



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

September 25, 1991

VIA OVERNIGHT MAIL
RETURN RECEIPT REQUESTED

REPLY TO ATTENTION OF:

Mr. T.C. Wright, Esq.
The Jesup Group, Inc.
312 North Hill Street
Mishawaka, IN 46544-1399

Mr. Robert P. Kardasz, P.E.
Director of Public Works
City of Stoughton
P.O. Box 383
211 Water Street
Stoughton, WI 53589

RE: Stoughton City Landfill Site, Stoughton, WI -
Revised Risk Tables

Gentlemen:

Enclosed please find one (1) copy each of the following: 1. Revised Risk Tables for the Stoughton City Landfill Site; 2. Memorandum from Pei-Fung Hurst, Environmental Criteria and Assessment Office, U.S. EPA, to Andrew Podowski, U.S. EPA Region V Toxicologist, dated April 15, 1991; 3. Memorandum from Andrew Podowski to myself, dated August 22, 1991; and 4. Memorandum from Pei-Fung Hurst to Jae Lee, U.S. EPA Region V Remedial Project Manager for the Hagen Farm Superfund Site, dated June 22, 1990.

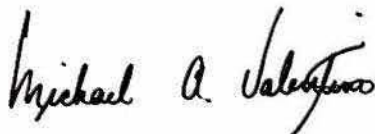
As you can see, the suggested interim oral reference dose (RfD) for tetrahydrofuran (THF) is 0.002 mg/kg/day. In the Risk Tables of the Baseline Risk Assessment prepared by ENSR Consulting and Engineering, the oral RfD used in the risk calculations was derived from an inhalation RfD for THF. Apparently, either some computational error was made in calculating the oral RfD, or the inhalation RfD given to ENSR (apparently by U.S. EPA, Research Triangle Park, N.C.) was in error. In any event, the oral RfD used in the PRP risk assessment (i.e., 0.068 mg/kg/day) is incorrect. This resulted in under-calculating human health risks from exposure to THF by a factor of 34 (i.e., the ratio between 0.068 and 0.002).

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The revised risk tables evaluate Site risks at MW-3S, the well found to have the highest THF concentrations. These revised risk tables will supercede those already placed in the Administrative Record for the Stoughton City Landfill Site.

This letter and the enclosures will be sent to the Site information repositories in Stoughton, and will be included as part of the Site Administrative Record. Should you have any questions concerning this letter or the enclosures, please contact me at your convenience.

Sincerely,

A handwritten signature in cursive script that reads "Michael A. Valentino".

Michael A. Valentino
Remedial Project Manager

Enclosures (4)

cc: Robin Schmidt, WDNR, w/ enc.
John Tielsch, U.S. EPA, w/ enc.
Louis Meschede, ENSR, w/ enc.
Michael Strimbu, Jacobs Engineering, w/ enc.

Table 6-7

Groundwater Ingestion Exposure

Adult Scenario

Chemical	Groundwater Concentration (ug/L)	Ingestion Rate (L/Day)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Gastrointestinal Absorption Adjustment Factor	Unit Correction Factor (mg/ug)	Body Weight (Kg)	Annual Average Daily Dose (mg/Kg/Day)	Lifetime Average Daily Dose (mg/Kg/Day)
Western Section									
1,2-dichloroethene	1.4	2	365/365	30/70	1.00	1.00E-03	70	4.00E-05	1.71E-05
Xylenes (total)	0.8	2	365/365	30/70	1.00	1.00E-03	70	2.29E-05	9.80E-06
Dichlorodifluoromethane	47.9	2	365/365	30/70	1.00	1.00E-03	70	1.37E-03	5.87E-04
Trichlorofluoromethane	4.8	2	365/365	30/70	1.00	1.00E-03	70	1.37E-04	5.88E-05
Tetrahydrofuran	115.9	2	365/365	30/70	1.00	1.00E-03	70	3.31E-03	1.42E-03
Bis(2-ethylhexyl)phthalate	1.6	2	365/365	30/70	1.00	1.00E-03	70	4.57E-05	1.96E-05
Aluminum	64.8	2	365/365	30/70	1.00	1.00E-03	70	1.85E-03	7.93E-04
Arsenic	2.9	2	365/365	30/70	1.00	1.00E-03	70	8.29E-05	3.55E-05
Lead	1.4	2	365/365	30/70	1.00	1.00E-03	70	4.00E-05	1.71E-05
Manganese	353.6	2	365/365	30/70	1.00	1.00E-03	70	1.01E-02	4.33E-03
Nickel	7.7	2	365/365	30/70	1.00	1.00E-03	70	2.20E-04	9.43E-05
Chromium	3.1	2	365/365	30/70	1.00	1.00E-03	70	8.86E-05	3.80E-05
Northeast Section									
Benzoic Acid	25	2	365/365	30/70	1.00	1.00E-03	70	7.14E-04	3.05E-04
Pentachlorophenol	25	2	365/365	30/70	1.00	1.00E-03	70	7.14E-04	3.06E-04
Nickel	20.1 J	2	365/365	30/70	1.00	1.00E-03	70	5.74E-04	2.46E-04
Southeast Section									
Arsenic	2.7 J	2	365/365	30/70	1.00	1.00E-03	70	7.71E-05	3.31E-05

Stough1.wk1, ENSR, 1990 28-Aug-91

J= Estimated Concentration

Table 6-8

28-Aug-91

Groundwater Ingestion Exposure

Child Scenario

Chemical	Groundwater Concentration (ug/L)	Ingestion Rate (L/Day)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Gastrointestinal Absorption Adjustment Factor	Unit Correction Factor (mg/ug)	Body Weight (Kg)	Annual Average Daily Dose (mg/Kg/Day)	Lifetime Average Daily Dose (mg/Kg/Day)

Western Section									
1,2-dichloroethene	1.4	0.743	365/365	5/70	1.00	1.00E-03	16	6.50E-05	4.64E-06
Xylenes (total)	0.8	0.743	365/365	5/70	1.00	1.00E-03	16	3.72E-05	2.65E-06
Dichlorodifluoromethane	47.9	0.743	365/365	5/70	1.00	1.00E-03	16	2.22E-03	1.59E-04
Trichlorofluoromethane	4.8	0.743	365/365	5/70	1.00	1.00E-03	16	2.23E-04	1.59E-05
Tetrahydrofuran	115.9	0.743	365/365	5/70	1.00	1.00E-03	16	5.38E-03	3.84E-04

Bis(2-ethylhexyl)phthalate	1.6	0.743	365/365	5/70	1.00	1.00E-03	16	7.43E-05	5.31E-06

Aluminum	64.8	0.743	365/365	5/70	1.00	1.00E-03	16	3.01E-03	2.15E-04
Arsenic	2.9	0.743	365/365	5/70	1.00	1.00E-03	16	1.35E-04	9.62E-06
Lead	1.4	0.743	365/365	5/70	1.00	1.00E-03	16	6.50E-05	4.64E-06
Manganese	353.6	0.743	365/365	5/70	1.00	1.00E-03	16	1.64E-02	1.17E-03
Nickel	7.7	0.743	365/365	5/70	1.00	1.00E-03	16	3.58E-04	2.55E-05
Chromium	3.1	0.743	365/365	5/70	1.00	1.00E-03	16	1.44E-04	1.03E-05

Northeast Section

Benzoic Acid	25	0.743	365/365	5/70	1.00	1.00E-03	16	1.16E-03	8.29E-05

Pentachlorophenol	25	0.743	365/365	5/70	1.00	1.00E-03	16	1.16E-03	8.29E-05

Nickel	20.1 J	0.743	365/365	5/70	1.00	1.00E-03	16	9.33E-04	6.67E-05

Southeast Section

Arsenic	2.7 J	0.743	365/365	5/70	1.00	1.00E-03	16	1.25E-04	8.96E-06

Stough1.wk1, ENSR, 1990 28-Aug-91

J= Estimated Concentration

Table 6-9

28-Aug-91

Dermal Contact with Groundwater

Adult Scenario

Chemical	Groundwater Concentration (ug/L)	Skin Surface (cm ²)	Dermal Permeability Constant (cm/Hour)	Exposure Time (Hours/Day)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Unit Correction Factor (L/cm ³) (mg/ug)	Body Weight (Kg)	Annual Average Daily Dose (mg/Kg/Day)	Lifetime Average Daily Dose (mg/Kg/Day)

Western Section										
1,2-dichloroethene	1.4	22000	8.00E-04	0.2	365/365	30/70	1.00E-06	70	7.04E-08	3.02E-08
Xylenes (total)	0.8	22000	9.00E-04	0.2	365/365	30/70	1.00E-06	70	4.53E-08	1.94E-08
Dichlorodifluoromethane	47.9	22000	8.00E-04	0.2	365/365	30/70	1.00E-06	70	2.41E-06	1.03E-06
Trichlorofluoromethane	4.8	22000	8.00E-04	0.2	365/365	30/70	1.00E-06	70	2.41E-07	1.03E-07
Tetrahydrofuran	115.9	22000	8.00E-04	0.2	365/365	30/70	1.00E-06	70	5.83E-06	2.50E-06

Bis(2-ethylhexyl)phthalate	1.6	22000	8.00E-04	0.2	365/365	30/70	1.00E-06	70	8.05E-08	3.45E-08

Aluminum	64.8	22000	7.20E-06	0.2	365/365	30/70	1.00E-06	70	2.93E-08	1.26E-08
Arsenic	2.9	22000	7.20E-06	0.2	365/365	30/70	1.00E-06	70	1.31E-09	5.62E-10
Lead	1.4	22000	7.20E-06	0.2	365/365	30/70	1.00E-06	70	6.34E-10	2.72E-10
Chromium	3.1	22000	7.20E-06	0.2	365/365	30/70	1.00E-06	70	1.40E-09	6.01E-10
Manganese	353.6	22000	7.20E-06	0.2	365/365	30/70	1.00E-06	70	1.60E-07	6.86E-08
Nickel	7.7	22000	7.20E-06	0.2	365/365	30/70	1.00E-06	70	3.48E-09	1.49E-09

Northeast Section										

Benzoic Acid	25	22000	8.00E-04	0.2	365/365	30/70	1.00E-06	70	1.26E-06	5.39E-07
Pentachlorophenol	25	22000	6.00E-01	0.2	365/365	30/70	1.00E-06	70	9.43E-04	4.04E-04
Nickel	20.1 J	22000	7.20E-06	0.2	365/365	30/70	1.00E-06	70	9.10E-09	3.90E-09

Southeast Section										

Arsenic	2.7 J	22000	7.20E-06	0.2	365/365	30/70	1.00E-06	70	1.22E-09	5.24E-10

Stough1.wk1, ENSR, 1990 28-Aug-91

J= Estimated Concentration

Table 6-10

28-Aug-91

Dermal Contact with Groundwater

Child Scenario

Chemical	Groundwater Concentration (ug/L)	Skin Surface (cm ²)	Dermal Permeability Constant (cm/Hour)	Exposure Time (Hours/Day)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Unit Correction Factor (L/cm ³) (mg/ug)	Body Weight (Kg)	Annual Average Daily Dose (mg/Kg/Day)	Lifetime Average Daily Dose (mg/Kg/Day)
Western Section										
1,2-dichloroethene	1.4	7290	8.00E-04	0.2	365/365	5/70	1.00E-06	16	1.02E-07	7.29E-09
Xylenes (total)	0.8	7290	9.00E-04	0.2	365/365	5/70	1.00E-06	16	6.56E-08	4.69E-09
Dichlorodifluoromethane	47.9	7290	8.00E-04	0.2	365/365	5/70	1.00E-06	16	3.49E-06	2.49E-07
Trichlorofluoromethane	4.8	7290	8.00E-04	0.2	365/365	5/70	1.00E-06	16	3.50E-07	2.50E-08
Tetrahydrofuran	115.9	7290	8.00E-04	0.2	365/365	5/70	1.00E-06	16	8.45E-06	6.04E-07
Bis(2-ethylhexyl)phthalate	1.6	7290	8.00E-04	0.2	365/365	5/70	1.00E-06	16	1.17E-07	8.33E-09
Aluminum	64.8	7290	7.20E-06	0.2	365/365	5/70	1.00E-06	16	4.25E-08	3.04E-09
Arsenic	2.9	7290	7.20E-06	0.2	365/365	5/70	1.00E-06	16	1.90E-09	1.36E-10
Lead	1.4	7290	7.20E-06	0.2	365/365	5/70	1.00E-06	16	9.19E-10	6.56E-11
Chromium	3.1	7290	7.20E-06	0.2	365/365	5/70	1.00E-06	16	2.03E-09	1.45E-10
Manganese	353.6	7290	7.20E-06	0.2	365/365	5/70	1.00E-06	16	2.32E-07	1.66E-08
Nickel	7.7	7290	7.20E-06	0.2	365/365	5/70	1.00E-06	16	5.05E-09	3.61E-10
Northeast Section										
Benzoic Acid	25	7290	8.00E-04	0.2	365/365	5/70	1.00E-06	16	1.82E-06	1.30E-07
Pentachlorophenol	25	7290	6.00E-01	0.2	365/365	5/70	1.00E-06	16	1.37E-03	9.76E-05
Nickel	20.1 J	7290	7.20E-06	0.2	365/365	5/70	1.00E-06	16	1.32E-08	9.42E-10
Southeast Section										
Arsenic	2.7 J	7290	7.20E-06	0.2	365/365	5/70	1.00E-06	16	1.77E-09	1.27E-10

Stough1.wk1, ENSR, 1990 28-Aug-91

J= Estimated Concentration

Table 6-11

28-Aug-91

Dermal Contact with Surface Water

Adult Scenario

Chemical	Surface Water Concentration (ug/L)	Skin Surface (cm ²)	Dermal Permeability Constant (cm/Hr)	Exposure Time (Hrs/Day)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Unit Correction Factor (L/cm ³) (mg/ug)	Body Weight (Kg)	Annual Average Daily Dose (mg/Kg/Day)	Lifetime Average Daily Dose (mg/Kg/Day)
Dichlorodifluoromethane	1.8	990	8.00E-04	2.6	7/365	30/70	1.00E-06	70	1.02E-09	4.35E-10
Semivolatile TIC	54 J	990	8.00E-04	2.6	7/365	30/70	1.00E-06	70	3.05E-08	1.31E-08
Lead	44	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	2.23E-10	9.57E-11
Vanadium	37.8	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	1.92E-10	8.23E-11
Chromium	12	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	6.09E-11	2.61E-11
Cobalt	15.9	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	8.07E-11	3.46E-11
Copper	20.9	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	1.06E-10	4.55E-11
Nickel	32.3	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	1.64E-10	7.03E-11
Aluminum	10558	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	5.36E-08	2.30E-08
Arsenic	4.2	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	2.13E-11	9.14E-12
Barium	352	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	1.79E-09	7.66E-10
Manganese	3012	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	1.53E-08	6.55E-09
Zinc	156.3	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	7.94E-10	3.40E-10

STOUGH17.wk1, ENSR, 1990.

28-Aug-91

(a) Permeability Constant for Al, SEAM, 1988.

