals													
Arsenic	7440-38-2	ug/L	2 : 2 : 3	100	6.00E+01	6.60E+01	No	NA	--	5.00E+01	Yes	Yes	>Screening Level
Barium	7440-39-3	ug/L	3 : 3 : 3	100	1.72E+03	2.60E+03	No	NA	--	2.00E+03	Yes	Yes	>Screening Level
Calcium	7440-70-2	ug/L	3 : 3 : 3	100	6.18E+05	8.05E+05	Yes	NA	--	NA	--	No	EN
Cobalt	7440-48-4	ug/L	3 : 3 : 3	100	5.07E+01	6.40E+01	No	NA	--	1.00E+03	No	No	</=Screening Level
Iron	7439-89-6	ug/L	2 : 3 : 3	67	8.43E+04	2.20E+05	Yes	NA	--	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	3 : 3 : 3	100	3.73E+01	5.60E+01	No	NA	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	3 : 3 : 3	100	2.52E+04	2.95E+04	Yes	NA	--	NA	--	No	EN

TABLE E-1
COMPARISON OF TCLP DATA TO GROUNDWATER STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	TCLP Screening Level (f)	Is Max Concentration > Screening Value?	COPC? (g)	Reason
Manganese	7439-96-5	ug/L	3 : 3 : 3	100	1.39E+04	3.00E+04	No	NA	--	1.50E+02	Yes	Yes	>Screening Level
Nickel	7440-02-0	ug/L	3 : 3 : 3	100	1.79E+02	2.16E+02	No	NA	--	1.00E+02	Yes	Yes	>Screening Level
Potassium	7440-09-7	ug/L	3 : 3 : 3	100	1.50E+04	2.25E+04	Yes	NA	--	NA	--	No	EN
Zinc	7440-66-6	ug/L	3 : 3 : 3	100	2.91E+03	4.80E+03	No	NA	--	5.00E+03	No	No	</=Screening Level

TABLE E-1
COMPARISON OF TCLP DATA TO GROUNDWATER STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	TCLP Screening Level (f)	Is Max Concentration > Screening Value?	COPC? (g)	Reason
Site Q North													
VOCs													
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	1 : 1 : 5	100	4.10E+00	4.10E+00	No	NA	--	5.50E-02	Yes	Yes	>Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	3 : 3 : 5	100	3.57E+01	6.00E+01	No	NA	--	1.60E+02	No	No	</=Screening Level
Benzene	71-43-2	ug/L	2 : 5 : 5	40	8.50E+00	1.00E+01	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 5 : 5	20	1.50E+01	3.50E+01	No	NA	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	2 : 5 : 5	40	2.82E+01	9.20E+01	No	NA	--	1.00E+02	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 5 : 5	20	6.00E+01	2.60E+02	No	NA	--	7.00E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	2 : 5 : 5	40	4.84E+01	1.90E+02	No	NA	--	1.00E+03	No	No	</=Screening Level
Trichloroethylene	79-01-6	ug/L	3 : 3 : 5	100	6.10E+00	9.60E+00	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 5 : 5	20	3.96E+02	1.90E+03	No	NA	--	1.00E+04	No	No	</=Screening Level
SVOCs													
1,2,4-Trichlorobenzene	120-82-1	ug/L	2 : 5 : 5	40	2.70E+01	3.90E+01	No	NA	--	7.00E+01	No	No	</=Screening Level
1,2-Dichlorobenzene	95-50-1	ug/L	2 : 5 : 5	40	7.42E+01	2.80E+02	No	NA	--	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	2 : 5 : 5	40	3.50E+01	5.40E+01	No	NA	--	7.50E+01	No	No	</=Screening Level
2,4,5-Trichlorophenol	95-95-4	ug/L	1 : 1 : 5	100	1.40E+01	1.40E+01	No	NA	--	7.00E+02	No	No	</=Screening Level
2,4,6-Trichlorophenol	88-06-2	ug/L	3 : 5 : 5	60	8.07E+02	3.80E+03	No	NA	--	1.00E+01	Yes	Yes	>Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	3 : 5 : 5	60	4.73E+03	2.30E+04	No	NA	--	2.10E+01	Yes	Yes	>Screening Level
2,4-Dimethylphenol	105-67-9	ug/L	1 : 1 : 5	100	1.20E+01	1.20E+01	No	NA	--	1.40E+02	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	2 : 5 : 5	40	2.09E+02	7.10E+02	No	NA	--	3.50E+01	Yes	Yes	>Screening Level
2-Nitroaniline	88-74-4	ug/L	1 : 5 : 5	20	2.98E+02	9.90E+02	No	NA	--	1.00E+00	Yes	Yes	>Screening Level
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	2 : 5 : 5	40	2.84E+01	3.70E+01	No	NA	--	3.50E+02	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	2 : 5 : 5	40	9.60E+02	4.00E+03	No	NA	--	2.80E+01	Yes	Yes	>Screening Level
4-Nitroaniline	100-01-6	ug/L	1 : 1 : 5	100	3.40E+01	3.40E+01	No	NA	--	1.00E+00	Yes	Yes	>Screening Level
Di-n-butylphthalate	84-74-2	ug/L	1 : 1 : 5	100	2.10E+01	2.10E+01	No	NA	--	7.00E+02	No	No	</=Screening Level
Diethyl Phthalate	84-66-2	ug/L	2 : 5 : 5	40	2.34E+01	3.50E+01	No	NA	--	5.60E+03	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 5 : 5	20	1.28E+02	4.40E+02	No	NA	--	1.40E+02	Yes	Yes	>Screening Level
Nitrobenzene	98-95-3	ug/L	1 : 5 : 5	20	4.80E+01	1.40E+02	No	NA	--	3.50E+00	Yes	Yes	>Screening Level
Phenol	108-95-2	ug/L	2 : 5 : 5	40	8.30E+01	2.10E+02	No	NA	--	1.00E+02	Yes	Yes	>Screening Level
Herbicide													
2,4,5-T	93-76-5	ug/L	2 : 5 : 5	40	1.57E+01	3.70E+01	No	NA	--	3.60E+02	No	No	</=Screening Level

TABLE E-1
COMPARISON OF TCLP DATA TO GROUNDWATER STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	TCLP Screening Level (f)	Is Max Concentration > Screening Value?	COPC? (g)	Reason
2,4-D	94-75-7	ug/L	1 : 5 : 5	20	5.70E+02	2.80E+03	No	NA	--	7.00E+01	Yes	Yes	>Screening Level
Dichlorprop	120-36-5	ug/L	1 : 1 : 5	100	7.70E+01	7.70E+01	No	NA	--	2.92E+02	No	No	</=Screening Level
Pentachlorophenol	87-86-5	ug/L	2 : 5 : 5	40	1.44E+03	5.80E+03	No	NA	--	1.00E+00	Yes	Yes	>Screening Level
PCBs													
Total PCBs	1336-36-3	ug/L	2 : 5 : 5	40	1.17E+00	2.50E+00	No	NA	--	5.00E-01	Yes	Yes	>Screening Level
Dioxin													
2,3,7,8-TCDD-TEQ	1746-01-6	ug/L	1 : 4 : 4	25	6.80E-06	2.09E-05	No	NA	--	3.00E-05	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 5 : 5	20	3.40E+03	1.30E+04	No	NA	--	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 5	100	5.90E+01	5.90E+01	No	NA	--	5.00E+01	Yes	Yes	>Screening Level
Barium	7440-39-3	ug/L	5 : 5 : 5	100	1.81E+03	5.20E+03	No	NA	--	2.00E+03	Yes	Yes	>Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 5	100	2.00E+00	2.00E+00	No	NA	--	4.00E+00	No	No	</=Screening Level
Cadmium	7440-43-9	ug/L	3 : 3 : 5	100	9.80E+00	1.20E+01	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
Calcium	7440-70-2	ug/L	5 : 5 : 5	100	9.56E+05	1.40E+06	Yes	NA	--	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 5	100	2.70E+01	2.70E+01	No	NA	--	1.00E+02	No	No	</=Screening Level
Cobalt	7440-48-4	ug/L	5 : 5 : 5	100	8.65E+01	1.50E+02	No	NA	--	1.00E+03	No	No	</=Screening Level
Iron	7439-89-6	ug/L	3 : 5 : 5	60	2.34E+03	1.00E+04	Yes	NA	--	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	4 : 5 : 5	80	1.36E+02	3.50E+02	No	NA	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	5 : 5 : 5	100	2.19E+04	3.95E+04	Yes	NA	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	5 : 5 : 5	100	5.33E+03	8.85E+03	No	NA	--	1.50E+02	Yes	Yes	>Screening Level
Nickel	7440-02-0	ug/L	5 : 5 : 5	100	2.59E+02	5.30E+02	No	NA	--	1.00E+02	Yes	Yes	>Screening Level
Potassium	7440-09-7	ug/L	5 : 5 : 5	100	1.06E+04	1.60E+04	Yes	NA	--	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 5	100	2.10E+01	2.10E+01	No	NA	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	5 : 5 : 5	100	3.82E+03	1.10E+04	No	NA	--	5.00E+03	Yes	Yes	>Screening Level

TABLE E-1
COMPARISON OF TCLP DATA TO GROUNDWATER STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	TCLP Screening Level (f)	Is Max Concentration > Screening Value?	COPC? (g)	Reason
Site Q South													
VOCs													
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 4	100	4.70E+00	4.70E+00	No	NA	--	7.00E+01	No	No	</=Screening Level
Benzene	71-43-2	ug/L	4 : 4 : 4	100	3.35E+00	4.50E+00	No	NA	--	5.00E+00	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 4	100	8.60E+00	8.60E+00	No	NA	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 4 : 4	25	2.58E+01	7.30E+01	No	NA	--	1.00E+02	No	No	</=Screening Level
Chloromethane	74-87-3	ug/L	1 : 4 : 4	25	3.00E+01	5.25E+01	No	NA	--	1.50E+00	Yes	Yes	>Screening Level
cis-1,3-Dichloropropene	10061-01-5	ug/L	1 : 1 : 4	100	4.80E+00	4.80E+00	No	NA	--	1.00E+00	Yes	Yes	>Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 4 : 4	25	1.83E+01	4.30E+01	No	NA	--	7.00E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	2 : 4 : 4	50	1.55E+01	2.90E+01	No	NA	--	1.00E+03	No	No	</=Screening Level
Trichloroethylene	79-01-6	ug/L	1 : 4 : 4	25	1.48E+01	2.90E+01	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
Xylenes, Total	1330-20-7	ug/L	2 : 4 : 4	50	4.10E+01	1.00E+02	No	NA	--	1.00E+04	No	No	</=Screening Level
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 4	100	4.60E+00	4.60E+00	No	NA	--	7.50E+01	No	No	</=Screening Level
2,4,6-Trichlorophenol	88-06-2	ug/L	1 : 4 : 4	25	2.61E+01	2.95E+01	No	NA	--	1.00E+01	Yes	Yes	>Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	2 : 4 : 4	50	4.27E+01	1.13E+02	No	NA	--	2.10E+01	Yes	Yes	>Screening Level
2-Nitroaniline	88-74-4	ug/L	1 : 1 : 4	100	6.70E+00	6.70E+00	No	NA	--	1.00E+00	Yes	Yes	>Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 4	100	3.20E+01	3.20E+01	No	NA	--	2.80E+01	Yes	Yes	>Screening Level
Naphthalene	91-20-3	ug/L	1 : 4 : 4	25	3.90E+01	8.10E+01	No	NA	--	1.40E+02	No	No	</=Screening Level
Phenol	108-95-2	ug/L	1 : 4 : 4	25	2.58E+01	2.80E+01	No	NA	--	1.00E+02	No	No	</=Screening Level
Herbicide													
2,4-D	94-75-7	ug/L	1 : 4 : 4	25	1.44E+01	2.03E+01	No	NA	--	7.00E+01	No	No	</=Screening Level
Pentachlorophenol	87-86-5	ug/L	4 : 4 : 4	100	3.53E+02	1.30E+03	No	NA	--	1.00E+00	Yes	Yes	>Screening Level
Metals													
Barium	7440-39-3	ug/L	4 : 4 : 4	100	2.69E+03	3.60E+03	No	NA	--	2.00E+03	Yes	Yes	>Screening Level
Cadmium	7440-43-9	ug/L	3 : 4 : 4	75	1.78E+02	3.40E+02	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
Calcium	7440-70-2	ug/L	4 : 4 : 4	100	4.65E+05	5.50E+05	Yes	NA	--	NA	--	No	EN
Cobalt	7440-48-4	ug/L	4 : 4 : 4	100	1.71E+02	5.70E+02	No	NA	--	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	3 : 4 : 4	75	1.29E+03	4.60E+03	No	NA	--	6.50E+02	Yes	Yes	>Screening Level
Iron	7439-89-6	ug/L	2 : 4 : 4	50	1.57E+04	6.00E+04	Yes	NA	--	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	4 : 4 : 4	100	1.14E+03	2.40E+03	No	NA	--	7.50E+00	Yes	Yes	>Screening Level

TABLE E-1
COMPARISON OF TCLP DATA TO GROUNDWATER STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	TCLP Screening Level (f)	Is Max Concentration > Screening Value?	COPC? (g)	Reason
Magnesium	7439-95-4	ug/L	4 : 4 : 4	100	1.69E+04	2.60E+04	Yes	NA	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	4 : 4 : 4	100	4.96E+03	6.60E+03	No	NA	--	1.50E+02	Yes	Yes	>Screening Level
Nickel	7440-02-0	ug/L	4 : 4 : 4	100	2.65E+02	4.60E+02	No	NA	--	1.00E+02	Yes	Yes	>Screening Level
Potassium	7440-09-7	ug/L	4 : 4 : 4	100	6.80E+03	8.00E+03	Yes	NA	--	NA	--	No	EN
Zinc	7440-66-6	ug/L	4 : 4 : 4	100	1.79E+04	2.80E+04	No	NA	--	5.00E+03	Yes	Yes	>Screening Level

TABLE E-1
COMPARISON OF TCLP DATA TO GROUNDWATER STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	TCLP Screening Level (f)	Is Max Concentration > Screening Value?	COPC? (g)	Reason
Site R													
VOCs													
1,1,1-Trichloroethane	71-55-6	ug/L	1 : 4 : 4	25	3.75E+01	1.20E+02	No	NA	--	2.00E+02	No	No	</=Screening Level
1,2-Dichloroethane	107-06-2	ug/L	3 : 4 : 4	75	6.53E+03	2.40E+04	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 4 : 4	25	1.24E+03	4.90E+03	No	NA	--	7.00E+01	Yes	Yes	>Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	1 : 4 : 4	25	2.00E+03	7.70E+03	No	NA	--	1.60E+02	Yes	Yes	>Screening Level
Acetone	67-64-1	ug/L	2 : 3 : 4	67	2.60E+02	2.90E+02	No	NA	--	7.00E+02	No	No	</=Screening Level
Benzene	71-43-2	ug/L	4 : 4 : 4	100	3.96E+03	1.40E+04	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
Chlorobenzene	108-90-7	ug/L	4 : 4 : 4	100	9.40E+03	3.30E+04	No	NA	--	1.00E+02	Yes	Yes	>Screening Level
Chloroform	67-66-3	ug/L	3 : 4 : 4	75	1.50E+03	5.90E+03	No	NA	--	8.00E+01	Yes	Yes	>Screening Level
Ethylbenzene	100-41-4	ug/L	4 : 4 : 4	100	5.20E+02	1.60E+03	No	NA	--	7.00E+02	Yes	Yes	>Screening Level
Tetrachloroethene	127-18-4	ug/L	3 : 4 : 4	75	3.12E+03	1.20E+04	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
Toluene	108-88-3	ug/L	4 : 4 : 4	100	7.93E+03	2.60E+04	No	NA	--	1.00E+03	Yes	Yes	>Screening Level
Trichloroethylene	79-01-6	ug/L	2 : 4 : 4	50	1.85E+04	7.40E+04	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
Xylenes, Total	1330-20-7	ug/L	4 : 4 : 4	100	1.94E+03	5.20E+03	No	NA	--	1.00E+04	No	No	</=Screening Level
SVOCs													
1,2,4-Trichlorobenzene	120-82-1	ug/L	3 : 4 : 4	75	4.98E+01	1.30E+02	No	NA	--	7.00E+01	Yes	Yes	>Screening Level
1,2-Dichlorobenzene	95-50-1	ug/L	4 : 4 : 4	100	3.90E+02	8.40E+02	No	NA	--	6.00E+02	Yes	Yes	>Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	3 : 4 : 4	75	1.05E+02	2.20E+02	No	NA	--	7.50E+01	Yes	Yes	>Screening Level
2,4,6-Trichlorophenol	88-06-2	ug/L	4 : 4 : 4	100	4.22E+03	1.20E+04	No	NA	--	1.00E+01	Yes	Yes	>Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	4 : 4 : 4	100	2.69E+04	9.00E+04	No	NA	--	2.10E+01	Yes	Yes	>Screening Level
2,4-Dimethylphenol	105-67-9	ug/L	2 : 4 : 4	50	1.80E+02	5.10E+02	No	NA	--	1.40E+02	Yes	Yes	>Screening Level
2-Chlorophenol	95-57-8	ug/L	4 : 4 : 4	100	7.70E+03	2.00E+04	No	NA	--	3.50E+01	Yes	Yes	>Screening Level
2-Methylnaphthalene	91-57-6	ug/L	1 : 1 : 4	100	1.10E+01	1.10E+01	No	NA	--	1.40E+02	No	No	</=Screening Level
2-Methylphenol	95-48-7	ug/L	3 : 4 : 4	75	2.94E+02	9.40E+02	No	NA	--	3.50E+02	Yes	Yes	>Screening Level
2-Nitroaniline	88-74-4	ug/L	3 : 4 : 4	75	8.63E+02	3.20E+03	No	NA	--	1.00E+00	Yes	Yes	>Screening Level
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	4 : 4 : 4	100	8.51E+02	1.90E+03	No	NA	--	3.50E+02	Yes	Yes	>Screening Level
4-Chloroaniline	106-47-8	ug/L	3 : 4 : 4	75	3.86E+03	8.50E+03	No	NA	--	2.80E+01	Yes	Yes	>Screening Level
4-Nitroaniline	100-01-6	ug/L	4 : 4 : 4	100	1.83E+03	5.50E+03	No	NA	--	1.00E+00	Yes	Yes	>Screening Level
4-Nitrophenol	100-02-7	ug/L	1 : 4 : 4	25	7.94E+02	2.80E+03	No	NA	--	NA	--	No	Screening Level NA
Di-n-butylphthalate	84-74-2	ug/L	1 : 4 : 4	25	5.69E+02	2.20E+03	No	NA	--	7.00E+02	Yes	Yes	>Screening Level

TABLE E-1
COMPARISON OF TCLP DATA TO GROUNDWATER STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	TCLP Screening Level (f)	Is Max Concentration > Screening Value?	COPC? (g)	Reason
Diethyl Phthalate	84-66-2	ug/L	2 : 4 : 4	50	9.64E+02	3.80E+03	No	NA	--	5.60E+03	No	No	</=Screening Level
Dimethyl Phthalate	131-11-3	ug/L	1 : 4 : 4	25	7.44E+02	2.90E+03	No	NA	--	3.60E+05	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	4 : 4 : 4	100	1.79E+03	3.90E+03	No	NA	--	1.40E+02	Yes	Yes	>Screening Level
Nitrobenzene	98-95-3	ug/L	3 : 4 : 4	75	1.21E+03	3.20E+03	No	NA	--	3.50E+00	Yes	Yes	>Screening Level
Phenol	108-95-2	ug/L	4 : 4 : 4	100	1.83E+04	4.00E+04	No	NA	--	1.00E+02	Yes	Yes	>Screening Level
Pesticide													
4,4'-DDE	72-55-9	ug/L	1 : 1 : 4	100	1.40E+00	1.40E+00	No	NA	--	1.00E+01	No	No	</=Screening Level
alpha-Chlordane	5103-71-9	ug/L	3 : 3 : 4	100	1.57E+00	2.10E+00	No	NA	--	2.00E+00	Yes	Yes	>Screening Level
beta-BHC	319-85-7	ug/L	1 : 1 : 4	100	3.40E-01	3.40E-01	No	NA	--	2.00E-01	Yes	Yes	>Screening Level
Endrin Aldehyde	7421-93-4	ug/L	1 : 4 : 4	25	4.47E+00	7.90E+00	No	NA	--	2.00E+00	Yes	Yes	>Screening Level
Heptachlor	76-44-8	ug/L	1 : 1 : 4	100	1.20E+00	1.20E+00	No	NA	--	4.00E-01	Yes	Yes	>Screening Level
Methoxychlor	72-43-5	ug/L	1 : 1 : 4	100	4.90E+00	4.90E+00	No	NA	--	4.00E+01	No	No	</=Screening Level
Herbicide													
2,4-D	94-75-7	ug/L	4 : 4 : 4	100	1.05E+04	2.30E+04	No	NA	--	7.00E+01	Yes	Yes	>Screening Level
Dichlorprop	120-36-5	ug/L	2 : 2 : 4	100	8.14E+02	1.60E+03	No	NA	--	2.92E+02	Yes	Yes	>Screening Level
Pentachlorophenol	87-86-5	ug/L	1 : 1 : 4	100	4.70E+01	4.70E+01	No	NA	--	1.00E+00	Yes	Yes	>Screening Level
PCBs													
Total PCBs	1336-36-3	ug/L	2 : 4 : 4	50	8.60E-01	1.25E+00	No	NA	--	5.00E-01	Yes	Yes	>Screening Level
Dioxin													
2,3,7,8-TCDD-TEQ	1746-01-6	ug/L	2 : 4 : 4	50	3.27E-07	5.80E-07	No	NA	--	3.00E-05	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 4 : 4	25	1.28E+03	2.10E+03	No	NA	--	3.60E+04	No	No	</=Screening Level
Barium	7440-39-3	ug/L	4 : 4 : 4	100	5.85E+02	7.60E+02	No	NA	--	2.00E+03	No	No	</=Screening Level
Cadmium	7440-43-9	ug/L	1 : 4 : 4	25	6.25E+01	1.00E+02	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
Calcium	7440-70-2	ug/L	4 : 4 : 4	100	2.50E+05	4.80E+05	Yes	NA	--	NA	--	No	EN
Cobalt	7440-48-4	ug/L	4 : 4 : 4	100	3.15E+02	6.30E+02	No	NA	--	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	2 : 4 : 4	50	1.15E+02	1.60E+02	No	NA	--	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	3 : 4 : 4	75	5.76E+03	1.20E+04	Yes	NA	--	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	2 : 2 : 4	100	4.45E+01	5.70E+01	No	NA	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	4 : 4 : 4	100	3.35E+04	4.50E+04	Yes	NA	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	4 : 4 : 4	100	3.54E+03	5.10E+03	No	NA	--	1.50E+02	Yes	Yes	>Screening Level

TABLE E-1
COMPARISON OF TCLP DATA TO GROUNDWATER STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	TCLP Screening Level (f)	Is Max Concentration > Screening Value?	COPC? (g)	Reason
Nickel	7440-02-0	ug/L	4 : 4 : 4	100	3.80E+02	1.30E+03	No	NA	--	1.00E+02	Yes	Yes	>Screening Level
Potassium	7440-09-7	ug/L	4 : 4 : 4	100	9.08E+03	2.20E+04	Yes	NA	--	NA	--	No	EN
Zinc	7440-66-6	ug/L	4 : 4 : 4	100	3.15E+03	1.10E+04	No	NA	--	5.00E+03	Yes	Yes	>Screening Level

TABLE E-1
COMPARISON OF TCLP DATA TO GROUNDWATER STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	TCLP Screening Level (f)	Is Max Concentration > Screening Value?	COPC? (g)	Reason
Site S													
VOCs													
1,1,1-Trichloroethane	71-55-6	ug/L	2 : 2 : 2	100	4.50E+02	6.00E+02	No	NA	--	2.00E+02	Yes	Yes	>Screening Level
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	2 : 2 : 2	100	1.22E+01	1.50E+01	No	NA	--	5.50E-02	Yes	Yes	>Screening Level
1,1,2-Trichloroethane	79-00-5	ug/L	1 : 1 : 2	100	6.40E+00	6.40E+00	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
1,1-Dichloroethane	75-34-3	ug/L	1 : 2 : 2	50	7.50E+01	1.30E+02	No	NA	--	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 2 : 2	50	2.70E+02	5.00E+02	No	NA	--	7.00E+01	Yes	Yes	>Screening Level
2-Butanone (MEK)	78-93-3	ug/L	2 : 2 : 2	100	2.95E+03	4.70E+03	No	NA	--	1.90E+03	Yes	Yes	>Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	2 : 2 : 2	100	1.05E+04	1.50E+04	No	NA	--	1.60E+02	Yes	Yes	>Screening Level
Acetone	67-64-1	ug/L	2 : 2 : 2	100	1.60E+03	1.80E+03	No	NA	--	7.00E+02	Yes	Yes	>Screening Level
Benzene	71-43-2	ug/L	2 : 2 : 2	100	5.70E+01	6.70E+01	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 2 : 2	50	8.60E+02	1.70E+03	No	NA	--	1.00E+02	Yes	Yes	>Screening Level
Chloroform	67-66-3	ug/L	1 : 1 : 2	100	1.20E+01	1.20E+01	No	NA	--	8.00E+01	No	No	</=Screening Level
Dichloromethane	75-09-2	ug/L	2 : 2 : 2	100	2.45E+02	4.70E+02	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
Ethylbenzene	100-41-4	ug/L	2 : 2 : 2	100	3.80E+03	4.40E+03	No	NA	--	7.00E+02	Yes	Yes	>Screening Level
Methyl N-Butyl Ketone	591-78-6	ug/L	2 : 2 : 2	100	3.50E+03	5.40E+03	No	NA	--	1.60E+02	Yes	Yes	>Screening Level
Tetrachloroethene	127-18-4	ug/L	2 : 2 : 2	100	4.13E+02	7.60E+02	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
Toluene	108-88-3	ug/L	2 : 2 : 2	100	2.85E+04	4.10E+04	No	NA	--	1.00E+03	Yes	Yes	>Screening Level
Trichloroethylene	79-01-6	ug/L	2 : 2 : 2	100	6.50E+02	7.20E+02	No	NA	--	5.00E+00	Yes	Yes	>Screening Level
Xylenes, Total	1330-20-7	ug/L	2 : 2 : 2	100	2.05E+04	2.30E+04	No	NA	--	1.00E+04	Yes	Yes	>Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 2 : 2	50	6.10E+01	9.70E+01	No	NA	--	6.00E+02	No	No	</=Screening Level
1,3-Dichlorobenzene	541-73-1	ug/L	1 : 1 : 2	100	7.20E+00	7.20E+00	No	NA	--	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 2 : 2	50	7.75E+01	1.30E+02	No	NA	--	7.50E+01	Yes	Yes	>Screening Level
2,4,5-Trichlorophenol	95-95-4	ug/L	1 : 1 : 2	100	7.40E+00	7.40E+00	No	NA	--	7.00E+02	No	No	</=Screening Level
2,4,6-Trichlorophenol	88-06-2	ug/L	1 : 2 : 2	50	1.63E+02	3.00E+02	No	NA	--	1.00E+01	Yes	Yes	>Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	1 : 2 : 2	50	2.08E+02	3.90E+02	No	NA	--	2.10E+01	Yes	Yes	>Screening Level
2,4-Dimethylphenol	105-67-9	ug/L	2 : 2 : 2	100	6.60E+01	6.80E+01	No	NA	--	1.40E+02	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 2 : 2	50	3.15E+01	3.80E+01	No	NA	--	3.50E+01	Yes	Yes	>Screening Level
2-Methylnaphthalene	91-57-6	ug/L	2 : 2 : 2	100	1.80E+01	2.20E+01	No	NA	--	1.40E+02	No	No	</=Screening Level
2-Methylphenol	95-48-7	ug/L	2 : 2 : 2	100	9.00E+01	1.30E+02	No	NA	--	3.50E+02	No	No	</=Screening Level

TABLE E-1
COMPARISON OF TCLP DATA TO GROUNDWATER STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	TCLP Screening Level (f)	Is Max Concentration > Screening Value?	COPC? (g)	Reason
2-Nitroaniline	88-74-4	ug/L	1 : 1 : 2	100	8.20E+01	8.20E+01	No	NA	--	1.00E+00	Yes	Yes	>Screening Level
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	2 : 2 : 2	100	4.10E+02	6.20E+02	No	NA	--	3.50E+02	Yes	Yes	>Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 2 : 2	50	2.95E+02	5.40E+02	No	NA	--	2.80E+01	Yes	Yes	>Screening Level
Benzyl Butyl Phthalate	85-68-7	ug/L	1 : 1 : 2	100	3.20E+00	3.20E+00	No	NA	--	1.40E+03	No	No	</=Screening Level
bis(2-Ethylhexyl)phthalate	117-81-7	ug/L	1 : 1 : 2	100	7.00E+00	7.00E+00	No	NA	--	6.00E+00	Yes	Yes	>Screening Level
Di-n-butylphthalate	84-74-2	ug/L	2 : 2 : 2	100	4.65E+01	7.40E+01	No	NA	--	7.00E+02	No	No	</=Screening Level
Diethyl Phthalate	84-66-2	ug/L	1 : 2 : 2	50	4.05E+01	5.60E+01	No	NA	--	5.60E+03	No	No	</=Screening Level
Dimethyl Phthalate	131-11-3	ug/L	1 : 1 : 2	100	1.70E+01	1.70E+01	No	NA	--	3.60E+05	No	No	</=Screening Level
Isophorone	78-59-1	ug/L	2 : 2 : 2	100	1.65E+03	2.10E+03	No	NA	--	1.40E+03	Yes	Yes	>Screening Level
N-Nitrosodiphenylamine	86-30-6	ug/L	1 : 1 : 2	100	1.30E+01	1.30E+01	No	NA	--	3.20E+00	Yes	Yes	>Screening Level
Naphthalene	91-20-3	ug/L	2 : 2 : 2	100	3.00E+02	3.40E+02	No	NA	--	1.40E+02	Yes	Yes	>Screening Level
Phenol	108-95-2	ug/L	2 : 2 : 2	100	4.50E+02	7.10E+02	No	NA	--	1.00E+02	Yes	Yes	>Screening Level
Pesticide													
alpha-BHC	319-84-6	ug/L	1 : 1 : 2	100	5.80E-01	5.80E-01	No	NA	--	1.10E-01	Yes	Yes	>Screening Level
alpha-Chlordane	5103-71-9	ug/L	1 : 1 : 2	100	3.90E-01	3.90E-01	No	NA	--	2.00E+00	No	No	</=Screening Level
beta-BHC	319-85-7	ug/L	2 : 2 : 2	100	1.03E+00	1.60E+00	No	NA	--	2.00E-01	Yes	Yes	>Screening Level
delta-BHC	319-86-8	ug/L	1 : 1 : 2	100	4.90E-01	4.90E-01	No	NA	--	2.00E-01	Yes	Yes	>Screening Level
Heptachlor	76-44-8	ug/L	1 : 1 : 2	100	3.30E-01	3.30E-01	No	NA	--	4.00E-01	No	No	</=Screening Level
Herbicide													
2,4,5-T	93-76-5	ug/L	1 : 2 : 2	50	1.93E+01	2.60E+01	No	NA	--	3.60E+02	No	No	</=Screening Level
2,4-D	94-75-7	ug/L	1 : 2 : 2	50	3.83E+01	6.40E+01	No	NA	--	7.00E+01	No	No	</=Screening Level
Pentachlorophenol	87-86-5	ug/L	1 : 2 : 2	50	9.13E+02	1.80E+03	No	NA	--	1.00E+00	Yes	Yes	>Screening Level
PCBs													
Total PCBs	1336-36-3	ug/L	1 : 2 : 2	50	2.65E-01	2.80E-01	No	NA	--	5.00E-01	No	No	</=Screening Level
Metals													
Barium	7440-39-3	ug/L	2 : 2 : 2	100	8.35E+02	8.50E+02	No	NA	--	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	2 : 2 : 2	100	1.90E+06	2.60E+06	Yes	NA	--	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 2 : 2	50	1.30E+02	1.60E+02	No	NA	--	1.00E+02	Yes	Yes	>Screening Level
Lead	7439-92-1	ug/L	1 : 2 : 2	50	1.05E+02	1.10E+02	No	NA	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	2 : 2 : 2	100	1.35E+04	1.60E+04	Yes	NA	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	2 : 2 : 2	100	1.20E+03	1.30E+03	No	NA	--	1.50E+02	Yes	Yes	>Screening Level

TABLE E-1
COMPARISON OF TCLP DATA TO GROUNDWATER STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	TCLP Screening Level (f)	Is Max Concentration > Screening Value?	COPC? (g)	Reason
Nickel	7440-02-0	ug/L	2 : 2 : 2	100	6.15E+01	7.00E+01	No	NA	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	2 : 2 : 2	100	4.15E+03	5.20E+03	Yes	NA	--	NA	--	No	EN
Zinc	7440-66-6	ug/L	1 : 2 : 2	50	4.05E+02	7.10E+02	No	NA	--	5.00E+03	No	No	</=Screening Level

TABLE E-1
COMPARISON OF TCLP DATA TO GROUNDWATER STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Mean Concentration (c)	Maximum Detected Concentration (d)	Essential Nutrient?	Background Concentration (e)	Is Max Concentration > Background?	TCLP Screening Level (f)	Is Max Concentration > Screening Value?	COPC? (g)	Reason

Notes:

BKG - Background concentration.
CAS - Chemical Abstracts Service.
COPC - Constituent of potential concern.
EN - Essential nutrient.
FOD - Frequency of detection.
NA - Not available.
IEPA - Illinois Environmental Protection Agency.
USEPA - United States Environmental Protection Agency.
PCB - Polychlorinated Biphenyl.
TCLP - Toxicity Characteristic Leaching Procedure; extracts were performed on the composite waste samples.
SVOC - Semivolatile organic compound.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalent Concentration.
VOC - Volatile Organic Compound.
-- Not applicable.
(a) Frequency of Detection = Number of detected samples: Number of samples used to calculate statistics: Total number of samples.
(b) Percent of detected samples out of samples used to calculate statistics. Constituents detected in fewer than 5 percent of samples, provided 20 samples are available, will not be included as C
(c) The arithmetic mean concentration for a constituent for each medium/area combination after sample/duplicate pairs were averaged and high non-detected values were excluded. (If one-half the detection limit was greater than the maximum detected concentration, the non-detect was not used). A proxy concentration of half the detection limit was used for non-detected results.
(d) The maximum detected concentration for a constituent for each medium/area combination after sample/duplicate pairs were averaged and high non-detected values were excluded. (If one-half the detection limit was greater than the maximum detected concentration, the non-detect was not used). A proxy concentration of half the detection limit was used for non-detected results.
(e) No background data are available for the TCLP samples.
(f) TCLP screening levels were used according to the following hierarchy:
Illinois Groundwater Quality Standards for Class I: Potable Resource Groundwater. 35 Ill. Adm. Code 620.410. February 2, 2002.
USEPA, 2002. 2002 Edition of the Drinking Water Standards and Health Advisories. Office of Water. EPA 822-R-02-038. Maximum Contaminant Levels. Summer 20
IEPA, 2002. Tiered Approach to Corrective Action Objectives. Appendix B, Table E. Tier 1 Groundwater Remediation Objectives for the Groundwater Component of the Groundwater Ingestion Route. Class I values. February 5, 2002.
USEPA, 2002. Region 9 Preliminary Remediation Goal (PRG) Table. October 1, 2002. Value for Tap Water
(g) A constituent is identified as a COPC if it is detected in greater than 5 percent of samples, provided 20 samples are available, if it is not an essential nutrient, if the maximum detected concentration is greater than the background concentration and if the maximum detected concentration is greater than the TCLP screening level.

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Herbicide	Dichlorprop	0.011	J	1.14E-01	NA	No	Screening Level NA
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Herbicide	MCPP	43	J	3.60E+00	NA	No	Screening Level NA
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Herbicide	Pentachlorophenol	0.061	J	4.57E-03	2.00E-02	No	</=BKG
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Metal	Aluminum	5200	J	1.38E+04	NA	No	Screening Level NA
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Metal	Antimony	0.81	J	2.33E+00	5.00E+00	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Metal	Arsenic	11		1.24E+01	2.50E+01	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Metal	Barium	340	J	3.07E+02	2.60E+02	Yes	>Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Metal	Beryllium	0.39	J	9.02E-01	1.10E+00	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Metal	Cadmium	17	J	3.34E+00	1.00E+00	Yes	>Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Metal	Calcium	4900		9.74E+04	NA	No	EN
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Metal	Chromium	16		2.21E+01	2.10E+01	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Metal	Cobalt	5.9	J	9.40E+00	NA	No	Screening Level NA
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Metal	Copper	270		8.58E+01	3.30E+02	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Metal	Iron	11000		2.33E+04	NA	No	EN
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Metal	Lead	130	J	1.30E+02	NA	No	Screening Level NA
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Metal	Magnesium	2300	J	1.23E+04	NA	No	EN
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Metal	Manganese	420		5.52E+02	NA	No	Screening Level NA
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Metal	Mercury	43		1.34E-01	1.00E-02	Yes	>Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Metal	Nickel	28		3.30E+01	2.00E+01	No	</=BKG
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Metal	Potassium	720	J	3.01E+03	NA	No	EN
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Metal	Silver	2.9		9.90E-01	2.40E-01	Yes	>Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Metal	Sodium	96	J	1.58E+02	NA	No	EN
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Metal	Vanadium	19	J	3.89E+01	9.80E+02	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Metal	Zinc	940	J	3.90E+02	1.00E+03	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Pesticide	Dieldrin	0.0014	J	1.13E-02	4.00E-03	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Pesticide	gamma-Chlordane	0.00033	J	4.11E-02	1.00E+01	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Semivolatile	1,2-Dichlorobenzene	0.034	J	NA	1.70E+01	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Semivolatile	Benzo(a)anthracene	0.041	J	2.76E-01	2.00E+00	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Semivolatile	Benzo(a)pyrene	0.046	J	4.06E-01	8.00E+00	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Semivolatile	Benzo(b)fluoranthene	0.089	J	3.66E-01	5.00E+00	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Semivolatile	Benzo(g,h,i)perylene	0.042	J	4.14E-01	4.20E+03	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	0.25	J	3.53E-01	3.60E+03	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Semivolatile	Chrysene	0.067	J	2.99E-01	1.60E+02	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Semivolatile	Fluoranthene	0.082	J	4.50E-01	4.30E+03	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Semivolatile	Indeno(1,2,3-cd)pyrene	0.032	J	NA	1.40E+01	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Semivolatile	Phenanthrene	0.032	J	3.31E-01	1.20E+04	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Semivolatile	Pyrene	0.078	J	4.30E-01	4.20E+03	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Volatile	Benzene	0.59	J	NA	3.00E-02	Yes	>Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Volatile	Carbon Disulfide	0.18	J	NA	3.20E+01	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Volatile	Chlorobenzene	5.8	J	NA	1.00E+00	Yes	>Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Volatile	Ethylbenzene	4.4	J	1.07E-03	1.30E+01	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Volatile	Tetrachloroethene	0.29	J	8.80E-04	6.00E-02	No	</=BKG
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Volatile	Toluene	0.87	J	NA	1.20E+01	No	</=Screening Level
O North	SOIL-O-1	Surface	SOIL-O-1-0.5	Volatile	Xylenes, Total	80	J	1.61E-03	1.50E+02	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Herbicide	2,4,5-T	7.7	J	NA	1.10E+01	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Herbicide	2,4-D	20		NA	1.50E+00	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Metal	Aluminum	1500		7.86E+03	NA	No	Screening Level NA
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Metal	Antimony	2.4		1.21E+00	5.00E+00	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Metal	Arsenic	37		9.26E+00	2.50E+01	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Metal	Barium	1200		3.28E+02	2.60E+02	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Metal	Beryllium	0.14	J	6.28E-01	1.10E+00	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Metal	Cadmium	86		2.91E-01	1.00E+00	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Metal	Calcium	7900		2.48E+04	NA	No	EN
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Metal	Chromium	62		1.57E+01	2.10E+01	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Metal	Cobalt	4.1		9.14E+00	NA	No	Screening Level NA
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Metal	Copper	1500		1.35E+01	3.30E+02	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Metal	Iron	8500		1.88E+04	NA	No	EN
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Metal	Lead	1200		1.33E+01	NA	No	Screening Level NA
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Metal	Magnesium	950		1.02E+04	NA	No	EN
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Metal	Manganese	1800		4.50E+02	NA	No	Screening Level NA
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Metal	Mercury	360	J	2.07E-02	1.00E-02	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Metal	Nickel	25	J	2.35E+01	2.00E+01	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Metal	Potassium	420	J	1.75E+03	NA	No	EN
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Metal	Selenium	24		NA	1.30E+00	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Metal	Silver	15		NA	2.40E-01	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Metal	Sodium	220		1.25E+02	NA	No	EN
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Metal	Vanadium	11		2.98E+01	9.80E+02	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Metal	Zinc	3900		5.88E+01	1.00E+03	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Pesticide	4,4'-DDE	33		NA	5.40E+01	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Pesticide	4,4'-DDT	58	J	1.04E-03	3.20E+01	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Pesticide	Aldrin	4.5	J	NA	5.00E-01	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Pesticide	alpha-BHC	1.5	J	NA	5.00E-04	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Pesticide	beta-BHC	21	J	NA	5.00E-04	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Pesticide	Dieldrin	50	J	NA	4.00E-03	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Pesticide	Endosulfan II	9.6	J	NA	1.80E+01	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Pesticide	Endosulfan Sulfate	24	J	NA	1.80E+01	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Pesticide	Heptachlor	9.9	J	NA	2.30E+01	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	1,2,4-Trichlorobenzene	290		NA	5.00E+00	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	1,2-Dichlorobenzene	520		NA	1.70E+01	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	1,3-Dichlorobenzene	12	J	NA	2.00E+00	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	1,4-Dichlorobenzene	120		NA	2.00E+00	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	2,4,5-Trichlorophenol	8.1	J	NA	2.70E+02	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	2,4,6-Trichlorophenol	61		NA	2.00E-01	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	2,4-Dichlorophenol	33		NA	4.80E-01	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	2-Chlorophenol	6.2	J	NA	1.50E+00	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	2-Methylnaphthalene	200		NA	1.20E+01	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	2-Methylphenol	4	J	NA	1.50E+01	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	2-Nitroaniline	62	J	NA	NA	No	Screening Level NA
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	2-Nitrophenol	12	J	NA	NA	No	Screening Level NA
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	3-Methylphenol/4-Methylphenol	14	J	NA	1.50E+01	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	4-Nitroaniline	1000	J	NA	NA	No	Screening Level NA
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	Acenaphthene	12	J	NA	5.70E+02	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	Anthracene	10	J	NA	1.20E+04	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	Benzo(a)anthracene	36		NA	2.00E+00	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	Benzo(a)pyrene	8.5	J	NA	8.00E+00	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	Benzo(b)fluoranthene	12	J	NA	5.00E+00	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	Benzo(g,h,i)perylene	4.7	J	NA	4.20E+03	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	Benzo(k)fluoranthene	3.8	J	NA	4.90E+01	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	Benzyl Butyl Phthalate	38		NA	9.30E+02	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	bis(2-Chloroethyl)ether	2.1	J	NA	4.00E-04	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	bis(2-Ethylhexyl)phthalate	8.2	J	6.40E-02	3.60E+03	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	Carbazole	4.9	J	NA	6.00E-01	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	Chrysene	69		NA	1.60E+02	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	Dibenzo(a,h)anthracene	4.6	J	NA	2.00E+00	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	Di-n-octylphthalate	3.4	J	NA	1.00E+04	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	Fluoranthene	13	J	NA	4.30E+03	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	Fluorene	20	J	NA	5.60E+02	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	Hexachlorobenzene	4.5	J	NA	2.00E+00	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	Naphthalene	41		NA	1.20E+01	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	Nitrobenzene	11	J	NA	1.00E-01	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	Phenanthrene	93	J	NA	1.20E+04	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	Phenol	22		NA	1.00E+02	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Semivolatile	Pyrene	120		NA	4.20E+03	No	</=Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Volatile	Benzene	61		NA	3.00E-02	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Volatile	Chlorobenzene	480		NA	1.00E+00	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Volatile	Dichloromethane	87		6.30E-03	2.00E-02	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Volatile	Ethylbenzene	760		8.37E-04	1.30E+01	No	</=BKG
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Volatile	Toluene	90		NA	1.20E+01	Yes	>Screening Level
O North	SOIL-O-1	Subsurface	SOIL-O-1-6FT	Volatile	Xylenes, Total	3800		1.50E-03	1.50E+02	Yes	>Screening Level
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Herbicide	2,4-D	0.031	J	9.96E-03	1.50E+00	No	</=Screening Level
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Herbicide	2,4-DB	0.013	J	NA	1.50E+00	No	</=Screening Level
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Herbicide	Dicamba	0.0024	J	NA	NA	No	Screening Level NA
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Herbicide	Dichlorprop	0.037	J	1.14E-01	NA	No	Screening Level NA
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Herbicide	MCPP	12	J	3.60E+00	NA	No	Screening Level NA
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Herbicide	Pentachlorophenol	0.023	J	4.57E-03	2.00E-02	No	</=BKG
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Metal	Aluminum	7400	J	1.38E+04	NA	No	Screening Level NA
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Metal	Antimony	0.74	J	2.33E+00	5.00E+00	No	</=Screening Level
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Metal	Arsenic	5.1		1.24E+01	2.50E+01	No	</=Screening Level
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Metal	Barium	100	J	3.07E+02	2.60E+02	No	</=Screening Level
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Metal	Beryllium	0.46		9.02E-01	1.10E+00	No	</=Screening Level
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Metal	Cadmium	0.54	J	3.34E+00	1.00E+00	No	</=Screening Level
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Metal	Calcium	26000		9.74E+04	NA	No	EN
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Metal	Chromium	13		2.21E+01	2.10E+01	No	</=Screening Level
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Metal	Cobalt	6.6	J	9.40E+00	NA	No	Screening Level NA
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Metal	Copper	26		8.58E+01	3.30E+02	No	</=Screening Level
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Metal	Iron	15000		2.33E+04	NA	No	EN
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Metal	Lead	14	J	1.30E+02	NA	No	Screening Level NA
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Metal	Magnesium	8500	J	1.23E+04	NA	No	EN
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Metal	Manganese	530		5.52E+02	NA	No	Screening Level NA
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Metal	Mercury	0.049		1.34E-01	1.00E-02	No	</=BKG
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Metal	Nickel	18		3.30E+01	2.00E+01	No	</=Screening Level
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Metal	Potassium	850	J	3.01E+03	NA	No	EN
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Metal	Sodium	110	J	1.58E+02	NA	No	EN
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Metal	Vanadium	28	J	3.89E+01	9.80E+02	No	</=Screening Level
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Metal	Zinc	70	J	3.90E+02	1.00E+03	No	</=Screening Level
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Pesticide	4,4'-DDT	0.00081	J	4.04E-02	3.20E+01	No	</=Screening Level
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Pesticide	Endrin Aldehyde	0.0034	J	5.88E-03	1.00E+00	No	</=Screening Level
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Pesticide	Methoxychlor	0.00088	J	5.60E-03	1.60E+02	No	</=Screening Level
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Semivolatile	Benzo(b)fluoranthene	0.14	J	3.66E-01	5.00E+00	No	</=Screening Level
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	0.023	J	3.53E-01	3.60E+03	No	</=Screening Level
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Semivolatile	Dibenzo(a,h)anthracene	0.078	J	1.20E-01	2.00E+00	No	</=Screening Level
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Volatile	Ethylbenzene	0.00038	J	1.07E-03	1.30E+01	No	</=Screening Level
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Volatile	Tetrachloroethene	0.001	J	8.80E-04	6.00E-02	No	</=Screening Level
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Volatile	Trichloroethylene	0.00058	J	NA	6.00E-02	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
O	SOIL-O-2	Surface	SOIL-O-2-0.5	Volatile	Xylenes, Total	0.0013	J	1.61E-03	1.50E+02	No	</=Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Herbicide	2,4,5-T	0.044	J	NA	1.10E+01	No	</=Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Herbicide	2,4-D	0.4		NA	1.50E+00	No	</=Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Herbicide	MCPP	3.8	J	NA	NA	No	Screening Level NA
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Metal	Aluminum	9300		7.86E+03	NA	No	Screening Level NA
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Metal	Arsenic	5.5		9.26E+00	2.50E+01	No	</=Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Metal	Barium	100		3.28E+02	2.60E+02	No	</=Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Metal	Beryllium	0.65		6.28E-01	1.10E+00	No	</=Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Metal	Cadmium	0.69		2.91E-01	1.00E+00	No	</=Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Metal	Calcium	4100		2.48E+04	NA	No	EN
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Metal	Chromium	17		1.57E+01	2.10E+01	No	</=Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Metal	Cobalt	10		9.14E+00	NA	No	Screening Level NA
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Metal	Copper	15		1.35E+01	3.30E+02	No	</=Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Metal	Iron	17000		1.88E+04	NA	No	EN
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Metal	Lead	12		1.33E+01	NA	No	Screening Level NA
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Metal	Magnesium	3300		1.02E+04	NA	No	EN
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Metal	Manganese	730		4.50E+02	NA	No	Screening Level NA
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Metal	Mercury	0.22	J	2.07E-02	1.00E-02	Yes	>Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Metal	Nickel	21	J	2.35E+01	2.00E+01	No	</=BKG
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Metal	Potassium	760	J	1.75E+03	NA	No	EN
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Metal	Vanadium	28		2.98E+01	9.80E+02	No	</=Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Metal	Zinc	48		5.88E+01	1.00E+03	No	</=Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Pesticide	4,4'-DDT	0.0067	J	1.04E-03	3.20E+01	No	</=Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Pesticide	delta-BHC	0.013	J	NA	5.00E-04	Yes	>Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Pesticide	Dieldrin	0.005	J	NA	4.00E-03	Yes	>Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Pesticide	gamma-BHC (Lindane)	0.018	J	NA	9.00E-03	Yes	>Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Pesticide	Heptachlor	0.0073	J	NA	2.30E+01	No	</=Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Volatile	1,1,1-Trichloroethane	0.0065	J	NA	2.00E+00	No	</=Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Volatile	2-Butanone (MEK)	0.0058	J	NA	NA	No	Screening Level NA
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Volatile	Acetone	0.018	J	NA	1.60E+01	No	</=Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Volatile	Benzene	0.6		NA	3.00E-02	Yes	>Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Volatile	Chlorobenzene	0.065		NA	1.00E+00	No	</=Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Volatile	Chloroform	0.003	J	NA	6.00E-01	No	</=Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Volatile	Ethylbenzene	0.059		8.37E-04	1.30E+01	No	</=Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Volatile	Toluene	0.042		NA	1.20E+01	No	</=Screening Level
O	SOIL-O-2	Subsurface	SOIL-O-2-6FT	Volatile	Xylenes, Total	0.22		1.50E-03	1.50E+02	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Herbicide	2,4,5-T	0.017	J	NA	1.10E+01	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Herbicide	2,4-D	0.05	J	9.96E-03	1.50E+00	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Herbicide	2,4-DB	0.019	J	NA	1.50E+00	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Herbicide	Dichlorprop	0.01	J	1.14E-01	NA	No	Screening Level NA
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Herbicide	MCPP	11	J	3.60E+00	NA	No	Screening Level NA
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Herbicide	Pentachlorophenol	2		4.57E-03	2.00E-02	No	</=BKG
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Metal	Aluminum	8600	J	1.38E+04	NA	No	Screening Level NA
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Metal	Arsenic	6.3		1.24E+01	2.50E+01	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Metal	Barium	130	J	3.07E+02	2.60E+02	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Metal	Beryllium	0.54		9.02E-01	1.10E+00	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Metal	Cadmium	1.7	J	3.34E+00	1.00E+00	No	</=BKG
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Metal	Calcium	6600		9.74E+04	NA	No	EN
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Metal	Chromium	15		2.21E+01	2.10E+01	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Metal	Cobalt	6.9	J	9.40E+00	NA	No	Screening Level NA
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Metal	Copper	40		8.58E+01	3.30E+02	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Metal	Iron	16000		2.33E+04	NA	No	EN
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Metal	Lead	20	J	1.30E+02	NA	No	Screening Level NA
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Metal	Magnesium	4100	J	1.23E+04	NA	No	EN
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Metal	Manganese	490		5.52E+02	NA	No	Screening Level NA
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Metal	Mercury	2.9		1.34E-01	1.00E-02	Yes	>Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Metal	Nickel	18		3.30E+01	2.00E+01	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Metal	Potassium	860	J	3.01E+03	NA	No	EN
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Metal	Sodium	85	J	1.58E+02	NA	No	EN
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Metal	Vanadium	28	J	3.89E+01	9.80E+02	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Metal	Zinc	130	J	3.90E+02	1.00E+03	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Pesticide	4,4'-DDD	0.086	J	7.04E-03	1.60E+01	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Pesticide	4,4'-DDT	0.23	J	4.04E-02	3.20E+01	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Pesticide	alpha-Chlordane	0.0094	J	6.15E-03	1.00E+01	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Pesticide	Dieldrin	0.18	J	1.13E-02	4.00E-03	No	</=BKG
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Pesticide	Endosulfan II	0.011	J	1.16E-03	1.80E+01	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Pesticide	Endosulfan Sulfate	0.17	J	1.81E-03	1.80E+01	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Pesticide	Endrin Ketone	0.022	J	NA	1.00E+00	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Pesticide	gamma-BHC (Lindane)	0.032	J	NA	9.00E-03	Yes	>Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Pesticide	gamma-Chlordane	0.18		4.11E-02	1.00E+01	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Pesticide	Heptachlor	0.016	J	3.12E-02	2.30E+01	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Semivolatile	1,2-Dichlorobenzene	0.036	J	NA	1.70E+01	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Semivolatile	2,4-Dichlorophenol	0.035	J	NA	4.80E-01	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Semivolatile	2-Nitroaniline	0.053	J	NA	NA	No	Screening Level NA
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Semivolatile	Benzo(a)anthracene	0.063	J	2.76E-01	2.00E+00	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Semivolatile	Benzo(b)fluoranthene	0.098	J	3.66E-01	5.00E+00	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Semivolatile	Benzo(g,h,i)perylene	1.2		4.14E-01	4.20E+03	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Semivolatile	Benzo(k)fluoranthene	0.1	J	2.83E-01	4.90E+01	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Semivolatile	Benzyl Butyl Phthalate	0.035	J	NA	9.30E+02	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	0.062	J	3.53E-01	3.60E+03	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Semivolatile	Chrysene	0.2	J	2.99E-01	1.60E+02	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Semivolatile	Dibenzo(a,h)anthracene	0.13	J	1.20E-01	2.00E+00	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Semivolatile	Di-n-butylphthalate	0.049	J	NA	2.30E+03	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Semivolatile	Hexachlorobenzene	0.11	J	NA	2.00E+00	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Semivolatile	Phenanthrene	0.04	J	3.31E-01	1.20E+04	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Semivolatile	Pyrene	0.13	J	4.30E-01	4.20E+03	No	</=Screening Level
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Volatile	2-Butanone (MEK)	0.017	J	NA	NA	No	Screening Level NA
O	SOIL-O-3	Surface	SOIL-O-3-0.5	Volatile	Acetone	0.13		NA	1.60E+01	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Herbicide	2,4,5-T	3.1	J	NA	1.10E+01	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Herbicide	2,4-D	42	J	NA	1.50E+00	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Metal	Aluminum	10000		7.86E+03	NA	No	Screening Level NA
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Metal	Arsenic	8.6		9.26E+00	2.50E+01	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Metal	Barium	130		3.28E+02	2.60E+02	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Metal	Beryllium	0.74		6.28E-01	1.10E+00	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Metal	Cadmium	2.4		2.91E-01	1.00E+00	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Metal	Calcium	6100		2.48E+04	NA	No	EN
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Metal	Chromium	24		1.57E+01	2.10E+01	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Metal	Cobalt	7		9.14E+00	NA	No	Screening Level NA
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Metal	Copper	35		1.35E+01	3.30E+02	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Metal	Iron	20000		1.88E+04	NA	No	EN
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Metal	Lead	22		1.33E+01	NA	No	Screening Level NA
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Metal	Magnesium	3700		1.02E+04	NA	No	EN
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Metal	Manganese	460		4.50E+02	NA	No	Screening Level NA
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Metal	Mercury	20	J	2.07E-02	1.00E-02	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Metal	Nickel	22	J	2.35E+01	2.00E+01	No	</=BKG
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Metal	Potassium	1000	J	1.75E+03	NA	No	EN
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Metal	Sodium	200		1.25E+02	NA	No	EN
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Metal	Vanadium	31		2.98E+01	9.80E+02	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Metal	Zinc	150	J	5.88E+01	1.00E+03	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Pesticide	4,4'-DDT	5.3	J	1.04E-03	3.20E+01	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Pesticide	beta-BHC	1.7	J	NA	5.00E-04	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Pesticide	delta-BHC	5.3	J	NA	5.00E-04	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Pesticide	Dieldrin	6.8		NA	4.00E-03	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Pesticide	Endrin Aldehyde	1.6	J	NA	1.00E+00	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Pesticide	gamma-BHC (Lindane)	4.8	J	NA	9.00E-03	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Pesticide	Heptachlor	5.3	J	NA	2.30E+01	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Pesticide	Heptachlor Epoxide	0.64	J	6.40E-04	7.00E-01	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Semivolatile	1,2,4-Trichlorobenzene	31	J	NA	5.00E+00	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Semivolatile	1,2-Dichlorobenzene	130	J	NA	1.70E+01	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Semivolatile	1,3-Dichlorobenzene	5.2	J	NA	2.00E+00	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Semivolatile	1,4-Dichlorobenzene	79	J	NA	2.00E+00	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Semivolatile	2,4,6-Trichlorophenol	6.9	J	NA	2.00E-01	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Semivolatile	2,4-Dichlorophenol	10	J	NA	4.80E-01	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Semivolatile	2-Chlorophenol	9.6	J	NA	1.50E+00	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Semivolatile	2-Methylnaphthalene	25	J	NA	1.20E+01	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Semivolatile	Benzo(a)anthracene	14	J	NA	2.00E+00	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Semivolatile	Benzo(a)pyrene	8.6	J	NA	8.00E+00	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Semivolatile	Benzo(b)fluoranthene	9.1	J	NA	5.00E+00	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Semivolatile	Benzo(g,h,i)perylene	6.1	J	NA	4.20E+03	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Semivolatile	Chrysene	31	J	NA	1.60E+02	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Semivolatile	Fluoranthene	4.4	J	NA	4.30E+03	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Semivolatile	Naphthalene	7.7	J	NA	1.20E+01	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Semivolatile	Phenanthrene	21	J	NA	1.20E+04	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Semivolatile	Phenol	7.9	J	NA	1.00E+02	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Semivolatile	Pyrene	28	J	NA	4.20E+03	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Volatile	1,1,1-Trichloroethane	0.0063		NA	2.00E+00	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Volatile	2-Butanone (MEK)	0.03		NA	NA	No	Screening Level NA
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Volatile	4-Methyl-2-pentanone (MIBK)	0.39	J	2.00E-03	NA	No	Screening Level NA
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Volatile	Acetone	1.8	J	NA	1.60E+01	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Volatile	Chlorobenzene	0.2	J	NA	1.00E+00	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Volatile	Chloroform	0.0066		NA	6.00E-01	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Volatile	Ethylbenzene	0.2	J	8.37E-04	1.30E+01	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Volatile	Toluene	0.068	J	NA	1.20E+01	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT	Volatile	Xylenes, Total	0.76		1.50E-03	1.50E+02	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Herbicide	2,4-D	12	J	NA	1.50E+00	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Metal	Aluminum	7000		7.86E+03	NA	No	Screening Level NA
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Metal	Arsenic	6		9.26E+00	2.50E+01	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Metal	Barium	240		3.28E+02	2.60E+02	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Metal	Beryllium	0.51		6.28E-01	1.10E+00	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Metal	Cadmium	0.33	J	2.91E-01	1.00E+00	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Metal	Calcium	12000		2.48E+04	NA	No	EN
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Metal	Chromium	11		1.57E+01	2.10E+01	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Metal	Cobalt	6.1		9.14E+00	NA	No	Screening Level NA
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Metal	Copper	14		1.35E+01	3.30E+02	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Metal	Iron	13000		1.88E+04	NA	No	EN
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Metal	Lead	12		1.33E+01	NA	No	Screening Level NA
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Metal	Magnesium	6300		1.02E+04	NA	No	EN
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Metal	Manganese	380		4.50E+02	NA	No	Screening Level NA
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Metal	Mercury	0.056	J	2.07E-02	1.00E-02	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Metal	Nickel	16	J	2.35E+01	2.00E+01	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Metal	Potassium	1600	J	1.75E+03	NA	No	EN
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Metal	Sodium	270		1.25E+02	NA	No	EN
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Metal	Vanadium	21		2.98E+01	9.80E+02	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Metal	Zinc	49	J	5.88E+01	1.00E+03	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Pesticide	4,4'-DDT	0.75	J	1.04E-03	3.20E+01	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Pesticide	beta-BHC	0.088	J	NA	5.00E-04	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Pesticide	delta-BHC	0.4	J	NA	5.00E-04	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Pesticide	Dieldrin	0.8		NA	4.00E-03	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Pesticide	gamma-BHC (Lindane)	0.96		NA	9.00E-03	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Pesticide	Heptachlor	0.25	J	NA	2.30E+01	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Pesticide	Heptachlor Epoxide	0.14	J	6.40E-04	7.00E-01	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Semivolatile	1,2,4-Trichlorobenzene	13	J	NA	5.00E+00	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Semivolatile	1,2-Dichlorobenzene	27	J	NA	1.70E+01	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Semivolatile	1,4-Dichlorobenzene	15	J	NA	2.00E+00	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Semivolatile	2,4-Dichlorophenol	4.4	J	NA	4.80E-01	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Semivolatile	2-Methylnaphthalene	10	J	NA	1.20E+01	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Semivolatile	Benzo(a)anthracene	7.2	J	NA	2.00E+00	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Semivolatile	Benzo(a)pyrene	5.6	J	NA	8.00E+00	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Semivolatile	Benzo(b)fluoranthene	6.1	J	NA	5.00E+00	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Semivolatile	Benzo(g,h,i)perylene	4	J	NA	4.20E+03	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Semivolatile	Chrysene	17	J	NA	1.60E+02	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Semivolatile	Phenanthrene	9.8	J	NA	1.20E+04	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Semivolatile	Pyrene	13	J	NA	4.20E+03	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Volatile	2-Butanone (MEK)	0.016	J	NA	NA	No	Screening Level NA
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Volatile	4-Methyl-2-pentanone (MIBK)	0.051	J	2.00E-03	NA	No	Screening Level NA
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Volatile	Acetone	0.5		NA	1.60E+01	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Volatile	Benzene	0.046	J	NA	3.00E-02	Yes	>Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Volatile	Chlorobenzene	0.22	J	NA	1.00E+00	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Volatile	Ethylbenzene	0.027	J	8.37E-04	1.30E+01	No	</=Screening Level
O	SOIL-O-3	Subsurface	SOIL-O-3-6FT-DUP	Volatile	Xylenes, Total	0.11	J	1.50E-03	1.50E+02	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Herbicide	Pentachlorophenol	0.0071	J	4.57E-03	2.00E-02	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Aluminum	4000		1.38E+04	NA	No	Screening Level NA
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Antimony	1.6	J	2.33E+00	5.00E+00	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Arsenic	26	J	1.24E+01	2.50E+01	Yes	>Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Barium	120		3.07E+02	2.60E+02	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Beryllium	1.8		9.02E-01	1.10E+00	Yes	>Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Cadmium	2		3.34E+00	1.00E+00	No	</=BKG
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Calcium	3200		9.74E+04	NA	No	EN
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Chromium	19		2.21E+01	2.10E+01	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Cobalt	13	J	9.40E+00	NA	No	Screening Level NA
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Copper	64		8.58E+01	3.30E+02	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Iron	9200		2.33E+04	NA	No	EN
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Lead	74		1.30E+02	NA	No	Screening Level NA
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Magnesium	460		1.23E+04	NA	No	EN
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Manganese	31		5.52E+02	NA	No	Screening Level NA
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Mercury	0.23		1.34E-01	1.00E-02	Yes	>Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Nickel	47		3.30E+01	2.00E+01	Yes	>Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Potassium	690	J	3.01E+03	NA	No	EN
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Selenium	7		1.08E+00	1.30E+00	Yes	>Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Silver	0.22	J	9.90E-01	2.40E-01	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Sodium	260		1.58E+02	NA	No	EN
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Thallium	1.3		NA	1.60E+00	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Vanadium	44		3.89E+01	9.80E+02	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Metal	Zinc	200	J	3.90E+02	1.00E+03	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Pesticide	4,4'-DDT	0.017	J	4.04E-02	3.20E+01	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Semivolatile	Benzo(a)anthracene	0.029	J	2.76E-01	2.00E+00	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Semivolatile	Benzo(a)pyrene	0.042	J	4.06E-01	8.00E+00	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Semivolatile	Benzo(b)fluoranthene	0.032	J	3.66E-01	5.00E+00	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Semivolatile	Benzo(g,h,i)perylene	0.072	J	4.14E-01	4.20E+03	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Semivolatile	Benzo(k)fluoranthene	0.03	J	2.83E-01	4.90E+01	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	0.05	J	3.53E-01	3.60E+03	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Semivolatile	Chrysene	0.034	J	2.99E-01	1.60E+02	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Semivolatile	Dibenzo(a,h)anthracene	0.059	J	1.20E-01	2.00E+00	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Semivolatile	Fluoranthene	0.04	J	4.50E-01	4.30E+03	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Semivolatile	Indeno(1,2,3-cd)pyrene	0.066	J	NA	1.40E+01	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Semivolatile	Phenanthrene	0.024	J	3.31E-01	1.20E+04	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Semivolatile	Pyrene	0.051	J	4.30E-01	4.20E+03	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Volatile	2-Butanone (MEK)	0.0071	J	NA	NA	No	Screening Level NA
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Volatile	4-Methyl-2-pentanone (MIBK)	0.021	J	NA	NA	No	Screening Level NA
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Volatile	Benzene	0.0038	J	NA	3.00E-02	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Volatile	Carbon Disulfide	0.0014	J	NA	3.20E+01	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Volatile	Chlorobenzene	0.004	J	NA	1.00E+00	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Volatile	Ethylbenzene	0.0024	J	1.07E-03	1.30E+01	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Volatile	Methyl N-Butyl Ketone	0.0059	J	NA	NA	No	Screening Level NA
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Volatile	Tetrachloroethene	0.006	J	8.80E-04	6.00E-02	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Volatile	Toluene	0.032	J	NA	1.20E+01	No	</=Screening Level
P	SOIL-P-1	Surface	SOIL-P-1-0.5	Volatile	Trichloroethylene	0.0015	J	NA	6.00E-02	No	</=Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Herbicide	2,4,5-T	0.0078	J	NA	1.10E+01	No	</=Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Herbicide	2,4-D	0.055	J	NA	1.50E+00	No	</=Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Herbicide	Dalapon	0.0083	J	NA	8.50E-01	No	</=Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Herbicide	Pentachlorophenol	0.02	J	NA	2.00E-02	No	</=Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Aluminum	4500		7.86E+03	NA	No	Screening Level NA
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Antimony	0.86	J	1.21E+00	5.00E+00	No	</=Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Arsenic	27	J	9.26E+00	2.50E+01	Yes	>Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Barium	120		3.28E+02	2.60E+02	No	</=Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Beryllium	1.2		6.28E-01	1.10E+00	Yes	>Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Cadmium	5.6		2.91E-01	1.00E+00	Yes	>Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Calcium	45000		2.48E+04	NA	No	EN
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Chromium	23		1.57E+01	2.10E+01	Yes	>Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Cobalt	8.4	J	9.14E+00	NA	No	Screening Level NA
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Copper	35		1.35E+01	3.30E+02	No	</=Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Iron	12000		1.88E+04	NA	No	EN
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Lead	110		1.33E+01	NA	No	Screening Level NA
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Magnesium	2800		1.02E+04	NA	No	EN
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Manganese	130		4.50E+02	NA	No	Screening Level NA
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Mercury	0.91		2.07E-02	1.00E-02	Yes	>Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Nickel	32		2.35E+01	2.00E+01	Yes	>Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Potassium	1100	J	1.75E+03	NA	No	EN
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Selenium	1.8		NA	1.30E+00	Yes	>Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Silver	0.3	J	NA	2.40E-01	Yes	>Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Sodium	1200		1.25E+02	NA	No	EN
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Thallium	1.5		NA	1.60E+00	No	</=Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Vanadium	30		2.98E+01	9.80E+02	No	</=Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Metal	Zinc	280	J	5.88E+01	1.00E+03	No	</=Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Pesticide	alpha-BHC	0.02	J	NA	5.00E-04	Yes	>Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Pesticide	alpha-Chlordane	0.017	J	NA	1.00E+01	No	</=Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Pesticide	beta-BHC	0.26	J	NA	5.00E-04	Yes	>Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Pesticide	Endosulfan I	0.018	J	NA	1.80E+01	No	</=Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Pesticide	Endosulfan Sulfate	0.044	J	NA	1.80E+01	No	</=Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Pesticide	gamma-Chlordane	0.07		2.40E-04	1.00E+01	No	</=Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Semivolatile	1,2-Dichlorobenzene	0.48	J	NA	1.70E+01	No	</=Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Semivolatile	1,4-Dichlorobenzene	1.3	J	NA	2.00E+00	No	</=Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Semivolatile	Benzyl Butyl Phthalate	3.6	J	NA	9.30E+02	No	</=Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Semivolatile	bis(2-Ethylhexyl)phthalate	2.4	J	6.40E-02	3.60E+03	No	</=Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Semivolatile	Phenanthrene	1	J	NA	1.20E+04	No	</=Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Volatile	2-Butanone (MEK)	1.4	J	NA	NA	No	Screening Level NA
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Volatile	Acetone	1.2	J	NA	1.60E+01	No	</=Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Volatile	Benzene	0.28	J	NA	3.00E-02	Yes	>Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Volatile	Chlorobenzene	2.1		NA	1.00E+00	Yes	>Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Volatile	Dichloromethane	2.3		6.30E-03	2.00E-02	No	</=BKG
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Volatile	Ethylbenzene	0.78		8.37E-04	1.30E+01	No	</=Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Volatile	Tetrachloroethene	0.24	J	1.02E-03	6.00E-02	No	</=BKG
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Volatile	Toluene	33		NA	1.20E+01	Yes	>Screening Level
P	SOIL-P-1	Subsurface	SOIL-P-1-6FT	Volatile	Xylenes, Total	2.4		1.50E-03	1.50E+02	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Herbicide	2,4-D	0.0046	J	9.96E-03	1.50E+00	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Herbicide	Dichlorprop	0.0024	J	1.14E-01	NA	No	Screening Level NA
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Herbicide	Pentachlorophenol	0.0043	J	4.57E-03	2.00E-02	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Metal	Aluminum	6000		1.38E+04	NA	No	Screening Level NA
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Metal	Antimony	0.62	J	2.33E+00	5.00E+00	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Metal	Arsenic	9.4		1.24E+01	2.50E+01	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Metal	Barium	180	J	3.07E+02	2.60E+02	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Metal	Beryllium	0.85		9.02E-01	1.10E+00	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Metal	Cadmium	3		3.34E+00	1.00E+00	No	</=BKG
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Metal	Calcium	70000		9.74E+04	NA	No	EN
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Metal	Chromium	14		2.21E+01	2.10E+01	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Metal	Cobalt	7.6	J	9.40E+00	NA	No	Screening Level NA
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Metal	Copper	59	J	8.58E+01	3.30E+02	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Metal	Iron	11000		2.33E+04	NA	No	EN
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Metal	Lead	170	J	1.30E+02	NA	No	Screening Level NA
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Metal	Magnesium	4300		1.23E+04	NA	No	EN
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Metal	Manganese	360	J	5.52E+02	NA	No	Screening Level NA
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Metal	Mercury	0.072	J	1.34E-01	1.00E-02	No	</=BKG
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Metal	Nickel	21		3.30E+01	2.00E+01	No	</=BKG
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Metal	Potassium	1400	J	3.01E+03	NA	No	EN
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Metal	Silver	0.23	J	9.90E-01	2.40E-01	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Metal	Sodium	180		1.58E+02	NA	No	EN
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Metal	Vanadium	21		3.89E+01	9.80E+02	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Metal	Zinc	390	J	3.90E+02	1.00E+03	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Pesticide	4,4'-DDE	0.003	J	1.23E-02	5.40E+01	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Pesticide	4,4'-DDT	0.0081	J	4.04E-02	3.20E+01	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Pesticide	alpha-Chlordane	0.0015	J	6.15E-03	1.00E+01	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Pesticide	Dieldrin	0.002	J	1.13E-02	4.00E-03	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Semivolatile	Acenaphthene	0.075	J	4.20E-02	5.70E+02	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Semivolatile	Anthracene	0.23	J	1.20E-01	1.20E+04	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Semivolatile	Benzo(a)anthracene	0.68		2.76E-01	2.00E+00	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Semivolatile	Benzo(a)pyrene	0.67		4.06E-01	8.00E+00	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Semivolatile	Benzo(b)fluoranthene	0.68		3.66E-01	5.00E+00	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Semivolatile	Benzo(g,h,i)perylene	0.32	J	4.14E-01	4.20E+03	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Semivolatile	Benzo(k)fluoranthene	0.57		2.83E-01	4.90E+01	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	0.035	J	3.53E-01	3.60E+03	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Semivolatile	Carbazole	0.073	J	NA	6.00E-01	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Semivolatile	Chrysene	0.77		2.99E-01	1.60E+02	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Semivolatile	Dibenzo(a,h)anthracene	0.11	J	1.20E-01	2.00E+00	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Semivolatile	Dibenzofuran	0.029	J	NA	NA	No	Screening Level NA
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Semivolatile	Fluoranthene	1.7		4.50E-01	4.30E+03	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Semivolatile	Fluorene	0.065	J	NA	5.60E+02	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Semivolatile	Indeno(1,2,3-cd)pyrene	0.24	J	NA	1.40E+01	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Semivolatile	Phenanthrene	1.1		3.31E-01	1.20E+04	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Semivolatile	Phenol	0.36	J	NA	1.00E+02	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Semivolatile	Pyrene	1.8		4.30E-01	4.20E+03	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Volatile	Ethylbenzene	0.00026	J	1.07E-03	1.30E+01	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Volatile	Styrene (Monomer)	0.00034	J	4.47E-03	4.00E+00	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Volatile	Tetrachloroethene	0.0031	J	8.80E-04	6.00E-02	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Volatile	Trichloroethylene	0.00079	J	NA	6.00E-02	No	</=Screening Level
P	SOIL-P-2	Surface	SOIL-P-2-0.5	Volatile	Xylenes, Total	0.00097	J	1.61E-03	1.50E+02	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Herbicide	Pentachlorophenol	1.2		NA	2.00E-02	Yes	>Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Metal	Aluminum	5300		7.86E+03	NA	No	Screening Level NA
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Metal	Antimony	1.2	J	1.21E+00	5.00E+00	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Metal	Arsenic	12		9.26E+00	2.50E+01	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Metal	Barium	110	J	3.28E+02	2.60E+02	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Metal	Beryllium	0.41	J	6.28E-01	1.10E+00	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Metal	Cadmium	6.8		2.91E-01	1.00E+00	Yes	>Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Metal	Calcium	40000		2.48E+04	NA	No	EN
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Metal	Chromium	22		1.57E+01	2.10E+01	Yes	>Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Metal	Cobalt	4.3	J	9.14E+00	NA	No	Screening Level NA
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Metal	Copper	52	J	1.35E+01	3.30E+02	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Metal	Iron	22000		1.88E+04	NA	No	EN
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Metal	Lead	86	J	1.33E+01	NA	No	Screening Level NA
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Metal	Magnesium	1800		1.02E+04	NA	No	EN
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Metal	Manganese	210	J	4.50E+02	NA	No	Screening Level NA
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Metal	Mercury	3.2	J	2.07E-02	1.00E-02	Yes	>Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Metal	Nickel	20		2.35E+01	2.00E+01	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Metal	Potassium	1200	J	1.75E+03	NA	No	EN
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Metal	Selenium	3.4	J	NA	1.30E+00	Yes	>Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Metal	Silver	0.8	J	NA	2.40E-01	Yes	>Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Metal	Sodium	790		1.25E+02	NA	No	EN
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Metal	Vanadium	25		2.98E+01	9.80E+02	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Metal	Zinc	700	J	5.88E+01	1.00E+03	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Pesticide	alpha-BHC	0.01	J	NA	5.00E-04	Yes	>Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Semivolatile	1,2,4-Trichlorobenzene	0.1	J	NA	5.00E+00	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Semivolatile	1,2-Dichlorobenzene	14	J	NA	1.70E+01	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Semivolatile	1,3-Dichlorobenzene	0.46	J	NA	2.00E+00	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Semivolatile	1,4-Dichlorobenzene	160		NA	2.00E+00	Yes	>Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Semivolatile	Anthracene	0.34	J	NA	1.20E+04	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Semivolatile	Benzo(a)anthracene	0.16	J	NA	2.00E+00	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Semivolatile	Benzo(a)pyrene	0.15	J	NA	8.00E+00	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Semivolatile	Benzo(b)fluoranthene	0.23	J	NA	5.00E+00	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Semivolatile	Benzo(g,h,i)perylene	0.15	J	NA	4.20E+03	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Semivolatile	Benzo(k)fluoranthene	0.16	J	NA	4.90E+01	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Semivolatile	bis(2-Ethylhexyl)phthalate	0.61	J	6.40E-02	3.60E+03	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Semivolatile	Chrysene	0.43	J	NA	1.60E+02	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Semivolatile	Dibenzofuran	0.38	J	NA	NA	No	Screening Level NA
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Semivolatile	Di-n-butylphthalate	0.17	J	NA	2.30E+03	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Semivolatile	Di-n-octylphthalate	0.59	J	NA	1.00E+04	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Semivolatile	Phenanthrene	0.34	J	NA	1.20E+04	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Semivolatile	Phenol	0.78	J	NA	1.00E+02	No	</=Screening Level
P	SOIL-P-2	Subsurface	SOIL-P-2-6FT	Semivolatile	Pyrene	0.33	J	NA	4.20E+03	No	</=Screening Level
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Herbicide	Dichlorprop	0.0012	J	1.14E-01	NA	No	Screening Level NA
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Herbicide	MCPP	0.56	J	3.60E+00	NA	No	Screening Level NA
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Herbicide	Pentachlorophenol	0.028		4.57E-03	2.00E-02	No	</=BKG
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Metal	Aluminum	3200		1.38E+04	NA	No	Screening Level NA
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Metal	Antimony	0.56	J	2.33E+00	5.00E+00	No	</=Screening Level
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Metal	Arsenic	17	J	1.24E+01	2.50E+01	No	</=Screening Level
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Metal	Barium	87		3.07E+02	2.60E+02	No	</=Screening Level
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Metal	Beryllium	1.5		9.02E-01	1.10E+00	Yes	>Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Metal	Cadmium	1		3.34E+00	1.00E+00	No	</=Screening Level
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Metal	Calcium	6600		9.74E+04	NA	No	EN
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Metal	Chromium	16		2.21E+01	2.10E+01	No	</=Screening Level
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Metal	Cobalt	9.7	J	9.40E+00	NA	No	Screening Level NA
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Metal	Copper	51		8.58E+01	3.30E+02	No	</=Screening Level
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Metal	Iron	7300		2.33E+04	NA	No	EN
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Metal	Lead	57		1.30E+02	NA	No	Screening Level NA
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Metal	Magnesium	780		1.23E+04	NA	No	EN
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Metal	Manganese	80		5.52E+02	NA	No	Screening Level NA
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Metal	Mercury	0.088		1.34E-01	1.00E-02	No	</=BKG
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Metal	Nickel	25		3.30E+01	2.00E+01	No	</=BKG
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Metal	Potassium	550	J	3.01E+03	NA	No	EN
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Metal	Selenium	1.6		1.08E+00	1.30E+00	Yes	>Screening Level
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Metal	Silver	0.13	J	9.90E-01	2.40E-01	No	</=Screening Level
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Metal	Sodium	250		1.58E+02	NA	No	EN
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Metal	Vanadium	26		3.89E+01	9.80E+02	No	</=Screening Level
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Metal	Zinc	190	J	3.90E+02	1.00E+03	No	</=Screening Level
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Pesticide	4,4'-DDT	0.0091	J	4.04E-02	3.20E+01	No	</=Screening Level
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Pesticide	Dieldrin	0.003	J	1.13E-02	4.00E-03	No	</=Screening Level
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Volatile	4-Methyl-2-pentanone (MIBK)	0.017	J	NA	NA	No	Screening Level NA
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Volatile	Benzene	0.0094	J	NA	3.00E-02	No	</=Screening Level
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Volatile	Carbon Disulfide	0.0014	J	NA	3.20E+01	No	</=Screening Level
P	SOIL-P-3	Surface	SOIL-P-3-0.5	Volatile	Tetrachloroethene	0.0019	J	8.80E-04	6.00E-02	No	</=Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Herbicide	Dalapon	0.008	J	NA	8.50E-01	No	</=Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Herbicide	MCPP	1.5	J	NA	NA	No	Screening Level NA
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Herbicide	Pentachlorophenol	0.019	J	NA	2.00E-02	No	</=Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Metal	Aluminum	6800		7.86E+03	NA	No	Screening Level NA
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Metal	Arsenic	8.9	J	9.26E+00	2.50E+01	No	</=Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Metal	Barium	130		3.28E+02	2.60E+02	No	</=Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Metal	Beryllium	0.45	J	6.28E-01	1.10E+00	No	</=Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Metal	Cadmium	3.6		2.91E-01	1.00E+00	Yes	>Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Metal	Calcium	40000		2.48E+04	NA	No	EN
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Metal	Chromium	14		1.57E+01	2.10E+01	No	</=Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Metal	Cobalt	6.9	J	9.14E+00	NA	No	Screening Level NA
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Metal	Copper	30		1.35E+01	3.30E+02	No	</=Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Metal	Iron	12000		1.88E+04	NA	No	EN
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Metal	Lead	34		1.33E+01	NA	No	Screening Level NA
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Metal	Magnesium	2600		1.02E+04	NA	No	EN
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Metal	Manganese	440		4.50E+02	NA	No	Screening Level NA
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Metal	Mercury	1.6		2.07E-02	1.00E-02	Yes	>Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Metal	Nickel	17		2.35E+01	2.00E+01	No	</=Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Metal	Potassium	930	J	1.75E+03	NA	No	EN
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Metal	Silver	0.25	J	NA	2.40E-01	Yes	>Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Metal	Sodium	10000		1.25E+02	NA	No	EN
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Metal	Vanadium	25		2.98E+01	9.80E+02	No	</=Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Metal	Zinc	2900	J	5.88E+01	1.00E+03	Yes	>Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Pesticide	4,4'-DDE	0.019	J	NA	5.40E+01	No	</=Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Pesticide	Dieldrin	0.017	J	NA	4.00E-03	Yes	>Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Pesticide	Endosulfan Sulfate	0.028	J	NA	1.80E+01	No	</=Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Pesticide	Endrin Aldehyde	0.059	J	NA	1.00E+00	No	</=Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Volatile	1,1-Dichloroethane	0.0024	J	NA	2.30E+01	No	</=Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Volatile	2-Butanone (MEK)	0.2		NA	NA	No	Screening Level NA
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Volatile	4-Methyl-2-pentanone (MIBK)	1.2	J	2.00E-03	NA	No	Screening Level NA
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Volatile	Acetone	0.39	J	NA	1.60E+01	No	</=Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Volatile	Benzene	2.2		NA	3.00E-02	Yes	>Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Volatile	Chlorobenzene	0.017	J	NA	1.00E+00	No	</=Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Volatile	Chloroform	0.002	J	NA	6.00E-01	No	</=Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Volatile	Ethylbenzene	0.11	J	8.37E-04	1.30E+01	No	</=Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Volatile	Methyl N-Butyl Ketone	0.048	J	NA	NA	No	Screening Level NA
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Volatile	Tetrachloroethene	0.011	J	1.02E-03	6.00E-02	No	</=Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Volatile	Toluene	4.8		NA	1.20E+01	No	</=Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Volatile	Trichloroethylene	0.0013	J	NA	6.00E-02	No	</=Screening Level
P	SOIL-P-3	Subsurface	SOIL-P-3-6FT	Volatile	Xylenes, Total	0.43	J	1.50E-03	1.50E+02	No	</=Screening Level
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Herbicide	2,4,5-T	0.0014	J	NA	1.10E+01	No	</=Screening Level
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Herbicide	2,4-D	0.01	J	9.96E-03	1.50E+00	No	</=Screening Level
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Herbicide	Dichlorprop	0.0095	J	1.14E-01	NA	No	Screening Level NA
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Herbicide	MCPP	2.3	J	3.60E+00	NA	No	Screening Level NA
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Herbicide	Pentachlorophenol	0.011	J	4.57E-03	2.00E-02	No	</=Screening Level
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Metal	Aluminum	6000		1.38E+04	NA	No	Screening Level NA
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Metal	Arsenic	4	J	1.24E+01	2.50E+01	No	</=Screening Level
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Metal	Barium	77		3.07E+02	2.60E+02	No	</=Screening Level
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Metal	Beryllium	0.42		9.02E-01	1.10E+00	No	</=Screening Level
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Metal	Cadmium	0.62		3.34E+00	1.00E+00	No	</=Screening Level
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Metal	Calcium	13000		9.74E+04	NA	No	EN
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Metal	Chromium	13		2.21E+01	2.10E+01	No	</=Screening Level
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Metal	Cobalt	6.2	J	9.40E+00	NA	No	Screening Level NA
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Metal	Copper	21		8.58E+01	3.30E+02	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Metal	Iron	12000		2.33E+04	NA	No	EN
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Metal	Lead	15		1.30E+02	NA	No	Screening Level NA
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Metal	Magnesium	7900		1.23E+04	NA	No	EN
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Metal	Manganese	390		5.52E+02	NA	No	Screening Level NA
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Metal	Mercury	0.068		1.34E-01	1.00E-02	No	</=BKG
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Metal	Nickel	17		3.30E+01	2.00E+01	No	</=Screening Level
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Metal	Potassium	990	J	3.01E+03	NA	No	EN
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Metal	Vanadium	25		3.89E+01	9.80E+02	No	</=Screening Level
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Metal	Zinc	85	J	3.90E+02	1.00E+03	No	</=Screening Level
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Pesticide	4,4'-DDT	1.1	J	4.04E-02	3.20E+01	No	</=Screening Level
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Pesticide	alpha-Chlordane	0.018	J	6.15E-03	1.00E+01	No	</=Screening Level
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Pesticide	Endosulfan Sulfate	0.036	J	1.81E-03	1.80E+01	No	</=Screening Level
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Pesticide	Endrin Aldehyde	0.14	J	5.88E-03	1.00E+00	No	</=Screening Level
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Pesticide	Endrin Ketone	0.0097	J	NA	1.00E+00	No	</=Screening Level
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Pesticide	Heptachlor Epoxide	0.015	J	1.05E-02	7.00E-01	No	</=Screening Level
P	SOIL-P-4	Surface	SOIL-P-4-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	0.036	J	3.53E-01	3.60E+03	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Herbicide	2,4,5-T	0.0039	J	NA	1.10E+01	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Herbicide	2,4-D	0.013	J	NA	1.50E+00	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Herbicide	Dalapon	0.003	J	NA	8.50E-01	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Herbicide	Dicamba	0.0031	J	NA	NA	No	Screening Level NA
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Herbicide	Pentachlorophenol	0.032		NA	2.00E-02	Yes	>Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Metal	Aluminum	4700		7.86E+03	NA	No	Screening Level NA
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Metal	Antimony	0.75	J	1.21E+00	5.00E+00	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Metal	Arsenic	7.9	J	9.26E+00	2.50E+01	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Metal	Barium	94		3.28E+02	2.60E+02	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Metal	Beryllium	0.73		6.28E-01	1.10E+00	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Metal	Cadmium	1.2		2.91E-01	1.00E+00	Yes	>Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Metal	Calcium	59000		2.48E+04	NA	No	EN
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Metal	Chromium	31		1.57E+01	2.10E+01	Yes	>Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Metal	Cobalt	5.1	J	9.14E+00	NA	No	Screening Level NA
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Metal	Copper	36		1.35E+01	3.30E+02	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Metal	Iron	8300		1.88E+04	NA	No	EN
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Metal	Lead	130		1.33E+01	NA	No	Screening Level NA
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Metal	Magnesium	5500		1.02E+04	NA	No	EN
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Metal	Manganese	220		4.50E+02	NA	No	Screening Level NA
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Metal	Mercury	1.4		2.07E-02	1.00E-02	Yes	>Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Metal	Nickel	23		2.35E+01	2.00E+01	No	</=BKG
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Metal	Potassium	1100	J	1.75E+03	NA	No	EN
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Metal	Selenium	0.75	J	NA	1.30E+00	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Metal	Sodium	2400		1.25E+02	NA	No	EN
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Metal	Vanadium	18		2.98E+01	9.80E+02	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Metal	Zinc	200	J	5.88E+01	1.00E+03	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Pesticide	4,4'-DDE	0.41	J	NA	5.40E+01	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Pesticide	4,4'-DDT	1.7	J	1.04E-03	3.20E+01	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Pesticide	alpha-Chlordane	0.028		NA	1.00E+01	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Pesticide	beta-BHC	0.034	J	NA	5.00E-04	Yes	>Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Pesticide	Dieldrin	0.56		NA	4.00E-03	Yes	>Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Pesticide	Endosulfan Sulfate	0.041	J	NA	1.80E+01	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Pesticide	Endrin Ketone	0.021	J	NA	1.00E+00	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Pesticide	gamma-BHC (Lindane)	0.066	J	NA	9.00E-03	Yes	>Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Pesticide	gamma-Chlordane	0.22	J	2.40E-04	1.00E+01	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Pesticide	Methoxychlor	0.1	J	1.02E-03	1.60E+02	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Volatile	1,2-Dichloroethene (total)	0.12	J	NA	4.00E-01	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Volatile	2-Butanone (MEK)	0.36	J	NA	NA	No	Screening Level NA
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Volatile	Acetone	1.5	J	NA	1.60E+01	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Volatile	Benzene	0.64		NA	3.00E-02	Yes	>Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Volatile	Chlorobenzene	1		NA	1.00E+00	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Volatile	Dichloromethane	1		6.30E-03	2.00E-02	No	</=BKG
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Volatile	Ethylbenzene	10		8.37E-04	1.30E+01	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Volatile	Tetrachloroethene	0.4		1.02E-03	6.00E-02	No	</=BKG
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Volatile	Toluene	10		NA	1.20E+01	No	</=Screening Level
P	SOIL-P-4	Subsurface	SOIL-P-4-6FT	Volatile	Xylenes, Total	31		1.50E-03	1.50E+02	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Herbicide	2,4-D	0.0089	J	9.96E-03	1.50E+00	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Herbicide	MCPP	1.2	J	3.60E+00	NA	No	Screening Level NA
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Herbicide	Pentachlorophenol	0.099		4.57E-03	2.00E-02	No	</=BKG
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Metal	Aluminum	4100		1.38E+04	NA	No	Screening Level NA
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Metal	Antimony	0.54	J	2.33E+00	5.00E+00	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Metal	Arsenic	3.1	J	1.24E+01	2.50E+01	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Metal	Barium	85		3.07E+02	2.60E+02	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Metal	Beryllium	0.23	J	9.02E-01	1.10E+00	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Metal	Cadmium	1.3		3.34E+00	1.00E+00	No	</=BKG
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Metal	Calcium	230000		9.74E+04	NA	No	EN
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Metal	Chromium	16		2.21E+01	2.10E+01	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Metal	Cobalt	2.7		9.40E+00	NA	No	Screening Level NA
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Metal	Copper	19	J	8.58E+01	3.30E+02	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Metal	Iron	7100		2.33E+04	NA	No	EN
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Metal	Lead	63		1.30E+02	NA	No	Screening Level NA

