APPENDIX H

BASELINE RISK ASSESSMENT ATTACHMENTS

Contents

Air Modeling Results

TOOELE SOUTH SITES PM_{10} MODELING RESULTS

Site	Site Area (m^2)	Source Area Dimension(s) (m)	Off-Site Resident Annual Average ($\mu g/m^3$)	On-Site Worker Annual Average ($\mu g/m^3$)	Future On-Site Resident Annual Maximum ($\mu g/m^3$)		Maximum Trench Length (m)	Area of Exposed Soils (m^2)	Construction Worker Monthly Maximum ($\mu g/m^3$)
					5' ht	2' ht			
Fuel Spill	20,200	50, 70, 80, 80	N/A	N/A	N/A	N/A	200	2,600	44
UST Site	6,240	79	0.01	3.5	21	25	700	9,100	67
3X Yard Current Future	484 2,080	22 22, 40	0.00075 N/A	0.75 N/A	7.5 15	16 30	20	260	13
Drainage Ditch	13,500	82, 82	0.02	7	27	33	200	2,600	44
Chemical Unload	4,230	46, 46	0.0065	0.85	15	30	160	2,080	40
Pavement Perimeter	3,480	59	0.0055	3.5	19	23	100	1,300	34
NW Wastewater Lagoons	2,700	30, 30, 30	0.0081	0.35	17	34	100	1,300	34
SW Wastewater Lagoon	2,500	50	0.0071	0.40	16	32	50	650	20
Boiler Blowdown	1,100	33	0.0010	1.5	12	24	N/A	N/A	N/A
#17 Drum Storage	960	31	0.0011	1.5	12	24	44	570	20
#17 Fuel Spill	360	19	0.00037	0.5	6	13	27	350	N/A

THIS PAGE INTENTIONALLY LEFT BLANK

TOOELE SOUTH SITES VOC MODELING RESULTS

Site/Chemical	Soil or Water VOC Concentration (ppm)	VOC Emission Rate ($g/m^2/sec$)	Off-Site Resident Annual Average ($\mu g/m^3$)	On-Site Worker Annual Average ($\mu g/m^3$)	Future On-Site Resident Annual Maximum ($\mu g/m^3$)		Construction Worker Monthly Maximum ($\mu g/m^3$)	Future On-Site Cattle Annual Average ($\mu g/m^3$)
					5' ht	2' ht		
Fuel Spill								
1,2-dimethylbenzene	0.66	7.40E-10					1.60E-03	
1,3-dimethylbenzene	0.50	5.30E-10					1.20E-03	
ethylbenzene	0.36	4.50E-10					9.80E-04	
methylene chloride	0.035	3.30E-10					7.30E-04	
benzene	0.046	1.90E-10					4.20E-04	
1,1,1,2-tetrachloroethane	0.043	4.20E-10					9.20E-04	
Drainage Ditch								
1,2-dichlorobenzene	0.020	9.20E-12					2.00E-05	
Chemical Unloading Area								
chloroform	0.041	2.70E-10					5.40E-10	
Pavement Perimeter Site								
MIBK	0.019	8.60E-12	1.20E-09	7.30E-07	4.00E-06	4.80E-06		1.50E-04
2-hexanone	0.011		2.40E-09	1.50E-06	8.00E-06	9.50E-06		NA
Wastewater Lagoons								
Lagoons 1-3 acetone	0.014	4.20E-07	1.70E-04	7.5E-03			7.10E-01	
Lagoon 4 acetone	0.094	2.80E-07	1.00E-04	5.5E-03			2.80E-01	
Boiler Blowdown								
methylene chloride	**0.011**	**3.10E-08**	**1.60E-06**	**2.40E-03**				
chloromethane	**0.0074**	**1.10E-08**	**1.10E-06**	**1.60E-03**				
#17 Drum Storage								
toluene	**0.021**	**4.90E-11**					**4.90E-05**	
chlorobenzene	**0.023**	**3.10E-11**					**3.10E-05**	
1,1,1-trichloroethane	0.021	9.30E-11					9.30E-05	
1,3-dimethylbenzene	0.016	1.70E-11					1.70E-05	
benzene	0.023	9.50E-11					9.50E-05	
1,2-dimethylbenzene	0.080	8.90E-11					8.90E-05	
#17 Fuel Spill								
1,2-dimethylbenzene	0.014	4.60E-12	8.50E-11	1.15E-07	1.35E-06	2.95E-06		1.15E-07
toluene	0.015	1.00E-11	1.85E-10	2.55E-07	3.05E-06	6.50E-06		2.55E-07

Transfer Factors for Plants, Beef, and Milk

Transfer Factors for Plants, Beef, and Milk

Chemical	Transfer (Uptake) Factors[a]							
	Plants (kg plant/kg soil)[b]						Beef[c] (d/kg)	Milk[d] (d/L)
	Potatoes	Carrots	Tomatoes	Lettuce	Beans/Peas	Forage		
Arsenic	1.5E-03	7.2E-04	3.6E-04	2.0E-03	1.7E-03	4.0E-02	1.3E-03	3.0E-05
Beryllium	3.8E-04	1.8E-04	9.0E-05	5.0E-04	4.2E-04	1.0E-02	1.0E-03	9.0E-07
Chromium	1.1E-03	5.4E-04	2.7E-04	3.8E-04	1.3E-03	7.5E-03	1.9E-03	1.4E-05
Copper	6.3E-02	3.0E-02	1.5E-02	2.0E-02	7.0E-02	4.0E-01	1.0E-02	1.5E-03
Lead	8.0E-04	3.8E-04	5.4E-04	2.9E-04	2.5E-03	5.8E-03	6.7E-05	4.9E-05
Mercury	5.0E-02	2.4E-02	1.2E-02	4.5E-02	5.6E-02	9.0E-01	3.5E-04	1.1E-05
Nickel	1.5E-02	7.2E-03	3.6E-03	1.4E-02	1.7E-02	2.8E-01	6.0E-03	2.7E-05
Nitrate[e]	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	3.5E-03	1.7E-03	2.4E-04	8.5E-04	1.1E-03	1.7E-02	2.0E-04	6.0E-04
Zinc	1.5E-01	7.1E-02	5.4E-02	7.0E-02	2.5E-01	1.4E+00	1.0E-01	1.0E-02
1,2-Dimethylbenzene	1.0E+01	1.0E+01	3.7E-02	3.0E-02	1.7E-01	6.1E-01	3.3E-05	1.1E-05
4-Methylphenol	1.8E+00	1.8E+00	1.8E-01	1.5E-01	8.2E-01	2.9E+00	2.2E-06	6.9E-07
Bis(2-ethylhexyl)phthalate	1.8E+02	1.8E+02	2.6E-03	2.2E-03	1.2E-02	4.4E-02	3.2E-03	1.0E-03
Methyl isobutyl ketone	6.2E-01	6.2E-01	4.8E-01	4.0E-01	2.2E+00	7.8E+00	3.9E-07	1.2E-07
Toluene	5.8E+00	5.8E+00	6.1E-02	5.1E-02	2.9E-01	1.0E+00	1.4E-05	4.3E-06

[a] The transfer factors for forage are provided on a dry-weight basis; all other transfer factors are provided on a fresh-weight basis. See text for details of calculations.

[b] Metals values taken from NRC (1992). Potato/carrot values for organics calculated using the method of Topp *et al.* (1986). Other organic values calculated using the method of Travis and Arms (1988).

[c] Values for arsenic, chromium, lead, and mercury taken from Stevens (1992). Other metal values taken from NRC (1992). Values for organics calculated using the method of Travis and Arms (1988).

[d] Values for arsenic, chromium, lead, mercury, and nickel taken from Stevens (1991). Other metal values taken from NRC (1992). Values for organics were calculated using the method of Travis and Arms (1988).

[e] No transfer factors for nitrate into plants, beef, or milk could be located in the literature.

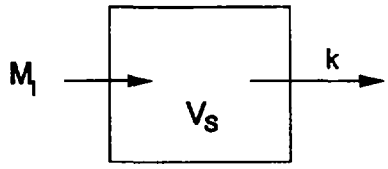
K:\TSI\DOCS\RFI-F2\TABLES\TFS.TAB

Approach to Estimating Average Air VOC Concentrations in a Shower Stall

Under both the current use and the future use scenarios in this assessment, receptor (human)exposure to airborne volatile organic chemials while showering was anticipated to be an important exposure route. Contained in this Appendix is the environmental fate model which was developed by RUST to quantify air levels of volatile chemicals in a shower.

This model has its basis in the 'shower model' developed by Foster and Chrostowski (1987). Their shower model estimates the rate of volatilization of organic chemicals from water droplets during a shower (M_I). Contaminants in droplets are assumed to be released through a process of molecular diffusion in both the water and air phases, which are modeled using two-film gas-liquid mass transfer theory.

These rates of volatilization for the organic chemicals were then used as input to a single-compartment first-order kinetic model. A constant rate of volatilization was assumed, along with a specified air exchange rate for the shower stall. Schematically, this compartment model can be represented as:



Where:

M_I = chemical volatilization rate in shower (mg/hr)
V_S = volume of air in shower stall (M^3)
k = air exchange rate in shower stall (hr^{-1})

The mathematical description of this first-order kinetic model can be written as:

$$\overline{C}_S = \frac{M_I (1 - e^{-k \cdot t_{1/2}})}{k \cdot V_S}$$

Where:

C_S = average air concentration of chemical in shower stall (mg/M^3)
$t_{1/2}$ = one-half of the length of time of a shower (hr)

The standard values for these inputs found in the literature are

V_S = 2.94 M^3 (ENVIRON, 1991)
k = 0.14 hr^{-1} ($t_{½}$ = 4.9 hours; 0.005 M^3/hr)
t = 0.16 hr

From Foster and Chrostowski (1987):

$$M_I = C_d \cdot CF \cdot t_d \cdot U$$

Where:

M_I = chemical volatilization rate (mg/hr)
C_d = chemical volatilization rate from water droplets (mg/M^3-hr)
CF = correction factor (0.001 M^3/L)
t_d = resident time of water droplet in shower (hr)
U = water usage rate during shower (L/hr)

with the following standard factors:

t_d = 0.00014 hr (0.5 seconds)
U = 680 L/hr (BOCA, 1978)

C_d in the above equation can be calculated using the following equation:

$$M_I = C_d \cdot CF \cdot t_d \cdot U$$

Where:

C_d = chemical volatilization rate from water droplets (mg/M^3-hr)
K_L = overall mass transfer coefficient for the chemical (cm/hr)
C_W = concentration of the chemical in water (mg/M^3)
A = specific interfacial surface area of doplet (cm^{-1}) [A = 6/d, where d mean shower droplet diameter (cm)]

with the following standard factor:

d = 0.1 cm (Foster and Chrostowski, 1987)

The resistance to transport in liquid and gaseous phases is commonly expressed by mass-transfer coefficients (k) in each phase. The overlal (or net) mass-transfer coefficient (K_L) for a chemnical is calculated by the following equation:

$$K_L = \left[\frac{1}{k_l} + \frac{RT}{H \cdot k_g} \right]^{-1} \left[\frac{T_C \cdot U_S}{T_S \cdot U_C} \right]^{-0.5}$$

Where:

K_L = overall mass-transfer coefficient (cm/hr)
K_l = liquid phase mass-transfer coefficient (cm/hr)
RT = constants (2.445 E-02 at-M^3/mol)
H = Henry's law constant for chemical (atm-M^3/mol)
k_g = gas phase mass-transfer coefficient (cm/hr)
T_C = calibration water temperature (° K)
T_S = shower water temperature (° K)
U_C = water viscosity at calibration temperature (cp)
U_S = water viscosity at shower temperature (cp)

Standard values from the literature are (ENVIRON, 1991):

T_C = 293 ° K
T_S = 318 ° K
U_C = 1.002 cp
U_S = 0.596 cp

Typical values for K_l (20 cm/hr) and k_g (3000 cm/hr), measured for CO_2 and H_2O, respectively, can be used to estimate these parameters for an organic compound (X) according to the following equations:

$$k_g(X) = 3000 \, (18/MW_X)^{0.5}$$

$$k_l(X) = 20 \, (44/MW_X)^{0.5}$$

Where:

MW_X = molecular weight of chemical (g/mol)

A summary of the input parameters for the shower model is provided in Table 1.

Table 1
Summary of Input Parameters for Shower Model

Parameter	Input Variable	Source
Shower stall volume (V_S)	2.94 M^3	ENVIRON, 1991
Air exchange rate in shower stall (k)	0.14 hr^{-1}	Personal communication - Industrial Hygienist
Shower time	0.16 hr	??
Residence time of water droplet	0.00014 hr	Foster and Chrostowski, 1987
Water usage rate (U)	680 L/hr	BOCA, 1978
Chemical concentration in water (C_w)	mg/M^3	See Table ___
Interfacial surface area of water droplet	0.1 cm	Foster and Chrostowski, 1987
Henry's Law Constant for chemical (H)	atm-M^3/mol	See Table ___
Calibration temperature (T_C)	293 ° K	ENVIRON, 1991
Shower water temperature	318 ° K	ENVIRON, 1991
Water Viscosity at T_C (U_C)	1.002 cp	ENVIRON, 1991
Water viscosity at T_S (U_S)	0.596 cp	ENVIRON, 1991
Molecular weight of chemical (MW)		
Toluene	92.14 g/mol	Montgomery and Welkom, 1990
Benzene	78.11 g/mol	
1,1,1-Trichloroethane	133.40 g/mol	
Trichloroethylene	131.39 g/mol	
Trichlorofluoromethane	137.37 g/mol	
Chloroform	119.38 g/mol	
Acetone	58.08 g/mol	
Tetrachloroethylene	165.83 g/mol	

References for Shower Model:

BOCA (Building Officials and Code Administrators). 1978. The BOCA Basic Plumbing Code/1978. BOCA International, Inc., Homewood, IL.

ENVIRON. 1991. Phase I Area-wide Risk Assessment for the Peak Oil, Bay Drums and Reeves Southeastern Superfund Sites. Tampa, FL.

Foster, S.A. and P.C. Chrostowski. 1987. Inhalation exposures to volatile organic contaminants in the shower. Paper No. 87-42.6 APCA 80th Annual Meeting, New York.

Montgomery, J.H. and L.M. Welkom. 1990. Groundwater Chemicals Desk Reference. Lewis Publishers, Chelsea, Michigan.

U.S. EPA. 1989. Risk Assessment Guidance for Superfund (RAGS). Volume. I. Human Health Evaluation Manual. (Part A). EPA/540/1-89/002.

Groundwater Modeling

Appendix
Description of GWM-2 spreadsheet

The GWM-2 spreadsheet was developed to assist in setting contaminant source parameters in the MULTIMED simulations of saturated zone transport only. An example of this spreadsheet is included in this Appendix. The following data are required for input in order to calculate several parameters which are either helpful or necessary for the MULTIMED model set-up:

Aquifer Thickness
Aquifer Porosity
Aquifer Hydraulic Conductivity
Local Hydraulic Gradient
Regional Hydraulic Gradient
Soil Bulk Density
Distance to Offsite Receptor
Plume Width and Length
Maximum Contaminant Concentration
Contaminant Distribution Coefficient
Contaminant Half-Life
Pulse Duration
Source Concentration
Infiltration Rate

These parameters represent the same input data for PREMED, the precursor for MULTIMED. Based on these input parameters, in addition to providing other important information, GWM-2 calculates the mass of contaminant contained in the plume (Pm). The mass of contaminant present in the plume is computed based on maximum concentration, plume area, thickness and aquifer porosity according to the following equation:

$P_m = 0.27 * C_{max} * P_v$ where:

P_m - mass of contaminant in a plume
C_{max} - maximum contaminant concentration
P_v - volume of water within a plume volume

Coefficient 0.27 represents the assumption, that an average concentration in a plume will be less than an average height of the pyramid which can be used to roughly represent the concentration distribution within the plume (average pyramid height = 1/3 * maximum pyramid height).

Source parameters in MULTIMED have to be set such that the mass delivered from the source equals the estimated mass present in the plume. There are four separate source parameters in MULTIMED which define the source configuration: source area (Sa), pulse duration (St), source concentration (Sc) and infiltration rate (Sq). GWM-2 spreadsheet computes the source area as equal to the plume area. The spreadsheet user selects the values

of the other source parameters, such that the mass balance is preserved (i.e., the Pm equals the mass of contaminant delivered by the source (Sm)).

For metals and other contaminants which are not expected to degrade (i.e., the half-life equals zero), the pulse duration is set to 25 years. This amount of time is considered to be a conservative estimate for the amount of time the contaminant source was added to the subsurface. For contaminants which are expected to degrade, the pulse duration is set to 0.01 years, in order to simulate a large slug of the contaminant being introduced into the system in a short period of time. Once again, this is considered to be conservative, since a large slug would not allow the degradation of the contaminant over a long period of time.

The infiltration rate remains constant, according to the output data provided by PRZM. As result, both Sq and St are set, only Sc can be altered to produce a value of Sm which is equal to Pm. Once the Sc is established, the value is used as input in MULTIMED. Initially the contaminant concentration 1 meter downgradient of the site is determined. If the concentration is less than the actual maximum groundwater concentration based on the 1993 data, the Sc was increased and the simulation repeated in order to have the concentration calculated by MULTIMED equal to the 1993 data.

If the Sc value produced a concentration larger than the groundwater data value, then Sc was not altered for determining the downgradient contaminant concentration, once again producing a more conservative estimate.

Example of GWM-2 Spreadsheet

GROUND WATER CONTAMINANT MODELING - PLUME CALCULATIONS
ESTIMATION OF CONTAMINANT SOURCE PARAMETERS
GWM-2.WK3" spreadsheet by Peter Rzepecki, RUST E & I, 1994

Site Name : TEAD-S, SWMU 13
Analyte : BENZENE

Aquifer parameters

A th	=	6 [m]	(aquifer thickness)
A por	=	0.43 [-]	(aquifer porosity)
A K	=	2125 [cm/day]	(aquifer hydraulic conductivity)
A grad	=	0.001 [-]	(local hydraulic gradient)
A reg. grad	=	0.0005 [-]	(regional hydraulic gradient)
Bd	=	1.51 [g/cm^3]	(soil bulk density)
D	=	1500 [m]	(distance to "Off Site Receptor Point")
C v	=	8 [m/year]	(contaminant travel velocity)
T t	=	181 [years]	(contaminant travel time to "OSRP")

Plume parameters

P w	=	200 [m]	(plume width)
P l	=	200 [m]	(plume length)
C max	=	0.0330 [mg/l]	(max. contaminant concentration)
C avg	=	0.0088 [mg/l]	(avg. contaminant concentration)
Kd	=	0.0245 [ml/g]	(distribution coeff. - soil/water)
R	=	1.09 [-]	(retardation factor)
P v	=	103200 [m^3]	(volume of water within a plume)
P m	=	9.08E-01 [kg]	(mass of contaminant in a plume)

****

Source parameters estimation for MULTIMED simulation

D factor	=	3 [-]	(dilution factor - source/aquifer)
S a	=	28800 [m^2]	(source area)
k	=	0.000 [1/year]	
t 1/2	=	0 [years]	(cont. half life t, if not degrad. set to 0)
S t	=	25.00 [years]	(pulse duration)
S c	=	1.43E-02 [mg/l]	(source concentration)
S q	=	0.0877 [m/year]	(infiltration rate)
S m	=	9.03E-01 [kg]	(mass of contaminant delivered by source)

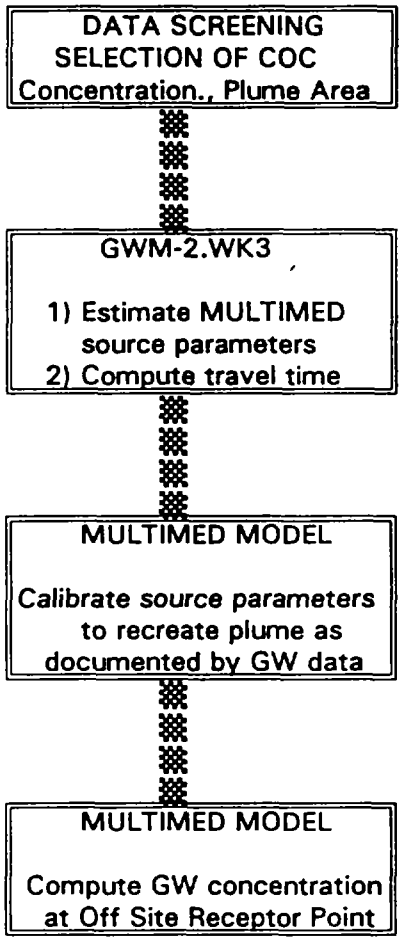
****

MASS BALANCE OK!!!

********** ********** ********** ********** ********** ********** ********** ********** **********

Flow Chart

MODELING PROCEDURE FLOW-CHART
I. GROUND WATER MODELING



Multimed Input Parameter Values

MULTIMED DATA INPUT SHEET

SITE NAME	=	TOOELE SOUTH - SWMU 13	
SIMULATION DATE	=	MAY 1994	
SIMULATION DESCRIPTION	=	MODELING ANION CONTAMINANTS IN GROUNDWATER	

AQUIFER SATURATED ZONE PARAMETERS	UNITS		F	F	NIT	NIT
Particle diameter	[cm]	=	not used	not used	not used	not used
Bulk density	[g/cc]	=	1.51	1.51	1.51	1.51
Aquifer thickness	[m]	=	6	6	6	6
Mixing zone depth	[m]	=	6	6	6	6
Aquifer porosity	[-]	=	0.43	0.43	0.43	0.43
Type of source for Satur. Zone module	[-]	=	Gaussian	Gaussian	Gaussian	Gaussian
Hydraulic conductivity	[m/yr]	=	7760	7760	7760	7760
Hydraulic gradient	[-]	=	0.001	0.0005	0.001	0.0005
Groundwater seep velocity	[m/yr]	=	derived	derived	derived	derived
Retardation coefficient	[-]	=	derived	derived	derived	derived
Longitudinal dispersivity	[m]	=	derived	derived	derived	derived
Transverse dispersivity	[m]	=	derived	derived	derived	derived
Vertical dispersivity	[m]	=	6	6	6	6
Temperature of aquifer	[C]	=	13.5	13.5	13.5	13.5
pH	[-]	=	7.2	7.2	7.2	7.2
Organic carbon content	[fract.]	=	0.0005	0.0005	0.0005	0.0005
Receptor distance from site	[m]	=	1	1300	1	1300
Angle off center	[degree]	=	0	0	0	0
Z-distance from watertable	[fract.]	=	0	0	0	0
CONTAMINANT SOURCE DATA	**UNITS**					
Infiltration rate	[m/yr]	=	0.088	0.088	0.088	0.088
Area of waste disposal unit	[m^2]	=	41472	41472	52488	52488
Duration of pulse	[yr]	=	25	25	25	25
Spread of contaminant source	[m]	=	derived	derived	derived	derived
Recharge rate	[m/yr]	=	0.088	0.088	0.088	0.088
Source decay constant	[1/yr]	=	0	0	0	0
Initial conc. at landfill	[mg/l]	=	20.69	20.69	16.00	16.00
Length scale of facility	[m]	=	derived	derived	derived	derived
Width scale of facility	[m]	=	derived	derived	derived	derived
CHEMICAL PROPERTIES OF CONTAMINANT	**UNITS**					
Solid phase decay coefficient	[1/yr]	=	0	0	0	0
Dissolved phase decay coefficient	[1/yr]	=	0	0	0	0
Overall chem decay coefficient	[1/yr]	=	0	0	0	0
Acid catalyhydrol rate	[l/M-yr]	=	0	0	0	0
Neutral hydrol rate cons	[1/yr]	=	0	0	0	0
Base catalyhydrol rate	[l/M-yr]	=	0	0	0	0
Reference temperature	[C]	=	0	0	0	0
Normalized Distrib. Coef (Koc)	[ml/g]	=	2	2	2	2
Distribution Coef (Kd)	[ml/g]	=	0.001	0.001	0.001	0.001
Biodegrad coef (sat zone)	[1/yr]	=	0	0	0	0
Air diffusion coef	[cm^2/s]	=	not act.	not act.	not act.	not act.
Ref temp. for air diffusion	[C]	=	not act.	not act.	not act.	not act.
Molecular weight	[g/mole]	=	not act.	not act.	not act.	not act.
Mole fraction of solute	[-]	=	not act.	not act.	not act.	not act.
Solute vapor pressure	[mm Hg]	=	not act.	not act.	not act.	not act.
Henry's Law Cons	[atm*m^3/	=	not act.	not act.	not act.	not act.
MCL or SMCL	[mg/l]	=	4	4	NA	NA
Maximum Receptor Point concentration	[ppm]	=	3.80E+01	5.66E-02	1.65E+01	5.50E-02
Time of maximum Recept. Pt. concentration	[years]	=	NA	80	NA	81
File Name		=	TS-F1	TS-F2	NITR-1	NITR-2

NA - NOT APPLICABLE

F	=	FLUORIDE
NIT	=	NITRITE/NITRATE (NONSPECIFIC)

MULTIMED DATA INPUT SHEET

SITE NAME	=	TOOELE SOUTH - SWMU 13
SIMULATION DATE	=	MAY 1994
SIMULATION DESCRIPTION	=	MODELING EXPLOSIVE CONTAMINANTS IN GROUNDWATER

AQUIFER SATURATED ZONE PARAMETERS	UNITS		135TNB	135TNB	13DNB	13DNB	246TNT	246TNT	24DNT	24DNT
Particle diameter	[cm]	=	not used	not used	not used	not used	not used	not used	not used	not used
Bulk density	[g/cc]	=	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51
Aquifer thickness	[m]	=	6	6	6	6	6	6	6	6
Mixing zone depth	[m]	=	6	6	6	6	6	6	6	6
Aquifer porosity	[-]	=	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Type of source for Satur. Zone module	[-]	=	Gaussian	Gaussian	Gaussian	Gaussian	Gaussian	Gaussian	Gaussian	Gaussian
Hydraulic conductivity	[m/yr]	=	7760	7760	7760	7760	7760	7760	7760	7760
Hydraulic gradient	[-]	=	0.001	0.0005	0.001	0.0005	0.001	0.0005	0.001	0.0005
Groundwater seep velocity	[m/yr]	=	derived	derived	derived	derived	derived	derived	derived	derived
Retardation coefficient	[-]	=	derived	derived	derived	derived	derived	derived	derived	derived
Longitudinal dispersivity	[m]	=	derived	derived	derived	derived	derived	derived	derived	derived
Transverse dispersivity	[m]	=	derived	derived	derived	derived	derived	derived	derived	derived
Vertical dispersivity	[m]	=	6	6	6	6	6	6	6	6
Temperature of aquifer	[C]	=	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5
pH	[-]	=	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
Organic carbon content	[fract.]	=	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Receptor distance from site	[m]	=	1	1300	1	1300	1	1300	1	1300
Angle off center	[degree]	=	0	0	0	0	0	0	0	0
Z-distance from watertable	[fract.]	=	0	0	0	0	0	0	0	0
CONTAMINANT SOURCE DATA	**UNITS**									
Infiltration rate	[m/yr]	=	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088
Area of waste disposal unit	[m^2]	=	10368	10368	10368	10368	10368	10368	10368	10368
Duration of pulse	[yr]	=	25	25	25	25	25	25	25	25
Spread of contaminant source	[m]	=	derived	derived	derived	derived	derived	derived	derived	derived
Recharge rate	[m/yr]	=	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088
Source decay constant	[1/yr]	=	0	0	0	0	0	0	0	0
Initial conc. at landfill	[mg/l]	=	5.32E-03	5.32E-03	1.04E-03	1.04E-03	8.06E-03	8.06E-03	0.010	0.010
Length scale of facility	[m]	=	derived	derived	derived	derived	derived	derived	derived	derived
Width scale of facility	[m]	=	derived	derived	derived	derived	derived	derived	derived	derived
CHEMICAL PROPERTIES OF CONTAMINANT	**UNITS**									
Solid phase decay coefficient	[1/yr]	=	0	0	0	0	0	0	0	0
Dissolved phase decay coefficient	[1/yr]	=	0	0	0	0	0	0	0	0
Overall chem decay coefficient	[1/yr]	=	0	0	0	0	0	0	0	0
Acid cataly hydrol rate	[l/M-yr]	=	0	0	0	0	0	0	0	0
Neutral hydrol rate cons	[1/yr]	=	0	0	0	0	0	0	0	0
Base cataly hydrol rate	[l/M-yr]	=	0	0	0	0	0	0	0	0
Reference temperature	[C]	=	0	0	0	0	0	0	0	0
Normalized Distrib. Coef (Koc)	[ml/g]	=	104	104	25	25	1100	1100	62	62
Distribution Coef (Kd)	[ml/g]	=	0.052	0.052	0.0125	0.0125	0.55	0.55	0.031	0.031
Biodegrad coef (sat zone)	[1/yr]	=	0	0	0	0	0	0	0	0
Air diffusion coef	[cm^2/s]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Ref temp. for air diffusion	[C]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Molecular weight	[g/mole]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Mole fraction of solute	[-]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Solute vapor pressure	[mm Hg]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Henry's Law Cons	[atm*m^3/	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
MCL or SMCL	[mg/l]	=	NA	NA	NA	NA	NA	NA	NA	NA
Maximum Receptor Point concentration	[ppm]	=	4.90E-03	3.15E-06	9.56E-04	6.87E-07	7.39E-03	2.0E-06	9.19E-03	6.27E-06
Time of maximum Recept. Pt. concentration	[years]	=	NA	90	NA	80	NA	210	NA	90
File Name		=	TS-TNB1	TS-TNB2	TS-DNB1	TS-DNB2	TS-TNT1	TS-TNT2	TS-24D1	TS-24D2