J= Estimated Concentration

Table 6-11 continued

28-Aug-91

Dermal Contact with Surface Water

Child Scenario

Chemical	Surface Water Concentration (ug/L)	Skin Surface (cm ²)	Dermal Permeability Constant (cm/Hr)	Exposure Time (Hrs/Day)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Unit Correction Factor (L/cm ³) (ng/ug)	Body Weight (Kg)	Annual Average Daily Dose (mg/Kg/Day)	Lifetime Average Daily Dose (mg/Kg/Day)
Dichlorodifluoromethane	1.8	1335	8.00E-04	1.3	7/365	5/70	1.00E-06	16	3.00E-09	2.14E-10
Semivolatile TIC	54 J	1335	8.00E-04	1.3	7/365	5/70	1.00E-06	16	8.99E-08	6.42E-09
Lead	44	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	6.59E-10	4.71E-11
Vanadium	37.8	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	5.66E-10	4.04E-11
Chromium	12	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	1.80E-10	1.28E-11
Cobalt	15.9	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	2.38E-10	1.70E-11
Copper	20.9	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	3.13E-10	2.24E-11
Nickel	32.3	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	4.84E-10	3.46E-11
Aluminum	10558	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	1.58E-07	1.13E-08
Arsenic	4.2	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	6.29E-11	4.49E-12
Barium	352	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	5.27E-09	3.77E-10
Manganese	3012	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	4.51E-08	3.22E-09
Zinc	156.3	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	2.34E-09	1.67E-10

Stough17.wk1, ENSR, 1990.

28-Aug-91

(a) Permeability Constant for Al, SEAM, 1988.

J= Estimated Concentration

Table 6-12

28-Aug-91

Sediment Dermal Exposure

Adult Scenario

Chemical	Sediment Concentration (ug/Kg)	Exposed Skin (cm2/Day)	Soil on Skin (mg/cm2)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Unit Adjustment Factor (Kg/ug)	Dermal Absorption Adjustment Factor	Body Weight (Kg)	Annual Average Daily Dose (mg/Kg/Day)	Lifetime Average Daily Dose (mg/Kg/Day)
2-butanone	5.3	990	2.77	4/365	30/70	1.00E-09	0.90	70	2.05E-09	8.78E-10
Benzoic acid	825	990	2.77	4/365	30/70	1.00E-09	1	70	3.54E-07	1.52E-07
TIC	10600 J	990	2.77	4/365	30/70	1.00E-09	1	70	4.55E-06	1.95E-06
Bis(2-ethylhexyl)phthalate	490	990	2.77	4/365	30/70	1.00E-09	0.90	70	1.89E-07	8.11E-08
Benzo(b)fluoranthene (coelutes w/ Benzo(k)fluoranthene)	150	990	2.77	4/365	30/70	1.00E-09	0.05	70	3.22E-09	1.38E-09
Chrysene	149	990	2.77	4/365	30/70	1.00E-09	0.05	70	3.20E-09	1.37E-09
Unknown hydrocarbons (TIC)	40590	990	2.77	4/365	30/70	1.00E-09	0.05	70	8.71E-07	3.73E-07
Fluoranthene	119	990	2.77	4/365	30/70	1.00E-09	0.05	70	2.55E-09	1.09E-09
Phenanthrene	147	990	2.77	4/365	30/70	1.00E-09	0.05	70	3.16E-09	1.35E-09
Pyrene	142	990	2.77	4/365	30/70	1.00E-09	0.05	70	3.05E-09	1.31E-09
Noncarcinogenic PAH (TIC)	1300 J	990	2.77	4/365	30/70	1.00E-09	0.05	70	2.79E-08	1.20E-08
Cadmium	14400	990	2.77	4/365	30/70	1.00E-09	1	70	6.18E-06	2.65E-06
Lead	107100	990	2.77	4/365	30/70	1.00E-09	0.01	70	4.60E-07	1.97E-07

Stough9.wk1, ENSR, 1990

28-Aug-91

J= Estimated Concentration

Sediment Dermal Exposure

Child Scenario

Chemical	Sediment Concentration (ug/Kg)	Exposed Skin (cm ² /Day)	Soil on Skin (mg/cm ²)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Unit Adjustment Factor (Kg/ug)	Dermal Absorption Adjustment Factor	Body Weight (Kg)	Annual Average Daily Dose (mg/Kg/Day)	Lifetime Average Daily Dose (mg/Kg/Day)
2-butanone	5.3	1335	2.77	7/365	5/70	1.00E-09	0.90	16	2.11E-08	1.51E-09
Benzoic acid	825	1335	2.77	7/365	5/70	1.00E-09	1	16	3.66E-06	2.61E-07
TIC	10600 J	1335	2.77	7/365	5/70	1.00E-09	1	16	4.70E-05	3.36E-06
Bis(2-ethylhexyl)phthalate	490	1335	2.77	7/365	5/70	1.00E-09	0.90	16	1.95E-06	1.40E-07
Benzo(b)fluoranthene (coelutes w/ Benzo(k)fluoranthene)	150	1335	2.77	7/365	5/70	1.00E-09	0.05	16	3.32E-08	2.37E-09
Chrysene	149	1335	2.77	7/365	5/70	1.00E-09	0.05	16	3.30E-08	2.36E-09
Unknown hydrocarbon (TIC)	40590	1335	2.77	7/365	5/70	1.00E-09	0.05	16	9.00E-06	6.43E-07
Fluoranthene	119	1335	2.77	7/365	5/70	1.00E-09	0.05	16	2.64E-08	1.88E-09
Phenanthrene	147	1335	2.77	7/365	5/70	1.00E-09	0.05	16	3.26E-08	2.33E-09
Pyrene	142	1335	2.77	7/365	5/70	1.00E-09	0.05	16	3.15E-08	2.25E-09
Noncarcinogenic PAH (TIC)	1300 J	1335	2.77	7/365	5/70	1.00E-09	0.05	16	2.88E-07	2.06E-08
Cadmium	14400	1335	2.77	7/365	5/70	1.00E-09	1	16	6.38E-05	4.56E-06
Lead	107100	1335	2.77	7/365	5/70	1.00E-09	0.01	16	4.75E-06	3.39E-07

Stough9.wk1, ENSR, 1990 28-Aug-91

J= Estimated concentration

Table 6-14

28-Aug-91

Sediment Ingestion Exposure

Adult Scenario

Chemical	Sediment Concentration (ug/Kg)	Ingestion Rate (mg/Day)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Unit Correction Factor (Kg/ug)	Gastrointestinal Absorption Adjustment Factor	Body Weight (Kg)	Annual Average Daily Dose (mg/Kg/Day)	Lifetime Average Daily Dose (mg/Kg/Day)
2-butanone	5.3	100	4/365	30/70	1.00E-09	1	70	8.30E-11	3.56E-11
Benzoic acid	825	100	4/365	30/70	1.00E-09	1	70	1.29E-08	5.54E-09
TIC	10600 J	100	4/365	30/70	1.00E-09	1	70	1.66E-07	7.11E-08
Bis(2-ethylhexyl)phthalate	490	100	4/365	30/70	1.00E-09	1	70	7.67E-09	3.29E-09
Benzo(b)fluoranthene (coelutes w/ Benzo(k)fluoranthene)	150	100	4/365	30/70	1.00E-09	0.9	70	2.11E-09	9.06E-10
Chrysene	149	100	4/365	30/70	1.00E-09	0.9	70	2.10E-09	9.00E-10
Unknown hydrocarbon TIC	40590	100	4/365	30/70	1.00E-09	1	70	6.35E-07	2.72E-07
Fluoranthene	119	100	4/365	30/70	1.00E-09	0.9	70	1.68E-09	7.19E-10
Phenanthrene	147	100	4/365	30/70	1.00E-09	0.9	70	2.07E-09	8.88E-10
Pyrene	142	100	4/365	30/70	1.00E-09	0.9	70	2.00E-09	8.57E-10
Noncarcinogenic PAH (TIC)	1300 J	100	4/365	30/70	1.00E-09	1	70	2.04E-08	8.72E-09
Cadmium	14400	100	4/365	30/70	1.00E-09	1	70	2.25E-07	9.66E-08
Lead	107100	100	4/365	30/70	1.00E-09	0.3	70	5.03E-07	2.16E-07

Stough9.wk1, ENSR, 1990

28-Aug-91

J= Estimated Concentration

Table 6-15

28-Aug-91

Sediment Ingestion Exposure

Child Scenario

Chemical	Sediment Concentration (ug/Kg)	Ingestion Rate (mg/Day)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Unit Correction Factor (Kg/ug)	Gastrointestinal Absorption Adjustment Factor	Body Weight (Kg)	Annual Average Daily Dose (mg/Kg/Day)	Lifetime Average Daily Dose (mg/Kg/Day)
2-butanone	5.3	200	7/365	5/70	1.00E-09	1	16	1.27E-09	9.08E-11
Benzoic acid	825	200	7/365	5/70	1.00E-09	1	16	1.98E-07	1.41E-08
TIC	10600 J	200	7/365	5/70	1.00E-09	1	16	2.54E-06	1.82E-07
Bis(2-ethylhexyl)phthalate	490	200	7/365	5/70	1.00E-09	1	16	1.17E-07	8.39E-09
Benzo(b)fluoranthene (coelutes w/ Benzo(k)fluoranthene)	150	200	7/365	5/70	1.00E-09	0.9	16	3.24E-08	2.31E-09
Chrysene	149	200	7/365	5/70	1.00E-09	0.9	16	3.21E-08	2.30E-09
Unknown hydrocarbon TIC	40590	200	7/365	5/70	1.00E-09	1	16	9.73E-06	6.95E-07
Fluoranthene	119	200	7/365	5/70	1.00E-09	0.9	16	2.57E-08	1.83E-09
Phenanthrene	147	200	7/365	5/70	1.00E-09	0.9	16	3.17E-08	2.27E-09
Pyrene	142	200	7/365	5/70	1.00E-09	0.9	16	3.06E-08	2.19E-09
Noncarcinogenic PAH (TIC)	1300 J	200	7/365	5/70	1.00E-09	1	16	3.12E-07	2.23E-08
Cadmium	14400	200	7/365	5/70	1.00E-09	1	16	3.45E-06	2.47E-07
Lead	107100	200	7/365	5/70	1.00E-09	0.3	16	7.70E-06	5.50E-07

Stough9.wk1, ENSR, 1990

28-Aug-91

J= Estimated Concentration

Waste Dermal Exposure

Adult Scenario

Chemical	Waste Concentration (ug/Kg)	Exposed Skin (cm ² /Day)	Soil on Skin (mg/cm ²)	Unit Correction Factor (Kg/ug)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Dermal Absorption Adjustment Factor	Body Weight (Kg)	Annual Average Daily Dose (mg/Kg/Day)	Lifetime Average Daily Dose (mg/Kg/Day)
Chloroform	2.5	990	2.77	1.00E-09	4/365	30/70	0.93	70	9.98E-10	4.28E-10
Bis(2-ethylhexyl)phthalate	165 J	990	2.77	1.00E-09	4/365	30/70	0.9	70	6.38E-08	2.73E-08
Butyl-n-benzyl phthalate	165 J	990	2.77	1.00E-09	4/365	30/70	0.74	70	5.24E-08	2.25E-08
Benzo(a)anthracene	69 J	990	2.77	1.00E-09	4/365	30/70	0.05	70	1.48E-09	6.35E-10
Benzo(b)fluoranthene (coelutes w/ Benzo(k)fluoranthene)	153.7	990	2.77	1.00E-09	4/365	30/70	0.05	70	3.30E-09	1.41E-09
Benzo(a)pyrene	68.7	990	2.77	1.00E-09	4/365	30/70	0.05	70	1.47E-09	6.32E-10
Chrysene	73.2	990	2.77	1.00E-09	4/365	30/70	0.05	70	1.57E-09	6.73E-10
Ideno(1,2,3-cd)pyrene	29.6	990	2.77	1.00E-09	4/365	30/70	0.05	70	6.35E-10	2.72E-10
Benzo(g,h,i)perylene	62.2	990	2.77	1.00E-09	4/365	30/70	0.05	70	1.34E-09	5.72E-10
Fluoranthene	78	990	2.77	1.00E-09	4/365	30/70	0.05	70	1.67E-09	7.18E-10
Pyrene	165 J	990	2.77	1.00E-09	4/365	30/70	0.05	70	3.54E-09	1.52E-09
Noncarcinogenic PAH (TIC)	260 J	990	2.77	1.00E-09	4/365	30/70	0.05	70	5.58E-09	2.39E-09

Stough10.wk1, ENSR, 1990 28-Aug-91

J= Estimated Concentration

Table 6-17

28-Aug-91

Waste Dermal Exposure

Child Scenario

Chemical	Waste Concentration (ug/Kg)	Exposed Skin (cm ² /Day)	Soil on Skin (mg/cm ²)	Unit Correction Factor (Kg/ug)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Dermal Absorption Adjustment Factor	Body Weight (Kg)	Annual Average Daily Dose (mg/Kg/Day)	Lifetime Average Daily Dose (mg/Kg/Day)
Chloroform	2.5	1335	2.77	1.00E-09	7/365	5/70	0.93	16	1.03E-08	7.36E-10
Bis(2-ethylhexyl)phthalate	165 J	1335	2.77	1.00E-09	7/365	5/70	0.9	16	6.58E-07	4.70E-08
Butyl-n-benzyl phthalate	165 J	1335	2.77	1.00E-09	7/365	5/70	0.74	16	5.41E-07	3.87E-08
Benzo(a)anthracene	69 J	1335	2.77	1.00E-09	7/365	5/70	0.05	16	1.53E-08	1.09E-09
Benzo(b)fluoranthene (coelutes w/ Benzo(k)fluoranthene)	153.7	1335	2.77	1.00E-09	7/365	5/70	0.05	16	3.41E-08	2.43E-09
Benzo(a)pyrene	68.7	1335	2.77	1.00E-09	7/365	5/70	0.05	16	1.52E-08	1.09E-09
Chrysene	73.2	1335	2.77	1.00E-09	7/365	5/70	0.05	16	1.62E-08	1.16E-09
Ideno(1,2,3-cd)pyrene	29.6	1335	2.77	1.00E-09	7/365	5/70	0.05	16	6.56E-09	4.69E-10
Benzo(g,h,i)perylene	62.2	1335	2.77	1.00E-09	7/365	5/70	0.05	16	1.38E-08	9.85E-10
Fluoranthene	78	1335	2.77	1.00E-09	7/365	5/70	0.05	16	1.73E-08	1.23E-09
Pyrene	165 J	1335	2.77	1.00E-09	7/365	5/70	0.05	16	3.66E-08	2.61E-09
Noncarcinogenic PAH (TIC)	260 J	1335	2.77	1.00E-09	7/365	5/70	0.05	16	5.76E-08	4.12E-09

Stough10.wk1, ENSR, 1990 28-Aug-91

J= Estimated Concentration

Table 6-18

Waste Ingestion Exposure

Adult Scenario

Chemical	Waste Concentration (ug/Kg)	Ingestion Rate (mg/Day)	Unit Correction Factor (Kg/ug)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Gastrointestinal Absorption Adjustment Factor	Body Weight (Kg)	Annual Average Daily Dose (mg/Kg/Day)	Lifetime Average Daily Dose (mg/Kg/Day)
Chloroform	2.5	100	1.00E-09	4/365	30/70	1	70	3.91E-11	1.68E-11
Bis(2-ethylhexyl)phthalate	165 J	100	1.00E-09	4/365	30/70	1	70	2.58E-09	1.11E-09
Butyl-n-benzyl phthalate	165 J	100	1.00E-09	4/365	30/70	1	70	2.58E-09	1.11E-09
Benzo(a)anthracene	69 J	100	1.00E-09	4/365	30/70	0.9	70	9.72E-10	4.17E-10
Benzo(b)fluoranthene (coelutes w/ benzo(k)fluoranthene)	153.7	100	1.00E-09	4/365	30/70	0.9	70	2.17E-09	9.28E-10
Benzo(a)pyrene	68.7	100	1.00E-09	4/365	30/70	0.9	70	9.68E-10	4.15E-10
Chrysene	73.2	100	1.00E-09	4/365	30/70	0.9	70	1.03E-09	4.42E-10
Ideno(1,2,3-cd)pyrene	29.6	100	1.00E-09	4/365	30/70	0.9	70	4.17E-10	1.79E-10
Benzo(g,h,i)perylene	62.2	100	1.00E-09	4/365	30/70	0.9	70	8.76E-10	3.76E-10
Fluoranthene	78	100	1.00E-09	4/365	30/70	0.9	70	1.10E-09	4.71E-10
Pyrene	165 J	100	1.00E-09	4/365	30/70	0.9	70	2.32E-09	9.96E-10
Noncarcinogenic PAH (TIC)	260 J	100	1.00E-09	4/365	30/70	0.9	70	3.66E-09	1.57E-09