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Metal	Magnesium	6100		1.23E+04	NA	No	EN
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Metal	Manganese	290		5.52E+02	NA	No	Screening Level NA
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Metal	Mercury	0.076	J	1.34E-01	1.00E-02	No	</=BKG
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Metal	Nickel	9.3		3.30E+01	2.00E+01	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Metal	Potassium	680		3.01E+03	NA	No	EN
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Metal	Vanadium	17		3.89E+01	9.80E+02	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Metal	Zinc	150	J	3.90E+02	1.00E+03	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Pesticide	4,4'-DDD	0.034		7.04E-03	1.60E+01	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Pesticide	4,4'-DDE	0.05		1.23E-02	5.40E+01	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Pesticide	4,4'-DDT	0.26	J	4.04E-02	3.20E+01	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Pesticide	alpha-Chlordane	0.0066	J	6.15E-03	1.00E+01	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Pesticide	Dieldrin	0.0064	J	1.13E-02	4.00E-03	No	</=BKG
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Pesticide	Endrin Aldehyde	0.0016	J	5.88E-03	1.00E+00	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Pesticide	Endrin Ketone	0.0061		NA	1.00E+00	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Pesticide	gamma-Chlordane	0.012		4.11E-02	1.00E+01	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Pesticide	Heptachlor	0.001	J	3.12E-02	2.30E+01	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Pesticide	Heptachlor Epoxide	0.0038	J	1.05E-02	7.00E-01	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Semivolatile	2-Methylnaphthalene	0.042	J	NA	1.20E+01	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Semivolatile	Acenaphthene	0.18	J	4.20E-02	5.70E+02	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Semivolatile	Anthracene	0.61		1.20E-01	1.20E+04	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Semivolatile	Benzo(a)anthracene	1.7		2.76E-01	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Semivolatile	Benzo(a)pyrene	1.7		4.06E-01	8.00E+00	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Semivolatile	Benzo(b)fluoranthene	1.5		3.66E-01	5.00E+00	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Semivolatile	Benzo(g,h,i)perylene	0.88		4.14E-01	4.20E+03	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Semivolatile	Benzo(k)fluoranthene	1.9		2.83E-01	4.90E+01	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Semivolatile	bis(2-Ethylhexyl)phthalate	0.054	J	3.53E-01	3.60E+03	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Semivolatile	Carbazole	0.28	J	NA	6.00E-01	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Semivolatile	Chrysene	1.8		2.99E-01	1.60E+02	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Semivolatile	Dibenzofuran	0.13	J	NA	NA	No	Screening Level NA
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Semivolatile	Fluoranthene	3.8		4.50E-01	4.30E+03	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Semivolatile	Fluorene	0.21	J	NA	5.60E+02	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Semivolatile	Indeno(1,2,3-cd)pyrene	0.54		NA	1.40E+01	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Semivolatile	Naphthalene	0.056	J	NA	1.20E+01	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Semivolatile	Phenanthrene	2.7		3.31E-01	1.20E+04	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Semivolatile	Pyrene	3.7		4.30E-01	4.20E+03	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Volatile	2-Butanone (MEK)	0.0015	J	NA	NA	No	Screening Level NA
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Volatile	Chlorobenzene	0.00052	J	NA	1.00E+00	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Volatile	Ethylbenzene	0.00019	J	1.07E-03	1.30E+01	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Volatile	Trichloroethylene	0.00071	J	NA	6.00E-02	No	</=Screening Level
Q North	SOIL-Q-1	Surface	SOIL-Q-1-0.5FT	Volatile	Xylenes, Total	0.00066	J	1.61E-03	1.50E+02	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Herbicide	2,4-D	0.0086	J	9.96E-03	1.50E+00	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Herbicide	2,4-DB	0.028	J	NA	1.50E+00	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Metal	Aluminum	10000		1.38E+04	NA	No	Screening Level NA
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Metal	Antimony	3	J	2.33E+00	5.00E+00	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Metal	Arsenic	20		1.24E+01	2.50E+01	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Metal	Barium	690		3.07E+02	2.60E+02	Yes	>Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Metal	Beryllium	0.71		9.02E-01	1.10E+00	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Metal	Cadmium	13		3.34E+00	1.00E+00	Yes	>Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Metal	Calcium	12000		9.74E+04	NA	No	EN
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Metal	Chromium	51		2.21E+01	2.10E+01	Yes	>Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Metal	Cobalt	12		9.40E+00	NA	No	Screening Level NA
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Metal	Copper	300	J	8.58E+01	3.30E+02	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Metal	Iron	71000		2.33E+04	NA	No	EN
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Metal	Lead	390		1.30E+02	NA	No	Screening Level NA
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Metal	Magnesium	3100		1.23E+04	NA	No	EN
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Metal	Manganese	670		5.52E+02	NA	No	Screening Level NA
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Metal	Mercury	2.5	J	1.34E-01	1.00E-02	Yes	>Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Metal	Nickel	61		3.30E+01	2.00E+01	Yes	>Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Metal	Potassium	900		3.01E+03	NA	No	EN
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Metal	Silver	2		9.90E-01	2.40E-01	Yes	>Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Metal	Vanadium	30		3.89E+01	9.80E+02	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Metal	Zinc	1200	J	3.90E+02	1.00E+03	Yes	>Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Pesticide	4,4'-DDT	0.0053	J	4.04E-02	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Pesticide	Dieldrin	0.0026	J	1.13E-02	4.00E-03	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Pesticide	Endosulfan II	0.001	J	1.16E-03	1.80E+01	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Pesticide	Endrin	0.0024	J	5.02E-03	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Pesticide	Endrin Aldehyde	0.0014	J	5.88E-03	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Pesticide	Endrin Ketone	0.0049	J	NA	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Pesticide	gamma-Chlordane	0.0017	J	4.11E-02	1.00E+01	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Pesticide	Heptachlor Epoxide	0.00052	J	1.05E-02	7.00E-01	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Semivolatile	Acenaphthene	0.037	J	4.20E-02	5.70E+02	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Semivolatile	Anthracene	0.2	J	1.20E-01	1.20E+04	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Semivolatile	Benzo(a)anthracene	0.53		2.76E-01	2.00E+00	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Semivolatile	Benzo(a)pyrene	0.65		4.06E-01	8.00E+00	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Semivolatile	Benzo(b)fluoranthene	0.58		3.66E-01	5.00E+00	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Semivolatile	Benzo(g,h,i)perylene	0.37	J	4.14E-01	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Semivolatile	Benzo(k)fluoranthene	0.6		2.83E-01	4.90E+01	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	0.025	J	3.53E-01	3.60E+03	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Semivolatile	Carbazole	0.081	J	NA	6.00E-01	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Semivolatile	Chrysene	0.59		2.99E-01	1.60E+02	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Semivolatile	Dibenzofuran	0.024	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Semivolatile	Fluoranthene	0.96		4.50E-01	4.30E+03	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Semivolatile	Fluorene	0.034	J	NA	5.60E+02	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Semivolatile	Phenanthrene	0.94		3.31E-01	1.20E+04	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Semivolatile	Pyrene	1.3		4.30E-01	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Volatile	Tetrachloroethene	0.0006	J	8.80E-04	6.00E-02	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Volatile	Trichloroethylene	0.0012	J	NA	6.00E-02	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5	Volatile	Xylenes, Total	0.00085	J	1.61E-03	1.50E+02	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Herbicide	2,4,5-T	0.0013	J	NA	1.10E+01	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Herbicide	2,4-D	0.015		9.96E-03	1.50E+00	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Herbicide	Dichlorprop	0.0015	J	1.14E-01	NA	No	Screening Level NA
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Metal	Aluminum	11000		1.38E+04	NA	No	Screening Level NA
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Metal	Antimony	2.5	J	2.33E+00	5.00E+00	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Metal	Arsenic	14		1.24E+01	2.50E+01	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Metal	Barium	730		3.07E+02	2.60E+02	Yes	>Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Metal	Beryllium	0.79		9.02E-01	1.10E+00	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Metal	Cadmium	11		3.34E+00	1.00E+00	Yes	>Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Metal	Calcium	13000		9.74E+04	NA	No	EN
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Metal	Chromium	48		2.21E+01	2.10E+01	Yes	>Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Metal	Cobalt	11		9.40E+00	NA	No	Screening Level NA
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Metal	Copper	410	J	8.58E+01	3.30E+02	Yes	>Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Metal	Iron	40000		2.33E+04	NA	No	EN
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Metal	Lead	490		1.30E+02	NA	No	Screening Level NA
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Metal	Magnesium	3300		1.23E+04	NA	No	EN
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Metal	Manganese	520		5.52E+02	NA	No	Screening Level NA
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Metal	Mercury	2.7	J	1.34E-01	1.00E-02	Yes	>Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Metal	Nickel	49		3.30E+01	2.00E+01	Yes	>Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Metal	Potassium	1000		3.01E+03	NA	No	EN
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Metal	Silver	2.5		9.90E-01	2.40E-01	Yes	>Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Metal	Vanadium	32		3.89E+01	9.80E+02	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Metal	Zinc	1200	J	3.90E+02	1.00E+03	Yes	>Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Pesticide	4,4'-DDT	0.078	J	4.04E-02	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Pesticide	alpha-Chlordane	0.0052	J	6.15E-03	1.00E+01	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Pesticide	Dieldrin	0.015	J	1.13E-02	4.00E-03	No	</=BKG
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Pesticide	Endosulfan II	0.0015	J	1.16E-03	1.80E+01	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Pesticide	Endrin Aldehyde	0.015	J	5.88E-03	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Pesticide	gamma-Chlordane	0.024	J	4.11E-02	1.00E+01	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Pesticide	Heptachlor Epoxide	0.0048	J	1.05E-02	7.00E-01	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Semivolatile	Acenaphthene	0.26	J	4.20E-02	5.70E+02	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Semivolatile	Anthracene	1.4	J	1.20E-01	1.20E+04	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Semivolatile	Benzo(a)anthracene	4.5		2.76E-01	2.00E+00	Yes	>Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Semivolatile	Benzo(a)pyrene	5.3		4.06E-01	8.00E+00	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Semivolatile	Benzo(b)fluoranthene	4.8		3.66E-01	5.00E+00	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Semivolatile	Benzo(g,h,i)perylene	3.8	J	4.14E-01	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Semivolatile	Benzo(k)fluoranthene	4.4		2.83E-01	4.90E+01	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Semivolatile	bis(2-Ethylhexyl)phthalate	0.3	J	3.53E-01	3.60E+03	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Semivolatile	Carbazole	0.67	J	NA	6.00E-01	Yes	>Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Semivolatile	Chrysene	5.1		2.99E-01	1.60E+02	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Semivolatile	Fluoranthene	8		4.50E-01	4.30E+03	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Semivolatile	Phenanthrene	6.3		3.31E-01	1.20E+04	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Semivolatile	Pyrene	8.6		4.30E-01	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Volatile	Tetrachloroethene	0.00047	J	8.80E-04	6.00E-02	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Volatile	Trichloroethylene	0.0013	J	NA	6.00E-02	No	</=Screening Level
Q South	SOIL-Q-10	Surface	SOIL-Q-10-0.5-DUP	Volatile	Xylenes, Total	0.00093	J	1.61E-03	1.50E+02	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Metal	Aluminum	9900		7.86E+03	NA	No	Screening Level NA
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Metal	Antimony	16	J	1.21E+00	5.00E+00	Yes	>Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Metal	Arsenic	19		9.26E+00	2.50E+01	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Metal	Barium	1200		3.28E+02	2.60E+02	Yes	>Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Metal	Beryllium	0.34	J	6.28E-01	1.10E+00	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Metal	Cadmium	17		2.91E-01	1.00E+00	Yes	>Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Metal	Calcium	16000		2.48E+04	NA	No	EN
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Metal	Chromium	98		1.57E+01	2.10E+01	Yes	>Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Metal	Cobalt	21		9.14E+00	NA	No	Screening Level NA
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Metal	Copper	1700	J	1.35E+01	3.30E+02	Yes	>Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Metal	Iron	130000		1.88E+04	NA	No	EN
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Metal	Lead	1200		1.33E+01	NA	No	Screening Level NA
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Metal	Magnesium	1900		1.02E+04	NA	No	EN
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Metal	Manganese	870		4.50E+02	NA	No	Screening Level NA
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Metal	Mercury	0.49	J	2.07E-02	1.00E-02	Yes	>Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Metal	Nickel	100		2.35E+01	2.00E+01	Yes	>Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Metal	Potassium	670		1.75E+03	NA	No	EN
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Metal	Selenium	3.7		NA	1.30E+00	Yes	>Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Metal	Silver	9.9		NA	2.40E-01	Yes	>Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Metal	Sodium	410		1.25E+02	NA	No	EN

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Metal	Vanadium	16		2.98E+01	9.80E+02	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Metal	Zinc	1900	J	5.88E+01	1.00E+03	Yes	>Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Pesticide	4,4'-DDD	0.0078	J	NA	1.60E+01	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Pesticide	4,4'-DDE	0.036		NA	5.40E+01	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Pesticide	4,4'-DDT	0.074	J	1.04E-03	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Pesticide	alpha-BHC	0.0029		NA	5.00E-04	Yes	>Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Pesticide	alpha-Chlordane	0.0049	J	NA	1.00E+01	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Pesticide	delta-BHC	0.00052	J	NA	5.00E-04	Yes	>Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Pesticide	Dieldrin	0.034	J	NA	4.00E-03	Yes	>Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Pesticide	Endosulfan II	0.0039	J	NA	1.80E+01	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Pesticide	Endosulfan Sulfate	0.006	J	NA	1.80E+01	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Pesticide	Endrin	0.0068	J	NA	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Pesticide	gamma-Chlordane	0.0032	J	2.40E-04	1.00E+01	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Pesticide	Heptachlor Epoxide	0.007	J	6.40E-04	7.00E-01	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Semivolatile	1,4-Dichlorobenzene	0.052	J	NA	2.00E+00	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Semivolatile	4-Chloroaniline	0.16	J	NA	7.00E-01	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Semivolatile	Benzo(a)anthracene	0.26	J	NA	2.00E+00	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Semivolatile	Benzo(a)pyrene	0.34	J	NA	8.00E+00	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Semivolatile	Benzo(b)fluoranthene	0.56		NA	5.00E+00	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Semivolatile	Benzyl Butyl Phthalate	1.1		NA	9.30E+02	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Semivolatile	bis(2-Ethylhexyl)phthalate	2.5		6.40E-02	3.60E+03	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Semivolatile	Chrysene	0.33	J	NA	1.60E+02	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Semivolatile	Fluoranthene	0.44	J	NA	4.30E+03	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Semivolatile	Phenanthrene	0.22	J	NA	1.20E+04	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Semivolatile	Pyrene	0.52		NA	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Volatile	2-Butanone (MEK)	0.015	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Volatile	Acetone	0.048	J	NA	1.60E+01	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Volatile	Benzene	0.0021	J	NA	3.00E-02	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Volatile	Carbon Disulfide	0.0035	J	NA	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Volatile	Chlorobenzene	0.0045	J	NA	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Volatile	Chloroform	0.0013	J	NA	6.00E-01	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Volatile	Ethylbenzene	0.0014	J	8.37E-04	1.30E+01	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Volatile	Styrene (Monomer)	0.00072	J	3.74E-03	4.00E+00	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Volatile	Tetrachloroethene	0.0037	J	1.02E-03	6.00E-02	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Volatile	Trichloroethylene	0.0027	J	NA	6.00E-02	No	</=Screening Level
Q South	SOIL-Q-10	Subsurface	SOIL-Q-10-6	Volatile	Xylenes, Total	0.0062	J	1.50E-03	1.50E+02	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Herbicide	Pentachlorophenol	2.3	J	4.57E-03	2.00E-02	No	</=BKG
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Metal	Aluminum	11000		1.38E+04	NA	No	Screening Level NA
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Metal	Antimony	26	J	2.33E+00	5.00E+00	Yes	>Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Metal	Arsenic	18		1.24E+01	2.50E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Metal	Barium	1300		3.07E+02	2.60E+02	Yes	>Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Metal	Beryllium	0.64		9.02E-01	1.10E+00	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Metal	Cadmium	30		3.34E+00	1.00E+00	Yes	>Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Metal	Calcium	70000		9.74E+04	NA	No	EN
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Metal	Chromium	170		2.21E+01	2.10E+01	Yes	>Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Metal	Cobalt	16		9.40E+00	NA	No	Screening Level NA
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Metal	Copper	2600		8.58E+01	3.30E+02	Yes	>Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Metal	Iron	59000		2.33E+04	NA	No	EN
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Metal	Lead	2600		1.30E+02	NA	No	Screening Level NA
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Metal	Magnesium	4000		1.23E+04	NA	No	EN
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Metal	Manganese	790		5.52E+02	NA	No	Screening Level NA
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Metal	Mercury	2.3		1.34E-01	1.00E-02	Yes	>Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Metal	Nickel	77		3.30E+01	2.00E+01	Yes	>Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Metal	Potassium	1100	J	3.01E+03	NA	No	EN
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Metal	Selenium	3	J	1.08E+00	1.30E+00	Yes	>Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Metal	Silver	17		9.90E-01	2.40E-01	Yes	>Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Metal	Sodium	620		1.58E+02	NA	No	EN
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Metal	Vanadium	26		3.89E+01	9.80E+02	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Metal	Zinc	3400		3.90E+02	1.00E+03	Yes	>Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Pesticide	4,4'-DDE	0.57	J	1.23E-02	5.40E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Pesticide	4,4'-DDT	1.5	J	4.04E-02	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Pesticide	alpha-BHC	0.17		4.96E-02	5.00E-04	No	</=BKG
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Pesticide	alpha-Chlordane	0.053	J	6.15E-03	1.00E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Pesticide	Dieldrin	0.4	J	1.13E-02	4.00E-03	No	</=BKG
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Pesticide	Endosulfan Sulfate	0.032	J	1.81E-03	1.80E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Pesticide	Endrin Ketone	0.11	J	NA	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Pesticide	gamma-Chlordane	0.41	J	4.11E-02	1.00E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	1,2-Dichlorobenzene	0.031	J	NA	1.70E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	1,4-Dichlorobenzene	0.43	J	NA	2.00E+00	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	2-Methylnaphthalene	0.062	J	NA	1.20E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	Acenaphthene	0.063	J	4.20E-02	5.70E+02	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	Anthracene	0.23	J	1.20E-01	1.20E+04	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	Benzo(a)anthracene	0.74		2.76E-01	2.00E+00	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	Benzo(a)pyrene	0.68		4.06E-01	8.00E+00	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	Benzo(b)fluoranthene	0.75		3.66E-01	5.00E+00	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	Benzo(g,h,i)perylene	0.28	J	4.14E-01	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	Benzo(k)fluoranthene	0.7		2.83E-01	4.90E+01	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	Benzyl Butyl Phthalate	0.55		NA	9.30E+02	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	13	J	3.53E-01	3.60E+03	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	Carbazole	0.084	J	NA	6.00E-01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	Chrysene	0.71		2.99E-01	1.60E+02	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	Dibenzo(a,h)anthracene	0.086	J	1.20E-01	2.00E+00	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	Dibenzofuran	0.046	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	Diethyl Phthalate	0.078	J	NA	4.70E+02	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	Di-n-butylphthalate	0.16	J	NA	2.30E+03	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	Fluoranthene	1.9		4.50E-01	4.30E+03	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	Fluorene	0.096	J	NA	5.60E+02	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	Indeno(1,2,3-cd)pyrene	0.18	J	NA	1.40E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	Naphthalene	0.49		NA	1.20E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	Phenanthrene	0.78	J	3.31E-01	1.20E+04	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Semivolatile	Pyrene	2		4.30E-01	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Volatile	4-Methyl-2-pentanone (MIBK)	0.0043	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Volatile	Benzene	0.0057	J	NA	3.00E-02	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Volatile	Chlorobenzene	0.045	J	NA	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Volatile	Chloroform	0.0018	J	NA	6.00E-01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Volatile	Ethylbenzene	0.005	J	1.07E-03	1.30E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Volatile	Tetrachloroethene	0.00096	J	8.80E-04	6.00E-02	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5	Volatile	Xylenes, Total	0.067	J	1.61E-03	1.50E+02	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Herbicide	2,4,5-T	0.0074	J	NA	1.10E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Herbicide	MCPA	0.72	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Herbicide	MCPP	5.2	J	3.60E+00	NA	No	Screening Level NA
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Herbicide	Pentachlorophenol	3.6	J	4.57E-03	2.00E-02	No	</=BKG
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Metal	Aluminum	9900		1.38E+04	NA	No	Screening Level NA
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Metal	Antimony	20	J	2.33E+00	5.00E+00	Yes	>Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Metal	Arsenic	17		1.24E+01	2.50E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Metal	Barium	1500		3.07E+02	2.60E+02	Yes	>Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Metal	Beryllium	0.62		9.02E-01	1.10E+00	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Metal	Cadmium	29		3.34E+00	1.00E+00	Yes	>Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Metal	Calcium	73000		9.74E+04	NA	No	EN
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Metal	Chromium	150		2.21E+01	2.10E+01	Yes	>Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Metal	Cobalt	16		9.40E+00	NA	No	Screening Level NA
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Metal	Copper	870		8.58E+01	3.30E+02	Yes	>Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Metal	Iron	63000		2.33E+04	NA	No	EN
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Metal	Lead	2000		1.30E+02	NA	No	Screening Level NA
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Metal	Magnesium	5700		1.23E+04	NA	No	EN
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Metal	Manganese	680		5.52E+02	NA	No	Screening Level NA
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Metal	Mercury	4.1		1.34E-01	1.00E-02	Yes	>Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Metal	Nickel	77		3.30E+01	2.00E+01	Yes	>Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Metal	Potassium	1100	J	3.01E+03	NA	No	EN
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Metal	Selenium	2.5	J	1.08E+00	1.30E+00	Yes	>Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Metal	Silver	8.3		9.90E-01	2.40E-01	Yes	>Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Metal	Sodium	480		1.58E+02	NA	No	EN
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Metal	Vanadium	28		3.89E+01	9.80E+02	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Metal	Zinc	3600		3.90E+02	1.00E+03	Yes	>Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Pesticide	4,4'-DDE	0.56	J	1.23E-02	5.40E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Pesticide	4,4'-DDT	1.4	J	4.04E-02	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Pesticide	alpha-BHC	0.2	J	4.96E-02	5.00E-04	No	</=BKG
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Pesticide	alpha-Chlordane	0.06	J	6.15E-03	1.00E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Pesticide	Dieldrin	0.35	J	1.13E-02	4.00E-03	No	</=BKG
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Pesticide	Endosulfan Sulfate	0.043	J	1.81E-03	1.80E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Pesticide	Endrin Ketone	0.11	J	NA	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Pesticide	gamma-Chlordane	0.39	J	4.11E-02	1.00E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	1,2-Dichlorobenzene	0.031	J	NA	1.70E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	1,4-Dichlorobenzene	0.27	J	NA	2.00E+00	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	2-Methylnaphthalene	0.048	J	NA	1.20E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	Acenaphthene	0.13	J	4.20E-02	5.70E+02	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	Anthracene	0.82		1.20E-01	1.20E+04	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	Benzo(a)anthracene	2.1		2.76E-01	2.00E+00	No	</=BKG
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	Benzo(a)pyrene	1.9		4.06E-01	8.00E+00	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	Benzo(b)fluoranthene	2.2		3.66E-01	5.00E+00	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	Benzo(g,h,i)perylene	0.72		4.14E-01	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	Benzo(k)fluoranthene	1.7		2.83E-01	4.90E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	Benzyl Butyl Phthalate	0.18	J	NA	9.30E+02	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	bis(2-Ethylhexyl)phthalate	4.2	J	3.53E-01	3.60E+03	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	Carbazole	0.27	J	NA	6.00E-01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	Chrysene	2.1		2.99E-01	1.60E+02	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	Dibenzo(a,h)anthracene	0.28	J	1.20E-01	2.00E+00	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	Dibenzofuran	0.12	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	Di-n-butylphthalate	0.066	J	NA	2.30E+03	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	Fluoranthene	4.2		4.50E-01	4.30E+03	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	Fluorene	0.24	J	NA	5.60E+02	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	Indeno(1,2,3-cd)pyrene	0.44	J	NA	1.40E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	Naphthalene	0.17	J	NA	1.20E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	Phenanthrene	2.8	J	3.31E-01	1.20E+04	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Semivolatile	Pyrene	4.2		4.30E-01	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Volatile	4-Methyl-2-pentanone (MIBK)	0.003	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Volatile	Chlorobenzene	0.01	J	NA	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Volatile	Ethylbenzene	0.021		1.07E-03	1.30E+01	No	</=Screening Level
Q South	SOIL-Q-11	Surface	SOIL-Q-11-0.5-DUP	Volatile	Xylenes, Total	0.25	J	1.61E-03	1.50E+02	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Herbicide	Pentachlorophenol	240	J	NA	2.00E-02	Yes	>Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Metal	Aluminum	10000		7.86E+03	NA	No	Screening Level NA
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Metal	Antimony	14	J	1.21E+00	5.00E+00	Yes	>Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Metal	Arsenic	19		9.26E+00	2.50E+01	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Metal	Barium	620		3.28E+02	2.60E+02	Yes	>Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Metal	Beryllium	0.28	J	6.28E-01	1.10E+00	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Metal	Cadmium	10		2.91E-01	1.00E+00	Yes	>Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Metal	Calcium	18000		2.48E+04	NA	No	EN
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Metal	Chromium	130		1.57E+01	2.10E+01	Yes	>Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Metal	Cobalt	25		9.14E+00	NA	No	Screening Level NA
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Metal	Copper	570		1.35E+01	3.30E+02	Yes	>Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Metal	Iron	210000		1.88E+04	NA	No	EN
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Metal	Lead	1500		1.33E+01	NA	No	Screening Level NA
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Metal	Magnesium	1700		1.02E+04	NA	No	EN
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Metal	Manganese	1400		4.50E+02	NA	No	Screening Level NA
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Metal	Mercury	36		2.07E-02	1.00E-02	Yes	>Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Metal	Nickel	320		2.35E+01	2.00E+01	Yes	>Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Metal	Potassium	660	J	1.75E+03	NA	No	EN
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Metal	Silver	2	J	NA	2.40E-01	Yes	>Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Metal	Vanadium	12	J	2.98E+01	9.80E+02	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Metal	Zinc	2100		5.88E+01	1.00E+03	Yes	>Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Pesticide	4,4'-DDD	1.4	J	NA	1.60E+01	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Pesticide	4,4'-DDT	1.5	J	1.04E-03	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Pesticide	Aldrin	0.21	J	NA	5.00E-01	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Pesticide	alpha-BHC	0.05	J	NA	5.00E-04	Yes	>Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Pesticide	alpha-Chlordane	0.031	J	NA	1.00E+01	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Pesticide	delta-BHC	0.24		NA	5.00E-04	Yes	>Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Pesticide	Dieldrin	0.46	J	NA	4.00E-03	Yes	>Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Pesticide	Endosulfan II	0.086	J	NA	1.80E+01	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Pesticide	Endosulfan Sulfate	0.076	J	NA	1.80E+01	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Pesticide	Endrin Aldehyde	2.6	J	NA	1.00E+00	Yes	>Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Pesticide	Endrin Ketone	0.22	J	NA	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Semivolatile	1,4-Dichlorobenzene	1.2	J	NA	2.00E+00	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Semivolatile	2,4,5-Trichlorophenol	1.1	J	NA	2.70E+02	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Semivolatile	Acenaphthene	1.3	J	NA	5.70E+02	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Semivolatile	Anthracene	2	J	NA	1.20E+04	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Semivolatile	Benzo(a)anthracene	1.8	J	NA	2.00E+00	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Semivolatile	Benzo(a)pyrene	1.8	J	NA	8.00E+00	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Semivolatile	Benzo(b)fluoranthene	2.2	J	NA	5.00E+00	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Semivolatile	Benzo(g,h,i)perylene	1.1	J	NA	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Semivolatile	Benzo(k)fluoranthene	1.1	J	NA	4.90E+01	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Semivolatile	Benzyl Butyl Phthalate	3.1	J	NA	9.30E+02	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Semivolatile	bis(2-Ethylhexyl)phthalate	11	J	6.40E-02	3.60E+03	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Semivolatile	Chrysene	2.1	J	NA	1.60E+02	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Semivolatile	Dibenzofuran	0.82	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Semivolatile	Di-n-butylphthalate	2.3	J	NA	2.30E+03	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Semivolatile	Fluoranthene	4.5	J	NA	4.30E+03	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Semivolatile	Fluorene	1.4	J	NA	5.60E+02	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Semivolatile	Phenanthrene	6.1	J	NA	1.20E+04	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Semivolatile	Phenol	1	J	NA	1.00E+02	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Semivolatile	Pyrene	5.2	J	NA	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Volatile	2-Butanone (MEK)	0.071	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Volatile	Acetone	0.23	J	NA	1.60E+01	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Volatile	Benzene	0.46		NA	3.00E-02	Yes	>Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Volatile	Carbon Disulfide	0.0078	J	NA	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Volatile	Chlorobenzene	1.1	J	NA	1.00E+00	Yes	>Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Volatile	Chloroethane	0.026	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Volatile	Ethylbenzene	0.45		8.37E-04	1.30E+01	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Volatile	Toluene	0.019	J	NA	1.20E+01	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Volatile	Trichloroethylene	0.0022	J	NA	6.00E-02	No	</=Screening Level
Q South	SOIL-Q-11	Subsurface	SOIL-Q-11-6	Volatile	Xylenes, Total	2.2	J	1.50E-03	1.50E+02	No	</=Screening Level
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Herbicide	2,4-D	0.0047	J	9.96E-03	1.50E+00	No	</=Screening Level
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Herbicide	Dichlorprop	0.0037	J	1.14E-01	NA	No	Screening Level NA
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Herbicide	MCPA	1.1	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Herbicide	MCPP	2	J	3.60E+00	NA	No	Screening Level NA
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Herbicide	Pentachlorophenol	0.036	J	4.57E-03	2.00E-02	No	</=BKG
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Metal	Aluminum	12000		1.38E+04	NA	No	Screening Level NA
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Metal	Arsenic	6		1.24E+01	2.50E+01	No	</=Screening Level
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Metal	Barium	200		3.07E+02	2.60E+02	No	</=Screening Level
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Metal	Beryllium	0.82		9.02E-01	1.10E+00	No	</=Screening Level
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Metal	Cadmium	1.4		3.34E+00	1.00E+00	No	</=BKG
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Metal	Calcium	9800		9.74E+04	NA	No	EN