NA - NOT APPLICABLE

135TNB	=	135 TRINITROBENZENE
13DNB	=	13 DINITROBENZENE
246TNT	=	246 TRINITROTOLUENE
24DNT	=	24 DINITROTOLUENE

MULTIMED DATA INPUT SHEET

SITE NAME	=	TOOELE SOUTH - SWMU 13
SIMULATION DATE	=	MAY 1994
SIMULATION DESCRIPTION	=	MODELING EXPLOSIVE CONTAMINANTS IN GROUNDWATER, CONTINUED 1

AQUIFER SATURATED ZONE PARAMETERS	UNITS		26DNT	26DNT	3NT	3NT	HMX	HMX	NB	NB
Particle diameter	[cm]	=	not used	not used	not used	not used	not used	not used	not used	not used
Bulk density	[g/cc]	=	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51
Aquifer thickness	[m]	=	6	6	6	6	6	6	6	6
Mixing zone depth	[m]	=	6	6	6	6	6	6	6	6
Aquifer porosity	[-]	=	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Type of source for Satur. Zone module	[-]	=	Gaussian	Gaussian	Gaussian	Gaussian	Gaussian	Gaussian	Gaussian	Gaussian
Hydraulic conductivity	[m/yr]	=	7760	7760	7760	7760	7760	7760	7760	7760
Hydraulic gradient	[-]	=	0.001	0.0005	0.001	0.0005	0.001	0.0005	0.001	0.0005
Groundwater seep velocity	[m/yr]	=	derived	derived	derived	derived	derived	derived	derived	derived
Retardation coefficient	[-]	=	derived	derived	derived	derived	derived	derived	derived	derived
Longitudinal dispersivity	[m]	=	derived	derived	derived	derived	derived	derived	derived	derived
Transverse dispersivity	[m]	=	derived	derived	derived	derived	derived	derived	derived	derived
Vertical dispersivity	[m]	=	6	6	6	6	6	6	6	6
Temperature of aquifer	[C]	=	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5
pH	[-]	=	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
Organic carbon content	[fract.]	=	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Receptor distance from site	[m]	=	1	1300	1	1300	1	1300	1	1300
Angle off center	[degree]	=	0	0	0	0	0	0	0	0
Z-distance from watertable	[fract.]	=	0	0	0	0	0	0	0	0
CONTAMINANT SOURCE DATA	**UNITS**									
Infiltration rate	[m/yr]	=	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088
Area of waste disposal unit	[m^2]	=	10368	10368	7200	7200	7200	7200	10368	10368
Duration of pulse	[yr]	=	25	25	25	25	25	25	25	25
Spread of contaminant source	[m]	=	derived	derived	derived	derived	derived	derived	derived	derived
Recharge rate	[m/yr]	=	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088
Source decay constant	[1/yr]	=	0	0	0	0	0	0	0	0
Initial conc. at landfill	[mg/l]	=	2.66E-02	2.66E-02	2.50E-02	2.50E-02	4.45E-02	4.45E-02	4.800	4.800
Length scale of facility	[m]	=	derived	derived	derived	derived	derived	derived	derived	derived
Width scale of facility	[m]	=	derived	derived	derived	derived	derived	derived	derived	derived
CHEMICAL PROPERTIES OF CONTAMINANT	**UNITS**									
Solid phase decay coefficient	[1/yr]	=	0	0	0	0	0	0	0	0
Dissolved phase decay coefficient	[1/yr]	=	0	0	0	0	0	0	0	0
Overall chem decay coefficient	[1/yr]	=	0	0	0	0	0	0	0	0
Acid cataly hydrol rate	[l/M-yr]	=	0	0	0	0	0	0	0	0
Neutral hydrol rate cons	[1/yr]	=	0	0	0	0	0	0	0	0
Base cataly hydrol rate	[l/M-yr]	=	0	0	0	0	0	0	0	0
Reference temperature	[C]	=	0	0	0	0	0	0	0	0
Normalized Distrib. Coef (Koc)	[ml/g]	=	52	52	1100	1100	0	0	229	229
Distribution Coef (Kd)	[ml/g]	=	0.026	0.026	0.55	0.55	0	0	0.1145	0.1145
Biodegrad coef (sat zone)	[1/yr]	=	0	0	0	0	0	0	0	0
Air diffusion coef	[cm^2/s]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Ref temp. for air diffusion	[C]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Molecular weight	[g/mole]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Mole fraction of solute	[-]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Solute vapor pressure	[mm Hg]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Henry's Law Cons	[atm*m^3/	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
MCL or SMCL	[mg/l]	=	NA	NA	NA	NA	NA	NA	NA	NA
Maximum Receptor Point concentration	[ppm]	=	2.45E-02	1.68E-05	1.91E-02	8.40E-06	1.70E-02	2.10E-05	3.04E-01	1.10E-17
Time of maximum Recept. Pt. concentration	[years]	=	NA	90	NA	209	NA	80	NA	26
File Name		=	TS-26D1	TS-26D2	TS-3NT1	TS-3NT2	HMX-1	HMX-2	NITROB-1	NITROB-2

NA - NOT APPLICABLE

26DNT	=	26 DINITROTOLUENE
3NT	=	3 NITROTOLUENE
HMX	=	CYCLOTETRAMETHYLENETETRANITRAMINE
NB	=	NITROBENZENE

MULTIMED DATA INPUT SHEET

SITE NAME	=	TOOELE SOUTH - SWMU 13
SIMULATION DATE	=	MAY 1994
SIMULATION DESCRIPTION	=	MODELING EXPLOSIVE CONTAMINANTS IN GROUNDWATER, CONTINUED 2

AQUIFER SATURATED ZONE PARAMETERS	UNITS		RDX	RDX
Particle diameter	[cm]	=	not used	not used
Bulk density	[g/cc]	=	1.51	1.51
Aquifer thickness	[m]	=	6	6
Mixing zone depth	[m]	=	6	6
Aquifer porosity	[-]	=	0.43	0.43
Type of source for Satur. Zone module	[-]	=	Gaussian	Gaussian
Hydraulic conductivity	[m/yr]	=	7780	7780
Hydraulic gradient	[-]	=	0.001	0.0005
Groundwater seep velocity	[m/yr]	=	derived	derived
Retardation coefficient	[-]	=	derived	derived
Longitudinal dispersivity	[m]	=	derived	derived
Transverse dispersivity	[m]	=	derived	derived
Vertical dispersivity	[m]	=	6	6
Temperature of aquifer	[C]	=	13.5	13.5
pH	[-]	=	7.2	7.2
Organic carbon content	[fract.]	=	0.0005	0.0005
Receptor distance from site	[m]	=	1	1300
Angle off center	[degree]	=	0	0
Z-distance from watertable	[fract.]	=	0	0
CONTAMINANT SOURCE DATA	**UNITS**			
Infiltration rate	[m/yr]	=	0.088	0.088
Area of waste disposal unit	[m^2]	=	10368	10368
Duration of pulse	[yr]	=	25	25
Spread of contaminant source	[m]	=	derived	derived
Recharge rate	[m/yr]	=	0.088	0.088
Source decay constant	[1/yr]	=	0	0
Initial conc. at landfill	[mg/l]	=	7.17E-02	7.17E-02
Length scale of facility	[m]	=	derived	derived
Width scale of facility	[m]	=	derived	derived
CHEMICAL PROPERTIES OF CONTAMINANT	**UNITS**			
Solid phase decay coefficient	[1/yr]	=	0	0
Dissolved phase decay coefficient	[1/yr]	=	0	0
Overall chem decay coefficient	[1/yr]	=	0	0
Acid cataly hydrol rate	[l/M-yr]	=	0	0
Neutral hydrol rate cons	[1/yr]	=	0	0
Base cataly hydrol rate	[l/M-yr]	=	0	0
Reference temperature	[C]	=	0	0
Normalized Distrib. Coef (Koc)	[ml/g]	=	11	11
Distribution Coef (Kd)	[ml/g]	=	0.0056	0.0056
Biodegrad coef (sat zone)	[1/yr]	=	0	0
Air diffusion coef	[cm^2/s]	=	not act.	not act.
Ref temp. for air diffusion	[C]	=	not act.	not act.
Molecular weight	[g/mole]	=	not act.	not act.
Mole fraction of solute	[-]	=	not act.	not act.
Solute vapor pressure	[mm Hg]	=	not act.	not act.
Henry's Law Cons	[atm*m^3/	=	not act.	not act.
MCL or SMCL	[mg/l]	=	NA	NA
Maximum Receptor Point concentration	[ppm]	=	3.30E-02	4.90E-05
Time of maximum Recept. Pt. concentration	[years]	=	NA	83
File Name		=	RDX-1	RDX-2

NA - NOT APPLICABLE

RDX = CYCLONITE

MULTIMED DATA INPUT SHEET

SITE NAME = TOOELE SOUTH - SWMU 13
SIMULATION DATE = MAY 1994
SIMULATION DESCRIPTION = MODELING METAL CONTAMINANTS IN GROUNDWATER

AQUIFER SATURATED ZONE PARAMETERS	UNITS		As	As	Be	Be	Cd	Cd	Se	Se
Particle diameter	[cm]	=	not used	not used	not used	not used	not used	not used	not used	not used
Bulk density	[g/cc]	=	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51
Aquifer thickness	[m]	=	6	6	6	6	6	6	6	6
Mixing zone depth	[m]	=	6	6	6	6	6	6	6	6
Aquifer porosity	[-]	=	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Type of source for Satur. Zone module	[-]	=	Gaussian	Gaussian	Gaussian	Gaussian	Gaussian	Gaussian	Gaussian	Gaussian
Hydraulic conductivity	[m/yr]	=	7760	7760	7760	7760	7760	7760	7760	7760
Hydraulic gradient	[-]	=	0.001	0.0005	0.001	0.0005	0.001	0.0005	0.001	0.0005
Groundwater seep velocity	[m/yr]	=	derived	derived	derived	derived	derived	derived	derived	derived
Retardation coefficient	[-]	=	derived	derived	derived	derived	derived	derived	derived	derived
Longitudinal dispersivity	[m]	=	derived	derived	derived	derived	derived	derived	derived	derived
Transverse dispersivity	[m]	=	derived	derived	derived	derived	derived	derived	derived	derived
Vertical dispersivity	[m]	=	6	6	6	6	6	6	6	6
Temperature of aquifer	[C]	=	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5
pH	[-]	=	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
Organic carbon content	[fract.]	=	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Receptor distance from site	[m]	=	1	1300	1	1300	1	1300	1	1300
Angle off center	[degree]	=	0	0	0	0	0	0	0	0
Z-distance from watertable	[fract.]	=	0	0	0	0	0	0	0	0
CONTAMINANT SOURCE DATA	UNITS									
Infiltration rate	[m/yr]	=	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088
Area of waste disposal unit	[m^2]	=	52488	52488	7200	7200	16200	16200	11250	11250
Duration of pulse	[yr]	=	25	25	25	25	25	25	25	25
Spread of contaminant source	[m]	=	derived	derived	derived	derived	derived	derived	derived	derived
Recharge rate	[m/yr]	=	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088
Source decay constant	[1/yr]	=	0	0	0	0	0	0	0	0
Initial conc. at landfill	[mg/l]	=	0.53	0.53	0.143	0.143	0.10	0.10	0.439	0.439
Length scale of facility	[m]	=	derived	derived	derived	derived	derived	derived	derived	derived
Width scale of facility	[m]	=	derived	derived	derived	derived	derived	derived	derived	derived
CHEMICAL PROPERTIES OF CONTAMINANT	UNITS									
Solid phase decay coefficient	[1/yr]	=	0	0	0	0	0	0	0	0
Dissolved phase decay coefficient	[1/yr]	=	0	0	0	0	0	0	0	0
Overall chem decay coefficient	[1/yr]	=	0	0	0	0	0	0	0	0
Acid catalyhydrol rate	[l/M-yr]	=	0	0	0	0	0	0	0	0
Neutral hydrol rate cons	[1/yr]	=	0	0	0	0	0	0	0	0
Base catalyhydrol rate	[l/M-yr]	=	0	0	0	0	0	0	0	0
Reference temperature	[C]	=	0	0	0	0	0	0	0	0
Normalized Distnb. Coef (Koc)	[ml/g]	=	2000	2000	1300000	1300000	2600	2600	2400	2400
Distnbution Coef (Kd)	[ml/g]	=	1	1	650	650	1.3	1.3	1.2	1.2
Biodegrad coef (sat zone)	[1/yr]	=	0	0	0	0	0	0	0	0
Air diffusion coef	[cm^2/s]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Ref temp. for air diffusion	[C]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Molecular weight	[g/mole]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Mole fraction of solute	[-]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Solute vapor pressure	[mm Hg]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Henry's Law Cons	[atm*m^3/	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
MCL or SMCL	[mg/l]	=	0.05	0.05	0.004	0.004	0.005	0.005	0.05	0.05
Maximum Receptor Point concentration	[ppm]	=	1.100	4.25E-04	0.012	3.18E-08	1.90E-02	3.4E-08	0.439	6.59E-05
Time of maximum Recept. Pt. concentration	[years]	=	NA	320	NA	165000	NA	380	NA	380
File Name		=	TS-AS1	TS-AS2	TS-BE1	TS-BE2	TS-CD1	TS-CD2	TS-SE1	TS-SE2

NA - NOT APPLICABLE

MULTIMED DATA INPUT SHEET

SITE NAME	=	TOOELE SOUTH - SWMU 13
SIMULATION DATE	=	MAY 1994
SIMULATION DESCRIPTION	=	MODELING METAL CONTAMINANTS IN GROUNDWATER, CONTINUED

AQUIFER SATURATED ZONE PARAMETERS	UNITS		T1	T1
Particle diameter	[cm]	=	not used	not used
Bulk density	[g/cc]	=	1.51	1.51
Aquifer thickness	[m]	=	6	6
Mixing zone depth	[m]	=	6	6
Aquifer porosity	[-]	=	0.43	0.43
Type of source for Satur. Zone module	[-]	=	Gaussian	Gaussian
Hydraulic conductivity	[m/yr]	=	7760	7760
Hydraulic gradient	[-]	=	0.001	0.0005
Groundwater seep velocity	[m/yr]	=	derived	derived
Retardation coefficient	[-]	=	derived	derived
Longitudinal dispersivity	[m]	=	derived	derived
Transverse dispersivity	[m]	=	derived	derived
Vertical dispersivity	[m]	=	6	6
Temperature of aquifer	[C]	=	13.5	13.5
pH	[-]	=	7.2	7.2
Organic carbon content	[fract.]	=	0.0005	0.0005
Receptor distance from site	[m]	=	1	1300
Angle off center	[degree]	=	0	0
Z-distance from watertable	[fract.]	=	0	0

CONTAMINANT SOURCE DATA	UNITS			
Infiltration rate	[m/yr]	=	0.088	0.088
Area of waste disposal unit	[m^2]	=	18432	18432
Duration of pulse	[yr]	=	25	25
Spread of contaminant source	[m]	=	derived	derived
Recharge rate	[m/yr]	=	0.088	0.088
Source decay constant	[1/yr]	=	0	0
Initial conc. at landfill	[mg/l]	=	7.21	7.21
Length scale of facility	[m]	=	derived	derived
Width scale of facility	[m]	=	derived	derived

CHEMICAL PROPERTIES OF CONTAMINANT	UNITS			
Solid phase decay coefficient	[1/yr]	=	0	0
Dissolved phase decay coefficient	[1/yr]	=	0	0
Overall chem decay coefficient	[1/yr]	=	0	0
Acid catalyhydrol rate	[l/M-yr]	=	0	0
Neutral hydrol rate cons	[1/yr]	=	0	0
Base catalyhydrol rate	[l/M-yr]	=	0	0
Reference temperature	[C]	=	0	0
Normalized Distrib. Coef (Koc)	[ml/g]	=	3000000	3000000
Distribution Coef (Kd)	[ml/g]	=	1500	1500
Biodegrad coef (sat zone)	[1/yr]	=	0	0
Air diffusion coef	[cm^2/s]	=	not act.	not act.
Ref temp. for air diffusion	[C]	=	not act.	not act.
Molecular weight	[g/mole]	=	not act.	not act.
Mole fraction of solute	[-]	=	not act.	not act.
Solute vapor pressure	[mm Hg]	=	not act.	not act.
Henry's Law Cons	[atm*m^3/	=	not act.	not act.
MCL or SMCL	[mg/l]	=	0.002	0.002
Maximum Receptor Point concentration	[ppm]	=	0.421	1.76E-06
Time of maximum Recept. Pt. concentration	[years]	=	NA	380000
File Name		=	TS-TL1	TS-TL2

NA - NOT APPLICABLE

MULTIMED DATA INPUT SHEET

SITE NAME	=	TOOELE SOUTH - SWMU 13
SIMULATION DATE	=	MAY 1994
SIMULATION DESCRIPTION	=	MODELING SEMI-VOLATILE CONTAMINANTS IN GROUNDWATER

AQUIFER SATURATED ZONE PARAMETERS	UNITS		2CNAP	2CNAP	2MNAP	2MNAP	ANAPNE	ANAPNE	ANTRC	ANTRC
Particle diameter	[cm]	=	not used	not used	not used	not used	not used	not used	not used	not used
Bulk density	[g/cc]	=	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51
Aquifer thickness	[m]	=	6	6	6	6	6	6	6	6
Mixing zone depth	[m]	=	6	6	6	6	6	6	6	6
Aquifer porosity	[-]	=	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Type of source for Satur. Zone module	[-]	=	Gaussian	Gaussian	Gaussian	Gaussian	Gaussian	Gaussian	Gaussian	Gaussian
Hydraulic conductivity	[m/yr]	=	7760	7760	7760	7760	7760	7760	7760	7760
Hydraulic gradient	[-]	=	0.001	0.0005	0.001	0.0005	0.001	0.0005	0.001	0.0005
Groundwater seep velocity	[m/yr]	=	derived	derived	derived	derived	derived	derved	derved	derived
Retardation coefficient	[-]	=	derived	derived	derived	derived	derived	derved	derved	derved
Longitudinal dispersivity	[m]	=	derived	derived	derived	derived	derived	derved	derived	derived
Transverse dispersivity	[m]	=	derived	derived	derived	derived	derived	derved	derved	derived
Vertical dispersivity	[m]	=	6	6	6	6	6	6	6	6
Temperature of aquifer	[C]	=	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5
pH	[-]	=	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
Organic carbon content	[fract.]	=	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Receptor distance from site	[m]	=	1	1300	1	1300	1	1300	1	1300
Angle off center	[degree]	=	0	0	0	0	0	0	0	0
Z-distance from watertable	[fract.]	=	0	0	0	0	0	0	0	0
CONTAMINANT SOURCE DATA	UNITS									
Infiltration rate	[m/yr]	=	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088
Area of waste disposal unit	[m^2]	=	7200	7200	11250	11250	10368	10368	10368	10368
Duration of pulse	[yr]	=	25	25	25	25	25	25	25	25
Spread of contaminant source	[m]	=	derived	derived	derived	derived	derived	derived	derived	derived
Recharge rate	[m/yr]	=	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088
Source decay constant	[1/yr]	=	0	0	0	0	0	0	0	0
Initial conc. at landfill	[mg/l]	=	7.59E-03	7.59E-03	1.05	1.05	121.0	121.0	786.7	786.7
Length scale of facility	[m]	=	derived	derived	derived	derived	derived	derved	derived	derived
Width scale of facility	[m]	=	derived	derived	derived	derived	derived	derived	derved	derived
CHEMICAL PROPERTIES OF CONTAMINANT	UNITS									
Solid phase decay coefficient	[1/yr]	=	0	0	0	0	0	0	0	0
Dissolved phase decay coefficient	[1/yr]	=	0	0	0	0	0	0	0	0
Overall chem decay coefficient	[1/yr]	=	0	0	0	0	0	0	0	0
Acid catalyhydrol rate	[l/M-yr]	=	0	0	0	0	0	0	0	0
Neutral hydrol rate cons	[1/yr]	=	0	0	0	0	0	0	0	0
Base catalyhydrol rate	[l/M-yr]	=	0	0	0	0	0	0	0	0
Reference temperature	[C]	=	0	0	0	0	0	0	0	0
Normalized Distnb. Coef (Koc)	[ml/g]	=	8511	8511	7413	7413	18	18	16032	16032
Distnbution Coef (Kd)	[ml/g]	=	4.26	4.26	3.71	3.71	0.009	0.009	8.02	8.02
Biodegrad coef (sat zone)	[1/yr]	=	0	0	0	0	0	0	0	0
Air diffusion coef	[cm^2/s]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Ref temp. for air diffusion	[C]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Molecular weight	[g/mole]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Mole fraction of solute	[-]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Solute vapor pressure	[mm Hg]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Henry's Law Cons	[atm*m^3/	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
MCL or SMCL	[mg/l]	=	NA	NA	NA	NA	NA	NA	NA	NA
Maximum Receptor Point concentration	[ppm]	=	5.80E-03	2.40E-07	1.000	5.87E-05	9.75	0	0.222	0
Time of maximum Recept. Pt. concentration	[years]	=	NA	1075	NA	950	NA	DC	NA	DC
File Name		=	TS-2CN1	TS-2CN2	TS-2MN1	TS-2MN2	TS-ACE1	TS-ACE2	TS-ANT1	TS-ANT2

NA - NOT APPLICABLE
DC - CONTAMINANT DEGRADES COMPLETELY PRIOR TO REACHING RECEPTOR

2CNAP	=	2 CHLORONAPHTHALENE
2MNAP	=	2 METHYLNAPHTHALENE
ANAPNE	=	ACENAPHTHALENE
ANTRC	=	ANTHRACENE

MULTIMED DATA INPUT SHEET

SITE NAME = TOOELE SOUTH - SWMU 13
SIMULATION DATE = MAY 1994
SIMULATION DESCRIPTION = MODELING VOLATILE CONTAMINANTS IN GROUNDWATER

AQUIFER SATURATED ZONE PARAMETERS	UNITS		13DMB	13DMB	C6H6	C6H6	ETC6H5	ETC6H5	MEC6H5	MEC6H5
Particle diameter	[cm]	=	not used	not used	not used	not used	not used	not used	not used	not used
Bulk density	[g/cc]	=	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51
Aquifer thickness	[m]	=	6	6	6	6	6	6	6	6
Mixing zone depth	[m]	=	6	6	6	6	6	6	6	6
Aquifer porosity	[-]	=	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Type of source for Satur. Zone module	[-]	=	Gaussian	Gaussian	Gaussian	Gaussian	Gaussian	Gaussian	Gaussian	Gaussian
Hydraulic conductivity	[m/yr]	=	7760	7760	7760	7760	7760	7760	7760	7760
Hydraulic gradient	[-]	=	0.001	0.0005	0.001	0.0005	0.001	0.0005	0.001	0.0005
Groundwater seep velocity	[m/yr]	=	derived	derived	derived	derived	derived	derived	derived	derived
Retardation coefficient	[-]	=	derived	derived	derived	derived	derived	derived	derived	derived
Longitudinal dispersivity	[m]	=	derived	derived	derived	derived	derived	derived	derived	derived
Transverse dispersivity	[m]	=	derived	derived	derived	derived	derived	derived	derived	derived
Vertical dispersivity	[m]	=	6	6	6	6	6	6	6	6
Temperature of aquifer	[C]	=	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5
pH	[-]	=	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
Organic carbon content	[fract.]	=	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Receptor distance from site	[m]	=	1	1300	1	1300	1	1300	1	1300
Angle off center	[degree]	=	0	0	0	0	0	0	0	0
Z-distance from watertable	[fract.]	=	0	0	0	0	0	0	0	0
CONTAMINANT SOURCE DATA	UNITS									
Infiltration rate	[m/yr]	=	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088
Area of waste disposal unit	[m^2]	=	10368	10368	28800	28800	11250	11250	11250	11250
Duration of pulse	[yr]	=	25	25	25	25	25	25	25	25
Spread of contaminant source	[m]	=	derived	derived	derived	derived	derived	derived	derived	derived
Recharge rate	[m/yr]	=	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088
Source decay constant	[1/yr]	=	0	0	0	0	0	0	0	0
Initial conc. at landfill	[mg/l]	=	21.00	21.00	36.00	36.00	33.0	33.0	43.8	43.8
Length scale of facility	[m]	=	derived	derived	derived	derived	derived	derived	derived	derived
Width scale of facility	[m]	=	derived	derived	derived	derived	derived	derived	derived	derived
CHEMICAL PROPERTIES OF CONTAMINANT	UNITS									
Solid phase decay coefficient	[1/yr]	=	0	0	0	0	0	0	0	0
Dissolved phase decay coefficient	[1/yr]	=	0	0	0	0	0	0	0	0
Overall chem decay coefficient	[1/yr]	=	0	0	0	0	0	0	0	0
Acid cataly hydrol rate	[l/M-yr]	=	0	0	0	0	0	0	0	0
Neutral hydrol rate cons	[1/yr]	=	0	0	0	0	0	0	0	0
Base cataly hydrol rate	[l/M-yr]	=	0	0	0	0	0	0	0	0
Reference temperature	[C]	=	0	0	0	0	0	0	0	0
Normalized Distrib. Coef (Koc)	[ml/g]	=	38	38	49	49	95	95	115	115
Distribution Coef (Kd)	[ml/g]	=	0.0645	0.0645	0.0245	0.0245	0.0475	0.0475	0.0575	0.0575
Biodegrad coef (sat zone)	[1/yr]	=	0	0	0	0	0	0	0	0
Air diffusion coef	[cm^2/s]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Ref temp. for air diffusion	[C]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Molecular weight	[g/mole]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Mole fraction of solute	[-]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Solute vapor pressure	[mm Hg]	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
Henry's Law Cons	[atm*m^3/	=	not act.	not act.	not act.	not act.	not act.	not act.	not act.	not act.
MCL or SMCL	[mg/l]	=	NA	NA	0.005	0.005	0.7	0.7	NA	NA
Maximum Receptor Point concentration	[ppm]	=	1.52	6.90E-17	4.980	1.40E-11	2.56	0	1.791	0
Time of maximum Recept. Pt. concentration	[years]	=	NA	22	NA	29	NA	DC	NA	DC
File Name		=	N-XY-1	N-XY-2	TS-BEN-1	TS-BEN-2	TS-EB1	TS-EB2	TOL-1	TOL-2

NA - NOT APPLICABLE
DC - CONTAMINANT DEGRADES COMPLETELY PRIOR TO REACHING RECEPTOR

13DMB = 13 DIMETHYLBENZENE (m-XYLENE)
C6H6 = BENZENE
ETC6H5 = ETHYLBENZENE
MEC6H5 = TOLUENE

Multimed Modeling Results

TOOELE SOUTH - CONTAMINANT TRANSPORT MODEL RESULTS

SITE NAME		:	SWMU 13, ANIONS	
Contaminant of Concern Name		:	F	NIT
Contaminated Area	[m^2]	:	41472	52488
Max. Contaminant Concentration	[mg/l]	:	38.00	1.60E+01
Kd	[ml/g]	:	0.001	0.001
Source Concentration	[mg/l]	:	20.69	1.60E+01
MCL	[mg/l]	:	4	NA
GROUND WATER				
On Site Receptor Pt. Conc.	[mg/l]	:	38.00	1.65E+01
MULTIMED file name			TS-F1	NITR-1
Off Site Receptor Pt. Conc.	[mg/l]	:	5.66E-02	5.50E-02
Peak concentration time	[years]	:	80	81
MULTIMED file name			TS-F2	NITR-2
LOTUS 123 file name			TS-F	NITR