Stough10.wk1, ENSR, 1990 28-Aug-91

J= Estimated Concentration

Table 6-19

Waste Ingestion Exposure

Child Scenario

Chemical	Waste Concentration (ug/Kg)	Ingestion Rate (mg/Day)	Unit Correction Factor (Kg/ug)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Gastrointestinal Absorption Adjustment Factor	Body Weight (Kg)	Annual Average Daily Dose (mg/Kg/Day)	Lifetime Average Daily Dose (mg/Kg/Day)
Chloroform	2.5	200	1.00E-09	7/365	5/70	1	16	5.99E-10	4.28E-11
Bis(2-ethylhexyl)phthalate	165 J	200	1.00E-09	7/365	5/70	1	16	3.96E-08	2.83E-09
Butyl-n-benzyl phthalate	165 J	200	1.00E-09	7/365	5/70	1	16	3.96E-08	2.83E-09
Benzo(a)anthracene	69 J	200	1.00E-09	7/365	5/70	0.9	16	1.49E-08	1.06E-09
Benzo(b)fluoranthene (coelutes w/ Benzo(k)fluoranthene)	153.7	200	1.00E-09	7/365	5/70	0.9	16	3.32E-08	2.37E-09
Benzo(a)pyrene	68.7	200	1.00E-09	7/365	5/70	0.9	16	1.48E-08	1.06E-09
Chrysene	73.2	200	1.00E-09	7/365	5/70	0.9	16	1.58E-08	1.13E-09
Ideno(1,2,3-cd)pyrene	29.6	200	1.00E-09	7/365	5/70	0.9	16	6.39E-09	4.56E-10
Benzo(g,h,i)perylene	62.2	200	1.00E-09	7/365	5/70	0.9	16	1.34E-08	9.59E-10
Fluoranthene	78	200	1.00E-09	7/365	5/70	0.9	16	1.68E-08	1.20E-09
Pyrene	165 J	200	1.00E-09	7/365	5/70	0.9	16	3.56E-08	2.54E-09
Noncarcinogenic PAH (TIC)	260 J	200	1.00E-09	7/365	5/70	0.9	16	5.61E-08	4.01E-09

Stough10.wk1, ENSR, 1990 28-Aug-91

J= Estimated Concentration

Table 6-20

28-Aug-91

Soil Dermal Absorption

Adult Scenario

Chemical	Soil Concentration (ug/Kg)	Exposed Skin (cm ² /Day)	Soil on Skin (mg/cm ²)	Unit Correction Factor (Kg/ug)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Dermal Absorption Adjustment Factor	Body Weight (Kg)	Annual Average Daily Dose (mg/Kg/Day)	Lifetime Average Daily Dose (mg/Kg/Day)
Alkane	590 J	990	2.77	1.00E-09	4/365	30/70	0.80	70	2.03E-07	8.68E-08

Soil Dermal Absorption

Child Scenario

Chemical	Soil Concentration (ug/Kg)	Exposed Skin (cm ² /Day)	Soil on Skin (mg/cm ²)	Unit Correction Factor (Kg/ug)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Dermal Absorption Adjustment Factor	Body Weight (Kg)	Annual Average Daily Dose (mg/Kg/Day)	Lifetime Average Daily Dose (mg/Kg/Day)
Alkane	590 J	1335	2.77	1.00E-09	7/365	5/70	0.80	16	2.09E-06	1.49E-07

Stough18.wk1, ENSR, 1990 28-Aug-91

J = Estimated Concentration

Soil Ingestion Exposure

Adult Scenario

Chemical	Soil Concentration (ug/Kg)	Ingestion Rate (mg/Day)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Unit Correction Factor (Kg/ug)	Gastrointestinal Absorption Adjustment Factor	Body Weight (Kg)	Annual Average Daily Dose (mg/Kg/Day)	Lifetime Average Daily Dose (mg/Kg/Day)
Alkane	590 J	100	4/365	30/70	1.00E-09	1	70	9.24E-09	3.96E-09

Soil Ingestion Exposure

Child Scenario

Chemical	Soil Concentration (ug/Kg)	Ingestion Rate (mg/Day)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Unit Correction Factor (Kg/ug)	Gastrointestinal Absorption Adjustment Factor	Body Weight (Kg)	Annual Average Daily Dose (mg/Kg/Day)	Lifetime Average Daily Dose (mg/Kg/Day)
Alkane	590 J	200	7/365	5/70	1.00E-09	1	16	1.41E-07	1.01E-08

Stough18.wk1, ENSR, 1990 28-Aug-91

J = Estimated Concentration

Inhalation Exposure

Adult Scenario

Chemical	Air Concentration (mg/M ³) (a)	Respiration Rate (M ³ /Day)	Daily Exposure Factor (Hrs/Hrs)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Inhalation Absorption Adjustment Factor	Body Weight (Kg)	Annual Average Daily Dose (mg/Kg/Day)	Lifetime Average Daily Dose (mg/Kg/Day)
1,2-dichloroethene (trans only)	0.236	20	8/24	365/365	30/70	1	70	2.25E-02	9.63E-03
Ethylbenzene	0.087	20	8/24	365/365	30/70	1	70	8.29E-03	3.55E-03
Toluene	0.151	20	8/24	365/365	30/70	1	70	1.44E-02	6.16E-03
Xylenes (total)	0.347	20	8/24	365/365	30/70	1	70	3.30E-02	1.42E-02
STOUGH2.wk1, ENSR, 1990.		28-Aug-91							

(a) ppm corrected to mg/M³ = (ppm * mol. wt.)/24.45

Inhalation Exposure

Child Scenario

Chemical	Air Concentration (mg/M ³) (a)	Respiration Rate (M ³ /Day)	Daily Exposure Factor (Hrs/Hrs)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Inhalation Absorption Adjustment Factor	Body Weight (Kg)	Annual Average Daily Dose (mg/Kg/Day)	Lifetime Average Daily Dose (mg/Kg/Day)
1,2-dichloroethene (trans only)	0.236	17.6	8/24	365/365	5/70	1	16	8.65E-02	6.18E-03
Ethylbenzene	0.087	17.6	8/24	365/365	5/70	1	16	3.19E-02	2.28E-03
Toluene	0.151	17.6	8/24	365/365	5/70	1	16	5.54E-02	3.95E-03
Xylenes (total)	0.347	17.6	8/24	365/365	5/70	1	16	1.27E-01	9.09E-03
STOUGH2.wk1, ENSR, 1990.		28-Aug-91							

(a) ppm corrected to mg/M³ by mg/M³ = (ppm * mol. wt.)/24.45

$$DW = \frac{AC \times RR \times EF \times ED \times IAAF}{BW}$$

BW

AC = Air Concentration
 RR = Respiration Rate
 EF = Exposure Frequency (Day/Day)
 ED = Exposure Duration (Yrs/Yrs)
 IAAF = Inhalation Absorption Adjustment Factor
 BW = Body Weight (70 kg adult, 16 kg child)

Table 6-24
Risk from Groundwater Ingestion
Lifetime Scenario

Chemical	Lifetime Adult Average Daily Dose (mg/Kg/Day)	Annual Adult Average Daily Dose (mg/Kg/Day)	Lifetime Child Average Daily Dose (mg/Kg/Day)	Annual Child Average Daily Dose (mg/Kg/Day)	Total Lifetime Average Daily Dose (mg/Kg/Day)	Slope Factor (mg/Kg/Day) ⁻¹	Reference Dose (mg/Kg/Day)	Adult Hazard Index	Excess Lifetime Cancer Risk
Western Section									
1,2-dichloroethene	1.71E-05	4.00E-05	4.64E-06	6.50E-05	2.18E-05	(e)	2.00E-02 (a)	2.00E-03	
Xylenes (total)	9.80E-06	2.29E-05	2.65E-06	3.72E-05	1.24E-05	(e)	2.00E+00 (a)	1.14E-05	
Dichlorodifluoromethane	5.87E-04	1.37E-03	1.59E-04	2.22E-03	7.45E-04	(e)	2.00E-01 (a)	6.84E-03	
Trichlorofluoromethane	5.88E-05	1.37E-04	1.59E-05	2.23E-04	7.47E-05	(e)	3.00E-01 (a)	4.57E-04	
Tetrahydrofuran	1.42E-03	3.31E-03	3.84E-04	5.38E-03	1.80E-03	(e)	2.00E-03 (d)	1.66E+00	
Bis(2-ethylhexyl)phthalate	1.96E-05	4.57E-05	5.31E-06	7.43E-05	2.49E-05	1.40E-02 (a)	2.00E-02 (a)	2.29E-03	3.5E-07
Aluminum	7.93E-04	1.85E-03	2.15E-04	3.01E-03	1.01E-03	(e)	(c)		
Arsenic	3.55E-05	8.29E-05	9.62E-06	1.35E-04	4.51E-05	1.75E+00 (f)	1.00E-03 (b)	8.29E-02	7.9E-05
Lead	1.71E-05	4.00E-05	4.64E-06	6.50E-05	2.18E-05	(e)	(c)		
Manganese	4.33E-03	1.01E-02	1.17E-03	1.64E-02	5.50E-03	(e)	2.00E-01 (b)	5.05E-02	
Nickel	9.43E-05	2.20E-04	2.55E-05	3.58E-04	1.20E-04	(c)	2.00E-02 (b)	1.10E-02	
Chromium	3.80E-05	8.86E-05	1.03E-05	1.44E-04	4.82E-05	(e)	5.00E-03 (a)	1.77E-02	
							Summed	1.83E+00	7.9E-05
Northeast Section									
Benzoic Acid	3.06E-04	7.14E-04	8.29E-05	1.16E-03	3.89E-04	(e)	4.00E+00 (a)	1.79E-04	
Pentachlorophenol	3.06E-04	7.14E-04	8.29E-05	1.16E-03	3.89E-04	(c)	3.00E-02 (a)	2.38E-02	
Nickel	2.46E-04	5.74E-04	6.67E-05	9.33E-04	3.13E-04	(e)	2.00E-02 (b)	2.87E-02	
							Summed	5.3E-02	
Southeast Section									
Arsenic	3.31E-05	7.71E-05	8.96E-06	1.25E-04	4.20E-05	1.75E+00 (f)	1.00E-03 (b)	7.71E-02	7.35E-05
							Summed	7.71E-02	7.35E-05

Stough1.wk1, ENSR, 1990 28-Aug-91

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database).

(b) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd Quarter.

(c) Value unavailable at this time.

(d) Value derived by U.S. EPA, Environmental Criteria and Assessment Office.

(e) Not carcinogenic by this route of exposure.

(f) U. S. EPA, IRIS, 1988.

Table 6-24 (continued)
 Risk from Groundwater Ingestion
 Child Scenario

Chemical	Annual Average Daily Dose (mg/Kg/Day)	Reference Dose (mg/Kg/Day)	Child Hazard Index
Western Section			
1,2-dichloroethene	6.50E-05	2.00E-02 (a)	3.25E-03
Xylenes (total)	3.72E-05	2.00E+00 (a)	1.86E-05
Dichlorodifluoromethane	2.22E-03	2.00E-01 (a)	1.11E-02
Trichlorofluoromethane	2.23E-04	3.00E-01 (a)	7.43E-04
Tetrahydrofuran	5.38E-03	2.00E-03 (d)	2.69E+00
Bis(2-ethylhexyl)phthalate	7.43E-05	2.00E-02 (a)	3.72E-03
Aluminum	3.01E-03	(c)	
Arsenic	1.35E-04	1.00E-03 (b)	1.35E-01
Lead	6.50E-05	(c)	
Manganese	1.64E-02	2.00E-01 (b)	8.21E-02
Nickel	3.58E-04	2.00E-02 (b)	1.79E-02
Chromium	1.44E-04	5.00E-03 (a)	2.88E-02
		Summed	2.97E+00
Northeast Section			
Benzoic Acid	1.16E-03	4.00E+00 (a)	2.90E-04
Pentachlorophenol	1.16E-03	3.00E-02 (a)	3.87E-02
Nickel	9.33E-04	2.00E-02 (b)	4.67E-02
		Summed	8.57E-02
Southeast Section			
Arsenic	1.25E-04	1.00E-03 (b)	1.25E-01
		Summed	1.25E-01

Stough1.wk1, ENSR, 1990 28-Aug-91

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database).

(b) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd Quarter.

(c) Value unavailable at this time.

(d) Value derived by U.S. EPA, Environmental Criteria and Assessment Office.

Table 6-25
Risk from Dermal Groundwater Exposure
Lifetime Scenario

Chemical	Lifetime Adult Average Daily Dose (mg/Kg/Day)	Annual Adult Average Daily Dose (mg/Kg/Day)	Lifetime Child Average Daily Dose (mg/Kg/Day)	Annual Child Average Daily Dose (mg/Kg/Day)	Total Lifetime Daily Dose (mg/Kg/Day)	Adjusted Dermal Slope Factor (mg/Kg/Day) ⁻¹	Adjusted Dermal Reference Dose (mg/Kg/Day)	Adult Hazard Index	Excess Lifetime Cancer Risk
Western Section									
1,2-dichloroethene	3.02E-08	7.04E-08	7.29E-09	1.02E-07	3.75E-08	(e)	2.00E-02 (a)	3.52E-06	
Xylenes (total)	1.94E-08	4.53E-08	4.69E-09	6.56E-08	2.41E-08	(e)	1.79E+00 (a)	2.53E-08	
Dichlorodifluoromethane	1.03E-06	2.41E-06	2.49E-07	3.49E-06	1.28E-06	(e)	2.00E-01 (a)	1.20E-05	
Trichlorofluoromethane	1.03E-07	2.41E-07	2.50E-08	3.50E-07	1.28E-07	(e)	3.00E-01 (a)	8.05E-07	
Tetrahydrofuran	2.50E-06	5.83E-06	6.04E-07	8.45E-06	3.10E-06	(e)	2.00E-03 (d)	2.91E-03	
Bis(2-ethylhexyl)phthalate	3.45E-08	8.05E-08	8.33E-09	1.17E-07	4.28E-08	1.56E-02 (a)	1.80E-02 (a)	4.47E-06	6.68E-10
Aluminum	1.26E-08	2.93E-08	3.04E-09	4.25E-08	1.56E-08	(e)	(c)		
Arsenic	5.62E-10	1.31E-09	1.36E-10	1.90E-09	6.98E-10	1.94E+00 (f)	9.00E-04 (b)	1.46E-06	1.35E-09
Lead	2.72E-10	6.34E-10	6.56E-11	9.19E-10	3.37E-10	(e)	(c)		
Chromium	6.01E-10	1.40E-09	1.45E-10	2.03E-09	7.47E-10	(e)	5.30E-04 (a)	2.65E-06	
Manganese	6.86E-08	1.60E-07	1.66E-08	2.32E-07	8.52E-08	(e)	6.00E-03 (b)	2.67E-05	
Nickel	1.49E-09	3.48E-09	3.61E-10	5.05E-09	1.85E-09	(c)	1.00E-03 (b)	3.48E-06	
							Summed	2.97E-03	2.02E-09
Northeast Section									
Benzoic Acid	5.39E-07	1.26E-06	1.30E-07	1.82E-06	6.69E-07	(e)	3.88E+00 (a)	3.24E-07	
Pentachlorophenol	4.04E-04	9.43E-04	9.76E-05	1.37E-03	5.02E-04	(c)	2.10E-02 (a)	4.49E-02	
Nickel	3.90E-09	9.10E-09	9.42E-10	1.32E-08	4.84E-09	(c)	1.00E-03 (b)	9.10E-06	
							Summed	4.49E-02	
Southeast Section									
Arsenic	5.24E-10	1.22E-09	1.27E-10	1.77E-09	6.50E-10	1.94E+00 (f)	9.00E-04 (b)	1.36E-06	1.26E-09
							Summed	1.36E-06	1.26E-09

Stough1.wk1, ENSR, 1990 28-Aug-91

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database). Oral values were adjusted for dermal exposure.

