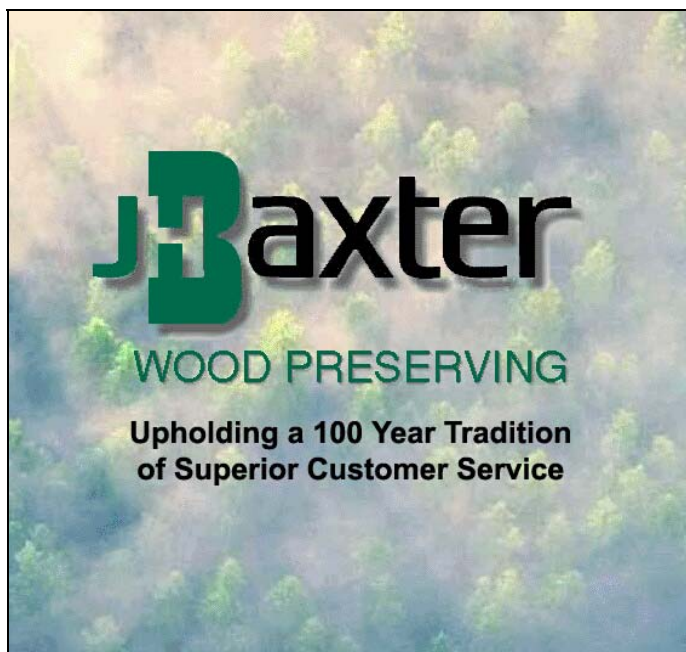


**Revised Baseline Human Health Risk Assessment**  
**J.H. Baxter & Company**  
**Eugene, Oregon Facility**



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**July 28, 2006**



## Table of Contents

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Table of Contents.....	i
List of Figures.....	iii
List of Tables.....	iv
Appendix.....	vi
Acronyms and Abbreviations.....	vii
Executive Summary.....	i
1 Introduction.....	1-1
1.1 Scope of the Baseline Human Health Risk Assessment (BHHRA).....	1-2
1.2 Guidance Documents.....	1-3
2 Site Background.....	2-1
2.1 Historical Operations.....	2-1
2.2 Current Site Operations.....	2-2
2.3 Analytical Data from the Remedial Investigations.....	2-4
2.3.1 Soil Data from On-Site Undeveloped Area.....	2-4
2.3.2 Data from On-Site Surface Soil.....	2-5
2.3.3 Data from On-Site Surface and Subsurface Soils.....	2-6
2.3.4 Data from Off-Site Soils.....	2-6
2.3.5 Data from On-Site Groundwater Samples.....	2-7
2.3.6 Data from Off-Site Groundwater Samples.....	2-8
2.3.7 Data from Surface Water Samples.....	2-8
2.3.8 Data from Sediment Samples.....	2-9
2.3.9 Toxicity Equivalent Concentrations in Soil, Sediment, and Groundwater.....	2-9
3 Data Evaluation.....	3-1
3.1 Sample Reporting Limit Evaluation.....	3-1
3.2 Sample Quantitation Limit Evaluation.....	3-1
4 Identification of Contaminants of Potential Concern.....	4-1
4.1 Identification of Contaminants of Potential Concern (COPCs).....	4-2
4.1.1 Surface Soil COPCs.....	4-3
4.1.2 Surface and Subsurface Soil COPCs.....	4-4
4.1.3 Off-Site Soil COPCs.....	4-4
4.1.4 Sediment COPCs.....	4-4
4.1.5 Surface Water COPCs.....	4-5
4.1.6 Current On-Site Groundwater COPCs.....	4-5
4.1.7 Current Off-Site Residential Groundwater and COPCs.....	4-5
4.1.8 Current Off-Site Industrial Groundwater COPCs.....	4-5
4.1.9 Future, Off-site Industrial and Residential Groundwater COPCs.....	4-5
4.1.10 Multi-Media COPCs.....	4-6
5 Exposure Assessment.....	5-1
5.1 Conceptual Site Model.....	5-1
5.1.1 Current and Future Land Use.....	5-1
5.1.2 Current and Reasonably Likely Future Beneficial Water Uses.....	5-2
5.1.3 Source of Chemical Release and Transport Mechanism.....	5-3
5.1.4 Potential Receptors.....	5-3

5.1.5	Potential Exposure Pathways.....	5-4
5.1.5.1	On-Site Worker.....	5-5
5.1.5.2	On-Site Trenchworker.....	5-5
5.1.5.3	Off-Site Residents.....	5-6
5.2	Quantification of Exposure.....	5-6
5.2.1	Estimation of Concentration at the Point of Exposure.....	5-6
5.2.2	Exposure Parameters.....	5-8
5.2.3	Algorithms for Calculating Average Daily Dose.....	5-9
5.2.3.1	Ingestion Algorithm.....	5-9
5.2.3.2	Dermal Contact Algorithm.....	5-10
5.2.3.3	Inhalation of Soil Particles.....	5-11
5.2.3.4	Inhalation of Vapors (Soil, Water).....	5-12
5.2.3.5	Dermal Contact with Water (Tap, Surface, Ground).....	5-14
5.2.3.6	Ingestion of Vegetables/Fruit.....	5-15
6	Toxicity Assessment.....	6-1
6.1	Carcinogenic Toxicity.....	6-1
6.2	Noncarcinogenic Toxicity.....	6-2
7	Risk Characterization.....	7-1
7.1	Carcinogenic Risk Estimates.....	7-1
7.2	Noncarcinogenic Effects.....	7-2
7.3	Results of the Risk Characterization.....	7-2
7.3.1	Risk and Hazard Index Estimates – On-site Worker Scenario.....	7-3
7.3.2	Risk and Hazard Index Estimates – On-site Trenchworker Scenario.....	7-3
7.3.3	Risk and Hazard Index Estimates – Off-Site Resident’s Exposure to Soils.....	7-4
7.3.4	Risk and Hazard Index Estimates – Groundwater Exposures of Current Off-site Resident.....	7-5
7.3.5	Risk and Hazard Index Estimates – Groundwater Exposures of Current Off-site Resident while Swimming.....	7-5
7.3.6	Risk and Hazard Index Estimates – Groundwater Exposures of Future Off-site Resident.....	7-6
7.3.7	Risk and Hazard Index Estimates – Exposures to Surface Water in Roosevelt Channel.....	7-6
7.3.8	Risk and Hazard Index Estimates – Exposures to Sediments in Roosevelt Channel.....	7-7
7.3.9	Risk and Hazard Index Estimates – Groundwater Exposures of Off-site Industrial Worker.....	7-7
7.3.10	Risk Associated with Consumption of Home-grown Produce.....	7-8
8	Discussion on Uncertainties.....	8-1
8.1	Uncertainties in the Exposure Assessment.....	8-1
8.2	Uncertainties in the Toxicity Assessment.....	8-3
8.3	Uncertainties in the Risk Estimates.....	8-3
9	Conclusions.....	9-1
10	References.....	10-1

## List of Figures

---

Figure 1. Site Vicinity Map

Figure 2. Site Detail Map

Figure 3. Conceptual Site Model for Human Health

## List of Tables

---

Table 2-1.	Data by Media and Location
Table 4-1.	Screening of Contaminants of Interest
Table 4-2.	Summary of Contaminants of Potential Concern
Table 5-1.	On-Site Surface Soil Summary Statistics and Exposure Point Concentrations
Table 5-2.	On-Site Surface and Subsurface Soil Summary Statistics and Exposure Point Concentrations
Table 5-3.	Off-Site Soil Summary Statistics and Exposure Point Concentrations
Table 5-4.	Off-Site Sediment Summary Statistics and Exposure Point Concentrations
Table 5-5.	On-Site Undeveloped Area Soil Summary Statistics and Exposure Point Concentrations
Table 5-6.	On-Site Groundwater Summary Statistics and Exposure Point Concentrations
Table 5-7.	Off-Site Current Residential Groundwater Summary Statistics and Exposure Point Concentrations
Table 5-8.	Off-Site Future Residential and Industrial Groundwater Summary Statistics and Exposure Point Concentrations
Table 5-9.	Future Off-Site Residential Groundwater Summary Statistics and Exposure Point Concentrations
Table 5-10.	Current Off-Site Industrial Groundwater Summary Statistics and Exposure Point Concentrations
Table 5-11.	Off-Site Surface Water Summary Statistics and Exposure Point Concentrations
Table 7-1a.	Calculated Risk Estimates due to Potential Soil Exposures – On-site Worker Scenario
Table 7-1b.	Calculated Risk Estimates due to Potential Soil Exposures – Undeveloped Area On-site Worker Scenario
Table 7-2a.	Calculated Risk Estimates due to Potential Soil Exposures – On-site Trenchworker Scenario

- Table 7-2b. Calculated Risk Estimates due to Potential Soil Exposures – Undeveloped Area On-site Trenchworker Scenario
- Table 7-3a. Calculated Risk Estimates due to Potential Groundwater Exposures – On-site Worker Scenario
- Table 7-3b. Calculated Risk Estimates due to Potential Groundwater Exposures via Inhalation – On-site Trench Worker Scenario
- Table 7-4. Calculated Risk Estimates due to Potential Soil Exposures – Current Off-site Residential Scenario
- Table 7-5. Calculated Risk Estimates due to Potential Groundwater Exposures – Incidental Ingestion and Dermal Contact during Irrigation – Current Off-site Residential Irrigation Scenario
- Table 7-6. Calculated Risk Estimates due to Residential Swimming Exposures – Current Off-site Residential Scenario
- Table 7-7. Calculated Risk Estimates due to Potential Groundwater Exposures – Incidental Ingestion and Dermal Contact during Irrigation – Future Off-site Residential Scenario
- Table 7-8. Calculated Risk Estimates due to Potential Groundwater Exposures – Incidental Ingestion and Dermal Contact during Swimming – Future Off-site Residential Scenario
- Table 7-9. Calculated Risk Estimates due to Potential Surface Water Exposures – Off-Site Recreational Scenario – Roosevelt Channel
- Table 7-10. Calculated Risk Estimates due to Potential Sediment Exposures – Off-Site Recreational Scenario
- Table 7-11. Calculated Risk Estimates due to Potential Groundwater Exposures – Current Off-site Industrial Scenario
- Table 7-12. Calculated Risk Estimates due to Consumption of Homegrown Produce – Residential and Industrial Groundwater – Current Residential Scenario
- Table 7-13. Summary of Estimated Risks and Hazard Indices

## **Appendix**

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Appendix A      Data Tables used in Risk Assessment

## Acronyms and Abbreviations

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ACQ	ammoniacal alkaline copper quat
ADD	average daily dose
ACZA	ammoniacal copper zinc arsenate (Chemonite®)
Baxter	J.H. Baxter & Co.
bgs	below ground surface
BHHRA	Baseline Human Health Risk Assessment
Chemonite®	registered trade name for ammoniacle copper zinc arsenate (ACZA)
COPC	contaminant of potential concern
COI	contaminant of interest
CSM	conceptual site model
DEQ	Oregon Department of Environmental Quality
EPA	Environmental Protection Agency
EPC	exposure point concentration
EWEB	Eugene Water and Electrical Board
HI	hazard index
HQ	hazard quotient
IRIS	Integrated Risk Information System
LOF	locality of facility
OEHHA	Office of Environmental Health Hazard Assessment
PAH	polycyclic aromatic hydrocarbons
PCP	pentachlorophenol
PEF	particulate emission factor
Premier	Premier Environmental Services, Inc.
PRG	preliminary remediation goal
RAGS	Risk Assessment Guidance for Superfund
RfD	reference dose
RI	Remedial Investigation
RME	Reasonable Maximum Exposure
SF	slope factor
SQLs	sample quantitation limits
SVOC	semi-volatile organic compound
TEQ	toxicity equivalency quotients
UCL	upper confidence limit
VOC	volatile organic compound
WOE	weight of evidence



## **Executive Summary**

---

J.H. Baxter & Co. (Baxter) has prepared this Baseline Human Health Risk Assessment (BHHRA) for Baxter' wood-treating facility ("Site") located in Eugene, Oregon. The objective of this BHHRA is to estimate the likelihood of potential health effects associated with assumed exposures to chemicals detected at Baxter's Eugene facility.

The BHHRA was conducted under the assumption that there would be no attempt to mitigate or prevent human exposures (no-action alternative). If the results of the human health risk assessment demonstrate that the estimated risks are unacceptable, then risk-based cleanup goals will be developed so that the risks can be managed or reduced to acceptable levels.

The purpose of this BHHRA is to determine whether operations at the Baxter facility released chemicals into the environment which would be detrimental to the health of exposed individuals. Since it is not feasible to take into account different exposure conditions that truly represent potential exposures at the facility and immediate areas, the results of this BHHRA are based on default exposure assumptions recommended by the Oregon Department of Environmental Quality (DEQ) or by the Environmental Protection Agency (EPA) under DEQ's approval.

As a result of using the default assumptions, the risk and hazard index are overestimated. This overestimation is intended to protect the health of the workers at the Baxter facility, as well as of residents and industrial workers in the immediate area of the Site.

The potential receptors who were evaluated in this risk assessment include:

- On-site workers involved with daily operations at the facility,
- Trenchworkers who may be involved with excavation activities,
- Off-site residents, and
- Off-site industrial workers.

The receptors were assumed to have come into contact with chemicals which were detected in soil both on-site and off-site, in surface water, and in sediments in the Roosevelt Channel. A hypothetical exposure scenario that was included in this risk assessment is the assumption that residents are being supplied with water from the residential and industrial wells which have been closed for several years. Although the community has been supplied with municipal water rather than with water from these wells, Baxter was required by DEQ to evaluate this unlikely event in order to be consistent with the conservative nature of this human health risk assessment and to be more protective of human health and the environment.

The EPA considers a risk range of 1 in 1,000,000 to 1 in 10,000 (1E-06 to 1E-04) as a target range within which to manage human-health risk (40 CFR, Section 300.430(e)(2)(i)(A); EPA 1991). The one-in-a-million level of risk is often referred to as the “de minimis” level of risk; human-health risks below this range would not require attention. In Oregon, DEQ considers the “de minimis” level of risk to be 1 in 1,000,000 (1E-06) for a single carcinogen, and an aggregate site risk for multiple carcinogens not to exceed 1 in 100,000 (1E-05). For noncarcinogens, the daily chemical intake of an exposed individual should not exceed the established intake that would result in health effects (i.e., a ratio of 1) which include developmental or reproductive effects.

The results of the risk assessment are summarized in the following table:

Exposure Scenario	Estimated Cancer Risks	Chemicals of Concern	Estimated Hazard Index	Chemicals of Concern
On-Site Worker Soil	1.E-04	Arsenic Benzo(a)pyrene Dibenz(a,h)anthracene 1,2,3,4,6,7,8-HpCDD (B-23)	0.70	--
Undeveloped Area	4.E-05	Arsenic 1,2,3,7,8-PeCDD 1,2,3,6,7,8-HxCDD 1,2,3,7,8,9-HxCDD 1,2,3,4,6,7,8-HpCDD 2,3,4,7,8-PeCDF 2,3,4,7,8-PeCDF	0.1	--

Exposure Scenario	Estimated Cancer Risks	Chemicals of Concern	Estimated Hazard Index	Chemicals of Concern
<b>Trench Worker</b>				
On-site Soil	7.E-07	--	0.1	--
Undeveloped Area	3.E-07	--	0.02	--
On-site Groundwater (direct contact)	4.E-05	Dibenz(a,h) anthracene Benzo(a) pyrene Pentachlorophenol	0.6	--
On-site Groundwater (inhalation)	3.E-07	--	0.01	--
<b>Current Off-site Resident</b>				
Off-site Soil	3.E-05	Arsenic <sup>1</sup> Benzo(a) pyrene 1,2,3,4,6,7,8-HpCDD (SS-4)	2.9	Iron <sup>2</sup>
Incidental ingestion and dermal contact with Irrigation Water	No carcinogenic COPCs	--	0.002	--
Incidental ingestion and dermal contact while swimming	No carcinogenic COPCs	--	0.002	--
Consumption of homegrown produce	No carcinogenic COPCs	--	0.06	--
<b>Future Off-site Resident<sup>3</sup></b>				
Incidental ingestion and dermal contact with irrigation water	7.E-04	Pentachlorophenol, Indeno(1,2,3-cd)pyrene Dioxins/furans	0.5	--
Swimming scenario	2.E-03	Pentachlorophenol, Indeno(1,2,3-cd)pyrene Dioxins/furans	0.5	--
Consumption of homegrown produce	No carcinogenic COPCs	--	0.1	--
<b>Recreational User</b>				
Surface water	2.E-06	Arsenic	0.02	--
Sediment	2.E-06	Arsenic	0.05	--
<b>Off-site Industrial Worker</b>				
Groundwater	6.E-07	Pentachlorophenol	0.002	--

<sup>1</sup> Actual arsenic concentrations off-site are below background levels established by DEQ.

<sup>2</sup> Iron is not a site-related compound.

<sup>3</sup> All future off-site residential scenarios include the assumption that water will come from industrial and off-site wells. However, all residents are connected to the municipal supply system.

The results show that the risks associated with a worker's exposure to chemicals in the soil at the Baxter facility will not meet DEQ's acceptable level of risk but are within the levels considered acceptable by EPA. Arsenic and dioxins are the primary contributors to the risk estimates. Potential exposures of a trenchworker to the soil do not pose a risk, but skin contact with groundwater beneath the site gives the perception of unacceptable risk. In reality, the trenchworker will be in personal protective clothing during excavation activities so that skin contact is either eliminated or minimized, thus reducing the risk.

The risks due to exposures of residents to soil in the off-site areas exceed the acceptable level of one-in-a-million due primarily to arsenic. However, the concentration of arsenic that is contributing to this level of risk is below the arsenic concentration that is considered naturally present in the soils in Oregon.

Exposures to the surface water and sediments in Roosevelt Channel could pose an unacceptable level of risk to a child, but the risk is due to the highest concentration of arsenic that was detected. This is an overestimation because the child was assumed to be exposed to this same high concentration for the entire duration of exposure. It should be noted that among the six surface water samples collected from Roosevelt Channel, there were no reported chemicals in four of the samples. The increased probability of cancer due to the only other sample with a reported concentration of arsenic is five in 10 million, which is lower than the acceptable level of one in a million. Therefore, the approach used in evaluating potential exposures of a child playing in the Roosevelt Channel overestimates the risk. Similar to the evaluation of the surface water at the Roosevelt Channel, evaluation of exposures to sediments in Roosevelt Channel assumes that the child will only come in contact with the highest concentration of arsenic. In reality, a child playing in Roosevelt Channel could come into contact with the lowest to the highest level of arsenic in the sediments. If the different concentrations of arsenic are taken into account, the total estimated risk would be at the acceptable level of one in a million. The total hazard index of 0.5 demonstrates that the daily intake of arsenic level is below the daily intake that could have health effects on a child playing in the Roosevelt Channel.

The evaluation of the hypothetical use of groundwater coming from the closed residential and industrial wells for irrigation and for water in aboveground pools resulted in unacceptable risk estimates due to the levels of arsenic, dioxins, and pentachlorophenol (PCP). These results ignore the fact that the residents are being supplied with municipal water and are not using water from these closed wells. Yet, there is still no risk associated with consuming home-grown fruits and vegetables that are irrigated with water from these closed wells.

There is no risk associated with an off-site industrial worker using the groundwater for log watering during the dry months of the year.

## **1 Introduction**

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The J.H. Baxter Project Team consisting of J.H. Baxter & Co. (Baxter), Premier Environmental Services, Inc. (Premier), and Hybrid Strategies has prepared this BHHRA for the Baxter wood-treating facility located in Eugene, Oregon (Figure 1). The Draft Remedial Investigation Summary Report (Baxter 2002a) and Beneficial Water Use Report (Baxter 2002b) provide supporting information for this BHHRA and are included by reference.

This Revised BHHRA incorporates DEQ's comments from the Draft BHHRA dated September 20, 2002 (Baxter 2002c). DEQ provided comments on October 3, 2002 (DEQ 2002b), and Baxter responded to those comments on November 4, 2002 (Baxter 2002d, 2003). Baxter and DEQ met and communicated with DEQ on several other occasions prior to completion of this report. This revised BHHRA incorporates DEQ's comments and Baxter's responses.

The objective of this BHHRA is to estimate the likelihood of potential health effects associated with assumed exposures to chemicals detected at Baxter's Eugene facility. The BHHRA was conducted under the assumption that there is no attempt to mitigate or prevent human exposures (i.e., a "no-action" scenario). If the results of the human health risk assessment demonstrate that the estimated risks are unacceptable, then risk-based cleanup goals will be developed so that the risks can be managed or reduced to acceptable levels. The proposed risk-based cleanup goals will be submitted to DEQ for approval prior to implementation of remediation measures. Alternatively, if the estimated level of risk is acceptable, then no further action will be proposed.

## **1.1 Scope of the Baseline Human Health Risk Assessment (BHHRA)**

The BHHRA is based on information about the historical and current operations at the Site, and on field data that were collected during the remedial investigations (RIs) (Baxter 2002a). Information that is relevant to the risk evaluation is summarized and included herein to provide the data that were considered prior to conducting the risk assessment. The BHHRA is based on the assumption that the current and future use of the Site will be industrial. Reasonably likely current and future uses for off-site areas within the locality of the facility consist of both residential and industrial uses. Collective demographic, physical, chemical, and biological factors, coupled with most recent scientific information, were also collected and evaluated for applicability in the evaluation of potential risks.

The elements of the BHHRA are the following:

- Identification of contaminants of potential concern (COPCs) – includes an evaluation of the data quality in order to determine its useability in the risk assessment. A screening evaluation was subsequently conducted to identify the COPCs that were evaluated further in the BHHRA.
- Exposure Assessment – identifies and evaluates the potentially complete exposure pathways. Also includes the estimation of the chemical concentrations at the points of exposure. Integrates the assumed exposure parameters of identified human receptors with the chemical concentrations at the point of exposures in order to estimate an average daily dose.
- Toxicity Assessment – discusses the toxicity factors that were used to evaluate the potential health effects of carcinogenic and noncarcinogenic COPCs.
- Risk Characterization – combines the information from the exposure and toxicity assessments to calculate a theoretical estimate of excess cancer risk and health hazard associated with the chemical concentrations at the Site.

## **1.2 Guidance Documents**

The risk assessment was conducted in accordance with the following guidance documents:

- Risk Assessment Guidance for Superfund, Part A, Vol. 1: Human Health Evaluation Manual, (EPA 1989);
- Guidance for Conduct of Deterministic Human Health Risk Assessments (DEQ 1998, Updated 2000);
- Risk Assessment Guidance for Superfund, Part A, Vol. 1: Human Health Evaluation Manual, Supplemental Guidance Manual, “Standard Default Exposure Factors”, (EPA 1991);
- Exposure Factors Handbook (EPA 1997);
- Dermal Exposure Assessment: Principles and Applications (EPA 1992a, 2001);
- Guidance for Data Useability in Risk Assessment (EPA 1992b); and
- Superfund Exposure Assessment Manual (EPA 1988).



## **2 Site Background**

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A detailed discussion of historical Site operations was presented in Section 2.1 of the RI Summary Report (Baxter 2002a), and is included by reference. This section discusses the aspects in operations that are relevant to the human health risk assessment. The results of the remedial investigations are also discussed briefly in the following subsections.

### ***2.1 Historical Operations***

The Site is approximately 42.5 acres in size and is located within the city limits of Eugene, Oregon (Figure 1). The land near the facility was first developed in the mid-1920s for agricultural use, including farmhouses. Industrial and commercial properties were developed along the abandoned railroad south of the facility. Prior to the development of the Site as a wood treatment facility in 1943, the area was undeveloped farmland. When Baxter began operations at the Eugene facility in 1943, the facility included an office building, a retort, working tanks for treating solution storage, and numerous buildings and sheds. Beginning in the 1950s, the adjacent farmland was developed for residential housing. The area was annexed as part of the City of Eugene in the early 1960s.

In 1952, the Eugene facility starting using metals-based treating solutions, and in 1955 began treating wood products with fire retardants. Supplementary retorts were added in 1966 (Retort 84), 1967 (Retort 81) and 1970 (Retort 85).

A log pond, owned and operated by Cabax Mill (subsequently named Barker-Willamette), was historically located on the southwestern portion of the facility (Figure 2). The pond was used to store raw logs to prevent staining and to soften the wood prior to milling. During the mid-1970s, Baxter purchased the property, including the log pond. The pond was filled in, and a stormwater retention pond was constructed. The current pond is approximately one acre in size and five feet deep.

In 1982, a hazardous waste storage shed was constructed for the temporary accumulation of wastes (periods less than 90 days). Historically, containerized wastes were accumulated in this same general area (Keystone 1991).

In 1992, a new Subpart W concrete, roofed drip pad was constructed on the east side of the treating plant and retorts. In 1994, a roof, drip pad, and sprinkler system were installed on the west side of Retort 85.

## **2.2 Current Site Operations**

The facility is registered as a large quantity hazardous waste generator with the EPA as Site Number ORD009032400. Hazardous wastes are generated from wood treating and equipment maintenance. Baxter maintains environmental permits with the Oregon DEQ and the Lane Regional Air Protection Agency. The major features at the site include the following, as shown on Figure 2:

- Pressure treatment wood preservation plant with partial roof and containment areas,
- Roofed drip pad,
- Above-ground storage tank farm,
- Office and service buildings,
- Lumber preparation and handling equipment and buildings,
- Preparation areas for poles, ties, lumber products, and associated handling equipment and buildings,
- Dry kilns for lumber and poles,
- Storage areas (yards) for treated and untreated wood products,
- Covered storage area with full secondary containment for chemicals,
- Groundwater treatment system,
- Storm water collection and treatment system,
- Process water treatment system, and
- Water cooling tower.

Baxter's products include pressure treated utility poles, crossties, crossarms for utilities, composite construction materials, guardrail posts, and lumber products. Poles are received in debarked condition ready for further processing. Sawn timber and lumber products may require further processing prior to treatment. Composite construction materials (i.e., laminated materials) are generally ready for treatment as received.

Five retorts (numbered 81–85) are currently in the main treatment area and are used for pressure treatment of wood products using creosote, 50:50 (creosote with fuel oil blend), PCP, Chemonite<sup>®</sup> (ammoniacal copper zinc arsenate [ACZA]), and ammoniacal alkaline copper quat (ACQ). The main treatment area also includes multiple work, process, and storage tanks. All retorts and tanks have secondary containment. All retorts have concrete drip pads which are Subpart W compliant. Approximately 80 percent of the remaining areas of the facility are unpaved.

Inbound poles are typically delivered by truck with bark layers removed. These poles are unloaded, classified, cut, tagged, branded, and marked before temporary storage in the Storage Yard. Poles are stacked throughout the storage yard on skids, which are pairs of poles that lay on the ground perpendicular to the stored poles.

Poles and other lumber products scheduled for treatment are prepared for treatment to customer specifications. This process includes making dimensional cuts and holes, incising and radial drilling, making damage repairs, spot sanding, washing, and measuring average wood moisture content. When the wood is ready for treatment, it is loaded onto rail trams. The trams are steel cradles that hold the “charges” of wood during retort treatment and post treatment equalization on the facility's drip pad. Unless otherwise stated, the term “charge” will refer to any units of wood product on trams and collectively designated for preservative treatment, or on the trams following removal from the retort.

Following treatment, wood product charges are removed from the retorts and placed on the drip pads to equalize pressure and temperature to ambient conditions. Treated wood

products must remain on the drip pad until all drippage ceases in accordance with Subpart W.

Treated wood product charges are placed on inspection layout skids (for poles) or in the storage yard (for other products) pending final approval for shipment. Wood products not meeting specifications are returned to the treatment process for post-treatment processing. Treated wood products passing inspection are then loaded on rail cars or trucks from the appropriate material storage and loadout area for shipment offsite.

### **2.3 Analytical Data from the Remedial Investigations**

Soil, sediment, groundwater, and surface water data that were used in the human health risk assessment are summarized in Table 2-1. The datasets were revised to include the sample locations for the different exposure scenarios, as identified in the comments provided by DEQ (DEQ 2002a, 2002b).

#### **2.3.1 Soil Data from On-Site Undeveloped Area**

As shown in the Table 2-1, two composite soil samples, Comp-S1 and Comp-S2, were collected from an undeveloped area located in the southwest portion of the Site and in the vicinity of the stormwater tanks. Other samples from this area are SS98-1, SS98-2, SS98-3, SS98-4, SS98-12, SD98-6 and SS98-1-4 Comp. In 2001, the soils represented by these seven samples were picked-up, compacted, and capped with a geotextile layer and 12 inches of imported rock to form a base cap for the stormwater tanks; therefore, these samples were not included in the assessment

Chemicals detected in samples Comp-S1 and Comp-S2 included arsenic, chromium, copper, zinc, and polyaromatic hydrocarbons (PAHs), and total 2,3,7,8-TCDD toxicity equivalency quotient (TEQ). PCP was detected only in sample Comp-S2 at 2,300 micrograms per kilogram ( $\mu\text{g}/\text{kg}$ ). The detected concentrations of arsenic, chromium, copper, and zinc were higher in Comp-S2 compared to Comp-S1 (Table A-7 in Appendix A). Total PAHs were detected in both samples at concentrations of 7,693  $\mu\text{g}/\text{kg}$  in Comp-

S1 and 15,024 µg/kg in Comp-S2. Analyses for dioxins and furans were completed on both samples. The concentrations of the different congeners of dioxins and furans were converted to 2,3,7,8-TCDD TEQs by applying the TEQs recommended by the World Health Organization in 1997. A 2,3,7,8-TCDD TEQ of 192 picograms per gram (pg/g) was detected in Comp-S1 and at 474 pg/g in Comp-S2. Table A-6 in Appendix A shows that PAHs and other semi-volatile organic compounds (SVOCs) were detected in the two composite samples. These samples were not analyzed for volatile organic compounds (VOCs).

### **2.3.2 Data from On-Site Surface Soil**

For purposes of the risk assessment, surface soil represents the potential exposure area from surface to a depth of two feet below ground surface (bgs). Table A-6 in Appendix A shows the analytical results from the on-site surface soil samples and from the two composite soil samples discussed in Section 2.2.1. The results show that metals, PAHs, SVOCs, VOCs, and dioxin/furan congeners were detected in the surface soil samples. Arsenic, chromium, copper, iron, manganese, and zinc were the metals detected in the surface soil samples. Maximum concentrations for arsenic, chromium, copper, and zinc were 2,400 mg/kg, 470 mg/kg, 4,100 mg/kg, and 1,800 mg/kg respectively. These results were found in sample B-20 which was collected near the main treatment area.

Detectable concentrations of PCP were found in only 12 samples, with the highest concentration of 182 mg/kg detected at B-11 near the main treatment area. The highest concentration was detected at a depth of one foot bgs. The maximum total PAHs calculated was 151 mg/kg for sample B-11.

As shown in Table A-6 in Appendix A, VOCs were also generally reported below the reporting limits with toluene and xylene being the more prevalent VOCs in the surface soil.

In addition to samples Comp-S1 and Comp-S2, analyses for dioxins and furans were limited to three samples on-site. The highest concentration of 2,3,7,8-TCDD TEQ (484

pg/g) was detected in the composite sample Comp-S2 which was collected in the vicinity of the stormwater tanks. The second highest concentration of 115 pg/g was detected in sample B-23.

### **2.3.3 Data from On-Site Surface and Subsurface Soils**

Table A-7 in Appendix A shows the soil data collected from surface to a depth of 15 feet bgs. This data set is used to evaluate industrial trench worker scenarios. The samples were analyzed for metals, PAHs, SVOCs, VOCs, and dioxins/furans. Detected metals included arsenic, chromium, copper, iron, manganese, and zinc. The highest concentrations of arsenic, chromium, copper, and zinc were detected in the surface soil sample collected near the main treatment area. The highest concentration of manganese was also at surface depth (B-24) whereas the highest concentration of iron (50,500 mg/kg) was detected in sample B-10 at a depth of 4–5 feet bgs.

PAHs were detected in 78 of 103 samples. The maximum total PAHs calculated was 252 mg/kg for sample B-11 at a depth of 2.5–4 ft bgs.

Except for PCP, the SVOCs were not present above the reporting limits. PCP was detected in 29 of 101 samples. The maximum detected concentration was detected at B-11 (surface soil) near the main treatment area at a concentration 182 mg/kg.

Among the VOCs, xylene was the most prevalent, and the other VOCs were generally not present above the reporting limits. The subsurface soil samples were not analyzed for dioxins and furans.

### **2.3.4 Data from Off-Site Soils**

Table A-2 in Appendix A presents the data from off-site soils. Offsite soils were collected from multiple surface locations. Arsenic was detected in six out of the 10 collected samples, but chromium, copper, iron, manganese, and zinc were detected in all of the off-site soil samples. The maximum concentrations for arsenic, chromium, copper,

and zinc were 7 mg/kg (SS-5), 46 mg/kg (SS-2), 48 mg/kg (SS-9), and 440 mg/kg (SS-2) respectively. The highest concentrations of iron (41,400 mg/kg) and manganese (978 mg/kg) were both detected in sample SS-5.

PCP was detected in two out of 10 samples with a maximum detected concentration of 0.55 mg/kg (SS-2). PAHs were detected in all ten samples with a maximum concentration for total PAHs of 1.23 mg/kg in sample SS-2.

VOCs were not detected in the off-site soil samples. 2,3,7,8-TCDD TEQs were detected in two samples with a maximum concentration of 10.6 pg/g.

### **2.3.5 Data from On-Site Groundwater Samples**

On-site groundwater samples have been collected and analyzed since 1985 (Appendix A, Table A-5). For the risk assessment, data from January 2000 through June 2005 were selected to represent current conditions for wells that were sampled on a quarterly basis. Due to limited data for volatile organic compounds, all available data for these chemicals were included. In addition, all available data were included for well stations W-1S, W-S2, W-2I, W-3S, W-4S, W-5S, W-8S, W-8I, W-9SW-14I, W-15S, W-21S, W-21I, and W-22S because these wells were not routinely sampled between January 2000 and June 2005.

Metals have been detected in on-site groundwater wells. Total arsenic was detected in 28 of 223 samples, with a maximum detected concentration of 350 µg/L. Total chromium was detected in 11 of 223 samples, with a maximum detected concentration of 270 µg/L. Total copper was detected in 14 of 223 samples, with a maximum detected concentration of 420 µg/L. Total zinc was detected in 66 of 223 samples, with a maximum detected concentration of 670 µg/L.

Organic compounds were detected in on-site groundwater wells. PCP was detected in 196 of 220 samples, with a maximum concentration of 8,780 µg/L. PAHs have been detected in 121 of 224 samples, with a maximum total calculated PAH value of 19,600 µg/L.

Dioxins and furans have been analyzed in six samples. For the calculated 2,3,7,8-TCDD TEQ, a value greater than zero occurred in all six samples, with a maximum TEQ of 4.64 pg/L.

### **2.3.6 Data from Off-Site Groundwater Samples**

The off-site groundwater data for the risk assessment are presented in Tables A-1 in Appendix A (off-site residential well data), A-8 (residential and industrial wells), and A-9 (industrial well data).

For the current residential scenario, copper and zinc were detected in five of the six groundwater samples (Table A-1). All results for PAHs, PCP, chlorinated phenols, and VOCs were non-detect.

For the current industrial scenario PCP was detected in seven of 13 samples. Results for all other chlorinated phenols were non-detect.

For the future residential and industrial scenarios, of the 120 offsite groundwater samples analyzed for metals, arsenic was detected in 9 samples, chromium in 12 samples, copper in 10 samples, and zinc in 68 samples. PAHs were observed in 14 of 122 samples with a maximum calculated total of 8.52 µg/L. PCP has been detected in 203 of 354 samples with a maximum of 324 µg/L. Dioxin and furan analyses were completed on eight samples; dioxins and furans were detected in all of the samples, with a maximum concentration of 30.9 pg/g TCDD TEQ. VOCs were not detected in the samples selected for analysis.

### **2.3.7 Data from Surface Water Samples**

Table A-4 (Appendix A) shows the analytical data from the off-site surface water samples that were collected from six locations in Roosevelt Channel. The samples were analyzed for metals and PCP. Arsenic, copper, and zinc were the metals that were



detected in the surface water samples. PCP was detected in the three samples that were analyzed for PCP, with a maximum detected concentration of 1.1 µg/L (RC-3).

### **2.3.8 Data from Sediment Samples**

Three sediment samples were collected from Roosevelt Channel (Table A-3, Appendix A). These samples were identified as SD-13, SD-14, and SD-15 and were collected in February of 2003. Five sediment samples collected in 1993 and analyzed for VOCs were also included.

The 2003 sediment samples were analyzed for metals, SVOCs, and dioxins/furans. Arsenic, chromium, copper, and zinc were detected in the sediment samples with maximum concentrations of 26 mg/kg, 157 mg/kg, 236 mg/kg, and 691 mg/kg, respectively. PCP was not detected in any of the sediment samples. Total PAH concentrations were detected in all three sediment samples with a maximum concentration of 8260 µg/kg. Dioxins and furans were detected in all three sediment samples with a maximum TEQ concentration of 283 pg/g.

VOCs were not detected in the sediment samples.

### **2.3.9 Toxicity Equivalent Concentrations in Soil, Sediment, and Groundwater**

Table A-10 in Appendix A shows the conversion of concentrations of the different dioxin and furan congeners into the 2,3,7,8-TCDD equivalent concentrations.

### **3 Data Evaluation**

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Selected data sets underwent a data quality assessment, which included a review of the analytical methods; reporting limits; laboratory, field, and method blanks; and laboratory quality control sample results. All of the dioxin/furan data was evaluated by the data quality assessment process. None of the data collected for the HHRA were “R” qualified or rejected.

#### ***3.1 Sample Reporting Limit Evaluation***

One or more sample-specific factors may result in unusually high reporting limits for a particular chemical. Potential causes of elevated reporting limits include percent soil moisture, limited sample volume, matrix interferences where high levels of non-target compounds limit the ability to detect target chemicals, and dilutions required to detect high levels of target compounds that mask the detection of other chemicals. These elevated reporting limits occasionally exceed the detected concentrations for the same chemical in other samples, thus suggesting that the elevated reporting limit is not representative of the entire data set or of site conditions. Inclusion of these data when determining the exposure point concentrations could contribute to uncertainty in the risk estimates.

#### ***3.2 Sample Quantitation Limit Evaluation***

The sample quantitation limits (SQLs) for all chemicals detected in the soil samples were compared to corresponding risk-based levels, namely EPA Region IX residential soil Preliminary Remediation Goals (PRGs) (EPA 2004). These PRGs are based on the conservative assumptions of a residential setting that include potential exposures through soil ingestion, dermal contact, and inhalation of volatile emissions and dust-borne particulates. The SQLs for all chemicals detected in the groundwater samples were

compared to tap water PRGs (EPA 2004), which are the acceptable levels based on domestic use of groundwater.

A chemical that is qualified as non-detect, due to the SQL being higher than the risk-based PRG, implies that the chemical may actually be present but that the concentration cannot be quantified because it is below the SQL. An SQL that is higher than a risk-based value has one of the following consequences: a potential overestimation of risk if the chemical is assumed to be present at concentrations equivalent to half the reporting limit; or a potential underestimation of risk due to the chemical being eliminated from the risk assessment because it is considered not present.

Any analyte that was detected at least once was included in the screening evaluation. Since the SQLs for all chemicals reported as non-detect were lower than their corresponding residential soil PRGs, chemicals that were not detected in all samples from a specific environmental medium were not evaluated further in the risk assessment. If a chemical was detected in some samples and not in others, the non-detects were included in the calculation of the chemical concentration by assuming that the chemical is present at half the reporting limit.

## **4 Identification of Contaminants of Potential Concern**

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Consistent with the guidelines recommended in the *Guidance for Conduct of Deterministic Human Health Risk Assessments* (DEQ 1998, 2000), the term “Contaminants of Interest” (COIs) applies to all chemicals that were detected at the Site prior to the screening process. During the data evaluation, the collected data were grouped according to the exposure areas delineated by the different exposure scenarios (to specific human receptors) that are evaluated in this BHHRA. The COIs in the different samples (i.e., soil, sediment, surface water, groundwater) were grouped as follows:

- COIs detected in on-site surface soil (on-site soil samples collected within the top two feet) to evaluate assumed exposures to on-site industrial workers,
- COIs detected in on-site surface and subsurface soil (0 to 15 feet bgs) to evaluate assumed exposures to on-site trenchworkers,
- COIs detected in off-site soil within the designated “locality of the facility” (LOF) to evaluate assumed exposures to off-site residents,
- COIs detected in sediments to evaluate exposures to a recreational user playing in the Roosevelt Channel,
- COIs detected in on-site groundwater wells to evaluate exposures to the on-site trenchworker,
- COIs detected in the wells referred to as off-site residential wells to evaluate hypothetical current exposures to off-site residents,
- COIs detected in the wells referred to as off-site residential wells and industrial wells to evaluate future hypothetical exposures to off-site residents,
- COIs detected in the current off-site industrial groundwater samples to evaluate assumed exposures to the off-site industrial worker, and
- COIs detected in the surface water samples collected from the Roosevelt Channel to evaluate assumed exposures to a recreational user playing in the Roosevelt Channel.

It should be noted that the wells identified as residential or industrial are not being used as a current source of potable water, and are unlikely future sources of groundwater

supply. Although the community is being supplied with municipal water, the DEQ required that the risk assessment include the hypothetical scenario of someone installing a non-permitted well as a source of water supply. The result of this assumption is the perception that residents and industrial workers are coming into contact with water from wells that have been decommissioned as sources of water supply for several years.

#### **4.1 Identification of Contaminants of Potential Concern (COPCs)**

Table 4-1 is a tabulated presentation of the screening process that ultimately resulted in the identification of COPCs that were evaluated in this BHHRA. Table 4-1 shows the maximum detected concentrations, the number of samples that were analyzed, the number of detects, the frequency of detection, the residential PRGs for soil or tap water (EPA 2004), and ultimately, whether or not the COI is a COPC for a specific environmental medium (e.g., soil groundwater) and/or a COPC on a multimedia basis. The SQLs are also shown for results that were reported as non-detect. It should be noted that, for dioxins, the concentrations of the different congeners of dioxins and furans were adjusted to 2,3,7,8-TCDD TEQ.

Soil COIs without available PRGs and without published toxicity values, were eliminated from further evaluation. These include inorganic mercury, 4-chloro-3-methylphenol, 2,6-dichlorophenol, cresols, 2-nitrophenol, 4-nitrophenol, tetrachlorophenols, 2-methylnaphthalene, and 2,3,5,6-tetrachlorophenol. Groundwater COIs were compared to the EPA Region IX tap water PRGs (EPA 2004).

The first criterion in the screening process recommended by DEQ guidelines (DEQ 1998, 2000) is the frequency of detection. COIs that were detected at a frequency of less than five percent were not identified as COPCs. A comparison to background was not used to screen the detected inorganic COIs because site-specific background samples were not collected.

The next step in the screening process is the concentration-risk screen. The result of this step is the identification of (a) individual COPCs, (b) COPCs within a given medium, (c) multi-media COPCs. To identify the individual COPCs, the maximum concentration of each COI ( $C_{ij}$ ) is compared to the EPA Region IX PRG. The ratio of the maximum concentration of each COI to its corresponding residential soil or tap water PRG,  $C_{ij}/PRG_{ij}$ , is termed  $R_{ij}$ , and the sum of the  $R_{ij}$  for all COIs is termed  $R_j$ . If the  $R_{ij}$  of a COI is greater than one, then the COI is identified as an individual COPC within the medium (e.g., surface soil) that it was detected.

If there are several COIs within a given medium, the total number of COIs within a given medium is termed  $N_{ij}$ . If the ratio  $R_{ij}/R_j$  is greater than  $1/N_{ij}$ , then the COI is identified as a COPC on a multiple basis within a given medium. This screening process was conducted for all COIs detected in the surface soil, surface and subsurface soil, sediments, off-site soil, surface water, on-site groundwater, off-site groundwater from residential wells, off-site groundwater from residential and industrial wells, and off-site industrial wells.

If a COI is present in multiple media, the sum of its  $R_{ij}$  across the different media is termed  $SR_{ij}$ . If the  $SR_{ij}$  is greater than one, then the COI is identified as a COPC on the basis of multiple media. In addition to the individual COPCs, the COPCs on a multiple basis within a given medium, and the multi-media COPCs, Table 4-1 also shows the COIs that were eliminated from further evaluation in the human health risk assessment. Table 4-1 presents the COPCs in the soil, sediments, surface water, and groundwater that were evaluated in the human health risk assessment. The last column in Table 4-1 is a list of the multi-media COPCs.

#### **4.1.1 Surface Soil COPCs**

Table 4-2 is a tabulated summary of the COPCs in surface soil, subsurface soil, sediments, groundwater, and surface water. The individual surface soil COPCs include inorganics (arsenic, chromium, copper, iron, manganese), carcinogenic and noncarcinogenic PAHs, PCP, and three congeners of dioxins/furans (1,2,3,6,7,8-HxCDD,

1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF). The COPCs on a multiple basis are arsenic and dibenz(a,h)anthracene.

Based on DEQ's comment, dated on July 12, 2002, the undeveloped area was evaluated separately through a comparison to the industrial soil PRGs (EPA 2004). The surface soil COPCs in the undeveloped area are arsenic, benzo(a)pyrene, and the less toxic dioxin and furan congeners (penta-, hexa-, and hepta- chlorodibenzodioxins and furans as well as octa-chlorodibenzodioxins). Subsurface soil samples were not collected from the undeveloped area.

#### **4.1.2 Surface and Subsurface Soil COPCs**

The individual surface and subsurface soil COPCs were inorganics (arsenic, chromium, copper, iron, manganese), carcinogenic PAHs, PCP, the hexa- and hepta-chlorodibenzodioxins and heptachlorodibenzofuran. The COPCs on a multiple basis are arsenic and dibenz(a,h)anthracene.

#### **4.1.3 Off-Site Soil COPCs**

The individual off-site soil COPCs are arsenic and iron, whereas the COPCs on a multiple basis are arsenic, benzo(a)pyrene, iron, and 1,2,3,4,6,7,8 heptachlorodibenzodioxin.

#### **4.1.4 Sediment COPCs**

The individual sediment COPCs include arsenic, benzo(b)fluoranthene, dibenz(a,h)anthracene, benzo(a)pyrene, and dioxins/furans. The sediment COPCs on a multiple basis are arsenic, benzo(a)pyrene, and dioxins/furans.

#### **4.1.5 Surface Water COPCs**

The individual surface water COPCs are arsenic and PCP, whereas arsenic is the only surface water COPC on a multiple basis.

#### **4.1.6 Current On-Site Groundwater COPCs**

Based on current on-site groundwater data, the groundwater individual COPCs are arsenic, PCP, benzene, ethylbenzene, carcinogenic and noncarcinogenic PAHs, iron, manganese, carbazole, and dioxins/furans. The COPCs on a multiple basis are arsenic, benzo(a)pyrene, benzo(a)anthracene, dibenz(a,h)anthracene, PCP, and naphthalene.

#### **4.1.7 Current Off-Site Residential Groundwater and COPCs**

There is no individual COPC in the samples collected from the current off-site residential wells, but copper was identified as a groundwater COPC on a multiple basis.

#### **4.1.8 Current Off-Site Industrial Groundwater COPCs**

The individual COPC for the off-site industrial groundwater is PCP. There is no COPC on a multiple basis.

#### **4.1.9 Future, Off-site Industrial and Residential Groundwater COPCs**

To address DEQ's comment (DEQ Comment 24, 9/20/2002) that the future risk from off-site groundwater should use data from the off-site monitoring wells, the individual COPCs in the samples from future off-site industrial and residential wells are arsenic, PAHs, PCP, and dioxins/furans. The COPCs on a multiple basis are arsenic, benzo(a)pyrene, and PCP.



#### **4.1.10 Multi-Media COPCs**

The multi-media COPCs are arsenic, PCP, benzene, carcinogenic and noncarcinogenic PAHs, total TCDD, iron, manganese, zinc, chromium, copper, carbazole, 2,4,6-trichlorophenol, and 4,6-dinitro-2-methylphenol.

## **5 Exposure Assessment**

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The exposure assessment identifies and describes potentially exposed human receptors, develops exposure pathways, and estimates the chemical concentration at the point where a human receptor could come into contact with the soil, surface water, sediments, and groundwater at the Site (i.e., exposure point concentrations).

### **5.1 Conceptual Site Model**

Figure 3 presents the conceptual site model (CSM) that was used as the framework for evaluating the potential exposures. The CSM is a schematic representation of the sources of chemical release, the transport mechanisms that influence the migration of the released chemicals through the environmental media, the potential exposure routes, and the potential receptors. The current and future land use, as well as the beneficial water use study, are critical factors in determining the receptors who could come into contact with COPCs in the different environmental media.

#### **5.1.1 Current and Future Land Use**

The Site vicinity currently consists of industrial, commercial, and residential properties. The Site is bordered on the northwest by Roosevelt Boulevard. Residential areas are located primarily north, northwest, and west of the facility, on the north side of Roosevelt Boulevard, and west of the facility along Cross Street. Commercial properties including Yale Transport, Armored Transport, and Lile of Oregon are located northeast of the facility along Roosevelt Boulevard. The Site is bordered on the south by Southern Pacific Railroad and on the west by Zip-O-Log Manufacturing, Cascade Plating and Machine, and Heli-Jet Industrial. Industrial areas are also present to the east of the facility. Future land uses are anticipated to be similar to current uses.

### **5.1.2 Current and Reasonably Likely Future Beneficial Water Uses**

A total of 50 water wells were identified in the locality of the facility (domestic, irrigation, or industrial wells, excluding monitoring wells). Industrial wells in the vicinity of the Site include wells at Zip-O-Log, Comac Veneer, and Sanipot. In addition, water wells used for irrigation purposes were identified in the vicinity of the Site. City water is readily available to the area provided by Eugene Water and Electric Board (EWEB).

The Beneficial Water Use Determination report (Baxter 2002b) provided a detailed discussion of current and future beneficial groundwater use. The report stated that one business in the locality of the facility (Sanipot) is currently using groundwater for domestic use. The owner of Sanipot was contacted and informed of Baxter's willingness to assist Sanipot's future use of the municipal water supply system as an alternate source of drinking water. The Sanipot well was subsequently abandoned and the facility was connected to the municipal supply system. The Beneficial Water Use Determination report further stated that the current and reasonably likely future beneficial use of groundwater in the locality of the facility is for irrigation and industrial purposes. The appropriate groundwater data set for the BHHRA was identified by incorporating the defined LOF. The LOF ("locality of the facility") is defined as "any point where a human or an ecological receptor contacts or is reasonably likely to come into contact with facility-related hazardous substances" (OAR 340-122-0115). The LOF takes into account the likelihood that chemicals would migrate over time. As a result, the LOF could be larger than the actual physical dimensions of the property or building.

The determination of the LOF considers factors such as the chemical and physical characteristics of the chemicals, the tendency for chemicals to migrate through environmental media, and the time required for migration of chemicals to occur.

Consequently, the groundwater and soil data set used in this BHHRA consisted of samples collected within the designated LOF. The LOF has been identified to include the entire area within the Site boundary. The LOF also extends (a) slightly south from the southeast corner of the Site boundary including off-site well W-35, (b) west to Fergus

Street including off-site well W-36, (c) northwest to Rutledge Street including off-site wells 34 and 35, and (d) north of Elmira Street including off-site wells 23, 24, 25, 26, and 28. At the intersection of Elmira Street and Archie, the boundary delineating the LOF angles southeast toward the northeast corner of the Site boundary.

### **5.1.3 Source of Chemical Release and Transport Mechanism**

The potential sources of chemical release are associated with the former and current operations of the Baxter facility. These include the stormwater retention pond, the former burn pit, retorts, the drip pad, treatment tanks, and retorts. Chemicals from these sources could have been released through surface runoff or spills, thus making the surface soil, sediments, and surface water as secondary sources of chemical release. Chemicals from surface discharges could vertically migrate through leaching and infiltration. Surface soil COPCs could also be dispersed into the air as dust-borne particulates. Volatilization is not considered a transport mechanism from soil because there are no volatile COPCs in soil. Infiltration through the subsurface soils could allow for migration of chemicals from the surface to the subsurface soil and, ultimately, to the ground water. Benzene, ethylbenzene, and naphthalene are volatile COPCs in on-site groundwater.

### **5.1.4 Potential Receptors**

The CSM identifies the on-site and off-site human receptors who could potentially come into contact with the COPCs present in the soil, sediments, surface water, and groundwater. In addition to the on-site soil, the other media of concern include the off-site soil, the surface water and sediments in the Roosevelt Channel, and groundwater that could be used off-site for purposes other than drinking water.

The potential human receptors, as illustrated in Figure 3, are the following:

- Current and future on-site workers involved in non-intrusive activities,
- Current and future on-site intrusive workers involved in trenching activities,

- Current and future off-site recreational users who could come into contact with the off-site sediments and surface water in the Roosevelt Channel, and
- Current and future off-site residents who could come into contact with the soil and groundwater with detected chemical concentrations.

The evaluation of off-site residents' exposures to groundwater is strictly hypothetical because, as previously mentioned, the community is being supplied by municipal water. Nevertheless, this evaluation was conducted to comply with DEQ's request.

### **5.1.5 Potential Exposure Pathways**

An exposure pathway is the mechanism by which a human receptor is exposed to chemicals from a source. The four elements of a complete exposure pathway are:

- a source of chemical release,
- a mechanism of release through a transport medium (i.e., release of chemicals in the soil through indoor air or through dust particles),
- a point of contact between the potential receptor and the transport medium (i.e., ingestion of soil), and
- a potential receptor (i.e., an on-site worker).

If any one of the four elements is missing, the exposure pathway is considered incomplete. Only complete exposure pathways would result in exposures.

Current exposure pathways are those that exist as a result of the current extent of contamination, combined with existing land use and human activity patterns. Future exposure pathways include pathways that have a reasonable probability of completion based on projected future land use and predicted human activity at the Site. The most likely means of future pathway completion is chemical migration from one medium to another or changes in land use.

#### **5.1.5.1 On-Site Worker**

Current and future on-site workers were assumed to be potentially exposed to surface soils (i.e., zero to two feet bgs) through:

- incidental ingestion,
- dermal contact, and
- inhalation of dust-borne particulates.

Since groundwater is not being used at the facility, and there are no future plans to use groundwater as a source of water supply at the facility, potential exposure of the on-site worker to the groundwater is deemed incomplete.

To comply with DEQ's direction (DEQ 2002a, 2002b) to evaluate separately the potential exposures to soil in the undeveloped area, the on-site worker was assumed to come into contact with the undeveloped area through incidental ingestion, dermal contact, and inhalation of dust-borne particulates.

#### **5.1.5.2 On-Site Trenchworker**

The trenchworker could come into contact with COPCs in the surface and subsurface soil while performing excavation activities. Based on information from the facility, the pipelines are above-ground. This implies that the activity pattern of the receptor termed "on-site trenchworker" is more analogous to that of a construction worker. It is also unlikely that the worker would come into contact with groundwater beneath the facility. Therefore, the on-site trenchworker is assumed to be exposed to the soil at the Site through the following pathways:

- incidental ingestion of surface and subsurface soil,
- dermal contact with surface and subsurface soil, and
- inhalation of particulates from surface and subsurface soil.

### **5.1.5.3 Off-Site Residents**

Current and future off-site residents were assumed to be using the groundwater for irrigating lawns and gardens, as well as for above-ground pools that could be used for swimming during the summer. To be comprehensive, the risk assessment also assumed that the child resident could be exposed to surface water and sediments while playing in the Roosevelt Channel. Based on these assumptions, the exposure pathways that were evaluated for the current and future off-site resident are the following:

- incidental ingestion of irrigation water by adult and child residents,
- dermal contact with irrigation water by adult and child residents,
- incidental ingestion of sediments and surface water in Roosevelt Channel by a child playing in the channel,
- dermal contact with sediments and surface water in Roosevelt Channel by a child playing in the channel,
- incidental ingestion of off-site surface soil by adult and child residents,
- dermal contact with off-site surface soil by adult and child residents,
- inhalation of dust-borne particulates from off-site surface soil by adult and child residents, and
- ingestion of home-grown produce by adult and child residents.

## **5.2 Quantification of Exposure**

This section describes the quantification of the chemical intake or exposure doses. These exposure doses provided the basis for subsequent risk calculations based on dose-response relationships. The reasonable maximum exposure (RME) approach was used to provide an estimate of the maximum exposure that might occur (EPA 1989).

### **5.2.1 Estimation of Concentration at the Point of Exposure**

The 95 percent upper confidence limit (UCL) of the mean concentration of each COPC was used to estimate the concentration at the point of exposure (i.e., exposure point

concentration or EPC). The 95% UCL provides reasonable confidence that the true site average will not be underestimated (EPA 1992b).

The 95% UCL was used as the EPC if the data set was statistically adequate. Since the calculation of the 95% UCL of the mean depends on the distribution of the data set (i.e., normal, lognormal, parametric) the distribution was tested prior to calculating the 95% UCL of the mean concentration of each chemical. The ProUCL software from the EPA National Exposure Research Laboratory, Environmental Sciences was used to perform the necessary statistical tests for determining the distribution of the data set. If the data set was determined to be non-parametric, the recommended UCL is typically the 95% Chebyshev UCL. If the data was normally distributed, then the Student's t UCL was used as the exposure point concentration (EPC). If the 95% UCL was higher than the maximum concentration, then the maximum detected concentration was used as the EPC.

The maximum detected concentration was used as the EPC when the data set consists of ten or fewer sampling points. The use of the maximum concentration results in an overestimation of the risk or hazard index and will be discussed in the uncertainty section.

The particulate emission factor (PEF) recommended by EPA was used to estimate the dust-borne particulates from the chemical concentrations in the soil.

The summary statistics and the EPCs used to evaluate the different exposure scenarios are tabulated as follows:

- Table 5-1 – On-site surface soil summary statistics and EPCs
- Table 5-2 – On-site surface and subsurface soil summary statistics and EPCs
- Table 5-3 – Off-site soil summary statistics and EPCs
- Table 5-4 – Off-site sediment summary statistics and EPCs
- Table 5-5 – On-site undeveloped area soil summary statistics and EPCs
- Table 5-6 – On-site groundwater summary statistics and EPCs
- Table 5-7 – Off-site current residential groundwater summary statistics and EPCs



- Table 5-8 – Off-site future residential and industrial groundwater summary statistics and EPCs
- Table 5-9 – Future off-site residential groundwater summary statistics and EPCs
- Table 5-10 – Current off-site industrial groundwater summary statistics and EPCs
- Table 5-11 – Off-site surface water summary statistics and EPCs

## **5.2.2 Exposure Parameters**

The exposure parameters for residents and on-site worker are consistent with the default parameters presented in the “Guidance for Conduct of Deterministic Human Health Risk Assessments” (DEQ 1998, 2000). The exposure conditions for a trenchworker were assumed to be generally similar to the recommended exposure conditions of an excavation worker (DEQ 1998, 2000), but with a few Site-specific modifications. Although the Draft BHHRA had assumed a groundwater ingestion rate of 2.3 liters/day, the revised human health risk assessment reduced the incidental ingestion rate to 0.05 liters/day. Since incidental ingestion of groundwater is assumed to be solely through transfer from hand to mouth, it is not deemed appropriate that the trenchworker will be consuming water at the same rate that an excavation worker will be consuming potable water. It should also be noted that these assumptions err on the conservative side. Based on information from the Baxter facility, there are no underground pipes at the Site; hence, it is unlikely that trenching will be occurring at the facility. In the event that trenching would even occur, the workers are required to wear coveralls and the required personal protective equipment. Therefore, the assumption that the trenchworker could be potentially exposed through skin contact does not represent actual conditions at the facility.

The exposure conditions for the (a) off-site industrial worker, (b) off-site resident, and (c) off-site recreational user are consistent with the assumptions presented in the Draft BHHRA (Baxter 2002c). The comments received from DEQ in October 2002 (DEQ 2002b) did not indicate any changes in the exposure conditions that were proposed in the Draft BHHRA (Baxter 2002c). The exposure parameters for each evaluated scenario are

presented in the corresponding spreadsheet calculations shown in Tables 7-1 through 7-13.

DEQ also required that the pathway through ingestion of homegrown vegetables be included in the human health risk assessment. The evaluation was based on the assumption that chemical concentrations in the groundwater will be transferred to the homegrown vegetables via root uptake from irrigation, resuspension from irrigation, and from aerial deposition from irrigation. The predicted concentrations in fruits and vegetables in a home garden were based on the equations published in the “Risk Assessment Information System” (EPA 2006). The consumption rate of homegrown vegetables was based on the guidelines recommended by DEQ (DEQ 1998, 2000).

## 5.2.3 Algorithms for Calculating Average Daily Dose

### 5.2.3.1 Ingestion Algorithm

The Average Daily Dose (ADD) from ingestion of soil is calculated as follows:

Carcinogens,

$$ADD_{ing} = \frac{C_s \cdot IRS \cdot CF_{km} \cdot EF_{dy} \cdot ED}{BW \cdot AT_c}$$

Equation 5.1

Noncarcinogens

$$ADD_{ing} = \frac{C_s \cdot IRS \cdot CF_{km} \cdot (EF_{hd} / CF_{hd}) \cdot EF_{dy} \cdot ED}{BW \cdot AT_n}$$

Equation 5.2

Where:

- ADD<sub>ing</sub> = Average daily dose from incidental soil ingestion (mg/[kg·d])
- C<sub>s</sub> = Constituent concentration in soil (mg/kg)
- IRS = Incidental soil ingestion rate (mg/d)
- CF<sub>km</sub> = Conversion factor (10<sup>-6</sup> kg/mg)
- EF<sub>hd</sub> = Exposure frequency (hr/d)

CF <sub>hd</sub>	=	Conversion factor (24 hr/d)
BW	=	Body weight (kg)
EF <sub>dy</sub>	=	Exposure frequency (d/yr)
ED	=	Exposure duration (yr)
AT <sub>n</sub>	=	Averaging time, noncarcinogens (d)
AT <sub>c</sub>	=	Averaging time, carcinogens (d)

Based on a review of available scientific publications pertaining to the bioavailability of arsenic in soil, Oregon DEQ's toxicologist approved the incorporation of a bioavailability factor of 50% for estimating the average daily dose of arsenic due to soil exposures.

### 5.2.3.2 Dermal Contact Algorithm

The ADD from dermal contact with soil is calculated as follows:

Carcinogens,

$$ADD_6 = \frac{DA_{soil} \cdot SA \cdot EF_{evd} \cdot EF_{dy} \cdot ED}{BW \cdot AT_c}$$

Equation 5.3

Noncarcinogens

$$ADD_6 = \frac{DA_{soil} \cdot SA \cdot EF_{evd} \cdot EF_{dy} \cdot ED}{BW \cdot AT_n}$$

Equation 5.4

$$DA_{soil} = C_s \cdot AF \cdot DAF \cdot CF_{km}$$

Equation 5.5

Where:

ADD <sub>6</sub>	=	Absorbed daily dose from contact with soil (mg/[kg·d])
SA	=	Exposed skin surface area (cm <sup>2</sup> )
EF <sub>dy</sub>	=	Exposure frequency (d/yr)
EF <sub>evd</sub>	=	Event frequency (events/d)
ED	=	Exposure duration (yr)
BW	=	Body weight (kg)
AT <sub>n</sub>	=	Averaging time, noncarcinogens (d)

$AT_c$	=	Averaging time, carcinogens (d)
$DA_{soil}$	=	Absorbed dose per soil contact event (mg/cm <sup>2</sup> -event)
$C_s$	=	Constituent concentration in soil (mg/kg)
AF	=	Soil-to-skin adherence factor (mg/cm <sup>2</sup> -event)
$CF_{km}$	=	Conversion factor (10 <sup>-6</sup> kg/mg)
DAF	=	Dermal absorption factor (unitless)

### 5.2.3.3 Inhalation of Soil Particles

The ADD from inhalation of soil particles is calculated as follows:

Carcinogens,

$$ADD_9 = \frac{PM_{10} \cdot IRA \cdot (EF_{hd} / CF_{hd}) \cdot EF_{dy} \cdot ED}{BW \cdot AT_c}$$

Equation 5.6

Carcinogens, residential

$$ADD_9 = \frac{PM_{10} \cdot IRA_{adj} \cdot (EF_{hd} / CF_{hd}) \cdot EF_{dy} \cdot ED}{BW \cdot AT_c}$$

Equation 5.7

Noncarcinogens

$$ADD_9 = \frac{PM_{10} \cdot IRA \cdot (EF_{hd} / CF_{hd}) \cdot EF_{dy} \cdot ED}{BW \cdot AT_n}$$

Equation 5.8

$$PM_{10} = \left( \frac{C_s}{PEF} \right) \cdot F_s$$

Equation 5.9

Where:

$ADD_9$	=	Average daily dose from inhalation of particulates (mg/[kg-d])
$PM_{10}$	=	Concentration of respirable particulates in air (mg/m <sup>3</sup> )
IRA	=	Inhalation rate (m <sup>3</sup> /d)
$F_s$	=	Fraction of soil contaminated (unitless)
$EF_{hd}$	=	Exposure frequency (hr/d)

CF <sub>hd</sub>	=	Conversion factor (24 hr/d)
EF <sub>dy</sub>	=	Exposure frequency (d/yr)
ED	=	Exposure duration (yr)
BW	=	Body weight of <i>k</i> th age (kg)
AT <sub>n</sub>	=	Averaging time, noncarcinogens (d)
AT <sub>c</sub>	=	Averaging time, carcinogens (d)
PEF	=	Particulate emission factor (m <sup>3</sup> /kg)

### 5.2.3.4 Inhalation of Vapors (Soil, Water)

The ADD from inhalation of volatiles is calculated as follows:

Carcinogens, occupational

$$ADD_8 = \frac{C_a \cdot IRA \cdot (EF_{hd} / CF_{hd}) \cdot EF_{dy} \cdot ED}{BW \cdot AT_c}$$

Equation 5.10

Noncarcinogens

$$ADD_8 = \frac{C_a \cdot IRA \cdot (EF_{hd} / CF_{hd}) \cdot EF_{dy} \cdot ED}{BW \cdot AT_n}$$

Equation 5.11

$$C_a = \left[ \left( \frac{C_s}{VF_s} \right) \cdot F_s \right] + [C_w \cdot VF_w \cdot F_w]$$

Equation 5.12

$$VF_s = Q/C \cdot \left( \frac{(\pi \cdot D_a \cdot I_e)^{0.5} \cdot CF_{cm}}{2 \cdot \rho_b \cdot D_a} \right)$$

Equation 5.13

$$D_a = \frac{[(\theta_a^{10/3} \cdot D_i \cdot H' + \theta_w^{10/3} \cdot D_w)] / n^2}{\rho_b \cdot K_d + \theta_w + \theta_a \cdot H'}$$

Equation 5.14

$$\theta_a = n - \theta_w$$

Equation 5.15

$$n = 1 - (\rho_b / \rho_s)$$

Equation 5.16

$$K_d = K_{oc} \cdot f_{oc}$$

Equation 5.17

Where:

ADD <sub>8</sub>	=	Average daily dose from inhalation of vaporized constituent (mg/[kg·d])
C <sub>a</sub>	=	Constituent concentration in air (mg/m <sup>3</sup> )
C <sub>s</sub>	=	Constituent concentration in soil (mg/kg)
IRA	=	Inhalation rate (m <sup>3</sup> /d)
EF <sub>hd</sub>	=	Exposure frequency (hr/d)
CF <sub>hd</sub>	=	Conversion factor (24 hr/d)
EF <sub>dy</sub>	=	Exposure frequency (d/yr)
ED	=	Exposure duration (yr)
BW	=	Body weight of <i>k</i> th age (kg)
AT <sub>n</sub>	=	Averaging time, noncarcinogens (d)
AT <sub>c</sub>	=	Averaging time, carcinogens (d)
C <sub>w</sub>	=	Average constituent concentration in water (mg/L)
F <sub>w</sub>	=	Fraction of water contaminated (unitless)
VF <sub>s</sub>	=	Volatilization factor for soil (m <sup>3</sup> /kg)
VF <sub>w</sub>	=	Volatilization factor for water (L/m <sup>3</sup> )
F <sub>s</sub>	=	Fraction of soil contaminated (unitless)
Q/C	=	Inverse of mean concentration at center of source area (g/m <sup>2</sup> ·s / kg/m <sup>3</sup> ); from Exhibit 11 in (EPA 1996)
D <sub>a</sub>	=	Apparent diffusivity (cm <sup>2</sup> /s)
I <sub>e</sub>	=	Exposure interval (9.5 × 10 <sup>8</sup> s)
CF <sub>cm</sub>	=	Conversion factor (10 <sup>-4</sup> m <sup>2</sup> /cm <sup>2</sup> )
ρ <sub>b</sub>	=	Dry soil bulk density (g/cm <sup>3</sup> )
θ <sub>a</sub>	=	Air-filled soil porosity (unitless)
D <sub>i</sub>	=	Diffusivity in air (cm <sup>2</sup> /s)
θ <sub>w</sub>	=	Water-filled soil porosity (unitless)
D <sub>w</sub>	=	Diffusivity in water (cm <sup>2</sup> /s)
<i>n</i>	=	Total soil porosity (unitless)
K <sub>d</sub>	=	Soil-water partition coefficient (cm <sup>3</sup> /g)
ρ <sub>s</sub>	=	Soil particle density (g/cm <sup>3</sup> )

$K_{oc}$  = Soil organic carbon partition coefficient (cm<sup>3</sup>/g)  
 $f_{oc}$  = Fraction organic carbon in soil (g/g)

### 5.2.3.5 Dermal Contact with Water (Tap, Surface, Ground)

The ADD from dermal contact with tap (ground) water is calculated as follows:

Carcinogens, occupational

$$ADD_7 = \frac{DA_{water} \cdot SA \cdot EF_{evd} \cdot EF_{dy} \cdot ED}{BW \cdot AT_c}$$

Equation 5.18

Noncarcinogens

$$ADD_7 = \frac{DA_{water} \cdot SA \cdot EF_{evd} \cdot EF_{dy} \cdot ED}{BW \cdot AT_n}$$

Equation 5.19

Inorganics in water

$$DA_{water} = 10^{-3} \cdot (C_w \cdot CF_{cl}) \cdot t_{event}$$

Equation 5.20

Organics in water

$$DA_{water} = 2 \cdot K_p \cdot (C_w \cdot CF_{cl}) \cdot \sqrt{\frac{6 \cdot \tau \cdot t_{event}}{\pi}}, \text{ for } t_{event} < t^*$$

Equation 5.21

$$DA_{water} = K_p \cdot (C_w \cdot CF_{cl}) \cdot \left[ \frac{t_{event}}{1+B} + 2\tau \cdot \left( \frac{1+3B}{1+B} \right) \right], \text{ for } t_{event} > t^*$$

Equation 5.22

$$\log K_p(\text{organics}) = -2.72 + 0.71 \cdot \log K_{ow} - 0.0061 \cdot MW$$

Equation 5.23

Where:

ADD <sub>water</sub>	=	Absorbed daily dose from contact with water (mg/[kg·d])
SA	=	Exposed skin surface area (cm <sup>2</sup> )
EF <sub>evd</sub>	=	Event frequency (events/d)
EF <sub>dy</sub>	=	Exposure frequency (d/yr)
ED	=	Exposure duration (yr)
BW	=	Body weight (kg)
AT <sub>n</sub>	=	Averaging time, noncarcinogens (d)
AT <sub>c</sub>	=	Averaging time, carcinogens (d)
DA <sub>water</sub>	=	Dose absorbed per unit area per water contact event (mg/cm <sup>2</sup> ·event)
C <sub>w</sub>	=	Constituent concentration in water (mg/L)
CF <sub>cl</sub>	=	Conversion factor (10 <sup>-3</sup> L/cm <sup>3</sup> )
t <sub>event</sub>	=	Duration of exposure event (hr/event)
K <sub>p</sub>	=	Dermal permeability coefficient (cm/hr)
τ	=	Lag time (hr/event)
t*	=	Time to reach steady-state (hr)
B	=	Relative contribution of permeability coefficients (unitless)
K <sub>ow</sub>	=	<i>n</i> -Octanol-water partition coefficient
MW	=	Constituent-specific molecular weight (g/mol)

### 5.2.3.6 Ingestion of Vegetables/Fruit

Carcinogens, residential

$$ADD = \frac{CP \times (IF_f + IF_v) \times CPF \times Vcf \times CF \times EF}{AT}$$

Equation 5.24

where:

$$IF_f = \left( \frac{IRfa \times EDa}{BWa} + \frac{IRfc \times EDc}{Bwc} \right) \text{ and } IF_v = \left( \frac{IRva \times EDa}{BWa} + \frac{IRvc \times EDc}{Bwc} \right)$$

IF <sub>f</sub>	=	fruit age-adjusted ingestion factor (0.0479 kg/day)
IF <sub>v</sub>	=	vegetable age-adjusted ingestion factor (0.0249 kg/day)
CPF	=	contaminated plant fraction (0.25 – resident) (RAIS, 2006)
EF	=	exposure frequency
AT	=	averaging time
CP	=	concentration in produce
Vcf	=	Vegetable/fruit correction factor (unitless) = default is 1



Noncarcinogens

$$ADD = \frac{CP \times (IRf + IRv) \times CPF \times CF \times Vcf \times EF \times ED}{AT}$$

Equation 5.25

where:

- CP = concentration in produce (calculated)
- IRf = fruit age-adjusted ingestion factor
- IRv = vegetable age-adjusted ingestion factor
- CPF = contaminated plant fraction (0.25)
- EF = exposure frequency
- ED = exposure duration
- BW = body weight
- AT = averaging time
- Vcf = Vegetable/fruit correction factor (unitless) = default is 1

To calculate concentration in produce (CP):

$$CP = C_w \times (IRR_{rup} + IRR_{res} + IRR_{dep})$$

Equation 5.26

where:

- C<sub>w</sub> = concentration in water
- IRR<sub>rup</sub> = root uptake from irrigation multiplier
- IRR<sub>res</sub> = resuspension from irrigation multiplier
- IRR<sub>dep</sub> = aerial deposition from irrigation multiplier

$$IRR_{rup} = \frac{Ir \times F \times B_{vwet} \times [1 - \exp(-\lambda E \times tb)]}{\rho \times \lambda B}$$

Equation 5.27

$$IRR_{res} = \frac{Ir \times F \times MLF \times [1 - \exp(-\lambda E \times tb)]}{\rho \times \lambda B}$$

Equation 5.28

$$IRR_{dep} = \frac{I_r \times F \times I_f \times T [1 - \exp(-\lambda E \times t_v)]}{\gamma_v \times \lambda E}$$

Equation 5.29

where

- $I_r$  = irrigation rate (3.63 L/m<sup>2</sup>-day)
- $F$  = irrigation period (0.25) unitless
- $BV_{wet}$  = soil to plant uptake wet weight (kg/)  $7.7 \times K_{ow}^{-0.58}$
- $\lambda E$  = decay for removal on produce (1/day)
- $t_b$  = long term deposition and buildup
- $t_v$  = aboveground exposure time
- $\lambda B$  = effective rate for removal
- $P$  = area density for root zone (240 kg/m<sup>2</sup>)
- $Y_v$  = plant yield (wet) = 2 (kg/m<sup>2</sup>)
- $MLF$  = plant mass loading factor (0.26), unitless

## **6 Toxicity Assessment**

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Toxicity assessment is based on the ability of a compound, at an administered dose, to elicit an adverse human health response. For risk assessment purposes, toxic chemical effects were separated into two categories of toxicity: carcinogenic effects and non-carcinogenic effects. This division relates to the currently-held scientific opinion that the mechanisms of action for these endpoints differ. For carcinogens, it was assumed that any level of exposure has a finite possibility of causing cancer; therefore, there is no threshold dose for carcinogenic effects. That is, a single exposure to a carcinogenic chemical may, at any level, result in an increased probability of developing cancer. For a chemical exhibiting non-carcinogenic effects, it is believed that humans have protective mechanisms that must be overcome before the adverse effect results; therefore, there is a threshold dose for these effects. This threshold concept view of non-carcinogenic effects holds that a range of exposures up to some defined threshold can be tolerated by humans without appreciable risk of harm.

### **6.1 Carcinogenic Toxicity**

For carcinogens, it is assumed that any level of exposure has a finite possibility of causing cancer; therefore, there is no threshold dose for carcinogenic effects. That is, a single exposure to a carcinogenic chemical may, at any level, result in an increased probability of developing cancer. The EPA evaluates chemicals that have carcinogenic effects in a two-step process. In the first part of the evaluation, both human and experimental animal studies are reviewed to determine the weight of evidence that a chemical is carcinogenic. Then a weight-of-evidence classification is assigned to the compound.

In the second part of the evaluation, a slope factor (SF) is calculated, which is an estimate of the slope of the tumor dose-response curve at relatively high doses. This curve is used to calculate cancer risk from any given exposure dose. The SF is established

conservatively by taking the slope of the 95<sup>th</sup> percentile upper-bound confidence level of the tumor dose-response curve from extensive animal carcinogenicity data. Thus, the actual slope factors estimating carcinogenic potency are probably lower, but are not likely to be higher.

A study conducted by the National Toxicology Program showed that there was evidence of carcinogenic effects of naphthalene on rats (NTP 2000). Due to the importance of naphthalene as an air pollutant, the Office of Environmental Health Hazard Assessment (OEHHA) of California Environmental Protection Agency developed an inhalation slope factor of  $1.2\text{E-}01 \text{ (mg/kg-day)}^{-1}$ . Although EPA has not adopted an inhalation slope factor for naphthalene, this BHHRA applied the inhalation slope factor developed by OEHHA in calculating the cancer risk estimate due to exposures to naphthalene.

## **6.2 Noncarcinogenic Toxicity**

The threshold dose for noncarcinogenic effects can be related to a reference dose (RfD). A chronic RfD is an estimate of a daily exposure level to which people, including sensitive individuals, do not have an appreciable risk of suffering significant adverse health effects.

For chemicals exhibiting non-carcinogenic effects, it is believed that humans have protective mechanisms that must be overcome before the adverse effect results; therefore, there is a threshold dose for these effects. This threshold concept view of non-carcinogenic effects holds that a range of exposures up to some defined threshold can be tolerated by humans without appreciable risk of harm.

The noncarcinogenic, or threshold, health effects of a chemical are evaluated using a RfD approach. A RfD is a conservative estimate of the daily intake of a chemical (milligram of chemical per kilogram body weight per day) that is without risk of any threshold health effects in humans, including sensitive subpopulations (women of child-bearing age and children).

The primary sources of toxicity values are IRIS (EPA online) and the toxicity factors published by the DEQ. The slope factors and reference doses used in estimating the risks and hazard indices are shown in the risk assessment tables.

## **7 Risk Characterization**

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This section of the BHHRA describes how calculated exposure doses were integrated with the toxicity criteria to yield estimated of potential health risks. Risk characterization involves the integration of health effects information, developed as part of the dose-response assessment, with exposure estimates developed as part of the exposure assessment. The result is a quantitative estimate of non-threshold carcinogenic risks, as well as a quantitative estimate of chronic and noncarcinogenic hazards based on the presumption that a threshold dose is required to elicit a response.

The EPA considers a risk range of 1 in 1,000,000 to 1 in 10,000 (1E-06 to 1E-04) as a target range within which to manage human-health risk (40 CFR, Section 300.430(e)(2)(i)(A); EPA 1991). The one-in-a-million level of risk is often referred to as the “de minimis” level of risk; human-health risks below this range would not require attention. In Oregon, DEQ considers the “de minimis” level of risk to be 1 in 1,000,000 (1E-06) for a single carcinogen, and an aggregate site risk for multiple carcinogens not to exceed 1 in 100,000 (1E-05).

### **7.1 Carcinogenic Risk Estimates**

The theoretical excess lifetime cancer risk is an estimate of the increased risk of an individual developing cancer as a result of exposure to the COPCs at specified daily dosages averaged over a lifetime of 70 years. The excess lifetime cancer risk will be estimated for each known, probable, or possible carcinogenic constituent, by using the following equation:

$$\textit{Excess Cancer Risk} = \textit{Exposure Dose} \times \textit{Slope Factor}$$

Lifetime daily intakes, using an averaging time of 70 years, effectively prorate the total cumulative dose over a lifetime.

## **7.2 Noncarcinogenic Effects**

The hazard quotient (HQ) is the ratio of the estimated exposure dose to the RfD. This ratio is used to evaluate noncarcinogenic health effects due to exposure to a constituent. For an exposure scenario where there would be adult and child receptors, as in the case of a residential scenario, the evaluation of noncarcinogenic effects is based on exposures of a child to the age of six years. An HQ greater than 1.0 indicates that the estimated exposure dose for that constituent exceeds acceptable levels for protection against noncarcinogenic effects. Although an HQ of less than 1.0 suggests that noncarcinogenic health effects should not occur, an HQ of slightly greater than 1.0 is not necessarily an indication that adverse effects will occur. The sum of the HQs is termed the hazard index (HI).

Since some individuals are exposed by more than one pathway, HQs are summed for each pathway that contributes to the exposure to the same individual in a given population. If the total hazard index is equal to or less than 1.0, it is believed that no threshold health effects will occur. An HI of slightly greater than 1.0, however, is not necessarily an indication that health effects will occur. Summing HQs across all chemicals and across all pathways assumes that all acute and chronic human health effects are additive. Since this assumption is known not to be accurate, when a total population hazard index exceeds 1.0, it is appropriate to re-examine the health effects, and to segregate the individual hazard quotients on the basis of target organ or mechanism of action.

## **7.3 Results of the Risk Characterization**

The estimated cancer risks and hazard indices for each potential receptor are described below. Detailed calculations are presented in Tables 7-1 through 7-12, and the results are summarized in Table 7-13.