F = FLUORIDE
NIT = NITRITE/NITRATE (NONSPECIFIC)

TOOELE SOUTH - CONTAMINANT TRANSPORT MODEL RESULTS

SITE NAME		:	SWMU 13, EXPLOSIVES							
Contaminant of Concern Name		:	135TNB	13DNB	246TNT	24DNT	26DNT	3NT	HMX	NB	RDX
Contaminated Area	[m^2]	:	10368	10368	10368	10368	10368	7200	7200	10368	10368
Max. Contaminant Concentration	[mg/l]	:	4.90E-03	9.58E-04	7.30E-03	9.22E-03	2.44E-02	0.019	0.017	4.41E-03	3.30E-02
Kd	[ml/g]	:	0.05	1.25E-02	0.55	0.03	0.026	0.55	0.00	0.1145	5.60E-03
Source Concentration	[mg/l]	:	5.32E-03	1.04E-03	8.06E-03	0.01	2.66E-02	0.025	4.45E-02	4.80	7.17E-02
MCL	[mg/l]	:	NA	NA	NA	NA	NA	NA	NA	NA	NA
GROUND WATER											
On Site Receptor Pt. Conc.	[mg/l]	:	4.90E-03	9.56E-04	7.39E-03	9.19E-03	2.45E-02	1.91E-02	0.017	3.04E-01	3.30E-02
MULTIMED file name			TS-TNB1	TS-DNB1	TS-TNT1	TS-24D1	TS-26D1	TS-3NT1	HMX-1	NITROB-1	RDX-1
Off Site Receptor Pt. Conc.	[mg/l]	:	3.15E-06	6.87E-07	1.99E-06	6.27E-06	1.68E-05	8.4E-06	2.1E-05	1.1E-17	4.9E-05
Peak concentration time	[years]	:	90	80	210	90	90	209	80	26	83
MULTIMED file name			TS-TNB2	TS-DNB2	TS-TNT2	TS-24D2	TS-26D2	TS-3NT2	HMX-2	NITROB-2	RDX-2
LOTUS 123 file name			TS-TNB	TS-DNB	TS-TNT	TS-24D	TS-26D	TS-3NT	HMX	NITROB	RDX

NA - NO MCL STANDARD
DC - CONTAMINANT DEGRADES COMPLETELY PRIOR TO REACHING OFF SITE RECEPTOR

135TNB	=	135 TRINITROBENZENE
13DNB	=	13 DINITROBENZENE
246TNT	=	246 TRINITROTOLUENE
24DNT	=	24 DINITROTOLUENE
26DNT	=	26 DINITROTOLUENE
3NT	=	3 NITROTOLUENE
HMX	=	CYCLOTETRAMETHYLENETETRANITRAMINE
NB	=	NITROBENZENE
RDX	=	CYCLONITE

TOOELE SOUTH - CONTAMINANT TRANSPORT MODEL RESULTS

SITE NAME		:	SWMU 13, METALS				
Contaminant of Concern Name		:	As	Be	Cd	Se	Tl
Contaminated Area	[m^2]	:	52488	7200	16200	11250	18432
Max. Contaminant Concentration	[mg/l]	:	1.10	1.20E-02	1.86E-02	4.20E-01	0.421
Kd	[ml/g]	:	1	650	1.3	1.2	1500
Source Concentration	[mg/l]	:	0.53	1.43E-01	0.10	0.439	7.21
MCL	[mg/l]	:	0.05	0.004	0.005	0.05	0.002
GROUND WATER							
On Site Receptor Pt. Conc.	[mg/l]	:	1.10	1.20E-02	1.90E-02	4.39E-01	0.421
MULTIMED file name			TS-AS1	TS-BE1	TS-CD1	TS-SE1	TS-TL1
Off Site Receptor Pt. Conc.	[mg/l]	:	4.25E-04	3.18E-08	3.35E-06	6.59E-05	1.76E-06
Peak concentration time	[years]	:	320	185000	380	360	380000
MULTIMED file name			TS-AS2	TS-BE2	TS-CD2	TS-SE2	TS-TL2
LOTUS 123 file name			TS-AS	TS-BE	TS-CD	TS-SE	TS-TL

TOOELE SOUTH - CONTAMINANT TRANSPORT MODEL RESULTS

SITE NAME		:	SWMU 13, SEMI-VOLATILES						
Contaminant of Concern Name		:	2CNAP	2MNAP	ANAPNE	ANTRC	B2EHP	FLRENE	NAP	PHANTR
Contaminated Area	[m^2]	:	7200	11250	10368	10368	10368	11250	22050	16200
Max. Contaminant Concentration	[mg/l]	:	5.80E-03	1.00	0.11	0.23	0.026	0.20	0.40	1.00
Kd	[ml/g]	:	4.26	3.71	0.009	8.02	50	2.51	0.275	2.62
Source Concentration	[mg/l]	:	7.59E-03	1.05	121	786.7	22119.40	221	440	1085
MCL	[mg/l]	:	NA	NA	NA	NA	NA	NA	NA	NA
GROUND WATER										
On Site Receptor Pt. Conc.	[mg/l]	:	5.80E-03	1.00	9.752	0.222	0.026	4.84E-01	25.81	9.439
MULTIMED file name			TS-2CN1	TS-2MN1	TS-ACE1	TS-ANT1	TS-BEP1	TS-FLU1	TS-NAP1	TS-PHA1
Off Site Receptor Pt. Conc.	[mg/l]	:	2.40E-07	5.87E-05	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Peak concentration time	[years]	:	1075	950	DC	DC	DC	DC	DC	DC
MULTIMED file name			TS-2CN2	TS-2MN2	TS-ACE2	TS-ANT2	TS-BEP2	TS-FLU2	TS-NAP2	TS-PHA2
LOTUS 123 file name			TS-2CN	TS-2MN	TS-ACE	TS-ANT	TS-BEP	TS-FLU	TS-NAP	TS-PHA

NA - NO MCL STANDARD
DC - CONTAMINANT DEGRADES COMPLETELY PRIOR TO REACHING OFF SITE RECEPTOR

2CNAP	= 2 CHLORONAPHTHALENE
2MNAP	= 2 METHYLNAPHTHALENE
ANAPNE	= ACENAPHTHALENE
ANTRC	= ANTHRACENE
B2EHP	= BIS(2-ETHYLHEXYL)PHTHALATE
FLRENE	= FLUORENE
NAP	= NAPHTHALENE
PHANTR	= PHENANTHRENE

TOOELE SOUTH - CONTAMINANT TRANSPORT MODEL RESULTS

SITE NAME		:	SWMU 13, VOLATILES					
Contaminant of Concern Name		:	13DMB	C6H6	ETC6H5	MEC6H5	TRCLE	XYLEN
Contaminated Area	[m^2]	:	10368	28800	11250	11250	11250	16200
Max. Contaminant Concentration	[mg/l]	:	0.019	0.033	0.03	0.029	0.006	0.27
Kd	[ml/g]	:	0.0645	0.0245	0.0475	0.0575	0.0325	0.0645
Source Concentration	[mg/l]	:	21	36	33	34.8	6.50	279
MCL	[mg/l]	:	NA	0.005	0.7	NA	0.005	10
GROUND WATER								
On Site Receptor Pt. Conc.	[mg/l]	:	1.52	4.98	2.56	1.791	0.552	26.81
MULTIMED file name			N-XY-1	BENZ-1	ET-BENZ-1	TOL-1	TCE-1	XYS-1
Off Site Receptor Pt. Conc.	[mg/l]	:	6.90E-17	1.40E-11	0.0E+00	0.0E+00	6.5E-10	1.5E-15
Peak concentration time	[years]	:	22	29	DC	DC	41	22
MULTIMED file name			N-XY-2	BENZ-2	ET-BENZ-2	TOL-2	TCE-2	XYS-2
LOTUS 123 file name			N-XY	TS-BEN	TS-EB	TOL	TCE	XYS

NA - NO MCL STANDARD
DC - CONTAMINANT DEGRADES COMPLETELY PRIOR TO REACHING OFF SITE RECEPTOR

13DMB = **13 DIMETHYLBENZENE (m-XYLENE)**
C6H6 = **BENZENE**
ETC6H5 = **ETHYLBENZENE**
MEC6H5 = **TOLUENE**
TRCLE = **TRICHLOROETHYLENE**
XYLEN = **XYLENES**

Risk Calculations for Baseline Human Health Risk Assessment

Table H.1.1-1 Pathway-Specific Carcinogenic Risks to the Future On-Site Adult Resident
Depot-Wide Exposure

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF BEEF						
	mg/g					
Arsenic	1.63E-09	8.38E-10	1.50E+00	1.26E-09		93.4%
Beryllium	3.99E-11	2.05E-11	4.30E+00	8.82E-11		6.6%
Chromium	4.00E-09	2.06E-09	NA	NA		
Copper	1.13E-07	5.81E-08	NA	NA		
Lead	8.16E-11	4.19E-11	NA	NA		
Mercury	1.26E-11	6.48E-12	NA	NA		
Nickel	7.29E-09	3.75E-09	NA	NA		
Nitrate	NA	0.00E+00	NA	NA		
Uranium	7.71E-12	3.96E-12	NA	NA		
Zinc	1.78E-05	9.15E-06	NA	NA		
bis(2-Ethylhexyl)phthalate	1.51E-12	7.76E-13	1.40E-02	1.09E-14		<1%
Xylene, o-	4.25E-15	2.18E-15	NA	NA		
4-Methylphenol	4.96E-13	2.55E-13	NA	NA		
Methyl isobutyl ketone	7.92E-15	4.07E-15	NA	NA		
Toluene	3.02E-15	1.55E-15	NA	NA	1.35E-09	
INGESTION OF MILK						
	mg/L					
Arsenic	9.80E-08	3.80E-10	1.50E+00	5.70E-10		99.5%
Beryllium	9.32E-11	3.61E-13	4.30E+00	1.55E-12		<1%
Chromium	7.65E-08	2.96E-10	NA	NA		
Copper	4.41E-05	1.71E-07	NA	NA		
Lead	1.55E-07	6.01E-10	NA	NA		

Table H.1.1-1 Pathway-Specific Carcinogenic Risks to the Future On-Site Adult Resident
Depot-Wide Exposure

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF MILK (cont'd)						
	mg/L					
Mercury	1.03E-09	3.99E-12	NA	NA		
Nickel	9.32E-11	3.61E-13	4.30E+00	1.55E-12		<1%
Nitrate	7.65E-08	2.96E-10	NA	NA		
Uranium	4.41E-05	1.71E-07	NA	NA		
Zinc	1.55E-07	6.01E-10	NA	NA		
bis(2-Ethylhexyl)phthalate	1.03E-09	3.99E-12	NA	NA		
Xylene, o-	8.52E-08	3.30E-10	NA	NA		
4-Methylphenol	NA	0.00E+00	NA	NA		
Methyl isobutyl ketone	2.00E-09	7.75E-12	NA	NA		
Toluene	4.63E-03	1.79E-05	NA	NA	5.73E-10	

Table H.1.1-2 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Adult Resident Depot-Wide Exposure

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF BEEF						
	mg/g					
Arsenic	1.63E-09	1.96E-09	3.00E-04	6.52E-06		7.8%
Beryllium	3.99E-11	4.79E-11	5.00E-03	9.57E-09		<1%
Chromium	4.00E-09	4.80E-09	5.00E-03	9.60E-07		1.2%
Copper	1.13E-07	1.36E-07	3.70E-02	3.66E-06		4.4%
Lead	8.16E-11	9.79E-11	4.30E-04	2.28E-07		<1%
Mercury	1.26E-11	1.51E-11	3.00E-04	5.04E-08		<1%
Nickel	7.29E-09	8.74E-09	2.00E-02	4.37E-07		<1%
Nitrate	NA	0.00E+00	7.00E+00	NA		
Uranium	7.71E-12	9.25E-12	3.00E-03	3.08E-09		<1%
Zinc	1.78E-05	2.14E-05	3.00E-01	7.12E-05		85.7%
bis(2-Ethylhexyl)phthalate	1.51E-12	1.81E-12	2.00E-02	9.06E-11		<1%
Xylene, o-	4.25E-15	5.10E-15	2.00E+00	2.55E-15		<1%
4-Methylphenol	4.96E-13	5.95E-13	5.00E-03	1.19E-10		<1%
Methyl isobutyl ketone	7.92E-15	9.50E-15	8.00E-02	1.19E-13		<1%
Toluene	3.02E-15	3.62E-15	2.00E-01	1.81E-14	8.30E-05	<1%
INGESTION OF MILK						
	mg/L					
Arsenic	9.80E-08	8.86E-10	3.00E-04	2.95E-06		1.9%
Beryllium	9.32E-11	8.43E-13	5.00E-03	1.69E-10		<1%
Chromium	7.65E-08	6.92E-10	5.00E-03	1.38E-07		<1%
Copper	4.41E-05	3.99E-07	3.70E-02	1.08E-05		6.9%
Lead	1.55E-07	1.40E-09	4.30E-04	3.26E-06		2.1%

Table H.1.1-2 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Adult Resident Depot-Wide Exposure

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF MILK (cont'd)						
	mg/L					
Mercury	1.03E-09	9.31E-12	3.00E-04	3.10E-08		<1%
Nickel	8.52E-08	7.70E-10	2.00E-02	3.85E-08		<1%
Nitrate	NA	0.00E+00	7.00E+00	NA		
Uranium	2.00E-09	1.81E-11	3.00E-03	6.03E-09		<1%
Zinc	4.63E-03	4.19E-05	3.00E-01	1.40E-04		89.0%
bis(2-Ethylhexyl)phthalate	1.24E-09	1.12E-11	2.00E-02	5.61E-10		<1%
Xylene, o-	3.49E-12	3.16E-14	2.00E+00	1.58E-14		<1%
4-Methylphenol	4.07E-10	3.68E-12	5.00E-03	7.36E-10		<1%
Methyl isobutyl ketone	6.50E-12	5.88E-14	8.00E-02	7.35E-13		<1%
Toluene	2.48E-12	2.24E-14	2.00E-01	1.12E-13	1.57E-04	<1%

Table H.1.1-3 Pathway-Specific Carcinogenic Risks to the Future On-Site Child Resident Depot-Wide Exposure

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF BEEF						
	mg/g					
Arsenic	1.63E-09	3.46E-10	1.50E+00	5.19E-10		93.4%
Beryllium	3.99E-11	8.47E-12	4.30E+00	3.64E-11		6.6%
Chromium	4.00E-09	8.49E-10	NA	NA		
Copper	1.13E-07	2.40E-08	NA	NA		
Lead	8.16E-11	1.73E-11	NA	NA		
Mercury	1.26E-11	2.67E-12	NA	NA		
Nickel	7.29E-09	1.55E-09	NA	NA		
Nitrate	NA	0.00E+00	NA	NA		
Uranium	7.71E-12	1.64E-12	NA	NA		
Zinc	1.78E-05	3.78E-06	NA	NA		
bis(2-Ethylhexyl)phthalate	1.51E-12	3.20E-13	1.40E-02	4.49E-15		<1%
Xylene, o-	4.25E-15	9.02E-16	NA	NA		
4-Methylphenol	4.96E-13	1.05E-13	NA	NA		
Methyl isobutyl ketone	7.92E-15	1.68E-15	NA	NA		
Toluene	3.02E-15	6.41E-16	NA	NA	5.55E-10	
INGESTION OF MILK						
	mg/L					
Arsenic	9.80E-08	4.35E-10	1.50E+00	6.52E-10		99.7%
Beryllium	9.32E-11	4.14E-13	4.30E+00	1.78E-12		<1%
Chromium	7.65E-08	3.40E-10	NA	NA		
Copper	4.41E-05	1.96E-07	NA	NA		
Lead	1.55E-07	6.88E-10	NA	NA		

Table H.1.1-3 Pathway-Specific Carcinogenic Risks to the Future On-Site Child Resident Depot-Wide Exposure

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF MILK (cont'd)						
	mg/L					
Mercury	1.03E-09	4.57E-12	NA	NA		
Nickel	8.52E-08	3.78E-10	NA	NA		
Nitrate	NA	0.00E+00	NA	NA		
Uranium	2.00E-09	8.88E-12	NA	NA		
Zinc	4.63E-03	2.05E-05	NA	NA		
bis(2-Ethylhexyl)phthalate	1.24E-09	5.50E-12	1.40E-02	7.70E-14		<1%
Xylene, o-	3.49E-12	1.55E-14	NA	NA		
4-Methylphenol	4.07E-10	1.81E-12	NA	NA		
Methyl isobutyl ketone	6.50E-12	2.88E-14	NA	NA		
Toluene	2.48E-12	1.10E-14	NA	NA	6.54E-10	

Table H.1.1-4 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Child Resident
Depot-Wide Exposure

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF BEEF						
	mg/g					
Arsenic	1.63E-09	4.03E-09	3.00E-04	1.34E-05		7.9%
Beryllium	3.99E-11	9.88E-11	5.00E-03	1.98E-08		<1%
Chromium	4.00E-09	9.90E-09	2.00E-02	4.95E-07		<1%
Copper	1.13E-07	2.80E-07	3.70E-02	7.56E-06		4.5%
Lead	8.16E-11	2.02E-10	4.30E-04	4.70E-07		<1%
Mercury	1.26E-11	3.12E-11	3.00E-03	1.04E-08		<1%
Nickel	7.29E-09	1.80E-08	2.00E-02	9.02E-07		<1%
Nitrate	NA	0.00E+00	7.00E+00	NA		
Uranium	7.71E-12	1.91E-11	3.00E-03	6.36E-09		<1%
Zinc	1.78E-05	4.41E-05	3.00E-01	1.47E-04		86.5%
bis(2-Ethylhexyl)phthalate	1.51E-12	3.74E-12	2.00E-02	1.87E-10		<1%
Xylene, o-	4.25E-15	1.05E-14	2.00E+00	5.26E-15		<1%
4-Methylphenol	4.96E-13	1.23E-12	5.00E-03	2.46E-10		<1%
Methyl isobutyl ketone	7.92E-15	1.96E-14	8.00E-01	2.45E-14		<1%
Toluene	3.02E-15	7.48E-15	2.00E+00	3.74E-15	1.70E-04	<1%
INGESTION OF MILK						
	mg/L					
Arsenic	9.80E-08	5.07E-09	3.00E-04	1.69E-05		1.9%
Beryllium	9.32E-11	4.83E-12	5.00E-03	9.65E-10		<1%
Chromium	7.65E-08	3.96E-09	2.00E-02	1.98E-07		<1%
Copper	4.41E-05	2.28E-06	3.70E-02	6.17E-05		6.9%
Lead	1.55E-07	8.03E-09	4.30E-04	1.87E-05		2.1%

Table H.1.1-4 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Child Resident Depot-Wide Exposure

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF MILK (cont'd)						
	mg/L					
Mercury	1.03E-09	5.33E-11	3.00E-03	1.78E-08		<1%
Nickel	8.52E-08	4.41E-09	2.00E-02	2.21E-07		<1%
Nitrate	NA	0.00E+00	7.00E+00	NA		
Uranium	2.00E-09	1.04E-10	3.00E-03	3.45E-08		<1%
Zinc	4.63E-03	2.40E-04	3.00E-01	7.99E-04		89.1%
bis(2-Ethylhexyl)phthalate	1.24E-09	6.42E-11	2.00E-02	3.21E-09		<1%
Xylene, o-	3.49E-12	1.81E-13	2.00E+00	9.04E-14		<1%
4-Methylphenol	4.07E-10	2.11E-11	5.00E-03	4.21E-09		<1%
Methyl isobutyl ketone	6.50E-12	3.37E-13	8.00E-01	4.21E-13		<1%
Toluene	2.48E-12	1.28E-13	2.00E+00	6.42E-14	8.97E-04	<1%

Table H.1.2-1 Pathway-Specific Carcinogenic Risks to the Current On-Site Worker SWMU-Wide Exposure at SWMU 13

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	2.15E-07	1.74E-09	1.5E+01	2.60E-08		12.3%
Beryllium	7.76E-09	6.26E-11	8.4E+00	5.26E-10		<1%
Chromium	5.60E-07	4.52E-09	4.1E+01	1.85E-07		87.4%
Copper	2.01E-07	1.62E-09	NA	NA		
Lead	8.33E-08	6.72E-10	NA	NA		
Mercury	1.27E-10	3.08E-13	NA	NA		
Nickel	1.21E-08	9.77E-11	8.4E-01	8.20E-11		<1%
Nitrate	5.00E-07	4.04E-09	NA	NA		
Uranium	2.64E-09	2.13E-11	NA	NA		
Zinc	1.31E-06	1.06E-08	NA	NA		
4-Methylphenol	3.16E-10	2.55E-12	NA	NA	2.12E-07	
INHALATION OF VAPORS						
	mg/m3					
Acetone	1.30E-05	1.05E-07	NA	NA		
Chloromethane	1.60E-06	1.29E-08	6.3E-03	8.14E-11		72.8%
Methylene chloride	2.35E-06	1.90E-08	1.6E-03	3.04E-11		27.2%
Methyl isobutyl ketone	1.50E-09	1.21E-11	NA	NA		
Methyl-n-butyl ketone	7.30E-10	5.89E-12	NA	NA	1.12E-10	

Table H.1.2-2 Pathway-Specific Noncarcinogenic Hazards to the Current On-Site Worker SWMU-Wide Exposure at SWMU 13

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	2.15E-07	4.86E-09	NA	NA		
Beryllium	7.76E-09	1.75E-10	NA	NA		
Chromium	5.60E-07	1.27E-08	1.1E-06	1.15E-02		99.96%
Copper	2.01E-07	4.54E-09	NA	NA		
Lead	8.33E-08	1.88E-09	4.3E-04	4.38E-06		<1%
Mercury	1.27E-10	8.61E-13	8.6E-05	1.00E-08		<1%
Nickel	1.21E-08	2.73E-10	NA	NA		
Nitrate	5.00E-07	1.13E-08	NA	NA		
Uranium	2.64E-09	5.97E-11	NA	NA		
Zinc	1.31E-06	2.96E-08	NA	NA		
4-Methylphenol	3.16E-10	7.14E-12	NA	NA	1.15E-02	
INHALATION OF VAPORS						
	mg/m3					
Acetone	1.30E-05	2.94E-07	NA	NA		
Chloromethane	1.60E-06	3.62E-08	8.6E-02	4.21E-07		84.8%
Methylene chloride	2.35E-06	5.31E-08	8.6E-01	6.18E-08		12.5%
Methyl isobutyl ketone	1.50E-09	3.39E-11	2.0E-02	1.70E-09		<1%
Methyl-n-butyl ketone	7.30E-10	1.65E-11	1.4E-03	1.18E-08	4.96E-07	2.4%

Table H.1.2-3 Pathway-Specific Carcinogenic Risks to the Future On-Site Adult Resident
SWMU-Wide Exposure (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	2.10E-06	2.37E-07	1.50E+01	3.55E-06		11.5%
Beryllium	4.81E-08	5.42E-09	8.40E+00	4.55E-08		<1%
Chromium	5.90E-06	6.65E-07	4.10E+01	2.73E-05		88.2%
Copper	1.70E-06	1.92E-07	NA	NA		
Lead	1.47E-06	1.66E-07	NA	NA		
Mercury	6.17E-09	2.09E-10	NA	NA		
Nickel	6.02E-07	6.79E-08	8.40E-01	5.70E-08		<1%
Nitrate	4.89E-07	5.51E-08	NA	NA		
Uranium	1.18E-07	1.33E-08	NA	NA		
Zinc	1.03E-05	1.16E-06	NA	NA		
4-Methylphenol	1.26E-08	1.42E-09	NA	NA	3.09E-05	
INHALATION OF VAPORS						
	mg/m3					
Methyl isobutyl ketone	8.00E-09	9.02E-10	NA	NA		
Methyl-n-butyl ketone	4.00E-09	4.51E-10	NA	NA	0.00E+00	
INGESTION OF GROUNDWATER						
	mg/L					
IMPA	0.49	5.75E-03	NA	NA		
1,3-Dinitrobenzene	0.00034	3.99E-06	NA	NA		
2,4-Dinitrotoluene	0.00117	1.37E-05	NA	NA		
2,6-Dinitrotoluene	0.0026	3.05E-05	6.80E-01	2.08E-05		<1%

Table H.1.2-3 Pathway-Specific Carcinogenic Risks to the Future On-Site Adult Resident SWMU-Wide Exposure (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF GROUNDWATER (cont'd)						
	mg/L					
Fluoride	15.23	1.79E-01	NA	NA		
HMX	0.0025	2.94E-05	NA	NA		
Nitrate	3.09	3.63E-02	NA	NA		
Nitrobenzene	0.00129	1.51E-05	NA	NA		
3-Nitrotoluene	0.0028	3.29E-05	NA	NA		
RDX	0.0037	4.34E-05	1.10E-01	4.78E-06		<1%
1,3,5-Trinitrobenzene	0.0007	8.22E-06	NA	NA		
2,4,6-Trinitrotoluene	0.001	1.17E-05	3.00E-02	3.52E-07		<1%
Acenaphthene	0.0147	1.73E-04	NA	NA		
Anthracene	0.021	2.47E-04	NA	NA		
bis(2-Ethylhexyl)phthalate	0.0058	6.81E-05	1.40E-02	9.53E-07		<1%
2-Chloronaphthalene	0.0016	1.88E-05	NA	NA		
Fluorene	0.0327	3.84E-04	NA	NA		
2-Methylnaphthalene	0.138	1.62E-03	NA	NA		
Naphthalene	0.062	7.28E-04	NA	NA		
Phenanthrene	0.1238	1.45E-03	NA	NA		
Benzene	0.004	4.70E-05	2.90E-02	1.36E-06		<1%
Xylene, m	0.002	2.35E-05	NA	NA		
Ethylbenzene	0.0039	4.58E-05	NA	NA		
Toluene	0.003	3.52E-05	NA	NA		
Trichloroethylene	0.001	1.17E-05	1.10E-02	1.29E-07		<1%
Xylenes	0.039	4.58E-04	NA	NA		
Arsenic	0.322	3.78E-03	1.50E+00	5.67E-03		97.9%

Table H.1.2-3 Pathway-Specific Carcinogenic Risks to the Future On-Site Adult Resident
SWMU-Wide Exposure (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF GROUNDWATER (cont'd)						
	mg/L					
Beryllium	0.0018	2.11E-05	4.30E+00	9.09E-05		1.6%
Cadmium	0.0055	6.46E-05	NA	NA		
Selenium	0.041	4.81E-04	NA	NA		
Thallium	0.114	1.34E-03	NA	NA	5.79E-03	
DERMAL CONTACT WITH GROUNDWATER						
	mg/L					
IMPA	0.49	1.76E-03	NA	NA		
1,3-Dinitrobenzene	0.00034	1.26E-07	NA	NA		
2,4-Dinitrotoluene	0.00117	8.92E-07	NA	NA		
2,6-Dinitrotoluene	0.0026	1.37E-06	NA*	NA		
Fluoride	15.23	5.72E-04	NA	NA		
HMX	0.0025	9.70E-08	NA	NA		
Nitrate	3.09	1.16E-04	NA	NA		
Nitrobenzene	0.00129	8.19E-07	NA	NA		
3-Nitrotoluene	0.0028	3.83E-06	NA	NA		
RDX	0.0037	5.02E-07	NA*	NA		
1,3,5-Trinitrobenzene	0.0007	1.39E-07	NA	NA		
2,4,6-Trinitrotoluene	0.001	4.38E-07	3.00E-02	1.32E-08		<1%
Acenaphthene	0.0147	4.85E-05	NA	NA		
Anthracene	0.021	7.48E-05	NA	NA		
bis(2-Ethylhexyl)phthalate	0.0058	2.12E-05	NA*	NA		
2-Chloronaphthalene	0.0016	5.43E-06	NA	NA		