(b) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd Quarter. Oral values were adjusted for dermal exposure.

(c) Value unavailable at this time.

(d) Value derived by U.S. EPA, Environmental Criteria Assessment Office. Oral value was adjusted for dermal exposure. XXXXXX

(e) Not carcinogenic by this route of exposure.

(f) U.S. EPA, IRIS, 1988. Oral value was adjusted for dermal exposure.

Table 6-25 (continued)

28-Aug-91

Risk from Dermal Groundwater Exposure

Child Scenario	Annual Average Daily Dose (mg/Kg/Day)	Adjusted Dermal Reference Dose (mg/Kg/Day)	Child Hazard Index
Western Section			
1,2-dichloroethene	1.02E-07	2.00E-02 (a)	5.10E-06
Xylenes (total)	6.56E-08	1.79E+00 (a)	3.67E-08
Dichlorodifluoromethane	3.49E-06	2.00E-01 (a)	1.75E-05
Trichlorofluoromethane	3.50E-07	3.00E-01 (a)	1.17E-06
Tetrahydrofuran	8.45E-06	2.00E-03 (d)	4.22E-03
Bis(2-ethylhexyl)phthalate	1.17E-07	1.80E-02 (a)	6.48E-06
Aluminum	4.25E-08	(c)	
Arsenic	1.90E-09	9.00E-04 (b)	2.11E-06
Lead	9.19E-10	(c)	
Chromium	2.03E-09	5.30E-04 (a)	3.84E-06
Manganese	2.32E-07	6.00E-03 (b)	3.87E-05
Nickel	5.05E-09	1.00E-03 (b)	5.05E-06
		Summed	4.30E-03
Northeast Section			
Benzoic Acid	1.82E-06	3.88E+00 (a)	4.70E-07
Pentachlorophenol	1.37E-03	2.10E-02 (a)	6.51E-02
Nickel	1.32E-08	1.00E-03 (b)	1.32E-05
		Summed	6.51E-02
Southeast Section			
Arsenic	1.77E-09	9.00E-04 (b)	1.97E-06
		Summed	1.97E-06

Stough1.wk1, ENSR, 1990 28-Aug-91

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database). Oral values were adjusted for dermal exposure.

(b) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd Quarter. Oral values were adjusted for dermal exposure.

(c) Value unavailable at this time.

(d) Value derived by U.S. EPA, Environmental Criteria Assessment Office. Oral value was adjusted for dermal exposure.

Table 6-26

28-Aug-91

Risk from Dermal Exposure to Surface Water

Lifetime Scenario

Chemical	Lifetime Adult Average Daily Dose (mg/Kg/Day)	Annual Adult Average Daily Dose (mg/Kg/Day)	Lifetime Child Average Daily Dose (mg/Kg/Day)	Annual Child Average Daily Dose (mg/Kg/Day)	Total Lifetime Daily Dose (mg/Kg/Day)	Adjusted Dermal Slope Factor (mg/Kg/Day) ⁻¹	Adjusted Dermal Reference Dose (mg/Kg/Day)	Adult Hazard Index	Excess Lifetime Cancer Risk
Dichlorodifluoromethane Semivolatile (TIC)	4.35E-10 1.31E-08	1.02E-09 3.05E-08	2.14E-10 6.42E-09	3.00E-09 8.99E-08	6.49E-10 1.95E-08	(c) (c)	2.00E-01 (a) 3.88E+00 (d)	5.08E-09 7.85E-09	
Lead	9.57E-11	2.23E-10	4.71E-11	6.59E-10	1.43E-10	(c)	(c)		
Vanadium	8.23E-11	1.92E-10	4.04E-11	5.66E-10	1.23E-10	(c)	1.35E-04 (a)	1.42E-06	
Chromium	2.61E-11	6.09E-11	1.28E-11	1.80E-10	3.90E-11	(c)	5.30E-04 (a)	1.15E-07	
Cobalt	3.46E-11	8.07E-11	1.70E-11	2.38E-10	5.16E-11	(c)	(c)		
Copper	4.55E-11	1.06E-10	2.24E-11	3.13E-10	6.78E-11	(c)	(c)		
Nickel	7.03E-11	1.64E-10	3.46E-11	4.84E-10	1.05E-10	(c)	1.00E-03 (b)	1.64E-07	
Aluminum	2.30E-08	5.36E-08	1.13E-08	1.58E-07	3.43E-08	(c)	(c)		
Arsenic	9.14E-12	2.13E-11	4.49E-12	6.29E-11	1.36E-11	1.94E+00 (e)	9.00E-04 (b)	2.37E-08	2.64E-11
Barium	7.66E-10	1.79E-09	3.77E-10	5.27E-09	1.14E-09	(c)	3.50E-03 (b)	5.11E-07	
Manganese	6.55E-09	1.53E-08	3.22E-09	4.51E-08	9.78E-09	(c)	6.00E-03 (b)	2.55E-06	
Zinc	3.40E-10	7.94E-10	1.67E-10	2.34E-09	5.07E-10	(c)	5.00E-02 (b)	1.59E-08	
							Summed	4.81E-06	2.64E-11

STOUGH17.wk1, ENSR, 1990.

28-Aug-91

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database). Oral values were adjusted for dermal exposure.

(b) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd Quarter. Oral values were adjusted for dermal exposure.

(c) Value unavailable at this time.

(d) RfD for Benzoic Acid was used. Oral value was adjusted for dermal exposure.

(e) U.S. EPA, IRIS, 1988. Oral value was adjusted for dermal exposure.

Please refer to RI Section 6.5 in the text and Table 6-228 for calculation and assumptions used.

Table 6-26 (cont.)

28-Aug-91

Risk from Dermal Exposure to Surface Water

Child Scenario

Chemical	Annual Average Daily Dose (mg/Kg/Day)	Adjusted Dermal Reference Dose (mg/Kg/Day)	Child Hazard Index
Dichlorodifluoromethane	3.00E-09	2.00E-01 (a)	1.50E-08
Semivolatiles (TIC)	8.99E-08	3.88E+00 (d)	2.32E-08
Lead	6.59E-10	(c)	
Vanadium	5.66E-10	1.35E-04 (b)	4.19E-06
Chromium	1.80E-10	5.30E-04 (a)	3.39E-07
Cobalt	2.38E-10	(c)	
Copper	3.13E-10	(c)	
Nickel	4.84E-10	1.00E-03 (b)	4.84E-07
Aluminum	1.58E-07	(c)	
Arsenic	6.29E-11	9.00E-04 (b)	6.99E-08
Barium	5.27E-09	3.50E-03 (b)	1.51E-06
Manganese	4.51E-08	6.00E-03 (b)	7.52E-06
Zinc	2.34E-09	5.00E-02 (b)	4.68E-08
		Summed	1.42E-05

Stough17.wk1, ENSR, 1990

28-Aug-91

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database). Oral values were adjusted for dermal exposure.

(b) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd Quarter. Oral values were adjusted for dermal exposure.

(c) Value unavailable at this time.

(d) RfD for Benzoic Acid was used. Oral value was adjusted for dermal exposure.

Table 6-27
Risk from Soil Dermal Absorption

Lifetime Scenario	Lifetime Adult Average Daily Dose (mg/Kg/Day)	Annual Adult Average Daily Dose (mg/Kg/Day)	Lifetime Child Average Daily Dose (mg/Kg/Day)	Annual Child Average Daily Dose (mg/Kg/Day)	Total Lifetime Average Daily Dose (mg/Kg/Day)	Adjusted Dermal Slope Factor (mg/Kg/Day) ⁻¹	Adjusted Dermal Reference Dose (mg/Kg/Day)	Adult Hazard Index
Chemical								
Alkane	8.68E-08	2.03E-07	1.49E-07	2.09E-06	2.36E-07	(a)	3.75E-01 (b)	5.40E-07

Risk from Soil Dermal Absorption

Child Scenario	Annual Average Daily Dose (mg/Kg/Day)	Adjusted Dermal Reference Dose (mg/Kg/Day)	Child Hazard Index
Chemical			
Alkane	2.09E-06	3.75E-01	5.58E-06

Risk from Soil Ingestion

Lifetime Scenario	Lifetime Adult Average Daily Dose (mg/Kg/Day)	Annual Adult Average Daily Dose (mg/Kg/Day)	Lifetime Child Average Daily Dose (mg/Kg/Day)	Annual Child Average Daily Dose (mg/Kg/Day)	Total Lifetime Average Daily Dose (mg/Kg/Day)	Slope Factor (mg/Kg/Day) ⁻¹	Reference Dose (mg/Kg/Day)	Adult Hazard Index
Chemical								
Alkane	3.96E-09	9.24E-09	1.01E-08	1.41E-07	1.41E-08	(a)	4.69E-01 (c)	1.97E-08

Risk from Soil Ingestion

Child Scenario	Annual Average Daily Dose (mg/Kg/Day)	Reference Dose (mg/Kg/Day)	Child Hazard Index
Chemical			
Alkane	1.41E-07	4.69E-01	3.02E-07

Stough18.wk1, ENSR, 1990 28-Aug-91

(a) This chemical is not considered carcinogenic by this route of exposure.

(b) Value calculation recommended by U.S. EPA Region V. Adjusted dermal RfD calculated using Threshold Limit Value for n-Heptane.

(c) RfD calculated using Threshold Limit Value for n-Heptane.

Please refer to RI Section 6.5 in the text and Table 6-22B for calculations and assumptions used.

Table 6-28

28-Aug-91

Risk from Sediment Dermal Exposure

Lifetime Scenario

Chemical	Lifetime Adult Average Daily Dose (mg/Kg/Day)	Annual Adult Average Daily Dose (mg/Kg/Day)	Lifetime Child Average Daily Dose (mg/Kg/Day)	Annual Child Average Daily Dose (mg/Kg/Day)	Total Lifetime Average Daily Dose (mg/Kg/Day)	Adjusted Dermal Slope Factor (mg/Kg/Day) ⁻¹	Adjusted Dermal Reference Dose (mg/Kg/Day)	Adult Hazard Index	Excess Lifetime Cancer Risk
2-butanone	8.78E-10	2.05E-09	1.51E-09	2.11E-08	2.39E-09	(b)	4.50E-02 (a)	4.55E-08	
Benzoic acid	1.52E-07	3.54E-07	2.61E-07	3.66E-06	4.13E-07	(b)	3.88E+00 (a)	9.13E-08	
TIC	1.95E-06	4.55E-06	3.36E-06	4.70E-05	5.31E-06	(c)	(c)		
Bis(2-ethylhexyl)phthalate	8.11E-08	1.89E-07	1.40E-07	1.95E-06	2.21E-07	1.56E-02 (a)	1.80E-02 (a)	1.05E-05	3.44E-09
Benzo(b)fluoranthene (coelutes w/ Benzo(k)fluoranthene)	1.38E-09	3.22E-09	2.37E-09	3.32E-08	3.75E-09	2.88E+01 (e)	(b)		1.08E-07
Chrysene	1.37E-09	3.20E-09	2.36E-09	3.30E-08	3.73E-09	2.88E+01 (e)	(b)		1.07E-07
Unknown hydrocarbon (TIC)	3.73E-07	8.71E-07	6.43E-07	9.00E-06	1.02E-06	(c)	(c)		
Fluoranthene	1.09E-09	2.55E-09	1.88E-09	2.64E-08	2.98E-09	(b)	1.60E-02 (a,g)	1.60E-07	
Phenanthrene	1.35E-09	3.16E-09	2.33E-09	3.26E-08	3.68E-09	(b)	1.60E-03 (f)	1.97E-06	
Pyrene	1.31E-09	3.05E-09	2.25E-09	3.15E-08	3.55E-09	(b)	1.20E-02 (a,g)	2.54E-07	
Noncarcinogenic PAH (TIC)	1.20E-08	2.79E-08	2.06E-08	2.88E-07	3.25E-08	(b)	1.60E-03 (f)	1.74E-05	
Cadmium	2.65E-06	6.18E-06	4.56E-06	6.38E-05	7.21E-06	(b)	5.00E-04 (a,d)	1.24E-02	
Lead	1.97E-07	4.60E-07	3.39E-07	4.75E-06	5.36E-07	(b)	(b)		
							Summed	1.24E-02	2.19E-07

Stough9.wk1, ENSR, 1990

28-Aug-91

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database). Oral values were adjusted for dermal exposure.

(b) Value unavailable at this time.

(c) Not applicable.

(d) Value for cadmium in water used.

(e) U.S. EPA, IRIS, 1988, slope factor for Benzo(a)pyrene was used.

(f) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd quarter. RfD for Naphthalene used.

(g) Developed in consultation with and U.S. EPA Environmental Criteria and Assessment Office and the Region V RPM.

Table 6-28 (continued)

Risk from Sediment Dermal Exposure

Child Scenario

Chemical	Annual Average Daily Dose (mg/Kg/Day)	Adjusted Dermal Reference Dose (mg/Kg/Day)	Child Hazard Index
2-butanone	2.11E-08	4.50E-02 (a)	4.70E-07
Benzoic acid (TIC)	3.66E-06 4.70E-05	3.88E+00 (a) (c)	9.42E-07
Bis(2-ethylhexyl)phthalate	1.95E-06	1.80E-02 (a)	1.09E-04
Benzo(b)fluoranthene (coelutes w/ Benzo(k)fluoranthene)	3.32E-08	(b)	
Chrysene	3.30E-08	(b)	
Unknown hydrocarbon(TIC)	9.00E-06	(c)	
Fluoranthene	2.64E-08	1.60E-02 (a, f)	1.65E-06
Phenanthrene	3.26E-08	1.60E-03 (e)	2.04E-05
Pyrene	3.15E-08	1.20E-02 (a, f)	2.62E-06
Noncarcinogenic PAH (TIC)	2.88E-07	1.60E-03 (f)	1.80E-04
Cadmium	6.38E-05	5.00E-04 (a, d)	1.28E-01
Lead	4.75E-06	(b)	
		Summed	1.28E-01

Stough9.wk1, ENSR, 1990

28-Aug-91

- (a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database). Oral values were adjusted for dermal exposure.
 (b) Value unavailable at this time.
 (c) Not applicable.
 (d) Value for cadmium in water used.
 (e) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd quarter. RfD for Naphthalene was used.
 (f) Developed in consultation with U.S. EPA Environmental Criteria and Assessment Office and the Region V RPM.