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Metal	Chromium	20		2.21E+01	2.10E+01	No	</=Screening Level
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Metal	Cobalt	8.8		9.40E+00	NA	No	Screening Level NA
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Metal	Copper	33		8.58E+01	3.30E+02	No	</=Screening Level
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Metal	Iron	19000		2.33E+04	NA	No	EN
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Metal	Lead	47		1.30E+02	NA	No	Screening Level NA
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Metal	Magnesium	4300		1.23E+04	NA	No	EN
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Metal	Manganese	460		5.52E+02	NA	No	Screening Level NA
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Metal	Mercury	0.059		1.34E-01	1.00E-02	No	</=BKG
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Metal	Nickel	22		3.30E+01	2.00E+01	No	</=BKG
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Metal	Potassium	1600	J	3.01E+03	NA	No	EN
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Metal	Vanadium	30		3.89E+01	9.80E+02	No	</=Screening Level
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Metal	Zinc	210		3.90E+02	1.00E+03	No	</=Screening Level
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Pesticide	4,4'-DDT	0.79	J	4.04E-02	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Pesticide	alpha-Chlordane	0.014	J	6.15E-03	1.00E+01	No	</=Screening Level
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Pesticide	Dieldrin	0.28		1.13E-02	4.00E-03	No	</=BKG
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Pesticide	Endosulfan Sulfate	0.02	J	1.81E-03	1.80E+01	No	</=Screening Level
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Semivolatile	Benzo(a)anthracene	0.03	J	2.76E-01	2.00E+00	No	</=Screening Level
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Semivolatile	Benzo(b)fluoranthene	0.033	J	3.66E-01	5.00E+00	No	</=Screening Level
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Semivolatile	Benzo(k)fluoranthene	0.032	J	2.83E-01	4.90E+01	No	</=Screening Level
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	0.78	J	3.53E-01	3.60E+03	No	</=Screening Level
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Semivolatile	Chrysene	0.042	J	2.99E-01	1.60E+02	No	</=Screening Level
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Semivolatile	Fluoranthene	0.057	J	4.50E-01	4.30E+03	No	</=Screening Level
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Semivolatile	Phenanthrene	0.026	J	3.31E-01	1.20E+04	No	</=Screening Level
Q South	SOIL-Q-12	Surface	SOIL-Q-12-0.5	Semivolatile	Pyrene	0.053	J	4.30E-01	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Herbicide	Pentachlorophenol	0.41	J	NA	2.00E-02	Yes	>Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Metal	Aluminum	9600		7.86E+03	NA	No	Screening Level NA
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Metal	Arsenic	5.8		9.26E+00	2.50E+01	No	</=Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Metal	Barium	280		3.28E+02	2.60E+02	No	</=BKG
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Metal	Beryllium	0.69		6.28E-01	1.10E+00	No	</=Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Metal	Cadmium	0.13	J	2.91E-01	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Metal	Calcium	15000		2.48E+04	NA	No	EN
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Metal	Chromium	16		1.57E+01	2.10E+01	No	</=Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Metal	Cobalt	8.3		9.14E+00	NA	No	Screening Level NA
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Metal	Copper	21		1.35E+01	3.30E+02	No	</=Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Metal	Iron	19000		1.88E+04	NA	No	EN
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Metal	Lead	14		1.33E+01	NA	No	Screening Level NA
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Metal	Magnesium	6700		1.02E+04	NA	No	EN
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Metal	Manganese	510		4.50E+02	NA	No	Screening Level NA
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Metal	Mercury	0.021	J	2.07E-02	1.00E-02	Yes	>Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Metal	Nickel	22		2.35E+01	2.00E+01	No	</=BKG
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Metal	Potassium	1900	J	1.75E+03	NA	No	EN
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Metal	Vanadium	28		2.98E+01	9.80E+02	No	</=Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Metal	Zinc	63		5.88E+01	1.00E+03	No	</=Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Pesticide	4,4'-DDT	0.79	J	1.04E-03	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Pesticide	gamma-BHC (Lindane)	0.0038	J	NA	9.00E-03	No	</=Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Pesticide	gamma-Chlordane	0.29		2.40E-04	1.00E+01	No	</=Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Pesticide	Heptachlor	0.0058	J	NA	2.30E+01	No	</=Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Semivolatile	1,2,4-Trichlorobenzene	0.069	J	NA	5.00E+00	No	</=Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Semivolatile	2-Methylnaphthalene	0.54		NA	1.20E+01	No	</=Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Semivolatile	3-Methylphenol/4-Methylphenol	0.38	J	NA	1.50E+01	No	</=Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Semivolatile	Benzyl Butyl Phthalate	0.25	J	NA	9.30E+02	No	</=Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Semivolatile	bis(2-Ethylhexyl)phthalate	2.9	J	6.40E-02	3.60E+03	No	</=Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Semivolatile	Di-n-butylphthalate	0.13	J	NA	2.30E+03	No	</=Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Semivolatile	Naphthalene	5.2		NA	1.20E+01	No	</=Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Semivolatile	Phenanthrene	0.033	J	NA	1.20E+04	No	</=Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Volatile	1,1,1-Trichloroethane	0.47		NA	2.00E+00	No	</=Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Volatile	1,1-Dichloroethane	0.76	J	NA	2.30E+01	No	</=Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Volatile	1,2-Dichloroethene (total)	8.5		NA	4.00E-01	Yes	>Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Volatile	Benzene	2		NA	3.00E-02	Yes	>Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Volatile	Chlorobenzene	1.2	J	NA	1.00E+00	Yes	>Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Volatile	Chloroethane	0.19	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Volatile	Ethylbenzene	270		8.37E-04	1.30E+01	No	</=BKG
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Volatile	Tetrachloroethene	0.96		1.02E-03	6.00E-02	No	</=BKG
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Volatile	Toluene	1300		NA	1.20E+01	Yes	>Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Volatile	Trichloroethylene	0.38		NA	6.00E-02	Yes	>Screening Level
Q South	SOIL-Q-12	Subsurface	SOIL-Q-12-6	Volatile	Xylenes, Total	1900	J	1.50E-03	1.50E+02	Yes	>Screening Level
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Herbicide	2,4-D	0.012	J	9.96E-03	1.50E+00	No	</=Screening Level
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Herbicide	MCPA	0.6	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Herbicide	MCPP	0.75	J	3.60E+00	NA	No	Screening Level NA
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Herbicide	Pentachlorophenol	0.0052	J	4.57E-03	2.00E-02	No	</=Screening Level
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Metal	Aluminum	14000		1.38E+04	NA	No	Screening Level NA
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Metal	Arsenic	7.9		1.24E+01	2.50E+01	No	</=Screening Level
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Metal	Barium	250		3.07E+02	2.60E+02	No	</=Screening Level
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Metal	Beryllium	0.99		9.02E-01	1.10E+00	No	</=Screening Level
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Metal	Cadmium	2.4		3.34E+00	1.00E+00	No	</=BKG
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Metal	Calcium	13000		9.74E+04	NA	No	EN
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Metal	Chromium	24		2.21E+01	2.10E+01	Yes	>Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Metal	Cobalt	11	J	9.40E+00	NA	No	Screening Level NA
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Metal	Copper	42		8.58E+01	3.30E+02	No	</=Screening Level
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Metal	Iron	24000		2.33E+04	NA	No	EN
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Metal	Lead	60		1.30E+02	NA	No	Screening Level NA
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Metal	Magnesium	4900		1.23E+04	NA	No	EN
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Metal	Manganese	660		5.52E+02	NA	No	Screening Level NA
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Metal	Mercury	0.14		1.34E-01	1.00E-02	Yes	>Screening Level
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Metal	Nickel	27		3.30E+01	2.00E+01	No	</=BKG
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Metal	Potassium	2300		3.01E+03	NA	No	EN
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Metal	Silver	0.18	J	9.90E-01	2.40E-01	No	</=Screening Level
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Metal	Thallium	1.9		NA	1.60E+00	Yes	>Screening Level
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Metal	Vanadium	36		3.89E+01	9.80E+02	No	</=Screening Level
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Metal	Zinc	260		3.90E+02	1.00E+03	No	</=Screening Level
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Pesticide	4,4'-DDE	0.043	J	1.23E-02	5.40E+01	No	</=Screening Level
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Pesticide	4,4'-DDT	0.071	J	4.04E-02	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Pesticide	alpha-Chlordane	0.014	J	6.15E-03	1.00E+01	No	</=Screening Level
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Pesticide	Dieldrin	0.1		1.13E-02	4.00E-03	No	</=BKG
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Pesticide	Endosulfan Sulfate	0.0055	J	1.81E-03	1.80E+01	No	</=Screening Level
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Pesticide	Endrin Aldehyde	0.012	J	5.88E-03	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Semivolatile	Benzo(k)fluoranthene	0.039	J	2.83E-01	4.90E+01	No	</=Screening Level
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	0.05	J	3.53E-01	3.60E+03	No	</=Screening Level
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Semivolatile	Chrysene	0.028	J	2.99E-01	1.60E+02	No	</=Screening Level
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Volatile	Toluene	0.0012	J	NA	1.20E+01	No	</=Screening Level
Q South	SOIL-Q-13	Surface	SOIL-Q-13-0.5	Volatile	Xylenes, Total	0.00074	J	1.61E-03	1.50E+02	No	</=Screening Level
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Herbicide	MCPA	3.7	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Herbicide	MCPP	1.5	J	3.60E+00	NA	No	Screening Level NA
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Herbicide	Pentachlorophenol	0.0055	J	4.57E-03	2.00E-02	No	</=Screening Level
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Metal	Aluminum	7200		1.38E+04	NA	No	Screening Level NA
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Metal	Arsenic	5.1		1.24E+01	2.50E+01	No	</=Screening Level
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Metal	Barium	180		3.07E+02	2.60E+02	No	</=Screening Level
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Metal	Beryllium	0.53		9.02E-01	1.10E+00	No	</=Screening Level
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Metal	Cadmium	1.8		3.34E+00	1.00E+00	No	</=BKG
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Metal	Calcium	11000		9.74E+04	NA	No	EN
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Metal	Chromium	17		2.21E+01	2.10E+01	No	</=Screening Level
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Metal	Cobalt	6.8	J	9.40E+00	NA	No	Screening Level NA
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Metal	Copper	86		8.58E+01	3.30E+02	No	</=Screening Level
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Metal	Iron	14000		2.33E+04	NA	No	EN
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Metal	Lead	62		1.30E+02	NA	No	Screening Level NA
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Metal	Magnesium	4200		1.23E+04	NA	No	EN
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Metal	Manganese	380		5.52E+02	NA	No	Screening Level NA
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Metal	Mercury	0.13		1.34E-01	1.00E-02	No	</=BKG
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Metal	Nickel	29		3.30E+01	2.00E+01	No	</=BKG
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Metal	Potassium	1300		3.01E+03	NA	No	EN
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Metal	Silver	0.11	J	9.90E-01	2.40E-01	No	</=Screening Level
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Metal	Vanadium	21		3.89E+01	9.80E+02	No	</=Screening Level
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Metal	Zinc	240		3.90E+02	1.00E+03	No	</=Screening Level
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Pesticide	4,4'-DDT	0.039	J	4.04E-02	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Pesticide	Dieldrin	0.0022	J	1.13E-02	4.00E-03	No	</=Screening Level
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Pesticide	Heptachlor Epoxide	0.012	J	1.05E-02	7.00E-01	No	</=Screening Level
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	0.063	J	3.53E-01	3.60E+03	No	</=Screening Level
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Semivolatile	Chrysene	0.023	J	2.99E-01	1.60E+02	No	</=Screening Level
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Semivolatile	Di-n-butylphthalate	0.055	J	NA	2.30E+03	No	</=Screening Level
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Volatile	Ethylbenzene	0.0005	J	1.07E-03	1.30E+01	No	</=Screening Level
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Volatile	Toluene	0.0018	J	NA	1.20E+01	No	</=Screening Level
Q South	SOIL-Q-14	Surface	SOIL-Q-14-0.5	Volatile	Xylenes, Total	0.0026	J	1.61E-03	1.50E+02	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Herbicide	2,4-D	0.0087	J	9.96E-03	1.50E+00	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Herbicide	MCPP	1.7	J	3.60E+00	NA	No	Screening Level NA
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Herbicide	Pentachlorophenol	0.0024	J	4.57E-03	2.00E-02	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Metal	Aluminum	11000		1.38E+04	NA	No	Screening Level NA
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Metal	Arsenic	5		1.24E+01	2.50E+01	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Metal	Barium	180		3.07E+02	2.60E+02	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Metal	Beryllium	0.97		9.02E-01	1.10E+00	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Metal	Cadmium	1.9	J	3.34E+00	1.00E+00	No	</=BKG
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Metal	Calcium	9000		9.74E+04	NA	No	EN
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Metal	Chromium	20		2.21E+01	2.10E+01	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Metal	Cobalt	8.6	J	9.40E+00	NA	No	Screening Level NA
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Metal	Copper	35		8.58E+01	3.30E+02	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Metal	Iron	19000		2.33E+04	NA	No	EN
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Metal	Lead	48		1.30E+02	NA	No	Screening Level NA
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Metal	Magnesium	4300		1.23E+04	NA	No	EN
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Metal	Manganese	320		5.52E+02	NA	No	Screening Level NA
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Metal	Mercury	0.16		1.34E-01	1.00E-02	Yes	>Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Metal	Nickel	22		3.30E+01	2.00E+01	No	</=BKG
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Metal	Potassium	1600		3.01E+03	NA	No	EN
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Metal	Thallium	0.97	J	NA	1.60E+00	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Metal	Vanadium	31		3.89E+01	9.80E+02	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Metal	Zinc	260		3.90E+02	1.00E+03	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Pesticide	4,4'-DDT	0.53	J	4.04E-02	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Pesticide	alpha-Chlordane	0.0039	J	6.15E-03	1.00E+01	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Pesticide	Dieldrin	0.16		1.13E-02	4.00E-03	No	</=BKG
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Pesticide	Endrin Aldehyde	0.017	J	5.88E-03	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Semivolatile	Anthracene	0.065	J	1.20E-01	1.20E+04	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Semivolatile	Benzo(a)anthracene	0.085	J	2.76E-01	2.00E+00	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Semivolatile	Benzo(a)pyrene	0.092	J	4.06E-01	8.00E+00	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Semivolatile	Benzo(g,h,i)perylene	0.064	J	4.14E-01	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Semivolatile	Benzo(k)fluoranthene	0.079	J	2.83E-01	4.90E+01	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	0.22	J	3.53E-01	3.60E+03	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Semivolatile	Chrysene	0.099	J	2.99E-01	1.60E+02	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Semivolatile	Fluoranthene	0.12	J	4.50E-01	4.30E+03	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Semivolatile	Indeno(1,2,3-cd)pyrene	0.049	J	NA	1.40E+01	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Semivolatile	Phenanthrene	0.065	J	3.31E-01	1.20E+04	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Semivolatile	Pyrene	0.14	J	4.30E-01	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Volatile	2-Butanone (MEK)	0.0023	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Volatile	Acetone	0.02	J	NA	1.60E+01	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Volatile	Ethylbenzene	0.00023	J	1.07E-03	1.30E+01	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Volatile	Methyl N-Butyl Ketone	0.0057	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Volatile	Toluene	0.0013	J	NA	1.20E+01	No	</=Screening Level
Q South	SOIL-Q-15	Surface	SOIL-Q-15-0.5	Volatile	Xylenes, Total	0.0008	J	1.61E-03	1.50E+02	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Herbicide	2,4-D	0.0069	J	9.96E-03	1.50E+00	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Herbicide	MCPA	1.6	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Herbicide	MCPP	2.2	J	3.60E+00	NA	No	Screening Level NA
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Herbicide	Pentachlorophenol	0.002	J	4.57E-03	2.00E-02	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Metal	Aluminum	7600		1.38E+04	NA	No	Screening Level NA
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Metal	Arsenic	5.5		1.24E+01	2.50E+01	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Metal	Barium	150		3.07E+02	2.60E+02	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Metal	Beryllium	0.54		9.02E-01	1.10E+00	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Metal	Cadmium	1	J	3.34E+00	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Metal	Calcium	11000		9.74E+04	NA	No	EN
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Metal	Chromium	13		2.21E+01	2.10E+01	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Metal	Cobalt	6.8	J	9.40E+00	NA	No	Screening Level NA
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Metal	Copper	21		8.58E+01	3.30E+02	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Metal	Iron	15000		2.33E+04	NA	No	EN
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Metal	Lead	27		1.30E+02	NA	No	Screening Level NA
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Metal	Magnesium	5000		1.23E+04	NA	No	EN
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Metal	Manganese	380		5.52E+02	NA	No	Screening Level NA
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Metal	Mercury	0.078		1.34E-01	1.00E-02	No	</=BKG
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Metal	Nickel	17		3.30E+01	2.00E+01	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Metal	Potassium	1400		3.01E+03	NA	No	EN
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Metal	Thallium	1.1	J	NA	1.60E+00	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Metal	Vanadium	22		3.89E+01	9.80E+02	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Metal	Zinc	140		3.90E+02	1.00E+03	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Pesticide	4,4'-DDE	0.0015	J	1.23E-02	5.40E+01	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Pesticide	4,4'-DDT	0.0051	J	4.04E-02	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Pesticide	Dieldrin	0.0033	J	1.13E-02	4.00E-03	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Pesticide	gamma-Chlordane	0.00053	J	4.11E-02	1.00E+01	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Semivolatile	Benzo(a)anthracene	0.065	J	2.76E-01	2.00E+00	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Semivolatile	Benzo(a)pyrene	0.075	J	4.06E-01	8.00E+00	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Semivolatile	Benzo(b)fluoranthene	0.069	J	3.66E-01	5.00E+00	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Semivolatile	Benzo(g,h,i)perylene	0.078	J	4.14E-01	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Semivolatile	Benzo(k)fluoranthene	0.071	J	2.83E-01	4.90E+01	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	0.066	J	3.53E-01	3.60E+03	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Semivolatile	Chrysene	0.065	J	2.99E-01	1.60E+02	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Semivolatile	Di-n-butylphthalate	0.051	J	NA	2.30E+03	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Semivolatile	Fluoranthene	0.12	J	4.50E-01	4.30E+03	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Semivolatile	Phenanthrene	0.058	J	3.31E-01	1.20E+04	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Volatile	2-Butanone (MEK)	0.011	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Volatile	4-Methyl-2-pentanone (MIBK)	0.0075	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Volatile	Acetone	0.15	J	NA	1.60E+01	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Volatile	Benzene	0.0018	J	NA	3.00E-02	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Volatile	Carbon Disulfide	0.0027	J	NA	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Volatile	Ethylbenzene	0.00074	J	1.07E-03	1.30E+01	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Volatile	Methyl N-Butyl Ketone	0.15		NA	NA	No	Screening Level NA
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Volatile	Toluene	0.0053	J	NA	1.20E+01	No	</=Screening Level
Q South	SOIL-Q-16	Surface	SOIL-Q-16-0.5	Volatile	Xylenes, Total	0.0024	J	1.61E-03	1.50E+02	No	</=Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Herbicide	2,4-D	170		NA	1.50E+00	Yes	>Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Herbicide	Pentachlorophenol	510		NA	2.00E-02	Yes	>Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Metal	Aluminum	6000		7.86E+03	NA	No	Screening Level NA
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Metal	Antimony	84	J	1.21E+00	5.00E+00	Yes	>Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Metal	Arsenic	40		9.26E+00	2.50E+01	Yes	>Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Metal	Barium	7200		3.28E+02	2.60E+02	Yes	>Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Metal	Beryllium	0.23	J	6.28E-01	1.10E+00	No	</=Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Metal	Cadmium	51		2.91E-01	1.00E+00	Yes	>Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Metal	Calcium	16000		2.48E+04	NA	No	EN
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Metal	Chromium	140		1.57E+01	2.10E+01	Yes	>Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Metal	Cobalt	21		9.14E+00	NA	No	Screening Level NA
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Metal	Copper	3800	J	1.35E+01	3.30E+02	Yes	>Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Metal	Iron	83000		1.88E+04	NA	No	EN
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Metal	Lead	24000		1.33E+01	NA	No	Screening Level NA
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Metal	Magnesium	3100		1.02E+04	NA	No	EN
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Metal	Manganese	600		4.50E+02	NA	No	Screening Level NA
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Metal	Mercury	1.8	J	2.07E-02	1.00E-02	Yes	>Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Metal	Nickel	110		2.35E+01	2.00E+01	Yes	>Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Metal	Potassium	700		1.75E+03	NA	No	EN
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Metal	Silver	4		NA	2.40E-01	Yes	>Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Metal	Sodium	1200		1.25E+02	NA	No	EN
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Metal	Vanadium	24		2.98E+01	9.80E+02	No	</=Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Metal	Zinc	11000	J	5.88E+01	1.00E+03	Yes	>Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Pesticide	4,4'-DDE	4.9		NA	5.40E+01	No	</=Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Pesticide	4,4'-DDT	5	J	1.04E-03	3.20E+01	No	</=Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Pesticide	alpha-BHC	0.064	J	NA	5.00E-04	Yes	>Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Pesticide	Dieldrin	1.2	J	NA	4.00E-03	Yes	>Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Semivolatile	2,4-Dichlorophenol	65	J	NA	4.80E-01	Yes	>Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Semivolatile	Phenol	29	J	NA	1.00E+02	No	</=Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Volatile	1,1,1-Trichloroethane	0.25	J	NA	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Volatile	1,2-Dichloroethane	4		NA	2.00E-02	Yes	>Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Volatile	Acetone	3	J	NA	1.60E+01	No	</=Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Volatile	Benzene	8.8		NA	3.00E-02	Yes	>Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Volatile	Chlorobenzene	26		NA	1.00E+00	Yes	>Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Volatile	Ethylbenzene	11		8.37E-04	1.30E+01	No	</=Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Volatile	Tetrachloroethene	28	J	1.02E-03	6.00E-02	Yes	>Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Volatile	Toluene	47		NA	1.20E+01	Yes	>Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Volatile	Trichloroethylene	0.73		NA	6.00E-02	Yes	>Screening Level
Q North	SOIL-Q-1	Subsurface	SOIL-Q-1-6FT	Volatile	Xylenes, Total	80		1.50E-03	1.50E+02	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Herbicide	2,4-D	0.0078	J	9.96E-03	1.50E+00	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Herbicide	Dichlorprop	0.0061	J	1.14E-01	NA	No	Screening Level NA
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Herbicide	Pentachlorophenol	0.0011	J	4.57E-03	2.00E-02	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Metal	Aluminum	4000		1.38E+04	NA	No	Screening Level NA
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Metal	Arsenic	4.2		1.24E+01	2.50E+01	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Metal	Barium	100		3.07E+02	2.60E+02	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Metal	Beryllium	0.31	J	9.02E-01	1.10E+00	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Metal	Cadmium	0.92		3.34E+00	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Metal	Calcium	8400		9.74E+04	NA	No	EN
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Metal	Chromium	8.2		2.21E+01	2.10E+01	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Metal	Cobalt	5.2	J	9.40E+00	NA	No	Screening Level NA
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Metal	Copper	10		8.58E+01	3.30E+02	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Metal	Iron	9600		2.33E+04	NA	No	EN
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Metal	Lead	20		1.30E+02	NA	No	Screening Level NA
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Metal	Magnesium	3000		1.23E+04	NA	No	EN
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Metal	Manganese	320		5.52E+02	NA	No	Screening Level NA
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Metal	Mercury	0.036		1.34E-01	1.00E-02	No	</=BKG
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Metal	Nickel	12		3.30E+01	2.00E+01	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Metal	Potassium	810		3.01E+03	NA	No	EN
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Metal	Vanadium	14		3.89E+01	9.80E+02	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Metal	Zinc	140		3.90E+02	1.00E+03	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Pesticide	4,4'-DDT	0.0021	J	4.04E-02	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Pesticide	Dieldrin	0.00066	J	1.13E-02	4.00E-03	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Pesticide	gamma-Chlordane	0.00055	J	4.11E-02	1.00E+01	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Semivolatile	Benzo(a)anthracene	0.21	J	2.76E-01	2.00E+00	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Semivolatile	Benzo(a)pyrene	0.18	J	4.06E-01	8.00E+00	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Semivolatile	Benzo(b)fluoranthene	0.21	J	3.66E-01	5.00E+00	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Semivolatile	Benzo(g,h,i)perylene	0.13	J	4.14E-01	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Semivolatile	Benzo(k)fluoranthene	0.24	J	2.83E-01	4.90E+01	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Semivolatile	Chrysene	0.24	J	2.99E-01	1.60E+02	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Semivolatile	Fluoranthene	0.32	J	4.50E-01	4.30E+03	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Semivolatile	Indeno(1,2,3-cd)pyrene	0.12	J	NA	1.40E+01	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Semivolatile	Phenanthrene	0.038	J	3.31E-01	1.20E+04	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Semivolatile	Pyrene	0.28	J	4.30E-01	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Volatile	2-Butanone (MEK)	0.014	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Volatile	4-Methyl-2-pentanone (MIBK)	0.0058	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Volatile	Acetone	0.18	J	NA	1.60E+01	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Volatile	Benzene	0.0015	J	NA	3.00E-02	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Volatile	Carbon Disulfide	0.0045	J	NA	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Volatile	Chlorobenzene	0.00067	J	NA	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Volatile	Ethylbenzene	0.00071	J	1.07E-03	1.30E+01	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Volatile	Methyl N-Butyl Ketone	0.19		NA	NA	No	Screening Level NA
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Volatile	Toluene	0.0034	J	NA	1.20E+01	No	</=Screening Level
Q South	SOIL-Q-17	Surface	SOIL-Q-17-0.5	Volatile	Xylenes, Total	0.0017	J	1.61E-03	1.50E+02	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Herbicide	2,4-D	0.0079	J	9.96E-03	1.50E+00	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Herbicide	MCPA	0.72	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Metal	Aluminum	3800		1.38E+04	NA	No	Screening Level NA
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Metal	Arsenic	3.3		1.24E+01	2.50E+01	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Metal	Barium	86		3.07E+02	2.60E+02	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Metal	Beryllium	0.28	J	9.02E-01	1.10E+00	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Metal	Cadmium	0.41	J	3.34E+00	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Metal	Calcium	7400		9.74E+04	NA	No	EN
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Metal	Chromium	8		2.21E+01	2.10E+01	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Metal	Cobalt	5	J	9.40E+00	NA	No	Screening Level NA
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Metal	Copper	7		8.58E+01	3.30E+02	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Metal	Iron	9200		2.33E+04	NA	No	EN
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Metal	Lead	15		1.30E+02	NA	No	Screening Level NA
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Metal	Magnesium	2700		1.23E+04	NA	No	EN
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Metal	Manganese	290		5.52E+02	NA	No	Screening Level NA
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Metal	Mercury	0.021	J	1.34E-01	1.00E-02	No	</=BKG
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Metal	Nickel	11		3.30E+01	2.00E+01	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Metal	Potassium	710		3.01E+03	NA	No	EN
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Metal	Vanadium	13		3.89E+01	9.80E+02	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Metal	Zinc	100		3.90E+02	1.00E+03	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Pesticide	alpha-Chlordane	0.00015	J	6.15E-03	1.00E+01	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Pesticide	Endrin Ketone	0.00069	J	NA	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Pesticide	Heptachlor Epoxide	0.00023	J	1.05E-02	7.00E-01	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Semivolatile	Benzo(a)anthracene	0.045	J	2.76E-01	2.00E+00	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Semivolatile	Benzo(a)pyrene	0.048	J	4.06E-01	8.00E+00	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Semivolatile	Benzo(g,h,i)perylene	0.052	J	4.14E-01	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Semivolatile	Benzo(k)fluoranthene	0.044	J	2.83E-01	4.90E+01	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	0.032	J	3.53E-01	3.60E+03	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Semivolatile	Chrysene	0.068	J	2.99E-01	1.60E+02	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Semivolatile	Fluoranthene	0.096	J	4.50E-01	4.30E+03	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Semivolatile	Indeno(1,2,3-cd)pyrene	0.045	J	NA	1.40E+01	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Semivolatile	Phenanthrene	0.044	J	3.31E-01	1.20E+04	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Semivolatile	Pyrene	0.093	J	4.30E-01	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Volatile	2-Butanone (MEK)	0.0064	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Volatile	Acetone	0.091		NA	1.60E+01	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Volatile	Benzene	0.0024	J	NA	3.00E-02	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Volatile	Carbon Disulfide	0.0048	J	NA	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Volatile	Chlorobenzene	0.00036	J	NA	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Volatile	Ethylbenzene	0.00052	J	1.07E-03	1.30E+01	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Volatile	Methyl N-Butyl Ketone	0.026	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Volatile	Toluene	0.0042	J	NA	1.20E+01	No	</=Screening Level
Q South	SOIL-Q-18	Surface	SOIL-Q-18-0.5	Volatile	Xylenes, Total	0.00078	J	1.61E-03	1.50E+02	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Herbicide	2,4-D	0.0064	J	9.96E-03	1.50E+00	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Herbicide	Dichlorprop	0.0062	J	1.14E-01	NA	No	Screening Level NA
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Herbicide	MCPA	2.8	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Herbicide	MCPP	2.6	J	3.60E+00	NA	No	Screening Level NA
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Herbicide	Pentachlorophenol	0.0015	J	4.57E-03	2.00E-02	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Metal	Aluminum	7400		1.38E+04	NA	No	Screening Level NA
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Metal	Arsenic	4.3		1.24E+01	2.50E+01	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Metal	Barium	160		3.07E+02	2.60E+02	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Metal	Beryllium	0.54		9.02E-01	1.10E+00	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Metal	Cadmium	1	J	3.34E+00	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Metal	Calcium	9300		9.74E+04	NA	No	EN
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Metal	Chromium	13		2.21E+01	2.10E+01	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Metal	Cobalt	6.8	J	9.40E+00	NA	No	Screening Level NA
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Metal	Copper	20		8.58E+01	3.30E+02	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Metal	Iron	14000		2.33E+04	NA	No	EN
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Metal	Lead	30		1.30E+02	NA	No	Screening Level NA
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Metal	Magnesium	4200		1.23E+04	NA	No	EN
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Metal	Manganese	370		5.52E+02	NA	No	Screening Level NA
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Metal	Mercury	0.052		1.34E-01	1.00E-02	No	</=BKG
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Metal	Nickel	16		3.30E+01	2.00E+01	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Metal	Potassium	1200		3.01E+03	NA	No	EN
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Metal	Thallium	0.79	J	NA	1.60E+00	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Metal	Vanadium	22		3.89E+01	9.80E+02	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Metal	Zinc	160		3.90E+02	1.00E+03	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Pesticide	4,4'-DDD	0.0057	J	7.04E-03	1.60E+01	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Pesticide	4,4'-DDE	0.00081	J	1.23E-02	5.40E+01	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Pesticide	4,4'-DDT	0.044	J	4.04E-02	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Pesticide	Endrin Aldehyde	0.00092	J	5.88E-03	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Pesticide	Endrin Ketone	0.0012	J	NA	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Pesticide	Heptachlor Epoxide	0.0005	J	1.05E-02	7.00E-01	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Semivolatile	Benzo(a)anthracene	0.041	J	2.76E-01	2.00E+00	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Semivolatile	Benzo(a)pyrene	0.046	J	4.06E-01	8.00E+00	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Semivolatile	Benzo(b)fluoranthene	0.056	J	3.66E-01	5.00E+00	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Semivolatile	Benzo(g,h,i)perylene	0.043	J	4.14E-01	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Semivolatile	Benzo(k)fluoranthene	0.055	J	2.83E-01	4.90E+01	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Semivolatile	Chrysene	0.059	J	2.99E-01	1.60E+02	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Semivolatile	Fluoranthene	0.06	J	4.50E-01	4.30E+03	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Volatile	2-Butanone (MEK)	0.0046	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Volatile	Ethylbenzene	0.00045	J	1.07E-03	1.30E+01	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Volatile	Methyl N-Butyl Ketone	0.025	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Volatile	Toluene	0.001	J	NA	1.20E+01	No	</=Screening Level
Q South	SOIL-Q-19	Surface	SOIL-Q-19-0.5	Volatile	Xylenes, Total	0.00056	J	1.61E-03	1.50E+02	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Herbicide	2,4,5-T	0.0021	J	NA	1.10E+01	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Herbicide	2,4-D	0.005	J	9.96E-03	1.50E+00	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Herbicide	Pentachlorophenol	0.047		4.57E-03	2.00E-02	No	</=BKG
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Metal	Aluminum	1200		1.38E+04	NA	No	Screening Level NA
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Metal	Antimony	1.6	J	2.33E+00	5.00E+00	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Metal	Arsenic	6		1.24E+01	2.50E+01	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Metal	Barium	61	J	3.07E+02	2.60E+02	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Metal	Beryllium	0.3	J	9.02E-01	1.10E+00	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Metal	Cadmium	92		3.34E+00	1.00E+00	Yes	>Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Metal	Calcium	120000		9.74E+04	NA	No	EN
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Metal	Chromium	8.9		2.21E+01	2.10E+01	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Metal	Cobalt	16	J	9.40E+00	NA	No	Screening Level NA
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Metal	Copper	230	J	8.58E+01	3.30E+02	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Metal	Iron	14000		2.33E+04	NA	No	EN
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Metal	Magnesium	9700		1.23E+04	NA	No	EN
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Metal	Manganese	210	J	5.52E+02	NA	No	Screening Level NA
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Metal	Mercury	0.076	J	1.34E-01	1.00E-02	No	</=BKG
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Metal	Nickel	14		3.30E+01	2.00E+01	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Metal	Potassium	330	J	3.01E+03	NA	No	EN
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Metal	Silver	5.2		9.90E-01	2.40E-01	Yes	>Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Metal	Sodium	560		1.58E+02	NA	No	EN
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Metal	Vanadium	8.3		3.89E+01	9.80E+02	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Metal	Zinc	8000	J	3.90E+02	1.00E+03	Yes	>Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Pesticide	4,4'-DDT	0.12	J	4.04E-02	3.20E+01	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Semivolatile	1,4-Dichlorobenzene	0.63		NA	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Semivolatile	2-Methylnaphthalene	0.095	J	NA	1.20E+01	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Semivolatile	Acenaphthene	0.09	J	4.20E-02	5.70E+02	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Semivolatile	Anthracene	0.21	J	1.20E-01	1.20E+04	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Semivolatile	Benzo(a)anthracene	1.5		2.76E-01	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Semivolatile	Benzo(a)pyrene	1.8		4.06E-01	8.00E+00	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Semivolatile	Benzo(b)fluoranthene	1.8		3.66E-01	5.00E+00	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Semivolatile	Benzo(g,h,i)perylene	1.1		4.14E-01	4.20E+03	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Semivolatile	Benzo(k)fluoranthene	1.4		2.83E-01	4.90E+01	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Semivolatile	Benzyl Butyl Phthalate	0.033	J	NA	9.30E+02	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	0.047	J	3.53E-01	3.60E+03	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Semivolatile	Carbazole	0.098	J	NA	6.00E-01	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Semivolatile	Chrysene	1.7		2.99E-01	1.60E+02	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Semivolatile	Dibenzo(a,h)anthracene	0.37		1.20E-01	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Semivolatile	Dibenzofuran	0.06	J	NA	NA	No	Screening Level NA
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Semivolatile	Fluoranthene	1.6		4.50E-01	4.30E+03	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Semivolatile	Fluorene	0.053	J	NA	5.60E+02	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Semivolatile	Indeno(1,2,3-cd)pyrene	1		NA	1.40E+01	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Semivolatile	Naphthalene	0.081	J	NA	1.20E+01	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Semivolatile	Phenanthrene	0.94		3.31E-01	1.20E+04	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Semivolatile	Pyrene	1.8		4.30E-01	4.20E+03	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Volatile	Tetrachloroethene	0.0024	J	8.80E-04	6.00E-02	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Volatile	Trichloroethylene	0.0015	J	NA	6.00E-02	No	</=Screening Level
Q North	SOIL-Q-2	Surface	SOIL-Q-2-0.5	Volatile	Xylenes, Total	0.0022	J	1.61E-03	1.50E+02	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Herbicide	2,4-D	0.014	J	9.96E-03	1.50E+00	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Herbicide	MCPP	3.1	J	3.60E+00	NA	No	Screening Level NA
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Herbicide	Pentachlorophenol	0.002	J	4.57E-03	2.00E-02	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Metal	Aluminum	9000		1.38E+04	NA	No	Screening Level NA
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Metal	Arsenic	7.1		1.24E+01	2.50E+01	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Metal	Barium	170		3.07E+02	2.60E+02	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Metal	Beryllium	0.71		9.02E-01	1.10E+00	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Metal	Cadmium	1.6	J	3.34E+00	1.00E+00	No	</=BKG
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Metal	Calcium	8900		9.74E+04	NA	No	EN
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Metal	Chromium	16		2.21E+01	2.10E+01	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Metal	Cobalt	8.4	J	9.40E+00	NA	No	Screening Level NA
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Metal	Copper	21		8.58E+01	3.30E+02	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Metal	Iron	17000		2.33E+04	NA	No	EN
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Metal	Lead	29		1.30E+02	NA	No	Screening Level NA
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Metal	Magnesium	4100		1.23E+04	NA	No	EN
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Metal	Manganese	630		5.52E+02	NA	No	Screening Level NA
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Metal	Mercury	0.065		1.34E-01	1.00E-02	No	</=BKG
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Metal	Nickel	19		3.30E+01	2.00E+01	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Metal	Potassium	1500		3.01E+03	NA	No	EN
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Metal	Vanadium	26		3.89E+01	9.80E+02	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Metal	Zinc	270		3.90E+02	1.00E+03	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Pesticide	4,4'-DDD	0.0012	J	7.04E-03	1.60E+01	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Pesticide	4,4'-DDE	0.00071	J	1.23E-02	5.40E+01	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Pesticide	Dieldrin	0.00041	J	1.13E-02	4.00E-03	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Pesticide	Endrin Ketone	0.00052	J	NA	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Pesticide	Heptachlor Epoxide	0.00057	J	1.05E-02	7.00E-01	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Semivolatile	Benzo(a)anthracene	0.045	J	2.76E-01	2.00E+00	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Semivolatile	Benzo(a)pyrene	0.04	J	4.06E-01	8.00E+00	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Semivolatile	Benzo(b)fluoranthene	0.036	J	3.66E-01	5.00E+00	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Semivolatile	Benzo(g,h,i)perylene	0.037	J	4.14E-01	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Semivolatile	Benzo(k)fluoranthene	0.047	J	2.83E-01	4.90E+01	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Semivolatile	Chrysene	0.045	J	2.99E-01	1.60E+02	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Semivolatile	Fluoranthene	0.095	J	4.50E-01	4.30E+03	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Semivolatile	Phenanthrene	0.045	J	3.31E-01	1.20E+04	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Volatile	2-Butanone (MEK)	0.024	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Volatile	4-Methyl-2-pentanone (MIBK)	0.0073	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Volatile	Acetone	0.26	J	NA	1.60E+01	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Volatile	Benzene	0.0015	J	NA	3.00E-02	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Volatile	Carbon Disulfide	0.004	J	NA	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Volatile	Chlorobenzene	0.0011	J	NA	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Volatile	Dichloromethane	0.0036	J	NA	2.00E-02	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Volatile	Ethylbenzene	0.00048	J	1.07E-03	1.30E+01	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Volatile	Methyl N-Butyl Ketone	0.12		NA	NA	No	Screening Level NA
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Volatile	Toluene	0.018		NA	1.20E+01	No	</=Screening Level
Q South	SOIL-Q-20	Surface	SOIL-Q-20-0.5	Volatile	Xylenes, Total	0.0018	J	1.61E-03	1.50E+02	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Herbicide	2,4,5-T	0.01		NA	1.10E+01	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Herbicide	2,4-D	0.021	J	NA	1.50E+00	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Herbicide	Dalapon	0.0092	J	NA	8.50E-01	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Herbicide	Dichlorprop	0.0027	J	5.80E-03	NA	No	Screening Level NA
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Herbicide	MCPP	3.6	J	NA	NA	No	Screening Level NA
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Herbicide	Pentachlorophenol	0.17		NA	2.00E-02	Yes	>Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Metal	Aluminum	3300		7.86E+03	NA	No	Screening Level NA
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Metal	Antimony	7.9	J	1.21E+00	5.00E+00	Yes	>Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Metal	Arsenic	9.1		9.26E+00	2.50E+01	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Metal	Barium	230	J	3.28E+02	2.60E+02	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Metal	Beryllium	0.64		6.28E-01	1.10E+00	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Metal	Cadmium	5.1		2.91E-01	1.00E+00	Yes	>Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Metal	Calcium	20000		2.48E+04	NA	No	EN
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Metal	Chromium	28		1.57E+01	2.10E+01	Yes	>Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Metal	Cobalt	4.9	J	9.14E+00	NA	No	Screening Level NA
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Metal	Copper	120	J	1.35E+01	3.30E+02	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Metal	Iron	45000		1.88E+04	NA	No	EN
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Metal	Lead	1100	J	1.33E+01	NA	No	Screening Level NA
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Metal	Magnesium	1600		1.02E+04	NA	No	EN
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Metal	Manganese	220	J	4.50E+02	NA	No	Screening Level NA
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Metal	Mercury	0.98	J	2.07E-02	1.00E-02	Yes	>Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Metal	Nickel	27		2.35E+01	2.00E+01	Yes	>Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Metal	Potassium	430	J	1.75E+03	NA	No	EN
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Metal	Silver	3.2		NA	2.40E-01	Yes	>Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Metal	Sodium	250		1.25E+02	NA	No	EN
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Metal	Vanadium	20		2.98E+01	9.80E+02	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Metal	Zinc	730	J	5.88E+01	1.00E+03	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Pesticide	4,4'-DDT	0.51	J	1.04E-03	3.20E+01	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	1,2,4-Trichlorobenzene	0.05	J	NA	5.00E+00	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	1,2-Dichlorobenzene	0.1	J	NA	1.70E+01	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	1,3-Dichlorobenzene	0.021	J	NA	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	1,4-Dichlorobenzene	1.4		NA	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	2,4-Dichlorophenol	0.03	J	NA	4.80E-01	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	2,4-Dimethylphenol	0.037	J	NA	9.00E+00	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	2-Methylnaphthalene	0.024	J	NA	1.20E+01	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	4-Chloroaniline	30	J	NA	7.00E-01	Yes	>Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	Acenaphthene	0.11	J	NA	5.70E+02	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	Anthracene	0.4		NA	1.20E+04	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	Benzo(a)anthracene	1.3		NA	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	Benzo(a)pyrene	1.2		NA	8.00E+00	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	Benzo(b)fluoranthene	1		NA	5.00E+00	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	Benzo(g,h,i)perylene	0.56		NA	4.20E+03	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	Benzo(k)fluoranthene	1.2		NA	4.90E+01	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	Benzyl Butyl Phthalate	0.023	J	NA	9.30E+02	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	bis(2-Chloroethyl)ether	0.044	J	NA	4.00E-04	Yes	>Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	bis(2-Ethylhexyl)phthalate	0.96		6.40E-02	3.60E+03	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	Carbazole	0.32	J	NA	6.00E-01	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	Chrysene	1.4		NA	1.60E+02	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	Dibenzo(a,h)anthracene	0.2	J	NA	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	Dibenzofuran	0.072	J	NA	NA	No	Screening Level NA
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	Diethyl Phthalate	1.6		NA	4.70E+02	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	Di-n-butylphthalate	0.036	J	NA	2.30E+03	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	Fluoranthene	2.7		NA	4.30E+03	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	Fluorene	0.088	J	NA	5.60E+02	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	Indeno(1,2,3-cd)pyrene	0.5		NA	1.40E+01	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	Phenanthrene	2.2		NA	1.20E+04	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Semivolatile	Pyrene	2.9		NA	4.20E+03	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Volatile	2-Butanone (MEK)	1.2	J	NA	NA	No	Screening Level NA

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Volatile	4-Methyl-2-pentanone (MIBK)	0.58	J	2.00E-03	NA	No	Screening Level NA
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Volatile	Acetone	2.7	J	NA	1.60E+01	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Volatile	Benzene	0.43		NA	3.00E-02	Yes	>Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Volatile	Chlorobenzene	36	J	NA	1.00E+00	Yes	>Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Volatile	Ethylbenzene	0.99	J	8.37E-04	1.30E+01	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Volatile	Methyl N-Butyl Ketone	0.5	J	NA	NA	No	Screening Level NA
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Volatile	Toluene	0.33	J	NA	1.20E+01	No	</=Screening Level
Q North	SOIL-Q-2	Subsurface	SOIL-Q-2-6FT	Volatile	Xylenes, Total	1.7		1.50E-03	1.50E+02	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Herbicide	2,4-D	0.0042	J	9.96E-03	1.50E+00	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Herbicide	Pentachlorophenol	0.42		4.57E-03	2.00E-02	No	</=BKG
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Metal	Aluminum	11000		1.38E+04	NA	No	Screening Level NA
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Metal	Arsenic	11	J	1.24E+01	2.50E+01	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Metal	Barium	2900		3.07E+02	2.60E+02	Yes	>Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Metal	Beryllium	0.82		9.02E-01	1.10E+00	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Metal	Cadmium	0.57		3.34E+00	1.00E+00	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Metal	Calcium	14000		9.74E+04	NA	No	EN
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Metal	Chromium	20		2.21E+01	2.10E+01	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Metal	Cobalt	9.6	J	9.40E+00	NA	No	Screening Level NA
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Metal	Copper	31		8.58E+01	3.30E+02	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Metal	Iron	24000		2.33E+04	NA	No	EN
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Metal	Lead	270		1.30E+02	NA	No	Screening Level NA
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Metal	Magnesium	3000		1.23E+04	NA	No	EN
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Metal	Manganese	530		5.52E+02	NA	No	Screening Level NA
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Metal	Mercury	0.4		1.34E-01	1.00E-02	Yes	>Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Metal	Nickel	31		3.30E+01	2.00E+01	No	</=BKG
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Metal	Potassium	2300	J	3.01E+03	NA	No	EN
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Metal	Sodium	180		1.58E+02	NA	No	EN
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Metal	Vanadium	28		3.89E+01	9.80E+02	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Metal	Zinc	200	J	3.90E+02	1.00E+03	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Pesticide	4,4'-DDD	0.039	J	7.04E-03	1.60E+01	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Pesticide	alpha-Chlordane	0.2		6.15E-03	1.00E+01	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Pesticide	beta-BHC	0.04	J	NA	5.00E-04	Yes	>Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Pesticide	Dieldrin	0.077	J	1.13E-02	4.00E-03	No	</=BKG
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Pesticide	Endosulfan II	0.014	J	1.16E-03	1.80E+01	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Pesticide	Endrin	0.018	J	5.02E-03	1.00E+00	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Pesticide	gamma-BHC (Lindane)	0.0057	J	NA	9.00E-03	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Pesticide	gamma-Chlordane	0.21		4.11E-02	1.00E+01	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Pesticide	Heptachlor	0.011	J	3.12E-02	2.30E+01	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Semivolatile	2,4-Dichlorophenol	1	J	NA	4.80E-01	Yes	>Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Semivolatile	Acenaphthene	0.16	J	4.20E-02	5.70E+02	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Semivolatile	Anthracene	0.51	J	1.20E-01	1.20E+04	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Semivolatile	Benzo(a)anthracene	1.7	J	2.76E-01	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Semivolatile	Benzo(a)pyrene	1.6	J	4.06E-01	8.00E+00	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Semivolatile	Benzo(b)fluoranthene	1.6	J	3.66E-01	5.00E+00	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Semivolatile	Benzo(g,h,i)perylene	0.82	J	4.14E-01	4.20E+03	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Semivolatile	Benzo(k)fluoranthene	1.4	J	2.83E-01	4.90E+01	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Semivolatile	Chrysene	1.8	J	2.99E-01	1.60E+02	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Semivolatile	Dibenzo(a,h)anthracene	0.26	J	1.20E-01	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Semivolatile	Fluoranthene	3	J	4.50E-01	4.30E+03	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Semivolatile	Indeno(1,2,3-cd)pyrene	0.69	J	NA	1.40E+01	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Semivolatile	Phenanthrene	2.5	J	3.31E-01	1.20E+04	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Semivolatile	Pyrene	3.8	J	4.30E-01	4.20E+03	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Volatile	Acetone	0.023	J	NA	1.60E+01	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Volatile	Carbon Disulfide	0.00084	J	NA	3.20E+01	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Volatile	Tetrachloroethene	0.00044	J	8.80E-04	6.00E-02	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Volatile	Trichloroethylene	0.00049	J	NA	6.00E-02	No	</=Screening Level
Q North	SOIL-Q-3	Surface	SOIL-Q-3-0.5	Volatile	Xylenes, Total	0.00039	J	1.61E-03	1.50E+02	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Herbicide	Pentachlorophenol	0.013	J	NA	2.00E-02	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Metal	Aluminum	4800		7.86E+03	NA	No	Screening Level NA
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Metal	Antimony	1.8	J	1.21E+00	5.00E+00	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Metal	Arsenic	7.9	J	9.26E+00	2.50E+01	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Metal	Barium	260		3.28E+02	2.60E+02	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Metal	Beryllium	0.53		6.28E-01	1.10E+00	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Metal	Cadmium	4		2.91E-01	1.00E+00	Yes	>Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Metal	Calcium	87000		2.48E+04	NA	No	EN
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Metal	Chromium	48		1.57E+01	2.10E+01	Yes	>Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Metal	Cobalt	4.9	J	9.14E+00	NA	No	Screening Level NA
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Metal	Copper	220		1.35E+01	3.30E+02	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Metal	Iron	35000		1.88E+04	NA	No	EN
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Metal	Lead	500		1.33E+01	NA	No	Screening Level NA
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Metal	Magnesium	3600		1.02E+04	NA	No	EN
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Metal	Manganese	240		4.50E+02	NA	No	Screening Level NA
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Metal	Mercury	2.2		2.07E-02	1.00E-02	Yes	>Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Metal	Nickel	30		2.35E+01	2.00E+01	Yes	>Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Metal	Potassium	790	J	1.75E+03	NA	No	EN
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Metal	Selenium	1.1	J	NA	1.30E+00	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Metal	Silver	0.26	J	NA	2.40E-01	Yes	>Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Metal	Sodium	1400		1.25E+02	NA	No	EN
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Metal	Vanadium	15		2.98E+01	9.80E+02	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Metal	Zinc	520	J	5.88E+01	1.00E+03	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Pesticide	4,4'-DDT	0.21	J	1.04E-03	3.20E+01	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Pesticide	beta-BHC	0.014	J	NA	5.00E-04	Yes	>Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Pesticide	Dieldrin	0.43	J	NA	4.00E-03	Yes	>Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Pesticide	Endrin Ketone	0.032	J	NA	1.00E+00	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Pesticide	Methoxychlor	0.085	J	1.02E-03	1.60E+02	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Semivolatile	1,2,4-Trichlorobenzene	0.13	J	NA	5.00E+00	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Semivolatile	1,3-Dichlorobenzene	0.11	J	NA	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Semivolatile	1,4-Dichlorobenzene	0.27	J	NA	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Semivolatile	Acenaphthene	0.15	J	NA	5.70E+02	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Semivolatile	Anthracene	0.42	J	NA	1.20E+04	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Semivolatile	Benzo(a)anthracene	1.3	J	NA	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Semivolatile	Benzo(a)pyrene	1.4	J	NA	8.00E+00	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Semivolatile	Benzo(b)fluoranthene	1.9	J	NA	5.00E+00	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Semivolatile	Benzo(g,h,i)perylene	0.83	J	NA	4.20E+03	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Semivolatile	Benzo(k)fluoranthene	1.2	J	NA	4.90E+01	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Semivolatile	bis(2-Ethylhexyl)phthalate	0.12	J	6.40E-02	3.60E+03	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Semivolatile	Chrysene	1.8	J	NA	1.60E+02	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Semivolatile	Fluoranthene	2.4	J	NA	4.30E+03	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Semivolatile	Indeno(1,2,3-cd)pyrene	0.64	J	NA	1.40E+01	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Semivolatile	Phenanthrene	1.5	J	NA	1.20E+04	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Semivolatile	Phenol	0.59	J	NA	1.00E+02	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Semivolatile	Pyrene	2.9	J	NA	4.20E+03	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Volatile	Benzene	0.00076	J	NA	3.00E-02	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Volatile	Carbon Disulfide	0.0018	J	NA	3.20E+01	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Volatile	Tetrachloroethene	0.0007	J	1.02E-03	6.00E-02	No	</=Screening Level
Q North	SOIL-Q-3	Subsurface	SOIL-Q-3-6	Volatile	Trichloroethylene	0.00076	J	NA	6.00E-02	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Herbicide	2,4,5-T	0.002	J	NA	1.10E+01	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Herbicide	MCPP	0.16	J	3.60E+00	NA	No	Screening Level NA
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Herbicide	Pentachlorophenol	0.096		4.57E-03	2.00E-02	No	</=BKG
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Metal	Aluminum	3200		1.38E+04	NA	No	Screening Level NA
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Metal	Antimony	0.82	J	2.33E+00	5.00E+00	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Metal	Arsenic	8.9		1.24E+01	2.50E+01	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Metal	Barium	81	J	3.07E+02	2.60E+02	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Metal	Beryllium	0.95		9.02E-01	1.10E+00	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Metal	Cadmium	6.2		3.34E+00	1.00E+00	Yes	>Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Metal	Calcium	52000		9.74E+04	NA	No	EN
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Metal	Chromium	10		2.21E+01	2.10E+01	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Metal	Cobalt	6.5	J	9.40E+00	NA	No	Screening Level NA
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Metal	Copper	39	J	8.58E+01	3.30E+02	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Metal	Iron	13000		2.33E+04	NA	No	EN
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Metal	Lead	85	J	1.30E+02	NA	No	Screening Level NA
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Metal	Magnesium	7700		1.23E+04	NA	No	EN
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Metal	Manganese	490	J	5.52E+02	NA	No	Screening Level NA
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Metal	Mercury	0.15	J	1.34E-01	1.00E-02	Yes	>Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Metal	Nickel	20		3.30E+01	2.00E+01	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Metal	Potassium	820	J	3.01E+03	NA	No	EN
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Metal	Selenium	0.71	J	1.08E+00	1.30E+00	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Metal	Silver	0.24	J	9.90E-01	2.40E-01	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Metal	Sodium	220		1.58E+02	NA	No	EN
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Metal	Vanadium	21		3.89E+01	9.80E+02	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Metal	Zinc	930	J	3.90E+02	1.00E+03	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Pesticide	4,4'-DDT	0.029	J	4.04E-02	3.20E+01	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Semivolatile	1,4-Dichlorobenzene	0.17	J	NA	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Semivolatile	2-Methylnaphthalene	0.24	J	NA	1.20E+01	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Semivolatile	Acenaphthene	0.2	J	4.20E-02	5.70E+02	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Semivolatile	Anthracene	0.43		1.20E-01	1.20E+04	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Semivolatile	Benzo(a)anthracene	1		2.76E-01	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Semivolatile	Benzo(a)pyrene	0.98		4.06E-01	8.00E+00	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Semivolatile	Benzo(b)fluoranthene	0.99		3.66E-01	5.00E+00	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Semivolatile	Benzo(g,h,i)perylene	0.52		4.14E-01	4.20E+03	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Semivolatile	Benzo(k)fluoranthene	0.82		2.83E-01	4.90E+01	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	0.079	J	3.53E-01	3.60E+03	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Semivolatile	Carbazole	0.18	J	NA	6.00E-01	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Semivolatile	Chrysene	1.2		2.99E-01	1.60E+02	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Semivolatile	Dibenzo(a,h)anthracene	0.18	J	1.20E-01	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Semivolatile	Dibenzofuran	0.18	J	NA	NA	No	Screening Level NA
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Semivolatile	Fluoranthene	1.8		4.50E-01	4.30E+03	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Semivolatile	Fluorene	0.19	J	NA	5.60E+02	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Semivolatile	Hexachlorobenzene	0.03	J	NA	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Semivolatile	Indeno(1,2,3-cd)pyrene	0.44		NA	1.40E+01	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Semivolatile	Naphthalene	0.26	J	NA	1.20E+01	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Semivolatile	Phenanthrene	2		3.31E-01	1.20E+04	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Semivolatile	Pyrene	2		4.30E-01	4.20E+03	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Volatile	Ethylbenzene	0.00034	J	1.07E-03	1.30E+01	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Volatile	Methyl N-Butyl Ketone	0.0031	J	NA	NA	No	Screening Level NA
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Volatile	Tetrachloroethene	0.0015	J	8.80E-04	6.00E-02	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Volatile	Trichloroethylene	0.0012	J	NA	6.00E-02	No	</=Screening Level
Q North	SOIL-Q-4	Surface	SOIL-Q-4-0.5	Volatile	Xylenes, Total	0.0018	J	1.61E-03	1.50E+02	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Metal	Aluminum	5400		7.86E+03	NA	No	Screening Level NA
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Metal	Antimony	0.81	J	1.21E+00	5.00E+00	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Metal	Arsenic	12		9.26E+00	2.50E+01	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Metal	Barium	110	J	3.28E+02	2.60E+02	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Metal	Beryllium	0.88		6.28E-01	1.10E+00	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Metal	Cadmium	1.5		2.91E-01	1.00E+00	Yes	>Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Metal	Calcium	73000		2.48E+04	NA	No	EN
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Metal	Chromium	12		1.57E+01	2.10E+01	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Metal	Cobalt	9.7	J	9.14E+00	NA	No	Screening Level NA
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Metal	Copper	28	J	1.35E+01	3.30E+02	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Metal	Iron	33000		1.88E+04	NA	No	EN
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Metal	Lead	64	J	1.33E+01	NA	No	Screening Level NA
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Metal	Magnesium	9100		1.02E+04	NA	No	EN
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Metal	Manganese	350	J	4.50E+02	NA	No	Screening Level NA
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Metal	Mercury	0.099	J	2.07E-02	1.00E-02	Yes	>Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Metal	Nickel	24		2.35E+01	2.00E+01	Yes	>Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Metal	Potassium	800	J	1.75E+03	NA	No	EN
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Metal	Sodium	190		1.25E+02	NA	No	EN
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Metal	Vanadium	25		2.98E+01	9.80E+02	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Metal	Zinc	210	J	5.88E+01	1.00E+03	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Pesticide	4,4'-DDE	0.002	J	NA	5.40E+01	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Pesticide	4,4'-DDT	0.0076	J	1.04E-03	3.20E+01	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Pesticide	Endosulfan II	0.00049	J	NA	1.80E+01	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Pesticide	gamma-Chlordane	0.00021	J	2.40E-04	1.00E+01	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Semivolatile	Acenaphthene	0.064	J	NA	5.70E+02	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Semivolatile	Anthracene	0.16	J	NA	1.20E+04	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Semivolatile	Benzo(a)anthracene	0.57		NA	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Semivolatile	Benzo(a)pyrene	0.58		NA	8.00E+00	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Semivolatile	Benzo(b)fluoranthene	0.55		NA	5.00E+00	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Semivolatile	Benzo(g,h,i)perylene	0.39	J	NA	4.20E+03	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Semivolatile	Benzo(k)fluoranthene	0.49		NA	4.90E+01	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Semivolatile	Carbazole	0.071	J	NA	6.00E-01	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Semivolatile	Chrysene	0.64		NA	1.60E+02	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Semivolatile	Dibenzo(a,h)anthracene	0.13	J	NA	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Semivolatile	Dibenzofuran	0.042	J	NA	NA	No	Screening Level NA
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Semivolatile	Fluoranthene	1.1		NA	4.30E+03	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Semivolatile	Fluorene	0.054	J	NA	5.60E+02	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Semivolatile	Indeno(1,2,3-cd)pyrene	0.36	J	NA	1.40E+01	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Semivolatile	Phenanthrene	0.84		NA	1.20E+04	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Semivolatile	Pyrene	1.3		NA	4.20E+03	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Volatile	2-Butanone (MEK)	0.0022	J	NA	NA	No	Screening Level NA
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Volatile	4-Methyl-2-pentanone (MIBK)	0.00099	J	2.00E-03	NA	No	Screening Level NA
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Volatile	Tetrachloroethene	0.00043	J	1.02E-03	6.00E-02	No	</=Screening Level
Q North	SOIL-Q-4	Subsurface	SOIL-Q-4-6	Volatile	Trichloroethylene	0.00051	J	NA	6.00E-02	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Herbicide	Pentachlorophenol	0.0055	J	4.57E-03	2.00E-02	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Metal	Aluminum	1400		1.38E+04	NA	No	Screening Level NA
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Metal	Antimony	0.71	J	2.33E+00	5.00E+00	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Metal	Arsenic	5.6	J	1.24E+01	2.50E+01	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Metal	Barium	87		3.07E+02	2.60E+02	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Metal	Beryllium	0.54		9.02E-01	1.10E+00	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Metal	Cadmium	0.66		3.34E+00	1.00E+00	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Metal	Calcium	5800		9.74E+04	NA	No	EN
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Metal	Chromium	9.9		2.21E+01	2.10E+01	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Metal	Cobalt	4.2	J	9.40E+00	NA	No	Screening Level NA
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Metal	Copper	37		8.58E+01	3.30E+02	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Metal	Iron	11000		2.33E+04	NA	No	EN
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Metal	Lead	20		1.30E+02	NA	No	Screening Level NA
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Metal	Magnesium	940		1.23E+04	NA	No	EN
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Metal	Manganese	140		5.52E+02	NA	No	Screening Level NA
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Metal	Mercury	0.024		1.34E-01	1.00E-02	No	</=BKG
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Metal	Nickel	15		3.30E+01	2.00E+01	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Metal	Potassium	290	J	3.01E+03	NA	No	EN
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Metal	Sodium	290		1.58E+02	NA	No	EN
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Metal	Vanadium	8.2		3.89E+01	9.80E+02	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Metal	Zinc	110	J	3.90E+02	1.00E+03	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Pesticide	4,4'-DDE	0.011	J	1.23E-02	5.40E+01	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Pesticide	alpha-Chlordane	0.00086	J	6.15E-03	1.00E+01	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Pesticide	beta-BHC	0.0013	J	NA	5.00E-04	Yes	>Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Pesticide	Dieldrin	0.018	J	1.13E-02	4.00E-03	No	</=BKG
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Pesticide	Endrin	0.0024	J	5.02E-03	1.00E+00	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Pesticide	Endrin Ketone	0.0024	J	NA	1.00E+00	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Pesticide	gamma-Chlordane	0.01	J	4.11E-02	1.00E+01	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Semivolatile	2-Methylnaphthalene	0.027	J	NA	1.20E+01	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Semivolatile	Benzo(a)anthracene	0.11	J	2.76E-01	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Semivolatile	Benzo(a)pyrene	0.13	J	4.06E-01	8.00E+00	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Semivolatile	Benzo(b)fluoranthene	0.11	J	3.66E-01	5.00E+00	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Semivolatile	Benzo(g,h,i)perylene	0.13	J	4.14E-01	4.20E+03	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Semivolatile	Benzo(k)fluoranthene	0.1	J	2.83E-01	4.90E+01	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	0.035	J	3.53E-01	3.60E+03	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Semivolatile	Chrysene	0.13	J	2.99E-01	1.60E+02	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Semivolatile	Dibenzo(a,h)anthracene	0.066	J	1.20E-01	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Semivolatile	Fluoranthene	0.12	J	4.50E-01	4.30E+03	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Semivolatile	Indeno(1,2,3-cd)pyrene	0.11	J	NA	1.40E+01	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Semivolatile	Phenanthrene	0.12	J	3.31E-01	1.20E+04	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Semivolatile	Pyrene	0.17	J	4.30E-01	4.20E+03	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Volatile	Benzene	0.00076	J	NA	3.00E-02	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Volatile	Carbon Disulfide	0.0028	J	NA	3.20E+01	No	</=Screening Level
Q North	SOIL-Q-5	Surface	SOIL-Q-5-0.5	Volatile	Tetrachloroethene	0.0028	J	8.80E-04	6.00E-02	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Herbicide	Pentachlorophenol	0.002	J	NA	2.00E-02	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Metal	Aluminum	5200		7.86E+03	NA	No	Screening Level NA
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Metal	Arsenic	6.3	J	9.26E+00	2.50E+01	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Metal	Barium	120		3.28E+02	2.60E+02	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Metal	Beryllium	0.53		6.28E-01	1.10E+00	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Metal	Cadmium	0.4	J	2.91E-01	1.00E+00	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Metal	Calcium	71000		2.48E+04	NA	No	EN
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Metal	Chromium	17		1.57E+01	2.10E+01	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Metal	Cobalt	4.9	J	9.14E+00	NA	No	Screening Level NA
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Metal	Copper	32		1.35E+01	3.30E+02	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Metal	Iron	14000		1.88E+04	NA	No	EN
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Metal	Lead	150		1.33E+01	NA	No	Screening Level NA
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Metal	Magnesium	3000		1.02E+04	NA	No	EN
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Metal	Manganese	200		4.50E+02	NA	No	Screening Level NA
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Metal	Mercury	0.26		2.07E-02	1.00E-02	Yes	>Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Metal	Nickel	13		2.35E+01	2.00E+01	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Metal	Potassium	740	J	1.75E+03	NA	No	EN
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Metal	Silver	0.19	J	NA	2.40E-01	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Metal	Sodium	180		1.25E+02	NA	No	EN
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Metal	Vanadium	27		2.98E+01	9.80E+02	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Metal	Zinc	140	J	5.88E+01	1.00E+03	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Pesticide	4,4'-DDD	0.012	J	NA	1.60E+01	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Pesticide	4,4'-DDE	0.0044	J	NA	5.40E+01	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Pesticide	4,4'-DDT	0.017	J	1.04E-03	3.20E+01	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Pesticide	alpha-Chlordane	0.014	J	NA	1.00E+01	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Pesticide	beta-BHC	0.015	J	NA	5.00E-04	Yes	>Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Pesticide	Dieldrin	0.024	J	NA	4.00E-03	Yes	>Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Pesticide	Endrin Aldehyde	0.012	J	NA	1.00E+00	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Pesticide	gamma-Chlordane	0.012	J	2.40E-04	1.00E+01	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Semivolatile	2-Methylnaphthalene	0.12	J	NA	1.20E+01	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Semivolatile	Acenaphthene	0.47		NA	5.70E+02	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Semivolatile	Acenaphthylene	0.069	J	NA	5.70E+02	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Semivolatile	Anthracene	1.2		NA	1.20E+04	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Semivolatile	Benzo(a)anthracene	2.9		NA	2.00E+00	Yes	>Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Semivolatile	Benzo(a)pyrene	2.7		NA	8.00E+00	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Semivolatile	Benzo(b)fluoranthene	2.2		NA	5.00E+00	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Semivolatile	Benzo(g,h,i)perylene	1.2		NA	4.20E+03	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Semivolatile	Benzo(k)fluoranthene	2.2		NA	4.90E+01	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Semivolatile	bis(2-Ethylhexyl)phthalate	0.082	J	6.40E-02	3.60E+03	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Semivolatile	Carbazole	0.38	J	NA	6.00E-01	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Semivolatile	Chrysene	3.1		NA	1.60E+02	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Semivolatile	Dibenzo(a,h)anthracene	0.4	J	NA	2.00E+00	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Semivolatile	Dibenzofuran	0.34	J	NA	NA	No	Screening Level NA
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Semivolatile	Fluoranthene	5.7		NA	4.30E+03	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Semivolatile	Fluorene	0.49		NA	5.60E+02	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Semivolatile	Indeno(1,2,3-cd)pyrene	1.2		NA	1.40E+01	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Semivolatile	Naphthalene	0.18	J	NA	1.20E+01	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Semivolatile	Phenanthrene	5.2		NA	1.20E+04	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Semivolatile	Phenol	0.27	J	NA	1.00E+02	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Semivolatile	Pyrene	6.7		NA	4.20E+03	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Volatile	Benzene	0.0011	J	NA	3.00E-02	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Volatile	Carbon Disulfide	0.0045	J	NA	3.20E+01	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Volatile	Ethylbenzene	0.00058	J	8.37E-04	1.30E+01	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Volatile	Tetrachloroethene	0.0006	J	1.02E-03	6.00E-02	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Volatile	Trichloroethylene	0.00093	J	NA	6.00E-02	No	</=Screening Level
Q North	SOIL-Q-5	Subsurface	SOIL-Q-5-6FT	Volatile	Xylenes, Total	0.0016	J	1.50E-03	1.50E+02	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Herbicide	Pentachlorophenol	2.3		4.57E-03	2.00E-02	No	</=BKG
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Metal	Aluminum	5200		1.38E+04	NA	No	Screening Level NA
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Metal	Antimony	1.9	J	2.33E+00	5.00E+00	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Metal	Arsenic	13		1.24E+01	2.50E+01	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Metal	Barium	110	J	3.07E+02	2.60E+02	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Metal	Beryllium	0.64		9.02E-01	1.10E+00	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Metal	Cadmium	2		3.34E+00	1.00E+00	No	</=BKG
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Metal	Calcium	79000		9.74E+04	NA	No	EN
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Metal	Chromium	11		2.21E+01	2.10E+01	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Metal	Cobalt	5	J	9.40E+00	NA	No	Screening Level NA
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Metal	Copper	40	J	8.58E+01	3.30E+02	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Metal	Iron	16000		2.33E+04	NA	No	EN
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Metal	Lead	74	J	1.30E+02	NA	No	Screening Level NA
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Metal	Magnesium	6200		1.23E+04	NA	No	EN
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Metal	Manganese	170	J	5.52E+02	NA	No	Screening Level NA
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Metal	Mercury	0.15	J	1.34E-01	1.00E-02	Yes	>Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Metal	Nickel	14		3.30E+01	2.00E+01	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Metal	Potassium	940	J	3.01E+03	NA	No	EN
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Metal	Silver	0.11	J	9.90E-01	2.40E-01	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Metal	Sodium	240		1.58E+02	NA	No	EN
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Metal	Vanadium	18		3.89E+01	9.80E+02	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Metal	Zinc	340	J	3.90E+02	1.00E+03	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Semivolatile	1,4-Dichlorobenzene	0.14	J	NA	2.00E+00	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Semivolatile	2-Methylnaphthalene	0.069	J	NA	1.20E+01	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Semivolatile	Acenaphthene	0.042	J	4.20E-02	5.70E+02	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Semivolatile	Anthracene	0.089	J	1.20E-01	1.20E+04	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Semivolatile	Benzo(a)anthracene	0.25	J	2.76E-01	2.00E+00	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Semivolatile	Benzo(a)pyrene	0.28	J	4.06E-01	8.00E+00	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Semivolatile	Benzo(b)fluoranthene	0.39		3.66E-01	5.00E+00	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Semivolatile	Benzo(g,h,i)perylene	0.16	J	4.14E-01	4.20E+03	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Semivolatile	Benzo(k)fluoranthene	0.29	J	2.83E-01	4.90E+01	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	0.071	J	3.53E-01	3.60E+03	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Semivolatile	Chrysene	0.29	J	2.99E-01	1.60E+02	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Semivolatile	Dibenzo(a,h)anthracene	0.055	J	1.20E-01	2.00E+00	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Semivolatile	Dibenzofuran	0.046	J	NA	NA	No	Screening Level NA
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Semivolatile	Fluoranthene	0.43		4.50E-01	4.30E+03	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Semivolatile	Fluorene	0.048	J	NA	5.60E+02	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Semivolatile	Indeno(1,2,3-cd)pyrene	0.12	J	NA	1.40E+01	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Semivolatile	Naphthalene	0.064	J	NA	1.20E+01	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Semivolatile	Phenanthrene	0.37		3.31E-01	1.20E+04	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Semivolatile	Pyrene	0.5		4.30E-01	4.20E+03	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Volatile	2-Butanone (MEK)	0.0062	J	NA	NA	No	Screening Level NA
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Volatile	Acetone	0.023	J	NA	1.60E+01	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Volatile	Carbon Disulfide	0.0013	J	NA	3.20E+01	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Volatile	Chlorobenzene	0.0013	J	NA	1.00E+00	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Volatile	Ethylbenzene	0.00053	J	1.07E-03	1.30E+01	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Volatile	Tetrachloroethene	0.00046	J	8.80E-04	6.00E-02	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Volatile	Trichloroethylene	0.00054	J	NA	6.00E-02	No	</=Screening Level
Q Central	SOIL-Q-6	Surface	SOIL-Q-6-0.5	Volatile	Xylenes, Total	0.0022	J	1.61E-03	1.50E+02	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Herbicide	2,4,5-T	0.0091	J	NA	1.10E+01	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Herbicide	2,4-D	0.0075	J	NA	1.50E+00	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Herbicide	Pentachlorophenol	0.012	J	NA	2.00E-02	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Metal	Aluminum	3200		7.86E+03	NA	No	Screening Level NA
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Metal	Antimony	5.8	J	1.21E+00	5.00E+00	Yes	>Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Metal	Arsenic	57		9.26E+00	2.50E+01	Yes	>Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Metal	Barium	75	J	3.28E+02	2.60E+02	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Metal	Beryllium	2.6		6.28E-01	1.10E+00	Yes	>Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Metal	Cadmium	0.41	J	2.91E-01	1.00E+00	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Metal	Calcium	2200		2.48E+04	NA	No	EN
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Metal	Chromium	27		1.57E+01	2.10E+01	Yes	>Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Metal	Cobalt	11	J	9.14E+00	NA	No	Screening Level NA
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Metal	Copper	150	J	1.35E+01	3.30E+02	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Metal	Iron	6200		1.88E+04	NA	No	EN
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Metal	Lead	120	J	1.33E+01	NA	No	Screening Level NA
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Metal	Magnesium	400		1.02E+04	NA	No	EN
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Metal	Manganese	29	J	4.50E+02	NA	No	Screening Level NA
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Metal	Mercury	0.11	J	2.07E-02	1.00E-02	Yes	>Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Metal	Nickel	32		2.35E+01	2.00E+01	Yes	>Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Metal	Potassium	500	J	1.75E+03	NA	No	EN
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Metal	Selenium	6.4		NA	1.30E+00	Yes	>Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Metal	Silver	0.55	J	NA	2.40E-01	Yes	>Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Metal	Thallium	4.1		NA	1.60E+00	Yes	>Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Metal	Vanadium	56		2.98E+01	9.80E+02	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Metal	Zinc	80	J	5.88E+01	1.00E+03	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Pesticide	4,4'-DDT	0.032	J	1.04E-03	3.20E+01	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Pesticide	Dieldrin	0.042	J	NA	4.00E-03	Yes	>Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Pesticide	Endrin Ketone	0.0044	J	NA	1.00E+00	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Semivolatile	1,4-Dichlorobenzene	0.14	J	NA	2.00E+00	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Semivolatile	2-Methylnaphthalene	0.052	J	NA	1.20E+01	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Semivolatile	Benzo(a)anthracene	0.029	J	NA	2.00E+00	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Semivolatile	Benzo(a)pyrene	0.024	J	NA	8.00E+00	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Semivolatile	Benzo(b)fluoranthene	0.031	J	NA	5.00E+00	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Semivolatile	Benzo(k)fluoranthene	0.029	J	NA	4.90E+01	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Semivolatile	bis(2-Ethylhexyl)phthalate	0.56		6.40E-02	3.60E+03	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Semivolatile	Chrysene	0.032	J	NA	1.60E+02	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Semivolatile	Fluoranthene	0.043	J	NA	4.30E+03	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Semivolatile	Naphthalene	0.035	J	NA	1.20E+01	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Semivolatile	Phenanthrene	0.045	J	NA	1.20E+04	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Semivolatile	Phenol	0.085	J	NA	1.00E+02	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Semivolatile	Pyrene	0.053	J	NA	4.20E+03	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Volatile	2-Butanone (MEK)	0.034	J	NA	NA	No	Screening Level NA
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Volatile	Acetone	0.16	J	NA	1.60E+01	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Volatile	Benzene	0.0078	J	NA	3.00E-02	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Volatile	Carbon Disulfide	0.0026	J	NA	3.20E+01	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Volatile	Chlorobenzene	0.017	J	NA	1.00E+00	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Volatile	Ethylbenzene	0.0012	J	8.37E-04	1.30E+01	No	</=Screening Level
Q Central	SOIL-Q-6	Subsurface	SOIL-Q-6-6	Volatile	Xylenes, Total	0.0054	J	1.50E-03	1.50E+02	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Herbicide	2,4,5-T	0.003	J	NA	1.10E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Herbicide	2,4-D	0.0047	J	9.96E-03	1.50E+00	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Herbicide	Pentachlorophenol	0.045		4.57E-03	2.00E-02	No	</=BKG
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Metal	Aluminum	3200		1.38E+04	NA	No	Screening Level NA
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Metal	Antimony	1.6	J	2.33E+00	5.00E+00	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Metal	Arsenic	3.5		1.24E+01	2.50E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Metal	Barium	170	J	3.07E+02	2.60E+02	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Metal	Beryllium	0.21	J	9.02E-01	1.10E+00	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Metal	Cadmium	1.3		3.34E+00	1.00E+00	No	</=BKG
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Metal	Calcium	260000		9.74E+04	NA	No	EN
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Metal	Chromium	14		2.21E+01	2.10E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Metal	Cobalt	2.1	J	9.40E+00	NA	No	Screening Level NA
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Metal	Copper	15	J	8.58E+01	3.30E+02	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Metal	Iron	5600		2.33E+04	NA	No	EN
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Metal	Lead	240	J	1.30E+02	NA	No	Screening Level NA
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Metal	Magnesium	12000		1.23E+04	NA	No	EN
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Metal	Manganese	140	J	5.52E+02	NA	No	Screening Level NA
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Metal	Nickel	8.9		3.30E+01	2.00E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Metal	Potassium	730	J	3.01E+03	NA	No	EN
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Metal	Silver	0.19	J	9.90E-01	2.40E-01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Metal	Sodium	340		1.58E+02	NA	No	EN
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Metal	Vanadium	18		3.89E+01	9.80E+02	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Metal	Zinc	320	J	3.90E+02	1.00E+03	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Pesticide	4,4'-DDD	0.029	J	7.04E-03	1.60E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Pesticide	4,4'-DDT	0.029	J	4.04E-02	3.20E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Pesticide	alpha-BHC	0.096	J	4.96E-02	5.00E-04	No	</=BKG
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Pesticide	alpha-Chlordane	0.0023	J	6.15E-03	1.00E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Pesticide	Dieldrin	0.048	J	1.13E-02	4.00E-03	No	</=BKG
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Pesticide	Endosulfan Sulfate	0.0024	J	1.81E-03	1.80E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Semivolatile	1,4-Dichlorobenzene	0.32	J	NA	2.00E+00	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Semivolatile	Anthracene	0.13	J	1.20E-01	1.20E+04	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Semivolatile	Benzo(a)anthracene	0.45	J	2.76E-01	2.00E+00	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Semivolatile	Benzo(a)pyrene	0.43	J	4.06E-01	8.00E+00	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Semivolatile	Benzo(b)fluoranthene	0.54	J	3.66E-01	5.00E+00	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Semivolatile	Benzo(g,h,i)perylene	0.24	J	4.14E-01	4.20E+03	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Semivolatile	Benzo(k)fluoranthene	0.36	J	2.83E-01	4.90E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Semivolatile	Benzyl Butyl Phthalate	0.32	J	NA	9.30E+02	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	0.24	J	3.53E-01	3.60E+03	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Semivolatile	Chrysene	0.65	J	2.99E-01	1.60E+02	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Semivolatile	Fluoranthene	1.3		4.50E-01	4.30E+03	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Semivolatile	Indeno(1,2,3-cd)pyrene	0.15	J	NA	1.40E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Semivolatile	Phenanthrene	0.59	J	3.31E-01	1.20E+04	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Semivolatile	Pyrene	1.4		4.30E-01	4.20E+03	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Volatile	2-Butanone (MEK)	0.011	J	NA	NA	No	Screening Level NA
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Volatile	4-Methyl-2-pentanone (MIBK)	0.0084	J	NA	NA	No	Screening Level NA
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Volatile	Acetone	0.061	J	NA	1.60E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Volatile	Benzene	0.0037	J	NA	3.00E-02	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Volatile	Carbon Disulfide	0.0056	J	NA	3.20E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Volatile	Chlorobenzene	0.042	J	NA	1.00E+00	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Volatile	Ethylbenzene	0.025	J	1.07E-03	1.30E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Volatile	Tetrachloroethene	0.0036	J	8.80E-04	6.00E-02	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Volatile	Trichloroethylene	0.001	J	NA	6.00E-02	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5	Volatile	Xylenes, Total	0.18		1.61E-03	1.50E+02	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Herbicide	2,4,5-T	0.0041	J	NA	1.10E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Herbicide	2,4-DB	0.035	J	NA	1.50E+00	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Herbicide	Pentachlorophenol	0.12	J	4.57E-03	2.00E-02	No	</=BKG
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Metal	Aluminum	6100		1.38E+04	NA	No	Screening Level NA
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Metal	Antimony	4.9	J	2.33E+00	5.00E+00	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Metal	Arsenic	7.9		1.24E+01	2.50E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Metal	Barium	590	J	3.07E+02	2.60E+02	Yes	>Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Metal	Beryllium	0.29	J	9.02E-01	1.10E+00	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Metal	Cadmium	1.9		3.34E+00	1.00E+00	No	</=BKG
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Metal	Calcium	220000		9.74E+04	NA	No	EN

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Metal	Chromium	26		2.21E+01	2.10E+01	Yes	>Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Metal	Cobalt	3.2	J	9.40E+00	NA	No	Screening Level NA
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Metal	Copper	26	J	8.58E+01	3.30E+02	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Metal	Iron	9900		2.33E+04	NA	No	EN
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Metal	Lead	480	J	1.30E+02	NA	No	Screening Level NA
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Metal	Magnesium	5200		1.23E+04	NA	No	EN
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Metal	Manganese	160	J	5.52E+02	NA	No	Screening Level NA
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Metal	Mercury	0.052	J	1.34E-01	1.00E-02	No	</=BKG
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Metal	Nickel	13		3.30E+01	2.00E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Metal	Potassium	1200	J	3.01E+03	NA	No	EN
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Metal	Silver	0.16	J	9.90E-01	2.40E-01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Metal	Sodium	430		1.58E+02	NA	No	EN
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Metal	Vanadium	23		3.89E+01	9.80E+02	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Metal	Zinc	1800	J	3.90E+02	1.00E+03	Yes	>Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Pesticide	4,4'-DDT	0.18	J	4.04E-02	3.20E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Pesticide	alpha-BHC	0.025	J	4.96E-02	5.00E-04	No	</=BKG
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Pesticide	alpha-Chlordane	0.0054	J	6.15E-03	1.00E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Pesticide	Dieldrin	0.048	J	1.13E-02	4.00E-03	No	</=BKG
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	1,4-Dichlorobenzene	0.28	J	NA	2.00E+00	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	2-Methylnaphthalene	0.035	J	NA	1.20E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	3-Methylphenol/4-Methylphenol	0.066	J	NA	1.50E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	Acenaphthene	0.053	J	4.20E-02	5.70E+02	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	Anthracene	0.13	J	1.20E-01	1.20E+04	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	Benzo(a)anthracene	0.4	J	2.76E-01	2.00E+00	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	Benzo(a)pyrene	0.38	J	4.06E-01	8.00E+00	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	Benzo(b)fluoranthene	0.45		3.66E-01	5.00E+00	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	Benzo(g,h,i)perylene	0.22	J	4.14E-01	4.20E+03	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	Benzo(k)fluoranthene	0.38	J	2.83E-01	4.90E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	Benzyl Butyl Phthalate	0.12	J	NA	9.30E+02	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	bis(2-Ethylhexyl)phthalate	2.2		3.53E-01	3.60E+03	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	Carbazole	0.065	J	NA	6.00E-01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	Chrysene	0.49		2.99E-01	1.60E+02	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	Dibenzo(a,h)anthracene	0.072	J	1.20E-01	2.00E+00	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	Dibenzofuran	0.043	J	NA	NA	No	Screening Level NA
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	Di-n-butylphthalate	0.24	J	NA	2.30E+03	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	Fluoranthene	0.85		4.50E-01	4.30E+03	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	Fluorene	0.064	J	NA	5.60E+02	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	Hexachlorobenzene	0.029	J	NA	2.00E+00	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	Indeno(1,2,3-cd)pyrene	0.14	J	NA	1.40E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	Naphthalene	0.046	J	NA	1.20E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	Phenanthrene	0.69		3.31E-01	1.20E+04	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Semivolatile	Pyrene	0.98		4.30E-01	4.20E+03	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Volatile	2-Butanone (MEK)	0.038	J	NA	NA	No	Screening Level NA
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Volatile	4-Methyl-2-pentanone (MIBK)	0.012	J	NA	NA	No	Screening Level NA
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Volatile	Acetone	0.91	J	NA	1.60E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Volatile	Benzene	0.012	J	NA	3.00E-02	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Volatile	Carbon Disulfide	0.0052	J	NA	3.20E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Volatile	Chlorobenzene	0.22	J	NA	1.00E+00	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Volatile	Ethylbenzene	0.045	J	1.07E-03	1.30E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Volatile	Tetrachloroethene	0.0032	J	8.80E-04	6.00E-02	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Volatile	Trichloroethylene	0.001	J	NA	6.00E-02	No	</=Screening Level
Q Central	SOIL-Q-7	Surface	SOIL-Q-7-0.5-DUP	Volatile	Xylenes, Total	0.17		1.61E-03	1.50E+02	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Herbicide	Dalapon	0.068	J	NA	8.50E-01	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Herbicide	Pentachlorophenol	0.63	J	NA	2.00E-02	Yes	>Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Metal	Aluminum	7800		7.86E+03	NA	No	Screening Level NA
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Metal	Antimony	3.7	J	1.21E+00	5.00E+00	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Metal	Arsenic	13		9.26E+00	2.50E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Metal	Barium	200	J	3.28E+02	2.60E+02	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Metal	Beryliium	0.53	J	6.28E-01	1.10E+00	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Metal	Cadmium	3.8		2.91E-01	1.00E+00	Yes	>Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Metal	Calcium	21000		2.48E+04	NA	No	EN
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Metal	Chromium	33		1.57E+01	2.10E+01	Yes	>Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Metal	Cobalt	6.5	J	9.14E+00	NA	No	Screening Level NA
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Metal	Copper	20000	J	1.35E+01	3.30E+02	Yes	>Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Metal	Iron	54000		1.88E+04	NA	No	EN
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Metal	Lead	300	J	1.33E+01	NA	No	Screening Level NA
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Metal	Magnesium	1700		1.02E+04	NA	No	EN
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Metal	Manganese	310	J	4.50E+02	NA	No	Screening Level NA
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Metal	Mercury	0.049	J	2.07E-02	1.00E-02	Yes	>Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Metal	Nickel	160		2.35E+01	2.00E+01	Yes	>Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Metal	Potassium	490	J	1.75E+03	NA	No	EN
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Metal	Silver	2.5		NA	2.40E-01	Yes	>Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Metal	Sodium	270		1.25E+02	NA	No	EN
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Metal	Vanadium	13		2.98E+01	9.80E+02	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Metal	Zinc	430	J	5.88E+01	1.00E+03	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Pesticide	alpha-Chlordane	0.031	J	NA	1.00E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Pesticide	Endosulfan Sulfate	0.027	J	NA	1.80E+01	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Semivolatile	1,2-Dichlorobenzene	0.22	J	NA	1.70E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Semivolatile	1,4-Dichlorobenzene	5.8	J	NA	2.00E+00	Yes	>Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Semivolatile	2-Methylnaphthalene	0.99	J	NA	1.20E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Semivolatile	3-Methylphenol/4-Methylphenol	0.55	J	NA	1.50E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Semivolatile	Benzo(a)anthracene	0.64	J	NA	2.00E+00	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Semivolatile	Benzo(a)pyrene	0.39	J	NA	8.00E+00	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Semivolatile	Benzo(g,h,i)perylene	0.36	J	NA	4.20E+03	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Semivolatile	Benzyl Butyl Phthalate	3	J	NA	9.30E+02	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Semivolatile	bis(2-Ethylhexyl)phthalate	21	J	6.40E-02	3.60E+03	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Semivolatile	Chrysene	0.68	J	NA	1.60E+02	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Semivolatile	Di-n-butylphthalate	2.6	J	NA	2.30E+03	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Semivolatile	Di-n-octylphthalate	0.55	J	NA	1.00E+04	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Semivolatile	Fluoranthene	0.41	J	NA	4.30E+03	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Semivolatile	Naphthalene	1.2	J	NA	1.20E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Semivolatile	Phenanthrene	0.65	J	NA	1.20E+04	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Semivolatile	Phenol	0.43	J	NA	1.00E+02	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Semivolatile	Pyrene	0.94	J	NA	4.20E+03	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Volatile	2-Butanone (MEK)	0.026	J	NA	NA	No	Screening Level NA
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Volatile	4-Methyl-2-pentanone (MIBK)	0.043	J	2.00E-03	NA	No	Screening Level NA
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Volatile	Acetone	0.19	J	NA	1.60E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Volatile	Benzene	0.21		NA	3.00E-02	Yes	>Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Volatile	Carbon Disulfide	0.052		NA	3.20E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Volatile	Chlorobenzene	40	J	NA	1.00E+00	Yes	>Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Volatile	Ethylbenzene	0.039	J	8.37E-04	1.30E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Volatile	Tetrachloroethene	0.0018	J	1.02E-03	6.00E-02	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Volatile	Toluene	0.064		NA	1.20E+01	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Volatile	Trichloroethylene	0.0023	J	NA	6.00E-02	No	</=Screening Level
Q Central	SOIL-Q-7	Subsurface	SOIL-Q-7-6	Volatile	Xylenes, Total	0.16		1.50E-03	1.50E+02	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Herbicide	Pentachlorophenol	0.0033	J	4.57E-03	2.00E-02	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Metal	Aluminum	3400		1.38E+04	NA	No	Screening Level NA
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Metal	Antimony	0.94	J	2.33E+00	5.00E+00	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Metal	Arsenic	3.2		1.24E+01	2.50E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Metal	Barium	93	J	3.07E+02	2.60E+02	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Metal	Beryllium	0.24	J	9.02E-01	1.10E+00	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Metal	Cadmium	0.69		3.34E+00	1.00E+00	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Metal	Calcium	210000		9.74E+04	NA	No	EN
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Metal	Chromium	12		2.21E+01	2.10E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Metal	Cobalt	2.4	J	9.40E+00	NA	No	Screening Level NA
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Metal	Copper	54	J	8.58E+01	3.30E+02	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Metal	Iron	7100		2.33E+04	NA	No	EN
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Metal	Lead	52	J	1.30E+02	NA	No	Screening Level NA
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Metal	Magnesium	17000		1.23E+04	NA	No	EN
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Metal	Manganese	240	J	5.52E+02	NA	No	Screening Level NA
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Metal	Mercury	0.27	J	1.34E-01	1.00E-02	Yes	>Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Metal	Nickel	9.5		3.30E+01	2.00E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Metal	Potassium	1100	J	3.01E+03	NA	No	EN
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Metal	Silver	0.14	J	9.90E-01	2.40E-01	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Metal	Sodium	370		1.58E+02	NA	No	EN
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Metal	Vanadium	13		3.89E+01	9.80E+02	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Metal	Zinc	100	J	3.90E+02	1.00E+03	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Pesticide	Aldrin	0.0021	J	3.56E-03	5.00E-01	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Pesticide	Dieldrin	0.0052	J	1.13E-02	4.00E-03	No	</=BKG
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Pesticide	Endrin Ketone	0.0011	J	NA	1.00E+00	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Semivolatile	1,4-Dichlorobenzene	0.045	J	NA	2.00E+00	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Semivolatile	Acenaphthene	0.03	J	4.20E-02	5.70E+02	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Semivolatile	Anthracene	0.078	J	1.20E-01	1.20E+04	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Semivolatile	Benzo(a)anthracene	0.29	J	2.76E-01	2.00E+00	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Semivolatile	Benzo(a)pyrene	0.3	J	4.06E-01	8.00E+00	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Semivolatile	Benzo(b)fluoranthene	0.32	J	3.66E-01	5.00E+00	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Semivolatile	Benzo(k)fluoranthene	0.28	J	2.83E-01	4.90E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Semivolatile	Benzyl Butyl Phthalate	0.023	J	NA	9.30E+02	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	0.13	J	3.53E-01	3.60E+03	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Semivolatile	Chrysene	0.32	J	2.99E-01	1.60E+02	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Semivolatile	Dibenzofuran	0.022	J	NA	NA	No	Screening Level NA
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Semivolatile	Fluoranthene	0.53		4.50E-01	4.30E+03	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Semivolatile	Fluorene	0.034	J	NA	5.60E+02	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Semivolatile	Indeno(1,2,3-cd)pyrene	0.088	J	NA	1.40E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Semivolatile	Phenanthrene	0.37	J	3.31E-01	1.20E+04	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Semivolatile	Pyrene	0.67		4.30E-01	4.20E+03	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Volatile	2-Butanone (MEK)	0.0096	J	NA	NA	No	Screening Level NA
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Volatile	Acetone	0.068	J	NA	1.60E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Volatile	Carbon Disulfide	0.00087	J	NA	3.20E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Volatile	Chlorobenzene	0.0016	J	NA	1.00E+00	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Volatile	Ethylbenzene	0.00031	J	1.07E-03	1.30E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Volatile	Tetrachloroethene	0.00041	J	8.80E-04	6.00E-02	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Volatile	Trichloroethylene	0.00097	J	NA	6.00E-02	No	</=Screening Level
Q Central	SOIL-Q-8	Surface	SOIL-Q-8-0.5	Volatile	Xylenes, Total	0.0012	J	1.61E-03	1.50E+02	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Herbicide	Pentachlorophenol	0.056	J	NA	2.00E-02	Yes	>Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Metal	Aluminum	8100		7.86E+03	NA	No	Screening Level NA
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Metal	Antimony	2.3	J	1.21E+00	5.00E+00	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Metal	Arsenic	13		9.26E+00	2.50E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Metal	Barium	510	J	3.28E+02	2.60E+02	Yes	>Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Metal	Beryllium	0.65		6.28E-01	1.10E+00	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Metal	Cadmium	14		2.91E-01	1.00E+00	Yes	>Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Metal	Calcium	46000		2.48E+04	NA	No	EN
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Metal	Chromium	85		1.57E+01	2.10E+01	Yes	>Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Metal	Cobalt	12	J	9.14E+00	NA	No	Screening Level NA
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Metal	Copper	260	J	1.35E+01	3.30E+02	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Metal	Iron	21000		1.88E+04	NA	No	EN
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Metal	Lead	520	J	1.33E+01	NA	No	Screening Level NA
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Metal	Magnesium	5800		1.02E+04	NA	No	EN
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Metal	Manganese	3000	J	4.50E+02	NA	No	Screening Level NA
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Metal	Mercury	0.61	J	2.07E-02	1.00E-02	Yes	>Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Metal	Nickel	69		2.35E+01	2.00E+01	Yes	>Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Metal	Potassium	1500	J	1.75E+03	NA	No	EN
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Metal	Silver	2.6		NA	2.40E-01	Yes	>Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Metal	Sodium	1100		1.25E+02	NA	No	EN
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Metal	Vanadium	26		2.98E+01	9.80E+02	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Metal	Zinc	630	J	5.88E+01	1.00E+03	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Pesticide	4,4'-DDD	0.0076	J	NA	1.60E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Pesticide	alpha-Chlordane	0.0047	J	NA	1.00E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Pesticide	Dieldrin	0.065	J	NA	4.00E-03	Yes	>Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Pesticide	Endrin Aldehyde	0.016	J	NA	1.00E+00	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Semivolatile	1,4-Dichlorobenzene	4.3		NA	2.00E+00	Yes	>Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Semivolatile	2-Methylnaphthalene	0.96	J	NA	1.20E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Semivolatile	Acenaphthene	0.38	J	NA	5.70E+02	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Semivolatile	Benzo(a)anthracene	0.55	J	NA	2.00E+00	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Semivolatile	Benzo(a)pyrene	0.53	J	NA	8.00E+00	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Semivolatile	Benzo(b)fluoranthene	0.29	J	NA	5.00E+00	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Semivolatile	Benzo(g,h,i)perylene	0.31	J	NA	4.20E+03	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Semivolatile	Benzyl Butyl Phthalate	3.8	J	NA	9.30E+02	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Semivolatile	bis(2-Ethylhexyl)phthalate	25		6.40E-02	3.60E+03	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Semivolatile	Chrysene	0.84	J	NA	1.60E+02	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Semivolatile	Dibenzofuran	0.38	J	NA	NA	No	Screening Level NA
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Semivolatile	Di-n-butylphthalate	1.1	J	NA	2.30E+03	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Semivolatile	Fluoranthene	0.83	J	NA	4.30E+03	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Semivolatile	Fluorene	0.5	J	NA	5.60E+02	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Semivolatile	Naphthalene	1.7	J	NA	1.20E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Semivolatile	Phenanthrene	1.6	J	NA	1.20E+04	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Semivolatile	Pyrene	0.98	J	NA	4.20E+03	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Volatile	1,2-Dichloroethene (total)	0.0011	J	NA	4.00E-01	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Volatile	2-Butanone (MEK)	0.05		NA	NA	No	Screening Level NA
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Volatile	Acetone	0.17	J	NA	1.60E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Volatile	Benzene	0.058		NA	3.00E-02	Yes	>Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Volatile	Carbon Disulfide	0.011		NA	3.20E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Volatile	Chlorobenzene	2.2	J	NA	1.00E+00	Yes	>Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Volatile	Ethylbenzene	0.2	J	8.37E-04	1.30E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Volatile	Tetrachloroethene	0.0014	J	1.02E-03	6.00E-02	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Volatile	Toluene	0.07		NA	1.20E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Volatile	Trichloroethylene	0.0023	J	NA	6.00E-02	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6	Volatile	Xylenes, Total	13		1.50E-03	1.50E+02	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Herbicide	Dalapon	0.02	J	NA	8.50E-01	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Herbicide	MCPP	1.1	J	NA	NA	No	Screening Level NA
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Herbicide	Pentachlorophenol	0.057	J	NA	2.00E-02	Yes	>Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Metal	Aluminum	7500		7.86E+03	NA	No	Screening Level NA
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Metal	Antimony	2.2	J	1.21E+00	5.00E+00	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Metal	Arsenic	8.6		9.26E+00	2.50E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Metal	Barium	280	J	3.28E+02	2.60E+02	No	</=BKG
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Metal	Beryllium	0.47	J	6.28E-01	1.10E+00	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Metal	Cadmium	5.3		2.91E-01	1.00E+00	Yes	>Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Metal	Calcium	63000		2.48E+04	NA	No	EN
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Metal	Chromium	110		1.57E+01	2.10E+01	Yes	>Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Metal	Cobalt	18	J	9.14E+00	NA	No	Screening Level NA
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Metal	Copper	190	J	1.35E+01	3.30E+02	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Metal	Iron	22000		1.88E+04	NA	No	EN
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Metal	Lead	640	J	1.33E+01	NA	No	Screening Level NA
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Metal	Magnesium	9700		1.02E+04	NA	No	EN
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Metal	Manganese	7900	J	4.50E+02	NA	No	Screening Level NA
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Metal	Mercury	0.92	J	2.07E-02	1.00E-02	Yes	>Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Metal	Nickel	67		2.35E+01	2.00E+01	Yes	>Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Metal	Potassium	1000	J	1.75E+03	NA	No	EN
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Metal	Silver	4.9		NA	2.40E-01	Yes	>Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Metal	Sodium	1600		1.25E+02	NA	No	EN
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Metal	Vanadium	19		2.98E+01	9.80E+02	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Metal	Zinc	740	J	5.88E+01	1.00E+03	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Pesticide	alpha-Chlordane	0.0081	J	NA	1.00E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Pesticide	Dieldrin	0.052	J	NA	4.00E-03	Yes	>Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Semivolatile	1,4-Dichlorobenzene	1.5	J	NA	2.00E+00	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Semivolatile	2-Methylnaphthalene	0.37	J	NA	1.20E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Semivolatile	Benzo(a)anthracene	0.22	J	NA	2.00E+00	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Semivolatile	Benzyl Butyl Phthalate	2.3	J	NA	9.30E+02	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Semivolatile	bis(2-Ethylhexyl)phthalate	19		6.40E-02	3.60E+03	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Semivolatile	Chrysene	0.29	J	NA	1.60E+02	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Semivolatile	Di-n-butylphthalate	0.42	J	NA	2.30E+03	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Semivolatile	Fluoranthene	0.42	J	NA	4.30E+03	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Semivolatile	Naphthalene	0.65	J	NA	1.20E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Semivolatile	Phenanthrene	0.75	J	NA	1.20E+04	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Semivolatile	Pyrene	0.5	J	NA	4.20E+03	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Volatile	1,2-Dichloroethene (total)	0.0016	J	NA	4.00E-01	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Volatile	2-Butanone (MEK)	0.027	J	NA	NA	No	Screening Level NA
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Volatile	Acetone	0.1	J	NA	1.60E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Volatile	Benzene	0.041		NA	3.00E-02	Yes	>Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Volatile	Carbon Disulfide	0.0068		NA	3.20E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Volatile	Chlorobenzene	0.095	J	NA	1.00E+00	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Volatile	Ethylbenzene	0.03	J	8.37E-04	1.30E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Volatile	Tetrachloroethene	0.00061	J	1.02E-03	6.00E-02	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Volatile	Toluene	0.097		NA	1.20E+01	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Volatile	Trichloroethylene	0.0006	J	NA	6.00E-02	No	</=Screening Level
Q Central	SOIL-Q-8	Subsurface	SOIL-Q-8-6-DUP	Volatile	Xylenes, Total	0.4		1.50E-03	1.50E+02	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Herbicide	2,4-D	0.0067	J	9.96E-03	1.50E+00	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Metal	Aluminum	11000		1.38E+04	NA	No	Screening Level NA
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Metal	Antimony	47	J	2.33E+00	5.00E+00	Yes	>Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Metal	Arsenic	33		1.24E+01	2.50E+01	Yes	>Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Metal	Barium	1000		3.07E+02	2.60E+02	Yes	>Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Metal	Beryllium	0.54		9.02E-01	1.10E+00	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Metal	Cadmium	22		3.34E+00	1.00E+00	Yes	>Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Metal	Calcium	22000		9.74E+04	NA	No	EN
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Metal	Chromium	660		2.21E+01	2.10E+01	Yes	>Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Metal	Cobalt	20		9.40E+00	NA	No	Screening Level NA
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Metal	Copper	710	J	8.58E+01	3.30E+02	Yes	>Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Metal	Iron	90000		2.33E+04	NA	No	EN
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Metal	Lead	3100		1.30E+02	NA	No	Screening Level NA
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Metal	Magnesium	3800		1.23E+04	NA	No	EN
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Metal	Manganese	2100		5.52E+02	NA	No	Screening Level NA
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Metal	Mercury	1	J	1.34E-01	1.00E-02	Yes	>Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Metal	Nickel	500		3.30E+01	2.00E+01	Yes	>Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Metal	Potassium	970		3.01E+03	NA	No	EN
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Metal	Silver	12		9.90E-01	2.40E-01	Yes	>Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Metal	Sodium	420		1.58E+02	NA	No	EN
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Metal	Vanadium	27		3.89E+01	9.80E+02	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Metal	Zinc	3000	J	3.90E+02	1.00E+03	Yes	>Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Pesticide	4,4'-DDT	2.6	J	4.04E-02	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Pesticide	alpha-Chlordane	0.033		6.15E-03	1.00E+01	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Pesticide	beta-BHC	0.011	J	NA	5.00E-04	Yes	>Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Pesticide	Endrin	0.17	J	5.02E-03	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Pesticide	gamma-Chlordane	0.15	J	4.11E-02	1.00E+01	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Pesticide	Heptachlor Epoxide	0.076	J	1.05E-02	7.00E-01	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Pesticide	Methoxychlor	0.092	J	5.60E-03	1.60E+02	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Semivolatile	Acenaphthene	0.051	J	4.20E-02	5.70E+02	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Semivolatile	Anthracene	0.34	J	1.20E-01	1.20E+04	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Semivolatile	Benzo(a)anthracene	1.8	J	2.76E-01	2.00E+00	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Semivolatile	Benzo(a)pyrene	1.8	J	4.06E-01	8.00E+00	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Semivolatile	Benzo(b)fluoranthene	3.3	J	3.66E-01	5.00E+00	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Semivolatile	Benzyl Butyl Phthalate	0.87	J	NA	9.30E+02	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	0.54	J	3.53E-01	3.60E+03	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Semivolatile	Carbazole	0.079	J	NA	6.00E-01	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Semivolatile	Chrysene	2.4	J	2.99E-01	1.60E+02	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Semivolatile	Dibenzofuran	0.029	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Semivolatile	Di-n-butylphthalate	0.11	J	NA	2.30E+03	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Semivolatile	Fluoranthene	3.2	J	4.50E-01	4.30E+03	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Semivolatile	Fluorene	0.062	J	NA	5.60E+02	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Semivolatile	Phenanthrene	1.6	J	3.31E-01	1.20E+04	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Semivolatile	Pyrene	3.3	J	4.30E-01	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Volatile	Carbon Disulfide	0.00066	J	NA	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Volatile	Ethylbenzene	0.00038	J	1.07E-03	1.30E+01	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Volatile	Tetrachloroethene	0.0021	J	8.80E-04	6.00E-02	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Volatile	Trichloroethylene	0.0017	J	NA	6.00E-02	No	</=Screening Level
Q South	SOIL-Q-9	Surface	SOIL-Q-9-0.5	Volatile	Xylenes, Total	0.0012	J	1.61E-03	1.50E+02	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Herbicide	2,4-D	0.0048	J	NA	1.50E+00	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Herbicide	MCPP	0.56	J	NA	NA	No	Screening Level NA
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Metal	Aluminum	6600		7.86E+03	NA	No	Screening Level NA