### **7.3.1 Risk and Hazard Index Estimates – On-site Worker Scenario**

Table 7-1a shows that the increased probability of cancer due to the on-site worker's exposure to surface soil is one in 10,000, primarily due to arsenic. By itself, arsenic could increase the probability of cancer at a rate of one in 10,000. The results showed, however, that there are no other potential health effects due to soil exposures at the Site because the cumulative hazard index of 0.7 is below the threshold level of 1.0.

Table 7-1b shows that the increased probability of cancer due to the on-site worker's exposure to surface soil in the undeveloped area is four in 100,000. Once again, this increased probability of cancer is primarily due to arsenic. The other contributors to the total risk are the less toxic congeners of dioxin in shallow soil. The hazard index of 0.1 shows that there are no health effects on the on-site worker due to the arsenic in the soil at the Baxter facility.

### **7.3.2 Risk and Hazard Index Estimates – On-site Trenchworker Scenario**

Table 7-2a shows that, under the unlikely event that trenching activities would occur at the Baxter facility, there is no increased probability of cancer or other health effects to the on-site trenchworker who could come into contact with the surface and subsurface soil. The estimate that there is an increased likelihood of cancer risk at a rate of 7 in 10 million is below the most stringent acceptable level of one in one million. Similarly, the cumulative hazard index of 0.1 indicates that potential exposures to noncarcinogens in the soil would not result in adverse health effects because the total dose is below the threshold level of 1.0.

Table 7-2b shows similar results when trenching activities are assumed to occur in the undeveloped area of the facility. The estimated increased probability of cancer is three in 10 million compared to the acceptable level of one in one million. The total hazard index of 0.02 is below the threshold level of 1.0. Thus, there would be no adverse health effects associated with the arsenic in the soil if trenching should occur.



As previously stated, the pipes at the Baxter facility are all above ground. Hence, the hypothetical trenchworker has no direct exposures to groundwater. However, the risk assessment evaluated the possibility that the trenchworker could be exposed to volatile emissions from the naphthalene and benzene that were detected in the groundwater. The estimated increased risk of cancer at three in 10 million is well below the acceptable level of one in one million, and the total hazard index of 0.01 shows that the daily chemical intake due to breathing the emissions from the groundwater is 100 times lower than the acceptable daily dose (Tables 7-3a and 7-3b).

### **7.3.3 Risk and Hazard Index Estimates – Off-Site Resident's Exposure to Soils**

Table 7-4 shows that potential exposures of the off-site resident to off-site soil are associated with an increased risk of cancer at three in 100,000. However, this is mainly due to the arsenic concentration of five mg/kg, which is lower than the background level of seven mg/kg. The results actually show that the concentrations of arsenic in the off-site soil which may be attributed to the operations at the Baxter facility are not any higher than what is naturally present in the soils in Oregon. Therefore, the operations at the Baxter facility would not cause a higher probability of cancer than what is naturally present in the environment. The highest concentration of heptachlorodibenzodioxin detected in the two off-site soil samples resulted in an estimated increased risk of cancer at a rate of two in a million, which slightly exceeds the most stringent level of one in one million. It should also be noted that this risk estimate is based on DEQ's default assumption that a child is ingesting soil at a rate of 400 mg per day compared to EPA's default soil ingestion rate of 200 mg per day. The DEQ's higher default soil ingestion rate resulted in a higher perceived risk although the observed concentration of heptachlorodibenxodioxin in off-site soils is below EPA PRGs, If the default soil ingestion rate for children recommended by EPA is applied, the estimated increased probability of cancer is at the acceptable level of one in one million.

### **7.3.4 Risk and Hazard Index Estimates – Groundwater Exposures of Current Off-site Resident**

At the direction of DEQ (October 2002), this risk assessment also evaluated the hypothetical exposures of residents to chemicals detected in the samples collected from the closed residential wells. These wells are not currently used as a source of domestic water supply, so the results of the risk evaluation do not represent actual current conditions. Although the residents are being supplied with municipal water, this risk assessment assumed that the water from these closed wells is being used to irrigate the lawns and gardens of the residents. As a result, the residents were assumed to have hypothetical exposures to groundwater through skin contact and incidental transfer of water from hand to mouth while irrigating. Table 7-5 shows that copper, a noncarcinogen, is the only COPC. The results also show that there are no adverse health effects associated with using the groundwater for irrigating the lawns in the off-site homes.

### **7.3.5 Risk and Hazard Index Estimates – Groundwater Exposures of Current Off-site Resident while Swimming**

The risk assessment also assumed that the water from these closed residential wells is being used to fill aboveground swimming pools. Another hypothetical exposure is that the adult and child residents will be swimming in this pool for one hour each event for the total duration of 60 days a year. As stated earlier, the only COPC in the samples collected from the closed residential wells is copper, a noncarcinogen. The results showed that there are no adverse health effects due to swimming in aboveground swimming pools if the water should come from the closed residential wells (Table 7-6).

### **7.3.6 Risk and Hazard Index Estimates – Groundwater Exposures of Future Off-site Resident**

DEQ required that the risk assessment evaluate hypothetical exposures of future residents, in the unlikely event that the groundwater from the closed residential and industrial wells would be used for irrigating lawns and for filling aboveground pools. The results showed that the estimated increased probability of cancer associated with this unlikely scenario exceeds one in one million due to PCP and dioxins. If it is assumed that incidental ingestion and dermal contact occur while irrigating the lawn and garden, Table 7-7 shows that the estimated increased risk of cancer is seven in 10,000. Table 7-8 shows that the estimated increased probability of cancer due to swimming in aboveground pools filled with groundwater from the closed residential and industrial wells is two in one thousand. Since the total hazard index for each of the two scenarios is below the threshold level of 1.0, these results indicate that, except for the increased probability of cancer, there are no other adverse health effects due to the chemicals detected in the closed residential and industrial wells.

### **7.3.7 Risk and Hazard Index Estimates – Exposures to Surface Water in Roosevelt Channel**

Table 7-9 presents the cancer and hazard index estimates based on the assumptions that a child would be playing in the Roosevelt Channel and coming into skin contact with the surface water. The child is assumed to be wearing short pants and a short-sleeved shirt, and is barefoot. The evaluation is based on the highest concentration of arsenic that was detected among the six samples, and on the highest concentration of PCP that was detected among three samples. The results showed that a child's exposure to the highest level of arsenic in the surface water at Roosevelt Channel resulted in an estimated increased risk of cancer at two in a million. Although this is higher than DEQ's acceptable level of one in a million, the increased risk of cancer is at the lower end of the risk range considered acceptable by EPA (i.e., one in 1,000,000 to one in 10,000). Furthermore, this result is based on the conservative assumption that the surface water in

the Roosevelt channel is always at the highest detected concentration of arsenic. It should be noted that among the six surface water samples collected from Roosevelt Channel, there were no reported chemicals in four of the samples. The increased probability of cancer due to the only other sample with a reported concentration of arsenic is five in 10 million, which is lower than the acceptable level of one in one million. Therefore, the approach used in evaluating potential exposures of a child playing in the Roosevelt Channel overestimates the risk.

### **7.3.8 Risk and Hazard Index Estimates – Exposures to Sediments in Roosevelt Channel**

Table 7-10 shows that a child coming into skin contact with sediments, while playing in the Roosevelt Channel, would have a total estimated increased risk of cancer at a rate of two in one million due solely to arsenic. Similar to the evaluation of the surface water at the Roosevelt Channel, this risk assessment is based on the assumption that the child will only come in contact with the highest concentration of arsenic. In reality, a child playing in Roosevelt Channel could come into contact with the lowest to the highest level of arsenic in the sediments. If the different concentrations of arsenic are taken into account, the total estimated risk would be at the acceptable level of one in a million. The total hazard index of 0.5 demonstrates that the daily intake of arsenic based on the assumed conditions of exposure is below the daily intake that would result in health effects other than cancer.

### **7.3.9 Risk and Hazard Index Estimates – Groundwater Exposures of Off-site Industrial Worker**

PCP is the only COPC in the groundwater from the off-site industrial wells. The evaluation assumes that a worker at adjacent facilities sprays the logs twice a week for four months per year when the area does not have a wet season. Potential exposures based on these assumptions resulted in an estimated increased risk of cancer of six in ten million, which is significantly lower than the acceptable level of one in one million. The

total hazard index of 0.002 demonstrates that the noncarcinogenic effects of PCP would not manifest in the worker involved with spraying the logs even if one were to assume that the water from the closed industrial wells is used (Table 7-11).

### **7.3.10 Risk Associated with Consumption of Home-grown Produce**

Table 7-12 shows the results if the residents are assumed to be consuming home-grown vegetables and fruits that are irrigated with water from the closed residential wells. The results show that the copper in the water samples from the closed residential wells would not result in adverse health effects should the residents consume fruits and vegetables that were irrigated with groundwater containing the reported levels of copper.

A summary of estimated risks and hazard indices is provided in Table 7-13.

## **8 Discussion on Uncertainties**

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This section discusses the uncertainties involved in the process of quantifying risk for human receptors. Because risk estimates are based on a combination of measurements and assumptions, it is important to provide information on sources of uncertainty in risk characterization.

### ***8.1 Uncertainties in the Exposure Assessment***

The exposure assessment evaluates the complete pathways that were identified in the CSM. Despite the fact that the community is being supplied with municipal water, the CSM assumes that water from the closed residential and industrial wells are being utilized by the residents and industrial workers in the vicinity of the Baxter facility. This assumption was made in order to comply with directions from DEQ. Therefore, the evaluation and resulting risk estimates attributed to use of groundwater from these closed wells are completely hypothetical.

A prevailing uncertainty in the exposure assessment lies in the estimation of chemical intake or dose. Sampling is not random but is designed to locate the worst contamination, and the analytical results are biased toward overestimation of contaminant levels. The concentration at the point of exposure is a significant factor in the uncertainty of the risk estimates. It is evident from the data that the distribution of the chemical concentrations throughout the Site does not follow a normal distribution. In most cases, the exposure point concentration is biased high due to high concentrations present in soil samples from one or two locations. In other instances, the number of samples is not adequate to perform a statistical calculation, hence, the maximum detected concentration is assumed to be at the point of exposure. By using maximum concentrations to calculate the chemical intake under the different exposure scenarios, the calculated risks and hazard indices are overestimated.

DEQ specified default values for various exposure parameters that were utilized in the dose estimates. Many of these default exposure parameters are likely to lead to an overestimate of potential exposure and risk for receptors coming into contact with constituents at the facility. Furthermore, overestimation of risk is likely due to the fact that some exposure scenarios are hypothetical and may not actually occur.

The uncertainty in the risk estimates is more pronounced in the evaluation of groundwater exposures. The data from the industrial and residential wells were used to estimate the concentrations that the current and future off-site residents would be exposed to via ingestion and dermal contact. In reality, all off-site residents have been supplied with municipal water for several years. In addition a deed restriction exists on the Sanipot property which prevents any use of groundwater at that property. Therefore, the concentrations that are being used to evaluate exposures are overestimated.

Another uncertainty in the exposure assessment is the frequency of exposure. Without any information on the activity patterns of the residents (e.g., how often residents water their lawn), how many households have above-ground pools for swimming, and how often residents swim in the pool, the assumptions tend to overestimate the risk and hazard indices.

Similar uncertainties are inherent in the assumed frequency that children would be playing in the Roosevelt Channel. The unacceptable risk due to the arsenic in the surface water is based on the highest detected concentration and the child is assumed to be barefoot and wearing short sleeved shirts and short pants. These conditions are more likely to overestimate rather than underestimate the risk and hazard index.

Since the groundwater beneath the Site is not a source of potable water, hand-to-mouth transfer will be the most likely source of any incidental ingestion that could occur during construction or trenchwork activities at the Site. Uncertainty is compounded further by the fact that construction or excavation/trenching activities will be conducted in accordance with a Health and Safety Plan that identifies the proper personal protective clothing that will prevent exposures to unacceptable levels of hazardous chemicals.

Several studies have been conducted that showed a wide range of bioavailability factors for arsenic that would reduce the actual chemical intake of an exposed individual. This is demonstrated in the wide range of cleanup levels that have been implemented at different hazardous waste sites. This is a major uncertainty that affects the risk estimates and the risk-based cleanup level for arsenic at the Baxter facility.

## ***8.2 Uncertainties in the Toxicity Assessment***

The uncertainty of extrapolating dose-response data from animals to humans along with the application of safety factors will result in an overestimation of the risk. The assumption of linearity and a non-threshold phenomenon in the dose-versus-risk relationship may, for some chemicals, result in a toxicity value that errs on the conservative side. This could result in an overestimation of the actual cancer risk in humans.

## ***8.3 Uncertainties in the Risk Estimates***

In deterministic baseline risk assessments such as the risk assessment conducted for the Baxter facility, the different receptors are assumed to be exposed to a single chemical concentration for the entire duration of exposure. In contrast, a probabilistic risk assessment incorporates different variables that could affect the chemical intake during the exposure period. Some of these variables include, but may not be limited to, the skin surface area that is exposed, the breathing rate, the ingestion rate, and the actual frequencies and duration of exposures. In general, a deterministic risk assessment results in an overestimation of risk.

The estimated carcinogenic and noncarcinogenic risks are based on the assumption that effects are additive. It is recognized in the scientific community that chemical mixtures could have antagonistic or synergistic effects. Until more scientific evidence is made available, risk assessments err on the conservative side by assuming additive effects. This



would lead to an overestimation of risk. On the other hand, if there are synergistic rather than additive effects, then the cumulative risks could be underestimated.

## 9 Conclusions

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Quantitative risk estimates were calculated for identified on-site and off-site receptor groups. The risk estimates presented are the result of a deterministic BHHRA for current and hypothetical future receptors and exposure routes. The conservative parameters and assumptions used in hypothetical scenarios for all potential receptors overestimates the risk when compared to realistic exposure parameters.

A tabulated summary of the results of the human health risk assessment is provided in Table 7-13. The results of the baseline human health risk assessment indicate that the evaluated exposure scenarios resulted in a cumulative cancer risk estimate ranging from 3E-07 to 2E-03.

Risks associated with a worker's exposure to chemicals in the soil at the Baxter facility will not meet DEQ's acceptable level of risk but are within the levels considered acceptable by EPA. Arsenic and dioxins are the primary contributors to the risk estimates. Potential exposures of a trenchworker to the soil do not pose a risk, but skin contact with groundwater beneath the site gives the perception of unacceptable risk. In reality, the trenchworker will be in personal protective clothing during excavation activities so that skin contact is either eliminated or minimized, thus, reducing the risk.

The risks due to exposures of residents to soil in the off-site areas exceed the acceptable level of one in a million due primarily to arsenic. However, the concentration of arsenic that is contributing to this level of risk is below the arsenic concentration that is considered naturally present in the soils in Oregon.

Exposures to the surface water and sediments in Roosevelt Channel could pose an unacceptable level of risk to a child, but the risk is due to the highest concentration of arsenic that was detected. This is an overestimation because the child was assumed to be exposed to this same high concentration for the entire duration of exposure. It should be

noted that among the six surface water samples collected from Roosevelt Channel, there were no reported chemicals in four of the samples. The increased probability of cancer due to the only other sample with a reported concentration of arsenic is five in 10 million, which is lower than the acceptable level of one in one million. Therefore, the approach used in evaluating potential exposures of a child playing in the Roosevelt Channel overestimates the risk. Similar to the evaluation of the surface water at the Roosevelt Channel, evaluation of exposures to sediments in Roosevelt Channel assumes that the child will only come in contact with the highest concentration of arsenic. In reality, a child playing in Roosevelt Channel could come into contact with the lowest to the highest level of arsenic in the sediments. If the different concentrations of arsenic are taken into account, the total estimated risk would be at the acceptable level of one in one million. The total hazard index of 0.5 demonstrates that the daily intake of arsenic level of one in one million.

The evaluation of the hypothetical use of groundwater coming from the closed residential and industrial wells for irrigation and for water in aboveground pools resulted in unacceptable risk estimates due to the levels of arsenic, dioxins, and PCP. These results ignore the fact that the residents are being supplied with municipal water and are not using water from these closed wells. There is no risk, however, associated with consuming home-grown fruits and vegetables that are irrigated with water from these closed wells.

There is no risk associated with an off-site industrial worker using the groundwater for watering logs during the dry months of the year.

There are several factors that should be considered in the course of making risk management decisions. The assumed exposures of the on-site worker to surface soil at the Site showed that ingestion and dermal contact with the arsenic in the soil are the primary contributors to the unacceptable level of risk. Several studies have been conducted that showed a wide range of bioavailability factors for arsenic that would reduce the actual chemical intake of an exposed individual. This is demonstrated in the wide range of cleanup levels that have been implemented at different hazardous waste sites. Until the

DEQ establishes an appropriate bioavailability factor, this is a major uncertainty that affects the risk-based cleanup level for arsenic at the Baxter facility.

The evaluation of the different exposures to groundwater is based on seemingly arbitrary assumptions that are intended to bias the results towards the high range rather than reflect the actual groundwater use at the Site and adjoining areas. Nevertheless, the results show that PCP is the primary chemical of concern in groundwater for future off-site receptors. Arsenic is a chemical of concern in the groundwater if it is assumed that groundwater from the industrial wells is also being used as a source of potable water supply by the off-site residents. Dioxins are also chemicals of concern associated with the use of groundwater from the industrial wells, but not with the use of groundwater from the residential wells.

## 10 References

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Baxter 2002a. Draft Remedial Investigation Summary Report. Prepared for Oregon Department of Environmental Quality. Prepared by J.H. Baxter & Co., Eugene, OR. June 28.

Baxter 2002b. Beneficial Water Use Determination. Prepared for Oregon Department of Environmental Quality. Prepared by J.H. Baxter & Co., Eugene, OR. June 28.

Baxter 2002c. Draft Human Health Risk Assessment. Prepared for Oregon Department of Environmental Quality. Prepared by J.H. Baxter & Co., Eugene, OR. September 20.

Baxter 2002d. Response to DEQ Comments on Draft Human Health Risk Assessment. Letter to Max Rosenberg of Oregon DEQ from RueAnn Thomas. November 4.

Baxter 2003. Human Health Risk Assessment – Bioavailability & Ingestion Rates. Letter to Max Rosenberg of Oregon DEQ from RueAnn Thomas. April 30.

DEQ 1998. Updated 2000. Guidance for Conduct of Deterministic Human Health Risk Assessment, Final. Oregon Department of Environmental Quality Waste Management and Cleanup Division Cleanup Policy and Program Development Section.

DEQ 2002a. Comments on Baxter's memorandum regarding the approach to the HHRA. E-mail from Max Rosenberg of Oregon Department of Environmental Quality to RueAnn Thomas of J.H. Baxter & Co. July 12, 2002.

DEQ 2002b. Comments on the Draft Human Health Risk Assessment. Letter from M. Rosenberg of Oregon DEQ to RueAnn Thomas. October 3.

EPA 1989. Risk Assessment Guidelines for Superfund (RAGS), Volume 1: Human Health Evaluation Manual (Part A). EPA/540/1-89/002. December 1989.

EPA 1991. Human Health Evaluation Manual, Supplemental Guidance: "Standard Default Exposure Factors." OSWER Directive 9285.6-03. U.S. Environmental Protection Agency. Washington, D.C.

EPA 1992a, 2001. Dermal Exposure Assessment: Principles and Applications. U.S. Environmental Protection Agency, Office of Health and Environmental Assessment.

EPA 1992b. Guidance for Data Useability in Risk Assessment. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response.

EPA 1997. Exposure Factors Handbook. U.S. Environmental Protection Agency, Office of Research and Development, National Center for Environmental Assessment, 1997.

EPA 1998. Superfund Exposure Assessment Manual. U.S. Environmental Protection, Office of Emergency and Remedial Response. EPA-540/1-88/001.

EPA 2002a. Child-Specific Exposure Factors Handbook. U.S. Environmental Protection Agency, Office of Research and Development's National Center for Environmental Assessment, EPA-600-P-00-002B, September.

EPA 2002b. Integration Risk Information System (IRIS) database. (<http://www.epa.gov/iris>).

EPA 2004. Region IX Preliminary Remediation Goals (PRGs). ([www.epa.gov/region09/waster/sfund/prg/index.htm](http://www.epa.gov/region09/waster/sfund/prg/index.htm)). Nov 1.

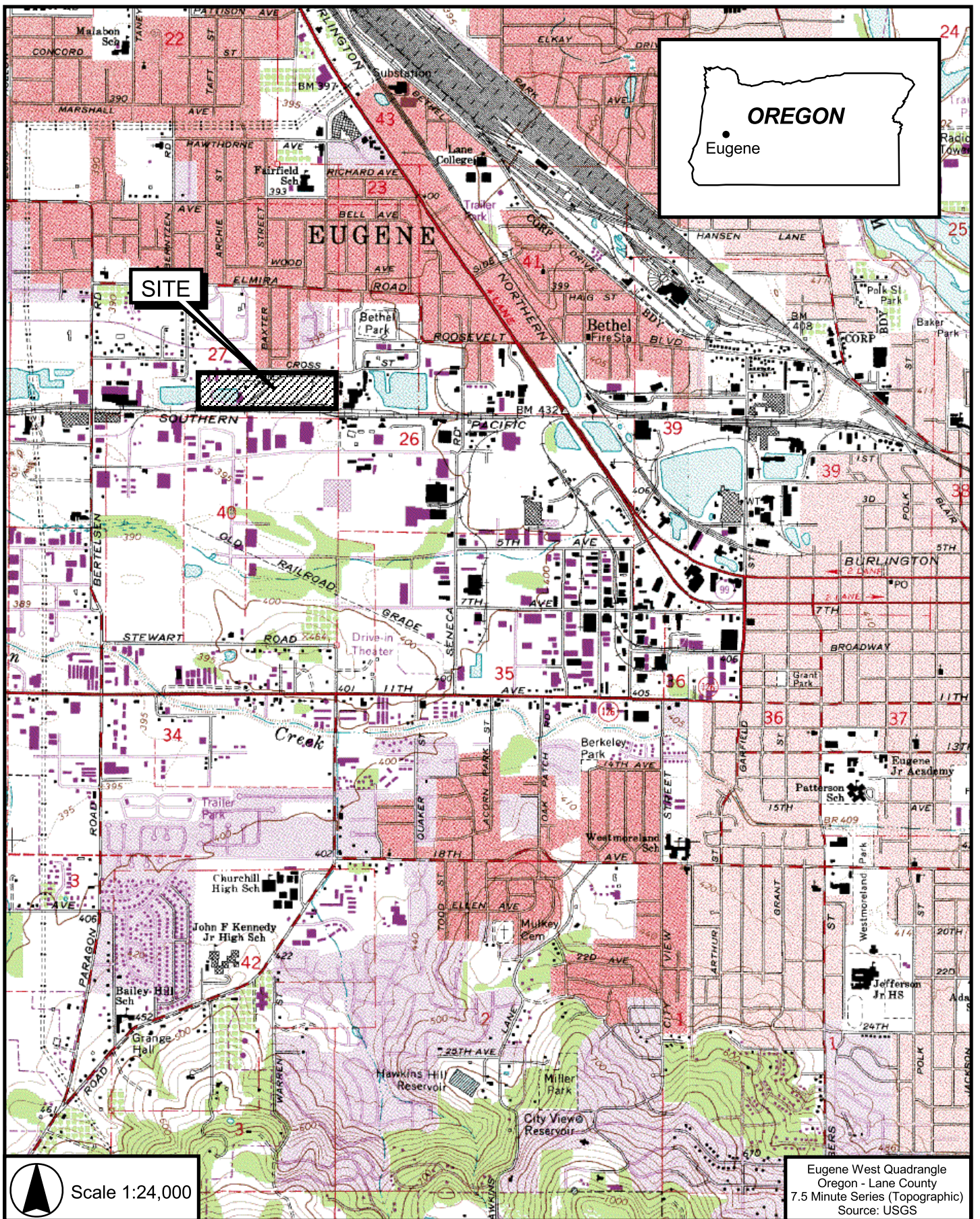
EPA 2006. Risk Assessment Information System (online). Last accessed on July 27, 2006. [http://risk.lsd.ornl.gov/prg/equations/ag\\_cc\\_veg.shtml](http://risk.lsd.ornl.gov/prg/equations/ag_cc_veg.shtml)

Keystone 1991. Remedial Investigation Report (Phase I) of J.H. Baxter & Company Eugene, Oregon Site. Prepared by Keystone Environmental Resources, Inc. for J.H. Baxter & Company. August 1991.

NTP 2000. Toxicology and Carcinogenic Studies of Naphthalene in F344/N Rats (Inhalation Studies). Technical Report Service No. 500, U.S. Department of Health and Human Services, Public Health Service, National Institute of Health. NTP, Research Triangle Park, NC.

## **Figures**

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**Figure 1. Site Vicinity Map - J.H. Baxter - Eugene, Oregon**





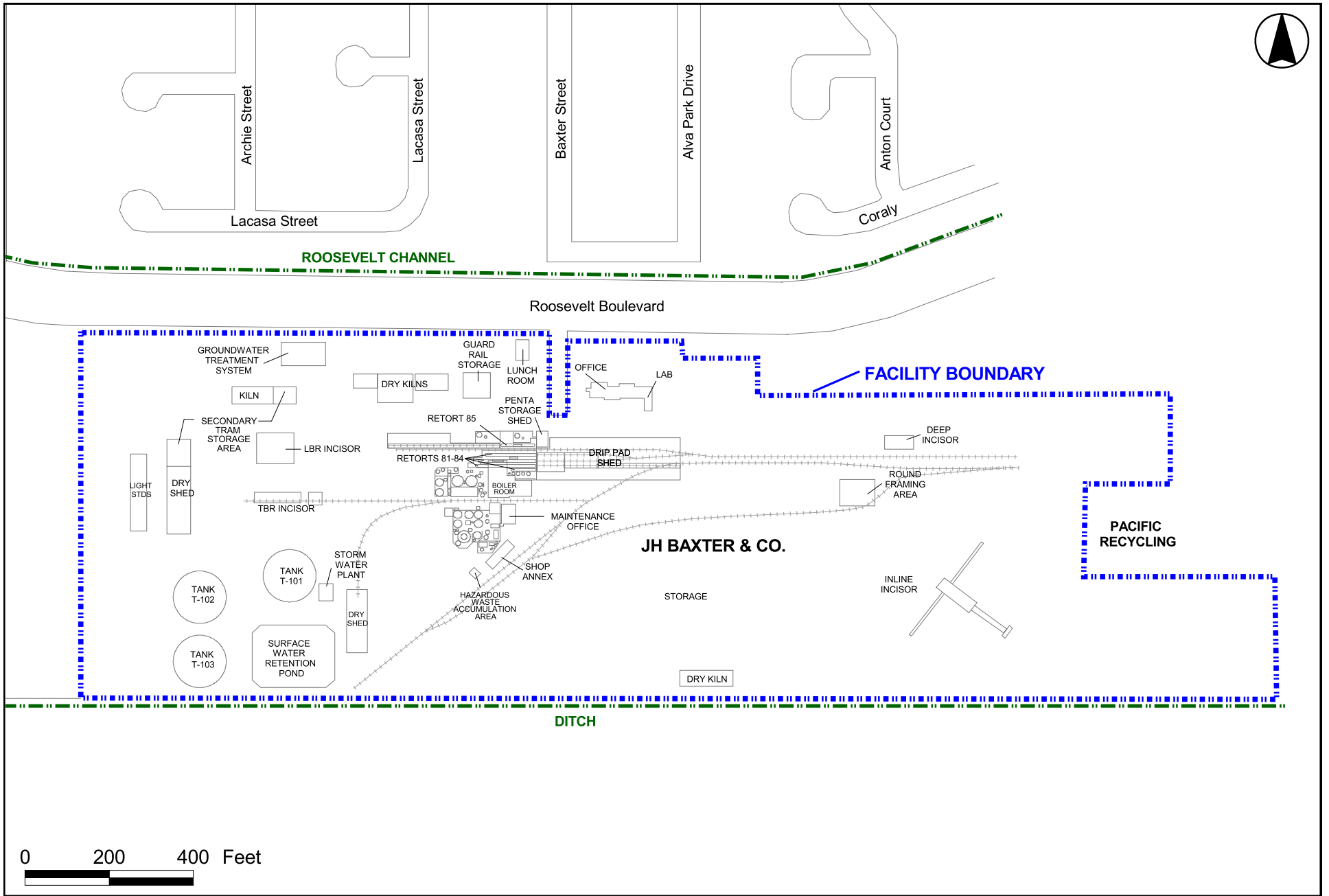
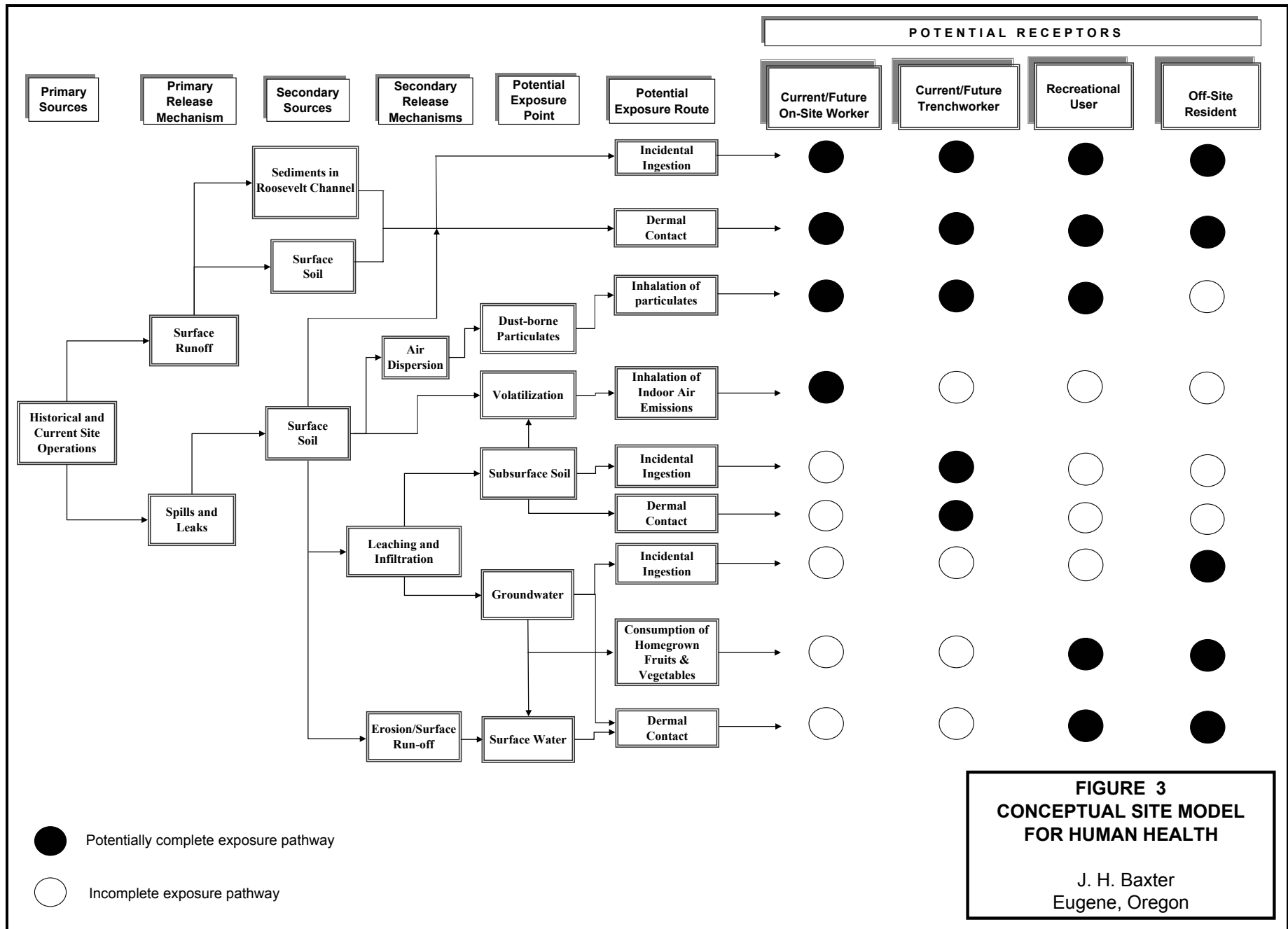


Figure 2. Site Detail Map - JH Baxter - Eugene, Oregon





## **Tables**

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**Table 2-1. Data by Media and Location**

<b>Media</b>	<b>Location</b>	<b>Scenario</b>	<b>Dataset</b>
Soil	On-site	Industrial Worker	On-site surface soils 0-2 ft bgs; all soil data except undeveloped area. Appendix A Table A-6
Soil	On-site	Trench worker	All on-site soil data (all depths), except undeveloped area. Appendix A Table A-7
Soil	Off-site	Resident	SS-1 through SS-9 (north & south of site). Off-site tax lot samples not included. Appendix A Table A-2
Soil	On-site undeveloped area	Industrial Worker	Comp-S1 and Comp-S2. Results for SS98-1, SS98-2, SS98-3, SS98-4, SD98-6, SS98-7, SS98-12, SS98-1-4-COMP, SOIL-PILE, and SOIL-PILE-COMP not included. Appendix A Table A-6
Groundwater	On-site	Worker and trench worker	All VOC data; last 8 quarters of data, regardless of age, for W-1S, W-S2, W-2I, W-3S, W-4S, W-5S, W-8S, W-8I, W-9SW-14I, W-15S, W-21S, W-21I, and W-22S; quarterly sampling data, January 2000 through June 2005, for all other on-site wells. Appendix A Table A-5
Groundwater	Off-site	Current Residential Irrigation	Residential wells 214 Waite, 255 Waite, 274 Waite, 304 Waite, 3510 Elmira, and 3841 Elmira. Note that no data are available for 285 Waite due to restricted access. Appendix A Table A-1.
Groundwater	Off-site	Current Industrial worker – irrigation (log deck watering)	Industrial wells 285 Bertelsen and Zip-o-log. Note that Sanipot data are not included because this well was decommissioned on May 28, 2004. Appendix A Table A-9.
Groundwater	Off-site	Future – residential irrigation	Western boundary wells W-11I, W-11S, W-18AI, and W-23, all residential wells and all industrial wells. Appendix A Table A-8.
Groundwater	Off-site	Future - industrial worker irrigation	Western boundary wells W-11I, W-11S, W-18AI, and W-23, all residential wells and all industrial wells. Appendix A Table A-8.
Surface water	Off-site Roosevelt Channel	Child in ditch	RC-1, RC-2, RC-3, CH001, SW008, and SW009 Appendix A Table A-4
Sediments	Off-site Roosevelt Channel	Child in ditch	SD-13, SD-14, and SD-15; VOC results from samples SD8, SD9, SD10, and SD11. Appendix A Table A-3

Table 4-1. Screening of Contaminants of Interest

CONTAMINANTS OF INTEREST	On-site Surface Soil (0-2 ft bgs) Appendix A Table A-6									On-site Surface and Subsurface Soils (Appendix A Table A-7)								
	Csoil(Cij) Max. Detected Conc. (mg/kg)	Number of Samples	Number of Detects	FOD	COPC	Region 9 Residential (PRGij) (mg/kg)	Csoil/Res. PRG (Rij) (unitless)	Individual COPC in Soil	Soil COPC (Multiple basis)	Csoil (Cij) Max. Detected Conc. (mg/kg)	Number of Samples	Number of Detects	FOD	COPC	Region 9 Residential PRGs (PRGij) (mg/kg)	Csoil/Res. PRG (Rij) (unitless)	Individual COPC in Soil	Soil COPC (Multiple basis)
<b>Carcinogens</b>																		
<b>Inorganics</b>																		
Arsenic	2390	57	57	100%	Yes	0.39	6134	Yes	Yes	2390	119	112	94%	Yes	0.39	6134	Yes	Yes
<b>Volatile Organic Compounds</b>																		
Benzene	0.073	32	6	19%	Yes	0.64	0.11	No	No	0.073	88	11	13%	Yes	0.64	0.1	No	No
Ethylbenzene	0.036	32	5	16%	Yes	400.0	0.0001	No	No	0.4	88	13	15%	Yes	400.0	0.00	No	No
Styrene	0.096	32	1	3%	No	1700.0	0.0001	No	No	0.47	73	6	8%	Yes	1700.0	0.00	No	No
<b>Semivolatile Organic Compounds</b>																		
Benzo(a)anthracene	14.3	44	31	70%	Yes	0.62	23.01	Yes	No	14	103	63	62%	Yes	0.62	23.0	Yes	No
Benzo(b)fluoranthene	13.1	44	35	80%	Yes	0.62	21.08	Yes	No	15	103	64	63%	Yes	0.62	24.1	Yes	No
Benzo(k)fluoranthene	4.0	44	30	68%	Yes	6.2	0.64	No	No	4.0	103	49	49%	Yes	6.2	0.6	No	No
Benzo(a)pyrene	4.44	44	32	73%	Yes	0.06	71.44	Yes	No	8	103	54	53%	Yes	0.06	130.3	Yes	Yes
Chrysene	30.7	44	32	73%	Yes	62	0.49	No	No	31	102	52	52%	Yes	62	0.5	No	No
Dibenz(a,h)anthracene	15.2	44	16	36%	Yes	0.06	244.58	Yes	Yes	15	99	22	22%	Yes	0.06	244.6	Yes	Yes
Indeno(1,2,3)cd-pyrene	4.52	44	28	64%	Yes	0.62	7.27	Yes	No	5.6	99	43	45%	Yes	0.62	9.0	Yes	No
Carbazole	< 0.1 - 6.5	32	0	0%	No	24.0	nc	No	No	4	73	4	5.5%	Yes	24.0	0.2	No	No
Pentachlorophenol	182	43	13	30%	Yes	3.0	60.67	Yes	No	182	101	29	29%	Yes	3.0	60.7	Yes	No
<b>Dioxins/Furans*</b>																		
Dibenzofuran	ns	3	0	0%	No	3.9E-06	0.87	No	No	ns	0	0	0%	No	nc	No	No	No
2,3,7,8-TCDD	3.4E-06	3	0	0%	No	3.9E-06	2.36	Yes	No	3.4E-06	3	0	0%	No	3.9E-06	0.87	No	No
1,2,3,7,8-PeCDD	9.2E-06	3	0	0%	No	3.9E-06	2.36	Yes	No	9.2E-06	3	0	0%	No	3.9E-06	2.36	Yes	No
1,2,3,4,7,8-HxCDD	3.0E-06	3	1	33%	Yes	3.9E-06	0.78	No	No	3.0E-06	3	1	33%	Yes	3.9E-06	0.78	No	No
1,2,3,6,7,8-HxCDD	2.5E-05	3	1	33%	Yes	3.9E-06	6.45	Yes	No	2.5E-05	3	1	33%	Yes	3.9E-06	6.45	Yes	No
1,2,3,7,8,9-HxCDD	1.4E-05	3	2	67%	Yes	3.9E-06	3.68	Yes	No	1.4E-05	3	2	67%	Yes	3.9E-06	3.68	Yes	No
1,2,3,4,6,7,8-HpCDD	5.9E-05	3	3	100%	Yes	3.9E-06	15.11	Yes	No	5.9E-05	3	3	100%	Yes	3.9E-06	15.11	Yes	No
OCDD	3.5E-06	3	3	100%	Yes	3.9E-06	0.91	No	No	3.5E-06	3	3	100%	Yes	3.9E-06	0.91	No	No
2,3,7,8-TCDF	4.0E-07	3	1	33%	Yes	3.9E-06	0.10	No	No	4.0E-07	3	1	33%	Yes	3.9E-06	0.10	No	No
1,2,3,7,8-PeCDF	4.7E-07	3	1	33%	Yes	3.9E-06	0.12	No	No	4.7E-07	3	1	33%	Yes	3.9E-06	0.12	No	No
2,3,4,7,8-PeCDF	2.4E-06	3	0	0%	No	3.9E-06	0.62	No	No	2.4E-06	3	0	0%	No	3.9E-06	0.62	No	No
1,2,3,4,7,8-HxCDF	8.2E-07	3	0	0%	No	3.9E-06	0.21	No	No	8.2E-07	3	0	0%	No	3.9E-06	0.21	No	No
1,2,3,6,7,8-HxCDF	7.8E-07	3	0	0%	No	3.9E-06	0.20	No	No	7.8E-07	3	0	0%	No	3.9E-06	0.20	No	No
1,2,3,7,8,9-HxCDF	7.0E-07	3	0	0%	No	3.9E-06	0.18	No	No	7.0E-07	3	0	0%	No	3.9E-06	0.18	No	No
2,3,4,6,7,8-HxCDF	6.5E-07	3	0	0%	No	3.9E-06	0.17	No	No	6.5E-07	3	0	0%	No	3.9E-06	0.17	No	No
1,2,3,4,6,7,8-HpCDF	8.8E-06	3	3	100%	Yes	3.9E-06	2.25	Yes	No	8.8E-06	3	3	100%	Yes	3.9E-06	2.25	Yes	No
1,2,3,4,7,8,9-HpCDF	7.1E-08	3	0	0%	No	3.9E-06	0.018	No	No	7.1E-08	3	0	0%	No	3.9E-06	0.018	No	No
OCDF	2.9E-07	3	3	100%	Yes	3.9E-06	0.08	No	No	2.9E-07	3	3	100%	Yes	3.9E-06	0.08	No	No

Table 4-1. Screening of Contaminants of Interest

CONTAMINANTS OF INTEREST	On-site Surface Soil (0-2 ft bgs) Appendix A Table A-6									On-site Surface and Subsurface Soils (Appendix A Table A-7)								
	Csoil (Cij) Max. Detected Conc. (mg/kg)	Number of Samples	Number of Detects	FOD	COPC	Region 9 Residential (PRGij) (mg/kg)	Csoil/Res. PRG (Rij) (unitless)	Individual COPC in Soil	Soil COPC (Multiple basis)	Csoil (Cij) Max. Detected Conc. (mg/kg)	Number of Samples	Number of Detects	FOD	COPC	Region 9 Residential PRGs (PRGij) (mg/kg)	Csoil/Res. PRG (Rij) (unitless)	Individual COPC in Soil	Soil COPC (Multiple basis)
<b>Noncarcinogens</b>																		
<b>Inorganics</b>																		
Chromium (Total)	468	46	46	100%	Yes	210	2.23	Yes	No	468	97	97	100%	Yes	210	2.2	Yes	No
Copper	4090	51	51	100%	Yes	3100	1.32	Yes	No	4090	108	108	100%	Yes	3100	1.3	Yes	No
Iron	48400	32	32	100%	Yes	23000	2.10	Yes	No	51000	70	70	100%	Yes	23000	2.2	Yes	No
Manganese	2330	32	32	100%	Yes	1800	1.29	Yes	No	2300	70	70	100%	Yes	1800	1.3	Yes	No
Zinc	1790	51	51	100%	Yes	23000	0.08	No	No	1790	108	108	100%	Yes	23000	0.1	No	No
Mercury	na	ns	0	0%	No	na	nc	No	No	ns	0	0	0%	No	na	nc	No	No
<b>Semivolatile Organic Compounds</b>																		
Acenaphthene	7	44	7	16%	Yes	3700	0.002	No	No	27	103	18	19%	Yes	3700	0.007	No	No
Acenaphthylene <sup>a</sup>	< 0.076 - 3.3	44	0	0%	No	3700	nc	No	No	10	102	6	6%	Yes	3700	0.003	No	No
Anthracene	4.2	44	19	43%	Yes	22000	0.0002	No	No	15	103	35	35%	Yes	22000	0.001	No	No
Benzo(g,h,i)perylene <sup>b</sup>	3.5	44	31	70%	Yes	2300	0.002	No	No	3.5	99	47	49%	Yes	2300	0.002	No	No
Fluoranthene	13.2	44	28	64%	Yes	2300	0.01	No	No	30.5	103	52	51%	Yes	2300	0.013	No	No
Fluorene	5.4	44	15	34%	Yes	2700	0.002	No	No	27	103	32	32%	Yes	2700	0.010	No	No
Naphthalene	0.49	44	10	23%	Yes	56	0.01	No	No	54	103	21	22%	Yes	56	0.964	No	No
Phenanthrene <sup>c</sup>	19.7	44	29	66%	Yes	22000	0.00	No	No	56.6	103	56	55%	Yes	22000	0.003	No	No
Pyrene	16	44	29	66%	Yes	2300	0.01	No	No	28	103	52	51%	Yes	2300	0.012	No	No
4-chloro-3-methylphenol	0.056	43	1	2%	No	na	na	No	No	0.1	97	2	2%	No	na	nc	No	nc
2-Chlorophenol	< 0.018 - 2	43	0	0%	No	63	na	No	No	0.25	97	2	2%	No	63	0.004	No	No
2,4-Dichlorophenol	< 0.018 - 2	43	0	--	No	180.0	na	No	No	4.8	97	6	6%	Yes	180.0	0.027	No	No
2,6-Dichlorophenol	< 0.5 - 2	11	0	0%	No	na	na	No	No	< 0.5 - 2	24	0	0%	No	na	nc	No	nc
2,4-dimethylphenol	0.18	9	1	11%	Yes	1200.0	nc	No	No	0.48	101	4	4%	No	1200.0	0.000	No	No
4,6-Dinitro-2-methylphenol	0.17	43	1	2%	No	120.0	na	No	No	0.17	97	1	1%	No	120.0	0.001	No	No
2,4-Dinitrophenol	0.36	43	1	2%	No	120.0	0.003	No	No	4.8	97	2	2%	No	120.0	0.040	No	No
Dinoseb	< 2	2	0	0%	No	61.0	na	No	No	ns	0	0	0%	No	61.0	nc	No	nc
2-Nitrophenol	< 0.018 - 2	43	0	0%	No	na	na	No	No	< .018 - 2	97	0	0%	No	na	nc	No	nc
4-Nitrophenol	0.14	43	1	2%	No	na	na	No	No	0.23	97	3	3%	No	na	nc	No	nc
Phenol	< 0.018 - 2	43	0	0%	No	18000	na	No	No	0.079	101	1	1%	No	18000	0.000	No	No
2,3,4,6-Tetrachlorophenol	2.9	9	7	0%	No	1800	0.002	No	No	14	24	16	67%	Yes	1800	0.008	No	No
2,3,5,6-Tetrachlorophenol	21.5	41	2	5%	No	1800	0.01	No	No	24	97	10	10%	Yes	na	nc	No	nc
2,4,5-Trichlorophenol	< 0.5	11	0	0%	No	6100	na	No	No	< 0.5 - 2	24	0	0%	No	6100	nc	No	nc
2,4,6-Trichlorophenol	< 0.034 - 2	43	0	0%	No	6.1	na	No	No	3.3	97	4	4%	No	6.1	0.5	No	No
2-methylnaphthalene	ns	ns	0	0%	No	na	na	No	No	ns	0	0	0%	No	na	nc	No	No
<b>Volatile Organic Compounds</b>																		
1,2-dichlorobenzene	< 21.40	1	0	0%	No	600	na	No	No	0.02	21	1	5%	No	600	0.0000	No	No
1,3-dichlorobenzene	< 21.40	1	0	0%	No	530	na	No	No	1.2	21	3	14%	Yes	530	0.0023	No	No
1,4-dichlorobenzene	< 21.40	1	0	0%	No	3.4	na	No	No	< .022 - 1.25	21	0	0%	No	3.4	nc	No	nc
Chlorobenzene	0.037	32	2	6%	Yes	150	0.0002	No	No	0.22	88	5	6%	Yes	150	0.0015	No	No
Toluene	0.25	32	10	31%	Yes	520	0.0005	No	No	0.27	88	13	15%	Yes	520	0.0005	No	No
Total xylene	0.123	32	11	34%	Yes	270	0.0005	No	No	1.6	88	24	27%	Yes	270	0.0059	No	No
<b>Sum of Ratios (Rj)</b>																		
<b>Number of Detected Constituents (Nij)</b>																		
<b>1/Nij</b>																		
	<b>6604.59</b>									<b>6670.1</b>								
	<b>52</b>									<b>60</b>								
	<b>0.02</b>									<b>0.017</b>								

Notes:

- PRG = Preliminary Remediation Goal.
- <sup>a</sup> Based on structural similarity to acenaphthene
- <sup>b</sup> Based on structural similarity to pyrene
- <sup>c</sup> Based on structural similarity to anthracene
- <sup>d</sup> Based on 4,6-dinitro-o-cyclohexyl phenol
- \* Values reported are WHO TEQ equivalents
- na - not available
- ns = not sampled
- i = concentration of chemical
- j = environmental medium, i.e., soil, groundwater, sediment
- COPC = Chemical of Potential Concern
- nc - not calculated

Table 4-1. Screening of Contaminants of Interest

CONTAMINANTS OF INTEREST	Off-site Sediment (Appendix A Table A-3)						Off-Site Soil Residential Scenario (Appendix A Table A-2)											
	Csed (Cij) Max. Detected Conc. (mg/kg)	Number of Samples	Number of Detects	FOD	COPC	Region 9 Residential PRGs (PRGij) (mg/kg)	Csed/Res PRG (Rij) (unitless)	Individual COPC in Sediment	Sediment COPC (Multiple basis)	Csoil(Cij) Max. Detected Conc. (mg/kg)	Number of Samples	Number of Detects	FOD	COPC	Region 9 Residential PRGs (PRGij) (mg/kg)	Csoil/Res. PRG (Rij) (unitless)	Individual COPC in Soil	Soil COPC (Multiple basis)
<b>Carcinogens</b>																		
<b>Inorganics</b>																		
Arsenic	26.0	5	4	80%	Yes	0.39	66.73	Yes	Yes	7	10	6	60%	Yes	0.39	17.97	Yes	Yes
<b>Volatile Organic Compounds</b>																		
Benzene	< 0.02	5	0	0%	No	0.64	nc	No	No	< .02 - .2	10	0	0%	No	0.64	nc	No	No
Ethylbenzene	< 0.02	5	0	0%	No	400.0	nc	No	No	< .02 - .2	10	0	0%	No	400.0	nc	No	No
Styrene	< 0.03	5	0	0%	No	1700.0	nc	No	No	< .03 - .3	10	0	0%	No	1700.0	nc	No	No
<b>Semivolatile Organic Compounds</b>																		
Benzo(a)anthracene	0.4200	3	3	100%	Yes	0.62	0.68	No	No	0.0776	10	10	100%	Yes	0.62	0.12	No	No
Benzo(b)fluoranthene	0.8700	3	3	100%	Yes	0.62	1.40	Yes	No	0.0729	10	10	100%	Yes	0.62	0.12	No	No
Benzo(k)fluoranthene	0.7000	3	3	100%	Yes	6.2	0.11	No	No	0.0742	10	8	80%	Yes	6.2	0.01	No	No
Benzo(a)pyrene	0.5200	3	3	100%	Yes	0.06	8.37	Yes	Yes	0.0508	10	10	100%	Yes	0.06	0.82	No	Yes
Chrysene	1.00	3	3	100%	Yes	62	0.02	No	No	0.113	10	7	70%	Yes	62	0.00	No	No
Dibenz(a,h)anthracene	0.22	3	2	67%	Yes	0.06	3.54	Yes	No	0.0361	10	9	90%	Yes	0.06	0.58	No	No
Indeno(1,2,3)cd-pyrene	0.500	3	3	100%	Yes	0.62	0.80	No	No	0.109	10	9	90%	Yes	0.62	0.18	No	No
Carbazole	ns	--	--	--	No	24.0	nc	No	No	ns	--	--	--	No	24.0	--	No	--
Pentachlorophenol	< 0.55	3	0	0%	No	3.0	nc	No	No	0.55	10	2	20%	Yes	3.0	0.18	No	No
<b>Dioxins/Furans**</b>																		
Dibenzofuran	0.14	3	3	100%	Yes	150.0	0.00	No	No	ns	0	0	nc	No	nc	nc	No	No
2,3,7,8-TCDD	6.23E-06	3	2	67%	Yes	3.9E-06	1.6	Yes	No	* 3.0E-07	2	0	0%	No	3.9E-06	nc	No	No
1,2,3,7,8-PeCDD	3.25E-05	3	3	100%	Yes	3.9E-06	8.3	Yes	Yes	* 8.0E-07	2	0	0%	No	3.9E-06	nc	No	No
1,2,3,4,7,8-HxCDD	7.72E-06	3	3	100%	Yes	3.9E-06	2.0	Yes	No	* 6.0E-08	2	0	0%	No	3.9E-06	nc	No	No
1,2,3,6,7,8-HxCDD	4.52E-05	3	3	100%	Yes	3.9E-06	11.6	Yes	Yes	2.5E-06	2	2	100%	Yes	3.9E-06	0.64	No	No
1,2,3,7,8,9-HxCDD	2.03E-05	3	3	100%	Yes	3.9E-06	5.2	Yes	Yes	6.9E-07	2	2	100%	Yes	3.9E-06	0.18	No	No
1,2,3,4,6,7,8-HpCDD	1.22E-04	3	3	100%	Yes	3.9E-06	31.2	Yes	Yes	3.3E-06	2	2	100%	Yes	3.9E-06	0.85	No	Yes
OCDD	8.73E-06	3	3	100%	Yes	3.9E-06	2.2	Yes	No	2.3E-07	2	2	100%	Yes	3.9E-06	0.06	No	No
2,3,7,8-TCDF	3.10E-07	3	3	100%	Yes	3.9E-06	0.1	No	No	* 3.5E-08	2	0	0%	No	3.9E-06	nc	No	No
1,2,3,7,8-PeCDF	8.93E-07	3	3	100%	Yes	3.9E-06	0.2	No	No	1.5E-07	2	1	50%	Yes	3.9E-06	0.04	No	No
2,3,4,7,8-PeCDF	7.51E-06	3	3	100%	Yes	3.9E-06	1.9	Yes	No	1.2E-06	2	1	50%	Yes	3.9E-06	0.31	No	No
1,2,3,4,7,8-HxCDF	8.22E-06	3	3	100%	Yes	3.9E-06	2.1	Yes	No	4.9E-07	2	1	50%	Yes	3.9E-06	0.13	No	No
1,2,3,6,7,8-HxCDF	4.44E-06	3	3	100%	Yes	3.9E-06	1.1	Yes	No	6.3E-07	2	1	50%	Yes	3.9E-06	0.16	No	No
1,2,3,7,8,9-HxCDF	6.19E-07	3	1	33%	Yes	3.9E-06	0.16	No	No	* 8.0E-08	2	0	0%	No	3.9E-06	nc	No	No
2,3,4,6,7,8-HxCDF	8.33E-06	3	3	100%	Yes	3.9E-06	2.1	Yes	No	7.1E-07	2	2	100%	Yes	3.9E-06	0.18	No	No
1,2,3,4,6,7,8-HpCDF	1.22E-05	3	3	100%	Yes	3.9E-06	3.1	Yes	No	6.1E-07	2	2	100%	Yes	3.9E-06	0.16	No	No
1,2,3,4,7,8,9-HpCDF	9.74E-07	3	3	100%	Yes	3.9E-06	0.2	No	No	* 4.0E-09	2	0	0%	No	3.9E-06	nc	No	No
OCDF	5.87E-07	3	3	100%	Yes	3.9E-06	0.15	No	No	4.0E-09	2	2	100%	Yes	3.9E-06	0.0010	No	No

Notes:

PRG = Preliminary Remediation Goal.

<sup>a</sup> Based on structural similarity to acenaphthene

<sup>b</sup> Based on structural similarity to pyrene

<sup>c</sup> Based on structural similarity to anthracene

<sup>d</sup> Based on 4,6-dinitro-o-cyclohexyl phenol

\* 1/2 Reporting limit

\*\* Values reported are WHO TEQ equivalents

nc - not calculated

na - not available

ns = not sampled

i = concentration of chemical

j = environmental medium, i.e., soil, groundwater, sediment

COPC = Chemical of Potential Concern

Table 4-1. Screening of Contaminants of Interest

CONTAMINANTS OF INTEREST	Off-site Sediment (Appendix A Table A-3)						Off-Site Soil Residential Scenario (Appendix A Table A-2)											
	Csed (Cij) Max. Detected Conc. (mg/kg)	Number of Samples	Number of Detects	FOD	COPC	Region 9 Residential PRGs (PRGij) (mg/kg)	Csed/Res PRG (Rij) (unitless)	Individual COPC in Sediment	Sediment COPC (Multiple basis)	Csoil(Cij) Max. Detected Conc. (mg/kg)	Number of Samples	Number of Detects	FOD	COPC	Region 9 Residential PRGs (PRGij) (mg/kg)	Csoil/Res. PRG (Rij) (unitless)	Individual COPC in Soil	Soil COPC (Multiple basis)
<b>Noncarcinogens</b>																		
<b>Inorganics</b>																		
Chromium (Total)	157	5	5	100%	Yes	210	0.75	No	No	45.6	10	10	100%	Yes	210	0.22	No	No
Copper	236	5	5	100%	Yes	3100	0.08	No	No	47.5	10	10	100%	Yes	3100	0.02	No	No
Iron	ns	--	--	nc	No	23000	--	No	No	41400	10	10	100%	Yes	23000	1.80	Yes	Yes
Manganese	ns	--	--	nc	No	1800	--	No	No	978	10	10	100%	Yes	1800	0.54	No	No
Zinc	691	5	5	100%	Yes	23000	0.03	No	No	440	10	10	100%	Yes	23000	0.02	No	No
Mercury	< 0.03	1	0	0%	No	na	nc	No	No	ns	0	0	nc	No	na	nc	No	No
<b>Semivolatile Organic Compounds</b>																		
Acenaphthene	0.079	3	1	33%	Yes	3700	0.00002	No	No	< 0.07	10	0	0%	No	3700	0.00	No	No
Acenaphthylene <sup>a</sup>	0.14	3	2	67%	Yes	3700	0.00004	No	No	0.0777	10	1	10%	Yes	3700	0.00	No	No
Anthracene	0.2	3	3	100%	Yes	22000	0.00001	No	No	0.0171	10	4	40%	Yes	22000	0.00	No	No
Benzo(g,h,i)perylene <sup>b</sup>	0.52	3	3	100%	Yes	2300	0.0002	No	No	0.054	10	5	50%	Yes	2300	0.00	No	No
Fluoranthene	0.84	3	3	100%	Yes	2300	0.0004	No	No	0.256	10	9	90%	Yes	2300	0.00	No	No
Fluorene	0.11	3	2	67%	Yes	2700	0.0003	No	No	0.0233	10	3	30%	Yes	2700	0.00	No	No
Naphthalene	0.57	3	3	100%	Yes	56	0.002	No	No	0.108	10	3	30%	Yes	56	0.00	No	No
Phenanthrene <sup>c</sup>	0.37	3	3	100%	Yes	22000	0.00003	No	No	0.145	10	9	90%	Yes	22000	0.00	No	No
Pyrene	1.2	3	3	100%	Yes	2300	0.0002	No	No	0.0945	10	6	60%	Yes	2300	0.00004	No	No
4-chloro-3-methyl-phenol	ns	--	--	--	No	na	nc	No	No	0.032	10	1	10%	Yes	na	nc	No	No
2-Chloro-phenol	ns	--	--	--	No	63	nc	No	No	< 0.017	10	0	0%	No	63	nc	No	No
2,4-Dichloro-phenol	< 0.071	3	0	--	No	180.0	nc	No	No	< 0.017	10	0	0%	No	180.0	nc	No	No
2,6-Dichloro-phenol	ns	--	--	--	No	na	nc	No	No	ns	--	--	--	No	na	nc	No	No
2,4-dimethylphenol	ns	--	--	--	No	1200.0	nc	No	No	< .017 - 0.17	10	0	0%	No	1200.0	nc	No	No
4,6-Dinitro-2-methyl-phenol	ns	--	--	--	No	120.0	nc	No	No	0.064	10	1	10%	Yes	120.0	0.00053	No	No
2,4-Dinitro-phenol	ns	--	--	--	No	120.0	nc	No	No	< 0.033	10	0	0%	No	120.0	nc	No	No
Dinoseb	ns	--	--	--	No	61.0	nc	No	No	ns	--	--	--	No	61.0	nc	No	No
2-Nitrophenol	ns	--	--	--	No	na	nc	No	No	< 0.017	10	0	0%	No	na	nc	No	No
4-Nitrophenol	ns	--	--	--	No	na	nc	No	No	0.051	10	1	10%	Yes	na	nc	nc	No
Phenol	ns	--	--	--	No	18000	nc	No	No	< 0.017	10	0	0%	No	18000	nc	No	No
2,3,4,6-Tetrachlorophenols	ns	--	--	--	No	1800	nc	No	No	ns	--	--	--	No	1800	nc	No	No
2,3,5,6-Tetrachlorophenols	ns	--	--	--	No	1800	nc	No	No	< 0.033	10	0	0%	No	1800	nc	No	No
2,4,5-Trichlorophenol	< 0.074	3	0	0%	No	6100	nc	No	No	ns	--	--	--	No	6100	nc	No	No
2,4,6-Trichlorophenol	< 0.062	3	0	0%	No	6.1	nc	No	No	0.245	10	1	10%	Yes	6.1	0.04	No	No
2-methylnaphthalene	0.18	3	3	100%	Yes	56.0	0.003	No	No	ns	0	0	0%	No	na	nc	No	No
<b>Volatile Organic Compounds</b>																		
1,2-dichlorobenzene	ns	--	--	--	No	600	nc	No	No	< .04 - 0.4	10	0	0%	No	600	nc	No	No
1,3-dichlorobenzene	ns	--	--	--	No	530	nc	No	No	< .04 - 0.4	10	0	0%	No	530	nc	No	No
1,4-dichlorobenzene	ns	--	--	--	No	3.4	nc	No	No	< .04 - 0.4	10	0	0%	No	3.4	nc	No	No
Chloro-benzene	< 0.02	5	0	0%	No	150	nc	No	No	< 0.02 - 0.2	10	0	0%	No	150	nc	No	No
Toluene	< 0.02	5	0	0%	No	520	nc	No	No	< 0.02 - 0.2	10	0	0%	No	520	nc	No	No
Total xylene	< 0.03	5	0	0%	No	270	nc	No	No	< 0.03 - 0.3	10	0	0%	No	270	nc	No	No
<b>Sum of Ratios (Rj)</b>							<b>155.98</b>							<b>25.32</b>				
<b>Number of Detected Constituents (Nij)</b>							<b>40</b>							<b>37</b>				
<b>1/Nij</b>							<b>0.03</b>							<b>0.03</b>				

Notes:

- PRG = Preliminary Remediation Goal.
- <sup>a</sup> Based on structural similarity to acenaphthene
- <sup>b</sup> Based on structural similarity to pyrene
- <sup>c</sup> Based on structural similarity to anthracene
- <sup>d</sup> Based on 4,6-dinitro-o-cyclohexyl phenol
- \* 1/2 Reporting limit
- \*\* Values reported are WHO TEQ equivalents
- nc - not calculated
- na - not available
- ns = not sampled
- i = concentration of chemical
- j = environmental medium, i.e., soil, groundwater, sediment
- COPC = Chemical of Potential Concern



Table 4-1. Screening of Contaminants of Interest

CONTAMINANTS OF INTEREST (COI)	Soil Undeveloped Area (Appendix A Table A-6)						Region 9 Industrial PRGs (PRGij) (mg/kg)	Csoil/Res. PRG (Rij) (unitless)	Individual COPC in Soil	Soil COPC (Multiple basis)
	Csoil (Cij) Max. Detected Conc. (mg/kg)	Number of Samples	Number of Detects	FOD	COPC					
<b>Carcinogens</b>										
<u>Inorganics</u>										
Arsenic	61.9	2	2	100%	Yes	1.60	38.7	Yes	Yes	
<u>Volatile Organic Compounds</u>										
Benzene	ns	0	0	nc	No	1.40	nc	No	No	
Ethylbenzene	ns	0	0	nc	No	400.0	nc	No	No	
Styrene	ns	0	0	nc	No	1700.0	nc	No	No	
<u>SVOCs</u>										
Benzo(a)anthracene	1	2	2	100%	Yes	2.10	0.29	No	No	
Benzo(b)fluoranthene	0.466	2	2	100%	Yes	2.10	0.22	No	No	
Benzo(k)fluoranthene	0.499	2	2	100%	Yes	21.0	0.02	No	No	
Benzo(a)pyrene	0.406	2	2	100%	Yes	0.21	1.93	Yes	Yes	
Chrysene	0.870	2	2	100%	Yes	210	0.004	No	No	
Dibenz(a,h)anthracene	0.134	2	2	100%	Yes	0.21	0.64	No	No	
Indeno(1,2,3)cd-pyrene	0.26	2	2	100%	Yes	2.10	0.12	No	No	
Carbazole	ns	0	0	nc	No	86.0	nc	No	No	
Pentachlorophenol	2	2	2	100%	Yes	9.0	0.26	No	No	
<u>Dioxins/Furans*</u>										
Dibenzofuran	ns	0	0	nc	No		nc	No	No	
2,3,7,8-TCDD	6.2E-06	2	2	100%	Yes	1.6E-05	0.388	No	No	
1,2,3,7,8-PeCDD	4.0E-05	2	2	100%	Yes	1.6E-05	2.500	Yes	Yes	
1,2,3,4,7,8-HxCDD	1.1E-05	2	2	100%	Yes	1.6E-05	0.688	No	No	
1,2,3,6,7,8-HxCDD	6.8E-05	2	2	100%	Yes	1.6E-05	4.250	Yes	Yes	
1,2,3,7,8,9-HxCDD	2.7E-05	2	2	100%	Yes	1.6E-05	1.688	Yes	Yes	
1,2,3,4,6,7,8-HpCDD	1.6E-04	2	2	100%	Yes	1.6E-05	10.000	Yes	Yes	
OCDD	2.1E-05	2	2	100%	Yes	1.6E-05	1.313	Yes	No	
2,3,7,8-TCDF	1.0E-06	2	2	100%	Yes	1.6E-05	0.063	No	No	
1,2,3,7,8-PeCDF	1.6E-06	2	2	100%	Yes	1.6E-05	0.100	No	No	
2,3,4,7,8-PeCDF	3.7E-05	2	2	100%	Yes	1.6E-05	2.313	Yes	Yes	
1,2,3,4,7,8-HxCDF	2.2E-05	2	2	100%	Yes	1.6E-05	1.375	Yes	No	
1,2,3,6,7,8-HxCDF	6.3E-06	2	2	100%	Yes	1.6E-05	0.394	No	No	
1,2,3,7,8,9-HxCDF	1.2E-05	2	2	100%	Yes	1.6E-05	0.750	No	No	
2,3,4,6,7,8-HxCDF	1.3E-05	2	2	100%	Yes	1.6E-05	0.813	No	No	
1,2,3,4,6,7,8-HpCDF	4.4E-05	2	2	100%	Yes	1.6E-05	2.750	Yes	Yes	
1,2,3,4,7,8,9-HpCDF	3.0E-06	2	2	100%	Yes	1.6E-05	0.188	No	No	
OCDF	1.2E-06	2	2	100%	Yes	1.6E-05	0.075	No	No	

Table 4-1. Screening of Contaminants of Interest

CONTAMINANTS OF INTEREST (COI)	Soil Undeveloped Area (Appendix A Table A-6)						Region 9 Industrial PRGs (PRGij) (mg/kg)	Csoil/Res. PRG (Rij) (unitless)	Individual COPC in Soil	Soil COPC (Multiple basis)
	Csoil (Cij) Max. Detected Conc. (mg/kg)	Number of Samples	Number of Detects	FOD	COPC					
<b>Noncarcinogens</b>										
<u>Inorganics</u>										
Chromium (Total)	58	2	2	100%	Yes	450	0.1	No	No	
Copper	122	2	2	100%	Yes	41000	0.003	No	No	
Iron	ns	0	0	nc	No	100000	nc	No	No	
Manganese	ns	0	0	nc	No	19000	nc	No	No	
Zinc	327	2	2	100%	Yes	100000	0.003	No	No	
Mercury	ns	0	0	nc	No	na	nc	No	No	
<u>Semi-Volatile Organic Compounds</u>										
Acenaphthene	0.894	2	2	100%	Yes	29000	0.00003	No	No	
Acenaphthylene <sup>a</sup>	0.134	2	2	100%	Yes	29000	0.000005	No	No	
Anthracene	0.923	2	2	100%	Yes	100000	0.00001	No	No	
Benzo(g,h,i)perylene <sup>b</sup>	0.24	2	2	100%	Yes	29000	0.00001	No	No	
Fluoranthene	3.2	2	2	100%	Yes	22000	0.0001	No	No	
Fluorene	0.85	2	2	100%	Yes	26000	0.00003	No	No	
Naphthalene	0.425	2	2	100%	Yes	190	0.002	No	No	
Phenanthrene <sup>c</sup>	3.58	2	2	100%	Yes	100000	0.00004	No	No	
Pyrene	1.77	2	2	100%	Yes	2300	0.001	No	No	
4-chloro-3-methyl-phenol	2	2	2	100%	Yes	na	nc	No	No	
2-Chloro-phenol	2	2	2	100%	Yes	240	0.008	No	No	
2,4-Dichloro-phenol	25	2	2	100%	Yes	1800.0	0.014	No	No	
2,6-Dichloro-phenol	0.5 - 2	2	0	0%	No	na	nc	No	No	
2,4-dimethylphenol	2	2	2	100%	Yes	12000.0	0.0002	No	No	
4,6-Dinitro-2-methyl-phenol	2	2	2	100%	Yes	1200.0	0.002	No	No	
2,4-Dinitro-phenol	4.8	2	2	100%	Yes	1200.0	0.004	No	No	
Cresols	4	2	2	100%	Yes	na	nc	No	No	
Dinoseb	2	2	0	0%	No	620.0	nc	No	No	
2-Nitrophenol	2	2	2	100%	Yes	na	nc	No	No	
4-Nitrophenol	2	2	2	100%	Yes	na	nc	No	No	
Phenol	2	2	2	100%	Yes	100000	0.00002	No	No	
2,3,4,6-Tetrachlorophenol	ns	0	0	nc	No	18000	nc	No	No	
2,3,5,6-Tetrachlorophenol	ns	0	0	nc	No	na	nc	No	No	
2,4,5-Trichlorophenol	2	2	2	100%	Yes	62000	nc	No	No	
2,4,6-Trichlorophenol	2	2	2	100%	Yes	62.0	0.03	No	No	
2-methylnaphthalene	ns	0	0	nc	No	na	nc	No	No	
<u>Volatile Organic Compounds</u>										
1,2-dichlorobenzene	ns	0	0	nc	No	600	nc	No	No	
1,3-dichlorobenzene	ns	0	0	nc	No	600	nc	No	No	
1,4-dichlorobenzene	ns	0	0	nc	No	7.9	nc	No	No	
Chlorobenzene	ns	0	0	nc	No	530	nc	No	No	
Toluene	ns	0	0	nc	No	520	nc	No	No	
Total xylene	ns	0	0	nc	No	420	nc	No	No	
<b>Sum of Ratios (Rj)</b>							<b>72.0</b>			
<b>Number of Detected Constituents (Nij)</b>							<b>50</b>			
<b>1/Nij</b>							<b>0.020</b>			

**Notes:**

PRG = Preliminary Remediation Goal.

<sup>a</sup> Based on structural similarity to acenaphthene

<sup>b</sup> Based on structural similarity to pyrene

<sup>c</sup> Based on structural similarity to anthracene

<sup>d</sup> Based on 4,6-dinitro-o-cyclohexyl phenol

nc - not calculated

na - not available

ns = not sampled

\* Values reported are WHO TEQ equivalents

Table 4-1. Screening of Contaminants of Interest

CONTAMINANTS OF INTEREST	Groundwater, Onsite (Appendix A Table A-5)						Region 9 Tap Water PRGs (ug/L)	Cgw/PRG (Rij) (unitless)	Individual COPC GW	Groundwater COPC (Multiple basis)
	Cij Max. Detected Conc. (ug/L)	Number of Samples	Number of Detects	FOD	COPC					
<b>Carcinogens</b>										
<b>Inorganics</b>										
Arsenic	352	223	28	13%	Yes	0.045	7822	Yes	Yes	
<b>Volatile Organic Compounds</b>										
Benzene	15.7	8	3	38%	Yes	0.350	45	Yes	No	
Styrene	ns	0	0	0%	No	1600	na	No	No	
<b>Semivolatile Organic Compounds</b>										
Benzo(a)anthracene	70	223	20	9%	Yes	0.092	761	Yes	Yes	
Benzo(b)fluoranthene	27	224	20	9%	Yes	0.092	293	Yes	No	
Benzo(k)fluoranthene	14	224	12	5%	Yes	0.920	15	Yes	No	
Benzo(a)pyrene	34	224	18	8%	Yes	0.009	3696	Yes	Yes	
Dibenz(a,h)anthracene	25.5	224	9	4%	No	0.009	2772	Yes	Yes	
Indeno(1,2,3-cd)-pyrene	13.7	224	7	3%	No	0.092	149	Yes	No	
Carbazole	105	14	5	36%	Yes	3.400	31	Yes	No	
Pentachlorophenol	8780	220	196	89%	Yes	0.560	15679	Yes	Yes	
<b>Dioxins/Furans*</b>										
2,3,7,8-TCDD	2.25E-06	5	0	0%	No	4.5E-07	5.0	Yes	No	
1,2,3,7,8-PeCDD	3.36E-06	5	1	20%	Yes	4.5E-07	7.5	Yes	No	
1,2,3,4,7,8-HxCDD	3.19E-07	5	1	20%	Yes	4.5E-07	0.7	No	No	
1,2,3,6,7,8-HxCDD	9.80E-07	5	3	60%	Yes	4.5E-07	2.2	Yes	No	
1,2,3,7,8,9-HxCDD	4.50E-07	5	2	40%	Yes	4.5E-07	1.0	No	No	
1,2,3,4,6,7,8-HpCDD	1.10E-06	5	4	80%	Yes	4.5E-07	2.4	Yes	No	
OCDD	1.05E-07	5	5	100%	Yes	4.5E-07	0.2	No	No	
2,3,7,8-TCDF	3.80E-07	5	1	20%	Yes	4.5E-07	0.8	No	No	
1,2,3,7,8-PeCDF	1.25E-07	5	2	40%	Yes	4.5E-07	0.3	No	No	
2,3,4,7,8-PeCDF	8.44E-07	5	1	20%	Yes	4.5E-07	1.9	Yes	No	
1,2,3,4,7,8-HxCDF	2.90E-07	5	2	40%	Yes	4.5E-07	0.6	No	No	
1,2,3,6,7,8-HxCDF	2.90E-07	5	3	60%	Yes	4.5E-07	0.6	No	No	
1,2,3,7,8,9-HxCDF	3.60E-07	5	2	40%	Yes	4.5E-07	0.8	No	No	
2,3,4,6,7,8-HxCDF	2.46E-07	5	2	40%	Yes	4.5E-07	0.5	No	No	
1,2,3,4,6,7,8-HpCDF	8.10E-07	5	3	60%	Yes	4.5E-07	1.8	Yes	No	
1,2,3,4,7,8,9-HpCDF	3.05E-08	5	1	20%	Yes	4.5E-07	0.1	No	No	
OCDF	1.20E-08	5	3	60%	Yes	4.5E-07	0.027	No	No	
<b>Noncarcinogens</b>										
<b>Inorganics</b>										
Chromium	270	223	11	4.9%	No	55000	0.005	No	No	
Copper	420	223	14	6%	Yes	1500	0.280	No	No	
Iron	16600	14	12	86%	Yes	11000	1.509	Yes	No	
Manganese	11300	14	10	71%	Yes	880	12.841	Yes	No	
Zinc	670	223	66	30%	Yes	11000	0.061	No	No	
<b>Semivolatile Organic Compounds</b>										
Acenaphthene	1640	224	38	17%	Yes	370	4.432	Yes	No	
Acenaphthylene <sup>a</sup>	11800	224	31	14%	Yes	370	31.892	Yes	No	
Anthracene	110	223	72	32%	Yes	1800	0.061	No	No	
Benzo(g,h,i)perylene <sup>b</sup>	16.7	224	7	3%	No	180	0.093	No	No	
Chrysene	80	223	20	9%	Yes	9.2	8.696	Yes	No	
Fluoranthene	140	223	48	22%	Yes	1500	0.093	No	No	
Fluorene	296	224	37	17%	Yes	240	1.233	Yes	No	
Naphthalene	9950	224	75	33%	Yes	6.2	1604.8	Yes	Yes	
Phenanthrene <sup>c</sup>	560	224	56	25%	Yes	1800	0.311	No	No	
Pyrene	170	223	36	16%	Yes	180	0.944	No	No	
4-chloro-3-methyl-phenol	5.6	220	4	2%	No	--	na	No	No	
2-Chloro-phenol	4.13	219	1	0%	No	30.0	0.138	No	No	
Cresols	<0.2	3	0	--	--	--	na	No	No	
2,4-Dichloro-phenol	7.46	220	7	3%	No	110	0.068	No	No	
2,6-Dichloro-phenol	87	206	2	1%	No	--	na	No	No	
2,4-dimethylphenol	6.28	220	2	1%	No	730	0.009	No	No	
4,6-Dinitro-2-methyl-phenol	444	219	3	1%	No	73	6.082	No	No	
2,4-Dinitro-phenol	22.8	220	2	1%	No	73	0.312	No	No	
Dinoseb	ns	0	0	0	No	36	nc	No	No	
2-Nitrophenol	5.36	220	4	2%	No	--	na	No	No	
4-Nitrophenol	163	220	4	2%	No	--	na	No	No	
Phenol	2.94	220	11	5.0%	No	11000	0.000	No	No	
<b>Tetrachlorophenols</b>										
2,3,4,6-Tetrachlorophenols	1100	206	23	11%	--	1100	1.000	No	No	
2,3,5,6-Tetrachlorophenols	1010	218	34	16%	Yes	--	na	No	No	
2,4,5-Trichlorophenol	<1600	195	0	--	--	3600	na	No	No	
2,4,6-Trichlorophenol	11.6	220	5	2%	No	3.6	3.2	Yes	No	
2-chloroethyl vinyl ether	ns	0	0	0%	No	--	na	No	No	
<b>Volatile Organic Compounds</b>										
Chloro-benzene	<1	4	0	0%	No	110	na	No	No	
Toluene	61.3	8	1	13%	Yes	720	0.1	No	No	
Ethylbenzene	97.5	8	2	25%	Yes	1300.0	0.1	No	No	
m,p-Xylene	ns	0	0	--	No	210	na	No	No	
1,1-dichloroethane	25.7	4	2	50%	Yes	810	0.032	No	No	
1,1-dichloroethylene	81.7	4	2	50%	Yes	340	0.240	No	No	
1,1,1-trichloroethane	<5	4	0	0%	No	3200	na	No	No	
1,2-dichlorobenzene	<1	2	0	0%	No	370	na	No	No	
1,3-dichlorobenzene	<1	2	0	0%	No	180.0	na	No	No	
1,4-dichlorobenzene	<1	2	0	0%	No	0.5	na	No	No	
<b>Sum of Ratios (Rij)</b>							<b>32967.63</b>			
<b>Number of Detected Constituents (Nij)</b>							<b>55</b>			
<b>1/Nij</b>							<b>0.018</b>			

Notes:

PRG = Preliminary Remediation Goal.