Table 6-29

28-Aug-91

Risk from Sediment Ingestion

Lifetime Scenario

Chemical	Lifetime Adult Average Daily Dose (mg/Kg/Day)	Annual Adult Average Daily Dose (mg/Kg/Day)	Lifetime Child Average Daily Dose (mg/Kg/Day)	Annual Child Average Daily Dose (mg/Kg/Day)	Total Lifetime Average Daily Dose (mg/Kg/Day)	Slope Factor (mg/Kg/Day) ⁻¹	Reference Dose (mg/Kg/Day)	Adult Hazard Index	Excess Lifetime Cancer Risk
2-butanone	3.56E-11	8.30E-11	9.08E-11	1.27E-09	1.26E-10	(b)	5.00E-02 (a)	1.66E-09	
Benzoic acid	5.54E-09	1.29E-08	1.41E-08	1.98E-07	1.97E-08	(b)	4.00E+00 (a)	3.23E-09	
TIC	7.11E-08	1.66E-07	1.82E-07	2.54E-06	2.53E-07	(c)	(c)		
Bis(2-ethylhexyl)phthalate	3.29E-09	7.67E-09	8.39E-09	1.17E-07	1.17E-08	1.40E-02 (a)	2.00E-02 (a)	3.84E-07	1.63E-10
Benzo(b)fluoranthene (coelutes w/ Benzo(k)fluoranthene)	9.06E-10	2.11E-09	2.31E-09	3.24E-08	3.22E-09	1.15E+01 (e)	(b)		3.70E-08
Chrysene	9.00E-10	2.10E-09	2.30E-09	3.21E-08	3.20E-09	1.15E+01 (e)	(b)		3.68E-08
Unknown hydrocarbon (TIC)	2.72E-07	6.35E-07	6.95E-07	9.73E-06	9.67E-07	(c)	(c)		
Fluoranthene	7.19E-10	1.68E-09	1.83E-09	2.57E-08	2.55E-09	(b)	4.00E-02 (a)	4.19E-08	
Phenanthrene	8.88E-10	2.07E-09	2.27E-09	3.17E-08	3.15E-09	(b)	4.00E-03 (f)	5.18E-07	
Pyrene	8.57E-10	2.00E-09	2.19E-09	3.06E-08	3.05E-09	(b)	3.00E-02 (a)	6.67E-08	
Noncarcinogenic PAH (TIC)	8.72E-09	2.04E-08	2.23E-08	3.12E-07	3.10E-08	(c)	4.00E-03 (f)	5.09E-06	
Cadmium	9.66E-08	2.25E-07	2.47E-07	3.45E-06	3.43E-07	(b)	5.00E-04 (d)	4.51E-04	
Lead	2.16E-07	5.03E-07	5.50E-07	7.70E-06	7.66E-07	(b)	(b)		
							Summed	4.57E-04	7.39E-08

Stough9.wk1, ENSR, 1990

28-Aug-91

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database).

(b) Value unavailable at this time.

(c) Not applicable.

(d) Value for cadmium in water used, IRIS, 1990.

(e) U.S. EPA, 1988. Slope factor for Benzo(a)pyrene used.

(f) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd quarter. RfD for Naphthalene used.

Table 6-29 (continued)

28-Aug-91

Risk from Sediment Ingestion

Child Scenario

Chemical	Annual Average Daily Dose (mg/Kg/Day)	Reference Dose (mg/Kg/Day)	Child Hazard Index
2-butanone	1.27E-09	5.00E-02 (a)	2.54E-08
Benzoic acid	1.98E-07	4.00E+00 (a)	4.94E-08
TIC	2.54E-06	(c)	
Bis(2-ethylhexyl)phthalate	1.17E-07	2.00E-02 (a)	5.87E-06
Benzo(b)fluoranthene (coelutes w/ Benzo(k)fluoranthene)	3.24E-08	(b)	
Chrysene	3.21E-08	(b)	
Unknown hydrocarbon (TIC)	9.73E-06	(c)	
Fluoranthene	2.57E-08	4.00E-02 (a)	6.42E-07
Phenanthrene	3.17E-08	4.00E-03 (f)	7.93E-06
Pyrene	3.06E-08	3.00E-02 (a)	1.02E-06
Noncarcinogenic PAH (TIC)	3.12E-07	4.00E-03 (f)	7.79E-05
Cadmium	3.45E-06	5.00E-04 (d)	6.90E-03
Lead	7.70E-06	(b)	
		Summed	7.00E-03

Stough9.wk1, ENSR, 1990

28-Aug-91

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database).

(b) Value unavailable at this time.

(c) Not applicable.

(d) Value for cadmium in water used, IRIS, 1990.

(e) U.S. EPA, 1988. Slope factor for Benzo(a)pyrene used.

(f) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd quarter. RfD for Naphthalene used.

Table 6-30

Risk from Waste Ingestion

Lifetime Scenario	Lifetime Adult Average Daily Dose (mg/Kg/Day)	Annual Adult Average Daily Dose (mg/Kg/Day)	Lifetime Child Average Daily Dose (mg/Kg/Day)	Annual Child Average Daily Dose (mg/Kg/Day)	Total Lifetime Average Daily Dose (mg/Kg/Day)	Slope Factor (mg/Kg/Day) ⁻¹	Reference Dose (mg/Kg/Day)	Adult Hazard Index	Excess Lifetime Cancer Risk
Chloroform	1.68E-11	3.91E-11	4.28E-11	5.99E-10	5.96E-11	6.10E-03 (a)	1.00E-02 (d)	3.91E-09	3.63E-13
Bis(2-ethylhexyl)phthalate	1.11E-09	2.58E-09	2.83E-09	3.96E-08	3.93E-09	1.40E-02 (a)	2.00E-02 (a)	1.29E-07	5.51E-11
Butyl-n-benzyl phthalate	1.11E-09	2.58E-09	2.83E-09	3.96E-08	3.93E-09	(b)	2.00E-01 (a)	1.29E-08	
Benzo(a)anthracene	4.17E-10	9.72E-10	1.06E-09	1.49E-08	1.48E-09	1.15E+01 (c)	(b)		1.70E-08
Benzo(b)fluoranthene	9.28E-10	2.17E-09	2.37E-09	3.32E-08	3.30E-09	1.15E+01 (c)	(b)		3.79E-08
(coelutes w/ benzo(k)fluoranthene)									
Benzo(a)pyrene	4.15E-10	9.68E-10	1.06E-09	1.48E-08	1.47E-09	1.15E+01 (c)	(b)		1.69E-08
Chrysene	4.42E-10	1.03E-09	1.13E-09	1.58E-08	1.57E-09	1.15E+01 (c)	(b)		1.81E-08
Ideno(1,2,3-cd)pyrene	1.79E-10	4.17E-10	4.56E-10	6.39E-09	6.35E-10	1.15E+01 (c)	(b)		7.30E-09
Benzo(g,h,i)perylene	3.76E-10	8.76E-10	9.59E-10	1.34E-08	1.33E-09	(b)	4.00E-03 (e)	2.19E-07	
Fluoranthene	4.71E-10	1.10E-09	1.20E-09	1.68E-08	1.67E-09	(b)	4.00E-02 (a)	2.75E-08	
Pyrene	9.96E-10	2.32E-09	2.54E-09	3.56E-08	3.54E-09	(b)	3.00E-02 (a)	7.75E-08	
Noncarcinogenic PAH (TIC)	1.57E-09	3.66E-09	4.01E-09	5.61E-08	5.58E-09	(b)	4.00E-03 (e)	9.16E-07	
							Summed	1.39E-06	9.73E-08

Stough10.wk1, ENSR, 1990 28-Aug-91

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database).

(b) Value unavailable at this time.

(c) U.S. EPA, IRIS, 1988. Slope factor for Benzo(a)pyrene used.

(d) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd quarter.

(e) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd quarter. RfD for Naphthalene used.

Table 6-30 (continued)

Risk from Waste Ingestion

Child Scenario	Annual Average Daily Dose (mg/Kg/Day)	Reference Dose (mg/Kg/Day)	Child Hazard Index
Chloroform	5.99E-10	1.00E-02 (c)	5.99E-08
Bis(2-ethylhexyl)phthalate	3.96E-08	2.00E-02 (a)	1.98E-06
Butyl-n-benzyl phthalate	3.96E-08	2.00E-01 (a)	1.98E-07
Benzo(a)anthracene	1.49E-08	(b)	
Benzo(b)fluoranthene (coelutes w/ Benzo(k)fluoranthene)	3.32E-08	(b)	
Benzo(a)pyrene	1.48E-08	(b)	
Chrysene	1.58E-08	(b)	
Ideno(1,2,3-cd)pyrene	6.39E-09	(b)	
Benzo(g,h,i)perylene	1.34E-08	4.00E-03 (d)	3.35E-06
Fluoranthene	1.68E-08	4.00E-02 (a)	4.21E-07
Pyrene	3.56E-08	3.00E-02 (a)	1.19E-06
Noncarcinogenic PAH (TIC)	5.61E-08	4.00E-03 (d)	1.40E-05
		Summed	2.12E-05

Stough10.wk1, ENSR, 1990 28-Aug-91

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database).

(b) Value unavailable at this time.

(c) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd quarter.

(d) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd quarter. RfD for Naphthalene used.

Table 6-31

Risk from Waste Dermal Exposure

Lifetime Scenario

Chemical	Lifetime Adult Average Daily Dose (mg/Kg/Day)	Annual Adult Average Daily Dose (mg/Kg/Day)	Lifetime Child Average Daily Dose (mg/Kg/Day)	Annual Child Average Daily Dose (mg/Kg/Day)	Total Lifetime Average Daily Dose (mg/Kg/Day)	Adjusted Dermal Slope Factor (mg/Kg/Day) ⁻¹	Adjusted Dermal Reference Dose (mg/Kg/Day)	Adult Hazard Index	Excess Lifetime Cancer Risk
Chloroform	4.28E-10	9.98E-10	7.36E-10	1.03E-08	1.16E-09	6.56E-03 (a)	9.30E-03 (d)	1.07E-07	7.64E-12
Bis(2-ethylhexyl)phthalate	2.73E-08	6.38E-08	4.70E-08	6.58E-07	7.43E-08	1.56E-02 (a)	1.80E-02 (a)	3.54E-06	1.16E-09
Butyl-n-benzyl phthalate	2.25E-08	5.24E-08	3.87E-08	5.41E-07	6.11E-08	(b)	1.48E-01 (a)	3.54E-07	
Benzo(a)anthracene	6.35E-10	1.48E-09	1.09E-09	1.53E-08	1.73E-09	2.88E+01 (c)	(b)		4.97E-08
Benzo(b)fluoranthene (coelutes w/ Benzo(k)fluoranthene)	1.41E-09	3.30E-09	2.43E-09	3.41E-08	3.85E-09	2.88E+01 (c)	(b)		1.11E-07
Benzo(a)pyrene	6.32E-10	1.47E-09	1.09E-09	1.52E-08	1.72E-09	2.88E+01 (c)	(b)		4.94E-08
Chrysene	6.73E-10	1.57E-09	1.16E-09	1.62E-08	1.83E-09	2.88E+01 (c)	(b)		5.27E-08
Ideno(1,2,3-cd)pyrene	2.72E-10	6.35E-10	4.69E-10	6.56E-09	7.41E-10	2.88E+01 (c)	(b)		2.13E-08
Benzo(g,h,i)perylene	5.72E-10	1.34E-09	9.85E-10	1.38E-08	1.56E-09	(b)	1.60E-03 (e)	8.34E-07	
Fluoranthene	7.18E-10	1.67E-09	1.23E-09	1.73E-08	1.95E-09	(b)	1.60E-02 (a,f)	1.05E-07	
Pyrene	1.52E-09	3.54E-09	2.61E-09	3.66E-08	4.13E-09	(b)	1.20E-02 (a,f)	2.95E-07	
Noncarcinogenic PAH (TIC)	2.39E-09	5.58E-09	4.12E-09	5.76E-08	6.51E-09	(b)	1.60E-03 (e,f)	3.49E-06	
							Summed	8.73E-06	2.85E-07

Stough10.wk1, ENSR, 1990 28-Aug-91

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database). Oral values were adjusted for dermal exposure.

(b) Value unavailable at this time.

(c) U.S. EPA, IRIS, 1988. Slope factor for Benzo(a)pyrene used. Value calculation recommended by U.S. EPA Region V.

(d) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd quarter.

(e) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd quarter. RfD for Naphthalene used. Oral values were adjusted for dermal exposure.

(f) Value calculation recommended by U.S. EPA Region V.

Please refer to RI Section 6.5 in the text and Table 6-228 for calculation and assumptions used.

Table 6-31 (continued)

28-Aug-91

Risk from Waste Dermal Exposure

Child Scenario

Chemical	Annual Average Daily Dose (mg/Kg/Day)	Adjusted Dermal Reference Dose (mg/Kg/Day)	Child Hazard Index
Chloroform	1.03E-08	9.30E-03 (b)	1.11E-06
Bis(2-ethylhexyl)phthalate	6.58E-07	1.80E-02 (a)	3.66E-05
Butyl-n-benzyl phthalate	5.41E-07	1.48E-01 (a)	3.66E-06
Benzo(a)anthracene	1.53E-08	(b)	
Benzo(b)fluoranthene	3.41E-08	(b)	
(coelutes w/ Benzo(k)fluoranthene)			
Benzo(a)pyrene	1.52E-08	(b)	
Chrysene	1.62E-08	(b)	
Ideno(1,2,3-cd)pyrene	6.56E-09	(b)	
Benzo(g,h,i)perylene	1.38E-08	1.60E-03 (e)	8.62E-06
Fluoranthene	1.73E-08	1.60E-02 (a,f)	1.08E-06
Pyrene	3.66E-08	1.20E-02 (a,f)	3.05E-06
Noncarcinogenic PAH (TIC)	5.76E-08	1.60E-03 (e,f)	3.60E-05
			9.01E-05

Stough10.wk1, ENSR, 1990 28-Aug-91

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database). Oral values were adjusted for dermal exposure.

(b) Value unavailable at this time.

(c) U.S. EPA, IRIS, 1988. Slope factor for Benzo(a)pyrene used. Value calculation recommended by U.S. EPA Region V.

(d) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd quarter.

(e) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd quarter. RfD for Naphthalene used. Oral values were adjusted for dermal exposure.

(f) Value calculation recommended by U.S. EPA Region V.

Please refer to RI Section 6.5 in the text and Table 6-228 for calculation and assumptions used.

Risk from Inhalation Exposure

Adult Scenario

Noncarcinogenic Chemical	Annual Average Daily Dose (mg/Kg/Day)	Reference Dose (mg/Kg/Day)	Adult Hazard Index	HEAST Reference Dose (mg/m ³)	Calculated Reference Dose (mg/Kg/Day)
1,2-dichloroethene (trans only)	2.25E-02	2.00E-02 (a)	1.12E+00		
Ethylbenzene	8.29E-03	2.86E-01 (b)	2.90E-02	1.00E+00 (b)	2.86E-01 (b)
Toluene	1.44E-02	5.71E-01 (b)	2.52E-02	2.00E+00 (b)	5.71E-01 (b)
Xylenes (total)	3.30E-02	8.57E-02 (b)	3.86E-01	3.00E-01 (b)	8.57E-02 (b)
		Summed	1.56E+00		

Risk from Inhalation Exposure

Child Scenario

Noncarcinogenic Chemical	Annual Average Daily Dose (mg/Kg/Day)	Reference Dose (mg/Kg/Day)	Child Hazard Index	HEAST Reference Dose (mg/m ³)	Calculated Reference Dose (mg/Kg/Day)
1,2-dichloroethene (trans only)	8.65E-02	2.00E-02 (a)	4.33E+00		
Ethylbenzene	3.19E-02	1.10E+00 (c)	2.90E-02	1.00E+00 (c)	1.10E+00 (c)
Toluene	5.54E-02	2.20E+00 (c)	2.52E-02	2.00E+00 (c)	2.20E+00 (c)
Xylenes (total)	1.27E-01	3.30E-01 (c)	3.86E-01	3.00E-01 (c)	3.30E-01 (c)
		Summed	4.77E+00		

STOUGH2.wk1, ENSR, 1990.