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Metal	Antimony	27	J	1.21E+00	5.00E+00	Yes	>Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Metal	Arsenic	17		9.26E+00	2.50E+01	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Metal	Barium	1900		3.28E+02	2.60E+02	Yes	>Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Metal	Beryllium	0.32	J	6.28E-01	1.10E+00	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Metal	Cadmium	22		2.91E-01	1.00E+00	Yes	>Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Metal	Calcium	17000		2.48E+04	NA	No	EN
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Metal	Chromium	74		1.57E+01	2.10E+01	Yes	>Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Metal	Cobalt	13		9.14E+00	NA	No	Screening Level NA
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Metal	Copper	520	J	1.35E+01	3.30E+02	Yes	>Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Metal	Iron	79000		1.88E+04	NA	No	EN
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Metal	Lead	1600		1.33E+01	NA	No	Screening Level NA
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Metal	Magnesium	2500		1.02E+04	NA	No	EN
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Metal	Manganese	600		4.50E+02	NA	No	Screening Level NA
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Metal	Mercury	0.62	J	2.07E-02	1.00E-02	Yes	>Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Metal	Nickel	58		2.35E+01	2.00E+01	Yes	>Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Metal	Potassium	740		1.75E+03	NA	No	EN
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Metal	Silver	5.1		NA	2.40E-01	Yes	>Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Metal	Sodium	370		1.25E+02	NA	No	EN
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Metal	Vanadium	17		2.98E+01	9.80E+02	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Metal	Zinc	2300	J	5.88E+01	1.00E+03	Yes	>Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Pesticide	4,4'-DDE	0.26		NA	5.40E+01	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Pesticide	4,4'-DDT	0.49	J	1.04E-03	3.20E+01	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Pesticide	alpha-Chlordane	0.037		NA	1.00E+01	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Pesticide	Dieldrin	0.12	J	NA	4.00E-03	Yes	>Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Pesticide	Endosulfan II	0.01	J	NA	1.80E+01	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Pesticide	Endrin	0.039	J	NA	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Pesticide	gamma-Chlordane	0.21	J	2.40E-04	1.00E+01	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Pesticide	Heptachlor Epoxide	0.058	J	6.40E-04	7.00E-01	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Semivolatile	Benzo(a)anthracene	1.2	J	NA	2.00E+00	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Semivolatile	Benzo(a)pyrene	1.2	J	NA	8.00E+00	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Semivolatile	Benzo(b)fluoranthene	1.4	J	NA	5.00E+00	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Semivolatile	Benzo(g,h,i)perylene	1.2	J	NA	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Semivolatile	Benzo(k)fluoranthene	1.1	J	NA	4.90E+01	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Semivolatile	Benzyl Butyl Phthalate	5.4		NA	9.30E+02	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Semivolatile	bis(2-Ethylhexyl)phthalate	0.36	J	6.40E-02	3.60E+03	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Semivolatile	Chrysene	1.4	J	NA	1.60E+02	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Semivolatile	Fluoranthene	2	J	NA	4.30E+03	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Semivolatile	Phenanthrene	0.89	J	NA	1.20E+04	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Semivolatile	Pyrene	1.8	J	NA	4.20E+03	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Volatile	Benzene	0.0015	J	NA	3.00E-02	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Volatile	Chlorobenzene	0.00058	J	NA	1.00E+00	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Volatile	Ethylbenzene	0.00052	J	8.37E-04	1.30E+01	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Volatile	Tetrachloroethene	0.003	J	1.02E-03	6.00E-02	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Volatile	Trichloroethylene	0.0013	J	NA	6.00E-02	No	</=Screening Level
Q South	SOIL-Q-9	Subsurface	SOIL-Q-9-6	Volatile	Xylenes, Total	0.0036	J	1.50E-03	1.50E+02	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Herbicide	Dichlorprop	0.1	J	1.14E-01	NA	No	Screening Level NA
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Herbicide	MCPP	49	J	3.60E+00	NA	No	Screening Level NA
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Metal	Aluminum	8700	J	1.38E+04	NA	No	Screening Level NA
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Metal	Antimony	0.44	J	2.33E+00	5.00E+00	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Metal	Arsenic	7.2		1.24E+01	2.50E+01	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Metal	Barium	150	J	3.07E+02	2.60E+02	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Metal	Beryllium	0.68		9.02E-01	1.10E+00	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Metal	Cadmium	0.49	J	3.34E+00	1.00E+00	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Metal	Calcium	4400		9.74E+04	NA	No	EN
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Metal	Chromium	17		2.21E+01	2.10E+01	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Metal	Cobalt	15	J	9.40E+00	NA	No	Screening Level NA
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Metal	Copper	23		8.58E+01	3.30E+02	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Metal	Iron	18000		2.33E+04	NA	No	EN
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Metal	Lead	33	J	1.30E+02	NA	No	Screening Level NA
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Metal	Magnesium	3400	J	1.23E+04	NA	No	EN
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Metal	Manganese	1200		5.52E+02	NA	No	Screening Level NA
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Metal	Mercury	0.037		1.34E-01	1.00E-02	No	</=BKG
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Metal	Nickel	20		3.30E+01	2.00E+01	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Metal	Potassium	880	J	3.01E+03	NA	No	EN
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Metal	Sodium	90	J	1.58E+02	NA	No	EN
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Metal	Vanadium	34	J	3.89E+01	9.80E+02	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Metal	Zinc	91	J	3.90E+02	1.00E+03	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Pesticide	4,4'-DDT	0.0027	J	4.04E-02	3.20E+01	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Pesticide	Dieldrin	0.0014	J	1.13E-02	4.00E-03	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Semivolatile	Benzo(a)anthracene	0.03	J	2.76E-01	2.00E+00	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Semivolatile	Benzo(a)pyrene	0.026	J	4.06E-01	8.00E+00	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Semivolatile	Benzo(b)fluoranthene	0.03	J	3.66E-01	5.00E+00	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Semivolatile	Benzo(g,h,i)perylene	0.045	J	4.14E-01	4.20E+03	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Semivolatile	Benzo(k)fluoranthene	0.026	J	2.83E-01	4.90E+01	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	0.078	J	3.53E-01	3.60E+03	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Semivolatile	Chrysene	0.032	J	2.99E-01	1.60E+02	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Semivolatile	Indeno(1,2,3-cd)pyrene	0.043	J	NA	1.40E+01	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Semivolatile	Phenanthrene	0.021	J	3.31E-01	1.20E+04	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Volatile	2-Butanone (MEK)	0.015	J	NA	NA	No	Screening Level NA
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Volatile	Acetone	0.13		NA	1.60E+01	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Volatile	Benzene	0.00068	J	NA	3.00E-02	No	</=Screening Level
R	SOIL-R-1	Surface	SOIL-R-1-0.5	Volatile	Ethylbenzene	0.00024	J	1.07E-03	1.30E+01	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Herbicide	2,4,5-T	0.0076	J	NA	1.10E+01	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Herbicide	2,4-D	0.42	J	NA	1.50E+00	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Herbicide	2,4-DB	0.027	J	NA	1.50E+00	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Herbicide	Dichlorprop	0.087	J	5.80E-03	NA	No	Screening Level NA
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Herbicide	MCPP	51	J	NA	NA	No	Screening Level NA
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Herbicide	Pentachlorophenol	0.093	J	NA	2.00E-02	Yes	>Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Metal	Aluminum	9600	J	7.86E+03	NA	No	Screening Level NA
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Metal	Arsenic	6.4		9.26E+00	2.50E+01	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Metal	Barium	130	J	3.28E+02	2.60E+02	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Metal	Beryllium	0.59		6.28E-01	1.10E+00	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Metal	Cadmium	0.36	J	2.91E-01	1.00E+00	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Metal	Calcium	5100		2.48E+04	NA	No	EN
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Metal	Chromium	16		1.57E+01	2.10E+01	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Metal	Cobalt	7.9	J	9.14E+00	NA	No	Screening Level NA
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Metal	Copper	20		1.35E+01	3.30E+02	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Metal	Iron	18000		1.88E+04	NA	No	EN
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Metal	Lead	17	J	1.33E+01	NA	No	Screening Level NA
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Metal	Magnesium	4000	J	1.02E+04	NA	No	EN
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Metal	Manganese	520		4.50E+02	NA	No	Screening Level NA
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Metal	Mercury	0.19		2.07E-02	1.00E-02	Yes	>Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Metal	Nickel	19		2.35E+01	2.00E+01	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Metal	Potassium	850	J	1.75E+03	NA	No	EN
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Metal	Sodium	130	J	1.25E+02	NA	No	EN
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Metal	Vanadium	31	J	2.98E+01	9.80E+02	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Metal	Zinc	74	J	5.88E+01	1.00E+03	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Pesticide	4,4'-DDT	0.012	J	1.04E-03	3.20E+01	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Pesticide	Aldrin	0.006	J	NA	5.00E-01	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Pesticide	alpha-Chlordane	0.0055	J	NA	1.00E+01	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Pesticide	Dieldrin	0.01	J	NA	4.00E-03	Yes	>Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Pesticide	Endrin Aldehyde	0.016	J	NA	1.00E+00	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Pesticide	gamma-Chlordane	0.0058	J	2.40E-04	1.00E+01	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Pesticide	Heptachlor Epoxide	0.036		6.40E-04	7.00E-01	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Semivolatile	1,2-Dichlorobenzene	0.1	J	NA	1.70E+01	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Semivolatile	2,4-Dimethylphenol	0.1	J	NA	9.00E+00	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Semivolatile	3-Methylphenol/4-Methylphenol	0.065	J	NA	1.50E+01	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Semivolatile	4-Chloroaniline	0.38	J	NA	7.00E-01	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Semivolatile	bis(2-Ethylhexyl)phthalate	0.038	J	6.40E-02	3.60E+03	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Volatile	1,2-Dichloroethene (total)	0.00048	J	NA	4.00E-01	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Volatile	2-Butanone (MEK)	0.0023	J	NA	NA	No	Screening Level NA
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Volatile	Benzene	0.006		NA	3.00E-02	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Volatile	Chlorobenzene	0.0031	J	NA	1.00E+00	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Volatile	Ethylbenzene	0.00044	J	8.37E-04	1.30E+01	No	</=Screening Level
R	SOIL-R-1	Subsurface	SOIL-R-1-6FT	Volatile	Xylenes, Total	0.00095	J	1.50E-03	1.50E+02	No	</=Screening Level
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Herbicide	2,4-D	0.055	J	9.96E-03	1.50E+00	No	</=Screening Level
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Herbicide	2,4-DB	0.029	J	NA	1.50E+00	No	</=Screening Level
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Herbicide	Dichlorprop	0.091	J	1.14E-01	NA	No	Screening Level NA
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Herbicide	MCPP	43	J	3.60E+00	NA	No	Screening Level NA
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Metal	Aluminum	7600	J	1.38E+04	NA	No	Screening Level NA
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Metal	Arsenic	5.5		1.24E+01	2.50E+01	No	</=Screening Level
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Metal	Barium	110	J	3.07E+02	2.60E+02	No	</=Screening Level
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Metal	Beryllium	0.48		9.02E-01	1.10E+00	No	</=Screening Level
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Metal	Cadmium	0.76	J	3.34E+00	1.00E+00	No	</=Screening Level
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Metal	Calcium	6400		9.74E+04	NA	No	EN
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Metal	Chromium	13		2.21E+01	2.10E+01	No	</=Screening Level
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Metal	Cobalt	6.9	J	9.40E+00	NA	No	Screening Level NA
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Metal	Copper	25		8.58E+01	3.30E+02	No	</=Screening Level
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Metal	Iron	15000		2.33E+04	NA	No	EN
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Metal	Lead	19	J	1.30E+02	NA	No	Screening Level NA
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Metal	Magnesium	4600	J	1.23E+04	NA	No	EN
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Metal	Manganese	560		5.52E+02	NA	No	Screening Level NA
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Metal	Mercury	0.076		1.34E-01	1.00E-02	No	</=BKG
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Metal	Nickel	17		3.30E+01	2.00E+01	No	</=Screening Level
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Metal	Potassium	820	J	3.01E+03	NA	No	EN
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Metal	Sodium	87	J	1.58E+02	NA	No	EN
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Metal	Vanadium	27	J	3.89E+01	9.80E+02	No	</=Screening Level
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Metal	Zinc	120	J	3.90E+02	1.00E+03	No	</=Screening Level
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Volatile	2-Butanone (MEK)	0.0031	J	NA	NA	No	Screening Level NA
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Volatile	Acetone	0.011	J	NA	1.60E+01	No	</=Screening Level
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Volatile	Benzene	0.0021	J	NA	3.00E-02	No	</=Screening Level
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Volatile	Chlorobenzene	0.064		NA	1.00E+00	No	</=Screening Level
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Volatile	Ethylbenzene	0.0019	J	1.07E-03	1.30E+01	No	</=Screening Level
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Volatile	Tetrachloroethene	0.012		8.80E-04	6.00E-02	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Volatile	Trichloroethylene	0.0003	J	NA	6.00E-02	No	</=Screening Level
R	SOIL-R-2	Surface	SOIL-R-2-0.5	Volatile	Xylenes, Total	0.0091	J	1.61E-03	1.50E+02	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Herbicide	2,4-D	0.28	J	NA	1.50E+00	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Herbicide	2,4-DB	0.045	J	NA	1.50E+00	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Herbicide	Dichlorprop	0.12	J	5.80E-03	NA	No	Screening Level NA
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Herbicide	MCPP	85	J	NA	NA	No	Screening Level NA
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Metal	Aluminum	8100	J	7.86E+03	NA	No	Screening Level NA
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Metal	Arsenic	6.2		9.26E+00	2.50E+01	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Metal	Barium	120	J	3.28E+02	2.60E+02	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Metal	Beryllium	0.48		6.28E-01	1.10E+00	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Metal	Cadmium	0.19	J	2.91E-01	1.00E+00	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Metal	Calcium	7500		2.48E+04	NA	No	EN
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Metal	Chromium	14		1.57E+01	2.10E+01	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Metal	Cobalt	7.6	J	9.14E+00	NA	No	Screening Level NA
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Metal	Copper	15		1.35E+01	3.30E+02	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Metal	Iron	16000		1.88E+04	NA	No	EN
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Metal	Lead	9.8	J	1.33E+01	NA	No	Screening Level NA
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Metal	Magnesium	5500	J	1.02E+04	NA	No	EN
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Metal	Manganese	650		4.50E+02	NA	No	Screening Level NA
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Metal	Mercury	0.047		2.07E-02	1.00E-02	Yes	>Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Metal	Nickel	18		2.35E+01	2.00E+01	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Metal	Potassium	760	J	1.75E+03	NA	No	EN
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Metal	Sodium	120	J	1.25E+02	NA	No	EN
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Metal	Vanadium	27	J	2.98E+01	9.80E+02	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Metal	Zinc	44	J	5.88E+01	1.00E+03	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Pesticide	4,4'-DDE	0.00066	J	NA	5.40E+01	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Pesticide	alpha-Chlordane	0.00037	J	NA	1.00E+01	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Pesticide	Endrin Ketone	0.005	J	NA	1.00E+00	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Pesticide	Heptachlor Epoxide	0.0013	J	6.40E-04	7.00E-01	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Pesticide	Methoxychlor	0.0072	J	1.02E-03	1.60E+02	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Semivolatile	2,4-Dichlorophenol	0.03	J	NA	4.80E-01	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Volatile	2-Butanone (MEK)	0.0071	J	NA	NA	No	Screening Level NA
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Volatile	4-Methyl-2-pentanone (MIBK)	0.15		2.00E-03	NA	No	Screening Level NA
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Volatile	Acetone	0.033	J	NA	1.60E+01	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Volatile	Benzene	0.023		NA	3.00E-02	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Volatile	Chlorobenzene	0.055		NA	1.00E+00	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Volatile	Chloroform	0.0028	J	NA	6.00E-01	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Volatile	Ethylbenzene	0.0066		8.37E-04	1.30E+01	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Volatile	Tetrachloroethene	0.0036	J	1.02E-03	6.00E-02	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Volatile	Toluene	0.046		NA	1.20E+01	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Volatile	Trichloroethylene	0.00074	J	NA	6.00E-02	No	</=Screening Level
R	SOIL-R-2	Subsurface	SOIL-R-2-6	Volatile	Xylenes, Total	0.041		1.50E-03	1.50E+02	No	</=Screening Level
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Herbicide	2,4-DB	0.026	J	NA	1.50E+00	No	</=Screening Level
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Herbicide	Dichlorprop	0.075	J	1.14E-01	NA	No	Screening Level NA
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Herbicide	MCPP	51	J	3.60E+00	NA	No	Screening Level NA
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Metal	Aluminum	10000	J	1.38E+04	NA	No	Screening Level NA
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Metal	Arsenic	6.6		1.24E+01	2.50E+01	No	</=Screening Level
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Metal	Barium	120	J	3.07E+02	2.60E+02	No	</=Screening Level
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Metal	Beryllium	0.6		9.02E-01	1.10E+00	No	</=Screening Level
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Metal	Calcium	6100		9.74E+04	NA	No	EN
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Metal	Chromium	17		2.21E+01	2.10E+01	No	</=Screening Level
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Metal	Cobalt	8.3		9.40E+00	NA	No	Screening Level NA
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Metal	Copper	15		8.58E+01	3.30E+02	No	</=Screening Level
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Metal	Iron	18000		2.33E+04	NA	No	EN
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Metal	Lead	10	J	1.30E+02	NA	No	Screening Level NA
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Metal	Magnesium	4800	J	1.23E+04	NA	No	EN
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Metal	Manganese	690		5.52E+02	NA	No	Screening Level NA
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Metal	Mercury	0.06		1.34E-01	1.00E-02	No	</=BKG
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Metal	Nickel	21		3.30E+01	2.00E+01	No	</=BKG
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Metal	Potassium	1000	J	3.01E+03	NA	No	EN
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Metal	Sodium	120	J	1.58E+02	NA	No	EN
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Metal	Vanadium	30	J	3.89E+01	9.80E+02	No	</=Screening Level
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Metal	Zinc	47	J	3.90E+02	1.00E+03	No	</=Screening Level
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Pesticide	Dieldrin	0.00037	J	1.13E-02	4.00E-03	No	</=Screening Level
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Semivolatile	Chrysene	0.02	J	2.99E-01	1.60E+02	No	</=Screening Level
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Volatile	1,2-Dichloroethane	0.0026	J	NA	2.00E-02	No	</=Screening Level
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Volatile	1,2-Dichloroethene (total)	0.00094	J	NA	4.00E-01	No	</=Screening Level
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Volatile	2-Butanone (MEK)	0.016	J	NA	NA	No	Screening Level NA
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Volatile	4-Methyl-2-pentanone (MIBK)	0.01	J	NA	NA	No	Screening Level NA
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Volatile	Acetone	0.15		NA	1.60E+01	No	</=Screening Level
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Volatile	Benzene	0.0014	J	NA	3.00E-02	No	</=Screening Level
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Volatile	Chlorobenzene	0.0026	J	NA	1.00E+00	No	</=Screening Level
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Volatile	Ethylbenzene	0.00038	J	1.07E-03	1.30E+01	No	</=Screening Level
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Volatile	Tetrachloroethene	0.0026	J	8.80E-04	6.00E-02	No	</=Screening Level
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Volatile	Trichloroethylene	0.012		NA	6.00E-02	No	</=Screening Level
R	SOIL-R-3	Surface	SOIL-R-3-0.5FT	Volatile	Xylenes, Total	0.0013	J	1.61E-03	1.50E+02	No	</=Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Herbicide	2,4-D	0.27	J	NA	1.50E+00	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Herbicide	Dichlorprop	0.049	J	5.80E-03	NA	No	Screening Level NA
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Herbicide	MCPP	76	J	NA	NA	No	Screening Level NA
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Metal	Aluminum	5400	J	7.86E+03	NA	No	Screening Level NA
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Metal	Antimony	4	J	1.21E+00	5.00E+00	No	</=Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Metal	Arsenic	12		9.26E+00	2.50E+01	No	</=Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Metal	Barium	160	J	3.28E+02	2.60E+02	No	</=Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Metal	Beryllium	0.78		6.28E-01	1.10E+00	No	</=Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Metal	Cadmium	3.8	J	2.91E-01	1.00E+00	Yes	>Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Metal	Calcium	38000		2.48E+04	NA	No	EN
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Metal	Chromium	260		1.57E+01	2.10E+01	Yes	>Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Metal	Cobalt	7.7		9.14E+00	NA	No	Screening Level NA
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Metal	Copper	130		1.35E+01	3.30E+02	No	</=Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Metal	Iron	39000		1.88E+04	NA	No	EN
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Metal	Lead	110	J	1.33E+01	NA	No	Screening Level NA
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Metal	Magnesium	2100	J	1.02E+04	NA	No	EN
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Metal	Manganese	280		4.50E+02	NA	No	Screening Level NA
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Metal	Mercury	1.1		2.07E-02	1.00E-02	Yes	>Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Metal	Nickel	60		2.35E+01	2.00E+01	Yes	>Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Metal	Potassium	890	J	1.75E+03	NA	No	EN
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Metal	Silver	1.1		NA	2.40E-01	Yes	>Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Metal	Sodium	720	J	1.25E+02	NA	No	EN
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Metal	Vanadium	27	J	2.98E+01	9.80E+02	No	</=Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Metal	Zinc	5900	J	5.88E+01	1.00E+03	Yes	>Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Pesticide	4,4'-DDE	0.0016	J	NA	5.40E+01	No	</=Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Pesticide	alpha-BHC	0.00061	J	NA	5.00E-04	Yes	>Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Pesticide	Endosulfan I	0.00098	J	NA	1.80E+01	No	</=Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Pesticide	Endrin	0.0019	J	NA	1.00E+00	No	</=Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Pesticide	gamma-Chlordane	0.0035	J	2.40E-04	1.00E+01	No	</=Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Pesticide	Heptachlor Epoxide	0.0012	J	6.40E-04	7.00E-01	No	</=Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Semivolatile	2,4,6-Trichlorophenol	0.1	J	NA	2.00E-01	No	</=Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Semivolatile	2,4-Dichlorophenol	0.29	J	NA	4.80E-01	No	</=Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Semivolatile	2-Nitroaniline	0.028	J	NA	NA	No	Screening Level NA
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Semivolatile	4-Chloroaniline	0.049	J	NA	7.00E-01	No	</=Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Semivolatile	Benzyl Butyl Phthalate	0.041	J	NA	9.30E+02	No	</=Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Semivolatile	bis(2-Ethylhexyl)phthalate	3.3		6.40E-02	3.60E+03	No	</=Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Semivolatile	Diethyl Phthalate	0.11	J	NA	4.70E+02	No	</=Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Semivolatile	Dimethyl Phthalate	0.033	J	NA	4.70E+02	No	</=Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Semivolatile	Di-n-butylphthalate	0.048	J	NA	2.30E+03	No	</=Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Volatile	1,1-Dichloroethylene	3.9	J	NA	6.00E-02	Yes	>Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Volatile	1,2-Dichloroethane	87		NA	2.00E-02	Yes	>Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Volatile	1,2-Dichloroethene (total)	51		NA	4.00E-01	Yes	>Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Volatile	Benzene	22		NA	3.00E-02	Yes	>Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Volatile	Chlorobenzene	27		NA	1.00E+00	Yes	>Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Volatile	Chloroform	5.4	J	NA	6.00E-01	Yes	>Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Volatile	Ethylbenzene	8.5	J	8.37E-04	1.30E+01	No	</=Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Volatile	Tetrachloroethene	610		1.02E-03	6.00E-02	Yes	>Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Volatile	Toluene	200		NA	1.20E+01	Yes	>Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Volatile	Trichloroethylene	810		NA	6.00E-02	Yes	>Screening Level
R	SOIL-R-3	Subsurface	SOIL-R-3-6FT	Volatile	Xylenes, Total	14	J	1.50E-03	1.50E+02	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Herbicide	2,4,5-TP (Silvex)	0.0093	J	NA	1.10E+01	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Herbicide	2,4-DB	0.06	J	NA	1.50E+00	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Herbicide	Dichlorprop	0.044	J	1.14E-01	NA	No	Screening Level NA
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Herbicide	MCPP	5.2	J	3.60E+00	NA	No	Screening Level NA
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Metal	Aluminum	6700	J	1.38E+04	NA	No	Screening Level NA
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Metal	Arsenic	6.1		1.24E+01	2.50E+01	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Metal	Barium	120	J	3.07E+02	2.60E+02	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Metal	Beryllium	0.49		9.02E-01	1.10E+00	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Metal	Calcium	5500		9.74E+04	NA	No	EN
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Metal	Chromium	14		2.21E+01	2.10E+01	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Metal	Cobalt	6.8		9.40E+00	NA	No	Screening Level NA
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Metal	Copper	15		8.58E+01	3.30E+02	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Metal	Iron	16000		2.33E+04	NA	No	EN
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Metal	Lead	8.6	J	1.30E+02	NA	No	Screening Level NA
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Metal	Magnesium	4500	J	1.23E+04	NA	No	EN
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Metal	Manganese	550		5.52E+02	NA	No	Screening Level NA
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Metal	Mercury	0.063		1.34E-01	1.00E-02	No	</=BKG
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Metal	Nickel	18		3.30E+01	2.00E+01	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Metal	Potassium	790	J	3.01E+03	NA	No	EN
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Metal	Sodium	110	J	1.58E+02	NA	No	EN
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Metal	Vanadium	29	J	3.89E+01	9.80E+02	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Metal	Zinc	43	J	3.90E+02	1.00E+03	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Pesticide	Dieldrin	0.001	J	1.13E-02	4.00E-03	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Pesticide	gamma-Chlordane	0.00023	J	4.11E-02	1.00E+01	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Semivolatile	Benzo(a)anthracene	0.033	J	2.76E-01	2.00E+00	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Semivolatile	Benzo(a)pyrene	0.033	J	4.06E-01	8.00E+00	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Semivolatile	Benzo(b)fluoranthene	0.032	J	3.66E-01	5.00E+00	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Semivolatile	Benzo(g,h,i)perylene	0.025	J	4.14E-01	4.20E+03	No	</=Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Semivolatile	Benzo(k)fluoranthene	0.035	J	2.83E-01	4.90E+01	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Semivolatile	Chrysene	0.051	J	2.99E-01	1.60E+02	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Semivolatile	Fluoranthene	0.039	J	4.50E-01	4.30E+03	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Semivolatile	Phenanthrene	0.03	J	3.31E-01	1.20E+04	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Semivolatile	Pyrene	0.048	J	4.30E-01	4.20E+03	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Volatile	1,2-Dichloroethane	0.0015	J	NA	2.00E-02	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Volatile	2-Butanone (MEK)	0.015	J	NA	NA	No	Screening Level NA
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Volatile	Acetone	0.098		NA	1.60E+01	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Volatile	Benzene	0.0016	J	NA	3.00E-02	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Volatile	Chlorobenzene	0.0018	J	NA	1.00E+00	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Volatile	Ethylbenzene	0.00031	J	1.07E-03	1.30E+01	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Volatile	Tetrachloroethene	0.01		8.80E-04	6.00E-02	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Volatile	Toluene	0.0018	J	NA	1.20E+01	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Volatile	Trichloroethylene	0.019		NA	6.00E-02	No	</=Screening Level
R	SOIL-R-4	Surface	SOIL-R-4-0.5FT	Volatile	Xylenes, Total	0.00095	J	1.61E-03	1.50E+02	No	</=Screening Level
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Herbicide	Dichlorprop	0.018	J	5.80E-03	NA	No	Screening Level NA
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Herbicide	MCPP	36	J	NA	NA	No	Screening Level NA
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Metal	Aluminum	8400	J	7.86E+03	NA	No	Screening Level NA
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Metal	Arsenic	5.4		9.26E+00	2.50E+01	No	</=Screening Level
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Metal	Barium	120	J	3.28E+02	2.60E+02	No	</=Screening Level
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Metal	Beryllium	0.47		6.28E-01	1.10E+00	No	</=Screening Level
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Metal	Calcium	5600		2.48E+04	NA	No	EN
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Metal	Chromium	13		1.57E+01	2.10E+01	No	</=Screening Level
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Metal	Cobalt	7.1		9.14E+00	NA	No	Screening Level NA
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Metal	Copper	14		1.35E+01	3.30E+02	No	</=Screening Level
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Metal	Iron	16000		1.88E+04	NA	No	EN
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Metal	Lead	8.1	J	1.33E+01	NA	No	Screening Level NA
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Metal	Magnesium	4600	J	1.02E+04	NA	No	EN
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Metal	Manganese	570		4.50E+02	NA	No	Screening Level NA
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Metal	Mercury	0.064		2.07E-02	1.00E-02	Yes	>Screening Level
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Metal	Nickel	17		2.35E+01	2.00E+01	No	</=Screening Level
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Metal	Potassium	800	J	1.75E+03	NA	No	EN
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Metal	Sodium	130	J	1.25E+02	NA	No	EN
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Metal	Vanadium	29	J	2.98E+01	9.80E+02	No	</=Screening Level
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Metal	Zinc	40	J	5.88E+01	1.00E+03	No	</=Screening Level
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Pesticide	alpha-Chlordane	0.00013	J	NA	1.00E+01	No	</=Screening Level
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Pesticide	gamma-Chlordane	0.00046	J	2.40E-04	1.00E+01	No	</=Screening Level
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Volatile	1,2-Dichloroethane	0.0014	J	NA	2.00E-02	No	</=Screening Level
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Volatile	2-Butanone (MEK)	0.005	J	NA	NA	No	Screening Level NA
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Volatile	Acetone	0.014	J	NA	1.60E+01	No	</=Screening Level
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Volatile	Benzene	0.0016	J	NA	3.00E-02	No	</=Screening Level
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Volatile	Chlorobenzene	0.0014	J	NA	1.00E+00	No	</=Screening Level
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Volatile	Ethylbenzene	0.00044	J	8.37E-04	1.30E+01	No	</=Screening Level
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Volatile	Tetrachloroethene	0.0046	J	1.02E-03	6.00E-02	No	</=Screening Level
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Volatile	Toluene	0.0029	J	NA	1.20E+01	No	</=Screening Level
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Volatile	Trichloroethylene	0.016		NA	6.00E-02	No	</=Screening Level
R	SOIL-R-4	Subsurface	SOIL-R-4-6FT	Volatile	Xylenes, Total	0.00099	J	1.50E-03	1.50E+02	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Herbicide	2,4,5-TP (Silvex)	0.25	J	NA	1.10E+01	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Herbicide	2,4-D	3.3	J	9.96E-03	1.50E+00	No	</=BKG
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Herbicide	Pentachlorophenol	440		4.57E-03	2.00E-02	Yes	>Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Metal	Aluminum	7300	J	1.38E+04	NA	No	Screening Level NA
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Metal	Antimony	0.58	J	2.33E+00	5.00E+00	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Metal	Arsenic	5.8		1.24E+01	2.50E+01	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Metal	Barium	120	J	3.07E+02	2.60E+02	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Metal	Beryllium	0.46		9.02E-01	1.10E+00	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Metal	Cadmium	0.85	J	3.34E+00	1.00E+00	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Metal	Calcium	4900		9.74E+04	NA	No	EN
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Metal	Chromium	23		2.21E+01	2.10E+01	Yes	>Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Metal	Cobalt	9.4	J	9.40E+00	NA	No	Screening Level NA
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Metal	Copper	23		8.58E+01	3.30E+02	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Metal	Iron	13000		2.33E+04	NA	No	EN
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Metal	Lead	63	J	1.30E+02	NA	No	Screening Level NA
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Metal	Magnesium	2600	J	1.23E+04	NA	No	EN
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Metal	Manganese	670		5.52E+02	NA	No	Screening Level NA
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Metal	Mercury	0.074		1.34E-01	1.00E-02	No	</=BKG
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Metal	Nickel	20		3.30E+01	2.00E+01	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Metal	Potassium	870	J	3.01E+03	NA	No	EN
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Metal	Sodium	79	J	1.58E+02	NA	No	EN
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Metal	Vanadium	24	J	3.89E+01	9.80E+02	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Metal	Zinc	110	J	3.90E+02	1.00E+03	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Pesticide	4,4'-DDD	1.7	J	7.04E-03	1.60E+01	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Pesticide	4,4'-DDE	3.3	J	1.23E-02	5.40E+01	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Pesticide	4,4'-DDT	16	J	4.04E-02	3.20E+01	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Pesticide	beta-BHC	26	J	NA	5.00E-04	Yes	>Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Pesticide	delta-BHC	0.74	J	1.52E-02	5.00E-04	No	</=BKG
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Pesticide	Endosulfan II	5.4		1.16E-03	1.80E+01	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Pesticide	Endrin	10		5.02E-03	1.00E+00	No	</=BKG

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Pesticide	gamma-BHC (Lindane)	7.5	J	NA	9.00E-03	Yes	>Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Pesticide	gamma-Chlordane	2.7	J	4.11E-02	1.00E+01	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Pesticide	Heptachlor	1.5	J	3.12E-02	2.30E+01	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	1,2,4-Trichlorobenzene	36		NA	5.00E+00	Yes	>Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	1,2-Dichlorobenzene	37		NA	1.70E+01	Yes	>Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	1,3-Dichlorobenzene	1	J	NA	2.00E+00	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	1,4-Dichlorobenzene	7.5	J	NA	2.00E+00	Yes	>Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	2,4,5-Trichlorophenol	1.1	J	NA	2.70E+02	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	2,4,6-Trichlorophenol	8.2	J	NA	2.00E-01	Yes	>Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	2,4-Dichlorophenol	2.3	J	NA	4.80E-01	Yes	>Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	2-Methylnaphthalene	11	J	NA	1.20E+01	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	2-Nitroaniline	4.6	J	NA	NA	No	Screening Level NA
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	4-Nitroaniline	57	J	NA	NA	No	Screening Level NA
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	Acenaphthene	1.2	J	4.20E-02	5.70E+02	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	Benzo(a)anthracene	8	J	2.76E-01	2.00E+00	Yes	>Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	Benzo(a)pyrene	5.4	J	4.06E-01	8.00E+00	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	Benzo(b)fluoranthene	6.6	J	3.66E-01	5.00E+00	Yes	>Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	Benzo(g,h,i)perylene	4.2	J	4.14E-01	4.20E+03	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	Benzo(k)fluoranthene	6.4	J	2.83E-01	4.90E+01	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	Benzyl Butyl Phthalate	120		NA	9.30E+02	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	3.9	J	3.53E-01	3.60E+03	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	Chrysene	20		2.99E-01	1.60E+02	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	Dibenzo(a,h)anthracene	1.8	J	1.20E-01	2.00E+00	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	Di-n-octylphthalate	1.3	J	NA	1.00E+04	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	Dinoseb	1.7	J	NA	2.50E-01	Yes	>Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	Fluoranthene	4.2	J	4.50E-01	4.30E+03	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	Fluorene	1.2	J	NA	5.60E+02	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	Indeno(1,2,3-cd)pyrene	1.3	J	NA	1.40E+01	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	Naphthalene	2.1	J	NA	1.20E+01	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	Phenanthrene	9.2	J	3.31E-01	1.20E+04	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Semivolatile	Pyrene	28		4.30E-01	4.20E+03	No	</=Screening Level
S	SOIL-S-1	Surface	SOIL-S-1-0.5	Volatile	Acetone	0.014	J	NA	1.60E+01	No	</=Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Herbicide	2,4,5-T	2.5	J	NA	1.10E+01	No	</=Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Herbicide	2,4,5-TP (Silvex)	0.35	J	NA	1.10E+01	No	</=Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Herbicide	2,4-D	1.8	J	NA	1.50E+00	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Metal	Aluminum	3800		7.86E+03	NA	No	Screening Level NA
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Metal	Antimony	4.1		1.21E+00	5.00E+00	No	</=Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Metal	Arsenic	4.2		9.26E+00	2.50E+01	No	</=Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Metal	Barium	290		3.28E+02	2.60E+02	No	</=BKG
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Metal	Beryllium	0.33	J	6.28E-01	1.10E+00	No	</=Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Metal	Cadmium	32		2.91E-01	1.00E+00	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Metal	Calcium	170000		2.48E+04	NA	No	EN
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Metal	Chromium	480		1.57E+01	2.10E+01	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Metal	Cobalt	6.5		9.14E+00	NA	No	Screening Level NA
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Metal	Copper	200		1.35E+01	3.30E+02	No	</=Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Metal	Iron	7000		1.88E+04	NA	No	EN
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Metal	Lead	2400		1.33E+01	NA	No	Screening Level NA
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Metal	Magnesium	4500		1.02E+04	NA	No	EN
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Metal	Manganese	230		4.50E+02	NA	No	Screening Level NA
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Metal	Mercury	2.6	J	2.07E-02	1.00E-02	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Metal	Nickel	15	J	2.35E+01	2.00E+01	No	</=Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Metal	Potassium	770	J	1.75E+03	NA	No	EN
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Metal	Selenium	1.8		NA	1.30E+00	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Metal	Silver	2.8		NA	2.40E-01	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Metal	Sodium	340		1.25E+02	NA	No	EN
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Metal	Vanadium	11		2.98E+01	9.80E+02	No	</=Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Metal	Zinc	1800		5.88E+01	1.00E+03	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Pesticide	Aldrin	0.19	J	NA	5.00E-01	No	</=Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Pesticide	delta-BHC	0.27		NA	5.00E-04	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Pesticide	gamma-BHC (Lindane)	0.11	J	NA	9.00E-03	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Pesticide	Heptachlor Epoxide	0.094	J	6.40E-04	7.00E-01	No	</=Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Semivolatile	1,2,4-Trichlorobenzene	7.3	J	NA	5.00E+00	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Semivolatile	1,2-Dichlorobenzene	110		NA	1.70E+01	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Semivolatile	1,3-Dichlorobenzene	12	J	NA	2.00E+00	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Semivolatile	1,4-Dichlorobenzene	200		NA	2.00E+00	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Semivolatile	2-Methylnaphthalene	3.6	J	NA	1.20E+01	No	</=Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Semivolatile	4-Chloroaniline	70	J	NA	7.00E-01	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Semivolatile	bis(2-Ethylhexyl)phthalate	11	J	6.40E-02	3.60E+03	No	</=Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Semivolatile	Isophorone	71		NA	8.00E+00	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Semivolatile	Naphthalene	19	J	NA	1.20E+01	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Volatile	1,1,1-Trichloroethane	67		NA	2.00E+00	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Volatile	1,1-Dichloroethane	4.7	J	NA	2.30E+01	No	</=Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Volatile	1,2-Dichloroethene (total)	2.5	J	NA	4.00E-01	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Volatile	2-Butanone (MEK)	290		NA	NA	No	Screening Level NA
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Volatile	4-Methyl-2-pentanone (MIBK)	200		2.00E-03	NA	No	Screening Level NA
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Volatile	Acetone	110	J	NA	1.60E+01	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Volatile	Benzene	35		NA	3.00E-02	Yes	>Screening Level

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Volatile	Chlorobenzene	1200		NA	1.00E+00	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Volatile	Dichloromethane	26		6.30E-03	2.00E-02	No	</=BKG
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Volatile	Ethylbenzene	450		8.37E-04	1.30E+01	No	</=BKG
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Volatile	Tetrachloroethene	5.8		1.02E-03	6.00E-02	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Volatile	Toluene	1400		NA	1.20E+01	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Volatile	Trichloroethylene	82		NA	6.00E-02	Yes	>Screening Level
S	SOIL-S-1	Subsurface	SOIL-S-1-6FT	Volatile	Xylenes, Total	1800		1.50E-03	1.50E+02	Yes	>Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Herbicide	Pentachlorophenol	0.011	J	4.57E-03	2.00E-02	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Metal	Aluminum	5300	J	1.38E+04	NA	No	Screening Level NA
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Metal	Antimony	0.8	J	2.33E+00	5.00E+00	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Metal	Arsenic	5.8		1.24E+01	2.50E+01	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Metal	Barium	84	J	3.07E+02	2.60E+02	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Metal	Beryllium	0.34	J	9.02E-01	1.10E+00	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Metal	Cadmium	1.6	J	3.34E+00	1.00E+00	No	</=BKG
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Metal	Calcium	200000		9.74E+04	NA	No	EN
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Metal	Chromium	22		2.21E+01	2.10E+01	No	</=BKG
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Metal	Cobalt	4.1	J	9.40E+00	NA	No	Screening Level NA
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Metal	Copper	46		8.58E+01	3.30E+02	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Metal	Iron	9400		2.33E+04	NA	No	EN
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Metal	Lead	75	J	1.30E+02	NA	No	Screening Level NA
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Metal	Magnesium	8900	J	1.23E+04	NA	No	EN
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Metal	Manganese	300		5.52E+02	NA	No	Screening Level NA
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Metal	Mercury	0.17		1.34E-01	1.00E-02	Yes	>Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Metal	Nickel	13		3.30E+01	2.00E+01	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Metal	Potassium	910	J	3.01E+03	NA	No	EN
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Metal	Sodium	170	J	1.58E+02	NA	No	EN
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Metal	Vanadium	17	J	3.89E+01	9.80E+02	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Metal	Zinc	220	J	3.90E+02	1.00E+03	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Pesticide	4,4'-DDD	0.0028	J	7.04E-03	1.60E+01	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Pesticide	4,4'-DDE	0.0036	J	1.23E-02	5.40E+01	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Pesticide	4,4'-DDT	0.011	J	4.04E-02	3.20E+01	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Pesticide	beta-BHC	0.00077	J	NA	5.00E-04	Yes	>Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Pesticide	Dieldrin	0.014		1.13E-02	4.00E-03	No	</=BKG
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Pesticide	Endosulfan II	0.0012	J	1.16E-03	1.80E+01	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Pesticide	Endrin	0.0046	J	5.02E-03	1.00E+00	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Pesticide	Endrin Aldehyde	0.0074		5.88E-03	1.00E+00	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Pesticide	gamma-Chlordane	0.0013	J	4.11E-02	1.00E+01	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Semivolatile	Benzo(a)anthracene	0.095	J	2.76E-01	2.00E+00	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Semivolatile	Benzo(a)pyrene	0.13	J	4.06E-01	8.00E+00	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Semivolatile	Benzo(b)fluoranthene	0.24	J	3.66E-01	5.00E+00	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Semivolatile	Benzo(g,h,i)perylene	0.12	J	4.14E-01	4.20E+03	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Semivolatile	bis(2-Ethylhexyl)phthalate	1.6		3.53E-01	3.60E+03	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Semivolatile	Chrysene	0.14	J	2.99E-01	1.60E+02	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Semivolatile	Di-n-butylphthalate	0.041	J	NA	2.30E+03	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Semivolatile	Di-n-octylphthalate	0.028	J	NA	1.00E+04	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Semivolatile	Fluoranthene	0.16	J	4.50E-01	4.30E+03	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Semivolatile	Indeno(1,2,3-cd)pyrene	0.11	J	NA	1.40E+01	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Semivolatile	Phenanthrene	0.056	J	3.31E-01	1.20E+04	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Semivolatile	Pyrene	0.16	J	4.30E-01	4.20E+03	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Volatile	1,1-Dichloroethane	0.00066	J	NA	2.30E+01	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Volatile	2-Butanone (MEK)	0.0024	J	NA	NA	No	Screening Level NA
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Volatile	Chlorobenzene	0.00047	J	NA	1.00E+00	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Volatile	Ethylbenzene	0.0011	J	1.07E-03	1.30E+01	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Volatile	Styrene (Monomer)	0.00037	J	4.47E-03	4.00E+00	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Volatile	Tetrachloroethene	0.00083	J	8.80E-04	6.00E-02	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Volatile	Trichloroethylene	0.00047	J	NA	6.00E-02	No	</=Screening Level
S	SOIL-S-2	Surface	SOIL-S-2-0.5	Volatile	Xylenes, Total	0.0042	J	1.61E-03	1.50E+02	No	</=Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Herbicide	2,4,5-T	0.0078	J	NA	1.10E+01	No	</=Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Herbicide	2,4-D	0.0048	J	NA	1.50E+00	No	</=Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Herbicide	MCPP	0.24	J	NA	NA	No	Screening Level NA
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Metal	Aluminum	3300		7.86E+03	NA	No	Screening Level NA
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Metal	Antimony	4.1		1.21E+00	5.00E+00	No	</=Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Metal	Arsenic	3.4		9.26E+00	2.50E+01	No	</=Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Metal	Barium	200		3.28E+02	2.60E+02	No	</=Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Metal	Beryllium	0.26	J	6.28E-01	1.10E+00	No	</=Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Metal	Cadmium	3.2		2.91E-01	1.00E+00	Yes	>Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Metal	Calcium	220000		2.48E+04	NA	No	EN
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Metal	Chromium	260		1.57E+01	2.10E+01	Yes	>Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Metal	Cobalt	6.3		9.14E+00	NA	No	Screening Level NA
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Metal	Copper	34		1.35E+01	3.30E+02	No	</=Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Metal	Iron	6400		1.88E+04	NA	No	EN
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Metal	Lead	1200		1.33E+01	NA	No	Screening Level NA
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Metal	Magnesium	14000		1.02E+04	NA	No	EN
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Metal	Manganese	110		4.50E+02	NA	No	Screening Level NA
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Metal	Mercury	0.4	J	2.07E-02	1.00E-02	Yes	>Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Metal	Nickel	11	J	2.35E+01	2.00E+01	No	</=Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Metal	Potassium	950	J	1.75E+03	NA	No	EN

TABLE E-2
COMPARISON OF SOIL SAMPLE DATA TO SOIL-TO-GROUNDWATER (SGW) STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Site	Location	Medium	Sample	Category	Constituent	Result (mg/kg)		Bkg (mg/kg)	SGW Stnd (mg/kg)	COPC?	Reason
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Metal	Selenium	0.66	J	NA	1.30E+00	No	</=Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Metal	Sodium	300		1.25E+02	NA	No	EN
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Metal	Vanadium	11		2.98E+01	9.80E+02	No	</=Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Metal	Zinc	230		5.88E+01	1.00E+03	No	</=Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Pesticide	4,4'-DDT	0.023	J	1.04E-03	3.20E+01	No	</=Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Pesticide	beta-BHC	0.013		NA	5.00E-04	Yes	>Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Pesticide	delta-BHC	0.0058	J	NA	5.00E-04	Yes	>Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Pesticide	Dieldrin	0.024		NA	4.00E-03	Yes	>Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Pesticide	gamma-Chlordane	0.0037	J	2.40E-04	1.00E+01	No	</=Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Pesticide	Heptachlor	0.0061	J	NA	2.30E+01	No	</=Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Semivolatile	2-Methylnaphthalene	9	J	NA	1.20E+01	No	</=Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Semivolatile	bis(2-Ethylhexyl)phthalate	110		6.40E-02	3.60E+03	No	</=Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Semivolatile	Di-n-butylphthalate	14	J	NA	2.30E+03	No	</=Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Semivolatile	Isophorone	13	J	NA	8.00E+00	Yes	>Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Semivolatile	Naphthalene	48		NA	1.20E+01	Yes	>Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Volatile	1,1,1-Trichloroethane	1.4	J	NA	2.00E+00	No	</=Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Volatile	1,2-Dichloroethene (total)	3.1	J	NA	4.00E-01	Yes	>Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Volatile	Dichloromethane	13		6.30E-03	2.00E-02	No	</=BKG
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Volatile	Ethylbenzene	200		8.37E-04	1.30E+01	No	</=BKG
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Volatile	Tetrachloroethene	33		1.02E-03	6.00E-02	Yes	>Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Volatile	Toluene	470		NA	1.20E+01	Yes	>Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Volatile	Trichloroethylene	1.4	J	NA	6.00E-02	Yes	>Screening Level
S	SOIL-S-2	Subsurface	SOIL-S-2-6FT	Volatile	Xylenes, Total	1200		1.50E-03	1.50E+02	Yes	>Screening Level

TABLE E-3
SUMMARY OF EXCEEDANCES OF SOIL-TO-GROUNDWATER AND TCLP STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

		Site (a)							
		Soil-to-Groundwater				TCLP			
Category	Constituent	P	Q Central	Q North	Q South	P	Q Central	Q North	Q South
Dioxin	2,3,7,8-TCDD-TEQ								
Herbicide	2,4,5-T								
Herbicide	2,4-D			1				1	
Herbicide	Dichlorprop								
Herbicide	Pentachlorophenol	2	3	2	2	4	1	2	4
Metal	Antimony		1	2	6				
Metal	Arsenic	2	1	1	1	1	2	1	
Metal	Barium		2	2	8		1	2	3
Metal	Beryllium	3	1						
Metal	Cadmium	4	3	6	8			3	3
Metal	Chromium	3	5	3	9				
Metal	Copper		1	1	7				1
Metal	Lead					1	3	4	4
Metal	Manganese					4	3	5	4
Metal	Mercury	5	6	7	11				
Metal	Nickel	2	4	4	8	1	3	3	4
Metal	Selenium	4	1		3				
Metal	Silver	3	4	4	8				
Metal	Thallium		1		1				
Metal	Zinc	1	1	2	8	1		1	4
PCBs	Total PCBs							5	
Pesticide	4,4'-DDT								
Pesticide	Aldrin								
Pesticide	alpha-BHC	2		1	2				
Pesticide	alpha-Chlordane								
Pesticide	beta-BHC	2		4	1				
Pesticide	delta-BHC				2				
Pesticide	Dieldrin	2	3	3	3				
Pesticide	Endosulfan Sulfate								
Pesticide	Endrin Aldehyde				1				
Pesticide	gamma-BHC (Lindane)	1							
Pesticide	Heptachlor					1			
Semivolatile	1,2,4-Trichlorobenzene								
Semivolatile	1,2-Dichlorobenzene								
Semivolatile	1,3-Dichlorobenzene								
Semivolatile	1,4-Dichlorobenzene	1	2			2			
Semivolatile	2,4,6-Trichlorophenol					1	1	2	1
Semivolatile	2,4-Dichlorophenol			2		2		2	1
Semivolatile	2,4-Dimethylphenol								
Semivolatile	2-Chlorophenol							2	
Semivolatile	2-Methylnaphthalene								
Semivolatile	2-Nitroaniline							1	1
Semivolatile	3-Methylphenol/4-Methylphenol								
Semivolatile	4-Chloroaniline			1		3		2	1
Semivolatile	4-Nitroaniline					1		1	
Semivolatile	Benzo(a)anthracene			1	1				
Semivolatile	Benzo(a)pyrene								
Semivolatile	Benzo(b)fluoranthene								
Semivolatile	bis(2-Chloroethyl)ether			1					
Semivolatile	bis(2-Ethylhexyl)phthalate								
Semivolatile	Carbazole				1				
Semivolatile	Cresol o,m,p								
Semivolatile	Dibenzo(a,h)anthracene								
Semivolatile	Di-n-butylphthalate								
Semivolatile	Dinoseb								
Semivolatile	Hexachlorobenzene								
Semivolatile	Isophorone								
Semivolatile	Naphthalene							1	
Semivolatile	Nitrobenzene							1	
Semivolatile	N-Nitrosodiphenylamine								

TABLE E-3
SUMMARY OF EXCEEDANCES OF SOIL-TO-GROUNDWATER AND TCLP STANDARDS
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

		Site (a)							
		Soil-to-Groundwater				TCLP			
Category	Constituent	P	Q Central	Q North	Q South	P	Q Central	Q North	Q South
Semivolatile	Phenol					2		2	
Volatile	1,1,1-Trichloroethane								
Volatile	1,1,2,2-Tetrachloroethane							1	
Volatile	1,1,2-Trichloroethane								
Volatile	1,1-Dichloroethylene								
Volatile	1,2-Dichloroethane			1					
Volatile	1,2-Dichloroethene (total)				1				
Volatile	2-Butanone (MEK)								
Volatile	2-Methylphenol								
Volatile	4-Methyl-2-pentanone (MIBK)								
Volatile	Acetone								
Volatile	Benzene	3	3	2	2	3	3	1	
Volatile	Chlorobenzene	1	2	2	2				
Volatile	Chloroform								
Volatile	Chloromethane								1
Volatile	cis-1,3-Dichloropropene								1
Volatile	Dichloromethane								
Volatile	Ethylbenzene								
Volatile	Methyl N-Butyl Ketone								
Volatile	Tetrachloroethene			1		2			
Volatile	Toluene	1		1	1				
Volatile	Trichloroethylene			1	1	2		1	1
Volatile	Xylenes, Total				1				

Notes:
TCLP - Toxicity Characteristic Leaching Procedure.
(a) - Numbers represent the number of soil exceedances for each constituent in each Site.

APPENDIX F

DEEP GROUNDWATER SCREEN

Appendix F
Deep Groundwater Screen

A comparison of groundwater samples collected at depths greater than 30 feet bgs to drinking water standards is shown in Table F-1. At several locations, groundwater was not encountered within the 30 feet of ground surface. These locations, which are not included in the quantitative risk assessment, are:

- AA-Q-1
- AA-Q-2
- AA-Q-3
- AA-Q-4
- AA-Q-5
- BDRK-O-1
- BDRK-P-1
- BDRK-Q-1
- BDRK-Q-2
- BDRK-R-1
- BDRK-S-1

As noted in the HHRA Workplan, there are no direct contact pathways for deep groundwater. The CSM notes that groundwater could discharge to the Mississippi River and could impact sediment, surface water and fish tissue. Because these latter three media have been measured directly as part of the SSP Program and other environmental programs in the vicinity (Menzie-Cura, 2001), it is not necessary to use the groundwater data in conjunction with models to predict these media concentrations.

A summary of COPCs for the deep groundwater pathway is presented in Table F-2.