<sup>a</sup> Based on structural similarity to acenaphthene

<sup>b</sup> Based on structural similarity to pyrene

<sup>c</sup> Based on structural similarity to anthracene

\* Values reported are WHO TEQ equivalents

Table 4-1. Screening of Contaminants of Interest

Groundwater Offsite Future Residential and Industrial (Appendix A Table A-8)									
CONTAMINANTS OF INTEREST	Conc in Water (Cw)	Number of Samples	Number of Detects	FOD	COPC	Region 9 Tap Water PRGs (ug/L)	Cw/PRG Rij (unitless)	Individual GW COPC	Ground-Water COPC (Multiple basis)
	Max. Detected Conc. (ug/L)								
<b>Carcinogens</b>									
<u>Inorganics</u>									
Arsenic	65	118	9	8%	Yes	0.045	1444	Yes	Yes
<u>Volatile Organic Compounds</u>									
Benzene	<1	23	0	0%	No	0.350	na	No	No
Styrene	<0.3	5	0	0%	No	1600	na	No	No
<u>Semivolatile Organic Compounds</u>									
Benzo(a)anthracene	0.84	122	3	2%	No	0.092	9.13	Yes	No
Benzo(b)fluoranthene	0.39	122	1	1%	No	0.092	4.24	Yes	No
Benzo(k)fluoranthene	<1	122	0	0%	No	0.920	na	No	No
Benzo(a)pyrene	0.74	122	2	2%	No	0.009	80.43	Yes	Yes
Dibenz(a,h)anthracene	0.31	122	1	1%	No	0.009	33.70	Yes	No
Indeno(1,2,3-cd)pyrene	0.61	122	1	1%	No	0.092	6.63	Yes	No
Carbazole	ns	0	0	0%	No	3.400	nc	nc	No
Pentachlorophenol	324	354	203	57%	Yes	0.560	578.57	Yes	Yes
<u>Dioxins/Furans*</u>									
2,3,7,8-TCDD	3.5E-06	7	2	29%	Yes	4.5E-07	7.8	Yes	No
1,2,3,7,8-PeCDD	9.6E-06	7	3	43%	Yes	4.5E-07	21.3	Yes	No
1,2,3,4,7,8-HxCDD	1.3E-06	7	3	43%	Yes	4.5E-07	2.8	Yes	No
1,2,3,6,7,8-HxCDD	1.4E-06	7	5	71%	Yes	4.5E-07	3.2	Yes	No
1,2,3,7,8,9-HxCDD	1.5E-06	7	4	57%	Yes	4.5E-07	3.4	Yes	No
1,2,3,4,6,7,8-HpCDD	1.1E-06	7	6	86%	Yes	4.5E-07	2.4	Yes	No
OCDD	1.1E-07	7	7	100%	Yes	4.5E-07	0.2	No	No
2,3,7,8-TCDF	3.8E-07	7	3	43%	Yes	4.5E-07	0.8	No	No
1,2,3,7,8-PeCDF	5.2E-07	7	4	57%	Yes	4.5E-07	1.2	Yes	No
2,3,4,7,8-PeCDF	6.9E-06	7	3	43%	Yes	4.5E-07	15.3	Yes	No
1,2,3,4,7,8-HxCDF	1.4E-06	7	4	57%	Yes	4.5E-07	3.0	Yes	No
1,2,3,6,7,8-HxCDF	1.2E-06	7	5	71%	Yes	4.5E-07	2.7	Yes	No
1,2,3,7,8,9-HxCDF	1.4E-06	7	4	57%	Yes	4.5E-07	3.1	Yes	No
2,3,4,6,7,8-HxCDF	1.4E-06	7	4	57%	Yes	4.5E-07	3.1	Yes	No
1,2,3,4,6,7,8-HpCDF	8.1E-07	7	6	86%	Yes	4.5E-07	1.8	Yes	No
1,2,3,4,7,8,9-HpCDF	1.8E-07	7	3	43%	Yes	4.5E-07	0.4	No	No
OCDF	1.2E-08	7	6	86%	Yes	4.5E-07	0.03	No	No
<b>Noncarcinogens</b>									
<u>Inorganics</u>									
Chromium	30	118	12	10%	Yes	55000	0.06	No	No
Copper	90	118	10	8%	Yes	1500	0.06	No	No
Iron	ns	0	0	0%	No	11000	na	No	No
Manganese	ns	0	0	0%	No	880	na	No	No
Zinc	471	120	68	57%	Yes	11000	0.04	No	No
<u>Semivolatile Organic Compounds</u>									
Acenaphthene	8.70	122	7	6%	Yes	370	0.02	No	No
Acenaphthylene <sup>a</sup>	2.40	122	1	1%	No	370	0.01	No	No
Anthracene	1.56	122	14	11%	Yes	1800	0.00	No	No
Benzo(g,h,i)perylene <sup>b</sup>	<1	122	0	0%	No	180	na	No	No
Chrysene	0.11	122	1	1%	No	9.2	0.01	No	No
Fluoranthene	0.60	122	10	8%	Yes	1500	0.00	No	No
Fluorene	0.19	122	5	4%	No	240	0.00	No	No
Naphthalene	8	122	10	8%	Yes	6.2	1.23	Yes	No
Phenanthrene <sup>c</sup>	1	122	9	7%	Yes	1800	0.00	No	No
Pyrene	0.9	122	7	6%	Yes	180	0.01	No	No
4-chloro-3-methyl-phenol	<40	235	0	0%	No	--	na	No	No
2-Chloro-phenol	<40	233	0	0%	No	30.0	na	No	No
Cresols	ns	na	na	na	No	--	na	No	No
2,4-Dichloro-phenol	2.6	233	1	0%	No	110	0.02	No	No
2,6-Dichloro-phenol	<32	218	0	0%	No	--	na	No	No
2,4-dimethylphenol	<40	235	0	0%	No	730	na	No	No
4,6-Dinitro-2-methyl-phenol	<400	235	0	0%	No	73	na	No	No
2,4-Dinitro-phenol	<400	235	0	0%	No	73	na	No	No
Dinoseb	ns	na	na	na	No	36	na	No	No
2-Nitrophenol	<40	235	0	0%	No	--	na	No	No
4-Nitrophenol	18.8	235	5	2%	No	--	na	No	No
Phenol	1.6	233	2	1%	No	11000	0.00	No	No
Tetrachlorophenols	ns	na	na	na	No	--	na	No	No
2,3,4,6-Tetrachlorophenols	331	219	2	1%	No	1100	0.30	No	No
2,3,5,6-Tetrachlorophenols	12.2	256	161	63%	Yes	--	na	No	No
2,4,5-Trichlorophenol	<33.4	217	0	0%	No	3600	na	No	No
2,4,6-Trichlorophenol	1.5	233	2	1%	No	3.6	0.41	No	No
2-chloroethyl vinyl ether	ns	na	na	na	No	na	na	No	No
<u>Volatile Organic Compounds</u>									
Chloro-benzene	<1	23	0	0%	No	110	na	No	No
Toluene	<1	23	0	0%	No	720	na	No	No
Ethylbenzene	<1	23	0	0%	No	1300.0	na	No	No
m,p-Xylene	<0.3	5	0	0%	No	210	na	No	No
1,1-dichloroethane	ns	na	na	na	No	810	na	No	No
1,1-dichloroethylene	ns	na	na	na	No	340	na	No	No
1,1,1-trichloroethane	ns	na	na	na	No	3200	na	No	No
1,2-dichlorobenzene	<1	15	0	0%	No	370	na	No	No
1,3-dichlorobenzene	<1	15	0	0%	No	180.0	na	No	No
1,4-dichlorobenzene	<1	15	0	0%	No	0.5	na	No	No
<b>Sum of Ratios (Rj)</b>							<b>2231.93</b>		
<b>Number of Detected Constituents (Nij)</b>							<b>42</b>		
<b>1/Nij</b>							<b>0.02</b>		

Notes:

- PRG = Preliminary Remediation Goal.
- <sup>a</sup> Based on structural similarity to acenaphthene
- <sup>b</sup> Based on structural similarity to pyrene
- <sup>c</sup> Based on structural similarity to anthracene
- \* Values reported are WHO TEQ equivalents

Table 4-1. Screening of Contaminants of Interest

Groundwater Current Offsite Residential (Appendix A Table A-1)									
CONTAMINANTS OF INTEREST	Conc in Groundwater			FOD	COPC	Region 9 Tap Water PRGs (ug/L)	Cgw/PRG Rij (unitless)	Individual GW COPC	GW COPC (Multiple basis)
	Max. Detected Conc. (ug/L)	Number of Samples	Number of Detects						
<b>Carcinogens</b>									
<b>Inorganics</b>									
Arsenic	<10	6	0	0%	No	0.045	na	No	No
<b>Volatile Organic Compounds</b>									
Benzene	<1	7	0	0%	No	0.350	na	No	No
Styrene	<0.3	5	0	0%	No	1600	na	No	No
<b>Semivolatile Organic Compounds</b>									
Benzo(a)anthracene	<0.02	6	0	0%	No	0.092	na	No	No
Benzo(b)fluoranthene	<0.02	6	0	0%	No	0.092	na	No	No
Benzo(k)fluoranthene	<0.02	6	0	0%	No	0.920	na	No	No
Benzo(a)pyrene	<0.02	6	0	0%	No	0.009	na	No	No
Dibenz(a,h)anthracene	<0.03	6	0	0%	No	0.009	na	No	No
Indeno(1,2,3-cd)-pyrene	<0.05	6	0	0%	No	0.092	na	No	No
Carbazole	ns			na	No	3.400	na	No	No
Pentachlorophenol	<1	14	0	0%	No	0.560	na	No	No
<b>Dioxins/Furans*</b>									
2,3,7,8-TCDD	ns	0	0	nc	No	4.5E-07	nc	No	No
1,2,3,7,8-PeCDD	ns	0	0	nc	No	4.5E-07	nc	No	No
1,2,3,4,7,8-HxCDD	ns	0	0	nc	No	4.5E-07	nc	No	No
1,2,3,6,7,8-HxCDD	ns	0	0	nc	No	4.5E-07	nc	No	No
1,2,3,7,8,9-HxCDD	ns	0	0	nc	No	4.5E-07	nc	No	No
1,2,3,4,6,7,8-HpCDD	ns	0	0	nc	No	4.5E-07	nc	No	No
OCDD	ns	0	0	nc	No	4.5E-07	nc	No	No
2,3,7,8-TCDF	ns	0	0	nc	No	4.5E-07	nc	No	No
1,2,3,7,8-PeCDF	ns	0	0	nc	No	4.5E-07	nc	No	No
2,3,4,7,8-PeCDF	ns	0	0	nc	No	4.5E-07	nc	No	No
1,2,3,4,7,8-HxCDF	ns	0	0	nc	No	4.5E-07	nc	No	No
1,2,3,6,7,8-HxCDF	ns	0	0	nc	No	4.5E-07	nc	No	No
1,2,3,7,8,9-HxCDF	ns	0	0	nc	No	4.5E-07	nc	No	No
2,3,4,6,7,8-HxCDF	ns	0	0	nc	No	4.5E-07	nc	No	No
1,2,3,4,6,7,8-HpCDF	ns	0	0	nc	No	4.5E-07	nc	No	No
1,2,3,4,7,8,9-HpCDF	ns	0	0	nc	No	4.5E-07	nc	No	No
OCDF	ns	0	0	nc	No	4.5E-07	nc	No	No
<b>Noncarcinogens</b>									
<b>Inorganics</b>									
Chromium	<10	6	0	0%	No	55000	na	No	No
Copper	90	6	5	83%	Yes	1500	0.06	No	Yes
Iron	ns			na	No	11000	na	No	No
Manganese	ns			na	No	880	na	No	No
Zinc	368	6	6	100%	Yes	11000	0.03	No	No
<b>Semivolatile Organic Compounds</b>									
Acenaphthene	<2	6	0	0%	No	370	na	No	No
Acenaphthylene <sup>a</sup>	<2	6	0	0%	No	370	na	No	No
Anthracene	<0.1	6	0	0%	No	1800	na	No	No
Benzo(g,h,i)perylene <sup>b</sup>	<0.05	6	0	0%	No	180	na	No	No
Chrysene	<0.15	6	0	0%	No	9.2	na	No	No
Fluoranthene	<0.02	6	0	0%	No	1500	na	No	No
Fluorene	<0.2	6	0	0%	No	240	na	No	No
Naphthalene	<0.02	6	0	0%	No	6.2	na	No	No
Phenanthrene <sup>c</sup>	<0.1	6	0	0%	No	1800	na	No	No
Pyrene	<0.2	6	0	0%	No	180	na	No	No
4-chloro-3-methyl-phenol	<0.5	8	0	0%	No	--	na	No	No
2-Chloro-phenol	<0.5	8	0	0%	No	30.0	na	No	No
Cresols	ns	0	0	0%	No	--	na	No	No
2,4-Dichloro-phenol	<0.5	8	0	0%	No	110	na	No	No
2,6-Dichloro-phenol	<0.5	2	0	0%	No	--	na	No	No
2,4-dimethylphenol	<0.5	8	0	0%	No	730	na	No	No
4,6-Dinitro-2-methyl-phenol	<2	8	0	0%	No	73	na	No	No
2,4-Dinitro-phenol	<2	8	0	0%	No	73	na	No	No
Dinoseb	ns	0	0	0%	No	36	na	No	No
2-Nitrophenol	<0.5	8	0	0%	No	--	na	No	No
4-Nitrophenol	<1	8	0	0%	No	--	na	No	No
Phenol	<0.5	8	0	0%	No	11000	na	No	No
Tetrachlorophenols	ns	0	0	0%	No	--	na	No	No
2,3,4,6-Tetrachlorophenols	<0.5	2	0	0%	No	1100	na	No	No
2,3,5,6-Tetrachlorophenols	<1	8	0	0%	No	--	na	No	No
2,4,5-Trichlorophenol	<0.5	2	0	0%	No	3600	na	No	No
2,4,6-Trichlorophenol	<1	8	0	0%	No	3.6	na	No	No
2-chloroethyl vinyl ether	ns								
<b>Volatile Organic Compounds</b>									
Chloro-benzene	<1	7	0	0%	No	110	na	No	No
Toluene	<1	7	0	0%	No	720	na	No	No
Ethylbenzene	<1	7	0	0%	No	1300	na	No	No
m,p-Xylene	<0.3	5	0	0%	No	210	na	No	No
1,1-dichloroethane	ns	0	0	0%	No	810	na	No	No
1,1-dichloroethylene	ns	0	0	0%	No	340	na	No	No
1,1,1-trichloroethane	ns	0	0	0%	No	3200	na	No	No
1,2-dichlorobenzene	<1	7	0	0%	No	370	na	No	No
1,3-dichlorobenzene	<1	7	0	0%	No	180.0	na	No	No
1,4-dichlorobenzene	<1	7	0	0%	No	0.5	na	No	No
<b>Sum of Ratios (Rj)</b>							<b>0.09</b>		
<b>Number of Detected Constituents (Nij)</b>							<b>2</b>		
<b>1/Nij</b>							<b>0.50</b>		

Notes:

- PRG = Preliminary Remediation Goal.
- <sup>a</sup> Based on structural similarity to acenaphthene
- <sup>b</sup> Based on structural similarity to pyrene
- <sup>c</sup> Based on structural similarity to anthracene
- \* Values reported are WHO TEQ equivalents

Table 4-1. Screening of Contaminants of Interest

CONTAMINANTS OF INTEREST	Groundwater Current Conc in Water (Cw)		Offsite Industrial Appendix A Table A-9)		Region 9 Tap Water PRGs (ug/L)	Cw/PRG Rij (unitless)	Individual GW COPC	GW COPC (Multiple basis)	
	Max. Detected Conc. (ug/L)	Number of Samples	Number of Detects	FOD COPC					
<b>Carcinogens</b>									
<u>Inorganics</u>									
Arsenic	ns	0	0	0%	No	0.045	0.00	No	No
<u>Volatile Organic Compounds</u>									
Benzene	ns	0	0	0%	No	0.350	na	No	No
Styrene	ns	0	0	0%	No	1600	na	No	No
<u>Semivolatile Organic Compounds</u>									
Benzo(a)anthracene	ns	0	0	0%	No	0.092	na	No	No
Benzo(b)fluoranthene	ns	0	0	0%	No	0.092	na	No	No
Benzo(k)fluoranthene	ns	0	0	0%	No	0.920	na	No	No
Benzo(a)pyrene	ns	0	0	0%	No	0.009	na	No	No
Dibenzo(a,h)anthracene	ns	0	0	0%	No	0.009	na	No	No
Indeno(1,2,3-cd)pyrene	ns	0	0	0%	No	0.092	na	No	No
Carbazole	ns	0	0	0%	No	3.400	na	No	No
Pentachlorophenol	2.67	13	7	54%	Yes	0.560	4.77	Yes	No
<u>Dioxins/Furans*</u>									
2,3,7,8-TCDD	ns	0	0	0%	No	4.5E-07	na	No	No
1,2,3,7,8-PeCDD	ns	0	0	0%	No	4.5E-07	na	No	No
1,2,3,4,7,8-HxCDD	ns	0	0	0%	No	4.5E-07	na	No	No
1,2,3,6,7,8-HxCDD	ns	0	0	0%	No	4.5E-07	na	No	No
1,2,3,7,8,9-HxCDD	ns	0	0	0%	No	4.5E-07	na	No	No
1,2,3,4,6,7,8-HpCDD	ns	0	0	0%	No	4.5E-07	na	No	No
OCDD	ns	0	0	0%	No	4.5E-07	na	No	No
2,3,7,8-TCDF	ns	0	0	0%	No	4.5E-07	na	No	No
1,2,3,7,8-PeCDF	ns	0	0	0%	No	4.5E-07	na	No	No
2,3,4,7,8-PeCDF	ns	0	0	0%	No	4.5E-07	na	No	No
1,2,3,4,7,8-HxCDF	ns	0	0	0%	No	4.5E-07	na	No	No
1,2,3,6,7,8-HxCDF	ns	0	0	0%	No	4.5E-07	na	No	No
1,2,3,7,8,9-HxCDF	ns	0	0	0%	No	4.5E-07	na	No	No
2,3,4,6,7,8-HxCDF	ns	0	0	0%	No	4.5E-07	na	No	No
1,2,3,4,6,7,8-HpCDF	ns	0	0	0%	No	4.5E-07	na	No	No
1,2,3,4,7,8,9-HpCDF	ns	0	0	0%	No	4.5E-07	na	No	No
OCDF	ns	0	0	0%	No	4.5E-07	na	No	No
<b>Noncarcinogens</b>									
<u>Inorganics</u>									
Chromium	ns	0	0	0%	No	55000	nc	No	No
Copper	ns	0	0	0%	No	1500	na	No	No
Iron	ns	0	0	0%	No	11000	na	No	No
Manganese	ns	0	0	0%	No	880	na	No	No
Zinc	ns	0	0	0%	No	11000	na	No	No
<u>Semivolatile Organic Compounds</u>									
Acenaphthene	ns	0	0	0%	No	370	na	No	No
Acenaphthylene <sup>a</sup>	ns	0	0	0%	No	370	na	No	No
Anthracene	ns	0	0	0%	No	1800	na	No	No
Benzo(g,h,i)perylene <sup>b</sup>	ns	0	0	0%	No	180	na	No	No
Chrysene	ns	0	0	0%	No	9.2	na	No	No
Fluoranthene	ns	0	0	0%	No	1500	na	No	No
Fluorene	ns	0	0	0%	No	240	na	No	No
Naphthalene	ns	0	0	0%	No	6.2	na	No	No
Phenanthrene <sup>c</sup>	ns	0	0	0%	No	1800	na	No	No
Pyrene	ns	0	0	0%	No	180	na	No	No
4-chloro-3-methyl-phenol	<1	6	0	0%	No	--	na	No	No
2-Chloro-phenol	<1	6	0	0%	No	30.0	na	No	No
Cresols	ns	0	0	0%	No	--	na	No	No
2,4-Dichloro-phenol	<1	6	0	0%	No	110	na	No	No
2,6-Dichloro-phenol	<1	6	0	0%	No	--	na	No	No
2,4-dimethylphenol	<1	6	0	0%	No	730	na	No	No
4,6-Dinitro-2-methyl-phenol	<10	6	0	0%	No	73	na	No	No
2,4-Dinitro-phenol	<10	6	0	0%	No	73	na	No	No
Dinoseb	ns	0	0	0%	No	36	na	No	No
2-Nitrophenol	<1	6	0	0%	No	--	na	No	No
4-Nitrophenol	<2	6	0	0%	No	--	na	No	No
Phenol	<1	6	0	0%	No	11000	na	No	No
Tetrachlorophenols	ns	0	0	0%	No	--	na	No	No
2,3,4,6-Tetrachlorophenols	<2	6	0	0%	No	1100	na	No	No
2,3,5,6-Tetrachlorophenols	<2	6	0	0%	No	--	na	No	No
2,4,5-Trichlorophenol	<2	6	0	0%	No	3600	na	No	No
2,4,6-Trichlorophenol	<2	6	0	0%	No	3.6	na	No	No
2-chloroethyl vinyl ether	ns	0	0	0%	No	na	na	No	No
<u>Volatile Organic Compounds</u>									
Chloro-benzene	ns	0	0	0%	No	110	na	No	No
Toluene	ns	0	0	0%	No	720	na	No	No
Ethylbenzene	ns	0	0	0%	No	1300.0	na	No	No
m,p-Xylene	ns	0	0	0%	No	210	na	No	No
1,1-dichloroethane	ns	0	0	0%	No	810	na	No	No
1,1-dichloroethylene	ns	0	0	0%	No	340	na	No	No
1,1,1-trichloroethane	ns	0	0	0%	No	3200	na	No	No
1,2-dichlorobenzene	ns	0	0	0%	No	370	na	No	No
1,3-dichlorobenzene	ns	0	0	0%	No	180.0	na	No	No
1,4-dichlorobenzene	ns	0	0	0%	No	0.5	na	No	No
<b>Sum of Ratios (Rj)</b>						<b>4.77</b>			
<b>Number of Detected Constituents (Nij)</b>						<b>1</b>			
<b>1/Nij</b>						<b>1.00</b>			

Notes:

- PRG = Preliminary Remediation Goal.
- <sup>a</sup> Based on structural similarity to acenaphthene
- <sup>b</sup> Based on structural similarity to pyrene
- <sup>c</sup> Based on structural similarity to anthracene
- \* Values reported are WHO TEQ equivalents

Table 4-1. Screening of Contaminants of Interest

	Off-site Surface Water (Appendix A Table A-4)										SUM Rij (SRij)	Multi-Media COPC
	Max. Detected Conc. (ug/L)	Number of Samples	Number of Detects	FOD	COPC	Region 9 Tap Water PRGs (ug/L)	Csw/PRG Rij (unitless)	Individual SW COPC	SW COPC (Multiple basis)			
<b>CONTAMINANTS OF INTEREST</b>												
<b>Carcinogens</b>												
<b>Inorganics</b>												
Arsenic	23.4	6	2	33%	Yes	0.045	520	Yes	Yes	22178	Yes	
<b>Volatile Organic Compounds</b>												
Benzene	ns	0	0	0%	No	0.350	nc	No	No	45	Yes	
Styrene	ns	0	0	0%	No	1600	nc	No	No	0	No	
<b>Semivolatile Organic Compounds</b>												
Benzo(a)anthracene	ns	0	0	0%	No	0.092	nc	No	No	770	Yes	
Benzo(b)fluoranthene	ns	0	0	0%	No	0.092	nc	No	No	345	Yes	
Benzo(k)fluoranthene	ns	0	0	0%	No	0.920	nc	No	No	62	Yes	
Benzo(a)pyrene	ns	0	0	0%	No	0.009	nc	No	No	3778	Yes	
Dibenz(a,h)anthracene	ns	0	0	0%	No	0.009	nc	No	No	3018	Yes	
Indeno(1,2,3-cd)-pyrene	ns	0	0	0%	No	0.092	nc	No	No	157	Yes	
Carbazole	ns	0	0	0%	No	3.400	nc	No	No	525	Yes	
Pentachlorophenol	1.1	3	3	100%	Yes	0.560	1.93	Yes	No	16281	Yes	
<b>Dioxins/Furans*</b>												
2,3,7,8-TCDD	ns	0	0	na	No	4.5E-07	nc	No	No	135	Yes	
1,2,3,7,8-PeCDD	ns	0	0	na	No	4.5E-07	nc	No	No	29	Yes	
1,2,3,4,7,8-HxCDD	ns	0	0	na	No	4.5E-07	nc	No	No	3	Yes	
1,2,3,6,7,8-HxCDD	ns	0	0	na	No	4.5E-07	nc	No	No	9	Yes	
1,2,3,7,8,9-HxCDD	ns	0	0	na	No	4.5E-07	nc	No	No	20	Yes	
1,2,3,4,6,7,8-HpCDD	ns	0	0	na	No	4.5E-07	nc	No	No	9	Yes	
OCDD	ns	0	0	na	No	4.5E-07	nc	No	No	30	Yes	
2,3,7,8-TCDF	ns	0	0	na	No	4.5E-07	nc	No	No	16	Yes	
1,2,3,7,8-PeCDF	ns	0	0	na	No	4.5E-07	nc	No	No	74	Yes	
2,3,4,7,8-PeCDF	ns	0	0	na	No	4.5E-07	nc	No	No	23	Yes	
1,2,3,4,7,8-HxCDF	ns	0	0	na	No	4.5E-07	nc	No	No	4	Yes	
1,2,3,6,7,8-HxCDF	ns	0	0	na	No	4.5E-07	nc	No	No	4	Yes	
1,2,3,7,8,9-HxCDF	ns	0	0	na	No	4.5E-07	nc	No	No	10	Yes	
2,3,4,6,7,8-HxCDF	ns	0	0	na	No	4.5E-07	nc	No	No	8	Yes	
1,2,3,4,6,7,8-HpCDF	ns	0	0	na	No	4.5E-07	nc	No	No	6	Yes	
1,2,3,4,7,8,9-HpCDF	ns	0	0	na	No	4.5E-07	nc	No	No	2	Yes	
OCDF	ns	0	0	na	No	4.5E-07	nc	No	No	4	Yes	
<b>Noncarcinogens</b>												
<b>Inorganics</b>												
Chromium	ns	0	0	0%	No	55000	nc	No	No	0	No	
Copper	34	6	5	83%	Yes	1500	0.02	No	No	0	No	
Iron	ns	0	0	0%	No	11000	nc	No	No	2	Yes	
Manganese	ns	0	0	0%	No	880	nc	No	No	18	Yes	
Zinc	41	6	5	83%	Yes	11000	0.004	No	No	3	Yes	
<b>Semivolatile Organic Compounds</b>												
Acenaphthene	ns	0	0	0%	No	370	nc	No	No	8	Yes	
Acenaphthylene <sup>a</sup>	ns	0	0	0%	No	370	nc	No	No	32	Yes	
Anthracene	ns	0	0	0%	No	1800	nc	No	No	0	No	
Benzo(g,h,i)perylene <sup>b</sup>	ns	0	0	0%	No	180	nc	No	No	0	No	
Chrysene	ns	0	0	0%	No	9.2	nc	No	No	9	Yes	
Fluoranthene	ns	0	0	0%	No	1500	nc	No	No	0	No	
Fluorene	ns	0	0	0%	No	240	nc	No	No	1	Yes	
Naphthalene	ns	0	0	0%	No	6.2	nc	No	No	1606	Yes	
Phenanthrene <sup>c</sup>	ns	0	0	0%	No	1800	nc	No	No	0	No	
Pyrene	ns	0	0	0%	No	180	nc	No	No	1	No	
4-chloro-3-methyl-phenol	ns	0	0	0%	No	--	nc	na	No	1	No	
2-Chloro-phenol	ns	0	0	0%	No	30.0	nc	na	No	0	No	
Cresols	ns	0	0	0%	No	--	nc	na	No	0	No	
2,4-Dichloro-phenol	ns	0	0	0%	No	110	nc	No	No	0	No	
2,6-Dichloro-phenol	ns	0	0	0%	No	--	nc	No	No	0	No	
2,4-dimethylphenol	ns	0	0	0%	No	730	nc	No	No	0	No	
4,6-Dinitro-2-methyl-phenol	ns	0	0	0%	No	73	nc	No	No	6	Yes	
2,4-Dinitro-phenol	ns	0	0	0%	No	73	nc	No	No	0	No	
Dinoseb	ns	0	0	0%	No	36	nc	No	No	0	No	
2-Nitrophenol	ns	0	0	0%	No	--	nc	No	No	0	No	
4-Nitrophenol	ns	0	0	0%	No	--	nc	No	No	0	No	
Phenol	ns	0	0	0%	No	11000	nc	No	No	0	No	
Tetrachlorophenols	ns	0	0	0%	No	--	nc	No	No	0	No	
2,3,4,6-Tetrachlorophenols	ns	0	0	0%	No	1100	nc	No	No	1	Yes	
2,3,5,6-Tetrachlorophenols	ns	0	0	0%	No	--	nc	No	No	0	No	
2,4,5-Trichlorophenol	ns	0	0	0%	No	3600	nc	No	No	0	No	
2,4,6-Trichlorophenol	ns	0	0	0%	No	3.6	nc	No	No	4	Yes	
2-chloroethyl vinyl ether	ns	0	0	0%	No	--	nc	No	No	1	No	
<b>Volatile Organic Compounds</b>												
Chloro-benzene	ns	0	0	0%	No	110	nc	No	No	0	No	
Toluene	ns	0	0	0%	No	720	nc	No	No	0	No	
Ethylbenzene	ns	0	0	0%	No	1300.0	nc	No	No	0	No	
m,p-Xylene	ns	0	0	0%	No	210	nc	No	No	0	No	
1,1-dichloroethane	ns	0	0	0%	No	810	nc	No	No	0	No	
1,1-dichloroethylene	ns	0	0	0%	No	340	nc	No	No	0	No	
1,1,1-trichloroethane	ns	0	0	0%	No	3200	nc	No	No	0	No	
1,2-dichlorobenzene	ns	0	0	0%	No	370	nc	No	No	13456	Yes	
1,3-dichlorobenzene	ns	0	0	0%	No	180.0	nc	No	No	261	Yes	
1,4-dichlorobenzene	ns	0	0	0%	No	0.5	nc	No	No	50	Yes	
<b>Sum of Ratios (Rj)</b>							<b>521.95</b>					
<b>Number of Detected Constituents (Nij)</b>							<b>4</b>					
<b>1/Nij</b>							<b>0.25</b>					

Notes:

- PRG = Preliminary Remediation Goal.
- <sup>a</sup> Based on structural similarity to acenaphthene
- <sup>b</sup> Based on structural similarity to pyrene
- <sup>c</sup> Based on structural similarity to anthracene
- \* Values reported are WHO TEQ equivalents

**Table 4-2. Summary of Contaminants of Potential Concern**

On-Site Surface Soil (0-2 ft bgs)		On-Site Surface and Subsurface Soil	
Individual COPC	Soil COPC (Multiple basis)	Individual COPC	Soil COPC (Multiple basis)
Arsenic Benzo(a)anthracene Benzo(b)fluoranthene Benzo(a)pyrene Dibenz(a,h)anthracene Indeno(1,2,3)cd-pyrene Pentachlorophenol 1,2,3,6,7,8-HxCDD 1,2,3,4,6,7,8-HpCDD 1,2,3,4,6,7,8-HpCDF  Chromium (Total) Copper Iron Manganese	Arsenic  Dibenz(a,h)anthracene	Arsenic Benzo(a)anthracene Benzo(b)fluoranthene Benzo(a)pyrene Dibenz(a,h)anthracene Indeno(1,2,3)cd-pyrene Pentachlorophenol 1,2,3,6,7,8-HxCDD 1,2,3,4,6,7,8-HpCDD 1,2,3,4,6,7,8-HpCDF Chromium (Total) Copper Iron Manganese	Arsenic  Dibenz(a,h)anthracene



**Table 4-2. Summary of Contaminants of Potential Concern**

Groundwater On-Site		Groundwater Current Off-Site Residential	
Individual COPC	Groundwater COPC (Multiple basis)	Individual COPC	Groundwater COPC (Multiple basis)
Arsenic	Arsenic		Copper
Benzene			
Benzo(a)anthracene	Benzo(a)anthracene		
Benzo(b)fluoranthene			
Benzo(k)fluoranthene			
Benzo(a)pyrene	Benzo(a)pyrene		
Dibenz(a,h)anthracene	Dibenz(a,h)anthracene		
Indeno(1,2,3)cd-pyrene			
Pentachlorophenol	Pentachlorophenol		
2,4,6-Trichlorophenol			
Carbazole			
2,3,7,8-TCDD			
1,2,3,7,8-PeCDD			
1,2,3,6,7,8-HxCDD			
1,2,3,4,6,7,8-HpCDD			
2,3,4,7,8-PeCDF			
1,2,3,4,6,7,8-HpCDF			
Iron			
Manganese			
Acenaphthene			
Acenaphthylene <sup>a</sup>			
Chrysene			
Fluorene			
Naphthalene	Naphthalene		
Ethylbenzene			
2,4,6-Trichlorophenol			

**Table 4-2. Summary of Contaminants of Potential Concern**

Off-Site Sediment		Off-Site Soil		Undeveloped Area	
Individual COPC	Sediment COPC (Multiple basis)	Individual COPC	Soil COPC (Multiple basis)	Individual COPC	Soil COPC (Multiple basis)
Arsenic	Arsenic	Arsenic	Arsenic	Arsenic	Arsenic
Benzo(b)fluoranthene					
Dibenz(a,h)anthracene					
Benzo(a)pyrene	Benzo(a)pyrene		Benzo(a)pyrene	Benzo(a)pyrene	Benzo(a)pyrene
2,3,7,8-TCDD					
1,2,3,7,8-PeCDD	1,2,3,7,8-PeCDD			1,2,3,7,8-PeCDD	1,2,3,7,8-PeCDD
1,2,3,4,7,8-HxCDD				1,2,3,6,7,8-HxCDD	1,2,3,6,7,8-HxCDD
1,2,3,6,7,8-HxCDD	1,2,3,6,7,8-HxCDD			1,2,3,7,8,9-HxCDD	1,2,3,7,8,9-HxCDD
1,2,3,7,8,9-HxCDD	1,2,3,7,8,9-HxCDD			1,2,3,4,6,7,8-HpCDD	1,2,3,4,6,7,8-HpCDD
1,2,3,4,6,7,8-HpCDD	1,2,3,4,6,7,8-HpCDD		1,2,3,4,6,7,8-HpCDD	OCDD	OCDD
OCDD				2,3,4,7,8-PeCDF	2,3,4,7,8-PeCDF
2,3,4,7,8-PeCDF				1,2,3,4,7,8-HxCDF	
1,2,3,4,7,8-HxCDF				1,2,3,4,6,7,8-HpCDF	1,2,3,4,6,7,8-HpCDF
1,2,3,6,7,8-HxCDF					
2,3,4,6,7,8-HxCDF					
1,2,3,4,6,7,8-HpCDF					
		Iron	Iron		



Table 5-1. On-Site Surface Soil Summary Statistics and Exposure Point Concentrations

	Min Detected Conc. (mg/kg)	Max. Detected Conc. (mg/kg)	Number of Samples	Number of Detects	Distribution	Recommended Statistical Calculation of UCL	UCL (mg/kg)	EPC (mg/kg)
<b>COPCs</b>								
<b><i>Carcinogens</i></b>								
<u>Inorganics</u>								
Arsenic	2.4	2390	57	57	Non-parametric	95% Chebyshev	340.2	340.2
<u>SVOCs</u>								
Benzo(a)anthracene	0.00104	14.3	44	31	Non-parametric	95% Chebyshev	1.8	1.8
Benzo(b)fluoranthene	0.00045	13.1	44	35	Non-parametric	95% Chebyshev	2.0	2.0
Benzo(a)pyrene	0.00045	4.44	44	32	Non-parametric	95% Chebyshev	1.0	1.0
Dibenz(a,h)anthracene	0.00055	15.2	44	16	Non-parametric	95% Chebyshev	1.9	1.9
Indeno(1,2,3)cd-pyrene	0.001	4.52	44	28	Non-parametric	95% Chebyshev	0.9	0.9
Pentachlorophenol	0.017	182	43	13	Non-parametric	95% Chebyshev	18.8	18.8
<u>Dioxins/Furans</u>								
1,2,3,6,7,8-HxCDD	3.1E-07	<u>2.5E-05</u>	3	1	Not evaluated	Not evaluated	nc	2.5E-05
1,2,3,4,6,7,8-HpCDD	6.1E-06	<u>5.9E-05</u>	3	3	Not evaluated	Not evaluated	nc	5.9E-05
1,2,3,4,6,7,8-HpCDF	3.8E-07	<u>8.8E-06</u>	3	0	Not evaluated	Not evaluated	nc	8.8E-06
<b><i>Noncarcinogens</i></b>								
<u>Inorganics</u>								
Chromium	10.2	468	46	46	Non-parametric	95% Chebyshev	70.6	70.6
Copper	23.8	4090	51	51	Non-parametric	95% Chebyshev	484.9	484.9
Iron	28	48400	32	32	Non-parametric	95% Chebyshev	21123.0	21123.0
Manganese	166	2330	32	32	Non-parametric	95% Chebyshev	547.7	547.7

**Notes:**

<sup>a</sup> Based on structural similarity to acenaphthene

<sup>b</sup> Based on structural similarity to pyrene

<sup>c</sup> Based on structural similarity to anthracene

<sup>d</sup> Based on 4,6-dinitro-o-cyclohexyl phenol

UCL - 95% upper confidence limit

EPC - exposure point concentration for risk assessment

Table 5-2. On-Site Surface and Subsurface Soil Summary Statistics and Exposure Point Concentrations

	Min Detected Conc. (mg/kg)	Max. Detected Conc. (mg/kg)	Number of Samples	Number of Detects	Distribution	Recommended UCL	UCL (mg/kg)	EPC (mg/kg)
<b>COPCs</b>								
<b><i>Carcinogens</i></b>								
<u>Inorganics</u>								
Arsenic	1.55	2390	119	112	Non-parametric	95% Chebyshev	203.9	203.9
<u>SVOCs</u>								
Benzo(a)anthracene	0.00098	14.3	103	63	Non-parametric	95% Chebyshev	1.6	1.6
Benzo(b)fluoranthene	0.00128	15	103	64	Non-parametric	95% Chebyshev	1.9	1.9
Benzo(a)pyrene	0.00243	8.1	103	54	Non-parametric	95% Chebyshev	0.8	0.8
Dibenz(a,h)anthracene	0.0128	15.2	99	22	Non-parametric	95% Chebyshev	1.2	1.2
Indeno(1,2,3)cd-pyrene	0.0028	5.6	99	43	Non-parametric	95% Chebyshev	0.7	0.7
Pentachlorophenol	0.973	182	101	29	Non-parametric	95% Chebyshev	21.7	21.7
<u>Dioxins/Furans</u>								
1,2,3,6,7,8-HxCDD	<u>3.1E-07</u>	2.5E-05	3	1	Not evaluated	nc	--	2.5E-05
1,2,3,4,6,7,8-HpCDD	<u>6.1E-06</u>	1.4E-05	3	3	Not evaluated	nc	--	1.4E-05
1,2,3,4,6,7,8-HpCDF	<u>3.8E-07</u>	8.8E-06	3	3	Not evaluated	nc	--	8.8E-06
<b><i>Noncarcinogens</i></b>								
<u>Inorganics</u>								
Chromium	10	468	97	97	Non-parametric	95% Chebyshev	59.8	59.8
Copper	15	4090	108	108	Non-parametric	95% Chebyshev	288.5	288.5
Iron	28	51000	70	70	Non-parametric	95% Chebyshev	38806.0	38806.0
Manganese	166	2300	70	70	Non-parametric	95% Chebyshev	984.3	984.3

**Table 5-3. Off-Site Soil Summary Statistics and Exposure Point Concentrations**

	Min Detected Conc. (mg/kg)	Max. Detected Conc. (mg/kg)	Number of Samples	Number of Detects	Distribution	Recommended UCL	UCL	EPC (mg/kg)
<b>COPCs</b>								
<b><i>Carcinogens</i></b>								
<u>Inorganics</u>								
Arsenic	3	7	10	6	Normal	Student's t	5.0	5.0
<u>SVOCs</u>								
Benzo(a)pyrene	0.001	0.0508	10	10	Non-parametric	95% Chebyshev	0.03	0.03
<u>Dioxins/Furans</u>								
1,2,3,4,6,7,8-HpCDD	7.2E-07	3.3E-06	2	2	Not Evaluated	Not calculated	--	3.3E-06
<b><i>Noncarcinogens</i></b>								
<u>Inorganics</u>								
Iron	3600	41400	10	10	Normal	Student's t	30091	30091

Notes:

na - not applicable due to size of data set

nc - not calculated.

Table 5-4. Off-Site Sediment Summary Statistics and Exposure Point Concentrations

	Min Detected Conc. (mg/kg)	Max. Detected Conc. (mg/kg)	Number of Samples	Number of Detects	Distribution	UCL	EPC (mg/kg)
<b>COPCs</b>							
<b><i>Carcinogens</i></b>							
<u>Inorganics</u>							
Arsenic	1.3E+01	26	5	4	Not Evaluated	nc	26.0
<u>SVOCs</u>							
Benzo(b)fluoranthene	1.9E-01	0.9	3	3	Not Evaluated	nc	0.9
Benzo(a)pyrene	1.1E-01	0.5	3	3	Not Evaluated	nc	0.5
Dibenz(a,h)anthracene	7.5E-02	0.2	3	2	Not Evaluated	nc	0.2
<u>Dioxins/Furans</u>							
2,3,7,8-TCDD	2.2E-07	<u>6.2E-06</u>	3	2	Not evaluated	nc	6.2E-06
1,2,3,7,8-PeCDD	5.5E-06	<u>3.3E-05</u>	3	3	Not evaluated	nc	3.3E-05
1,2,3,4,7,8-HxCDD	1.4E-06	<u>7.7E-06</u>	3	3	Not evaluated	nc	7.7E-06
1,2,3,6,7,8-HxCDD	6.4E-06	<u>4.5E-05</u>	3	3	Not evaluated	nc	4.5E-05
1,2,3,7,8,9-HxCDD	2.9E-06	<u>2.0E-05</u>	3	3	Not evaluated	nc	2.0E-05
1,2,3,4,6,7,8-HpCDD	2.2E-05	<u>1.2E-04</u>	3	3	Not evaluated	nc	1.2E-04
OCDD	1.5E-06	<u>8.7E-06</u>	3	3	Not evaluated	nc	8.7E-06
2,3,4,7,8-PeCDF	1.3E-06	<u>7.5E-06</u>	3	3	Not evaluated	nc	7.5E-06
1,2,3,4,7,8-HxCDF	1.4E-06	<u>8.2E-06</u>	3	3	Not evaluated	nc	8.2E-06
1,2,3,6,7,8-HxCDF	6.8E-07	<u>4.4E-06</u>	3	3	Not evaluated	nc	4.4E-06
2,3,4,6,7,8-HxCDF	1.2E-06	<u>8.3E-06</u>	3	3	Not evaluated	nc	8.3E-06
1,2,3,4,6,7,8-HpCDF	2.2E-06	<u>5.9E-07</u>	3	3	Not evaluated	nc	5.9E-07

na - not applicable due to size of data set

**Table 5-5. On-Site Undeveloped Area Soil Summary Statistics and Exposure Point Concentrations**

	<b>Min Detected Conc. (mg/kg)</b>	<b>Max. Detected Conc. (mg/kg)</b>	<b>Number of Samples</b>	<b>Number of Detects</b>	<b>Distribution</b>	<b>EPC  (mg/kg)</b>
<b>COPCs</b>						
<b><i>Carcinogens</i></b>						
<u>Inorganics</u>						
Arsenic	38	62	2	2	Not evaluated	62.0
<u>SVOCs</u>						
Benzo(a)pyrene	0.196	0.406	2	2	Not evaluated	0.406
<u>Dioxins/furans</u>						
1,2,3,7,8-PeCDD	1.9E-05	4.0E-05	2	2	Not evaluated	4.0E-05
1,2,3,6,7,8-HxCDD	2.9E-05	6.8E-05	2	2	Not evaluated	6.8E-05
1,2,3,7,8,9-HxCDD	1.1E-05	2.7E-05	2	2	Not evaluated	2.7E-05
1,2,3,4,6,7,8-HpCDD	6.7E-05	1.6E-04	2	2	Not evaluated	1.6E-04
OCDD	9.1E-06	2.1E-05	2	2	Not evaluated	2.1E-05
2,3,4,7,8-PeCDF	1.4E-05	3.7E-05	2	2	Not evaluated	3.7E-05
1,2,3,4,7,8-HxCDF	4.0E-06	2.2E-05	2	2	Not evaluated	2.2E-05
1,2,3,4,6,7,8-HpCDF	1.8E-05	4.4E-05	2	2	Not evaluated	4.4E-05

na - not applicable due to size of data set

nc - not calculated.



**Table 5-6. On-Site Groundwater Summary Statistics and Exposure Point Concentrations**

	Min Detected Conc. (ug/L)	Max. Detected Conc. (ug/L)	Number of Samples	Number of Detects	Distribution	Recommended UCL	UCL (ug/L)	EPC (ug/L)
<b>COPCs</b>								
<b><i>Carcinogens</i></b>								
<u>Inorganics</u>								
Arsenic	0.006	352	223	28	Non-parametric	95% Chebyshev	30.60	30.6
<u>Volatile Organic Compounds</u>								
Benzene	2.5	15.7	8	3	Non-parametric	95% Chebyshev	11.80	15.7
<u>Semivolatile Organic Compounds</u>								
Benzo(a)anthracene	0.1	70	223	20	Non-parametric	95% Chebyshev	2.4	2.4
Benzo(b)fluoranthene	0.022	27	224	20	Non-parametric	95% Chebyshev	1.1	1.1
Benzo(k)fluoranthene	0.12	14	224	12	Non-parametric	95% Chebyshev	0.6	0.6
Benzo(a)pyrene	0.028	34	224	18	Non-parametric	95% Chebyshev	1.3	1.3
Dibenz(a,h)anthracene	0.08	25.5	224	9	Non-parametric	95% Chebyshev	1.3	1.3
Indeno(1,2,3)cd-pyrene	0.05	13.7	224	7	Non-parametric	95% Chebyshev	0.5	0.5
Carbazole	24.8	105	14	5	Non-parametric	95% Chebyshev	55.7	55.7
Pentachlorophenol	0.31	8780	220	196	Non-parametric	95% Chebyshev	1255.9	1255.9
<u>Dioxins/Furans</u>								
2,3,7,8-TCDD	5.0E-07	2.3E-06	5	0	Not evaluated	--	--	2.3E-06
1,2,3,7,8-PeCDD	4.0E-07	3.4E-06	5	1	Not evaluated	--	--	3.4E-06
1,2,3,6,7,8-HxCDD	9.0E-08	9.8E-07	5	3	Not evaluated	--	--	9.8E-07
1,2,3,4,6,7,8-HpCDD	4.0E-08	1.1E-06	5	4	Not evaluated	--	--	1.1E-06
2,3,4,7,8-PeCDF	2.8E-07	8.4E-07	5	1	Not evaluated	--	--	8.4E-07
1,2,3,4,6,7,8-HpCDF	1.1E-08	8.1E-07	5	3	Not evaluated	--	--	8.1E-07
<b><i>Noncarcinogens</i></b>								
<u>Inorganics</u>								
Iron	0.141	16600	14	12	Non-parametric	95% Chebyshev	9701.0	9701.0
Manganese	0.023	11300	14	10	Non-parametric	95% Chebyshev	5620.0	5620.0
<u>Semivolatile Organic Compounds</u>								
Acenaphthene	0.1	1640	224	38	Non-parametric	95% Chebyshev	61.8	61.8
Acenaphthylene <sup>a</sup>	0.1	11800	224	31	Non-parametric	95% Chebyshev	317.8	317.8
Chrysene	0.1	80	223	20	Non-parametric	95% Chebyshev	3.2	3.2
Fluorene	0.09	296	224	37	Non-parametric	95% Chebyshev	15.7	15.7
Naphthalene	0.1	9950	224	75	Non-parametric	95% Chebyshev	888.8	888.8
2,4,6-Trichlorophenol	1.04	11.6	220	5	Non-parametric	95% Chebyshev	59.0	11.6
<u>Volatile Organic Compounds</u>								
Ethylbenzene	2.5	97.5	8	2	Non-parametric	95% Chebyshev	58.9	97.5

**Notes:**

PRG = Preliminary Remediation Goal.

<sup>a</sup> Based on structural similarity to acenaphthene

<sup>b</sup> Based on structural similarity to pyrene

<sup>c</sup> Based on structural similarity to anthracene

<sup>d</sup> Based on 4,6-dinitro-o-cyclohexyl phenol

UCL - 95% upper confidence limit

EPC - exposure point concentration for risk assessment

**Table 5-7. Off-Site Current Residential Groundwater  
Summary Statistics and Exposure Point Concentrations**

	Min Detected Conc. <sup>a</sup> (ug/L)	Max. Detected Conc. <sup>a</sup> (ug/L)	Number of Samples	Number of Detects	Distribution	Recommended UCL (ug/L)	UCL (ug/L)	EPC (ug/L)
<b>COPCs</b>								
Copper	25	90	6	5	Not calculated	na	90.0	90.0

**Notes:**

a - based on concentrations from off-site residential and industrial groundwater wells

UCL - 95% upper confidence limit

EPC - exposure point concentration for risk assessment

**Table 5-8. Off-Site Future Residential and Industrial Groundwater Summary Statistics and Exposure Point Concentrations**

	Min Detected Conc. <sup>a</sup> (ug/L)	Max. Detected Conc. <sup>a</sup> (ug/L)	Number of Samples	Number of Detects	Distribution	Recommended UCL (ug/L)	EPC (ug/L)
<b>COPCs</b>							
Arsenic	1.2	65	118	9	Non-parametric	95% Chebyshev	7.3
Pentachlorophenol	0.2	324	354	203	Non-parametric	95% Chebyshev	53.5
<u>Semivolatile Organic Compounds</u>							
Naphthalene	0.1	7.6	122	10	Non-parametric	95% Chebyshev	1.0
Benzo(a)anthracene	0.1	0.84	122	3	Not evaluated	na	0.84
Benzo(b)fluoranthene	0.1	0.39	122	1	Not evaluated	na	0.39
Benzo(a)pyrene	0.1	0.74	122	2	Not evaluated	na	0.74
Dibenz(a,h)anthracene	0.1	0.31	122	1	Not evaluated	na	0.31
Indeno(1,2,3)cd-pyrene	0.1	0.61	122	1	Not evaluated	na	0.61
<u>Dioxins/Furans</u>							
2,3,7,8-TCDD	5.0E-07	3.5E-06	7	2	Not evaluated	na	3.5E-06
1,2,3,7,8-PeCDD	4.0E-07	9.6E-06	7	3	Not evaluated	na	9.6E-06
1,2,3,4,7,8-HxCDD	5.5E-08	1.3E-06	7	3	Not evaluated	na	1.3E-06
1,2,3,6,7,8-HxCDD	5.5E-08	1.4E-06	7	5	Not evaluated	na	1.4E-06
1,2,3,7,8,9-HxCDD	5.5E-08	1.5E-06	7	4	Not evaluated	na	1.5E-06
1,2,3,4,6,7,8-HpCDD	4.0E-08	1.1E-06	7	6	Not evaluated	na	1.1E-06
1,2,3,7,8-PeCDF	2.2E-08	6.9E-06	7	3	Not evaluated	na	6.9E-06
2,3,4,7,8-PeCDF	2.2E-07	6.9E-06	7	3	Not evaluated	na	6.9E-06
1,2,3,4,7,8-HxCDF	4.0E-08	1.4E-06	7	4	Not evaluated	na	1.4E-06
1,2,3,6,7,8-HxCDF	4.0E-08	1.2E-06	7	5	Not evaluated	na	1.2E-06
1,2,3,7,8,9-HxCDF	4.5E-08	1.4E-06	7	4	Not evaluated	na	1.4E-06
2,3,4,6,7,8-HxCDF	4.5E-08	1.4E-06	7	4	Not evaluated	na	1.4E-06
1,2,3,4,6,7,8-HpCDF	1.1E-08	1.8E-07	7	3	Not evaluated	na	1.8E-07

**Notes:**

a - based on concentrations from off-site residential and industrial groundwater wells

UCL - 95% upper confidence limit

EPC - exposure point concentration for risk assessment

**Table 5-9. Future Off-Site Residential Groundwater  
Summary Statistics and Exposure Point Concentrations**

	<b>Min Detected Conc. (ug/L)</b>	<b>Max. Detected Conc. (ug/L)</b>	<b>Number of Samples</b>	<b>Number of Detects</b>	<b>Distribution</b>	<b>Recommended UCL (ug/L)</b>	<b>UCL (ug/L)</b>	<b>EPC (ug/L)</b>
<b>COPCs</b>								
<b><i>Carcinogens</i></b>								
Pentachlorophenol	0.21	75	68	23	Non-parametric	95% Chebyshev	20.50	20.5

Note:

Evaluation based on data from off-site residential groundwater wells.

UCL - 95% upper confidence limit

EPC - exposure point concentration for risk assessment

**Table 5-10. Off-Site Current Industrial Groundwater  
Summary Statistics and Exposure Point Concentrations**

	Min Detected Conc. (ug/L)	Max. Detected Conc. (ug/L)	Number of Samples	Number of Detects	Distribution	Recommended UCL (ug/L)	UCL (ug/L)	EPC (ug/L)
<b>COPCs</b>								
<b><i>Carcinogens</i></b>								
Pentachlorophenol	0.31	2.67	13	7	Non-parametric	95% Chebyshev	85.5	2.7

UCL - 95% upper confidence limit

EPC - exposure point concentration for risk assessment

**Table 5-11. Off-Site Surface Water  
Summary Statistics and Exposure Point Concentrations**

	Min Detected Conc. (ug/L)	Max. Detected Conc. (ug/L)	Number of Samples	Number of Detects	Distribution	UCL	EPC  (ug/L)
<b>COPCs</b>							
<b><i>Carcinogens</i></b>							
<u>Inorganics</u>							
Arsenic	7.3	23.4	6	2	na	nc	23.4
<u>Semivolatile Organic Compounds</u>							
Pentachlorophenol	0.76	1.1	3	3	na	nc	1.1

na - not applicable due to size of data set

UCL - 95% upper confidence limit

EPC - exposure point concentration for risk assessment

**Table 7-1a. Calculated Risk Estimates due to Potential Soil Exposures  
On-Site Worker Scenario**

Parameter	Description	Units	Value	Reference
Dose	Dose of chemical	mg/kg-day	See below	Calculated
HI	Hazard index	unitless	See below	Calculated
Risk	Risk	unitless	See below	Calculated
EPCs	Exposure Point Concentration in soil	mg/kg	See below	Calculated
IRa	Adult Soil ingestion rate	mg/day	100	ODEQ, 1998
EF	Exposure frequency	days/year	250	ODEQ, 1998
EvD	Event frequency	event/day	1	ODEQ, 1998
ED	Exposure duration - adult	years	25	ODEQ, 1998
Bwa	Body weight - adult	kg	70	ODEQ, 1998
AP	Averaging period	days	See below	Calculated
VF	Volatilization factor	m <sup>3</sup> /kg	See below	chemical-specific
PEF	Particulate emission factor	m <sup>3</sup> /kg	1.32E+09	USEPA, 1996a
SSAa	Skin surface area - adult	cm <sup>2</sup>	4100	ODEQ, 1998
DAF	Dermal absorption factor	unitless	See below	chemical-specific
SARa	Soil adherence rate - adult	mg/cm <sup>2</sup> - ev	0.08	ODEQ, 1998
InhRa	Inhalation rate - adult	m <sup>3</sup> /day	15.2	ODEQ, 1998
CF1	Conversion factor, mg to kg	kg/mg	1.00E-06	Calculated
RfDo	Oral reference dose	mg/kg-day	See below	chemical-specific
RfDi	Inhalation reference dose	mg/kg-day	See below	Calculated
CSFo	Oral cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated
CSFi	Inhalation cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated

**Table 7-1a. Calculated Risk Estimates due to Potential Soil Exposures  
On-Site Worker Scenario**

Carcinogens												Total Risk
AP = 25,550 days												
Compound	EPCs	DAF	BAF	CSFo	CSFi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	Risk <sub>ing</sub>	Risk <sub>der</sub>	Risk <sub>inh</sub>	
<b>Inorganics</b>												
Arsenic	340.2	0.01	0.5	1.5E+00	1.5E+01	5.9E-05	3.9E-06	1.4E-08	9.E-05	6.E-06	2.E-07	1.E-04
<b>SVOCs</b>												
Benzo(a) anthracene	1.8	0.1	--	7.3E-01	7.3E-01	6.1E-07	2.0E-07	7.0E-11	4.E-07	1.E-07	5.E-11	6.E-07
Dibenz(a,h) anthracene	1.9	0.1	--	7.3E+00	7.3E+00	6.5E-07	2.1E-07	7.5E-11	5.E-06	2.E-06	5.E-10	6.E-06
Benzo(a) pyrene	1.0	0.1	--	7.3E+00	7.3E+00	3.4E-07	1.1E-07	4.0E-11	3.E-06	8.E-07	3.E-10	3.E-06
Benzo(b) fluoranthene	2.0	0.1	--	7.3E-01	7.3E-01	7.0E-07	2.3E-07	8.0E-11	5.E-07	2.E-07	6.E-11	7.E-07
Pentachloro-phenol (PC	18.8	0.25	--	1.2E-01	1.2E-01	6.6E-06	5.4E-06	7.6E-10	8.E-07	6.E-07	9.E-11	1.E-06
Indeno(1,2,3-cd) pyrene	0.9	0.1	--	7.3E-01	7.3E-01	3.0E-07	9.7E-08	3.4E-11	2.E-07	7.E-08	2.E-11	3.E-07
<b>Dioxin/Furans</b>												
1,2,3,6,7,8-HxCDD	2.5E-05	0.03		1.5E+05	1.5E+05	8.8E-12	8.7E-13	1.0E-15	1.E-06	1.E-07	2.E-10	1.E-06
1,2,3,4,6,7,8-HpCDD (B-2)	5.9E-05	0.03		1.5E+05	1.5E+05	2.1E-11	2.0E-12	2.4E-15	3.E-06	3.E-07	4.E-10	3.E-06
1,2,3,4,6,7,8-HpCDF	8.8E-06	0.03		1.5E+05	1.5E+05	3.1E-12	3.0E-13	3.5E-16	5.E-07	5.E-08	5.E-11	5.E-07
<b>Cumulative Risk</b>												<b>1.E-04</b>
Noncarcinogens												Total HI
AP = 9.1E+03 days												
Compound	RBCs	DAF	BAF	RfDo	RfDi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	HI <sub>ing</sub>	HI <sub>der</sub>	HI <sub>inh</sub>	
<b>Inorganics</b>												
Arsenic	340.2	0.01	0.5	3.0E-04	3.0E-04	1.7E-04	1.1E-05	3.8E-08	0.6	0.0	0.0	0.6
Chromium	70.6	0.01	--	1.5E+00	--	6.9E-05	2.3E-06	8.0E-09	0.0	0.0	--	0.0
Copper	484.9	0.01	--	4.0E-02	4.0E-02	4.7E-04	1.6E-05	5.5E-08	0.0	0.0	0.0	0.0
Iron	21123.0	0.01		3.0E-01	3.0E-01	2.1E-02	6.8E-04	2.4E-06	0.1	0.0	0.0	0.1
Manganese	547.7	0.01		2.4E-02	1.4E-05	5.4E-04	1.8E-05	6.2E-08	0.0	0.0	0.0	0.0
<b>SVOCs</b>												
Pentachlorophenol	18.8	0.25	--	3.0E-02	3.0E-02	1.8E-05	1.5E-05	2.1E-09	0.0	0.0	0.0	0.0
<b>Cumulative HI</b>												<b>0.7</b>

BAF = Bioavailability Factor



**Table 7-1b. Calculated Risk Estimates due to Potential Soil Exposure  
Undeveloped Area On-Site Worker Scenario**

Parameter	Description	Units	Value	Reference
Dose	Dose of chemical	mg/kg-day	See below	Calculated
HI	Hazard index	unitless	See below	Calculated
Risk	Risk	unitless	See below	Calculated
EPCs	Exposure Point Concentration in soil	mg/kg	See below	Calculated
IRa	Adult Soil ingestion rate	mg/day	100	ODEQ, 1998
EF	Exposure frequency	days/year	250	ODEQ, 1998
EvD	Event frequency	event/day	1	ODEQ, 1998
ED	Exposure duration - adult	years	25	ODEQ, 1998
Bwa	Body weight - adult	kg	70	ODEQ, 1998
AP	Averaging period	days	See below	Calculated
VF	Volatilization factor	m <sup>3</sup> /kg	See below	chemical-specific
PEF	Particulate emission factor	m <sup>3</sup> /kg	1.32E+09	USEPA, 1996a
SSAa	Skin surface area - adult	cm <sup>2</sup>	4100	ODEQ, 1998
DAF	Dermal absorption factor	unitless	See below	chemical-specific
SARa	Soil adherence rate - adult	mg/cm <sup>2</sup> - ev	0.08	ODEQ, 1998
InhRa	Inhalation rate - adult	m <sup>3</sup> /day	15.2	ODEQ, 1998
CF1	Conversion factor, mg to kg	kg/mg	1.00E-06	Calculated
RfDo	Oral reference dose	mg/kg-day	See below	chemical-specific
RfDi	Inhalation reference dose	mg/kg-day	See below	Calculated
CSFo	Oral cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated
CSFi	Inhalation cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated

Carcinogens		AP = 25,550 days											Total
Compound	EPCs	DAF	BAF	CSFo	CSFi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	Risk <sub>ing</sub>	Risk <sub>der</sub>	Risk <sub>inh</sub>	Risk	
<b>Inorganics</b>													
Arsenic	62.0	0.01	0.5	1.5E+00	1.5E+01	1.1E-05	7.1E-07	2.5E-09	2.E-05	1.E-06	4.E-08	2.E-05	
<b>SVOCs</b>													
Benzo(a) pyrene	0.4	0.1	--	7.3E+00	7.3E+00	1.4E-07	4.7E-08	1.6E-11	1.E-06	3.E-07	1.E-10	1.E-06	
<b>Dioxin/Furans</b>													
1,2,3,7,8-PeCDD	4.0E-05	0.03	--	1.5E+05	1.5E+05	1.4E-11	1.4E-12	1.6E-15	2.E-06	2.E-07	2.E-10	2.E-06	
1,2,3,6,7,8-HxCDD	6.8E-05	0.03	--	1.5E+05	1.5E+05	2.4E-11	2.3E-12	2.7E-15	4.E-06	4.E-07	4.E-10	4.E-06	
1,2,3,7,8,9-HxCDD	2.7E-05	0.03	--	1.5E+05	1.5E+05	9.4E-12	9.3E-13	1.1E-15	1.E-06	1.E-07	2.E-10	2.E-06	
1,2,3,4,6,7,8-HpCDD	1.6E-04	0.03	--	1.5E+05	1.5E+05	5.6E-11	5.5E-12	6.4E-15	8.E-06	8.E-07	1.E-09	9.E-06	
OCDD	2.1E-05	0.03	--	1.5E+05	1.5E+05	7.3E-12	7.2E-13	8.5E-16	1.E-06	1.E-07	1.E-10	1.E-06	
2,3,4,7,8-PeCDF	3.7E-05	0.03	--	1.5E+05	1.5E+05	1.3E-11	1.3E-12	1.5E-15	2.E-06	2.E-07	2.E-10	2.E-06	
1,2,3,4,7,8-HxCDF	2.2E-05	0.03	--	1.5E+05	1.5E+05	7.7E-12	7.6E-13	8.9E-16	1.E-06	1.E-07	1.E-10	1.E-06	
1,2,3,4,6,7,8-HpCDF	4.4E-05	0.03	--	1.5E+05	1.5E+05	1.5E-11	1.5E-12	1.8E-15	2.E-06	2.E-07	3.E-10	3.E-06	
<b>Cumulative Risk</b>												<b>4.E-05</b>	

Noncarcinogens		AP = 9.1E+03 days											Total
Compound	RBCs	DAF	BAF	RfDo	RfDi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	HI <sub>ing</sub>	HI <sub>der</sub>	HI <sub>inh</sub>	HI	
<b>Inorganics</b>													
Arsenic	62.0	0.01	0.5	3.0E-04	3.0E-04	3.0E-05	2.0E-06	7.0E-09	0.1	0.0	0.0	0.1	
<b>Cumulative HI</b>												<b>0.1</b>	

BAF = Bioavailability Factor

**Table 7-2a. Calculated Risk Estimates due to Potential Soil Exposures  
On-Site Trench Worker Scenario**

Parameter	Description	Units	Value	Reference								
Dose	Dose of chemical	mg/kg-day	See below	Calculated								
HI	Hazard index	unitless	See below	Calculated								
Risk	Risk	unitless	See below	Calculated								
RBCs	Risk-based concentration in soil	mg/kg	See below	Calculated								
IRa	Adult Soil ingestion rate	mg/day	480	ODEQ, 1998								
EF	Exposure frequency	days/year	9	ODEQ, 1998								
EvD	Event frequency	event/day	2	ODEQ, 1998								
ED	Exposure duration - adult	years	1	ODEQ, 1998								
Bwa	Body weight - adult	kg	70	ODEQ, 1998								
AP	Averaging period	days	See below	Calculated								
VF	Volatilization factor	m <sup>3</sup> /kg	See below	chemical-specific								
PEF	Particulate emission factor	m <sup>3</sup> /kg	1.32E+09	USEPA, 1996a								
SSAa	Skin surface area - adult	cm <sup>2</sup>	4100	ODEQ, 1998								
DAF	Dermal absorption factor	unitless	See below	chemical-specific								
SARa	Soil adherence rate - adult	mg/cm <sup>2</sup> - ev	1	ODEQ, 1998								
InhRa	Inhalation rate - adult	m <sup>3</sup> /day	15.2	ODEQ, 1998								
CF1	Conversion factor, mg to kg	kg/mg	1.00E-06	Calculated								
RfDo	Oral reference dose	mg/kg-day	See below	chemical-specific								
RfDi	Inhalation reference dose	mg/kg-day	See below	Calculated								
CSFo	Oral cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated								
CSFi	Inhalation cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated								
<b>Carcinogens</b>												
<i>AP = 25,550 days</i>												
Compound	EPCs	DAF	BAF	CSFo	CSFi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	Risk <sub>ing</sub>	Risk <sub>der</sub>	Risk <sub>inh</sub>	Total Risk
<b>Inorganics</b>												
Arsenic	203.9	0.01	0.5	1.5E+00	1.5E+01	2.5E-07	8.4E-08	9.8E-13	3.7E-07	1.3E-07	1.5E-11	5.0E-07
<b>SVOCs</b>												
Benzo(a) anthracene	1.6	0.1	--	7.3E-01	7.3E-01	3.8E-09	6.6E-09	9.2E-14	3.E-09	5.E-09	7.E-14	8.E-09
Dibenz(a,h) anthracene	1.2	0.1	--	7.3E+00	7.3E+00	2.9E-09	5.0E-09	7.0E-14	2.E-08	4.E-08	5.E-13	6.E-08
Benzo(a) pyrene	0.8	0.1	--	7.3E+00	7.3E+00	1.9E-09	3.3E-09	4.6E-14	1.E-08	2.E-08	3.E-13	4.E-08
Benzo(b) fluoranthene	1.9	0.1	--	7.3E-01	7.3E-01	4.6E-09	7.8E-09	1.1E-13	3.E-09	6.E-09	8.E-14	9.E-09
Pentachloro-phenol (PCF)	21.7	0.25	--	1.2E-01	1.2E-01	5.2E-08	2.2E-07	1.3E-12	6.E-09	3.E-08	2.E-13	3.E-08
Indeno(1,2,3-cd) pyrene	0.7	0.1	--	7.3E-01	7.3E-01	1.8E-09	3.0E-09	4.3E-14	1.E-09	2.E-09	3.E-14	4.E-09
<b>Dioxin/Furans</b>												
1,2,3,6,7,8-HxCDD	2.5E-05	0.03	--	1.5E+05	1.5E+05	6.1E-14	3.1E-14	1.5E-18	9.E-09	5.E-09	2.E-13	1.E-08
1,2,3,4,6,7,8-HpCDD	1.4E-05	0.03	--	1.5E+05	1.5E+05	3.5E-14	1.8E-14	8.3E-19	5.E-09	3.E-09	1.E-13	8.E-09
1,2,3,4,6,7,8-HpCDF	8.8E-06	0.03	--	1.5E+05	1.5E+05	2.1E-14	1.1E-14	5.1E-19	3.E-09	2.E-09	8.E-14	5.E-09
<b>Cumulative Risk</b>												<b>7.E-07</b>
<b>Noncarcinogens</b>												
<i>AP = 3.7E+02 days</i>												
Compound	RBCs	DAF	BAF	RfDo	RfDi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	HI <sub>ing</sub>	HI <sub>der</sub>	HI <sub>inh</sub>	Total HI
<b>Inorganics</b>												
Arsenic	203.9	0.01	0.5	3.0E-04	3.0E-04	1.7E-05	5.9E-06	8.3E-10	6.E-02	2.E-02	3.E-06	8.E-02
Chromium	59.8	0.01	--	1.5E+00	--	1.0E-05	1.7E-06	2.4E-10	7.E-06	1.E-06	--	8.E-06
Iron	38806.0	0.01	--	3.0E-01	3.0E-01	6.6E-03	1.1E-03	1.6E-07	2.E-02	4.E-03	5.E-07	3.E-02
Manganese	984.3	0.01	--	2.4E-02	1.4E-05	1.7E-04	2.8E-05	4.0E-09	7.E-03	1.E-03	3.E-04	8.E-03
Copper	288.5	0.01	--	4.0E-02	--	4.9E-05	8.3E-06	1.2E-09	1.E-03	2.E-04	--	1.E-03
<b>SVOCs</b>												
Pentachlorophenol	21.7	0.25	--	3.0E-02	3.0E-02	3.7E-06	1.6E-05	8.8E-11	1.E-04	5.E-04	3.E-09	6.E-04
<b>Cumulative HI</b>												<b>0.1</b>

**Table 7-2b. Calculated Risk Estimates due to Potential Soil Exposures  
Undeveloped Area On-Site Trench Worker Scenario**

Parameter	Description	Units	Value	Reference								
Dose	Dose of chemical	mg/kg-day	See below	Calculated								
HI	Hazard index	unitless	See below	Calculated								
Risk	Risk	unitless	See below	Calculated								
EPCs	Exposure Point Concentration in soil	mg/kg	See below	Calculated								
IRa	Adult Soil ingestion rate	mg/day	480	ODEQ, 1998								
EF	Exposure frequency	days/year	9	ODEQ, 1998								
EvD	Event frequency	event/day	2	ODEQ, 1998								
ED	Exposure duration - adult	years	1	ODEQ, 1998								
Bwa	Body weight - adult	kg	70	ODEQ, 1998								
AP	Averaging period	days	See below	Calculated								
VF	Volatilization factor	m <sup>3</sup> /kg	See below	chemical-specific								
PEF	Particulate emission factor	m <sup>3</sup> /kg	1.32E+09	USEPA, 1996a								
SSAa	Skin surface area - adult	cm <sup>2</sup>	4100	ODEQ, 1998								
DAF	Dermal absorption factor	unitless	See below	chemical-specific								
SARa	Soil adherence rate - adult	mg/cm <sup>2</sup> - ev	0.08	ODEQ, 1998								
InhRa	Inhalation rate - adult	m <sup>3</sup> /day	15.2	ODEQ, 1998								
CF1	Conversion factor, mg to kg	kg/mg	1.00E-06	Calculated								
RfDo	Oral reference dose	mg/kg-day	See below	chemical-specific								
RfDi	Inhalation reference dose	mg/kg-day	See below	Calculated								
CSFo	Oral cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated								
CSFi	Inhalation cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated								
<b>Carcinogens</b>												<b>Total Risk</b>
AP = 25,550 days												
Compound	EPCs	DAF	BAF	CSFo	CSFi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	Risk <sub>ing</sub>	Risk <sub>der</sub>	Risk <sub>inh</sub>	Total Risk
<b>Inorganics</b>												
Arsenic	61.9	0.03	0.5	1.5E+00	1.5E+01	7.5E-08	6.1E-09	3.6E-12	1.E-07	9.E-09	5.E-11	1.E-07
<b>SVOCs</b>												
Benzo(a) pyrene	0.41	0.13	--	7.3E+00	7.3E+00	9.8E-10	1.7E-10	2.4E-14	7.E-09	1.E-09	2.E-13	8.E-09
<b>Dioxin/Furans</b>												
1,2,3,7,8-PeCDD	4.0E-05	0.03		1.5E+05	1.5E+05	9.7E-14	4.0E-15	2.3E-18	1.E-08	6.E-10	3.E-13	2.E-08
1,2,3,6,7,8-HxCDD	6.8E-05	0.03		1.5E+05	1.5E+05	1.6E-13	6.7E-15	3.9E-18	2.E-08	1.E-09	6.E-13	3.E-08
1,2,3,7,8,9-HxCDD	2.7E-05	0.03		1.5E+05	1.5E+05	6.5E-14	2.7E-15	1.6E-18	1.E-08	4.E-10	2.E-13	1.E-08
1,2,3,4,6,7,8-HpCDD	1.6E-04	0.03		1.5E+05	1.5E+05	3.9E-13	1.6E-14	9.3E-18	6.E-08	2.E-09	1.E-12	6.E-08
OCDD	2.1E-05	0.03		1.5E+05	1.5E+05	5.1E-14	2.1E-15	1.2E-18	8.E-09	3.E-10	2.E-13	8.E-09
2,3,4,7,8-PeCDF	3.7E-05	0.03		1.5E+05	1.5E+05	8.9E-14	3.7E-15	2.1E-18	1.E-08	5.E-10	3.E-13	1.E-08
1,2,3,4,7,8-HxCDF	2.2E-05	0.03		1.5E+05	1.5E+05	5.3E-14	2.2E-15	1.3E-18	8.E-09	3.E-10	2.E-13	8.E-09
1,2,3,4,6,7,8-HpCDF	4.4E-05	0.03		1.5E+05	1.5E+05	1.1E-13	4.4E-15	2.5E-18	2.E-08	7.E-10	4.E-13	2.E-08
<b>Cumulative Risk</b>												<b>3.E-07</b>
<b>Noncarcinogens</b>												
AP = 3.7E+02 days												
Compound	RBCs	DAF	BAF	RfDo	RfDi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	HI <sub>ing</sub>	HI <sub>der</sub>	HI <sub>inh</sub>	Total HI
<b>Inorganics</b>												
Arsenic	61.9	0.03	0.5	3.0E-04	3.0E-04	5.2E-06	4.3E-07	2.5E-10	1.7E-02	1.4E-03	8.4E-07	1.9E-02
<b>Cumulative HI</b>												<b>0.02</b>

BAF = Bioavailability Factor

**Table 7-3a. Calculated Risk Estimates due to Potential Groundwater Exposures  
On-Site Trench Worker Scenario**

Parameter	Description	Units	Value	Reference
Dose	Dose of chemical	mg/kg-day	See below	Calculated
HI	Hazard index	unitless	See below	Calculated
Risk	Risk	unitless	See below	Calculated
RBCw	Chemical concentration in water	mg/L	See below	Calculated
EFhd	Lag time	hr/event	2	ODEQ, 1998
InhRa	Inhalation Rate, adult	m <sup>3</sup> /day	15.2	ODEQ, 1998
IngRa	Adult Trenchworker's Water ingestion rate	L/day	0.05	ODEQ, 1998
EF	Exposure frequency	days/year	9	Site-specific
EvD	Event frequency	event/day	2	ODEQ, 1998
ED	Exposure duration - adult	years	1	ODEQ, 1998
Bwa	Body weight - adult	kg	70	ODEQ, 1998
AP	Averaging period	days	See below	Calculated
VF	Volatilization factor	m <sup>3</sup> /kg	See below	chemical-specific
SSAa	Skin surface area - adult	cm <sup>2</sup>	4,100	ODEQ, 1998
DAwater	Dermal Absorption dose	mg/cm <sup>2</sup> -event	See below	chemical-specific
VF	Volatilization factor	L/m <sup>3</sup>	0.5	default (EPA, 1998)
CFhd	Conversion factor	hr/day	24	ODEQ, 1998
CF1	Conversion factor, L to cm <sup>3</sup>	L/cm <sup>3</sup>	1.00E-03	Calculated
RfDo	Oral reference dose	mg/kg-day	See below	Calculated
RfDi	Inhalation reference dose	mg/kg-day	See below	Calculated
CSFo	Oral cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated
CSFi	Inhalation cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated

DERMAL EXPOSURE PARAM					DAevent		selected	RAIS, 1/06	VDEQ	DA guidance
Chemical	Kp (cm/hr)	B (unitless)	tao (unitless)	t* (hour)	ET < t*	ET > t*	DAevent (mg/cm2-ev)			
Arsenic	0.001									
Benzene	0.021	0.01	0.26	0.63	6.57E-07	8.27E-07	8.27E-07			0.021
Benzo(a)anthracene	0.81	46.00	2.20	10.00	1.15E-05	2.58E-05	1.15E-05			0.81
Dibenz(a,h) anthracene	2.700	690.00	4.40	21.00	2.83E-05	9.12E-02	2.83E-05			2.7
Benzo(a)pyrene	1.200	130.00	2.90	14.00	1.06E-05	2.77E-02	1.06E-05			1.2
Benzo(b)fluoranthene	1.200	130.00	3.00	14.00	9.10E-06	2.41E-02	9.10E-06			1.2
Benzo(k)fluoranthene	1.200	130.00	3.00	14.00	4.94E-06	1.31E-02	4.94E-06			
Carbazole	0.0797	0.26	0.91	2.18	1.65E-05	1.84E-02	1.65E-05			
Pentachloro-phenol	0.65	72.00	3.70	17.00	6.14E-03	1.80E+01	6.14E-03			0.65
Indeno(1,2,3-cd) pyrene	1.900	380.00	4.20	20.00	7.84E-06	2.46E-02	7.84E-06			1.9
2,4,6-Trichloro-phenol	0.060	0.49	1.40	9.20	3.22E-06	4.16E-03	3.22E-06			0.059
2,3,7,8-TCDD	1.4	630.00	8.10	38.00	3.51E-11	1.53E-07	3.51E-11			1.4
1,2,3,7,8-PeCDD	1.4	630.00	8.10	38.00	5.23E-11	2.28E-07	5.23E-11			
1,2,3,6,7,8-HxCDD	1.4	630.00	8.10	38.00	1.53E-11	6.66E-08	1.53E-11			
1,2,3,4,6,7,8-HpCDD (B-23)	1.4	630.00	8.10	38.00	1.71E-11	7.48E-08	1.71E-11			
2,3,4,7,8-PeCDF	1.4	630.00	8.10	38.00	1.31E-11	5.74E-08	1.31E-11			
1,2,3,4,6,7,8-HpCDF	1.4	630.00	8.10	38.00	1.26E-11	5.51E-08	1.26E-11			
Iron	0.001									
Manganese	0.001									
Acenaphthene	0.133	4.01E-01	0.77	1.84	2.82E-05	3.16E-02	2.82E-05			
Acenaphthylene	0.141	5.13E-01	0.75	1.79	1.51E-04	1.72E-01	1.51E-04			
Chrysene	0.810	46.00	2.20	10.00	1.50E-05	3.37E-05	1.50E-05			0.81
Fluorene	0.171	0.53	0.90	2.15	9.95E-06	1.17E-02	9.95E-06			
Naphthalene	0.069	0.20	0.53	2.20	1.76E-04	1.90E-01	1.76E-04			0.069
4,6-Dinitro-2-methyl-phenol	0.0381	0.02	1.35	3.24	7.68E-05	8.05E-02	7.68E-05			
Ethylbenzene	0.074	0.14	0.39	1.30	1.76E-05	1.96E-02	1.76E-05			0.074

**Table 7-3a. Calculated Risk Estimates due to Potential Groundwater Exposures  
On-Site Trench Worker Scenario**

25,550 days											Total Risk
Carcinogens Compound	RBCw	DAwater	CSFo	CSFi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	Risk <sub>ing</sub>	Risk <sub>der</sub>	Risk <sub>inh</sub>	
<b>Inorganics</b>											
Arsenic	3.1E-02	6.12E-08	1.5E+00	1.5E+01	7.7E-09	2.5E-09	--	1.E-08	4.E-09	--	2.E-08
<b>SVOCs</b>											
Benzo(a) anthracene	2.4E-03	1.15E-05	7.3E-01	7.3E-01	6.1E-10	4.7E-07	--	4.E-10	3.E-07	--	3.E-07
Dibenz(a,h) anthracene	1.3E-03	2.83E-05	7.3E+00	7.3E+00	3.2E-10	1.2E-06	--	2.E-09	9.E-06	--	9.E-06
Benzo(a) pyrene	1.3E-03	1.06E-05	7.3E+00	7.3E+00	3.3E-10	4.4E-07	--	2.E-09	3.E-06	--	3.E-06
Benzo(b) fluoranthene	1.1E-03	9.10E-06	7.3E-01	7.3E-01	2.8E-10	3.8E-07	--	2.E-10	3.E-07	--	3.E-07
Benzo(k) fluoranthene	6.1E-04	4.94E-06	7.3E-02	7.3E-02	1.5E-10	2.0E-07	--	1.E-11	1.E-08	--	1.E-08
Chrysene	3.2E-03	1.50E-05	7.3E-03	7.3E-03	8.0E-10	6.2E-07	--	6.E-12	5.E-09	--	5.E-09
Naphthalene	8.9E-01	1.76E-04	1.2E-01	1.2E-01	2.2E-07	7.2E-06	--	3.E-08	9.E-07	--	9.E-07
Carbazole	5.6E-02	1.65E-05	2.0E-02	2.0E-02	1.4E-08	6.8E-07	--	3.E-10	1.E-08	--	1.E-08
Pentachloro-phenol	1.3E+00	6.14E-03	1.2E-01	1.2E-01	3.2E-07	2.5E-04	--	4.E-08	3.E-05	--	3.E-05
Indeno(1,2,3-cd) pyrene	5.2E-04	7.84E-06	7.3E-01	7.3E-01	1.3E-10	3.2E-07	--	9.E-11	2.E-07	--	2.E-07
2,4,6-Trichloro-phenol	1.2E-02	3.22E-06	1.1E-02	1.1E-02	2.9E-09	2.7E-07	--	3.E-11	3.E-09	--	3.E-09
<b>VOCs</b>											
Benzene	1.6E-02	1.15E-05	5.5E-02	2.7E-02	4.0E-09	3.4E-08	--	2.E-10	2.E-09	--	2.E-09
<b>Dioxin/Furans</b>											
2,3,7,8-TCDD	2.3E-09	3.51E-11	1.50E+05	1.50E+05	5.7E-16	1.4E-12	--	9.E-11	2.E-07	--	2.E-07
1,2,3,7,8-PeCDD	3.4E-09	5.23E-11	1.50E+05	1.50E+05	8.4E-16	2.2E-12	--	1.E-10	3.E-07	--	3.E-07
1,2,3,6,7,8-HxCDD	9.8E-10	1.53E-11	1.50E+05	1.50E+05	2.5E-16	6.3E-13	--	4.E-11	9.E-08	--	9.E-08
1,2,3,4,6,7,8-HpCDD (B-23)	1.1E-09	1.71E-11	1.50E+05	1.50E+05	2.8E-16	7.1E-13	--	4.E-11	1.E-07	--	1.E-07
2,3,4,7,8-PeCDF	8.4E-10	1.31E-11	1.50E+05	1.50E+05	2.1E-16	5.4E-13	--	3.E-11	8.E-08	--	8.E-08
1,2,3,4,6,7,8-HpCDF	8.1E-10	1.26E-11	1.50E+05	1.50E+05	2.0E-16	5.2E-13	--	3.E-11	8.E-08	--	8.E-08
<b>Cumulative Risk</b>										<b>4.E-05</b>	
3.7E+02 days											Total HI
Noncarcinogens Compound	Cw	DAwater	RfDo	RfDi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	HI <sub>ing</sub>	HI <sub>der</sub>	HI <sub>inh</sub>	
<b>Inorganics</b>											
Arsenic	3.1E-02	6.12E-08	3.0E-04	3.0E-04	5.4E-07	1.8E-07	--	1.8E-03	5.9E-04	--	2.4E-03
Iron	9.7E+00	1.94E-05	3.0E-01	3.0E-01	1.7E-04	5.6E-05	--	5.7E-04	1.9E-04	--	7.6E-04
Manganese	5.6E+00	1.12E-05	2.4E+02	1.4E-05	9.9E-05	3.2E-05	--	4.1E-07	1.4E-07	--	5.5E-07
<b>SVOCs</b>											
Acenaphthene	6.2E-02	2.82E-05	6.0E-02	6.0E-02	1.1E-06	8.1E-05	--	1.8E-05	1.4E-03	--	1.4E-03
Acenaphthylene	3.2E-01	1.51E-04	6.0E-02	6.0E-02	5.6E-06	4.4E-04	--	9.3E-05	7.3E-03	--	7.4E-03
Fluorene	1.6E-02	9.95E-06	4.0E-02	4.0E-02	2.8E-07	2.9E-05	--	6.9E-06	7.2E-04	--	7.3E-04
Naphthalene	8.9E-01	1.76E-04	2.0E-02	8.6E-04	1.6E-05	5.1E-04	--	7.8E-04	2.5E-02	--	2.6E-02
Pentachlorophenol	1.3E+00	6.14E-03	3.0E-02	3.0E-02	2.2E-05	1.8E-02	--	7.4E-04	5.9E-01	--	5.9E-01
2,4,6-Trichloro-phenol	1.2E-02	3.22E-06	1.0E-04	1.0E-04	2.0E-07	2.3E-05	--	2.0E-03	2.3E-01	--	2.3E-01
<b>VOCs</b>											
Benzene	1.6E-02	1.15E-05	4.0E-03	8.6E-03	2.8E-07	2.4E-06	--	6.9E-05	6.0E-04	0.0E+00	6.7E-04
Ethylbenzene	9.8E-02	1.76E-05	1.0E-01	2.9E-01	1.7E-06	5.1E-05	--	1.7E-05	5.1E-04	0.0E+00	5.3E-04
<b>Cumulative Hazai</b>										<b>0.6</b>	