28-Aug-91

(a) Oral RfDs only were available. U.S. EPA, IRIS, 1990.

(b) Derived from U.S. EPA, 1991. Health Effects Assessment Summary Tables (HEAST), Annual. Adult respiration rate and adult body weight shown in Table 6-21 used to convert mg/m³ to mg/kg/day.(c) Derived from U.S. EPA, 1991. Health Effects Assessment Summary Tables (HEAST), Annual. Child respiration rate and child body weight shown in Table 6-21 used to convert mg/m³ to mg/kg/day.

Table 6-7 (REVISED)

Groundwater Ingestion Exposure
Adult Scenario

Chemical	Groundwater Concentration (ug/L)	Ingestion Rate (L/Day)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Gastrointestinal Absorption Adjustment Factor	Unit Correction Factor (mg/ug)	Body Weight (Kg)	Adult Daily Intake (mg/Kg/Day)
WESTERN SECTION (MW-4D)								
1,2-dichloroethene	2.5	2	365/365	30/70	1.00	1.00E-03	70	7.14E-05
Xylenes (total)	1.8	2	365/365	30/70	1.00	1.00E-03	70	5.00E-05
Dichlorodifluoromethane	0.8	2	365/365	30/70	1.00	1.00E-03	70	2.14E-05
Trichlorofluoromethane	0.2	2	365/365	30/70	1.00	1.00E-03	70	5.71E-06
Tetrahydrofuran	7.5	2	365/365	30/70	1.00	1.00E-03	70	2.14E-04
Bis(2-ethylhexyl)phthalate	1.6	2	365/365	30/70	1.00	1.00E-03	70	4.57E-05
Aluminum	100.0	2	365/365	30/70	1.00	1.00E-03	70	2.86E-03
Arsenic	2.7	2	365/365	30/70	1.00	1.00E-03	70	7.71E-05
Lead	2.5	2	365/365	30/70	1.00	1.00E-03	70	7.14E-05
Manganese	217.0	2	365/365	30/70	1.00	1.00E-03	70	6.20E-03
Nickel	20.0	2	365/365	30/70	0.50	1.00E-03	70	2.86E-04
Chromium	8.0	2	365/365	30/70	1.00	1.00E-03	70	2.29E-04
NORTHEAST SECTION (MW-5S)								
Benzoic Acid	25.0	2	365/365	30/70	1.00	1.00E-03	70	7.14E-04
Pentachlorophenol	25.0	2	365/365	30/70	1.00	1.00E-03	70	7.14E-04
Nickel	20.0	2	365/365	30/70	1.00	1.00E-03	70	5.71E-04
SOUTHEAST SECTION (MW-2S)								
Arsenic	3.4	2	365/365	30/70	1.00	1.00E-03	70	9.57E-05
Bis(2-ethylhexyl)phthalate	24.5	2	365/365	30/70	1.00	1.00E-03	70	7.00E-04
STO-R1.WK1, JEG, 1991 28-Aug-91								

Table 6-8 (REVISED)

Groundwater Ingestion Exposure
Child Scenario

Chemical	Groundwater Concentration (ug/L)	Ingestion Rate (L/Day)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Gastrointestinal Absorption Adjustment Factor	Unit Correction Factor (mg/ug)	Body Weight (Kg)	Child Daily Intake (mg/Kg/Day)
WESTERN SECTION (MW-4D)								
1,2-dichloroethene	2.5	0.743	365/365	5/70	1.00	1.00E-03	16	1.16E-04
Xylenes (total)	1.8	0.743	365/365	5/70	1.00	1.00E-03	16	8.13E-05
Dichlorodifluoromethane	0.8	0.743	365/365	5/70	1.00	1.00E-03	16	3.48E-05
Trichlorofluoromethane	0.2	0.743	365/365	5/70	1.00	1.00E-03	16	9.29E-06
Tetrahydrofuran	7.5	0.743	365/365	5/70	1.00	1.00E-03	16	3.48E-04
Bis(2-ethylhexyl)phthalate	1.6	0.743	365/365	5/70	1.00	1.00E-03	16	7.43E-05
Aluminum	100.0	0.743	365/365	5/70	1.00	1.00E-03	16	4.64E-03
Arsenic	2.7	0.743	365/365	5/70	1.00	1.00E-03	16	1.25E-04
Lead	2.5	0.743	365/365	5/70	1.00	1.00E-03	16	1.16E-04
Manganese	217.0	0.743	365/365	5/70	1.00	1.00E-03	16	1.01E-02
Nickel	20.0	0.743	365/365	5/70	0.50	1.00E-03	16	4.64E-04
Chromium	8.0	0.743	365/365	5/70	1.00	1.00E-03	16	3.72E-04
NORTHEAST SECTION (MW-5S)								
Benzoic Acid	25.0	0.743	365/365	5/70	1.00	1.00E-03	16	1.16E-03
Pentachlorophenol	25.0	0.743	365/365	5/70	1.00	1.00E-03	16	1.16E-03
Nickel	20.0	0.743	365/365	5/70	1.00	1.00E-03	16	9.29E-04
SOUTHEAST SECTION (MW-2S)								
Arsenic	3.4	0.743	365/365	5/70	1.00	1.00E-03	16	1.56E-04
Bis(2-ethylhexyl)phthalate	24.5	0.743	365/365	5/70	1.00	1.00E-03	16	1.14E-03

STO-R1.WK1, JEG, 1991

28-Aug-91

Table 6-9 (REVISED)

Dermal Contact with Groundwater
Adult Scenario

Chemical	Groundwater Concentration (ug/L)	Skin Surface (cm ²)	Dermal Permeability Constant (cm/Hour)	Exposure Time (Days)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Unit Adjustment Factor (L/cm ³) (mg/ug)	Body Weight (Kg)	Adult Daily Dose (a) (mg/Kg/Day)
WESTERN SECTION (MW-4D)									
1,2-dichloroethene	2.5	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	4.62E-09
Xylenes (total)	1.8	19400	9.00E-04	0.2/24	365/365	30/70	1.00E-06	70	3.64E-09
Dichlorodifluoromethane	0.8	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	1.39E-09
Trichlorofluoromethane	0.2	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	3.70E-10
Tetrahydrofuran	7.5	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	1.39E-08
Bis(2-ethylhexyl)phthalate	1.6	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	2.96E-09
Aluminum	100.0	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	1.66E-09
Arsenic	2.7	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	4.49E-11
Lead	2.5	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	4.16E-11
Chromium	217.0	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	3.61E-09
Manganese	20.0	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	3.33E-10
Nickel	8.0	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	1.33E-10
NORTHEAST SECTION (MW-5S)									
Benzoic Acid	25.0	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	4.62E-08
Pentachlorophenol	25.0	19400	6.00E-01	0.2/24	365/365	30/70	1.00E-06	70	3.46E-05
Nickel	20.0	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	3.33E-10
SOUTHEAST SECTION (MW-2S)									
Arsenic	3.4	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	5.57E-11
Bis(2-ethylhexyl)phthalate	24.5	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	4.07E-10
STO-R1.MK1, JEG, 1991	28-Aug-91								

(a) Absorbed dose.

Table 6-10 (REVISED)

Dermal Contact with Groundwater
Child Scenario

Chemical	Groundwater Concentration (ug/L)	Skin Surface (cm ²)	Dermal Permeability Constant (cm/Hour)	Exposure Time (Days)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Unit Adjustment Factor (L/cm ³) (mg/ug)	Body Weight (Kg)	Child Daily Dose (a) (mg/Kg/Day)
WESTERN SECTION (MW-4D)									
1,2-dichloroethene	2.5	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	7.58E-09
Xylenes (total)	1.8	7280	9.00E-04	0.2/24	365/365	5/70	1.00E-06	16	5.97E-09
Dichlorodifluoromethane	0.8	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	2.28E-09
Trichlorofluoromethane	0.2	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	6.07E-10
Tetrahydrofuran	7.5	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	2.28E-08
Bis(2-ethylhexyl)phthalate	1.6	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	4.85E-09
Aluminum	100.0	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	2.73E-09
Arsenic	2.7	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	7.37E-11
Lead	2.5	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	6.83E-11
Chromium	217.0	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	5.92E-09
Manganese	20.0	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	5.46E-10
Nickel	8.0	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	2.18E-10
NORTHEAST SECTION (MW-5S)									
Benzoic Acid	25.0	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	7.58E-08
Pentachlorophenol	25.0	7280	6.00E-01	0.2/24	365/365	5/70	1.00E-06	16	5.69E-05
Nickel	20.0	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	5.46E-10
SOUTHEAST SECTION (MW-2S)									
Arsenic	3.4	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	9.15E-11
Bis(2-ethylhexyl)phthalate	24.5	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	6.69E-10

STO-R1.MK1, JEG, 1991

28-Aug-91

(a) Absorbed dose.

Table 6-11 (REVISED)

Dermal Contact with Surface Water
Adult Scenario

Chemical	Surface Water Concentration (ug/L)	Skin Surface (cm ²)	Dermal Permeability Constant (cm/Hr)	Exposure Time (Hrs/Day)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Unit Adjustment Factor (L/cm ³) (mg/ug)	Body Weight (Kg)	Adult Daily Dose (b) (mg/Kg/Day)
Dichlorodifluoromethane	1.8	990	8.00E-04	2.6	7/365	30/70	1.00E-06	70	1.02E-09
Semivolatile TIC	54 J	990	8.00E-04	2.6	7/365	30/70	1.00E-06	70	3.05E-08
Lead	44	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	2.23E-10
Vanadium	37.8	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	1.92E-10
Chromium	12	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	6.09E-11
Cobalt	15.9	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	8.07E-11
Copper	20.9	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	1.06E-10
Nickel	32.3	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	1.64E-10
Aluminum	10558	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	5.36E-08
Arsenic	4.2	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	2.13E-11
Barium	352	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	1.79E-09
Manganese	3012	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	1.53E-08
Zinc	156.3	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	7.94E-10

STO-R17.WK1, JEG, 1991 28-Aug-91

(a) Permeability Constant for Al, SEAM, 1988.

(b) Absorbed dose.

J= Estimated Concentration

Table 6-11 (REVISED, continued)

Dermal Contact with Surface Water
Child Scenario

Chemical	Surface Water Concentration (ug/L)	Skin Surface (cm ²)	Dermal Permeability Constant (cm/Hr)	Exposure Time (Hrs/Day)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Unit Adjustment Factor (L/cm ³) (mg/ug)	Body Weight (Kg)	Child Daily Dose (b) (mg/Kg/Day)
Dichlorodifluoromethane	1.8	1335	8.00E-04	1.3	7/365	5/70	1.00E-06	16	3.00E-09
Semivolatile TIC	54 J	1335	8.00E-04	1.3	7/365	5/70	1.00E-06	16	8.99E-08
Lead	44	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	6.59E-10
Vanadium	37.8	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	5.66E-10
Chromium	12	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	1.80E-10
Cobalt	15.9	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	2.38E-10
Copper	20.9	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	3.13E-10
Nickel	32.3	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	4.84E-10
Aluminum	10558	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	1.58E-07
Arsenic	4.2	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	6.29E-11
Barium	352	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	5.27E-09
Manganese	3012	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	4.51E-08
Zinc	156.3	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	2.34E-09

STO-R17.WK1, JEG, 1991 28-Aug-91

(a) Permeability Constant for Al, SEAN, 1988.

(b) Absorbed dose.

J= Estimated Concentration

Table 6-12 (REVISED)

Sediment Dermal Exposure
Adult Scenario

Chemical	Sediment Concentration (ug/Kg)	Exposed Skin (cm ² /Day)	Soil on Skin (mg/cm ²)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Unit Adjustment Factor (Kg/ug)	Dermal Absorption Adjustment Factor	Body Weight (Kg)	Adult Daily Dose (a) (mg/Kg/Day)
2-butanone	5.3	990	2.77	4/365	30/70	1.00E-09	0.90	70	2.05E-09
Benzoic acid	825	990	2.77	4/365	30/70	1.00E-09	1	70	3.54E-07
TIC	10600 J	990	2.77	4/365	30/70	1.00E-09	1	70	4.55E-06
Bis(2-ethylhexyl)phthalate	490	990	2.77	4/365	30/70	1.00E-09	0.90	70	1.89E-07
Benzo(b)fluoranthene (coelutes Benzo(k)fluoranthene)	150	990	2.77	4/365	30/70 30/70	1.00E-09	0.05	70	3.22E-09
Chrysene	149	990	2.77	4/365	30/70	1.00E-09	0.05	70	3.20E-09
Unknown hydrocarbons (TIC)	40590	990	2.77	4/365	30/70	1.00E-09	0.05	70	8.71E-07
Fluoranthene	119	990	2.77	4/365	30/70	1.00E-09	0.05	70	2.55E-09
Phenanthrene	147	990	2.77	4/365	30/70	1.00E-09	0.05	70	3.16E-09
Pyrene	142	990	2.77	4/365	30/70	1.00E-09	0.05	70	3.05E-09
Noncarcinogenic PAH (TIC)	1300 J	990	2.77	4/365	30/70	1.00E-09	0.05	70	2.79E-08
Cadmium	14400	990	2.77	4/365	30/70	1.00E-09	1	70	6.18E-06
Lead	107100	990	2.77	4/365	30/70	1.00E-09	0.01	70	4.60E-07

STO-R9.WK1, JEG, 1991

28-Aug-91

J= Estimated Concentration
(a) Absorbed dose.

Table 6-13 (REVISED)

Sediment Dermal Exposure
Child Scenario

Chemical	Sediment Concentration (ug/Kg)	Exposed Skin (cm ² /Day)	Soil on Skin (mg/cm ²)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Unit Adjustment Factor (Kg/ug)	Dermal Absorption Adjustment Factor	Body Weight (Kg)	Child Daily Dose (a) (ng/Kg/Day)
2-butanone	5.3	1335	2.77	7/365	5/70	1.00E-09	0.90	16	2.11E-08
Benzoic acid	825	1335	2.77	7/365	5/70	1.00E-09	1	16	3.66E-06
TIC	10600 J	1335	2.77	7/365	5/70	1.00E-09	1	16	4.70E-05
Bis(2-ethylhexyl)phthalate	490	1335	2.77	7/365	5/70	1.00E-09	0.90	16	1.95E-06
Benzo(b)fluoranthene (coelutes Benzo(k)fluoranthene)	150	1335	2.77	7/365	5/70	1.00E-09	0.05	16	3.32E-08
Chrysene	149	1335	2.77	7/365	5/70	1.00E-09	0.05	16	3.30E-08
Unknown hydrocarbon (TIC)	40590	1335	2.77	7/365	5/70	1.00E-09	0.05	16	9.00E-06
Fluoranthene	119	1335	2.77	7/365	5/70	1.00E-09	0.05	16	2.64E-08
Phenanthrene	147	1335	2.77	7/365	5/70	1.00E-09	0.05	16	3.26E-08
Pyrene	142	1335	2.77	7/365	5/70	1.00E-09	0.05	16	3.15E-08
Noncarcinogenic PAH (TIC)	1300 J	1335	2.77	7/365	5/70	1.00E-09	0.05	16	2.88E-07
Cadmium	14400	1335	2.77	7/365	5/70	1.00E-09	1	16	6.38E-05
Lead	107100	1335	2.77	7/365	5/70	1.00E-09	0.01	16	4.75E-06

STO-R9.WK1, JEG, 1991

28-Aug-91

J= Estimated concentration
(a) Absorbed dose.