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-1-106													
VOCs													
Benzene	71-43-2	ug/L	1 : 1 : 1	100	9.60E+00	No	3.40E+01	OS - UAA-2/OS-2-110	No	5.00E+00	Yes	No	</=BKG
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.30E+03	No	5.00E+03	OS - UAA-2/OS-2-110	No	1.00E+02	Yes	No	</=BKG
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	2.70E+00	No	3.20E+01	OS - UAA-2/OS-2-110	No	6.00E+02	No	No	</=Screening Level
1,3-Dichlorobenzene	541-73-1	ug/L	1 : 1 : 1	100	1.50E+00	No	9.80E+01	OS - UAA-2/OS-2-110	No	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	8.00E+01	No	2.40E+03	OS - UAA-2/OS-2-110	No	7.50E+01	Yes	No	</=BKG
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	3.40E+00	No	3.20E+01	OS - UAA-2/OS-2-110	No	2.10E+01	No	No	</=Screening Level
2,4-Dimethylphenol	105-67-9	ug/L	1 : 1 : 1	100	1.40E+00	No	2.80E+01	OS - UAA-2/OS-2-110	No	1.40E+02	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	1.90E+01	No	6.40E+01	OS - UAA-2/OS-2-110	No	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	4.10E+00	No	1.94E+01	OS - UAA-2/OS-2-110	No	2.80E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	1.00E+01	No	NA	OS - UAA-2/OS-2-110	--	1.40E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-1-116													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	9.00E+02	No	1.52E+03	OS - UAA-2/OS-2-120	No	1.00E+02	Yes	No	</=BKG
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	2.30E+00	No	2.80E+01	OS - UAA-2/OS-2-120	No	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	6.60E+01	No	1.72E+03	OS - UAA-2/OS-2-120	No	7.50E+01	No	No	</=Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	3.50E+00	No	2.40E+01	OS - UAA-2/OS-2-120	No	2.10E+01	No	No	</=Screening Level
2,4-Dimethylphenol	105-67-9	ug/L	1 : 1 : 1	100	2.10E+00	No	2.40E+01	OS - UAA-2/OS-2-120	No	1.40E+02	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	1.70E+01	No	1.92E+01	OS - UAA-2/OS-2-120	No	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	2.80E+00	No	5.60E+00	OS - UAA-2/OS-2-120	No	2.80E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	8.00E+00	No	NA	OS - UAA-2/OS-2-120	--	1.40E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-1-120													
VOCs													
1,1-Dichloroethylene	75-35-4	ug/L	1 : 1 : 1	100	1.10E+00	No	NA	OS - UAA-2/OS-2-120	--	7.00E+00	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	4.00E+02	No	1.52E+03	OS - UAA-2/OS-2-120	No	1.00E+02	Yes	No	</=BKG
Methane	74-82-8	ug/L	1 : 1 : 1	100	1.70E+01	No	NA	OS - UAA-2/OS-2-120	--	NA	--	No	No Dose-Response Value
Toluene	108-88-3	ug/L	1 : 1 : 1	100	1.00E+00	No	NA	OS - UAA-2/OS-2-120	--	1.00E+03	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	2.20E+00	No	NA	OS - UAA-2/OS-2-120	--	2.00E+00	Yes	Yes	>Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	1.20E+00	No	2.80E+01	OS - UAA-2/OS-2-120	No	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	2.10E+01	No	1.72E+03	OS - UAA-2/OS-2-120	No	7.50E+01	No	No	</=Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	1.20E+00	No	2.40E+01	OS - UAA-2/OS-2-120	No	2.10E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	6.50E+00	No	1.92E+01	OS - UAA-2/OS-2-120	No	3.50E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	3.00E+00	No	NA	OS - UAA-2/OS-2-120	--	1.40E+02	No	No	</=Screening Level
Pesticide													
alpha-BHC	319-84-6	ug/L	1 : 1 : 1	100	6.50E-02	No	NA	OS - UAA-2/OS-2-120	--	1.10E-01	No	No	</=Screening Level
PCBs													
Total PCBs	1336-36-3	ug/L	1 : 1 : 1	100	9.00E-02	No	NA	OS - UAA-2/OS-2-120	--	5.00E-01	No	No	</=Screening Level
Metals													
Barium	7440-39-3	ug/L	1 : 1 : 1	100	1.20E+02	No	NA	OS - UAA-2/OS-2-120	--	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	3.10E+05	Yes	NA	OS - UAA-2/OS-2-120	--	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	6.10E+00	No	NA	OS - UAA-2/OS-2-120	--	1.00E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	4.80E+04	Yes	NA	OS - UAA-2/OS-2-120	--	5.00E+03	Yes	No	EN
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	7.90E+04	Yes	NA	OS - UAA-2/OS-2-120	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	2.20E+03	No	NA	OS - UAA-2/OS-2-120	--	1.50E+02	Yes	Yes	>Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	7.30E+00	No	NA	OS - UAA-2/OS-2-120	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.80E+04	Yes	NA	OS - UAA-2/OS-2-120	--	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	6.30E+04	Yes	NA	OS - UAA-2/OS-2-120	--	NA	--	No	EN
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	1.90E+01	No	NA	OS - UAA-2/OS-2-120	--	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-1-26													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	2.60E+00	No	NA	OS - UAA-2/OS-2-30	--	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	5.70E+00	No	NA	OS - UAA-2/OS-2-30	--	7.00E+01	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	1.30E-01	No	NA	OS - UAA-2/OS-2-30	--	5.00E+00	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	5.40E+00	No	NA	OS - UAA-2/OS-2-30	--	1.00E+02	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	7.60E-01	No	NA	OS - UAA-2/OS-2-30	--	2.00E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-1-36													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	2.20E+00	No	4.80E+01	OS - UAA-2/OS-2-40	No	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	6.20E-01	No	1.62E+02	OS - UAA-2/OS-2-40	No	7.00E+01	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	3.20E+01	No	NA	OS - UAA-2/OS-2-40	--	1.00E+02	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	4.70E-01	No	4.20E+00	OS - UAA-2/OS-2-40	No	2.00E+00	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	7.40E+00	No	NA	OS - UAA-2/OS-2-40	--	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	3.50E+00	No	NA	OS - UAA-2/OS-2-40	--	7.50E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-1-46													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	2.45E+00	No	4.60E+02	OS - UAA-2/OS-2-50	No	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	5.45E-01	No	1.86E+03	OS - UAA-2/OS-2-50	No	7.00E+01	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	6.90E+00	No	1.04E+02	OS - UAA-2/OS-2-50	No	1.00E+02	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	1.50E+00	No	5.80E+01	OS - UAA-2/OS-2-50	No	2.00E+00	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	2.05E+00	No	NA	OS - UAA-2/OS-2-50	--	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	1.30E+00	No	NA	OS - UAA-2/OS-2-50	--	7.50E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-1-56													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	2.80E+00	No	4.60E+02	OS - UAA-2/OS-2-60	No	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	2.00E+00	No	1.78E+03	OS - UAA-2/OS-2-60	No	7.00E+01	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	5.60E+00	No	1.58E+02	OS - UAA-2/OS-2-60	No	1.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	2.50E+01	No	1.96E+03	OS - UAA-2/OS-2-60	No	NA	--	No	</=BKG
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	2.50E+00	No	6.40E+01	OS - UAA-2/OS-2-60	No	2.00E+00	Yes	No	</=BKG
SVOCs													
Benzo(g,h,i)perylene	191-24-2	ug/L	1 : 1 : 1	100	1.60E+00	No	NA	OS - UAA-2/OS-2-60	--	2.10E+02	No	No	</=Screening Level
Dibenzo(a,h)anthracene	53-70-3	ug/L	1 : 1 : 1	100	1.30E+00	No	NA	OS - UAA-2/OS-2-60	--	3.00E-01	Yes	Yes	>Screening Level
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	1 : 1 : 1	100	1.80E+00	No	NA	OS - UAA-2/OS-2-60	--	4.30E-01	Yes	Yes	>Screening Level
Pesticide													
alpha-BHC	319-84-6	ug/L	1 : 1 : 1	100	1.90E-02	No	NA	OS - UAA-2/OS-2-60	--	1.10E-01	No	No	</=Screening Level
Herbicide													
2,4,5-T	93-76-5	ug/L	1 : 1 : 1	100	1.80E-01	No	NA	OS - UAA-2/OS-2-60	--	3.60E+02	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	1.40E+03	No	NA	OS - UAA-2/OS-2-60	--	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	5.70E+01	No	1.18E+01	OS - UAA-2/OS-2-60	Yes	5.00E+01	Yes	Yes	>Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	3.10E+02	No	7.00E+02	OS - UAA-2/OS-2-60	No	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.90E+05	Yes	4.60E+05	OS - UAA-2/OS-2-60	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	1.00E+01	No	NA	OS - UAA-2/OS-2-60	--	1.00E+02	No	No	</=Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	7.80E+00	No	NA	OS - UAA-2/OS-2-60	--	1.00E+03	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	5.30E+04	Yes	6.00E+04	OS - UAA-2/OS-2-60	No	5.00E+03	Yes	No	EN
Iron, Ferrous (2+)	C-FE+2	ug/L	1 : 1 : 1	100	1.40E+04	Yes	6.80E+03	OS - UAA-2/OS-2-60	Yes	5.00E+03	Yes	No	EN
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	5.00E+04	Yes	1.10E+05	OS - UAA-2/OS-2-60	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	5.40E+03	No	4.40E+03	OS - UAA-2/OS-2-60	Yes	1.50E+02	Yes	Yes	>Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.40E+01	No	NA	OS - UAA-2/OS-2-60	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	9.00E+03	Yes	2.00E+04	OS - UAA-2/OS-2-60	No	NA	--	No	EN
Selenium	7782-49-2	ug/L	1 : 1 : 1	100	4.60E+00	No	NA	OS - UAA-2/OS-2-60	--	5.00E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	7.60E+04	Yes	2.00E+05	OS - UAA-2/OS-2-60	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	4.10E+00	No	NA	OS - UAA-2/OS-2-60	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	2.50E+01	No	2.80E+01	OS - UAA-2/OS-2-60	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-1-66													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	1.20E+00	No	6.00E+02	OS - UAA-2/OS-2-70	No	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	7.80E+00	No	1.62E+02	OS - UAA-2/OS-2-70	No	1.00E+02	No	No	</=Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	4.50E-01	No	NA	OS - UAA-2/OS-2-70	--	1.50E+00	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	2.00E+00	No	9.20E+01	OS - UAA-2/OS-2-70	No	2.00E+00	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-2/OS-2-70	--	6.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-1-76													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	1.00E+00	No	6.60E+02	OS - UAA-2/OS-2-80	No	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	7.70E-01	No	3.60E+03	OS - UAA-2/OS-2-80	No	7.00E+01	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.80E+02	No	1.24E+02	OS - UAA-2/OS-2-80	Yes	1.00E+02	Yes	Yes	>Screening Level
Dichloromethane	75-09-2	ug/L	1 : 1 : 1	100	7.20E-01	No	NA	OS - UAA-2/OS-2-80	--	5.00E+00	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	5.20E-01	No	NA	OS - UAA-2/OS-2-80	--	1.00E+03	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	5.40E+00	No	1.04E+02	OS - UAA-2/OS-2-80	No	2.00E+00	Yes	No	</=BKG
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	1.60E+00	No	NA	OS - UAA-2/OS-2-80	--	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	1.40E+00	No	NA	OS - UAA-2/OS-2-80	--	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	4.80E+00	No	NA	OS - UAA-2/OS-2-80	--	3.50E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	2.10E+00	No	NA	OS - UAA-2/OS-2-80	--	1.40E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-1-86													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	6.20E+02	No	3.60E+03	OS - UAA-2/OS-2-90	No	1.00E+02	Yes	No	</=BKG
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	3.80E+00	No	2.00E+01	OS - UAA-2/OS-2-90	No	2.00E+00	Yes	No	</=BKG
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	1.10E+00	No	1.46E+01	OS - UAA-2/OS-2-90	No	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	3.70E+00	No	4.80E+02	OS - UAA-2/OS-2-90	No	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	1.10E+01	No	4.80E+01	OS - UAA-2/OS-2-90	No	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	1.10E+00	No	1.72E+01	OS - UAA-2/OS-2-90	No	2.80E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	5.70E+00	No	NA	OS - UAA-2/OS-2-90	--	1.40E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-1-96													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.50E+03	No	5.20E+03	OS - UAA-2/OS-2-100	No	1.00E+02	Yes	No	</=BKG
Methane	74-82-8	ug/L	1 : 1 : 1	100	6.00E+01	No	1.06E+02	OS - UAA-2/OS-2-100	No	NA	--	No	</=BKG
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	3.00E+00	No	1.96E+01	OS - UAA-2/OS-2-100	No	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	5.10E+01	No	7.40E+02	OS - UAA-2/OS-2-100	No	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	1.80E+01	No	3.60E+01	OS - UAA-2/OS-2-100	No	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	3.40E+00	No	6.20E+00	OS - UAA-2/OS-2-100	No	2.80E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	8.70E+00	No	NA	OS - UAA-2/OS-2-100	--	1.40E+02	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	2.30E+04	No	1.04E+03	OS - UAA-2/OS-2-100	Yes	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	1.40E+01	No	NA	OS - UAA-2/OS-2-100	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	7.20E+02	No	2.40E+02	OS - UAA-2/OS-2-100	Yes	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	9.50E-01	No	NA	OS - UAA-2/OS-2-100	--	4.00E+00	No	No	</=Screening Level
Cadmium	7440-43-9	ug/L	1 : 1 : 1	100	9.20E-01	No	NA	OS - UAA-2/OS-2-100	--	5.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.40E+05	Yes	5.20E+05	OS - UAA-2/OS-2-100	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	3.40E+02	No	3.00E+01	OS - UAA-2/OS-2-100	Yes	1.00E+02	Yes	Yes	>Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	1.50E+01	No	NA	OS - UAA-2/OS-2-100	--	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	7.10E+01	No	1.18E+01	OS - UAA-2/OS-2-100	Yes	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	7.80E+04	Yes	5.60E+04	OS - UAA-2/OS-2-100	Yes	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	2.00E+01	No	NA	OS - UAA-2/OS-2-100	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	7.30E+04	Yes	7.20E+04	OS - UAA-2/OS-2-100	Yes	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	1.60E+03	No	3.20E+03	OS - UAA-2/OS-2-100	No	1.50E+02	Yes	No	</=BKG
Mercury	7439-97-6	ug/L	1 : 1 : 1	100	8.00E-02	No	NA	OS - UAA-2/OS-2-100	--	2.00E+00	No	No	</=Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	7.00E+01	No	NA	OS - UAA-2/OS-2-100	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	2.80E+04	Yes	2.00E+04	OS - UAA-2/OS-2-100	Yes	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	7.70E+04	Yes	6.60E+04	OS - UAA-2/OS-2-100	Yes	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	4.00E+01	No	3.20E+00	OS - UAA-2/OS-2-100	Yes	4.90E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	1.10E+02	No	1.08E+02	OS - UAA-2/OS-2-100	Yes	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-2													
SVOCs													
4-Nitrophenol	100-02-7	ug/L	1 : 1 : 1	100	1.50E+00	No	NA		--	NA	--	No	Screening Level NA

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-2-103													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	4.60E+02	No	5.20E+03	OS - UAA-2/OS-2-100	No	1.00E+02	Yes	No	</=BKG
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	2.90E+00	No	1.44E+01	OS - UAA-2/OS-2-100	No	2.00E+00	Yes	No	</=BKG
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	1.20E+00	No	1.96E+01	OS - UAA-2/OS-2-100	No	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	8.10E+00	No	7.40E+02	OS - UAA-2/OS-2-100	No	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	7.50E+00	No	3.60E+01	OS - UAA-2/OS-2-100	No	3.50E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-2-113													
VOCs													
Benzene	71-43-2	ug/L	1 : 1 : 1	100	4.50E+00	No	3.40E+01	OS - UAA-2/OS-2-110	No	5.00E+00	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.00E+03	No	5.00E+03	OS - UAA-2/OS-2-110	No	1.00E+02	Yes	No	</=BKG
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	3.80E+00	No	1.86E+01	OS - UAA-2/OS-2-110	No	1.50E+00	Yes	No	</=BKG
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	2.90E+00	No	3.20E+01	OS - UAA-2/OS-2-110	No	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	5.10E+01	No	2.40E+03	OS - UAA-2/OS-2-110	No	7.50E+01	No	No	</=Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	1.70E+00	No	3.20E+01	OS - UAA-2/OS-2-110	No	2.10E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	1.40E+01	No	6.40E+01	OS - UAA-2/OS-2-110	No	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	1.40E+00	No	1.94E+01	OS - UAA-2/OS-2-110	No	2.80E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-2-121													
VOCs													
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	1.80E+00	No	NA	OS - UAA-2/OS-2-120	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	5.60E+02	No	1.52E+03	OS - UAA-2/OS-2-120	No	1.00E+02	Yes	No	</=BKG
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	3.50E+00	No	NA	OS - UAA-2/OS-2-120	--	2.00E+00	Yes	Yes	>Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	1.50E+00	No	2.80E+01	OS - UAA-2/OS-2-120	No	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	8.20E+00	No	1.72E+03	OS - UAA-2/OS-2-120	No	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	8.10E+00	No	1.92E+01	OS - UAA-2/OS-2-120	No	3.50E+01	No	No	</=Screening Level

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-2-124													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	6.40E-01	No	3.20E+01	OS - UAA-2/OS-2-124	No	7.00E+02	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	3.30E-01	No	4.80E+01	OS - UAA-2/OS-2-124	No	5.00E+00	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	7.00E+01	No	4.00E+03	OS - UAA-2/OS-2-124	No	1.00E+02	No	No	</=Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	6.30E-01	No	1.94E+01	OS - UAA-2/OS-2-124	No	1.50E+00	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	5.00E+01	No	2.00E+02	OS - UAA-2/OS-2-124	No	NA	--	No	</=BKG
Toluene	108-88-3	ug/L	1 : 1 : 1	100	5.80E-01	No	NA	OS - UAA-2/OS-2-124	--	1.00E+03	No	No	</=Screening Level
Trichloroethylene	79-01-6	ug/L	1 : 1 : 1	100	1.50E+00	No	NA	OS - UAA-2/OS-2-124	--	5.00E+00	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	1.90E+00	No	1.30E+01	OS - UAA-2/OS-2-124	No	2.00E+00	No	No	</=Screening Level
Pesticide													
alpha-BHC	319-84-6	ug/L	1 : 1 : 1	100	4.20E-02	No	NA	OS - UAA-2/OS-2-124	--	1.10E-01	No	No	</=Screening Level
Herbicide													
2,4,5-TP (Silvex)	93-72-1	ug/L	1 : 1 : 1	100	2.30E-01	No	NA	OS - UAA-2/OS-2-124	--	5.00E+01	No	No	</=Screening Level
PCBs													
Total PCBs	1336-36-3	ug/L	1 : 1 : 1	100	8.00E-02	No	NA	OS - UAA-2/OS-2-124	--	5.00E-01	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	4.70E+04	No	NA	OS - UAA-2/OS-2-124	--	3.60E+04	Yes	Yes	>Screening Level
Antimony	7440-36-0	ug/L	1 : 1 : 1	100	5.50E+00	No	NA	OS - UAA-2/OS-2-124	--	6.00E+00	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	8.70E+01	No	NA	OS - UAA-2/OS-2-124	--	5.00E+01	Yes	Yes	>Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	1.80E+03	No	1.96E+02	OS - UAA-2/OS-2-124	Yes	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	2.50E+00	No	NA	OS - UAA-2/OS-2-124	--	4.00E+00	No	No	</=Screening Level
Cadmium	7440-43-9	ug/L	1 : 1 : 1	100	2.80E+00	No	NA	OS - UAA-2/OS-2-124	--	5.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	3.40E+05	Yes	6.80E+05	OS - UAA-2/OS-2-124	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	5.30E+02	No	NA	OS - UAA-2/OS-2-124	--	1.00E+02	Yes	Yes	>Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	5.20E+01	No	NA	OS - UAA-2/OS-2-124	--	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	1.30E+02	No	NA	OS - UAA-2/OS-2-124	--	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	2.00E+05	Yes	7.40E+04	OS - UAA-2/OS-2-124	Yes	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	6.30E+01	No	NA	OS - UAA-2/OS-2-124	--	7.50E+00	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	8.20E+04	Yes	1.00E+05	OS - UAA-2/OS-2-124	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	6.70E+03	No	3.20E+03	OS - UAA-2/OS-2-124	Yes	1.50E+02	Yes	Yes	>Screening Level
Mercury	7439-97-6	ug/L	1 : 1 : 1	100	9.80E-02	No	NA	OS - UAA-2/OS-2-124	--	2.00E+00	No	No	</=Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.90E+02	No	NA	OS - UAA-2/OS-2-124	--	1.00E+02	Yes	Yes	>Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	3.00E+04	Yes	2.20E+04	OS - UAA-2/OS-2-124	Yes	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	8.30E+04	Yes	7.40E+04	OS - UAA-2/OS-2-124	Yes	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.40E+02	No	2.40E+00	OS - UAA-2/OS-2-124	Yes	4.90E+01	Yes	Yes	>Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	3.50E+02	No	8.40E+01	OS - UAA-2/OS-2-124	Yes	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-2-33													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	9.90E-01	No	NA	OS - UAA-2/OS-2-30	--	7.00E+02	No	No	</=Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	3.10E-01	No	NA	OS - UAA-2/OS-2-30	--	1.50E+00	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	3.10E-01	No	NA	OS - UAA-2/OS-2-30	--	1.00E+03	No	No	</=Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	4.60E-01	No	NA	OS - UAA-2/OS-2-30	--	1.00E+04	No	No	</=Screening Level

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-2-53													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	1.00E+00	No	4.60E+02	OS - UAA-2/OS-2-50	No	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.60E+01	No	1.04E+02	OS - UAA-2/OS-2-50	No	1.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	1.55E+01	No	NA	OS - UAA-2/OS-2-50	--	NA	--	No	No Dose-Response Value
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	4.85E-01	No	5.80E+01	OS - UAA-2/OS-2-50	No	2.00E+00	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	2.35E+00	No	NA	OS - UAA-2/OS-2-50	--	6.00E+02	No	No	</=Screening Level
Pesticide													
alpha-BHC	319-84-6	ug/L	1 : 1 : 1	100	8.05E-02	No	NA	OS - UAA-2/OS-2-50	--	1.10E-01	No	No	</=Screening Level
delta-BHC	319-86-8	ug/L	1 : 1 : 1	100	3.80E-02	No	NA	OS - UAA-2/OS-2-50	--	2.00E-01	No	No	</=Screening Level
Dieldrin	60-57-1	ug/L	1 : 1 : 1	100	1.90E-02	No	NA	OS - UAA-2/OS-2-50	--	9.00E+00	No	No	</=Screening Level
Endosulfan II	33213-65-9	ug/L	1 : 1 : 1	100	1.30E-02	No	NA	OS - UAA-2/OS-2-50	--	4.20E+01	No	No	</=Screening Level
gamma-Chlordane	5103-74-2	ug/L	1 : 1 : 1	100	7.50E-03	No	NA	OS - UAA-2/OS-2-50	--	2.00E+00	No	No	</=Screening Level
Heptachlor	76-44-8	ug/L	1 : 1 : 1	100	1.90E-02	No	NA	OS - UAA-2/OS-2-50	--	4.00E-01	No	No	</=Screening Level
Herbicide													
2,4,5-T	93-76-5	ug/L	1 : 1 : 1	100	1.35E+00	No	NA	OS - UAA-2/OS-2-50	--	3.60E+02	No	No	</=Screening Level
2,4,5-TP (Silvex)	93-72-1	ug/L	1 : 1 : 1	100	6.40E-02	No	NA	OS - UAA-2/OS-2-50	--	5.00E+01	No	No	</=Screening Level
2,4-DB	94-82-6	ug/L	1 : 1 : 1	100	2.20E-01	No	NA	OS - UAA-2/OS-2-50	--	2.90E+02	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	2.45E+02	No	NA	OS - UAA-2/OS-2-50	--	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	3.00E+01	No	NA	OS - UAA-2/OS-2-50	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	3.10E+02	No	NA	OS - UAA-2/OS-2-50	--	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.80E+05	Yes	NA	OS - UAA-2/OS-2-50	--	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	3.70E+00	No	NA	OS - UAA-2/OS-2-50	--	1.00E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	4.10E+04	Yes	NA	OS - UAA-2/OS-2-50	--	5.00E+03	Yes	No	EN
Iron, Ferrous (2+)	C-FE+2	ug/L	1 : 1 : 1	100	5.95E+03	Yes	NA	OS - UAA-2/OS-2-50	--	5.00E+03	Yes	No	EN
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	4.90E+04	Yes	NA	OS - UAA-2/OS-2-50	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	5.10E+03	No	NA	OS - UAA-2/OS-2-50	--	1.50E+02	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	5.90E+00	No	NA	OS - UAA-2/OS-2-50	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.60E+04	Yes	NA	OS - UAA-2/OS-2-50	--	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	7.45E+04	Yes	NA	OS - UAA-2/OS-2-50	--	NA	--	No	EN
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	8.20E+00	No	NA	OS - UAA-2/OS-2-50	--	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-2-63													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	6.40E-01	No	4.60E+02	OS - UAA-2/OS-2-60	No	7.00E+02	No	No	</=Screening Level
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	2.00E+01	No	NA	OS - UAA-2/OS-2-60	--	1.90E+03	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	3.70E-01	No	NA	OS - UAA-2/OS-2-60	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.40E+01	No	1.58E+02	OS - UAA-2/OS-2-60	No	1.00E+02	No	No	</=Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	4.40E-01	No	NA	OS - UAA-2/OS-2-60	--	1.50E+00	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	8.40E-01	No	6.40E+01	OS - UAA-2/OS-2-60	No	2.00E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-2-73													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	7.70E-01	No	6.00E+02	OS - UAA-2/OS-2-70	No	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	3.20E+01	No	1.62E+02	OS - UAA-2/OS-2-70	No	1.00E+02	No	No	</=Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	4.10E-01	No	NA	OS - UAA-2/OS-2-70	--	1.50E+00	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	1.80E+00	No	9.20E+01	OS - UAA-2/OS-2-70	No	2.00E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-2-83													
VOCs													
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	1.00E+00	No	3.60E+03	OS - UAA-2/OS-2-80	No	7.00E+01	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	3.80E+02	No	1.24E+02	OS - UAA-2/OS-2-80	Yes	1.00E+02	Yes	Yes	>Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	4.90E+00	No	1.04E+02	OS - UAA-2/OS-2-80	No	2.00E+00	Yes	No	</=BKG
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	1.80E+00	No	NA	OS - UAA-2/OS-2-80	--	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	2.30E+00	No	NA	OS - UAA-2/OS-2-80	--	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	7.60E+00	No	NA	OS - UAA-2/OS-2-80	--	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	1.30E+00	No	1.20E+01	OS - UAA-2/OS-2-80	No	2.80E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	4.60E+00	No	NA	OS - UAA-2/OS-2-80	--	1.40E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-2-93													
VOCs													
Benzene	71-43-2	ug/L	1 : 1 : 1	100	2.40E+00	No	2.60E+01	OS - UAA-2/OS-2-90	No	5.00E+00	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	8.50E+02	No	3.60E+03	OS - UAA-2/OS-2-90	No	1.00E+02	Yes	No	</=BKG
Methane	74-82-8	ug/L	1 : 1 : 1	100	4.50E+01	No	NA	OS - UAA-2/OS-2-90	--	NA	--	No	No Dose-Response Value
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	3.50E+00	No	2.00E+01	OS - UAA-2/OS-2-90	No	2.00E+00	Yes	No	</=BKG
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	1.90E+00	No	1.46E+01	OS - UAA-2/OS-2-90	No	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	9.20E+00	No	4.80E+02	OS - UAA-2/OS-2-90	No	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	1.20E+01	No	4.80E+01	OS - UAA-2/OS-2-90	No	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	1.40E+00	No	1.72E+01	OS - UAA-2/OS-2-90	No	2.80E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	8.00E+00	No	NA	OS - UAA-2/OS-2-90	--	1.40E+02	No	No	</=Screening Level
Pesticide													
gamma-BHC (Lindane)	58-89-9	ug/L	1 : 1 : 1	100	9.40E-03	No	NA	OS - UAA-2/OS-2-90	--	2.00E-01	No	No	</=Screening Level
Herbicide													
2,4,5-T	93-76-5	ug/L	1 : 1 : 1	100	2.40E-01	No	NA	OS - UAA-2/OS-2-90	--	3.60E+02	No	No	</=Screening Level
2,4-DB	94-82-6	ug/L	1 : 1 : 1	100	2.60E-01	No	NA	OS - UAA-2/OS-2-90	--	2.90E+02	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	3.70E+02	No	NA	OS - UAA-2/OS-2-90	--	3.60E+04	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	2.10E+02	No	NA	OS - UAA-2/OS-2-90	--	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.40E+05	Yes	NA	OS - UAA-2/OS-2-90	--	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	4.00E+00	No	NA	OS - UAA-2/OS-2-90	--	1.00E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	2.60E+04	Yes	NA	OS - UAA-2/OS-2-90	--	5.00E+03	Yes	No	EN
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	6.00E+04	Yes	NA	OS - UAA-2/OS-2-90	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	1.60E+03	No	NA	OS - UAA-2/OS-2-90	--	1.50E+02	Yes	Yes	>Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	6.50E+00	No	NA	OS - UAA-2/OS-2-90	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	4.50E+04	Yes	NA	OS - UAA-2/OS-2-90	--	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	7.60E+04	Yes	NA	OS - UAA-2/OS-2-90	--	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.90E+00	No	NA	OS - UAA-2/OS-2-90	--	4.90E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	1.80E+01	No	NA	OS - UAA-2/OS-2-90	--	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-3-108													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	4.90E+02	No	5.00E+03	OS - UAA-2/OS-2-110	No	1.00E+02	Yes	No	</=BKG
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	2.80E+00	No	1.86E+01	OS - UAA-2/OS-2-110	No	1.50E+00	Yes	No	</=BKG
Methane	74-82-8	ug/L	1 : 1 : 1	100	8.40E+01	No	NA	OS - UAA-2/OS-2-110	--	NA	--	No	No Dose-Response Value
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	2.50E+00	No	1.90E+01	OS - UAA-2/OS-2-110	No	2.00E+00	Yes	No	</=BKG
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	1.80E+00	No	3.20E+01	OS - UAA-2/OS-2-110	No	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	4.20E+00	No	2.40E+03	OS - UAA-2/OS-2-110	No	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	6.80E+00	No	6.40E+01	OS - UAA-2/OS-2-110	No	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	1.20E+00	No	1.94E+01	OS - UAA-2/OS-2-110	No	2.80E+01	No	No	</=Screening Level
bis(2-Ethylhexyl)phthalate	117-81-7	ug/L	1 : 1 : 1	100	9.20E-01	No	NA	OS - UAA-2/OS-2-110	--	6.00E+00	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	4.00E+00	No	NA	OS - UAA-2/OS-2-110	--	1.40E+02	No	No	</=Screening Level
Pesticide													
beta-BHC	319-85-7	ug/L	1 : 1 : 1	100	2.70E-02	No	NA	OS - UAA-2/OS-2-110	--	2.00E-01	No	No	</=Screening Level
gamma-BHC (Lindane)	58-89-9	ug/L	1 : 1 : 1	100	8.50E-03	No	NA	OS - UAA-2/OS-2-110	--	2.00E-01	No	No	</=Screening Level
Herbicide													
2,4,5-TP (Silvex)	93-72-1	ug/L	1 : 1 : 1	100	8.60E-02	No	NA	OS - UAA-2/OS-2-110	--	5.00E+01	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	7.80E+01	No	NA	OS - UAA-2/OS-2-110	--	3.60E+04	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	1.50E+02	No	NA	OS - UAA-2/OS-2-110	--	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.50E+05	Yes	NA	OS - UAA-2/OS-2-110	--	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	3.90E+00	No	NA	OS - UAA-2/OS-2-110	--	1.00E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	2.90E+04	Yes	NA	OS - UAA-2/OS-2-110	--	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	3.90E+00	No	NA	OS - UAA-2/OS-2-110	--	7.50E+00	No	No	</=Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	6.00E+04	Yes	NA	OS - UAA-2/OS-2-110	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	1.70E+03	No	NA	OS - UAA-2/OS-2-110	--	1.50E+02	Yes	Yes	>Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	6.70E+00	No	NA	OS - UAA-2/OS-2-110	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	4.70E+04	Yes	NA	OS - UAA-2/OS-2-110	--	NA	--	No	EN

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	6.50E+04	Yes	NA	OS - UAA-2/OS-2-110	--	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.40E+00	No	NA	OS - UAA-2/OS-2-110	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	2.10E+01	No	NA	OS - UAA-2/OS-2-110	--	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-3-118													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	6.90E+02	No	1.52E+03	OS - UAA-2/OS-2-120	No	1.00E+02	Yes	No	</=BKG
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	1.70E+00	No	NA	OS - UAA-2/OS-2-120	--	2.00E+00	No	No	</=Screening Level
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	9.10E+00	No	1.72E+03	OS - UAA-2/OS-2-120	No	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	1.50E+01	No	1.92E+01	OS - UAA-2/OS-2-120	No	3.50E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	7.30E+00	No	NA	OS - UAA-2/OS-2-120	--	1.40E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-3-128													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	5.20E+02	No	4.00E+03	OS - UAA-2/OS-2-124	No	1.00E+02	Yes	No	</=BKG
Methane	74-82-8	ug/L	1 : 1 : 1	100	3.60E+01	No	2.00E+02	OS - UAA-2/OS-2-124	No	NA	--	No	</=BKG
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	3.40E+00	No	1.30E+01	OS - UAA-2/OS-2-124	No	2.00E+00	Yes	No	</=BKG
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	5.10E+00	No	8.20E+02	OS - UAA-2/OS-2-124	No	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	1.30E+01	No	4.00E+01	OS - UAA-2/OS-2-124	No	3.50E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	6.60E+00	No	2.40E+01	OS - UAA-2/OS-2-124	No	1.40E+02	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	3.00E+03	No	NA	OS - UAA-2/OS-2-124	--	3.60E+04	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	2.50E+02	No	1.96E+02	OS - UAA-2/OS-2-124	Yes	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.70E+05	Yes	6.80E+05	OS - UAA-2/OS-2-124	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	3.30E+01	No	NA	OS - UAA-2/OS-2-124	--	1.00E+02	No	No	</=Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	3.10E+00	No	NA	OS - UAA-2/OS-2-124	--	1.00E+03	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	6.40E+04	Yes	7.40E+04	OS - UAA-2/OS-2-124	No	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	5.10E+00	No	NA	OS - UAA-2/OS-2-124	--	7.50E+00	No	No	</=Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	7.60E+04	Yes	1.00E+05	OS - UAA-2/OS-2-124	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	1.60E+03	No	3.20E+03	OS - UAA-2/OS-2-124	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	2.60E+01	No	NA	OS - UAA-2/OS-2-124	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	4.10E+04	Yes	2.20E+04	OS - UAA-2/OS-2-124	Yes	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	6.90E+04	Yes	7.40E+04	OS - UAA-2/OS-2-124	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	7.30E+00	No	2.40E+00	OS - UAA-2/OS-2-124	Yes	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	5.10E+01	No	8.40E+01	OS - UAA-2/OS-2-124	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-3-38													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	9.50E-01	No	4.80E+01	OS - UAA-2/OS-2-40	No	7.00E+02	No	No	</=Screening Level
1,1-Dichloroethylene	75-35-4	ug/L	1 : 1 : 1	100	3.60E-01	No	3.80E+01	OS - UAA-2/OS-2-40	No	7.00E+00	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	1.30E+01	No	1.62E+02	OS - UAA-2/OS-2-40	No	7.00E+01	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	8.10E-01	No	NA	OS - UAA-2/OS-2-40	--	1.00E+02	No	No	</=Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	4.60E-01	No	NA	OS - UAA-2/OS-2-40	--	1.50E+00	No	No	</=Screening Level
Trichloroethylene	79-01-6	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-2/OS-2-40	--	5.00E+00	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	4.90E-01	No	4.20E+00	OS - UAA-2/OS-2-40	No	2.00E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-3-48													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	9.20E-01	No	4.60E+02	OS - UAA-2/OS-2-50	No	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	1.10E+01	No	1.86E+03	OS - UAA-2/OS-2-50	No	7.00E+01	No	No	</=Screening Level
Trichloroethylene	79-01-6	ug/L	1 : 1 : 1	100	1.40E+00	No	4.60E+00	OS - UAA-2/OS-2-50	No	5.00E+00	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	8.60E-01	No	5.80E+01	OS - UAA-2/OS-2-50	No	2.00E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-3-58													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	1.00E+00	No	4.60E+02	OS - UAA-2/OS-2-60	No	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	2.50E+00	No	1.78E+03	OS - UAA-2/OS-2-60	No	7.00E+01	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	4.80E+00	No	1.58E+02	OS - UAA-2/OS-2-60	No	1.00E+02	No	No	</=Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	6.00E-01	No	NA	OS - UAA-2/OS-2-60	--	1.50E+00	No	No	</=Screening Level
Trichloroethylene	79-01-6	ug/L	1 : 1 : 1	100	6.70E-01	No	NA	OS - UAA-2/OS-2-60	--	5.00E+00	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	1.30E+00	No	6.40E+01	OS - UAA-2/OS-2-60	No	2.00E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-3-68													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	8.30E-01	No	6.00E+02	OS - UAA-2/OS-2-70	No	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	9.70E-01	No	2.80E+03	OS - UAA-2/OS-2-70	No	7.00E+01	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	4.40E-01	No	NA	OS - UAA-2/OS-2-70	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	8.80E+00	No	1.62E+02	OS - UAA-2/OS-2-70	No	1.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	4.40E+01	No	NA	OS - UAA-2/OS-2-70	--	NA	--	No	No Dose-Response Value
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	6.80E-01	No	9.20E+01	OS - UAA-2/OS-2-70	No	2.00E+00	No	No	</=Screening Level
Pesticide													
beta-BHC	319-85-7	ug/L	1 : 1 : 1	100	9.20E-03	No	NA	OS - UAA-2/OS-2-70	--	2.00E-01	No	No	</=Screening Level
Herbicide													
2,4,5-T	93-76-5	ug/L	1 : 1 : 1	100	4.40E+00	No	NA	OS - UAA-2/OS-2-70	--	3.60E+02	No	No	</=Screening Level
Metals													
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	3.20E+00	No	NA	OS - UAA-2/OS-2-70	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	5.60E+02	No	NA	OS - UAA-2/OS-2-70	--	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.90E+05	Yes	NA	OS - UAA-2/OS-2-70	--	NA	--	No	EN
Iron	7439-89-6	ug/L	1 : 1 : 1	100	3.90E+04	Yes	NA	OS - UAA-2/OS-2-70	--	5.00E+03	Yes	No	EN
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	5.30E+04	Yes	NA	OS - UAA-2/OS-2-70	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	3.30E+03	No	NA	OS - UAA-2/OS-2-70	--	1.50E+02	Yes	Yes	>Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	8.70E+03	Yes	NA	OS - UAA-2/OS-2-70	--	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	7.60E+04	Yes	NA	OS - UAA-2/OS-2-70	--	NA	--	No	EN
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	1.80E+01	No	NA	OS - UAA-2/OS-2-70	--	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-3-78													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	4.80E-01	No	6.60E+02	OS - UAA-2/OS-2-80	No	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	7.00E-01	No	3.60E+03	OS - UAA-2/OS-2-80	No	7.00E+01	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.20E+01	No	1.24E+02	OS - UAA-2/OS-2-80	No	1.00E+02	No	No	</=Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	3.40E-01	No	NA	OS - UAA-2/OS-2-80	--	1.50E+00	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	4.30E-01	No	1.04E+02	OS - UAA-2/OS-2-80	No	2.00E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-3-88													
VOCs													
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	7.20E-01	No	1.14E+02	OS - UAA-2/OS-2-90	No	7.00E+01	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.00E+02	No	3.60E+03	OS - UAA-2/OS-2-90	No	1.00E+02	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	3.80E+00	No	2.00E+01	OS - UAA-2/OS-2-90	No	2.00E+00	Yes	No	</=BKG
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	1.30E+00	No	4.80E+02	OS - UAA-2/OS-2-90	No	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	2.00E+00	No	4.80E+01	OS - UAA-2/OS-2-90	No	3.50E+01	No	No	</=Screening Level
bis(2-Ethylhexyl)phthalate	117-81-7	ug/L	1 : 1 : 1	100	3.60E+00	No	NA	OS - UAA-2/OS-2-90	--	6.00E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - AA-O-3-98													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	3.40E+02	No	5.20E+03	OS - UAA-2/OS-2-100	No	1.00E+02	Yes	No	</=BKG
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	4.80E+00	No	1.44E+01	OS - UAA-2/OS-2-100	No	2.00E+00	Yes	No	</=BKG
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	2.60E+00	No	1.96E+01	OS - UAA-2/OS-2-100	No	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	4.30E+00	No	7.40E+02	OS - UAA-2/OS-2-100	No	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	6.80E+00	No	3.60E+01	OS - UAA-2/OS-2-100	No	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	1.30E+00	No	6.20E+00	OS - UAA-2/OS-2-100	No	2.80E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	4.20E+00	No	NA	OS - UAA-2/OS-2-100	--	1.40E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
O - BDRK-O-1-153													
VOCs													
Dichloromethane	75-09-2	ug/L	1 : 1 : 1	100	1.30E+00	No	NA	OS - UAA-2/OS-2-124	--	5.00E+00	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	2.70E+01	No	2.00E+02	OS - UAA-2/OS-2-124	No	NA	--	No	</=BKG
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	1.60E+02	No	NA	OS - UAA-2/OS-2-124	--	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	3.30E+00	No	NA	OS - UAA-2/OS-2-124	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	2.40E+02	No	1.96E+02	OS - UAA-2/OS-2-124	Yes	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.60E+05	Yes	6.80E+05	OS - UAA-2/OS-2-124	No	NA	--	No	EN
Iron	7439-89-6	ug/L	1 : 1 : 1	100	4.10E+02	Yes	7.40E+04	OS - UAA-2/OS-2-124	No	5.00E+03	No	No	EN
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	6.60E+04	Yes	1.00E+05	OS - UAA-2/OS-2-124	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	5.80E+01	No	3.20E+03	OS - UAA-2/OS-2-124	No	1.50E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	7.00E+03	Yes	2.20E+04	OS - UAA-2/OS-2-124	No	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	1.20E+05	Yes	7.40E+04	OS - UAA-2/OS-2-124	Yes	NA	--	No	EN
Thallium	7440-28-0	ug/L	1 : 1 : 1	100	3.80E+00	No	NA	OS - UAA-2/OS-2-124	--	2.00E+00	Yes	Yes	>Screening Level
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	2.60E+00	No	2.40E+00	OS - UAA-2/OS-2-124	Yes	4.90E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-1-104													
VOCs													
Benzene	71-43-2	ug/L	1 : 1 : 1	100	1.90E+02	No	5.00E+00	OS - UAA-1/OS-1-100	Yes	5.00E+00	Yes	Yes	>Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	4.90E+03	No	8.00E+02	OS - UAA-1/OS-1-100	Yes	1.00E+02	Yes	Yes	>Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	1.80E+02	No	1.92E+03	OS - UAA-1/OS-1-100	No	NA	--	No	</=BKG
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	1.00E+01	No	3.60E+01	OS - UAA-1/OS-1-100	No	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	7.80E+01	No	3.40E+00	OS - UAA-1/OS-1-100	Yes	3.50E+01	Yes	Yes	>Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	2.40E+01	No	NA	OS - UAA-1/OS-1-100	--	2.80E+01	No	No	</=Screening Level
Dibenzo(a,h)anthracene	53-70-3	ug/L	1 : 1 : 1	100	4.20E+00	No	1.36E+00	OS - UAA-1/OS-1-100	Yes	3.00E-01	Yes	Yes	>Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	3.90E+01	No	NA	OS - UAA-1/OS-1-100	--	1.40E+02	No	No	</=Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	1.40E+01	No	NA	OS - UAA-1/OS-1-100	--	1.00E+02	No	No	</=Screening Level
Pesticide													
alpha-Chlordane	5103-71-9	ug/L	1 : 1 : 1	100	7.20E-03	No	NA	OS - UAA-1/OS-1-100	--	2.00E+00	No	No	</=Screening Level
Herbicide													
Pentachlorophenol	87-86-5	ug/L	1 : 1 : 1	100	4.70E+00	No	NA	OS - UAA-1/OS-1-100	--	1.00E+00	Yes	Yes	>Screening Level
PCBs													
Total PCBs	1336-36-3	ug/L	1 : 1 : 1	100	1.10E-01	No	NA	OS - UAA-1/OS-1-100	--	5.00E-01	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	3.60E+02	No	1.04E+03	OS - UAA-1/OS-1-100	No	3.60E+04	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	5.90E+02	No	1.02E+02	OS - UAA-1/OS-1-100	Yes	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.00E+05	Yes	1.34E+06	OS - UAA-1/OS-1-100	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	1.10E+01	No	2.60E+01	OS - UAA-1/OS-1-100	No	1.00E+02	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	1.20E+01	No	3.00E+00	OS - UAA-1/OS-1-100	Yes	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	2.60E+04	Yes	1.62E+05	OS - UAA-1/OS-1-100	No	5.00E+03	Yes	No	EN
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	4.90E+04	Yes	3.40E+05	OS - UAA-1/OS-1-100	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	7.00E+02	No	4.20E+04	OS - UAA-1/OS-1-100	No	1.50E+02	Yes	No	</=BKG
Mercury	7439-97-6	ug/L	1 : 1 : 1	100	7.40E-02	No	NA	OS - UAA-1/OS-1-100	--	2.00E+00	No	No	</=Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.80E+01	No	1.86E+02	OS - UAA-1/OS-1-100	No	1.00E+02	No	No	</=Screening Level

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DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	2.40E+04	Yes	6.00E+04	OS - UAA-1/OS-1-100	No	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	2.30E+05	Yes	4.00E+05	OS - UAA-1/OS-1-100	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	2.10E+00	No	NA	OS - UAA-1/OS-1-100	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	8.00E+01	No	4.60E+05	OS - UAA-1/OS-1-100	No	5.00E+03	No	No	</=Screening Level

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Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-1-114													
VOCs													
Benzene	71-43-2	ug/L	1 : 1 : 1	100	6.00E+01	No	6.80E+00	OS - UAA-1/OS-1-110	Yes	5.00E+00	Yes	Yes	>Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	4.60E+03	No	1.42E+03	OS - UAA-1/OS-1-110	Yes	1.00E+02	Yes	Yes	>Screening Level
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	9.80E+00	No	7.20E+01	OS - UAA-1/OS-1-110	No	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	4.60E+01	No	1.28E+01	OS - UAA-1/OS-1-110	Yes	3.50E+01	Yes	Yes	>Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	7.30E+00	No	NA	OS - UAA-1/OS-1-110	--	2.80E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	2.10E+01	No	NA	OS - UAA-1/OS-1-110	--	1.40E+02	No	No	</=Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	3.40E+00	No	NA	OS - UAA-1/OS-1-110	--	1.00E+02	No	No	</=Screening Level

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DEEP GROUNDWATER SCREEN
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SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-1-120													
VOCs													
Benzene	71-43-2	ug/L	1 : 1 : 1	100	7.70E+01	No	6.80E+00	OS - UAA-1/OS-1-110	Yes	5.00E+00	Yes	Yes	>Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	6.40E+00	No	NA	OS - UAA-1/OS-1-110	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	2.30E+03	No	1.42E+03	OS - UAA-1/OS-1-110	Yes	1.00E+02	Yes	Yes	>Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	1.50E+02	No	1.88E+03	OS - UAA-1/OS-1-110	No	NA	--	No	</=BKG
Trichloroethylene	79-01-6	ug/L	1 : 1 : 1	100	1.60E+01	No	NA	OS - UAA-1/OS-1-110	--	5.00E+00	Yes	Yes	>Screening Level
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	3.10E+00	No	7.20E+01	OS - UAA-1/OS-1-110	No	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	2.20E+01	No	1.28E+01	OS - UAA-1/OS-1-110	Yes	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	2.80E+00	No	NA	OS - UAA-1/OS-1-110	--	2.80E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	1.10E+01	No	NA	OS - UAA-1/OS-1-110	--	1.40E+02	No	No	</=Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	2.80E+00	No	NA	OS - UAA-1/OS-1-110	--	1.00E+02	No	No	</=Screening Level
Pesticide													
alpha-Chlordane	5103-71-9	ug/L	1 : 1 : 1	100	1.10E-02	No	NA	OS - UAA-1/OS-1-110	--	2.00E+00	No	No	</=Screening Level
Herbicide													
Pentachlorophenol	87-86-5	ug/L	1 : 1 : 1	100	3.90E+00	No	NA	OS - UAA-1/OS-1-110	--	1.00E+00	Yes	Yes	>Screening Level
PCBs													
Total PCBs	1336-36-3	ug/L	1 : 1 : 1	100	1.30E-01	No	NA	OS - UAA-1/OS-1-110	--	5.00E-01	No	No	</=Screening Level
Dioxin													
2,3,7,8-TCDD-TEQ	1746-01-6	ug/L	1 : 1 : 1	100	6.90E-07	No	NA	OS - UAA-1/OS-1-110	--	3.00E-05	No	No	</=Screening Level
Metals													
Barium	7440-39-3	ug/L	1 : 1 : 1	100	4.50E+02	No	3.00E+02	OS - UAA-1/OS-1-110	Yes	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.20E+05	Yes	1.44E+06	OS - UAA-1/OS-1-110	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	7.10E+00	No	2.40E+02	OS - UAA-1/OS-1-110	No	1.00E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	3.50E+04	Yes	3.00E+05	OS - UAA-1/OS-1-110	No	5.00E+03	Yes	No	EN
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	5.50E+04	Yes	4.00E+05	OS - UAA-1/OS-1-110	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	1.00E+03	No	5.60E+04	OS - UAA-1/OS-1-110	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	2.70E+01	No	3.00E+02	OS - UAA-1/OS-1-110	No	1.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.80E+04	Yes	6.60E+04	OS - UAA-1/OS-1-110	No	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	2.10E+05	Yes	4.00E+05	OS - UAA-1/OS-1-110	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.40E+00	No	3.60E+01	OS - UAA-1/OS-1-110	No	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	6.90E+01	No	6.00E+05	OS - UAA-1/OS-1-110	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-1-64													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.00E+00	No	4.00E+00	OS - UAA-1/OS-1-60	No	1.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	2.00E+01	No	1.82E+01	OS - UAA-1/OS-1-60	Yes	NA	--	No	No Dose-Response Value
SVOCs													
2-Nitroaniline	88-74-4	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-1/OS-1-60	--	1.00E+00	Yes	Yes	>Screening Level
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	1 : 1 : 1	100	1.40E+00	No	NA	OS - UAA-1/OS-1-60	--	3.50E+02	No	No	</=Screening Level
4,6-Dinitro-2-methylphenol	534-52-1	ug/L	1 : 1 : 1	100	5.20E+00	No	NA	OS - UAA-1/OS-1-60	--	NA	--	No	Screening Level NA
Anthracene	120-12-7	ug/L	1 : 1 : 1	100	8.00E-01	No	NA	OS - UAA-1/OS-1-60	--	2.10E+03	No	No	</=Screening Level
Benzo(a)anthracene	56-55-3	ug/L	1 : 1 : 1	100	1.00E+00	No	NA	OS - UAA-1/OS-1-60	--	1.30E-01	Yes	Yes	>Screening Level
Benzo(b)fluoranthene	205-99-2	ug/L	1 : 1 : 1	100	4.00E+00	No	NA	OS - UAA-1/OS-1-60	--	1.80E-01	Yes	Yes	>Screening Level
Benzo(g,h,i)perylene	191-24-2	ug/L	1 : 1 : 1	100	1.10E+00	No	NA	OS - UAA-1/OS-1-60	--	2.10E+02	No	No	</=Screening Level
Benzo(k)fluoranthene	207-08-9	ug/L	1 : 1 : 1	100	8.90E-01	No	NA	OS - UAA-1/OS-1-60	--	1.70E-01	Yes	Yes	>Screening Level
Benzyl Butyl Phthalate	85-68-7	ug/L	1 : 1 : 1	100	8.70E-01	No	NA	OS - UAA-1/OS-1-60	--	1.40E+03	No	No	</=Screening Level
bis(2-Chloroethyl)ether	111-44-4	ug/L	1 : 1 : 1	100	1.10E+00	No	NA	OS - UAA-1/OS-1-60	--	1.00E+01	No	No	</=Screening Level
bis(2-Ethylhexyl)phthalate	117-81-7	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-1/OS-1-60	--	6.00E+00	No	No	</=Screening Level
Chrysene	218-01-9	ug/L	1 : 1 : 1	100	9.50E-01	No	NA	OS - UAA-1/OS-1-60	--	1.50E+00	No	No	</=Screening Level
Di-n-butylphthalate	84-74-2	ug/L	1 : 1 : 1	100	1.10E+00	No	NA	OS - UAA-1/OS-1-60	--	7.00E+02	No	No	</=Screening Level
Di-n-octylphthalate	117-84-0	ug/L	1 : 1 : 1	100	7.20E-01	No	NA	OS - UAA-1/OS-1-60	--	1.40E+02	No	No	</=Screening Level
Dibenzo(a,h)anthracene	53-70-3	ug/L	1 : 1 : 1	100	2.90E+00	No	NA	OS - UAA-1/OS-1-60	--	3.00E-01	Yes	Yes	>Screening Level
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	1 : 1 : 1	100	8.90E-01	No	NA	OS - UAA-1/OS-1-60	--	4.30E-01	Yes	Yes	>Screening Level
Phenanthrene	85-01-8	ug/L	1 : 1 : 1	100	9.80E-01	No	NA	OS - UAA-1/OS-1-60	--	2.10E+03	No	No	</=Screening Level
Pesticide													
Heptachlor	76-44-8	ug/L	1 : 1 : 1	100	4.20E-03	No	NA	OS - UAA-1/OS-1-60	--	4.00E-01	No	No	</=Screening Level
Herbicide													
Dichlorprop	120-36-5	ug/L	1 : 1 : 1	100	5.50E-01	No	NA	OS - UAA-1/OS-1-60	--	2.92E+02	No	No	</=Screening Level
PCBs													
Total PCBs	1336-36-3	ug/L	1 : 1 : 1	100	1.10E-01	No	NA	OS - UAA-1/OS-1-60	--	5.00E-01	No	No	</=Screening Level
Metals													

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	2.80E+02	No	1.90E+03	OS - UAA-1/OS-1-60	No	3.60E+04	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	3.10E+02	No	2.60E+02	OS - UAA-1/OS-1-60	Yes	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.40E+05	Yes	6.60E+05	OS - UAA-1/OS-1-60	No	NA	--	No	EN
Iron	7439-89-6	ug/L	1 : 1 : 1	100	4.00E+04	Yes	1.18E+05	OS - UAA-1/OS-1-60	No	5.00E+03	Yes	No	EN
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	5.60E+04	Yes	1.38E+05	OS - UAA-1/OS-1-60	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	1.30E+03	No	8.40E+03	OS - UAA-1/OS-1-60	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	9.50E+00	No	1.72E+01	OS - UAA-1/OS-1-60	No	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	9.10E+03	Yes	2.80E+04	OS - UAA-1/OS-1-60	No	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	9.60E+04	Yes	2.40E+05	OS - UAA-1/OS-1-60	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.80E+00	No	NA	OS - UAA-1/OS-1-60	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	1.30E+01	No	6.80E+01	OS - UAA-1/OS-1-60	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-1-74													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	5.80E+00	No	4.80E+00	OS - UAA-1/OS-1-70	Yes	1.00E+02	No	No	</=Screening Level
Herbicide													
Pentachlorophenol	87-86-5	ug/L	1 : 1 : 1	100	6.40E+00	No	NA	OS - UAA-1/OS-1-70	--	1.00E+00	Yes	Yes	>Screening Level
Dioxin													
2,3,7,8-TCDD-TEQ	1746-01-6	ug/L	1 : 1 : 1	100	1.43E-05	No	NA	OS - UAA-1/OS-1-70	--	3.00E-05	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-1-84													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.20E+01	No	5.60E+02	OS - UAA-1/OS-1-80	No	1.00E+02	No	No	</=Screening Level
Herbicide													
Pentachlorophenol	87-86-5	ug/L	1 : 1 : 1	100	5.90E+00	No	NA	OS - UAA-1/OS-1-80	--	1.00E+00	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-1-94													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	4.80E+00	No	9.00E+02	OS - UAA-1/OS-1-90	No	1.00E+02	No	No	</=Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	5.30E-01	No	NA	OS - UAA-1/OS-1-90	--	1.50E+00	No	No	</=Screening Level

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-2-104													
VOCs													
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	1 : 1 : 1	100	1.50E+01	No	NA	OS - UAA-1/OS-1-100	--	5.50E-02	Yes	Yes	>Screening Level
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	7.30E+01	No	NA	OS - UAA-1/OS-1-100	--	1.90E+03	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	6.90E+03	No	5.00E+00	OS - UAA-1/OS-1-100	Yes	5.00E+00	Yes	Yes	>Screening Level
Carbon Tetrachloride	56-23-5	ug/L	1 : 1 : 1	100	6.90E+00	No	NA	OS - UAA-1/OS-1-100	--	5.00E+00	Yes	Yes	>Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	4.90E+02	No	8.00E+02	OS - UAA-1/OS-1-100	No	1.00E+02	Yes	No	</=BKG
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	4.70E+01	No	6.20E-01	OS - UAA-1/OS-1-100	Yes	7.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	1.50E+03	No	1.92E+03	OS - UAA-1/OS-1-100	No	NA	--	No	</=BKG
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	1.00E+02	No	NA	OS - UAA-1/OS-1-100	--	1.00E+04	No	No	</=Screening Level
SVOCs													
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	5.30E+00	No	3.40E+00	OS - UAA-1/OS-1-100	Yes	3.50E+01	No	No	</=Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	2.80E+02	No	NA	OS - UAA-1/OS-1-100	--	1.00E+02	Yes	Yes	>Screening Level
Pesticide													
alpha-BHC	319-84-6	ug/L	1 : 1 : 1	100	8.40E-03	No	NA	OS - UAA-1/OS-1-100	--	1.10E-01	No	No	</=Screening Level
Herbicide													
MCPP	93-65-2	ug/L	1 : 1 : 1	100	3.20E+01	No	NA	OS - UAA-1/OS-1-100	--	3.60E+01	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	1.00E+03	No	1.04E+03	OS - UAA-1/OS-1-100	No	3.60E+04	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	1.40E+03	No	1.02E+02	OS - UAA-1/OS-1-100	Yes	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.00E+05	Yes	1.34E+06	OS - UAA-1/OS-1-100	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	2.00E+01	No	2.60E+01	OS - UAA-1/OS-1-100	No	1.00E+02	No	No	</=Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	2.90E+00	No	4.00E+02	OS - UAA-1/OS-1-100	No	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	6.30E+00	No	3.00E+00	OS - UAA-1/OS-1-100	Yes	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	2.90E+04	Yes	1.62E+05	OS - UAA-1/OS-1-100	No	5.00E+03	Yes	No	EN
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	4.90E+04	Yes	3.40E+05	OS - UAA-1/OS-1-100	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	5.30E+02	No	4.20E+04	OS - UAA-1/OS-1-100	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.00E+01	No	1.86E+02	OS - UAA-1/OS-1-100	No	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.70E+04	Yes	6.00E+04	OS - UAA-1/OS-1-100	No	NA	--	No	EN

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	2.50E+05	Yes	4.00E+05	OS - UAA-1/OS-1-100	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	4.30E+00	No	NA	OS - UAA-1/OS-1-100	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	1.60E+01	No	4.60E+05	OS - UAA-1/OS-1-100	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-2-114													
VOCs													
Benzene	71-43-2	ug/L	1 : 1 : 1	100	5.90E+03	No	6.80E+00	OS - UAA-1/OS-1-110	Yes	5.00E+00	Yes	Yes	>Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	2.63E+02	No	1.42E+03	OS - UAA-1/OS-1-110	No	1.00E+02	Yes	No	</=BKG
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	1.45E+00	No	7.20E+01	OS - UAA-1/OS-1-110	No	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	3.20E+00	No	1.28E+01	OS - UAA-1/OS-1-110	No	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	2.30E+00	No	NA	OS - UAA-1/OS-1-110	--	2.80E+01	No	No	</=Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	1.70E+02	No	NA	OS - UAA-1/OS-1-110	--	1.00E+02	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-2-122													
VOCs													
Benzene	71-43-2	ug/L	1 : 1 : 1	100	2.80E+03	No	6.80E+00	OS - UAA-1/OS-1-110	Yes	5.00E+00	Yes	Yes	>Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	1.50E+01	No	NA	OS - UAA-1/OS-1-110	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	4.80E+02	No	1.42E+03	OS - UAA-1/OS-1-110	No	1.00E+02	Yes	No	</=BKG
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	2.30E+01	No	NA	OS - UAA-1/OS-1-110	--	1.50E+00	Yes	Yes	>Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	7.20E+02	No	1.88E+03	OS - UAA-1/OS-1-110	No	NA	--	No	</=BKG
SVOCs													
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	4.60E+00	No	1.28E+01	OS - UAA-1/OS-1-110	No	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	2.40E+00	No	NA	OS - UAA-1/OS-1-110	--	2.80E+01	No	No	</=Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	1.20E+02	No	NA	OS - UAA-1/OS-1-110	--	1.00E+02	Yes	Yes	>Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	2.20E+03	No	1.26E+04	OS - UAA-1/OS-1-110	No	3.60E+04	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	8.10E+02	No	3.00E+02	OS - UAA-1/OS-1-110	Yes	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.70E+05	Yes	1.44E+06	OS - UAA-1/OS-1-110	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	3.50E+01	No	2.40E+02	OS - UAA-1/OS-1-110	No	1.00E+02	No	No	</=Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	2.40E+00	No	5.20E+02	OS - UAA-1/OS-1-110	No	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	7.60E+00	No	7.60E+01	OS - UAA-1/OS-1-110	No	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	2.30E+04	Yes	3.00E+05	OS - UAA-1/OS-1-110	No	5.00E+03	Yes	No	EN
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	3.90E+04	Yes	4.00E+05	OS - UAA-1/OS-1-110	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	5.90E+02	No	5.60E+04	OS - UAA-1/OS-1-110	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.20E+01	No	3.00E+02	OS - UAA-1/OS-1-110	No	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.20E+04	Yes	6.60E+04	OS - UAA-1/OS-1-110	No	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	1.20E+05	Yes	4.00E+05	OS - UAA-1/OS-1-110	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	4.10E+00	No	3.60E+01	OS - UAA-1/OS-1-110	No	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	1.80E+01	No	6.00E+05	OS - UAA-1/OS-1-110	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-2-34													
VOCs													
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	3.30E-01	No	NA	OS - UAA-1/OS-1-30	--	7.00E+02	No	No	</=Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	3.60E-01	No	NA	OS - UAA-1/OS-1-30	--	1.50E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-2-44													
VOCs													
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	2.60E-01	No	NA	OS - UAA-1/OS-1-40	--	1.50E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-2-54													
VOCs													
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	3.60E-01	No	NA	OS - UAA-1/OS-1-50	--	1.50E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-2-64													
VOCs													
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	1.90E+00	No	NA	OS - UAA-1/OS-1-60	--	1.90E+03	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	3.80E+00	No	1.82E+01	OS - UAA-1/OS-1-60	No	NA	--	No	</=BKG
Methyl N-Butyl Ketone	591-78-6	ug/L	1 : 1 : 1	100	8.70E-01	No	NA	OS - UAA-1/OS-1-60	--	1.60E+02	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	3.00E+02	No	1.90E+03	OS - UAA-1/OS-1-60	No	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	9.40E+00	No	9.40E+00	OS - UAA-1/OS-1-60	No	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	2.20E+02	No	2.60E+02	OS - UAA-1/OS-1-60	No	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.10E+05	Yes	6.60E+05	OS - UAA-1/OS-1-60	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	4.60E+00	No	1.36E+01	OS - UAA-1/OS-1-60	No	1.00E+02	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	2.10E+00	No	NA	OS - UAA-1/OS-1-60	--	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	1.30E+04	Yes	1.18E+05	OS - UAA-1/OS-1-60	No	5.00E+03	Yes	No	EN
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	2.60E+04	Yes	1.38E+05	OS - UAA-1/OS-1-60	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	4.80E+02	No	8.40E+03	OS - UAA-1/OS-1-60	No	1.50E+02	Yes	No	</=BKG
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	5.90E+03	Yes	2.80E+04	OS - UAA-1/OS-1-60	No	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	2.00E+04	Yes	2.40E+05	OS - UAA-1/OS-1-60	No	NA	--	No	EN
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	4.60E+00	No	6.80E+01	OS - UAA-1/OS-1-60	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-2-74													
VOCs													
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	6.30E-01	No	NA	OS - UAA-1/OS-1-70	--	7.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-2-84													
VOCs													
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	6.70E-01	No	NA	OS - UAA-1/OS-1-80	--	7.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-2-94													
VOCs													
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	4.20E-01	No	NA	OS - UAA-1/OS-1-90	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	3.70E+00	No	9.00E+02	OS - UAA-1/OS-1-90	No	1.00E+02	No	No	</=Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	4.80E-01	No	NA	OS - UAA-1/OS-1-90	--	1.50E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-3-102													
VOCs													
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	3.80E-01	No	NA	OS - UAA-1/OS-1-100	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	4.50E-01	No	8.00E+02	OS - UAA-1/OS-1-100	No	1.00E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	5.40E-01	No	6.20E-01	OS - UAA-1/OS-1-100	No	1.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-3-112													
VOCs													
Benzene	71-43-2	ug/L	1 : 1 : 1	100	1.30E+00	No	6.80E+00	OS - UAA-1/OS-1-110	No	5.00E+00	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	5.90E-01	No	NA	OS - UAA-1/OS-1-110	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	6.10E+00	No	1.42E+03	OS - UAA-1/OS-1-110	No	1.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	2.70E+02	No	1.88E+03	OS - UAA-1/OS-1-110	No	NA	--	No	</=BKG
Toluene	108-88-3	ug/L	1 : 1 : 1	100	4.70E-01	No	NA	OS - UAA-1/OS-1-110	--	1.00E+03	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	1.10E+04	No	1.26E+04	OS - UAA-1/OS-1-110	No	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	4.70E+00	No	7.20E+01	OS - UAA-1/OS-1-110	No	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	8.80E+02	No	3.00E+02	OS - UAA-1/OS-1-110	Yes	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	4.60E-01	No	NA	OS - UAA-1/OS-1-110	--	4.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.20E+05	Yes	1.44E+06	OS - UAA-1/OS-1-110	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	1.20E+02	No	2.40E+02	OS - UAA-1/OS-1-110	No	1.00E+02	Yes	No	</=BKG
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	6.30E+00	No	5.20E+02	OS - UAA-1/OS-1-110	No	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	4.00E+01	No	7.60E+01	OS - UAA-1/OS-1-110	No	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	5.70E+04	Yes	3.00E+05	OS - UAA-1/OS-1-110	No	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	7.30E+00	No	1.04E+01	OS - UAA-1/OS-1-110	No	7.50E+00	No	No	</=Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	5.90E+04	Yes	4.00E+05	OS - UAA-1/OS-1-110	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	6.30E+02	No	5.60E+04	OS - UAA-1/OS-1-110	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	3.30E+01	No	3.00E+02	OS - UAA-1/OS-1-110	No	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.80E+04	Yes	6.60E+04	OS - UAA-1/OS-1-110	No	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	2.40E+05	Yes	4.00E+05	OS - UAA-1/OS-1-110	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	2.00E+01	No	3.60E+01	OS - UAA-1/OS-1-110	No	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	9.70E+01	No	6.00E+05	OS - UAA-1/OS-1-110	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-3-122													
VOCs													
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	1 : 1 : 1	100	1.30E+00	No	NA	OS - UAA-1/OS-1-110	--	1.60E+02	No	No	</=Screening Level
Methyl N-Butyl Ketone	591-78-6	ug/L	1 : 1 : 1	100	1.50E+00	No	NA	OS - UAA-1/OS-1-110	--	1.60E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-3-126													
VOCs													
Acetone	67-64-1	ug/L	1 : 1 : 1	100	1.60E+01	No	NA	OS - UAA-1/OS-1-110	--	7.00E+02	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	5.20E-01	No	NA	OS - UAA-1/OS-1-110	--	7.00E+02	No	No	</=Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	7.70E-01	No	NA	OS - UAA-1/OS-1-110	--	1.50E+00	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	5.90E+01	No	1.88E+03	OS - UAA-1/OS-1-110	No	NA	--	No	</=BKG
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	3.00E+03	No	1.26E+04	OS - UAA-1/OS-1-110	No	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	4.30E+00	No	7.20E+01	OS - UAA-1/OS-1-110	No	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	1.50E+02	No	3.00E+02	OS - UAA-1/OS-1-110	No	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	2.40E-01	No	NA	OS - UAA-1/OS-1-110	--	4.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	3.10E+05	Yes	1.44E+06	OS - UAA-1/OS-1-110	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	1.20E+02	No	2.40E+02	OS - UAA-1/OS-1-110	No	1.00E+02	Yes	No	</=BKG
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	4.50E+00	No	5.20E+02	OS - UAA-1/OS-1-110	No	1.00E+03	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	7.50E+04	Yes	3.00E+05	OS - UAA-1/OS-1-110	No	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	4.20E+00	No	1.04E+01	OS - UAA-1/OS-1-110	No	7.50E+00	No	No	</=Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	8.00E+04	Yes	4.00E+05	OS - UAA-1/OS-1-110	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	1.20E+03	No	5.60E+04	OS - UAA-1/OS-1-110	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	2.80E+01	No	3.00E+02	OS - UAA-1/OS-1-110	No	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.20E+04	Yes	6.60E+04	OS - UAA-1/OS-1-110	No	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	1.40E+05	Yes	4.00E+05	OS - UAA-1/OS-1-110	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	8.00E+00	No	3.60E+01	OS - UAA-1/OS-1-110	No	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	1.50E+02	No	6.00E+05	OS - UAA-1/OS-1-110	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-3-42													
VOCs													
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	5.55E-01	No	NA	OS - UAA-1/OS-1-40	--	7.00E+02	No	No	</=Screening Level
Dichloromethane	75-09-2	ug/L	1 : 1 : 1	100	1.00E+00	No	NA	OS - UAA-1/OS-1-40	--	5.00E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-3-52													
VOCs													
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	2.80E-01	No	NA	OS - UAA-1/OS-1-50	--	7.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-3-62													
VOCs													
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	4.80E-01	No	NA	OS - UAA-1/OS-1-60	--	7.00E+02	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	8.95E-01	No	NA	OS - UAA-1/OS-1-60	--	7.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-3-72													
VOCs													
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	1 : 1 : 1	100	4.20E-01	No	NA	OS - UAA-1/OS-1-70	--	5.50E-02	Yes	Yes	>Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	8.50E-01	No	NA	OS - UAA-1/OS-1-70	--	7.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	1.90E+01	No	NA	OS - UAA-1/OS-1-70	--	NA	--	No	No Dose-Response Value
Herbicide													
MCPP	93-65-2	ug/L	1 : 1 : 1	100	2.20E+01	No	NA	OS - UAA-1/OS-1-70	--	3.60E+01	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	2.40E+03	No	NA	OS - UAA-1/OS-1-70	--	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	3.70E+00	No	NA	OS - UAA-1/OS-1-70	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	1.80E+02	No	NA	OS - UAA-1/OS-1-70	--	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.30E+05	Yes	NA	OS - UAA-1/OS-1-70	--	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	2.30E+01	No	NA	OS - UAA-1/OS-1-70	--	1.00E+02	No	No	</=Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	3.00E+00	No	NA	OS - UAA-1/OS-1-70	--	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	8.50E+00	No	NA	OS - UAA-1/OS-1-70	--	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	3.60E+04	Yes	NA	OS - UAA-1/OS-1-70	--	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	4.90E+00	No	NA	OS - UAA-1/OS-1-70	--	7.50E+00	No	No	</=Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	3.20E+04	Yes	NA	OS - UAA-1/OS-1-70	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	1.10E+03	No	NA	OS - UAA-1/OS-1-70	--	1.50E+02	Yes	Yes	>Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.40E+01	No	NA	OS - UAA-1/OS-1-70	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	5.10E+03	Yes	NA	OS - UAA-1/OS-1-70	--	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	1.20E+04	Yes	NA	OS - UAA-1/OS-1-70	--	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	7.90E+00	No	NA	OS - UAA-1/OS-1-70	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	3.60E+01	No	NA	OS - UAA-1/OS-1-70	--	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - AA-P-3-82													
VOCs													
Benzene	71-43-2	ug/L	1 : 1 : 1	100	5.40E-01	No	NA	OS - UAA-1/OS-1-80	--	5.00E+00	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	5.40E-01	No	NA	OS - UAA-1/OS-1-80	--	7.00E+02	No	No	</=Screening Level
Chloroform	67-66-3	ug/L	1 : 1 : 1	100	2.00E-01	No	NA	OS - UAA-1/OS-1-80	--	8.00E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
P - BDRK-P-1-158													
VOCs													
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	4.10E+00	No	NA	OS - UAA-1/OS-1-110	--	1.90E+03	No	No	</=Screening Level
Acetone	67-64-1	ug/L	1 : 1 : 1	100	3.80E+01	No	NA	OS - UAA-1/OS-1-110	--	7.00E+02	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	2.10E+01	No	6.80E+00	OS - UAA-1/OS-1-110	Yes	5.00E+00	Yes	Yes	>Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	1.70E+00	No	NA	OS - UAA-1/OS-1-110	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	7.80E+00	No	1.42E+03	OS - UAA-1/OS-1-110	No	1.00E+02	No	No	</=Screening Level
Chloroform	67-66-3	ug/L	1 : 1 : 1	100	7.10E+00	No	NA	OS - UAA-1/OS-1-110	--	8.00E+01	No	No	</=Screening Level
Dichloromethane	75-09-2	ug/L	1 : 1 : 1	100	1.30E+00	No	NA	OS - UAA-1/OS-1-110	--	5.00E+00	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	1.50E+00	No	1.88E+03	OS - UAA-1/OS-1-110	No	NA	--	No	</=BKG
Toluene	108-88-3	ug/L	1 : 1 : 1	100	8.90E-01	No	NA	OS - UAA-1/OS-1-110	--	1.00E+03	No	No	</=Screening Level
SVOCs													
Benzo(a)pyrene	50-32-8	ug/L	1 : 1 : 1	100	1.30E+00	No	NA	OS - UAA-1/OS-1-110	--	2.00E-01	Yes	Yes	>Screening Level
Benzo(b)fluoranthene	205-99-2	ug/L	1 : 1 : 1	100	1.60E+00	No	NA	OS - UAA-1/OS-1-110	--	1.80E-01	Yes	Yes	>Screening Level
Benzo(g,h,i)perylene	191-24-2	ug/L	1 : 1 : 1	100	1.80E+00	No	NA	OS - UAA-1/OS-1-110	--	2.10E+02	No	No	</=Screening Level
Benzo(k)fluoranthene	207-08-9	ug/L	1 : 1 : 1	100	1.80E+00	No	NA	OS - UAA-1/OS-1-110	--	1.70E-01	Yes	Yes	>Screening Level
bis(2-Ethylhexyl)phthalate	117-81-7	ug/L	1 : 1 : 1	100	1.30E+00	No	NA	OS - UAA-1/OS-1-110	--	6.00E+00	No	No	</=Screening Level
Chrysene	218-01-9	ug/L	1 : 1 : 1	100	6.80E-01	No	NA	OS - UAA-1/OS-1-110	--	1.50E+00	No	No	</=Screening Level
Di-n-octylphthalate	117-84-0	ug/L	1 : 1 : 1	100	1.10E+00	No	NA	OS - UAA-1/OS-1-110	--	1.40E+02	No	No	</=Screening Level
Dibenzo(a,h)anthracene	53-70-3	ug/L	1 : 1 : 1	100	1.50E+00	No	NA	OS - UAA-1/OS-1-110	--	3.00E-01	Yes	Yes	>Screening Level
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	1 : 1 : 1	100	1.30E+00	No	NA	OS - UAA-1/OS-1-110	--	4.30E-01	Yes	Yes	>Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	2.70E+00	No	NA	OS - UAA-1/OS-1-110	--	1.00E+02	No	No	</=Screening Level
Pesticide													
Heptachlor	76-44-8	ug/L	1 : 1 : 1	100	6.30E-03	No	NA	OS - UAA-1/OS-1-110	--	4.00E-01	No	No	</=Screening Level
Herbicide													
MCPA	94-74-6	ug/L	1 : 1 : 1	100	5.20E+01	No	NA	OS - UAA-1/OS-1-110	--	1.80E+01	Yes	Yes	>Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	5.10E+03	No	1.26E+04	OS - UAA-1/OS-1-110	No	3.60E+04	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	2.30E+02	No	3.00E+02	OS - UAA-1/OS-1-110	No	2.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
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SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	3.60E-01	No	NA	OS - UAA-1/OS-1-110	--	4.00E+00	No	No	</=Screening Level
Cadmium	7440-43-9	ug/L	1 : 1 : 1	100	7.30E-01	No	5.40E+03	OS - UAA-1/OS-1-110	No	5.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	5.20E+05	Yes	1.44E+06	OS - UAA-1/OS-1-110	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	3.40E+01	No	2.40E+02	OS - UAA-1/OS-1-110	No	1.00E+02	No	No	</=Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	2.20E+00	No	5.20E+02	OS - UAA-1/OS-1-110	No	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	2.30E+01	No	7.60E+01	OS - UAA-1/OS-1-110	No	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	9.30E+03	Yes	3.00E+05	OS - UAA-1/OS-1-110	No	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	3.60E+00	No	1.04E+01	OS - UAA-1/OS-1-110	No	7.50E+00	No	No	</=Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	1.90E+04	Yes	4.00E+05	OS - UAA-1/OS-1-110	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	2.30E+02	No	5.60E+04	OS - UAA-1/OS-1-110	No	1.50E+02	Yes	No	</=BKG
Mercury	7439-97-6	ug/L	1 : 1 : 1	100	1.10E-01	No	NA	OS - UAA-1/OS-1-110	--	2.00E+00	No	No	</=Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	3.20E+01	No	3.00E+02	OS - UAA-1/OS-1-110	No	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.70E+04	Yes	6.60E+04	OS - UAA-1/OS-1-110	No	NA	--	No	EN
Selenium	7782-49-2	ug/L	1 : 1 : 1	100	5.50E+00	No	NA	OS - UAA-1/OS-1-110	--	5.00E+01	No	No	</=Screening Level
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	1.40E+05	Yes	4.00E+05	OS - UAA-1/OS-1-110	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.90E+01	No	3.60E+01	OS - UAA-1/OS-1-110	No	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	6.30E+01	No	6.00E+05	OS - UAA-1/OS-1-110	No	5.00E+03	No	No	</=Screening Level