**Table 7-3b. Calculated Risk Estimates due to Potential Groundwater Exposures via Inhalation  
On-Site Trench Worker Scenario**

Parameter	Description	Units	Value	Reference
Dose	Dose of chemical	mg/kg-day	See below	Calculated
HI	Hazard index	unitless	See below	Calculated
Risk	Risk	unitless	See below	Calculated
RBCw	Chemical concentration in water	mg/L	See below	Calculated
EFhd	Lag time	hr/event	2	ODEQ, 1998
InhRa	Inhalation Rate, adult	m <sup>3</sup> /day	15.2	ODEQ, 1998
IngRa	Adult Trenchworker Water ingestion rate	L/day	0.05	ODEQ, 1998
EF	Exposure frequency	days/year	9	Site-specific
EvD	Event frequency	event/day	2	ODEQ, 1998
ED	Exposure duration - adult	years	1	ODEQ, 1998
Bwa	Body weight - adult	kg	70	ODEQ, 1998
AP	Averaging period	days	See below	Calculated
VF	Volatilization factor	m <sup>3</sup> /kg	See below	chemical-specific
SSAa	Skin surface area - adult	cm <sup>2</sup>	4,100	ODEQ, 1998
DAwater	Dermal Absorption dose	mg/cm <sup>2</sup> -event	See below	chemical-specific
VF	Volatilization factor	L/m <sup>3</sup>	0.5	default (EPA, 1998)
CFhd	Conversion factor	hr/day	24	ODEQ, 1998
CF1	Conversion factor, L to cm <sup>3</sup>	L/cm <sup>3</sup>	1.00E-03	Calculated
RfDo	Oral reference dose	mg/kg-day	See below	Calculated
RfDi	Inhalation reference dose	mg/kg-day	See below	Calculated
CSFo	Oral cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated
CSFi	Inhalation cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated

Carcinogens											Total
25,550 days											Risk
Compound	RBCw	DAwater	CSFo	CSFi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	Risk <sub>ing</sub>	Risk <sub>der</sub>	Risk <sub>inh</sub>	
<b>SVOCs</b>											
Naphthalene	8.9E-01	1.76E-04	1.2E-01	1.2E-01	--	--	2.8E-06	--	--	3.E-07	3.E-07
<b>VOCs</b>											
Benzene	1.6E-02	1.15E-05	5.5E-02	2.7E-02	--	--	5.0E-08	--	--	1.E-09	1.E-09
<b>Cumulative Risk</b>											<b>3.E-07</b>

Noncarcinogens											Total
3.7E+02 days											HI
Compound	Cw	DAwater	RfDo	RfDi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	HI <sub>ing</sub>	HI <sub>der</sub>	HI <sub>inh</sub>	
<b>SVOCs</b>											
Naphthalene	8.9E-01	1.76E-04	2.0E-02	8.6E-04			4.2E-03	--	--		0.0E+00
<b>VOCs</b>											
Benzene	1.6E-02	1.15E-05	4.0E-03	8.6E-03			1.0E-04	--	--	1.2E-02	1.2E-02
Ethylbenzene	9.8E-02	1.76E-05	1.0E-01	2.9E-01			5.6E-04	--	--	1.9E-03	1.9E-03
<b>Cumulative Hazard Index</b>											<b>0.01</b>

**Table 7-4. Calculated Risk Estimates due to Potential Soil Exposures  
Current Off-Site Residential Scenario**

Parameter	Description	Units	Value	Reference								
Dose	Dose of chemical	mg/kg-day	See below	Calculated								
HI	Hazard index	unitless	See below	Calculated								
Risk	Risk	unitless	See below	Calculated								
RBCs	Risk-based concentration in soil	mg/kg	See below	Calculated								
IRar	Adult Residents's Soil ingestion rate	mg/day	100	ODEQ, 1998								
IRc	Child Soil ingestion rate	mg/day	400	ODEQ, 1998								
EF	Exposure frequency	days/year	350	ODEQ, 1998								
EvD	Event frequency	event/day	1	ODEQ, 1998								
ED	Exposure duration - adult	years	30	ODEQ, 1998								
EDc	Exposure duration - child	years	6	ODEQ, 1998								
Bwa	Body weight - adult	kg	70	chemical-specific								
BWc	Body weight - child	kg	15	ODEQ, 1998								
AP	Averaging period	days	See below	Calculated								
VF	Volatilization factor	m <sup>3</sup> /kg	See below	chemical-specific								
PEF	Particulate emission factor	m <sup>3</sup> /kg	1.32E+09	USEPA, 1996a								
SSAa	Skin surface area - adult	cm <sup>2</sup>	6900	ODEQ, 1998								
SSAc	Skin surface area - child	cm <sup>2</sup>	5000	ODEQ, 1998								
DAF	Dermal absorption factor	unitless	See below	chemical-specific								
SARa	Soil adherence rate - adult	mg/cm <sup>2</sup> - ev	0.08	ODEQ, 1998								
SARc	Soil adherence rate - child	mg/cm <sup>2</sup> - ev	1	ODEQ, 1998								
InhRa	Inhalation rate - adult	m <sup>3</sup> /day	15.2	ODEQ, 1998								
InhRc	Inhalation rate - child	m <sup>3</sup> /day	8.3	ODEQ, 1998								
CF1	Conversion factor, mg to kg	kg/mg	1.00E-06	Calculated								
RfDo	Oral reference dose	mg/kg-day	See below	Calculated								
RfDi	Inhalation reference dose	mg/kg-day	See below	Calculated								
CSFo	Oral cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated								
CSFi	Inhalation cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated								
<b>Carcinogens</b>												
<i>AP = 25,550 days</i>												
Compound	EPCs	DAF	BAF	CSFo	CSFi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	Risk <sub>ing</sub>	Risk <sub>der</sub>	Risk <sub>inh</sub>	Total Risk
<b>Inorganics</b>												
Arsenic	5.0	0.03	5.0E-01	1.5E+00	1.5E+01	1.2E-05	4.5E-06	4.5E-10	2.E-05	7.E-06	7.E-09	3.E-05
<b>SVOCs</b>												
Benzo(a) pyrene	0.03	0.13	--	7.3E+00	7.3E+00	7.7E-08	1.1E-07	2.6E-12	6.E-07	8.E-07	2.E-11	1.E-06
<b>Dioxin/Furans</b>												
1,2,3,4,6,7,8-HpCDD (SS-4)	3.3E-06	0.03	#####	#####	#####	8.9E-12	3.0E-12	3.0E-16	1.E-06	4.E-07	4.E-11	2.E-06
<b>Cumulative Risk</b>												<b>3.E-05</b>
<b>Noncarcinogens</b>												
<i>AP = 2,190 days</i>												
Compound	RBCs	DAF	BAF	RfDo	RfDi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	HI <sub>ing</sub>	HI <sub>der</sub>	HI <sub>inh</sub>	Total HI
<b>Inorganics</b>												
Iron	30091	0.01		3.00E-01	3.00E-01	7.7E-01	9.6E-02	1.2E-05	2.6E+00	3.2E-01	4.0E-05	2.9E+00
<b>Cumulative HI</b>												<b>2.9</b>

BAF = Bioavailability Factor

**Table 7-5. Calculated Risk Estimates due to Potential Groundwater Exposures  
Incidental Ingestion and Dermal Contact during Irrigation  
Current Off-Site Residential Scenario**

Parameter	Description	Units	Value	Reference
Dose	Dose of chemical	mg/kg-day	See below	Calculated
HI	Hazard index	unitless	See below	Calculated
Risk	Risk	unitless	See below	Calculated
EPCw	Chemical concentration in water	mg/L	See below	Calculated
Et	hour per event	hr/event	2	ODEQ (verbal)
IRar	Adult Residents's Water ingestion rate	L/day	0.05	ODEQ, 1998
IRc	Child Water ingestion rate	L/day	0.05	ODEQ, 1998
EF	Exposure frequency	days/year	60	Site-specific
EvD	Event frequency	event/day	1	ODEQ, 1998
ED	Exposure duration - adult	years	30	ODEQ, 1998
EDc	Exposure duration - child	years	6	ODEQ, 1998
Bwa	Body weight - adult	kg	70	ODEQ, 1998
BWc	Body weight - child	kg	15	ODEQ, 1998
AP	Averaging period	days	See below	Calculated
VF	Volatilization factor	m <sup>3</sup> /kg	See below	chemical-specific
SSA	Skin surface area - adult's hands	cm <sup>2</sup>	1,840	ODEQ, 1998
SSAc	Skin surface area - child	cm <sup>2</sup>	6,600	ODEQ, 1998
DAwater	Dermal Absorption dose	mg/cm <sup>2</sup> -event	See below	chemical-specific
CF1	Conversion factor, L to cm <sup>3</sup>	L/cm <sup>3</sup>	1.00E-03	Calculated
RfDo	Oral reference dose	mg/kg-day	See below	Calculated
RfDi	Inhalation reference dose	mg/kg-day	See below	Calculated
CSFo	Oral cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated
CSFi	Inhalation cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated

DERMAL EXPOSURE PA					DAevent		selected
Chemical	Kp	B	tao	t*	ET < t*	ET > t*	DAevent
	(cm/hr)	(unitless)	(unitless)	(hour)			(mg/cm <sup>2</sup> -ev)
Copper	0.001						

Noncarcinogens											Total HI
Compound	Cw		RfDo	RfDi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	HI <sub>ing</sub>	HI <sub>der</sub>	HI <sub>inh</sub>	
<i>2,190 days</i>											
<b>Inorganics</b>											
Copper	9.0E-02		4.00E-02	4.00E-02	4.9E-05	1.3E-05	--	1.2E-03	3.3E-04	--	<b>0.002</b>
<b>Cumulative Hazard Index</b>											<b>0.002</b>



**Table 7-6. Calculated Risk Estimates due to Residential Swimming Exposures  
Off-Site Current Residential Scenario**

Parameter	Description	Units	Value	Reference
Dose	Dose of chemical	mg/kg-day	See below	Calculated
HI	Hazard index	unitless	See below	Calculated
Risk	Risk	unitless	See below	Calculated
EPCw	Chemical concentration in water	mg/L	See below	Calculated
Et	hour per event	hr/event	2	ODEQ (verbal)
IRar	Adult Resident's Water ingestion rate	L/day	0.05	ODEQ, 1998
IRc	Child Water ingestion rate	L/day	0.05	ODEQ, 1998
EF	Exposure frequency	days/year	60	Site-specific
EvD	Event frequency	event/day	1	ODEQ, 1998
ED	Exposure duration - adult	years	30	ODEQ, 1998
EDc	Exposure duration - child	years	6	ODEQ, 1998
Bwa	Body weight - adult	kg	70	ODEQ, 1998
BWc	Body weight - child	kg	15	ODEQ, 1998
AP	Averaging period	days	See below	Calculated
VF	Volatilization factor	m <sup>3</sup> /kg	See below	chemical-specific
SSA	Skin surface area - adult's hands	cm <sup>2</sup>	22,000	ODEQ, 1998
SSAc	Skin surface area - child	cm <sup>2</sup>	7,300	ODEQ, 1998
DAwater	Dermal Absorption dose	mg/cm <sup>2</sup> -event	See below	chemical-specific
CF1	Conversion factor, L to cm <sup>3</sup>	L/cm <sup>3</sup>	1.00E-03	Calculated
RfDo	Oral reference dose	mg/kg-day	See below	Calculated
RfDi	Inhalation reference dose	mg/kg-day	See below	Calculated
CSFo	Oral cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated
CSFi	Inhalation cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated

DERMAL EXPOSURE PA				DAevent		selected
Chemical	Kp (cm/hr)	B (unitless)	tao (unitless)	t* (hour)	ET < t*	ET > t*
Copper	0.001					

Noncarcinogens											Total HI
Compound	Cw	RfDo	RfDi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	HI <sub>ing</sub>	HI <sub>der</sub>	HI <sub>inh</sub>	2,190 days	
<b>Inorganics</b>											
Copper	9.0E-02	4.00E-02	4.00E-02	4.9E-05	1.4E-05	--	1.2E-03	3.6E-04	--		0.002
<b>Cumulative Hazard Index</b>											<b>0.002</b>

**Table 7-7. Calculated Risk Estimates due to Potential Groundwater Exposures  
Incidental Ingestion and Dermal Contact during Irrigation  
Future Off-Site Residential Scenario**

Parameter	Description	Units	Value	Reference
Dose	Dose of chemical	mg/kg-day	See below	Calculated
HI	Hazard index	unitless	See below	Calculated
Risk	Risk	unitless	See below	Calculated
EPCw	Chemical concentration in water	mg/L	See below	Calculated
Et	hour per event	hr/event	1	ODEQ (verbal)
IRar	Adult Residents's Water ingestion rate	L/day	0.05	ODEQ, 1998
IRc	Child Water ingestion rate	L/day	0.05	ODEQ, 1998
EF	Exposure frequency	days/year	60	Site-specific
EvD	Event frequency	event/day	1	ODEQ, 1998
ED	Exposure duration - adult	years	30	ODEQ, 1998
EDc	Exposure duration - child	years	6	ODEQ, 1998
Bwa	Body weight - adult	kg	70	ODEQ, 1998
BWc	Body weight - child	kg	15	ODEQ, 1998
AP	Averaging period	days	See below	Calculated
VF	Volatilization factor	m <sup>3</sup> /kg	See below	chemical-specific
SSA	Skin surface area - adult's hands	cm <sup>2</sup>	1,840	ODEQ, 1998
SSAc	Skin surface area - child	cm <sup>2</sup>	6,600	ODEQ, 1998
DAwater	Dermal Absorption dose	mg/cm <sup>2</sup> -event	See below	chemical-specific
CF1	Conversion factor, L to cm3	L/cm3	1.00E-03	Calculated
RfDo	Oral reference dose	mg/kg-day	See below	Calculated
RfDi	Inhalation reference dose	mg/kg-day	See below	Calculated
CSFo	Oral cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated
CSFi	Inhalation cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated

Chemical	DERMAL EXPOSURE PA				DAevent		selected DAevent (mg/cm2-ev)	DA guidance
	Kp (cm/hr)	B (unitless)	tao (unitless)	t* (hour)	ET < t*	ET > t*		
Arsenic	0.001							
Benzo(a)anthracene	0.948	46.00	2.20	10.00	3.26E-09	1.04E-08	3.26E-09	0.81
Dibenzo(a,h) anthracene	1.680	690.00	4.40	21.00	3.02E-09	1.37E-05	3.02E-09	2.7
Benzo(a)pyrene	1.240	130.00	2.90	14.00	4.32E-09	1.59E-05	4.32E-09	1.2
Benzo(b)fluoranthene	0.699	130.00	3.00	14.00	1.31E-09	4.88E-06	1.31E-09	1.2
Pentachloro-phenol	0.65	72.00	3.70	17.00	1.85E-04	7.66E-01	1.85E-04	0.65
Indeno(1,2,3-cd) pyrene	2.230	380.00	4.20	20.00	7.71E-06	3.42E-02	7.71E-06	1.9
2,3,7,8-TCDD TEQ (WHO)	1.4	630.00	8.10	38.00	3.85E-11	2.38E-07	3.85E-11	1.4
1,2,3,7,8-PeCDD	1.4	630.00	8.10	38.00	1.06E-10	6.53E-07	1.06E-10	
1,2,3,4,7,8-HxCDD	1.4	630.00	8.10	38.00	1.38E-11	8.50E-08	1.38E-11	
1,2,3,6,7,8-HxCDD	1.4	630.00	8.10	38.00	1.59E-11	9.79E-08	1.59E-11	
1,2,3,7,8,9-HxCDD	1.4	630.00	8.10	38.00	1.67E-11	1.03E-07	1.67E-11	
1,2,3,4,6,7,8-HpCDD	1.4	630.00	8.10	38.00	1.21E-11	7.48E-08	1.21E-11	
1,2,3,7,8-PeCDF	1.4	630.00	8.10	38.00	7.60E-11	4.69E-07	7.60E-11	
2,3,4,7,8-PeCDF	1.4	630.00	8.10	38.00	7.60E-11	4.69E-07	7.60E-11	
1,2,3,4,7,8-HxCDF	1.4	630.00	8.10	38.00	1.49E-11	9.18E-08	1.49E-11	
1,2,3,6,7,8-HxCDF	1.4	630.00	8.10	38.00	1.34E-11	8.29E-08	1.34E-11	
1,2,3,7,8,9-HxCDF	1.4	630.00	8.10	38.00	1.52E-11	9.38E-08	1.52E-11	
2,3,4,6,7,8-HxCDF	1.4	630.00	8.10	38.00	1.55E-11	9.58E-08	1.55E-11	
1,2,3,4,6,7,8-HpCDF	1.4	630.00	8.10	38.00	1.95E-12	1.20E-08	1.95E-12	
Iron	0.001							
Manganese	0.001							
Acenaphthene	0.133	4.01E-01	0.77	1.84	1.99E-08	2.57E-05	1.99E-08	
Acenaphthylene	0.141	5.13E-01	0.75	1.79	1.07E-07	1.42E-04	1.07E-07	
Chrysene	1.030	46.00	2.20	10.00	1.35E-08	4.28E-05	1.35E-08	0.81
Fluorene	0.171	0.53	0.90	2.15	7.04E-09	9.91E-06	7.04E-09	
Naphthalene	0.069	0.20	0.53	2.20	1.45E-07	1.62E-04	1.45E-07	0.069

**Table 7-7. Calculated Risk Estimates due to Potential Groundwater Exposures  
Incidental Ingestion and Dermal Contact during Irrigation  
Future Off-Site Residential Scenario**

25,550 days											Total Risk
Compound	EPCw	DAwater	CSFo	CSFi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	Risk <sub>ing</sub>	Risk <sub>der</sub>	Risk <sub>inh</sub>	
<b>Carcinogens</b>											
<b>Inorganics</b>											
Arsenic	7.3E-03		1.50E+00	1.50E+01	6.3E-07	5.6E-08	--	9.51E-07	8.4E-08	--	1.0E-06
<b>SVOCs</b>											
Benzo(a) anthracene	8.4E-04	3.26E-09	7.30E-01	7.30E-01	7.3E-08	2.5E-08	--	5.35E-08	1.8E-08	--	7.2E-08
Dibenz(a,h) anthracene	3.1E-04	3.02E-09	7.30E+00	7.30E+00	2.7E-08	2.3E-08	--	1.97E-07	1.7E-07	--	3.7E-07
Benzo(a) pyrene	7.4E-04	4.32E-09	7.30E+00	7.30E+00	6.5E-08	3.3E-08	--	4.71E-07	2.4E-07	--	7.1E-07
Benzo(b) fluoranthene	3.9E-04	1.31E-09	7.30E-01	7.30E-01	3.4E-08	1.0E-08	--	2.48E-08	7.3E-09	--	3.2E-08
Pentachloro-phenol	5.4E-02	1.85E-04	1.20E-01	1.20E-01	4.7E-06	1.4E-03	--	5.60E-07	1.7E-04	--	1.7E-04
Indeno(1,2,3-cd) pyrene	0.00061	7.71E-06	7.30E-01	7.30E-01	5.3E-08	5.9E-05	--	3.88E-08	4.3E-05	--	4.3E-05
Naphthalene	1.0E-03	1.45E-07	1.20E-01	1.20E-01	9.1E-08	1.1E-06	--	1.09E-08	1.3E-07	--	1.4E-07
<b>Dioxin/Furans</b>											
2,3,7,8-TCDD	3.5E-09	3.85E-11	1.50E+05	1.50E+05	3.1E-13	3.0E-10	--	4.58E-08	4.4E-05	--	4.4E-05
1,2,3,7,8-PeCDD	9.6E-09	1.06E-10	1.50E+05	1.50E+05	8.4E-13	8.1E-10	--	1.26E-07	1.2E-04	--	1.2E-04
1,2,3,4,7,8-HxCDD	1.3E-09	1.38E-11	1.50E+05	1.50E+05	1.1E-13	1.1E-10	--	1.64E-08	1.6E-05	--	1.6E-05
1,2,3,6,7,8-HxCDD	1.4E-09	1.59E-11	1.50E+05	1.50E+05	1.3E-13	1.2E-10	--	1.88E-08	1.8E-05	--	1.8E-05
1,2,3,7,8,9-HxCDD	1.5E-09	1.67E-11	1.50E+05	1.50E+05	1.3E-13	1.3E-10	--	1.99E-08	1.9E-05	--	1.9E-05
1,2,3,4,6,7,8-HpCDD	1.1E-09	1.21E-11	1.50E+05	1.50E+05	9.6E-14	9.3E-11	--	1.44E-08	1.4E-05	--	1.4E-05
1,2,3,7,8-PeCDF	6.9E-09	7.60E-11	1.50E+05	1.50E+05	6.0E-13	5.8E-10	--	9.03E-08	8.8E-05	--	8.8E-05
2,3,4,7,8-PeCDF	6.9E-09	7.60E-11	1.50E+05	1.50E+05	6.0E-13	5.8E-10	--	9.03E-08	8.8E-05	--	8.8E-05
1,2,3,4,7,8-HxCDF	1.4E-09	1.49E-11	1.50E+05	1.50E+05	1.2E-13	1.1E-10	--	1.77E-08	1.7E-05	--	1.7E-05
1,2,3,6,7,8-HxCDF	1.2E-09	1.34E-11	1.50E+05	1.50E+05	1.1E-13	1.0E-10	--	1.60E-08	1.5E-05	--	1.5E-05
1,2,3,7,8,9-HxCDF	1.4E-09	1.52E-11	1.50E+05	1.50E+05	1.2E-13	1.2E-10	--	1.81E-08	1.8E-05	--	1.8E-05
2,3,4,6,7,8-HxCDF	1.4E-09	1.55E-11	1.50E+05	1.50E+05	1.2E-13	1.2E-10	--	1.84E-08	1.8E-05	--	1.8E-05
1,2,3,4,6,7,8-HpCDF	1.8E-10	1.95E-12	1.50E+05	1.50E+05	1.5E-14	1.5E-11	--	2.32E-09	2.2E-06	--	2.2E-06
<b>Cumulative Risk</b>											<b>7.0E-04</b>
2,190 days											
Compound	Cw	DAwater	RfDo	RfDi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	HI <sub>ing</sub>	HI <sub>der</sub>	HI <sub>inh</sub>	Total HI
<b>Noncarcinogens</b>											
<b>Inorganics</b>											
Arsenic	7.3E-03		3.00E-04	3.00E-04	4.0E-06	5.3E-07	--	1.3E-02	1.8E-03	--	1.5E-02
<b>SVOCs</b>											
Naphthalene	1.0E-03	1.45E-07	2.00E-02	8.60E-04	5.7E-07	1.1E-05	--	3.E-05	5.E-04	--	6.E-04
Pentachlorophenol	5.4E-02	1.85E-04	3.00E-02	3.00E-02	2.9E-05	1.3E-02	--	1.E-03	4.E-01	--	4.E-01
<b>Cumulative Hazard Index</b>											<b>0.5</b>

**Table 7-8. Calculated Risk Estimates due to Potential Groundwater Exposures  
Incidental Ingestion and Dermal Contact during Swimming  
Future Off-Site Residential Scenario**

Parameter	Description	Units	Value	Reference
Dose	Dose of chemical	mg/kg-day	See below	Calculated
HI	Hazard index	unitless	See below	Calculated
Risk	Risk	unitless	See below	Calculated
EPCw	Chemical concentration in water	mg/L	See below	Calculated
Et	hour per event	hr/event	1	ODEQ (verbal)
IRar	Adult Residents's Water ingestion rate	L/day	0.05	ODEQ, 1998
IRc	Child Water ingestion rate	L/day	0.05	ODEQ, 1998
EF	Exposure frequency	days/year	60	Site-specific
EvD	Event frequency	event/day	1	ODEQ, 1998
ED	Exposure duration - adult	years	30	ODEQ, 1998
EDc	Exposure duration - child	years	6	ODEQ, 1998
Bwa	Body weight - adult	kg	70	ODEQ, 1998
BWc	Body weight - child	kg	15	ODEQ, 1998
AP	Averaging period	days	See below	Calculated
VF	Volatilization factor	m <sup>3</sup> /kg	See below	chemical-specific
SSA	Skin surface area - adult's hands	cm <sup>2</sup>	22,000	ODEQ, 1998
SSAc	Skin surface area - child	cm <sup>2</sup>	7,300	ODEQ, 1998
DAwater	Dermal Absorption dose	mg/cm <sup>2</sup> -event	See below	chemical-specific
CF1	Conversion factor, L to cm3	L/cm3	1.00E-03	Calculated
RfDo	Oral reference dose	mg/kg-day	See below	Calculated
RfDi	Inhalation reference dose	mg/kg-day	See below	Calculated
CSFo	Oral cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated
CSFi	Inhalation cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated

Chemical	DERMAL EXPOSURE PA				DAevent		selected DAevent (mg/cm2-ev)	DA guidance
	Kp (cm/hr)	B (unitless)	tao (unitless)	t* (hour)	ET < t*	ET > t*		
Arsenic	0.001							
Benzo(a)anthracene	0.948	46.00	2.20	10.00	3.26E-09	1.04E-08	3.26E-09	0.81
Dibenz(a,h) anthracene	1.680	690.00	4.40	21.00	3.02E-09	1.37E-05	3.02E-09	2.7
Benzo(a)pyrene	1.240	130.00	2.90	14.00	4.32E-09	1.59E-05	4.32E-09	1.2
Benzo(b)fluoranthene	0.699	130.00	3.00	14.00	1.31E-09	4.88E-06	1.31E-09	1.2
Pentachloro-phenol	0.65	72.00	3.70	17.00	1.85E-04	7.66E-01	1.85E-04	0.65
Indeno(1,2,3-cd) pyrene	2.230	380.00	4.20	20.00	7.71E-06	3.42E-02	7.71E-06	1.9
2,3,7,8-TCDD TEQ (WHO)	1.4	630.00	8.10	38.00	3.85E-11	2.38E-07	3.85E-11	1.4
1,2,3,7,8-PeCDD	1.4	630.00	8.10	38.00	1.06E-10	6.53E-07	1.06E-10	
1,2,3,4,7,8-HxCDD	1.4	630.00	8.10	38.00	1.38E-11	8.50E-08	1.38E-11	
1,2,3,6,7,8-HxCDD	1.4	630.00	8.10	38.00	1.59E-11	9.79E-08	1.59E-11	
1,2,3,7,8,9-HxCDD	1.4	630.00	8.10	38.00	1.67E-11	1.03E-07	1.67E-11	
1,2,3,4,6,7,8-HpCDD	1.4	630.00	8.10	38.00	1.21E-11	7.48E-08	1.21E-11	
1,2,3,7,8-PeCDF	1.4	630.00	8.10	38.00	7.60E-11	4.69E-07	7.60E-11	
2,3,4,7,8-PeCDF	1.4	630.00	8.10	38.00	7.60E-11	4.69E-07	7.60E-11	
1,2,3,4,7,8-HxCDF	1.4	630.00	8.10	38.00	1.49E-11	9.18E-08	1.49E-11	
1,2,3,6,7,8-HxCDF	1.4	630.00	8.10	38.00	1.34E-11	8.29E-08	1.34E-11	
1,2,3,7,8,9-HxCDF	1.4	630.00	8.10	38.00	1.52E-11	9.38E-08	1.52E-11	
2,3,4,6,7,8-HxCDF	1.4	630.00	8.10	38.00	1.55E-11	9.58E-08	1.55E-11	
1,2,3,4,6,7,8-HpCDF	1.4	630.00	8.10	38.00	1.95E-12	1.20E-08	1.95E-12	
Iron	0.001							
Manganese	0.001							
Acenaphthene	0.133	4.01E-01	0.77	1.84	1.99E-08	2.57E-05	1.99E-08	
Acenaphthylene	0.141	5.13E-01	0.75	1.79	1.07E-07	1.42E-04	1.07E-07	
Chrysene	1.030	46.00	2.20	10.00	1.35E-08	4.28E-05	1.35E-08	0.81
Fluorene	0.171	0.53	0.90	2.15	7.04E-09	9.91E-06	7.04E-09	
Naphthalene	0.069	0.20	0.53	2.20	1.45E-07	1.62E-04	1.45E-07	0.069

**Table 7-8. Calculated Risk Estimates due to Potential Groundwater Exposures  
Incidental Ingestion and Dermal Contact during Swimming  
Future Off-Site Residential Scenario**

25,550 days											Total Risk
Compound	EPCw	DAwater	CSFo	CSFi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	Risk <sub>ing</sub>	Risk <sub>der</sub>	Risk <sub>inh</sub>	
<b>Carcinogens</b>											
<b>Inorganics</b>											
Arsenic	7.3E-03		1.50E+00	1.50E+01	6.3E-07	1.8E-07	--	1.E-06	3.E-07	--	1.E-06
<b>SVOCs</b>											
Benzo(a) anthracene	8.4E-04	3.26E-09	7.30E-01	7.30E-01	7.3E-08	8.0E-08	--	5.E-08	6.E-08	--	1.E-07
Dibenz(a,h) anthracene	3.1E-04	3.02E-09	7.30E+00	7.30E+00	2.7E-08	7.4E-08	--	2.E-07	5.E-07	--	7.E-07
Benzo(a) pyrene	7.4E-04	4.32E-09	7.30E+00	7.30E+00	6.5E-08	1.1E-07	--	5.E-07	8.E-07	--	1.E-06
Benzo(b) fluoranthene	3.9E-04	1.31E-09	7.30E-01	7.30E-01	3.4E-08	3.2E-08	--	2.E-08	2.E-08	--	5.E-08
Pentachloro-phenol	5.4E-02	1.85E-04	1.20E-01	1.20E-01	4.7E-06	4.5E-03	--	6.E-07	5.E-04	--	5.E-04
Indeno(1,2,3-cd) pyrene	0.00061	7.71E-06	7.30E-01	7.30E-01	5.3E-08	1.9E-04	--	4.E-08	1.E-04	--	1.E-04
Naphthalene	1.0E-03	1.45E-07	1.20E-01	1.20E-01	9.1E-08	3.6E-06	--	1.E-08	4.E-07	--	4.E-07
<b>Dioxin/Furans</b>											
2,3,7,8-TCDD	3.5E-09	3.85E-11	1.50E+05	1.50E+05	3.1E-13	9.5E-10	--	5.E-08	1.E-04	--	1.E-04
1,2,3,7,8-PeCDD	9.6E-09	1.06E-10	1.50E+05	1.50E+05	8.4E-13	2.6E-09	--	1.E-07	4.E-04	--	4.E-04
1,2,3,4,7,8-HxCDD	1.3E-09	1.38E-11	1.50E+05	1.50E+05	1.1E-13	3.4E-10	--	2.E-08	5.E-05	--	5.E-05
1,2,3,6,7,8-HxCDD	1.4E-09	1.59E-11	1.50E+05	1.50E+05	1.3E-13	3.9E-10	--	2.E-08	6.E-05	--	6.E-05
1,2,3,7,8,9-HxCDD	1.5E-09	1.67E-11	1.50E+05	1.50E+05	1.3E-13	4.1E-10	--	2.E-08	6.E-05	--	6.E-05
1,2,3,4,6,7,8-HpCDD	1.1E-09	1.21E-11	1.50E+05	1.50E+05	9.6E-14	3.0E-10	--	1.E-08	4.E-05	--	4.E-05
1,2,3,7,8-PeCDF	6.9E-09	7.60E-11	1.50E+05	1.50E+05	6.0E-13	1.9E-09	--	9.E-08	3.E-04	--	3.E-04
2,3,4,7,8-PeCDF	6.9E-09	7.60E-11	1.50E+05	1.50E+05	6.0E-13	1.9E-09	--	9.E-08	3.E-04	--	3.E-04
1,2,3,4,7,8-HxCDF	1.4E-09	1.49E-11	1.50E+05	1.50E+05	1.2E-13	3.7E-10	--	2.E-08	5.E-05	--	5.E-05
1,2,3,6,7,8-HxCDF	1.2E-09	1.34E-11	1.50E+05	1.50E+05	1.1E-13	3.3E-10	--	2.E-08	5.E-05	--	5.E-05
1,2,3,7,8,9-HxCDF	1.4E-09	1.52E-11	1.50E+05	1.50E+05	1.2E-13	3.7E-10	--	2.E-08	6.E-05	--	6.E-05
2,3,4,6,7,8-HxCDF	1.4E-09	1.55E-11	1.50E+05	1.50E+05	1.2E-13	3.8E-10	--	2.E-08	6.E-05	--	6.E-05
1,2,3,4,6,7,8-HpCDF	1.8E-10	1.95E-12	1.50E+05	1.50E+05	1.5E-14	4.8E-11	--	2.E-09	7.E-06	--	7.E-06
<b>Cumulative Risk</b>											<b>2.E-03</b>
2,190 days											
Compound	Cw	DAwater	RfDo	RfDi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	HI <sub>ing</sub>	HI <sub>der</sub>	HI <sub>inh</sub>	Total HI
<b>Noncarcinogens</b>											
<b>Inorganics</b>											
Arsenic	7.3E-03		3.00E-04	3.00E-04	4.0E-06	5.8E-07	--	1.3E-02	1.9E-03	--	1.5E-02
<b>SVOCs</b>											
Naphthalene	1.0E-03	1.45E-07	2.00E-02	8.60E-04	5.7E-07	1.2E-05	--	2.8E-05	5.8E-04	--	6.1E-04
Pentachlorophenol	5.4E-02	1.85E-04	3.00E-02	3.00E-02	2.9E-05	1.5E-02	--	9.8E-04	4.9E-01	--	4.9E-01
<b>Cumulative Hazard Index</b>											<b>0.5</b>

**Table 7-9. Calculated Risk Estimates Due to Potential Surface Water Exposures  
Off-Site Recreational Scenario - Roosevelt Channel**

Parameter	Description	Units	Value	Reference
Dose	Dose of chemical	mg/kg-day	See below	Calculated
HI	Hazard index	unitless	See below	Calculated
Risk	Risk	unitless	See below	Calculated
EPCw	Chemical concentration in water	mg/L	See below	Calculated
Et	hour per event	hr/event	1	ODEQ (verbal)
IRc	Child Water ingestion rate	L/day	0.05	ODEQ, 1998
EF	Exposure frequency	days/year	60	Site-specific
EvD	Event frequency	event/day	1	ODEQ, 1998
EDc	Exposure duration - child	years	6	ODEQ, 1998
Bwa	Body weight - adult	kg	70	ODEQ, 1998
BWc	Body weight - child	kg	15	ODEQ, 1998
AP	Averaging period	days	See below	Calculated
VF	Volatilization factor	m <sup>3</sup> /kg	See below	chemical-specific
SSAc	Skin surface area - child	cm <sup>2</sup>	2,717	ODEQ, 1998
DAwater	Dermal Absorption dose	mg/cm <sup>2</sup> -event	See below	chemical-specific
CF1	Conversion factor, L to cm <sup>3</sup>	L/cm <sup>3</sup>	1.00E-03	Calculated
RfDo	Oral reference dose	mg/kg-day	See below	Calculated
RfDi	Inhalation reference dose	mg/kg-day	See below	Calculated
CSFo	Oral cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated
CSFi	Inhalation cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated

DERMAL EXPOSURE PA					DAevent		selected
Chemical	Kp (cm/hr)	B (unitless)	tao (unitless)	t* (hour)	ET < t*	ET > t*	DAevent (mg/cm2-ev)
Arsenic	0.001						
Benzo(a)anthracene	0.948	46.00	2.20	10.00	3.26E-09	1.04E-08	3.26E-09
Dibenz(a,h) anthracene	1.680	690.00	4.40	21.00	3.02E-09	1.37E-05	3.02E-09
Benzo(a)pyrene	1.240	130.00	2.90	14.00	4.32E-09	1.59E-05	4.32E-09
Benzo(b)fluoranthene	0.699	130.00	3.00	14.00	1.31E-09	4.88E-06	1.31E-09
Pentachloro-phenol	0.65	72.00	3.70	17.00	3.80E-06	1.57E-02	3.80E-06
Indeno(1,2,3-cd) pyrene	2.230	380.00	4.20	20.00	7.71E-09	3.42E-05	7.71E-09
2,3,7,8-TCDD TEQ (WHO)	1.4	630.00	8.10	38.00	3.41E-13	2.11E-09	3.41E-13
Naphthalene	0.069	0.20	0.53	2.20	1.45E-07	1.62E-04	1.45E-07

**Table 7-9. Calculated Risk Estimates Due to Potential Surface Water Exposures  
Off-Site Recreational Scenario - Roosevelt Channel**

<b>Carcinogens</b>											<b>Total Risk</b>
<b>Compound</b>	<i>25,550 days</i>										
	<b>EPCw</b>	<b>DAwater</b>	<b>CSFo</b>	<b>CSFi</b>	<b>Dose<sub>ing</sub></b>	<b>Dose<sub>der</sub></b>	<b>Dose<sub>inh</sub></b>	<b>Risk<sub>ing</sub></b>	<b>Risk<sub>der</sub></b>	<b>Risk<sub>inh</sub></b>	
<b>Inorganics</b>											
Arsenic	7.0E-03		1.5E+00	1.5E+01	3.3E-07	1.8E-08	--	5.E-07	3.E-08	--	5.E-07
Pentachloro-phenol	1.1E-03	3.80E-06	1.2E-01	1.2E-01	5.2E-08	9.7E-06	--	6.E-09	1.E-06	--	1.E-06
<b>Cumulative Risk</b>											<b>2.E-06</b>
<b>Noncarcinogens</b>											<b>Total HI</b>
<b>Compound</b>	<i>2.2E+03 days</i>										
	<b>Cw</b>	<b>DAwater</b>	<b>RfDo</b>	<b>RfDi</b>	<b>Dose<sub>ing</sub></b>	<b>Dose<sub>der</sub></b>	<b>Dose<sub>inh</sub></b>	<b>HI<sub>ing</sub></b>	<b>HI<sub>der</sub></b>	<b>HI<sub>inh</sub></b>	
<b>Inorganics</b>											
Arsenic	7.0E-03		3.0E-04	3.0E-04	3.8E-06	2.1E-07	--	1.3E-02	6.9E-04	--	1.3E-02
<b>SVOCs</b>											
Pentachlorophenol	1.1E-03	3.80E-06	3.0E-02	3.0E-02	6.0E-07	1.1E-04	--	2.0E-05	3.8E-03	--	3.8E-03
<b>Cumulative Hazard Index</b>											<b>0.02</b>

**Table 7-10. Calculated Risk Estimates due to Potential Sediment Exposures  
Off-Site Recreational Scenario**

Parameter	Description	Units	Value	Reference								
Dose	Dose of chemical	mg/kg-day	See below	Calculated								
HI	Hazard index	unitless	See below	Calculated								
Risk	Risk	unitless	See below	Calculated								
EPCsed	Exposure Point Concentration in sediment	mg/kg	See below	Calculated								
IRa	Child Sediment ingestion rate	mg/day	400	ODEQ, 1998								
EF	Exposure frequency	days/year	13	ODEQ, 1998								
EvD	Event frequency	event/day	1	ODEQ, 1998								
ED	Exposure duration	years	5	ODEQ, 1998								
Bwc	Body weight - child	kg	28	ODEQ, 1998								
AP	Averaging period	days	See below	Calculated								
VF	Volatilization factor	m <sup>3</sup> /kg	See below	chemical-specific								
PEF	Particulate emission factor	m <sup>3</sup> /kg	1.32E+09	USEPA, 1996a								
SSAc	Skin surface area - child	cm <sup>2</sup>	2717	ODEQ, 1998								
DAF	Dermal absorption factor	unitless	See below	chemical-specific								
SARa	Sediment adherence rate - child	mg/cm <sup>2</sup> - ev	1	ODEQ, 1998								
InhRa	Inhalation rate - child	m <sup>3</sup> /day	8.3	ODEQ, 1998								
CF1	Conversion factor, mg to kg	kg/mg	1.00E-06	Calculated								
RfDo	Oral reference dose	mg/kg-day	See below	chemical-specific								
RfDi	Inhalation reference dose	mg/kg-day	See below	Calculated								
CSFo	Oral cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated								
CSFi	Inhalation cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated								
<b>Carcinogens</b> <i>AP = 25,550 days</i>												
Compound	EPCsed	DAF	VF	CSFo	CSFi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	Risk <sub>ing</sub>	Risk <sub>der</sub>	Risk <sub>inh</sub>	Total Risk
<b>Inorganics</b>												
Arsenic	26.0	0.03	--	1.50E+00	1.50E+01	9.4E-07	1.9E-07	1.5E-11	1.4E-06	2.9E-07	2.2E-10	<b>2.E-06</b>
<b>SVOCs</b>												
Dibenz(a,h) anthracene	0.2	0.13	--	7.30E+00	7.30E+00	8.0E-09	7.1E-09	1.3E-13	5.8E-08	5.2E-08	9.2E-13	1.E-07
Benzo(a) pyrene	0.5	0.13	--	7.30E+00	7.30E+00	1.9E-08	1.7E-08	3.0E-13	1.4E-07	1.2E-07	2.2E-12	3.E-07
Benzo(b) fluoranthene	0.9	0.13	--	7.30E-01	7.30E-01	3.2E-08	2.8E-08	5.0E-13	2.3E-08	2.0E-08	3.6E-13	4.E-08
<b>Dioxin/Furans</b>												
2,3,7,8-TCDD	6.2E-06	0.03		7.30E-01	7.30E-01	2.3E-13	4.6E-14	3.6E-18	1.7E-13	3.4E-14	2.6E-18	2.E-13
<b>1,2,3,7,8-PeCDD (B-17)</b>	3.3E-05	0.03		7.30E-01	7.30E-01	1.2E-12	2.4E-13	1.9E-17	8.6E-13	1.8E-13	1.4E-17	1.E-12
1,2,3,4,7,8-HxCDD	7.7E-06	0.03		7.30E-01	7.30E-01	2.8E-13	5.7E-14	4.4E-18	2.0E-13	4.2E-14	3.2E-18	2.E-13
<b>1,2,3,6,7,8-HxCDD (B-23)</b>	4.5E-05	0.03		7.30E-01	7.30E-01	1.6E-12	3.3E-13	2.6E-17	1.2E-12	2.4E-13	1.9E-17	1.E-12
1,2,3,7,8,9-HxCDD	2.0E-05	0.03		7.30E-01	7.30E-01	7.4E-13	1.5E-13	1.2E-17	5.4E-13	1.1E-13	8.5E-18	6.E-13
<b>1,2,3,4,6,7,8-HpCDD (B-23)</b>	1.2E-04	0.03		7.30E-01	7.30E-01	4.4E-12	9.0E-13	7.0E-17	3.2E-12	6.6E-13	5.1E-17	4.E-12
OCDD	8.7E-06	0.03		7.30E-01	7.30E-01	3.2E-13	6.5E-14	5.0E-18	2.3E-13	4.7E-14	3.6E-18	3.E-13
2,3,4,7,8-PeCDF	7.5E-06	0.03		7.30E-01	7.30E-01	2.7E-13	5.6E-14	4.3E-18	2.0E-13	4.1E-14	3.1E-18	2.E-13
1,2,3,4,7,8-HxCDF	8.2E-06	0.03		7.30E-01	7.30E-01	3.0E-13	6.1E-14	4.7E-18	2.2E-13	4.4E-14	3.4E-18	3.E-13
1,2,3,6,7,8-HxCDF	4.4E-06	0.03		7.30E-01	7.30E-01	1.6E-13	3.3E-14	2.5E-18	1.2E-13	2.4E-14	1.9E-18	1.E-13
2,3,4,6,7,8-HxCDF	8.3E-06	0.03		7.30E-01	7.30E-01	3.0E-13	6.2E-14	4.8E-18	2.2E-13	4.5E-14	3.5E-18	3.E-13
1,2,3,4,6,7,8-HpCDF	5.9E-07	0.03		7.30E-01	7.30E-01	2.1E-14	4.3E-15	3.4E-19	1.6E-14	3.2E-15	2.4E-19	2.E-14
<b>Cumulative Risk</b>											<b>2.E-06</b>	
<b>Noncarcinogens</b> <i>AP = 1,825 days</i>												
Compound	RBCs	DAF	VF	RfDo	RfDi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	HI <sub>ing</sub>	HI <sub>der</sub>	HI <sub>inh</sub>	Total HI
<b>Inorganics</b>												
Arsenic	26.0	0.03		3.00E-04	3.00E-04	1.3E-05	2.7E-06	2.1E-10	4.4E-02	9.0E-03	6.9E-07	5.3E-02
<b>Cumulative HI</b>											<b>0.05</b>	



**Table 7-11. Calculated Risk Estimates Due to Potential Groundwater Exposures  
Off-Site Current Industrial Scenario**

Parameter	Description	Units	Value	Reference
Dose	Dose of chemical	mg/kg-day	See below	Calculated
HI	Hazard index	unitless	See below	Calculated
Risk	Risk	unitless	See below	Calculated
RBCw	Chemical concentration in water	mg/L	See below	Calculated
Et	hour per event	hr/event	1	ODEQ (verbal)
EF	Exposure frequency	days/year	32	90 Site-specific
EvD	Event frequency	event/day	1	ODEQ, 1998
ED	Exposure duration - adult	years	25	ODEQ, 1998
Bwa	Body weight - adult	kg	70	ODEQ, 1998
AP	Averaging period	days	See below	Calculated
SSA	Skin surface area	cm <sup>2</sup>	4,100	ODEQ, 1998
DAwater	Dermal Absorption dose	mg/cm <sup>2</sup> -event	See below	chemical-specific
CF1	Conversion factor, L to cm <sup>3</sup>	L/cm <sup>3</sup>	1.00E-03	Calculated
RfDo	Oral reference dose	mg/kg-day	See below	Calculated
RfDi	Inhalation reference dose	mg/kg-day	See below	Calculated
CSFo	Oral cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated
CSFi	Inhalation cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated

DERMAL EXPOSURE PA					DAevent			selected DAevent (mg/cm2-ev)	DA guidance
Chemical	Kp (cm/hr)	B (unitless)	tao (unitless)	t* (hour)	ET < t*	ET > t*			
Pentachloro-phenol	0.195	72.00	3.70	17.00	2.77E-06	1.15E-02	2.77E-06	0.65	

Carcinogens											Total Risk
25,550 days											
Compound	RBCw	DAwater	CSFo	CSFi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	Risk <sub>ing</sub>	Risk <sub>der</sub>	Risk <sub>inh</sub>	
SVOCs											
Pentachloro-phenol	2.7E-03	2.77E-06	1.20E-01	1.20E-01	--	5.1E-06	--	--	6.E-07	--	6.E-07
<b>Cumulative Risk</b>											<b>6.E-07</b>

Noncarcinogens											Total HI
2,190 days											
Compound	Cw	DAwater	RfDo	RfDi	Dose <sub>ing</sub>	Dose <sub>der</sub>	Dose <sub>inh</sub>	HI <sub>ing</sub>	HI <sub>der</sub>	HI <sub>inh</sub>	
SVOCs											
Pentachlorophenol	2.7E-03	2.77E-06	3.00E-02	3.00E-02	--	5.9E-05	--	--	2.0E-03	--	2.0E-03
<b>Cumulative Hazard Index</b>											<b>2.0E-03</b>

**Table 7-12. Calculated Risk Estimates due to Consumption of Home Grown Product Residential and Industrial Groundwater -- Current Residential Scenario**

Parameter	Description	Units	Value	Reference		
Cw	Concentration in water	mg/L	See below			
IRRrup	Root uptake from irrigation	L/kg	See below	Calculated		
IRRres	Resuspension from irrigation	L/kg	See below	Calculated		
IRRdep	Aerial deposition from irrigation	L/kg	See below	Calculated		
F	Irrigation period	unitless	0.25	RAIS		
BV <sub>wet</sub>	soil to plant uptake wet weight	kg/kg	chemical-spe			
IRar	decay for removal on produce	1/day	0.0495			
	decay	1/day	0			
Yv	plant yield (wet)	kg/m <sup>2</sup>	2			
tw	weathering half-life	day	14			
p	area density for root zone	kg/m <sup>2</sup>	240			
Ir	Irrigation rate	L/m <sup>2</sup> -day	3.63			
If	Interception fraction	unitless	0.42			
MLF	Plant mass loading factor	unitless	0.26			
	effective rate for removal	1/day	0.000027			
	soil leaching rate	1/day	0.000027			
tb	long-term deposition and buildup	days	10950			
T	Translocation factor	unitless	1			
tv	aboveground exposure time	days	60			
CP	concentration in produce	mg/kg	calculated			
IF <sub>r</sub>	fruit age-adjusted ingestion factor	kg/day	0.0479			
IF <sub>v</sub>	vegetable age-adjusted ingestion factor	kg/day	0.0249			
CPF	contaminated plant fraction		0.25			
AP	Averaging period	days	See below			
VF	Volatilization factor	m <sup>3</sup> /kg	See below			
<b>COPCs</b>	<b>Cw</b>	<b>BV<sub>wet</sub></b>	<b>IRRrup</b>	<b>IRRres</b>	<b>IRRdep</b>	<b>CP</b>
Copper	9.00E-02	8.00E-02	11.20	36.41	3.65	4.6E+00

Parameter	Description	Units	Value	Reference				
Dose	Dose of chemical	mg/kg-day	See below	Calculated				
HI	Hazard index	unitless	See below	Calculated				
Risk	Risk	unitless	See below	Calculated				
CP	Concentration in produce	mg/kg	See below	Calculated				
CPF	Contaminated plant fraction	unitless	0.25					
IRfa	Adult fruit ingestion rate	g/kg-day	5.1					
IRfc	Child fruit ingestion rate	g/kg-day	19.3					
IRva	Adult vegetable ingestion rate	g/kg-day	6.4					
IRvc	Child vegetable ingestion rate	g/kg-day	13.9					
EF	Exposure frequency	days/year	350	Site-specific				
ED	Exposure duration - adult	years	30	ODEQ, 1998				
EDc	Exposure duration - child	years	6	ODEQ, 1998				
Bwa	Body weight - adult	kg	70	ODEQ, 1998				
BWc	Body weight - child	kg	15	ODEQ, 1998				
AP	Averaging period	days	See below	Calculated				
CF	Conversion factor	kg/g	0.001	chemical-specific				
RfDo	Oral reference dose	mg/kg-day	See below	Calculated				
CSFo	Oral cancer slope factor	(mg/kg-day) <sup>-1</sup>	See below	Calculated				
<b>Noncarcinogens</b>				<b>2,190</b>				
<b>Compound</b>	<b>EPCw</b>	<b>CP</b>	<b>RfDo</b>	<b>Dose<sub>ing</sub></b>	<b>Dose<sub>inh</sub></b>	<b>HI<sub>ing</sub></b>	<b>HI<sub>inh</sub></b>	<b>Total HI</b>
<b>Inorganics</b>								
Copper	9.0E-02	4.6E+00	4.00E-02	2.4E-03		6.1E-02		6.1E-02
<b>Cumulative Hazard Index</b>								<b>0.1</b>

Kp = dermal permeability coefficient in water

B = dimensionless ratio of the permeability coefficient of a chemical through the stratum corneum relative to its permeability coefficient across the viable epidermis.

tao = lag time per event

t\* = time to reach steady state

Hi - Hazard Index

**Table 7-13. Summary of Estimated Risks and Hazard Indices**

<b>Exposure Scenario</b>	<b>Estimated Cancer Risks</b>	<b>Chemicals of Concern</b>	<b>Estimated Hazard Index</b>	<b>Chemicals of Concern</b>
<b>On-Site Worker</b>				
Soil	1.E-04	Arsenic Benzo(a)pyrene Dibenz(a,h)anthracene 1,2,3,4,6,7,8-HpCDD (B-23)	0.70	--
Undeveloped Area	4.E-05	Arsenic 1,2,3,7,8-PeCDD 1,2,3,6,7,8-HxCDD 1,2,3,7,8,9-HxCDD 1,2,3,4,6,7,8-HpCDD 2,3,4,7,8-PeCDF 2,3,4,7,8-PeCDF	0.1	--
<b>Trench Worker</b>				
On-Site Soil	7.E-07	--	0.1	--
Undeveloped Area	3.E-07	--	0.02	--
On-Site Groundwater (direct contact)	4.E-05	Dibenz(a,h) anthracene Benzo(a) pyrene Pentachlorophenol	0.6	--
On-Site Groundwater (inhalation)	3.E-07	--	0.01	--
<b>Current Off-site Resident</b>				
Off-site Soil	3.E-05	Arsenic <sup>1</sup> Benzo(a) pyrene 1,2,3,4,6,7,8-HpCDD (SS-4)	2.9	Iron <sup>2</sup>
Incidental Ingestion and Dermal contact with Irrigation Water	No carcinogenic COPCs	--	0.002	--
Incidental Ingestion and dermal contact while swimming	No carcinogenic COPCs	--	0.002	--
Consumption of homegrown produce	No carcinogenic COPCs	--	0.06	--
<b>Future Off-site Resident<sup>3</sup></b>				
Incidental Ingestion and Dermal Contact with Irrigation Water	7.E-04	Pentachlorophenol, Indeno(1,2,3-cd)pyrene Dioxins/furans	0.5	--
Swimming scenario	2.E-03	Pentachlorophenol, Indeno(1,2,3-cd)pyrene Dioxins/furans	0.5	--
Consumption of homegrown produce	No carcinogenic COPCs	--	0.1	--
<b>Recreational User</b>				
Surface Water	2.E-06	Arsenic	0.02	--
Sediment	2.E-06	Arsenic	0.05	--
<b>Off-site Industrial Worker</b>				
Groundwater	6.E-07	Pentachlorophenol	0.002	--

**Notes:**

1 - Actual arsenic concentrations off-site are below background levels established by DEQ.

2 - Iron is not a site-related compound.

3 - Future off-site scenarios include the assumption that water will come from industrial and off-site wells. However, all residents are connected to the municipal supply system.

## **Appendix A**

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Table A-1	Residential Groundwater Well Data - Residential Scenarios
Table A-2	Off-site Soil Residential Scenarios
Table A-3	Off-site Sediment - Child in Ditch Scenario
Table A-4	Off-site Surface Water - Child in Ditch Scenario
Table A-5	On-site Groundwater - Worker and Trench Worker Scenarios
Table A-6	On-site Soil - Industrial Worker Scenario
Table A-7	On-site Soil Trench Worker Scenario (all soil depths)
Table A-8	Groundwater Wells – Future Residential and Industrial Scenarios
Table A-9	Off-site Groundwater Wells – Industrial Scenario
Table A-10	Calculation of WHO 2,3,7,8-TCDD TEQs (all media)

Table A-1. Residential Groundwater Wells, Residential Scenarios.

Sample event	Station ID	Date	Lab rep	Arsenic	Arsenic, Dissolved	Chromium	Chromium, Dissolved	Copper	Copper, Dissolved	Zinc, Total	Zinc, Dissolved	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Dibenzo(a,h)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
2003Sept_wells	W-16AI	9/15/2003																				
2004Sept_wells	W-16AI	9/15/2004																				
2002Sept_wells	W-17AI	9/10/2002		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2003Sept_wells	W-17AI	9/15/2003		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2004Sept_wells	W-17AI	9/10/2004		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02 U	0.02 U	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2003Sept_wells	W-17AS	9/15/2003		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2004Sept_wells	W-17AS	9/10/2004		0.005 U	0.005 U	0.008	0.005 U	0.02 U	0.02 U	0.02 U	0.02 U	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2002March_wells	W-17BI	3/7/2002																				
2003Sept_wells	W-17BI	9/15/2003		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2004Sept_wells	W-17BI	9/9/2004		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2002March_wells	W-24	3/6/2002																				
2002June_wells	W-24	6/6/2002																				
2002Sept_wells	W-24	9/12/2002																				
2002Dec_wells	W-24	12/12/2002																				
2003March_wells	W-24	3/11/2003																				
2003Sept_wells	W-24	9/15/2003																				
2004March_wells	W-24	3/30/2004																				
2004Sept_wells	W-24	9/15/2004																				
2005March_wells	W-24	3/23/2005																				
2002March_wells	W-25	3/7/2002																				
2002June_wells	W-25	6/6/2002																				
2002Sept_wells	W-25	9/10/2002																				
2002Dec_wells	W-25	12/12/2002																				
2003March_wells	W-25	3/11/2003																				
2003Sept_wells	W-25	9/22/2003																				
2004March_wells	W-25	3/30/2004																				
2004Sept_wells	W-25	9/14/2004																				
2005March_wells	W-25	3/23/2005																				
2002March_wells	W-32	3/7/2002																				
2002June_wells	W-32	6/13/2002																				
2002Sept_wells	W-32	9/10/2002																				
2002Dec_wells	W-32	12/12/2002																				
2003March_wells	W-32	3/10/2003																				
2003Sept_wells	W-32	9/22/2003																				
2004March_wells	W-32	3/31/2004																				
2004Sept_wells	W-32	9/14/2004																				
2005March_wells	W-32	3/23/2005																				
2002March_wells	W-34	3/7/2002																				
2002June_wells	W-34	6/13/2002																				
2002Sept_wells	W-34	9/11/2002																				
2002Dec_wells	W-34	12/12/2002																				
2003March_wells	W-34	3/11/2003																				
2003Sept_wells	W-34	9/23/2003																				

Table A-1. Residential Groundwater Wells, Residential Scenarios.

Sample event	Station ID	Date	Lab rep	Arsenic	Arsenic, Dissolved	Chromium	Chromium, Dissolved	Copper	Copper, Dissolved	Zinc, Total	Zinc, Dissolved	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Dibenzo(a,h)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
2004March_wells	W-34	3/30/2004																				
2004Sept_wells	W-34	9/15/2004																				
2005March_wells	W-34	3/23/2005																				
2002March_wells	W-35	3/19/2002																				
2002June_wells	W-35	6/13/2002																				
2002Sept_wells	W-35	9/12/2002																				
2002Dec_wells	W-35	12/12/2002																				
2003Sept_wells	W-35	9/22/2003																				
2004Sept_wells	W-35	9/13/2004																				
2002March_wells	W-36	3/6/2002																				
2002June_wells	W-36	6/13/2002																				
2002Sept_wells	W-36	9/12/2002																				
2002Dec_wells	W-36	12/12/2002																				
2003Sept_wells	W-36	9/19/2003																				
2004Sept_wells	W-36	9/13/2004																				
2002July_wells	214 Waite	7/18/2002																				
Misc Data	255 Waite	00/00/2000																				
2002July_wells	255 Waite	7/22/2002																				
2003Sept_wells	255 Waite	9/10/2003																				
2004Sept_wells	255 Waite	10/4/2004																				
Misc Data	274 Waite	00/00/2000																				
2002July_wells	274 Waite	7/18/2002																				
2002July_wells	304 Waite	7/18/2002																				
Misc Data	3510 Elmira Rd	5/8/1992																				
HC GW DB	3510 Elmira Rd	3/1/1993		0.01 U	0.01 U	0.01 U	0.01 U	0.025 U	0.025 U	0.368	0.31	2 U	2 U	0.1 U	0.02 U	0.03 U	0.02 U	0.02 U	0.05 U	0.02 U	0.15 U	
Misc Data	3841 Elmira Rd	5/8/1992																				
HC GW DB	3841 Elmira Rd	3/1/1993		0.01 U	0.01 U	0.01 U	0.01 U	0.082	0.054	0.097	0.062	2 U	2 U	0.1 U	0.02 U	0.03 U	0.02 U	0.02 U	0.05 U	0.02 U	0.15 U	
HC GW DB	3841 Elmira Rd	6/1/1993		0.01 U	0.01 U	0.01 U	0.01 U	0.04	0.04	0.04	0.04	2 U	2 U	0.1 U	0.02 U	0.03 U	0.02 U	0.02 U	0.05 U	0.02 U	0.15 U	
HC GW DB	3841 Elmira Rd	9/1/1993		0.01 U	0.01 U	0.01 U	0.01 U	0.075	0.079	0.042	0.044	2 U	2 U	0.1 U	0.02 U	0.03 U	0.02 U	0.02 U	0.05 U	0.02 U	0.15 U	
HC GW DB	3841 Elmira Rd	12/1/1993		0.01 U	0.01 U	0.01 U	0.01 U	0.07	0.07	0.07	0.07	2 U	2 U	0.1 U	0.02 U	0.03 U	0.02 U	0.02 U	0.05 U	0.02 U	0.15 U	
HC GW DB	3841 Elmira Rd	2/1/1994		0.01 U	0.01 U	0.01 U	0.01 U	0.09	0.2	0.09	0.08	2 U	2 U	0.1 U	0.02 U	0.03 U	0.02 U	0.02 U	0.05 U	0.02 U	0.15 U	

Notes:

U -- The analyte was not detected at or above the associated reporting limit.

UJ -- Estimated reporting limit.

J -- Estimated value.

B -- The analyte was detected in the associated laboratory blank in addition to the sample.

Table A-1. Residential Groundwater Wells, Residential Scenarios.

Sample event	Station ID	Date	Lab rep	Fluorene	Phenanthrene	Pyrene	Total PAHs (calculated)	Phenol	2-Chloro-phenol	2,4-Dichloro-phenol	2,6-Dichloro-phenol	2,4,5-Trichloro-phenol	2,4,6-Trichloro-phenol	2,3,4,6-Tetrachloro-phenol	2,3,5,6-Tetrachloro-phenol	Pentachloro-phenol (PCP)	4-Chloro-3-methyl-phenol	2-Nitro-phenol	4-Nitro-phenol	2,4-Dinitro-phenol
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
2003Sept_wells	W-16AI	9/15/2003						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2004Sept_wells	W-16AI	9/15/2004						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2002Sept_wells	W-17AI	9/10/2002		0.1 U	0.1 U	0.1 U	4.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2003Sept_wells	W-17AI	9/15/2003		0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2004Sept_wells	W-17AI	9/10/2004		0.1 U	0.1 U	0.1 U	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2003Sept_wells	W-17AS	9/15/2003		0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2004Sept_wells	W-17AS	9/10/2004		0.1 U	0.1 U	0.1 U	7.8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2002March_wells	W-17BI	3/7/2002						0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.2 U	0.5 U	0.5 U	1 U	5 U
2003Sept_wells	W-17BI	9/15/2003		0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2004Sept_wells	W-17BI	9/9/2004		0.1 U	0.1 U	0.1 U	0.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2002March_wells	W-24	3/6/2002						5 U	5 U	5 U	5 U	10 U	10 U	10 U	10 U	20.5	5 U	5 U	10 U	50 U
2002June_wells	W-24	6/6/2002						2.5 U	2.5 U	2.5 U	2.5 U	5 U	5 U	5 U	5 U	17.4	2.5 U	2.5 U	5 U	25 U
2002Sept_wells	W-24	9/12/2002						4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	20	4 U	4 U	8 U	16 U
2002Dec_wells	W-24	12/12/2002						4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	21.9	4 U	4 U	8 U	16 U
2003March_wells	W-24	3/11/2003						1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	7.68	1 U	1 U	2 U	4 U
2003Sept_wells	W-24	9/15/2003						1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2.45	1 U	1 U	2 U	4 U
2004March_wells	W-24	3/30/2004						5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	36	5 U	5 U	10 U	20 U
2004Sept_wells	W-24	9/15/2004						5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	12.6	5 U	5 U	10 U	20 U
2005March_wells	W-24	3/23/2005						5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25.1	5 U	5 U	10 U	20 U
2002March_wells	W-25	3/7/2002						6.7 U	6.7 U	6.7 U	6.7 U	14 U	14 U	14 U	14 U	49.5	6.7 U	6.7 U	14 U	67 U
2002June_wells	W-25	6/6/2002						6.65 U	6.65 U	6.65 U	6.65 U	13.3 U	13.3 U	13.3 U	13.3 U	53.1	6.65 U	6.65 U	13.3 U	66.5 U
2002Sept_wells	W-25	9/10/2002						8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U	63.5	8 U	8 U	16 U	32 U
2002Dec_wells	W-25	12/12/2002						10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	65.8	10 U	10 U	20 U	40 U
2003March_wells	W-25	3/11/2003						5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	60.1	5 U	5 U	10 U	20 U
2003Sept_wells	W-25	9/22/2003						5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	75	5 U	5 U	10 U	20 U
2004March_wells	W-25	3/30/2004						5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	61.6	5 U	5 U	10 U	20 U
2004Sept_wells	W-25	9/14/2004						5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	51	5 U	5 U	10 U	20 U
2005March_wells	W-25	3/23/2005						5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	71.5	5 U	5 U	10 U	20 U
2002March_wells	W-32	3/7/2002						0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.2 U	0.5 U	0.5 U	1 U	5 U
2002June_wells	W-32	6/13/2002						0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.2 U	0.5 U	0.5 U	1 U	5 U
2002Sept_wells	W-32	9/10/2002						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2002Dec_wells	W-32	12/12/2002						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2003March_wells	W-32	3/10/2003						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2003Sept_wells	W-32	9/22/2003						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2004March_wells	W-32	3/31/2004						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2004Sept_wells	W-32	9/14/2004						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.68	0.5 U	0.5 U	1 U	2 U
2005March_wells	W-32	3/23/2005						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.64	0.5 U	0.5 U	1 U	2 U
2002March_wells	W-34	3/7/2002						0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.2 U	0.5 U	0.5 U	1 U	5 U
2002June_wells	W-34	6/13/2002						0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.2 U	0.5 U	0.5 U	1 U	5 U
2002Sept_wells	W-34	9/11/2002						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2002Dec_wells	W-34	12/12/2002						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2003March_wells	W-34	3/11/2003						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2003Sept_wells	W-34	9/23/2003						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U

Table A-1. Residential Groundwater Wells, Residential Scenarios.

Sample event	Station ID	Date	Lab rep	Fluorene	Phenanthrene	Pyrene	Total PAHs (calculated)	Phenol	2-Chloro-phenol	2,4-Dichloro-phenol	2,6-Dichloro-phenol	2,4,5-Trichloro-phenol	2,4,6-Trichloro-phenol	2,3,4,6-Tetrachloro-phenol	2,3,5,6-Tetrachloro-phenol	Pentachloro-phenol (PCP)	4-Chloro-3-methyl-phenol	2-Nitro-phenol	4-Nitro-phenol	2,4-Dinitro-phenol
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
2004March_wells	W-34	3/30/2004						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.22	0.5 U	0.5 U	1 U	2 U
2004Sept_wells	W-34	9/15/2004						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2005March_wells	W-34	3/23/2005						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.29	0.5 U	0.5 U	1 U	2 U
2002March_wells	W-35	3/19/2002						0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.2 U	0.5 U	0.5 U	1 U	5 U
2002June_wells	W-35	6/13/2002						0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.2 U	0.5 U	0.5 U	1 U	5 U
2002Sept_wells	W-35	9/12/2002						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2002Dec_wells	W-35	12/12/2002						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2003Sept_wells	W-35	9/22/2003						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2004Sept_wells	W-35	9/13/2004						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2002March_wells	W-36	3/6/2002						0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.2 U	0.5 U	0.5 U	1 U	5 U
2002June_wells	W-36	6/13/2002						0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.2 U	0.5 U	0.5 U	1 U	5 U
2002Sept_wells	W-36	9/12/2002						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2002Dec_wells	W-36	12/12/2002						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2003Sept_wells	W-36	9/19/2003						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2004Sept_wells	W-36	9/13/2004						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.21	0.5 U	0.5 U	1 U	2 U
2002July_wells	214 Waite	7/18/2002														0.25 U				
Misc Data	255 Waite	00/00/2000														0.25 U				
2002July_wells	255 Waite	7/22/2002														0.25 U				
2003Sept_wells	255 Waite	9/10/2003						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
2004Sept_wells	255 Waite	10/4/2004						0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U
Misc Data	274 Waite	00/00/2000														0.25 U				
2002July_wells	274 Waite	7/18/2002														0.25 U				
2002July_wells	304 Waite	7/18/2002														0.25 U				
Misc Data	3510 Elmira Rd	5/8/1992																		
HC GW DB	3510 Elmira Rd	3/1/1993		0.2 U	0.1 U	0.2 U	2 U	0.5 U	0.5 U	0.5 U			1 U		1 U	1 U	0.5 U	0.5 U	1 U	1 U
Misc Data	3841 Elmira Rd	5/8/1992																		
HC GW DB	3841 Elmira Rd	3/1/1993		0.2 U	0.1 U	0.2 U	2 U	0.5 U	0.5 U	0.5 U			1 U		1 U	1 U	0.5 U	0.5 U	1 U	1 U
HC GW DB	3841 Elmira Rd	6/1/1993		0.2 U	0.1 U	0.2 U	2 U	0.5 U	0.5 U	0.5 U			1 U		1 U	1 U	0.5 U	0.5 U	1 U	1 U
HC GW DB	3841 Elmira Rd	9/1/1993		0.2 U	0.1 U	0.2 U	2 U	0.5 U	0.5 U	0.5 U			1 U		1 U	1 U	0.5 U	0.5 U	1 U	1 U
HC GW DB	3841 Elmira Rd	12/1/1993		0.2 U	0.1 U	0.2 U	2 U	0.5 U	0.5 U	0.5 U			1 U		1 U	1 U	0.5 U	0.5 U	1 U	1 U
HC GW DB	3841 Elmira Rd	2/1/1994		0.2 U	0.1 U	0.2 U	2 U	0.5 U	0.5 U	0.5 U			1 U		1 U	1 U	0.5 U	0.5 U	1 U	1 U

Notes:

U -- The analyte was not detected at or above the associ

UJ -- Estimated reporting limit.

J -- Estimated value.

B -- The analyte was detected in the associated laborato



Table A-1. Residential Groundwater Wells, Residential Scenarios.

Sample event	Station ID	Date	Lab rep	2,4-Dimethyl-phenol ug/L	4,6-Dinitro-2-methyl-phenol ug/L	1,2-Dichloro-benzene ug/L	1,3-Dichloro-benzene ug/L	1,4-Dichloro-benzene ug/L	Benzene ug/L	Chloro-benzene ug/L	Ethyl-benzene ug/L	Styrene ug/L	Toluene ug/L	Xylenes ug/L
2003Sept_wells	W-16AI	9/15/2003		0.5 U	2 U									
2004Sept_wells	W-16AI	9/15/2004		0.5 U	2 U									
2002Sept_wells	W-17AI	9/10/2002		0.5 U	2 U									
2003Sept_wells	W-17AI	9/15/2003		0.5 U	2 U									
2004Sept_wells	W-17AI	9/10/2004		0.5 U	2 U									
2003Sept_wells	W-17AS	9/15/2003		0.5 U	2 U									
2004Sept_wells	W-17AS	9/10/2004		0.5 U	2 U									
2002March_wells	W-17BI	3/7/2002		0.5 U	5 U									
2003Sept_wells	W-17BI	9/15/2003		0.5 U	2 U									
2004Sept_wells	W-17BI	9/9/2004		0.5 U	2 U									
2002March_wells	W-24	3/6/2002		5 U	50 U									
2002June_wells	W-24	6/6/2002		2.5 U	25 U									
2002Sept_wells	W-24	9/12/2002		4 U	16 U									
2002Dec_wells	W-24	12/12/2002		4 U	16 U									
2003March_wells	W-24	3/11/2003		1 U	4 U									
2003Sept_wells	W-24	9/15/2003		1 U	4 U									
2004March_wells	W-24	3/30/2004		5 U	20 U									
2004Sept_wells	W-24	9/15/2004		5 U	20 U									
2005March_wells	W-24	3/23/2005		5 U	20 U									
2002March_wells	W-25	3/7/2002		6.7 U	67 U									
2002June_wells	W-25	6/6/2002		6.65 U	66.5 U									
2002Sept_wells	W-25	9/10/2002		8 U	32 U									
2002Dec_wells	W-25	12/12/2002		10 U	40 U									
2003March_wells	W-25	3/11/2003		5 U	20 U									
2003Sept_wells	W-25	9/22/2003		5 U	20 U									
2004March_wells	W-25	3/30/2004		5 U	20 U									
2004Sept_wells	W-25	9/14/2004		5 U	20 U									
2005March_wells	W-25	3/23/2005		5 U	20 U									
2002March_wells	W-32	3/7/2002		0.5 U	5 U									
2002June_wells	W-32	6/13/2002		0.5 U	5 U									
2002Sept_wells	W-32	9/10/2002		0.5 U	2 U									
2002Dec_wells	W-32	12/12/2002		0.5 U	2 U									
2003March_wells	W-32	3/10/2003		0.5 U	2 U									
2003Sept_wells	W-32	9/22/2003		0.5 U	2 U									
2004March_wells	W-32	3/31/2004		0.5 U	2 U									
2004Sept_wells	W-32	9/14/2004		0.5 U	2 U									
2005March_wells	W-32	3/23/2005		0.5 U	2 U									
2002March_wells	W-34	3/7/2002		0.5 U	5 U									
2002June_wells	W-34	6/13/2002		0.5 U	5 U									
2002Sept_wells	W-34	9/11/2002		0.5 U	2 U									
2002Dec_wells	W-34	12/12/2002		0.5 U	2 U									
2003March_wells	W-34	3/11/2003		0.5 U	2 U									
2003Sept_wells	W-34	9/23/2003		0.5 U	2 U									

Table A-1. Residential Groundwater Wells, Residential Scenarios.

Sample event	Station ID	Date	Lab rep	2,4-Dimethyl-phenol ug/L	4,6-Dinitro-2-methyl-phenol ug/L	1,2-Dichloro-benzene ug/L	1,3-Dichloro-benzene ug/L	1,4-Dichloro-benzene ug/L	Benzene ug/L	Chloro-benzene ug/L	Ethyl-benzene ug/L	Styrene ug/L	Toluene ug/L	Xylenes ug/L
2004March_wells	W-34	3/30/2004		0.5 U	2 U									
2004Sept_wells	W-34	9/15/2004		0.5 U	2 U									
2005March_wells	W-34	3/23/2005		0.5 U	2 U									
2002March_wells	W-35	3/19/2002		0.5 U	5 U									
2002June_wells	W-35	6/13/2002		0.5 U	5 U									
2002Sept_wells	W-35	9/12/2002		0.5 U	2 U									
2002Dec_wells	W-35	12/12/2002		0.5 U	2 U									
2003Sept_wells	W-35	9/22/2003		0.5 U	2 U									
2004Sept_wells	W-35	9/13/2004		0.5 U	2 U									
2002March_wells	W-36	3/6/2002		0.5 U	5 U									
2002June_wells	W-36	6/13/2002		0.5 U	5 U									
2002Sept_wells	W-36	9/12/2002		0.5 U	2 U									
2002Dec_wells	W-36	12/12/2002		0.5 U	2 U									
2003Sept_wells	W-36	9/19/2003		0.5 U	2 U									
2004Sept_wells	W-36	9/13/2004		0.5 U	2 U									
2002July_wells	214 Waite	7/18/2002												
Misc Data	255 Waite	00/00/2000												
2002July_wells	255 Waite	7/22/2002												
2003Sept_wells	255 Waite	9/10/2003		0.5 U	2 U									
2004Sept_wells	255 Waite	10/4/2004		0.5 U	2 U									
Misc Data	274 Waite	00/00/2000												
2002July_wells	274 Waite	7/18/2002												
2002July_wells	304 Waite	7/18/2002												
Misc Data	3510 Elmira Rd	5/8/1992				1 U	1 U	1 U	1 U	1 U	1 U		1 U	
HC GW DB	3510 Elmira Rd	3/1/1993		0.5 U	1 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U	0.3 U
Misc Data	3841 Elmira Rd	5/8/1992				1 U	1 U	1 U	1 U	1 U	1 U		1 U	
HC GW DB	3841 Elmira Rd	3/1/1993		0.5 U	1 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U	0.3 U
HC GW DB	3841 Elmira Rd	6/1/1993		0.5 U	1 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U	0.3 U
HC GW DB	3841 Elmira Rd	9/1/1993		0.5 U	1 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U	0.3 U
HC GW DB	3841 Elmira Rd	12/1/1993		0.5 U	1 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U	0.3 U
HC GW DB	3841 Elmira Rd	2/1/1994		0.5 U	1 U									

Notes:

- U -- The analyte was not detected at or above the associated reporting limit.
- UJ -- Estimated reporting limit.
- J -- Estimated value.
- B -- The analyte was detected in the associated laboratory.

Table A-2. Off-site Soil Residential Scenarios.

Sample event	Station ID	Date	Upper	Lower	Arsenic mg/Kg	Chromium mg/Kg	Copper mg/Kg	Iron mg/Kg	Manganese mg/Kg	Zinc mg/Kg	Acenaphthene ug/Kg	Acenaphthylene ug/Kg	Anthracene ug/Kg	Benzo(a)anthracene ug/Kg	Dibenzo(a,h)anthracene ug/Kg	Benzo(a)pyrene ug/Kg	Benzo(b)fluoranthene ug/Kg	Benzo(g,h,i)perylene ug/Kg	Benzo(k)fluoranthene ug/Kg	Chrysene ug/Kg	4-Chloro-3-methylphenol ug/Kg	1,2-Dichlorobenzene ug/Kg	1,3-Dichlorobenzene ug/Kg	1,4-Dichlorobenzene ug/Kg
			Depth (ft)	Depth (ft)																				
1994 RI Phase II	SS-1	6/24/1993	0	0.25	1 U	4	8.54	3600	399	24.1	70 U	70 U	3.91	7.03	5.9	1.93	17.2	1.7 U	2.57	12.7	17 U	40 U	40 U	40 U
1994 RI Phase II	SS-2	6/24/1993	0	0.25	3	45.6	45.4	20400	534	440	70 U	70 U	15.6	77.6	36.1	50.8	72.9	54	74.2	113	32	400 U	400 U	400 U
1994 RI Phase II	SS-3	6/24/1993	0	0.25	5 U	22.8	28.5	29800	545	58.4	70 U	70 U	3.5 U	11	10.7	10.1	10.1	7.05	5.65	15.6	17 U	40 U	40 U	40 U
1994 RI Phase II	SS-4	6/24/1993	0	0.25	5.3	24	25.8	24200	646	77.2	70 U	70 U	3.5 U	3.08	4.66	4.47	6.26	4.46	1.65	5.69	17 U	40 U	40 U	40 U
1994 RI Phase II	SS-5	6/24/1993	0	0.25	7	36.1	31.9	41400	978	76.6	70 U	70 U	3.5 U	2.22	3.66	1.19	3.32	1.7 U	0.7 U	5 U	17 U	40 U	40 U	40 U
1994 RI Phase II	SS-6	6/24/1993	0	0.25	5 U	24.8	27.9	28000	457	65.8	70 U	70 U	5.12	13.5	6.17	5.01	10.3	2.5	3.1	17.3	17 U	40 U	40 U	40 U
1994 RI Phase II	SS-7	6/24/1993	0	0.25	5.1	27	24.5	27800	780	69.1	70 U	70 U	3.5 U	2.6	3.2	1.6	4.1	1.7 U	1.3	5 U	17 U	40 U	40 U	40 U
1994 RI Phase II	SS-8	6/24/1993	0	0.25	5.6	24.6	27.3	30400	559	56.8	70 U	70 U	3.5 U	2.6	1 U	2.2	3.4	1.7 U	0.7 U	5 U	17 U	40 U	40 U	40 U
1994 RI Phase II	SS-9	6/24/1993	0	0.25	6.9	23.7	47.5	27200	659	56	70 U	77.7	17.1	31.1	19.2	22.1	45.9	6.5	19.7	49.7	17 U	40 U	40 U	40 U
1994 RI Phase II	SS-9	6/24/1993	0	0.25	5 U	20.6	34.1	26400	551	52	70 U	70 U	3.5 U	5.8	4.8	1.2	1.9	1.7 U	2.4	5.5	17 U	40 U	40 U	40 U
1996Sept_SL&SD	SS-3	9/8/1996	0	-9																				
1996Sept_SL&SD	SS-4	9/8/1996	0	-9																				

Notes:

U -- The analyte was not detected at or above the associated reporting limit.

UJ -- Estimated reporting limit.

J -- Estimated value.

B -- The analyte was detected in the associated laboratory blank in addition to the sample.

EMPC -- Estimated maximum possible concentration.

Table A-2. Off-site Soil Residential Scenarios.