Table H.1.2-3 Pathway-Specific Carcinogenic Risks to the Future On-Site Adult Resident
SWMU-Wide Exposure (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
DERMAL CONTACT WITH GROUNDWATER (cont'd)						
	mg/L					
Fluorene	0.0327	1.16E-04	NA	NA		
2-Methylnaphthalene	0.138	2.25E-04	NA	NA		
Naphthalene	0.062	7.00E-05	NA	NA		
Phenanthrene	0.1238	4.45E-04	NA	NA		
Benzene	0.004	1.86E-06	2.90E-02	5.41E-08		<1%
Xylene, m	0.002	2.54E-06	NA	NA		
Ethylbenzene	0.0039	5.88E-06	NA	NA		
Toluene	0.003	2.62E-06	NA	NA		
Trichloroethylene	0.001	1.34E-06	NA*	NA		
Xylenes	0.039	4.96E-05	NA	NA		
Arsenic	0.322	6.17E-06	1.50E+00	9.26E-06		6.0%
Beryllium	0.0018	3.38E-05	4.30E+00	1.45E-04		94.0%
Cadmium	0.0055	1.72E-06	NA	NA		
Selenium	0.041	1.28E-06	NA	NA		
Thallium	0.114	1.07E-05	NA	NA	1.55E-04	
GROUNDWATER VAPOR INHALATION WHILE SHOWERING/BATHING						
	mg/m3					
Benzene	0.0132	9.92E-06	2.90E-02	2.88E-07		95.9%
Ethylbenzene	0.0102	7.66E-06	NA	NA		
Toluene	0.00844	6.34E-06	NA	NA		
Trichloroethylene	0.00276	2.07E-06	6.00E-03	1.24E-08		4.1%
Xylenes	0.0102	7.66E-06	NA	NA	3.00E-07	

Table H.1.2-3 Pathway-Specific Carcinogenic Risks to the Future On-Site Adult Resident SWMU-Wide Exposure (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.2-4 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Adult Resident SWMU-Wide Exposure (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	2.10E-06	5.52E-07	NA	NA		
Beryllium	4.81E-08	1.27E-08	NA	NA		
Chromium	5.90E-06	1.55E-06	1.10E-06	1.41E+00		99.9%
Copper	1.70E-06	4.47E-07	NA	NA		
Lead	1.47E-06	3.87E-07	4.30E-04	8.99E-04		<1%
Mercury	6.17E-09	4.87E-10	8.60E-05	5.66E-06		<1%
Nickel	6.02E-07	1.58E-07	NA	NA		
Nitrate	4.89E-07	1.29E-07	NA	NA		
Uranium	1.18E-07	3.10E-08	NA	NA		
Zinc	1.03E-05	2.71E-06	NA	NA		
4-Methylphenol	1.26E-08	3.31E-09	NA	NA	1.41E+00	
INHALATION OF VAPORS						
	mg/m3					
Methyl isobutyl ketone	8.00E-09	2.10E-09	2.00E-02	1.05E-07		12.3%
Methyl-n-butyl ketone	4.00E-09	1.05E-09	1.40E-03	7.51E-07	8.57E-07	87.7%
INGESTION OF GROUNDWATER						
	mg/L					
IMPA	0.49	1.34E-02	1.00E-01	1.34E-01		<1%
1,3-Dinitrobenzene	0.00034	9.32E-06	1.00E-04	9.32E-02		<1%
2,4-Dinitrotoluene	0.00117	3.21E-05	2.00E-03	1.60E-02		<1%
2,6-Dinitrotoluene	0.0026	7.12E-05	1.00E-03	7.12E-02		<1%

Table H.1.2-4 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Adult Resident
SWMU-Wide Exposure (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF GROUNDWATER (cont'd)						
	mg/L					
Fluoride	15.23	4.17E-01	1.20E-01	3.48E+00		4.7%
HMX	0.0025	6.85E-05	5.00E-02	1.37E-03		<1%
Nitrate	3.09	8.47E-02	7.00E+00	1.21E-02		<1%
Nitrobenzene	0.00129	3.53E-05	5.00E-04	7.07E-02		<1%
3-Nitrotoluene	0.0028	7.67E-05	1.00E-02	7.67E-03		<1%
RDX	0.0037	1.01E-04	3.00E-03	3.38E-02		<1%
1,3,5-Trinitrobenzene	0.0007	1.92E-05	5.00E-05	3.84E-01		<1%
2,4,6-Trinitrotoluene	0.001	2.74E-05	5.00E-04	5.48E-02		<1%
Acenaphthene	0.0147	4.03E-04	6.00E-02	6.71E-03		<1%
Anthracene	0.021	5.75E-04	3.00E-01	1.92E-03		<1%
bis(2-Ethylhexyl)phthalate	0.0058	1.59E-04	2.00E-02	7.95E-03		<1%
2-Chloronaphthalene	0.0016	4.38E-05	8.00E-02	5.48E-04		<1%
Fluorene	0.0327	8.96E-04	4.00E-02	2.24E-02		<1%
2-Methylnaphthalene	0.138	3.78E-03	NA	NA		
Naphthalene	0.062	1.70E-03	4.00E-02	4.25E-02		<1%
Phenanthrene	0.1238	3.39E-03	3.00E-02	1.13E-01		<1%
Benzene	0.004	1.10E-04	NA	NA		
Xylene, m	0.002	5.48E-05	2.00E+00	2.74E-05		<1%
Ethylbenzene	0.0039	1.07E-04	1.00E-01	1.07E-03		<1%
Toluene	0.003	8.22E-05	2.00E-01	4.11E-04		<1%
Trichloroethylene	0.001	2.74E-05	6.00E-03	4.57E-03		<1%
Xylenes	0.039	1.07E-03	2.00E+00	5.34E-04		<1%
Arsenic	0.322	8.82E-03	3.00E-04	2.94E+01		40.0%

Table H.1.2-4 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Adult Resident SWMU-Wide Exposure (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF GROUNDWATER (cont'd)						
	mg/L					
Beryllium	0.0018	4.93E-05	5.00E-03	9.86E-03		<1%
Cadmium	0.0055	1.51E-04	5.00E-04	3.01E-01		<1%
Selenium	0.041	1.12E-03	5.00E-03	2.25E-01		<1%
Thallium	0.114	3.12E-03	8.00E-05	3.90E+01	7.35E+01	53.1%
DERMAL CONTACT WITH GROUNDWATER						
	mg/L					
IMPA	0.49	4.11E-03	1.00E-01	4.11E-02		8.2%
1,3-Dinitrobenzene	0.00034	2.94E-07	1.00E-04	2.94E-03		<1%
2,4-Dinitrotoluene	0.00117	2.08E-06	2.00E-03	1.04E-03		<1%
2,6-Dinitrotoluene	0.0026	3.19E-06	1.00E-03	3.19E-03		<1%
Fluoride	15.23	1.34E-03	1.20E-01	1.11E-02		2.2%
HMX	0.0025	2.26E-07	NA*	NA		
Nitrate	3.09	2.71E-04	7.00E+00	3.87E-05		<1%
Nitrobenzene	0.00129	1.91E-06	5.00E-04	3.82E-03		<1%
3-Nitrotoluene	0.0028	8.94E-06	1.00E-02	8.94E-04		<1%
RDX	0.0037	1.17E-06	3.00E-03	3.90E-04		<1%
1,3,5-Trinitrobenzene	0.0007	3.24E-07	5.00E-05	6.48E-03		1.3%
2,4,6-Trinitrotoluene	0.001	1.02E-06	NA*	NA		
Acenaphthene	0.0147	1.13E-04	NA*	NA		
Anthracene	0.021	1.74E-04	3.00E-01	5.82E-04		<1%
bis(2-Ethylhexyl)phthalate	0.0058	4.96E-05	NA*	NA		
2-Chloronaphthalene	0.0016	1.27E-05	8.00E-02	1.58E-04		<1%

Table H.1.2-4 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Adult Resident SWMU-Wide Exposure (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
DERMAL CONTACT WITH GROUNDWATER (cont'd)						
	mg/L					
Fluorene	0.0327	2.70E-04	4.00E-02	6.75E-03		1.3%
2-Methylnaphthalene	0.138	5.25E-04	NA	NA		
Naphthalene	0.062	1.63E-04	4.00E-02	4.09E-03		<1%
Phenanthrene	0.1238	1.04E-03	3.00E-02	3.46E-02		6.9%
Benzene	0.004	4.35E-06	NA	NA		
Xylene, m	0.002	5.93E-06	2.00E+00	2.97E-06		<1%
Ethylbenzene	0.0039	1.37E-05	1.00E-01	1.37E-04		<1%
Toluene	0.003	6.11E-06	2.00E-01	3.05E-05		<1%
Trichloroethylene	0.001	3.13E-06	NA*	NA		
Xylenes	0.039	1.16E-04	2.00E+00	5.78E-05		<1%
Arsenic	0.322	1.44E-05	3.00E-04	4.80E-02		9.6%
Beryllium	0.0018	7.89E-05	5.00E-03	1.58E-02		3.1%
Cadmium	0.0055	4.02E-06	5.00E-04	8.04E-03		1.6%
Selenium	**0.041**	**3.00E-06**	**5.00E-03**	5.99E-04		**<1%**
Thallium	**0.114**	**2.50E-05**	**8.00E-05**	**3.12E-01**	5.02E-01	**62.2%**
GROUNDWATER VAPOR INHALATION WHILE SHOWERING/BATHING						
	mg/m3					
Benzene	0.0132	2.31E-05	1.70E-03	1.36E-02		98.6%
Ethylbenzene	0.0102	1.79E-05	2.90E-01	6.17E-05		<1%
Toluene	0.00844	1.48E-05	1.10E-01	1.35E-04		<1%
Trichloroethylene	0.00276	4.84E-06	NA	NA		
Xylenes	0.0102	1.79E-05	NA	NA	1.38E-02	

Table H.1.2-4 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Adult Resident SWMU-Wide Exposure (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.2-5 Pathway-Specific Carcinogenic Risks to the Future On-Site Child Resident
SWMU-Wide Exposure (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	3.49E-06	2.75E-07	1.50E+01	4.13E-06		10.4%
Beryllium	7.40E-08	5.84E-09	8.40E+00	4.90E-08		<1%
Chromium	1.10E-05	8.68E-07	4.10E+01	3.56E-05		89.3%
Copper	1.00E-05	7.89E-07	NA	NA		
Lead	2.99E-06	2.36E-07	NA	NA		
Mercury	1.24E-08	2.94E-10	NA	NA		
Nickel	1.20E-06	9.47E-08	8.40E-01	7.95E-08		<1%
Nitrate	6.64E-07	5.24E-08	NA	NA		
Uranium	2.35E-07	1.85E-08	NA	NA		
Zinc	1.73E-05	1.37E-06	NA	NA		
4-Methylphenol	2.53E-08	2.00E-09	NA	NA	3.98E-05	
INHALATION OF VAPORS						
	mg/m3					
Methyl isobutyl ketone	8.00E-09	6.31E-10	NA	NA		
Methyl-n-butyl ketone	4.00E-09	3.16E-10	NA	NA	0.00E+00	
INGESTION OF GROUNDWATER						
	mg/L					
IMPA	0.49	2.68E-03	NA	NA		
1,3-Dinitrobenzene	0.00034	1.86E-06	NA	NA		
2,4-Dinitrotoluene	0.00117	6.41E-06	NA	NA		
2,6-Dinitrotoluene	0.0026	1.42E-05	6.80E-01	9.69E-06		<1%

Table H.1.2-5 Pathway-Specific Carcinogenic Risks to the Future On-Site Child Resident
SWMU-Wide Exposure (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF GROUNDWATER (cont'd)						
	mg/L					
Fluoride	15.23	8.35E-02	NA	NA		
HMX	0.0025	1.37E-05	NA	NA		
Nitrate	3.09	1.69E-02	NA	NA		
Nitrobenzene	0.00129	7.07E-06	NA	NA		
3-Nitrotoluene	0.0028	1.53E-05	NA	NA		
RDX	0.0037	2.03E-05	1.10E-01	2.23E-06		<1%
1,3,5-Trinitrobenzene	0.0007	3.84E-06	NA	NA		
2,4,6-Trinitrotoluene	0.001	5.48E-06	3.00E-02	1.64E-07		<1%
Acenaphthene	0.0147	8.05E-05	NA	NA		
Anthracene	0.021	1.15E-04	NA	NA		
bis(2-Ethylhexyl)phthalate	0.0058	3.18E-05	1.40E-02	4.45E-07		<1%
2-Chloronaphthalene	0.0016	8.77E-06	NA	NA		
Fluorene	0.0327	1.79E-04	NA	NA		
2-Methylnaphthalene	0.138	7.56E-04	NA	NA		
Naphthalene	0.062	3.40E-04	NA	NA		
Phenanthrene	0.1238	6.78E-04	NA	NA		
Benzene	0.004	2.19E-05	2.90E-02	6.36E-07		<1%
Xylene, m	0.002	1.10E-05	NA	NA		
Ethylbenzene	0.0039	2.14E-05	NA	NA		
Toluene	0.003	1.64E-05	NA	NA		
Trichloroethylene	0.001	5.48E-06	1.10E-02	6.03E-08		<1%
Xylenes	0.039	2.14E-04	NA	NA		
Arsenic	0.322	1.76E-03	1.50E+00	2.65E-03		97.9%

Table H.1.2-5 Pathway-Specific Carcinogenic Risks to the Future On-Site Child Resident
SWMU-Wide Exposure (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF GROUNDWATER (cont'd)						
	mg/L					
Beryllium	0.0018	9.86E-06	4.30E+00	4.24E-05		1.6%
Cadmium	0.0055	3.01E-05	NA	NA		
Selenium	0.041	2.25E-04	NA	NA		
Thallium	0.114	6.25E-04	NA	NA	2.70E-03	
DERMAL CONTACT WITH GROUNDWATER						
	mg/L					
IMPA	0.49	5.46E-04	NA	NA		
1,3-Dinitrobenzene	0.00034	3.90E-08	NA	NA		
2,4-Dinitrotoluene	0.00117	2.76E-07	NA	NA		
2,6-Dinitrotoluene	0.0026	4.23E-07	NA*	NA		
Fluoride	15.23	1.77E-04	NA	NA		
HMX	0.0025	3.00E-08	NA	NA		
Nitrate	3.09	3.60E-05	NA	NA		
Nitrobenzene	0.00129	2.54E-07	NA	NA		
3-Nitrotoluene	0.0028	1.19E-06	NA	NA		
RDX	0.0037	1.55E-07	NA*	NA		
1,3,5-Trinitrobenzene	0.0007	4.30E-08	NA	NA		
2,4,6-Trinitrotoluene	0.001	1.36E-07	3.00E-02	4.07E-09		<1%
Acenaphthene	0.0147	1.50E-05	NA	NA		
Anthracene	0.021	2.32E-05	NA	NA		
bis(2-Ethylhexyl)phthalate	0.0058	6.58E-06	NA*	NA		
2-Chloronaphthalene	0.0016	1.68E-06	NA	NA		

Table H.1.2-5 Pathway-Specific Carcinogenic Risks to the Future On-Site Child Resident
SWMU-Wide Exposure (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
DERMAL CONTACT WITH GROUNDWATER (cont'd)						
	mg/L					
Fluorene	0.0327	3.58E-05	NA	NA		
2-Methylnaphthalene	0.138	6.97E-05	NA	NA		
Naphthalene	0.062	2.17E-05	NA	NA		
Phenanthrene	0.1238	1.38E-04	NA	NA		
Benzene	0.004	5.78E-07	2.90E-02	1.67E-08		<1%
Xylene, m	0.002	7.88E-07	NA	NA		
Ethylbenzene	0.0039	1.82E-06	NA	NA		
Toluene	0.003	8.11E-07	NA	NA		
Trichloroethylene	0.001	4.15E-07	NA*	NA		
Xylenes	0.039	1.54E-05	NA	NA		
Arsenic	0.322	1.91E-06	1.50E+00	2.87E-06		6.0%
Beryllium	0.0018	1.05E-05	4.30E+00	4.51E-05		94.0%
Cadmium	0.0055	5.34E-07	NA	NA		
Selenium	0.041	3.98E-07	NA	NA		
Thallium	0.114	3.32E-06	NA	NA	4.79E-05	
GROUNDWATER VAPOR INHALATION WHILE SHOWERING/BATHING						
	mg/m3					
Benzene	0.0132	6.94E-06	2.90E-02	2.01E-07		95.9%
Ethylbenzene	0.0102	5.37E-06	NA	NA		
Toluene	0.00844	4.44E-06	NA	NA		
Trichloroethylene	0.00276	1.45E-06	6.00E-03	8.71E-09		4.1%
Xylenes	0.0102	5.37E-06	NA	NA	2.10E-07	

Table H.1.2-5 Pathway-Specific Carcinogenic Risks to the Future On-Site Child Resident
SWMU-Wide Exposure (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.2-6 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Child Resident SWMU-Wide Exposure (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	3.49E-06	3.21E-06	NA	NA		
Beryllium	7.40E-08	6.81E-08	NA	NA		
Chromium	1.10E-05	1.01E-05	1.10E-06	9.21E+00		99.9%
Copper	1.00E-05	9.21E-06	NA	NA		
Lead	2.99E-06	2.75E-06	4.30E-04	6.40E-03		<1%
Mercury	1.24E-08	3.42E-09	8.60E-05	3.98E-05		<1%
Nickel	1.20E-06	1.10E-06	NA	NA		
Nitrate	6.64E-07	6.11E-07	NA	NA		
Uranium	2.35E-07	2.16E-07	NA	NA		
Zinc	1.73E-05	1.59E-05	NA	NA		
4-Methylphenol	2.53E-08	2.33E-08	NA	NA	9.21E+00	
INHALATION OF VAPORS						
	mg/m3					
Methyl isobutyl ketone	9.50E-09	8.75E-09	2.00E-01	4.37E-08		1.6%
Methyl-n-butyl ketone	4.80E-09	3.68E-09	1.40E-03	2.63E-06	2.67E-06	98.4%
INGESTION OF GROUNDWATER						
	mg/L					
IMPA	0.49	3.13E-02	1.00E-01	3.13E-01		<1%
1,3-Dinitrobenzene	0.00034	2.17E-05	1.00E-03	2.17E-02		<1%
2,4-Dinitrotoluene	0.00117	7.48E-05	2.00E-03	3.74E-02		<1%
2,6-Dinitrotoluene	0.0026	1.66E-04	1.00E-02	1.66E-02		<1%

Table H.1.2-6 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Child Resident SWMU-Wide Exposure (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF GROUNDWATER (cont'd)						
	mg/L					
Fluoride	15.23	9.74E-01	6.00E-02	1.62E+01		16.9%
HMX	0.0025	1.60E-04	5.00E-02	3.20E-03		<1%
Nitrate	3.09	1.98E-01	7.00E+00	2.82E-02		<1%
Nitrobenzene	0.00129	8.25E-05	5.00E-03	1.65E-02		<1%
3-Nitrotoluene	0.0028	1.79E-04	1.00E-01	1.79E-03		<1%
RDX	0.0037	2.37E-04	3.00E-03	7.88E-02		<1%
1,3,5-Trinitrobenzene	0.0007	4.47E-05	5.00E-04	8.95E-02		<1%
2,4,6-Trinitrotoluene	0.001	6.39E-05	5.00E-04	1.28E-01		<1%
Acenaphthene	0.0147	9.40E-04	6.00E-01	1.57E-03		<1%
Anthracene	0.021	1.34E-03	3.00E+00	4.47E-04		<1%
bis(2-Ethylhexyl)phthalate	0.0058	3.71E-04	2.00E-02	1.85E-02		<1%
2-Chloronaphthalene	0.0016	1.02E-04	8.00E-02	1.28E-03		<1%
Fluorene	0.0327	2.09E-03	4.00E-01	5.23E-03		<1%
2-Methylnaphthalene	**0.138**	**8.82E-03**	**NA**	**NA**		
Naphthalene	**0.062**	**3.96E-03**	**4.00E-02**	**9.91E-02**		**<1%**
Phenanthrene	**0.1238**	**7.91E-03**	**3.00E-01**	**2.64E-02**		**<1%**
Benzene	**0.004**	**2.56E-04**	**NA**	**NA**		
Xylene, m	0.002	1.28E-04	2.00E+00	6.39E-05		<1%
Ethylbenzene	0.0039	2.49E-04	1.00E-01	2.49E-03		<1%
Toluene	0.003	1.92E-04	2.00E+00	9.59E-05		<1%
Trichloroethylene	0.001	6.39E-05	6.00E-03	1.07E-02		<1%
Xylenes	0.039	2.49E-03	2.00E+00	1.25E-03		<1%
Arsenic	0.322	2.06E-02	3.00E-04	6.86E+01		71.4%

Table H.1.2-6 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Child Resident SWMU-Wide Exposure (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF GROUNDWATER (cont'd)						
	mg/L					
Beryllium	0.0018	1.15E-04	5.00E-03	2.30E-02		<1%
Cadmium	0.0055	3.52E-04	5.00E-04	7.03E-01		<1%
Selenium	0.041	2.62E-03	5.00E-03	5.24E-01		<1%
Thallium	0.114	7.29E-03	8.00E-04	9.11E+00	9.61E+01	9.5%
DERMAL CONTACT WITH GROUNDWATER						
	mg/L					
IMPA	0.49	6.37E-03	1.00E-01	6.37E-02		22.7%
1,3-Dinitrobenzene	0.00034	4.55E-07	1.00E-03	4.55E-04		<1%
2,4-Dinitrotoluene	0.00117	3.22E-06	2.00E-03	1.61E-03		<1%
2,6-Dinitrotoluene	0.0026	4.94E-06	1.00E-02	4.94E-04		<1%
Fluoride	15.23	2.07E-03	6.00E-02	3.45E-02		12.3%
HMX	0.0025	3.51E-07	NA*	NA		
Nitrate	3.09	4.20E-04	7.00E+00	6.00E-05		<1%
Nitrobenzene	0.00129	2.96E-06	5.00E-03	5.92E-04		<1%
3-Nitrotoluene	0.0028	1.39E-05	1.00E-01	1.39E-04		<1%
RDX	0.0037	1.81E-06	3.00E-03	6.05E-04		<1%
1,3,5-Trinitrobenzene	0.0007	5.02E-07	5.00E-04	1.00E-03		<1%
2,4,6-Trinitrotoluene	0.001	1.58E-06	NA*	NA		
Acenaphthene	0.0147	1.75E-04	NA*	NA		
Anthracene	0.021	2.70E-04	3.00E+00	9.01E-05		<1%
bis(2-Ethylhexyl)phthalate	0.0058	7.68E-05	2.00E-02	3.84E-03		1.4%
2-Chloronaphthalene	0.0016	1.96E-05	8.00E-02	2.46E-04		<1%

Table H.1.2-6 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Child Resident SWMU-Wide Exposure (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
DERMAL CONTACT WITH GROUNDWATER (cont'd)						
	mg/L					
Fluorene	0.0327	4.18E-04	4.00E-01	1.05E-03		<1%
2-Methylnaphthalene	0.138	8.13E-04	NA	NA		
Naphthalene	0.062	2.53E-04	4.00E-02	6.33E-03		2.3%
Phenanthrene	0.1238	1.61E-03	3.00E-01	5.36E-03		1.9%
Benzene	0.004	6.74E-06	NA	NA		
Xylene, m	0.002	9.19E-06	2.00E+00	4.60E-06		<1%
Ethylbenzene	0.0039	2.12E-05	1.00E-01	2.12E-04		<1%
Toluene	0.003	9.47E-06	2.00E+00	4.73E-06		<1%
Trichloroethylene	0.001	4.84E-06	NA*	NA		
Xylenes	0.039	1.79E-04	2.00E+00	8.96E-05		<1%
Arsenic	0.322	2.23E-05	3.00E-04	7.44E-02		26.5%
Beryllium	0.0018	1.22E-04	5.00E-03	2.44E-02		8.7%
Cadmium	0.0055	6.23E-06	5.00E-04	1.25E-02		4.4%
Selenium	0.041	4.64E-06	5.00E-03	9.28E-04		<1%
Thallium	0.114	3.87E-05	8.00E-04	4.84E-02	2.81E-01	17.2%
GROUNDWATER VAPOR INHALATION WHILE SHOWERING/BATHING						
	mg/m3					
Benzene	0.0132	8.10E-05	1.70E-02	4.77E-03		87.4%
Ethylbenzene	0.0102	6.26E-05	2.90E-01	2.16E-04		4.0%
Toluene	0.00844	5.18E-05	1.10E-01	4.71E-04		8.6%
Trichloroethylene	0.00276	1.69E-05	NA	NA		
Xylenes	0.0102	6.26E-05	NA	NA	5.45E-03	

Table H.1.2-6 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Child Resident SWMU-Wide Exposure (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.3-1 Pathway-Specific Carcinogenic Risks to the Future On-Site Construction Worker at the Fuel Spill Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SUBSURFACE SOIL						
	mg/kg					
Benzene	0.046	1.85E-09	2.90E-02	5.37E-11		11.2%
Xylene, o-	0.66	2.66E-08	NA	NA		
Xylene, m	0.5	2.01E-08	NA	NA		
Ethylbenzene	0.36	1.45E-08	NA	NA		
Methylene chloride	0.035	1.41E-09	7.50E-03	1.06E-11		2.2%
1,1,2,2-Tetrachloroethane	0.043	1.73E-09	2.00E-01	3.46E-10		72.2%
Nitrate	98	3.95E-06	NA	NA		
Acenaphthene	5.82	2.34E-07	NA	NA		
Anthracene	0.92	3.70E-08	NA	NA		
Dimethylnaphthalenes	178.3	7.18E-06	NA	NA		
Fluorene	4.13	1.66E-07	NA	NA		
2-Methylnaphthalene	44.4	1.79E-06	NA	NA		
Methylnaphthalenes	66.4	2.67E-06	NA	NA		
N-Nitrosodiphenylamine	0.35	1.41E-08	4.90E-03	6.90E-11		14.4%
Naphthalene	12.43	5.00E-07	NA	NA		
Phenanthrene	23.5	9.46E-07	NA	NA		
Trimethylnaphthalenes	133.2	5.36E-06	NA	NA	4.80E-10	
DERMAL CONTACT WITH SUBSURFACE SOIL						
	mg/kg					
Benzene	0.046	1.77E-10	2.90E-02	5.14E-12		43.8%
Xylene, o-	0.66	2.54E-09	NA	NA		
Xylene, m	0.5	1.92E-09	NA	NA		

Table H.1.3-1 Pathway-Specific Carcinogenic Risks to the Future On-Site Construction Worker at the Fuel Spill Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
DERMAL CONTACT WITH SUBSURFACE SOIL (cont'd)						
	mg/kg					
Ethylbenzene	0.36	1.39E-09	NA	NA		
Methylene chloride	0.035	1.35E-10	NA*	NA		
1,1,2,2-Tetrachloroethane	0.043	1.66E-10	NA*	NA		
Nitrate	98	3.77E-08	NA	NA		
Acenaphthene	5.82	2.24E-08	NA	NA		
Anthracene	0.92	3.54E-09	NA	NA		
Dimethylnaphthalenes	178.3	6.86E-07	NA	NA		
Fluorene	4.13	1.59E-08	NA	NA		
2-Methylnaphthalene	44.4	1.71E-07	NA	NA		
Methylnaphthalenes	66.4	2.56E-07	NA	NA		
N-Nitrosodiphenylamine	0.35	1.35E-09	4.90E-03	6.60E-12		56.2%
Naphthalene	12.43	4.79E-08	NA	NA		
Phenanthrene	23.5	9.05E-08	NA	NA		
Trimethylnaphthalenes	133.2	5.13E-07	NA	NA	1.17E-11	
INHALATION OF VAPORS						
	mg/m3					
Benzene	4.20E-07	8.81E-10	2.90E-02	2.55E-11		6.2%
Xylene, o-	1.60E-07	3.35E-10	NA	NA		
Xylene, m	1.20E-06	2.52E-09	NA	NA		
Ethylbenzene	9.80E-07	2.05E-09	NA	NA		
Methylene chloride	7.30E-07	1.53E-09	1.60E-03	2.45E-12		<1%
1,1,2,2-Tetrachloroethane	9.20E-07	1.93E-09	2.00E-01	3.86E-10	4.14E-10	93.2%

Table H.1.3-1 Pathway-Specific Carcinogenic Risks to the Future On-Site Construction Worker at the Fuel Spill Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF PARTICULATES						
	mg/m3					
Nitrate	4.31E-06	9.04E-09	NA	NA		
Acenaphthene	2.56E-07	5.37E-10	NA	NA		
Anthracene	4.05E-08	8.49E-11	NA	NA		
Dimethylnaphthalenes	7.85E-06	4.93E-09	NA	NA		
Fluorene	1.82E-07	3.81E-10	NA	NA		
2-Methylnaphthalene	1.95E-06	4.10E-09	NA	NA		
Methylnaphthalenes	2.92E-06	1.84E-09	NA	NA		
N-Nitrosodiphenylamine	1.54E-08	3.23E-11	NA	NA		
Naphthalene	5.47E-07	3.44E-10	NA	NA		
Phenanthrene	1.03E-06	2.17E-09	NA	NA		
Trimethylnaphthalenes	5.86E-06	3.69E-09	NA	NA	0.00E+00	