Table 6-14 (REVISED)

Sediment Ingestion Exposure
Adult Scenario

Chemical	Sediment Concentration (ug/Kg)	Sediment Ingestion Rate (mg/Day)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Unit Adjustment Factor (Kg/ug)	Gastrointestinal Absorption Adjustment Factor	Body Weight (Kg)	Adult Daily Intake (mg/Kg/Day)
2-butanone	5.3	100	4/365	30/70	1.00E-09	1	70	8.30E-11
Benzoic acid	825	100	4/365	30/70	1.00E-09	1	70	1.29E-08
TIC	10600 J	100	4/365	30/70	1.00E-09	1	70	1.66E-07
Bis(2-ethylhexyl)phthalate	490	100	4/365	30/70	1.00E-09	1	70	7.67E-09
Benzo(b)fluoranthene (coelutes Benzo(k)fluoranthene)	150	100	4/365	30/70	1.00E-09	0.9	70	2.11E-09
Chrysene	149	100	4/365	30/70	1.00E-09	0.9	70	2.10E-09
Unknown hydrocarbon TIC	40590	100	4/365	30/70	1.00E-09	1	70	6.35E-07
Fluoranthene	119	100	4/365	30/70	1.00E-09	0.9	70	1.68E-09
Phenanthrene	147	100	4/365	30/70	1.00E-09	0.9	70	2.07E-09
Pyrene	142	100	4/365	30/70	1.00E-09	0.9	70	2.00E-09
Noncarcinogenic PAH (TIC)	1300 J	100	4/365	30/70	1.00E-09	1	70	2.04E-08
Cadmium	14400	100	4/365	30/70	1.00E-09	1	70	2.25E-07
Lead	107100	100	4/365	30/70	1.00E-09	0.3	70	5.03E-07
STO-R9.WK1, JEG, 1991	28-Aug-91							

J= Estimated Concentration

Table 6-15 (REVISED)

Sediment Ingestion Exposure
Child Scenario

Chemical	Sediment Concentration (ug/Kg)	Sediment Ingestion Rate (mg/Day)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Unit Adjustment Factor (Kg/ug)	Gastrointestinal Absorption Adjustment Factor	Body Weight (Kg)	Child Daily Intake (mg/Kg/Day)
2-butanone	5.3	200	7/365	5/70	1.00E-09	1	16	1.27E-09
Benzoic acid	825	200	7/365	5/70	1.00E-09	1	16	1.98E-07
TIC	10600 J	200	7/365	5/70	1.00E-09	1	16	2.54E-06
Bis(2-ethylhexyl)phthalate	490	200	7/365	5/70	1.00E-09	1	16	1.17E-07
Benzo(b)fluoranthene (coelutes Benzo(k)fluoranthene)	150	200	7/365 7/365	5/70 5/70	1.00E-09	0.9	16	3.24E-08
Chrysene	149	200	7/365	5/70	1.00E-09	0.9	16	3.21E-08
Unknown hydrocarbon TIC	40590	200	7/365	5/70	1.00E-09	1	16	9.73E-06
Fluoranthene	119	200	7/365	5/70	1.00E-09	0.9	16	2.57E-08
Phenanthrene	147	200	7/365	5/70	1.00E-09	0.9	16	3.17E-08
Pyrene	142	200	7/365	5/70	1.00E-09	0.9	16	3.06E-08
Noncarcinogenic PAH (TIC)	1300 J	200	7/365	5/70	1.00E-09	1	16	3.12E-07
Cadmium	14400	200	7/365	5/70	1.00E-09	1	16	3.45E-06
Lead	107100	200	7/365	5/70	1.00E-09	0.3	16	7.70E-06

STO-R9.MK1, JEG, 1991

28-Aug-91

J= Estimated Concentration

Table 6-16 (REVISED)

Waste Dermal Exposure
Adult Scenario

Chemical	Waste Concentration (ug/Kg)	Exposed Skin (cm ² /Day)	Soil on Skin (mg/cm ²)	Unit Adjustment Factor (Kg/ug)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Dermal Absorption Adjustment Factor	Body Weight (Kg)	Adult Daily Dose (a) (mg/Kg/Day)
Chloroform	2.5	990	2.77	1.00E-09	4/365	30/70	0.93	70	9.98E-10
Bis(2-ethylhexyl)phthalate	165 J	990	2.77	1.00E-09	4/365	30/70	0.9	70	6.38E-08
Butyl-n-benzyl phthalate	165 J	990	2.77	1.00E-09	4/365	30/70	0.74	70	5.24E-08
Benzo(a)anthracene	69 J	990	2.77	1.00E-09	4/365	30/70	0.05	70	1.48E-09
Benzo(b)fluoranthene (coelutes w/ Benzo(k)fluoranthene)	153.7	990	2.77	1.00E-09	4/365	30/70	0.05	70	3.30E-09
Benzo(a)pyrene	68.7	990	2.77	1.00E-09	4/365	30/70	0.05	70	1.47E-09
Chrysene	73.2	990	2.77	1.00E-09	4/365	30/70	0.05	70	1.57E-09
Ideno(1,2,3-cd)pyrene	29.6	990	2.77	1.00E-09	4/365	30/70	0.05	70	6.35E-10
Benzo(g,h,i)perylene	62.2	990	2.77	1.00E-09	4/365	30/70	0.05	70	1.34E-09
Fluoranthene	78	990	2.77	1.00E-09	4/365	30/70	0.05	70	1.67E-09
Pyrene	165 J	990	2.77	1.00E-09	4/365	30/70	0.05	70	3.54E-09
Noncarcinogenic PAH (TIC)	260 J	990	2.77	1.00E-09	4/365	30/70	0.05	70	5.58E-09

STO-R10.WK1, JEG, 1991

28-Aug-91

J= Estimated Concentration

(a) Absorbed dose.

Table 6-17 (REVISED)

Waste Dermal Exposure
Child Scenario

Chemical	Waste Concentration (ug/Kg)	Exposed Skin (cm ² /Day)	Soil on Skin (mg/cm ²)	Unit Adjustment Factor (Kg/ug)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Dermal Absorption Adjustment Factor	Body Weight (Kg)	Child Daily Dose (a) (mg/Kg/Day)
Chloroform	2.5	1335	2.77	1.00E-09	7/365	5/70	0.93	16	1.03E-08
Bis(2-ethylhexyl)phthalate	165 J	1335	2.77	1.00E-09	7/365	5/70	0.90	16	6.58E-07
Butyl-n-benzyl phthalate	165 J	1335	2.77	1.00E-09	7/365	5/70	0.74	16	5.41E-07
Benzo(a)anthracene	69 J	1335	2.77	1.00E-09	7/365	5/70	0.05	16	1.53E-08
Benzo(b)fluoranthene (coelutes w/ Benzo(k)fluoranthene)	153.7	1335	2.77	1.00E-09	7/365	5/70	0.05	16	3.41E-08
Benzo(a)pyrene	68.7	1335	2.77	1.00E-09	7/365	5/70	0.05	16	1.52E-08
Chrysene	73.2	1335	2.77	1.00E-09	7/365	5/70	0.05	16	1.62E-08
Ideno(1,2,3-cd)pyrene	29.6	1335	2.77	1.00E-09	7/365	5/70	0.05	16	6.56E-09
Benzo(g,h,i)perylene	62.2	1335	2.77	1.00E-09	7/365	5/70	0.05	16	1.38E-08
Fluoranthene	78	1335	2.77	1.00E-09	7/365	5/70	0.05	16	1.73E-08
Pyrene	165 J	1335	2.77	1.00E-09	7/365	5/70	0.05	16	3.66E-08
Noncarcinogenic PAH (TIC)	260 J	1335	2.77	1.00E-09	7/365	5/70	0.05	16	5.76E-08

STO-R10.WK1, JEG, 1991

28-Aug-91

J= Estimated Concentration

(a) Absorbed dose.

Table 6-18 (REVISED)

Waste Ingestion Exposure
Adult Scenario

Chemical	Waste Concentration (ug/Kg)	Ingestion Rate (mg/Day)	Unit Adjustment Factor (Kg/ug)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Gastrointestinal Absorption Adjustment Factor	Body Weight (Kg)	Adult Daily Intake (mg/Kg/Day)
Chloroform	2.5	100	1.00E-09	4/365	30/70	1	70	3.91E-11
Bis(2-ethylhexyl)phthalate	165 J	100	1.00E-09	4/365	30/70	1	70	2.58E-09
Butyl-n-benzyl phthalate	165 J	100	1.00E-09	4/365	30/70	1	70	2.58E-09
Benzo(a)anthracene	69 J	100	1.00E-09	4/365	30/70	0.9	70	9.72E-10
Benzo(b)fluoranthene (coelutes w/ benzo(k)fluoranthene)	153.7	100	1.00E-09	4/365	30/70	0.9	70	2.17E-09
Benzo(a)pyrene	68.7	100	1.00E-09	4/365	30/70	0.9	70	9.68E-10
Chrysene	73.2	100	1.00E-09	4/365	30/70	0.9	70	1.03E-09
Ideno(1,2,3-cd)pyrene	29.6	100	1.00E-09	4/365	30/70	0.9	70	4.17E-10
Benzo(g,h,i)perylene	62.2	100	1.00E-09	4/365	30/70	0.9	70	8.76E-10
Fluoranthene	78	100	1.00E-09	4/365	30/70	0.9	70	1.10E-09
Pyrene	165 J	100	1.00E-09	4/365	30/70	0.9	70	2.32E-09
Noncarcinogenic PAH (TIC)	260 J	100	1.00E-09	4/365	30/70	0.9	70	3.66E-09

STO-R10.WK1, JEG, 1991

28-Aug-91

J= Estimated Concentration

Table 6-19 (REVISED)

Waste Ingestion Exposure
Child Scenario

Chemical	Waste Concentration (ug/Kg)	Ingestion Rate (mg/Day)	Unit Adjustment Factor (Kg/ug)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Gastrointestinal Absorption Adjustment Factor	Body Weight (Kg)	Child Daily Intake (mg/Kg/Day)
Chloroform	2.5	200	1.00E-09	7/365	5/70	1	16	5.99E-10
Bis(2-ethylhexyl)phthalate	165 J	200	1.00E-09	7/365	5/70	1	16	3.96E-08
Butyl-n-benzyl phthalate	165 J	200	1.00E-09	7/365	5/70	1	16	3.96E-08
Benzo(a)anthracene	69 J	200	1.00E-09	7/365	5/70	0.9	16	1.49E-08
Benzo(b)fluoranthene	153.7	200	1.00E-09	7/365	5/70	0.9	16	3.32E-08
(coelutes w/ Benzo(k)fluoranthene)					5/70			
Benzo(a)pyrene	68.7	200	1.00E-09	7/365	5/70	0.9	16	1.48E-08
Chrysene	73.2	200	1.00E-09	7/365	5/70	0.9	16	1.58E-08
Ideno(1,2,3-cd)pyrene	29.6	200	1.00E-09	7/365	5/70	0.9	16	6.39E-09
Benzo(g,h,i)perylene	62.2	200	1.00E-09	7/365	5/70	0.9	16	1.34E-08
Fluoranthene	78	200	1.00E-09	7/365	5/70	0.9	16	1.68E-08
Pyrene	165 J	200	1.00E-09	7/365	5/70	0.9	16	3.56E-08
Noncarcinogenic PAH (TIC)	260 J	200	1.00E-09	7/365	5/70	0.9	16	5.61E-08

STO-R10.WK1, JEG, 1991
J= Estimated Concentration

28-Aug-91

Table 6-20 (REVISED)

Soil Dermal Absorption
Adult Scenario

Chemical	Soil Concentration (ug/Kg)	Exposed Skin (cm ² /Day)	Soil on Skin (mg/cm ²)	Unit Adjustment Factor (Kg/ug)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Dermal Absorption Adjustment Factor	Body Weight (Kg)	Adult Daily Dose (b) (mg/Kg/Day)
Alkane	590 J	990	2.77	1.00E-09	4/365	30/70	0.80	70	2.03E-07

Soil Dermal Absorption
Child Scenario

Chemical	Soil Concentration (ug/Kg)	Exposed Skin (cm ² /Day)	Soil on Skin (mg/cm ²)	Unit Adjustment Factor (Kg/ug)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Dermal Absorption Adjustment Factor	Body Weight (Kg)	Child Daily Dose (b) (mg/Kg/Day)
Alkane	590 J	1335	2.77	1.00E-09	7/365	5/70	0.80	16	2.09E-06

STO-R18.WK1, JEG, 1991

28-Aug-91

(a) U. S. EPA. Superfund Exposure Assessment Manual, 1988.

(b) Absorbed dose.

J = Estimated Concentration

Soil Ingestion Exposure
Adult Scenario

Chemical	Soil Concentration (ug/Kg)	Ingestion Rate (mg/Day)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Unit Adjustment Factor (Kg/ug)	Gastrointestinal Absorption Adjustment Factor	Body Weight (Kg)	Adult Daily Intake (mg/Kg/Day)
Alkane	590 J	100	4/365	30/70	1.00E-09	1	70	9.24E-09

Soil Ingestion Exposure
Child Scenario

Chemical	Soil Concentration (ug/Kg)	Ingestion Rate (mg/Day)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Unit Adjustment Factor (Kg/ug)	Gastrointestinal Absorption Adjustment Factor	Body Weight (Kg)	Child Daily Intake (mg/Kg/Day)
Alkane	590 J	200	7/365	5/70	1.00E-09	1	16	1.41E-07

STO-R18.WK1, JEG, 1991

28-Aug-91

J = Estimated Concentration

Table 6-21 (REVISED FOR AVG. OF SAMPLE & REPLICATE -- 1 DETECT & 1 NON-DETECT @1/2 x METHOD DETECTION LIMIT)

Inhalation Exposure
Adult Scenario

Chemical	Air Concentration (mg/M ³) (a)	Respiration Rate (M ³ /Day)	Daily Exposure Factor (Hrs/Hrs)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Lifetime)	Inhalation Absorption Adjustment Factor	Body Weight (Kg)	Adult Daily Intake (mg/Kg/Day)	Detect (ppm)	Method Det. Limit (ppm)	Non-detect (ppm)	AVG (ppm)
1,2-dichloroethene (trans only)	0.157	20	8/24	365/365	30/70	1	70	1.50E-02	0.06	0.04	0.02	0.040
Ethylbenzene	0.054	20	8/24	365/365	30/70	1	70	5.18E-03	0.02	0.01	0.005	0.013
Toluene	0.085	20	8/24	365/365	30/70	1	70	8.09E-03	0.04	0.01	0.005	0.023
Xylenes (total)	0.184	20	8/24	365/365	30/70	1	70	1.76E-02	0.08	0.01	0.005	0.043

STO-R2R.WK1, JEG, 1991 28-Aug-91
(a) ppm corrected to mg/M³ = (ppm * mol. wt.)/24.45

Inhalation Exposure
Child Scenario

Chemical	Air Concentration (mg/M ³) (a)	Respiration Rate (M ³ /Day)	Daily Exposure Factor (Hrs/Hrs)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Lifetime)	Inhalation Absorption Adjustment Factor	Body Weight (Kg)	Child Daily Intake (mg/Kg/Day)
1,2-dichloroethene (trans only)	0.157	17.6	8/24	365/365	5/70	1	16	5.77E-02
Ethylbenzene	0.054	17.6	8/24	365/365	5/70	1	16	1.99E-02
Toluene	0.085	17.6	8/24	365/365	5/70	1	16	3.11E-02
Xylenes (total)	0.184	17.6	8/24	365/365	5/70	1	16	6.76E-02