Sample event	Station ID	Date	Upper Depth (ft)	Lower Depth (ft)	2,3,5,6-Tetrachloro-phenol ug/Kg	2,4,6-Trichloro-phenol ug/Kg	2,4-Dichloro-phenol ug/Kg	Pentachloro-phenol (PCP) ug/Kg	2-Chloro-phenol ug/Kg	4,6-Dinitro-2-methyl-phenol ug/Kg	2,4-Dinitro-phenol ug/Kg	Fluoranthene ug/Kg	Fluorene ug/Kg	Indeno(1,2,3-cd) pyrene ug/Kg	2,4-Dimethyl-phenol ug/Kg	Naphthalene ug/Kg	2-Nitro-phenol ug/Kg	4-Nitro-phenol ug/Kg	Phenanthrene ug/Kg	Phenol ug/Kg	Pyrene ug/Kg	Total PAHs (calculated) ug/Kg	Total PAHs (reported) ug/Kg
1994 RI Phase II	SS-1	6/24/1993	0	0.25	33 U	33 U	17 U	33 U	17 U	64	33 U	35.5	7 U	8.79	17 U	70 U	17 U	51	24.8	17 U	12.5	132.83	133
1994 RI Phase II	SS-2	6/24/1993	0	0.25	33 U	33 U	17 U	33 U	17 U	33 U	33 U	256	23.3	109	17 U	108	17 U	33 U	145	17 U	94.5	1230	1230
1994 RI Phase II	SS-3	6/24/1993	0	0.25	33 U	33 U	17 U	33 U	17 U	33 U	33 U	20.8	7 U	7.44	17 U	70 U	17 U	33 U	21.9	17 U	18.1	138.44	138
1994 RI Phase II	SS-4	6/24/1993	0	0.25	33 U	245	17 U	330 U	17 U	33 U	33 U	11.9	7 U	6.08	170 U	70 U	17 U	33 U	5.01	17 U	8.65	61.91	62
1994 RI Phase II	SS-5	6/24/1993	0	0.25	33 U	33 U	17 U	33 U	17 U	33 U	33 U	8.34	7 U	1.7 U	17 U	70 U	17 U	33 U	6.82	17 U	7 U	25.55	26
1994 RI Phase II	SS-6	6/24/1993	0	0.25	33 U	33 U	17 U	104	17 U	33 U	33 U	41.4	7.17	6.58	17 U	70 U	17 U	33 U	24.4	17 U	14	156.55	157
1994 RI Phase II	SS-7	6/24/1993	0	0.25	33 U	33 U	17 U	33 U	17 U	33 U	33 U	8.2	7 U	4.9	17 U	70 U	17 U	33 U	4.8	17 U	7 U	30.7	31
1994 RI Phase II	SS-8	6/24/1993	0	0.25	33 U	33 U	17 U	33 U	17 U	33 U	33 U	7 U	7 U	2.1	17 U	108	17 U	33 U	3.5 U	17 U	7 U	118.3	118
1994 RI Phase II	SS-9	6/24/1993	0	0.25	33 U	33 U	17 U	33 U	17 U	33 U	33 U	86.3	12.4	15	17 U	78.4	17 U	33 U	27.1	17 U	83.4	591.6	592
1994 RI Phase II	SS-9	6/24/1993	0	0.25	33 U	33 U	17 U	33 U	17 U	33 U	33 U	8.4	7 U	4.1	17 U	70 U	17 U	33 U	5.1	17 U	7 U	39.2	39
1996Sept_SL&SD	SS-3	9/8/1996	0	-9																			
1996Sept_SL&SD	SS-4	9/8/1996	0	-9																			

Notes:

U -- The analyte was not detected at or above the associated r

UJ -- Estimated reporting limit.

J -- Estimated value.

B -- The analyte was detected in the associated laboratory blar

EMPC -- Estimated maximum possible concentration.

Table A-2. Off-site Soil Residential Scenarios.

Sample event	Station ID	Date	Upper Depth (ft)	Lower Depth (ft)	Benzene	Chloro-benzene	Ethyl-benzene	Styrene	Toluene	Xylenes, Total	2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	2,3,4,6,7,8-HxCDF	
					ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g
1994 RI Phase II	SS-1	6/24/1993	0	0.25	20 U	20 U	20 U	30 U	20 U	30 U															
1994 RI Phase II	SS-2	6/24/1993	0	0.25	200 U	200 U	200 U	300 U	200 U	300 U															
1994 RI Phase II	SS-3	6/24/1993	0	0.25	20 U	20 U	20 U	30 U	20 U	30 U															
1994 RI Phase II	SS-4	6/24/1993	0	0.25	20 U	20 U	20 U	30 U	20 U	30 U															
1994 RI Phase II	SS-5	6/24/1993	0	0.25	20 U	20 U	20 U	30 U	20 U	30 U															
1994 RI Phase II	SS-6	6/24/1993	0	0.25	20 U	20 U	20 U	30 U	20 U	30 U															
1994 RI Phase II	SS-7	6/24/1993	0	0.25	20 U	20 U	20 U	30 U	20 U	30 U															
1994 RI Phase II	SS-8	6/24/1993	0	0.25	20 U	20 U	20 U	30 U	20 U	30 U															
1994 RI Phase II	SS-9	6/24/1993	0	0.25	20 U	20 U	20 U	30 U	20 U	30 U															
1994 RI Phase II	SS-9	6/24/1993	0	0.25	20 U	20 U	20 U	30 U	20 U	30 U															
1996Sept_SL&SD	SS-3	9/8/1996	0	-9							0.6 U	1.6 U	1.2 U	6.6	2.9	72.2	637.4	0.7 U	1.3 U	1.8 U	1.6	1.3 U	1.6 U	2.5	
1996Sept_SL&SD	SS-4	9/8/1996	0	-9							0.6 U	1.6 U	1.2 U	25.1	6.9	333.3	2324.6	0.7 U	2.9	2.4	4.9	6.3	1.6 U	7.1	

Notes:  
 U -- The analyte was not detected at or above the associated r  
 UJ -- Estimated reporting limit.  
 J -- Estimated value.  
 B -- The analyte was detected in the associated laboratory blar  
 EMPC -- Estimated maximum possible concentration.

Table A-2. Off-site Soil Residential Scenarios.

Sample event	Station ID	Date	Upper Depth (ft)	Lower Depth (ft)	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	Total TCDD	Total PeCDD	Total HxCDD	Total HpCDD	Total OCDD	Total TCDF	Total PeCDF	Total HxCDF	Total HpCDF	Total OCDF	Total dioxins/furans	2,3,7,8-TCDD TEQ (WHO)
1994 RI Phase II	SS-1	6/24/1993	0	0.25															
1994 RI Phase II	SS-2	6/24/1993	0	0.25															
1994 RI Phase II	SS-3	6/24/1993	0	0.25															
1994 RI Phase II	SS-4	6/24/1993	0	0.25															
1994 RI Phase II	SS-5	6/24/1993	0	0.25															
1994 RI Phase II	SS-6	6/24/1993	0	0.25															
1994 RI Phase II	SS-7	6/24/1993	0	0.25															
1994 RI Phase II	SS-8	6/24/1993	0	0.25															
1994 RI Phase II	SS-9	6/24/1993	0	0.25															
1996Sept_SL&SD	SS-3	9/8/1996	0	-9	17.2	0.8 U	17.4	0.5	1.6 U	20	143.3	637.4	2.2	2.7	25.5	56.2	17.4	905.16	4.14
1996Sept_SL&SD	SS-4	9/8/1996	0	-9	61.4	0.8 U	40.3	64.1	1.6 U	36	600	2324.6	0.7 U	46.5	198.9	173.8	40.3	3484.27	11.8

Notes:

U -- The analyte was not detected at or above the associated r

UJ -- Estimated reporting limit.

J -- Estimated value.

B -- The analyte was detected in the associated laboratory blar

EMPC -- Estimated maximum possible concentration.

**Table A-3.** Off-site Sediment, Child in Ditch Scenario. Metals.

Sample event	Station ID	LabRep	Date	Upper	Lower	Arsenic mg/Kg	Chromium mg/Kg	Copper mg/Kg	Mercury mg/Kg	Zinc mg/Kg
				Depth (in)	Depth (in)					
2003 Sediments	SD13		2/21/2003	0	4	14.7	157	181		678
2003 Sediments	SD13	2	2/21/2003	0	4	1 U	67.5	160	0.03 U	691
2003 Sediments	SD14		2/21/2003	0	4	12.7	32.6	83.5		252
2003 Sediments	SD15		2/21/2003	0	4	26	57.9	236		385
2003 Sediments	SD15	2	2/21/2003	0	4	26	60.5	231		366

Notes:

U -- The analyte was not detected at or above the associated reporting limit.

UJ -- Estimated reporting limit.

J -- Estimated value.

B -- The analyte was detected in the associated laboratory blank in addition to the sample.

**Table A-3.** Off-site Sediment, Child in Ditch Scenario. SVOCs.

Sample event	Station ID	Date	Upper Depth (in)	Lower Depth (in)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) anthracene	Dibenzo(a,h) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenzo-furan	2,4,5-Trichloro- phenol	2,4,6-Trichloro- phenol
					ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
2003 Sediments	SD13	2/21/2003	0	4	48 U	54 J	66 J	200 J	98 U	220 J	380 J	460 J	250 J	490 J	71 J	61 U	51 U
2003 Sediments	SD14	2/21/2003	0	4	29 U	27 U	52 J	93 J	75 J	110 J	190 J	180 J	150 J	200 J	28 J	36 U	30 U
2003 Sediments	SD15	2/21/2003	0	4	79 J	140 J	200 J	420 J	220 J	520 J	870 J	520 J	700 J	1000 J	140 J	74 U	62 U

Notes:

U -- The analyte was not detected at or above the associated reporting limit.

UJ -- Estimated reporting limit.

J -- Estimated value.

B -- The analyte was detected in the associated laboratory blank in addition to the sample.



**Table A-3.** Off-site Sediment, Child in Ditch Scenario. SVOCs.

Sample event	Station ID	Date	Upper Depth (in)	Lower Depth (in)	2,4-Dichloro-phenol ug/Kg	Pentachloro-phenol (PCP) ug/Kg	2-Methyl-naphthalene ug/Kg	Fluoranthene ug/Kg	Fluorene ug/Kg	Indeno(1,2,3-cd) pyrene ug/Kg	Naphthalene ug/Kg	Phenanthrene ug/Kg	Pyrene ug/Kg	Total PAHs (calculated) ug/Kg
2003 Sediments	SD13	2/21/2003	0	4	59 U	450 U	150 J	390 J	67 J	280 J	230 J	280 J	930 J	4297
2003 Sediments	SD14	2/21/2003	0	4	35 U	270 U	32 J	180 J	28 U	160 J	93 J	130 J	260 J	1873
2003 Sediments	SD15	2/21/2003	0	4	71 U	550 U	180 J	840 J	110 J	500 J	570 J	370 J	1200 J	8259

Notes:

U -- The analyte was not detected at or above the associated repc

UJ -- Estimated reporting limit.

J -- Estimated value.

B -- The analyte was detected in the associated laboratory blank ii

**Table A-3.** Off-site Sediment, Child in Ditch Scenario. VOCs.

Sample event	Station ID	Sample ID	Date	Upper Depth (in)	Lower Depth (in)	Benzene	Chloro- benzene	Ethyl- benzene	Styrene	Toluene	Xylenes, Total
						ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
1994 RI Phase II	SD-8	SD_8	3/30/1993	0	4	20 U	20 U	20 U	30 U	20 U	30 U
1994 RI Phase II	SD-8	SD_8B	3/30/1993	0	4	20 U	20 U	20 U	30 U	20 U	30 U
1994 RI Phase II	SD-9	SD_9	3/30/1993	0	4	20 U	20 U	20 U	30 U	20 U	30 U
1994 RI Phase II	SD-10	SD_10	3/30/1993	0	4	20 U	20 U	20 U	30 U	20 U	30 U
1994 RI Phase II	SD-11	SD_11	3/30/1993	0	4	20 U	20 U	20 U	30 U	20 U	30 U

Notes:

U -- The analyte was not detected at or above the associated reporting limit.

UJ -- Estimated reporting limit.

J -- Estimated value.

B -- The analyte was detected in the associated laboratory blank in addition to the sample.

**Table A-3.** Off-site Sediment, Child in Ditch Scenario. Dioxin and Furans.

Sample event	Station ID	Date	Upper Depth (in)	Lower Depth (in)	2,3,7,8-TCDD pg/g	1,2,3,7,8-PeCDD pg/g	1,2,3,4,7,8-HxCDD pg/g	1,2,3,6,7,8-HxCDD pg/g	1,2,3,7,8,9-HxCDD pg/g	1,2,3,4,6,7,8-HpCDD pg/g	OCDD pg/g	2,3,7,8-TCDF pg/g	1,2,3,7,8-PeCDF pg/g	2,3,4,7,8-PeCDF pg/g	1,2,3,4,7,8-HxCDF pg/g	1,2,3,6,7,8-HxCDF pg/g	1,2,3,7,8,9-HxCDF pg/g	2,3,4,6,7,8-HxCDF pg/g	1,2,3,4,6,7,8-HpCDF pg/g
2003 Sediments	SD13	2/21/2003	0	4	6.226	31.411	71.99	241.849	144.628	6473.64 B	41761.573 J	2.399 C	11.556	10.42	55.418	40.25	2.849 J	62.997	909.07
2003 Sediments	SD14	2/21/2003	0	4	0.439 U	5.514	13.771	64.011	28.693	2223.989 B	15377.114 J	0.52 C	2.592	2.579	13.627	6.84	1.452 U	12.105	220.748
2003 Sediments	SD15	2/21/2003	0	4	3.452	32.531	77.153	452.073	203.398	12169.941 B	87267.881 J	3.095 C	17.868	15.02	82.165	44.36	12.388 U	83.329	1223.153

Notes:

U -- The analyte was not detected at or above the associated reporting limit.

UJ -- Estimated reporting limit.

J -- Estimated value.

B -- The analyte was detected in the associated laboratory blank in addition to the sample.

**Table A-3.** Off-site Sediment, Child in Ditch Scenario. Dioxin and Furans.

Sample event	Station ID	Date	Upper Depth (in)	Lower Depth (in)	1,2,3,4,7,8,9-HpCDF pg/g	OCDF pg/g	Total TCDD pg/g	Total PeCDD pg/g	Total HxCDD pg/g	Total HpCDD pg/g	Total TCDF pg/g	Total PeCDF pg/g	Total HxCDF pg/g	Total HpCDF pg/g	2,3,7,8-TCDD TEQ (WHO) pg/g
2003 Sediments	SD13	2/21/2003	0	4	71.719	3175.341 B	32.556	177.287	1434.329	13930.342	60.89	415.58	1502.803	3521.903	185
2003 Sediments	SD14	2/21/2003	0	4	13.735	770.194	2.869	30.581	347.449	5039.838	5.537	75.299	332.027	908.948	47.4
2003 Sediments	SD15	2/21/2003	0	4	97.416	5865.646 B	37.14	240.332	2571.64	28495.512	50.781	495.459	2336.61	6020.777	284

Notes:

U -- The analyte was not detected at or above the associated re

UJ -- Estimated reporting limit.

J -- Estimated value.

B -- The analyte was detected in the associated laboratory blank

**Table A-4.** Off-site Surface Water, Child in Ditch Scenario. Metals.

Sample event	Station ID	Date	Arsenic mg/L	Arsenic, Dissolved mg/L	Chromium mg/L	Chromium Dissolved mg/L	Copper mg/L	Copper, Dissolved mg/L	Zinc, Total mg/L	Zinc, Dissolved mg/L
2000 SW Invest.	CH001	5/16/2000	0.005 U	0.005 U			0.005	0.005 U	0.048	0.028
2000 SW Invest.	CH001	5/25/2000	0.005 U	0.005 U			0.005 U	0.005 U	0.036	0.02 U
2000 SW Invest.	SW008	4/13/2000	0.005 U	0.005 U			0.011	0.005 U	0.075	0.025
2000 SW Invest.	SW008	5/10/2000	0.005 U	0.005 U			0.01	0.005 U	0.046	0.031
2000 SW Invest.	SW009	4/13/2000	0.0073	0.005 U			0.027	0.005 U	0.161	0.05
2000 SW Invest.	SW009	5/10/2000	0.0234	0.0204			0.034	0.012	0.088	0.041
GW Data below will be used for the future SW scenario										
HC GW DB	W-24	1/1/2001	0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.024	0.02 U
HC GW DB	W-24	4/1/2001	0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02 U	0.02
HC GW DB	W-24	6/1/2001	0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02 U	0.02 U
HC GW DB	W-25	1/1/2001	0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02 U	0.02 U
HC GW DB	W-25	4/1/2001	0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.025	0.02 U
HC GW DB	W-25	6/1/2001	0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02 U	0.02 U

Notes:

U -- The analyte was not detected at or above the associated reporting limit.

UJ -- Estimated reporting limit.

J -- Estimated value.

B -- The analyte was detected in the associated laboratory blank in addition to the sample.

Table A-4. Off-site Surface Water, Child in Ditch Scenario. SVOCS.

Sample event	Station ID	Date	Acenaph- thene ug/L	Acenaph- thylene ug/L	Anthracene ug/L	Benzo(a) anthracene ug/L	Dibenzo(a,h) anthracene ug/L	Benzo(a) pyrene ug/L	Benzo(b) fluoranthene ug/L	Benzo(g,h,i) perylene ug/L	Benzo(k) fluoranthene ug/L	Carbazole ug/L	Chrysene ug/L	4-Chloro-3- methylphen ol ug/L	2,3,4,6- Tetrachloro- phenol ug/L	2,3,5,6- Tetrachloro- phenol ug/L	2,4,5- Trichloro- phenol ug/L	2,4,6- Trichloro- phenol ug/L	2,4-Dichloro- phenol ug/L
Roosevelt Channel	RC-1	9/6/2001	<b>ONLY PENTACHLOROPHENOL DATA FOR THESE SAMPLES</b>																
Roosevelt Channel	RC-2	9/6/2001																	
Roosevelt Channel	RC-3	9/6/2001																	
GW data below will be used as a surrogate for future SW scenario																			
HC GW DB	W-24	1/1/2001	0.1 U	0.1 U	0.43	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	1 U	1 U	1 U	1 U	0.5 U
HC GW DB	W-24	4/1/2001	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	1 U	1 U	1 U	1 U	0.5 U
HC GW DB	W-24	6/1/2001	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	1 U	1 U	1 U	1 U	0.5 U
HC GW DB	W-24	9/1/2001												0.5 U	1 U	1 U	1 U	1 U	0.5 U
HC GW DB	W-24	12/1/2001												0.5 U	1 U	1 U	1 U	1 U	0.5 U
HC GW DB	W-25	1/1/2001	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	1 U	1 U	1 U	1 U	0.5 U
HC GW DB	W-25	4/1/2001	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	1 U	1 U	1 U	1 U	0.5 U
HC GW DB	W-25	6/1/2001	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	1 U	1 U	1 U	1 U	0.5 U
HC GW DB	W-25	9/1/2001												0.5 U	1 U	1 U	1 U	1 U	0.5 U
HC GW DB	W-25	12/1/2001												0.5 U	1 U	1 U	1 U	1 U	0.5 U

Notes:

- U -- The analyte was not detected at or above the associated reporting limit.
- UJ -- Estimated reporting limit.
- J -- Estimated value.
- B -- The analyte was detected in the associated laboratory blank in addition to the sample.

Table A-4. Off-site Surface Water, Child in Ditch Scenario. SVOCS.

Sample event	Station ID	Date	Pentachloro-phenol (PCP) ug/L	2-Chloro-phenol ug/L	4,6-Dinitro-2-methylphenol ug/L	2,4-Dinitro-phenol ug/L	2,6-Dichloro-phenol ug/L	Fluoranthene ug/L	Fluorene ug/L	Indeno(1,2,3-cd)pyrene ug/L	2,4-Dimethyl-phenol ug/L	Naphthalene ug/L	2-Nitrophenol ug/L	4-Nitrophenol ug/L	Phenanthrene ug/L	Phenol ug/L	Pyrene ug/L	Total PAHs (calculated) ug/L	Total PAHs (reported) ug/L
Roosevelt Channel	RC-1	9/6/2001	0.76																
Roosevelt Channel	RC-2	9/6/2001	0.76																
Roosevelt Channel	RC-3	9/6/2001	1.08																
GW data below will be used as a surrogate for future																			
HC GW DB	W-24	1/1/2001	34.4	0.5 U	5 U	5 U	0.5 U	0.1 U	0.19	0.1 U	0.5 U	0.3	0.5 U	1 U	0.1 U	0.5 UJ	0.1 U	0.92	1.5
HC GW DB	W-24	4/1/2001	18.6	0.5 U	5 U	5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.5 UJ	0.1 U	0.5 U	1 UJ	0.1 U	0.5 UJ	0.1 U	0.1 U	0.1 U
HC GW DB	W-24	6/1/2001	19.8	0.5 U	5 U	5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.5 U	1 U	0.1 U	0.5 UJ	0.1 U	0.1 U	0.1 U
HC GW DB	W-24	9/1/2001	14.2	0.5 U	5 U	5 U	0.5 U				0.5 U		0.5 U	1 U		0.5 U			
HC GW DB	W-24	12/1/2001	82.9	0.5 U	5 U	5 U	0.5 U				0.5 U		0.5 U	1 U		0.5 U			
HC GW DB	W-25	1/1/2001	38.5	0.5 U	5 U	5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.5 U	1 U	0.1 U	0.5 UJ	0.1 U	0.1 U	0.1 U
HC GW DB	W-25	4/1/2001	33.9	0.5 U	5 U	5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.5 UJ	0.1 U	0.5 U	1 UJ	0.1 U	0.5 UJ	0.1 U	0.1 U	0.1 U
HC GW DB	W-25	6/1/2001	43	0.5 U	5 U	5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.5 U	1 U	0.1 U	0.5 UJ	0.1 U	0.1 U	0.1 U
HC GW DB	W-25	9/1/2001	44.7	0.5 U	5 U	5 U	0.5 U				0.5 U		0.5 U	1 U		0.5 U			
HC GW DB	W-25	12/1/2001	49.3	0.5 U	5 U	5 U	0.5 U				0.5 U		0.5 U	1 U		0.5 U			

Notes:  
 U -- The analyte was not detected at or above the a  
 UJ -- Estimated reporting limit.  
 J -- Estimated value.  
 B -- The analyte was detected in the associated lab

**Table A-4.** Off-site Surface Water, Child in Ditch Scenario. Dioxins and Furans.

J.H. Baxter Eugene Facility

Sample event	Station ID	Date	2,3,7,8-TCDD pg/L	1,2,3,7,8-PeCDD pg/L	1,2,3,4,7,8-HxCDD pg/L	1,2,3,6,7,8-HxCDD pg/L	1,2,3,7,8,9-HxCDD pg/L	1,2,3,4,6,7,8-HpCDD pg/L	OCDD pg/L	2,3,7,8-TCDF pg/L	1,2,3,7,8-PeCDF pg/L	2,3,4,7,8-PeCDF pg/L	1,2,3,4,7,8-HxCDF pg/L	1,2,3,6,7,8-HxCDF pg/L	1,2,3,7,8,9-HxCDF pg/L	2,3,4,6,7,8-HxCDF pg/L	1,2,3,4,6,7,8-HpCDF pg/L	1,2,3,4,7,8,9-HpCDF pg/L	OCDF pg/L	Total TCDD pg/L
2002June_wells	W-24	6/6/2002	2.3 J	3.6 J	EMPC	3.1 J	EMPC	3.8 J	3.7 J	EMPC	6.6 J	69.6 JB	1.7 J	EMPC	3.8 J	EMPC	3.4 J	EMPC	3.4 J	2.3
2002June_wells	W-25	6/6/2002	3.5 J	9.6 J	12.5 J	14.4 J	15.2 J	13.5 J	41.4 JB	3.6 J	10.4 J	13.8 J	13.5 J	12.2 J	13.8 J	14.1 J	14.5 J	17.7 J	29.3 J	3.5

Notes:

- U -- The analyte was not detected at or above the associated reporting limit.
- UJ -- Estimated reporting limit.
- J -- Estimated value.
- B -- The analyte was detected in the associated laboratory blank in addition to the sample.
- EMPC -- Estimated maximum possible concentration.



**Table A-4.** Off-site Surface Water, Child in Ditch Scenario. Dioxins and Furans.

Sample event	Station ID	Date	Total PeCDD pg/L	Total HxCDD pg/L	Total HpCDD pg/L	Total TCDF pg/L	Total PeCDF pg/L	Total HxCDF pg/L	Total HpCDF pg/L	2,3,7,8-TCDD pg/L	equivalent (TEQ-WHO)
2002June_wells	W-24	6/6/2002	3.6 EMPC	3.8	6.6	1.7 EMPC	7.3 EMPC	14.3	4.5		10.6
2002June_wells	W-25	6/6/2002	9.6	42.1	13.5	3.6	24.2	53.6	32.2		30.9

Notes:

U -- The analyte was not detected at or

UJ -- Estimated reporting limit.

J -- Estimated value.

B -- The analyte was detected in the as

EMPC -- Estimated maximum possible

Table A-5. On-site Groundwater Wells, Worker and Trench Worker Scenarios.

Sample event	Station ID	Date	Lab rep	Asenic	Asenic, Dissolved	Chromium	Chromium, Dissolved	Copper	Copper, Dissolved	Iron, Total	Iron, Dissolved	Manganese	Manganese, Dissolved	Zinc, Total	Zinc, Dissolved	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Dibenzo(a,h)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Fluoranthene	Fluorene	Naphthalene	Indeno(1,2,3-cd)pyrene	
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
1991 RI Phase I	W-1S	8/1/1990		0.01 U	0.01 U	0.014	0.01 U	0.025 U	0.025 U	16.6	0.1 U	0.606	0.015 U	0.05	0.02 U	2 U	2 U	0.5 U	0.2 U	0.03 U	0.028	0.034	0.05 U	0.034 U	0.15 U	0.2 U	0.2 U	2 U	0.05 U	
HC GW DB	W-1S	3/1/1998		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U					0.028	0.02 U	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.1 U	0.1 U	1 U	1 U	0.2 U	
1997 FS PII	W-2I	12/00/1995		0.005 U	0.005 U	0.009	0.005 U	0.025 U	0.025 U					0.041	0.03	1 U	1 U	1.4	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.1 U	4.3	4.3	44	0.2 U	
1997 FS PII	W-2I	09/00/1996		0.005 U	0.005 U	0.025 U	0.025 U	0.036	0.005 U					0.046	0.02 U	0.05 U	0.05 U	0.05 U	0.05 U	0.1 U	0.05 U	0.05 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	11	0.05 U	
1991 RI Phase I	W-2S	8/1/1990		0.012		0.001 U		0.025 U		8.57		11.3		0.042		200 U	262	38.4	12	15.5	7.91	10.2	11.6	3.43	31	100	124	710	1.99	
HC GW DB	W-2S	12/1/1997		0.011	0.011	0.005 U	0.005 U	0.025 U	0.025 U					0.045	0.022	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.1 U	0.1 U	4.6	1 U	0.2 U	
1991 RI Phase I	W-3S	8/1/1990		0.01 U	0.01 U	0.01 U	0.01 U	0.025 U	0.025 U	0.311	0.1 U	0.015 U	0.015 U	0.02 U	0.02 U	2 U	2 U	0.5 U	0.02 U	0.03 U	0.02 U	0.02 U	0.05 U	0.02 U	0.15 U	0.2 U	0.2 U	2 U	0.05 U	
1991 RI Phase I	W-4S	8/1/1990		0.01 U	0.01 U	0.01 U	0.01 U	0.025 U	0.025 U	0.634	0.1 U	6.38	3.54	0.022	0.02 U	2 U	2 U	0.5 U	0.02 U	0.03 U	0.02 U	0.02 U	0.02 U	0.02 U	0.15 U	0.2 U	0.2 U	2 U	0.05 U	
HC GW DB	W-4S	3/1/1998		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U					0.025	0.02 U	1 U	1 U	1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.1 U	1 U	1 U	1 U	0.2 U	
1991 RI Phase I	W-5I	8/1/1990		0.01 U	0.01 U	0.01 U	0.01 U	0.025 U	0.025 U	0.1 U	0.1 U	0.0804	0.0863	0.025 U	0.02 U	3.35	7.84	0.5 U	0.02 U	0.03 U	0.02 U	0.02 U	0.05 U	0.02 U	0.15 U	0.2 U	0.616	5.41	0.05 U	
HC GW DB	W-5I	3/1/1998		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U					0.027	0.02 U	1 U	1 U	1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.1 U	1 U	1 U	1 U	0.2 U	
1991 RI Phase I	W-6I	8/1/1990		0.01 U	0.01 U	0.01 U	0.01 U	0.025 U	0.025 U	0.1 U	0.1 U	0.015 U	0.015 U	0.025 U	0.02 U	5.25	13.1	0.02 U	0.02 U	0.03 U	0.02 U	0.02 U	0.05 U	0.02 U	0.15 U	1.02	1.27	15	0.05 U	
HC GW DB	W-6I	9/1/1996		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U					0.02 U	0.02 U	0.07	0.05 U	0.05 U	0.05 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.24	0.05 U	0.05 U	0.1 U	
HC GW DB	W-6I	9/1/1996 2		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U					0.025 U	0.025 U	0.08	0.05 U	0.05 U	0.05 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.27	0.09	0.05 U	0.1 U	
HC GW DB	W-6I	3/1/1997		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U					0.02 U	0.02 U	2.1	1 U	1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.1 U	0.56	1 U	4	0.2 U	
HC GW DB	W-6I	9/1/1997		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U					0.027	0.02 U	1 U	1 U	1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.1 U	0.56	1 U	1 U	0.2 U	
HC GW DB	W-6I	3/1/1998		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U					0.097	0.063	1	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.1 U	0.38	1 U	5.2	0.2 U	
HC GW DB	W-6I	8/1/1998		0.005 U	0.005 U	0.007	0.005 U	0.025 U	0.025 U					0.117	0.056	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.1 U	0.2	1 U	1 U	0.2 U	
HC GW DB	W-6I	3/1/1999		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U					0.02 U	0.02 U	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.1 U	0.56	1 U	1 U	0.2 U	
2000 GWMon	W-6I	03/00/2000		0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.025 U					0.02 U	0.02 U	0.48	0.11	0.83	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.1 U	1.2	0.68	1.28	0.5 U	
HC GW DB	W-6I	9/1/2001																												
2002Sept_wells	W-6I	9/10/2002																												
2003Sept_wells	W-6I	9/23/2003																												
2004Sept_wells	W-6I	9/9/2004																												
1991 RI Phase I	W-7S	8/1/1990																												
HC GW DB	W-7S	9/1/1997		0.347	0.037	0.005 U	0.005 U	0.081	0.025 U					0.142	0.02 U	1 U	1 U	3.2	0.75	0.5 U	0.81	0.91	0.3 U	0.32	1.4	11	39.6	426	0.2 U	
HC GW DB	W-7S	12/1/1997		0.352	0.195	0.005 U	0.005 U	0.033	0.025 U					0.122	0.048	1 U	1 U	0.1 U	1 U	0.5 U	1 U	1 U	0.3 U	1 U	1 U	0.5 U	1 U	8.9	0.2 U	
HC GW DB	W-7S	3/1/1998		0.274	0.266	0.005 U	0.005 U	0.025 U	0.025 U					0.038	0.02 U	35.7	10.8	1 U	0.61	1.1	0.13	0.1 U	0.3 U	0.1 U	0.5	0.4	6.1	1.7	0.2 U	
HC GW DB	W-7S	6/1/1998		0.24	0.228	0.005 U	0.005 U	0.025 U	0.025 U					0.046	0.027	54.3	15.1	1.14	0.28	0.5 U	0.15	0.2	0.3 U	0.1 U	0.83	4.2	18	3470	0.2 U	
HC GW DB	W-7S	8/1/1998		0.144	0.05	0.005 U	0.005 U	0.032	0.025 U					0.059	0.02 U	1640	11800	4.77	0.11	0.3 U	0.14	0.2	0.3 U	0.1 U	0.32	16.7	93.3	5970	0.2 U	
HC GW DB	W-7S	3/1/1999		0.238	0.202	0.005 U	0.005 U	0.025 U	0.025 U					0.026	0.02 U	11.2	1.4	83.8	2.5	0.3 U	3.8	4	0.3 U	0.7	3.3	32.1	1.1	1 U	0.2 U	
2000 GWMon	W-7S	03/00/2000		0.158	0.096	0.005 U	0.025 U	0.025 U	0.025 U					0.038	0.02 U	393	10.2	70.6	0.1 U	0.5 U	0.49	0.87	0.5 U	0.66	0.65	9.3	111	1706	0.5 U	
2000 GWMon	W-7S	03/00/2000		0.157	0.094	0.005 U	0.025 U	0.025 U	0.025 U					0.036	0.2 U	384	10.3	39.6	0.1 U	0.5 U	0.64	0.66	0.5 U	0.64	0.83	7.01	98.9	1024	0.5 U	
HC GW DB	W-7S	9/1/2001		0.082	0.029	0.005 U	0.005 U	0.035	0.02 U					0.026	0.02 U	167	0.1 U	49.1	0.2	0.1	0.1	0.4	0.1	0.2	0.3	12.4	69	2890	0.2	
2002Sept_wells	W-7S	9/10/2002		0.032	0.025	0.005 U	0.005 U	0.031	0.02 U					0.03	0.02 U	137	2.3	43.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	5.8	59	6060	0.1 U	
2002Sept_wells	W-7S	9/10/2002		0.028	0.025	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	139	2.9	45	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	5.8	54.9	6390	0.1 U	
2002Sept_wells	W-7S	9/10/2002 2		0.029	0.025	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	144	2.4	46.8	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	6.1	56	6560	0.1 U	
2003Sept_wells	W-7S	9/10/2003		0.0175	0.0137	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	130	2.1	39	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	6.6	48.5	7730	0.1 U	
2003Sept_wells	W-7S	9/10/2003		0.0167	0.0137	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	131	2.4	39.3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	6.9	48.6	7230	0.1 U	
2004Sept_wells	W-7S	9/9/2004		0.04	0.035	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	130	167	9.5	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	8.5	57.6	8920	0.1 U
2004Sept_wells	W-7S	9/9/2004		0.043	0.037	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	141	179	8.9	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	9.4	58.2	9950	0.1 U
2004Sept_wells	W-7S	9/9/2004 2		0.042	0.037	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	137	177	8.9	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	8.5	58.9	8300	0.1 U
1997 FS PII	W-8I	12/00/1995		0.005 U	0.005 U	0.007	0.005 U	0.025 U	0.025 U					0.065	0.025 U	1 U	1 U	0.1 U	0.43	0.5 U	0.27	0.3	0.3 U	0.12	0.54	0.39	1 U	1.1	0.2 U	
1997 FS PII	W-8I	09/00/1996		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U					0.03	0.025 U	0.05 U	0.05 U	0.05 U	0.05 U	0.1 U	0.05 U	0.05 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1991 RI Phase I	W-8S	8/1/1990		0.18	0.171	0.01 U	0.01 U	0.025 U	0.025 U	16.5	7.11	6.71	7.11	0.034	0.02 U	350	185	95.1	30.5	25.5	19	16.3	16.7	6.94	54	115	296	2000	4.36	
HC GW DB	W-8S	3/1/1998		0.213	0.211	0.005 U	0.005 U	0.025 U	0.025 U					0.056	0.02 U	310	17.1			23.6	3.8	0.54	3.1	1.2			3.4	83.		



Table A-5. On-site Groundwater Wells, Worker and Trench Worker Scenarios.

Sample event	Station ID	Date	Lab rep	Concentration (mg/L, ug/L, or ug/L)																									
				Arsenic	Arsenic, Dissolved	Chromium	Chromium, Dissolved	Copper	Copper, Dissolved	Iron, Total	Iron, Dissolved	Manganese	Manganese, Dissolved	Zinc, Total	Zinc, Dissolved	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Dibenz(a,h)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Fluoranthene	Fluorene	Naphthalene	Indeno(1,2,3-cd)pyrene	
2005June_wells	W-13I	6/30/2005		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.1 U	0.13	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.22	0.1 U	
2005June_wells	W-13I	6/30/2005		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25	0.1 U	
2000 GWMon	W-13S	03/00/2000		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U			0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	
2000 GWMon	W-13S	07/00/2000		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U			0.02 U	0.02 U	1.02	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.87	0.5 U	
HC GW DB	W-13S	9/1/2000		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.26	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.58	0.1 U	0.1 U	0.5 U	0.5 U	
HC GW DB	W-13S	1/1/2001		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1.1	0.1 U	0.1 U	
HC GW DB	W-13S	4/1/2001		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.1 U	0.47	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U
HC GW DB	W-13S	4/6/2001																											
HC GW DB	W-13S	6/1/2001		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.9	0.1 U	
HC GW DB	W-13S	9/1/2001		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.1 U	0.3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	7.6	0.1 U	
HC GW DB	W-13S	9/1/2001 2		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.1 U	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	7	0.1 U	
HC GW DB	W-13S	12/1/2001		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2002March_wells	W-13S	3/4/2002		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.2	0.1 U	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1.5	0.1 U	
2002March_wells	W-13S	3/4/2002 2		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.2	0.1 U	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1.3	0.1 U	
2002June_wells	W-13S	6/6/2002		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.1 U	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2	0.1 U	
2002Sept_wells	W-13S	9/6/2002		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.1 U	0.3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.1 U	
2002Dec_wells	W-13S	12/11/2002		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.1 U	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2003March_wells	W-13S	3/7/2003		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.1 U	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.3	0.1 U	
2003March_wells	W-13S	3/7/2003 2		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.1 U	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.3	0.1 U	
2003June_wells	W-13S	6/23/2003		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1	0.12	0.25	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25	0.94	0.1 U
2003June_wells	W-13S	6/23/2003 2		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.13	0.13	0.24	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.24	0.92	0.1 U
2003Sept_wells	W-13S	9/9/2003		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.1 U	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2003Sept_wells	W-13S	9/9/2003 2		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.1 U	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2003Dec_wells	W-13S	12/15/2003		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.1 U	0.15	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2003Dec_wells	W-13S	12/15/2003		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.1 U	0.16	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2004March_wells	W-13S	3/31/2004		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.11	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.54	0.1 U	
2004March_wells	W-13S	3/31/2004		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.1	0.19	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.41	0.1 U	
2004June_wells	W-13S	6/8/2004		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.2	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.3	0.1 U	
2004Sept_wells	W-13S	9/9/2004		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2	0.1 U	
2004Dec_wells	W-13S	12/2/2004		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.2 U	0.2 U	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2005March_wells	W-13S	3/22/2005		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1	0.1	0.16	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.47	0.1 U
2005June_wells	W-13S	6/30/2005		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U			0.02 U	0.02 U	0.1 U	0.1 U	0.36	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.22	0.8	0.1 U
1991 RI Phase I	W-14I	8/1/1990		0.01 U	0.01 U	0.01 U	0.01 U	0.025 U	0.025 U	0.149	0.1 U	0.015 U	0.015 U	0.02 U	0.02 U	2 U	0.5 U	0.02 U	0.03 U	0.02 U	0.03 U	0.05 U	0.02 U	0.15 U	0.2 U	0.2 U	2 U	0.05 U	0.5 U
HC GW DB	W-14I	3/1/1998		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U			0.072	0.04	1 U	1 U	1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.3 U	0.1 U	0.1 U	1 U	1 U	0.1 U	0.2 U
HC GW DB	W-18AI	12/1/1998		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U			0.02 U	0.02 U	1 U	1 U	1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.3 U	0.1 U	0.1 U	1 U	1 U	0.1 U	0.2 U
HC GW DB	W-18AI	3/1/1999		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U			0.043	0.043	1 U	1 U	1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.3 U	0.1 U	0.1 U	1 U	1 U	0.1 U	0.2 U
HC GW DB	W-18AI	3/1/1999 2		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U			0.034	0.041	1 U	1 U	1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.3 U	0.1 U	0.1 U	1 U	1 U	0.1 U	0.2 U
HC GW DB	W-18AI	6/1/1999		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U			0.034	0.033	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.3 U	0.1 U	0.1 U	1 U	1 U	0.1 U	0.2 U
HC GW DB	W-18AI	6/1/1999 2		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U			0.02 U	0.02 U	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.3 U	0.1 U	0.1 U	1 U	1 U	0.1 U	0.2 U
HC GW DB	W-18AI	9/1/1999		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U			0.027	0.02 U	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.3 U	0.1 U	0.1 U	1 U	1 U	0.1 U	0.2 U
HC GW DB	W-18AI	12/1/1999		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U			0.036	0.02 U	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.3 U	0.1 U	0.1 U	1 U	1 U	0.1 U	0.2 U
HC GW DB	W-18AI	12/1/1999 2		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U			0.042	0.02 U	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.3 U	0.1 U	0.1 U	1 U	1 U	0.1 U	0.2 U
2000 GWMon	W-18AI	03/00/2000		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U			0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U
2000 GWMon	W-18AI	07/00/2000		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U			0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	

Table A-5. On-site Groundwater Wells, Worker and Trench Worker Scenarios.

Sample event	Station ID	Date	Lab rep																											
			Arsenic mg/L	Arsenic, Dissolved mg/L	Chromium mg/L	Chromium, Dissolved mg/L	Copper mg/L	Copper, Dissolved mg/L	Iron, Total mg/L	Iron, Dissolved mg/L	Manganese mg/L	Manganese , Dissolved mg/L	Zinc, Total mg/L	Zinc, Dissolved mg/L	Acenaphthe ne ug/L	Acenaphthy lene ug/L	Anthracene ug/L	Benzo(a) anthracene ug/L	Dibenzo(a,h ) anthracene ug/L	Benzo(a) pyrene ug/L	Benzo(b) fluoranthene ug/L	Benzo(g,h,i) perylene ug/L	Benzo(k) fluoranthene ug/L	Chrysene ug/L	Fluoranthene ug/L	Fluorene ug/L	Naphthalen e ug/L	Indeno(1,2, 3-cd) pyrene ug/L		
2000 GWMon	W-20I	03/00/2000	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U				0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
2000 GWMon	W-20I	07/00/2000	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U				0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
HC GW DB	W-20I	9/1/2000	0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U				0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
HC GW DB	W-20I	1/1/2001	0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U				0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
HC GW DB	W-20I	4/1/2001	0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U				0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
HC GW DB	W-20I	6/1/2001	0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U				0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U

Table A-5. On-site Groundwater Wells, Worker and Trench Worker Scenarios.

Sample event	Station ID	Date	Lab rep	Arsenic mg/L	Arsenic, Dissolved mg/L	Chromium mg/L	Chromium, Dissolved mg/L	Copper mg/L	Copper, Dissolved mg/L	Iron, Total mg/L	Iron, Dissolved mg/L	Manganese mg/L	Manganese , Dissolved mg/L	Zinc, Total mg/L	Zinc, Dissolved mg/L	Acenaphthe ne ug/L	Acenaphthry lene ug/L	Anthracene ug/L	Benzo(a) anthracene ug/L	Dibenzo(a,h) anthracene ug/L	Benzo(a) pyrene ug/L	Benzo(b) fluoranthene ug/L	Benzo(k) fluoranthene ug/L	Benzo(g,h,i) perylene ug/L	Chrysene ug/L	Fluoranthene ug/L	Fluorene ug/L	Naphthalen e ug/L	Indeno(1,2, 3-cd) pyrene ug/L	
HC GW DB	W-20I	9/1/2001		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
HC GW DB	W-20I	12/1/2001		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2002March_wells	W-20I	3/4/2002		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2002June_wells	W-20I	6/6/2002		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2002Sept_wells	W-20I	9/6/2002		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2002Dec_wells	W-20I	12/11/2002		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2003March_wells	W-20I	3/7/2003		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2003March_wells	W-20I	3/7/2003		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2003June_wells	W-20I	6/23/2003		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2003Sept_wells	W-20I	9/9/2003		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2003Dec_wells	W-20I	12/15/2003		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2004March_wells	W-20I	3/31/2004		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2004June_wells	W-20I	6/8/2004		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2004Sept_wells	W-20I	9/9/2004		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2004Dec_wells	W-20I	12/2/2004		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
2005March_wells	W-20I	3/22/2005		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2005March_wells	W-20I	3/23/2005		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2005June_wells	W-20I	6/30/2005		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
1997 FS PII	W-21I	12/00/1995		0.007	0.005 U	0.02	0.005 U	0.028	0.025 U					0.096	0.025 U	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.1 U	0.1 U	1 U	1 U	0.2 U	
1997 FS PII	W-21I	12/00/1995		0.006	0.005 U	0.018	0.005 U	0.025	0.025 U					0.079	0.025 U	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.1 U	0.15	1 U	1 U	0.2 U	
1997 FS PII	W-21I	09/00/1996		0.005 U	0.005 U	0.025 U	0.025 U	0.025 U	0.025 U					0.033	0.06	0.05 U	0.05 U	0.05 U	0.05 U	0.1 U	0.05 U	0.05 U	0.1 U	0.05 U	0.05 U	0.1	0.05 U	0.05 U	0.05 U	
1997 FS PII	W-21S	12/00/1995		0.108	0.009	0.148	0.005 U	0.24	0.025 U					0.445	0.025 U	1 U	1 U	3.5	0.35	0.72	0.1 U	0.1 U	0.41	0.1 U	0.59	7	53	1 U	0.2 U	
1997 FS PII	W-21S	09/00/1996		0.105	0.025 U	0.126	0.025 U	0.301	0.025 U					0.554	0.03	15	0.69	2.5	0.45	0.08	0.16	0.18	0.1 U	0.15	0.47	4.6	12	14	0.05	
1997 FS PII	W-22S	12/00/1995		0.194	0.005 U	0.27	0.005 U	0.42	0.025 U					0.67	0.025 U	1 U	1 U	110	70	0.5 U	0.34	27	0.3 U	14	80	140	1 U	1 U	0.2 U	
1997 FS PII	W-22S	09/00/1996		0.094	0.005 U	0.097	0.005 U	0.226	0.025 U					0.44	0.024	12	0.9	21	19	4.5	10	8.6	0.42	8.1	17	61	17	9.8	2.6	
2000 GWMon	W-23	3/27/2000		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.053	0.063	0.1 U	0.1 U	1.56	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	
2000 GWMon	W-23	3/27/2000														0.1 U	0.1 U	1.51	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.61	
2000 GWMon	W-23	7/12/2000		0.007	0.005 U	0.006	0.005 U	0.025	0.02 U					0.095	0.16	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	
HC GW DB	W-23	1/1/2001		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
HC GW DB	W-23	3/1/2001																												
HC GW DB	W-23	4/1/2001		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.23	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
HC GW DB	W-23	6/1/2001		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.022 U	0.02	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
HC GW DB	W-23	9/1/2001		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.061	0.03	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
HC GW DB	W-23	12/1/2001		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
HC GW DB	W-23	12/1/2001 2		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2002June_wells	W-23	6/6/2002																												
2002June_wells	W-23	6/6/2002																												
2002March_wells	W-23	3/5/2002		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2002March_wells	W-23	3/5/2002		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2002June_wells	W-23	6/6/2002		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2002June_wells	W-23	6/6/2002		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2002Sept_wells	W-23	9/10/2002		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2002Dec_wells	W-23	12/11/2002		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2002Dec_wells	W-23	12/11/2002		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
2003Sept_wells	W-23	9/12/2003		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	4.3	0.1 U	
2004Sept_wells	W-23	9/8/2004		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U					0.02 U	0.02 U															

Table A-5. On-site Groundwater Wells, Worker and Trench Worker Scenarios.

Sample event	Station ID	Date	Lab rep	Phenanthrene ug/L	Pyrene ug/L	Total PAHs (calculated) ug/L	Total PAHs (reported) ug/L	Carbazole ug/L	Phenol ug/L	2-Chloro- phenol ug/L	2,4-Dichloro- phenol ug/L	2,6-Dichloro- phenol ug/L	2,4,5- Trichloro- phenol ug/L	2,4,6- Trichloro- phenol ug/L	2,3,4,6- Tetrachloro- phenol ug/L	2,3,5,6- Tetrachloro- phenol ug/L	Pentachloro- phenol (PCP) ug/L	4-Chloro-3- methyl- phenol ug/L	2-Nitro- phenol ug/L	4-Nitro- phenol ug/L	2,4-Dinitro- phenol ug/L	3 and 4- Methyl- phenol ug/L	2,4- Dimethyl- phenol ug/L	4,6-Dinitro- 2-methyl- phenol ug/L	o-Cresol ug/L	1,2-Dichloro- benzene ug/L	1,3-Dichloro- benzene ug/L	
1991 RI Phase I	W-1S	8/1/1990		0.5 U	0.2 U	0.062	0.06	2 U	0.5 U	0.5 U	0.5 U			1 U		6.11	56.7	0.833	0.5 U	1 U	1 U		0.5 U	1 U				
HC GW DB	W-1S	3/1/1998		0.1 U	0.5 U	1 U	1 U		2.94	0.5 U	0.5 U	0.5 U		1 U	1 U	1 U	4.16	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
1997 FS PII	W-2I	12/00/1995		5.5	0.5 U	59.5	59.5		2.5 U	2.5 U	2.5 U	21.8		2.5 U	6	14.4	144	2.5 U	2.5 U	10 U	10 U		2.5 U	5 U				
1997 FS PII	W-2I	09/00/1996		0.05 U	0.05 U	11	11		0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	1 U	9.45	112	0.5 U	0.5 U	1 U	1 U		0.5 U	5 U				
1991 RI Phase I	W-2S	8/1/1990		196	73.3	1597.33	1640.73	43.4	2.8	4.13	1.77			11.6		86.3	299	500 U	5.36	43	22.8		6.28	14.8				
HC GW DB	W-2S	12/1/1997		0.1 U	0.5 U	4.6	4.6		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	1 U	2030	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
1991 RI Phase I	W-3S	8/1/1990		0.5 U	0.2 U	2 U	0	2 U	0.5 U	0.5 U	0.5 U			1 U	1 U	1 U	1 U	1.77	0.5 U	1 U	1 U		0.5 U	1 U				
1991 RI Phase I	W-4S	8/1/1990		0.5 U	0.2 U	2 U	0	2 U	0.5 U	0.5 U	0.5 U			1 U	1 U	1 U	1.01	1 U	0.5 U	1 U	1 U		0.5 U	1 U				
HC GW DB	W-4S	3/1/1998		1 U	1 U	1 U	1 U		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	1 U	0.2	0.5 U	0.5 U	1 U	2.5 U		0.5 U	2.5 U				
1991 RI Phase I	W-5I	8/1/1990		1.43	0.2 U	18.646	42.02	24.8	0.537	0.5 U	2.04			1 U	1 U	25.9	299	2.57	0.5 U	1.32	2.33		0.5 U	1 U				
HC GW DB	W-5I	3/1/1998		0.21	1 U	0.21	0.21		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	1 U	1070	0.5 U	0.5 U	1 U	2.5 U		0.5 U	2.5 U				
1991 RI Phase I	W-6I	8/1/1990		0.735	0.6	36.975	80.98	44																				
HC GW DB	W-6I	9/1/1996		0.1	0.1	0.51	0.51		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	67.8	24.4	328	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U			
HC GW DB	W-6I	9/1/1996 2		0.12	0.12	0.73	0.73		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	53.4	18.9	289	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U			
HC GW DB	W-6I	3/1/1997		1 U	1 U	6.66	6.66		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	45.8	1 U	236	0.5 U	0.5 U	1 U	5 U		0.5 U	2.5 U			
HC GW DB	W-6I	9/1/1997		0.13	1 U	0.69	0.69		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	1 U	695	0.5 U	0.5 U	1 U	2.5 U		0.5 U	2.5 U				
HC GW DB	W-6I	3/1/1998		0.1 U	1 U	6.58	6.58		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	43.2	1 U	207	0.5 U	0.5 U	1 U	2.5 U		0.5 U	2.5 U			
HC GW DB	W-6I	8/1/1998		0.48	1 U	0.68	0.68		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	23.1	1 U	80.6	0.5 U	0.5 U	1 U	2.5 U		0.5 U	2.5 U			
HC GW DB	W-6I	3/1/1999		0.1 U	1 U	0.56	0.56		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	38.1	1 U	138	0.5 U	0.5 U	1 U	2.5 U		0.5 U	2.5 U	0.2 U		
2000 GWMon	W-6I	03/00/2000		0.16	0.63	7.11	7.1		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	31.1	118	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
HC GW DB	W-6I	9/1/2001							0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	1 U	133	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
2002Sept_wells	W-6I	9/10/2002							10 U	10 U	10 U	10 U		10 U	10 U	10 U	12.8	83.4	10 U	10 U	20 U	40 U		10 U	40 U			
2003Sept_wells	W-6I	9/23/2003							5 U	5 U	5 U	5 U		5 U	5 U	5 U	10.3	70.6	5 U	5 U	10 U	20 U		5 U	20 U			
2004Sept_wells	W-6I	9/9/2004							5 U	5 U	5 U	5 U		5 U	5 U	5 U	7	52.3	5 U	5 U	10 U	20 U		5 U	20 U			
1991 RI Phase I	W-7S	8/1/1990																										
HC GW DB	W-7S	9/1/1997		38.9	3.9	526.79	526.79		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	1100	1010	7600	0.5 U	0.5 U	1 U	2.5 U		0.5 U	2.5 U			
HC GW DB	W-7S	12/1/1997		0.53	1 U	9.43	9.43		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	455	334	3120	0.5 U	0.5 U	1 U	2.5 U		0.5 U	2.5 U			
HC GW DB	W-7S	3/1/1998		2.7	1.4	61.14	61.14		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	491	290	2020	0.5 U	0.5 U	1 U	2.5 U		0.5 U	2.5 U			
HC GW DB	W-7S	6/1/1998		14.1	6.48	3720.68	3720.68		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	566	364	2360	0.5 U	0.5 U	1 U	2.5 U		0.5 U	2.5 U			
HC GW DB	W-7S	8/1/1998		47.2	5.76	19578.5	19578.5		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	507	403	4660	0.5 U	0.5 U	1 U	2.5 U		0.5 U	2.5 U			
HC GW DB	W-7S	3/1/1999		0.6	19.8	164.3	164.3		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	702	301	2220	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U			
2000 GWMon	W-7S	03/00/2000		0.66	0.11	2303.54	2303.5		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	1 U	1600	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
2000 GWMon	W-7S	03/00/2000		0.74	0.1 U	1567.32	1567.3		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	331	1 U	1700	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U			
HC GW DB	W-7S	9/1/2001		2.2	6.7	3198	3198		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	1 U	1410	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
2002Sept_wells	W-7S	9/10/2002		0.1 U	3.3	6310.5			1600 U	1600 U	1600 U	1600 U		1600 U	1600 U	1600 U	1600 U	6650	1600 U	1600 U	3200 U	6400 U		1600 U	6400 U			
2002Sept_wells	W-7S	9/10/2002		0.1 U	3.3	6640.9			1600 U	1600 U	1600 U	1600 U		1600 U	1600 U	1600 U	1600 U	7850	1600 U	1600 U	3200 U	6400 U		1600 U	6400 U			
2002Sept_wells	W-7S	9/10/2002 2		0.1 U	3.4	6818.7			1600 U	1600 U	1600 U	1600 U		1600 U	1600 U	1600 U	1600 U	8400	1600 U	1600 U	3200 U	6400 U		1600 U	6400 U			
2003Sept_wells	W-7S	9/10/2003		39.7	3.7	7999.6			500 U	500 U	500 U	500 U		500 U	500 U	500 U	530	8780	500 U	500 U	1000 U	2000 U		500 U	2000 U			
2003Sept_wells	W-7S	9/10/2003		38.3	3.8	7500.3			500 U	500 U	500 U	500 U		500 U	500 U	590	500 U	8380	500 U	500 U	1000 U	2000 U		500 U	2000 U			
2004Sept_wells	W-7S	9/9/2004		47	5	9344.8			500 U	500 U	500 U	500 U		500 U	500 U	500 U	6120	500 U	500 U	1000 U	2000 U		500 U	2000 U				
2004Sept_wells	W-7S	9/9/2004		48.7	5.4	10400.8			500 U	500 U	500 U	500 U		500 U	500 U	500 U	6220	500 U	500 U	1000 U	2000 U		500 U	2000 U				
2004Sept_wells	W-7S	9/9/2004 2		45.8	4.8	8741.1			500 U	500 U	500 U	500 U		500 U	500 U	500 U	5800	500 U	500 U	1000 U	2000 U		500 U	2000 U				
1997 FS PII	W-8I	12/00/1995		0.1 U	0.76	3.91	3.9		2.5 U	2.5 U	2.5 U	2.5 U		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	10 U	10 U		2.5 U	2.5 U				
1997 FS PII	W-8I	09/00/1996		0.05 U	0.05 U	0.1 U	-9 U		0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	1 U	1 U	1 U	0.5 U	0.5 U	1 U	1 U		0.5 U	5 U				
1991 RI Phase I	W-8S	8/1/1990		560	104	3878.4	3983.4	105	1.65	0.5 U	7.46			10.4		73.1	1160	5.6	1.87	163	20 U		6.2	100				
HC GW DB	W-8S	3/1/1998		2.8		462.54	462.54		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	83.3	1 U	40.7	0.5 U	0.5 U	1 U	2.5 U		0.5 U				
1991 RI Phase I	W-9I	8/1/1990		0.5 U	0.2 U	2 U	0	2 U	0.5 U	0.5 U	0.5 U			1 U	1 U	1 U	1 U	0.5 U	0.5 U	1 U	1 U		0.5 U	1 U				
1991 RI Phase I	W-9S	8/1/1990		0.5 U	0.2 U	2 U	0	2 U	0.5 U	0.5 U	0.5 U			1 U	1 U	1 U	1 U	0.5 U	0.5 U	1 U	1 U		0.5 U	1 U				
HC GW DB	W-11I	12/1/1997		0.17	0.56	3	3																					
HC GW DB	W-11I	6/1/1998		1 U	1 U	1 U	1 U																					
HC GW DB	W-11I	12/1/1998		1 U	1 U	0.11	0.11																					
HC GW DB	W-11I	3/1/1999		1 U	1 U	1 U	1 U																					
HC GW DB	W-11I	6/1/1999		1 U	1 U	1 U	1 U																					
HC GW DB	W-11I	9/1/1999		0.1 U	0.5 U	1 U	1 U		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	1 U	1 U	42.1	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U			
HC GW DB	W-11I	12/1/1999		0.1 U	0.5 U	1 U	1 U		0.5 U	0.5 U	0.5 U	0.5 U		1 U	1 U	1 U	1 U	59.8	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U			</





Table A-5. On-site Groundwater Wells, Worker and Trench Worker Scenarios.

Sample event	Station ID	Date	Lab rep	Phenanthrene	Pyrene	Total PAHs (calculated)	Total PAHs (reported)	Carbazole	Phenol	2-Chloro-phenol	2,4-Dichloro-phenol	2,6-Dichloro-phenol	2,4,5-Trichloro-phenol	2,4,6-Trichloro-phenol	2,3,4,6-Tetrachloro-phenol	2,3,5,6-Tetrachloro-phenol	Pentachloro-phenol (PCP)	4-Chloro-3-methyl-phenol	2-Nitro-phenol	4-Nitro-phenol	2,4-Dinitro-phenol	3 and 4-Methyl-phenol	2,4-Dimethyl-phenol	4,6-Dinitro-2-methyl-phenol	o-Cresol	1,2-Dichloro-benzene	1,3-Dichloro-benzene	
2005June_wells	W-13I	6/30/2005		0.44	0.1 U	0.79			50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	949	50 U	50 U	100 U	200 U		50 U	200 U				
2005June_wells	W-13I	6/30/2005		0.33	0.1 U	0.58			50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	935	50 U	50 U	100 U	200 U		50 U	200 U				
2000 GWMon	W-13S	03/00/2000		0.1 U	0.1 U	0.5 U	0		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	2160	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
2000 GWMon	W-13S	07/00/2000		0.1 U	0.1 U	1.89	1.9		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1600	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
HC GW DB	W-13S	9/1/2000		0.1 U	0.93	1.77	3		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1560	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
HC GW DB	W-13S	1/1/2001		0.1 U	0.1 U	1.1	1.9		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1590	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
HC GW DB	W-13S	4/1/2001		0.1 U	0.1 U	0.47	0.47		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	802	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
HC GW DB	W-13S	4/6/2001																										
HC GW DB	W-13S	6/1/2001		0.1 U	0.1 U	0.9	0.9		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	2160	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
HC GW DB	W-13S	9/1/2001		0.2	0.1 U	8.2	8.2		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	2110	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
HC GW DB	W-13S	9/1/2001 2		0.1	0.1 U	7.4	7.3		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	2020	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
HC GW DB	W-13S	12/1/2001		0.1 U	0.1 U	0.1 U	0.1 U		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	648	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
2002March_wells	W-13S	3/4/2002		0.1 U	0.1 U	1.9			180 U	180 U	180 U	180 U	360 U	360 U	360 U	360 U	1650	180 U	180 U	360 U	1800 U		180 U	1800 U				
2002March_wells	W-13S	3/4/2002 2		0.1 U	0.1 U	1.7			180 U	180 U	180 U	180 U	360 U	360 U	360 U	360 U	1650	180 U	180 U	360 U	1800 U		180 U	1800 U				
2002June_wells	W-13S	6/6/2002		0.1 U	0.1 U	0.4			200 U	200 U	200 U	200 U	400 U	400 U	400 U	400 U	1260	200 U	200 U	400 U	2000 U		200 U	2000 U				
2002Sept_wells	W-13S	9/6/2002		0.1 U	0.1 U	0.4			200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	1510	200 U	200 U	400 U	800 U		200 U	800 U				
2002Dec_wells	W-13S	12/11/2002		0.1 U	0.1 U	1.7			160 U	160 U	160 U	160 U	160 U	160 U	160 U	160 U	1360	160 U	160 U	320 U	640 U		160 U	640 U				
2003March_wells	W-13S	3/7/2003		0.1 U	0.1 U	0.5			80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	1050	80 U	80 U	160 U	320 U		80 U	320 U				
2003March_wells	W-13S	3/7/2003 2		0.1 U	0.1 U	0.5			80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	955	80 U	80 U	160 U	320 U		80 U	320 U				
2003June_wells	W-13S	6/23/2003		0.11	0.1 U	1.77			200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	1420	200 U	200 U	400 U	800 U		200 U	800 U				
2003June_wells	W-13S	6/23/2003 2		0.11	0.1 U	1.77			200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	1520	200 U	200 U	400 U	800 U		200 U	800 U				
2003Sept_wells	W-13S	9/9/2003		0.1 U	0.1 U	0.2			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.62	1 U	1 U	2 U	4 U		1 U	4 U				
2003Sept_wells	W-13S	9/9/2003 2		0.1 U	0.1 U	0.2			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.54	1 U	1 U	2 U	4 U		1 U	4 U				
2003Dec_wells	W-13S	12/15/2003		0.1 U	0.1 U	0.15			50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	396	50 U	50 U	100 U	200 U		50 U	200 U				
2003Dec_wells	W-13S	12/15/2003		0.1 U	0.1 U	0.16			50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	541	50 U	50 U	100 U	200 U		50 U	200 U				
2004March_wells	W-13S	3/31/2004		0.1 U	0.1 U	0.65			25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	444	25 U	25 U	50 U	100 U		25 U	100 U				
2004March_wells	W-13S	3/31/2004		0.1 U	0.1 U	0.7			50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	878	50 U	50 U	100 U	200 U		50 U	200 U				
2004June_wells	W-13S	6/8/2004		0.1 U	0.1 U	0.5			25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	302	25 U	25 U	50 U	100 U		25 U	100 U				
2004Sept_wells	W-13S	9/9/2004		0.1 U	0.1 U	0.2			50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	565	50 U	50 U	100 U	200 U		50 U	200 U				
2004Dec_wells	W-13S	12/2/2004		0.64	0.2 U	0.64			100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	1470	100 U	100 U	200 U	400 U		100 U	400 U				
2005March_wells	W-13S	3/22/2005		0.44	0.1 U	1.37			100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	1380	100 U	100 U	200 U	400 U		100 U	400 U				
2005June_wells	W-13S	6/30/2005		1.5	0.1 U	2.88			200 U	200 U	200 U	200 U	200 U	200 U	202	200 U	2760	200 U	200 U	400 U	800 U		200 U	800 U				
1991 RI Phase I	W-14I	8/1/1990		0.5 U	0.2 U	0.03	0.03	2 U	2.05	0.5 U	1.46			1.51		5.07	4.04	0.5 U	0.5 U	1 U	1 U		0.5 U	1 U				
HC GW DB	W-14I	3/1/1998		1 U	1 U	1 U	1 U		2.05	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.53	0.5 U	0.5 U	1 U	2.5 U		0.5 U	2.5 U				
HC GW DB	W-18AI	12/1/1998		1 U	1 U	1 U	1 U																					
HC GW DB	W-18AI	3/1/1999		1 U	1 U	1 U	1 U																					
HC GW DB	W-18AI	3/1/1999 2		1 U	1 U	1 U	1 U																					
HC GW DB	W-18AI	6/1/1999		1 U	1 U	1 U	1 U																					
HC GW DB	W-18AI	6/1/1999 2		1 U	1 U	1 U	1 U																					
HC GW DB	W-18AI	9/1/1999		0.1 U	0.5 U	1 U	1 U		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	54.8	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
HC GW DB	W-18AI	12/1/1999		0.1 U	0.5 U	1 U	1 U		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	71	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
HC GW DB	W-18AI	12/1/1999 2		0.1 U	0.5 U	1 U	1 U		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	68.3	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
2000 GWMon	W-18AI	03/00/2000		0.1 U	0.1 U	0.5 U	0		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.4 U	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
2000 GWMon	W-18AI	07/00/2000		0.1 U	0.1 U	0.5 U	0		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	82.4	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
HC GW DB	W-18AI	9/1/2000		0.1 U	0.1 U	0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	26.4	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
HC GW DB	W-18AI	1/1/2001							0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	106	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
HC GW DB	W-18AI	6/1/2001							0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	52.9	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
HC GW DB	W-18AI	12/1/2001							0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	98.4	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
2002June_wells	W-18AI	6/13/2002							16.7 U	16.7 U	16.7 U	16.7 U	33.4 U	33.4 U	33.4 U	33.4 U	88.3	16.7 U	16.7 U	33.4 U	167 U		16.7 U	167 U				
2002Dec_wells	W-18AI	12/11/2002							16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	111	16 U	16 U	32 U	64 U		16 U	64 U				
2003March_wells	W-18AI	3/10/2003							5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	70.7	5 U	5 U	10 U	20 U		5 U	20 U				
2003March_wells	W-18AI	3/10/2003							5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	71.5	5 U	5 U	10 U	20 U		5 U	20 U				
2003Sept_wells	W-18AI	9/12/2003							10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	109	10 U	10 U	20 U	40 U		10 U	40 U				
2004March_wells	W-18AI	3/31/2004							5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	63	5 U	5 U	10 U	20 U		5 U	20 U				
2004Sept_wells	W-18AI	9/15/2004							5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	64.2	5 U	5 U	10 U	20 U		5 U	20 U				
2005March_wells	W-18AI	3/24/2005							5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	78.7	5 U	5 U	10 U	20 U		5 U	20 U				
1994 RI Phase II	W-18AS	1/10/1992		0.5 U	0.2 U	2 U			1.97	0.68 U	0.84 U						1.51 U	0.61 U	0.82 U	1.11 U	1.58 U		0.45 U	1.03 U		1 U		

Table A-5. On-site Groundwater Wells, Worker and Trench Worker Scenarios.

Sample event	Station ID	Date	Lab rep		Total PAHs (calculated)	Total PAHs (reported)	Carbazole	Phenol	2-Chloro-phenol	2,4-Dichloro-phenol	2,6-Dichloro-phenol	2,4,5-Trichloro-phenol	2,4,6-Trichloro-phenol	2,3,4,6-Tetrachloro-phenol	2,3,5,6-Tetrachloro-phenol	Pentachloro-phenol (PCP)	4-Chloro-3-methyl-phenol	2-Nitro-phenol	4-Nitro-phenol	2,4-Dinitro-phenol	3 and 4-Methyl-phenol	2,4-Dimethyl-phenol	4,6-Dinitro-2-methyl-phenol	o-Cresol	1,2-Dichloro-benzene	1,3-Dichloro-benzene
			ug/L	ug/L																						
2000 GWMon	W-201	03/00/2000	0.1 U	0.1 U	0.5 U	0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	84.5	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U			
2000 GWMon	W-201	07/00/2000	0.1 U	0.1 U	0.5 U	0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	88.4	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U			
HC GW DB	W-201	9/1/2000	0.1 U	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	97.3	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U			
HC GW DB	W-201	1/1/2001	0.1 U	0.1 U	0.1 U	0.1 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	97.7	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U			
HC GW DB	W-201	4/1/2001	0.1 U	0.1 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	112	0.5 U	0.5 U	1 UJ	5 U		0.5 UJ	5 U			
HC GW DB	W-201	6/1/2001	0.1 U	0.1 U	0.1 U	0.1 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	93.6	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U			

Table A-5. On-site Groundwater Wells, Worker and Trench Worker Scenarios.

Sample event	Station ID	Date	Lab rep	Phenanthrene	Pyrene	Total PAHs (calculated)	Total PAHs (reported)	Carbazole	Phenol	2-Chloro-phenol	2,4-Dichloro-phenol	2,6-Dichloro-phenol	2,4,5-Trichloro-phenol	2,4,6-Trichloro-phenol	2,3,4,6-Tetrachloro-phenol	2,3,5,6-Tetrachloro-phenol	Pentachloro-phenol (PCP)	4-Chloro-3-methyl-phenol	2-Nitro-phenol	4-Nitro-phenol	2,4-Dinitro-phenol	3 and 4-Methyl-phenol	2,4-Dimethyl-phenol	4,6-Dinitro-2-methyl-phenol	o-Cresol	1,2-Dichloro-benzene	1,3-Dichloro-benzene	
HC GW DB	W-20I	9/1/2001		0.1 U	0.1 U	0.1 U	0.1 U		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	98.9	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
HC GW DB	W-20I	12/1/2001		0.1 U	0.1 U	0.1 U	0.1 U		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	108	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
2002March_wells	W-20I	3/4/2002		0.1 U	0.1 U	0.1 U			20 U	20 U	20 U	20 U	40 U	40 U	40 U	40 U	109	20 U	20 U	40 U	200 U		20 U	200 U				
2002June_wells	W-20I	6/6/2002		0.1 U	0.1 U	0.1 U			20 U	20 U	20 U	20 U	40 U	40 U	40 U	40 U	102	20 U	20 U	40 U	200 U		20 U	200 U				
2002Sept_wells	W-20I	9/6/2002		0.1 U	0.1 U	0.1 U			20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	114	20 U	20 U	40 U	80 U		20 U	80 U				
2002Dec_wells	W-20I	12/11/2002		0.1 U	0.1 U	1.6			16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	107	16 U	16 U	32 U	64 U		16 U	64 U				
2003March_wells	W-20I	3/7/2003		0.1 U	0.1 U	0.1 U			10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	86.8	10 U	10 U	20 U	40 U		10 U	40 U				
2003March_wells	W-20I	3/7/2003		0.1 U	0.1 U	0.1 U			10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	92.3	10 U	10 U	20 U	40 U		10 U	40 U				
2003June_wells	W-20I	6/23/2003		0.1 U	0.1 U	0.1 U			10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	122	10 U	10 U	20 U	40 U		10 U	40 U				
2003Sept_wells	W-20I	9/9/2003		0.1 U	0.1 U	0.1 U			10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	129	10 U	10 U	20 U	40 U		10 U	40 U				
2003Dec_wells	W-20I	12/15/2003		0.1 U	0.1 U	0.1 U			10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	140	10 U	10 U	20 U	40 U		10 U	40 U				
2004March_wells	W-20I	3/31/2004		0.1 U	0.1 U	0.1 U			10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	111	10 U	10 U	20 U	40 U		10 U	40 U				
2004June_wells	W-20I	6/8/2004		0.1 U	0.1 U	0.1 U			20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	104	20 U	20 U	40 U	80 U		20 U	80 U				
2004Sept_wells	W-20I	9/9/2004		0.1 U	0.1 U	0.1 U			10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	137	10 U	10 U	20 U	40 U		10 U	40 U				
2004Dec_wells	W-20I	12/2/2004		0.2 U	0.2 U	0.2 U			25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	232	25 U	25 U	50 U	100 U		25 U	100 U				
2005March_wells	W-20I	3/22/2005		0.1 U	0.1 U	0.1 U			10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	138	10 U	10 U	20 U	40 U		10 U	40 U				
2005March_wells	W-20I	3/23/2005		0.1 U	0.1 U	0.1 U			10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	125	10 U	10 U	20 U	40 U		10 U	40 U				
2005June_wells	W-20I	6/30/2005		0.1 U	0.1 U	0.1 U			25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	254	25 U	25 U	50 U	100 U		25 U	100 U				
1997 FS PII	W-21I	12/00/1995		0.1 U	0.5 U	1 U	-9 U		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	10 U	10 U		2.5 U	2.5 U				
1997 FS PII	W-21I	12/00/1995		0.16	0.5 U	0.31	0.3		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	10 U	10 U		2.5 U	2.5 U				
1997 FS PII	W-21I	09/00/1996		0.05 U	0.05	0.15	0.2		0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	1 U	1 U	1 U	0.5 U	0.5 U	1 U	1 U		0.5 U	5 U				
1997 FS PII	W-21S	12/00/1995		16	4.6	86.17	86.2		2.5 U	2.5 U	2.5 U	87	2.5 U	484	778	4730	2.5 U	2.5 U	10 U	10 U		2.5 U	444					
1997 FS PII	W-21S	09/00/1996		13	3.1	66.43	66.4		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	86	232	1810	0.5 U	0.5 U	1 U	1 U		0.5 U	0.5 U					
1997 FS PII	W-22S	12/00/1995		2.1	170	647.1	647.1		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	1060	306	3260	2.5 U	2.5 U	10 U	10 U		2.5 U	2.5 U					
1997 FS PII	W-22S	09/00/1996		75	49	315.92	315.9		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	54.5	74.3	1100	0.5 U	0.5 U	1 U	1 U		0.5 U	5 U					
2000 GWMon	W-23	3/27/2000		1.15	0.66	3.37			0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	170	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
2000 GWMon	W-23	3/27/2000		1.24	0.7	4.06																						
2000 GWMon	W-23	7/12/2000		0.1 U	0.1 U	0.5 U			0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	57.7	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
HC GW DB	W-23	1/1/2001		0.1 U	0.1 U	0.1 U	0.1 U		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	118	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
HC GW DB	W-23	3/1/2001																										
HC GW DB	W-23	4/1/2001		0.1 U	0.1 U	0.23	0.23		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	102	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
HC GW DB	W-23	6/1/2001		0.1 U	0.1 U	0.1	0.1		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	127	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
HC GW DB	W-23	9/1/2001		0.1 U	0.1 U	0.1 U	0.1 U		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	90.4	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
HC GW DB	W-23	12/1/2001		0.1 U	0.1 U	0.1 U	0.1 U		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	95.3	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
HC GW DB	W-23	12/1/2001 2		0.1 U	0.1 U	0.1 U	0.1 U		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	95.2	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U				
2002June_wells	W-23	6/6/2002																										
2002June_wells	W-23	6/6/2002																										
2002March_wells	W-23	3/5/2002		0.1 U	0.1 U	0.1 U			10 U	10 U	10 U	10 U	20 U	20 U	20 U	20 U	86.9	10 U	10 U	20 U	100 U		10 U	100 U				
2002March_wells	W-23	3/5/2002		0.1 U	0.1 U	0.1 U			10 U	10 U	10 U	10 U	20 U	20 U	20 U	20 U	82	10 U	10 U	20 U	100 U		10 U	100 U				
2002June_wells	W-23	6/6/2002		0.1 U	0.1 U	0.1 U			7.7 U	7.7 U	7.7 U	7.7 U	15.4 U	15.4 U	15.4 U	15.4 U	72.1	7.7 U	7.7 U	15.4 U	77 U		7.7 U	77 U				
2002June_wells	W-23	6/6/2002		0.1 U	0.1 U	0.1 U			10 U	10 U	10 U	10 U	20 U	20 U	20 U	20 U	89.3	10 U	10 U	20 U	100 U		10 U	100 U				
2002Sept_wells	W-23	9/10/2002		0.1 U	0.1 U	0.1 U			10 U	10 U	10 U	10 U	10 U	10 U	11.4	12.2	92.5	10 U	10 U	20 U	40 U		10 U	40 U				
2002Dec_wells	W-23	12/11/2002		0.1 U	0.1 U	1.6			8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U	68.4	8 U	8 U	16 U	32 U		8 U	32 U				
2002Dec_wells	W-23	12/11/2002		0.1 U	0.1 U	1.6			8 U	8 U	8 U	8 U	8 U	8 U	8 U	8.4	81.8	8 U	8 U	16 U	32 U		8 U	32 U				
2003Sept_wells	W-23	9/12/2003		0.1 U	0.1 U	4.4			10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	72.5	10 U	10 U	20 U	40 U		10 U	40 U				
2004Sept_wells	W-23	9/8/2004		0.1 U	0.1 U	0.1 U			5 U	5 U	5 U	5 U	5 U	5 U	5 U	8.5	62.1	5 U	5 U	10 U	20 U		5 U	20 U				

Notes:  
 U -- The analyte was not detected at or above  
 UJ -- Estimated reporting limit.  
 J -- Estimated value.  
 B -- The analyte was detected in the associat  
 EMPC -- Estimated maximum possible conce

Table A-5. On-site Groundwater Wells, Worker and Trench Worker Scenarios.

Sample event	Station ID	Date	Lab rep	1,4-Dichloro- benzene ug/L	Benzene ug/L	Chloro- benzene ug/L	1,1,1- Trichloro- ethane ug/L	1,1-Dichloro- ethane ug/L	1,1-Dichloro- ethylene ug/L	Ethyl- benzene ug/L	Styrene ug/L	Toluene ug/L	2,3,7,8- TCDD pg/L	1,2,3,7,8- PeCDD pg/L	1,2,3,4,7,8- HxCDD pg/L
1991 RI Phase I	W-1S	8/1/1990													
HC GW DB	W-1S	3/1/1998													
1997 FS PII	W-2I	12/00/1995													
1997 FS PII	W-2I	09/00/1996													
1991 RI Phase I	W-2S	8/1/1990													
HC GW DB	W-2S	12/1/1997													
1991 RI Phase I	W-3S	8/1/1990													
1991 RI Phase I	W-4S	8/1/1990													
HC GW DB	W-4S	3/1/1998													
1991 RI Phase I	W-5I	8/1/1990													
HC GW DB	W-5I	3/1/1998													
1991 RI Phase I	W-6I	8/1/1990		15.7		5 U	25.7	81.7	5 U		5 U				
HC GW DB	W-6I	9/1/1996													
HC GW DB	W-6I	9/1/1996 2													
HC GW DB	W-6I	3/1/1997													
HC GW DB	W-6I	9/1/1997													
HC GW DB	W-6I	3/1/1998													
HC GW DB	W-6I	8/1/1998													
HC GW DB	W-6I	3/1/1999													
2000 GWMon	W-6I	03/00/2000													
HC GW DB	W-6I	9/1/2001													
2002Sept_wells	W-6I	9/10/2002													
2003Sept_wells	W-6I	9/23/2003													
2004Sept_wells	W-6I	9/9/2004													
1991 RI Phase I	W-7S	8/1/1990		7.1		5 U	5 U	5 U	97.5		61.3				
HC GW DB	W-7S	9/1/1997													
HC GW DB	W-7S	12/1/1997													
HC GW DB	W-7S	3/1/1998													
HC GW DB	W-7S	6/1/1998													
HC GW DB	W-7S	8/1/1998													
HC GW DB	W-7S	3/1/1999													
2000 GWMon	W-7S	03/00/2000													
2000 GWMon	W-7S	03/00/2000													
HC GW DB	W-7S	9/1/2001													
2002Sept_wells	W-7S	9/10/2002													
2002Sept_wells	W-7S	9/10/2002													
2002Sept_wells	W-7S	9/10/2002 2													
2003Sept_wells	W-7S	9/10/2003													
2003Sept_wells	W-7S	9/10/2003													
2004Sept_wells	W-7S	9/9/2004													
2004Sept_wells	W-7S	9/9/2004													
2004Sept_wells	W-7S	9/9/2004 2													
1997 FS PII	W-8I	12/00/1995													
1997 FS PII	W-8I	09/00/1996													
1991 RI Phase I	W-8S	8/1/1990		5 U		5 U	5 U	5 U	7.9		5 U				
HC GW DB	W-8S	3/1/1998													
1991 RI Phase I	W-9I	8/1/1990													
1991 RI Phase I	W-9S	8/1/1990													
HC GW DB	W-11I	12/1/1997													
HC GW DB	W-11I	6/1/1998													
HC GW DB	W-11I	12/1/1998													
HC GW DB	W-11I	3/1/1999													
HC GW DB	W-11I	6/1/1999													
HC GW DB	W-11I	9/1/1999													
HC GW DB	W-11I	12/1/1999													
2000 GWMon	W-11I	03/00/2000													
2000 GWMon	W-11I	07/00/2000													
2000 GWMon	W-11I	07/00/2000													
HC GW DB	W-11I	9/1/2000													
HC GW DB	W-11I	1/1/2001													
HC GW DB	W-11I	6/1/2001													
HC GW DB	W-11I	12/1/2001													

Table A-5. On-site Groundwater Wells, Worker and Trench Worker Scenarios.