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.3-2 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Construction Worker at the Fuel Spill Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SUBSURFACE SOIL						
	mg/kg					
Benzene	0.046	2.59E-08	NA	NA		
Xylene, o-	0.66	3.72E-07	2.00E+00	1.86E-07		<1%
Xylene, m	0.5	2.82E-07	2.00E+00	1.41E-07		<1%
Ethylbenzene	0.36	2.03E-07	1.00E-01	2.03E-06		<1%
Methylene chloride	0.035	1.97E-08	6.00E-02	3.29E-07		<1%
1,1,2,2-Tetrachloroethane	0.043	2.42E-08	NA	NA		
Nitrate	98	5.52E-05	7.00E+00	7.89E-06		<1%
Acenaphthene	5.82	3.28E-06	6.00E-01	5.47E-06		<1%
Anthracene	0.92	5.19E-07	3.00E+00	1.73E-07		<1%
Dimethylnaphthalenes	178.3	1.00E-04	4.00E-02	2.51E-03		45.1%
Fluorene	4.13	2.33E-06	4.00E-01	5.82E-06		<1%
2-Methylnaphthalene	44.4	2.50E-05	NA	NA		
Methylnaphthalenes	66.4	3.74E-05	4.00E-02	9.36E-04		16.8%
N-Nitrosodiphenylamine	0.35	1.97E-07	NA	NA		
Naphthalene	12.43	7.01E-06	4.00E-02	1.75E-04		3.1%
Phenanthrene	23.5	1.32E-05	3.00E-01	4.41E-05		<1%
Trimethylnaphthalenes	133.2	7.51E-05	4.00E-02	1.88E-03	5.57E-03	33.7%
DERMAL CONTACT WITH SUBSURFACE SOIL						
	mg/kg					
Benzene	4.6E-02	2.48E-09	NA	NA		
Xylene, o-	6.6E-01	3.56E-08	2.00E+00	1.78E-08		<1%
Xylene, m	5.0E-01	2.69E-08	2.00E+00	1.35E-08		<1%

Table H.1.3-2 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Construction Worker at the Fuel Spill Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
DERMAL CONTACT WITH SUBSURFACE SOIL (cont'd)						
	mg/kg					
Ethylbenzene	3.6E-01	1.94E-08	1.00E-01	1.94E-07		<1%
Methylene chloride	3.5E-02	1.89E-09	NA*	NA		
1,1,2,2-Tetrachloroethane	4.3E-02	2.32E-09	NA	NA		
Nitrate	9.8E+01	5.28E-07	7.00E+00	7.55E-08		<1%
Acenaphthene	5.8E+00	3.14E-07	NA*	NA		
Anthracene	9.2E-01	4.96E-08	3.00E+00	1.65E-08		<1%
Dimethylnaphthalenes	1.8E+02	9.61E-06	4.00E-02	2.40E-04		45.2%
Fluorene	4.1E+00	2.23E-07	4.00E-01	5.56E-07		<1%
2-Methylnaphthalene	4.4E+01	2.39E-06	NA	NA		
Methylnaphthalenes	6.6E+01	3.58E-06	4.00E-02	8.95E-05		16.8%
N-Nitrosodiphenylamine	3.5E-01	1.89E-08	NA	NA		
Naphthalene	1.2E+01	6.70E-07	4.00E-02	1.67E-05		3.2%
Phenanthrene	2.4E+01	1.27E-06	3.00E-01	4.22E-06		<1%
Trimethylnaphthalenes	1.3E+02	7.18E-06	4.00E-02	1.79E-04	5.31E-04	33.8%
INHALATION OF VAPORS						
	mg/m3					
Benzene	4.20E-07	1.23E-08	1.70E-02	7.25E-07		85.4%
Xylene, o-	1.60E-07	4.70E-09	NA	NA		
Xylene, m	1.20E-06	3.52E-08	NA	NA		
Ethylbenzene	9.80E-07	2.88E-08	2.90E-01	9.92E-08		11.7%
Methylene chloride	7.30E-07	2.14E-08	8.60E-01	2.49E-08		2.9%
1,1,2,2-Tetrachloroethane	9.20E-07	2.70E-08	NA	NA	8.49E-07	

Table H.1.3-2 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Construction Worker at the Fuel Spill Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF PARTICULATES						
	mg/m3					
Nitrate	4.31E-06	1.27E-07	NA	NA		
Acenaphthene	2.56E-07	7.52E-09	NA	NA		
Anthracene	4.05E-08	1.19E-09	NA	NA		
Dimethylnaphthalenes	7.85E-06	6.91E-08	1.10E-04	6.28E-04		45.7%
Fluorene	1.82E-07	5.33E-09	NA	NA		
2-Methylnaphthalene	1.95E-06	5.73E-08	NA	NA		
Methylnaphthalenes	2.92E-06	2.57E-08	1.10E-04	2.34E-04		17.0%
N-Nitrosodiphenylamine	1.54E-08	4.52E-10	NA	NA		
Naphthalene	5.47E-07	4.82E-09	1.10E-04	4.38E-05		3.2%
Phenanthrene	1.03E-06	3.04E-08	NA	NA		
Trimethylnaphthalenes	5.86E-06	5.16E-08	1.10E-04	4.69E-04	1.37E-03	34.1%

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.4-1 Pathway-Specific Carcinogenic Risks to the Future On-Site Construction Worker at the Underground Storage Tank Site

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SUBSURFACE SOIL						
	mg/kg .					
Nitrate	57	2.29E-06	NA	NA	0.00E+00	
DERMAL CONTACT WITH SUBSURFACE SOIL						
	mg/kg					
Nitrate	57	2.19E-08	NA	NA	0.00E+00	
INHALATION OF PARTICULATES						
	mg/m3					
Nitrate	3.82E-06	8.01E-09	NA	NA	0.00E+00	

Table H.1.4-2 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Construction Worker at the Underground Storage Tank Site

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SUBSURFACE SOIL						
	mg/kg					
Nitrate	57	3.21E-05	7.0E+00	4.59E-06	4.59E-06	100%
DERMAL CONTACT WITH SUBSURFACE SOIL						
	mg/kg					
Nitrate	57	3.07E-07	7.0E+00	4.39E-08	4.39E-08	100%
INHALATION OF PARTICULATES						
	mg/m3					
Nitrate	3.82E-06	1.12E-07	NA	NA	0.00E+00	

Table H.1.5-1 Pathway-Specific Carcinogenic Risks to the Current On-Site Worker at the 3X Yard (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	42.4	8.21E-07	1.5E+00	1.23E-06		100%
Chromium	293.8	5.69E-06	NA	NA	1.23E-06	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	42.4	6.28E-08	1.5E+00	9.43E-08		100%
Chromium	293.8	4.35E-07	NA	NA	9.43E-08	

Table H.1.5-2 Pathway-Specific Noncarcinogenic Hazards to the Current On-Site Worker at the 3X Yard (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	42.4	2.30E-06	3.0E-04	7.67E-03		70.6%
Chromium	293.8	1.59E-05	5.0E-03	3.19E-03	1.09E-02	29.4%
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	42.4	1.76E-07	3.0E-04	5.87E-04		70.6%
Chromium	293.8	1.22E-06	5.0E-03	2.44E-04	8.30E-04	29.4%

Table H.1.5-3 Pathway-Specific Carcinogenic Risks to the Current Off-Site Adult Resident at the 3X Yard (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	3.18E-11	3.58E-12	1.50E+01	5.38E-11		5.0%
Chromium	2.20E-10	2.48E-11	4.10E+01	1.02E-09	1.07E-09	95.0%

Table H.1.5-4 Pathway-Specific Noncarcinogenic Hazards to the Current Off-Site Adult Resident at the 3X Yard (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	3.18E-11	8.36E-12	NA	NA		
Chromium	2.20E-10	5.80E-11	1.10E-06	5.27E-05	5.27E-05	100%

Table H.1.5-5 Pathway-Specific Carcinogenic Risks to the Current Off-Site Child Resident at the 3X Yard (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	3.18E-11	2.51E-12	1.50E+01	3.76E-11		5.0%
Chromium	2.20E-10	1.74E-11	4.10E+01	7.13E-10	7.50E-10	95%

Table H.1.5-6 Pathway-Specific Noncarcinogenic Hazards to the Current Off-Site Child Resident at the 3X Yard (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	3.18E-11	2.93E-11	NA	NA		
Chromium	2.20E-10	2.03E-10	1.10E-06	1.84E-04	1.84E-04	100%

Table H.1.5-7 Pathway-Specific Carcinogenic Risks to the Future On-Site Adult Resident at the 3X Yard (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	37.5	2.20E-05	1.50E+00	3.30E-05		100%
Chromium	226.9	1.33E-04	NA	NA	3.30E-05	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	37.5	1.01E-06	1.50E+00	1.52E-06		100%
Chromium	226.9	6.11E-06	NA	NA	1.52E-06	
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	7.85E-05	1.50E+00	1.18E-04		100%
Chromium	NA	3.17E-04	NA	NA	1.18E-04	

Table H.1.5-8 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Adult Resident at the 3X Yard (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	37.5	5.14E-05	3.00E-04	1.71E-01		73.4%
Chromium	226.9	3.11E-04	5.00E-03	6.22E-02	2.33E-01	26.6%
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	37.5	2.36E-06	3.00E-04	7.86E-03		73.4%
Chromium	226.9	1.43E-05	5.00E-03	2.85E-03	1.07E-02	26.6%
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	1.83E-04	3.00E-04	6.10E-01		73.4%
Chromium	NA	7.39E-04	5.00E-03	1.48E-01	7.58E-01	26.6%

Table H.1.5-9 Pathway-Specific Carcinogenic Risks to the Future On-Site Child Resident at the 3X Yard (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	37.5	4.11E-05	1.50E+00	6.16E-05		100%
Chromium	226.9	2.49E-04	NA	NA	6.16E-05	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	37.5	5.45E-07	1.50E+00	8.17E-07		100%
Chromium	226.9	3.29E-06	NA	NA	8.17E-07	
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	4.02E-05	1.50E+00	6.04E-05		100%
Chromium	NA	1.66E-04	NA	NA	6.04E-05	

Table H.1.5-10 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Resident Child at the 3X Yard (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	37.5	4.79E-04	3.00E-04	1.60E+00		91.7%
Chromium	226.9	2.90E-03	2.00E-02	1.45E-01	1.74E+00	8.3%
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	37.5	6.35E-06	3.00E-04	2.12E-02		1.2%
Chromium	226.9	3.84E-05	2.00E-02	1.92E-03	2.31E-02	<1%
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	4.69E-04	3.00E-04	1.56E+00		94.2%
Chromium	NA	1.94E-03	2.00E-02	9.71E-02	1.66E+00	5.8%

Table H.1.5-11 Pathway-Specific Carcinogenic Risks to the Future On-Site Construction Worker at the 3X Yard (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SUBSURFACE SOIL						
	mg/kg					
Arsenic	159.1	6.40E-06	1.50E+00	9.61E-06		100%
Chromium	38.1	1.53E-06	NA	NA	9.61E-06	
DERMAL CONTACT WITH SUBSURFACE SOIL						
	mg/kg					
Arsenic	159.1	6.12E-08	1.50E+00	9.19E-08		100%
Chromium	38.1	1.47E-08	NA	NA	9.19E-08	
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	2.07E-06	4.34E-09	1.50E+01	6.50E-08		60%
Chromium	4.95E-07	1.04E-09	4.10E+01	4.26E-08	1.08E-07	40%

Table H.1.5-12 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Construction Worker at the 3X Yard (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SUBSURFACE SOIL						
	mg/kg					
Arsenic	159.1	8.97E-05	3.00E-04	2.99E-01		99.6%
Chromium	38.1	2.15E-05	2.00E-02	1.07E-03	3.00E-01	<1%
DERMAL CONTACT WITH SUBSURFACE SOIL						
	mg/kg					
Arsenic	159.1	8.57E-07	3.00E-04	2.86E-03		99.6%
Chromium	38.1	2.05E-07	2.00E-02	1.03E-05	2.87E-03	<1%
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	2.07E-06	6.07E-08	NA	NA		
Chromium	4.95E-07	1.45E-08	1.10E-06	1.32E-02	1.32E-02	100%

Table H.1.6-1 Pathway-Specific Carcinogenic Risks to the Current Off-Site Adult Resident at the Boiler Blowdown Discharge Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF VAPORS						
	mg/m3					
Methylene chloride	1.60E-09	1.80E-10	1.60E-03	2.89E-13		27.0%
Chloromethane	1.10E-09	1.24E-10	6.30E-03	7.81E-13	1.07E-12	73.0%

Table H.1.6-2 Pathway-Specific Noncarcinogenic Hazards to the Current Off-Site Adult Resident at the Boiler Blowdown Discharge Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF VAPORS						
	mg/m3					
Methylene chloride	1.60E-09	4.21E-10	8.60E-01	4.89E-10		12.7%
Chloromethane	1.10E-09	2.89E-10	8.60E-02	3.36E-09	3.85E-09	87%

Table H.1.6-3 Pathway-Specific Carcinogenic Risks to the Current Off-Site Child Resident at the Boiler Blowdown Discharge Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF VAPORS						
	mg/m3					
Methylene chloride	1.60E-09	1.26E-10	1.60E-03	2.02E-13		27.0%
Chloromethane	1.10E-09	8.68E-11	6.30E-03	5.47E-13	7.49E-13	73%

Table H.1.6-4 Pathway-Specific Noncarcinogenic Hazards to the Current Off-Site Child Resident at the Boiler Blowdown Discharge Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF VAPORS						
	mg/m3					
Methylene chloride	1.60E-09	1.47E-09	8.60E-01	1.71E-09		12.7%
Chloromethane	1.10E-09	1.01E-09	8.60E-02	1.18E-08	1.35E-08	87%

Table H.1.7-1 Pathway-Specific Carcinogenic Risks to the Current On-Site Worker at the Drainage Ditch Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	1.5E+00	NA		
Beryllium	1.05	2.03E-08	4.3E+00	8.75E-08		100%
Chromium	31.2	6.04E-07	NA	NA		
Copper	25.4	4.92E-07	NA	NA		
Lead	NA	0.00E+00	NA	NA		
Nickel	NA	0.00E+00	NA	NA		
Nitrate	5.79	1.12E-07	NA	NA		
Zinc	158	3.06E-06	NA	NA		
1,2-Dichlorobenzene	NA	0.00E+00	NA	NA	8.75E-08	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	1.5E+00	NA		
Beryllium	1.05	1.56E-09	4.3E+00	6.69E-09		100%
Chromium	31.2	4.62E-08	NA	NA		
Copper	25.4	3.76E-08	NA	NA		
Lead	NA	0.00E+00	NA	NA		
Nickel	NA	0.00E+00	NA	NA		
Nitrate	5.79	8.58E-09	NA	NA		
Zinc	158	2.34E-07	NA	NA		
1,2-Dichlorobenzene	NA	0.00E+00	NA	NA	6.69E-09	

Table H.1.7-2 Pathway-Specific Noncarcinogenic Hazards to the Current On-Site Worker at the Drainage Ditch Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	3.0E-04	NA		
Beryllium	1.05	5.70E-08	5.0E-03	1.14E-05		2.7%
Chromium	31.2	1.69E-06	5.0E-03	3.38E-04		81.4%
Copper	25.4	1.38E-06	3.7E-02	3.72E-05		9.0%
Lead	NA	0.00E+00	4.3E-04	NA		
Nickel	NA	0.00E+00	2.0E-02	NA		
Nitrate	5.79	3.14E-07	7.0E+00	4.49E-08		<1%
Zinc	158	8.57E-06	3.0E-01	2.86E-05		6.9%
1,2-Dichlorobenzene	NA	0.00E+00	9.0E-02	NA	4.16E-04	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	3.0E-04	NA		
Beryllium	1.05	4.36E-09	5.0E-03	8.71E-07		3.0%
Chromium	31.2	1.29E-07	5.0E-03	2.59E-05		89.4%
Copper	25.4	1.05E-07	NA*	NA		
Lead	NA	0.00E+00	4.3E-04	NA		
Nickel	NA	0.00E+00	2.0E-02	NA		
Nitrate	5.79	2.40E-08	7.0E+00	3.43E-09		<1%
Zinc	158	6.56E-07	3.0E-01	2.19E-06		7.5%
1,2-Dichlorobenzene	NA	0.00E+00	9.0E-02	NA	2.90E-05	

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.7-3 Pathway-Specific Carcinogenic Risks to the Current Off-Site Adult Resident at the Drainage Ditch Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	NA	0.00E+00	1.50E+01	NA		
Beryllium	2.10E-11	2.37E-12	8.40E+00	1.99E-11		<1%
Chromium	6.24E-10	7.03E-11	4.10E+01	2.88E-09		99.3%
Copper	5.08E-10	5.73E-11	NA	NA		
Lead	NA	0.00E+00	NA	NA		
Nickel	NA	0.00E+00	8.40E-01	NA		
Nitrate	1.16E-10	1.31E-11	NA	NA		
Zinc	3.16E-09	3.56E-10	NA	NA	2.90E-09	

Table H.1.7-4 Pathway-Specific Noncarcinogenic Hazards to the Current Off-Site Adult Resident at the Drainage Ditch Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	NA	0.00E+00	NA	NA		
Beryllium	2.10E-11	5.52E-12	NA	NA		
Chromium	6.24E-10	1.64E-10	1.10E-06	1.49E-04		100%
Copper	5.08E-10	1.34E-10	NA	NA		
Lead	NA	0.00E+00	4.30E-04	NA		
Nickel	NA	0.00E+00	NA	NA		
Nitrate	1.16E-10	3.05E-11	NA	NA		
Zinc	3.16E-09	8.31E-10	NA	NA	1.49E-04	

Table H.1.7-5 Pathway-Specific Carcinogenic Risks to the Current Off-Site Child Resident at the Drainage Ditch Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	NA	0.00E+00	1.50E+01	NA		
Beryllium	2.10E-11	1.66E-12	8.40E+00	1.39E-11		<1%
Chromium	6.24E-10	4.92E-11	4.10E+01	2.02E-09		99.3%
Copper	5.08E-10	4.01E-11	NA	NA		
Lead	NA	0.00E+00	NA	NA		
Nickel	NA	0.00E+00	8.40E-01	NA		
Nitrate	1.16E-10	9.14E-12	NA	NA		
Zinc	3.16E-09	2.49E-10	NA	NA	2.03E-09	

Table H.1.7-6 Pathway-Specific Noncarcinogenic Hazards to the Current Off-Site Child Resident at the Drainage Ditch Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	NA	0.00E+00	NA	NA		
Beryllium	2.10E-11	1.93E-11	NA	NA		
Chromium	6.24E-10	5.74E-10	1.10E-06	5.22E-04		100%
Copper	5.08E-10	4.68E-10	NA	NA		
Lead	NA	0.00E+00	4.30E-04	NA		
Nickel	NA	0.00E+00	NA	NA		
Nitrate	1.16E-10	1.07E-10	NA	NA		
Zinc	3.16E-09	2.91E-09	NA	NA	5.22E-04	

Table H.1.7-7 Pathway-Specific Carcinogenic Risks to the Future On-Site Adult Resident at the Drainage Ditch Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	1.50E+00	NA		
Beryllium	1.05	6.16E-07	4.30E+00	2.65E-06		100%
Chromium	31.2	1.83E-05	NA	NA		
Copper	25.4	1.49E-05	NA	NA		
Lead	NA	0.00E+00	NA	NA		
Nickel	NA	0.00E+00	NA	NA		
Nitrate	5.79	3.40E-06	NA	NA		
Zinc	158	9.28E-05	NA	NA		
1,2-Dichlorobenzene	NA	0.00E+00	NA	NA	2.65E-06	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	1.50E+00	NA		
Beryllium	1.05	2.83E-08	4.30E+00	1.22E-07		100%
Chromium	31.2	8.41E-07	NA	NA		
Copper	25.4	6.84E-07	NA	NA		
Lead	NA	0.00E+00	NA	NA		
Nickel	NA	0.00E+00	NA	NA		
Nitrate	5.79	1.56E-07	NA	NA		
Zinc	158	4.26E-06	NA	NA		
1,2-Dichlorobenzene	NA	0.00E+00	NA	NA	1.22E-07	

Table H.1.7-7 Pathway-Specific Carcinogenic Risks to the Future On-Site Adult Resident at the Drainage Ditch Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	0.00E+00	1.50E+00	NA		
Beryllium	NA	5.49E-07	4.30E+00	2.36E-06		100%
Chromium	NA	4.35E-05	NA	NA		
Copper	NA	1.97E-03	NA	NA		
Lead	NA	0.00E+00	NA	NA		
Nickel	NA	0.00E+00	NA	NA		
Nitrate	NA	0.00E+00	NA	NA		
Zinc	NA	3.62E-02	NA	NA		
1,2-Dichlorobenzene	NA	0.00E+00	NA	NA	2.36E-06	

Table H.1.7-8 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Adult Resident at the Drainage Ditch Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	3.00E-04	NA		
Beryllium	1.05	1.44E-06	5.00E-03	2.88E-04		2.7%
Chromium	31.2	4.27E-05	5.00E-03	8.55E-03		81.4%
Copper	25.4	3.48E-05	3.70E-02	9.40E-04		9.0%
Lead	NA	0.00E+00	4.30E-04	NA		
Nickel	NA	0.00E+00	2.00E-02	NA		
Nitrate	5.79	7.93E-06	7.00E+00	1.13E-06		<1%
Zinc	158	2.16E-04	3.00E-01	7.21E-04		6.9%
1,2-Dichlorobenzene	NA	0.00E+00	9.00E-02	NA	1.05E-02	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	3.00E-04	NA		
Beryllium	1.05	6.60E-08	5.00E-03	1.32E-05		3.0%
Chromium	31.2	1.96E-06	5.00E-03	3.92E-04		89.4%
Copper	25.4	1.60E-06	NA*	NA		
Lead	NA	0.00E+00	4.30E-04	NA		
Nickel	NA	0.00E+00	2.00E-02	NA		
Nitrate	5.79	3.64E-07	7.00E+00	5.20E-08		<1%
Zinc	158	9.93E-06	3.00E-01	3.31E-05		7.5%
1,2-Dichlorobenzene	NA	0.00E+00	9.00E-02	NA	4.39E-04	

Table H.1.7-8 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Adult Resident at the Drainage Ditch Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	0.00E+00	3.00E-04	NA		
Beryllium	NA	1.28E-06	5.00E-03	2.56E-04		<1%
Chromium	NA	1.02E-04	5.00E-03	2.03E-02		4.8%
Copper	NA	4.59E-03	3.70E-02	1.24E-01		29.1%
Lead	NA	0.00E+00	4.30E-04	NA		
Nickel	NA	0.00E+00	2.00E-02	NA		
Nitrate	NA	0.00E+00	7.00E+00	NA		
Zinc	NA	8.44E-02	3.00E-01	2.81E-01		66.1%
1,2-Dichlorobenzene	NA	0.00E+00	9.00E-02	NA	4.26E-01	

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.7-9 Pathway-Specific Carcinogenic Risks to the Future On-Site Child Resident at the Drainage Ditch Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	1.50E+00	NA		
Beryllium	1.05	1.15E-06	4.30E+00	4.95E-06		100%
Chromium	31.2	3.42E-05	NA	NA		
Copper	25.4	2.78E-05	NA	NA		
Lead	NA	0.00E+00	NA	NA		
Nickel	NA	0.00E+00	NA	NA		
Nitrate	5.79	6.35E-06	NA	NA		
Zinc	158	1.73E-04	NA	NA		
1,2-Dichlorobenzene	NA	0.00E+00	NA	NA	4.95E-06	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	1.50E+00	NA		
Beryllium	1.05	1.52E-08	4.30E+00	6.56E-08		100%
Chromium	31.2	4.53E-07	NA	NA		
Copper	25.4	3.69E-07	NA	NA		
Lead	NA	0.00E+00	NA	NA		
Nickel	NA	0.00E+00	NA	NA		
Nitrate	5.79	8.41E-08	NA	NA		
Zinc	158	2.29E-06	NA	NA		
1,2-Dichlorobenzene	NA	0.00E+00	NA	NA	6.56E-08	

Table H.1.7-9 Pathway-Specific Carcinogenic Risks to the Future On-Site Child Resident at the Drainage Ditch Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	0.00E+00	1.50E+00	NA		
Beryllium	NA	2.82E-07	4.30E+00	1.21E-06		100%
Chromium	NA	2.29E-05	NA	NA		
Copper	NA	1.03E-03	NA	NA		
Lead	NA	0.00E+00	NA	NA		
Nickel	NA	0.00E+00	NA	NA		
Nitrate	NA	0.00E+00	NA	NA		
Zinc	NA	1.90E-02	NA	NA		
1,2-Dichlorobenzene	NA	0.00E+00	NA	NA	1.21E-06	

Table H.1.7-10 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Resident Child at the Drainage Ditch Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	3.00E-04	NA		
Beryllium	1.05	1.34E-05	5.00E-03	2.68E-03		7.0%
Chromium	31.2	3.99E-04	2.00E-02	1.99E-02		52.3%
Copper	25.4	3.25E-04	3.70E-02	8.78E-03		23.0%
Lead	NA	0.00E+00	4.30E-04	NA		
Nickel	NA	0.00E+00	2.00E-02	NA		
Nitrate	5.79	7.40E-05	7.00E+00	1.06E-05		<1%
Zinc	158	2.02E-03	3.00E-01	6.73E-03		17.6%
1,2-Dichlorobenzene	NA	0.00E+00	9.00E-02	NA	3.82E-02	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	3.00E-04	NA		
Beryllium	1.05	1.78E-07	5.00E-03	3.56E-05		9.1%
Chromium	31.2	5.29E-06	2.00E-02	2.64E-04		67.9%
Copper	25.4	4.30E-06	NA*	NA		
Lead	NA	0.00E+00	4.30E-04	NA		
Nickel	NA	0.00E+00	2.00E-02	NA		
Nitrate	5.79	9.81E-07	7.00E+00	1.40E-07		<1%
Zinc	158	2.68E-05	3.00E-01	8.92E-05		22.9%
1,2-Dichlorobenzene	NA	0.00E+00	9.00E-02	NA	3.89E-04	

Table H.1.7-10 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Resident Child at the Drainage Ditch Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	0.00E+00	3.00E-04	NA		
Beryllium	NA	3.29E-06	5.00E-03	6.57E-04		<1%
Chromium	NA	2.67E-04	2.00E-02	1.33E-02		1.2%
Copper	NA	1.21E-02	3.70E-02	3.26E-01		30.3%
Lead	NA	0.00E+00	4.30E-04	NA		
Nickel	NA	0.00E+00	2.00E-02	NA		
Nitrate	NA	0.00E+00	7.00E+00	NA		
Zinc	NA	2.21E-01	3.00E-01	7.37E-01		68.4%
1,2-Dichlorobenzene	NA	0.00E+00	9.00E-02	NA	1.08E+00	

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.7-11 Pathway-Specific Carcinogenic Risks to the Future On-Site Construction Worker at the Drainage Ditch Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SUBSURFACE SOIL						
	mg/kg					
Arsenic	41.2	1.66E-06	1.50E+00	2.49E-06		95.3%
Beryllium	0.71	2.86E-08	4.30E+00	1.23E-07		4.7%
Chromium	33.8	1.36E-06	NA	NA		
Copper	13	5.23E-07	NA	NA		
Lead	102.5	4.13E-06	NA	NA		
Nickel	13.8	5.56E-07	NA	NA		
Nitrate	NA	0.00E+00	NA	NA		
Zinc	83.9	3.38E-06	NA	NA		
1,2-Dichlorobenzene	0.02	8.05E-10	NA	NA	2.61E-06	
DERMAL CONTACT WITH SUBSURFACE SOIL						
	mg/kg					
Arsenic	41.2	1.59E-08	1.50E+00	2.38E-08		95.3%
Beryllium	0.71	2.73E-10	4.30E+00	1.18E-09		4.7%
Chromium	33.8	1.30E-08	NA	NA		
Copper	13	5.00E-09	NA	NA		
Lead	102.5	3.95E-08	NA	NA		
Nickel	13.8	5.31E-09	NA	NA		
Nitrate	NA	0.00E+00	NA	NA		
Zinc	83.9	3.23E-08	NA	NA		
1,2-Dichlorobenzene	0.02	7.70E-11	NA	NA	2.50E-08	