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Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-1-100													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	2.00E+02	No	4.20E+03	OS - UAA-3/OS-3-104	No	1.00E+02	Yes	No	</=BKG
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	7.80E+00	No	4.40E+03	OS - UAA-3/OS-3-104	No	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	4.60E+00	No	2.80E+01	OS - UAA-3/OS-3-104	No	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	5.20E+00	No	4.20E+03	OS - UAA-3/OS-3-104	No	2.80E+01	No	No	</=Screening Level

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DEEP GROUNDWATER SCREEN
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Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-1-110													
VOCs													
Benzene	71-43-2	ug/L	1 : 1 : 1	100	1.00E+01	No	8.60E+00	OS - UAA-3/OS-3-114	Yes	5.00E+00	Yes	Yes	>Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.30E+02	No	1.14E+03	OS - UAA-3/OS-3-114	No	1.00E+02	Yes	No	</=BKG
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	2.10E-01	No	NA	OS - UAA-3/OS-3-114	--	1.50E+00	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	8.90E-01	No	NA	OS - UAA-3/OS-3-114	--	7.00E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	3.90E-01	No	NA	OS - UAA-3/OS-3-114	--	1.00E+03	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	3.20E+00	No	NA	OS - UAA-3/OS-3-114	--	2.00E+00	Yes	Yes	>Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	2.00E+00	No	NA	OS - UAA-3/OS-3-114	--	1.00E+04	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	3.00E+00	No	4.60E+01	OS - UAA-3/OS-3-114	No	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	3.20E+00	No	3.60E+03	OS - UAA-3/OS-3-114	No	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	3.60E+00	No	3.40E+01	OS - UAA-3/OS-3-114	No	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	1.60E+00	No	NA	OS - UAA-3/OS-3-114	--	2.80E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	2.00E+00	No	NA	OS - UAA-3/OS-3-114	--	1.40E+02	No	No	</=Screening Level

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Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-1-120													
VOCs													
Benzene	71-43-2	ug/L	1 : 1 : 1	100	2.80E+01	No	3.60E+00	OS - UAA-3/OS-3-116	Yes	5.00E+00	Yes	Yes	>Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	3.10E+02	No	7.20E+02	OS - UAA-3/OS-3-116	No	1.00E+02	Yes	No	</=BKG
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	2.10E+00	No	NA	OS - UAA-3/OS-3-116	--	7.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	9.80E+01	No	2.80E+01	OS - UAA-3/OS-3-116	Yes	NA	--	No	No Dose-Response Value
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	2.90E+00	No	NA	OS - UAA-3/OS-3-116	--	2.00E+00	Yes	Yes	>Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	7.40E+00	No	3.20E+01	OS - UAA-3/OS-3-116	No	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	6.10E+00	No	3.00E+03	OS - UAA-3/OS-3-116	No	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	1.00E+01	No	1.94E+01	OS - UAA-3/OS-3-116	No	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	2.70E+01	No	1.96E+01	OS - UAA-3/OS-3-116	Yes	2.80E+01	No	No	</=Screening Level
Benzo(g,h,i)perylene	191-24-2	ug/L	1 : 1 : 1	100	1.00E+00	No	1.38E+00	OS - UAA-3/OS-3-116	No	2.10E+02	No	No	</=Screening Level
Dibenzo(a,h)anthracene	53-70-3	ug/L	1 : 1 : 1	100	1.00E+00	No	NA	OS - UAA-3/OS-3-116	--	3.00E-01	Yes	Yes	>Screening Level
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	1 : 1 : 1	100	1.00E+00	No	NA	OS - UAA-3/OS-3-116	--	4.30E-01	Yes	Yes	>Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	5.90E+00	No	NA	OS - UAA-3/OS-3-116	--	1.40E+02	No	No	</=Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	3.40E+00	No	NA	OS - UAA-3/OS-3-116	--	1.00E+02	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	3.00E+04	No	2.40E+03	OS - UAA-3/OS-3-116	Yes	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	3.70E+01	No	NA	OS - UAA-3/OS-3-116	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	1.10E+03	No	3.00E+02	OS - UAA-3/OS-3-116	Yes	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	1.90E+00	No	NA	OS - UAA-3/OS-3-116	--	4.00E+00	No	No	</=Screening Level
Cadmium	7440-43-9	ug/L	1 : 1 : 1	100	9.40E-01	No	4.00E+00	OS - UAA-3/OS-3-116	No	5.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	3.00E+05	Yes	6.80E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	5.30E+02	No	7.60E+01	OS - UAA-3/OS-3-116	Yes	1.00E+02	Yes	Yes	>Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	3.20E+01	No	3.00E+00	OS - UAA-3/OS-3-116	Yes	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	1.40E+02	No	5.00E+01	OS - UAA-3/OS-3-116	Yes	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	1.10E+05	Yes	1.22E+05	OS - UAA-3/OS-3-116	No	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	4.20E+01	No	NA	OS - UAA-3/OS-3-116	--	7.50E+00	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	8.10E+04	Yes	2.40E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	2.20E+03	No	2.40E+03	OS - UAA-3/OS-3-116	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.30E+02	No	2.20E+01	OS - UAA-3/OS-3-116	Yes	1.00E+02	Yes	Yes	>Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	2.40E+04	Yes	2.20E+04	OS - UAA-3/OS-3-116	Yes	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	6.10E+04	Yes	1.22E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	7.90E+01	No	NA	OS - UAA-3/OS-3-116	--	4.90E+01	Yes	Yes	>Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	4.40E+02	No	4.60E+02	OS - UAA-3/OS-3-116	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-1-127													
SVOCs													
1,2,4-Trichlorobenzene	120-82-1	ug/L	1 : 1 : 1	100	6.10E+00	No	NA	OS - UAA-3/OS-3-116	--	7.00E+01	No	No	</=Screening Level
1,3-Dichlorobenzene	541-73-1	ug/L	1 : 1 : 1	100	2.50E+00	No	2.60E+01	OS - UAA-3/OS-3-116	No	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	2.20E+01	No	3.00E+03	OS - UAA-3/OS-3-116	No	7.50E+01	No	No	</=Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	1.20E+01	No	1.06E+02	OS - UAA-3/OS-3-116	No	2.10E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	5.60E+00	No	1.94E+01	OS - UAA-3/OS-3-116	No	3.50E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	3.10E+00	No	NA	OS - UAA-3/OS-3-116	--	1.40E+02	No	No	</=Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	2.00E+00	No	NA	OS - UAA-3/OS-3-116	--	1.00E+02	No	No	</=Screening Level
Metals													
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	8.70E+00	No	NA	OS - UAA-3/OS-3-116	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	2.60E+02	No	3.00E+02	OS - UAA-3/OS-3-116	No	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.60E+05	Yes	6.80E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Copper	7440-50-8	ug/L	1 : 1 : 1	100	1.20E+00	No	5.00E+01	OS - UAA-3/OS-3-116	No	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	1.30E+04	Yes	1.22E+05	OS - UAA-3/OS-3-116	No	5.00E+03	Yes	No	EN
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	7.00E+04	Yes	2.40E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	7.10E+02	No	2.40E+03	OS - UAA-3/OS-3-116	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	7.30E+00	No	2.20E+01	OS - UAA-3/OS-3-116	No	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	2.60E+04	Yes	2.20E+04	OS - UAA-3/OS-3-116	Yes	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	6.40E+04	Yes	1.22E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Thallium	7440-28-0	ug/L	1 : 1 : 1	100	3.70E+00	No	NA	OS - UAA-3/OS-3-116	--	2.00E+00	Yes	Yes	>Screening Level
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	2.80E+00	No	NA	OS - UAA-3/OS-3-116	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	2.30E+01	No	4.60E+02	OS - UAA-3/OS-3-116	No	5.00E+03	No	No	</=Screening Level

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-1-127.5													
VOCs													
Benzene	71-43-2	ug/L	1 : 1 : 1	100	3.30E+01	No	3.60E+00	OS - UAA-3/OS-3-116	Yes	5.00E+00	Yes	Yes	>Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	9.75E+02	No	7.20E+02	OS - UAA-3/OS-3-116	Yes	1.00E+02	Yes	Yes	>Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	2.60E+00	No	NA	OS - UAA-3/OS-3-116	--	1.50E+00	Yes	Yes	>Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	6.70E+00	No	NA	OS - UAA-3/OS-3-116	--	7.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	9.95E+01	No	2.80E+01	OS - UAA-3/OS-3-116	Yes	NA	--	No	No Dose-Response Value
Toluene	108-88-3	ug/L	1 : 1 : 1	100	1.50E+00	No	NA	OS - UAA-3/OS-3-116	--	1.00E+03	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	4.55E+00	No	NA	OS - UAA-3/OS-3-116	--	2.00E+00	Yes	Yes	>Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	1.95E+01	No	NA	OS - UAA-3/OS-3-116	--	1.00E+04	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	4.35E+02	No	3.20E+01	OS - UAA-3/OS-3-116	Yes	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	1.90E+01	No	3.00E+03	OS - UAA-3/OS-3-116	No	7.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	2.85E+03	No	1.96E+01	OS - UAA-3/OS-3-116	Yes	2.80E+01	Yes	Yes	>Screening Level
Pesticide													
alpha-BHC	319-84-6	ug/L	1 : 1 : 1	100	5.60E-02	No	NA	OS - UAA-3/OS-3-116	--	1.10E-01	No	No	</=Screening Level
Dieldrin	60-57-1	ug/L	1 : 1 : 1	100	6.30E-02	No	NA	OS - UAA-3/OS-3-116	--	9.00E+00	No	No	</=Screening Level
Endosulfan II	33213-65-9	ug/L	1 : 1 : 1	100	4.00E-02	No	NA	OS - UAA-3/OS-3-116	--	4.20E+01	No	No	</=Screening Level
Endosulfan Sulfate	1031-07-8	ug/L	1 : 1 : 1	100	5.10E-02	No	NA	OS - UAA-3/OS-3-116	--	4.20E+01	No	No	</=Screening Level
Endrin	72-20-8	ug/L	1 : 1 : 1	100	5.50E-02	No	NA	OS - UAA-3/OS-3-116	--	2.00E+00	No	No	</=Screening Level
Heptachlor Epoxide	1024-57-3	ug/L	1 : 1 : 1	100	4.50E-01	No	NA	OS - UAA-3/OS-3-116	--	2.00E-01	Yes	Yes	>Screening Level
Herbicide													
2,4-D	94-75-7	ug/L	1 : 1 : 1	100	2.40E+00	No	NA	OS - UAA-3/OS-3-116	--	7.00E+01	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	2.20E+04	No	2.40E+03	OS - UAA-3/OS-3-116	Yes	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	3.60E+01	No	NA	OS - UAA-3/OS-3-116	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	6.40E+02	No	3.00E+02	OS - UAA-3/OS-3-116	Yes	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	2.30E+00	No	NA	OS - UAA-3/OS-3-116	--	4.00E+00	No	No	</=Screening Level
Cadmium	7440-43-9	ug/L	1 : 1 : 1	100	1.30E+00	No	4.00E+00	OS - UAA-3/OS-3-116	No	5.00E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	3.10E+05	Yes	6.80E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	1.75E+02	No	7.60E+01	OS - UAA-3/OS-3-116	Yes	1.00E+02	Yes	Yes	>Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	2.30E+01	No	3.00E+00	OS - UAA-3/OS-3-116	Yes	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	7.35E+01	No	5.00E+01	OS - UAA-3/OS-3-116	Yes	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	8.60E+04	Yes	1.22E+05	OS - UAA-3/OS-3-116	No	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	4.90E+01	No	NA	OS - UAA-3/OS-3-116	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	7.80E+04	Yes	2.40E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	3.65E+03	No	2.40E+03	OS - UAA-3/OS-3-116	Yes	1.50E+02	Yes	Yes	>Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	7.50E+01	No	2.20E+01	OS - UAA-3/OS-3-116	Yes	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	3.20E+04	Yes	2.20E+04	OS - UAA-3/OS-3-116	Yes	NA	--	No	EN
Selenium	7782-49-2	ug/L	1 : 1 : 1	100	5.30E+00	No	NA	OS - UAA-3/OS-3-116	--	5.00E+01	No	No	</=Screening Level
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	6.60E+04	Yes	1.22E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	7.10E+01	No	NA	OS - UAA-3/OS-3-116	--	4.90E+01	Yes	Yes	>Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	3.60E+02	No	4.60E+02	OS - UAA-3/OS-3-116	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-1-50													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	5.60E+00	No	1.04E+00	OS - UAA-3/OS-3-54	Yes	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	9.60E-01	No	2.80E+00	OS - UAA-3/OS-3-54	No	7.00E+01	No	No	</=Screening Level
Acetone	67-64-1	ug/L	1 : 1 : 1	100	1.10E+01	No	NA	OS - UAA-3/OS-3-54	--	7.00E+02	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	2.40E+00	No	2.40E+00	OS - UAA-3/OS-3-54	No	5.00E+00	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	3.70E-01	No	NA	OS - UAA-3/OS-3-54	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.30E+02	No	3.20E+02	OS - UAA-3/OS-3-54	No	1.00E+02	Yes	No	</=BKG
Chloroethane	75-00-3	ug/L	1 : 1 : 1	100	1.30E+00	No	NA	OS - UAA-3/OS-3-54	--	4.60E+00	No	No	</=Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	9.60E-01	No	NA	OS - UAA-3/OS-3-54	--	1.50E+00	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	1.00E+00	No	NA	OS - UAA-3/OS-3-54	--	7.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	1.20E+02	No	NA	OS - UAA-3/OS-3-54	--	NA	--	No	No Dose-Response Value
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	7.20E-01	No	NA	OS - UAA-3/OS-3-54	--	2.00E+00	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	1.10E+01	No	NA	OS - UAA-3/OS-3-54	--	6.00E+02	No	No	</=Screening Level
1,3-Dichlorobenzene	541-73-1	ug/L	1 : 1 : 1	100	2.50E+00	No	NA	OS - UAA-3/OS-3-54	--	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	3.00E+01	No	NA	OS - UAA-3/OS-3-54	--	7.50E+01	No	No	</=Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	1.00E+00	No	NA	OS - UAA-3/OS-3-54	--	2.10E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	3.20E+00	No	NA	OS - UAA-3/OS-3-54	--	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	1.30E+02	No	NA	OS - UAA-3/OS-3-54	--	2.80E+01	Yes	Yes	>Screening Level
Pesticide													
Heptachlor Epoxide	1024-57-3	ug/L	1 : 1 : 1	100	1.10E-02	No	NA	OS - UAA-3/OS-3-54	--	2.00E-01	No	No	</=Screening Level
Herbicide													
2,4,5-TP (Silvex)	93-72-1	ug/L	1 : 1 : 1	100	1.70E-01	No	NA	OS - UAA-3/OS-3-54	--	5.00E+01	No	No	</=Screening Level
2,4-D	94-75-7	ug/L	1 : 1 : 1	100	6.70E-01	No	NA	OS - UAA-3/OS-3-54	--	7.00E+01	No	No	</=Screening Level
2,4-DB	94-82-6	ug/L	1 : 1 : 1	100	8.90E-01	No	NA	OS - UAA-3/OS-3-54	--	2.90E+02	No	No	</=Screening Level
Dichlorprop	120-36-5	ug/L	1 : 1 : 1	100	1.50E+00	No	NA	OS - UAA-3/OS-3-54	--	2.92E+02	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	3.70E+04	No	NA	OS - UAA-3/OS-3-54	--	3.60E+04	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Antimony	7440-36-0	ug/L	1 : 1 : 1	100	5.70E+00	No	NA	OS - UAA-3/OS-3-54	--	6.00E+00	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	1.30E+02	No	NA	OS - UAA-3/OS-3-54	--	5.00E+01	Yes	Yes	>Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	6.70E+02	No	NA	OS - UAA-3/OS-3-54	--	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	6.30E+00	No	NA	OS - UAA-3/OS-3-54	--	4.00E+00	Yes	Yes	>Screening Level
Cadmium	7440-43-9	ug/L	1 : 1 : 1	100	7.60E+00	No	NA	OS - UAA-3/OS-3-54	--	5.00E+00	Yes	Yes	>Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.80E+05	Yes	NA	OS - UAA-3/OS-3-54	--	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	1.60E+02	No	NA	OS - UAA-3/OS-3-54	--	1.00E+02	Yes	Yes	>Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	2.50E+01	No	NA	OS - UAA-3/OS-3-54	--	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	8.30E+01	No	NA	OS - UAA-3/OS-3-54	--	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	1.10E+05	Yes	NA	OS - UAA-3/OS-3-54	--	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	1.60E+02	No	NA	OS - UAA-3/OS-3-54	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	4.90E+04	Yes	NA	OS - UAA-3/OS-3-54	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	4.80E+03	No	NA	OS - UAA-3/OS-3-54	--	1.50E+02	Yes	Yes	>Screening Level
Mercury	7439-97-6	ug/L	1 : 1 : 1	100	1.50E-01	No	NA	OS - UAA-3/OS-3-54	--	2.00E+00	No	No	</=Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.10E+02	No	NA	OS - UAA-3/OS-3-54	--	1.00E+02	Yes	Yes	>Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	2.10E+04	Yes	NA	OS - UAA-3/OS-3-54	--	NA	--	No	EN
Selenium	7782-49-2	ug/L	1 : 1 : 1	100	7.40E+00	No	NA	OS - UAA-3/OS-3-54	--	5.00E+01	No	No	</=Screening Level
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	6.60E+04	Yes	NA	OS - UAA-3/OS-3-54	--	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.70E+02	No	NA	OS - UAA-3/OS-3-54	--	4.90E+01	Yes	Yes	>Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	1.00E+03	No	NA	OS - UAA-3/OS-3-54	--	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-1-60													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	4.35E+00	No	NA	OS - UAA-3/OS-3-64	--	7.00E+02	No	No	</=Screening Level
Acetone	67-64-1	ug/L	1 : 1 : 1	100	1.43E+01	No	NA	OS - UAA-3/OS-3-64	--	7.00E+02	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	1.50E+00	No	7.00E-01	OS - UAA-3/OS-3-64	Yes	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	2.35E+02	No	6.20E+01	OS - UAA-3/OS-3-64	Yes	1.00E+02	Yes	Yes	>Screening Level
Chloroethane	75-00-3	ug/L	1 : 1 : 1	100	8.40E-01	No	NA	OS - UAA-3/OS-3-64	--	4.60E+00	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	8.00E+00	No	NA	OS - UAA-3/OS-3-64	--	6.00E+02	No	No	</=Screening Level
1,3-Dichlorobenzene	541-73-1	ug/L	1 : 1 : 1	100	1.50E+00	No	NA	OS - UAA-3/OS-3-64	--	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	2.05E+01	No	NA	OS - UAA-3/OS-3-64	--	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	2.95E+00	No	NA	OS - UAA-3/OS-3-64	--	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	7.00E+01	No	NA	OS - UAA-3/OS-3-64	--	2.80E+01	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-1-70													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	1.10E+00	No	8.80E-01	OS - UAA-3/OS-3-74	Yes	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.00E+02	No	3.00E+02	OS - UAA-3/OS-3-74	No	1.00E+02	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	4.00E+00	No	NA	OS - UAA-3/OS-3-74	--	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	9.60E+00	No	NA	OS - UAA-3/OS-3-74	--	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	1.60E+00	No	NA	OS - UAA-3/OS-3-74	--	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	1.40E+01	No	NA	OS - UAA-3/OS-3-74	--	2.80E+01	No	No	</=Screening Level

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-1-80													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	2.20E+00	No	NA	OS - UAA-3/OS-3-84	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.30E+02	No	2.60E+03	OS - UAA-3/OS-3-84	No	1.00E+02	Yes	No	</=BKG
Chloroethane	75-00-3	ug/L	1 : 1 : 1	100	6.90E-01	No	NA	OS - UAA-3/OS-3-84	--	4.60E+00	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	6.70E+01	No	NA	OS - UAA-3/OS-3-84	--	NA	--	No	No Dose-Response Value
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	5.60E+00	No	1.00E+01	OS - UAA-3/OS-3-84	No	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	1.20E+01	No	3.40E+02	OS - UAA-3/OS-3-84	No	7.50E+01	No	No	</=Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	1.00E+00	No	4.40E+00	OS - UAA-3/OS-3-84	No	2.10E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	2.40E+00	No	2.80E+01	OS - UAA-3/OS-3-84	No	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	5.50E+01	No	9.40E+02	OS - UAA-3/OS-3-84	No	2.80E+01	Yes	No	</=BKG
Anthracene	120-12-7	ug/L	1 : 1 : 1	100	6.20E-01	No	NA	OS - UAA-3/OS-3-84	--	2.10E+03	No	No	</=Screening Level
Benzo(b)fluoranthene	205-99-2	ug/L	1 : 1 : 1	100	3.70E+00	No	NA	OS - UAA-3/OS-3-84	--	1.80E-01	Yes	Yes	>Screening Level
Benzo(g,h,i)perylene	191-24-2	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-3/OS-3-84	--	2.10E+02	No	No	</=Screening Level
Benzo(k)fluoranthene	207-08-9	ug/L	1 : 1 : 1	100	8.40E-01	No	NA	OS - UAA-3/OS-3-84	--	1.70E-01	Yes	Yes	>Screening Level
Benzyl Butyl Phthalate	85-68-7	ug/L	1 : 1 : 1	100	6.60E-01	No	NA	OS - UAA-3/OS-3-84	--	1.40E+03	No	No	</=Screening Level
Chrysene	218-01-9	ug/L	1 : 1 : 1	100	5.80E-01	No	NA	OS - UAA-3/OS-3-84	--	1.50E+00	No	No	</=Screening Level
Dibenzo(a,h)anthracene	53-70-3	ug/L	1 : 1 : 1	100	2.80E+00	No	NA	OS - UAA-3/OS-3-84	--	3.00E-01	Yes	Yes	>Screening Level
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	1 : 1 : 1	100	8.80E-01	No	NA	OS - UAA-3/OS-3-84	--	4.30E-01	Yes	Yes	>Screening Level
N-Nitroso-di-n-propylamine	621-64-7	ug/L	1 : 1 : 1	100	1.50E+00	No	NA	OS - UAA-3/OS-3-84	--	1.80E+00	No	No	</=Screening Level
Pesticide													
beta-BHC	319-85-7	ug/L	1 : 1 : 1	100	1.70E-01	No	NA	OS - UAA-3/OS-3-84	--	2.00E-01	No	No	</=Screening Level
gamma-BHC (Lindane)	58-89-9	ug/L	1 : 1 : 1	100	2.60E-02	No	NA	OS - UAA-3/OS-3-84	--	2.00E-01	No	No	</=Screening Level
Heptachlor	76-44-8	ug/L	1 : 1 : 1	100	1.60E-02	No	NA	OS - UAA-3/OS-3-84	--	4.00E-01	No	No	</=Screening Level
Herbicide													
2,4,5-T	93-76-5	ug/L	1 : 1 : 1	100	1.90E-01	No	NA	OS - UAA-3/OS-3-84	--	3.60E+02	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	5.80E+03	No	NA	OS - UAA-3/OS-3-84	--	3.60E+04	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	1.00E+01	No	NA	OS - UAA-3/OS-3-84	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	6.30E+02	No	NA	OS - UAA-3/OS-3-84	--	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	2.90E-01	No	NA	OS - UAA-3/OS-3-84	--	4.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.40E+05	Yes	NA	OS - UAA-3/OS-3-84	--	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	4.80E+01	No	NA	OS - UAA-3/OS-3-84	--	1.00E+02	No	No	</=Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	5.10E+00	No	NA	OS - UAA-3/OS-3-84	--	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	3.50E+01	No	NA	OS - UAA-3/OS-3-84	--	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	4.90E+04	Yes	NA	OS - UAA-3/OS-3-84	--	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	1.10E+01	No	NA	OS - UAA-3/OS-3-84	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	5.00E+04	Yes	NA	OS - UAA-3/OS-3-84	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	3.00E+03	No	NA	OS - UAA-3/OS-3-84	--	1.50E+02	Yes	Yes	>Screening Level
Mercury	7439-97-6	ug/L	1 : 1 : 1	100	2.10E-01	No	NA	OS - UAA-3/OS-3-84	--	2.00E+00	No	No	</=Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	5.70E+01	No	NA	OS - UAA-3/OS-3-84	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.30E+04	Yes	NA	OS - UAA-3/OS-3-84	--	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	4.90E+04	Yes	NA	OS - UAA-3/OS-3-84	--	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.60E+01	No	NA	OS - UAA-3/OS-3-84	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	1.60E+02	No	NA	OS - UAA-3/OS-3-84	--	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-1-90													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	2.90E+00	No	NA	OS - UAA-3/OS-3-94	--	7.00E+02	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	1.40E+00	No	1.10E+02	OS - UAA-3/OS-3-94	No	5.00E+00	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	2.20E+02	No	4.20E+03	OS - UAA-3/OS-3-94	No	1.00E+02	Yes	No	</=BKG
Chloroethane	75-00-3	ug/L	1 : 1 : 1	100	8.40E-01	No	NA	OS - UAA-3/OS-3-94	--	4.60E+00	No	No	</=Screening Level
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	1.20E+01	No	2.00E+03	OS - UAA-3/OS-3-94	No	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	3.70E+00	No	1.90E+01	OS - UAA-3/OS-3-94	No	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	1.10E+02	No	1.60E+03	OS - UAA-3/OS-3-94	No	2.80E+01	Yes	No	</=BKG

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-2-100													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	5.30E-01	No	NA	OS - UAA-3/OS-3-104	--	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	5.40E-01	No	NA	OS - UAA-3/OS-3-104	--	7.00E+01	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	3.20E-01	No	NA	OS - UAA-3/OS-3-104	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.10E+01	No	4.20E+03	OS - UAA-3/OS-3-104	No	1.00E+02	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	2.40E+00	No	5.00E+01	OS - UAA-3/OS-3-104	No	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	5.30E+00	No	4.40E+03	OS - UAA-3/OS-3-104	No	7.50E+01	No	No	</=Screening Level
2,4,6-Trichlorophenol	88-06-2	ug/L	1 : 1 : 1	100	1.10E+00	No	1.56E+01	OS - UAA-3/OS-3-104	No	1.00E+01	No	No	</=Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	4.90E+00	No	1.04E+02	OS - UAA-3/OS-3-104	No	2.10E+01	No	No	</=Screening Level
Dioxin													
2,3,7,8-TCDD-TEQ	1746-01-6	ug/L	1 : 1 : 1	100	4.62E-07	No	NA	OS - UAA-3/OS-3-104	--	3.00E-05	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-2-110													
VOCs													
Benzene	71-43-2	ug/L	1 : 1 : 1	100	2.60E-01	No	8.60E+00	OS - UAA-3/OS-3-114	No	5.00E+00	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	1.70E+00	No	NA	OS - UAA-3/OS-3-114	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	2.65E+00	No	1.14E+03	OS - UAA-3/OS-3-114	No	1.00E+02	No	No	</=Screening Level
Chloroform	67-66-3	ug/L	1 : 1 : 1	100	2.45E-01	No	NA	OS - UAA-3/OS-3-114	--	8.00E+01	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	4.30E-01	No	NA	OS - UAA-3/OS-3-114	--	1.00E+03	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	8.55E-01	No	NA	OS - UAA-3/OS-3-114	--	2.00E+00	No	No	</=Screening Level
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	1.50E+00	No	3.60E+03	OS - UAA-3/OS-3-114	No	7.50E+01	No	No	</=Screening Level
Benzo(g,h,i)perylene	191-24-2	ug/L	1 : 1 : 1	100	6.70E-01	No	NA	OS - UAA-3/OS-3-114	--	2.10E+02	No	No	</=Screening Level

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-2-120													
VOCs													
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	6.90E-01	No	NA	OS - UAA-3/OS-3-116	--	7.00E+01	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	1.90E-01	No	3.60E+00	OS - UAA-3/OS-3-116	No	5.00E+00	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	1.00E+00	No	NA	OS - UAA-3/OS-3-116	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	8.70E+00	No	7.20E+02	OS - UAA-3/OS-3-116	No	1.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	7.70E+00	No	2.80E+01	OS - UAA-3/OS-3-116	No	NA	--	No	</=BKG
Toluene	108-88-3	ug/L	1 : 1 : 1	100	7.50E-01	No	NA	OS - UAA-3/OS-3-116	--	1.00E+03	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	1.10E+00	No	NA	OS - UAA-3/OS-3-116	--	2.00E+00	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	2.30E+00	No	3.20E+01	OS - UAA-3/OS-3-116	No	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	3.90E+00	No	3.00E+03	OS - UAA-3/OS-3-116	No	7.50E+01	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	4.00E+04	No	2.40E+03	OS - UAA-3/OS-3-116	Yes	3.60E+04	Yes	Yes	>Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	3.40E+01	No	NA	OS - UAA-3/OS-3-116	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	1.10E+03	No	3.00E+02	OS - UAA-3/OS-3-116	Yes	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	2.30E+00	No	NA	OS - UAA-3/OS-3-116	--	4.00E+00	No	No	</=Screening Level
Cadmium	7440-43-9	ug/L	1 : 1 : 1	100	7.70E-01	No	4.00E+00	OS - UAA-3/OS-3-116	No	5.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	3.60E+05	Yes	6.80E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	3.00E+02	No	7.60E+01	OS - UAA-3/OS-3-116	Yes	1.00E+02	Yes	Yes	>Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	8.70E+01	No	3.00E+00	OS - UAA-3/OS-3-116	Yes	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	2.30E+02	No	5.00E+01	OS - UAA-3/OS-3-116	Yes	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	1.30E+05	Yes	1.22E+05	OS - UAA-3/OS-3-116	Yes	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	1.60E+02	No	NA	OS - UAA-3/OS-3-116	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	1.10E+05	Yes	2.40E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	6.20E+03	No	2.40E+03	OS - UAA-3/OS-3-116	Yes	1.50E+02	Yes	Yes	>Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.90E+02	No	2.20E+01	OS - UAA-3/OS-3-116	Yes	1.00E+02	Yes	Yes	>Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.70E+04	Yes	2.20E+04	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Selenium	7782-49-2	ug/L	1 : 1 : 1	100	7.70E+00	No	NA	OS - UAA-3/OS-3-116	--	5.00E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	3.40E+04	Yes	1.22E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.40E+02	No	NA	OS - UAA-3/OS-3-116	--	4.90E+01	Yes	Yes	>Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	3.20E+02	No	4.60E+02	OS - UAA-3/OS-3-116	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-2-130													
VOCs													
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	3.60E-01	No	NA	OS - UAA-3/OS-3-116	--	7.00E+01	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	3.50E-01	No	3.60E+00	OS - UAA-3/OS-3-116	No	5.00E+00	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	9.30E+00	No	7.20E+02	OS - UAA-3/OS-3-116	No	1.00E+02	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	8.70E-01	No	NA	OS - UAA-3/OS-3-116	--	2.00E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-2-130B													
VOCs													
Methane	74-82-8	ug/L	1 : 1 : 1	100	1.20E+01	No	2.80E+01	OS - UAA-3/OS-3-116	No	NA	--	No	</=BKG
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	7.60E+02	No	2.40E+03	OS - UAA-3/OS-3-116	No	3.60E+04	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	4.10E+02	No	3.00E+02	OS - UAA-3/OS-3-116	Yes	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.00E+05	Yes	6.80E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	6.30E+00	No	7.60E+01	OS - UAA-3/OS-3-116	No	1.00E+02	No	No	</=Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	1.40E+00	No	3.00E+00	OS - UAA-3/OS-3-116	No	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	6.20E+00	No	5.00E+01	OS - UAA-3/OS-3-116	No	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	1.50E+04	Yes	1.22E+05	OS - UAA-3/OS-3-116	No	5.00E+03	Yes	No	EN
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	5.50E+04	Yes	2.40E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	4.10E+02	No	2.40E+03	OS - UAA-3/OS-3-116	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	5.00E+00	No	2.20E+01	OS - UAA-3/OS-3-116	No	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	8.60E+03	Yes	2.20E+04	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	3.50E+04	Yes	1.22E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	5.10E+00	No	NA	OS - UAA-3/OS-3-116	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	1.20E+01	No	4.60E+02	OS - UAA-3/OS-3-116	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-2-60													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-3/OS-3-64	--	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	4.60E-01	No	2.60E+00	OS - UAA-3/OS-3-64	No	7.00E+01	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.10E+01	No	6.20E+01	OS - UAA-3/OS-3-64	No	1.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	1.07E+01	No	3.40E+02	OS - UAA-3/OS-3-64	No	NA	--	No	</=BKG
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	3.30E+00	No	NA	OS - UAA-3/OS-3-64	--	7.50E+01	No	No	</=Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	4.30E+01	No	NA	OS - UAA-3/OS-3-64	--	2.10E+01	Yes	Yes	>Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	7.80E+00	No	NA	OS - UAA-3/OS-3-64	--	3.50E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	1.70E+00	No	NA	OS - UAA-3/OS-3-64	--	1.40E+02	No	No	</=Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	1.40E+01	No	NA	OS - UAA-3/OS-3-64	--	1.00E+02	No	No	</=Screening Level
Dioxin													
2,3,7,8-TCDD-TEQ	1746-01-6	ug/L	1 : 1 : 1	100	2.00E-08	No	NA	OS - UAA-3/OS-3-64	--	3.00E-05	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	3.70E+04	No	5.00E+02	OS - UAA-3/OS-3-64	Yes	3.60E+04	Yes	Yes	>Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	4.80E+01	No	NA	OS - UAA-3/OS-3-64	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	1.30E+03	No	2.00E+02	OS - UAA-3/OS-3-64	Yes	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	3.00E+00	No	NA	OS - UAA-3/OS-3-64	--	4.00E+00	No	No	</=Screening Level
Cadmium	7440-43-9	ug/L	1 : 1 : 1	100	1.00E+00	No	NA	OS - UAA-3/OS-3-64	--	5.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	4.50E+05	Yes	4.40E+05	OS - UAA-3/OS-3-64	Yes	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	1.30E+02	No	1.64E+01	OS - UAA-3/OS-3-64	Yes	1.00E+02	Yes	Yes	>Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	4.60E+01	No	1.08E+01	OS - UAA-3/OS-3-64	Yes	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	5.50E+01	No	NA	OS - UAA-3/OS-3-64	--	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	1.20E+05	Yes	1.96E+04	OS - UAA-3/OS-3-64	Yes	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	3.20E+01	No	NA	OS - UAA-3/OS-3-64	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	1.20E+05	Yes	1.26E+05	OS - UAA-3/OS-3-64	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	7.40E+03	No	8.20E+03	OS - UAA-3/OS-3-64	No	1.50E+02	Yes	No	</=BKG
Mercury	7439-97-6	ug/L	1 : 1 : 1	100	2.80E-01	No	NA	OS - UAA-3/OS-3-64	--	2.00E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.20E+02	No	2.60E+01	OS - UAA-3/OS-3-64	Yes	1.00E+02	Yes	Yes	>Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	2.00E+04	Yes	1.00E+05	OS - UAA-3/OS-3-64	No	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	8.20E+04	Yes	1.76E+05	OS - UAA-3/OS-3-64	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.20E+02	No	NA	OS - UAA-3/OS-3-64	--	4.90E+01	Yes	Yes	>Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	2.30E+02	No	9.00E+01	OS - UAA-3/OS-3-64	Yes	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-2-70													
VOCs													
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	5.90E-01	No	7.00E+00	OS - UAA-3/OS-3-74	No	7.00E+01	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.30E+01	No	3.00E+02	OS - UAA-3/OS-3-74	No	1.00E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	3.40E-01	No	6.00E-01	OS - UAA-3/OS-3-74	No	1.00E+03	No	No	</=Screening Level
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	4.60E+00	No	NA	OS - UAA-3/OS-3-74	--	7.50E+01	No	No	</=Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	7.80E+00	No	NA	OS - UAA-3/OS-3-74	--	2.10E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-2-80													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	9.20E-01	No	NA	OS - UAA-3/OS-3-84	--	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	3.50E-01	No	NA	OS - UAA-3/OS-3-84	--	7.00E+01	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.60E+01	No	2.60E+03	OS - UAA-3/OS-3-84	No	1.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	3.30E+01	No	NA	OS - UAA-3/OS-3-84	--	NA	--	No	No Dose-Response Value
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	6.80E+00	No	3.40E+02	OS - UAA-3/OS-3-84	No	7.50E+01	No	No	</=Screening Level
2,4,6-Trichlorophenol	88-06-2	ug/L	1 : 1 : 1	100	1.90E+01	No	NA	OS - UAA-3/OS-3-84	--	1.00E+01	Yes	Yes	>Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	4.60E+01	No	4.40E+00	OS - UAA-3/OS-3-84	Yes	2.10E+01	Yes	Yes	>Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	5.00E+00	No	2.80E+01	OS - UAA-3/OS-3-84	No	3.50E+01	No	No	</=Screening Level
Herbicide													
Dichlorprop	120-36-5	ug/L	1 : 1 : 1	100	5.60E-01	No	NA	OS - UAA-3/OS-3-84	--	2.92E+02	No	No	</=Screening Level
MCPA	94-74-6	ug/L	1 : 1 : 1	100	2.40E+01	No	NA	OS - UAA-3/OS-3-84	--	1.80E+01	Yes	Yes	>Screening Level
PCBs													
Total PCBs	1336-36-3	ug/L	1 : 1 : 1	100	3.13E-01	No	NA	OS - UAA-3/OS-3-84	--	5.00E-01	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	8.60E+02	No	NA	OS - UAA-3/OS-3-84	--	3.60E+04	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	3.10E+02	No	NA	OS - UAA-3/OS-3-84	--	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.10E+05	Yes	NA	OS - UAA-3/OS-3-84	--	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	5.90E+01	No	NA	OS - UAA-3/OS-3-84	--	1.00E+02	No	No	</=Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	1.10E+00	No	NA	OS - UAA-3/OS-3-84	--	1.00E+03	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	4.30E+04	Yes	NA	OS - UAA-3/OS-3-84	--	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	2.60E+00	No	NA	OS - UAA-3/OS-3-84	--	7.50E+00	No	No	</=Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	5.10E+04	Yes	NA	OS - UAA-3/OS-3-84	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	3.30E+03	No	NA	OS - UAA-3/OS-3-84	--	1.50E+02	Yes	Yes	>Screening Level
Mercury	7439-97-6	ug/L	1 : 1 : 1	100	4.80E-01	No	NA	OS - UAA-3/OS-3-84	--	2.00E+00	No	No	</=Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	3.70E+01	No	NA	OS - UAA-3/OS-3-84	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.10E+04	Yes	NA	OS - UAA-3/OS-3-84	--	NA	--	No	EN

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	5.10E+04	Yes	NA	OS - UAA-3/OS-3-84	--	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	2.60E+00	No	NA	OS - UAA-3/OS-3-84	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	6.10E+01	No	NA	OS - UAA-3/OS-3-84	--	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-2-90													
VOCs													
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	6.50E-01	No	NA	OS - UAA-3/OS-3-94	--	7.00E+01	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	7.30E-01	No	NA	OS - UAA-3/OS-3-94	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.50E+01	No	4.20E+03	OS - UAA-3/OS-3-94	No	1.00E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	5.40E-01	No	NA	OS - UAA-3/OS-3-94	--	1.00E+03	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	2.60E+00	No	3.40E+01	OS - UAA-3/OS-3-94	No	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	6.20E+00	No	2.00E+03	OS - UAA-3/OS-3-94	No	7.50E+01	No	No	</=Screening Level
2,4,6-Trichlorophenol	88-06-2	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-3/OS-3-94	--	1.00E+01	No	No	</=Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	5.60E+00	No	1.88E+01	OS - UAA-3/OS-3-94	No	2.10E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	3.90E+00	No	1.60E+03	OS - UAA-3/OS-3-94	No	2.80E+01	No	No	</=Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	5.20E+00	No	NA	OS - UAA-3/OS-3-94	--	1.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-3-100													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	2.50E+00	No	4.20E+03	OS - UAA-3/OS-3-104	No	1.00E+02	No	No	</=Screening Level
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	1.40E+00	No	4.40E+03	OS - UAA-3/OS-3-104	No	7.50E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-3-110													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.60E+00	No	1.14E+03	OS - UAA-3/OS-3-114	No	1.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-3-120													
VOCs													
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	3.40E-01	No	NA	OS - UAA-3/OS-3-116	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	2.20E+00	No	7.20E+02	OS - UAA-3/OS-3-116	No	1.00E+02	No	No	</=Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	3.00E-01	No	NA	OS - UAA-3/OS-3-116	--	1.50E+00	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	6.30E+01	No	2.80E+01	OS - UAA-3/OS-3-116	Yes	NA	--	No	No Dose-Response Value
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	1.50E+00	No	3.00E+03	OS - UAA-3/OS-3-116	No	7.50E+01	No	No	</=Screening Level
Herbicide													
2,4-D	94-75-7	ug/L	1 : 1 : 1	100	1.00E+00	No	NA	OS - UAA-3/OS-3-116	--	7.00E+01	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	8.30E+03	No	2.40E+03	OS - UAA-3/OS-3-116	Yes	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	7.30E+00	No	NA	OS - UAA-3/OS-3-116	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	4.10E+02	No	3.00E+02	OS - UAA-3/OS-3-116	Yes	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	4.10E-01	No	NA	OS - UAA-3/OS-3-116	--	4.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.80E+05	Yes	6.80E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	2.20E+02	No	7.60E+01	OS - UAA-3/OS-3-116	Yes	1.00E+02	Yes	Yes	>Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	7.00E+00	No	3.00E+00	OS - UAA-3/OS-3-116	Yes	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	1.00E+02	No	5.00E+01	OS - UAA-3/OS-3-116	Yes	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	6.40E+04	Yes	1.22E+05	OS - UAA-3/OS-3-116	No	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	9.30E+00	No	NA	OS - UAA-3/OS-3-116	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	4.60E+04	Yes	2.40E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	9.40E+02	No	2.40E+03	OS - UAA-3/OS-3-116	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	4.80E+01	No	2.20E+01	OS - UAA-3/OS-3-116	Yes	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.10E+04	Yes	2.20E+04	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	2.20E+04	Yes	1.22E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	2.10E+01	No	NA	OS - UAA-3/OS-3-116	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	3.50E+02	No	4.60E+02	OS - UAA-3/OS-3-116	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-3-50													
VOCs													
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	3.80E-01	No	2.80E+00	OS - UAA-3/OS-3-54	No	7.00E+01	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	3.60E-01	No	NA	OS - UAA-3/OS-3-54	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.70E+02	No	3.20E+02	OS - UAA-3/OS-3-54	No	1.00E+02	Yes	No	</=BKG
Methane	74-82-8	ug/L	1 : 1 : 1	100	6.70E+02	No	NA	OS - UAA-3/OS-3-54	--	NA	--	No	No Dose-Response Value
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	2.70E+00	No	NA	OS - UAA-3/OS-3-54	--	7.50E+01	No	No	</=Screening Level
2,4,6-Trichlorophenol	88-06-2	ug/L	1 : 1 : 1	100	1.70E+00	No	NA	OS - UAA-3/OS-3-54	--	1.00E+01	No	No	</=Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	6.80E+00	No	NA	OS - UAA-3/OS-3-54	--	2.10E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	4.10E+00	No	NA	OS - UAA-3/OS-3-54	--	3.50E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	2.50E+00	No	NA	OS - UAA-3/OS-3-54	--	1.40E+02	No	No	</=Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	1.00E+01	No	NA	OS - UAA-3/OS-3-54	--	1.00E+02	No	No	</=Screening Level
Pesticide													
alpha-BHC	319-84-6	ug/L	1 : 1 : 1	100	5.40E-03	No	NA	OS - UAA-3/OS-3-54	--	1.10E-01	No	No	</=Screening Level
beta-BHC	319-85-7	ug/L	1 : 1 : 1	100	6.00E-02	No	NA	OS - UAA-3/OS-3-54	--	2.00E-01	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	1.30E+04	No	NA	OS - UAA-3/OS-3-54	--	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	5.40E+01	No	NA	OS - UAA-3/OS-3-54	--	5.00E+01	Yes	Yes	>Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	6.90E+02	No	NA	OS - UAA-3/OS-3-54	--	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	1.40E+00	No	NA	OS - UAA-3/OS-3-54	--	4.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.40E+05	Yes	NA	OS - UAA-3/OS-3-54	--	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	9.80E+01	No	NA	OS - UAA-3/OS-3-54	--	1.00E+02	No	No	</=Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	2.10E+01	No	NA	OS - UAA-3/OS-3-54	--	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	2.10E+01	No	NA	OS - UAA-3/OS-3-54	--	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	8.30E+04	Yes	NA	OS - UAA-3/OS-3-54	--	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	2.80E+01	No	NA	OS - UAA-3/OS-3-54	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	5.60E+04	Yes	NA	OS - UAA-3/OS-3-54	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	3.80E+03	No	NA	OS - UAA-3/OS-3-54	--	1.50E+02	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Mercury	7439-97-6	ug/L	1 : 1 : 1	100	8.50E-02	No	NA	OS - UAA-3/OS-3-54	--	2.00E+00	No	No	</=Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	8.70E+01	No	NA	OS - UAA-3/OS-3-54	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.50E+04	Yes	NA	OS - UAA-3/OS-3-54	--	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	1.30E+05	Yes	NA	OS - UAA-3/OS-3-54	--	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	4.60E+01	No	NA	OS - UAA-3/OS-3-54	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	1.50E+02	No	NA	OS - UAA-3/OS-3-54	--	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-3-60													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	5.10E+01	No	6.20E+01	OS - UAA-3/OS-3-64	No	1.00E+02	No	No	</=Screening Level
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	2.60E+00	No	NA	OS - UAA-3/OS-3-64	--	7.50E+01	No	No	</=Screening Level
2,4,6-Trichlorophenol	88-06-2	ug/L	1 : 1 : 1	100	6.00E+00	No	NA	OS - UAA-3/OS-3-64	--	1.00E+01	No	No	</=Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	1.90E+01	No	NA	OS - UAA-3/OS-3-64	--	2.10E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	3.60E+00	No	NA	OS - UAA-3/OS-3-64	--	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	5.80E+00	No	NA	OS - UAA-3/OS-3-64	--	2.80E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
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Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-3-70													
VOCs													
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	4.40E-01	No	NA	OS - UAA-3/OS-3-74	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	8.40E+00	No	3.00E+02	OS - UAA-3/OS-3-74	No	1.00E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	3.60E-01	No	6.00E-01	OS - UAA-3/OS-3-74	No	1.00E+03	No	No	</=Screening Level
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	3.60E+00	No	NA	OS - UAA-3/OS-3-74	--	7.50E+01	No	No	</=Screening Level
2,4,6-Trichlorophenol	88-06-2	ug/L	1 : 1 : 1	100	1.30E+00	No	NA	OS - UAA-3/OS-3-74	--	1.00E+01	No	No	</=Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	3.80E+00	No	NA	OS - UAA-3/OS-3-74	--	2.10E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	4.10E+00	No	NA	OS - UAA-3/OS-3-74	--	2.80E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-3-80													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.25E+01	No	2.60E+03	OS - UAA-3/OS-3-84	No	1.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	3.35E+01	No	NA	OS - UAA-3/OS-3-84	--	NA	--	No	No Dose-Response Value
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	1.20E+00	No	1.00E+01	OS - UAA-3/OS-3-84	No	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	3.35E+00	No	3.40E+02	OS - UAA-3/OS-3-84	No	7.50E+01	No	No	</=Screening Level
2,4,6-Trichlorophenol	88-06-2	ug/L	1 : 1 : 1	100	1.75E+00	No	NA	OS - UAA-3/OS-3-84	--	1.00E+01	No	No	</=Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	5.30E+00	No	4.40E+00	OS - UAA-3/OS-3-84	Yes	2.10E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	5.75E+00	No	9.40E+02	OS - UAA-3/OS-3-84	No	2.80E+01	No	No	</=Screening Level
Benzo(g,h,i)perylene	191-24-2	ug/L	1 : 1 : 1	100	6.80E-01	No	NA	OS - UAA-3/OS-3-84	--	2.10E+02	No	No	</=Screening Level
Pesticide													
Endrin Ketone	53494-70-5	ug/L	1 : 1 : 1	100	1.95E-02	No	NA	OS - UAA-3/OS-3-84	--	2.00E+00	No	No	</=Screening Level
Herbicide													
2,4-D	94-75-7	ug/L	1 : 1 : 1	100	2.20E+00	No	NA	OS - UAA-3/OS-3-84	--	7.00E+01	No	No	</=Screening Level
MCPP	93-65-2	ug/L	1 : 1 : 1	100	1.10E+01	No	NA	OS - UAA-3/OS-3-84	--	3.60E+01	No	No	</=Screening Level
Pentachlorophenol	87-86-5	ug/L	1 : 1 : 1	100	1.80E-01	No	NA	OS - UAA-3/OS-3-84	--	1.00E+00	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	4.60E+03	No	NA	OS - UAA-3/OS-3-84	--	3.60E+04	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	4.75E+02	No	NA	OS - UAA-3/OS-3-84	--	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	2.50E-01	No	NA	OS - UAA-3/OS-3-84	--	4.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.60E+05	Yes	NA	OS - UAA-3/OS-3-84	--	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	3.00E+01	No	NA	OS - UAA-3/OS-3-84	--	1.00E+02	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	1.10E+01	No	NA	OS - UAA-3/OS-3-84	--	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	3.10E+04	Yes	NA	OS - UAA-3/OS-3-84	--	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	2.65E+00	No	NA	OS - UAA-3/OS-3-84	--	7.50E+00	No	No	</=Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	4.50E+04	Yes	NA	OS - UAA-3/OS-3-84	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	1.10E+03	No	NA	OS - UAA-3/OS-3-84	--	1.50E+02	Yes	Yes	>Screening Level
Mercury	7439-97-6	ug/L	1 : 1 : 1	100	3.15E-01	No	NA	OS - UAA-3/OS-3-84	--	2.00E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.80E+01	No	NA	OS - UAA-3/OS-3-84	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	9.80E+03	Yes	NA	OS - UAA-3/OS-3-84	--	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	2.10E+04	Yes	NA	OS - UAA-3/OS-3-84	--	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.10E+01	No	NA	OS - UAA-3/OS-3-84	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	6.30E+01	No	NA	OS - UAA-3/OS-3-84	--	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-3-90													
VOCs													
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	3.00E-01	No	NA	OS - UAA-3/OS-3-94	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	2.30E+00	No	4.20E+03	OS - UAA-3/OS-3-94	No	1.00E+02	No	No	</=Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	3.10E-01	No	NA	OS - UAA-3/OS-3-94	--	1.50E+00	No	No	</=Screening Level
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	1.70E+00	No	2.00E+03	OS - UAA-3/OS-3-94	No	7.50E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-4-100													
VOCs													
Benzene	71-43-2	ug/L	1 : 1 : 1	100	1.80E-01	No	4.80E+01	OS - UAA-3/OS-3-104	No	5.00E+00	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	2.35E+00	No	NA	OS - UAA-3/OS-3-104	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	6.95E+00	No	4.20E+03	OS - UAA-3/OS-3-104	No	1.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-4-110													
VOCs													
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	3.30E-01	No	NA	OS - UAA-3/OS-3-114	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.30E+00	No	1.14E+03	OS - UAA-3/OS-3-114	No	1.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	2.90E+01	No	NA	OS - UAA-3/OS-3-114	--	NA	--	No	No Dose-Response Value
Pesticide													
beta-BHC	319-85-7	ug/L	1 : 1 : 1	100	9.30E-03	No	NA	OS - UAA-3/OS-3-114	--	2.00E-01	No	No	</=Screening Level
Heptachlor	76-44-8	ug/L	1 : 1 : 1	100	4.30E-03	No	NA	OS - UAA-3/OS-3-114	--	4.00E-01	No	No	</=Screening Level
Herbicide													
Pentachlorophenol	87-86-5	ug/L	1 : 1 : 1	100	4.90E-01	No	NA	OS - UAA-3/OS-3-114	--	1.00E+00	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	9.30E+04	No	NA	OS - UAA-3/OS-3-114	--	3.60E+04	Yes	Yes	>Screening Level
Antimony	7440-36-0	ug/L	1 : 1 : 1	100	6.10E+00	No	NA	OS - UAA-3/OS-3-114	--	6.00E+00	Yes	Yes	>Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	4.70E+01	No	NA	OS - UAA-3/OS-3-114	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	1.30E+03	No	NA	OS - UAA-3/OS-3-114	--	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	4.80E+00	No	NA	OS - UAA-3/OS-3-114	--	4.00E+00	Yes	Yes	>Screening Level
Cadmium	7440-43-9	ug/L	1 : 1 : 1	100	1.30E+00	No	NA	OS - UAA-3/OS-3-114	--	5.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.60E+05	Yes	NA	OS - UAA-3/OS-3-114	--	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	2.80E+02	No	NA	OS - UAA-3/OS-3-114	--	1.00E+02	Yes	Yes	>Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	8.70E+01	No	NA	OS - UAA-3/OS-3-114	--	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	1.50E+02	No	NA	OS - UAA-3/OS-3-114	--	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	1.90E+05	Yes	NA	OS - UAA-3/OS-3-114	--	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	1.10E+02	No	NA	OS - UAA-3/OS-3-114	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	8.50E+04	Yes	NA	OS - UAA-3/OS-3-114	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	2.40E+04	No	NA	OS - UAA-3/OS-3-114	--	1.50E+02	Yes	Yes	>Screening Level
Mercury	7439-97-6	ug/L	1 : 1 : 1	100	8.40E-02	No	NA	OS - UAA-3/OS-3-114	--	2.00E+00	No	No	</=Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	2.00E+02	No	NA	OS - UAA-3/OS-3-114	--	1.00E+02	Yes	Yes	>Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	2.60E+04	Yes	NA	OS - UAA-3/OS-3-114	--	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	2.00E+04	Yes	NA	OS - UAA-3/OS-3-114	--	NA	--	No	EN

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	3.00E+02	No	NA	OS - UAA-3/OS-3-114	--	4.90E+01	Yes	Yes	>Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	3.70E+02	No	NA	OS - UAA-3/OS-3-114	--	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-4-50													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	5.90E+01	No	3.20E+02	OS - UAA-3/OS-3-54	No	1.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	2.50E+02	No	NA	OS - UAA-3/OS-3-54	--	NA	--	No	No Dose-Response Value
Toluene	108-88-3	ug/L	1 : 1 : 1	100	3.60E-01	No	NA	OS - UAA-3/OS-3-54	--	1.00E+03	No	No	</=Screening Level
SVOCs													
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	7.60E+00	No	NA	OS - UAA-3/OS-3-54	--	3.50E+01	No	No	</=Screening Level
bis(2-Chloroethyl)ether	111-44-4	ug/L	1 : 1 : 1	100	3.80E+00	No	NA	OS - UAA-3/OS-3-54	--	1.00E+01	No	No	</=Screening Level
Pesticide													
beta-BHC	319-85-7	ug/L	1 : 1 : 1	100	1.60E-01	No	NA	OS - UAA-3/OS-3-54	--	2.00E-01	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	8.50E+03	No	NA	OS - UAA-3/OS-3-54	--	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	5.00E+01	No	NA	OS - UAA-3/OS-3-54	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	1.10E+03	No	NA	OS - UAA-3/OS-3-54	--	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	5.30E-01	No	NA	OS - UAA-3/OS-3-54	--	4.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.70E+05	Yes	NA	OS - UAA-3/OS-3-54	--	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	1.30E+02	No	NA	OS - UAA-3/OS-3-54	--	1.00E+02	Yes	Yes	>Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	1.10E+01	No	NA	OS - UAA-3/OS-3-54	--	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	1.50E+01	No	NA	OS - UAA-3/OS-3-54	--	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	8.10E+04	Yes	NA	OS - UAA-3/OS-3-54	--	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	1.20E+01	No	NA	OS - UAA-3/OS-3-54	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	4.80E+04	Yes	NA	OS - UAA-3/OS-3-54	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	1.60E+03	No	NA	OS - UAA-3/OS-3-54	--	1.50E+02	Yes	Yes	>Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	6.90E+01	No	NA	OS - UAA-3/OS-3-54	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	2.10E+04	Yes	NA	OS - UAA-3/OS-3-54	--	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	1.30E+05	Yes	NA	OS - UAA-3/OS-3-54	--	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	2.50E+01	No	NA	OS - UAA-3/OS-3-54	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	8.80E+01	No	NA	OS - UAA-3/OS-3-54	--	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-4-60													
VOCs													
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	6.50E-01	No	7.00E-01	OS - UAA-3/OS-3-64	No	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	9.80E+00	No	6.20E+01	OS - UAA-3/OS-3-64	No	1.00E+02	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	8.20E-01	No	NA	OS - UAA-3/OS-3-64	--	7.00E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	3.40E-01	No	NA	OS - UAA-3/OS-3-64	--	1.00E+03	No	No	</=Screening Level
SVOCs													
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	2.20E+00	No	NA	OS - UAA-3/OS-3-64	--	2.10E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-4-70													
VOCs													
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	3.20E-01	No	NA	OS - UAA-3/OS-3-74	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	5.60E+00	No	3.00E+02	OS - UAA-3/OS-3-74	No	1.00E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	3.80E-01	No	6.00E-01	OS - UAA-3/OS-3-74	No	1.00E+03	No	No	</=Screening Level
SVOCs													
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	2.00E+00	No	NA	OS - UAA-3/OS-3-74	--	2.10E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-4-80													
VOCs													
Benzene	71-43-2	ug/L	1 : 1 : 1	100	3.80E-01	No	1.26E+02	OS - UAA-3/OS-3-84	No	5.00E+00	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	4.50E+01	No	2.60E+03	OS - UAA-3/OS-3-84	No	1.00E+02	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	9.00E-01	No	NA	OS - UAA-3/OS-3-84	--	7.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	6.90E+02	No	NA	OS - UAA-3/OS-3-84	--	NA	--	No	No Dose-Response Value
Toluene	108-88-3	ug/L	1 : 1 : 1	100	3.20E-01	No	NA	OS - UAA-3/OS-3-84	--	1.00E+03	No	No	</=Screening Level
SVOCs													
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	2.10E+00	No	4.40E+00	OS - UAA-3/OS-3-84	No	2.10E+01	No	No	</=Screening Level
bis(2-Ethylhexyl)phthalate	117-81-7	ug/L	1 : 1 : 1	100	8.70E-01	No	NA	OS - UAA-3/OS-3-84	--	6.00E+00	No	No	</=Screening Level
Pesticide													
beta-BHC	319-85-7	ug/L	1 : 1 : 1	100	2.70E-02	No	NA	OS - UAA-3/OS-3-84	--	2.00E-01	No	No	</=Screening Level
Heptachlor Epoxide	1024-57-3	ug/L	1 : 1 : 1	100	5.60E-03	No	NA	OS - UAA-3/OS-3-84	--	2.00E-01	No	No	</=Screening Level
Herbicide													
2,4-D	94-75-7	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-3/OS-3-84	--	7.00E+01	No	No	</=Screening Level
Pentachlorophenol	87-86-5	ug/L	1 : 1 : 1	100	4.10E-01	No	NA	OS - UAA-3/OS-3-84	--	1.00E+00	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	5.30E+03	No	NA	OS - UAA-3/OS-3-84	--	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	1.50E+01	No	NA	OS - UAA-3/OS-3-84	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	8.20E+02	No	NA	OS - UAA-3/OS-3-84	--	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	3.60E-01	No	NA	OS - UAA-3/OS-3-84	--	4.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.70E+05	Yes	NA	OS - UAA-3/OS-3-84	--	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	5.50E+01	No	NA	OS - UAA-3/OS-3-84	--	1.00E+02	No	No	</=Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	6.20E+00	No	NA	OS - UAA-3/OS-3-84	--	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	1.80E+01	No	NA	OS - UAA-3/OS-3-84	--	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	3.90E+04	Yes	NA	OS - UAA-3/OS-3-84	--	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	9.90E+00	No	NA	OS - UAA-3/OS-3-84	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	4.10E+04	Yes	NA	OS - UAA-3/OS-3-84	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	1.40E+03	No	NA	OS - UAA-3/OS-3-84	--	1.50E+02	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Mercury	7439-97-6	ug/L	1 : 1 : 1	100	1.80E-01	No	NA	OS - UAA-3/OS-3-84	--	2.00E+00	No	No	</=Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	3.90E+01	No	NA	OS - UAA-3/OS-3-84	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	9.40E+03	Yes	NA	OS - UAA-3/OS-3-84	--	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	3.90E+04	Yes	NA	OS - UAA-3/OS-3-84	--	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.60E+01	No	NA	OS - UAA-3/OS-3-84	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	1.20E+02	No	NA	OS - UAA-3/OS-3-84	--	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-4-90													
VOCs													
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	1.80E+00	No	NA	OS - UAA-3/OS-3-94	--	1.90E+03	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	5.20E+01	No	4.20E+03	OS - UAA-3/OS-3-94	No	1.00E+02	No	No	</=Screening Level
SVOCs													
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	2.40E+00	No	1.88E+01	OS - UAA-3/OS-3-94	No	2.10E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	1.80E+00	No	1.90E+01	OS - UAA-3/OS-3-94	No	3.50E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-5-106													
VOCs													
Methane	74-82-8	ug/L	1 : 1 : 1	100	9.00E+02	No	3.40E+02	OS - UAA-3/OS-3-104	Yes	NA	--	No	No Dose-Response Value
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	1.10E+03	No	6.20E+03	OS - UAA-3/OS-3-104	No	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	3.30E+00	No	NA	OS - UAA-3/OS-3-104	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	6.00E+02	No	2.00E+03	OS - UAA-3/OS-3-104	No	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	2.20E-01	No	NA	OS - UAA-3/OS-3-104	--	4.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.30E+05	Yes	5.20E+05	OS - UAA-3/OS-3-104	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	2.30E+01	No	1.48E+02	OS - UAA-3/OS-3-104	No	1.00E+02	No	No	</=Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	1.40E+00	No	6.60E+00	OS - UAA-3/OS-3-104	No	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	8.40E+00	No	1.10E+02	OS - UAA-3/OS-3-104	No	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	3.10E+04	Yes	5.00E+04	OS - UAA-3/OS-3-104	No	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	3.10E+00	No	6.20E+00	OS - UAA-3/OS-3-104	No	7.50E+00	No	No	</=Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	3.80E+04	Yes	1.48E+05	OS - UAA-3/OS-3-104	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	2.20E+03	No	2.20E+03	OS - UAA-3/OS-3-104	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.10E+01	No	5.40E+01	OS - UAA-3/OS-3-104	No	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	9.50E+03	Yes	2.40E+04	OS - UAA-3/OS-3-104	No	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	1.70E+04	Yes	1.60E+05	OS - UAA-3/OS-3-104	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	6.60E+00	No	NA	OS - UAA-3/OS-3-104	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	8.30E+00	No	7.20E+02	OS - UAA-3/OS-3-104	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-5-45													
VOCs													
Benzene	71-43-2	ug/L	1 : 1 : 1	100	1.50E+01	No	7.20E+00	OS - UAA-3/OS-3-44	Yes	5.00E+00	Yes	Yes	>Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	4.60E+02	No	3.20E+02	OS - UAA-3/OS-3-44	Yes	1.00E+02	Yes	Yes	>Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	7.00E+02	No	NA	OS - UAA-3/OS-3-44	--	NA	--	No	No Dose-Response Value
Toluene	108-88-3	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-3/OS-3-44	--	1.00E+03	No	No	</=Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	6.80E+00	No	NA	OS - UAA-3/OS-3-44	--	1.00E+04	No	No	</=Screening Level
SVOCs													
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	1.10E+01	No	NA	OS - UAA-3/OS-3-44	--	3.50E+01	No	No	</=Screening Level
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	1 : 1 : 1	100	4.70E+00	No	NA	OS - UAA-3/OS-3-44	--	3.50E+02	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	9.10E+01	No	NA	OS - UAA-3/OS-3-44	--	2.80E+01	Yes	Yes	>Screening Level
bis(2-Chloroethyl)ether	111-44-4	ug/L	1 : 1 : 1	100	2.90E+00	No	NA	OS - UAA-3/OS-3-44	--	1.00E+01	No	No	</=Screening Level
Diethyl Phthalate	84-66-2	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-3/OS-3-44	--	5.60E+03	No	No	</=Screening Level
N-Nitrosodiphenylamine	86-30-6	ug/L	1 : 1 : 1	100	1.50E+00	No	NA	OS - UAA-3/OS-3-44	--	3.20E+00	No	No	</=Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	1.60E+00	No	NA	OS - UAA-3/OS-3-44	--	1.00E+02	No	No	</=Screening Level
Pesticide													
Aldrin	309-00-2	ug/L	1 : 1 : 1	100	6.80E-03	No	NA	OS - UAA-3/OS-3-44	--	1.40E+01	No	No	</=Screening Level
alpha-BHC	319-84-6	ug/L	1 : 1 : 1	100	1.20E-02	No	NA	OS - UAA-3/OS-3-44	--	1.10E-01	No	No	</=Screening Level
beta-BHC	319-85-7	ug/L	1 : 1 : 1	100	9.60E-02	No	NA	OS - UAA-3/OS-3-44	--	2.00E-01	No	No	</=Screening Level
Herbicide													
MCPA	94-74-6	ug/L	1 : 1 : 1	100	2.70E+01	No	NA	OS - UAA-3/OS-3-44	--	1.80E+01	Yes	Yes	>Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	7.10E+03	No	NA	OS - UAA-3/OS-3-44	--	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	7.60E+01	No	NA	OS - UAA-3/OS-3-44	--	5.00E+01	Yes	Yes	>Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	9.00E+02	No	NA	OS - UAA-3/OS-3-44	--	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	3.80E-01	No	NA	OS - UAA-3/OS-3-44	--	4.00E+00	No	No	</=Screening Level
Cadmium	7440-43-9	ug/L	1 : 1 : 1	100	1.60E+00	No	NA	OS - UAA-3/OS-3-44	--	5.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.80E+05	Yes	NA	OS - UAA-3/OS-3-44	--	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	5.80E+01	No	NA	OS - UAA-3/OS-3-44	--	1.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	9.90E+00	No	NA	OS - UAA-3/OS-3-44	--	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	2.40E+01	No	NA	OS - UAA-3/OS-3-44	--	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	7.30E+04	Yes	NA	OS - UAA-3/OS-3-44	--	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	3.70E+01	No	NA	OS - UAA-3/OS-3-44	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	4.40E+04	Yes	NA	OS - UAA-3/OS-3-44	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	1.40E+03	No	NA	OS - UAA-3/OS-3-44	--	1.50E+02	Yes	Yes	>Screening Level
Mercury	7439-97-6	ug/L	1 : 1 : 1	100	1.90E-01	No	NA	OS - UAA-3/OS-3-44	--	2.00E+00	No	No	</=Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	4.90E+01	No	NA	OS - UAA-3/OS-3-44	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	2.60E+04	Yes	NA	OS - UAA-3/OS-3-44	--	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	8.00E+04	Yes	NA	OS - UAA-3/OS-3-44	--	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.80E+01	No	NA	OS - UAA-3/OS-3-44	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	1.00E+03	No	NA	OS - UAA-3/OS-3-44	--	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-5-55													
VOCs													
Acetone	67-64-1	ug/L	1 : 1 : 1	100	1.40E+01	No	NA	OS - UAA-3/OS-3-54	--	7.00E+02	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	1.01E+00	No	2.40E+00	OS - UAA-3/OS-3-54	No	5.00E+00	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	7.45E-01	No	NA	OS - UAA-3/OS-3-54	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	2.40E+02	No	3.20E+02	OS - UAA-3/OS-3-54	No	1.00E+02	Yes	No	</=BKG
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	1.65E+00	No	NA	OS - UAA-3/OS-3-54	--	1.00E+04	No	No	</=Screening Level
SVOCs													
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	4.55E+00	No	NA	OS - UAA-3/OS-3-54	--	3.50E+01	No	No	</=Screening Level
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	1 : 1 : 1	100	1.60E+00	No	NA	OS - UAA-3/OS-3-54	--	3.50E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-5-65													
VOCs													
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	1 : 1 : 1	100	8.60E-01	No	NA	OS - UAA-3/OS-3-64	--	1.60E+02	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	2.60E+01	No	2.80E-01	OS - UAA-3/OS-3-64	Yes	5.00E+00	Yes	Yes	>Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	7.50E-01	No	7.00E-01	OS - UAA-3/OS-3-64	Yes	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.80E+01	No	6.20E+01	OS - UAA-3/OS-3-64	No	1.00E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	2.80E+00	No	NA	OS - UAA-3/OS-3-64	--	1.00E+03	No	No	</=Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	1.50E+01	No	NA	OS - UAA-3/OS-3-64	--	1.00E+04	No	No	</=Screening Level
SVOCs													
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	1 : 1 : 1	100	1.20E+01	No	NA	OS - UAA-3/OS-3-64	--	3.50E+02	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	5.00E+02	No	NA	OS - UAA-3/OS-3-64	--	2.80E+01	Yes	Yes	>Screening Level
Diethyl Phthalate	84-66-2	ug/L	1 : 1 : 1	100	2.40E+00	No	NA	OS - UAA-3/OS-3-64	--	5.60E+03	No	No	</=Screening Level
N-Nitrosodiphenylamine	86-30-6	ug/L	1 : 1 : 1	100	3.30E+00	No	NA	OS - UAA-3/OS-3-64	--	3.20E+00	Yes	Yes	>Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	1.60E+00	No	NA	OS - UAA-3/OS-3-64	--	1.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-5-75													
VOCs													
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	1 : 1 : 1	100	1.37E+00	No	NA	OS - UAA-3/OS-3-74	--	1.60E+02	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	2.45E+00	No	1.48E+01	OS - UAA-3/OS-3-74	No	5.00E+00	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	6.10E-01	No	NA	OS - UAA-3/OS-3-74	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	8.10E+00	No	3.00E+02	OS - UAA-3/OS-3-74	No	1.00E+02	No	No	</=Screening Level
Methyl N-Butyl Ketone	591-78-6	ug/L	1 : 1 : 1	100	1.60E+00	No	NA	OS - UAA-3/OS-3-74	--	1.60E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	1.15E+00	No	6.00E-01	OS - UAA-3/OS-3-74	Yes	1.00E+03	No	No	</=Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	2.60E+00	No	NA	OS - UAA-3/OS-3-74	--	1.00E+04	No	No	</=Screening Level
SVOCs													
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	1 : 1 : 1	100	9.50E+00	No	NA	OS - UAA-3/OS-3-74	--	3.50E+02	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	1.40E+02	No	NA	OS - UAA-3/OS-3-74	--	2.80E+01	Yes	Yes	>Screening Level
N-Nitrosodiphenylamine	86-30-6	ug/L	1 : 1 : 1	100	1.10E+00	No	NA	OS - UAA-3/OS-3-74	--	3.20E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-5-85													
VOCs													
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	1 : 1 : 1	100	3.70E-01	No	NA	OS - UAA-3/OS-3-84	--	5.50E-02	Yes	Yes	>Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	1 : 1 : 1	100	1.70E+00	No	NA	OS - UAA-3/OS-3-84	--	1.60E+02	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	1.50E+01	No	1.26E+02	OS - UAA-3/OS-3-84	No	5.00E+00	Yes	No	</=BKG
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	3.80E-01	No	NA	OS - UAA-3/OS-3-84	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.60E+01	No	2.60E+03	OS - UAA-3/OS-3-84	No	1.00E+02	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	1.10E+00	No	NA	OS - UAA-3/OS-3-84	--	7.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	4.00E+03	No	NA	OS - UAA-3/OS-3-84	--	NA	--	No	No Dose-Response Value
Toluene	108-88-3	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-3/OS-3-84	--	1.00E+03	No	No	</=Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	6.60E+00	No	NA	OS - UAA-3/OS-3-84	--	1.00E+04	No	No	</=Screening Level
SVOCs													
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	1 : 1 : 1	100	7.00E+00	No	NA	OS - UAA-3/OS-3-84	--	3.50E+02	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	3.80E+02	No	9.40E+02	OS - UAA-3/OS-3-84	No	2.80E+01	Yes	No	</=BKG
N-Nitrosodiphenylamine	86-30-6	ug/L	1 : 1 : 1	100	1.50E+00	No	NA	OS - UAA-3/OS-3-84	--	3.20E+00	No	No	</=Screening Level
Pesticide													
Aldrin	309-00-2	ug/L	1 : 1 : 1	100	1.20E-02	No	NA	OS - UAA-3/OS-3-84	--	1.40E+01	No	No	</=Screening Level
beta-BHC	319-85-7	ug/L	1 : 1 : 1	100	2.80E-02	No	NA	OS - UAA-3/OS-3-84	--	2.00E-01	No	No	</=Screening Level
Herbicide													
MCPA	94-74-6	ug/L	1 : 1 : 1	100	3.30E+01	No	NA	OS - UAA-3/OS-3-84	--	1.80E+01	Yes	Yes	>Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	1.90E+04	No	NA	OS - UAA-3/OS-3-84	--	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	1.80E+01	No	NA	OS - UAA-3/OS-3-84	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	1.20E+03	No	NA	OS - UAA-3/OS-3-84	--	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	1.30E+00	No	NA	OS - UAA-3/OS-3-84	--	4.00E+00	No	No	</=Screening Level
Cadmium	7440-43-9	ug/L	1 : 1 : 1	100	6.20E-01	No	NA	OS - UAA-3/OS-3-84	--	5.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.10E+05	Yes	NA	OS - UAA-3/OS-3-84	--	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	1.10E+02	No	NA	OS - UAA-3/OS-3-84	--	1.00E+02	Yes	Yes	>Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	2.30E+01	No	NA	OS - UAA-3/OS-3-84	--	1.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Copper	7440-50-8	ug/L	1 : 1 : 1	100	2.00E+01	No	NA	OS - UAA-3/OS-3-84	--	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	9.70E+04	Yes	NA	OS - UAA-3/OS-3-84	--	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	3.00E+01	No	NA	OS - UAA-3/OS-3-84	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	5.90E+04	Yes	NA	OS - UAA-3/OS-3-84	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	2.60E+03	No	NA	OS - UAA-3/OS-3-84	--	1.50E+02	Yes	Yes	>Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	9.90E+01	No	NA	OS - UAA-3/OS-3-84	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.90E+04	Yes	NA	OS - UAA-3/OS-3-84	--	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	3.60E+04	Yes	NA	OS - UAA-3/OS-3-84	--	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	6.10E+01	No	NA	OS - UAA-3/OS-3-84	--	4.90E+01	Yes	Yes	>Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	2.00E+02	No	NA	OS - UAA-3/OS-3-84	--	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-5-95													
VOCs													
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	9.40E+00	No	NA	OS - UAA-3/OS-3-94	--	1.90E+03	No	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	1 : 1 : 1	100	1.10E+01	No	NA	OS - UAA-3/OS-3-94	--	1.60E+02	No	No	</=Screening Level
Acetone	67-64-1	ug/L	1 : 1 : 1	100	2.20E+01	No	NA	OS - UAA-3/OS-3-94	--	7.00E+02	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	3.90E+00	No	1.10E+02	OS - UAA-3/OS-3-94	No	5.00E+00	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	1.10E+00	No	NA	OS - UAA-3/OS-3-94	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	3.30E+01	No	4.20E+03	OS - UAA-3/OS-3-94	No	1.00E+02	No	No	</=Screening Level
Dichloromethane	75-09-2	ug/L	1 : 1 : 1	100	1.10E+00	No	NA	OS - UAA-3/OS-3-94	--	5.00E+00	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	1.40E+00	No	NA	OS - UAA-3/OS-3-94	--	7.00E+02	No	No	</=Screening Level
Methyl N-Butyl Ketone	591-78-6	ug/L	1 : 1 : 1	100	3.80E-01	No	NA	OS - UAA-3/OS-3-94	--	1.60E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	6.90E+00	No	NA	OS - UAA-3/OS-3-94	--	1.00E+03	No	No	</=Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	9.00E+00	No	NA	OS - UAA-3/OS-3-94	--	1.00E+04	No	No	</=Screening Level
SVOCs													
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	1 : 1 : 1	100	5.20E+01	No	NA	OS - UAA-3/OS-3-94	--	3.50E+02	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	8.20E+01	No	1.60E+03	OS - UAA-3/OS-3-94	No	2.80E+01	Yes	No	</=BKG
Diethyl Phthalate	84-66-2	ug/L	1 : 1 : 1	100	2.40E+00	No	3.40E+01	OS - UAA-3/OS-3-94	No	5.60E+03	No	No	</=Screening Level
N-Nitrosodiphenylamine	86-30-6	ug/L	1 : 1 : 1	100	4.10E+00	No	NA	OS - UAA-3/OS-3-94	--	3.20E+00	Yes	Yes	>Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	1.40E+00	No	NA	OS - UAA-3/OS-3-94	--	1.00E+02	No	No	</=Screening Level