Sample event	Station ID	Date	Lab rep	1,4-Dichloro-	Benzene	Chloro-	1,1,1-	1,1-Dichloro-	1,1-Dichloro-	Ethyl-	Styrene	Toluene	2,3,7,8-	1,2,3,7,8-	1,2,3,4,7,8-
				benzene	ug/L	benzene	ug/L	Trichloro-	ethane	ethylene	benzene	ug/L	ug/L	pg/L	pg/L
2002June_wells	W-11I	6/6/2002													
2002Dec_wells	W-11I	12/11/2002													
2003Sept_wells	W-11I	9/16/2003													
2004Sept_wells	W-11I	9/15/2004													
HC GW DB	W-11S	9/1/1999													
HC GW DB	W-11S	12/1/1999													
2000 GWMon	W-11S	03/00/2000													
2000 GWMon	W-11S	07/00/2000													
HC GW DB	W-11S	9/1/2000													
HC GW DB	W-11S	1/1/2001													
HC GW DB	W-11S	6/1/2001													
HC GW DB	W-11S	12/1/2001													
2002June_wells	W-11S	6/6/2002											1.5 U	1.9 J	1.2 U
2002Dec_wells	W-11S	12/11/2002													
2003Sept_wells	W-11S	9/16/2003													
2004Sept_wells	W-11S	9/15/2004													
1991 RI Phase I	W-12D	8/1/1990													
HC GW DB	W-12D	3/1/1998													
HC GW DB	W-12D	9/1/2001													
2003Sept_wells	W-12D	9/16/2003													
1991 RI Phase I	W-12I	8/1/1990													
HC GW DB	W-12I	9/1/1996													
HC GW DB	W-12I	9/1/1996 2													
HC GW DB	W-12I	3/1/1997													
HC GW DB	W-12I	3/1/1997 2													
HC GW DB	W-12I	9/1/1997													
HC GW DB	W-12I	3/1/1998													
HC GW DB	W-12I	8/1/1998													
HC GW DB	W-12I	9/1/1999													
HC GW DB	W-12I	9/1/1999 2													
HC GW DB	W-12I	9/1/2000													
HC GW DB	W-12I	9/1/2001													
2002Sept_wells	W-12I	9/10/2002													
2003Sept_wells	W-12I	9/16/2003													
2004Sept_wells	W-12I	9/16/2004													
1991 RI Phase I	W-13D	8/1/1990													
1991 RI Phase I	W-13I	8/1/1990		8.3		5 U		6.9	10.2	5 U		5 U			
2000 GWMon	W-13I	03/00/2000													
2000 GWMon	W-13I	07/00/2000													
HC GW DB	W-13I	9/1/2000													
HC GW DB	W-13I	1/1/2001													
HC GW DB	W-13I	4/1/2001													
HC GW DB	W-13I	6/1/2001													
HC GW DB	W-13I	9/1/2001													
HC GW DB	W-13I	12/1/2001													
2002March_wells	W-13I	3/4/2002													
2002June_wells	W-13I	6/6/2002													
2002June_wells	W-13I	6/6/2002 2													
2002Sept_wells	W-13I	9/6/2002													
2002Dec_wells	W-13I	12/11/2002													
2002Dec_wells	W-13I	12/11/2002 2													
2003March_wells	W-13I	3/7/2003													
2003June_wells	W-13I	6/23/2003													
2003Sept_wells	W-13I	9/9/2003													
2003Dec_wells	W-13I	12/15/2003													
2004March_wells	W-13I	3/31/2004													
2004June_wells	W-13I	6/8/2004													
2004June_wells	W-13I	6/8/2004													
2004Sept_wells	W-13I	9/9/2004													
2004Dec_wells	W-13I	12/2/2004													
2004Dec_wells	W-13I	12/2/2004													
2005March_wells	W-13I	3/22/2005													

Table A-5. On-site Groundwater Wells, Worker and Trench Worker Scenarios.

Sample event	Station ID	Date	Lab rep	1,4-Dichloro-	Benzene	Chloro-	1,1,1-	1,1-Dichloro-	1,1-Dichloro-	Ethyl-	Styrene	Toluene	2,3,7,8-	1,2,3,7,8-	1,2,3,4,7,8-	
				benzene	ug/L	benzene	ug/L	Trichloro-	ethane	ethane	ethylene	benzene	ug/L	ug/L	pg/L	TCDD
2005June_wells	W-13I	6/30/2005														
2005June_wells	W-13I	6/30/2005														
2000 GWMon	W-13S	03/00/2000														
2000 GWMon	W-13S	07/00/2000														
HC GW DB	W-13S	9/1/2000														
HC GW DB	W-13S	1/1/2001														
HC GW DB	W-13S	4/1/2001														
HC GW DB	W-13S	4/6/2001											1.3 U	2 U	1.8 U	
HC GW DB	W-13S	6/1/2001														
HC GW DB	W-13S	9/1/2001														
HC GW DB	W-13S	9/1/2001 2														
HC GW DB	W-13S	12/1/2001														
2002March_wells	W-13S	3/4/2002														
2002March_wells	W-13S	3/4/2002 2														
2002June_wells	W-13S	6/6/2002														
2002Sept_wells	W-13S	9/6/2002														
2002Dec_wells	W-13S	12/11/2002														
2003March_wells	W-13S	3/7/2003														
2003March_wells	W-13S	3/7/2003 2														
2003June_wells	W-13S	6/23/2003														
2003June_wells	W-13S	6/23/2003 2														
2003Sept_wells	W-13S	9/9/2003														
2003Sept_wells	W-13S	9/9/2003 2														
2003Dec_wells	W-13S	12/15/2003														
2003Dec_wells	W-13S	12/15/2003														
2004March_wells	W-13S	3/31/2004														
2004March_wells	W-13S	3/31/2004														
2004June_wells	W-13S	6/8/2004														
2004Sept_wells	W-13S	9/9/2004														
2004Dec_wells	W-13S	12/2/2004														
2005March_wells	W-13S	3/22/2005														
2005June_wells	W-13S	6/30/2005														
1991 RI Phase I	W-14I	8/1/1990														
HC GW DB	W-14I	3/1/1998														
HC GW DB	W-18AI	12/1/1998														
HC GW DB	W-18AI	3/1/1999														
HC GW DB	W-18AI	3/1/1999 2														
HC GW DB	W-18AI	6/1/1999														
HC GW DB	W-18AI	6/1/1999 2														
HC GW DB	W-18AI	9/1/1999														
HC GW DB	W-18AI	12/1/1999														
HC GW DB	W-18AI	12/1/1999 2														
2000 GWMon	W-18AI	03/00/2000														
2000 GWMon	W-18AI	07/00/2000														
HC GW DB	W-18AI	9/1/2000														
HC GW DB	W-18AI	1/1/2001														
HC GW DB	W-18AI	6/1/2001														
HC GW DB	W-18AI	12/1/2001														
2002June_wells	W-18AI	6/13/2002														
2002Dec_wells	W-18AI	12/11/2002														
2003March_wells	W-18AI	3/10/2003														
2003March_wells	W-18AI	3/10/2003														
2003Sept_wells	W-18AI	9/12/2003														
2004March_wells	W-18AI	3/31/2004														
2004Sept_wells	W-18AI	9/15/2004														
2005March_wells	W-18AI	3/24/2005														
1994 RI Phase II	W-18AS	1/10/1992		1 U	1 U	1 U			1 U		1 U					
1994 RI Phase II	W-18AS	5/8/1992		1 U	1 U	1 U			1 U		1 U					
HC GW DB	W-18AS	12/1/1997														
2003Sept_wells	W-18AS	9/12/2003														
2003Sept_wells	W-18AS	9/15/2003														
2004Sept_wells	W-18AS	9/8/2004														

Table A-5

Table A-5. On-site Groundwater Wells, Worker and Trench Worker Scenarios.

Sample event	Station ID Date		Lab rep	1,4-Dichloro-	Benzene	Chloro-	1,1,1-	1,1-Dichloro-	1,1-Dichloro-	Ethyl-	Styrene	Toluene	2,3,7,8-	1,2,3,7,8-	1,2,3,4,7,8-
			ug/L	ug/L	benzene	benzene	benzene	ethane	ethane	ethylene	benzene	ug/L	ug/L	pg/L	pg/L
2000 GWMon	W-20I	03/00/2000													
2000 GWMon	W-20I	07/00/2000													
HC GW DB	W-20I	9/1/2000													
HC GW DB	W-20I	1/1/2001													
HC GW DB	W-20I	4/1/2001													
HC GW DB	W-20I	6/1/2001													

Table A-5. On-site Groundwater Wells, Worker and Trench Worker Scenarios.

Sample event	Station ID	Date	Lab rep	1,4-Dichloro-	Benzene	Chloro-	1,1,1-	1,1-Dichloro-	1,1-Dichloro-	Ethyl-	Styrene	Toluene	2,3,7,8-	1,2,3,7,8-	1,2,3,4,7,8-	
				benzene	ug/L	benzene	ug/L	Trichloro-	ethane	ethane	ethylene	benzene	ug/L	ug/L	pg/L	TCDD
HC GW DB	W-20I	9/1/2001														
HC GW DB	W-20I	12/1/2001														
2002March_wells	W-20I	3/4/2002														
2002June_wells	W-20I	6/6/2002														
2002Sept_wells	W-20I	9/6/2002														
2002Dec_wells	W-20I	12/11/2002														
2003March_wells	W-20I	3/7/2003														
2003March_wells	W-20I	3/7/2003														
2003June_wells	W-20I	6/23/2003														
2003Sept_wells	W-20I	9/9/2003														
2003Dec_wells	W-20I	12/15/2003														
2004March_wells	W-20I	3/31/2004														
2004June_wells	W-20I	6/8/2004														
2004Sept_wells	W-20I	9/9/2004														
2004Dec_wells	W-20I	12/2/2004														
2005March_wells	W-20I	3/22/2005														
2005March_wells	W-20I	3/23/2005														
2005June_wells	W-20I	6/30/2005														
1997 FS PII	W-21I	12/00/1995														
1997 FS PII	W-21I	12/00/1995														
1997 FS PII	W-21I	09/00/1996														
1997 FS PII	W-21S	12/00/1995														
1997 FS PII	W-21S	09/00/1996														
1997 FS PII	W-22S	12/00/1995														
1997 FS PII	W-22S	09/00/1996														
2000 GWMon	W-23	3/27/2000														
2000 GWMon	W-23	3/27/2000														
2000 GWMon	W-23	7/12/2000														
HC GW DB	W-23	1/1/2001														
HC GW DB	W-23	3/1/2001											1.2 U	1.1 U	1.4 U	
HC GW DB	W-23	4/1/2001														
HC GW DB	W-23	6/1/2001														
HC GW DB	W-23	9/1/2001														
HC GW DB	W-23	12/1/2001														
HC GW DB	W-23	12/1/2001 2														
2002June_wells	W-23	6/6/2002											1 U	0.8 U	1 J	EMPC
2002June_wells	W-23	6/6/2002											4.505 U	6.713 U	6.371 U	
2002March_wells	W-23	3/5/2002														
2002March_wells	W-23	3/5/2002														
2002June_wells	W-23	6/6/2002														
2002June_wells	W-23	6/6/2002											4.505 U	6.713 U	6.371 U	
2002Sept_wells	W-23	9/10/2002														
2002Dec_wells	W-23	12/11/2002														
2002Dec_wells	W-23	12/11/2002														
2003Sept_wells	W-23	9/12/2003														
2004Sept_wells	W-23	9/8/2004														

Notes:  
 U -- The analyte was not detected at or above  
 UJ -- Estimated reporting limit.  
 J -- Estimated value.  
 B -- The analyte was detected in the associat  
 EMPC -- Estimated maximum possible conce



Table A-5. On-site Groundwater Wells, Worker and Trench Worker Scenarios.

Sample event	Station ID	Date	Lab rep	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	Total TCDD	Total PeCDD	Total HxCDD	Total HpCDD	Total TCDF	Total PeCDF	Total HxCDF	Total HpCDF	2,3,7,8-TCDD equivalent (TEQ-WHO)			
1991 RI Phase I	W-1S	8/1/1990																											
HC GW DB	W-1S	3/1/1998																											
1997 FS PII	W-2I	12/00/1995																											
1997 FS PII	W-2I	09/00/1996																											
1991 RI Phase I	W-2S	8/1/1990																											
HC GW DB	W-2S	12/1/1997																											
1991 RI Phase I	W-3S	8/1/1990																											
1991 RI Phase I	W-4S	8/1/1990																											
HC GW DB	W-4S	3/1/1998																											
1991 RI Phase I	W-5I	8/1/1990																											
HC GW DB	W-5I	3/1/1998																											
1991 RI Phase I	W-6I	8/1/1990																											
HC GW DB	W-6I	9/1/1996																											
HC GW DB	W-6I	9/1/1996 2																											
HC GW DB	W-6I	3/1/1997																											
HC GW DB	W-6I	9/1/1997																											
HC GW DB	W-6I	3/1/1998																											
HC GW DB	W-6I	8/1/1998																											
HC GW DB	W-6I	3/1/1999																											
2000 GWMon	W-6I	03/00/2000																											
HC GW DB	W-6I	9/1/2001																											
2002Sept_wells	W-6I	9/10/2002																											
2003Sept_wells	W-6I	9/23/2003																											
2004Sept_wells	W-6I	9/9/2004																											
1991 RI Phase I	W-7S	8/1/1990																											
HC GW DB	W-7S	9/1/1997																											
HC GW DB	W-7S	12/1/1997																											
HC GW DB	W-7S	3/1/1998																											
HC GW DB	W-7S	6/1/1998																											
HC GW DB	W-7S	8/1/1998																											
HC GW DB	W-7S	3/1/1999																											
2000 GWMon	W-7S	03/00/2000																											
2000 GWMon	W-7S	03/00/2000																											
HC GW DB	W-7S	9/1/2001																											
2002Sept_wells	W-7S	9/10/2002																											
2002Sept_wells	W-7S	9/10/2002																											
2002Sept_wells	W-7S	9/10/2002 2																											
2003Sept_wells	W-7S	9/10/2003																											
2003Sept_wells	W-7S	9/10/2003																											
2004Sept_wells	W-7S	9/9/2004																											
2004Sept_wells	W-7S	9/9/2004																											
2004Sept_wells	W-7S	9/9/2004 2																											
1997 FS PII	W-8I	12/00/1995																											
1997 FS PII	W-8I	09/00/1996																											
1991 RI Phase I	W-8S	8/1/1990																											
HC GW DB	W-8S	3/1/1998																											
1991 RI Phase I	W-9I	8/1/1990																											
1991 RI Phase I	W-9S	8/1/1990																											
HC GW DB	W-11I	12/1/1997																											
HC GW DB	W-11I	6/1/1998																											
HC GW DB	W-11I	12/1/1998																											
HC GW DB	W-11I	3/1/1999																											
HC GW DB	W-11I	6/1/1999																											
HC GW DB	W-11I	9/1/1999																											
HC GW DB	W-11I	12/1/1999																											
2000 GWMon	W-11I	03/00/2000																											
2000 GWMon	W-11I	07/00/2000																											
2000 GWMon	W-11I	07/00/2000																											
HC GW DB	W-11I	9/1/2000																											
HC GW DB	W-11I	1/1/2001																											
HC GW DB	W-11I	6/1/2001																											
HC GW DB	W-11I	12/1/2001																											

Table A-5. On-site Groundwater Wells, Worker and Trench Worker Scenarios.

Sample event	Station ID	Date	Lab rep	1,2,3,6,7,8-	1,2,3,7,8,9-	1,2,3,4,6,7,8-	OCDD	2,3,7,8-	1,2,3,7,8-	2,3,4,7,8-	1,2,3,4,7,8-	1,2,3,6,7,8-	1,2,3,7,8,9-	2,3,4,6,7,8-	1,2,3,4,6,7,8-	1,2,3,4,7,8,9-	OCDF	Total TCDD	Total PeCDD	Total HxCDD	Total HpCDD	Total TCDF	Total PeCDF	Total HxCDF	Total HpCDF	2,3,7,8-TCDD equivalent (TEQ- WHO)	
				pg/L	pg/L	pg/L		pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L											pg/L
2002June_wells	W-111	6/6/2002																									
2002Dec_wells	W-111	12/11/2002																									
2003Sept_wells	W-111	9/16/2003																									
2004Sept_wells	W-111	9/15/2004																									
HC GW DB	W-11S	9/1/1999																									
HC GW DB	W-11S	12/1/1999																									
2000 GWMon	W-11S	03/00/2000																									
2000 GWMon	W-11S	07/00/2000																									
HC GW DB	W-11S	9/1/2000																									
HC GW DB	W-11S	1/1/2001																									
HC GW DB	W-11S	6/1/2001																									
HC GW DB	W-11S	12/1/2001																									
2002June_wells	W-11S	6/6/2002		3.6 J	4.5 J	51.8	1050	1.1 U	2.5 J	1.1 U	2.9 J	1.8 J	EMPC	3.6 J	2.2 J	12.4 J	1.5 U	57.5 J	1.5 U	1.9	18.2	132	1.1 U	2.5	21.3	49.3	5.785
2002Dec_wells	W-11S	12/11/2002																									
2003Sept_wells	W-11S	9/16/2003																									
2004Sept_wells	W-11S	9/15/2004																									
1991 RI Phase I	W-12D	8/1/1990																									
HC GW DB	W-12D	3/1/1998																									
HC GW DB	W-12D	9/1/2001																									
2003Sept_wells	W-12D	9/16/2003																									
1991 RI Phase I	W-12I	8/1/1990																									
HC GW DB	W-12I	9/1/1996																									
HC GW DB	W-12I	9/1/1996 2																									
HC GW DB	W-12I	3/1/1997																									
HC GW DB	W-12I	3/1/1997 2																									
HC GW DB	W-12I	9/1/1997																									
HC GW DB	W-12I	3/1/1998																									
HC GW DB	W-12I	8/1/1998																									
HC GW DB	W-12I	9/1/1999																									
HC GW DB	W-12I	9/1/1999 2																									
HC GW DB	W-12I	9/1/2000																									
HC GW DB	W-12I	9/1/2001																									
2002Sept_wells	W-12I	9/10/2002																									
2003Sept_wells	W-12I	9/16/2003																									
2004Sept_wells	W-12I	9/16/2004																									
1991 RI Phase I	W-13D	8/1/1990																									
1991 RI Phase I	W-13I	8/1/1990																									
2000 GWMon	W-13I	03/00/2000																									
2000 GWMon	W-13I	07/00/2000																									
HC GW DB	W-13I	9/1/2000																									
HC GW DB	W-13I	1/1/2001																									
HC GW DB	W-13I	4/1/2001																									
HC GW DB	W-13I	6/1/2001																									
HC GW DB	W-13I	9/1/2001																									
HC GW DB	W-13I	12/1/2001																									
2002March_wells	W-13I	3/4/2002																									
2002June_wells	W-13I	6/6/2002																									
2002June_wells	W-13I	6/6/2002 2																									
2002Sept_wells	W-13I	9/6/2002																									
2002Dec_wells	W-13I	12/11/2002																									
2002Dec_wells	W-13I	12/11/2002 2																									
2003March_wells	W-13I	3/7/2003																									
2003June_wells	W-13I	6/23/2003																									
2003Sept_wells	W-13I	9/9/2003																									
2003Dec_wells	W-13I	12/15/2003																									
2004March_wells	W-13I	3/31/2004																									
2004June_wells	W-13I	6/8/2004																									
2004June_wells	W-13I	6/8/2004																									
2004Sept_wells	W-13I	9/9/2004																									
2004Dec_wells	W-13I	12/2/2004																									
2004Dec_wells	W-13I	12/2/2004																									
2005March_wells	W-13I	3/22/2005																									

Table A-5. On-site Groundwater Wells, Worker and Trench Worker Scenarios.

Sample event	Station ID	Date	Lab rep	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	Total TCDD	Total PeCDD	Total HxCDD	Total HpCDD	Total TCDF	Total PeCDF	Total HxCDF	Total HpCDF	2,3,7,8-TCDD	equivalent (TEQ- WHO)	
2005June_wells	W-13I	6/30/2005																										
2005June_wells	W-13I	6/30/2005																										
2000 GWMon	W-13S	03/00/2000																										
2000 GWMon	W-13S	07/00/2000																										
HC GW DB	W-13S	9/1/2000																										
HC GW DB	W-13S	1/1/2001																										
HC GW DB	W-13S	4/1/2001																										
HC GW DB	W-13S	4/6/2001		1.8 U	1.6 U	17 J	110 B	3.8 J	2.2 U	1.4 U	1.7 U	1.1 U	1.1 U	1.6 U	2.2 U	2.4 U	10 U	1.3 U	2 U	1.7 U	31 J	3.8 J	1.8 U	1.4 U	8 J	3.174		
HC GW DB	W-13S	6/1/2001																										
HC GW DB	W-13S	9/1/2001																										
HC GW DB	W-13S	9/1/2001 2																										
HC GW DB	W-13S	12/1/2001																										
2002March_wells	W-13S	3/4/2002																										
2002March_wells	W-13S	3/4/2002 2																										
2002June_wells	W-13S	6/6/2002																										
2002Sept_wells	W-13S	9/6/2002																										
2002Dec_wells	W-13S	12/11/2002																										
2003March_wells	W-13S	3/7/2003																										
2003March_wells	W-13S	3/7/2003 2																										
2003June_wells	W-13S	6/23/2003																										
2003June_wells	W-13S	6/23/2003 2																										
2003Sept_wells	W-13S	9/9/2003																										
2003Sept_wells	W-13S	9/9/2003 2																										
2003Dec_wells	W-13S	12/15/2003																										
2003Dec_wells	W-13S	12/15/2003																										
2004March_wells	W-13S	3/31/2004																										
2004March_wells	W-13S	3/31/2004																										
2004June_wells	W-13S	6/8/2004																										
2004Sept_wells	W-13S	9/9/2004																										
2004Dec_wells	W-13S	12/2/2004																										
2005March_wells	W-13S	3/22/2005																										
2005June_wells	W-13S	6/30/2005																										
1991 RI Phase I	W-14I	8/1/1990																										
HC GW DB	W-14I	3/1/1998																										
HC GW DB	W-18AI	12/1/1998																										
HC GW DB	W-18AI	3/1/1999																										
HC GW DB	W-18AI	3/1/1999 2																										
HC GW DB	W-18AI	6/1/1999																										
HC GW DB	W-18AI	6/1/1999 2																										
HC GW DB	W-18AI	9/1/1999																										
HC GW DB	W-18AI	12/1/1999																										
HC GW DB	W-18AI	12/1/1999 2																										
2000 GWMon	W-18AI	03/00/2000																										
2000 GWMon	W-18AI	07/00/2000																										
HC GW DB	W-18AI	9/1/2000																										
HC GW DB	W-18AI	1/1/2001																										
HC GW DB	W-18AI	6/1/2001																										
HC GW DB	W-18AI	12/1/2001																										
2002June_wells	W-18AI	6/13/2002																										
2002Dec_wells	W-18AI	12/11/2002																										
2003March_wells	W-18AI	3/10/2003																										
2003March_wells	W-18AI	3/10/2003																										
2003Sept_wells	W-18AI	9/12/2003																										
2004March_wells	W-18AI	3/31/2004																										
2004Sept_wells	W-18AI	9/15/2004																										
2005March_wells	W-18AI	3/24/2005																										
1994 RI Phase II	W-18AS	1/10/1992																										
1994 RI Phase II	W-18AS	5/8/1992																										
HC GW DB	W-18AS	12/1/1997																										
2003Sept_wells	W-18AS	9/12/2003																										
2003Sept_wells	W-18AS	9/15/2003																										
2004Sept_wells	W-18AS	9/8/2004																										

Table A-5. On-site Groundwater Wells, Worker and Trench Worker Scenarios.

Sample event	Station ID	Date	Lab rep
2000 GWMon	W-20I	03/00/2000	1,2,3,6,7,8-HxCDD pg/L
2000 GWMon	W-20I	07/00/2000	1,2,3,7,8,9-HxCDD pg/L
HC GW DB	W-20I	9/1/2000	1,2,3,4,6,7,8-HpCDD pg/L
HC GW DB	W-20I	1/1/2001	OCDD pg/L
HC GW DB	W-20I	4/1/2001	2,3,7,8-TCDF pg/L
HC GW DB	W-20I	6/1/2001	1,2,3,7,8-PeCDF pg/L
			2,3,4,7,8-PeCDF pg/L
			1,2,3,4,7,8-HxCDF pg/L
			1,2,3,6,7,8-HxCDF pg/L
			1,2,3,7,8,9-HxCDF pg/L
			2,3,4,6,7,8-HxCDF pg/L
			1,2,3,4,6,7,8-HpCDF pg/L
			1,2,3,4,7,8,9-HpCDF pg/L
			OCDF pg/L
			Total TCDD pg/L
			Total PeCDD pg/L
			Total HxCDD pg/L
			Total HpCDD pg/L
			Total TCDF pg/L
			Total PeCDF pg/L
			Total HxCDF pg/L
			Total HpCDF pg/L
			Total TCDD equivalent pg/L (TEQ- WHO)

Table A-5. On-site Groundwater Wells, Worker and Trench Worker Scenarios.

Sample event	Station ID	Date	Lab rep	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	Total TCDD	Total PeCDD	Total HxCDD	Total HpCDD	Total TCDF	Total PeCDF	Total HxCDF	Total HpCDF	2,3,7,8-TCDD	equivalent (TEQ- WHO)	
HC GW DB	W-20I	9/1/2001																										
HC GW DB	W-20I	12/1/2001																										
2002March_wells	W-20I	3/4/2002																										
2002June_wells	W-20I	6/6/2002																										
2002Sept_wells	W-20I	9/6/2002																										
2002Dec_wells	W-20I	12/11/2002																										
2003March_wells	W-20I	3/7/2003																										
2003March_wells	W-20I	3/7/2003																										
2003June_wells	W-20I	6/23/2003																										
2003Sept_wells	W-20I	9/9/2003																										
2003Dec_wells	W-20I	12/15/2003																										
2004March_wells	W-20I	3/31/2004																										
2004June_wells	W-20I	6/8/2004																										
2004Sept_wells	W-20I	9/9/2004																										
2004Dec_wells	W-20I	12/2/2004																										
2005March_wells	W-20I	3/22/2005																										
2005March_wells	W-20I	3/23/2005																										
2005June_wells	W-20I	6/30/2005																										
1997 FS PII	W-21I	12/00/1995																										
1997 FS PII	W-21I	12/00/1995																										
1997 FS PII	W-21S	09/00/1996																										
1997 FS PII	W-21S	09/00/1996																										
1997 FS PII	W-22S	12/00/1995																										
1997 FS PII	W-22S	09/00/1996																										
2000 GWMon	W-23	3/27/2000																										
2000 GWMon	W-23	3/27/2000																										
2000 GWMon	W-23	7/12/2000																										
HC GW DB	W-23	1/1/2001																										
HC GW DB	W-23	3/1/2001	9.8 J	1.3 U	110	820	1 U	1.2 U	1.4 U	1.6 U	2.9 I	1.4 U	2.4 U	81	4 U	120	1.2 U	1.1 U	41 J	200	1 U	16 J	110	250	5.279			
HC GW DB	W-23	4/1/2001																										
HC GW DB	W-23	6/1/2001																										
HC GW DB	W-23	9/1/2001																										
HC GW DB	W-23	12/1/2001																										
HC GW DB	W-23	12/1/2001 2																										
2002June_wells	W-23	6/6/2002	1.9 J	1.5 J	11.9 J	10.5 J	B	EMPC	0.8 U	1.8 J	1.6 J	1.9 J	1.6 J	1.5 J	EMPC	1.8 J	9.7 J	2.2 J	8.5 J	1 U	0.8 U	5.3	17.6	0.8 U	3.4	17.3	26.4	3.2
2002June_wells	W-23	6/6/2002	5.957 U	6.104 U	8.072 U	30.469 J	5.709 U	3.087 U	3.375 U	4.329 U	4.447 U	5.517 U	4.919 U	4.145 U	6.106 U	11.271 U	4.505 U	6.713 U	5.957 U	8.072 U	5.709 U	3.375 U	4.447 U	4.145 U	8.793			
2002March_wells	W-23	3/5/2002																										
2002March_wells	W-23	3/5/2002																										
2002June_wells	W-23	6/6/2002																										
2002June_wells	W-23	6/6/2002	5.957 U	6.104 U	8.072 U	30.469 J	5.709 U	3.087 U	3.375 U	4.329 U	4.447 U	5.517 U	4.919 U	4.145 U	6.106 U	11.271 U	4.505 U	6.713 U	5.957 U	8.072 U	5.709 U	3.375 U	4.447 U	4.145 U	8.793			
2002Sept_wells	W-23	9/10/2002																										
2002Dec_wells	W-23	12/11/2002																										
2002Dec_wells	W-23	12/11/2002																										
2003Sept_wells	W-23	9/12/2003																										
2004Sept_wells	W-23	9/8/2004																										

Notes:  
 U -- The analyte was not detected at or above  
 UJ -- Estimated reporting limit.  
 J -- Estimated value.  
 B -- The analyte was detected in the associat  
 EMPC -- Estimated maximum possible conce

Table A-6. On-site Soil, Industrial Worker Scenario.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	Arsenic	Chromium	Copper	Iron	Manganese	Zinc	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Dibenzo(a,h)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene
						mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
<b>ONSITE UNDEVELOPED AREA</b>																				
Stormwater Tank	COMP_S1		8/27/2001	0	0.5	37.9	57.4	101			230	350	134 U	476	309	134 U	196	290	153	247
Stormwater Tank	COMP_S2		8/27/2001	0	0.5	61.9	58	122			327	894	134 U	923	608	134 U	406	466	240	499
1994 RI Phase II	B-1		1/26/1994	0	1	2.24	15.5	22.9	23000	267	36.6	76 U	76 U	3.8 U	0.76 U	1.1 U	0.76 U	1.28	1.9 U	1.14
1994 RI Phase II	B-2		1/26/1994	0.25	1.5	4.3	36.6	28.3	33600	1430	62.3	88 U	88 U	4.4 U	0.88 U	1.3 U	0.88 U	1.9	2.1 U	0.88 U
1994 RI Phase II	B-3		1/26/1994	0	1	90.3	16	80.8	15600	242	73.8	76 U	76 U	6.58	47.1	1.1 U	60.4	74.2	81.4	23.6
1994 RI Phase II	B-4		1/26/1994	0.25	1.9	28.3	32.7	30	36500	585	64.3	85 U	85 U	4.3 U	4.21	1.2 U	11.2	14.7	12.6	2.98
1994 RI Phase II	B-5		1/26/1994	1	2.5	6	34.3	33.6	33800	776	71.2	89 U	89 U	4.4 U	1.04	1.3 U	2.43	2.54	2.2 U	0.89 U
1994 RI Phase II	B-6		1/26/1994	0	1.5	84.4	35.8	103	16900	259	73.2	360 U	360 U	18 U	71.2	5.2 U	151	276	596	46.6
1994 RI Phase II	B-7		1/26/1994	0	1.5	167	17.3	153	20700	281	575	1960	770 U	2420	5230	6470	3850	4220	1700	1670
1994 RI Phase II	B-8		1/26/1994	0	1	234	47.5	440	16700	166	175	2300 U	2300 U	120 U	114	33 U	2030	2420	2480	405
1994 RI Phase II	B-9		1/26/1994	1	2.5	227	39.4	41.4	37900	1370	720	86 U	86 U	44.1	195	1.2 U	65.7	120	54.5	52.2
1994 RI Phase II	B-10		1/26/1994	0	1.5	16	27.3	48.8	21300	171	68.6	75 U	75 U	37 U	517	686	966	719	646	170
1994 RI Phase II	B-11		1/27/1994	0	1	1710	64.4	288	16700	195	261	7310	4600 U	1550	14300	15200	4440	13100	3490	3960
1994 RI Phase II	B-13		1/27/1994	0.67	1.5	13	34.9	35.6	15700	212	219	1020	450 U	128	343	1820	377	398	303	123
1994 RI Phase II	B-14		1/27/1994	0	1	20.5	23.7	56.4	18100	242	95.3	2200 U	2200 U	110 U	266	2570	317	537	403	64.8
1994 RI Phase II	B-15		1/27/1994	0	1	6.99	16.4	23.8	23800	212	49.7	230 U	230 U	11.3 U	102	184	110	140	68.7	48.2
1994 RI Phase II	B-16		1/27/1994	0	1	7.6	44.5	40.8	48400	1430	84	740 U	740 U	44	437	10.5 U	410	503	246	195
1994 RI Phase II	B-17		1/27/1994	0.5	2	2.4	11	24.4	13600	173	25.9	870 U	870 U	44 U	8.7 U	13 U	8.7 U	459	436	8.7 U
1994 RI Phase II	B-18		1/27/1994	0	1	29.9	27.5	152	20600	280	113	78 U	78 U	3.9 U	57.4	232	70	86	44.6	26.2
1994 RI Phase II	B-19		1/27/1994	0	1	4.14	26.1	28.9	26100	288	217	74 U	74 U	3.7 U	4.19	12.8	12.4	15.1	3.37	0.74 U
1994 RI Phase II	B-20		1/27/1994	0	1.5	2390	468	4090	26800	245	1790	760 U	760 U	42.6	553	1300	225	647	275	256
1994 RI Phase II	B-21		1/27/1994	0	1	5.36	20.2	30.1	24500	273	46.7	73 U	73 U	3.6 U	40.2	119	14.8	22.7	29.4	6.24
1994 RI Phase II	B-22		1/26/1994	0	1	5.49	26.9	33.9	26600	291	51.3	76 U	76 U	3.8 U	13.5	105	22.8	25.3	26.1	6.37
1994 RI Phase II	B-23		1/26/1994	0	1	48.1	31.1	82.8	16300	219	89.2	760 U	760 U	1780	1630	10.9 U	721	1040	765	475
1994 RI Phase II	B-24		1/25/1994	0	1	8.45	13.9	27	19000	2330	38.3	76 U	76 U	112	125	650	248	395	454	144
1994 RI Phase II	B-25		1/27/1994	0.5	2	29.4	10.2	31.2	14300	231	86.9	196	74 U	65	35	1.1 U	13.6	51.3	24.8	8.21
1994 RI Phase II	B-26		1/27/1994	0	1	62.2	27.7	100	28	426	80.2	76 U	76 U	139	3060	514	1510	1700	876	464
1994 RI Phase II	B-27		1/25/1994	0	1	8.15	17.5	27	27700	313	55.8	90 U	90 U	12.5	249	779	170	276	142	123
1994 RI Phase II	B-28		1/25/1994	0	1	22.5	26.5	41.1	27700	675	65.6	112	76 U	4.6	135	230	51.4	84.8	36.4	34.1
1994 RI Phase II	B-29		1/25/1994	0	1	29.4	29.4	91.4	30500	935	132	74 U	74 U	3.7 U	3.65	1.1 U	2.64	4.42	2.08	0.74 U
1994 RI Phase II	B-30		1/25/1994	1.5	2.5	4.8	45.4	32.2	41800	1130	77.3	91 U	91 U	4.6 U	0.91 U	1.3 U	0.91 U	0.91 U	2.2 U	2.14
1994 RI Phase II	B-31		1/25/1994	1.5	2.5	15.9	36.6	28.2	40700	950	68.8	91 U	91 U	4.6 U	0.91 U	1.3 U	0.91 U	0.91 U	2.2 U	0.91 U
1994 RI Phase II	B-32		1/25/1994	0	1	123	17.5	54.1	20800	314	66.6	76 U	76 U	5.48	41.6	1.1 U	70.5	122	108	33.8
2000 Former Guard Post	BH00-1		3/16/2000	0	0.5	29.9		162			88.3									
2000 Former Guard Post	BH00-2		3/16/2000	0	0.5	33.8		192			110									
2000 Former Guard Post	BH00-3		3/16/2000	0	0.5	29		120			81.2									
2000 Former Guard Post	BH00-4		3/16/2000	0	0.5	39.1		130			85.8									
2000 Former Guard Post	BH00-5		3/17/2000	0	0.5	44.5		133			91.9									
1997 FS PII	SS-1		11/00/1995	0	0.5	80.4	24.4	296			159	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
1997 FS PII	SS-1	2	11/00/1995	0	0.5	75	25	301			160									
1997 FS PII	SS-2		11/00/1995	0	0.5	78.3	49.3	229			136	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
1997 FS PII	SS-2	2	11/00/1995	0	0.5															
1997 FS PII	SS-3		11/00/1995	0	0.5	82.5	50.1	178			132	3300 U	3300 U	4200	3300 U	3300 U	3300 U	3300 U	3300 U	3300 U
1997 FS PII	SS-4		11/00/1995	0	0.5	385	156	603			183	3300 U	3300 U	3300 U	3300 U	3300 U	3300	6500	3300 U	3300 U
1997 FS PII	SS-5		11/00/1995	0	0.5	198	36.8	213			113	3300 U	3300 U	3300 U	3300 U	3300 U	3300 U	6000	3300 U	3300 U

Table A-6. On-site Soil, Industrial Worker Scenario.

J.H. Baxter Eugene Facility

Sample event	Station ID	Lab rep	Date	Upper	Lower	Arsenic	Chromium	Copper	Iron	Manganese	Zinc	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Dibenzo(a,h)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	
				Depth (ft)	Depth (ft)																
1997 FS PII	SS-6		11/00/1995	0	0.5	64	41.6	336			279	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
1997 FS PII	SS-7		11/00/1995	0	0.5	120	68.8	698			508	3300 U	3300 U	3300 U	3300 U	3300 U	3300 U	3300 U	3300 U	3300 U	3300 U
1997 FS PII	SS-8		11/00/1995	0	0.5	159	70	173			323										
1997 FS PII	SS-9		11/00/1995	0	0.5	156	65.3	336			233										
1997 FS PII	SS-10		11/00/1995	0	0.5	188	51	363			268										
1997 FS PII	SS-11		11/00/1995	0	0.5	86	28	91.1			80.6	3300 U	3300 U	3300 U	33000 U	3300 U	3300 U	3300 U	3300 U	3300 U	3300 U
1998 Addtl Samp	SS98-10		2/2/1998	0	1	120															
1998 Addtl Samp	SS98-11		2/2/1998	0	1	57.6															
1998 Addtl Samp	SS98-5		2/2/1998	0	1	61.7						100 U	100 U	74	142	50 U	145	10 U	154	159	
1998 Addtl Samp	SS98-6		2/2/1998	0	1	119						100 U	100 U	77	143	50 U	108	10 U	113	190	
1998 Addtl Samp	SS98-8		2/2/1998	0	1	14.5															
1998 Addtl Samp	SS98-9		2/2/1998	0	1	111															
1991 RI Phase I	W-13S		5/9/1990	1.5	3.5	4.54	16.3	23.8	22400	338	54.4	107 U	107 U	50 U	10.6	64.8	14	24.7	25.8	10.2	

Notes:

U -- The analyte was not detected at or above the associated reporting limit.

UJ -- Estimated reporting limit.

J -- Estimated value.

B -- The analyte was detected in the associated laboratory blank in addition to the sample.

EMPC -- Estimated maximum possible concentration.

Table A-6. On-site Soil, Industrial Worker Scenario.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	Carbazole ug/Kg	Chrysene ug/Kg	4-Chloro-3-methyl-phenol ug/Kg	1,2-Dichloro-benzene ug/Kg	1,3-Dichloro-benzene ug/Kg	1,4-Dichloro-benzene ug/Kg	Tetrachloro-phenols, Total ug/Kg	2,3,4,6-Tetrachloro-phenol ug/Kg	2,3,5,6-Tetrachloro-phenol ug/Kg	2,4,5-Trichloro-phenol ug/Kg	2,4,6-Trichloro-phenol ug/Kg	2,4-Dichloro-phenol ug/Kg
<b>ONSITE UNDEVELOPED AREA</b>																	
Stormwater Tank	COMP_S1		8/27/2001	0	0.5		452	2000 U				2000 U			2000 U	2000 U	2000 U
Stormwater Tank	COMP_S2		8/27/2001	0	0.5		870	2000 U				2000 U			2000 U	2000 U	2000 U
1994 RI Phase II	B-1		1/26/1994	0	1	110 U	5.5 U	18 U					36 U			36 U	18 U
1994 RI Phase II	B-2		1/26/1994	0.25	1.5	130 U	6.3 U	21 U					42 U			42 U	21 U
1994 RI Phase II	B-3		1/26/1994	0	1	110 U	79.2	18 U					36 U			36 U	18 U
1994 RI Phase II	B-4		1/26/1994	0.25	1.9	120 U	6.1 U	21 U					40 U			40 U	21 U
1994 RI Phase II	B-5		1/26/1994	1	2.5	130 U	6.4 U	22 U					42 U			42 U	22 U
1994 RI Phase II	B-6		1/26/1994	0	1.5	520 U	247	71 U					137 U			137 U	71 U
1994 RI Phase II	B-7		1/26/1994	0	1.5	1100 U	12000	187 U					21500			362 U	187 U
1994 RI Phase II	B-8		1/26/1994	0	1	3300 U	835	56 U					8110			109 U	56 U
1994 RI Phase II	B-9		1/26/1994	1	2.5	120 U	210	21 U					41 U			41 U	21 U
1994 RI Phase II	B-10		1/26/1994	0	1.5	110 U	1540	56					35 U			35 U	18 U
1994 RI Phase II	B-11		1/27/1994	0	1	6500 U	30700	110 U					213 U			213 U	110 U
1994 RI Phase II	B-13		1/27/1994	0.67	1.5	640 U	2090	107 U					207 U			207 U	107 U
1994 RI Phase II	B-14		1/27/1994	0	1	3100 U	823	106 U					206 U			206 U	106 U
1994 RI Phase II	B-15		1/27/1994	0	1	320 U	260	55 U					106 U			106 U	55 U
1994 RI Phase II	B-16		1/27/1994	0	1	1050 U	789	18 U					34 U			34 U	18 U
1994 RI Phase II	B-17		1/27/1994	0.5	2	1300 U	62 U	107 U					207 U			207 U	107 U
1994 RI Phase II	B-18		1/27/1994	0	1	110 U	93.5	19 U					37 U			37 U	19 U
1994 RI Phase II	B-19		1/27/1994	0	1	110 U	24.1	108 U					210 U			210 U	108 U
1994 RI Phase II	B-20		1/27/1994	0	1.5	1100 U	992	18 U					36 U			36 U	18 U
1994 RI Phase II	B-21		1/27/1994	0	1	100 U	39.9	18 U					34 U			34 U	18 U
1994 RI Phase II	B-22		1/26/1994	0	1	110 U	87.9	18 U					36 U			36 U	18 U
1994 RI Phase II	B-23		1/26/1994	0	1	1100 U	2920	18 U					36 U			36 U	18 U
1994 RI Phase II	B-24		1/25/1994	0	1	110 U	873	18 U					35 U			35 U	18 U
1994 RI Phase II	B-25		1/27/1994	0.5	2	110 U	51.8	18 U					34 U			34 U	18 U
1994 RI Phase II	B-26		1/27/1994	0	1	110 U	237	18 U					36 U			36 U	18 U
1994 RI Phase II	B-27		1/25/1994	0	1	130 U	456	22 U					42 U			42 U	22 U
1994 RI Phase II	B-28		1/25/1994	0	1	110 U	146	18 U					36 U			36 U	18 U
1994 RI Phase II	B-29		1/25/1994	0	1	110 U	13.5	18 U					35 U			35 U	18 U
1994 RI Phase II	B-30		1/25/1994	1.5	2.5	130 U	6.5 U	22 U					43 U			43 U	22 U
1994 RI Phase II	B-31		1/25/1994	1.5	2.5	130 U	6.5 U	22 U					43 U			43 U	22 U
1994 RI Phase II	B-32		1/25/1994	0	1	110 U	73.1	18 U					36 U			36 U	18 U
2000 Former Guard Post	BH00-1		3/16/2000	0	0.5												
2000 Former Guard Post	BH00-2		3/16/2000	0	0.5												
2000 Former Guard Post	BH00-3		3/16/2000	0	0.5												
2000 Former Guard Post	BH00-4		3/16/2000	0	0.5												
2000 Former Guard Post	BH00-5		3/17/2000	0	0.5												
1997 FS PII	SS-1		11/00/1995	0	0.5		330 U	500 U					500 U	500 U	500 U	500 U	500 U
1997 FS PII	SS-1	2	11/00/1995	0	0.5												
1997 FS PII	SS-2		11/00/1995	0	0.5		330 U	500 U					600	500 U	500 U	500 U	500 U
1997 FS PII	SS-2	2	11/00/1995	0	0.5			500 U					900	500 U	500 U	500 U	500 U
1997 FS PII	SS-3		11/00/1995	0	0.5		3300 U	500 U					500 U	500 U	500 U	500 U	500 U
1997 FS PII	SS-4		11/00/1995	0	0.5			7200	500 U				2900	500 U	500 U	500 U	500 U
1997 FS PII	SS-5		11/00/1995	0	0.5		6400	500 U					500	500 U	500 U	500 U	500 U



Table A-6. On-site Soil, Industrial Worker Scenario.

J.H. Baxter Eugene Facility

Sample event	Station ID	Lab rep	Date	Upper	Lower	Carbazole ug/Kg	Chrysene ug/Kg	4-Chloro-3- methyl- phenol ug/Kg	1,2-Dichloro- benzene ug/Kg	1,3-Dichloro- benzene ug/Kg	1,4-Dichloro- benzene ug/Kg	Tetrachloro- phenols, Total ug/Kg	2,3,4,6- Tetrachloro- phenol ug/Kg	2,3,5,6- Tetrachloro- phenol ug/Kg	2,4,5- Trichloro- phenol ug/Kg	2,4,6- Trichloro- phenol ug/Kg	2,4-Dichloro- phenol ug/Kg
				Depth (ft)	Depth (ft)												
1997 FS PII	SS-6		11/00/1995	0	0.5		330 U	500 U					1200	500 U	500 U	500 U	500 U
1997 FS PII	SS-7		11/00/1995	0	0.5		3900	500 U					1700	500 U	500 U	500 U	500 U
1997 FS PII	SS-8		11/00/1995	0	0.5												
1997 FS PII	SS-9		11/00/1995	0	0.5												
1997 FS PII	SS-10		11/00/1995	0	0.5												
1997 FS PII	SS-11		11/00/1995	0	0.5		3300 U	500 U					900	500 U	500 U	500 U	500 U
1998 Addtl Samp	SS98-10		2/2/1998	0	1												
1998 Addtl Samp	SS98-11		2/2/1998	0	1												
1998 Addtl Samp	SS98-5		2/2/1998	0	1		120										
1998 Addtl Samp	SS98-6		2/2/1998	0	1		120										
1998 Addtl Samp	SS98-8		2/2/1998	0	1												
1998 Addtl Samp	SS98-9		2/2/1998	0	1												
1991 RI Phase I	W-13S		5/9/1990	1.5	3.5	107 U	34.1	53.5 U	21.4 U	21.4 U	21.4 U			106 U		106 U	53.5 U

Notes:

U -- The analyte was not detected at or above the associated reporting limit.

UJ -- Estimated reporting limit.

J -- Estimated value.

B -- The analyte was detected in the associated laboratory blank in addition to the sample.

EMPC -- Estimated maximum possible concentration.

Table A-6. On-site Soil, Industrial Worker Scenario.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	2,6-Dichloro-phenol ug/Kg	Pentachloro-phenol (PCP) ug/Kg	2-Chloro-phenol ug/Kg	Cresols ug/Kg	Dinoseb ug/Kg	4,6-Dinitro-2-methyl-phenol ug/Kg	2,4-Dinitro-phenol ug/Kg	Fluoranthene ug/Kg	Fluorene ug/Kg	Indeno(1,2,3-cd)pyrene ug/Kg	2,4-Dimethyl-phenol ug/Kg	Naphthalene ug/Kg	2-Nitro-phenol ug/Kg	4-Nitro-phenol ug/Kg
<b>ONSITE UNDEVELOPED AREA</b>																			
Stormwater Tank	COMP_S1		8/27/2001	0	0.5	2000 U	2000 U	2000 U	4000 U	2000 U	2000 U	25000 U	1720	352	155	2000 U	158	2000 U	2000 U
Stormwater Tank	COMP_S2		8/27/2001	0	0.5	2000 U	2300	2000 U	4000 U	2000 U	2000 U	25000 U	3230	850	263	2000 U	425	2000 U	2000 U
1994 RI Phase II	B-1		1/26/1994	0	1		36 U	18 U			36 U	36 U	7.6 U	7.6 U	1.9 U	18 U	76 U	18 U	36 U
1994 RI Phase II	B-2		1/26/1994	0.25	1.5		42 U	21 U			42 U	42 U	8.8 U	8.8 U	2.1 U	21 U	88 U	21 U	42 U
1994 RI Phase II	B-3		1/26/1994	0	1		36 U	18 U			36 U	36 U	7.6 U	7.6 U	36.85	18 U	76 U	18 U	36 U
1994 RI Phase II	B-4		1/26/1994	0.25	1.9		40 U	21 U			40 U	40 U	8.5 U	8.5 U	2.1 U	21 U	85 U	21 U	40 U
1994 RI Phase II	B-5		1/26/1994	1	2.5		42 U	22 U			42 U	42 U	8.9 U	8.9 U	2.2 U	22 U	89 U	22 U	42 U
1994 RI Phase II	B-6		1/26/1994	0	1.5		137 U	71 U			137 U	137 U	181	54	8.8 U	71 U	360 U	71 U	137 U
1994 RI Phase II	B-7		1/26/1994	0	1.5		66400	187 U			362 U	362 U	13200	1240	2210	187 U	770 U	187 U	362 U
1994 RI Phase II	B-8		1/26/1994	0	1		109 U	56 U			109 U	109 U	914	230 U	1990	56 U	2300 U	56 U	109 U
1994 RI Phase II	B-9		1/26/1994	1	2.5		41 U	21 U			41 U	41 U	371	8.6 U	34.3	21 U	321	21 U	41 U
1994 RI Phase II	B-10		1/26/1994	0	1.5		35 U	18 U			35 U	35 U	388	27.8	1130	18 U	114	18 U	35 U
1994 RI Phase II	B-11		1/27/1994	0	1		182000	110 U			2130 U	2130 U	11600	5440	4520	110 U	4600 U	110 U	213 U
1994 RI Phase II	B-13		1/27/1994	0.67	1.5		207 U	107 U			207 U	362	1310	248	251	107 U	450 U	107 U	207 U
1994 RI Phase II	B-14		1/27/1994	0	1		206 U	106 U			206 U	206 U	414	220 U	718	106 U	2200 U	106 U	206 U
1994 RI Phase II	B-15		1/27/1994	0	1		106 U	55 U			106 U	106 U	64.1	23 U	57	55 U	230 U	55 U	106 U
1994 RI Phase II	B-16		1/27/1994	0	1		34 U	18 U			34 U	34 U	561	102	278	18 U	740 U	18 U	34 U
1994 RI Phase II	B-17		1/27/1994	0.5	2		207 U	107 U			207 U	207 U	115	87 U	21 U	107 U	870 U	107 U	207 U
1994 RI Phase II	B-18		1/27/1994	0	1		37 U	19 U			37 U	37 U	49.5	7.8 U	82.6	19 U	78 U	19 U	37 U
1994 RI Phase II	B-19		1/27/1994	0	1		210 U	108 U			210 U	210 U	7.4 U	7.4 U	3.97	108 U	74 U	108 U	210 U
1994 RI Phase II	B-20		1/27/1994	0	1.5		36 U	18 U			173	36 U	751	76 U	455	18 U	760 U	18 U	36 U
1994 RI Phase II	B-21		1/27/1994	0	1		34 U	18 U			34 U	34 U	24.7	7.3 U	40.2	18 U	73 U	18 U	34 U
1994 RI Phase II	B-22		1/26/1994	0	1		36 U	18 U			36 U	36 U	25.5	7.6 U	15.1	18 U	76 U	18 U	36 U
1994 RI Phase II	B-23		1/26/1994	0	1		1930	18 U			36 U	36 U	2210	257	693	18 U	760 U	18 U	36 U
1994 RI Phase II	B-24		1/25/1994	0	1		35 U	18 U			35 U	35 U	443	35.7	417	18 U	94.8	18 U	35 U
1994 RI Phase II	B-25		1/27/1994	0.5	2		34 U	18 U			34 U	34 U	185	77.4	11.2	18 U	87.2	18 U	34 U
1994 RI Phase II	B-26		1/27/1994	0	1		36 U	18 U			36 U	36 U	902	141	1250	18 U	421	18 U	36 U
1994 RI Phase II	B-27		1/25/1994	0	1		42 U	22 U			42 U	42 U	222	12	197	22 U	90 U	22 U	42 U
1994 RI Phase II	B-28		1/25/1994	0	1		36 U	18 U			36 U	36 U	95.4	7.6 U	59.3	18 U	156	18 U	36 U
1994 RI Phase II	B-29		1/25/1994	0	1		35 U	18 U			35 U	35 U	7.4 U	7.4 U	2.78	18 U	74 U	18 U	35 U
1994 RI Phase II	B-30		1/25/1994	1.5	2.5		43 U	22 U			43 U	43 U	9.1 U	9.1 U	2.2 U	22 U	91 U	22 U	43 U
1994 RI Phase II	B-31		1/25/1994	1.5	2.5		43 U	22 U			43 U	43 U	9.1 U	9.1 U	2.2 U	22 U	91 U	22 U	43 U
1994 RI Phase II	B-32		1/25/1994	0	1		36 U	18 U			36 U	36 U	102	11.1	81	18 U	76 U	18 U	36 U
2000 Former Guard Post	BH00-1		3/16/2000	0	0.5														
2000 Former Guard Post	BH00-2		3/16/2000	0	0.5														
2000 Former Guard Post	BH00-3		3/16/2000	0	0.5														
2000 Former Guard Post	BH00-4		3/16/2000	0	0.5														
2000 Former Guard Post	BH00-5		3/17/2000	0	0.5														
1997 FS PII	SS-1		11/00/1995	0	0.5	500 U	2200	500 U			1000 U	2000 U	330 U	330 U	330 U	500 U	330 U	500 U	2000 U
1997 FS PII	SS-1	2	11/00/1995	0	0.5	500 U	2700	500 U			1000 U	2000 U	330 U	330 U	330 U	500 U	330 U	500 U	2000 U
1997 FS PII	SS-2		11/00/1995	0	0.5	500 U	2800	500 U			1000 U	2000 U				500 U		500 U	2000 U
1997 FS PII	SS-2	2	11/00/1995	0	0.5	500 U	2800	500 U			1000 U	2000 U				500 U		500 U	2000 U
1997 FS PII	SS-3		11/00/1995	0	0.5	500 U	1500	500 U			1000 U	2000 U	3300 U	3300 U	3300 U	500 U	3300 U	500 U	2000 U
1997 FS PII	SS-4		11/00/1995	0	0.5	500 U	4100	500 U			1000 U	2000 U	6500	3300 U	3300 U	500 U	3300 U	500 U	2000 U
1997 FS PII	SS-5		11/00/1995	0	0.5	500 U	3500	500 U			1000 U	2000 U	3300 U	3300 U	3300 U	500 U	3300 U	500 U	2000 U

Table A-6. On-site Soil, Industrial Worker Scenario.

J.H. Baxter Eugene Facility

Sample event	Station ID	Lab rep	Date	Upper	Lower	2,6-Dichloro-phenol ug/Kg	Pentachloro-phenol (PCP) ug/Kg	2-Chloro-phenol ug/Kg	Cresols ug/Kg	Dinoseb ug/Kg	4,6-Dinitro-2-methyl-phenol ug/Kg	2,4-Dinitro-phenol ug/Kg	Fluoranthene ug/Kg	Fluorene ug/Kg	Indeno(1,2,3-cd)pyrene ug/Kg	2,4-Dimethyl-phenol ug/Kg	Naphthalene ug/Kg	2-Nitro-phenol ug/Kg	4-Nitro-phenol ug/Kg
				Depth (ft)	Depth (ft)														
1997 FS PII	SS-6		11/00/1995	0	0.5	500 U	16500	500 U			1000 U	2000 U	330 U	330 U	330 U	500 U	330 U	500 U	2000 U
1997 FS PII	SS-7		11/00/1995	0	0.5	500 U	3100	500 U			1000 U	2000 U	3300 U	3300 U	3300 U	500 U	3300 U	500 U	2000 U
1997 FS PII	SS-8		11/00/1995	0	0.5														
1997 FS PII	SS-9		11/00/1995	0	0.5														
1997 FS PII	SS-10		11/00/1995	0	0.5														
1997 FS PII	SS-11		11/00/1995	0	0.5	500 U	1900	500 U			1000 U	2000 U	3300 U	3300 U	3300 U	500 U	3300 U	500 U	2000 U
1998 Addtl Samp	SS98-10		2/2/1998	0	1														
1998 Addtl Samp	SS98-11		2/2/1998	0	1														
1998 Addtl Samp	SS98-5		2/2/1998	0	1								146	10 U	233		100 U		
1998 Addtl Samp	SS98-6		2/2/1998	0	1								279	46	180		104		
1998 Addtl Samp	SS98-8		2/2/1998	0	1														
1998 Addtl Samp	SS98-9		2/2/1998	0	1														
1991 RI Phase I	W-13S		5/9/1990	1.5	3.5		106 U	53.5 U			106 U	106 U	20 U	21.4 U	10.9	184	487	53.5 U	141

Notes:

U -- The analyte was not detected at or above the associated reporting limit.

UJ -- Estimated reporting limit.

J -- Estimated value.

B -- The analyte was detected in the associated laboratory blank in addition to the sample.

EMPC -- Estimated maximum possible concentration.

Table A-6. On-site Soil, Industrial Worker Scenario.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	Phenanthrene ug/Kg	Phenol ug/Kg	Pyrene ug/Kg	Total PAHs (calculated) ug/Kg	Total PAHs (reported) ug/Kg	Benzene ug/Kg	Chloro-benzene ug/Kg	Ethyl-benzene ug/Kg	Styrene ug/Kg	Toluene ug/Kg	Xylenes, Total ug/Kg	2,3,7,8-TCDD pg/g	1,2,3,7,8-PeCDD pg/g	1,2,3,4,7,8-HxCDD pg/g	1,2,3,6,7,8-HxCDD pg/g	1,2,3,7,8,9-HxCDD pg/g	
<b>ONSITE UNDEVELOPED AREA</b>																						
Stormwater Tank	COMP_S1		8/27/2001	0	0.5	1890	2000 U	945	7693								3	19	36	290	110	
Stormwater Tank	COMP_S2		8/27/2001	0	0.5	3580	2000 U	1770	15024								6.2	40	110	680	270	
1994 RI Phase II	B-1		1/26/1994	0	1	3.8 U	18 U	7.6 U	2.42	2.4	22 U	22 U	22 U	33 U	22 U	33 U						
1994 RI Phase II	B-2		1/26/1994	0.25	1.5	4.4 U	21 U	8.8 U	1.9	1.9	29	25 U	25 U	38 U	25 U	38 U						
1994 RI Phase II	B-3		1/26/1994	0	1	24.5	18 U	115	626.93	627	22 U	22 U	22 U	33 U	26	46						
1994 RI Phase II	B-4		1/26/1994	0.25	1.9	4.3 U	21 U	8.5 U	45.69	46	24 U	24 U	24 U	37 U	25	37 U						
1994 RI Phase II	B-5		1/26/1994	1	2.5	4.4 U	22 U	8.9 U	6.01	6	25 U	25 U	25 U	38 U	25 U	38 U						
1994 RI Phase II	B-6		1/26/1994	0	1.5	108	71 U	505	2235.8	2235.8	21 U	21 U	35	31 U	28	77						
1994 RI Phase II	B-7		1/26/1994	0	1.5	5230	187 U	15000	76400	76400	25	22 U	22 U	33 U	59	49	2.3 U	4.7 U	6.3 U	6.2 U	43.4	
1994 RI Phase II	B-8		1/26/1994	0	1	140	56 U	1110	12438	12438	27 U	27 U	27 U	40 U	27 U	40 U						
1994 RI Phase II	B-9		1/26/1994	1	2.5	22.9	21 U	402	1892.7	1893	25 U	25 U	25 U	37 U	25 U	37 U						
1994 RI Phase II	B-10		1/26/1994	0	1.5	120	18 U	594	7617.8	7618	21 U	21 U	29	32 U	29	79						
1994 RI Phase II	B-11		1/27/1994	0	1	19700	110 U	15900	151210	151210	22 U	37	22 U	96	31	32 U						
1994 RI Phase II	B-13		1/27/1994	0.67	1.5	845	107 U	3570	12826	12826	21 U	21 U	21 U	32 U	250	42						
1994 RI Phase II	B-14		1/27/1994	0	1	502	106 U	619	7233.8	7234	21 U	21 U	36	31 U	69	123						
1994 RI Phase II	B-15		1/27/1994	0	1	32.3	55 U	181	1247.3	1247	21 U	21 U	21 U	32 U	24	32 U						
1994 RI Phase II	B-16		1/27/1994	0	1	399	18 U	789	4753	4753	21 U	21 U	24	31 U	21 U	81						
1994 RI Phase II	B-17		1/27/1994	0.5	2	291	107 U	87 U	1301	1301	21 U	21 U	21 U	31 U	21 U	31 U	6.8 U	18.4 U	27.8 U	20.4 U	3.2 U	
1994 RI Phase II	B-18		1/27/1994	0	1	17.9	19 U	91.6	851.3	851	22 U	22 U	22 U	33 U	22 U	33 U						
1994 RI Phase II	B-19		1/27/1994	0	1	5.54	108 U	7.4 U	81.47	81	21 U	21 U	21 U	32 U	21 U	51						
1994 RI Phase II	B-20		1/27/1994	0	1.5	180	18 U	1590	7266.6	7267	25	22 U	22 U	33 U	54	60						
1994 RI Phase II	B-21		1/27/1994	0	1	8.32	18 U	32.6	378.06	378	21 U	21 U	21 U	31 U	21 U	31 U						
1994 RI Phase II	B-22		1/26/1994	0	1	11.2	18 U	50.6	389.37	389	22 U	22 U	22 U	33 U	22 U	33 U						
1994 RI Phase II	B-23		1/26/1994	0	1	631	18 U	2880	16002	16002	26	22 U	22 U	33 U	22 U	33 U	1.9 U	3.5 U	30.4	251.6	143.4	
1994 RI Phase II	B-24		1/25/1994	0	1	119	18 U	526	4636.5	4636.5	21 U	21 U	21 U	32 U	21 U	32 U						
1994 RI Phase II	B-25		1/27/1994	0.5	2	496	18 U	241	1543.51	1544	21 U	21 U	21 U	31 U	21 U	31 U						
1994 RI Phase II	B-26		1/27/1994	0	1	253	18 U	1380	12847	12847	37	31	26	32 U	22 U	63						
1994 RI Phase II	B-27		1/25/1994	0	1	56.5	22 U	307	3002	3002	26 U	26 U	26 U	39 U	26 U	39 U						
1994 RI Phase II	B-28		1/25/1994	0	1	32	18 U	108	1285	1285	73	22 U	22 U	33 U	22 U	33 U						
1994 RI Phase II	B-29		1/25/1994	0	1	3.7 U	18 U	12	41.07	41.07	21 U	21 U	21 U	31 U	21 U	32						
1994 RI Phase II	B-30		1/25/1994	1.5	2.5	4.6 U	22 U	9.1 U	2.14	2	26 U	26 U	26 U	39 U	26 U	39 U						
1994 RI Phase II	B-31		1/25/1994	1.5	2.5	4.6 U	22 U	9.1 U	91 U	0	26 U	26 U	26 U	39 U	26 U	39 U						
1994 RI Phase II	B-32		1/25/1994	0	1	17.8	18 U	150	816.38	816.4	22 U	22 U	22 U	32 U	22 U	32 U						
2000 Former Guard Post	BH00-1		3/16/2000	0	0.5																	
2000 Former Guard Post	BH00-2		3/16/2000	0	0.5																	
2000 Former Guard Post	BH00-3		3/16/2000	0	0.5																	
2000 Former Guard Post	BH00-4		3/16/2000	0	0.5																	
2000 Former Guard Post	BH00-5		3/17/2000	0	0.5																	
1997 FS PII	SS-1		11/00/1995	0	0.5	330 U	500 U	330 U	330 U													
1997 FS PII	SS-1	2	11/00/1995	0	0.5																	
1997 FS PII	SS-2		11/00/1995	0	0.5	330 U	500 U	330 U	330 U													
1997 FS PII	SS-2	2	11/00/1995	0	0.5		500 U															
1997 FS PII	SS-3		11/00/1995	0	0.5	3300 U	500 U	3300 U	4200													
1997 FS PII	SS-4		11/00/1995	0	0.5	3700	500 U	5600	32800													
1997 FS PII	SS-5		11/00/1995	0	0.5	3300 U	500 U	3400	15800													

Table A-6. On-site Soil, Industrial Worker Scenario.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	Phenanthrene ug/Kg	Phenol ug/Kg	Pyrene ug/Kg	Total PAHs (calculated) ug/Kg	Total PAHs (reported) ug/Kg	Benzene ug/Kg	Chloro- benzene ug/Kg	Ethyl- benzene ug/Kg	Styrene ug/Kg	Toluene ug/Kg	Xylenes, Total ug/Kg	2,3,7,8- TCDD pg/g	1,2,3,7,8- PeCDD pg/g	1,2,3,4,7,8- HxCDD pg/g	1,2,3,6,7,8- HxCDD pg/g	1,2,3,7,8,9- HxCDD pg/g	
1997 FS PII	SS-6		11/00/1995	0	0.5	330 U	500 U	330 U	330 U													
1997 FS PII	SS-7		11/00/1995	0	0.5	3300 U	500 U	3300 U	8100													
1997 FS PII	SS-8		11/00/1995	0	0.5																	
1997 FS PII	SS-9		11/00/1995	0	0.5																	
1997 FS PII	SS-10		11/00/1995	0	0.5																	
1997 FS PII	SS-11		11/00/1995	0	0.5	3300 U	500 U	3300 U	33000 U													
1998 Addtl Samp	SS98-10		2/2/1998	0	1																	
1998 Addtl Samp	SS98-11		2/2/1998	0	1																	
1998 Addtl Samp	SS98-5		2/2/1998	0	1	46		126	1345													
1998 Addtl Samp	SS98-6		2/2/1998	0	1	82		238	1680													
1998 Addtl Samp	SS98-8		2/2/1998	0	1																	
1998 Addtl Samp	SS98-9		2/2/1998	0	1																	
1991 RI Phase I	W-13S		5/9/1990	1.5	3.5	50 U	53.5 U	21.4 U	682.1	682.1	21.4 U	21.4 U	21.4 U	21.4 U	21.4 U	21.4 U						

Notes:

U -- The analyte was not detected at or above the associated reporting limit.

UJ -- Estimated reporting limit.

J -- Estimated value.

B -- The analyte was detected in the associated laboratory blank in addition to the sample.

EMPC -- Estimated maximum possible concentration.

Table A-6. On-site Soil, Industrial Worker Scenario.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	Total TCDD	Total PeCDD	Total HxCDD	Total HpCDD
<b>ONSITE UNDEVELOPED AREA</b>																					
Stormwater Tank	COMP_S1		8/27/2001	0	0.5	6700	91000	2.9	8	27	40	27	51	48	1800	120	6000	140	320	2400	20000
Stormwater Tank	COMP_S2		8/27/2001	0	0.5	16000	210000	10	32	74	220	63	120	130	4400	300	12000	260	620	6000	48000
1994 RI Phase II	B-1		1/26/1994	0	1																
1994 RI Phase II	B-2		1/26/1994	0.25	1.5																
1994 RI Phase II	B-3		1/26/1994	0	1																
1994 RI Phase II	B-4		1/26/1994	0.25	1.9																
1994 RI Phase II	B-5		1/26/1994	1	2.5																
1994 RI Phase II	B-6		1/26/1994	0	1.5																
1994 RI Phase II	B-7		1/26/1994	0	1.5	764	7112.9	1.2 U	2.6 U	2.6 U	2 U	1.8 U	1.7 U	1.7 U	128.9	2.3 U	626.1	2.3 U	4.7 U	366.6	3310.7
1994 RI Phase II	B-8		1/26/1994	0	1																
1994 RI Phase II	B-9		1/26/1994	1	2.5																
1994 RI Phase II	B-10		1/26/1994	0	1.5																
1994 RI Phase II	B-11		1/27/1994	0	1																
1994 RI Phase II	B-13		1/27/1994	0.67	1.5																
1994 RI Phase II	B-14		1/27/1994	0	1																
1994 RI Phase II	B-15		1/27/1994	0	1																
1994 RI Phase II	B-16		1/27/1994	0	1																
1994 RI Phase II	B-17		1/27/1994	0.5	2	613	7064.3	8 U	11.6 U	9.7 U	16.3 U	15.5 U	14 U	12.9 U	38.4	14.2 U	100	6.8 U	18.4 U	27.8 U	1075.4
1994 RI Phase II	B-18		1/27/1994	0	1																
1994 RI Phase II	B-19		1/27/1994	0	1																
1994 RI Phase II	B-20		1/27/1994	0	1.5																
1994 RI Phase II	B-21		1/27/1994	0	1																
1994 RI Phase II	B-22		1/26/1994	0	1																
1994 RI Phase II	B-23		1/26/1994	0	1	5894.1	35325.5	2.9	9.4	2.1 U	4.5 U	4.5 U	3.5 U	3.1 U	878.8	1.8 U	2928.8	1.9 U	3.5 U	1680.7	12974.7
1994 RI Phase II	B-24		1/25/1994	0	1																
1994 RI Phase II	B-25		1/27/1994	0.5	2																
1994 RI Phase II	B-26		1/27/1994	0	1																
1994 RI Phase II	B-27		1/25/1994	0	1																
1994 RI Phase II	B-28		1/25/1994	0	1																
1994 RI Phase II	B-29		1/25/1994	0	1																
1994 RI Phase II	B-30		1/25/1994	1.5	2.5																
1994 RI Phase II	B-31		1/25/1994	1.5	2.5																
1994 RI Phase II	B-32		1/25/1994	0	1																
2000 Former Guard Post	BH00-1		3/16/2000	0	0.5																
2000 Former Guard Post	BH00-2		3/16/2000	0	0.5																
2000 Former Guard Post	BH00-3		3/16/2000	0	0.5																
2000 Former Guard Post	BH00-4		3/16/2000	0	0.5																
2000 Former Guard Post	BH00-5		3/17/2000	0	0.5																
1997 FS PII	SS-1		11/00/1995	0	0.5																
1997 FS PII	SS-1	2	11/00/1995	0	0.5																
1997 FS PII	SS-2		11/00/1995	0	0.5																
1997 FS PII	SS-2	2	11/00/1995	0	0.5																
1997 FS PII	SS-3		11/00/1995	0	0.5																
1997 FS PII	SS-4		11/00/1995	0	0.5																
1997 FS PII	SS-5		11/00/1995	0	0.5																

Table A-6. On-site Soil, Industrial Worker Scenario.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	1,2,3,4,6,7, 8-HpCDD	OCDD	2,3,7,8- TCDF	1,2,3,7,8- PeCDF	2,3,4,7,8- PeCDF	1,2,3,4,7,8- HxCDF	1,2,3,6,7,8- HxCDF	1,2,3,7,8,9- HxCDF	2,3,4,6,7,8- HxCDF	1,2,3,4,6,7, 8-HpCDF	1,2,3,4,7,8, 9-HpCDF	OCDF	Total TCDD	Total PeCDD	Total HxCDD	Total HpCDD	
						pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g
1997 FS PII	SS-6		11/00/1995	0	0.5																	
1997 FS PII	SS-7		11/00/1995	0	0.5																	
1997 FS PII	SS-8		11/00/1995	0	0.5																	
1997 FS PII	SS-9		11/00/1995	0	0.5																	
1997 FS PII	SS-10		11/00/1995	0	0.5																	
1997 FS PII	SS-11		11/00/1995	0	0.5																	
1998 Addtl Samp	SS98-10		2/2/1998	0	1																	
1998 Addtl Samp	SS98-11		2/2/1998	0	1																	
1998 Addtl Samp	SS98-5		2/2/1998	0	1																	
1998 Addtl Samp	SS98-6		2/2/1998	0	1																	
1998 Addtl Samp	SS98-8		2/2/1998	0	1																	
1998 Addtl Samp	SS98-9		2/2/1998	0	1																	
1991 RI Phase I	W-13S		5/9/1990	1.5	3.5																	

Notes:

U -- The analyte was not detected at or above the associated reporting limit.

UJ -- Estimated reporting limit.

J -- Estimated value.

B -- The analyte was detected in the associated laboratory blank in addition to the sample.

EMPC -- Estimated maximum possible concentration.

Table A-6. On-site Soil, Industrial Worker Scenario.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	Total OCDD pg/g	Total TCDF pg/g	Total PeCDF pg/g	Total HxCDF pg/g	Total HpCDF pg/g	Total OCDF pg/g	Total dioxins/ furans pg/g	2,3,7,8- TCDD TEQ (WHO) pg/g
<b>ONSITE UNDEVELOPED AREA</b>													
Stormwater Tank	COMP_S1		8/27/2001	0	0.5		43	280	2600	7200			192
Stormwater Tank	COMP_S2		8/27/2001	0	0.5		130	920	7100	17000			474
1994 RI Phase II	B-1		1/26/1994	0	1								
1994 RI Phase II	B-2		1/26/1994	0.25	1.5								
1994 RI Phase II	B-3		1/26/1994	0	1								
1994 RI Phase II	B-4		1/26/1994	0.25	1.9								
1994 RI Phase II	B-5		1/26/1994	1	2.5								
1994 RI Phase II	B-6		1/26/1994	0	1.5								
1994 RI Phase II	B-7		1/26/1994	0	1.5	7112.9	1.2 U	2.6 U	2 U	589.5	626.1	12004.91	19.3
1994 RI Phase II	B-8		1/26/1994	0	1								
1994 RI Phase II	B-9		1/26/1994	1	2.5								
1994 RI Phase II	B-10		1/26/1994	0	1.5								
1994 RI Phase II	B-11		1/27/1994	0	1								
1994 RI Phase II	B-13		1/27/1994	0.67	1.5								
1994 RI Phase II	B-14		1/27/1994	0	1								
1994 RI Phase II	B-15		1/27/1994	0	1								
1994 RI Phase II	B-16		1/27/1994	0	1								
1994 RI Phase II	B-17		1/27/1994	0.5	2	7063.4	8 U	11.6 U	16.3 U	144.2	100	8373.9	28.5
1994 RI Phase II	B-18		1/27/1994	0	1								
1994 RI Phase II	B-19		1/27/1994	0	1								
1994 RI Phase II	B-20		1/27/1994	0	1.5								
1994 RI Phase II	B-21		1/27/1994	0	1								
1994 RI Phase II	B-22		1/26/1994	0	1								
1994 RI Phase II	B-23		1/26/1994	0	1	35326.5	2.9	177	1254.9	3329	2928.8	57573.7	118
1994 RI Phase II	B-24		1/25/1994	0	1								
1994 RI Phase II	B-25		1/27/1994	0.5	2								
1994 RI Phase II	B-26		1/27/1994	0	1								
1994 RI Phase II	B-27		1/25/1994	0	1								
1994 RI Phase II	B-28		1/25/1994	0	1								
1994 RI Phase II	B-29		1/25/1994	0	1								
1994 RI Phase II	B-30		1/25/1994	1.5	2.5								
1994 RI Phase II	B-31		1/25/1994	1.5	2.5								
1994 RI Phase II	B-32		1/25/1994	0	1								
2000 Former Guard Post	BH00-1		3/16/2000	0	0.5								
2000 Former Guard Post	BH00-2		3/16/2000	0	0.5								
2000 Former Guard Post	BH00-3		3/16/2000	0	0.5								
2000 Former Guard Post	BH00-4		3/16/2000	0	0.5								
2000 Former Guard Post	BH00-5		3/17/2000	0	0.5								
1997 FS PII	SS-1		11/00/1995	0	0.5								
1997 FS PII	SS-1	2	11/00/1995	0	0.5								
1997 FS PII	SS-2		11/00/1995	0	0.5								
1997 FS PII	SS-2	2	11/00/1995	0	0.5								
1997 FS PII	SS-3		11/00/1995	0	0.5								
1997 FS PII	SS-4		11/00/1995	0	0.5								
1997 FS PII	SS-5		11/00/1995	0	0.5								

Table A-6



**Table A-6.** On-site Soil, Industrial Worker Scenario.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	Total OCDD	Total TCDF	Total PeCDF	Total HxCDF	Total HpCDF	Total OCDF	Total dioxins/ furans	2,3,7,8- TCDD TEQ (WHO)
						pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g
1997 FS PII	SS-6		11/00/1995	0	0.5								
1997 FS PII	SS-7		11/00/1995	0	0.5								
1997 FS PII	SS-8		11/00/1995	0	0.5								
1997 FS PII	SS-9		11/00/1995	0	0.5								
1997 FS PII	SS-10		11/00/1995	0	0.5								
1997 FS PII	SS-11		11/00/1995	0	0.5								
1998 Addtl Samp	SS98-10		2/2/1998	0	1								
1998 Addtl Samp	SS98-11		2/2/1998	0	1								
1998 Addtl Samp	SS98-5		2/2/1998	0	1								
1998 Addtl Samp	SS98-6		2/2/1998	0	1								
1998 Addtl Samp	SS98-8		2/2/1998	0	1								
1998 Addtl Samp	SS98-9		2/2/1998	0	1								
1991 RI Phase I	W-13S		5/9/1990	1.5	3.5								

Notes:

U -- The analyte was not detected at or above the associated reporting limit.

UJ -- Estimated reporting limit.

J -- Estimated value.

B -- The analyte was detected in the associated laboratory blank in addition to the sample.

EMPC -- Estimated maximum possible concentration.

Table A-7. On-site Soil, Trench Worker Scenario, all depths.

Sample event	Station ID	Lab rep	Date	Upper	Lower	Arsenic	Chromium	Copper	Iron	Manganese	Zinc	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Dibenzo(a,h)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene
				Depth (ft)	Depth (ft)														
<b>ONSITE UNDEVELOPED AREA</b>																			
Stormwater Tank	COMP_S1		8/27/2001	0	0.5	37.9	57.4	101			230	350	134 U	476	309	134 U	196	290	153
Stormwater Tank	COMP_S2		8/27/2001	0	0.5	61.9	58	122			327	894	134 U	923	608	134 U	406	466	240
1994 RI Phase II	B-1		1/26/1994	0	1	2.24	15.5	22.9	23000	267	36.6	76 U	76 U	3.8 U	0.76 U	1.1 U	0.76 U	1.28	1.9 U
1994 RI Phase II	B-1		1/26/1994	4	5	4.1	33.3	34.6	42900	808	75.3	100 U	100 U	5.1 U	3.81	1.5 U	3.08	4.25	2.98
1994 RI Phase II	B-2		1/26/1994	0.25	1.5	4.3	36.6	28.3	33600	1430	62.3	88 U	88 U	4.4 U	0.88 U	1.3 U	0.88 U	1.9	2.1 U
1994 RI Phase II	B-2		1/26/1994	3	4	4	30.9	20.7	25000	497	43.4	93 U	93 U	4.7 U	0.93 U	1.3 U	0.93 U	0.93 U	2.3 U
1994 RI Phase II	B-2		1/26/1994	3	4	4.6	29.8	22.2	24300	753	42	93 U	93 U	4.7 U	0.93 U	1.3 U	0.93 U	0.93 U	2.3 U
1994 RI Phase II	B-3		1/26/1994	0	1	90.3	16	80.8	15600	242	73.8	76 U	76 U	6.58	47.1	1.1 U	60.4	74.2	81.4
1994 RI Phase II	B-3		1/26/1994	4	5.5	3.9	33.9	32.9	40200	809	73.9	98 U	98 U	4.9 U	0.985	1.4 U	0.98 U	0.98 U	2.4 U
1994 RI Phase II	B-4		1/26/1994	0.25	1.9	28.3	32.7	30	36500	585	64.3	85 U	85 U	4.3 U	4.21	1.2 U	11.2	14.7	12.6
1994 RI Phase II	B-4		1/26/1994	4	5.5	7.9	41.3	35.2	45000	791	77.6	95 U	95 U	4.8 U	2.59	1.4 U	4.91	6.6	3.06
1994 RI Phase II	B-5		1/26/1994	1	2.5	6	34.3	33.6	33800	776	71.2	89 U	89 U	4.4 U	1.04	1.3 U	2.43	2.54	2.2 U
1994 RI Phase II	B-5		1/26/1994	5	6.5	8.6	41	40.1	41500	1160	77.4	97 U	97 U	4.8 U	5.13	1.4 U	5.91	10.8	8.2
1994 RI Phase II	B-6		1/26/1994	0	1.5	84.4	35.8	103	16900	259	73.2	360 U	360 U	18 U	71.2	5.2 U	151	276	596
1994 RI Phase II	B-6		1/26/1994	2.5	4	3.5	44.1	34	37700	547	72.8	93 U	93 U	4.7 U	0.93 U	1.3 U	0.93 U	0.93 U	2.3 U
1994 RI Phase II	B-7		1/26/1994	0	1.5	167	17.3	153	20700	281	575	1960	770 U	2420	5230	6470	3850	4220	1700
1994 RI Phase II	B-7		1/26/1994	4	5.5	21.3	27.5	37.4	35800	647	63.7	100 U	100 U	30.3	24.2	1.4 U	9.73	15.2	12.7
1994 RI Phase II	B-8		1/26/1994	0	1	234	47.5	440	16700	166	175	2300 U	2300 U	120 U	114	33 U	2030	2420	2480
1994 RI Phase II	B-8		1/26/1994	4	5.5	6.5	34	26.5	30000	1290	44.6	10100	1470	4700 U	4070	13 U	2040	2170	1570
1994 RI Phase II	B-9		1/26/1994	1	2.5	227	39.4	41.4	37900	1370	720	86 U	86 U	44.1	195	1.2 U	65.7	120	54.5
1994 RI Phase II	B-9		1/26/1994	5	6.5	6.1	10	16.1	19000	365	74.3	689	80 U	772	597	1.1 U	251	359	205
1994 RI Phase II	B-10		1/26/1994	0	1.5	16	27.3	48.8	21300	171	68.6	75 U	75 U	37 U	517	686	966	719	646
1994 RI Phase II	B-10		1/26/1994	4	5.5	4.99	35.1	39.8	50500	1420	77.5	532	118	87.4	143	1.5 U	20.4	44.7	10.4
1994 RI Phase II	B-11		1/27/1994	0	1	1710	64.4	288	16700	195	261	7310	4600 U	1550	14300	15200	4440	13100	3490
1994 RI Phase II	B-11		1/27/1994	2.5	4	7.1	45	41.9	44800	970	91.7	48300 U	6620	8810	4790	690 U	1390	1700	369
1994 RI Phase II	B-11		1/27/1994	2.5	4	10	43.3	40.4	43400	912	103	23500	9980	9700	6070	140 U	1240	2580	478
1994 RI Phase II	B-12		1/27/1994	4	5.5	7.9	28.7	33.5	40400	1120	75.9	3050	1000 U	1200	958	1110	703	595	180
1994 RI Phase II	B-12		1/27/1994	4	5.5	12	35.3	37.8	41900	934	145	2720	1190	1080	806	887	600	476	136
1994 RI Phase II	B-13		1/27/1994	0.67	1.5	13	34.9	35.6	15700	212	219	1020	450 U	128	343	1820	377	398	303
1994 RI Phase II	B-13		1/27/1994	4	5.5	103	38.1	34.8	47500	1340	82.3	100 U	100 U	5 U	1 U	1.4 U	1 U	1 U	2.4 U
1994 RI Phase II	B-14		1/27/1994	0	1	20.5	23.7	56.4	18100	242	95.3	2200 U	2200 U	110 U	266	2570	317	537	403
1994 RI Phase II	B-14		1/27/1994	4	5.5	7.6	44.5	40.8	48400	1430	84	93 U	93 U	4.7 U	4.08	1.3 U	0.93 U	9.49	3.28
1994 RI Phase II	B-15		1/27/1994	0	1	6.99	16.4	23.8	23800	212	49.7	230 U	230 U	11.3 U	102	184	110	140	68.7
1994 RI Phase II	B-15		1/27/1994	3	4	5.49	42.1	36.6	48000	1030	78.6	91 U	91 U	4.6 U	0.91 U	1.3 U	0.91 U	0.91 U	2.2 U
1994 RI Phase II	B-16		1/27/1994	0	1	7.6	44.5	40.8	48400	1430	84	740 U	740 U	44	437	10.5 U	410	503	246
1994 RI Phase II	B-16		1/27/1994	2.5	4	2.5	41.5	28.2	35500	1830	57.8	92 U	92 U	4.6 U	0.92 U	1.3 U	0.92 U	0.92 U	2.2 U
1994 RI Phase II	B-17		1/27/1994	0.5	2	2.4	11	24.4	13600	173	25.9	870 U	870 U	44 U	8.7 U	13 U	8.7 U	459	436
1994 RI Phase II	B-17		1/27/1994	4	5.5	3.8	29.7	30.2	39600	946	70.8	98 U	98 U	4.9 U	0.98 U	1.4 U	0.98 U	0.98 U	2.4 U
1994 RI Phase II	B-18		1/27/1994	0	1	29.9	27.5	152	20600	280	113	78 U	78 U	3.9 U	57.4	232	70	86	44.6
1994 RI Phase II	B-18		1/27/1994	2.5	4	1650	53.6	154	41200	727	426	95 U	95 U	4.7 U	0.95 U	1.4 U	0.95 U	0.95 U	2.3 U
1994 RI Phase II	B-19		1/27/1994	0	1	4.14	26.1	28.9	26100	288	217	74 U	74 U	3.7 U	4.19	12.8	12.4	15.1	3.37
1994 RI Phase II	B-19		1/27/1994	4	5.5	2.44	43.3	35	46700	927	1180	95 U	95 U	4.7 U	2.71	1.4 U	0.95 U	3.92	2.3 U
1994 RI Phase II	B-20		1/27/1994	0	1.5	2390	468	4090	26800	245	1790	760 U	760 U	42.6	553	1300	225	647	275
1994 RI Phase II	B-20		1/27/1994	2.5	4	5.3	40	45.2	42300	1020	360	94 U	94 U	4.7 U	5.13	1.3 U	3.94	7.92	2.3 U
1994 RI Phase II	B-21		1/27/1994	0	1	5.36	20.2	30.1	24500	273	46.7	73 U	73 U	3.6 U	40.2	119	14.8	22.7	29.4
1994 RI Phase II	B-21		1/27/1994	4	5.5	7.98	44.8	35.1	49300	1150	274	100 U	100 U	7.83	23.9	1.5 U	6.05	13.3	3.37
1994 RI Phase II	B-22		1/26/1994	0	1	5.49	26.9	33.9	26600	291	51.3	76 U	76 U	3.8 U	13.5	105	22.8	25.3	26.1

Table A-7. On-site Soil, Trench Worker Scenario, all depths.