Table H.1.7-11 Pathway-Specific Carcinogenic Risks to the Future On-Site Construction Worker at the Drainage Ditch Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	1.81E-06	3.80E-09	1.50E+01	5.70E-08		30.6%
Beryllium	3.12E-08	6.55E-11	8.40E+00	5.50E-10		<1%
Chromium	1.49E-06	3.12E-09	4.10E+01	1.28E-07		68.6%
Copper	5.72E-07	1.20E-09	NA	NA		
Lead	4.51E-06	9.46E-09	NA	NA		
Nickel	6.07E-07	1.27E-09	8.40E-01	1.07E-09		<1%
Nitrate	NA	0.00E+00	NA	NA		
Zinc	3.69E-06	7.74E-09	NA	NA	1.86E-07	
INHALATION OF VAPORS						
	mg/m3					
1,2-Dichlorobenzene	2.00E-08	4.19E-11	NA	NA	0.00E+00	

Table H.1.7-12 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Construction Worker at the Drainage Ditch Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SUBSURFACE SOIL						
	mg/kg					
Arsenic	41.2	2.32E-05	3.00E-04	7.74E-02		36.2%
Beryllium	0.71	4.00E-07	5.00E-03	8.00E-05		<1%
Chromium	33.8	1.90E-05	2.00E-02	9.52E-04		<1%
Copper	13	7.33E-06	3.70E-02	1.98E-04		<1%
Lead	102.5	5.78E-05	4.30E-04	1.34E-01		62.9%
Nickel	13.8	7.78E-06	2.00E-02	3.89E-04		<1%
Nitrate	NA	0.00E+00	7.00E+00	NA		
Zinc	83.9	4.73E-05	3.00E-01	1.58E-04		<1%
1,2-Dichlorobenzene	0.02	1.13E-08	9.00E-02	1.25E-07	2.14E-01	<1%
DERMAL CONTACT WITH SUBSURFACE SOIL						
	mg/kg					
Arsenic	41.2	2.22E-07	3.00E-04	7.40E-04		36.3%
Beryllium	0.71	3.83E-09	5.00E-03	7.65E-07		<1%
Chromium	33.8	1.82E-07	2.00E-02	9.11E-06		<1%
Copper	13	7.01E-08	NA*	NA		
Lead	102.5	5.52E-07	4.30E-04	1.28E-03		63.0%
Nickel	13.8	7.44E-08	2.00E-02	3.72E-06		<1%
Nitrate	NA	0.00E+00	7.00E+00	NA		
Zinc	83.9	4.52E-07	3.00E-01	1.51E-06		<1%
1,2-Dichlorobenzene	0.02	1.08E-09	9.00E-02	1.20E-08	2.04E-03	<1%

Table H.1.7-12 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Construction Worker at the Drainage Ditch Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	1.81E-06	5.32E-08	NA	NA		
Beryllium	3.12E-08	9.17E-10	NA	NA		
Chromium	1.49E-06	4.37E-08	1.10E-06	3.97E-02		99.2%
Copper	5.72E-07	1.68E-08	NA	NA		
Lead	4.51E-06	1.32E-07	4.30E-04	3.08E-04		<1%
Nickel	6.07E-07	1.78E-08	NA	NA		
Nitrate	NA	0.00E+00	NA	NA		
Zinc	3.69E-06	1.08E-07	NA	NA	4.00E-02	
INHALATION OF VAPORS						
1,2-Dichlorobenzene	2.00E-08	5.87E-10	4.00E-01	1.47E-09	1.47E-09	100%

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.8-1 Pathway-Specific Carcinogenic Risks to the Current On-Site Worker at the Chemical Unload Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	1.5E+00	NA		
Chromium	NA	0.00E+00	NA	NA		
Copper	NA	0.00E+00	NA	NA		
Lead	98	1.90E-06	NA	NA		
Nitrate	5.8	1.12E-07	NA	NA		
Zinc	120	2.32E-06	NA	NA		
bis(2-Ethylhexyl)phthalate	NA	0.00E+00	1.4E-02	NA		
Chloroform	NA	0.00E+00	6.1E-03	NA	0.00E+00	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	1.5E+00	NA		
Chromium	NA	0.00E+00	NA	NA		
Copper	NA	0.00E+00	NA	NA		
Lead	98	1.45E-07	NA	NA		
Nitrate	5.8	8.60E-09	NA	NA		
Zinc	120	1.78E-07	NA	NA		
bis(2-Ethylhexyl)phthalate	NA	0.00E+00	NA*	NA		
Chloroform	NA	0.00E+00	6.1E-03	NA	0.00E+00	

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.8-2 Pathway-Specific Noncarcinogenic Hazards to the Current On-Site Worker at the Chemical Unload Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	3.0E-04	NA		
Chromium	NA	0.00E+00	5.0E-03	NA		
Copper	NA	0.00E+00	3.7E-02	NA		
Lead	98	5.32E-06	4.3E-04	1.24E-02		99.8%
Nitrate	5.8	3.15E-07	7.0E+00	4.49E-08		<1%
Zinc	120	6.51E-06	3.0E-01	2.17E-05		<1%
bis(2-Ethylhexyl)phthalate	NA	0.00E+00	2.0E-02	NA		
Chloroform	NA	0.00E+00	1.0E-02	NA	1.24E-02	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	3.0E-04	NA		
Chromium	NA	0.00E+00	5.0E-03	NA		
Copper	NA	0.00E+00	NA*	NA		
Lead	98	4.07E-07	4.3E-04	9.46E-04		99.8%
Nitrate	5.8	2.41E-08	7.0E+00	3.44E-09		<1%
Zinc	120	4.98E-07	3.0E-01	1.66E-06		<1%
bis(2-Ethylhexyl)phthalate	NA	0.00E+00	NA*	NA	9.47E-04	

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.8-3 Pathway-Specific Carcinogenic Risks to the Current Off-Site Adult Resident at the Chemical Unload Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF PARTICULATES						
	mg/m3					
Lead	6.37E-10	7.18E-11	NA	NA		
Nitrate	3.77E-11	4.25E-12	NA	NA		
Zinc	7.80E-10	8.79E-11	NA	NA	0.00E+00	

Table H.1.8-4 Pathway-Specific Noncarcinogenic Hazards to the Current Off-Site Adult Resident at the Chemical Unload Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF PARTICULATES						
	mg/m3					
Lead	6.37E-10	1.68E-10	4.30E-04	3.90E-07		100%
Nitrate	3.77E-11	9.92E-12	NA	NA		
Zinc	7.80E-10	2.05E-10	NA	NA	3.90E-07	

Table H.1.8-5 Pathway-Specific Carcinogenic Risks to the Current Off-Site Child Resident at the Chemical Unload Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF PARTICULATES						
	mg/m3					
Lead	6.37E-10	5.03E-11	NA	NA		
Nitrate	3.77E-11	2.97E-12	NA	NA		
Zinc	7.80E-10	6.15E-11	NA	NA	0.00E+00	

Table H.1.8-6 Pathway-Specific Noncarcinogenic Hazards to the Current Off-Site Child Resident at the Chemical Unload Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF PARTICULATES						
	mg/m3					
Lead	6.37E-10	5.86E-10	4.30E-04	1.36E-06		100%
Nitrate	3.77E-11	3.47E-11	NA	NA		
Zinc	7.80E-10	7.18E-10	NA	NA	1.36E-06	

Table H.1.8-7 Pathway-Specific Carcinogenic Risks to the Future On-Site Adult Resident at the Chemical Unload Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	1.50E+00	NA		
Chromium	NA	0.00E+00	NA	NA		
Copper	NA	0.00E+00	NA	NA		
Lead	98	5.75E-05	NA	NA		
Nitrate	5.8	3.41E-06	NA	NA		
Zinc	120	7.05E-05	NA	NA		
bis(2-Ethylhexyl)phthalate	NA	0.00E+00	1.40E-02	NA		
Chloroform	NA	0.00E+00	6.10E-03	NA	0.00E+00	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	1.50E+00	NA		
Chromium	NA	0.00E+00	NA	NA		
Copper	NA	0.00E+00	NA	NA		
Lead	98	2.64E-06	NA	NA		
Nitrate	5.8	1.56E-07	NA	NA		
Zinc	120	3.23E-06	NA	NA		
bis(2-Ethylhexyl)phthalate	NA	0.00E+00	NA*	NA		
Chloroform	NA	0.00E+00	6.10E-03	NA	0.00E+00	

Table H.1.8-7 Pathway-Specific Carcinogenic Risks to the Future On-Site Adult Resident at the Chemical Unload Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	0.00E+00	1.50E+00	NA		
Chromium	NA	0.00E+00	NA	NA		
Copper	NA	0.00E+00	NA	NA		
Lead	NA	1.76E-04	NA	NA		
Nitrate	NA	0.00E+00	NA	NA		
Zinc	NA	2.75E-02	NA	NA		
bis(2-Ethylhexyl)phthalate	NA	0.00E+00	1.40E-02	NA		
Chloroform	NA	0.00E+00	6.10E-03	NA	0.00E+00	

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.8-8 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Adult Resident at the Chemical Unload Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	3.00E-04	NA		
Chromium	NA	0.00E+00	5.00E-03	NA		
Copper	NA	0.00E+00	3.70E-02	NA		
Lead	98	1.34E-04	4.30E-04	3.12E-01		99.8%
Nitrate	5.8	7.95E-06	7.00E+00	1.14E-06		<1%
Zinc	120	1.64E-04	3.00E-01	5.48E-04		<1%
bis(2-Ethylhexyl)phthalate	NA	0.00E+00	2.00E-02	NA		
Chloroform	NA	0.00E+00	1.00E-02	NA	3.13E-01	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	3.00E-04	NA		
Chromium	NA	0.00E+00	5.00E-03	NA		
Copper	NA	0.00E+00	NA*	NA		
Lead	98	6.16E-06	4.30E-04	1.43E-02		99.8%
Nitrate	5.8	3.65E-07	7.00E+00	5.21E-08		<1%
Zinc	120	7.55E-06	3.00E-01	2.52E-05		<1%
bis(2-Ethylhexyl)phthalate	NA	0.00E+00	NA*	NA		
Chloroform	NA	0.00E+00	NA*	NA	1.44E-02	

Table H.1.8-8 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Adult Resident at the Chemical Unload Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	0.00E+00	3.00E-04	NA		
Chromium	NA	0.00E+00	5.00E-03	NA		
Copper	NA	0.00E+00	3.70E-02	NA		
Lead	NA	4.10E-04	4.30E-04	9.54E-01		81.7%
Nitrate	NA	0.00E+00	7.00E+00	NA		
Zinc	NA	6.41E-02	3.00E-01	2.14E-01		18.3%
bis(2-Ethylhexyl)phthalate	NA	0.00E+00	2.00E-02	NA		
Chloroform	NA	0.00E+00	1.00E-02	NA	1.17E+00	

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.8-9 Pathway-Specific Carcinogenic Risks to the Future On-Site Child Resident at the Chemical Unload Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	1.50E+00	NA		
Chromium	NA	0.00E+00	NA	NA		
Copper	NA	0.00E+00	NA	NA		
Lead	98	1.07E-04	NA	NA		
Nitrate	5.8	6.36E-06	NA	NA		
Zinc	120	1.32E-04	NA	NA		
bis(2-Ethylhexyl)phthalate	NA	0.00E+00	1.40E-02	NA		
Chloroform	NA	0.00E+00	6.10E-03	NA	0.00E+00	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	1.50E+00	NA		
Chromium	NA	0.00E+00	NA	NA		
Copper	NA	0.00E+00	NA	NA		
Lead	98	1.42E-06	NA	NA		
Nitrate	5.8	8.42E-08	NA	NA		
Zinc	120	1.74E-06	NA	NA		
bis(2-Ethylhexyl)phthalate	NA	0.00E+00	NA*	NA		
Chloroform	NA	0.00E+00	6.10E-03	NA	0.00E+00	

Table H.1.8-9 Pathway-Specific Carcinogenic Risks to the Future On-Site Child Resident at the Chemical Unload Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	0.00E+00	1.50E+00	NA		
Chromium	NA	0.00E+00	NA	NA		
Copper	NA	0.00E+00	NA	NA		
Lead	NA	9.25E-05	NA	NA		
Nitrate	NA	0.00E+00	NA	NA		
Zinc	NA	1.44E-02	NA	NA		
bis(2-Ethylhexyl)phthalate	NA	0.00E+00	1.40E-02	NA		
Chloroform	NA	0.00E+00	6.10E-03	NA	0.00E+00	

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.8-10 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Resident Child at the Chemical Unload Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	3.00E-04	NA		
Chromium	NA	0.00E+00	2.00E-02	NA		
Copper	NA	0.00E+00	3.70E-02	NA		
Lead	98	1.25E-03	4.30E-04	2.91E+00		99.8%
Nitrate	5.8	7.42E-05	7.00E+00	1.06E-05		<1%
Zinc	120	1.53E-03	3.00E-01	5.11E-03		<1%
bis(2-Ethylhexyl)phthalate	NA	0.00E+00	2.00E-02	NA		
Chloroform	NA	0.00E+00	1.00E-02	NA	2.92E+00	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	3.00E-04	NA		
Chromium	NA	0.00E+00	2.00E-02	NA		
Copper	NA	0.00E+00	NA*	NA		
Lead	98	1.66E-05	4.30E-04	3.86E-02		99.8%
Nitrate	5.8	9.83E-07	7.00E+00	1.40E-07		<1%
Zinc	120	2.03E-05	3.00E-01	6.78E-05		<1%
bis(2-Ethylhexyl)phthalate	NA	0.00E+00	2.00E-02	NA		
Chloroform	NA	0.00E+00	NA*	NA	3.87E-02	

Table H.1.8-10 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Resident Child at the Chemical Unload Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	0.00E+00	3.00E-04	NA		
Chromium	NA	0.00E+00	2.00E-02	NA		
Copper	NA	0.00E+00	3.70E-02	NA		
Lead	NA	1.08E-03	4.30E-04	2.51E+00		81.8%
Nitrate	NA	0.00E+00	7.00E+00	NA		
Zinc	NA	1.68E-01	3.00E-01	5.60E-01		18.2%
bis(2-Ethylhexyl)phthalate	NA	0.00E+00	2.00E-02	NA		
Chloroform	NA	0.00E+00	1.00E-02	NA	3.07E+00	

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.8-11 Pathway-Specific Carcinogenic Risks to the Future On-Site Construction Worker at the Chemical Unload Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SUBSURFACE SOIL						
	mg/kg					
Arsenic	29.7	1.20E-06	1.50E+00	1.79E-06		99.96%
Chromium	37.7	1.52E-06	NA	NA		
Copper	18.4	7.41E-07	NA	NA		
Lead	NA	0.00E+00	NA	NA		
Nitrate	11.5	4.63E-07	NA	NA		
Zinc	120	4.83E-06	NA	NA		
bis(2-Ethylhexyl)phthalate	1.22	4.91E-08	1.40E-02	6.88E-10		<1%
Chloroform	0.0409	1.65E-09	6.10E-03	1.00E-11	1.79E-06	<1%
DERMAL CONTACT WITH SUBSURFACE SOIL						
	mg/kg					
Arsenic	29.7	1.14E-08	1.50E+00	1.71E-08		99.99%
Chromium	37.7	1.45E-08	NA	NA		
Copper	18.4	7.08E-09	NA	NA		
Lead	NA	0.00E+00	NA	NA		
Nitrate	11.5	4.43E-09	NA	NA		
Zinc	120	4.62E-08	NA	NA		
bis(2-Ethylhexyl)phthalate	1.22	4.70E-09	NA*	NA		
Chloroform	0.0409	1.57E-10	6.10E-03	9.60E-13	1.72E-08	<1%

Table H.1.8-11 Pathway-Specific Carcinogenic Risks to the Future On-Site Construction Worker at the Chemical Unload Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	1.19E-06	2.49E-09	1.50E+01	3.74E-08		22%
Chromium	1.51E-06	3.16E-09	4.10E+01	1.30E-07		78%
Copper	7.36E-07	1.54E-09	NA	NA		
Lead	NA	0.00E+00	NA	NA		
Nitrate	4.60E-07	9.64E-10	NA	NA		
Zinc	4.80E-06	1.01E-08	NA	NA		
bis(2-Ethylhexyl)phthalate	4.88E-08	3.07E-11	NA	NA	1.67E-07	
INHALATION OF VAPORS						
	mg/m3					
Chloroform	5.40E-07	1.13E-09	8.10E-02	9.17E-11	9.17E-11	100%

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.8-12 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Construction Worker at the Chemical Unload Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SUBSURFACE SOIL						
	mg/kg					
Arsenic	29.7	1.67E-05	3.00E-04	5.58E-02		97%
Chromium	37.7	2.12E-05	2.00E-02	1.06E-03		2%
Copper	18.4	1.04E-05	3.70E-02	2.80E-04		<1$
Lead	NA	0.00E+00	4.30E-04	NA		
Nitrate	11.5	6.48E-06	7.00E+00	9.26E-07		<1$
Zinc	120	6.76E-05	3.00E-01	2.25E-04		<1$
bis(2-Ethylhexyl)phthalate	1.22	6.88E-07	2.00E-02	3.44E-05		<1$
Chloroform	0.0409	2.31E-08	1.00E-02	2.31E-06	5.74E-02	<1$
DERMAL CONTACT WITH SUBSURFACE SOIL						
	mg/kg					
Arsenic	29.7	1.60E-07	3.00E-04	5.34E-04		97%
Chromium	37.7	2.03E-07	2.00E-02	1.02E-05		2%
Copper	18.4	9.92E-08	NA*	NA		
Lead	NA	0.00E+00	4.30E-04	NA		
Nitrate	11.5	6.20E-08	7.00E+00	8.85E-09		<1%
Zinc	120	6.47E-07	3.00E-01	2.16E-06		<1%
bis(2-Ethylhexyl)phthalate	1.22	6.58E-08	2.00E-02	3.29E-06		<1%
Chloroform	0.0409	2.20E-09	NA*	NA	5.49E-04	

Table H.1.8-12 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Construction Worker at the Chemical Unload Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	1.19E-06	3.49E-08	NA	NA		
Chromium	1.51E-06	4.43E-08	1.10E-06	4.02E-02		100%
Copper	7.36E-07	2.16E-08	NA	NA		
Lead	NA	0.00E+00	4.30E-04	NA		
Nitrate	4.60E-07	1.35E-08	NA	NA		
Zinc	4.80E-06	1.41E-07	NA	NA		
bis(2-Ethylhexyl)phthalate	4.88E-08	4.30E-10	2.90E-03	1.48E-07	4.02E-02	<1%
INHALATION OF VAPORS						
	mg/m3					
Chloroform	5.40E-07	1.59E-08	NA	NA	0.00E+00	

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.9-1 Pathway-Specific Carcinogenic Risks to the Current On-Site Worker at the Pavement Perimeter Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	48.5	9.40E-07	1.5E+00	1.41E-06		100%
Chromium	27.7	5.37E-07	NA	NA		
Nitrate	130	2.52E-06	NA	NA		
Zinc	NA	0.00E+00	NA	NA		
Methyl isobutyl ketone	0.019	3.68E-10	NA	NA		
Methyl-n-butyl ketone	0.011	2.13E-10	NA	NA	1.41E-06	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	48.5	7.19E-08	1.5E+00	1.08E-07		100%
Chromium	27.7	4.11E-08	NA	NA		
Nitrate	130	1.93E-07	NA	NA		
Zinc	NA	0.00E+00	NA	NA		
Methyl isobutyl ketone	0.019	2.82E-10	NA	NA		
Methyl-n-butyl ketone	0.011	1.63E-10	NA	NA	1.08E-07	

Table H.1.9-2 Pathway-Specific Noncarcinogenic Hazards to the Current On-Site Worker at the Pavement Perimeter Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	48.5	2.63E-06	3.0E-04	8.77E-03		96.7%
Chromium	27.7	1.50E-06	5.0E-03	3.01E-04		3.3%
Nitrate	130	7.05E-06	7.0E+00	1.01E-06		<1%
Zinc	NA	0.00E+00	3.0E-01	NA		
Methyl isobutyl ketone	0.019	1.03E-09	8.0E-02	1.29E-08		<1%
Methyl-n-butyl ketone	0.011	5.97E-10	NA	NA	9.07E-03	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	48.5	2.01E-07	3.0E-04	6.71E-04		96.7%
Chromium	27.7	1.15E-07	5.0E-03	2.30E-05		3.3%
Nitrate	130	5.39E-07	7.0E+00	7.71E-08		<1%
Zinc	NA	0.00E+00	3.0E-01	NA		
Methyl isobutyl ketone	0.019	7.88E-10	8.0E-02	9.86E-09		<1%
Methyl-n-butyl ketone	0.011	4.56E-10	NA	NA	6.94E-04	

Table H.1.9-3 Pathway-Specific Carcinogenic Risks to the Current Off-Site Adult Resident at the Pavement Perimeter Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	2.67E-10	3.01E-11	1.50E+01	4.51E-10		39.0%
Chromium	1.52E-10	1.72E-11	4.10E+01	7.04E-10		61.0%
Nitrate	7.15E-10	8.06E-11	NA	NA	1.16E-09	
INHALATION OF VAPORS						
	mg/m3					
Methyl isobutyl ketone	2.40E-12	2.71E-13	NA	NA		
Methyl-n-butyl ketone	1.20E-12	1.35E-13	NA	NA	0.00E+00	

Table H.1.9-4 Pathway-Specific Noncarcinogenic Hazards to the Current Off-Site Adult Resident at the Pavement Perimeter Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	2.67E-10	7.02E-11	NA	NA		
Chromium	1.52E-10	4.01E-11	1.10E-06	3.64E-05		100%
Nitrate	7.15E-10	1.88E-10	NA	NA	3.64E-05	
INHALATION OF VAPORS						
	mg/m3					
Methyl isobutyl ketone	2.40E-12	6.31E-13	2.00E-02	3.16E-11		12.3%
Methyl-n-butyl ketone	1.20E-12	3.16E-13	1.40E-03	2.25E-10	2.57E-10	87.7%

Table H.1.9-5 Pathway-Specific Carcinogenic Risks to the Current Off-Site Child Resident at the Pavement Perimeter Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	2.67E-10	2.10E-11	1.50E+01	3.16E-10		39.0%
Chromium	1.52E-10	1.20E-11	4.10E+01	4.93E-10		61.0%
Nitrate	7.15E-10	5.64E-11	NA	NA	8.09E-10	
INHALATION OF VAPORS						
	mg/m3					
Methyl isobutyl ketone	2.40E-12	1.89E-13	NA	NA		
Methyl-n-butyl ketone	1.20E-12	9.47E-14	NA	NA	0.00E+00	

Table H.1.9-6 Pathway-Specific Noncarcinogenic Hazards to the Current Off-Site Child Resident at the Pavement Perimeter Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	2.67E-10	2.46E-10	NA	NA		
Chromium	1.52E-10	1.40E-10	1.10E-06	1.27E-04		100%
Nitrate	7.15E-10	6.58E-10	NA	NA	1.27E-04	
INHALATION OF VAPORS						
	mg/m3					
Methyl isobutyl ketone	2.40E-12	2.21E-12	2.00E-01	1.10E-11		1%
Methyl-n-butyl ketone	1.20E-12	1.10E-12	1.40E-03	7.89E-10	8.00E-10	99%

Table H.1.9-7 Pathway-Specific Carcinogenic Risks to the Future On-Site Adult Resident at the Pavement Perimeter Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	48.5	2.85E-05	1.50E+00	4.27E-05		100%
Chromium	27.7	1.63E-05	NA	NA		
Nitrate	130	7.63E-05	NA	NA		
Zinc	NA	0.00E+00	NA	NA		
Methyl isobutyl ketone	0.019	1.12E-08	NA	NA		
Methyl-n-butyl ketone	0.011	6.46E-09	NA	NA	4.27E-05	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	48.5	1.31E-06	1.50E+00	1.96E-06		100%
Chromium	27.7	7.46E-07	NA	NA		
Nitrate	130	3.50E-06	NA	NA		
Zinc	NA	0.00E+00	NA	NA		
Methyl isobutyl ketone	**0.019**	**5.12E-09**	**NA**	**NA**		
Methyl-n-butyl ketone	**0.011**	**2.96E-09**	**NA**	**NA**	1.96E-06	
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	1.01E-04	1.50E+00	1.52E-04		100%
Chromium	NA	3.86E-05	NA	NA		
Nitrate	NA	0.00E+00	NA	NA		
Zinc	NA	0.00E+00	NA	NA		
Methyl isobutyl ketone	NA	2.59E-05	NA	NA		
Methyl-n-butyl ketone	NA	0.00E+00	NA	NA	1.52E-04	

Table H.1.9-8 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Adult Resident at the Pavement Perimeter Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	48.5	6.64E-05	3.00E-04	2.21E-01		96.7%
Chromium	27.7	3.79E-05	5.00E-03	7.59E-03		3.3%
Nitrate	130	1.78E-04	7.00E+00	2.54E-05		<1%
Zinc	NA	0.00E+00	3.00E-01	NA		
Methyl isobutyl ketone	0.019	2.60E-08	8.00E-02	3.25E-07		<1%
Methyl-n-butyl ketone	0.011	1.51E-08	NA	NA	2.29E-01	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	48.5	3.05E-06	3.00E-04	1.02E-02		96.7%
Chromium	27.7	1.74E-06	5.00E-03	3.48E-04		3.3%
Nitrate	130	8.17E-06	7.00E+00	1.17E-06		<1%
Zinc	NA	0.00E+00	3.00E-01	NA		
Methyl isobutyl ketone	0.019	1.19E-08	8.00E-02	1.49E-07		<1%
Methyl-n-butyl ketone	0.011	6.92E-09	NA	NA	1.05E-02	
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	2.37E-04	3.00E-04	7.89E-01		97.7%
Chromium	NA	9.02E-05	5.00E-03	1.80E-02		2.2%
Nitrate	NA	0.00E+00	7.00E+00	NA		
Zinc	NA	0.00E+00	3.00E-01	NA		
Methyl isobutyl ketone	NA	6.03E-05	8.00E-02	7.54E-04		<1%
Methyl-n-butyl ketone	NA	0.00E+00	NA	NA	8.08E-01	

Table H.1.9-9 Pathway-Specific Carcinogenic Risks to the Future On-Site Child Resident at the Pavement Perimeter Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	48.5	5.32E-05	1.50E+00	7.97E-05		100%
Chromium	27.7	3.04E-05	NA	NA		
Nitrate	130	1.42E-04	NA	NA		
Zinc	NA	0.00E+00	NA	NA		
Methyl isobutyl ketone	0.019	2.08E-08	NA	NA		
Methyl-n-butyl ketone	0.011	1.21E-08	NA	NA	7.97E-05	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	48.5	7.04E-07	1.50E+00	1.06E-06		100%
Chromium	27.7	4.02E-07	NA	NA		
Nitrate	130	1.89E-06	NA	NA		
Zinc	NA	0.00E+00	NA	NA		
Methyl isobutyl ketone	0.019	2.76E-09	NA	NA		
Methyl-n-butyl ketone	0.011	1.60E-09	NA	NA	1.06E-06	
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	5.20E-05	1.50E+00	7.81E-05		100%
Chromium	NA	2.03E-05	NA	NA		
Nitrate	NA	0.00E+00	NA	NA		
Zinc	NA	0.00E+00	NA	NA		
Methyl isobutyl ketone	NA	1.33E-05	NA	NA		
Methyl-n-butyl ketone	NA	0.00E+00	NA	NA	7.81E-05	

Table H.1.9-10 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Resident Child at the Pavement Perimeter Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	48.5	6.20E-04	3.00E-04	2.07E+00		99.1%
Chromium	27.7	3.54E-04	2.00E-02	1.77E-02		<1%
Nitrate	130	1.66E-03	7.00E+00	2.37E-04		<1%
Zinc	NA	0.00E+00	3.00E-01	NA		
Methyl isobutyl ketone	0.019	2.43E-07	8.00E-01	3.04E-07		<1%
Methyl-n-butyl ketone	0.011	1.41E-07	NA	NA	2.08E+00	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	48.5	8.22E-06	3.00E-04	2.74E-02		99.1%
Chromium	27.7	4.69E-06	2.00E-02	2.35E-04		<1%
Nitrate	130	2.20E-05	7.00E+00	3.15E-06		<1%
Zinc	NA	0.00E+00	3.00E-01	NA		
Methyl isobutyl ketone	0.019	3.22E-08	8.00E-01	4.02E-08		<1%
Methyl-n-butyl ketone	0.011	1.86E-08	NA	NA	2.76E-02	
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	6.07E-04	3.00E-04	2.02E+00		99.4%
Chromium	NA	2.37E-04	2.00E-02	1.18E-02		<1%
Nitrate	NA	0.00E+00	7.00E+00	NA		
Zinc	NA	0.00E+00	3.00E-01	NA		
Methyl isobutyl ketone	NA	1.56E-04	8.00E-01	1.94E-04		<1%
Methyl-n-butyl ketone	NA	0.00E+00	NA	NA	2.04E+00	