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-6-104													
VOCs													
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	2.30E+00	No	NA	OS - UAA-4/OS-4-100	--	1.90E+03	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	1.10E+02	No	NA	OS - UAA-4/OS-4-100	--	5.00E+00	Yes	Yes	>Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	3.30E-01	No	NA	OS - UAA-4/OS-4-100	--	7.00E+02	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	1.40E+00	No	NA	OS - UAA-4/OS-4-100	--	7.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	2.40E+02	No	2.60E+01	OS - UAA-4/OS-4-100	Yes	NA	--	No	No Dose-Response Value
Toluene	108-88-3	ug/L	1 : 1 : 1	100	6.60E-01	No	NA	OS - UAA-4/OS-4-100	--	1.00E+03	No	No	</=Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	9.00E-01	No	NA	OS - UAA-4/OS-4-100	--	1.00E+04	No	No	</=Screening Level
SVOCs													
2-Methylnaphthalene	91-57-6	ug/L	1 : 1 : 1	100	2.60E+00	No	NA	OS - UAA-4/OS-4-100	--	1.40E+02	No	No	</=Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	7.00E+00	No	NA	OS - UAA-4/OS-4-100	--	1.00E+02	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	3.70E+03	No	4.20E+03	OS - UAA-4/OS-4-100	No	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	3.00E+00	No	9.80E+00	OS - UAA-4/OS-4-100	No	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	2.90E+02	No	6.80E+02	OS - UAA-4/OS-4-100	No	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	4.80E-01	No	NA	OS - UAA-4/OS-4-100	--	4.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.60E+05	Yes	3.00E+05	OS - UAA-4/OS-4-100	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	2.80E+01	No	3.80E+01	OS - UAA-4/OS-4-100	No	1.00E+02	No	No	</=Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	1.90E+00	No	3.80E+00	OS - UAA-4/OS-4-100	No	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	8.60E+00	No	1.36E+01	OS - UAA-4/OS-4-100	No	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	3.00E+04	Yes	4.00E+04	OS - UAA-4/OS-4-100	No	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	4.70E+00	No	6.80E+00	OS - UAA-4/OS-4-100	No	7.50E+00	No	No	</=Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	4.30E+04	Yes	7.80E+04	OS - UAA-4/OS-4-100	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	2.20E+03	No	1.54E+03	OS - UAA-4/OS-4-100	Yes	1.50E+02	Yes	Yes	>Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	7.80E+00	No	1.80E+01	OS - UAA-4/OS-4-100	No	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.20E+04	Yes	1.24E+04	OS - UAA-4/OS-4-100	No	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	2.40E+04	Yes	3.60E+04	OS - UAA-4/OS-4-100	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	8.00E+00	No	1.34E+01	OS - UAA-4/OS-4-100	No	4.90E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	2.10E+01	No	4.60E+01	OS - UAA-4/OS-4-100	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-6-110													
VOCs													
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	1.40E+00	No	NA	OS - UAA-4/OS-4-110	--	1.90E+03	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	3.90E+01	No	NA	OS - UAA-4/OS-4-110	--	5.00E+00	Yes	Yes	>Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	3.80E-01	No	6.40E-01	OS - UAA-4/OS-4-110	No	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	5.50E-01	No	NA	OS - UAA-4/OS-4-110	--	1.00E+02	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	1.10E+00	No	1.84E+00	OS - UAA-4/OS-4-110	No	7.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	9.00E+02	No	NA	OS - UAA-4/OS-4-110	--	NA	--	No	No Dose-Response Value
Toluene	108-88-3	ug/L	1 : 1 : 1	100	4.80E-01	No	7.20E-01	OS - UAA-4/OS-4-110	No	1.00E+03	No	No	</=Screening Level
SVOCs													
2-Methylnaphthalene	91-57-6	ug/L	1 : 1 : 1	100	2.00E+00	No	NA	OS - UAA-4/OS-4-110	--	1.40E+02	No	No	</=Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	3.00E+00	No	NA	OS - UAA-4/OS-4-110	--	1.00E+02	No	No	</=Screening Level
Herbicide													
2,4-D	94-75-7	ug/L	1 : 1 : 1	100	1.00E+00	No	NA	OS - UAA-4/OS-4-110	--	7.00E+01	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	1.30E+04	No	NA	OS - UAA-4/OS-4-110	--	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	6.60E+00	No	NA	OS - UAA-4/OS-4-110	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	5.70E+02	No	NA	OS - UAA-4/OS-4-110	--	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	1.50E+00	No	NA	OS - UAA-4/OS-4-110	--	4.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	3.10E+05	Yes	NA	OS - UAA-4/OS-4-110	--	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	1.10E+02	No	NA	OS - UAA-4/OS-4-110	--	1.00E+02	Yes	Yes	>Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	5.00E+00	No	NA	OS - UAA-4/OS-4-110	--	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	2.80E+01	No	NA	OS - UAA-4/OS-4-110	--	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	7.80E+04	Yes	NA	OS - UAA-4/OS-4-110	--	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	9.50E+00	No	NA	OS - UAA-4/OS-4-110	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	8.60E+04	Yes	NA	OS - UAA-4/OS-4-110	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	4.90E+03	No	NA	OS - UAA-4/OS-4-110	--	1.50E+02	Yes	Yes	>Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	2.40E+01	No	NA	OS - UAA-4/OS-4-110	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	2.50E+04	Yes	NA	OS - UAA-4/OS-4-110	--	NA	--	No	EN

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	5.20E+04	Yes	NA	OS - UAA-4/OS-4-110	--	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	2.30E+01	No	NA	OS - UAA-4/OS-4-110	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	5.10E+01	No	NA	OS - UAA-4/OS-4-110	--	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-6-34													
VOCs													
Benzene	71-43-2	ug/L	1 : 1 : 1	100	1.20E+04	No	NA	OS - UAA-4/OS-4-30	--	5.00E+00	Yes	Yes	>Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	1.20E+04	No	NA	OS - UAA-4/OS-4-30	--	5.00E+00	Yes	Yes	>Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	5.05E+01	No	NA	OS - UAA-4/OS-4-30	--	1.00E+03	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	5.05E+01	No	NA	OS - UAA-4/OS-4-30	--	1.00E+03	No	No	</=Screening Level
SVOCs													
2-Methylnaphthalene	91-57-6	ug/L	1 : 1 : 1	100	1.45E+02	No	NA	OS - UAA-4/OS-4-30	--	1.40E+02	Yes	Yes	>Screening Level
2-Methylnaphthalene	91-57-6	ug/L	1 : 1 : 1	100	1.45E+02	No	NA	OS - UAA-4/OS-4-30	--	1.40E+02	Yes	Yes	>Screening Level
4,6-Dinitro-2-methylphenol	534-52-1	ug/L	1 : 1 : 1	100	2.20E+00	No	NA	OS - UAA-4/OS-4-30	--	NA	--	No	Screening Level NA
4,6-Dinitro-2-methylphenol	534-52-1	ug/L	1 : 1 : 1	100	2.20E+00	No	NA	OS - UAA-4/OS-4-30	--	NA	--	No	Screening Level NA
Acenaphthene	83-32-9	ug/L	1 : 1 : 1	100	2.55E+00	No	NA	OS - UAA-4/OS-4-30	--	4.20E+02	No	No	</=Screening Level
Acenaphthene	83-32-9	ug/L	1 : 1 : 1	100	2.55E+00	No	NA	OS - UAA-4/OS-4-30	--	4.20E+02	No	No	</=Screening Level
Carbazole	86-74-8	ug/L	1 : 1 : 1	100	4.70E+00	No	NA	OS - UAA-4/OS-4-30	--	3.40E+00	Yes	Yes	>Screening Level
Carbazole	86-74-8	ug/L	1 : 1 : 1	100	4.70E+00	No	NA	OS - UAA-4/OS-4-30	--	3.40E+00	Yes	Yes	>Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	2.20E+02	No	NA	OS - UAA-4/OS-4-30	--	1.00E+02	Yes	Yes	>Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	2.20E+02	No	NA	OS - UAA-4/OS-4-30	--	1.00E+02	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-6-44													
VOCs													
Benzene	71-43-2	ug/L	1 : 1 : 1	100	5.20E+02	No	NA	OS - UAA-4/OS-4-40	--	5.00E+00	Yes	Yes	>Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	4.70E+00	No	NA	OS - UAA-4/OS-4-40	--	1.00E+03	No	No	</=Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	1.00E+01	No	NA	OS - UAA-4/OS-4-40	--	1.00E+04	No	No	</=Screening Level
SVOCs													
2-Methylnaphthalene	91-57-6	ug/L	1 : 1 : 1	100	1.60E+01	No	NA	OS - UAA-4/OS-4-40	--	1.40E+02	No	No	</=Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	4.60E+01	No	NA	OS - UAA-4/OS-4-40	--	1.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-6-54													
VOCs													
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	1.40E+00	No	NA	OS - UAA-4/OS-4-50	--	1.90E+03	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	1.10E+03	No	NA	OS - UAA-4/OS-4-50	--	5.00E+00	Yes	Yes	>Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	2.20E+00	No	NA	OS - UAA-4/OS-4-50	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.50E+00	No	NA	OS - UAA-4/OS-4-50	--	1.00E+02	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	2.30E+00	No	1.78E+00	OS - UAA-4/OS-4-50	Yes	7.00E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	3.80E+00	No	9.00E-01	OS - UAA-4/OS-4-50	Yes	1.00E+03	No	No	</=Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	4.00E+00	No	4.00E+00	OS - UAA-4/OS-4-50	No	1.00E+04	No	No	</=Screening Level
SVOCs													
2-Methylnaphthalene	91-57-6	ug/L	1 : 1 : 1	100	7.90E+00	No	NA	OS - UAA-4/OS-4-50	--	1.40E+02	No	No	</=Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	3.80E+01	No	NA	OS - UAA-4/OS-4-50	--	1.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-6-64													
VOCs													
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	1.00E+01	No	NA	OS - UAA-4/OS-4-60	--	1.90E+03	No	No	</=Screening Level
Acetone	67-64-1	ug/L	1 : 1 : 1	100	2.40E+01	No	NA	OS - UAA-4/OS-4-60	--	7.00E+02	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	7.20E+01	No	NA	OS - UAA-4/OS-4-60	--	5.00E+00	Yes	Yes	>Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.40E+00	No	NA	OS - UAA-4/OS-4-60	--	1.00E+02	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	4.20E+00	No	NA	OS - UAA-4/OS-4-60	--	7.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	5.40E+03	No	8.80E+02	OS - UAA-4/OS-4-60	Yes	NA	--	No	No Dose-Response Value
Toluene	108-88-3	ug/L	1 : 1 : 1	100	8.80E-01	No	7.20E-01	OS - UAA-4/OS-4-60	Yes	1.00E+03	No	No	</=Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	3.80E+00	No	NA	OS - UAA-4/OS-4-60	--	1.00E+04	No	No	</=Screening Level
SVOCs													
2-Methylnaphthalene	91-57-6	ug/L	1 : 1 : 1	100	3.20E+01	No	NA	OS - UAA-4/OS-4-60	--	1.40E+02	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	1.50E+01	No	NA	OS - UAA-4/OS-4-60	--	1.40E+02	No	No	</=Screening Level
Phenanthrene	85-01-8	ug/L	1 : 1 : 1	100	5.00E+00	No	NA	OS - UAA-4/OS-4-60	--	2.10E+03	No	No	</=Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	4.00E+00	No	NA	OS - UAA-4/OS-4-60	--	1.00E+02	No	No	</=Screening Level
Pesticide													
Aldrin	309-00-2	ug/L	1 : 1 : 1	100	1.40E-02	No	NA	OS - UAA-4/OS-4-60	--	1.40E+01	No	No	</=Screening Level
alpha-BHC	319-84-6	ug/L	1 : 1 : 1	100	3.30E-02	No	NA	OS - UAA-4/OS-4-60	--	1.10E-01	No	No	</=Screening Level
gamma-BHC (Lindane)	58-89-9	ug/L	1 : 1 : 1	100	7.30E-03	No	NA	OS - UAA-4/OS-4-60	--	2.00E-01	No	No	</=Screening Level
Heptachlor	76-44-8	ug/L	1 : 1 : 1	100	1.50E-02	No	NA	OS - UAA-4/OS-4-60	--	4.00E-01	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	5.00E+03	No	1.38E+03	OS - UAA-4/OS-4-60	Yes	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	6.10E+00	No	NA	OS - UAA-4/OS-4-60	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	1.00E+03	No	1.14E+03	OS - UAA-4/OS-4-60	No	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.00E+05	Yes	2.60E+05	OS - UAA-4/OS-4-60	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	3.30E+01	No	1.56E+01	OS - UAA-4/OS-4-60	Yes	1.00E+02	No	No	</=Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	2.90E+00	No	NA	OS - UAA-4/OS-4-60	--	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	1.10E+01	No	NA	OS - UAA-4/OS-4-60	--	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	2.80E+04	Yes	4.20E+04	OS - UAA-4/OS-4-60	No	5.00E+03	Yes	No	EN

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Lead	7439-92-1	ug/L	1 : 1 : 1	100	8.40E+00	No	NA	OS - UAA-4/OS-4-60	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	4.50E+04	Yes	7.80E+04	OS - UAA-4/OS-4-60	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	2.80E+03	No	3.80E+03	OS - UAA-4/OS-4-60	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.40E+01	No	2.60E+01	OS - UAA-4/OS-4-60	No	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.70E+04	Yes	1.40E+04	OS - UAA-4/OS-4-60	Yes	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	1.80E+04	Yes	2.80E+04	OS - UAA-4/OS-4-60	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.10E+01	No	2.40E+00	OS - UAA-4/OS-4-60	Yes	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	2.40E+01	No	NA	OS - UAA-4/OS-4-60	--	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-6-74													
VOCs													
Acetone	67-64-1	ug/L	1 : 1 : 1	100	1.40E+01	No	NA	OS - UAA-4/OS-4-70	--	7.00E+02	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	5.60E+01	No	NA	OS - UAA-4/OS-4-70	--	5.00E+00	Yes	Yes	>Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	5.70E-01	No	NA	OS - UAA-4/OS-4-70	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-4/OS-4-70	--	1.00E+02	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	1.60E+00	No	NA	OS - UAA-4/OS-4-70	--	7.00E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	6.90E-01	No	NA	OS - UAA-4/OS-4-70	--	1.00E+03	No	No	</=Screening Level
SVOCs													
2-Methylnaphthalene	91-57-6	ug/L	1 : 1 : 1	100	1.00E+01	No	NA	OS - UAA-4/OS-4-70	--	1.40E+02	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	3.20E+00	No	NA	OS - UAA-4/OS-4-70	--	1.40E+02	No	No	</=Screening Level
Phenanthrene	85-01-8	ug/L	1 : 1 : 1	100	2.40E+00	No	NA	OS - UAA-4/OS-4-70	--	2.10E+03	No	No	</=Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	3.40E+00	No	NA	OS - UAA-4/OS-4-70	--	1.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-6-84													
VOCs													
Benzene	71-43-2	ug/L	1 : 1 : 1	100	5.80E+02	No	NA	OS - UAA-4/OS-4-80	--	5.00E+00	Yes	Yes	>Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	1.50E+00	No	NA	OS - UAA-4/OS-4-80	--	1.50E+00	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	9.10E+00	No	NA	OS - UAA-4/OS-4-80	--	7.00E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	9.40E+00	No	NA	OS - UAA-4/OS-4-80	--	1.00E+03	No	No	</=Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	1.10E+01	No	NA	OS - UAA-4/OS-4-80	--	1.00E+04	No	No	</=Screening Level
SVOCs													
2-Methylnaphthalene	91-57-6	ug/L	1 : 1 : 1	100	2.00E+01	No	NA	OS - UAA-4/OS-4-80	--	1.40E+02	No	No	</=Screening Level
Carbazole	86-74-8	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-4/OS-4-80	--	3.40E+00	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	2.20E+00	No	NA	OS - UAA-4/OS-4-80	--	1.40E+02	No	No	</=Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	2.40E+01	No	NA	OS - UAA-4/OS-4-80	--	1.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-6-94													
VOCs													
1,1-Dichloroethylene	75-35-4	ug/L	1 : 1 : 1	100	3.70E-01	No	NA	OS - UAA-4/OS-4-90	--	7.00E+00	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	3.70E-01	No	NA	OS - UAA-4/OS-4-90	--	7.00E+01	No	No	</=Screening Level
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	3.10E+00	No	NA	OS - UAA-4/OS-4-90	--	1.90E+03	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	8.40E+01	No	NA	OS - UAA-4/OS-4-90	--	5.00E+00	Yes	Yes	>Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	6.70E-01	No	1.00E+00	OS - UAA-4/OS-4-90	No	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	5.80E-01	No	NA	OS - UAA-4/OS-4-90	--	1.00E+02	No	No	</=Screening Level
Dichloromethane	75-09-2	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-4/OS-4-90	--	5.00E+00	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	1.40E+00	No	NA	OS - UAA-4/OS-4-90	--	7.00E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	1.10E+00	No	NA	OS - UAA-4/OS-4-90	--	1.00E+03	No	No	</=Screening Level
Trichloroethylene	79-01-6	ug/L	1 : 1 : 1	100	7.60E-01	No	NA	OS - UAA-4/OS-4-90	--	5.00E+00	No	No	</=Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	2.80E+00	No	NA	OS - UAA-4/OS-4-90	--	1.00E+04	No	No	</=Screening Level
SVOCs													
2-Methylnaphthalene	91-57-6	ug/L	1 : 1 : 1	100	2.00E+00	No	NA	OS - UAA-4/OS-4-90	--	1.40E+02	No	No	</=Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	3.20E+00	No	NA	OS - UAA-4/OS-4-90	--	1.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-7-104													
VOCs													
Benzene	71-43-2	ug/L	1 : 1 : 1	100	3.30E-01	No	NA	OS - UAA-4/OS-4-100	--	5.00E+00	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	8.70E+00	No	NA	OS - UAA-4/OS-4-100	--	1.00E+02	No	No	</=Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	5.00E-01	No	7.60E-01	OS - UAA-4/OS-4-100	No	1.50E+00	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	9.25E-01	No	NA	OS - UAA-4/OS-4-100	--	7.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	5.65E+02	No	2.60E+01	OS - UAA-4/OS-4-100	Yes	NA	--	No	No Dose-Response Value
Toluene	108-88-3	ug/L	1 : 1 : 1	100	3.50E-01	No	NA	OS - UAA-4/OS-4-100	--	1.00E+03	No	No	</=Screening Level
SVOCs													
Dibenzo(a,h)anthracene	53-70-3	ug/L	1 : 1 : 1	100	6.30E-01	No	NA	OS - UAA-4/OS-4-100	--	3.00E-01	Yes	Yes	>Screening Level
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	1 : 1 : 1	100	6.70E-01	No	NA	OS - UAA-4/OS-4-100	--	4.30E-01	Yes	Yes	>Screening Level
PCBs													
Total PCBs	1336-36-3	ug/L	1 : 1 : 1	100	4.00E-02	No	7.60E-02	OS - UAA-4/OS-4-100	No	5.00E-01	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	2.65E+02	No	4.20E+03	OS - UAA-4/OS-4-100	No	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	9.65E+00	No	9.80E+00	OS - UAA-4/OS-4-100	No	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	6.30E+02	No	6.80E+02	OS - UAA-4/OS-4-100	No	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.45E+05	Yes	3.00E+05	OS - UAA-4/OS-4-100	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	7.80E+00	No	3.80E+01	OS - UAA-4/OS-4-100	No	1.00E+02	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	3.05E+00	No	1.36E+01	OS - UAA-4/OS-4-100	No	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	2.50E+04	Yes	4.00E+04	OS - UAA-4/OS-4-100	No	5.00E+03	Yes	No	EN
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	3.35E+04	Yes	7.80E+04	OS - UAA-4/OS-4-100	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	1.25E+03	No	1.54E+03	OS - UAA-4/OS-4-100	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	5.35E+00	No	1.80E+01	OS - UAA-4/OS-4-100	No	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.00E+04	Yes	1.24E+04	OS - UAA-4/OS-4-100	No	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	1.50E+04	Yes	3.60E+04	OS - UAA-4/OS-4-100	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.55E+00	No	1.34E+01	OS - UAA-4/OS-4-100	No	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	1.50E+01	No	4.60E+01	OS - UAA-4/OS-4-100	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-7-34													
VOCs													
1,1,1-Trichloroethane	71-55-6	ug/L	1 : 1 : 1	100	4.70E-01	No	NA	OS - UAA-4/OS-4-30	--	2.00E+02	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	4.20E-01	No	NA	OS - UAA-4/OS-4-30	--	5.00E+00	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	2.70E+02	No	NA	OS - UAA-4/OS-4-30	--	1.00E+02	Yes	Yes	>Screening Level
Chloroethane	75-00-3	ug/L	1 : 1 : 1	100	3.10E+00	No	NA	OS - UAA-4/OS-4-30	--	4.60E+00	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	1.70E+00	No	NA	OS - UAA-4/OS-4-30	--	7.00E+02	No	No	</=Screening Level
SVOCs													
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	3.60E+00	No	NA	OS - UAA-4/OS-4-30	--	3.50E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	1.80E+00	No	NA	OS - UAA-4/OS-4-30	--	1.40E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-7-44													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	3.80E-01	No	NA	OS - UAA-4/OS-4-40	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.10E+01	No	NA	OS - UAA-4/OS-4-40	--	1.00E+02	No	No	</=Screening Level
Chloroethane	75-00-3	ug/L	1 : 1 : 1	100	2.20E+00	No	NA	OS - UAA-4/OS-4-40	--	4.60E+00	No	No	</=Screening Level
Dichloromethane	75-09-2	ug/L	1 : 1 : 1	100	1.00E+00	No	2.40E+00	OS - UAA-4/OS-4-40	No	5.00E+00	No	No	</=Screening Level
SVOCs													
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	1.70E+00	No	NA	OS - UAA-4/OS-4-40	--	2.10E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-7-54													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	2.40E-01	No	NA	OS - UAA-4/OS-4-50	--	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	3.10E-01	No	NA	OS - UAA-4/OS-4-50	--	7.00E+01	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	5.40E-01	No	NA	OS - UAA-4/OS-4-50	--	5.00E+00	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	8.20E+00	No	NA	OS - UAA-4/OS-4-50	--	1.00E+02	No	No	</=Screening Level
Chloroethane	75-00-3	ug/L	1 : 1 : 1	100	3.40E-01	No	NA	OS - UAA-4/OS-4-50	--	4.60E+00	No	No	</=Screening Level
Dichloromethane	75-09-2	ug/L	1 : 1 : 1	100	1.00E+00	No	NA	OS - UAA-4/OS-4-50	--	5.00E+00	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	9.20E-01	No	1.78E+00	OS - UAA-4/OS-4-50	No	7.00E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	3.00E-01	No	9.00E-01	OS - UAA-4/OS-4-50	No	1.00E+03	No	No	</=Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	5.40E-01	No	4.00E+00	OS - UAA-4/OS-4-50	No	1.00E+04	No	No	</=Screening Level
SVOCs													
2,4,6-Trichlorophenol	88-06-2	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-4/OS-4-50	--	1.00E+01	No	No	</=Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	2.60E+00	No	NA	OS - UAA-4/OS-4-50	--	2.10E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-7-64													
VOCs													
Benzene	71-43-2	ug/L	1 : 1 : 1	100	2.20E-01	No	NA	OS - UAA-4/OS-4-60	--	5.00E+00	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.00E+01	No	NA	OS - UAA-4/OS-4-60	--	1.00E+02	No	No	</=Screening Level
Chloroethane	75-00-3	ug/L	1 : 1 : 1	100	3.50E-01	No	NA	OS - UAA-4/OS-4-60	--	4.60E+00	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	8.50E-01	No	NA	OS - UAA-4/OS-4-60	--	7.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	1.90E+03	No	8.80E+02	OS - UAA-4/OS-4-60	Yes	NA	--	No	No Dose-Response Value
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	2.00E+00	No	NA	OS - UAA-4/OS-4-60	--	1.00E+04	No	No	</=Screening Level
Pesticide													
Heptachlor	76-44-8	ug/L	1 : 1 : 1	100	7.80E-03	No	NA	OS - UAA-4/OS-4-60	--	4.00E-01	No	No	</=Screening Level
Herbicide													
2,4-D	94-75-7	ug/L	1 : 1 : 1	100	4.80E-01	No	NA	OS - UAA-4/OS-4-60	--	7.00E+01	No	No	</=Screening Level
Metals													
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	1.10E+01	No	NA	OS - UAA-4/OS-4-60	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	7.50E+02	No	1.14E+03	OS - UAA-4/OS-4-60	No	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.60E+05	Yes	2.60E+05	OS - UAA-4/OS-4-60	No	NA	--	No	EN
Iron	7439-89-6	ug/L	1 : 1 : 1	100	2.50E+04	Yes	4.20E+04	OS - UAA-4/OS-4-60	No	5.00E+03	Yes	No	EN
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	3.20E+04	Yes	7.80E+04	OS - UAA-4/OS-4-60	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	1.60E+03	No	3.80E+03	OS - UAA-4/OS-4-60	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	4.90E+00	No	2.60E+01	OS - UAA-4/OS-4-60	No	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.00E+04	Yes	1.40E+04	OS - UAA-4/OS-4-60	No	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	1.50E+04	Yes	2.80E+04	OS - UAA-4/OS-4-60	No	NA	--	No	EN

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-7-74													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.10E+01	No	NA	OS - UAA-4/OS-4-70	--	1.00E+02	No	No	</=Screening Level
Dichloromethane	75-09-2	ug/L	1 : 1 : 1	100	1.00E+00	No	NA	OS - UAA-4/OS-4-70	--	5.00E+00	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	6.70E-01	No	NA	OS - UAA-4/OS-4-70	--	7.00E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	3.70E-01	No	NA	OS - UAA-4/OS-4-70	--	1.00E+03	No	No	</=Screening Level
SVOCs													
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-4/OS-4-70	--	2.10E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-7-84													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	3.30E+01	No	NA	OS - UAA-4/OS-4-80	--	1.00E+02	No	No	</=Screening Level
Chloroethane	75-00-3	ug/L	1 : 1 : 1	100	8.20E-01	No	NA	OS - UAA-4/OS-4-80	--	4.60E+00	No	No	</=Screening Level
Dichloromethane	75-09-2	ug/L	1 : 1 : 1	100	1.00E+00	No	NA	OS - UAA-4/OS-4-80	--	5.00E+00	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	9.50E-01	No	NA	OS - UAA-4/OS-4-80	--	7.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-7-94													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	5.70E+00	No	NA	OS - UAA-4/OS-4-90	--	1.00E+02	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	8.90E-01	No	NA	OS - UAA-4/OS-4-90	--	7.00E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	3.00E-01	No	NA	OS - UAA-4/OS-4-90	--	1.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-8-104													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	3.50E-01	No	NA	OS - UAA-4/OS-4-100	--	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	5.40E-01	No	NA	OS - UAA-4/OS-4-100	--	7.00E+01	No	No	</=Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	2.40E-01	No	7.60E-01	OS - UAA-4/OS-4-100	No	1.50E+00	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	1.00E+02	No	2.60E+01	OS - UAA-4/OS-4-100	Yes	NA	--	No	No Dose-Response Value
Metals													
Barium	7440-39-3	ug/L	1 : 1 : 1	100	2.40E+02	No	6.80E+02	OS - UAA-4/OS-4-100	No	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.30E+05	Yes	3.00E+05	OS - UAA-4/OS-4-100	No	NA	--	No	EN
Copper	7440-50-8	ug/L	1 : 1 : 1	100	2.70E+00	No	1.36E+01	OS - UAA-4/OS-4-100	No	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	1.00E+04	Yes	4.00E+04	OS - UAA-4/OS-4-100	No	5.00E+03	Yes	No	EN
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	3.10E+04	Yes	7.80E+04	OS - UAA-4/OS-4-100	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	6.40E+02	No	1.54E+03	OS - UAA-4/OS-4-100	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	6.40E+00	No	1.80E+01	OS - UAA-4/OS-4-100	No	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	5.80E+03	Yes	1.24E+04	OS - UAA-4/OS-4-100	No	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	1.70E+04	Yes	3.60E+04	OS - UAA-4/OS-4-100	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.40E+00	No	1.34E+01	OS - UAA-4/OS-4-100	No	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	1.50E+01	No	4.60E+01	OS - UAA-4/OS-4-100	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-8-111													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	2.30E-01	No	NA	OS - UAA-4/OS-4-110	--	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	5.70E+00	No	NA	OS - UAA-4/OS-4-110	--	7.00E+01	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	4.20E-01	No	6.40E-01	OS - UAA-4/OS-4-110	No	7.00E+02	No	No	</=Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	2.20E-01	No	1.18E+00	OS - UAA-4/OS-4-110	No	1.50E+00	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	4.70E+01	No	NA	OS - UAA-4/OS-4-110	--	NA	--	No	No Dose-Response Value
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	1.70E+00	No	NA	OS - UAA-4/OS-4-110	--	2.00E+00	No	No	</=Screening Level
SVOCs													
Benzo(g,h,i)perylene	191-24-2	ug/L	1 : 1 : 1	100	8.10E-01	No	NA	OS - UAA-4/OS-4-110	--	2.10E+02	No	No	</=Screening Level
Dibenzo(a,h)anthracene	53-70-3	ug/L	1 : 1 : 1	100	6.40E-01	No	NA	OS - UAA-4/OS-4-110	--	3.00E-01	Yes	Yes	>Screening Level
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	1 : 1 : 1	100	9.40E-01	No	NA	OS - UAA-4/OS-4-110	--	4.30E-01	Yes	Yes	>Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	3.00E+03	No	NA	OS - UAA-4/OS-4-110	--	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	6.50E+00	No	NA	OS - UAA-4/OS-4-110	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	3.90E+02	No	NA	OS - UAA-4/OS-4-110	--	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	2.50E-01	No	NA	OS - UAA-4/OS-4-110	--	4.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.30E+05	Yes	NA	OS - UAA-4/OS-4-110	--	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	1.20E+02	No	NA	OS - UAA-4/OS-4-110	--	1.00E+02	Yes	Yes	>Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	4.40E+00	No	NA	OS - UAA-4/OS-4-110	--	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	2.60E+01	No	NA	OS - UAA-4/OS-4-110	--	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	4.20E+04	Yes	NA	OS - UAA-4/OS-4-110	--	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	4.50E+00	No	NA	OS - UAA-4/OS-4-110	--	7.50E+00	No	No	</=Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	3.30E+04	Yes	NA	OS - UAA-4/OS-4-110	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	2.30E+03	No	NA	OS - UAA-4/OS-4-110	--	1.50E+02	Yes	Yes	>Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	2.40E+01	No	NA	OS - UAA-4/OS-4-110	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.20E+04	Yes	NA	OS - UAA-4/OS-4-110	--	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	2.60E+04	Yes	NA	OS - UAA-4/OS-4-110	--	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	6.70E+00	No	NA	OS - UAA-4/OS-4-110	--	4.90E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	3.20E+01	No	NA	OS - UAA-4/OS-4-110	--	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-8-34													
VOCs													
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	6.15E-01	No	NA	OS - UAA-4/OS-4-30	--	7.00E+01	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	1.10E-01	No	NA	OS - UAA-4/OS-4-30	--	5.00E+00	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	6.20E-01	No	NA	OS - UAA-4/OS-4-30	--	1.00E+02	No	No	</=Screening Level
Trichloroethylene	79-01-6	ug/L	1 : 1 : 1	100	2.20E-01	No	NA	OS - UAA-4/OS-4-30	--	5.00E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-8-44													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	5.20E-01	No	NA	OS - UAA-4/OS-4-40	--	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	1.60E+01	No	NA	OS - UAA-4/OS-4-40	--	7.00E+01	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	2.90E-01	No	NA	OS - UAA-4/OS-4-40	--	1.00E+03	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	3.80E+00	No	NA	OS - UAA-4/OS-4-40	--	2.00E+00	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-8-54													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	5.70E-01	No	NA	OS - UAA-4/OS-4-50	--	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	1.50E+01	No	NA	OS - UAA-4/OS-4-50	--	7.00E+01	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	2.40E-01	No	NA	OS - UAA-4/OS-4-50	--	5.00E+00	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	8.80E-01	No	NA	OS - UAA-4/OS-4-50	--	7.00E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	3.80E-01	No	9.00E-01	OS - UAA-4/OS-4-50	No	1.00E+03	No	No	</=Screening Level
Trichloroethylene	79-01-6	ug/L	1 : 1 : 1	100	1.80E-01	No	NA	OS - UAA-4/OS-4-50	--	5.00E+00	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	2.60E+00	No	NA	OS - UAA-4/OS-4-50	--	2.00E+00	Yes	Yes	>Screening Level
SVOCs													
Benzo(g,h,i)perylene	191-24-2	ug/L	1 : 1 : 1	100	8.40E-01	No	NA	OS - UAA-4/OS-4-50	--	2.10E+02	No	No	</=Screening Level
Dibenzo(a,h)anthracene	53-70-3	ug/L	1 : 1 : 1	100	6.40E-01	No	NA	OS - UAA-4/OS-4-50	--	3.00E-01	Yes	Yes	>Screening Level
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	1 : 1 : 1	100	7.70E-01	No	NA	OS - UAA-4/OS-4-50	--	4.30E-01	Yes	Yes	>Screening Level

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-8-64													
VOCs													
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	7.40E+00	No	NA	OS - UAA-4/OS-4-60	--	7.00E+01	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	3.60E-01	No	NA	OS - UAA-4/OS-4-60	--	7.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	5.50E+00	No	8.80E+02	OS - UAA-4/OS-4-60	No	NA	--	No	</=BKG
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	9.80E-01	No	NA	OS - UAA-4/OS-4-60	--	2.00E+00	No	No	</=Screening Level
SVOCs													
Benzo(g,h,i)perylene	191-24-2	ug/L	1 : 1 : 1	100	7.70E-01	No	NA	OS - UAA-4/OS-4-60	--	2.10E+02	No	No	</=Screening Level
Dibenzo(a,h)anthracene	53-70-3	ug/L	1 : 1 : 1	100	5.80E-01	No	NA	OS - UAA-4/OS-4-60	--	3.00E-01	Yes	Yes	>Screening Level
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	1 : 1 : 1	100	6.80E-01	No	NA	OS - UAA-4/OS-4-60	--	4.30E-01	Yes	Yes	>Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	4.60E+02	No	1.38E+03	OS - UAA-4/OS-4-60	No	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	3.00E+00	No	NA	OS - UAA-4/OS-4-60	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	4.20E+02	No	1.14E+03	OS - UAA-4/OS-4-60	No	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.10E+05	Yes	2.60E+05	OS - UAA-4/OS-4-60	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	1.00E+01	No	1.56E+01	OS - UAA-4/OS-4-60	No	1.00E+02	No	No	</=Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	2.20E+00	No	NA	OS - UAA-4/OS-4-60	--	1.00E+03	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	2.50E+04	Yes	4.20E+04	OS - UAA-4/OS-4-60	No	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	3.00E+00	No	NA	OS - UAA-4/OS-4-60	--	7.50E+00	No	No	</=Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	3.00E+04	Yes	7.80E+04	OS - UAA-4/OS-4-60	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	2.30E+03	No	3.80E+03	OS - UAA-4/OS-4-60	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	8.10E+00	No	2.60E+01	OS - UAA-4/OS-4-60	No	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	7.90E+03	Yes	1.40E+04	OS - UAA-4/OS-4-60	No	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	1.80E+04	Yes	2.80E+04	OS - UAA-4/OS-4-60	No	NA	--	No	EN
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	1.60E+01	No	NA	OS - UAA-4/OS-4-60	--	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-8-74													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	2.20E-01	No	NA	OS - UAA-4/OS-4-70	--	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-4/OS-4-70	--	7.00E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-8-84													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	3.20E-01	No	NA	OS - UAA-4/OS-4-80	--	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	1.40E+00	No	NA	OS - UAA-4/OS-4-80	--	7.00E+01	No	No	</=Screening Level
Trichloroethylene	79-01-6	ug/L	1 : 1 : 1	100	4.10E-01	No	NA	OS - UAA-4/OS-4-80	--	5.00E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - AA-Q-8-94													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	4.30E-01	No	NA	OS - UAA-4/OS-4-90	--	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	1.10E+00	No	NA	OS - UAA-4/OS-4-90	--	7.00E+01	No	No	</=Screening Level

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - BDRK-Q-1-163													
VOCs													
Chloroform	67-66-3	ug/L	1 : 1 : 1	100	1.30E+00	No	NA	OS - UAA-3/OS-3-116	--	8.00E+01	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	5.80E+00	No	2.80E+01	OS - UAA-3/OS-3-116	No	NA	--	No	</=BKG
Methyl N-Butyl Ketone	591-78-6	ug/L	1 : 1 : 1	100	6.00E-01	No	NA	OS - UAA-3/OS-3-116	--	1.60E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	7.30E-01	No	NA	OS - UAA-3/OS-3-116	--	1.00E+03	No	No	</=Screening Level
SVOCs													
Benzo(g,h,i)perylene	191-24-2	ug/L	1 : 1 : 1	100	1.00E+00	No	1.38E+00	OS - UAA-3/OS-3-116	No	2.10E+02	No	No	</=Screening Level
Dibenzo(a,h)anthracene	53-70-3	ug/L	1 : 1 : 1	100	6.40E-01	No	NA	OS - UAA-3/OS-3-116	--	3.00E-01	Yes	Yes	>Screening Level
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	1 : 1 : 1	100	7.20E-01	No	NA	OS - UAA-3/OS-3-116	--	4.30E-01	Yes	Yes	>Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	4.00E+04	No	2.40E+03	OS - UAA-3/OS-3-116	Yes	3.60E+04	Yes	Yes	>Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	6.40E+01	No	NA	OS - UAA-3/OS-3-116	--	5.00E+01	Yes	Yes	>Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	5.80E+02	No	3.00E+02	OS - UAA-3/OS-3-116	Yes	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	1.70E+00	No	NA	OS - UAA-3/OS-3-116	--	4.00E+00	No	No	</=Screening Level
Cadmium	7440-43-9	ug/L	1 : 1 : 1	100	3.20E+00	No	4.00E+00	OS - UAA-3/OS-3-116	No	5.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.50E+06	Yes	6.80E+05	OS - UAA-3/OS-3-116	Yes	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	8.80E+01	No	7.60E+01	OS - UAA-3/OS-3-116	Yes	1.00E+02	No	No	</=Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	1.80E+01	No	3.00E+00	OS - UAA-3/OS-3-116	Yes	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	5.80E+01	No	5.00E+01	OS - UAA-3/OS-3-116	Yes	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	5.10E+04	Yes	1.22E+05	OS - UAA-3/OS-3-116	No	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	2.70E+01	No	NA	OS - UAA-3/OS-3-116	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	7.80E+04	Yes	2.40E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	5.30E+02	No	2.40E+03	OS - UAA-3/OS-3-116	No	1.50E+02	Yes	No	</=BKG
Mercury	7439-97-6	ug/L	1 : 1 : 1	100	2.40E-01	No	NA	OS - UAA-3/OS-3-116	--	2.00E+00	No	No	</=Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.30E+02	No	2.20E+01	OS - UAA-3/OS-3-116	Yes	1.00E+02	Yes	Yes	>Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	2.60E+04	Yes	2.20E+04	OS - UAA-3/OS-3-116	Yes	NA	--	No	EN
Selenium	7782-49-2	ug/L	1 : 1 : 1	100	1.40E+01	No	NA	OS - UAA-3/OS-3-116	--	5.00E+01	No	No	</=Screening Level
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	1.30E+05	Yes	1.22E+05	OS - UAA-3/OS-3-116	Yes	NA	--	No	EN