Sample event	Station ID	Lab rep	Date	Upper	Lower	Arsenic	Chromium	Copper	Iron	Manganese	Zinc	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Dibenzo(a,h)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene
				Depth (ft)	Depth (ft)														
<b>ONSITE UNDEVELOPED AREA</b>																			
1994 RI Phase II	B-22		1/26/1994	4	5.5	5.99	36.5	33.8	47700	1050	72.8	99 U	99 U	4.9 U	5.41	1.4 U	0.99 U	5.91 U	2.4 U
1994 RI Phase II	B-23		1/26/1994	0	1	48.1	31.1	82.8	16300	219	89.2	760 U	760 U	1780	1630	10.9 U	721	1040	765
1994 RI Phase II	B-23		1/26/1994	4	5.5	5.7	34.2	35.6	41600	1020	71.8	97 U	97 U	4.8 U	2.94	1.4 U	6.14248	8.14	2.3 U
1994 RI Phase II	B-24		1/25/1994	0	1	8.45	13.9	27	19000	2330	38.3	76 U	76 U	112	125	650	248	395	454
1994 RI Phase II	B-24		1/25/1994	4	5.5	4.64	37.3	32.1	47400	1000	77.6	97 U	97 U	4.8 U	4.5	1.4 U	0.97 U	4.97	2.3 U
1994 RI Phase II	B-24		1/25/1994	4	5.5	4.65	33.8	28.1	43800	726	75.2	95 U	95 U	25.9	109	34.5	30.7	61.9	23.1
1994 RI Phase II	B-25		1/27/1994	0.5	2	29.4	10.2	31.2	14300	231	86.9	196	74 U	65	35	1.1 U	13.6	51.3	24.8
1994 RI Phase II	B-25		1/27/1994	2.5	4	3.04	47.2	31	38100	768	73.6	95 U	95 U	8.73	5.9	1.4 U	3.69	10.1	2.55
1994 RI Phase II	B-26		1/27/1994	0	1	62.2	27.7	100	28	426	80.2	76 U	76 U	139	3060	514	1510	1700	876
1994 RI Phase II	B-26		1/27/1994	4	5.5	2.84	36.8	32.8	46500	1030	75.7	97 U	97 U	4.8 U	7.67	1.4 U	3.13	6	2.3 U
1994 RI Phase II	B-27		1/25/1994	0	1	8.15	17.5	27	27700	313	55.8	90 U	90 U	12.5	249	779	170	276	142
1994 RI Phase II	B-27		1/25/1994	4	5.5	1.55	30.2	28.2	41800	788	71.4	95 U	95 U	4.7 U	2.97	1.4 U	0.95 U	4.18	2.3 U
1994 RI Phase II	B-28		1/25/1994	0	1	22.5	26.5	41.1	27700	675	65.6	112	76 U	4.6	135	230	51.4	84.8	36.4
1994 RI Phase II	B-28		1/25/1994	4	5.5	2.58	38.4	33.3	47400	898	80.4	99 U	99 U	5 U	4.15	1.4 U	0.99 U	4.4	2.4 U
1994 RI Phase II	B-29		1/25/1994	0	1	29.4	29.4	91.4	30500	935	132	74 U	74 U	3.7 U	3.65	1.1 U	2.64	4.42	2.08
1994 RI Phase II	B-29		1/25/1994	4	5.5	4.6	16.3	19.6	27300	551	49.7	90 U	90 U	4.5 U	0.9 U	1.3 U	0.9 U	0.9 U	2.4 U
1994 RI Phase II	B-30		1/25/1994	1.5	2.5	4.8	45.4	32.2	41800	1130	77.3	91 U	91 U	4.6 U	0.91 U	1.3 U	0.91 U	0.91 U	2.2 U
1994 RI Phase II	B-30		1/25/1994	3	4.5	5.1	49	29	42600	1120	69.3	97 U	97 U	4.8 U	0.97 U	1.4 U	0.97 U	0.97 U	2.3 U
1994 RI Phase II	B-31		1/25/1994	1.5	2.5	15.9	36.6	28.2	40700	950	68.8	91 U	91 U	4.6 U	0.91 U	1.3 U	0.91 U	0.91 U	2.2 U
1994 RI Phase II	B-31		1/25/1994	4.5	5.5	5.4	24.1	26.7	36400	870	65.7	98 U	98 U	4.9 U	0.98 U	1.4 U	0.98 U	0.98 U	2.4 U
1994 RI Phase II	B-32		1/25/1994	0	1	123	17.5	54.1	20800	314	66.6	76 U	76 U	5.48	41.6	1.1 U	70.5	122	108
1994 RI Phase II	B-32		1/25/1994	3	4	5	38.8	27.4	36100	907	80.8	90 U	90 U	4.5 U	0.9 U	1.3 U	0.9 U	0.9 U	2.2 U
1997 FS PII	B-34		11/1/1995	12	14	10 U	12.7	15.5			36.9	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
1997 FS PII	B-34	2	11/1/1995	12	14							330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
1997 FS PII	B-35		11/1/1995	7	9	17.5	24.4	19.4			46.6	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
1997 FS PII	B-35		11/1/1995	12	14	10	11.2	16			36	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
1997 FS PII	B-36		11/1/1995	7	9	10 U	23.2	21			55	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
1997 FS PII	B-37		10/31/1995	2	4	31.6	48.6	34.3			94.3	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
1997 FS PII	B-37	2	10/31/1995	2	4	29.4	38.9	36.6			85.1	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
1997 FS PII	B-37		10/31/1995	12	14	10 U	12.1	16			39	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
1997 FS PII	B-38		11/3/1995	2	4	45.2	46.5	33.7			87.1	4200	3300 U	4800	12000	3300 U	8100	15000	3300 U
1997 FS PII	B-38	2	11/3/1995	2	4	43.2	44.3	32.7			86.5								
1997 FS PII	B-38		11/3/1995	12	14	20 U	20.8	21.2			49	500	330 U	600	330 U	330 U	330 U	330 U	330 U
1997 FS PII	B-38	2	11/3/1995	12	14														
1997 FS PII	SS-1		11/00/1995	0	0.5	80.4	24.4	296			159	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
1997 FS PII	SS-1	2	11/00/1995	0	0.5	75	25	301			160								
1997 FS PII	SS-2		11/00/1995	0	0.5	78.3	49.3	229			136	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
1997 FS PII	SS-2	2	11/00/1995	0	0.5														
1997 FS PII	SS-3		11/00/1995	0	0.5	82.5	50.1	178			132	3300 U	3300 U	4200	3300 U	3300 U	3300 U	3300 U	3300 U
1997 FS PII	SS-4		11/00/1995	0	0.5	385	156	603			183	3300 U	3300 U	3300 U	3300 U	3300 U	3300	6500	3300 U
1997 FS PII	SS-5		11/00/1995	0	0.5	198	36.8	213			113	3300 U	3300 U	3300 U	3300 U	3300 U	3300 U	6000	3300 U
1997 FS PII	SS-6		11/00/1995	0	0.5	64	41.6	336			279	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
1997 FS PII	SS-7		11/00/1995	0	0.5	120	68.8	698			508	3300 U	3300 U	3300 U	3300 U	3300 U	3300 U	4200	3300 U
1997 FS PII	SS-8		11/00/1995	0	0.5	159	70	173			323								

Table A-7. On-site Soil, Trench Worker Scenario, all depths.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	Arsenic	Chromium	Copper	Iron	Manganese	Zinc	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Dibenzo(a,h)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene
						mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
<b>ONSITE UNDEVELOPED AREA</b>																			
1997 FS PII	SS-9		11/00/1995	0	0.5	156	65.3	336			233								
1997 FS PII	SS-10		11/00/1995	0	0.5	188	51	363			268								
1997 FS PII	SS-11		11/00/1995	0	0.5	86	28	91.1			80.6	3300 U	3300 U	3300 U	33000 U	3300 U	3300 U	3300 U	3300 U
1998 Addtl Samp	SS98-10		2/2/1998	0	1	120													
1998 Addtl Samp	SS98-11		2/2/1998	0	1	57.6													
1998 Addtl Samp	SS98-5		2/2/1998	0	1	61.7						100 U	100 U	74	142	50 U	145	10 U	154
1998 Addtl Samp	SS98-6		2/2/1998	0	1	119						100 U	100 U	77	143	50 U	108	10 U	113
1998 Addtl Samp	SS98-8		2/2/1998	0	1	14.5													
1998 Addtl Samp	SS98-9		2/2/1998	0	1	111													
1991 RI Phase I	W-4S		12/00/1986	14	15							100 U	100 U	100 U	100 U		100 U	100 U	
1991 RI Phase I	W-5I		12/00/1986	5.5	6							100 U	100 U	100 U	100 U		100 U	100 U	
1991 RI Phase I	W-7S		12/00/1986	6.5	7							2800	100 U	1000	200		400	100	
1991 RI Phase I	W-8S		12/00/1986	5.5	6							23000	100 U	15000	3300		1100	1100	
1991 RI Phase I	W-9I		6/6/1990	3	4.5							124 U	124 U	50 U	10.4	28.9	11	22.4	19.3
1991 RI Phase I	W-9S		5/8/1990	3	5	7.06	43.5	35.9	31500	639	62.2	114 U	114 U	50 U	9.3	45	7.94	16.5	22.3
1991 RI Phase I	W-11S		5/9/1990	2.5	4	2 U	30.3	32.1	36900	1110	69.9	136 U	136 U	68 U	2.72 U	4.08 U	2 U	2 U	6.8 U
1991 RI Phase I	W-12I		5/25/1990	3	4.5							131 U	131 U	50 U	149	39.3 U	14.8	23.6	65.5 U
1991 RI Phase I	W-13S		5/9/1990	1.5	3.5	4.54	16.3	23.8	22400	338	54.4	107 U	107 U	50 U	10.6	64.8	14	24.7	25.8
1991 RI Phase I	W-14I		5/30/1990	7	8							110 U	110 U	55 U	2.2 U	3.3 U	2.2 U	2.2 U	5.5 U
1997 FS PII	W-21S		11/3/1995	8	10	21.6	26.9	17.9			69.8	27000	3300 U	14000	11000	3300 U	3300 U	6500	3300 U
1997 FS PII	W-21S		11/3/1995	13	15	20 U	12.5	17			52.8	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
1997 FS PII	W-22S		11/2/1995	9	11	20.8	27.3	18.3			56.7	1800	330 U	1200	1100	330 U	330 U	600	330 U
1997 FS PII	W-22S		11/2/1995	9	11	20 U	32.3	28			70	8500		7700	4000	3300 U	3300 U	3300 U	3300 U
1997 FS PII	W-22S		11/2/1995	14	16	31	43.8	15			41.1	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
2000 Former Guard Post	BH00-1		3/16/2000	0	0.5	29.9		162			88.3								
2000 Former Guard Post	BH00-1		3/16/2000	2.75	3.25	5.73		31.8			73.9								
2000 Former Guard Post	BH00-2		3/16/2000	0	0.5	33.8		192			110								
2000 Former Guard Post	BH00-2		3/16/2000	2.75	3.25	6.92		38.2			84.1								
2000 Former Guard Post	BH00-3		3/16/2000	0	0.5	29		120			81.2								
2000 Former Guard Post	BH00-3		3/16/2000	2.5	3	4.26		30.6			73.9								
2000 Former Guard Post	BH00-4		3/16/2000	0	0.5	39.1		130			85.8								
2000 Former Guard Post	BH00-4		3/16/2000	2.75	3	4.65		35.7			70.2								
2000 Former Guard Post	BH00-4		3/16/2000	2.75	3	12.7		46			69.2								
2000 Former Guard Post	BH00-5		3/17/2000	0	0.5	44.5		133			91.9								
2000 Former Guard Post	BH00-5		3/17/2000	2.75	3.25	8.52		28.3			58.1								
1998 Tax Lots	2002		10/00/1998	0	-9							100 U	120	210	150	79	200	410	170
1998 Tax Lots	2002A		10/00/1998	0	-9	59.8													
1998 Tax Lots	2002B		10/00/1998	0	-9	61													
1998 Tax Lots	2002C		10/00/1998	0	-9	28.5													
1998 Tax Lots	2002D		10/00/1998	0	-9	8.72													
1998 Tax Lots	2002E		10/00/1998	0	-9	26.3													

Notes:  
 U -- The analyte was not detected at or above the associated reporting limit.  
 UJ -- Estimated reporting limit.  
 J -- Estimated value.  
 B -- The analyte was detected in the associated laboratory blank in addition to the sample.  
 EMPC -- Estimated maximum possible concentration.

Table A-7. On-site Soil, Trench Worker Scenario, all depths.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	Benzo(k) fluoranthene ug/Kg	Carbazole ug/Kg	Chrysene ug/Kg	4-Chloro-3-methyl-phenol ug/Kg	1,2-Dichloro-benzene ug/Kg	1,3-Dichloro-benzene ug/Kg	1,4-Dichloro-benzene ug/Kg	Tetrachloro-phenols, Total ug/Kg	2,3,4,6-Tetrachloro-phenol ug/Kg	2,3,5,6-Tetrachloro-phenol ug/Kg	2,4,5-Trichloro-phenol ug/Kg	2,4,6-Trichloro-phenol ug/Kg
<b>ONSITE UNDEVELOPED AREA</b>																	
Stormwater Tank	COMP_S1		8/27/2001	0	0.5	247		452	2000 U				2000 U			2000 U	2000 U
Stormwater Tank	COMP_S2		8/27/2001	0	0.5	499		870	2000 U				2000 U			2000 U	2000 U
1994 RI Phase II	B-1		1/26/1994	0	1	1.14	110 U	5.5 U	18 U						36 U		36 U
1994 RI Phase II	B-1		1/26/1994	4	5	2.66	150 U	7.3 U	25 U						48 U		48 U
1994 RI Phase II	B-2		1/26/1994	0.25	1.5	0.88 U	130 U	6.3 U	21 U						42 U		42 U
1994 RI Phase II	B-2		1/26/1994	3	4	0.93 U	130 U	6.7 U	23 U						44 U		44 U
1994 RI Phase II	B-2		1/26/1994	3	4	0.93 U	130 U	6.7 U	23 U						44 U		44 U
1994 RI Phase II	B-3		1/26/1994	0	1	23.6	110 U	79.2	18 U						36 U		36 U
1994 RI Phase II	B-3		1/26/1994	4	5.5	0.98 U	140 U	7 U	24 U						46 U		46 U
1994 RI Phase II	B-4		1/26/1994	0.25	1.9	2.98	120 U	6.1 U	21 U						40 U		40 U
1994 RI Phase II	B-4		1/26/1994	4	5.5	1.82	140 U	6.8 U	23 U						45 U		45 U
1994 RI Phase II	B-5		1/26/1994	1	2.5	0.89 U	130 U	6.4 U	22 U						42 U		42 U
1994 RI Phase II	B-5		1/26/1994	5	6.5	4.64	140 U	7.03	23 U						46 U		46 U
1994 RI Phase II	B-6		1/26/1994	0	1.5	46.6	520 U	247	71 U						137 U		137 U
1994 RI Phase II	B-6		1/26/1994	2.5	4	0.93 U	130 U	6.7 U	23 U						44 U		44 U
1994 RI Phase II	B-7		1/26/1994	0	1.5	1670	1100 U	12000	187 U						21500		362 U
1994 RI Phase II	B-7		1/26/1994	4	5.5	4.02	140 U	46.5	24 U						48 U		48 U
1994 RI Phase II	B-8		1/26/1994	0	1	405	3300 U	835	56 U						8110		109 U
1994 RI Phase II	B-8		1/26/1994	4	5.5	928	1300 U	6090	23 U						44 U		576
1994 RI Phase II	B-9		1/26/1994	1	2.5	52.2	120 U	210	21 U						41 U		41 U
1994 RI Phase II	B-9		1/26/1994	5	6.5	164	110 U	851	19 U						38 U		38 U
1994 RI Phase II	B-10		1/26/1994	0	1.5	170	110 U	1540	56						35 U		35 U
1994 RI Phase II	B-10		1/26/1994	4	5.5	16.6	367	207	102						50 U		50 U
1994 RI Phase II	B-11		1/27/1994	0	1	3960	6500 U	30700	110 U						213 U		213 U
1994 RI Phase II	B-11		1/27/1994	2.5	4	798	2670	9960	235 U						456 U		1040
1994 RI Phase II	B-11		1/27/1994	2.5	4	944	4110	22700	234 U						455 U		455 U
1994 RI Phase II	B-12		1/27/1994	4	5.5	234	1400 U	4240	243 U						471 U		3260
1994 RI Phase II	B-12		1/27/1994	4	5.5	188	1400 U	3810	239 U						464 U		464 U
1994 RI Phase II	B-13		1/27/1994	0.67	1.5	123	640 U	2090	107 U						207 U		207 U
1994 RI Phase II	B-13		1/27/1994	4	5.5	1 U	140 U	7.2 U	24 U						48 U		48 U
1994 RI Phase II	B-14		1/27/1994	0	1	64.8	3100 U	823	106 U						206 U		206 U
1994 RI Phase II	B-14		1/27/1994	4	5.5	0.93 U	130 U	6.7 U	23 U						44 U		44 U
1994 RI Phase II	B-15		1/27/1994	0	1	48.2	320 U	260	55 U						106 U		106 U
1994 RI Phase II	B-15		1/27/1994	3	4	0.91 U	130 U	6.5 U	22 U						43 U		43 U
1994 RI Phase II	B-16		1/27/1994	0	1	195	1050 U	789	18 U						34 U		34 U
1994 RI Phase II	B-16		1/27/1994	2.5	4	0.92 U	1130 U	6.6 U	22 U						43 U		43 U
1994 RI Phase II	B-17		1/27/1994	0.5	2	8.7 U	1300 U	62 U	107 U						207 U		207 U
1994 RI Phase II	B-17		1/27/1994	4	5.5	0.98 U	140 U	7 U	24 U						46 U		46 U
1994 RI Phase II	B-18		1/27/1994	0	1	26.2	110 U	93.5	19 U						37 U		37 U
1994 RI Phase II	B-18		1/27/1994	2.5	4	0.95 U	140 U	6.8 U	23 U						44 U		44 U
1994 RI Phase II	B-19		1/27/1994	0	1	0.74 U	110 U	24.1	108 U						210 U		210 U
1994 RI Phase II	B-19		1/27/1994	4	5.5	0.95 U	140 U	6.8 U	23 U						45 U		45 U
1994 RI Phase II	B-20		1/27/1994	0	1.5	256	1100 U	992	18 U						36 U		36 U
1994 RI Phase II	B-20		1/27/1994	2.5	4	0.94 U	130 U	10.2	23 U						44 U		44 U
1994 RI Phase II	B-21		1/27/1994	0	1	6.24	100 U	39.9	18 U						34 U		34 U
1994 RI Phase II	B-21		1/27/1994	4	5.5	2.83	150	41.5	25 U						48 U		48 U
1994 RI Phase II	B-22		1/26/1994	0	1	6.37	110 U	87.9	18 U						36 U		36 U

Table A-7. On-site Soil, Trench Worker Scenario, all depths.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	Benzo(k) fluoranthene ug/Kg	Carbazole ug/Kg	Chrysene ug/Kg	4-Chloro-3-methyl-phenol ug/Kg	1,2-Dichloro-benzene ug/Kg	1,3-Dichloro-benzene ug/Kg	1,4-Dichloro-benzene ug/Kg	Tetrachloro-phenols, Total ug/Kg	2,3,4,6-Tetrachloro-phenol ug/Kg	2,3,5,6-Tetrachloro-phenol ug/Kg	2,4,5-Trichloro-phenol ug/Kg	2,4,6-Trichloro-phenol ug/Kg
<b>ONSITE UNDEVELOPED AREA</b>																	
1994 RI Phase II	B-22		1/26/1994	4	5.5	0.99 U	140 U	7.1 U	24 U						46 U		46 U
1994 RI Phase II	B-23		1/26/1994	0	1	475 U	1100 U	2920 U	18 U						36 U		36 U
1994 RI Phase II	B-23		1/26/1994	4	5.5	0.97 U	140 U	6.9 U	23 U						45 U		45 U
1994 RI Phase II	B-24		1/25/1994	0	1	144 U	110 U	873 U	18 U						35 U		35 U
1994 RI Phase II	B-24		1/25/1994	4	5.5	0.97 U	140 U	6.9 U	24 U						46 U		46 U
1994 RI Phase II	B-24		1/25/1994	4	5.5	23.9 U	140 U	158 U	23 U						45 U		45 U
1994 RI Phase II	B-25		1/27/1994	0.5	2	8.21 U	110 U	51.8 U	18 U						34 U		34 U
1994 RI Phase II	B-25		1/27/1994	2.5	4	2.38 U	140 U	8.35 U	23 U						45 U		45 U
1994 RI Phase II	B-26		1/27/1994	0	1	464 U	110 U	237 U	18 U						36 U		36 U
1994 RI Phase II	B-26		1/27/1994	4	5.5	0.97 U	140 U	6.9 U	23 U						46 U		46 U
1994 RI Phase II	B-27		1/25/1994	0	1	123 U	130 U	456 U	22 U						42 U		42 U
1994 RI Phase II	B-27		1/25/1994	4	5.5	0.95 U	140 U	6.8 U	23 U						44 U		44 U
1994 RI Phase II	B-28		1/25/1994	0	1	34.1 U	110 U	146 U	18 U						36 U		36 U
1994 RI Phase II	B-28		1/25/1994	4	5.5	0.99 U	140 U	7.1 U	24 U						47 U		47 U
1994 RI Phase II	B-29		1/25/1994	0	1	0.74 U	110 U	13.5 U	18 U						35 U		35 U
1994 RI Phase II	B-29		1/25/1994	4	5.5	0.9 U	130 U	6.5 U	22 U						43 U		43 U
1994 RI Phase II	B-30		1/25/1994	1.5	2.5	2.14 U	130 U	6.5 U	22 U						43 U		43 U
1994 RI Phase II	B-30		1/25/1994	3	4.5	0.97 U	140 U	6.9 U	23 U						45 U		45 U
1994 RI Phase II	B-31		1/25/1994	1.5	2.5	0.91 U	130 U	6.5 U	22 U						43 U		43 U
1994 RI Phase II	B-31		1/25/1994	4.5	5.5	0.98 U	140 U	0.7 U	24 U						46 U		46 U
1994 RI Phase II	B-32		1/25/1994	0	1	33.8 U	110 U	73.1 U	18 U						36 U		36 U
1994 RI Phase II	B-32		1/25/1994	3	4	0.9 U	130 U	6.5 U	22 U						42 U		42 U
1997 FS PII	B-34		11/1/1995	12	14	330 U		330 U	500 U	50 U	50 U	50 U		500 U	500 U	500 U	500 U
1997 FS PII	B-34	2	11/1/1995	12	14	330 U		330 U		50 U	50 U	50 U					
1997 FS PII	B-35		11/1/1995	7	9	330 U		330 U	500 U	50 U	50 U	50 U		500 U	500 U	500 U	500 U
1997 FS PII	B-35		11/1/1995	12	14	330 U		330 U	500 U	50 U	50 U	50 U		500 U	500 U	500 U	500 U
1997 FS PII	B-36		11/1/1995	7	9	330 U		330 U	500 U	1250 U	1210 U	1250 U		14400 U	500 U	500 U	500 U
1997 FS PII	B-37		10/31/1995	2	4	330 U		330 U	500 U	50 U	50 U	50 U		1000 U	2400 U	500 U	500 U
1997 FS PII	B-37	2	10/31/1995	2	4	330 U		330 U	500 U					1200 U	2100 U	500 U	500 U
1997 FS PII	B-37		10/31/1995	12	14	330 U		330 U	500 U	50 U	50 U	50 U		500 U	500 U	500 U	500 U
1997 FS PII	B-38		11/3/1995	2	4	3300 U		14000 U	500 U	250 U	250 U	250 U		8800 U	24100 U	500 U	500 U
1997 FS PII	B-38	2	11/3/1995	2	4												
1997 FS PII	B-38		11/3/1995	12	14	330 U		400 U	500 U	250 U	250 U	250 U		1200 U	1900 U	500 U	500 U
1997 FS PII	B-38	2	11/3/1995	12	14				500 U	50 U	50 U	50 U		700 U	900 U	500 U	500 U
1997 FS PII	SS-1		11/00/1995	0	0.5	330 U		330 U	500 U					500 U	500 U	500 U	500 U
1997 FS PII	SS-1	2	11/00/1995	0	0.5												
1997 FS PII	SS-2		11/00/1995	0	0.5	330 U		330 U	500 U					600 U	500 U	500 U	500 U
1997 FS PII	SS-2	2	11/00/1995	0	0.5				500 U					900 U	500 U	500 U	500 U
1997 FS PII	SS-3		11/00/1995	0	0.5	3300 U		3300 U	500 U					500 U	500 U	500 U	500 U
1997 FS PII	SS-4		11/00/1995	0	0.5	3300 U		7200 U	500 U					2900 U	500 U	500 U	500 U
1997 FS PII	SS-5		11/00/1995	0	0.5	3300 U		6400 U	500 U					500 U	500 U	500 U	500 U
1997 FS PII	SS-6		11/00/1995	0	0.5	330 U		330 U	500 U					1200 U	500 U	500 U	500 U
1997 FS PII	SS-7		11/00/1995	0	0.5	3300 U		3900 U	500 U					1700 U	500 U	500 U	500 U
1997 FS PII	SS-8		11/00/1995	0	0.5												

Table A-7. On-site Soil, Trench Worker Scenario, all depths.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	Benzo(k) fluoranthene ug/Kg	Carbazole ug/Kg	Chrysene ug/Kg	4-Chloro-3-methyl-phenol ug/Kg	1,2-Dichloro-benzene ug/Kg	1,3-Dichloro-benzene ug/Kg	1,4-Dichloro-benzene ug/Kg	Tetrachloro-phenols, Total ug/Kg	2,3,4,6-Tetrachloro-phenol ug/Kg	2,3,5,6-Tetrachloro-phenol ug/Kg	2,4,5-Trichloro-phenol ug/Kg	2,4,6-Trichloro-phenol ug/Kg
<b>ONSITE UNDEVELOPED AREA</b>																	
1997 FS PII	SS-9		11/00/1995	0	0.5												
1997 FS PII	SS-10		11/00/1995	0	0.5												
1997 FS PII	SS-11		11/00/1995	0	0.5	3300 U		3300 U	500 U					900	500 U	500 U	500 U
1998 Addtl Samp	SS98-10		2/2/1998	0	1												
1998 Addtl Samp	SS98-11		2/2/1998	0	1												
1998 Addtl Samp	SS98-5		2/2/1998	0	1	159		120									
1998 Addtl Samp	SS98-6		2/2/1998	0	1	190		120									
1998 Addtl Samp	SS98-8		2/2/1998	0	1												
1998 Addtl Samp	SS98-9		2/2/1998	0	1												
1991 RI Phase I	W-4S		12/00/1986	14	15	100 U		100 U									
1991 RI Phase I	W-5I		12/00/1986	5.5	6	100 U		100 U									
1991 RI Phase I	W-7S		12/00/1986	6.5	7	100		600									
1991 RI Phase I	W-8S		12/00/1986	5.5	6	1100		3300									
1991 RI Phase I	W-9I		6/6/1990	3	4.5	8.75	124 U	69.6	62 U	24.8 U	24.8 U	24.8 U			124 U		124 U
1991 RI Phase I	W-9S		5/8/1990	3	5	5.21	114 U	17 U	57 U	22.8 U	22.8 U	22.8 U			114 U		114 U
1991 RI Phase I	W-11S		5/9/1990	2.5	4	2 U	136 U	20.4 U	68 U	27.2 U	27.2 U	27.2 U			136 U		136 U
1991 RI Phase I	W-12I		5/25/1990	3	4.5	12.5	131 U	536	65.5 U	26.2 U	26.2 U	26.2 U			131 U		181
1991 RI Phase I	W-13S		5/9/1990	1.5	3.5	10.2	107 U	34.1	53.5 U	21.4 U	21.4 U	21.4 U			106 U		106 U
1991 RI Phase I	W-14I		5/30/1990	7	8	2.2 U	110 U	16.5 U	55 U	22	22 U	22 U			110 U		110 U
1997 FS PII	W-21S		11/3/1995	8	10	3300 U		13000	500 U	250 U	250 U	250 U		2200	1500	500 U	500 U
1997 FS PII	W-21S		11/3/1995	13	15	330 U		330 U	500 U	50 U	50 U	50 U		500 U	500 U	500 U	500 U
1997 FS PII	W-22S		11/2/1995	9	11	400		1100	500 U	250 U	210	250 U		3800	1600	500 U	500 U
1997 FS PII	W-22S		11/2/1995	9	11	3300 U			500 U	250 U	100	250 U		3400	1100	500 U	500 U
1997 FS PII	W-22S		11/2/1995	14	16	330 U		330 U	500 U	50 U	50 U	50 U		500 U	500 U	500 U	500 U
2000 Former Guard Post	BH00-1		3/16/2000	0	0.5												
2000 Former Guard Post	BH00-1		3/16/2000	2.75	3.25												
2000 Former Guard Post	BH00-2		3/16/2000	0	0.5												
2000 Former Guard Post	BH00-2		3/16/2000	2.75	3.25												
2000 Former Guard Post	BH00-3		3/16/2000	0	0.5												
2000 Former Guard Post	BH00-3		3/16/2000	2.5	3												
2000 Former Guard Post	BH00-4		3/16/2000	0	0.5												
2000 Former Guard Post	BH00-4		3/16/2000	2.75	3												
2000 Former Guard Post	BH00-4		3/16/2000	2.75	3												
2000 Former Guard Post	BH00-5		3/17/2000	0	0.5												
2000 Former Guard Post	BH00-5		3/17/2000	2.75	3.25												
1998 Tax Lots	2002		10/00/1998	0	-9	230		440									
1998 Tax Lots	2002A		10/00/1998	0	-9												
1998 Tax Lots	2002B		10/00/1998	0	-9												
1998 Tax Lots	2002C		10/00/1998	0	-9												
1998 Tax Lots	2002D		10/00/1998	0	-9												
1998 Tax Lots	2002E		10/00/1998	0	-9												

Notes:  
 U -- The analyte was not detected at or above the associated reporting limit.  
 UJ -- Estimated reporting limit.  
 J -- Estimated value.  
 B -- The analyte was detected in the associated laboratory blank in addition to the sample  
 EMPC -- Estimated maximum possible concentration.

Table A-7. On-site Soil, Trench Worker Scenario, all depths.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	2,4-Dichloro-phenol ug/Kg	2,6-Dichloro-phenol ug/Kg	Pentachloro-phenol (PCP) ug/Kg	2-Chloro-phenol ug/Kg	Cresols ug/Kg	Dinoseb ug/Kg	4,6-Dinitro-2-methyl-phenol ug/Kg	2,4-Dinitro-phenol ug/Kg	Fluoranthene ug/Kg	Fluorene ug/Kg	Indeno(1,2,3-cd)pyrene ug/Kg	2,4-Dimethyl-phenol ug/Kg	Naphthalene ug/Kg	
<b>ONSITE UNDEVELOPED AREA</b>																			
Stormwater Tank	COMP_S1		8/27/2001	0	0.5	2000 U	2000 U	2000 UJ	2000 U	4000 U	2000 U	2000 U	25000 U	1720	352	155	2000 U	158	
Stormwater Tank	COMP_S2		8/27/2001	0	0.5	2000 U	2000 U	2300	2000 U	4000 U	2000 U	2000 U	25000 U	3230	850	263	2000 U	425	
1994 RI Phase II	B-1		1/26/1994	0	1	18 U		36 U	18 U			36 U	36 U	7.6 U	7.6 U	1.9 U	18 U	76 U	
1994 RI Phase II	B-1		1/26/1994	4	5	25 U		48 U	25 U			48 U	48 U	10 U	10 U	2.5 U	25 U	100 U	
1994 RI Phase II	B-2		1/26/1994	0.25	1.5	21 U		42 U	21 U			42 U	42 U	8.8 U	8.8 U	2.1 U	21 U	88 U	
1994 RI Phase II	B-2		1/26/1994	3	4	23 U		44 U	23 U			44 U	44 U	9.3 U	9.3 U	2.3 U	23 U	93 U	
1994 RI Phase II	B-2		1/26/1994	3	4	23 U		44 U	23 U			44 U	44 U	9.3 U	9.3 U	2.3 U	23 U	93 U	
1994 RI Phase II	B-3		1/26/1994	0	1	18 U		36 U	18 U			36 U	36 U	7.6 U	7.6 U	36.85	18 U	76 U	
1994 RI Phase II	B-3		1/26/1994	4	5.5	24 U		46 U	24 U			46 U	46 U	9.8 U	9.8 U	2.4 U	24 U	98 U	
1994 RI Phase II	B-4		1/26/1994	0.25	1.9	21 U		40 U	21 U			40 U	40 U	8.5 U	8.5 U	2.1 U	21 U	85 U	
1994 RI Phase II	B-4		1/26/1994	4	5.5	23 U		45 U	23 U			45 U	45 U	9.5 U	9.5 U	2.3 U	23 U	95 U	
1994 RI Phase II	B-5		1/26/1994	1	2.5	22 U		42 U	22 U			42 U	42 U	8.9 U	8.9 U	2.2 U	22 U	89 U	
1994 RI Phase II	B-5		1/26/1994	5	6.5	23 U		46 U	23 U			46 U	46 U	14.7 U	9.7 U	5.21	23 U	97 U	
1994 RI Phase II	B-6		1/26/1994	0	1.5	71 U		137 U	71 U			137 U	137 U	181	54	8.8 U	71 U	360 U	
1994 RI Phase II	B-6		1/26/1994	2.5	4	23 U		44 U	23 U			44 U	44 U	9.3 U	9.3 U	2.3 U	23 U	93 U	
1994 RI Phase II	B-7		1/26/1994	0	1.5	187 U		66400	187 U			362 U	362 U	13200	1240	2210	187 U	770 U	
1994 RI Phase II	B-7		1/26/1994	4	5.5	24 U		48 U	24 U			48 U	48 U	97.5	47.5	10.5	24 U	100 U	
1994 RI Phase II	B-8		1/26/1994	0	1	56 U		109 U	56 U			109 U	109 U	914	230 U	1990	56 U	2300 U	
1994 RI Phase II	B-8		1/26/1994	4	5.5	23 U		44 U	23 U			44 U	44 U	14100	7080	977	23 U	11200	
1994 RI Phase II	B-9		1/26/1994	1	2.5	21 U		41 U	21 U			41 U	41 U	371	8.6 U	34.3	21 U	321	
1994 RI Phase II	B-9		1/26/1994	5	6.5	19 U		38 U	19 U			38 U	38 U	1700	401	130	19 U	826	
1994 RI Phase II	B-10		1/26/1994	0	1.5	18 U		35 U	18 U			35 U	35 U	388	27.8	1130	18 U	114	
1994 RI Phase II	B-10		1/26/1994	4	5.5	26 U		50 U	26 U			50 U	50 U	820	594	16	26 U	320	
1994 RI Phase II	B-11		1/27/1994	0	1	110 U		182000	110 U			2130 U	2130 U	11600	5440	4520	110 U	4600 U	
1994 RI Phase II	B-11		1/27/1994	2.5	4	1700		456 U	235 U			456 U	4790	30500	19100	467	235 U	48300 U	
1994 RI Phase II	B-11		1/27/1994	2.5	4	2410		455 U	234 U			455 U	455 U	25200	19300	532	234 U	53900	
1994 RI Phase II	B-12		1/27/1994	4	5.5	4780		46700	243 U			471 U	471 U	2860	2220	258	243 U	12100	
1994 RI Phase II	B-12		1/27/1994	4	5.5	3080		38500	239 U			464 U	464 U	2340	2060	193	239 U	7850	
1994 RI Phase II	B-13		1/27/1994	0.67	1.5	107 U		207 U	107 U			207 U	362	1310	248	251	107 U	450 U	
1994 RI Phase II	B-13		1/27/1994	4	5.5	24 U		1880	24 U			48 U	48 U	12.2	10 U	2.4 U	24 U	100 U	
1994 RI Phase II	B-14		1/27/1994	0	1	106 U		206 U	106 U			206 U	206 U	414	220 U	718	106 U	2200 U	
1994 RI Phase II	B-14		1/27/1994	4	5.5	23 U		44 U	23 U			44 U	44 U	9.65	9.3 U	10.9	23 U	93 U	
1994 RI Phase II	B-15		1/27/1994	0	1	55 U		106 U	55 U			106 U	106 U	64.1	23 U	57	55 U	230 U	
1994 RI Phase II	B-15		1/27/1994	3	4	22 U		43 U	22 U			43 U	43 U	9.1 U	9.1 U	2.2 U	22 U	91 U	
1994 RI Phase II	B-16		1/27/1994	0	1	18 U		34 U	18 U			34 U	34 U	561	102	278	18 U	740 U	
1994 RI Phase II	B-16		1/27/1994	2.5	4	22 U		43 U	22 U			43 U	43 U	9.2 U	9.2 U	2.2 U	22 U	92 U	
1994 RI Phase II	B-17		1/27/1994	0.5	2	107 U		207 U	107 U			207 U	207 U	115	87 U	21 U	107 U	870 U	
1994 RI Phase II	B-17		1/27/1994	4	5.5	24 U		46 U	24 U			46 U	46 U	34.2	9.8 U	2.4 U	24 U	98 U	
1994 RI Phase II	B-18		1/27/1994	0	1	19 U		37 U	19 U			37 U	37 U	49.5	7.8 U	82.6	19 U	78 U	
1994 RI Phase II	B-18		1/27/1994	2.5	4	23 U		44 U	23 U			44 U	44 U	9.5 U	9.5 U	2.3 U	23 U	95 U	
1994 RI Phase II	B-19		1/27/1994	0	1	108 U		210 U	108 U			210 U	210 U	7.4 U	7.4 U	3.97	108 U	74 U	
1994 RI Phase II	B-19		1/27/1994	4	5.5	23 U		45 U	23 U			45 U	45 U	9.5 U	12	2.3 U	23 U	95 U	
1994 RI Phase II	B-20		1/27/1994	0	1.5	18 U		36 U	18 U			173	36 U	751	76 U	455	18 U	760 U	
1994 RI Phase II	B-20		1/27/1994	2.5	4	23 U		44 U	23 U			44 U	44 U	12.6	9.4 U	6	23 U	94 U	
1994 RI Phase II	B-21		1/27/1994	0	1	18 U		34 U	18 U			34 U	34 U	24.7	7.3 U	40.2	18 U	73 U	
1994 RI Phase II	B-21		1/27/1994	4	5.5	25 U		48 U	25 U			48 U	48 U	133	10 U	6.46	25 U	100 U	
1994 RI Phase II	B-22		1/26/1994	0	1	18 U		36 U	18 U			36 U	36 U	25.5	7.6 U	15.1	18 U	76 U	



Table A-7. On-site Soil, Trench Worker Scenario, all depths.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	2,4-Dichloro-phenol ug/Kg	2,6-Dichloro-phenol ug/Kg	Pentachloro-phenol (PCP) ug/Kg	2-Chloro-phenol ug/Kg	Cresols ug/Kg	Dinoseb ug/Kg	4,6-Dinitro-2-methyl-phenol ug/Kg	2,4-Dinitro-phenol ug/Kg	Fluoranthene ug/Kg	Fluorene ug/Kg	Indeno(1,2,3-cd)pyrene ug/Kg	2,4-Dimethyl-phenol ug/Kg	Naphthalene ug/Kg	
<b>ONSITE UNDEVELOPED AREA</b>																			
1994 RI Phase II	B-22		1/26/1994	4	5.5	24 U		46 U	24 U			46 U	46 U	9.9 U	9.9 U	2.4 U	24 U	99 U	
1994 RI Phase II	B-23		1/26/1994	0	1	18 U		1930	18 U			36 U	36 U	2210	257	693	18 U	760 U	
1994 RI Phase II	B-23		1/26/1994	4	5.5	23 U		45 U	23 U			45 U	45 U	9.7 U	9.7 U	2.3 U	23 U	97 U	
1994 RI Phase II	B-24		1/25/1994	0	1	18 U		35 U	18 U			35 U	35 U	443	35.7	417	18 U	94.8	
1994 RI Phase II	B-24		1/25/1994	4	5.5	24 U		46 U	24 U			46 U	46 U	9.7 U	9.7 U	2.3 U	24 U	97 U	
1994 RI Phase II	B-24		1/25/1994	4	5.5	23 U		45 U	23 U			45 U	45 U	115	14.6	39.1	23 U	95 U	
1994 RI Phase II	B-25		1/27/1994	0.5	2	18 U		34 U	18 U			34 U	34 U	185	77.4	11.2	18 U	87.2	
1994 RI Phase II	B-25		1/27/1994	2.5	4	23 U		45 U	23 U			45 U	45 U	28.3	11.7	2.3 U	23 U	95 U	
1994 RI Phase II	B-26		1/27/1994	0	1	18 U		36 U	18 U			36 U	36 U	902	141	1250	18 U	421	
1994 RI Phase II	B-26		1/27/1994	4	5.5	23 U		46 U	23 U			46 U	46 U	9.7 U	9.7 U	2.3 U	23 U	97 U	
1994 RI Phase II	B-27		1/25/1994	0	1	22 U		42 U	22 U			42 U	42 U	222	12	197	22 U	90 U	
1994 RI Phase II	B-27		1/25/1994	4	5.5	23 U		44 U	23 U			44 U	44 U	9.5 U	9.5 U	2.3 U	23 U	95 U	
1994 RI Phase II	B-28		1/25/1994	0	1	18 U		36 U	18 U			36 U	36 U	95.4	7.6 U	59.3	18 U	156	
1994 RI Phase II	B-28		1/25/1994	4	5.5	24 U		47 U	24 U			47 U	47 U	9.9 U	9.9 U	2.4 U	24 U	99 U	
1994 RI Phase II	B-29		1/25/1994	0	1	18 U		35 U	18 U			35 U	35 U	7.4 U	7.4 U	2.78	18 U	74 U	
1994 RI Phase II	B-29		1/25/1994	4	5.5	22 U		43 U	22 U			43 U	43 U	9 U	9 U	2.4 U	22 U	90 U	
1994 RI Phase II	B-30		1/25/1994	1.5	2.5	22 U		43 U	22 U			43 U	43 U	9.1 U	9.1 U	2.2 U	22 U	91 U	
1994 RI Phase II	B-30		1/25/1994	3	4.5	23 U		45 U	23 U			45 U	45 U	9.7 U	9.7 U	2.3 U	23 U	97 U	
1994 RI Phase II	B-31		1/25/1994	1.5	2.5	22 U		43 U	22 U			43 U	43 U	9.1 U	9.1 U	2.2 U	22 U	91 U	
1994 RI Phase II	B-31		1/25/1994	4.5	5.5	24 U		46 U	24 U			46 U	46 U	9.8 U	9.8 U	2.4 U	24 U	98 U	
1994 RI Phase II	B-32		1/25/1994	0	1	18 U		36 U	18 U			36 U	36 U	102	11.1	81	18 U	76 U	
1994 RI Phase II	B-32		1/25/1994	3	4	22 U		42 U	22 U			42 U	42 U	9 U	9 U	2.2 U	22 U	90 U	
1997 FS PII	B-34		11/1/1995	12	14	500 U	500 U	1000 U	500 U			1000 U	2000 U	330 U	330 U	330 U	500 U	330 U	
1997 FS PII	B-34	2	11/1/1995	12	14									330 U	330 U	330 U		330 U	
1997 FS PII	B-35		11/1/1995	7	9	500 U	500 U	1400	500 U			1000 U	2000 U	330 U	330 U	330 U	500 U	330 U	
1997 FS PII	B-35		11/1/1995	12	14	500 U	500 U	1000 U	500 U			1000 U	2000 U	330 U	330 U	330 U	500 U	330 U	
1997 FS PII	B-36		11/1/1995	7	9	500 U	500 U	163900	500 U			1000 U	2000 U	330 U	330 U	330 U	500 U	330 U	
1997 FS PII	B-37		10/31/1995	2	4	500 U	500 U	4800	500 U			1000 U	2000 U	330 U	330 U	330 U	500 U	330 U	
1997 FS PII	B-37	2	10/31/1995	2	4	500 U	500 U	9900	500 U			1000 U	2000 U	330 U	330 U	330 U	500 U	330 U	
1997 FS PII	B-37		10/31/1995	12	14	500 U	500 U	1000 U	500 U			1000 U	2000 U	330 U	330 U	330 U	500 U	330 U	
1997 FS PII	B-38		11/3/1995	2	4	500 U	500 U	142200	500 U			1000 U	2000 U	21000	3300 U	5600	500 U	19000	
1997 FS PII	B-38	2	11/3/1995	2	4														
1997 FS PII	B-38		11/3/1995	12	14	500 U	500 U	17000	500 U			1000 U	2000 U	1100	500	330 U	500 U	330 U	
1997 FS PII	B-38	2	11/3/1995	12	14	500 U	500 U	11000	500 U			1000 U	2000 U				500 U		
1997 FS PII	SS-1		11/00/1995	0	0.5	500 U	500 U	2200	500 U			1000 U	2000 U	330 U	330 U	330 U	500 U	330 U	
1997 FS PII	SS-1	2	11/00/1995	0	0.5														
1997 FS PII	SS-2		11/00/1995	0	0.5	500 U	500 U	2700	500 U			1000 U	2000 U	330 U	330 U	330 U	500 U	330 U	
1997 FS PII	SS-2	2	11/00/1995	0	0.5	500 U	500 U	2800	500 U			1000 U	2000 U				500 U		
1997 FS PII	SS-3		11/00/1995	0	0.5	500 U	500 U	1500	500 U			1000 U	2000 U	3300 U	3300 U	3300 U	500 U	3300 U	
1997 FS PII	SS-4		11/00/1995	0	0.5	500 U	500 U	4100	500 U			1000 U	2000 U	6500	3300 U	3300 U	500 U	3300 U	
1997 FS PII	SS-5		11/00/1995	0	0.5	500 U	500 U	3500	500 U			1000 U	2000 U	3300 U	3300 U	3300 U	500 U	3300 U	
1997 FS PII	SS-6		11/00/1995	0	0.5	500 U	500 U	16500	500 U			1000 U	2000 U	330 U	330 U	330 U	500 U	330 U	
1997 FS PII	SS-7		11/00/1995	0	0.5	500 U	500 U	3100	500 U			1000 U	2000 U	3300 U	3300 U	3300 U	500 U	3300 U	
1997 FS PII	SS-8		11/00/1995	0	0.5														

Table A-7. On-site Soil, Trench Worker Scenario, all depths.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	2,4-Dichloro-phenol ug/Kg	2,6-Dichloro-phenol ug/Kg	Pentachloro-phenol (PCP) ug/Kg	2-Chloro-phenol ug/Kg	Cresols ug/Kg	Dinoseb ug/Kg	4,6-Dinitro-2-methyl-phenol ug/Kg	2,4-Dinitro-phenol ug/Kg	Fluoranthene ug/Kg	Fluorene ug/Kg	Indeno(1,2,3-cd)pyrene ug/Kg	2,4-Dimethyl-phenol ug/Kg	Naphthalene ug/Kg	
<b>ONSITE UNDEVELOPED AREA</b>																			
1997 FS PII	SS-9		11/00/1995	0	0.5														
1997 FS PII	SS-10		11/00/1995	0	0.5														
1997 FS PII	SS-11		11/00/1995	0	0.5	500 U	500 U	1900	500 U			1000 U	2000 U	3300 U	3300 U	3300 U	500 U	3300 U	
1998 Addtl Samp	SS98-10		2/2/1998	0	1														
1998 Addtl Samp	SS98-11		2/2/1998	0	1														
1998 Addtl Samp	SS98-5		2/2/1998	0	1									146	10 U	233		100 U	
1998 Addtl Samp	SS98-6		2/2/1998	0	1									279	46	180		104	
1998 Addtl Samp	SS98-8		2/2/1998	0	1														
1998 Addtl Samp	SS98-9		2/2/1998	0	1														
1991 RI Phase I	W-4S		12/00/1986	14	15			100 U						100 U	100 U		100 U	100 U	
1991 RI Phase I	W-5I		12/00/1986	5.5	6			100 U						100 U	100 U		100 U	100 U	
1991 RI Phase I	W-7S		12/00/1986	6.5	7			100 U						3000	1900		100 U	400	
1991 RI Phase I	W-8S		12/00/1986	5.5	6			1200						100 U	20000		100 U	36000	
1991 RI Phase I	W-9I		6/6/1990	3	4.5	62 U		124 U	62 U			124 U	124 U	52.1	20 U	5.34	62 U	124 U	
1991 RI Phase I	W-9S		5/8/1990	3	5	105		114 U	249			114 U	114 U	43.6	22.8 U	10.1	341	114 U	
1991 RI Phase I	W-11S		5/9/1990	2.5	4	75.5		136 U	68 U			136 U	136 U	20 U	27.2	6.8 U	74.7	136 U	
1991 RI Phase I	W-12I		5/25/1990	3	4.5	65.5 U		973	96.1			131 U	131 U	27.1	20 U	65.5 U	478	181	
1991 RI Phase I	W-13S		5/9/1990	1.5	3.5	53.5 U		106 U	53.5 U			106 U	106 U	20 U	21.4 U	10.9	184	487	
1991 RI Phase I	W-14I		5/30/1990	7	8	55 U		110 U	55 U			110 U	110 U	20 U	22 U	5.5 U	55 U	110 U	
1997 FS PII	W-21S		11/3/1995	8	10	500 U	500 U	40300	500 U			1000 U	2000 U	23000	27000	3300 U	500 U	35000	
1997 FS PII	W-21S		11/3/1995	13	15	500 U	500 U	2100	500 U			1000 U	2000 U	330 U	330 U	330 U	500 U	330 U	
1997 FS PII	W-22S		11/2/1995	9	11	500 U	500 U	54900	500 U			1000 U	2000 U	2100	1800	330 U	500 U	1500	
1997 FS PII	W-22S		11/2/1995	9	11	500 U	500 U	88400	500 U			1000 U	2000 U	12000	8100	3300 U	500 U	16000	
1997 FS PII	W-22S		11/2/1995	14	16	500 U	500 U	1300	500 U			1000 U	2000 U	330 U	330 U	330 U	500 U	330 U	
2000 Former Guard Post	BH00-1		3/16/2000	0	0.5														
2000 Former Guard Post	BH00-1		3/16/2000	2.75	3.25														
2000 Former Guard Post	BH00-2		3/16/2000	0	0.5														
2000 Former Guard Post	BH00-2		3/16/2000	2.75	3.25														
2000 Former Guard Post	BH00-3		3/16/2000	0	0.5														
2000 Former Guard Post	BH00-3		3/16/2000	2.5	3														
2000 Former Guard Post	BH00-4		3/16/2000	0	0.5														
2000 Former Guard Post	BH00-4		3/16/2000	2.75	3														
2000 Former Guard Post	BH00-4		3/16/2000	2.75	3														
2000 Former Guard Post	BH00-5		3/17/2000	0	0.5														
2000 Former Guard Post	BH00-5		3/17/2000	2.75	3.25														
1998 Tax Lots	2002		10/00/1998	0	-9									280	29	150		100 U	
1998 Tax Lots	2002A		10/00/1998	0	-9														
1998 Tax Lots	2002B		10/00/1998	0	-9														
1998 Tax Lots	2002C		10/00/1998	0	-9														
1998 Tax Lots	2002D		10/00/1998	0	-9														
1998 Tax Lots	2002E		10/00/1998	0	-9														

Notes:  
 U -- The analyte was not detected at or above the associated reporting limit.  
 UJ -- Estimated reporting limit.  
 J -- Estimated value.  
 B -- The analyte was detected in the associated laboratory blank in addition to the sample  
 EMPC -- Estimated maximum possible concentration.

Table A-7. On-site Soil, Trench Worker Scenario, all depths.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	2-Nitro-phenol ug/Kg	4-Nitro-phenol ug/Kg	Phenanthrene ug/Kg	Phenol ug/Kg	Pyrene ug/Kg	Total PAHs (calculated) ug/Kg	Total PAHs (reported) ug/Kg	Benzene ug/Kg	Chloro-benzene ug/Kg	Ethyl-benzene ug/Kg	Styrene ug/Kg	Toluene ug/Kg	Xylenes, Total ug/Kg	2,3,7,8-TCDD pg/g	1,2,3,7,8-PeCDD pg/g
<b>ONSITE UNDEVELOPED AREA</b>																				
Stormwater Tank	COMP_S1		8/27/2001	0	0.5	2000 U	2000 U	1890	2000 U	945	7693								3	19
Stormwater Tank	COMP_S2		8/27/2001	0	0.5	2000 U	2000 U	3580	2000 U	1770	15024								6.2	40
1994 RI Phase II	B-1		1/26/1994	0	1	18 U	36 U	3.8 U	18 U	7.6 U	2.42	2.4	22 U	22 U	22 U	33 U	22 U	33 U		
1994 RI Phase II	B-1		1/26/1994	4	5	25 U	48 U	5.1 U	25 U	10 U	16.78	16.8	29 U	29 U	29 U	44 U	29 U	44 U		
1994 RI Phase II	B-2		1/26/1994	0.25	1.5	21 U	42 U	4.4 U	21 U	8.8 U	1.9	1.9	29	25 U	25 U	38 U	25 U	38 U		
1994 RI Phase II	B-2		1/26/1994	3	4	23 U	44 U	11.9	23 U	9.3 U	11.9	11.9	27 U	27 U	27 U	40 U	27 U	40 U		
1994 RI Phase II	B-2		1/26/1994	3	4	23 U	44 U	4.7 U	23 U	9.3 U	93 U	0	27 U	27 U	27 U	40 U	27 U	40 U		
1994 RI Phase II	B-3		1/26/1994	0	1	18 U	36 U	24.5	18 U	115	626.93	627	22 U	22 U	22 U	33 U	26	46		
1994 RI Phase II	B-3		1/26/1994	4	5.5	24 U	46 U	4.9 U	24 U	9.8 U	0.985	1	28 U	28 U	28 U	42 U	28 U	42 U		
1994 RI Phase II	B-4		1/26/1994	0.25	1.9	21 U	40 U	4.3 U	21 U	8.5 U	45.69	46	24 U	24 U	24 U	37 U	25	37 U		
1994 RI Phase II	B-4		1/26/1994	4	5.5	23 U	45 U	5.39	23 U	25.6	49.97	50	27 U	27 U	27 U	41 U	27 U	41 U		
1994 RI Phase II	B-5		1/26/1994	1	2.5	22 U	42 U	4.4 U	22 U	8.9 U	6.01	6	25 U	25 U	25 U	38 U	25 U	38 U		
1994 RI Phase II	B-5		1/26/1994	5	6.5	23 U	46 U	7.2	23 U	17.5	86.32	86.3	28 U	28 U	28 U	41 U	28 U	27 U		
1994 RI Phase II	B-6		1/26/1994	0	1.5	71 U	137 U	108	71 U	505	2235.8	2235.8	21 U	21 U	35	31 U	28	77		
1994 RI Phase II	B-6		1/26/1994	2.5	4	23 U	44 U	4.7 U	23 U	9.3 U	93 U	0	27	27	27	40	27	40		
1994 RI Phase II	B-7		1/26/1994	0	1.5	187 U	362 U	5230	187 U	15000	76400	76400	25	22 U	22 U	33 U	59	49	2.3 U	4.7 U
1994 RI Phase II	B-7		1/26/1994	4	5.5	24 U	48 U	81.8	24 U	81.2	461.15	461.2	29 U	29 U	29 U	43 U	29 U	43 U		
1994 RI Phase II	B-8		1/26/1994	0	1	56 U	109 U	140	56 U	1110	12438	12438	27 U	27 U	27 U	40 U	27 U	40 U		
1994 RI Phase II	B-8		1/26/1994	4	5.5	23 U	44 U	17400	23 U	11400	90595	90595	27 U	27 U	72	40 U	27 U	315		
1994 RI Phase II	B-9		1/26/1994	1	2.5	21 U	41 U	22.9	21 U	402	1892.7	1893	25 U	25 U	25 U	37 U	25 U	37 U		
1994 RI Phase II	B-9		1/26/1994	5	6.5	19 U	114	979	19 U	1670	9594	9594	23 U	23 U	23 U	34 U	23 U	34 U		
1994 RI Phase II	B-10		1/26/1994	0	1.5	18 U	35 U	120	18 U	594	7617.8	7618	21 U	21 U	29	32 U	29	79		
1994 RI Phase II	B-10		1/26/1994	4	5.5	26 U	50 U	1680	26 U	479	5088.5	5456	32	30 U	42	45 U	30 U	88		
1994 RI Phase II	B-11		1/27/1994	0	1	110 U	213 U	19700	110 U	15900	151210	151210	22 U	37	22 U	96	31	32 U		
1994 RI Phase II	B-11		1/27/1994	2.5	4	235 U	456 U	51700	235 U	20800	157004	159674	48	203	48	362	28 U	411		
1994 RI Phase II	B-11		1/27/1994	2.5	4	234 U	455 U	56600	234 U	19200	251924	256034	28 U	224	62	473	28 U	410		
1994 RI Phase II	B-12		1/27/1994	4	5.5	243 U	471 U	7340	243 U	2290	39338	39338	29 U	29 U	29 U	380	29 U	45		
1994 RI Phase II	B-12		1/27/1994	4	5.5	239 U	464 U	6460	239 U	3320	34116	34116	28 U	28 U	28 U	111	28 U	114		
1994 RI Phase II	B-13		1/27/1994	0.67	1.5	107 U	207 U	845	107 U	3570	12826	12826	21 U	21 U	21 U	32 U	250	42		
1994 RI Phase II	B-13		1/27/1994	4	5.5	24 U	48 U	5 U	24 U	10 U	12.2	12	29 U	29 U	29 U	43 U	29 U	43 U		
1994 RI Phase II	B-14		1/27/1994	0	1	106 U	206 U	502	106 U	619	7233.8	7234	21 U	21 U	36	31 U	69	123		
1994 RI Phase II	B-14		1/27/1994	4	5.5	23 U	44 U	7.24	23 U	9.3 U	44.64	45	27 U	27 U	27 U	40 U	27 U	40 U		
1994 RI Phase II	B-15		1/27/1994	0	1	55 U	106 U	32.3	55 U	181	1247.3	1247	21 U	21 U	21 U	32 U	24	32 U		
1994 RI Phase II	B-15		1/27/1994	3	4	22 U	43 U	4.6 U	22 U	9.1 U	91 U	0	26 U	26 U	26 U	39 U	26 U	39 U		
1994 RI Phase II	B-16		1/27/1994	0	1	18 U	34 U	399	18 U	789	4753	4753	21 U	21 U	24	31 U	21 U	81		
1994 RI Phase II	B-16		1/27/1994	2.5	4	22 U	43 U	4.6 U	22 U	9.2 U	92 U	0	26 U	26 U	26 U	39 U	26 U	39 U		
1994 RI Phase II	B-17		1/27/1994	0.5	2	107 U	207 U	291	107 U	87 U	1301	1301	21 U	21 U	21 U	31 U	21 U	31 U	6.8 U	18.4 U
1994 RI Phase II	B-17		1/27/1994	4	5.5	24 U	46 U	4.9 U	24 U	20.7	54.9	55	28 U	28 U	28 U	42 U	28 U	42 U		
1994 RI Phase II	B-18		1/27/1994	0	1	19 U	37 U	17.9	19 U	91.6	851.3	851	22 U	22 U	22 U	33 U	22 U	33 U		
1994 RI Phase II	B-18		1/27/1994	2.5	4	23 U	44 U	5.03	23 U	9.5 U	5.03	5	27 U	27 U	27 U	40 U	27 U	40 U		
1994 RI Phase II	B-19		1/27/1994	0	1	108 U	210 U	5.54	108 U	7.4 U	81.47	81	21 U	21 U	21 U	32 U	21 U	51		
1994 RI Phase II	B-19		1/27/1994	4	5.5	23 U	45 U	4.81	23 U	9.5 U	23.44	23	27 U	27 U	27 U	41 U	27 U	41 U		
1994 RI Phase II	B-20		1/27/1994	0	1.5	18 U	36 U	180	18 U	1590	7266.6	7267	25	22 U	22 U	33 U	54	60		
1994 RI Phase II	B-20		1/27/1994	2.5	4	23 U	44 U	4.7 U	23 U	17	62.79	63	27 U	27 U	27 U	40 U	27 U	40 U		
1994 RI Phase II	B-21		1/27/1994	0	1	18 U	34 U	8.32	18 U	32.6	378.06	378	21 U	21 U	21 U	31 U	21 U	31 U		
1994 RI Phase II	B-21		1/27/1994	4	5.5	25 U	48 U	14.9	25 U	101	354.14	504	29 U	29 U	29 U	44 U	29 U	44 U		
1994 RI Phase II	B-22		1/26/1994	0	1	18 U	36 U	11.2	18 U	50.6	389.37	389	22 U	22 U	22 U	33 U	22 U	33 U		

Table A-7

Table A-7. On-site Soil, Trench Worker Scenario, all depths.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	2-Nitro-phenol ug/Kg	4-Nitro-phenol ug/Kg	Phenanthrene ug/Kg	Phenol ug/Kg	Pyrene ug/Kg	Total PAHs (calculated) ug/Kg	Total PAHs (reported) ug/Kg	Benzene ug/Kg	Chloro-benzene ug/Kg	Ethyl-benzene ug/Kg	Styrene ug/Kg	Toluene ug/Kg	Xylenes, Total ug/Kg	2,3,7,8-TCDD pg/g	1,2,3,7,8-PeCDD pg/g
<b>ONSITE UNDEVELOPED AREA</b>																				
1994 RI Phase II	B-22		1/26/1994	4	5.5	24 U	46 U	4.9 U	24 U	9.9 U	5.41	5	28 U	28 U	28 U	42 U	48	42 U		
1994 RI Phase II	B-23		1/26/1994	0	1	18 U	36 U	631	18 U	2880	16002	16002	26	22 U	22 U	33 U	22 U	33 U	1.9 U	3.5 U
1994 RI Phase II	B-23		1/26/1994	4	5.5	23 U	45 U	4.8 U	23 U	9.7 U	17.22248	17.22	28	27 U	27 U	41 U	27 U	41 U		
1994 RI Phase II	B-24		1/25/1994	0	1	18 U	35 U	119	18 U	526	4636.5	4636.5	21 U	21 U	21 U	32 U	21 U	32 U		
1994 RI Phase II	B-24		1/25/1994	4	5.5	24 U	46 U	4.8 U	24 U	9.7 U	9.47	9.47	28 U	28 U	28 U	42 U	28 U	42 U		
1994 RI Phase II	B-24		1/25/1994	4	5.5	23 U	45 U	27.2	23 U	126	788.9	788.9	27 U	27 U	27 U	41 U	27 U	41 U		
1994 RI Phase II	B-25		1/27/1994	0.5	2	18 U	34 U	496	18 U	241	1543.51	1544	21 U	21 U	21 U	31 U	21 U	31 U		
1994 RI Phase II	B-25		1/27/1994	2.5	4	23 U	45 U	58.6	23 U	39.6	179.9	179.9	27 U	27 U	27 U	41 U	27 U	41 U		
1994 RI Phase II	B-26		1/27/1994	0	1	18 U	36 U	253	18 U	1380	12847	12847	37	31	26	32 U	22 U	63		
1994 RI Phase II	B-26		1/27/1994	4	5.5	23 U	46 U	4.8 U	23 U	9.7 U	16.8	168	28 U	28 U	28 U	41 U	28 U	41 U		
1994 RI Phase II	B-27		1/25/1994	0	1	22 U	42 U	56.5	22 U	307	3002	3002	26 U	26 U	26 U	39 U	26 U	39 U		
1994 RI Phase II	B-27		1/25/1994	4	5.5	23 U	44 U	5.66	23 U	9.5 U	12.81	12.81	27 U	27 U	27 U	40 U	27 U	40 U		
1994 RI Phase II	B-28		1/25/1994	0	1	18 U	36 U	32	18 U	108	1285	1285	73	22 U	22 U	33 U	22 U	33 U		
1994 RI Phase II	B-28		1/25/1994	4	5.5	24 U	47 U	10	24 U	9.9 U	18.55	18.55	28 U	28 U	28 U	43 U	28 U	43 U		
1994 RI Phase II	B-29		1/25/1994	0	1	18 U	35 U	3.7 U	18 U	12	41.07	41.07	21 U	21 U	21 U	31 U	21 U	32		
1994 RI Phase II	B-29		1/25/1994	4	5.5	22 U	43 U	4.5 U	22 U	9 U	90 U	0	36	26 U	26 U	39 U	26 U	39 U		
1994 RI Phase II	B-30		1/25/1994	1.5	2.5	22 U	43 U	4.6 U	22 U	9.1 U	2.14	2	26 U	26 U	26 U	39 U	26 U	39 U		
1994 RI Phase II	B-30		1/25/1994	3	4.5	23 U	45 U	4.8 U	23 U	9.7 U	97 U	0	28 U	28 U	28 U	41 U	28 U	41 U		
1994 RI Phase II	B-31		1/25/1994	1.5	2.5	22 U	43 U	4.6 U	22 U	9.1 U	91 U	0	26 U	26 U	26 U	39 U	26 U	39 U		
1994 RI Phase II	B-31		1/25/1994	4.5	5.5	24 U	46 U	6.61	24 U	9.8 U	6.61	6.61	28 U	28 U	28 U	42 U	28 U	42 U		
1994 RI Phase II	B-32		1/25/1994	0	1	18 U	36 U	17.8	18 U	150	816.38	816.4	22 U	22 U	22 U	32 U	22 U	32 U		
1994 RI Phase II	B-32		1/25/1994	3	4	22 U	42 U	4.5 U	22 U	9 U	90 U	0	26 U	26 U	26 U	39 U	26 U	39 U		
1997 FS PII	B-34		11/1/1995	12	14	500 U	2000 U	330 U	500 U	330 U	330 U		50 U	50 U	50 U		50 U	50 U		
1997 FS PII	B-34	2	11/1/1995	12	14			330 U		330 U	330 U		50 U	50 U	50 U		50 U	50 U		
1997 FS PII	B-35		11/1/1995	7	9	500 U	2000 U	330 U	500 U	330 U	330 U		50 U	50 U	50 U		50 U	50 U		
1997 FS PII	B-35		11/1/1995	12	14	500 U	2000 U	330 U	500 U	330 U	330 U		50 U	50 U	50 U		50 U	50 U		
1997 FS PII	B-36		11/1/1995	7	9	500 U	2000 U	330 U	500 U	330 U	330 U		50 U	50 U	400		50 U	1600		
1997 FS PII	B-37		10/31/1995	2	4	500 U	2000 U	330 U	500 U	330 U	330 U		50 U	50 U	50 U		50 U	50 U		
1997 FS PII	B-37	2	10/31/1995	2	4	500 U	2000 U	330 U	500 U	330 U	330 U									
1997 FS PII	B-37		10/31/1995	12	14	500 U	2000 U	330 U	500 U	330 U	330 U		50 U	50 U	50 U		50 U	50 U		
1997 FS PII	B-38		11/3/1995	2	4	500 U	2000 U	7700	500 U	23000	134400		50 U	50 U	150		270	460		
1997 FS PII	B-38	2	11/3/1995	2	4															
1997 FS PII	B-38		11/3/1995	12	14	500 U	2000 U	1700	500 U	1200	6000		50 U	50 U	50 U		50 U	50		
1997 FS PII	B-38	2	11/3/1995	12	14	500 U	2000 U		500 U				50 U	50 U	50 U		50 U	50 U		
1997 FS PII	SS-1		11/00/1995	0	0.5	500 U	2000 U	330 U	500 U	330 U	330 U									
1997 FS PII	SS-1	2	11/00/1995	0	0.5															
1997 FS PII	SS-2		11/00/1995	0	0.5	500 U	2000 U	330 U	500 U	330 U	330 U									
1997 FS PII	SS-2	2	11/00/1995	0	0.5	500 U	2000 U		500 U											
1997 FS PII	SS-3		11/00/1995	0	0.5	500 U	2000 U	3300 U	500 U	3300 U	4200									
1997 FS PII	SS-4		11/00/1995	0	0.5	500 U	2000 U	3700	500 U	5600	32800									
1997 FS PII	SS-5		11/00/1995	0	0.5	500 U	2000 U	3300 U	500 U	3400	15800									
1997 FS PII	SS-6		11/00/1995	0	0.5	500 U	2000 U	330 U	500 U	330 U	330 U									
1997 FS PII	SS-7		11/00/1995	0	0.5	500 U	2000 U	3300 U	500 U	3300 U	8100									
1997 FS PII	SS-8		11/00/1995	0	0.5															

Table A-7. On-site Soil, Trench Worker Scenario, all depths.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	2-Nitro-phenol ug/Kg	4-Nitro-phenol ug/Kg	Phenanthrene ug/Kg	Phenol ug/Kg	Pyrene ug/Kg	Total PAHs (calculated) ug/Kg	Total PAHs (reported) ug/Kg	Benzene ug/Kg	Chloro-benzene ug/Kg	Ethyl-benzene ug/Kg	Styrene ug/Kg	Toluene ug/Kg	Xylenes, Total ug/Kg	2,3,7,8-TCDD pg/g	1,2,3,7,8-PeCDD pg/g
<b>ONSITE UNDEVELOPED AREA</b>																				
1997 FS PII	SS-9		11/00/1995	0	0.5															
1997 FS PII	SS-10		11/00/1995	0	0.5															
1997 FS PII	SS-11		11/00/1995	0	0.5	500 U	2000 U	3300 U	500 U	3300 U	33000 U									
1998 Addtl Samp	SS98-10		2/2/1998	0	1															
1998 Addtl Samp	SS98-11		2/2/1998	0	1															
1998 Addtl Samp	SS98-5		2/2/1998	0	1			46		126	1345									
1998 Addtl Samp	SS98-6		2/2/1998	0	1			82		238	1680									
1998 Addtl Samp	SS98-8		2/2/1998	0	1															
1998 Addtl Samp	SS98-9		2/2/1998	0	1															
1991 RI Phase I	W-4S		12/00/1986	14	15			100 U	100 U	100 U	100 U									
1991 RI Phase I	W-5I		12/00/1986	5.5	6			100 U	100 U	100 U	100 U									
1991 RI Phase I	W-7S		12/00/1986	6.5	7			6000	100 U	1000	17500									
1991 RI Phase I	W-8S		12/00/1986	5.5	6			15000	100 U	13000	131900									
1991 RI Phase I	W-9I		6/6/1990	3	4.5	62 U	124 U	50 U	62 U	45.6	273.39	273.39	24.8 U	24.8 U	24.8 U	24.8 U	24.8 U	24.8 U	24.8 U	24.8 U
1991 RI Phase I	W-9S		5/8/1990	3	5	57 U	231	59.3	57 U	98.8	318.05	318.05	22.8 U	22.8 U	22.8 U	22.8 U	22.8 U	22.8 U	22.8 U	22.8 U
1991 RI Phase I	W-11S		5/9/1990	2.5	4	68 U	136 U	50 U	68 U	27.2 U	27.2	0	27.2 U	27.2 U	27.2 U	27.2 U	27.2 U	27.2 U	27.2 U	27.2 U
1991 RI Phase I	W-12I		5/25/1990	3	4.5	65.5 U	131 U	50 U	79	20 U	944	944	26.2 U	26.2 U	26.2 U	26.2 U	26.2 U	26.2 U	26.2 U	26.2 U
1991 RI Phase I	W-13S		5/9/1990	1.5	3.5	53.5 U	141	50 U	53.5 U	21.4 U	682.1	682.1	21.4 U	21.4 U	21.4 U	21.4 U	21.4 U	21.4 U	21.4 U	21.4 U
1991 RI Phase I	W-14I		5/30/1990	7	8	55 U	110 U	50 U	55 U	20 U	110 U	0	22 U	22 U	22 U	22 U	22 U	22 U	22 U	22 U
1997 FS PII	W-21S		11/3/1995	8	10	500 U	2000 U	44000	500 U	28000	228500		50 U	50 U	50 U		50 U		70	
1997 FS PII	W-21S		11/3/1995	13	15	500 U	2000 U	330 U	500 U	330 U	330 U		50 U	50 U	50 U		50 U		50 U	
1997 FS PII	W-22S		11/2/1995	9	11	500 U	2000 U	4000	500 U	2500	18100		50 U	50 U	60		50 U		430	
1997 FS PII	W-22S		11/2/1995	9	11	500 U	2000 U	24000	500 U	14000	94300		50 U	50 U	50 U		50 U		260	
1997 FS PII	W-22S		11/2/1995	14	16	500 U	2000 U	330 U	500 U	330 U	330 U		50 U	50 U	50 U		50 U		50 U	
2000 Former Guard Post	BH00-1		3/16/2000	0	0.5															
2000 Former Guard Post	BH00-1		3/16/2000	2.75	3.25															
2000 Former Guard Post	BH00-2		3/16/2000	0	0.5															
2000 Former Guard Post	BH00-2		3/16/2000	2.75	3.25															
2000 Former Guard Post	BH00-3		3/16/2000	0	0.5															
2000 Former Guard Post	BH00-3		3/16/2000	2.5	3															
2000 Former Guard Post	BH00-4		3/16/2000	0	0.5															
2000 Former Guard Post	BH00-4		3/16/2000	2.75	3															
2000 Former Guard Post	BH00-4		3/16/2000	2.75	3															
2000 Former Guard Post	BH00-5		3/17/2000	0	0.5															
2000 Former Guard Post	BH00-5		3/17/2000	2.75	3.25															
1998 Tax Lots	2002		10/00/1998	0	-9			110		360	2768									
1998 Tax Lots	2002A		10/00/1998	0	-9															
1998 Tax Lots	2002B		10/00/1998	0	-9															
1998 Tax Lots	2002C		10/00/1998	0	-9															
1998 Tax Lots	2002D		10/00/1998	0	-9															
1998 Tax Lots	2002E		10/00/1998	0	-9															

Notes:  
 U -- The analyte was not detected at or above the associated reporting limit.  
 UJ -- Estimated reporting limit.  
 J -- Estimated value.  
 B -- The analyte was detected in the associated laboratory blank in addition to the sample  
 EMPC -- Estimated maximum possible concentration.