Table H.1.9-11 Pathway-Specific Carcinogenic Risks to the Future On-Site Construction Worker at the Pavement Perimeter Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SUBSURFACE SOIL						
	mg/kg					
Arsenic	52.1	2.10E-06	1.50E+00	3.15E-06		100%
Chromium	33.7	1.36E-06	NA	NA		
Nitrate	55.6	2.24E-06	NA	NA		
Zinc	76.7	3.09E-06	NA	NA		
Methyl isobutyl ketone	NA	0.00E+00	NA	NA	3.15E-06	
DERMAL CONTACT WITH SUBSURFACE SOIL						
	mg/kg					
Arsenic	52.1	2.01E-08	1.50E+00	3.01E-08		100%
Chromium	33.7	1.30E-08	NA	NA		
Nitrate	55.6	2.14E-08	NA	NA		
Zinc	76.7	2.95E-08	NA	NA		
Methyl isobutyl ketone	NA	0.00E+00	NA	NA	3.01E-08	
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	1.77E-06	3.71E-09	1.50E+01	5.57E-08		36.1%
Chromium	1.15E-06	2.40E-09	4.10E+01	9.85E-08		63.9%
Nitrate	1.89E-06	3.96E-09	NA	NA		
Zinc	2.61E-06	5.47E-09	NA	NA	1.54E-07	

Table H.1.9-12 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Construction Worker at the Pavement Perimeter Site (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SUBSURFACE SOIL						
	mg/kg					
Arsenic	52.1	2.94E-05	3.00E-04	9.79E-02		99%
Chromium	33.7	1.90E-05	2.00E-02	9.50E-04		<1%
Nitrate	55.6	3.13E-05	7.00E+00	4.48E-06		<1%
Zinc	76.7	4.32E-05	3.00E-01	1.44E-04		<1%
Methyl isobutyl ketone	NA	0.00E+00	8.00E-01	NA	9.90E-02	
DERMAL CONTACT WITH SUBSURFACE SOIL						
	mg/kg					
Arsenic	52.1	2.81E-07	3.00E-04	9.36E-04		99%
Chromium	33.7	1.82E-07	2.00E-02	9.08E-06		<1%
Nitrate	55.6	3.00E-07	7.00E+00	4.28E-08		<1%
Zinc	76.7	4.13E-07	3.00E-01	1.38E-06		<1%
Methyl isobutyl ketone	NA	0.00E+00	8.00E-01	NA	9.46E-04	
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	1.77E-06	5.20E-08	NA	NA		
Chromium	1.15E-06	3.36E-08	1.10E-06	3.06E-02		100%
Nitrate	1.89E-06	5.55E-08	NA	NA		
Zinc	2.61E-06	7.65E-08	NA	NA	3.06E-02	

Table H.1.10-1 Pathway-Specific Carcinogenic Risks to the Current Off-Site Adult Resident at Wastewater Lagoons 1, 2, and 3 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF VAPORS						
	mg/m3					
Acetone	1.70E-07	1.92E-08	NA	NA	0.00E+00	

Table H.1.10-2 Pathway-Specific Noncarcinogenic Hazards to the Current Off-Site Adult Resident at Wastewater Lagoons 1, 2, and 3 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF VAPORS						
	mg/m3					
Acetone	1.70E-07	4.47E-08	NA	NA	0.00E+00	

Table H.1.10-3 Pathway-Specific Carcinogenic Risks to the Current Off-Site Child Resident at Wastewater Lagoons 1, 2, and 3 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF VAPORS						
	mg/m3					
Acetone	1.70E-07	1.34E-08	NA	NA	0.00E+00	

Table H.1.10-4 Pathway-Specific Noncarcinogenic Hazards to the Current Off-Site Child Resident at Wastewater Lagoons 1, 2, and 3 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF VAPORS						
	mg/m3					
Acetone	1.70E-07	1.56E-07	NA	NA	0.00E+00	

Table H.1.10-5 Pathway-Specific Carcinogenic Risks to the Future On-Site Adult Resident at Wastewater Lagoons 1, 2, and 3 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SOIL						
	mg/kg					
Arsenic	36.5	2.14E-05	1.50E+00	3.21E-05		92%
Beryllium	1.16	6.81E-07	4.30E+00	2.93E-06		8%
Chromium	37.6	2.21E-05	NA	NA		
Copper	33.4	1.96E-05	NA	NA		
Mercury	0.364	2.14E-07	NA	NA		
Nickel	35.4	2.08E-05	NA	NA		
Uranium	4	2.35E-06	NA	NA		
Zinc	131	7.69E-05	NA	NA	3.51E-05	
DERMAL CONTACT WITH SOIL						
	mg/kg					
Arsenic	36.5	9.84E-07	1.50E+00	1.48E-06		92%
Beryllium	1.16	3.13E-08	4.30E+00	1.34E-07		8%
Chromium	37.6	1.01E-06	NA	NA		
Copper	33.4	9.00E-07	NA	NA		
Mercury	0.364	9.81E-09	NA	NA		
Nickel	35.4	9.54E-07	NA	NA		
Uranium	4	1.08E-07	NA	NA		
Zinc	131	3.53E-06	NA	NA	1.61E-06	

Table H.1.10-5 Pathway-Specific Carcinogenic Risks to the Future On-Site Adult Resident at Wastewater Lagoons 1, 2, and 3 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	7.64E-05	1.50E+00	1.15E-04		98%
Beryllium	NA	6.07E-07	4.30E+00	2.61E-06		2%
Chromium	NA	5.25E-05	NA	NA		
Copper	NA	2.58E-03	NA	NA		
Mercury	NA	2.42E-05	NA	NA		
Nickel	NA	7.08E-04	NA	NA		
Uranium	NA	1.17E-05	NA	NA		
Zinc	NA	3.00E-02	NA	NA	1.17E-04	

Table H.1.10-6 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Adult Resident at Wastewater Lagoons 1, 2, and 3 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SOIL						
	mg/kg					
Arsenic	36.5	5.00E-05	3.00E-04	1.67E-01		90.1%
Beryllium	1.16	1.59E-06	5.00E-03	3.18E-04		<1%
Chromium	37.6	5.15E-05	5.00E-03	1.03E-02		5.6%
Copper	33.4	4.58E-05	3.70E-02	1.24E-03		<1%
Mercury	0.364	4.99E-07	3.00E-04	1.66E-03		<1%
Nickel	35.4	4.85E-05	2.00E-02	2.42E-03		1.3%
Uranium	4	5.48E-06	3.00E-03	1.83E-03		<1%
Zinc	131	1.79E-04	3.00E-01	5.98E-04	1.85E-01	<1%
DERMAL CONTACT WITH SOIL						
	mg/kg					
Arsenic	36.5	2.30E-06	3.00E-04	7.65E-03		90.7%
Beryllium	1.16	7.29E-08	5.00E-03	1.46E-05		<1%
Chromium	37.6	2.36E-06	5.00E-03	4.73E-04		5.6%
Copper	33.4	2.10E-06	NA*	NA		
Mercury	0.364	2.29E-08	3.00E-04	7.63E-05		<1%
Nickel	35.4	2.23E-06	2.00E-02	1.11E-04		1.3%
Uranium	4	2.52E-07	3.00E-03	8.38E-05		<1%
Zinc	131	8.24E-06	3.00E-01	2.75E-05	8.44E-03	<1%

Table H.1.10-6 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Adult Resident at Wastewater Lagoons 1, 2, and 3 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	1.78E-04	3.00E-04	5.94E-01		45.9%
Beryllium	NA	1.42E-06	5.00E-03	2.83E-04		<1%
Chromium	NA	1.22E-04	5.00E-03	2.45E-02		1.9%
Copper	NA	6.03E-03	3.70E-02	1.63E-01		12.6%
Mercury	NA	5.64E-05	3.00E-04	1.88E-01		14.5%
Nickel	NA	1.65E-03	2.00E-02	8.26E-02		6.4%
Uranium	NA	2.72E-05	3.00E-03	9.06E-03		<1%
Zinc	NA	6.99E-02	3.00E-01	2.33E-01	1.29E+00	18.0%

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.10-7 Pathway-Specific Carcinogenic Risks to the Future On-Site Child Resident at Wastewater Lagoons 1, 2, and 3 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SOIL						
	mg/kg					
Arsenic	36.5	4.00E-05	1.50E+00	6.00E-05		91.7%
Beryllium	1.16	1.27E-06	4.30E+00	5.47E-06		8.3%
Chromium	37.6	4.12E-05	NA	NA		
Copper	33.4	3.66E-05	NA	NA		
Mercury	0.364	3.99E-07	NA	NA		
Nickel	35.4	3.88E-05	NA	NA		
Uranium	4	4.38E-06	NA	NA		
Zinc	131	1.44E-04	NA	NA	6.55E-05	
DERMAL CONTACT WITH SOIL						
	mg/kg					
Arsenic	36.5	5.30E-07	1.50E+00	7.95E-07		91.7%
Beryllium	1.16	1.68E-08	4.30E+00	7.24E-08		8.3%
Chromium	37.6	5.46E-07	NA	NA		
Copper	33.4	4.85E-07	NA	NA		
Mercury	0.364	5.29E-09	NA	NA		
Nickel	35.4	5.14E-07	NA	NA		
Uranium	4	5.81E-08	NA	NA		
Zinc	131	1.90E-06	NA	NA	8.67E-07	

Table H.1.10-7 Pathway-Specific Carcinogenic Risks to the Future On-Site Child Resident at Wastewater Lagoons 1, 2, and 3 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	3.92E-05	1.50E+00	5.88E-05		97.8%
Beryllium	NA	3.11E-07	4.30E+00	1.34E-06		2.2%
Chromium	NA	2.76E-05	NA	NA		
Copper	NA	1.36E-03	NA	NA		
Mercury	NA	1.25E-05	NA	NA		
Nickel	NA	3.66E-04	NA	NA		
Uranium	NA	6.14E-06	NA	NA		
Zinc	NA	1.57E-02	NA	NA	6.01E-05	

Table H.1.10-8 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Resident Child at Wastewater Lagoons 1, 2, and 3 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SOIL						
	mg/kg					
Arsenic	36.5	4.67E-04	3.00E-04	1.56E+00		94.8%
Beryllium	1.16	1.48E-05	5.00E-03	2.97E-03		<1%
Chromium	37.6	4.81E-04	2.00E-02	2.40E-02		1.5%
Copper	33.4	4.27E-04	3.70E-02	1.15E-02		<1%
Mercury	0.364	4.65E-06	3.00E-03	1.55E-03		<1%
Nickel	35.4	4.53E-04	2.00E-02	2.26E-02		1.4%
Uranium	4	5.11E-05	3.00E-03	1.70E-02		1.0%
Zinc	131	1.67E-03	3.00E-01	5.58E-03	1.64E+00	<1%
DERMAL CONTACT WITH SOIL						
	mg/kg					
Arsenic	36.5	6.18E-06	3.00E-04	2.06E-02		95.5%
Beryllium	1.16	1.97E-07	5.00E-03	3.93E-05		<1%
Chromium	37.6	6.37E-06	2.00E-02	3.18E-04		1.5%
Copper	33.4	5.66E-06	NA*	NA		
Mercury	0.364	6.17E-08	3.00E-03	2.06E-05		<1%
Nickel	35.4	6.00E-06	2.00E-02	3.00E-04		1.4%
Uranium	4	6.78E-07	3.00E-03	2.26E-04		1.0%
Zinc	131	2.22E-05	3.00E-01	7.40E-05	2.16E-02	<1%

Table H.1.10-8 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Resident Child at Wastewater Lagoons 1, 2, and 3 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	4.57E-04	3.00E-04	1.52E+00		53.1%
Beryllium	NA	3.63E-06	5.00E-03	7.26E-04		<1%
Chromium	NA	3.22E-04	2.00E-02	1.61E-02		<1%
Copper	NA	1.59E-02	3.70E-02	4.28E-01		15.0%
Mercury	NA	1.46E-04	3.00E-03	4.87E-02		1.7%
Nickel	NA	4.27E-03	2.00E-02	2.14E-01		7.5%
Uranium	NA	7.16E-05	3.00E-03	2.39E-02		<1%
Zinc	NA	1.83E-01	3.00E-01	6.11E-01	2.87E+00	21.3%

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.10-9 Pathway-Specific Carcinogenic Risks to the Future On-Site Construction Worker at Wastewater Lagoons 1, 2, and 3 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SOIL						
	mg/kg					
Arsenic	36.5	1.47E-06	1.50E+00	2.20E-06		91.7%
Beryllium	1.16	4.67E-08	4.30E+00	2.01E-07		8.3%
Chromium	37.6	1.51E-06	NA	NA		
Copper	33.4	1.34E-06	NA	NA		
Mercury	0.364	1.47E-08	NA	NA		
Nickel	35.4	1.43E-06	NA	NA		
Uranium	4	1.61E-07	NA	NA		
Zinc	131	5.27E-06	NA	NA	2.40E-06	
DERMAL CONTACT WITH SOIL						
	mg/kg					
Arsenic	36.5	1.41E-08	1.50E+00	2.11E-08		91.7%
Beryllium	1.16	4.47E-10	4.30E+00	1.92E-09		8.3%
Chromium	37.6	1.45E-08	NA	NA		
Copper	33.4	1.29E-08	NA	NA		
Mercury	0.364	1.40E-10	NA	NA		
Nickel	35.4	1.36E-08	NA	NA		
Uranium	4	1.54E-09	NA	NA		
Zinc	131	5.04E-08	NA	NA	2.30E-08	

Table H.1.10-9 Pathway-Specific Carcinogenic Risks to the Future On-Site Construction Worker at Wastewater Lagoons 1, 2, and 3 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	1.24E-06	2.60E-09	1.50E+01	3.90E-08		25.7%
Beryllium	3.94E-08	8.27E-11	8.40E+00	6.95E-10		<1%
Chromium	1.28E-06	2.68E-09	4.10E+01	1.10E-07		72.4%
Copper	1.14E-06	2.38E-09	NA	NA		
Mercury	1.24E-08	7.78E-12	NA	NA		
Nickel	1.20E-06	2.52E-09	8.40E-01	2.12E-09		1.4%
Uranium	1.36E-07	2.85E-10	NA	NA		
Zinc	4.45E-06	9.34E-09	NA	NA	1.52E-07	

Table H.1.10-10 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Construction Worker at Wastewater Lagoons 1, 2, and 3 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SOIL						
	mg/kg					
Arsenic	36.5	2.06E-05	3.00E-04	6.86E-02		94.8%
Beryllium	1.16	6.54E-07	5.00E-03	1.31E-04		<1%
Chromium	37.6	2.12E-05	2.00E-02	1.06E-03		1.5%
Copper	33.4	1.88E-05	3.70E-02	5.09E-04		<1%
Mercury	0.364	2.05E-07	3.00E-03	6.84E-05		<1%
Nickel	35.4	2.00E-05	2.00E-02	9.98E-04		1.4%
Uranium	4	2.25E-06	3.00E-03	7.51E-04		1.0%
Zinc	131	7.38E-05	3.00E-01	2.46E-04	7.23E-02	<1%
DERMAL CONTACT WITH SOIL						
	mg/kg					
Arsenic	36.5	1.97E-07	3.00E-04	6.56E-04		95.5%
Beryllium	1.16	6.25E-09	5.00E-03	1.25E-06		<1%
Chromium	37.6	2.03E-07	2.00E-02	1.01E-05		1.5%
Copper	33.4	1.80E-07	NA*	NA		
Mercury	0.364	1.96E-09	3.00E-03	6.54E-07		<1%
Nickel	35.4	1.91E-07	2.00E-02	9.54E-06		1.4%
Uranium	4	2.16E-08	3.00E-03	7.19E-06		1.0%
Zinc	131	7.06E-07	3.00E-01	2.35E-06	6.87E-04	<1%

Table H.1.10-10 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Construction Worker at Wastewater Lagoons 1, 2, and 3 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	1.24E-06	3.64E-08	NA	NA		
Beryllium	3.94E-08	1.16E-09	NA	NA		
Chromium	1.28E-06	3.75E-08	1.10E-06	3.41E-02		99.996%
Copper	1.14E-06	3.33E-08	NA	NA		
Mercury	1.24E-08	1.09E-10	8.60E-05	1.27E-06		<1%
Nickel	1.20E-06	3.53E-08	NA	NA		
Uranium	1.36E-07	3.99E-09	NA	NA		
Zinc	4.45E-06	1.31E-07	NA	NA	3.41E-02	

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.11-1 Pathway-Specific Carcinogenic Risks to the Current Off-Site Adult Resident at Wastewater Lagoon 4 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF VAPORS						
	mg/m3					
Acetone	9.90E-08	1.12E-08	NA	NA	0.00E+00	

Table H.1.11-2 Pathway-Specific Noncarcinogenic Hazards to the Current Off-Site Adult Resident at Wastewater Lagoon 4 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF VAPORS						
	mg/m3					
Acetone	9.90E-08	2.60E-08	NA	NA	0.00E+00	

Table H.1.11-3 Pathway-Specific Carcinogenic Risks to the Current Off-Site Child Resident at Wastewater Lagoon 4 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF VAPORS						
	mg/m3					
Acetone	9.90E-08	7.81E-09	NA	NA	0.00E+00	

Table H.1.11-4 Pathway-Specific Noncarcinogenic Hazards to the Current Off-Site Child Resident at Wastewater Lagoon 4 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF VAPORS						
	mg/m3					
Acetone	9.90E-08	9.11E-08	NA	NA	0.00E+00	

Table H.1.11-5 Pathway-Specific Carcinogenic Risks to the Future On-Site Adult Resident at Wastewater Lagoon 4 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SOIL						
	mg/kg					
Chromium	29.8	1.75E-05	NA	NA		
Copper	27.7	1.63E-05	NA	NA		
Uranium	3.1	1.82E-06	NA	NA		
Zinc	127	7.46E-05	NA	NA		
4-Methylphenol	0.79	4.64E-07	NA	NA	0.00E+00	
DERMAL CONTACT WITH SOIL						
	mg/kg					
Chromium	29.8	8.03E-07	NA	NA		
Copper	27.7	7.46E-07	NA	NA		
Uranium	3.1	8.35E-08	NA	NA		
Zinc	127	3.42E-06	NA	NA		
4-Methylphenol	0.79	2.13E-07	NA	NA	0.00E+00	
INGESTION OF HOMEGROWN PRODUCE						
Chromium	NA	4.16E-05	NA	NA		
Copper	NA	2.14E-03	NA	NA		
Uranium	NA	9.03E-06	NA	NA		
Zinc	NA	2.91E-02	NA	NA		
4-Methylphenol	NA	5.67E-04	NA	NA	0.00E+00	

Table H.1.11-6 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Adult Resident at Wastewater Lagoon 4 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SOIL						
	mg/kg					
Chromium	29.8	4.08E-05	5.00E-03	8.16E-03		71.6%
Copper	27.7	3.79E-05	3.70E-02	1.03E-03		9.0%
Uranium	3.1	4.25E-06	3.00E-03	1.42E-03		12.4%
Zinc	127	1.74E-04	3.00E-01	5.80E-04		5.1%
4-Methylphenol	0.79	1.08E-06	5.00E-03	2.16E-04	1.14E-02	1.9%
DERMAL CONTACT WITH SOIL						
	mg/kg					
Chromium	29.8	1.87E-06	5.00E-03	3.75E-04		66.2%
Copper	27.7	1.74E-06	NA*	NA		
Uranium	3.1	1.95E-07	3.00E-03	6.50E-05		11.5%
Zinc	127	7.99E-06	3.00E-01	2.66E-05		4.7%
4-Methylphenol	0.79	4.97E-07	5.00E-03	9.93E-05	5.66E-04	17.6%
INGESTION OF HOMEGROWN PRODUCE						
Chromium	NA	9.70E-05	5.00E-03	1.94E-02		3.0%
Copper	NA	5.00E-03	3.70E-02	1.35E-01		20.7%
Uranium	NA	2.11E-05	3.00E-03	7.02E-03		1.1%
Zinc	NA	6.78E-02	3.00E-01	2.26E-01		34.7%
4-Methylphenol	NA	1.32E-03	5.00E-03	2.65E-01	6.52E-01	40.6%

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.11-7 Pathway-Specific Carcinogenic Risks to the Future On-Site Child Resident at Wastewater Lagoon 4 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SOIL						
	mg/kg					
Chromium	29.8	3.27E-05	NA	NA		
Copper	27.7	3.04E-05	NA	NA		
Uranium	3.1	3.40E-06	NA	NA		
Zinc	127	1.39E-04	NA	NA		
4-Methylphenol	0.79	8.66E-07	NA	NA	0.00E+00	
DERMAL CONTACT WITH SOIL						
	mg/kg					
Chromium	29.8	4.33E-07	NA	NA		
Copper	27.7	4.02E-07	NA	NA		
Uranium	3.1	4.50E-08	NA	NA		
Zinc	127	1.84E-06	NA	NA		
4-Methylphenol	0.79	1.15E-07	NA	NA	0.00E+00	
INGESTION OF HOMEGROWN PRODUCE						
Chromium	NA	2.19E-05	NA	NA		
Copper	NA	1.13E-03	NA	NA		
Uranium	NA	4.76E-06	NA	NA		
Zinc	NA	1.52E-02	NA	NA		
4-Methylphenol	NA	2.96E-04	NA	NA	0.00E+00	

Table H.1.11-8 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Resident Child at Wastewater Lagoon 4 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SOIL						
	mg/kg					
Chromium	29.8	3.81E-04	2.00E-02	1.91E-02		38.7%
Copper	27.7	3.54E-04	3.70E-02	9.57E-03		19.4%
Uranium	3.1	3.96E-05	3.00E-03	1.32E-02		26.8%
Zinc	127	1.62E-03	3.00E-01	5.41E-03		11.0%
4-Methylphenol	0.79	1.01E-05	5.00E-03	2.02E-03	4.93E-02	4.1%
DERMAL CONTACT WITH SOIL						
	mg/kg					
Chromium	29.8	5.05E-06	2.00E-02	2.52E-04		32.9%
Copper	27.7	4.69E-06	NA*	NA		
Uranium	3.1	5.25E-07	3.00E-03	1.75E-04		22.8%
Zinc	127	2.15E-05	3.00E-01	7.17E-05		9.4%
4-Methylphenol	0.79	1.34E-06	5.00E-03	2.68E-04	7.67E-04	34.9%
INGESTION OF HOMEGROWN PRODUCE						
Chromium	NA	2.55E-04	2.00E-02	1.27E-02		<1%
Copper	NA	1.31E-02	3.70E-02	3.55E-01		21.3%
Uranium	NA	5.55E-05	3.00E-03	1.85E-02		1.1%
Zinc	NA	1.78E-01	3.00E-01	5.93E-01		35.5%
4-Methylphenol	NA	3.45E-03	5.00E-03	6.91E-01	1.67E+00	41.4%

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.11-9 Pathway-Specific Carcinogenic Risks to the Future On-Site Construction Worker at Wastewater Lagoon 4 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SOIL						
	mg/kg					
Chromium	29.8	1.20E-06	NA	NA		
Copper	27.7	1.12E-06	NA	NA		
Uranium	3.1	1.25E-07	NA	NA		
Zinc	127	5.11E-06	NA	NA		
4-Methylphenol	0.79	3.18E-08	NA	NA	0.00E+00	
DERMAL CONTACT WITH SOIL						
	mg/kg					
Chromium	29.8	1.15E-08	NA	NA		
Copper	27.7	1.07E-08	NA	NA		
Uranium	3.1	1.19E-09	NA	NA		
Zinc	127	4.89E-08	NA	NA		
4-Methylphenol	0.79	3.04E-09	NA	NA	0.00E+00	
INHALATION OF PARTICULATES						
	mg/m3					
Chromium	5.96E-07	1.25E-09	4.10E+01	5.12E-08		100%
Copper	5.54E-07	1.16E-09	NA	NA		
Uranium	6.20E-08	1.30E-10	NA	NA		
Zinc	2.54E-06	5.33E-09	NA	NA		
4-Methylphenol	1.58E-08	3.31E-11	NA	NA	5.12E-08	

Table H.1.11-10 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Construction Worker at Wastewater Lagoon 4 (SWMU 13)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SOIL						
	mg/kg					
Chromium	29.8	1.68E-05	2.00E-02	8.40E-04		38.7%
Copper	27.7	1.56E-05	3.70E-02	4.22E-04		19.4%
Uranium	3.1	1.75E-06	3.00E-03	5.82E-04		26.8%
Zinc	127	7.16E-05	3.00E-01	2.39E-04		11.0%
4-Methylphenol	0.79	4.45E-07	5.00E-03	8.90E-05	2.17E-03	4.1%
DERMAL CONTACT WITH SOIL						
	mg/kg					
Chromium	29.8	1.61E-07	2.00E-02	8.03E-06		32.9%
Copper	27.7	1.49E-07	NA*	NA		
Uranium	3.1	1.67E-08	3.00E-03	5.57E-06		22.8%
Zinc	127	6.84E-07	3.00E-01	2.28E-06		9.4%
4-Methylphenol	0.79	4.26E-08	5.00E-03	8.52E-06	2.44E-05	34.9%
INHALATION OF PARTICULATES						
	mg/m3					
Chromium	5.96E-07	1.75E-08	1.10E-06	1.59E-02		100%
Copper	5.54E-07	1.63E-08	NA	NA		
Uranium	6.20E-08	1.82E-09	NA	NA		
Zinc	2.54E-06	7.46E-08	NA	NA		
4-Methylphenol	1.58E-08	4.64E-10	NA	NA	1.59E-02	

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.12-1 Pathway-Specific Carcinogenic Risks to the Current On-Site Worker
SWMU-Wide Exposure at SWMU 17

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	9.29E-08	3.38E-09	1.5E+01	5.06E-08		35.2%
Chromium	6.26E-08	2.28E-09	4.1E+01	9.33E-08		64.8%
Copper	2.38E-07	8.65E-09	NA	NA		
Lead	5.60E-07	2.04E-08	NA	NA		
Zinc	2.25E-07	8.18E-09	NA	NA		
bis(2-Ethylhexyl)phthalate	1.80E-10	1.96E-12	NA	NA	1.44E-07	
INHALATION OF VAPORS						
	mg/m3					
Xylene, o-	1.15E-10	4.18E-12	NA	NA		
Toluene	2.55E-10	9.27E-12	NA	NA	0.00E+00	

Table H.1.12-2 Pathway-Specific Noncarcinogenic Hazards to the Current On-Site Worker SWMU-Wide Exposure at SWMU 17

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	9.29E-08	9.45E-09	NA	NA		
Chromium	6.26E-08	6.37E-09	1.1E-06	5.79E-03		97.8%
Copper	2.38E-07	2.42E-08	NA	NA		
Lead	5.60E-07	5.70E-08	4.3E-04	1.33E-04		2.2%
Zinc	2.25E-07	2.29E-08	NA	NA		
bis(2-Ethylhexyl)phthalate	1.80E-10	5.50E-12	2.9E-03	1.89E-09	5.92E-03	<1%
INHALATION OF VAPORS						
	mg/m3					
Xylene, o-	1.15E-10	1.17E-11	NA	NA		
Toluene	2.55E-10	2.59E-11	1.1E-01	2.36E-10	2.36E-10	100%

Table H.1.12-3 Pathway-Specific Carcinogenic Risks to the Future On-Site Adult Resident SWMU-Wide Exposure (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	7.43E-07	8.38E-08	1.50E+01	1.26E-06		35.2%
Chromium	5.00E-07	5.64E-08	4.10E+01	2.31E-06		64.8%
Copper	1.91E-06	2.15E-07	NA	NA		
Lead	4.48E-06	5.05E-07	NA	NA		
Zinc	1.80E-06	2.03E-07	NA	NA		
bis(2-Ethylhexyl)phthalate	2.16E-09	7.30E-11	NA	NA	3.57E-06	
INHALATION OF VAPORS						
	mg/m3					
Xylene, o-	1.35E-09	1.52E-10	NA	NA		
Toluene	3.05E-09	3.44E-10	NA	NA	0.00E+00	

Table H.1.12-4 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Adult Resident SWMU-Wide Exposure (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	7.43E-07	1.95E-07	NA	NA		
Chromium	5.00E-07	1.32E-07	1.10E-06	1.20E-01		97.8%
Copper	1.91E-06	5.02E-07	NA	NA		
Lead	4.48E-06	1.18E-06	4.30E-04	2.74E-03		2.2%
Zinc	1.80E-06	4.73E-07	NA	NA		
bis(2-Ethylhexyl)phthalate	2.16E-09	1.70E-10	2.90E-03	5.88E-08	1.22E-01	<1%
INHALATION OF VAPORS						
	mg/m3					
Xylene, o-	1.35E-09	3.55E-10	NA	NA		
Toluene	3.05E-09	8.02E-10	1.10E-01	7.29E-09	7.29E-09	100%