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.00E+02	No	NA	OS - UAA-3/OS-3-116	--	4.90E+01	Yes	Yes	>Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	1.70E+02	No	4.60E+02	OS - UAA-3/OS-3-116	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Q - BDRK-Q-2-143													
VOCs													
Methane	74-82-8	ug/L	1 : 1 : 1	100	1.30E+01	No	2.20E+01	OS - UAA-4/OS-4-113	No	NA	--	No	</=BKG
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	2.20E+02	No	1.66E+04	OS - UAA-4/OS-4-113	No	3.60E+04	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	6.35E+02	No	1.00E+03	OS - UAA-4/OS-4-113	No	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	7.65E+04	Yes	3.20E+05	OS - UAA-4/OS-4-113	No	NA	--	No	EN
Copper	7440-50-8	ug/L	1 : 1 : 1	100	9.65E-01	No	1.88E+02	OS - UAA-4/OS-4-113	No	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	4.10E+02	Yes	1.72E+05	OS - UAA-4/OS-4-113	No	5.00E+03	No	No	EN
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	4.25E+04	Yes	8.40E+04	OS - UAA-4/OS-4-113	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	1.20E+01	No	7.20E+03	OS - UAA-4/OS-4-113	No	1.50E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	4.40E+03	Yes	1.58E+04	OS - UAA-4/OS-4-113	No	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	5.55E+04	Yes	3.20E+04	OS - UAA-4/OS-4-113	Yes	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	2.05E+00	No	5.20E+01	OS - UAA-4/OS-4-113	No	4.90E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
R - AA-R-1-108													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	1.10E+01	No	1.60E+01	OS - UAA-2/OS-2-110	No	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethane	107-06-2	ug/L	1 : 1 : 1	100	4.00E+01	No	NA	OS - UAA-2/OS-2-110	--	5.00E+00	Yes	Yes	>Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	5.80E+01	No	3.40E+01	OS - UAA-2/OS-2-110	Yes	7.00E+01	No	No	</=Screening Level
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	2.60E+02	No	NA	OS - UAA-2/OS-2-110	--	1.90E+03	No	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	1 : 1 : 1	100	1.00E+02	No	NA	OS - UAA-2/OS-2-110	--	1.60E+02	No	No	</=Screening Level
Acetone	67-64-1	ug/L	1 : 1 : 1	100	1.20E+04	No	NA	OS - UAA-2/OS-2-110	--	7.00E+02	Yes	Yes	>Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	2.40E+02	No	3.40E+01	OS - UAA-2/OS-2-110	Yes	5.00E+00	Yes	Yes	>Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	3.60E+03	No	5.00E+03	OS - UAA-2/OS-2-110	No	1.00E+02	Yes	No	</=BKG
Chloroform	67-66-3	ug/L	1 : 1 : 1	100	2.40E+01	No	NA	OS - UAA-2/OS-2-110	--	8.00E+01	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	2.30E+02	No	NA	OS - UAA-2/OS-2-110	--	7.00E+02	No	No	</=Screening Level
Tetrachloroethene	127-18-4	ug/L	1 : 1 : 1	100	8.80E+01	No	NA	OS - UAA-2/OS-2-110	--	5.00E+00	Yes	Yes	>Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	6.40E+02	No	NA	OS - UAA-2/OS-2-110	--	1.00E+03	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	3.40E+01	No	1.90E+01	OS - UAA-2/OS-2-110	Yes	2.00E+00	Yes	Yes	>Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	1.50E+03	No	NA	OS - UAA-2/OS-2-110	--	1.00E+04	No	No	</=Screening Level
SVOCs													
1,2,4-Trichlorobenzene	120-82-1	ug/L	1 : 1 : 1	100	4.10E+01	No	NA	OS - UAA-2/OS-2-110	--	7.00E+01	No	No	</=Screening Level
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	1.10E+03	No	3.20E+01	OS - UAA-2/OS-2-110	Yes	6.00E+02	Yes	Yes	>Screening Level
1,3-Dichlorobenzene	541-73-1	ug/L	1 : 1 : 1	100	2.80E+01	No	9.80E+01	OS - UAA-2/OS-2-110	No	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	2.10E+02	No	2.40E+03	OS - UAA-2/OS-2-110	No	7.50E+01	Yes	No	</=BKG
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	2.40E+02	No	3.20E+01	OS - UAA-2/OS-2-110	Yes	2.10E+01	Yes	Yes	>Screening Level
2,4-Dimethylphenol	105-67-9	ug/L	1 : 1 : 1	100	5.00E+01	No	2.80E+01	OS - UAA-2/OS-2-110	Yes	1.40E+02	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	3.00E+02	No	6.40E+01	OS - UAA-2/OS-2-110	Yes	3.50E+01	Yes	Yes	>Screening Level
2-Methylphenol	95-48-7	ug/L	1 : 1 : 1	100	1.20E+01	No	NA	OS - UAA-2/OS-2-110	--	3.50E+02	No	No	</=Screening Level
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	1 : 1 : 1	100	4.20E+02	No	NA	OS - UAA-2/OS-2-110	--	3.50E+02	Yes	Yes	>Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	1.10E+04	No	1.94E+01	OS - UAA-2/OS-2-110	Yes	2.80E+01	Yes	Yes	>Screening Level
Diethyl Phthalate	84-66-2	ug/L	1 : 1 : 1	100	3.90E+01	No	NA	OS - UAA-2/OS-2-110	--	5.60E+03	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	1.10E+03	No	NA	OS - UAA-2/OS-2-110	--	1.40E+02	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Phenol	108-95-2	ug/L	1 : 1 : 1	100	1.10E+04	No	NA	OS - UAA-2/OS-2-110	--	1.00E+02	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
R - AA-R-1-118													
VOCs													
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	7.30E+01	No	1.06E+01	OS - UAA-2/OS-2-120	Yes	7.00E+01	Yes	Yes	>Screening Level
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	2.10E+02	No	NA	OS - UAA-2/OS-2-120	--	1.90E+03	No	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	1 : 1 : 1	100	1.10E+02	No	NA	OS - UAA-2/OS-2-120	--	1.60E+02	No	No	</=Screening Level
Acetone	67-64-1	ug/L	1 : 1 : 1	100	8.20E+03	No	NA	OS - UAA-2/OS-2-120	--	7.00E+02	Yes	Yes	>Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	2.00E+02	No	NA	OS - UAA-2/OS-2-120	--	5.00E+00	Yes	Yes	>Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.70E+03	No	1.52E+03	OS - UAA-2/OS-2-120	Yes	1.00E+02	Yes	Yes	>Screening Level
Chloroform	67-66-3	ug/L	1 : 1 : 1	100	6.80E+00	No	NA	OS - UAA-2/OS-2-120	--	8.00E+01	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	4.00E+01	No	NA	OS - UAA-2/OS-2-120	--	7.00E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	2.30E+02	No	NA	OS - UAA-2/OS-2-120	--	1.00E+03	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	3.10E+01	No	NA	OS - UAA-2/OS-2-120	--	2.00E+00	Yes	Yes	>Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	1.20E+02	No	NA	OS - UAA-2/OS-2-120	--	1.00E+04	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	2.60E+02	No	2.80E+01	OS - UAA-2/OS-2-120	Yes	6.00E+02	No	No	</=Screening Level
2,4-Dimethylphenol	105-67-9	ug/L	1 : 1 : 1	100	5.40E+01	No	2.40E+01	OS - UAA-2/OS-2-120	Yes	1.40E+02	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	1.40E+02	No	1.92E+01	OS - UAA-2/OS-2-120	Yes	3.50E+01	Yes	Yes	>Screening Level
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	1 : 1 : 1	100	3.20E+02	No	NA	OS - UAA-2/OS-2-120	--	3.50E+02	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	1.60E+04	No	5.60E+00	OS - UAA-2/OS-2-120	Yes	2.80E+01	Yes	Yes	>Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	4.50E+03	No	NA	OS - UAA-2/OS-2-120	--	1.00E+02	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
R - AA-R-1-128													
VOCs													
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	1.00E+01	No	1.54E+02	OS - UAA-2/OS-2-124	No	7.00E+01	No	No	</=Screening Level
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	3.40E+01	No	NA	OS - UAA-2/OS-2-124	--	1.90E+03	No	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	1 : 1 : 1	100	1.10E+01	No	NA	OS - UAA-2/OS-2-124	--	1.60E+02	No	No	</=Screening Level
Acetone	67-64-1	ug/L	1 : 1 : 1	100	9.60E+02	No	NA	OS - UAA-2/OS-2-124	--	7.00E+02	Yes	Yes	>Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	1.00E+02	No	4.80E+01	OS - UAA-2/OS-2-124	Yes	5.00E+00	Yes	Yes	>Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	2.00E+03	No	4.00E+03	OS - UAA-2/OS-2-124	No	1.00E+02	Yes	No	</=BKG
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	1.30E+01	No	NA	OS - UAA-2/OS-2-124	--	7.00E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	4.00E+01	No	NA	OS - UAA-2/OS-2-124	--	1.00E+03	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	4.50E+00	No	1.30E+01	OS - UAA-2/OS-2-124	No	2.00E+00	Yes	No	</=BKG
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	2.90E+01	No	NA	OS - UAA-2/OS-2-124	--	1.00E+04	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	1.80E+01	No	1.48E+01	OS - UAA-2/OS-2-124	Yes	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	3.70E+01	No	8.20E+02	OS - UAA-2/OS-2-124	No	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	5.50E+01	No	4.00E+01	OS - UAA-2/OS-2-124	Yes	3.50E+01	Yes	Yes	>Screening Level
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	1 : 1 : 1	100	7.40E+01	No	NA	OS - UAA-2/OS-2-124	--	3.50E+02	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	1.00E+04	No	4.80E+00	OS - UAA-2/OS-2-124	Yes	2.80E+01	Yes	Yes	>Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	1.80E+02	No	2.40E+01	OS - UAA-2/OS-2-124	Yes	1.40E+02	Yes	Yes	>Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	1.10E+03	No	NA	OS - UAA-2/OS-2-124	--	1.00E+02	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
R - AA-R-1-131													
VOCs													
Acetone	67-64-1	ug/L	1 : 1 : 1	100	3.10E+02	No	NA	OS - UAA-2/OS-2-124	--	7.00E+02	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	1.20E+02	No	4.80E+01	OS - UAA-2/OS-2-124	Yes	5.00E+00	Yes	Yes	>Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	2.90E+03	No	4.00E+03	OS - UAA-2/OS-2-124	No	1.00E+02	Yes	No	</=BKG
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	2.10E+01	No	NA	OS - UAA-2/OS-2-124	--	7.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	1.20E+03	No	2.00E+02	OS - UAA-2/OS-2-124	Yes	NA	--	No	No Dose-Response Value
Toluene	108-88-3	ug/L	1 : 1 : 1	100	1.30E+01	No	NA	OS - UAA-2/OS-2-124	--	1.00E+03	No	No	</=Screening Level
SVOCs													
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	1.50E+04	No	4.80E+00	OS - UAA-2/OS-2-124	Yes	2.80E+01	Yes	Yes	>Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	2.30E+02	No	NA	OS - UAA-2/OS-2-124	--	1.00E+02	Yes	Yes	>Screening Level
Pesticide													
alpha-BHC	319-84-6	ug/L	1 : 1 : 1	100	8.60E-02	No	NA	OS - UAA-2/OS-2-124	--	1.10E-01	No	No	</=Screening Level
beta-BHC	319-85-7	ug/L	1 : 1 : 1	100	8.80E-02	No	3.40E-01	OS - UAA-2/OS-2-124	No	2.00E-01	No	No	</=Screening Level
delta-BHC	319-86-8	ug/L	1 : 1 : 1	100	4.30E-02	No	NA	OS - UAA-2/OS-2-124	--	2.00E-01	No	No	</=Screening Level
Endosulfan Sulfate	1031-07-8	ug/L	1 : 1 : 1	100	1.60E-01	No	NA	OS - UAA-2/OS-2-124	--	4.20E+01	No	No	</=Screening Level
Endrin Ketone	53494-70-5	ug/L	1 : 1 : 1	100	1.20E-01	No	NA	OS - UAA-2/OS-2-124	--	2.00E+00	No	No	</=Screening Level
Heptachlor	76-44-8	ug/L	1 : 1 : 1	100	6.00E-02	No	NA	OS - UAA-2/OS-2-124	--	4.00E-01	No	No	</=Screening Level
Heptachlor Epoxide	1024-57-3	ug/L	1 : 1 : 1	100	2.60E-02	No	NA	OS - UAA-2/OS-2-124	--	2.00E-01	No	No	</=Screening Level
Herbicide													
Dichlorprop	120-36-5	ug/L	1 : 1 : 1	100	2.30E+00	No	NA	OS - UAA-2/OS-2-124	--	2.92E+02	No	No	</=Screening Level
MCPP	93-65-2	ug/L	1 : 1 : 1	100	4.90E+01	No	1.74E+02	OS - UAA-2/OS-2-124	No	3.60E+01	Yes	No	</=BKG
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	2.40E+04	No	NA	OS - UAA-2/OS-2-124	--	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	2.80E+01	No	NA	OS - UAA-2/OS-2-124	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	2.80E+03	No	1.96E+02	OS - UAA-2/OS-2-124	Yes	2.00E+03	Yes	Yes	>Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	1.50E+00	No	NA	OS - UAA-2/OS-2-124	--	4.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	3.50E+05	Yes	6.80E+05	OS - UAA-2/OS-2-124	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	2.40E+02	No	NA	OS - UAA-2/OS-2-124	--	1.00E+02	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	3.60E+01	No	NA	OS - UAA-2/OS-2-124	--	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	1.10E+02	No	NA	OS - UAA-2/OS-2-124	--	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	9.60E+04	Yes	7.40E+04	OS - UAA-2/OS-2-124	Yes	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	3.50E+01	No	NA	OS - UAA-2/OS-2-124	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	9.80E+04	Yes	1.00E+05	OS - UAA-2/OS-2-124	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	3.00E+03	No	3.20E+03	OS - UAA-2/OS-2-124	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.00E+02	No	NA	OS - UAA-2/OS-2-124	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	2.20E+04	Yes	2.20E+04	OS - UAA-2/OS-2-124	No	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	9.40E+04	Yes	7.40E+04	OS - UAA-2/OS-2-124	Yes	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	7.30E+01	No	2.40E+00	OS - UAA-2/OS-2-124	Yes	4.90E+01	Yes	Yes	>Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	3.90E+02	No	8.40E+01	OS - UAA-2/OS-2-124	Yes	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
R - AA-R-1-48													
VOCs													
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	1.40E+02	No	1.86E+03	OS - UAA-2/OS-2-50	No	7.00E+01	Yes	No	</=BKG
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	1.80E+03	No	NA	OS - UAA-2/OS-2-50	--	1.90E+03	No	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	1 : 1 : 1	100	8.90E+02	No	NA	OS - UAA-2/OS-2-50	--	1.60E+02	Yes	Yes	>Screening Level
Acetone	67-64-1	ug/L	1 : 1 : 1	100	8.30E+04	No	NA	OS - UAA-2/OS-2-50	--	7.00E+02	Yes	Yes	>Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	1.50E+03	No	2.40E+01	OS - UAA-2/OS-2-50	Yes	5.00E+00	Yes	Yes	>Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.30E+04	No	1.04E+02	OS - UAA-2/OS-2-50	Yes	1.00E+02	Yes	Yes	>Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	1.40E+03	No	NA	OS - UAA-2/OS-2-50	--	7.00E+02	Yes	Yes	>Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	3.70E+03	No	NA	OS - UAA-2/OS-2-50	--	1.00E+03	Yes	Yes	>Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	1.60E+02	No	5.80E+01	OS - UAA-2/OS-2-50	Yes	2.00E+00	Yes	Yes	>Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	6.60E+02	No	NA	OS - UAA-2/OS-2-50	--	1.00E+04	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	1.40E+02	No	NA	OS - UAA-2/OS-2-50	--	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	1.30E+02	No	NA	OS - UAA-2/OS-2-50	--	7.50E+01	Yes	Yes	>Screening Level
2,4-Dimethylphenol	105-67-9	ug/L	1 : 1 : 1	100	2.80E+02	No	NA	OS - UAA-2/OS-2-50	--	1.40E+02	Yes	Yes	>Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	1.70E+03	No	NA	OS - UAA-2/OS-2-50	--	3.50E+01	Yes	Yes	>Screening Level
2-Methylphenol	95-48-7	ug/L	1 : 1 : 1	100	9.70E+01	No	NA	OS - UAA-2/OS-2-50	--	3.50E+02	No	No	</=Screening Level
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	1 : 1 : 1	100	2.90E+03	No	NA	OS - UAA-2/OS-2-50	--	3.50E+02	Yes	Yes	>Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	4.00E+04	No	NA	OS - UAA-2/OS-2-50	--	2.80E+01	Yes	Yes	>Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	7.90E+03	No	NA	OS - UAA-2/OS-2-50	--	1.40E+02	Yes	Yes	>Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	7.00E+04	No	NA	OS - UAA-2/OS-2-50	--	1.00E+02	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
R - AA-R-1-58													
VOCs													
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	7.50E+02	No	1.78E+03	OS - UAA-2/OS-2-60	No	7.00E+01	Yes	No	</=BKG
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	5.50E+02	No	NA	OS - UAA-2/OS-2-60	--	1.90E+03	No	No	</=Screening Level
Acetone	67-64-1	ug/L	1 : 1 : 1	100	2.10E+04	No	NA	OS - UAA-2/OS-2-60	--	7.00E+02	Yes	Yes	>Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	8.00E+02	No	3.00E+01	OS - UAA-2/OS-2-60	Yes	5.00E+00	Yes	Yes	>Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	6.90E+03	No	1.58E+02	OS - UAA-2/OS-2-60	Yes	1.00E+02	Yes	Yes	>Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	2.90E+03	No	NA	OS - UAA-2/OS-2-60	--	1.00E+03	Yes	Yes	>Screening Level
Trichloroethylene	79-01-6	ug/L	1 : 1 : 1	100	8.30E+01	No	NA	OS - UAA-2/OS-2-60	--	5.00E+00	Yes	Yes	>Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	1.50E+02	No	6.40E+01	OS - UAA-2/OS-2-60	Yes	2.00E+00	Yes	Yes	>Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	6.40E+02	No	NA	OS - UAA-2/OS-2-60	--	1.00E+04	No	No	</=Screening Level
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	3.70E+02	No	NA	OS - UAA-2/OS-2-60	--	7.50E+01	Yes	Yes	>Screening Level
2,4-Dimethylphenol	105-67-9	ug/L	1 : 1 : 1	100	3.50E+02	No	NA	OS - UAA-2/OS-2-60	--	1.40E+02	Yes	Yes	>Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	1.70E+03	No	4.80E+00	OS - UAA-2/OS-2-60	Yes	3.50E+01	Yes	Yes	>Screening Level
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	1 : 1 : 1	100	1.70E+03	No	NA	OS - UAA-2/OS-2-60	--	3.50E+02	Yes	Yes	>Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	4.60E+04	No	8.80E+00	OS - UAA-2/OS-2-60	Yes	2.80E+01	Yes	Yes	>Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	5.40E+03	No	NA	OS - UAA-2/OS-2-60	--	1.40E+02	Yes	Yes	>Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	2.70E+04	No	NA	OS - UAA-2/OS-2-60	--	1.00E+02	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
R - AA-R-1-68													
VOCs													
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	7.00E+02	No	2.80E+03	OS - UAA-2/OS-2-70	No	7.00E+01	Yes	No	</=BKG
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	6.70E+02	No	NA	OS - UAA-2/OS-2-70	--	1.90E+03	No	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	1 : 1 : 1	100	5.70E+02	No	NA	OS - UAA-2/OS-2-70	--	1.60E+02	Yes	Yes	>Screening Level
Acetone	67-64-1	ug/L	1 : 1 : 1	100	2.50E+04	No	NA	OS - UAA-2/OS-2-70	--	7.00E+02	Yes	Yes	>Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	8.30E+02	No	4.80E+01	OS - UAA-2/OS-2-70	Yes	5.00E+00	Yes	Yes	>Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	7.50E+03	No	1.62E+02	OS - UAA-2/OS-2-70	Yes	1.00E+02	Yes	Yes	>Screening Level
Tetrachloroethene	127-18-4	ug/L	1 : 1 : 1	100	2.30E+01	No	NA	OS - UAA-2/OS-2-70	--	5.00E+00	Yes	Yes	>Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	3.20E+03	No	NA	OS - UAA-2/OS-2-70	--	1.00E+03	Yes	Yes	>Screening Level
Trichloroethylene	79-01-6	ug/L	1 : 1 : 1	100	3.10E+01	No	NA	OS - UAA-2/OS-2-70	--	5.00E+00	Yes	Yes	>Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	2.20E+02	No	9.20E+01	OS - UAA-2/OS-2-70	Yes	2.00E+00	Yes	Yes	>Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	7.70E+02	No	NA	OS - UAA-2/OS-2-70	--	1.00E+04	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	2.50E+02	No	NA	OS - UAA-2/OS-2-70	--	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	4.10E+02	No	NA	OS - UAA-2/OS-2-70	--	7.50E+01	Yes	Yes	>Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	5.30E+02	No	3.20E+00	OS - UAA-2/OS-2-70	Yes	3.50E+01	Yes	Yes	>Screening Level
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	1 : 1 : 1	100	2.10E+03	No	NA	OS - UAA-2/OS-2-70	--	3.50E+02	Yes	Yes	>Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	5.10E+04	No	7.40E+00	OS - UAA-2/OS-2-70	Yes	2.80E+01	Yes	Yes	>Screening Level
Benzo(g,h,i)perylene	191-24-2	ug/L	1 : 1 : 1	100	2.10E+02	No	NA	OS - UAA-2/OS-2-70	--	2.10E+02	No	No	</=Screening Level
Chrysene	218-01-9	ug/L	1 : 1 : 1	100	1.10E+02	No	NA	OS - UAA-2/OS-2-70	--	1.50E+00	Yes	Yes	>Screening Level
Dibenzo(a,h)anthracene	53-70-3	ug/L	1 : 1 : 1	100	1.70E+02	No	NA	OS - UAA-2/OS-2-70	--	3.00E-01	Yes	Yes	>Screening Level
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	1 : 1 : 1	100	1.60E+02	No	NA	OS - UAA-2/OS-2-70	--	4.30E-01	Yes	Yes	>Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	4.30E+03	No	NA	OS - UAA-2/OS-2-70	--	1.40E+02	Yes	Yes	>Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	2.60E+04	No	NA	OS - UAA-2/OS-2-70	--	1.00E+02	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
R - AA-R-1-78													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	1.90E+02	No	6.60E+02	OS - UAA-2/OS-2-80	No	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	5.80E+01	No	3.60E+03	OS - UAA-2/OS-2-80	No	7.00E+01	No	No	</=Screening Level
Acetone	67-64-1	ug/L	1 : 1 : 1	100	2.50E+03	No	NA	OS - UAA-2/OS-2-80	--	7.00E+02	Yes	Yes	>Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	4.50E+02	No	1.10E+02	OS - UAA-2/OS-2-80	Yes	5.00E+00	Yes	Yes	>Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	5.00E+01	No	NA	OS - UAA-2/OS-2-80	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	4.30E+03	No	1.24E+02	OS - UAA-2/OS-2-80	Yes	1.00E+02	Yes	Yes	>Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	1.30E+03	No	NA	OS - UAA-2/OS-2-80	--	NA	--	No	No Dose-Response Value
Tetrachloroethene	127-18-4	ug/L	1 : 1 : 1	100	2.60E+01	No	NA	OS - UAA-2/OS-2-80	--	5.00E+00	Yes	Yes	>Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	5.90E+02	No	NA	OS - UAA-2/OS-2-80	--	1.00E+03	No	No	</=Screening Level
Trichloroethylene	79-01-6	ug/L	1 : 1 : 1	100	2.10E+01	No	NA	OS - UAA-2/OS-2-80	--	5.00E+00	Yes	Yes	>Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	2.30E+01	No	1.04E+02	OS - UAA-2/OS-2-80	No	2.00E+00	Yes	No	</=BKG
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	3.80E+02	No	NA	OS - UAA-2/OS-2-80	--	1.00E+04	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	1.90E+02	No	NA	OS - UAA-2/OS-2-80	--	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	3.00E+02	No	NA	OS - UAA-2/OS-2-80	--	7.50E+01	Yes	Yes	>Screening Level
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	1 : 1 : 1	100	2.00E+02	No	NA	OS - UAA-2/OS-2-80	--	3.50E+02	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	2.50E+04	No	1.20E+01	OS - UAA-2/OS-2-80	Yes	2.80E+01	Yes	Yes	>Screening Level
Benzo(g,h,i)perylene	191-24-2	ug/L	1 : 1 : 1	100	2.00E+02	No	NA	OS - UAA-2/OS-2-80	--	2.10E+02	No	No	</=Screening Level
Dibenzo(a,h)anthracene	53-70-3	ug/L	1 : 1 : 1	100	1.80E+02	No	NA	OS - UAA-2/OS-2-80	--	3.00E-01	Yes	Yes	>Screening Level
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	1 : 1 : 1	100	1.50E+02	No	NA	OS - UAA-2/OS-2-80	--	4.30E-01	Yes	Yes	>Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	4.10E+02	No	NA	OS - UAA-2/OS-2-80	--	1.40E+02	Yes	Yes	>Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	1.90E+03	No	NA	OS - UAA-2/OS-2-80	--	1.00E+02	Yes	Yes	>Screening Level
Pesticide													
alpha-BHC	319-84-6	ug/L	1 : 1 : 1	100	4.40E-01	No	NA	OS - UAA-2/OS-2-80	--	1.10E-01	Yes	Yes	>Screening Level
beta-BHC	319-85-7	ug/L	1 : 1 : 1	100	3.20E-01	No	NA	OS - UAA-2/OS-2-80	--	2.00E-01	Yes	Yes	>Screening Level
Dieldrin	60-57-1	ug/L	1 : 1 : 1	100	4.60E-01	No	NA	OS - UAA-2/OS-2-80	--	9.00E+00	No	No	</=Screening Level
Endosulfan II	33213-65-9	ug/L	1 : 1 : 1	100	2.80E-02	No	NA	OS - UAA-2/OS-2-80	--	4.20E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Endosulfan Sulfate	1031-07-8	ug/L	1 : 1 : 1	100	1.60E-01	No	NA	OS - UAA-2/OS-2-80	--	4.20E+01	No	No	</=Screening Level
gamma-BHC (Lindane)	58-89-9	ug/L	1 : 1 : 1	100	8.60E-02	No	NA	OS - UAA-2/OS-2-80	--	2.00E-01	No	No	</=Screening Level
gamma-Chlordane	5103-74-2	ug/L	1 : 1 : 1	100	5.90E-02	No	NA	OS - UAA-2/OS-2-80	--	2.00E+00	No	No	</=Screening Level
Heptachlor	76-44-8	ug/L	1 : 1 : 1	100	2.50E-01	No	NA	OS - UAA-2/OS-2-80	--	4.00E-01	No	No	</=Screening Level
Heptachlor Epoxide	1024-57-3	ug/L	1 : 1 : 1	100	1.50E-02	No	NA	OS - UAA-2/OS-2-80	--	2.00E-01	No	No	</=Screening Level
Methoxychlor	72-43-5	ug/L	1 : 1 : 1	100	2.50E-02	No	NA	OS - UAA-2/OS-2-80	--	4.00E+01	No	No	</=Screening Level
Herbicide													
2,4-D	94-75-7	ug/L	1 : 1 : 1	100	1.70E+00	No	NA	OS - UAA-2/OS-2-80	--	7.00E+01	No	No	</=Screening Level
Dichlorprop	120-36-5	ug/L	1 : 1 : 1	100	4.30E+01	No	NA	OS - UAA-2/OS-2-80	--	2.92E+02	No	No	</=Screening Level
MCPA	94-74-6	ug/L	1 : 1 : 1	100	4.40E+01	No	NA	OS - UAA-2/OS-2-80	--	1.80E+01	Yes	Yes	>Screening Level
MCPP	93-65-2	ug/L	1 : 1 : 1	100	1.10E+02	No	NA	OS - UAA-2/OS-2-80	--	3.60E+01	Yes	Yes	>Screening Level
Pentachlorophenol	87-86-5	ug/L	1 : 1 : 1	100	9.00E-01	No	NA	OS - UAA-2/OS-2-80	--	1.00E+00	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	1.70E+04	No	NA	OS - UAA-2/OS-2-80	--	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	3.10E+01	No	NA	OS - UAA-2/OS-2-80	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	1.20E+03	No	NA	OS - UAA-2/OS-2-80	--	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	1.00E+00	No	NA	OS - UAA-2/OS-2-80	--	4.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	3.20E+05	Yes	NA	OS - UAA-2/OS-2-80	--	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	1.30E+02	No	NA	OS - UAA-2/OS-2-80	--	1.00E+02	Yes	Yes	>Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	1.60E+01	No	NA	OS - UAA-2/OS-2-80	--	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	6.70E+01	No	NA	OS - UAA-2/OS-2-80	--	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	7.70E+04	Yes	NA	OS - UAA-2/OS-2-80	--	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	1.60E+01	No	NA	OS - UAA-2/OS-2-80	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	6.70E+04	Yes	NA	OS - UAA-2/OS-2-80	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	4.50E+03	No	NA	OS - UAA-2/OS-2-80	--	1.50E+02	Yes	Yes	>Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	7.20E+01	No	NA	OS - UAA-2/OS-2-80	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.70E+04	Yes	NA	OS - UAA-2/OS-2-80	--	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	1.40E+05	Yes	NA	OS - UAA-2/OS-2-80	--	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	5.80E+01	No	NA	OS - UAA-2/OS-2-80	--	4.90E+01	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	3.50E+02	No	NA	OS - UAA-2/OS-2-80	--	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
R - AA-R-1-88													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	2.10E+01	No	2.60E+01	OS - UAA-2/OS-2-90	No	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	1.20E+01	No	1.14E+02	OS - UAA-2/OS-2-90	No	7.00E+01	No	No	</=Screening Level
Acetone	67-64-1	ug/L	1 : 1 : 1	100	4.70E+02	No	NA	OS - UAA-2/OS-2-90	--	7.00E+02	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	1.20E+02	No	2.60E+01	OS - UAA-2/OS-2-90	Yes	5.00E+00	Yes	Yes	>Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.20E+03	No	3.60E+03	OS - UAA-2/OS-2-90	No	1.00E+02	Yes	No	</=BKG
Chloroethane	75-00-3	ug/L	1 : 1 : 1	100	1.50E+01	No	NA	OS - UAA-2/OS-2-90	--	4.60E+00	Yes	Yes	>Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	3.20E+01	No	NA	OS - UAA-2/OS-2-90	--	1.00E+03	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	1.30E+01	No	2.00E+01	OS - UAA-2/OS-2-90	No	2.00E+00	Yes	No	</=BKG
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	1.60E+01	No	NA	OS - UAA-2/OS-2-90	--	1.00E+04	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	6.00E+01	No	1.46E+01	OS - UAA-2/OS-2-90	Yes	6.00E+02	No	No	</=Screening Level
1,3-Dichlorobenzene	541-73-1	ug/L	1 : 1 : 1	100	1.80E+01	No	3.20E+01	OS - UAA-2/OS-2-90	No	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	1.20E+02	No	4.80E+02	OS - UAA-2/OS-2-90	No	7.50E+01	Yes	No	</=BKG
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	2.20E+01	No	4.80E+01	OS - UAA-2/OS-2-90	No	3.50E+01	No	No	</=Screening Level
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	1 : 1 : 1	100	2.20E+01	No	NA	OS - UAA-2/OS-2-90	--	3.50E+02	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	1.30E+03	No	1.72E+01	OS - UAA-2/OS-2-90	Yes	2.80E+01	Yes	Yes	>Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	6.80E+01	No	NA	OS - UAA-2/OS-2-90	--	1.40E+02	No	No	</=Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	3.50E+02	No	NA	OS - UAA-2/OS-2-90	--	1.00E+02	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
R - AA-R-1-98													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	1.20E+01	No	NA	OS - UAA-2/OS-2-100	--	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	1.80E+01	No	2.20E+01	OS - UAA-2/OS-2-100	No	7.00E+01	No	No	</=Screening Level
Acetone	67-64-1	ug/L	1 : 1 : 1	100	1.50E+02	No	NA	OS - UAA-2/OS-2-100	--	7.00E+02	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	3.00E+01	No	4.00E+01	OS - UAA-2/OS-2-100	No	5.00E+00	Yes	No	</=BKG
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.00E+03	No	5.20E+03	OS - UAA-2/OS-2-100	No	1.00E+02	Yes	No	</=BKG
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	9.80E+01	No	NA	OS - UAA-2/OS-2-100	--	7.00E+02	No	No	</=Screening Level
Tetrachloroethene	127-18-4	ug/L	1 : 1 : 1	100	2.40E+01	No	NA	OS - UAA-2/OS-2-100	--	5.00E+00	Yes	Yes	>Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	1.80E+01	No	NA	OS - UAA-2/OS-2-100	--	1.00E+03	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	1.00E+01	No	1.44E+01	OS - UAA-2/OS-2-100	No	2.00E+00	Yes	No	</=BKG
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	7.30E+02	No	NA	OS - UAA-2/OS-2-100	--	1.00E+04	No	No	</=Screening Level
SVOCs													
1,2,4-Trichlorobenzene	120-82-1	ug/L	1 : 1 : 1	100	2.00E+01	No	NA	OS - UAA-2/OS-2-100	--	7.00E+01	No	No	</=Screening Level
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	9.40E+02	No	1.96E+01	OS - UAA-2/OS-2-100	Yes	6.00E+02	Yes	Yes	>Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	3.00E+02	No	7.40E+02	OS - UAA-2/OS-2-100	No	7.50E+01	Yes	No	</=BKG
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	9.80E+01	No	1.60E+01	OS - UAA-2/OS-2-100	Yes	2.10E+01	Yes	Yes	>Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	2.50E+01	No	3.60E+01	OS - UAA-2/OS-2-100	No	3.50E+01	No	No	</=Screening Level
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	1 : 1 : 1	100	9.10E+00	No	NA	OS - UAA-2/OS-2-100	--	3.50E+02	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	4.80E+03	No	6.20E+00	OS - UAA-2/OS-2-100	Yes	2.80E+01	Yes	Yes	>Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	1.80E+02	No	NA	OS - UAA-2/OS-2-100	--	1.40E+02	Yes	Yes	>Screening Level
Phenol	108-95-2	ug/L	1 : 1 : 1	100	1.30E+02	No	NA	OS - UAA-2/OS-2-100	--	1.00E+02	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
R - BDRK-R-1-163													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	3.20E-01	No	3.20E+01	OS - UAA-2/OS-2-124	No	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	5.50E-01	No	1.54E+02	OS - UAA-2/OS-2-124	No	7.00E+01	No	No	</=Screening Level
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	1.50E+00	No	NA	OS - UAA-2/OS-2-124	--	1.90E+03	No	No	</=Screening Level
Acetone	67-64-1	ug/L	1 : 1 : 1	100	2.00E+01	No	NA	OS - UAA-2/OS-2-124	--	7.00E+02	No	No	</=Screening Level
Benzene	71-43-2	ug/L	1 : 1 : 1	100	1.10E+01	No	4.80E+01	OS - UAA-2/OS-2-124	No	5.00E+00	Yes	No	</=BKG
Bromodichloromethane	75-27-4	ug/L	1 : 1 : 1	100	2.40E-01	No	NA	OS - UAA-2/OS-2-124	--	8.00E+01	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	1.80E+00	No	NA	OS - UAA-2/OS-2-124	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	4.00E+01	No	4.00E+03	OS - UAA-2/OS-2-124	No	1.00E+02	No	No	</=Screening Level
Chloroform	67-66-3	ug/L	1 : 1 : 1	100	3.50E+00	No	NA	OS - UAA-2/OS-2-124	--	8.00E+01	No	No	</=Screening Level
Ethylbenzene	100-41-4	ug/L	1 : 1 : 1	100	9.40E-01	No	NA	OS - UAA-2/OS-2-124	--	7.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	4.00E+00	No	2.00E+02	OS - UAA-2/OS-2-124	No	NA	--	No	</=BKG
Toluene	108-88-3	ug/L	1 : 1 : 1	100	3.60E+00	No	NA	OS - UAA-2/OS-2-124	--	1.00E+03	No	No	</=Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	6.00E+00	No	NA	OS - UAA-2/OS-2-124	--	1.00E+04	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	4.60E+00	No	1.48E+01	OS - UAA-2/OS-2-124	No	6.00E+02	No	No	</=Screening Level
2,4-Dichlorophenol	120-83-2	ug/L	1 : 1 : 1	100	5.40E+00	No	1.66E+01	OS - UAA-2/OS-2-124	No	2.10E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	4.80E+00	No	4.00E+01	OS - UAA-2/OS-2-124	No	3.50E+01	No	No	</=Screening Level
3-Methylphenol/4-Methylphenol	106-44-5	ug/L	1 : 1 : 1	100	2.20E+00	No	NA	OS - UAA-2/OS-2-124	--	3.50E+02	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	1.60E+03	No	4.80E+00	OS - UAA-2/OS-2-124	Yes	2.80E+01	Yes	Yes	>Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	4.90E+00	No	2.40E+01	OS - UAA-2/OS-2-124	No	1.40E+02	No	No	</=Screening Level
Herbicide													
2,4,5-T	93-76-5	ug/L	1 : 1 : 1	100	9.20E-01	No	NA	OS - UAA-2/OS-2-124	--	3.60E+02	No	No	</=Screening Level
2,4-D	94-75-7	ug/L	1 : 1 : 1	100	3.10E+00	No	NA	OS - UAA-2/OS-2-124	--	7.00E+01	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	2.90E+04	No	NA	OS - UAA-2/OS-2-124	--	3.60E+04	No	No	</=Screening Level
Antimony	7440-36-0	ug/L	1 : 1 : 1	100	4.60E+00	No	NA	OS - UAA-2/OS-2-124	--	6.00E+00	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	3.00E+01	No	NA	OS - UAA-2/OS-2-124	--	5.00E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
Barium	7440-39-3	ug/L	1 : 1 : 1	100	2.60E+02	No	1.96E+02	OS - UAA-2/OS-2-124	Yes	2.00E+03	No	No	</=Screening Level
Cadmium	7440-43-9	ug/L	1 : 1 : 1	100	1.10E+00	No	NA	OS - UAA-2/OS-2-124	--	5.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	3.70E+05	Yes	6.80E+05	OS - UAA-2/OS-2-124	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	4.00E+01	No	NA	OS - UAA-2/OS-2-124	--	1.00E+02	No	No	</=Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	9.40E+00	No	NA	OS - UAA-2/OS-2-124	--	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	1.90E+01	No	NA	OS - UAA-2/OS-2-124	--	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	1.90E+04	Yes	7.40E+04	OS - UAA-2/OS-2-124	No	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	1.30E+01	No	NA	OS - UAA-2/OS-2-124	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	6.00E+04	Yes	1.00E+05	OS - UAA-2/OS-2-124	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	2.00E+02	No	3.20E+03	OS - UAA-2/OS-2-124	No	1.50E+02	Yes	No	</=BKG
Mercury	7439-97-6	ug/L	1 : 1 : 1	100	2.00E-01	No	NA	OS - UAA-2/OS-2-124	--	2.00E+00	No	No	</=Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	3.80E+01	No	NA	OS - UAA-2/OS-2-124	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	2.30E+04	Yes	2.20E+04	OS - UAA-2/OS-2-124	Yes	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	3.20E+05	Yes	7.40E+04	OS - UAA-2/OS-2-124	Yes	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	6.00E+01	No	2.40E+00	OS - UAA-2/OS-2-124	Yes	4.90E+01	Yes	Yes	>Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	5.10E+01	No	8.40E+01	OS - UAA-2/OS-2-124	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-1-104													
VOCs													
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	1.50E+00	No	NA	OS - UAA-3/OS-3-104	--	7.00E+01	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	9.40E-01	No	NA	OS - UAA-3/OS-3-104	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	7.00E+01	No	4.20E+03	OS - UAA-3/OS-3-104	No	1.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	8.40E+00	No	3.40E+02	OS - UAA-3/OS-3-104	No	NA	--	No	</=BKG
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	2.10E+04	No	6.20E+03	OS - UAA-3/OS-3-104	Yes	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	2.10E+01	No	NA	OS - UAA-3/OS-3-104	--	5.00E+01	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	6.70E+02	No	2.00E+03	OS - UAA-3/OS-3-104	No	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	9.30E-01	No	NA	OS - UAA-3/OS-3-104	--	4.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	1.90E+05	Yes	5.20E+05	OS - UAA-3/OS-3-104	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	2.50E+02	No	1.48E+02	OS - UAA-3/OS-3-104	Yes	1.00E+02	Yes	Yes	>Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	1.60E+01	No	6.60E+00	OS - UAA-3/OS-3-104	Yes	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	5.80E+01	No	1.10E+02	OS - UAA-3/OS-3-104	No	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	7.30E+04	Yes	5.00E+04	OS - UAA-3/OS-3-104	Yes	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	2.30E+01	No	6.20E+00	OS - UAA-3/OS-3-104	Yes	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	4.60E+04	Yes	1.48E+05	OS - UAA-3/OS-3-104	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	1.50E+03	No	2.20E+03	OS - UAA-3/OS-3-104	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	6.80E+01	No	5.40E+01	OS - UAA-3/OS-3-104	Yes	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	3.00E+04	Yes	2.40E+04	OS - UAA-3/OS-3-104	Yes	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	2.60E+04	Yes	1.60E+05	OS - UAA-3/OS-3-104	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	4.20E+01	No	NA	OS - UAA-3/OS-3-104	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	1.60E+02	No	7.20E+02	OS - UAA-3/OS-3-104	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-1-114													
VOCs													
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	5.70E-01	No	NA	OS - UAA-3/OS-3-114	--	7.00E+01	No	No	</=Screening Level
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	1 : 1 : 1	100	1.00E+00	No	NA	OS - UAA-3/OS-3-114	--	1.60E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	4.10E+02	No	1.14E+03	OS - UAA-3/OS-3-114	No	1.00E+02	Yes	No	</=BKG
SVOCs													
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	7.10E+00	No	3.40E+01	OS - UAA-3/OS-3-114	No	3.50E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	3.30E+00	No	NA	OS - UAA-3/OS-3-114	--	1.40E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-1-124													
VOCs													
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	1.50E+01	No	NA	OS - UAA-3/OS-3-116	--	1.90E+03	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	8.80E-01	No	NA	OS - UAA-3/OS-3-116	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	7.80E+01	No	7.20E+02	OS - UAA-3/OS-3-116	No	1.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	7.70E-01	No	2.80E+01	OS - UAA-3/OS-3-116	No	NA	--	No	</=BKG
Toluene	108-88-3	ug/L	1 : 1 : 1	100	7.90E-01	No	NA	OS - UAA-3/OS-3-116	--	1.00E+03	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	2.50E+00	No	NA	OS - UAA-3/OS-3-116	--	2.00E+00	Yes	Yes	>Screening Level
PCBs													
Total PCBs	1336-36-3	ug/L	1 : 1 : 1	100	1.20E-01	No	1.20E-01	OS - UAA-3/OS-3-116	No	5.00E-01	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	1.20E+04	No	2.40E+03	OS - UAA-3/OS-3-116	Yes	3.60E+04	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	6.10E+02	No	3.00E+02	OS - UAA-3/OS-3-116	Yes	2.00E+03	No	No	</=Screening Level
Beryllium	7440-41-7	ug/L	1 : 1 : 1	100	4.20E-01	No	NA	OS - UAA-3/OS-3-116	--	4.00E+00	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.20E+05	Yes	6.80E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	1.80E+02	No	7.60E+01	OS - UAA-3/OS-3-116	Yes	1.00E+02	Yes	Yes	>Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	7.30E+00	No	3.00E+00	OS - UAA-3/OS-3-116	Yes	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	3.50E+01	No	5.00E+01	OS - UAA-3/OS-3-116	No	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	6.20E+04	Yes	1.22E+05	OS - UAA-3/OS-3-116	No	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	8.00E+00	No	NA	OS - UAA-3/OS-3-116	--	7.50E+00	Yes	Yes	>Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	5.20E+04	Yes	2.40E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	1.90E+03	No	2.40E+03	OS - UAA-3/OS-3-116	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	4.10E+01	No	2.20E+01	OS - UAA-3/OS-3-116	Yes	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	3.30E+04	Yes	2.20E+04	OS - UAA-3/OS-3-116	Yes	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	4.30E+04	Yes	1.22E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	2.00E+01	No	NA	OS - UAA-3/OS-3-116	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	9.90E+01	No	4.60E+02	OS - UAA-3/OS-3-116	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-1-34													
VOCs													
Chloroethane	75-00-3	ug/L	1 : 1 : 1	100	3.30E+00	No	NA	OS - UAA-3/OS-3-34	--	4.60E+00	No	No	</=Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	3.40E-01	No	NA	OS - UAA-3/OS-3-34	--	1.50E+00	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	1.40E+00	No	NA	OS - UAA-3/OS-3-34	--	6.00E+02	No	No	</=Screening Level
bis(2-Chloroethyl)ether	111-44-4	ug/L	1 : 1 : 1	100	1.40E+00	No	NA	OS - UAA-3/OS-3-34	--	1.00E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-1-54													
VOCs													
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	8.00E+00	No	NA	OS - UAA-3/OS-3-54	--	1.90E+03	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	4.40E-01	No	3.20E+02	OS - UAA-3/OS-3-54	No	1.00E+02	No	No	</=Screening Level
Chloromethane	74-87-3	ug/L	1 : 1 : 1	100	3.20E-01	No	NA	OS - UAA-3/OS-3-54	--	1.50E+00	No	No	</=Screening Level
SVOCs													
bis(2-Ethylhexyl)phthalate	117-81-7	ug/L	1 : 1 : 1	100	3.50E+00	No	NA	OS - UAA-3/OS-3-54	--	6.00E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-1-64													
VOCs													
Dichloromethane	75-09-2	ug/L	1 : 1 : 1	100	4.20E-01	No	NA	OS - UAA-3/OS-3-64	--	5.00E+00	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	1.10E+01	No	3.40E+02	OS - UAA-3/OS-3-64	No	NA	--	No	</=BKG
Metals													
Barium	7440-39-3	ug/L	1 : 1 : 1	100	6.20E+02	No	2.00E+02	OS - UAA-3/OS-3-64	Yes	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.20E+05	Yes	4.40E+05	OS - UAA-3/OS-3-64	No	NA	--	No	EN
Iron	7439-89-6	ug/L	1 : 1 : 1	100	3.50E+04	Yes	1.96E+04	OS - UAA-3/OS-3-64	Yes	5.00E+03	Yes	No	EN
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	4.50E+04	Yes	1.26E+05	OS - UAA-3/OS-3-64	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	2.80E+03	No	8.20E+03	OS - UAA-3/OS-3-64	No	1.50E+02	Yes	No	</=BKG
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	9.00E+03	Yes	1.00E+05	OS - UAA-3/OS-3-64	No	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	3.30E+04	Yes	1.76E+05	OS - UAA-3/OS-3-64	No	NA	--	No	EN
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	2.00E+01	No	9.00E+01	OS - UAA-3/OS-3-64	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-1-74													
VOCs													
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	5.30E-01	No	7.00E+00	OS - UAA-3/OS-3-74	No	7.00E+01	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	4.80E+00	No	3.00E+02	OS - UAA-3/OS-3-74	No	1.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-1-84													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	5.55E-01	No	NA	OS - UAA-3/OS-3-84	--	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	7.95E-01	No	NA	OS - UAA-3/OS-3-84	--	7.00E+01	No	No	</=Screening Level
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	7.70E+00	No	NA	OS - UAA-3/OS-3-84	--	1.90E+03	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	2.20E+01	No	2.60E+03	OS - UAA-3/OS-3-84	No	1.00E+02	No	No	</=Screening Level
Toluene	108-88-3	ug/L	1 : 1 : 1	100	4.60E-01	No	NA	OS - UAA-3/OS-3-84	--	1.00E+03	No	No	</=Screening Level
Trichloroethylene	79-01-6	ug/L	1 : 1 : 1	100	5.90E-01	No	NA	OS - UAA-3/OS-3-84	--	5.00E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-1-94													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	5.30E-01	No	NA	OS - UAA-3/OS-3-94	--	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	7.40E-01	No	NA	OS - UAA-3/OS-3-94	--	7.00E+01	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	2.70E+01	No	4.20E+03	OS - UAA-3/OS-3-94	No	1.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-2-108													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.40E+02	No	4.20E+03	OS - UAA-3/OS-3-104	No	1.00E+02	Yes	No	</=BKG
SVOCs													
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	4.40E+00	No	2.80E+01	OS - UAA-3/OS-3-104	No	3.50E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	2.00E+00	No	NA	OS - UAA-3/OS-3-104	--	1.40E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-2-118													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	3.40E+02	No	7.20E+02	OS - UAA-3/OS-3-116	No	1.00E+02	Yes	No	</=BKG
SVOCs													
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	1.00E+01	No	1.94E+01	OS - UAA-3/OS-3-116	No	3.50E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	4.80E+00	No	NA	OS - UAA-3/OS-3-116	--	1.40E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-2-118.5													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	2.90E+02	No	7.20E+02	OS - UAA-3/OS-3-116	No	1.00E+02	Yes	No	</=BKG
Methane	74-82-8	ug/L	1 : 1 : 1	100	2.90E+01	No	2.80E+01	OS - UAA-3/OS-3-116	Yes	NA	--	No	No Dose-Response Value
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	2.30E+00	No	NA	OS - UAA-3/OS-3-116	--	2.00E+00	Yes	Yes	>Screening Level
SVOCs													
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	5.90E+00	No	1.94E+01	OS - UAA-3/OS-3-116	No	3.50E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	3.00E+00	No	NA	OS - UAA-3/OS-3-116	--	1.40E+02	No	No	</=Screening Level
Pesticide													
beta-BHC	319-85-7	ug/L	1 : 1 : 1	100	1.00E-01	No	3.20E-02	OS - UAA-3/OS-3-116	Yes	2.00E-01	No	No	</=Screening Level
Herbicide													
2,4,5-TP (Silvex)	93-72-1	ug/L	1 : 1 : 1	100	9.90E-02	No	1.72E-01	OS - UAA-3/OS-3-116	No	5.00E+01	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	5.80E+03	No	2.40E+03	OS - UAA-3/OS-3-116	Yes	3.60E+04	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	4.00E+02	No	3.00E+02	OS - UAA-3/OS-3-116	Yes	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.00E+05	Yes	6.80E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	8.80E+01	No	7.60E+01	OS - UAA-3/OS-3-116	Yes	1.00E+02	No	No	</=Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	2.70E+00	No	3.00E+00	OS - UAA-3/OS-3-116	No	1.00E+03	No	No	</=Screening Level
Copper	7440-50-8	ug/L	1 : 1 : 1	100	1.90E+01	No	5.00E+01	OS - UAA-3/OS-3-116	No	6.50E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	3.70E+04	Yes	1.22E+05	OS - UAA-3/OS-3-116	No	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	3.00E+00	No	NA	OS - UAA-3/OS-3-116	--	7.50E+00	No	No	</=Screening Level
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	5.30E+04	Yes	2.40E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	1.00E+03	No	2.40E+03	OS - UAA-3/OS-3-116	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.80E+01	No	2.20E+01	OS - UAA-3/OS-3-116	No	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	4.10E+04	Yes	2.20E+04	OS - UAA-3/OS-3-116	Yes	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	4.50E+04	Yes	1.22E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	8.00E+00	No	NA	OS - UAA-3/OS-3-116	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	3.70E+01	No	4.60E+02	OS - UAA-3/OS-3-116	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-2-48													
VOCs													
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	6.60E-01	No	NA	OS - UAA-3/OS-3-44	--	7.00E+02	No	No	</=Screening Level
Xylenes, Total	1330-20-7	ug/L	1 : 1 : 1	100	5.70E-01	No	NA	OS - UAA-3/OS-3-44	--	1.00E+04	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-2-68													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.60E+00	No	6.20E+01	OS - UAA-3/OS-3-64	No	1.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-2-78													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	8.90E+00	No	3.00E+02	OS - UAA-3/OS-3-74	No	1.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	6.10E-01	No	NA	OS - UAA-3/OS-3-74	--	NA	--	No	No Dose-Response Value
Pesticide													
beta-BHC	319-85-7	ug/L	1 : 1 : 1	100	1.10E-02	No	NA	OS - UAA-3/OS-3-74	--	2.00E-01	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	2.50E+03	No	NA	OS - UAA-3/OS-3-74	--	3.60E+04	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	2.50E+02	No	NA	OS - UAA-3/OS-3-74	--	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.10E+05	Yes	NA	OS - UAA-3/OS-3-74	--	NA	--	No	EN
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	2.20E+01	No	NA	OS - UAA-3/OS-3-74	--	1.00E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	3.20E+04	Yes	NA	OS - UAA-3/OS-3-74	--	5.00E+03	Yes	No	EN
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	4.60E+04	Yes	NA	OS - UAA-3/OS-3-74	--	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	2.80E+03	No	NA	OS - UAA-3/OS-3-74	--	1.50E+02	Yes	Yes	>Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	6.40E+00	No	NA	OS - UAA-3/OS-3-74	--	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	9.00E+03	Yes	NA	OS - UAA-3/OS-3-74	--	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	3.50E+04	Yes	NA	OS - UAA-3/OS-3-74	--	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	3.90E+00	No	NA	OS - UAA-3/OS-3-74	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	2.40E+01	No	NA	OS - UAA-3/OS-3-74	--	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-2-88													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	4.00E-01	No	NA	OS - UAA-3/OS-3-84	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	2.40E+01	No	2.60E+03	OS - UAA-3/OS-3-84	No	1.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-2-98													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	4.70E-01	No	NA	OS - UAA-3/OS-3-94	--	7.00E+02	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	1.10E+00	No	NA	OS - UAA-3/OS-3-94	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	3.50E+01	No	4.20E+03	OS - UAA-3/OS-3-94	No	1.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-3-104													
VOCs													
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-3/OS-3-104	--	7.00E+01	No	No	</=Screening Level
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	5.30E-01	No	NA	OS - UAA-3/OS-3-104	--	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.80E+02	No	4.20E+03	OS - UAA-3/OS-3-104	No	1.00E+02	Yes	No	</=BKG
Methane	74-82-8	ug/L	1 : 1 : 1	100	9.90E+00	No	3.40E+02	OS - UAA-3/OS-3-104	No	NA	--	No	</=BKG
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	6.10E-01	No	NA	OS - UAA-3/OS-3-104	--	2.00E+00	No	No	</=Screening Level
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	1.30E+00	No	4.40E+03	OS - UAA-3/OS-3-104	No	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	4.20E+00	No	2.80E+01	OS - UAA-3/OS-3-104	No	3.50E+01	No	No	</=Screening Level
Benzo(b)fluoranthene	205-99-2	ug/L	1 : 1 : 1	100	3.80E+00	No	2.60E+00	OS - UAA-3/OS-3-104	Yes	1.80E-01	Yes	Yes	>Screening Level
Benzo(g,h,i)perylene	191-24-2	ug/L	1 : 1 : 1	100	1.30E+00	No	3.20E+00	OS - UAA-3/OS-3-104	No	2.10E+02	No	No	</=Screening Level
Benzo(k)fluoranthene	207-08-9	ug/L	1 : 1 : 1	100	6.60E-01	No	NA	OS - UAA-3/OS-3-104	--	1.70E-01	Yes	Yes	>Screening Level
Chrysene	218-01-9	ug/L	1 : 1 : 1	100	5.50E-01	No	1.38E+00	OS - UAA-3/OS-3-104	No	1.50E+00	No	No	</=Screening Level
Dibenzo(a,h)anthracene	53-70-3	ug/L	1 : 1 : 1	100	2.80E+00	No	3.00E+00	OS - UAA-3/OS-3-104	No	3.00E-01	Yes	No	</=BKG
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	1 : 1 : 1	100	9.60E-01	No	NA	OS - UAA-3/OS-3-104	--	4.30E-01	Yes	Yes	>Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	2.20E+00	No	NA	OS - UAA-3/OS-3-104	--	1.40E+02	No	No	</=Screening Level
Pesticide													
beta-BHC	319-85-7	ug/L	1 : 1 : 1	100	7.00E-02	No	NA	OS - UAA-3/OS-3-104	--	2.00E-01	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	4.70E+03	No	6.20E+03	OS - UAA-3/OS-3-104	No	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	3.70E+00	No	NA	OS - UAA-3/OS-3-104	--	5.00E+01	No	No	</=Screening Level
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	7.30E+01	No	1.48E+02	OS - UAA-3/OS-3-104	No	1.00E+02	No	No	</=Screening Level
Cobalt	7440-48-4	ug/L	1 : 1 : 1	100	2.50E+00	No	6.60E+00	OS - UAA-3/OS-3-104	No	1.00E+03	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	3.10E+04	Yes	5.00E+04	OS - UAA-3/OS-3-104	No	5.00E+03	Yes	No	EN
Lead	7439-92-1	ug/L	1 : 1 : 1	100	6.10E+00	No	6.20E+00	OS - UAA-3/OS-3-104	No	7.50E+00	No	No	</=Screening Level
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	7.60E+02	No	2.20E+03	OS - UAA-3/OS-3-104	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.70E+01	No	5.40E+01	OS - UAA-3/OS-3-104	No	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	3.40E+04	Yes	2.40E+04	OS - UAA-3/OS-3-104	Yes	NA	--	No	EN

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-3-114													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	5.30E+02	No	1.14E+03	OS - UAA-3/OS-3-114	No	1.00E+02	Yes	No	</=BKG
Toluene	108-88-3	ug/L	1 : 1 : 1	100	1.40E+00	No	NA	OS - UAA-3/OS-3-114	--	1.00E+03	No	No	</=Screening Level
SVOCs													
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	1.00E+01	No	3.40E+01	OS - UAA-3/OS-3-114	No	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	3.70E+00	No	NA	OS - UAA-3/OS-3-114	--	2.80E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	5.70E+00	No	NA	OS - UAA-3/OS-3-114	--	1.40E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-3-124													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	4.60E+02	No	7.20E+02	OS - UAA-3/OS-3-116	No	1.00E+02	Yes	No	</=BKG
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	1.80E+00	No	NA	OS - UAA-3/OS-3-116	--	2.00E+00	No	No	</=Screening Level
SVOCs													
1,2-Dichlorobenzene	95-50-1	ug/L	1 : 1 : 1	100	1.40E+00	No	3.20E+01	OS - UAA-3/OS-3-116	No	6.00E+02	No	No	</=Screening Level
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	1.40E+00	No	3.00E+03	OS - UAA-3/OS-3-116	No	7.50E+01	No	No	</=Screening Level
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	7.90E+00	No	1.94E+01	OS - UAA-3/OS-3-116	No	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	2.40E+00	No	1.96E+01	OS - UAA-3/OS-3-116	No	2.80E+01	No	No	</=Screening Level
bis(2-Ethylhexyl)phthalate	117-81-7	ug/L	1 : 1 : 1	100	1.00E+00	No	NA	OS - UAA-3/OS-3-116	--	6.00E+00	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	4.10E+00	No	NA	OS - UAA-3/OS-3-116	--	1.40E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-3-132													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	2.50E+02	No	7.20E+02	OS - UAA-3/OS-3-116	No	1.00E+02	Yes	No	</=BKG
Methane	74-82-8	ug/L	1 : 1 : 1	100	4.20E+01	No	2.80E+01	OS - UAA-3/OS-3-116	Yes	NA	--	No	No Dose-Response Value
Toluene	108-88-3	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-3/OS-3-116	--	1.00E+03	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	6.10E+00	No	NA	OS - UAA-3/OS-3-116	--	2.00E+00	Yes	Yes	>Screening Level
SVOCs													
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	4.30E+00	No	1.94E+01	OS - UAA-3/OS-3-116	No	3.50E+01	No	No	</=Screening Level
4-Chloroaniline	106-47-8	ug/L	1 : 1 : 1	100	1.70E+00	No	1.96E+01	OS - UAA-3/OS-3-116	No	2.80E+01	No	No	</=Screening Level
Naphthalene	91-20-3	ug/L	1 : 1 : 1	100	2.30E+00	No	NA	OS - UAA-3/OS-3-116	--	1.40E+02	No	No	</=Screening Level
Pesticide													
beta-BHC	319-85-7	ug/L	1 : 1 : 1	100	8.70E-02	No	3.20E-02	OS - UAA-3/OS-3-116	Yes	2.00E-01	No	No	</=Screening Level
gamma-BHC (Lindane)	58-89-9	ug/L	1 : 1 : 1	100	5.10E-03	No	NA	OS - UAA-3/OS-3-116	--	2.00E-01	No	No	</=Screening Level
Herbicide													
2,4,5-TP (Silvex)	93-72-1	ug/L	1 : 1 : 1	100	1.20E-01	No	1.72E-01	OS - UAA-3/OS-3-116	No	5.00E+01	No	No	</=Screening Level
PCBs													
Total PCBs	1336-36-3	ug/L	1 : 1 : 1	100	4.00E-02	No	1.20E-01	OS - UAA-3/OS-3-116	No	5.00E-01	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	1.00E+03	No	2.40E+03	OS - UAA-3/OS-3-116	No	3.60E+04	No	No	</=Screening Level
Chromium	7440-47-3	ug/L	1 : 1 : 1	100	1.70E+01	No	7.60E+01	OS - UAA-3/OS-3-116	No	1.00E+02	No	No	</=Screening Level
Iron	7439-89-6	ug/L	1 : 1 : 1	100	2.60E+04	Yes	1.22E+05	OS - UAA-3/OS-3-116	No	5.00E+03	Yes	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	5.70E+02	No	2.40E+03	OS - UAA-3/OS-3-116	No	1.50E+02	Yes	No	</=BKG
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	1.00E+01	No	2.20E+01	OS - UAA-3/OS-3-116	No	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	4.00E+04	Yes	2.20E+04	OS - UAA-3/OS-3-116	Yes	NA	--	No	EN

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-3-34													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-3/OS-3-34	--	1.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-3-44													
VOCs													
Toluene	108-88-3	ug/L	1 : 1 : 1	100	3.40E-01	No	NA	OS - UAA-3/OS-3-44	--	1.00E+03	No	No	</=Screening Level
SVOCs													
bis(2-Ethylhexyl)phthalate	117-81-7	ug/L	1 : 1 : 1	100	8.80E-01	No	NA	OS - UAA-3/OS-3-44	--	6.00E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-3-54													
VOCs													
2-Butanone (MEK)	78-93-3	ug/L	1 : 1 : 1	100	6.30E+00	No	NA	OS - UAA-3/OS-3-54	--	1.90E+03	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.40E+00	No	3.20E+02	OS - UAA-3/OS-3-54	No	1.00E+02	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-3-64													
VOCs													
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	2.10E+00	No	6.20E+01	OS - UAA-3/OS-3-64	No	1.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	2.70E+01	No	3.40E+02	OS - UAA-3/OS-3-64	No	NA	--	No	</=BKG
SVOCs													
1,4-Dichlorobenzene	106-46-7	ug/L	1 : 1 : 1	100	1.40E+00	No	NA	OS - UAA-3/OS-3-64	--	7.50E+01	No	No	</=Screening Level
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	1.80E+02	No	5.00E+02	OS - UAA-3/OS-3-64	No	3.60E+04	No	No	</=Screening Level
Barium	7440-39-3	ug/L	1 : 1 : 1	100	7.00E+02	No	2.00E+02	OS - UAA-3/OS-3-64	Yes	2.00E+03	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.20E+05	Yes	4.40E+05	OS - UAA-3/OS-3-64	No	NA	--	No	EN
Iron	7439-89-6	ug/L	1 : 1 : 1	100	2.30E+04	Yes	1.96E+04	OS - UAA-3/OS-3-64	Yes	5.00E+03	Yes	No	EN
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	4.00E+04	Yes	1.26E+05	OS - UAA-3/OS-3-64	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	2.50E+03	No	8.20E+03	OS - UAA-3/OS-3-64	No	1.50E+02	Yes	No	</=BKG
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	7.60E+03	Yes	1.00E+05	OS - UAA-3/OS-3-64	No	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	3.40E+04	Yes	1.76E+05	OS - UAA-3/OS-3-64	No	NA	--	No	EN
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	9.40E+00	No	9.00E+01	OS - UAA-3/OS-3-64	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-3-74													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	5.10E-01	No	8.80E-01	OS - UAA-3/OS-3-74	No	7.00E+02	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	3.70E+00	No	3.00E+02	OS - UAA-3/OS-3-74	No	1.00E+02	No	No	</=Screening Level
SVOCs													
Benzo(b)fluoranthene	205-99-2	ug/L	1 : 1 : 1	100	4.00E+00	No	NA	OS - UAA-3/OS-3-74	--	1.80E-01	Yes	Yes	>Screening Level
Benzo(g,h,i)perylene	191-24-2	ug/L	1 : 1 : 1	100	1.20E+00	No	NA	OS - UAA-3/OS-3-74	--	2.10E+02	No	No	</=Screening Level
Benzo(k)fluoranthene	207-08-9	ug/L	1 : 1 : 1	100	1.10E+00	No	NA	OS - UAA-3/OS-3-74	--	1.70E-01	Yes	Yes	>Screening Level
Chrysene	218-01-9	ug/L	1 : 1 : 1	100	6.70E-01	No	NA	OS - UAA-3/OS-3-74	--	1.50E+00	No	No	</=Screening Level
Dibenzo(a,h)anthracene	53-70-3	ug/L	1 : 1 : 1	100	2.90E+00	No	NA	OS - UAA-3/OS-3-74	--	3.00E-01	Yes	Yes	>Screening Level
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	1 : 1 : 1	100	1.00E+00	No	NA	OS - UAA-3/OS-3-74	--	4.30E-01	Yes	Yes	>Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-3-84													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	5.70E-01	No	NA	OS - UAA-3/OS-3-84	--	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	7.10E-01	No	NA	OS - UAA-3/OS-3-84	--	7.00E+01	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	1.60E+01	No	2.60E+03	OS - UAA-3/OS-3-84	No	1.00E+02	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	4.10E-01	No	NA	OS - UAA-3/OS-3-84	--	2.00E+00	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - AA-S-3-94													
VOCs													
1,1-Dichloroethane	75-34-3	ug/L	1 : 1 : 1	100	5.50E-01	No	NA	OS - UAA-3/OS-3-94	--	7.00E+02	No	No	</=Screening Level
1,2-Dichloroethene (total)	540-59-0	ug/L	1 : 1 : 1	100	1.30E+00	No	NA	OS - UAA-3/OS-3-94	--	7.00E+01	No	No	</=Screening Level
Chlorobenzene	108-90-7	ug/L	1 : 1 : 1	100	5.10E+01	No	4.20E+03	OS - UAA-3/OS-3-94	No	1.00E+02	No	No	</=Screening Level
Vinyl chloride	75-01-4	ug/L	1 : 1 : 1	100	4.10E-01	No	NA	OS - UAA-3/OS-3-94	--	2.00E+00	No	No	</=Screening Level
SVOCs													
2-Chlorophenol	95-57-8	ug/L	1 : 1 : 1	100	1.50E+00	No	1.90E+01	OS - UAA-3/OS-3-94	No	3.50E+01	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason
S - BDRK-S-1-165													
VOCs													
Carbon Disulfide	75-15-0	ug/L	1 : 1 : 1	100	5.00E-01	No	NA	OS - UAA-3/OS-3-116	--	7.00E+02	No	No	</=Screening Level
Methane	74-82-8	ug/L	1 : 1 : 1	100	1.10E+01	No	2.80E+01	OS - UAA-3/OS-3-116	No	NA	--	No	</=BKG
Metals													
Aluminum	7429-90-5	ug/L	1 : 1 : 1	100	6.30E+03	No	2.40E+03	OS - UAA-3/OS-3-116	Yes	3.60E+04	No	No	</=Screening Level
Arsenic	7440-38-2	ug/L	1 : 1 : 1	100	6.30E+00	No	NA	OS - UAA-3/OS-3-116	--	5.00E+01	No	No	</=Screening Level
Calcium	7440-70-2	ug/L	1 : 1 : 1	100	2.90E+04	Yes	6.80E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Iron	7439-89-6	ug/L	1 : 1 : 1	100	3.30E+03	Yes	1.22E+05	OS - UAA-3/OS-3-116	No	5.00E+03	No	No	EN
Magnesium	7439-95-4	ug/L	1 : 1 : 1	100	1.50E+04	Yes	2.40E+05	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Manganese	7439-96-5	ug/L	1 : 1 : 1	100	2.20E+01	No	2.40E+03	OS - UAA-3/OS-3-116	No	1.50E+02	No	No	</=Screening Level
Mercury	7439-97-6	ug/L	1 : 1 : 1	100	7.30E-02	No	NA	OS - UAA-3/OS-3-116	--	2.00E+00	No	No	</=Screening Level
Nickel	7440-02-0	ug/L	1 : 1 : 1	100	8.00E+00	No	2.20E+01	OS - UAA-3/OS-3-116	No	1.00E+02	No	No	</=Screening Level
Potassium	7440-09-7	ug/L	1 : 1 : 1	100	1.30E+04	Yes	2.20E+04	OS - UAA-3/OS-3-116	No	NA	--	No	EN
Sodium	7440-23-5	ug/L	1 : 1 : 1	100	4.60E+05	Yes	1.22E+05	OS - UAA-3/OS-3-116	Yes	NA	--	No	EN
Vanadium	7440-62-2	ug/L	1 : 1 : 1	100	1.40E+01	No	NA	OS - UAA-3/OS-3-116	--	4.90E+01	No	No	</=Screening Level
Zinc	7440-66-6	ug/L	1 : 1 : 1	100	7.20E+00	No	4.60E+02	OS - UAA-3/OS-3-116	No	5.00E+03	No	No	</=Screening Level

TABLE F-1
DEEP GROUNDWATER SCREEN
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Units	FOD (a)	% FOD (b)	Detected Concentration (c)	Essential Nutrient?	Background Concentration (d)	Off-site Background Location(e)	Is Detected Concentration > Background?	Ground water Screening Level (f)	Is Detected Concentration > Screening Value?	COPC? (g)	Reason

Notes:

BKG - Background concentration.
CAS - Chemical Abstracts Service.
COPC - Constituent of potential concern.
EN - Essential nutrient.
FOD - Frequency of detection.
NA - Not available.
-- Not applicable.
PCB - Polychlorinated Biphenyl.
SVOC - Semivolatile organic compound.
TCDD-TEQ - 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalence Concentration.
USEPA - United States Environmental Protection Agency.
VOC - Volatile Organic Compound.
(a) Frequency of Detection = Number of detected samples: Number of samples used to calculate statistics: Total number of samples.
(b) Percent of detected samples out of samples used to calculate statistics. Constituents detected in fewer than 5 percent of samples, provided 20 samples are available, will not be included as CC
(c) The detected concentration for a constituent for each medium/area combination after sample/duplicate pairs were averaged and high non-detected values were excluded. (If one-half the detection limit was greater than the maximum detected concentration, the non-detect was not used).
(d) Equal to two times the average concentration for the constituent in deep groundwater in an off-site sampling location.
(e) Off-site well/sample used to calculate background concentration for deep groundwater locations.
(f) Groundwater screening levels were used according to the following hierarchy:
Illinois Groundwater Quality Standards for Class I: Potable Resource Groundwater. 35 Ill. Adm. Code 620.410. February 2, 2002.
USEPA, 2002. 2002 Edition of the Drinking Water Standards and Health Advisories. Office of Water. EPA 822-R-02-038. Maximum Contaminant Levels. Summer 20(
IEPA, 2002. Tiered Approach to Corrective Action Objectives. Appendix B, Table E. Tier 1 Groundwater Remediation Objectives for the Groundwater Component of the Groundwater Ingestion Route. Class I values. Februar 2002.
USEPA, 2002. Region 9 Preliminary Remediation Goal (PRG) Table. October 1, 2002. Value for Tap Water.
(g) A constituent is identified as a COPC in deep groundwater/Leachate if it is detected in deep groundwater and/or leachate, is greater than 5 percent of samples, provided 20 samples are available, if it is not an essential nutrient, detected concentration is greater than the background concentration and if the detected concentration is greater than the groundwater screening level.

TABLE F-2
SUMMARY OF COPCS IN DEEP GROUNDWATER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	O - AA-O-1-120	O - AA-O-1-56	O - AA-O-1-76	O - AA-O-1-96	O - AA-O-2-121	O - AA-O-2-124	O - AA-O-2-53	O - AA-O-2-83	O - AA-O-2-93	O - AA-O-3-108	O - AA-O-3-68
VOCs												
1,1,2,2-Tetrachloroethane	79-34-5											
1,2-Dichloroethane	107-06-2											
1,2-Dichloroethene (total)	540-59-0											
4-Methyl-2-pentanone (MIBK)	108-10-1											
Acetone	67-64-1											
Benzene	71-43-2											
Carbon Tetrachloride	56-23-5											
Chlorobenzene	108-90-7			X					X			
Chloroethane	75-00-3											
Chloromethane	74-87-3											
Ethylbenzene	100-41-4											
Tetrachloroethene	127-18-4											
Toluene	108-88-3											
Trichloroethylene	79-01-6											
Vinyl chloride	75-01-4	X				X						
SVOCs												
1,2-Dichlorobenzene	95-50-1											
1,4-Dichlorobenzene	106-46-7											
2,4,6-Trichlorophenol	88-06-2											
2,4-Dichlorophenol	120-83-2											
2,4-Dimethylphenol	105-67-9											
2-Chlorophenol	95-57-8											
2-Methylnaphthalene	91-57-6											
2-Nitroaniline	88-74-4											
3-Methylphenol/4-Methylphenol	106-44-5											
4-Chloroaniline	106-47-8											
Benzo(a)anthracene	56-55-3											
Benzo(a)pyrene	50-32-8											
Benzo(b)fluoranthene	205-99-2											
Benzo(k)fluoranthene	207-08-9											
Carbazole	86-74-8											
Chrysene	218-01-9											
Dibenzo(a,h)anthracene	53-70-3		X									
Indeno(1,2,3-cd)pyrene	193-39-5		X									
Naphthalene	91-20-3											
N-Nitrosodiphenylamine	86-30-6											
Phenol	108-95-2											
Pesticide												
alpha-BHC	319-84-6											
beta-BHC	319-85-7											
Heptachlor Epoxide	1024-57-3											
Herbicide												
MCPA	94-74-6											
MCPP	93-65-2											
Pentachlorophenol	87-86-5											
Metals												
Aluminum	7429-90-5						X					
Antimony	7440-36-0											

TABLE F-2
SUMMARY OF COPCS IN DEEP GROUNDWATER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	O - AA-O-1-120	O - AA-O-1-56	O - AA-O-1-76	O - AA-O-1-96	O - AA-O-2-121	O - AA-O-2-124	O - AA-O-2-53	O - AA-O-2-83	O - AA-O-2-93	O - AA-O-3-108	O - AA-O-3-68
Arsenic	7440-38-2		X				X					
Barium	7440-39-3											
Beryllium	7440-41-7											
Cadmium	7440-43-9											
Chromium	7440-47-3				X		X					
Lead	7439-92-1				X		X					
Manganese	7439-96-5	X	X				X	X		X	X	X
Nickel	7440-02-0						X					
Thallium	7440-28-0											
Vanadium	7440-62-2						X					
Total:		**2**	**4**	**1**	**2**	**1**	**7**	**1**	**1**	**1**	**1**	**1**

Notes:
CAS - Chemical Abstracts Service.
COPC - Constituent of Potential Concern.
MCPA - 2-Methyl-4-chlorophenoxyacetic acid.
MCPP - 2-(2-Methyl-4-chlorophenoxy) propionic acid.
SVOCs - Semivolatile Organic Compounds.
VOCs - Volatile Organic Compounds.

TABLE F-2
SUMMARY OF COPCS IN DEEP GROUNDWATER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	O - BDRK-O-1-153	P - AA-P-1-104	P - AA-P-1-114	P - AA-P-1-120	P - AA-P-1-84	P - AA-P-1-74	P - AA-P-1-84	P - AA-P-2-104	P - AA-P-2-114	P - AA-P-2-122	P - AA-P-3-72
VOCs												
1,1,2,2-Tetrachloroethane	79-34-5								X			X
1,2-Dichloroethane	107-06-2											
1,2-Dichloroethene (total)	540-59-0											
4-Methyl-2-pentanone (MIBK)	108-10-1											
Acetone	67-64-1											
Benzene	71-43-2		X	X	X				X	X	X	
Carbon Tetrachloride	56-23-5								X			
Chlorobenzene	108-90-7		X	X	X							
Chloroethane	75-00-3											
Chloromethane	74-87-3										X	
Ethylbenzene	100-41-4											
Tetrachloroethene	127-18-4											
Toluene	108-88-3											
Trichloroethylene	79-01-6				X							
Vinyl chloride	75-01-4											
SVOCs												
1,2-Dichlorobenzene	95-50-1											
1,4-Dichlorobenzene	106-46-7											
2,4,6-Trichlorophenol	88-06-2											
2,4-Dichlorophenol	120-83-2											
2,4-Dimethylphenol	105-67-9											
2-Chlorophenol	95-57-8		X	X								
2-Methylnaphthalene	91-57-6											
2-Nitroaniline	88-74-4					X						
3-Methylphenol/4-Methylphenol	106-44-5											
4-Chloroaniline	106-47-8											
Benzo(a)anthracene	56-55-3					X						
Benzo(a)pyrene	50-32-8											
Benzo(b)fluoranthene	205-99-2					X						
Benzo(k)fluoranthene	207-08-9					X						
Carbazole	86-74-8											
Chrysene	218-01-9											
Dibenzo(a,h)anthracene	53-70-3		X			X						
Indeno(1,2,3-cd)pyrene	193-39-5					X						
Naphthalene	91-20-3											
N-Nitrosodiphenylamine	86-30-6											
Phenol	108-95-2								X	X	X	
Pesticide												
alpha-BHC	319-84-6											
beta-BHC	319-85-7											
Heptachlor Epoxide	1024-57-3											
Herbicide												
MCPA	94-74-6											
MCPP	93-65-2											
Pentachlorophenol	87-86-5		X		X		X	X				
Metals												
Aluminum	7429-90-5											
Antimony	7440-36-0											

TABLE F-2
SUMMARY OF COPCS IN DEEP GROUNDWATER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	P - BDRK-P-1-158	Q - AA-Q-1-110	Q - AA-Q-1-120	Q - AA-Q-1-127	Q - AA-Q-1-127_5	Q - AA-Q-1-50	Q - AA-Q-1-60	Q - AA-Q-1-80	Q - AA-Q-2-120	Q - AA-Q-2-60
VOCs											
1,1,2,2-Tetrachloroethane	79-34-5										
1,2-Dichloroethane	107-06-2										
1,2-Dichloroethene (total)	540-59-0										
4-Methyl-2-pentanone (MIBK)	108-10-1										
Acetone	67-64-1										
Benzene	71-43-2	X	X	X		X					
Carbon Tetrachloride	56-23-5										
Chlorobenzene	108-90-7					X		X			
Chloroethane	75-00-3										
Chloromethane	74-87-3					X					
Ethylbenzene	100-41-4										
Tetrachloroethene	127-18-4										
Toluene	108-88-3										
Trichloroethylene	79-01-6										
Vinyl chloride	75-01-4		X	X		X					
SVOCs											
1,2-Dichlorobenzene	95-50-1										
1,4-Dichlorobenzene	106-46-7										
2,4,6-Trichlorophenol	88-06-2										
2,4-Dichlorophenol	120-83-2										X
2,4-Dimethylphenol	105-67-9										
2-Chlorophenol	95-57-8										
2-Methylnaphthalene	91-57-6										
2-Nitroaniline	88-74-4										
3-Methylphenol/4-Methylphenol	106-44-5										
4-Chloroaniline	106-47-8					X	X	X			
Benzo(a)anthracene	56-55-3										
Benzo(a)pyrene	50-32-8	X									
Benzo(b)fluoranthene	205-99-2	X							X		
Benzo(k)fluoranthene	207-08-9	X							X		
Carbazole	86-74-8										
Chrysene	218-01-9										
Dibenzo(a,h)anthracene	53-70-3	X		X					X		
Indeno(1,2,3-cd)pyrene	193-39-5	X		X					X		
Naphthalene	91-20-3										
N-Nitrosodiphenylamine	86-30-6										
Phenol	108-95-2										
Pesticide											
alpha-BHC	319-84-6										
beta-BHC	319-85-7										
Heptachlor Epoxide	1024-57-3					X					
Herbicide											
MCPA	94-74-6	X									
MCPP	93-65-2										
Pentachlorophenol	87-86-5										
Metals											
Aluminum	7429-90-5						X			X	X
Antimony	7440-36-0										

TABLE F-2
SUMMARY OF COPCS IN DEEP GROUNDWATER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	P - BDRK-P-1-158	Q - AA-Q-1-110	Q - AA-Q-1-120	Q - AA-Q-1-127	Q - AA-Q-1-127_5	Q - AA-Q-1-50	Q - AA-Q-1-60	Q - AA-Q-1-80	Q - AA-Q-2-120	Q - AA-Q-2-60
Arsenic	7440-38-2						X				
Barium	7440-39-3										
Beryllium	7440-41-7						X				
Cadmium	7440-43-9						X				
Chromium	7440-47-3			X		X	X			X	X
Lead	7439-92-1			X		X	X		X	X	X
Manganese	7439-96-5					X	X		X	X	
Nickel	7440-02-0			X			X			X	X
Thallium	7440-28-0				X						
Vanadium	7440-62-2			X		X	X			X	X
Total:		**7**	**2**	**8**	**1**	**10**	**10**	**2**	**6**	**6**	**6**

Notes:
CAS - Chemical Abstracts Service.
COPC - Constituent of Potential Concern.
MCPA - 2-Methyl-4-chlorophenoxyacetic acid.
MCPP - 2-(2-Methyl-4-chlorophenoxy) propionic acid.
SVOCs - Semivolatile Organic Compounds.
VOCs - Volatile Organic Compounds.

TABLE F-2
SUMMARY OF COPCS IN DEEP GROUNDWATER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Q - AA-Q-2-80	Q - AA-Q-3-120	Q - AA-Q-3-50	Q - AA-Q-3-80	Q - AA-Q-4-110	Q - AA-Q-4-50	Q - AA-Q-4-80	Q - AA-Q-5-45	Q - AA-Q-5-65	Q - AA-Q-5-75	Q - AA-Q-5-85
VOCs												
1,1,2,2-Tetrachloroethane	79-34-5											X
1,2-Dichloroethane	107-06-2											
1,2-Dichloroethene (total)	540-59-0											
4-Methyl-2-pentanone (MIBK)	108-10-1											
Acetone	67-64-1											
Benzene	71-43-2								X	X		
Carbon Tetrachloride	56-23-5											
Chlorobenzene	108-90-7								X			
Chloroethane	75-00-3											
Chloromethane	74-87-3											
Ethylbenzene	100-41-4											
Tetrachloroethene	127-18-4											
Toluene	108-88-3											
Trichloroethylene	79-01-6											
Vinyl chloride	75-01-4											
SVOCs												
1,2-Dichlorobenzene	95-50-1											
1,4-Dichlorobenzene	106-46-7											
2,4,6-Trichlorophenol	88-06-2	X										
2,4-Dichlorophenol	120-83-2	X										
2,4-Dimethylphenol	105-67-9											
2-Chlorophenol	95-57-8											
2-Methylnaphthalene	91-57-6											
2-Nitroaniline	88-74-4											
3-Methylphenol/4-Methylphenol	106-44-5											
4-Chloroaniline	106-47-8								X	X	X	
Benzo(a)anthracene	56-55-3											
Benzo(a)pyrene	50-32-8											
Benzo(b)fluoranthene	205-99-2											
Benzo(k)fluoranthene	207-08-9											
Carbazole	86-74-8											
Chrysene	218-01-9											
Dibenzo(a,h)anthracene	53-70-3											
Indeno(1,2,3-cd)pyrene	193-39-5											
Naphthalene	91-20-3											
N-Nitrosodiphenylamine	86-30-6									X		
Phenol	108-95-2											
Pesticide												
alpha-BHC	319-84-6											
beta-BHC	319-85-7											
Heptachlor Epoxide	1024-57-3											
Herbicide												
MCPA	94-74-6	X							X			X
MCPP	93-65-2											
Pentachlorophenol	87-86-5											
Metals												
Aluminum	7429-90-5					X						
Antimony	7440-36-0					X						

TABLE F-2
SUMMARY OF COPCS IN DEEP GROUNDWATER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Q - AA-Q-2-80	Q - AA-Q-3-120	Q - AA-Q-3-50	Q - AA-Q-3-80	Q - AA-Q-4-110	Q - AA-Q-4-50	Q - AA-Q-4-80	Q - AA-Q-5-45	Q - AA-Q-5-65	Q - AA-Q-5-75	Q - AA-Q-5-85
Arsenic	7440-38-2			X					X			
Barium	7440-39-3											
Beryllium	7440-41-7					X						
Cadmium	7440-43-9											
Chromium	7440-47-3		X			X	X					X
Lead	7439-92-1		X	X		X	X	X	X			X
Manganese	7439-96-5	X		X	X	X	X	X	X			X
Nickel	7440-02-0					X						
Thallium	7440-28-0											
Vanadium	7440-62-2					X						X
Total:		**4**	**2**	**3**	**1**	**8**	**3**	**2**	**7**	**3**	**1**	**6**

Notes:
CAS - Chemical Abstracts Service.
COPC - Constituent of Potential Concern.
MCPA - 2-Methyl-4-chlorophenoxyacetic acid.
MCPP - 2-(2-Methyl-4-chlorophenoxy) propionic acid.
SVOCs - Semivolatile Organic Compounds.
VOCs - Volatile Organic Compounds.

TABLE F-2
SUMMARY OF COPCS IN DEEP GROUNDWATER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Q - AA-Q-5-95	Q - AA-Q-6-104	Q - AA-Q-6-110	Q - AA-Q-6-34	Q - AA-Q-6-44	Q - AA-Q-6-54	Q - AA-Q-6-64	Q - AA-Q-6-74	Q - AA-Q-6-84	Q - AA-Q-6-94	Q - AA-Q-7-104
VOCs												
1,1,2,2-Tetrachloroethane	79-34-5											
1,2-Dichloroethane	107-06-2											
1,2-Dichloroethene (total)	540-59-0											
4-Methyl-2-pentanone (MIBK)	108-10-1											
Acetone	67-64-1											
Benzene	71-43-2		X	X	X	X	X	X	X	X	X	
Carbon Tetrachloride	56-23-5											
Chlorobenzene	108-90-7											
Chloroethane	75-00-3											
Chloromethane	74-87-3											
Ethylbenzene	100-41-4											
Tetrachloroethene	127-18-4											
Toluene	108-88-3											
Trichloroethylene	79-01-6											
Vinyl chloride	75-01-4											
SVOCs												
1,2-Dichlorobenzene	95-50-1											
1,4-Dichlorobenzene	106-46-7											
2,4,6-Trichlorophenol	88-06-2											
2,4-Dichlorophenol	120-83-2											
2,4-Dimethylphenol	105-67-9											
2-Chlorophenol	95-57-8											
2-Methylnaphthalene	91-57-6				X							
2-Nitroaniline	88-74-4											
3-Methylphenol/4-Methylphenol	106-44-5											
4-Chloroaniline	106-47-8											
Benzo(a)anthracene	56-55-3											
Benzo(a)pyrene	50-32-8											
Benzo(b)fluoranthene	205-99-2											
Benzo(k)fluoranthene	207-08-9											
Carbazole	86-74-8				X							
Chrysene	218-01-9											
Dibenzo(a,h)anthracene	53-70-3											X
Indeno(1,2,3-cd)pyrene	193-39-5											X
Naphthalene	91-20-3											
N-Nitrosodiphenylamine	86-30-6	X										
Phenol	108-95-2				X							
Pesticide												
alpha-BHC	319-84-6											
beta-BHC	319-85-7											
Heptachlor Epoxide	1024-57-3											
Herbicide												
MCPA	94-74-6											
MCPP	93-65-2											
Pentachlorophenol	87-86-5											
Metals												
Aluminum	7429-90-5											
Antimony	7440-36-0											

TABLE F-2
SUMMARY OF COPCS IN DEEP GROUNDWATER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Q - AA-Q-5-95	Q - AA-Q-6-104	Q - AA-Q-6-110	Q - AA-Q-6-34	Q - AA-Q-6-44	Q - AA-Q-6-54	Q - AA-Q-6-64	Q - AA-Q-6-74	Q - AA-Q-6-84	Q - AA-Q-6-94	Q - AA-Q-7-104
Arsenic	7440-38-2											
Barium	7440-39-3											
Beryllium	7440-41-7											
Cadmium	7440-43-9											
Chromium	7440-47-3			X								
Lead	7439-92-1			X				X				
Manganese	7439-96-5		X	X								
Nickel	7440-02-0											
Thallium	7440-28-0											
Vanadium	7440-62-2											
Total:		**1**	**2**	**4**	**4**	**1**	**1**	**2**	**1**	**1**	**1**	**2**

Notes:
CAS - Chemical Abstracts Service.
COPC - Constituent of Potential Concern.
MCPA - 2-Methyl-4-chlorophenoxyacetic acid.
MCPP - 2-(2-Methyl-4-chlorophenoxy) propionic acid.
SVOCs - Semivolatile Organic Compounds.
VOCs - Volatile Organic Compounds.

TABLE F-2
SUMMARY OF COPCS IN DEEP GROUNDWATER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Q - AA-Q-7-34	Q - AA-Q-8-111	Q - AA-Q-8-44	Q - AA-Q-8-54	Q - AA-Q-8-64	Q - BDRK-Q-1-163	R - AA-R-1-108	R - AA-R-1-118	R - AA-R-1-128	R - AA-R-1-131
VOCs											
1,1,2,2-Tetrachloroethane	79-34-5										
1,2-Dichloroethane	107-06-2							X			
1,2-Dichloroethene (total)	540-59-0								X		
4-Methyl-2-pentanone (MIBK)	108-10-1										
Acetone	67-64-1							X	X	X	
Benzene	71-43-2							X	X	X	X
Carbon Tetrachloride	56-23-5										
Chlorobenzene	108-90-7	X							X		
Chloroethane	75-00-3										
Chloromethane	74-87-3										
Ethylbenzene	100-41-4										
Tetrachloroethene	127-18-4							X			
Toluene	108-88-3										
Trichloroethylene	79-01-6										
Vinyl chloride	75-01-4			X	X			X	X		
SVOCs											
1,2-Dichlorobenzene	95-50-1							X			
1,4-Dichlorobenzene	106-46-7										
2,4,6-Trichlorophenol	88-06-2										
2,4-Dichlorophenol	120-83-2							X			
2,4-Dimethylphenol	105-67-9										
2-Chlorophenol	95-57-8							X	X	X	
2-Methylnaphthalene	91-57-6										
2-Nitroaniline	88-74-4										
3-Methylphenol/4-Methylphenol	106-44-5							X			
4-Chloroaniline	106-47-8							X	X	X	X
Benzo(a)anthracene	56-55-3										
Benzo(a)pyrene	50-32-8										
Benzo(b)fluoranthene	205-99-2										
Benzo(k)fluoranthene	207-08-9										
Carbazole	86-74-8										
Chrysene	218-01-9										
Dibenzo(a,h)anthracene	53-70-3		X		X	X	X				
Indeno(1,2,3-cd)pyrene	193-39-5		X		X	X	X				
Naphthalene	91-20-3							X		X	
N-Nitrosodiphenylamine	86-30-6										
Phenol	108-95-2							X	X	X	X
Pesticide											
alpha-BHC	319-84-6										
beta-BHC	319-85-7										
Heptachlor Epoxide	1024-57-3										
Herbicide											
MCPA	94-74-6										
MCPP	93-65-2										
Pentachlorophenol	87-86-5										
Metals											
Aluminum	7429-90-5						X				
Antimony	7440-36-0										

TABLE F-2
SUMMARY OF COPCS IN DEEP GROUNDWATER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	Q - AA-Q-7-34	Q - AA-Q-8-111	Q - AA-Q-8-44	Q - AA-Q-8-54	Q - AA-Q-8-64	Q - BDRK-Q-1-163	R - AA-R-1-108	R - AA-R-1-118	R - AA-R-1-128	R - AA-R-1-131
Arsenic	7440-38-2						X				
Barium	7440-39-3										X
Beryllium	7440-41-7										
Cadmium	7440-43-9										
Chromium	7440-47-3		X								X
Lead	7439-92-1						X				X
Manganese	7439-96-5		X								
Nickel	7440-02-0						X				
Thallium	7440-28-0										
Vanadium	7440-62-2						X				X
Total:		**1**	**4**	**1**	**3**	**2**	**7**	**12**	**8**	**6**	**7**

Notes:
CAS - Chemical Abstracts Service.
COPC - Constituent of Potential Concern.
MCPA - 2-Methyl-4-chlorophenoxyacetic acid.
MCPP - 2-(2-Methyl-4-chlorophenoxy) propionic acid.
SVOCs - Semivolatile Organic Compounds.
VOCs - Volatile Organic Compounds.

TABLE F-2
SUMMARY OF COPCS IN DEEP GROUNDWATER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	R - AA-R-1-48	R - AA-R-1-58	R - AA-R-1-68	R - AA-R-1-78	R - AA-R-1-88	R - AA-R-1-98	R - BDRK-R-1-163	S - AA-S-1-104	S - AA-S-1-124	S - AA-S-2-118_5	S - AA-S-2-78
VOCs												
1,1,2,2-Tetrachloroethane	79-34-5											
1,2-Dichloroethane	107-06-2											
1,2-Dichloroethene (total)	540-59-0											
4-Methyl-2-pentanone (MIBK)	108-10-1	X		X								
Acetone	67-64-1	X	X	X	X							
Benzene	71-43-2	X	X	X	X	X						
Carbon Tetrachloride	56-23-5											
Chlorobenzene	108-90-7	X	X	X	X							
Chloroethane	75-00-3					X						
Chloromethane	74-87-3											
Ethylbenzene	100-41-4	X										
Tetrachloroethene	127-18-4			X	X		X					
Toluene	108-88-3	X	X	X								
Trichloroethylene	79-01-6		X	X	X							
Vinyl chloride	75-01-4	X	X	X						X	X	
SVOCs												
1,2-Dichlorobenzene	95-50-1						X					
1,4-Dichlorobenzene	106-46-7	X	X	X	X							
2,4,6-Trichlorophenol	88-06-2											
2,4-Dichlorophenol	120-83-2						X					
2,4-Dimethylphenol	105-67-9	X	X									
2-Chlorophenol	95-57-8	X	X	X								
2-Methylnaphthalene	91-57-6											
2-Nitroaniline	88-74-4											
3-Methylphenol/4-Methylphenol	106-44-5	X	X	X								
4-Chloroaniline	106-47-8	X	X	X	X	X	X	X				
Benzo(a)anthracene	56-55-3											
Benzo(a)pyrene	50-32-8											
Benzo(b)fluoranthene	205-99-2											
Benzo(k)fluoranthene	207-08-9											
Carbazole	86-74-8											
Chrysene	218-01-9			X								
Dibenzo(a,h)anthracene	53-70-3			X	X							
Indeno(1,2,3-cd)pyrene	193-39-5			X	X							
Naphthalene	91-20-3	X	X	X	X		X					
N-Nitrosodiphenylamine	86-30-6											
Phenol	108-95-2	X	X	X	X	X	X					
Pesticide												
alpha-BHC	319-84-6				X							
beta-BHC	319-85-7				X							
Heptachlor Epoxide	1024-57-3											
Herbicide												
MCPA	94-74-6				X							
MCPP	93-65-2				X							
Pentachlorophenol	87-86-5											
Metals												
Aluminum	7429-90-5											
Antimony	7440-36-0											

TABLE F-2
SUMMARY OF COPCS IN DEEP GROUNDWATER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	S - AA-S-3-104	S - AA-S-3-132	S - AA-S-3-74
VOCs				
1,1,2,2-Tetrachloroethane	79-34-5			
1,2-Dichloroethane	107-06-2			
1,2-Dichloroethene (total)	540-59-0			
4-Methyl-2-pentanone (MIBK)	108-10-1			
Acetone	67-64-1			
Benzene	71-43-2			
Carbon Tetrachloride	56-23-5			
Chlorobenzene	108-90-7			
Chloroethane	75-00-3			
Chloromethane	74-87-3			
Ethylbenzene	100-41-4			
Tetrachloroethene	127-18-4			
Toluene	108-88-3			
Trichloroethylene	79-01-6			
Vinyl chloride	75-01-4		X	
SVOCs				
1,2-Dichlorobenzene	95-50-1			
1,4-Dichlorobenzene	106-46-7			
2,4,6-Trichlorophenol	88-06-2			
2,4-Dichlorophenol	120-83-2			
2,4-Dimethylphenol	105-67-9			
2-Chlorophenol	95-57-8			
2-Methylnaphthalene	91-57-6			
2-Nitroaniline	88-74-4			
3-Methylphenol/4-Methylphenol	106-44-5			
4-Chloroaniline	106-47-8			
Benzo(a)anthracene	56-55-3			
Benzo(a)pyrene	50-32-8			
Benzo(b)fluoranthene	205-99-2	X		X
Benzo(k)fluoranthene	207-08-9	X		X
Carbazole	86-74-8			
Chrysene	218-01-9			
Dibenzo(a,h)anthracene	53-70-3			X
Indeno(1,2,3-cd)pyrene	193-39-5	X		X
Naphthalene	91-20-3			
N-Nitrosodiphenylamine	86-30-6			
Phenol	108-95-2			
Pesticide				
alpha-BHC	319-84-6			
beta-BHC	319-85-7			
Heptachlor Epoxide	1024-57-3			
Herbicide				
MCPA	94-74-6			
MCPP	93-65-2			
Pentachlorophenol	87-86-5			
Metals				
Aluminum	7429-90-5			
Antimony	7440-36-0			

TABLE F-2
SUMMARY OF COPCS IN DEEP GROUNDWATER
HUMAN HEALTH RISK ASSESSMENT
SAUGET AREA 2 RI/FS
SAUGET, ILLINOIS

Constituent	CAS	S - AA-S-3-104	S - AA-S-3-132	S - AA-S-3-74
Arsenic	7440-38-2			
Barium	7440-39-3			
Beryllium	7440-41-7			
Cadmium	7440-43-9			
Chromium	7440-47-3			
Lead	7439-92-1			
Manganese	7439-96-5			
Nickel	7440-02-0			
Thallium	7440-28-0			
Vanadium	7440-62-2			
Total:		**3**	**1**	**4**

Notes:
CAS - Chemical Abstracts Service.
COPC - Constituent of Potential Concern.
MCPA - 2-Methyl-4-chlorophenoxyacetic acid.
MCPP - 2-(2-Methyl-4-chlorophenoxy) propionic acid.
SVOCs - Semivolatile Organic Compounds.
VOCs - Volatile Organic Compounds.