Table A-7. On-site Soil, Trench Worker Scenario, all depths.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	Total TCDD
<b>ONSITE UNDEVELOPED AREA</b>																					
Stormwater Tank	COMP_S1		8/27/2001	0	0.5	36	290	110	6700	91000	2.9	8	27	40	27	51	48	1800	120	6000	140
Stormwater Tank	COMP_S2		8/27/2001	0	0.5	110	680	270	16000	210000	10	32	74	220	63	120	130	4400	300	12000	260
1994 RI Phase II	B-1		1/26/1994	0	1																
1994 RI Phase II	B-1		1/26/1994	4	5																
1994 RI Phase II	B-2		1/26/1994	0.25	1.5																
1994 RI Phase II	B-2		1/26/1994	3	4																
1994 RI Phase II	B-2		1/26/1994	3	4																
1994 RI Phase II	B-3		1/26/1994	0	1																
1994 RI Phase II	B-3		1/26/1994	4	5.5																
1994 RI Phase II	B-4		1/26/1994	0.25	1.9																
1994 RI Phase II	B-4		1/26/1994	4	5.5																
1994 RI Phase II	B-5		1/26/1994	1	2.5																
1994 RI Phase II	B-5		1/26/1994	5	6.5																
1994 RI Phase II	B-6		1/26/1994	0	1.5																
1994 RI Phase II	B-6		1/26/1994	2.5	4																
1994 RI Phase II	B-7		1/26/1994	0	1.5	6.3 U	6.2 U	43.4	764	7112.9	1.2 U	2.6 U	2.6 U	2 U	1.8 U	1.7 U	1.7 U	128.9	2.3 U	626.1	2.3 U
1994 RI Phase II	B-7		1/26/1994	4	5.5																
1994 RI Phase II	B-8		1/26/1994	0	1																
1994 RI Phase II	B-8		1/26/1994	4	5.5																
1994 RI Phase II	B-9		1/26/1994	1	2.5																
1994 RI Phase II	B-9		1/26/1994	5	6.5																
1994 RI Phase II	B-10		1/26/1994	0	1.5																
1994 RI Phase II	B-10		1/26/1994	4	5.5																
1994 RI Phase II	B-11		1/27/1994	0	1																
1994 RI Phase II	B-11		1/27/1994	2.5	4																
1994 RI Phase II	B-11		1/27/1994	2.5	4																
1994 RI Phase II	B-12		1/27/1994	4	5.5																
1994 RI Phase II	B-12		1/27/1994	4	5.5																
1994 RI Phase II	B-13		1/27/1994	0.67	1.5																
1994 RI Phase II	B-13		1/27/1994	4	5.5																
1994 RI Phase II	B-14		1/27/1994	0	1																
1994 RI Phase II	B-14		1/27/1994	4	5.5																
1994 RI Phase II	B-15		1/27/1994	0	1																
1994 RI Phase II	B-15		1/27/1994	3	4																
1994 RI Phase II	B-16		1/27/1994	0	1																
1994 RI Phase II	B-16		1/27/1994	2.5	4																
1994 RI Phase II	B-17		1/27/1994	0.5	2	27.8 U	20.4 U	3.2 U	613	7064.3	8 U	11.6 U	9.7 U	16.3 U	15.5 U	14 U	12.9 U	38.4	14.2 U	100	6.8 U
1994 RI Phase II	B-17		1/27/1994	4	5.5																
1994 RI Phase II	B-18		1/27/1994	0	1																
1994 RI Phase II	B-18		1/27/1994	2.5	4																
1994 RI Phase II	B-19		1/27/1994	0	1																
1994 RI Phase II	B-19		1/27/1994	4	5.5																
1994 RI Phase II	B-20		1/27/1994	0	1.5																
1994 RI Phase II	B-20		1/27/1994	2.5	4																
1994 RI Phase II	B-21		1/27/1994	0	1																
1994 RI Phase II	B-21		1/27/1994	4	5.5																
1994 RI Phase II	B-22		1/26/1994	0	1																

Table A-7. On-site Soil, Trench Worker Scenario, all depths.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	Total TCDD
<b>ONSITE UNDEVELOPED AREA</b>																					
1994 RI Phase II	B-22		1/26/1994	4	5.5																
1994 RI Phase II	B-23		1/26/1994	0	1	30.4	251.6	143.4	5894.1	35325.5	2.9	9.4	2.1 U	4.5 U	4.5 U	3.5 U	3.1 U	878.8	1.8 U	2928.8	1.9 U
1994 RI Phase II	B-23		1/26/1994	4	5.5																
1994 RI Phase II	B-24		1/25/1994	0	1																
1994 RI Phase II	B-24		1/25/1994	4	5.5																
1994 RI Phase II	B-24		1/25/1994	4	5.5																
1994 RI Phase II	B-25		1/27/1994	0.5	2																
1994 RI Phase II	B-25		1/27/1994	2.5	4																
1994 RI Phase II	B-26		1/27/1994	0	1																
1994 RI Phase II	B-26		1/27/1994	4	5.5																
1994 RI Phase II	B-27		1/25/1994	0	1																
1994 RI Phase II	B-27		1/25/1994	4	5.5																
1994 RI Phase II	B-28		1/25/1994	0	1																
1994 RI Phase II	B-28		1/25/1994	4	5.5																
1994 RI Phase II	B-29		1/25/1994	0	1																
1994 RI Phase II	B-29		1/25/1994	4	5.5																
1994 RI Phase II	B-30		1/25/1994	1.5	2.5																
1994 RI Phase II	B-30		1/25/1994	3	4.5																
1994 RI Phase II	B-31		1/25/1994	1.5	2.5																
1994 RI Phase II	B-31		1/25/1994	4.5	5.5																
1994 RI Phase II	B-32		1/25/1994	0	1																
1994 RI Phase II	B-32		1/25/1994	3	4																
1997 FS PII	B-34		11/1/1995	12	14																
1997 FS PII	B-34	2	11/1/1995	12	14																
1997 FS PII	B-35		11/1/1995	7	9																
1997 FS PII	B-35		11/1/1995	12	14																
1997 FS PII	B-36		11/1/1995	7	9																
1997 FS PII	B-37		10/31/1995	2	4																
1997 FS PII	B-37	2	10/31/1995	2	4																
1997 FS PII	B-37		10/31/1995	12	14																
1997 FS PII	B-38		11/3/1995	2	4																
1997 FS PII	B-38	2	11/3/1995	2	4																
1997 FS PII	B-38		11/3/1995	12	14																
1997 FS PII	B-38	2	11/3/1995	12	14																
1997 FS PII	SS-1		11/00/1995	0	0.5																
1997 FS PII	SS-1	2	11/00/1995	0	0.5																
1997 FS PII	SS-2		11/00/1995	0	0.5																
1997 FS PII	SS-2	2	11/00/1995	0	0.5																
1997 FS PII	SS-3		11/00/1995	0	0.5																
1997 FS PII	SS-4		11/00/1995	0	0.5																
1997 FS PII	SS-5		11/00/1995	0	0.5																
1997 FS PII	SS-6		11/00/1995	0	0.5																
1997 FS PII	SS-7		11/00/1995	0	0.5																
1997 FS PII	SS-8		11/00/1995	0	0.5																

Table A-7. On-site Soil, Trench Worker Scenario, all depths.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	Total TCDD
<b>ONSITE UNDEVELOPED AREA</b>																					
1997 FS PII	SS-9		11/00/1995	0	0.5																
1997 FS PII	SS-10		11/00/1995	0	0.5																
1997 FS PII	SS-11		11/00/1995	0	0.5																
1998 Addtl Samp	SS98-10		2/2/1998	0	1																
1998 Addtl Samp	SS98-11		2/2/1998	0	1																
1998 Addtl Samp	SS98-5		2/2/1998	0	1																
1998 Addtl Samp	SS98-6		2/2/1998	0	1																
1998 Addtl Samp	SS98-8		2/2/1998	0	1																
1998 Addtl Samp	SS98-9		2/2/1998	0	1																
1991 RI Phase I	W-4S		12/00/1986	14	15																
1991 RI Phase I	W-5I		12/00/1986	5.5	6																
1991 RI Phase I	W-7S		12/00/1986	6.5	7																
1991 RI Phase I	W-8S		12/00/1986	5.5	6																
1991 RI Phase I	W-9I		6/6/1990	3	4.5																
1991 RI Phase I	W-9S		5/8/1990	3	5																
1991 RI Phase I	W-11S		5/9/1990	2.5	4																
1991 RI Phase I	W-12I		5/25/1990	3	4.5																
1991 RI Phase I	W-13S		5/9/1990	1.5	3.5																
1991 RI Phase I	W-14I		5/30/1990	7	8																
1997 FS PII	W-21S		11/3/1995	8	10																
1997 FS PII	W-21S		11/3/1995	13	15																
1997 FS PII	W-22S		11/2/1995	9	11																
1997 FS PII	W-22S		11/2/1995	9	11																
1997 FS PII	W-22S		11/2/1995	14	16																
2000 Former Guard Post	BH00-1		3/16/2000	0	0.5																
2000 Former Guard Post	BH00-1		3/16/2000	2.75	3.25																
2000 Former Guard Post	BH00-2		3/16/2000	0	0.5																
2000 Former Guard Post	BH00-2		3/16/2000	2.75	3.25																
2000 Former Guard Post	BH00-3		3/16/2000	0	0.5																
2000 Former Guard Post	BH00-3		3/16/2000	2.5	3																
2000 Former Guard Post	BH00-4		3/16/2000	0	0.5																
2000 Former Guard Post	BH00-4		3/16/2000	2.75	3																
2000 Former Guard Post	BH00-4		3/16/2000	2.75	3																
2000 Former Guard Post	BH00-5		3/17/2000	0	0.5																
2000 Former Guard Post	BH00-5		3/17/2000	2.75	3.25																
1998 Tax Lots	2002		10/00/1998	0	-9																
1998 Tax Lots	2002A		10/00/1998	0	-9																
1998 Tax Lots	2002B		10/00/1998	0	-9																
1998 Tax Lots	2002C		10/00/1998	0	-9																
1998 Tax Lots	2002D		10/00/1998	0	-9																
1998 Tax Lots	2002E		10/00/1998	0	-9																

Notes:  
 U -- The analyte was not detected at or above the associated reporting limit.  
 UJ -- Estimated reporting limit.  
 J -- Estimated value.  
 B -- The analyte was detected in the associated laboratory blank in addition to the sample  
 EMPC -- Estimated maximum possible concentration.



Table A-7. On-site Soil, Trench Worker Scenario, all depths.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	Total PeCDD pg/g	Total HxCDD pg/g	Total HpCDD pg/g	Total OCDD pg/g	Total TCDF pg/g	Total PeCDF pg/g	Total HxCDF pg/g	Total HpCDF pg/g	Total OCDF pg/g	Total dioxins/ furans pg/g	2,3,7,8- TCDD TEQ (WHO) pg/g
<b>ONSITE UNDEVELOPED AREA</b>																
Stormwater Tank	COMP_S1		8/27/2001	0	0.5	320	2400	20000		43	280	2600	7200			192
Stormwater Tank	COMP_S2		8/27/2001	0	0.5	620	6000	48000		130	920	7100	17000			474
1994 RI Phase II	B-1		1/26/1994	0	1											
1994 RI Phase II	B-1		1/26/1994	4	5											
1994 RI Phase II	B-2		1/26/1994	0.25	1.5											
1994 RI Phase II	B-2		1/26/1994	3	4											
1994 RI Phase II	B-2		1/26/1994	3	4											
1994 RI Phase II	B-3		1/26/1994	0	1											
1994 RI Phase II	B-3		1/26/1994	4	5.5											
1994 RI Phase II	B-4		1/26/1994	0.25	1.9											
1994 RI Phase II	B-4		1/26/1994	4	5.5											
1994 RI Phase II	B-5		1/26/1994	1	2.5											
1994 RI Phase II	B-5		1/26/1994	5	6.5											
1994 RI Phase II	B-6		1/26/1994	0	1.5											
1994 RI Phase II	B-6		1/26/1994	2.5	4											
1994 RI Phase II	B-7		1/26/1994	0	1.5	4.7 U	366.6	3310.7	7112.9	1.2 U	2.6 U	2 U	589.5	626.1	12004.91	19.3
1994 RI Phase II	B-7		1/26/1994	4	5.5											
1994 RI Phase II	B-8		1/26/1994	0	1											
1994 RI Phase II	B-8		1/26/1994	4	5.5											
1994 RI Phase II	B-9		1/26/1994	1	2.5											
1994 RI Phase II	B-9		1/26/1994	5	6.5											
1994 RI Phase II	B-10		1/26/1994	0	1.5											
1994 RI Phase II	B-10		1/26/1994	4	5.5											
1994 RI Phase II	B-11		1/27/1994	0	1											
1994 RI Phase II	B-11		1/27/1994	2.5	4											
1994 RI Phase II	B-11		1/27/1994	2.5	4											
1994 RI Phase II	B-12		1/27/1994	4	5.5											
1994 RI Phase II	B-12		1/27/1994	4	5.5											
1994 RI Phase II	B-13		1/27/1994	0.67	1.5											
1994 RI Phase II	B-13		1/27/1994	4	5.5											
1994 RI Phase II	B-14		1/27/1994	0	1											
1994 RI Phase II	B-14		1/27/1994	4	5.5											
1994 RI Phase II	B-15		1/27/1994	0	1											
1994 RI Phase II	B-15		1/27/1994	3	4											
1994 RI Phase II	B-16		1/27/1994	0	1											
1994 RI Phase II	B-16		1/27/1994	2.5	4											
1994 RI Phase II	B-17		1/27/1994	0.5	2	18.4 U	27.8 U	1075.4	7063.4	8 U	11.6 U	16.3 U	144.2	100	8373.9	28.5
1994 RI Phase II	B-17		1/27/1994	4	5.5											
1994 RI Phase II	B-18		1/27/1994	0	1											
1994 RI Phase II	B-18		1/27/1994	2.5	4											
1994 RI Phase II	B-19		1/27/1994	0	1											
1994 RI Phase II	B-19		1/27/1994	4	5.5											
1994 RI Phase II	B-20		1/27/1994	0	1.5											
1994 RI Phase II	B-20		1/27/1994	2.5	4											
1994 RI Phase II	B-21		1/27/1994	0	1											
1994 RI Phase II	B-21		1/27/1994	4	5.5											
1994 RI Phase II	B-22		1/26/1994	0	1											

Table A-7. On-site Soil, Trench Worker Scenario, all depths.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	Total PeCDD pg/g	Total HxCDD pg/g	Total HpCDD pg/g	Total OCDD pg/g	Total TCDF pg/g	Total PeCDF pg/g	Total HxCDF pg/g	Total HpCDF pg/g	Total OCDF pg/g	Total dioxins/ furans pg/g	2,3,7,8- TCDD TEQ (WHO) pg/g
<b>ONSITE UNDEVELOPED AREA</b>																
1994 RI Phase II	B-22		1/26/1994	4	5.5											
1994 RI Phase II	B-23		1/26/1994	0	1	3.5 U	1680.7	12974.7	35326.5	2.9	177	1254.9	3329	2928.8	57573.7	119
1994 RI Phase II	B-23		1/26/1994	4	5.5											
1994 RI Phase II	B-24		1/25/1994	0	1											
1994 RI Phase II	B-24		1/25/1994	4	5.5											
1994 RI Phase II	B-24		1/25/1994	4	5.5											
1994 RI Phase II	B-25		1/27/1994	0.5	2											
1994 RI Phase II	B-25		1/27/1994	2.5	4											
1994 RI Phase II	B-26		1/27/1994	0	1											
1994 RI Phase II	B-26		1/27/1994	4	5.5											
1994 RI Phase II	B-27		1/25/1994	0	1											
1994 RI Phase II	B-27		1/25/1994	4	5.5											
1994 RI Phase II	B-28		1/25/1994	0	1											
1994 RI Phase II	B-28		1/25/1994	4	5.5											
1994 RI Phase II	B-29		1/25/1994	0	1											
1994 RI Phase II	B-29		1/25/1994	4	5.5											
1994 RI Phase II	B-30		1/25/1994	1.5	2.5											
1994 RI Phase II	B-30		1/25/1994	3	4.5											
1994 RI Phase II	B-31		1/25/1994	1.5	2.5											
1994 RI Phase II	B-31		1/25/1994	4.5	5.5											
1994 RI Phase II	B-32		1/25/1994	0	1											
1994 RI Phase II	B-32		1/25/1994	3	4											
1997 FS PII	B-34		11/1/1995	12	14											
1997 FS PII	B-34	2	11/1/1995	12	14											
1997 FS PII	B-35		11/1/1995	7	9											
1997 FS PII	B-35		11/1/1995	12	14											
1997 FS PII	B-36		11/1/1995	7	9											
1997 FS PII	B-37		10/31/1995	2	4											
1997 FS PII	B-37	2	10/31/1995	2	4											
1997 FS PII	B-37		10/31/1995	12	14											
1997 FS PII	B-38		11/3/1995	2	4											
1997 FS PII	B-38	2	11/3/1995	2	4											
1997 FS PII	B-38		11/3/1995	12	14											
1997 FS PII	B-38	2	11/3/1995	12	14											
1997 FS PII	SS-1		11/00/1995	0	0.5											
1997 FS PII	SS-1	2	11/00/1995	0	0.5											
1997 FS PII	SS-2		11/00/1995	0	0.5											
1997 FS PII	SS-2	2	11/00/1995	0	0.5											
1997 FS PII	SS-3		11/00/1995	0	0.5											
1997 FS PII	SS-4		11/00/1995	0	0.5											
1997 FS PII	SS-5		11/00/1995	0	0.5											
1997 FS PII	SS-6		11/00/1995	0	0.5											
1997 FS PII	SS-7		11/00/1995	0	0.5											
1997 FS PII	SS-8		11/00/1995	0	0.5											

Table A-7. On-site Soil, Trench Worker Scenario, all depths.

Sample event	Station ID	Lab rep	Date	Upper Depth (ft)	Lower Depth (ft)	Total PeCDD pg/g	Total HxCDD pg/g	Total HpCDD pg/g	Total OCDD pg/g	Total TCDF pg/g	Total PeCDF pg/g	Total HxCDF pg/g	Total HpCDF pg/g	Total OCDF pg/g	Total dioxins/ furans pg/g	2,3,7,8- TCDD TEQ (WHO) pg/g
<b>ONSITE UNDEVELOPED AREA</b>																
1997 FS PII	SS-9		11/00/1995	0	0.5											
1997 FS PII	SS-10		11/00/1995	0	0.5											
1997 FS PII	SS-11		11/00/1995	0	0.5											
1998 Addtl Samp	SS98-10		2/2/1998	0	1											
1998 Addtl Samp	SS98-11		2/2/1998	0	1											
1998 Addtl Samp	SS98-5		2/2/1998	0	1											
1998 Addtl Samp	SS98-6		2/2/1998	0	1											
1998 Addtl Samp	SS98-8		2/2/1998	0	1											
1998 Addtl Samp	SS98-9		2/2/1998	0	1											
1991 RI Phase I	W-4S		12/00/1986	14	15											
1991 RI Phase I	W-5I		12/00/1986	5.5	6											
1991 RI Phase I	W-7S		12/00/1986	6.5	7											
1991 RI Phase I	W-8S		12/00/1986	5.5	6											
1991 RI Phase I	W-9I		6/6/1990	3	4.5											
1991 RI Phase I	W-9S		5/8/1990	3	5											
1991 RI Phase I	W-11S		5/9/1990	2.5	4											
1991 RI Phase I	W-12I		5/25/1990	3	4.5											
1991 RI Phase I	W-13S		5/9/1990	1.5	3.5											
1991 RI Phase I	W-14I		5/30/1990	7	8											
1997 FS PII	W-21S		11/3/1995	8	10											
1997 FS PII	W-21S		11/3/1995	13	15											
1997 FS PII	W-22S		11/2/1995	9	11											
1997 FS PII	W-22S		11/2/1995	9	11											
1997 FS PII	W-22S		11/2/1995	14	16											
2000 Former Guard Post	BH00-1		3/16/2000	0	0.5											
2000 Former Guard Post	BH00-1		3/16/2000	2.75	3.25											
2000 Former Guard Post	BH00-2		3/16/2000	0	0.5											
2000 Former Guard Post	BH00-2		3/16/2000	2.75	3.25											
2000 Former Guard Post	BH00-3		3/16/2000	0	0.5											
2000 Former Guard Post	BH00-3		3/16/2000	2.5	3											
2000 Former Guard Post	BH00-4		3/16/2000	0	0.5											
2000 Former Guard Post	BH00-4		3/16/2000	2.75	3											
2000 Former Guard Post	BH00-4		3/16/2000	2.75	3											
2000 Former Guard Post	BH00-5		3/17/2000	0	0.5											
2000 Former Guard Post	BH00-5		3/17/2000	2.75	3.25											
1998 Tax Lots	2002		10/00/1998	0	-9											
1998 Tax Lots	2002A		10/00/1998	0	-9											
1998 Tax Lots	2002B		10/00/1998	0	-9											
1998 Tax Lots	2002C		10/00/1998	0	-9											
1998 Tax Lots	2002D		10/00/1998	0	-9											
1998 Tax Lots	2002E		10/00/1998	0	-9											

Notes:  
 U -- The analyte was not detected at or above the associated reporting limit.  
 UJ -- Estimated reporting limit.  
 J -- Estimated value.  
 B -- The analyte was detected in the associated laboratory blank in addition to the sample  
 EMPC -- Estimated maximum possible concentration.

Table A-8. Groundwater Wells, Future Residential and Industrial Scenarios.

Sample event	Station ID	Date	Lab rep	Arsenic mg/L	Arsenic, Dissolved mg/L	Chromium mg/L	Chromium, Dissolved mg/L	Copper mg/L	Copper, Dissolved mg/L	Zinc, Total mg/L	Zinc, Dissolved mg/L	Acenaphthene ug/L	Acenaphthylene ug/L	Anthracene ug/L	Benzo(a)anthracene ug/L	Dibenz(a,h) anthracene ug/L	Benzo(e) pyrene ug/L	Benzo(b) fluoranthene ug/L	Benzo(g,h,i) perylene ug/L	Benzo(k) fluoranthene ug/L	Chrysene ug/L	Fluoranthene ug/L	Fluorene ug/L	Naphthalene ug/L
HC GW DB	W-111	12/1/1997		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.052	0.023	1.7	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-111	9/1/1998		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.095	0.025	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-111	12/1/1998		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05	0.02 U	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-111	3/1/1999		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.04	0.044	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-111	6/1/1999		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.047	0.038	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-111	9/1/1999		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.046	0.025	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-111	12/1/1999		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.044	0.024	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1 U
2000 GWMon	W-111	03/00/2000		0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.025 U	0.028	0.021	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.11	0.46	1 U	1 U
2000 GWMon	W-111	07/00/2000		0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.025 U	0.02	0.02	0.1 U	0.1 U	0.26	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.11	0.46	1 U	1 U
2000 GWMon	W-111	07/00/2000		0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.025 U	0.02	0.02	0.1 U	0.1 U	0.29	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-111	9/1/2000		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-111	1/1/2001																						
HC GW DB	W-111	6/1/2001																						
HC GW DB	W-111	12/1/2001																						
2002June_wells	W-111	6/6/2002																						
2002Dec_wells	W-111	12/11/2002																						
2003Sept_wells	W-111	9/16/2003																						
2004Sept_wells	W-111	9/15/2004																						
HC GW DB	W-11S	9/1/1999		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.063	0.032	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-11S	12/1/1999		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.073	0.038	1 U	1 U	0.0017	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1 U
2000 GWMon	W-11S	03/00/2000		0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.025 U	0.036	0.025	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.11	0.46	1 U	1 U
2000 GWMon	W-11S	07/00/2000		0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.025 U	0.023	0.025	0.1 U	0.1 U	0.33	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-11S	9/1/2000		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02	0.02 U	0.1 U	0.1 U	0.13	0.25	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-11S	1/1/2001		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02	0.02 U	0.1 U	0.1 U	0.89	0.84	0.31	0.74	0.1 U	0.1 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-11S	6/1/2001		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02	0.02 U	0.1 U	0.1 U	0.3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-11S	12/1/2001		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.11	0.46	1 U	1 U
2002June_wells	W-11S	6/6/2002																						
2002June_wells	W-11S	6/6/2002		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02	0.02 U	0.1 U	0.1 U	0.1	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.11	0.46	1 U	1 U
2002Dec_wells	W-11S	12/11/2002		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02	0.02 U	0.1 U	0.1 U	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.11	0.46	1 U	1 U
2003Sept_wells	W-11S	9/16/2003																						
2004Sept_wells	W-11S	9/15/2004																						
HC GW DB	W-16A1	9/1/1996		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.3	0.1	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	7.4
HC GW DB	W-16A1	12/1/1996		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.057	0.025 U	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-16A1	3/1/1996		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.125	0.09	8.7	2.4	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1.9
HC GW DB	W-16A1	6/1/1996		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.054	0.04	1 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-16A1	6/1/1997		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.158	0.133	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-16A1	6/1/1998		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.471	0.233	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-16A1	6/1/1999		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.32	0.07	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1 U
2000 GWMon	W-16A1	07/00/2000		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.02	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.11	0.46	1 U	1 U
2003Sept_wells	W-16A1	9/15/2003																						
2004Sept_wells	W-16A1	9/15/2004																						
1994 RI Phase II	W-16AS	1/10/1992		0.0012 U	0.0012 U	0.02 U	0.02 U	0.008 U	0.008 U	0.007	0.006	2 U	2 U	0.5 U	0.02 U	0.03 U	0.02 U	0.02 U	0.05 U	0.02 U	0.15 U	0.2 U	0.2 U	2 U
1994 RI Phase II	W-16AS	5/8/1992		0.0012 U	0.0012 U	0.02 U	0.02 U	0.008 U	0.008 U	0.023	0.016	2 U	2 U	0.5 U	0.02 U	0.03 U	0.02 U	0.02 U	0.05 U	0.02 U	0.15 U	0.2 U	0.2 U	2 U
HC GW DB	W-16AS	12/1/1997		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.071	0.02 U	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-17A1	9/1/1997		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.092	0.063	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-17A1	12/1/1997		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.039	0.021	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-17A1	3/1/1998		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.024	0.02 U	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-17A1	6/1/1998		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.132	0.125	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-17A1	8/1/1998		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.09	0.09	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-17A1	6/1/1999		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.089	0.062	1 U	1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.3 U	0.1 U	0.11	0.46	1 U	1 U
2000 GWMon	W-17A1	07/00/2000		0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.62	0.02	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.11	0.46	1 U	1 U
HC GW DB	W-17A1	9/1/2001		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.11	0.46	1 U	1 U
2002Sept_wells	W-17A1	9/10/2002		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.11	0.46	1 U	1 U
2003Sept_wells	W-17A1	9/15/2003		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.11	0.46	1 U	1 U
2004Sept_wells	W-17A1	9/10/2004		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.11	0.46	1 U	1 U
1994 RI Phase II	W-17AS	1/10/1992		0.0025 U	0.0012 U	0.02 U	0.02 U	0.008 U	0.0															



Table A-8. Groundwater Wells, Future Residential and Industrial Scenarios.

Sample event	Station ID	Date	Lab rep	Arsenic	Arsenic, Dissolved	Chromium	Chromium, Dissolved	Copper	Copper, Dissolved	Zinc, Total	Zinc, Dissolved	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Dibenz(a,h)anthracene	Benzo(e)anthracene	Pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Fluoranthene	Fluorene	Naphthalene
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
HC GW DB	W-26	12/1/2001																							
2002June_wells	W-26	6/6/2002																							
2002March_wells	W-26	3/5/2002																							
2002June_wells	W-26	6/6/2002																							
2002Sept_wells	W-26	9/11/2002																							
2002Dec_wells	W-26	12/12/2002																							
2003March_wells	W-26	3/11/2003																							
2003Sept_wells	W-26	9/22/2003																							
2004March_wells	W-26	3/31/2004																							
2004Sept_wells	W-26	9/13/2004																							
2005March_wells	W-26	3/23/2005																							
2000 GWMon	W-28	3/29/2000		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	5.51
2000 GWMon	W-28	7/11/2000		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2000 GWMon	W-29	7/17/2000		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2000 GWMon	W-29	7/17/2000										0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
HC GW DB	W-29	1/1/2001																							
HC GW DB	W-29	4/1/2001																							
HC GW DB	W-29	6/1/2001																							
HC GW DB	W-29	9/1/2001																							
HC GW DB	W-29	12/1/2001																							
2002March_wells	W-29	3/5/2002																							
2002June_wells	W-29	6/13/2002																							
2002Sept_wells	W-29	9/11/2002																							
2002Dec_wells	W-29	12/12/2002																							
2003March_wells	W-29	3/13/2003																							
2003March_wells	W-29	3/13/2003																							
2003Sept_wells	W-29	9/22/2003																							
2004March_wells	W-29	3/31/2004																							
2004Sept_wells	W-29	9/14/2004																							
2005March_wells	W-29	3/24/2005																							
2000 GWMon	W-32	7/17/2000		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
HC GW DB	W-32	1/1/2001																							
HC GW DB	W-32	4/1/2001																							
HC GW DB	W-32	6/1/2001																							
HC GW DB	W-32	9/1/2001																							
HC GW DB	W-32	12/1/2001																							
2002March_wells	W-32	3/7/2002																							
2002June_wells	W-32	6/13/2002																							
2002Sept_wells	W-32	9/10/2002																							
2002Dec_wells	W-32	12/12/2002																							
2003March_wells	W-32	3/10/2003																							
2003Sept_wells	W-32	9/22/2003																							
2004March_wells	W-32	3/31/2004																							
2004Sept_wells	W-32	9/14/2004																							
2005March_wells	W-32	3/23/2005																							
2000 GWMon	W-34	7/17/2000		0.005 U	0.005 U	0.005 U	0.005 U	0.02 U	0.02 U	0.02 U	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
HC GW DB	W-34	1/1/2001																							
HC GW DB	W-34	4/1/2001																							
HC GW DB	W-34	6/1/2001																							
HC GW DB	W-34	9/1/2001																							
HC GW DB	W-34	12/1/2001																							
2002March_wells	W-34	3/7/2002																							
2002June_wells	W-34	6/13/2002																							
2002Sept_wells	W-34	9/11/2002																							
2002Dec_wells	W-34	12/12/2002																							
2003March_wells	W-34	3/11/2003																							
2003Sept_wells	W-34	9/23/2003																							
2004March_wells	W-34	3/30/2004																							
2004Sept_wells	W-34	9/15/2004																							
2005March_wells	W-34	3/23/2005																							
HC GW DB	W-35	9/1/2001																							
HC GW DB	W-35	12/1/2001																							
2002March_wells	W-35	3/19/2002																							

Table A-8. Groundwater Wells, Future Residential and Industrial Scenarios.

Sample event	Station ID	Date	Lab rep	Arsenic	Arsenic, Dissolved	Chromium	Chromium, Dissolved	Copper	Copper, Dissolved	Zinc, Total	Zinc, Dissolved	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Dibenz(a,h)anthracene	Benzo(e)anthracene	Pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Fluoranthene	Fluorene	Naphthalene
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
2002June_wells	W-35	6/13/2002																							
2002Sept_wells	W-35	9/12/2002																							
2002Dec_wells	W-35	12/12/2002																							
2003Sept_wells	W-35	9/22/2003																							
2004Sept_wells	W-35	9/13/2004																							
HC GW DB	W-36	9/1/2001																							
HC GW DB	W-36	12/1/2001																							
2002March_wells	W-36	3/6/2002																							
2002June_wells	W-36	6/13/2002																							
2002Sept_wells	W-36	9/12/2002																							
2002Dec_wells	W-36	12/12/2002																							
2003Sept_wells	W-36	9/19/2003																							
2004Sept_wells	W-36	9/13/2004																							
Misc Data	285 Bertelsen	00/00/2000																							
2002July_wells	285 Bertelsen	7/19/2002																							
2002Sept_wells	285 Bertelsen	9/13/2002																							
Misc Data	255 Waite	00/00/2000																							
2002July_wells	255 Waite	7/22/2002																							
Misc Data	274 Waite	00/00/2000																							
2002July_wells	274 Waite	7/18/2002																							
2004Sept_wells	255 Waite	10/4/2004																							
2003Sept_wells	235 Waite	9/10/2003																							
Misc Data	3510 Elmira Rc	5/8/1992																							
HC GW DB	3510 Elmira Rc	3/1/1993		0.01 U	0.01 U	0.01 U	0.01 U	0.025 U	0.025 U	0.368	0.31	2 U	2 U	0.1 U	0.02 U	0.03 U	0.02 U	0.02 U	0.05 U	0.02 U	0.15 U	0.2 U	0.2 U	2 U	
Misc Data	3841 Elmira Rc	5/8/1992																							
HC GW DB	3841 Elmira Rc	3/1/1993		0.01 U	0.01 U	0.01 U	0.01 U	0.082	0.054	0.097	0.062	2 U	2 U	0.1 U	0.02 U	0.03 U	0.02 U	0.02 U	0.05 U	0.02 U	0.15 U	0.2 U	0.2 U	2 U	
HC GW DB	3841 Elmira Rc	6/1/1993		0.01 U	0.01 U	0.01 U	0.01 U	0.04	0.04	0.04	0.04	2 U	2 U	0.1 U	0.02 U	0.03 U	0.02 U	0.02 U	0.05 U	0.02 U	0.15 U	0.2 U	0.2 U	2 U	
HC GW DB	3841 Elmira Rc	9/1/1993		0.01 U	0.01 U	0.01 U	0.01 U	0.075	0.079	0.042	0.044	2 U	2 U	0.1 U	0.02 U	0.03 U	0.02 U	0.02 U	0.05 U	0.02 U	0.15 U	0.2 U	0.2 U	2 U	
HC GW DB	3841 Elmira Rc	12/1/1993		0.01 U	0.01 U	0.01 U	0.01 U	0.07	0.07	0.07	0.07	2 U	2 U	0.1 U	0.02 U	0.03 U	0.02 U	0.02 U	0.05 U	0.02 U	0.15 U	0.2 U	0.2 U	2 U	
HC GW DB	3841 Elmira Rc	2/1/1994		0.01 U	0.01 U	0.01 U	0.01 U	0.09	0.2	0.09	0.08	2 U	2 U	0.1 U	0.02 U	0.03 U	0.02 U	0.02 U	0.05 U	0.02 U	0.15 U	0.2 U	0.2 U	2 U	
Misc Data	Cascade MW3	06/00/1999																							
Misc Data	Cascade MW3	09/00/1999																							
Misc Data	Cascade MW3	12/00/1999																							
Misc Data	Cascade MW3	03/00/2000																							
Misc Data	Cascade MW3	06/00/2000																							
Misc Data	Cascade MW3	09/00/2000																							
Misc Data	Cascade MW6	06/00/1999																							
Misc Data	Cascade MW6	09/00/1999																							
Misc Data	Cascade MW6	12/1/1999																							
Misc Data	Cascade MW6	03/00/2000																							
Misc Data	Cascade MW6	06/00/2000																							
HC GW DB	Cascade MW6	9/1/2000																							
Misc Data	Cascade PW1	06/00/1999																							
Misc Data	Cascade PW1	09/00/1999																							
Misc Data	Cascade PW1	12/00/1999																							
Misc Data	Zippolog	09/00/1999																							
Misc Data	Zippolog	06/00/2000																							
Misc Data	Zippolog	03/00/2001																							
HC GW DB	Zippolog	9/1/2001																							
2002March_wells	Zipolog	3/5/2002																							
2002Sept_wells	Zipolog	9/13/2002																							
2003Sept_wells	Zipolog	9/10/2003																							
2004Sept_wells	Zipolog	9/30/2004																							

Notes:  
 U -- The analyte was not detected at or above the associated reporting limit  
 UU -- Estimated reporting limit  
 J -- Estimated value  
 B -- The analyte was detected in the associated laboratory blank in addition to the sample  
 EMPC -- Estimated maximum possible concentration

Table A-8. Groundwater Wells, Future Residential and Industrial Scenarios.

Sample event	Station ID	Date	Lab rep	Intenst(1,2,3-cd)	Pyrene	Phenanthrene	Pyrene	Total PAHs (calculated)	Total PAHs (reported)	Carbazole	Phenol	2-Chloro-phenol	2,4-Dichloro-phenol	2,6-Dichloro-phenol	2,4,5-Trichloro-phenol	2,4,6-Trichloro-phenol	Tetrachloro-phenol	2,3,4,5-Tetrachloro-phenol	Pentachloro-phenol (PCP)	4-Chloro-3-methyl-phenol	2-Nitro-phenol	4-Nitro-phenol	2,4-Dinitro-phenol	2,4-Dimethyl-phenol	4-Dinitro-methyl-phenol	o-Cresol	1,2-Dichloro-benzene	1,3-Dichloro-benzene	1,4-Dichloro-benzene	Benzene	Chloro-benzene	Ethyl-benzene	Styrene	Toluene	Xylenes		
HC GW DB	W-11	12/1/1997		0.2 U	0.17	0.56		3	3																												
HC GW DB	W-11	6/1/1998		0.2 U	1 U	1 U		1 U	1 U																												
HC GW DB	W-11	12/1/1998		0.2 U	1 U	1 U		0.11	0.11																												
HC GW DB	W-11	3/1/1999		0.2 U	1 U	1 U		1 U	1 U																												
HC GW DB	W-11	6/1/1999		0.2 U	1 U	1 U		1 U	1 U																												
HC GW DB	W-11	9/1/1999		0.2 U	0.1 U	0.5 U		1 U	1 U		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	42.1	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U											
HC GW DB	W-11	12/1/1999		0.2 U	0.1 U	0.5 U		1 U	1 U		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	59.8	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U											
2000 GWMon	W-11	03/00/2000		0.5 U	0.1 U	0.1 U		0.5 U	0		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	27.8	0.5 U	0.5 U	1 U	2.5 U	0.5 U	2.5 U											
2000 GWMon	W-11	07/00/2000		0.5 U	0.37	0.1 U		0.75	0.8		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	202	0.5 U	0.5 U	1 U	2.5 U	0.5 U	2.5 U											
2000 GWMon	W-11	07/00/2000		0.5 U	0.31	0.1 U		0.6	0.6		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	185	0.5 U	0.5 U	1 U	2.5 U	0.5 U	2.5 U											
HC GW DB	W-11	9/1/2000		0.5 U	0.1 U	0.1 U		0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	134	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U											
HC GW DB	W-11	1/1/2001		0.5 U	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	245	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U											
HC GW DB	W-11	6/1/2001		0.5 U	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	244	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U											
HC GW DB	W-11	12/1/2001		0.5 U	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	228	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U											
2002June_wells	W-11	6/6/2002		40 U	40 U	40 U		40 U	40 U		40 U	40 U	80 U	80 U	80 U	80 U	80 U	80 U	324	40 U	40 U	80 U	400 U	40 U	400 U												
2002Dec_wells	W-11	12/11/2002		32 U	32 U	32 U		32 U	32 U		32 U	32 U	32 U	32 U	32 U	32 U	32 U	32 U	281	32 U	32 U	64 U	128 U	32 U	128 U												
2003Sept_wells	W-11	9/16/2003		20 U	20 U	20 U		20 U	20 U		20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	94.6	20 U	20 U	40 U	80 U	20 U	80 U												
2004Sept_wells	W-11	9/15/2004		25 U	25 U	25 U		25 U	25 U		25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	136	25 U	25 U	50 U	100 U	25 U	100 U												
HC GW DB	W-11S	9/1/1999		0.2 U	0.1 U	0.5 U		1 U	1 U		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	2.3	6.53	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U											
HC GW DB	W-11S	12/1/1999		0.2 U	0.1 U	0.5 U		0.0027	0.0027		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	19.8	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U											
2000 GWMon	W-11S	03/00/2000		0.5 U	0.1 U	0.1 U		0.5 U	0		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	12.1	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U											
2000 GWMon	W-11S	07/00/2000		0.5 U	0.25	0.1		1.07	1.1		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	27.5	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U											
HC GW DB	W-11S	9/1/2000		0.5 U	0.1 U	0.94		2.41	3.5		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	16.6	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U											
HC GW DB	W-11S	1/1/2001		0.1 U	0.1 U	0.1 U		2.78	3.4		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	24.5	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U											
HC GW DB	W-11S	6/1/2001		0.1 U	0.1 U	0.1 U		0.3	0.3		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	6	17.7	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U											
HC GW DB	W-11S	12/1/2001		0.1 U	0.1 U	0.1 U		0.1 U	0.1 U		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	28.4	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U											
2002June_wells	W-11S	6/6/2002		0.1 U	0.1	0.1		0.7			2 U	2 U	2 U	2 U	4 U	4 U	4 U	4 U	5.7	19.5	2 U	2 U	4 U	20 U	2 U	20 U											
2002Dec_wells	W-11S	12/11/2002		0.1 U	0.1 U	0.1 U		1.7			2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	17.6	2 U	2 U	4 U	8 U	2 U	8 U											
2003Sept_wells	W-11S	9/16/2003		1 U	1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.4 U	1 U	1 U	2 U	4 U	1 U	4 U											
2004Sept_wells	W-11S	9/15/2004		0.2 U	0.93	0.5 U		8.52	8.52		2.5 U	2.5 U	2.5 U	2.5 U	1 U	1 U	1 U	1 U	1 U	0.69	1 U	1 U	2 U	4 U	1 U	4 U											
HC GW DB	W-16A	9/1/1996		0.2 U	0.1 U	0.5 U		0.23	0.23		2.5 U	2.5 U	2.5 U	2.5 U	1 U	1 U	1 U	1 U	1 U	2.5 U	2.5 U	10 U	10 U	2.5 U	2.5 U												
HC GW DB	W-16A	12/1/1996		0.2 U	0.1 U	0.5 U		0.23	0.23		2.5 U	2.5 U	2.5 U	2.5 U	1 U	1 U	1 U	1 U	1 U	2.5 U	2.5 U	10 U	10 U	2.5 U	2.5 U												
HC GW DB	W-16A	3/1/1996		0.2 U	0.1 U	0.5 U		13	13		2.5 U	2.5 U	2.5 U	2.5 U	1 U	1 U	1 U	1 U	1 U	2.5 U	2.5 U	10 U	10 U	2.5 U	2.5 U												
HC GW DB	W-16A	6/1/1996		0.1 U	0.1 U	0.1 U		1 U	1 U		2.5 U	2.5 U	2.5 U	2.5 U	1 U	1 U	1 U	1 U	1 U	2.5 U	2.5 U	10 U	10 U	2.5 U	2.5 U												
HC GW DB	W-16A	6/1/1997		0.2 U	1 U	1 U		1 U	1 U		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	0.43	0.5 U	0.5 U	1 U	2.5 U	0.5 U	2.5 U											
HC GW DB	W-16A	6/1/1998		0.2 U	1 U	1 U		1 U	1 U		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	0.43	0.5 U	0.5 U	1 U	2.5 U	0.5 U	2.5 U											
HC GW DB	W-16A	6/1/1999		0.2 U	1 U	1 U		1 U	1 U		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	0.2 U	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U											
2000 GWMon	W-16A	07/00/2000		0.5 U	0.1 U	0.1 U		0.5 U	0		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	331	1 U	0.02 U	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U										
2003Sept_wells	W-16A	9/15/2003		0.5 U	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	2 U											
2004Sept_wells	W-16A	9/15/2004		0.5 U	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	2 U											
1984 RI Phase II	W-16AS	1/10/1992		0.05 U	0.5 U	0.2 U		2 U			0.82	0.38 U	0.47 U	0.5 U	0.5 U	0.5 U																					





Table A-8. Groundwater Wells, Future Residential and Industrial Scenarios.

Sample event	Station ID	Date	Lab rep	1,2-Dichloro-3,4-dichloro	Phenanthrene	Pyrene	Total PAHs (calculated)	Total PAHs (reported)	Carbazole	Phenol	2-Chloro-phenol	2,4-Dichloro-phenol	2,6-Dichloro-phenol	2,4,5-Trichloro-phenol	2,4,6-Trichloro-phenol	2,3,4,6-Tetrachloro-phenol	2,3,5,6-Tetrachloro-phenol	Pentachloro-phenol (PCP)	4-Chloro-3-methyl-phenol	2-Nitro-phenol	4-Nitro-phenol	2,4-Dinitro-phenol	2,4-Dimethyl-phenol	4-Dinitro-methyl-phenol	o-Cresol	1,2-Dichloro-benzene	1,3-Dichloro-benzene	1,4-Dichloro-benzene	Benzene	Chloro-benzene	Ethyl-benzene	Styrene	Toluene	Xylenes		
HC GW DB	W-26	12/1/2001		0.5 U	0.5 U	0.5 U	0.5 U							1 U	1 U	1 U	1 U	129	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U												
2002June_wells	W-26	6/6/2002		20 U	20 U	20 U	20 U							40 U	40 U	40 U	40 U	119	20 U	20 U	40 U	200 U	20 U	200 U												
2002March_wells	W-26	3/5/2002		20 U	20 U	20 U	20 U							40 U	40 U	40 U	40 U	128	20 U	20 U	40 U	200 U	20 U	200 U												
2002June_wells	W-26	6/6/2002		16 U	16 U	16 U	16 U							16 U	16 U	16 U	16 U	146	16 U	16 U	32 U	64 U	16 U	64 U												
2002Sept_wells	W-26	9/11/2002		16 U	16 U	16 U	16 U							16 U	16 U	16 U	16 U	150	16 U	16 U	32 U	64 U	16 U	64 U												
2002Dec_wells	W-26	12/12/2002		10 U	10 U	10 U	10 U							10 U	10 U	10 U	10 U	123	10 U	10 U	20 U	40 U	10 U	40 U												
2003March_wells	W-26	3/11/2003		10 U	10 U	10 U	10 U							10 U	10 U	10 U	10 U	144	10 U	10 U	20 U	40 U	10 U	40 U												
2003Sept_wells	W-26	9/22/2003		10 U	10 U	10 U	10 U							10 U	10 U	10 U	10 U	124	10 U	10 U	20 U	40 U	10 U	40 U												
2004March_wells	W-26	3/31/2004		10 U	10 U	10 U	10 U							10 U	10 U	10 U	10 U	117	10 U	10 U	20 U	40 U	10 U	40 U												
2004Sept_wells	W-26	9/13/2004		10 U	10 U	10 U	10 U							10 U	10 U	10 U	10 U	120	10 U	10 U	20 U	40 U	10 U	40 U												
2005March_wells	W-26	3/23/2005		0.5 U	1 U	0.1 U	5.51							0.5 U	0.5 U	0.5 U	0.5 U	1 U	33.1	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U											
2000 GWMon	W-28	7/11/2000		0.5 U	0.1 U	0.1 U	0.5 U							1 U	1 U	1 U	1 U	34.6	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U												
2000 GWMon	W-29	7/17/2000		0.5 U	0.1 U	0.1 U	0.5 U							1 U	1 U	1 U	1 U	25.9	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U												
2000 GWMon	W-29	7/17/2000		0.5 U	0.13	0.1 U	0.13							1 U	1 U	1 U	1 U	29.7	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U												
HC GW DB	W-29	1/1/2001		0.5 U	0.5 U	0.5 U	0.5 U							1 U	1 U	1 U	1 U	29.7	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U												
HC GW DB	W-29	4/1/2001		0.5 U	0.5 U	0.5 U	0.5 U							1 U	1 U	1 U	1 U	26.6	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U												
HC GW DB	W-29	6/1/2001		0.5 U	0.5 U	0.5 U	0.5 U							1 U	1 U	1 U	1 U	25.3	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U												
HC GW DB	W-29	9/1/2001		0.5 U	0.5 U	0.5 U	0.5 U							1 U	1 U	1 U	1 U	27.7	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U												
HC GW DB	W-29	12/1/2001		0.5 U	0.5 U	0.5 U	0.5 U							1 U	1 U	1 U	1 U	28.3	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U												
2002March_wells	W-29	3/5/2002		5 U	5 U	5 U	5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	26.5	5 U	5 U	10 U	50 U	5 U	50 U												
2002June_wells	W-29	6/13/2002		2.5 U	2.5 U	2.5 U	2.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25.7	2.5 U	2.5 U	5 U	25 U	2.5 U	25 U												
2002Sept_wells	W-29	9/11/2002		8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U	29.1	8 U	8 U	16 U	32 U	8 U	32 U												
2002Dec_wells	W-29	12/12/2002		4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	31.4	4 U	4 U	8 U	16 U	4 U	16 U												
2003March_wells	W-29	3/13/2003		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	21.3	2.5 U	2.5 U	5 U	10 U	2.5 U	10 U												
2003March_wells	W-29	3/13/2003		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	22.8	2.5 U	2.5 U	5 U	10 U	2.5 U	10 U												
2003Sept_wells	W-29	9/22/2003		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	29.2	2.5 U	2.5 U	5 U	10 U	2.5 U	10 U												
2004March_wells	W-29	3/31/2004		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	22.5	2.5 U	2.5 U	5 U	10 U	2.5 U	10 U												
2004Sept_wells	W-29	9/14/2004		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	22.2	2.5 U	2.5 U	5 U	10 U	2.5 U	10 U												
2005March_wells	W-29	3/24/2005		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25.1	2.5 U	2.5 U	5 U	10 U	2.5 U	10 U												
2000 GWMon	W-32	7/17/2000		0.5 U	0.1 U	0.1 U	0.5 U							1 U	1 U	1 U	1 U	0.45	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U												
HC GW DB	W-32	1/1/2001		0.5 U	0.5 U	0.5 U	0.5 U							1 U	1 U	1 U	1 U	0.25*	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U												
HC GW DB	W-32	4/1/2001		0.5 U	0.5 U	0.5 U	0.5 U							1 U	1 U	1 U	1 U	0.24	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U												
HC GW DB	W-32	6/1/2001		0.5 U	0.5 U	0.5 U	0.5 U							1 U	1 U	1 U	1 U	0.25	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U												
HC GW DB	W-32	9/1/2001		0.5 U	0.5 U	0.5 U	0.5 U							1 U	1 U	1 U	1 U	0.28 U	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U												
HC GW DB	W-32	12/1/2001		0.5 U	0.5 U	0.5 U	0.5 U							1 U	1 U	1 U	1 U	0.2 U	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U												
2002March_wells	W-32	3/7/2002		0.5 U	0.5 U	0.5 U	0.5 U							1 U	1 U	1 U	1 U	0.2 U	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U												
2002June_wells	W-32	6/13/2002		0.5 U	0.5 U	0.5 U	0.5 U							1 U	1 U	1 U	1 U	0.2 U	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U												
2002Sept_wells	W-32	9/10/2002		0.5 U	0.5 U	0.5 U	0.5 U							0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	2 U												
2002Dec_wells	W-32	12/12/2002		0.5 U	0.5 U	0.5 U	0.5 U							0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	2 U												
2003March_wells	W-32	3/10/2003		0.5 U	0.5 U	0.5 U	0.5 U							0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	2 U												
2003Sept_wells	W-32	9/22/2003		0.5 U	0.5 U	0.5 U	0.5 U							0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	2 U												
2004March_wells	W-32	3/31/2004		0.5 U	0.5 U	0.5 U	0.5 U							0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	2 U												
2004Sept_wells	W-32	9/14/2004		0.5 U	0.5 U	0.5 U	0.5 U																													

Table A-8. Groundwater Wells, Future Residential and Industrial Scenarios.

Sample event	Station ID	Date	Lab rep	Intenct(1,2,3-cd)	pyrene	Phenanthrene	Pyrene	Total PAHs (calculated)	Total PAHs (reported)	Carbazole	Phenol	2-Chloro-phenol	2,4-Dichloro-phenol	2,6-Dichloro-phenol	2,4,5-Trichloro-phenol	2,4,6-Trichloro-phenol	2,3,4,5-Tetrachloro-phenol	2,3,4,6-Tetrachloro-phenol	Pentachloro-phenol (PCP)	4-Chloro-3-methyl-phenol	2-Nitro-phenol	4-Nitro-phenol	2,4-Dinitro-phenol	2,4-Dimethyl-phenol	4-c-Dinitro-methyl-phenol	o-Cresol	1,2-Dichloro-benzene	1,3-Dichloro-benzene	1,4-Dichloro-benzene	Benzene	Chloro-benzene	Ethyl-benzene	Styrene	Toluene	Xylenes			
2002June_wells	W-35	6/13/2002									0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	0.2 U	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U												
2002Sept_wells	W-35	9/12/2002									0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	2 U												
2002Dec_wells	W-35	12/12/2002									0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	2 U												
2003Sept_wells	W-35	9/22/2003									0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	2 U												
2004Sept_wells	W-35	9/13/2004									0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	2 U												
HC GW DB	W-36	9/1/2001									0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.48 U	0.5 U	0.5 U	2.28 U	5 U	0.5 U	5 U													
HC GW DB	W-36	12/1/2001									0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.2 U	0.5 U	0.5 U	2.04 U	5 U	0.5 U	5 U													
2002March_wells	W-36	3/6/2002									0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.2 U	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U													
2002June_wells	W-36	6/13/2002									0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.2 U	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U													
2002Sept_wells	W-36	9/12/2002									0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	2 U													
2002Dec_wells	W-36	12/12/2002									0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	2 U													
2003Sept_wells	W-36	9/19/2003									0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	2 U													
2004Sept_wells	W-36	9/13/2004									0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	2 U													
Misc Data	285 Bertelsen	00/00/2000																	0.25 U																			
2002July_wells	285 Bertelsen	7/19/2002																	0.25 U																			
2002Sept_wells	285 Bertelsen	9/13/2002									0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	2 U													
Misc Data	255 Waite	00/00/2000																	0.25 U																			
2002July_wells	255 Waite	7/22/2002																	0.25 U																			
Misc Data	274 Waite	00/00/2000																	0.25 U																			
2002July_wells	274 Waite	7/18/2002																	0.25 U																			
2004Sept_wells	255 Waite	10/4/2004									0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	2 U													
2003Sept_wells	235 Waite	9/10/2003									0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	2 U													
Misc Data	3510 Elmira Rc	5/8/1992																																				
HC GW DB	3510 Elmira Rc	3/1/1993									0.05 U	0.1 U	0.2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	1 U	0.4 U	0.4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		
Misc Data	3841 Elmira Rc	5/8/1992																																				
HC GW DB	3841 Elmira Rc	3/1/1993									0.05 U	0.1 U	0.2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	1 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U	0.3 U	0.3 U	0.3 U		
HC GW DB	3841 Elmira Rc	6/1/1993									0.05 U	0.1 U	0.2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	1 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U	0.3 U	0.3 U	0.3 U		
HC GW DB	3841 Elmira Rc	9/1/1993									0.05 U	0.1 U	0.2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	1 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U	0.3 U	0.3 U	0.3 U		
HC GW DB	3841 Elmira Rc	12/1/1993									0.05 U	0.1 U	0.2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	1 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U	0.3 U	0.3 U	0.3 U		
HC GW DB	3841 Elmira Rc	2/1/1994									0.05 U	0.1 U	0.2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	1 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U	0.3 U	0.3 U	0.3 U		
Misc Data	Cascade MW3	06/00/1999																	-9 U																			
Misc Data	Cascade MW3	09/00/1999																	-9 U																			
Misc Data	Cascade MW3	12/00/1999																	0.54 U																			
Misc Data	Cascade MW3	03/00/2000																	1 U																			
Misc Data	Cascade MW3	06/00/2000																	0.73 U																			
Misc Data	Cascade MW3	09/00/2000																	0.77 U																			
Misc Data	Cascade MW6	06/00/1999																	116 U																			
Misc Data	Cascade MW6	09/00/1999																	189 U																			
Misc Data	Cascade MW6	12/1/1999																	139 U																			
Misc Data	Cascade MW6	03/00/2000																	122 U																			
Misc Data	Cascade MW6	06/00/2000																	115 U																			
HC GW DB	Cascade MW6	9/1/2000									0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.66 U	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U													
Misc Data	Cascade PW1	06/00/1999																	170 U																			
Misc Data	Cascade PW1	09/00/1999																	2.35 U																			
Misc Data	Cascade PW1	12/00/1999																	79.2 U																			
Misc Data	Cascade PW1	09/00/1999																	82.2 U																			
Misc Data	Zippolog	09/00/1999																	1.69 U																			
Misc Data	Zippolog	06/00/2000																	2.67 U																			
Misc Data	Zippolog	03/00/2001																	2.37 U																			
HC GW DB	Zippolog	9/1/2001									0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.66 U	0.5 U	0.5 U	1 U	5 U	0.5 U	5 U													
2002March_wells	Zippolog	3/5/2002									1 U	1 U	1 U	1 U	2 U	2 U	2 U	2 U	0.4 U	1 U	1 U	2 U	10 U	1 U	10 U													
2002Sept_wells	Zippolog	9/13/2002									0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.12 U	0.5 U	0.5 U	1 U	2 U	0.5 U	2 U													
2003Sept_wells	Zippolog	9/10/2003									0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	2 U													
2004Sept_wells	Zippolog	9/30/2004									0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.31 U	0.5 U	0.5 U	1 U	2 U	0.5 U	2 U													

Table A-8. Groundwater Wells, Future Residential and Industrial Scenarios.

Sample event	Station ID	Date	Lab rep	2,3,7,8-	1,2,3,7,8-	1,2,3,4,7,8-	1,2,3,6,7,8-	1,2,3,7,8,9-	1,2,3,4,6,7,8-	OCDD	2,3,7,8-	1,2,3,7,8-	2,3,4,7,8-	1,2,3,4,7,8-	1,2,3,6,7,8-	1,2,3,7,8,9-	2,3,4,6,7,8-	1,2,3,4,6,7,8-	1,2,3,4,7,8,9-	OCDF	Total TCDD	Total	Total	Total	Total	Total	Total	Total	Total	Total	
				TCDD	PecDD	HxCDD	HxCDD	HxCDD	HxCDD	HxCDD	HxCDD	HxCDD	TCDF	PecCDF	HxCDF	HxCDF	HxCDF	HxCDF	HxCDF	HxCDF	HxCDF	HxCDF	OCDF	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L
HC GW DB	W-11I	12/1/1997																													
HC GW DB	W-11I	9/1/1998																													
HC GW DB	W-11I	12/1/1998																													
HC GW DB	W-11I	3/1/1999																													
HC GW DB	W-11I	6/1/1999																													
HC GW DB	W-11I	9/1/1999																													
HC GW DB	W-11I	12/1/1999																													
2000 GWMon	W-11I	03/00/2000																													
2000 GWMon	W-11I	07/00/2000																													
2000 GWMon	W-11I	07/00/2000																													
HC GW DB	W-11I	9/1/2000																													
HC GW DB	W-11I	1/1/2001																													
HC GW DB	W-11I	6/1/2001																													
HC GW DB	W-11I	12/1/2001																													
2002June_wells	W-11I	6/6/2002																													
2002Dec_wells	W-11I	12/11/2002																													
2003Sept_wells	W-11I	9/16/2003																													
2004Sept_wells	W-11I	9/15/2004																													
HC GW DB	W-11S	9/1/1999																													
HC GW DB	W-11S	12/1/1999																													
2000 GWMon	W-11S	03/00/2000																													
2000 GWMon	W-11S	07/00/2000																													
HC GW DB	W-11S	9/1/2000																													
HC GW DB	W-11S	1/1/2001																													
HC GW DB	W-11S	6/1/2001																													
HC GW DB	W-11S	12/1/2001																													
2002June_wells	W-11S	6/6/2002	1.5 U	1.9 J	1.2 U	3.6 J	4.5 J	51.8	1050		1.1 U	2.5 J	1.1 U	2.9 J	1.8 J	EMPC	3.6 J	2.2 J	12.4 J	1.5 U	57.5 J	1.5 U	1.9	18.2	132	1.1 U	2.5	21.3	49.3	5.785	
2002June_wells	W-11S	6/6/2002																													
2002Dec_wells	W-11S	12/11/2002																													
2003Sept_wells	W-11S	9/16/2003																													
2004Sept_wells	W-11S	9/15/2004																													
HC GW DB	W-16AI	9/1/1996																													
HC GW DB	W-16AI	12/1/1996																													
HC GW DB	W-16AI	3/1/1996																													
HC GW DB	W-16AI	6/1/1996																													
HC GW DB	W-16AI	6/1/1997																													
HC GW DB	W-16AI	6/1/1998																													
HC GW DB	W-16AI	6/1/1999																													
2000 GWMon	W-16AI	07/00/2000																													
2003Sept_wells	W-16AI	9/15/2003																													
2004Sept_wells	W-16AI	9/15/2004																													
1994 RI Phase II	W-16AS	1/10/1992																													
1994 RI Phase II	W-16AS	5/8/1992																													
HC GW DB	W-16AS	12/1/1997																													
HC GW DB	W-17AI	9/1/1997																													
HC GW DB	W-17AI	12/1/1997																													
HC GW DB	W-17AI	3/1/1998																													
HC GW DB	W-17AI	6/1/1998																													
HC GW DB	W-17AI	8/1/1998																													
HC GW DB	W-17AI	6/1/1999																													
2000 GWMon	W-17AI	07/00/2000																													
HC GW DB	W-17AI	9/1/2001																													
2002Sept_wells	W-17AI	9/10/2002																													
2003Sept_wells	W-17AI	9/15/2003																													
2004Sept_wells	W-17AI	9/10/2004																													
1994 RI Phase II	W-17AS	1/10/1992																													
1994 RI Phase II	W-17AS	5/8/1992																													
HC GW DB	W-17AS	12/1/1997																													
2003Sept_wells	W-17AS	9/15/2003																													
2004Sept_wells	W-17AS	9/10/2004																													
1994 RI Phase II	W-17BI	1/10/1992																													
1994 RI Phase II	W-17BI	5/8/1992																													
HC GW DB	W-17BI	9/1/2001																													
2002March_wells	W-17BI	3/7/2002																													
2003Sept_wells	W-17BI	9/15/2003																													
2004Sept_wells	W-17BI	9/9/2004																													
HC GW DB	W-18AI	12/1/1998																													
HC GW DB	W-18AI	3/1/1999																													
HC GW DB	W-18AI	3/1/1999 2																													
HC GW DB	W-18AI	6/1/1999																													
HC GW DB	W-18AI	6/1/1999 2																													
HC GW DB	W-18AI	9/1/1999																													
HC GW DB	W-18AI	12/1/1999																													
2000 GWMon	W-18AI	03/00/2000																													







Table A-9. Off-site Groundwater Wells, Industrial Scenarios.

Sample event	Station ID	Date	Lab rep	Phenol	2-Chloro-phenol	2,4-Dichloro-phenol	2,6-Dichloro-phenol	2,4,5-Trichloro-phenol	2,4,6-Trichloro-phenol	2,3,4,6-Tetrachloro-phenol	2,3,5,6-Tetrachloro-phenol	Pentachloro-phenol (PCP)	4-Chloro-3-methyl-phenol	2-Nitro-phenol	4-Nitro-phenol	2,4-Dinitro-phenol	3 and 4-Methyl-phenol	2,4-Dimethyl-phenol	4,6-Dinitro-2-methyl-phenol
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Misc Data	285 Bertelsen	00/00/2000										0.25 U							
Misc Data2	285 Bertelsen	10/00/2000										0.25 U							
Misc Data2	285 Bertelsen	7/19/2002										0.25 U							
2002July_wells	285 Bertelsen	7/19/2002										0.25 U							
2002Sept_wells	285 Bertelsen	9/13/2002		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U		0.5 U	2 U
Misc Data	Cascade MW6	06/00/1999										116							
Misc Data	Cascade MW6	09/00/1999										189							
Misc Data	Cascade MW6	12/1/1999										139							
Misc Data	Cascade MW6	03/00/2000										122							
Misc Data	Cascade MW6	06/00/2000										115							
HC GW DB	Cascade MW6	9/1/2000										170							
Misc Data	Zippolog	09/00/1999										1.69							
Misc Data	Zippolog	06/00/2000										2.67							
Misc Data	Zippolog	03/00/2001										2.37							
HC GW DB	Zippolog	9/1/2001		0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.66	0.5 U	0.5 U	1 U	5 U		0.5 U	5 U
2002March_wells	Zipolog	3/5/2002		1 U	1 U	1 U	1 U	2 U	2 U	2 U	2 U	0.4	1 U	1 U	2 U	10 U		1 U	10 U
2002Sept_wells	Zipolog	9/13/2002		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.12	0.5 U	0.5 U	1 U	2 U		0.5 U	2 U
2003Sept_wells	Zipolog	9/10/2003		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1 U	2 U		0.5 U	2 U
2004Sept_wells	Zipolog	9/30/2004		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.31	0.5 U	0.5 U	1 U	2 U		0.5 U	2 U

Notes:

- U -- The analyte was not detected at or above the associated reporting limit.
- UJ -- Estimated reporting limit.
- J -- Estimated value.
- B -- The analyte was detected in the associated laboratory blank in addition to the sample.



Table A-10. Dioxin TEQ calculations for Soil Samples (pg/g)

	WHO TEF	1/2 reporting			1/2 reporting			1/2 reporting			1/2 reporting		
		B-7 1/26/1994	limit	TEQ calc	B-17 1/27/1994	limit	TEQ calc	B-23 1/26/1994	limit	TEQ calc	COMP_S1 8/27/2001	limit	TEQ calc
Upper Depth (feet)		0			0.5			0			0		
Lower Depth (feet)		1.5			2			1			0.5		
2,3,7,8-TCDD	1.0	2.3 U	1.15	1.15	6.8 U	3.4	3.4	1.9 U	0.95	0.95	3	-	3
1,2,3,7,8-PeCDD	1.0	4.7 U	2.35	2.35	18.4 U	9.2	9.2	3.5 U	1.75	1.75	19	-	19
1,2,3,4,7,8-HxCDD	0.1	6.3 U	3.15	0.315	27.8 U	13.9	1.39	30.4	-	3.04	36	-	3.6
1,2,3,6,7,8-HxCDD	0.1	6.2 U	3.1	0.31	20.4 U	10.2	1.02	251.6	-	25.16	290	-	29
1,2,3,7,8,9-HxCDD	0.1	43.4	-	4.34	3.2 U	1.6	0.16	143.4	-	14.34	110	-	11
1,2,3,4,6,7,8-HpCDD	0.01	764	-	7.64	613	-	6.13	5894.1	-	58.941	6700	-	67
OCDD	0.0001	7112.9	-	0.71129	7064.3	-	0.70643	35325.5	-	3.53255	91000	-	9.1
2,3,7,8-TCDF	0.1	1.2 U	0.6	0.06	8 U	4	0.4	2.9	-	0.29	2.9	-	0.29
1,2,3,7,8-PeCDF	0.05	2.6 U	1.3	0.065	11.6 U	5.8	0.29	9.4	-	0.47	8	-	0.4
2,3,4,7,8-PeCDF	0.5	2.6 U	1.3	0.65	9.7 U	4.85	2.425	2.1 U	1.05	0.525	27	-	13.5
1,2,3,4,7,8-HxCDF	0.1	2 U	1	0.1	16.3 U	8.15	0.815	4.5 U	2.25	0.225	40	-	4
1,2,3,6,7,8-HxCDF	0.1	1.8 U	0.9	0.09	15.5 U	7.75	0.775	4.5 U	2.25	0.225	27	-	2.7
1,2,3,7,8,9-HxCDF	0.1	1.7 U	0.85	0.085	14 U	7	0.7	3.5 U	1.75	0.175	51	-	5.1
2,3,4,6,7,8-HxCDF	0.1	1.7 U	0.85	0.085	12.9 U	6.45	0.645	3.1 U	1.55	0.155	48	-	4.8
1,2,3,4,6,7,8-HpCDF	0.01	128.9	-	1.289	38.4	-	0.384	878.8	-	8.788	1800	-	18
1,2,3,4,7,8,9-HpCDF	0.01	2.3 U	1.15	0.0115	14.2 U	7.1	0.071	1.8 U	0.9	0.009	120	-	1.2
OCDF	0.0001	626.1	-	0.06261	100	-	0.01	2928.8	-	0.29288	6000	-	0.6
<b>Total TEQ</b>				<b>19.3144</b>			<b>28.52143</b>			<b>118.86843</b>			<b>192.29</b>
Total TCDD		2.3 U			6.8 U			1.9 U			140		
Total PeCDD		4.7 U			18.4 U			3.5 U			320		
Total HxCDD		366.6			27.8 U			1680.7			2400		
Total HpCDD		3310.7			1075.4			12974.7			20000		
Total TCDF		1.2 U			8 U			2.9			43		
Total PeCDF		2.6 U			11.6 U			177			280		
Total HxCDF		2 U			16.3 U			1254.9			2600		
Total HpCDF		589.5			144.2			3329			7200		

Notes:

- U -- The analyte was not detected at or above the associated reporting limit.
- UJ -- Estimated reporting limit.
- J -- Estimated value.
- B -- The analyte was detected in the associated laboratory blank in addition to the sample.
- EMPC -- Estimated maximum possible concentration.

**Table A-10.** Dioxin TEQ calculations for Soil Samples (pg/g)

	WHO TEF	1/2			1/2			1/2		
		COMP_S2 8/27/2001	reporting limit	TEQ calc	SS_3 9/8/96	reporting limit	TEQ calc	SS_4 9/8/96	reporting limit	TEQ calc
Upper Depth (feet)		0			0			0		
Lower Depth (feet)		0.5			-9			-9		
2,3,7,8-TCDD	1.0	6.2	-	6.2	<0.6	0.3	0.3	<0.6	0.3	0.3
1,2,3,7,8-PeCDD	1.0	40	-	40	<1.6	0.8	0.8	<1.6	0.8	0.8
1,2,3,4,7,8-HxCDD	0.1	110	-	11	<1.2	0.6	0.06	<1.2	0.6	0.06
1,2,3,6,7,8-HxCDD	0.1	680	-	68	6.6	-	0.66	25.1	-	2.51
1,2,3,7,8,9-HxCDD	0.1	270	-	27	2.9	-	0.29	6.9	-	0.69
1,2,3,4,6,7,8-HpCDD	0.01	16000	-	160	72.2	-	0.722	333.3	-	3.333
OCDD	0.0001	210000	-	21	637.4	-	0.06374	2324.6	-	0.23246
2,3,7,8-TCDF	0.1	10	-	1	<0.7	0.35	0.035	<0.7	0.35	0.035
1,2,3,7,8-PeCDF	0.05	32	-	1.6	<1.3	0.65	0.0325	2.9	-	0.145
2,3,4,7,8-PeCDF	0.5	74	-	37	<1.8	0.9	0.45	2.4	-	1.2
1,2,3,4,7,8-HxCDF	0.1	220	-	22	1.6	-	0.16	4.9	-	0.49
1,2,3,6,7,8-HxCDF	0.1	63	-	6.3	<1.3	0.65	0.065	6.3	-	0.63
1,2,3,7,8,9-HxCDF	0.1	120	-	12	<1.6	0.8	0.08	<1.6	0.8	0.08
2,3,4,6,7,8-HxCDF	0.1	130	-	13	2.5	-	0.25	7.1	-	0.71
1,2,3,4,6,7,8-HpCDF	0.01	4400	-	44	17.2	-	0.172	61.4	-	0.614
1,2,3,4,7,8,9-HpCDF	0.01	300	-	3	<0.8	0.4	0.004	<0.8	0.4	0.004
OCDF	0.0001	12000	-	1.2	17.4	-	0.00174	40.3	-	0.00403
<b>Total TEQ</b>				<b>474.3</b>			<b>4.14598</b>			<b>11.83749</b>
Total TCDD		260			0.5			64.1		
Total PeCDD		620			<1.6			<1.6		
Total HxCDD		6000			20			36		
Total HpCDD		48000			143.3			600		
Total TCDF		130			2.2			<.7		
Total PeCDF		920			2.7			46.5		
Total HxCDF		7100			25.5			198.9		
Total HpCDF		17000			56.2			173.8		

Notes:  
 U -- The analyte was not detected .  
 UJ -- Estimated reporting limit.  
 J -- Estimated value.  
 B -- The analyte was detected in th  
 EMPC -- Estimated maximum poss

**Table A-10.** Dioxin TEQ calculations for Sediment Samples (pg/g)

	WHO TEF	SD13 2/21/03	1/2 reporting limit	TEQ calc	SD14 2/21/03	1/2 reporting limit	TEQ calc	SD15 2/21/03	1/2 reporting limit	TEQ calc
Upper Depth (feet)		0			0			0		
Lower Depth (feet)		4			4			4		
2,3,7,8-TCDD	1.0	6.226	-	6.226	<0.439	0.2195	0.2195	3.452	-	3.452
1,2,3,7,8-PeCDD	1.0	31.411	-	31.411	5.514	-	5.514	32.531	-	32.531
1,2,3,4,7,8-HxCDD	0.1	71.99	-	7.199	13.771	-	1.3771	77.153	-	7.7153
1,2,3,6,7,8-HxCDD	0.1	241.849	-	24.1849	64.011	-	6.4011	452.073	-	45.2073
1,2,3,7,8,9-HxCDD	0.1	144.628	-	14.4628	28.693	-	2.8693	203.398	-	20.3398
1,2,3,4,6,7,8-HpCDD	0.01	6473.64	-	64.7364	2223.989	-	22.23989	12169.941	-	121.69941
OCDD	0.0001	41761.573	-	4.1761573	15377.114	-	1.5377114	87267.881	-	8.7267881
2,3,7,8-TCDF	0.1	2.399	-	0.2399	0.52	-	0.052	3.095	-	0.3095
1,2,3,7,8-PeCDF	0.05	11.556	-	0.5778	2.592	-	0.1296	17.868	-	0.8934
2,3,4,7,8-PeCDF	0.5	10.42	-	5.21	2.579	-	1.2895	15.02	-	7.51
1,2,3,4,7,8-HxCDF	0.1	55.418	-	5.5418	13.627	-	1.3627	82.165	-	8.2165
1,2,3,6,7,8-HxCDF	0.1	40.25	-	4.025	6.84	-	0.684	44.36	-	4.436
1,2,3,7,8,9-HxCDF	0.1	2.849	-	0.2849	<1.452	0.726	0.0726	<12.388	6.194	0.6194
2,3,4,6,7,8-HxCDF	0.1	62.997	-	6.2997	12.105	-	1.2105	83.329	-	8.3329
1,2,3,4,6,7,8-HpCDF	0.01	909.07	-	9.0907	220.748	-	2.20748	1223.153	-	12.23153
1,2,3,4,7,8,9-HpCDF	0.01	71.719	-	0.71719	13.735	-	0.13735	97.416	-	0.97416
OCDF	0.0001	3175.341	-	0.3175341	770.194	-	0.0770194	5865.646	-	0.5865646
<b>Total TEQ</b>				<b>184.70078</b>			<b>47.3814</b>			<b>283.7815527</b>
Total TCDD		32.556			2.869			37.14		
Total PeCDD		177.287			30.581			240.332		
Total HxCDD		1434.329			347.449			2571.64		
Total HpCDD		13930.342			5039.838			28495.512		
Total TCDF		60.89			5.537			50.781		
Total PeCDF		415.58			75.299			495.459		
Total HxCDF		1502.803			332.027			2336.61		
Total HpCDF		3521.903			908.948			6020.777		

Notes:

- U -- The analyte was not detected at or above the associated reporting limit.
- UJ -- Estimated reporting limit.
- J -- Estimated value.
- B -- The analyte was detected in the associated laboratory blank in addition to the sample.
- EMPC -- Estimated maximum possible concentration.

**Table A-10.** Dioxin TEQ calculations with WHO-TEF for June 2002 GW samples

Analyte	EPA 1613 Minimum Quantitation Limit (pg/L)		WHO TEF	W-11S 6/6/02			W-23 6/6/02			W-23CAS 6/6/02		
				1/2 reporting limit	TEQ calc	1/2 reporting limit	TEQ calc	1/2 reporting limit	TEQ calc			
2,3,7,8-TCDD	10		1.0	1.5 U	0.75	0.75	1 U	0.5	0.5	4.505 U	2.2525	2.2525
1,2,3,7,8-PeCDD	50		1.0	1.9 J	-	1.9	0.8 U	0.4	0.4	6.713 U	3.3565	3.3565
1,2,3,4,7,8-HxCDD	50		0.1	1.2 U	0.6	0.06	1 J EMPC	-	0.1	6.371 U	3.1855	0.31855
1,2,3,6,7,8-HxCDD	50		0.1	3.6 J	-	0.36	1.9 J EMPC	-	0.19	5.957 U	2.9785	0.29785
1,2,3,7,8,9-HxCDD	50		0.1	4.5 J	-	0.45	1.5 J EMPC	-	0.15	6.104 U	3.052	0.3052
1,2,3,4,6,7,8-HpCDD	50		0.01	51.8	-	0.518	11.9 J EMPC	-	0.119	8.072 U	4.036	0.04036
OCDD	100		0.0001	1050	-	0.105	30.5 JB EMPC	-	0.00305	30.469 J	-	0.0030469
2,3,7,8-TCDF	10		0.1	1.1 U	0.55	0.055	0.8 U	0.4	0.04	5.709 U	2.8545	0.28545
1,2,3,7,8-PeCDF	50		0.05	2.5 J	-	0.125	1.8 J	-	0.09	3.087 U	1.5435	0.077175
2,3,4,7,8-PeCDF	50		0.5	1.1 U	0.55	0.275	1.6 J	-	0.8	3.375 U	1.6875	0.84375
1,2,3,4,7,8-HxCDF	50		0.1	2.9 J	-	0.29	1.9 J	-	0.19	4.329 U	2.1645	0.21645
1,2,3,6,7,8-HxCDF	50		0.1	1.8 J EMPC	-	0.18	1.6 J	-	0.16	4.447 U	2.2235	0.22235
1,2,3,7,8,9-HxCDF	50		0.1	3.6 J	-	0.36	1.5 J EMPC	-	0.15	5.517 U	2.7585	0.27585
2,3,4,6,7,8-HxCDF	50		0.1	2.2 J	-	0.22	1.8 J	-	0.18	4.919 U	2.4595	0.24595
1,2,3,4,6,7,8-HpCDF	50		0.01	12.4 J	-	0.124	9.7 J	-	0.097	4.145 U	2.0725	0.020725
1,2,3,4,7,8,9-HpCDF	50		0.01	1.5 U	0.75	0.0075	2.2 J	-	0.022	6.106 U	3.053	0.03053
OCDF	100		0.0001	57.5 J	-	0.00575	8.5 J	-	0.00085	11.271 U	5.6355	0.00056355
<b>Total TEQ</b>						<b>5.78525</b>			<b>3.2</b>			<b>8.79280045</b>
Total TCDD	10			1.5 U			1 U			4.505 U		
Total PeCDD	50			1.9			0.8 U			6.713 U		
Total HxCDD	50			18.2			5.3			5.957 U		
Total HpCDD	50			132			17.6			8.072 U		
Total TCDF	10			1.1 U			0.8 U			5.709 U		
Total PeCDF	50			2.5			3.4			3.375 U		
Total HxCDF	50			21.3			17.3			4.447 U		
Total HpCDF	50			49.3			26.4			4.145 U		

Notes:

U -- The analyte was not detected at or above the associated reporting limit.

UJ -- Estimated reporting limit.

J -- Estimated value.

B -- The analyte was detected in the associated laboratory blank in addition to the sample.

EMPC -- Estimated maximum possible concentration.

**Table A-10.** Dioxin TEQ calculations with WHO-TEF for June 2002 GW samples

Analyte	EPA 1613 Minimum Quantitation		W-24			W-25			W-26		
	Limit (pg/L)	WHO TEF	6/6/02	1/2 reporting limit	TEQ calc	6/6/02	1/2 reporting limit	TEQ calc	6/6/02	1/2 reporting limit	TEQ calc
2,3,7,8-TCDD	10	1.0	2.3 J	-	2.3	3.5 J	-	3.5	1.3 U	0.65	0.65
1,2,3,7,8-PeCDD	50	1.0	3.6 J EMPC	-	3.6	9.6 J	-	9.6	1 U	0.5	0.5
1,2,3,4,7,8-HxCDD	50	0.1	3.1 J EMPC	-	0.31	12.5 J	-	1.25	1.1 U	0.55	0.055
1,2,3,6,7,8-HxCDD	50	0.1	3.8 J	-	0.38	14.4 J	-	1.44	1.1 U	0.55	0.055
1,2,3,7,8,9-HxCDD	50	0.1	3.7 J EMPC	-	0.37	15.2 J	-	1.52	1.1 U	0.55	0.055
1,2,3,4,6,7,8-HpCDD	50	0.01	6.6 J	-	0.066	13.5 J	-	0.135	13.3 J	-	0.133
OCDD	100	0.0001	69.6 JB	-	0.00696	41.4 JB	-	0.00414	303	-	0.0303
2,3,7,8-TCDF	10	0.1	1.7 J EMPC	-	0.17	3.6 J	-	0.36	0.9 U	0.45	0.045
1,2,3,7,8-PeCDF	50	0.05	3.8 J EMPC	-	0.19	10.4 J	-	0.52	0.9 U	0.45	0.0225
2,3,4,7,8-PeCDF	50	0.5	3.4 J EMPC	-	1.7	13.8 J	-	6.9	0.9 U	0.45	0.225
1,2,3,4,7,8-HxCDF	50	0.1	3.4 J	-	0.34	13.5 J	-	1.35	0.8 U	0.4	0.04
1,2,3,6,7,8-HxCDF	50	0.1	3.3 J	-	0.33	12.2 J	-	1.22	0.8 U	0.4	0.04
1,2,3,7,8,9-HxCDF	50	0.1	4.3 J	-	0.43	13.8 J	-	1.38	0.9 U	0.45	0.045
2,3,4,6,7,8-HxCDF	50	0.1	3.3 J	-	0.33	14.1 J	-	1.41	0.9 U	0.45	0.045
1,2,3,4,6,7,8-HpCDF	50	0.01	3.6 J EMPC	-	0.036	14.5 J	-	0.145	3 J	-	0.03
1,2,3,4,7,8,9-HpCDF	50	0.01	4.5 J	-	0.045	17.7 J	-	0.177	1.2 U	0.6	0.006
OCDF	100	0.0001	8.3 J	-	0.00083	29.3 J	-	0.00293	9.6 J	-	0.00096
<b>Total TEQ</b>					<b>10.60479</b>			<b>30.91407</b>			<b>1.97776</b>
Total TCDD	10		2.3			3.5			1.3 U		
Total PeCDD	50		3.6 EMPC			9.6			1 U		
Total HxCDD	50		3.8			42.1			1.1 U		
Total HpCDD	50		6.6			13.5			27.7		
Total TCDF	10		1.7 EMPC			3.6			0.9 U		
Total PeCDF	50		7.3 EMPC			24.2			0.9 U		
Total HxCDF	50		14.3			53.6			1.8		
Total HpCDF	50		4.5			32.2			3		

Notes:

- U -- The analyte was not detected at or above the reporting limit.
- UJ -- Estimated reporting limit.
- J -- Estimated value.
- B -- The analyte was detected in the associated sample.
- EMPC -- Estimated maximum possible concentration.

**Table A-10.** Dioxin TEQ calculations with WHO-TEF for GW samples prior to June 2002

Analyte	EPA		W-13S			W-23		
	Minimum Quantitation Limit (pg/L)	WHO TEF	4/6/2001	1/2 reporting limit	TEQ calc	3/3/2001	1/2 reporting limit	TEQ calc
2,3,7,8-TCDD	10	1.0	1.3 U	0.65	0.65	1.2 U	0.6	0.6
1,2,3,7,8-PeCDD	50	1.0	2 U	1	1	1.1 U	0.55	0.55
1,2,3,4,7,8-HxCDD	50	0.1	1.8 U	0.9	0.09	1.4 U	0.7	0.07
1,2,3,6,7,8-HxCDD	50	0.1	1.8 U	0.9	0.09	9.8 J	-	0.98
1,2,3,7,8,9-HxCDD	50	0.1	1.6 U	0.8	0.08	1.3 U	0.65	0.065
1,2,3,4,6,7,8-HpCDD	50	0.01	17 J	-	0.17	110	-	1.1
OCDD	100	0.0001	110 B	-	0.011	820	-	0.082
2,3,7,8-TCDF	10	0.1	3.8 J	-	0.38	1 U	0.5	0.05
1,2,3,7,8-PeCDF	50	0.05	2.2 U	1.1	0.055	1.2 U	0.6	0.03
2,3,4,7,8-PeCDF	50	0.5	1.4 U	0.7	0.35	1.4 U	0.7	0.35
1,2,3,4,7,8-HxCDF	50	0.1	1.7 U	0.85	0.085	1.6 U	0.8	0.08
1,2,3,6,7,8-HxCDF	50	0.1	1.1 U	0.55	0.055	2.9 I	-	0.29
1,2,3,7,8,9-HxCDF	50	0.1	1.1 U	0.55	0.055	1.4 U	0.7	0.07
2,3,4,6,7,8-HxCDF	50	0.1	1.6 U	0.8	0.08	2.4 U	1.2	0.12
1,2,3,4,6,7,8-HpCDF	50	0.01	2.2 U	1.1	0.011	81	-	0.81
1,2,3,4,7,8,9-HpCDF	50	0.01	2.4 U	1.2	0.012	4 U	2	0.02
OCDF	100	0.0001	10 U	5	0.0005	120	-	0.012
<b>Total TEQ</b>					<b>3.1745</b>			<b>5.279</b>
Total TCDD	10		1.3 U			1.2 U		
Total PeCDD	50		2 U			1.1 U		
Total HxCDD	50		1.7 U			41 J		
Total HpCDD	50		31 J			200		
Total TCDF	10		3.8 J			1 U		
Total PeCDF	50		1.8 U			16 U		
Total HxCDF	50		1.4 U			110		
Total HpCDF	50		8 J			250		

Notes:

U -- The analyte was not detected at or above the associated reporting limit.

UJ -- Estimated reporting limit.

J -- Estimated value.

B -- The analyte was detected in the associated laboratory blank in addition to the sample.

EMPC -- Estimated maximum possible concentration.