Table H.1.12-5 Pathway-Specific Carcinogenic Risks to the Future On-Site Child Resident
SWMU-Wide Exposure (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	1.49E-06	1.18E-07	1.50E+01	1.76E-06		35.3%
Chromium	1.00E-06	7.89E-08	4.10E+01	3.24E-06		64.7%
Copper	3.81E-06	3.01E-07	NA	NA		
Lead	8.96E-06	7.07E-07	NA	NA		
Zinc	3.60E-06	2.84E-07	NA	NA		
bis(2-Ethylhexyl)phthalate	4.68E-09	1.11E-10	NA	NA	5.00E-06	
INHALATION OF VAPORS						
	mg/m3					
Xylene, o-	2.95E-09	2.33E-10	NA	NA		
Toluene	6.50E-09	5.13E-10	NA	NA	0.00E+00	

Table H.1.12-6 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Child Resident SWMU-Wide Exposure (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	1.49E-06	1.37E-06	NA	NA		
Chromium	1.00E-06	9.21E-07	1.10E-06	8.37E-01		97.8%
Copper	3.81E-06	3.51E-06	NA	NA		
Lead	8.96E-06	8.25E-06	4.30E-04	1.92E-02		2.2%
Zinc	3.60E-06	3.31E-06	NA	NA		
bis(2-Ethylhexyl)phthalate	4.68E-09	1.29E-09	2.90E-03	4.46E-07	8.56E-01	<1%
INHALATION OF VAPORS						
	mg/m3					
Xylene, o-	2.95E-09	2.72E-09	NA	NA		
Toluene	6.50E-09	5.98E-09	1.10E-01	5.44E-08	5.44E-08	100%

Table H.1.13-1 Pathway-Specific Carcinogenic Risks to the Current On-Site Worker at the Fuel Spill Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SURFACE SOIL						
	mg/kg					
bis(2-Ethylhexyl)phthalate	0.36	3.14E-08	1.4E-02	4.40E-10		100%
Xylene, o-	0.014	1.22E-09	NA	NA		
Toluene	0.015	1.31E-09	NA	NA	4.40E-10	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
bis(2-Ethylhexyl)phthalate	0.36	2.40E-08	NA*	NA		
Xylene, o-	0.014	9.34E-10	NA	NA		
Toluene	0.015	1.00E-09	NA	NA	0.00E+00	

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.13-2 Pathway-Specific Noncarcinogenic Hazards to the Current On-Site Worker at the Fuel Spill Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SURFACE SOIL						
	mg/kg					
bis(2-Ethylhexyl)phthalate	0.36	8.79E-08	2.0E-02	4.40E-06		99.5%
Xylene, o-	0.014	3.42E-09	2.0E+00	1.71E-09		<1%
Toluene	0.015	3.66E-09	2.0E-01	1.83E-08	4.42E-06	<1%
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
bis(2-Ethylhexyl)phthalate	0.36	6.73E-08	NA*	NA		
Xylene, o-	0.014	2.62E-09	2.0E+00	1.31E-09		8.5%
Toluene	0.015	2.80E-09	2.0E-01	1.40E-08	1.53E-08	91.5%

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.13-3 Pathway-Specific Carcinogenic Risks to the Current Off-Site Adult Resident at the Fuel Spill Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF PARTICULATES						
	mg/m3					
bis(2-Ethylhexyl)phthalate	1.33E-13	4.50E-15	NA	NA	0.00E+00	
INHALATION OF VAPORS						
	mg/m3					
Xylene, o-	8.50E-14	9.58E-15	NA	NA		
Toluene	1.85E-13	2.09E-14	NA	NA	0.00E+00	

Table H.1.13-4 Pathway-Specific Noncarcinogenic Hazards to the Current Off-Site Adult Resident at the Fuel Spill Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF PARTICULATES						
	mg/m3					
bis(2-Ethylhexyl)phthalate	1.33E-13	1.05E-14	2.90E-03	3.62E-12	3.62E-12	100%
INHALATION OF VAPORS						
	mg/m3					
Xylene, o-	8.50E-14	2.24E-14	NA	NA		
Toluene	1.85E-13	4.87E-14	1.10E-01	4.42E-13	4.42E-13	100%

Table H.1.13-5 Pathway-Specific Carcinogenic Risks to the Current Off-Site Child Resident at the Fuel Spill Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF PARTICULATES						
	mg/m3					
bis(2-Ethylhexyl)phthalate	1.33E-13	3.15E-15	NA	NA	0.00E+00	
INHALATION OF VAPORS						
	mg/m3					
Xylene, o-	8.50E-14	6.71E-15	NA	NA		
Toluene	1.85E-13	1.46E-14	NA	NA	0.00E+00	

Table H.1.13-6 Pathway-Specific Noncarcinogenic Hazards to the Current Off-Site Child Resident at the Fuel Spill Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF PARTICULATES						
	mg/m3					
bis(2-Ethylhexyl)phthalate	1.33E-13	3.68E-14	2.90E-03	1.27E-11	1.27E-11	100%
INHALATION OF VAPORS						
	mg/m3					
Xylene, o-	8.50E-14	7.82E-14	NA	NA		
Toluene	1.85E-13	1.70E-13	1.10E-01	1.55E-12	1.55E-12	100%

Table H.1.13-7 Pathway-Specific Carcinogenic Risks to the Future On-Site Adult Resident at the Fuel Spill Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SURFACE SOIL						
	mg/kg					
bis(2-Ethylhexyl)phthalate	0.36	2.11E-07	1.40E-02	2.96E-09		100%
Xylene, o-	0.014	8.22E-09	NA	NA		
Toluene	0.015	8.81E-09	NA	NA	2.96E-09	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
bis(2-Ethylhexyl)phthalate	0.36	9.70E-08	NA*	NA		
Xylene, o-	0.014	3.77E-09	NA	NA		
Toluene	0.015	4.04E-09	NA	NA	0.00E+00	
INGESTION OF HOMEGROWN PRODUCE						
bis(2-Ethylhexyl)phthalate	NA	7.43E-06	1.40E-02	1.04E-07		100%
Xylene, o-	NA	4.09E-06	NA	NA		
Toluene	NA	1.25E-06	NA	NA	1.04E-07	

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.13-8 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Adult Resident at the Fuel Spill Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SURFACE SOIL						
	mg/kg					
bis(2-Ethylhexyl)phthalate	0.36	4.93E-07	2.00E-02	2.47E-05		99.5%
Xylene, o-	0.014	1.92E-08	2.00E+00	9.59E-09		<1%
Toluene	0.015	2.05E-08	2.00E-01	1.03E-07	2.48E-05	<1%
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
bis(2-Ethylhexyl)phthalate	0.36	2.26E-07	NA*	NA		
Xylene, o-	0.014	8.80E-09	2.00E+00	4.40E-09		8.5%
Toluene	0.015	9.43E-09	2.00E-01	4.72E-08	5.16E-08	91.5%
INGESTION OF HOMEGROWN PRODUCE						
bis(2-Ethylhexyl)phthalate	NA	1.73E-05	2.00E-02	8.67E-04		97.8%
Xylene, o-	NA	9.55E-06	2.00E+00	4.78E-06		<1%
Toluene	NA	2.92E-06	2.00E-01	1.46E-05	8.86E-04	1.6%

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.13-9 Pathway-Specific Carcinogenic Risks to the Future On-Site Child Resident at the Fuel Spill Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SURFACE SOIL						
	mg/kg					
bis(2-Ethylhexyl)phthalate	0.36	3.95E-07	1.40E-02	5.52E-09		100%
Xylene, o-	0.014	1.53E-08	NA	NA		
Toluene	0.015	1.64E-08	NA	NA	5.52E-09	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
bis(2-Ethylhexyl)phthalate	0.36	5.23E-08	NA*	NA		
Xylene, o-	0.014	2.03E-09	NA	NA		
Toluene	0.015	2.18E-09	NA	NA	0.00E+00	
INGESTION OF HOMEGROWN PRODUCE						
bis(2-Ethylhexyl)phthalate	NA	3.88E-06	1.40E-02	5.44E-08		100%
Xylene, o-	NA	2.14E-06	NA	NA		
Toluene	NA	1.88E-06	NA	NA	5.44E-08	

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.13-10 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Resident Child at the Fuel Spill Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SURFACE SOIL						
	mg/kg					
bis(2-Ethylhexyl)phthalate	0.36	4.60E-06	2.00E-02	2.30E-04		99.9%
Xylene, o-	0.014	1.79E-07	2.00E+00	8.95E-08		<1%
Toluene	0.015	1.92E-07	2.00E+00	9.59E-08	2.30E-04	<1%
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
bis(2-Ethylhexyl)phthalate	0.36	6.10E-07	2.00E-02	3.05E-05		99.9%
Xylene, o-	0.014	2.37E-08	2.00E+00	1.19E-08		<1%
Toluene	0.015	2.54E-08	2.00E+00	1.27E-08	3.05E-05	<1%
INGESTION OF HOMEGROWN PRODUCE						
bis(2-Ethylhexyl)phthalate	NA	4.53E-05	2.00E-02	2.26E-03		99.0%
Xylene, o-	NA	2.49E-05	2.00E+00	1.25E-05		<1%
Toluene	NA	2.19E-05	2.00E+00	1.10E-05	2.29E-03	<1%

Table H.1.14-1 Pathway-Specific Carcinogenic Risks to the Current On-Site Worker at the Drum Storage Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	61.9	5.40E-06	1.5E+00	8.10E-06		100%
Chromium	41.7	3.64E-06	NA	NA		
Copper	158.8	1.39E-05	NA	NA		
Lead	373.5	3.26E-05	NA	NA		
Zinc	150	1.31E-05	NA	NA	8.10E-06	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	61.9	4.13E-07	1.5E+00	6.20E-07		100%
Chromium	41.7	2.78E-07	NA	NA		
Copper	158.8	1.06E-06	NA	NA		
Lead	373.5	2.49E-06	NA	NA		
Zinc	150	1.00E-06	NA	NA	6.20E-07	

Table H.1.14-2 Pathway-Specific Noncarcinogenic Hazards to the Current On-Site Worker at the Drum Storage Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	61.9	1.51E-05	3.0E-04	5.04E-02		19.0%
Chromium	41.7	1.02E-05	5.0E-03	2.04E-03		<1%
Copper	158.8	3.88E-05	3.7E-02	1.05E-03		<1%
Lead	373.5	9.12E-05	4.3E-04	2.12E-01		79.8%
Zinc	150	3.66E-05	3.0E-01	1.22E-04	2.66E-01	<1%
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	61.9	1.16E-06	3.0E-04	3.86E-03		19.0%
Chromium	41.7	7.79E-07	5.0E-03	1.56E-04		<1%
Copper	158.8	2.97E-06	NA*	NA		
Lead	373.5	6.98E-06	4.3E-04	1.62E-02		80.1%
Zinc	150	2.80E-06	3.0E-01	9.34E-06	2.02E-02	<1%

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.14-3 Pathway-Specific Carcinogenic Risks to the Current Off-Site Adult Resident at the Drum Storage Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	6.81E-11	7.68E-12	1.50E+01	1.15E-10		35.2%
Chromium	4.59E-11	5.17E-12	4.10E+01	2.12E-10		64.8%
Copper	1.75E-10	1.97E-11	NA	NA		
Lead	4.11E-10	4.63E-11	NA	NA		
Zinc	1.65E-10	1.86E-11	NA	NA	3.27E-10	

Table H.1.14-4 Pathway-Specific Noncarcinogenic Hazards to the Current Off-Site Adult Resident at the Drum Storage Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	6.81E-11	1.79E-11	NA	NA		
Chromium	4.59E-11	1.21E-11	1.10E-06	1.10E-05		97.8%
Copper	1.75E-10	4.59E-11	NA	NA		
Lead	4.11E-10	1.08E-10	4.30E-04	2.51E-07		2.2%
Zinc	1.65E-10	4.34E-11	NA	NA	1.12E-05	

Table H.1.14-5 Pathway-Specific Carcinogenic Risks to the Current Off-Site Child Resident at the Drum Storage Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	6.81E-11	5.37E-12	1.50E+01	8.06E-11		35.2%
Chromium	4.59E-11	3.62E-12	4.10E+01	1.48E-10		64.8%
Copper	1.75E-10	1.38E-11	NA	NA		
Lead	4.11E-10	3.24E-11	NA	NA		
Zinc	1.65E-10	1.30E-11	NA	NA	2.29E-10	

Table H.1.14-6 Pathway-Specific Noncarcinogenic Hazards to the Current Off-Site Child Resident at the Drum Storage Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	6.81E-11	6.27E-11	NA	NA		
Chromium	4.59E-11	4.22E-11	1.10E-06	3.84E-05		97.8%
Copper	1.75E-10	1.61E-10	NA	NA		
Lead	4.11E-10	3.78E-10	4.30E-04	8.80E-07		2.2%
Zinc	1.65E-10	1.52E-10	NA	NA	3.93E-05	

Table H.1.14-7 Pathway-Specific Carcinogenic Risks to the Future On-Site Adult Resident at the Drum Storage Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	61.9	3.63E-05	1.50E+00	5.45E-05		100%
Chromium	41.7	2.45E-05	NA	NA		
Copper	158.8	9.32E-05	NA	NA		
Lead	373.5	2.19E-04	NA	NA		
Zinc	150	8.81E-05	NA	NA	5.45E-05	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	61.9	1.67E-06	1.50E+00	2.50E-06		100%
Chromium	41.7	1.12E-06	NA	NA		
Copper	158.8	4.28E-06	NA	NA		
Lead	373.5	1.01E-05	NA	NA		
Zinc	150	4.04E-06	NA	NA	2.50E-06	
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	1.30E-04	1.50E+00	1.94E-04		100%
Chromium	NA	5.82E-05	NA	NA		
Copper	NA	1.23E-02	NA	NA		
Lead	NA	6.70E-04	NA	NA		
Zinc	NA	3.43E-03	NA	NA	1 94E-04	

Table H.1.14-8 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Adult Resident at the Drum Storage Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Chronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	61.9	8.48E-05	3.00E-04	2.83E-01		19.0%
Chromium	41.7	5.71E-05	5.00E-03	1.14E-02		<1%
Copper	158.8	2.18E-04	3.70E-02	5.88E-03		<1%
Lead	373.5	5.12E-04	4.30E-04	1.19E+00		79.8%
Zinc	150	2.05E-04	3.00E-01	6.85E-04	1.49E+00	<1%
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	61.9	3.89E-06	3.00E-04	1.30E-02		19.0%
Chromium	41.7	2.62E-06	5.00E-03	5.24E-04		<1%
Copper	158.8	9.98E-06	NA*	NA		
Lead	373.5	2.35E-05	4.30E-04	5.46E-02		80.1%
Zinc	150	9.43E-06	3.00E-01	3.14E-05	6.81E-02	<1%
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	3.02E-04	3.00E-04	1.01E+00		18.4%
Chromium	NA	1.36E-04	5.00E-03	2.71E-02		<1%
Copper	NA	2.87E-02	3.70E-02	7.75E-01		14.2%
Lead	NA	1.56E-03	4.30E-04	3.64E+00		66.5%
Zinc	NA	8.01E-03	3.00E-01	2.67E-02	5.47E+00	<1%

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.14-9 Pathway-Specific Carcinogenic Risks to the Future On-Site Child Resident at the Drum Storage Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	61.9	6.78E-05	1.50E+00	1.02E-04		100%
Chromium	41.7	4.57E-05	NA	NA		
Copper	158.8	1.74E-04	NA	NA		
Lead	373.5	4.09E-04	NA	NA		
Zinc	150	1.64E-04	NA	NA	1.02E-04	
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	61.9	8.99E-07	1.50E+00	1.35E-06		100%
Chromium	41.7	6.06E-07	NA	NA		
Copper	158.8	2.31E-06	NA	NA		
Lead	373.5	5.42E-06	NA	NA		
Zinc	150	2.18E-06	NA	NA	1.35E-06	
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	6.64E-05	1.50E+00	9.96E-05		100%
Chromium	NA	3.06E-05	NA	NA		
Copper	NA	6.46E-03	NA	NA		
Lead	NA	3.53E-04	NA	NA		
Zinc	NA	1.80E-02	NA	NA	9.96E-05	

Table H.1.14-10 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Resident Child at the Drum Storage Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SURFACE SOIL						
	mg/kg					
Arsenic	61.9	7.91E-04	3.00E-04	2.64E+00		19.1%
Chromium	41.7	5.33E-04	2.00E-02	2.67E-02		<1%
Copper	158.8	2.03E-03	3.70E-02	5.49E-02		<1%
Lead	373.5	4.78E-03	4.30E-04	1.11E+01		80.3%
Zinc	150	1.92E-03	3.00E-01	6.39E-03	1.38E+01	<1%
DERMAL CONTACT WITH SURFACE SOIL						
	mg/kg					
Arsenic	61.9	1.05E-05	3.00E-04	3.50E-02		19.1%
Chromium	41.7	7.06E-06	2.00E-02	3.53E-04		<1%
Copper	158.8	2.69E-05	NA*	NA		
Lead	373.5	6.33E-05	4.30E-04	1.47E-01		80.6%
Zinc	150	2.54E-05	3.00E-01	8.47E-05	1.83E-01	<1%
INGESTION OF HOMEGROWN PRODUCE						
Arsenic	NA	7.75E-04	3.00E-04	2.58E+00		17.3%
Chromium	NA	3.57E-04	2.00E-02	1.78E-02		<1%
Copper	NA	7.54E-02	3.70E-02	2.04E+00		13.7%
Lead	NA	4.11E-03	4.30E-04	9.57E+00		64.2%
Zinc	NA	2.10E-01	3.00E-01	7.00E-01	1.49E+01	4.7%

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Table H.1.14-11 Pathway-Specific Carcinogenic Risks to the Future On-Site Construction Worker at the Drum Storage Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
INGESTION OF SUBSURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	1.50E+00	NA		
Chromium	28.7	1.16E-06	NA	NA		
Copper	91.1	3.67E-06	NA	NA		
Lead	220.9	8.89E-06	NA	NA		
Zinc	146.4	5.89E-06	NA	NA		
Benzene	0.023	9.26E-10	2.90E-02	2.69E-11		100%
Xylene, o-	0.08	3.22E-09	NA	NA		
Xylene, m	0.016	6.44E-10	NA	NA		
Monochlorobenzene	0.023	9.26E-10	NA	NA		
Toluene	0.021	8.45E-10	NA	NA		
1,1,1-Trichloroethane	0.021	8.45E-10	NA	NA	2.69E-11	
DERMAL CONTACT WITH SUBSURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	1.50E+00	NA		
Chromium	28.7	1.10E-08	NA	NA		
Copper	91.1	3.51E-08	NA	NA		
Lead	220.9	8.50E-08	NA	NA		
Zinc	146.4	5.64E-08	NA	NA		
Benzene	0.023	8.85E-11	2.90E-02	2.57E-12		100%
Xylene, o-	0.08	3.08E-10	NA	NA		
Xylene, m	0.016	6.16E-11	NA	NA		
Monochlorobenzene	0.023	8.85E-11	NA	NA		

Table H.1.14-11 Pathway-Specific Carcinogenic Risks to the Future On-Site Construction Worker at the Drum Storage Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Slope Factor (per mg/kg-d)	Chemical-specific Cancer Risk	Total Pathway Cancer Risk	Percent of Total Cancer Risk
DERMAL CONTACT WITH SUBSURFACE SOIL (cont'd)						
Toluene	0.021	8.08E-11	NA	NA		
1,1,1-Trichloroethane	0.021	8.08E-11	NA	NA	2.57E-12	
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	NA	0.00E+00	1.50E+01	NA		
Chromium	5.74E-07	1.20E-09	4.10E+01	4.93E-08		100%
Copper	1.82E-06	3.82E-09	NA	NA		
Lead	4.42E-06	9.26E-09	NA	NA		
Zinc	2.93E-06	6.14E-09	NA	NA	4.93E-08	
INHALATION OF VAPORS						
Benzene	9.50E-08	1.99E-10	2.90E-02	5.78E-12		100%
Xylene, o-	9.50E-08	1.99E-10	NA	NA		
Xylene, m	1.70E-08	3.56E-11	NA	NA		
Monochlorobenzene	3.10E-08	6.50E-11	NA	NA		
Toluene	4.90E-08	1.03E-10	NA	NA		
1,1,1-Trichloroethane	9.30E-08	1.95E-10	NA	NA	5.78E-12	

Table H.1.14-12 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Construction Worker at the Drum Storage Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
INGESTION OF SUBSURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	3.00E-04	NA		
Chromium	28.7	1.62E-05	2.00E-02	8.09E-04		<1%
Copper	91.1	5.13E-05	3.70E-02	1.39E-03		<1%
Lead	220.9	1.24E-04	4.30E-04	2.90E-01		99.2%
Zinc	146.4	8.25E-05	3.00E-01	2.75E-04		<1%
Benzene	0.023	1.30E-08	NA	NA		
Xylene, o-	0.08	4.51E-08	2.00E+00	2.25E-08		<1%
Xylene, m	0.016	9.02E-09	2.00E+00	4.51E-09		<1%
Monochlorobenzene	0.023	1.30E-08	2.00E-02	6.48E-07		<1%
Toluene	0.021	1.18E-08	2.00E+00	5.92E-09		<1%
1,1,1-Trichloroethane	0.021	1.18E-08	NA	NA	2.92E-01	
DERMAL CONTACT WITH SUBSURFACE SOIL						
	mg/kg					
Arsenic	NA	0.00E+00	3.00E-04	NA		
Chromium	28.7	1.55E-07	2.00E-02	7.73E-06		<1%
Copper	91.1	4.91E-07	NA*	NA		
Lead	220.9	1.19E-06	4.30E-04	2.77E-03		99.6%
Zinc	146.4	7.89E-07	3.00E-01	2.63E-06		<1%
Benzene	0.023	1.24E-09	NA	NA		
Xylene, o-	0.08	4.31E-09	2.00E+00	2.16E-09		<1%
Xylene, m	0.016	8.62E-10	2.00E+00	4.31E-10		<1%
Monochlorobenzene	0.023	1.24E-09	NA*	NA		

Table H.1.14-12 Pathway-Specific Noncarcinogenic Hazards to the Future On-Site Construction Worker at the Drum Storage Site (SWMU 17)

Chemicals	Concentration in Environmental Medium	Exposure Dose (mg/kg-d)	Subchronic RfD mg/kg-d	Chemical-specific Hazard Quotient	Total Pathway Hazard Index	Percent of Total Hazard
DERMAL CONTACT WITH SUBSURFACE SOIL (cont'd)						
	mg/kg					
Toluene	0.021	1.13E-09	2.00E+00	5.66E-10		<1%
1,1,1-Trichloroethane	0.021	1.13E-09	NA	NA	2.78E-03	
INHALATION OF PARTICULATES						
	mg/m3					
Arsenic	NA	0.00E+00	NA	NA		
Chromium	5.74E-07	1.68E-08	1.10E-06	1.53E-02		98.1%
Copper	1.82E-06	5.35E-08	NA	NA		
Lead	4.42E-06	1.30E-07	4.30E-04	3.02E-04		1.9%
Zinc	2.93E-06	8.59E-08	NA	NA	1.56E-02	
INHALATION OF VAPORS						
	mg/m3					
Benzene	9.50E-08	2.79E-09	1.70E-02	1.64E-07		80.1%
Xylene, o-	9.50E-08	2.79E-09	NA	NA		
Xylene, m	1.70E-08	4.99E-10	NA	NA		
Monochlorobenzene	3.10E-08	9.10E-10	5.00E-02	1.82E-08		8.9%
Toluene	4.90E-08	1.44E-09	1.10E-01	1.31E-08		6.4%
1,1,1-Trichloroethane	9.30E-08	2.73E-09	2.90E-01	9.41E-09	2.05E-07	4.6%

NA* = It was considered inappropriate to use the oral toxicity value to evaluate the dermal toxicity of this chemical because the oral toxicity value is based solely on local effects on the gastrointestinal tract, including the liver.

Hazard Quotients Calculated for TEAD-S Maximum Background Values

Hazard Quotients Calculated for TEAD-S Maximum Background Values

					American Robin					Golden Eagle					Deer Mouse						Mule Deer				
Analyte Name	Soil EPC (mg/kg)	Water EPC (mg/L)	Air EPC (mg/m3)	ABS	Soil Ingestion	Dermal Contact with Soil	Dietary Ingestion	Water Ingestion	Total	Soil Ingestion	Dermal Contact with Soil	Dietary Ingestion	Water Ingestion	Total	Soil Ingestion	Dermal Contact with Soil	Dietary Ingestion	Water Ingestion	Inhalation	Total	Soil Ingestion	Dermal Contact with Soil	Dietary Ingestion	Water Ingestion	Total
AG	7 6		0	0 010	4 E-01	1 E-05	ND	NA	4 E-01	NA	NA	ND	NA	7 E-06	5 E-03	4 E-06	ND	NA	NA	5 E-03	3 E-07	2 E-10	ND	NA	3 E-07
AS	39 0		0	0 010	2 E+00	7 E-05	8 E-01	NA	3 E+00	NA	NA	5 E-05	NA	8 E-05	1 E+00	1 E-03	3 E+00	NA	NA	4 E+00	2 E-04	1 E-07	4 E-04	NA	6 E-04
BE	1 1		0	0 010	4 E-02	1 E-06	ND	NA	4 E-02	NA	NA	ND	NA	6 E-07	2 E-03	2 E-06	ND	NA	NA	2 E-03	3 E-07	1 E-10	ND	NA	3 E-07
CD	21 1		0	0 010	2 E+01	8 E-04	ND	NA	2 E+01	NA	NA	ND	NA	3 E-04	2 E-01	2 E-04	ND	NA	NA	2 E-01	3 E-05	2 E-08	ND	NA	3 E-05
CR	56 2		0	0 010	3 E+01	1 E-03	ND	NA	3 E+01	5 E-04	2 E-07	ND	NA	5 E-04	4 E-01	3 E-04	ND	NA	NA	4 E-01	3 E-05	2 E-08	ND	NA	3 E-05
HG	0 3		0	0 010	9 E-02	3 E-06	2 E-01	NA	3 E-01	1 E-06	5 E-10	1 E-05	NA	1 E-05	1 E-02	8 E-06	1 E-01	NA	NA	1 E-01	1 E-06	8 E-10	1 E-05	NA	2 E-05
CU	58 1		0	0 010	8 E-01	3 E-05	2 E+00	NA	3 E+00	1 E-05	4 E-09	8 E-05	NA	9 E-05	1 E-01	9 E-05	1 E+00	NA	NA	1 E+00	2 E-05	9 E-09	2 E-04	NA	2 E-04
NI	30 0		0	0 010	7 E-01	3 E-05	4 E-01	NA	1 E+00	1 E-05	4 E-09	3 E-05	NA	4 E-05	2 E-02	1 E-05	4 E-02	NA	NA	6 E-02	2 E-06	1 E-09	7 E-06	NA	9 E-06
PB	254 0		0	0 010	1 E+01	4 E-04	3 E+00	NA	2 E+01	2 E-04	5 E-08	2 E-04	NA	4 E-04	2 E+00	1 E-03	2 E+00	NA	NA	4 E+00	2 E-04	1 E-07	4 E-04	NA	7 E-04
SB	15 8		0	0 010	ND	ND	ND	ND	NA	ND	ND	ND	ND	NA	7 E-01	5 E-04	ND	NA	NA	7 E-01	9 E-05	5 E-08	ND	NA	9 E-05
SE	5 8		0	0 010	6 E+00	2 E-04	ND	NA	6 E+00	9 E-05	3 E-08	ND	NA	9 E-05	1 E+00	7 E-04	ND	NA	NA	1 E+00	1 E-04	5 E-08	ND	NA	1 E-04
TL	68 6		0	0 010	2 E+02	7 E-03	ND	NA	2 E+02	4 E-03	1 E-06	ND	NA	4 E-03	2 E+01	1 E-02	ND	NA	NA	2 E+01	2 E-03	1 E-06	ND	NA	2 E-03
ZN	232 0		0	0 010	6 E+00	2 E-04	3 E+01	NA	4 E+01	1 E-04	3 E-08	1 E-03	NA	1 E-03	1 E-01	8 E-05	2 E+00	NA	NA	2 E+00	1 E-05	8 E-09	2 E-04	NA	2 E-04

Note: NA indicates pathway incomplete. ND indicates parameters unavailable.