STO-R2R.WK1, JEG, 1991 28-Aug-91
(a) ppm corrected to mg/M³ by mg/M³ = (ppm * mol. wt.)/24.45

Daily Intake = $\frac{AC \times RR \times EF \times ED \times IAAF}{BW}$

- AC = Air Concentration
- RR = Respiration Rate
- EF = Exposure Frequency (Day/Day)
- ED = Exposure Duration (Yrs/Yrs)
- IAAF = Inhalation Absorption Adjustment Factor
- BW = Body Weight (70 kg adult, 16 kg child)

Table 6-24 (REVISED)

Risk from Groundwater Ingestion

Chemical	Adult Daily Intake (mg/Kg/Day)	Child Daily Intake (mg/Kg/Day)	Total Lifetime Avg. Daily Intake (mg/Kg/Day)	Slope Factor (mg/Kg/Day) ⁻¹	Reference Dose (mg/Kg/Day)	Adult Hazard Index (g)	Child Hazard Index (h)	Excess Lifetime Cancer Risk (i)
WESTERN SECTION (MW-4D)								
1,2-dichloroethene	7.14E-05	1.16E-04	3.89E-05	(e)	2.00E-02 (a)	3.6E-03	5.8E-03	
Xylenes (total)	5.00E-05	8.13E-05	2.72E-05	(e)	2.00E+00 (a)	2.5E-05	4.1E-05	
Dichlorodifluoromethane	2.14E-05	3.48E-05	1.17E-05	(e)	2.00E-01 (a)	1.1E-04	1.7E-04	
Trichlorofluoromethane	5.71E-06	9.29E-06	3.11E-06	(e)	3.00E-01 (a)	1.9E-05	3.1E-05	
Tetrahydrofuran	2.14E-04	3.48E-04	1.17E-04	(e)	2.00E-03 (d)	1.1E-01	1.7E-01	
Bis(2-ethylhexyl)phthalate	4.57E-05	7.43E-05	2.49E-05	1.40E-02 (a)	2.00E-02 (a)	2.3E-03	3.7E-03	3.5E-07
Aluminum	2.86E-03	4.64E-03	1.56E-03	(e)	(c)			
Arsenic	7.71E-05	1.25E-04	4.20E-05	1.75E+00 (f)	1.00E-03 (b)	7.7E-02	1.3E-01	7.4E-05
Lead	7.14E-05	1.16E-04	3.89E-05	(e)	(c)			
Manganese	6.20E-03	1.01E-02	3.38E-03	(e)	2.00E-01 (b)	3.1E-02	5.0E-02	
Nickel	2.86E-04	4.64E-04	1.56E-04	(c)	2.00E-02 (b)	1.4E-02	2.3E-02	
Chromium	2.29E-04	3.72E-04	1.24E-04	(e)	1.00E+00 (a)	2.3E-04	3.7E-04	
					Summed	2.4E-01	3.8E-01	7.4E-05
NORTHEAST SECTION (MW-5S)								
Benzoic Acid	7.14E-04	1.16E-03	3.89E-04	(e)	4.00E+00 (a)	1.8E-04	2.9E-04	
Pentachlorophenol	7.14E-04	1.16E-03	3.89E-04	(c)	3.00E-02 (a)	2.4E-02	3.9E-02	
Nickel	5.71E-04	9.29E-04	3.11E-04	(e)	2.00E-02 (b)	2.9E-02	4.6E-02	
					Summed	5.3E-02	8.5E-02	
SOUTHEAST SECTION (MW-2S)								
Arsenic	9.57E-05	1.56E-04	5.21E-05	1.75E+00 (f)	1.00E-03 (b)	9.6E-02	1.6E-01	9.1E-05
Bis(2-ethylhexyl)phthalate	7.00E-04	1.14E-03	3.81E-04	1.40E-02 (a)	2.00E-02 (a)	3.5E-02	5.7E-02	5.3E-06
					Summed	1.3E-01	2.1E-01	9.7E-05

STO-R1.WK1, JEG, 1991

28-Aug-91

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database).

(b) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd Quarter.

(c) Value unavailable at this time.

(d) Value derived by U.S. EPA, Environmental Criteria and Assessment Office.

(e) Not carcinogenic by this route of exposure.

(f) U. S. EPA, IRIS, 1988.

(g) Calculated by (Adult Daily Intake)/(Rfd).

(h) Calculated by (Child Daily Intake)/(Rfd).

(i) Calculated by (Total Lifetime Avg. Daily Intake) x (Slope Factor).

Table 6-25 (REVISED)

Risk from Dermal Groundwater Exposure

Chemical	Adult Daily Dose (mg/Kg/Day)	Child Daily Dose (mg/Kg/Day)	Total Lifetime Avg. Daily Dose (mg/Kg/Day)	Adjusted Dermal Slope Factor (mg/Kg/Day) ⁻¹	Adjusted Dermal Reference Dose (mg/Kg/Day)	Adult Hazard Index (g)	Child Hazard Index (h)	Excess Lifetime Cancer Risk (i)
WESTERN SECTION (MW-4D)								
1,2-dichloroethene	4.62E-09	7.58E-09	2.52E-09	(e)	2.00E-02 (a)	2.3E-07	3.8E-07	
Xylenes (total)	3.64E-09	5.97E-09	1.99E-09	(e)	1.79E+00 (a)	2.0E-09	3.3E-09	
Dichlorodifluoromethane	1.39E-09	2.28E-09	7.56E-10	(e)	2.00E-01 (a)	6.9E-09	1.1E-08	
Trichlorofluoromethane	3.70E-10	6.07E-10	2.02E-10	(e)	3.00E-01 (a)	1.2E-09	2.0E-09	
Tetrahydrofuran	1.39E-08	2.28E-08	7.56E-09	(e)	2.00E-03 (d)	6.9E-06	1.1E-05	
Bis(2-ethylhexyl)phthalate	2.96E-09	4.85E-09	1.61E-09	1.56E-02 (a)	1.80E-02 (a)	1.6E-07	2.7E-07	2.5E-11
Aluminum	1.66E-09	2.73E-09	9.08E-10	(e)	(c)			
Arsenic	4.49E-11	7.37E-11	2.45E-11	1.94E+00 (f)	9.00E-04 (b)	5.0E-08	8.2E-08	4.8E-11
Lead	4.16E-11	6.83E-11	2.27E-11	(c)	(c)			
Chromium	3.61E-09	5.92E-09	1.97E-09	(e)	5.30E-04 (a)	6.8E-06	1.1E-05	
Manganese	3.33E-10	5.46E-10	1.82E-10	(e)	6.00E-03 (b)	5.5E-08	9.1E-08	
Nickel	1.33E-10	2.18E-10	7.26E-11	(c)	1.00E-03 (b)	1.3E-07	2.2E-07	
					Summed	1.4E-05	2.4E-05	7.3E-11
NORTHEAST SECTION (MW-5S)								
Benzoic Acid	4.62E-08	7.58E-08	2.52E-08	(e)	3.88E+00 (a)	1.2E-08	2.0E-08	
Pentachlorophenol	3.46E-05	5.69E-05	1.89E-05	(c)	2.10E-02 (a)	1.6E-03	2.7E-03	
Nickel	3.33E-10	5.46E-10	1.82E-10	(e)	1.00E-03 (b)	3.3E-07	5.5E-07	
					Summed	1.7E-03	2.7E-03	
SOUTHEAST SECTION (MW-2S)								
Arsenic	5.57E-11	9.15E-11	3.04E-11	1.94E+00 (f)	9.00E-04 (b)	6.2E-08	1.0E-07	5.9E-11
Bis(2-ethylhexyl)phthalate	4.07E-10	6.69E-10	2.22E-10	1.56E-02 (a)	1.80E-02 (a)	2.3E-08	3.7E-08	3.5E-12
					Summed	8.5E-08	1.4E-07	6.2E-11

STO-R1.WK1, JEG, 1991

28-Aug-91

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database).

(b) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd Quarter.

(c) Value unavailable at this time.

(d) Value derived by U. S. EPA, Environmental Criteria Assessment Office.

(e) Not carcinogenic by this route of exposure.

(f) U.S. EPA, IRIS, 1988.

(g) Calculated by (Adult Daily Dose) / (RfD).

(h) Calculated by (Child Daily Dose) / (RfD).

(i) Calculated by (Total Lifetime Avg. Daily Dose) x (Slope Factor).

Table 6-26 (REVISED)

Risk from Dermal Exposure to Surface Water

Chemical	Adult Daily Dose (mg/Kg/Day)	Child Daily Dose (mg/Kg/Day)	Total Lifetime Avg. Dose (mg/Kg/Day)	Adjusted Dermal Slope Factor (mg/Kg/Day) ⁻¹	Adjusted Dermal Reference Dose (mg/Kg/Day)	Adult Hazard Index (f)	Child Hazard Index (g)	Excess Lifetime Cancer Risk (h)
Dichlorodifluoromethane Semivolatile (TIC)	1.02E-09 3.05E-08	3.00E-09 8.99E-08	6.49E-10 1.95E-08	(c) (c)	2.00E-01 (a) 3.88E+00 (d)	5.1E-09 7.9E-09	1.5E-08 2.3E-08	
Lead	2.23E-10	6.59E-10	1.43E-10	(c)	(c)			
Vanadium	1.92E-10	5.66E-10	1.23E-10	(c)	1.35E-04 (a)	1.4E-06	4.2E-06	
Chromium	6.09E-11	1.80E-10	3.90E-11	(c)	5.30E-04 (a)	1.1E-07	3.4E-07	
Cobalt	8.07E-11	2.38E-10	5.16E-11	(c)	(c)			
Copper	1.06E-10	3.13E-10	6.78E-11	(c)	(c)			
Nickel	1.64E-10	4.84E-10	1.05E-10	(c)	1.00E-03 (b)	1.6E-07	4.8E-07	
Aluminum	5.36E-08	1.58E-07	3.43E-08	(c)	(c)			
Arsenic	2.13E-11	6.29E-11	1.36E-11	1.94E+00 (e)	9.00E-04 (b)	2.4E-08	7.0E-08	2.6E-11
Barium	1.79E-09	5.27E-09	1.14E-09	(c)	3.50E-03 (b)	5.1E-07	1.5E-06	
Manganese	1.53E-08	4.51E-08	9.78E-09	(c)	6.00E-03 (b)	2.5E-06	7.5E-06	
Zinc	7.94E-10	2.34E-09	5.07E-10	(c)	5.00E-02 (b)	1.6E-08	4.7E-08	
					Summed	4.8E-06	1.4E-05	2.6E-11

STO-R17.WK1, JEG, 1991 28-Aug-91

(a) U. S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database).

(b) U. S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd Quarter.

(c) Value unavailable at this time.

(d) RfD for Benzoic Acid was used.

(e) U.S. EPA, IRIS, 1988.

(f) Calculated by (Adult Daily Dose) / (RfD).

(g) Calculated by (Child Daily Dose) / (RfD).

(h) Calculated by (Total Lifetime Avg. Daily Dose) x (Slope Factor).

Table 6-27 (REVISED)

Risk from Soil Dermal Absorption

Chemical	Adult Daily Dose (mg/Kg/Day)	Child Daily Dose (mg/Kg/Day)	Total Lifetime Avg. Daily Dose (mg/Kg/Day)	Adjusted Dermal Slope Factor (mg/Kg/Day) ⁻¹	Adjusted Dermal Reference Dose (mg/Kg/Day)	Adult Hazard Index (c)	Child Hazard Index (d)	Excess Lifetime Cancer Risk (e)
Alkane	2.03E-07	2.09E-06	2.36E-07	(a)	3.75E-01 (b)	5.4E-07	5.6E-06	

STO-R18.WK1, JEG, 1990

28-Aug-91

(a) This chemical is not considered carcinogenic by this route of exposure.

(b) RfD calculated using the Threshold Limit Value for n-Heptane.

(c) Calculated by (Adult Daily Dose) / (RfD).

(d) Calculated by (Child Daily Dose) / (RfD).

(e) Calculated by (Total Lifetime Avg. Daily Dose) x (Slope Factor).

Risk from Soil Ingestion

Chemical	Adult Daily Intake (mg/Kg/Day)	Child Daily Intake (mg/Kg/Day)	Total Lifetime Avg. Daily Dose (mg/Kg/Day)	Slope Factor (mg/Kg/Day) ⁻¹	Reference Dose (mg/Kg/Day)	Adult Hazard Index (c)	Child Hazard Index (d)	Excess Lifetime Cancer Risk (e)
Alkane	9.24E-09	1.41E-07	1.41E-08	(a)	4.69E-01 (b)	2.0E-08	3.0E-07	

STO-R18.WK1, JEG, 1991

28-Aug-91

(a) This chemical is not considered carcinogenic by this route exposure.

(b) RfD calculated using Threshold Limit Value for n-Heptane.

(c) Calculated by (Adult Daily Intake) / (RfD).

(d) Calculated by (Child Daily Intake) / (RfD).

(e) Calculated by (Total Lifetime Avg. Daily Intake) x (Slope Factor).

Table 6-28 (REVISED)

Risk from Sediment Dermal Exposure

Chemical	Adult Daily Dose (mg/Kg/Day)	Child Daily Dose (mg/Kg/Day)	Total Lifetime Avg. Daily Dose (mg/Kg/Day)	Adjusted Dermal Slope Factor (mg/Kg/Day) ⁻¹	Adjusted Dermal Reference Dose (mg/Kg/Day)	Adult Hazard Index (h)	Child Hazard Index (i)	Excess Lifetime Cancer Risk (j)
2-butanone	2.05E-09	2.11E-08	2.39E-09	(b)	4.50E-02 (a)	4.6E-08	4.7E-07	
Benzoic acid	3.54E-07	3.66E-06	4.13E-07	(b)	3.88E+00 (a)	9.1E-08	9.4E-07	
TIC	4.55E-06	4.70E-05	5.31E-06	(b)	(c)			
Bis(2-ethylhexyl)phthalate	1.89E-07	1.95E-06	2.21E-07	1.56E-02 (a)	1.80E-02 (a)	1.1E-05	1.1E-04	3.4E-09
Benzo(b)fluoranthene (coelutes)	3.22E-09	3.32E-08	3.75E-09	2.88E+01 (e)	(b)			1.1E-07
Benzo(k)fluoranthene								
Chrysene	3.20E-09	3.30E-08	3.73E-09	2.88E+01 (e)	(b)			1.1E-07
Unknown hydrocarbon (TIC)	8.71E-07	9.00E-06	1.02E-06	(b)	(b)			
Fluoranthene	2.55E-09	2.64E-08	2.98E-09		1.60E-02 (a,g)	1.6E-07		
Phenanthrene	3.16E-09	3.26E-08	3.68E-09		1.60E-03 (f)	2.0E-06		
Pyrene	3.05E-09	3.15E-08	3.55E-09	(b)	1.20E-02 (a,g)	2.5E-07	2.6E-06	
Noncarcinogenic PAH (TIC)	2.79E-08	2.88E-07	3.25E-08	(b)	(b)			
Cadmium	6.18E-06	6.38E-05	7.21E-06	(b)	5.00E-04 (a,d)	1.2E-02	1.3E-01	
Lead	4.60E-07	4.75E-06	5.36E-07	(b)	(b)			
					Summed	1.2E-02	1.3E-01	2.2E-07

STO-R9.WK1, JEG, 1991

28-Aug-91

(a) = U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database). Oral values were adjusted for dermal exposure.

(b) Value unavailable at this time.

(c) Not applicable.

(d) Value for cadmium in water used.

(e) U.S. EPA, IRIS, 1988, slope factor for Benzo(a)pyrene used.

(f) U.S. EPA, 1990, Health Effects Assessment Summary Tables, 3rd quarter. RfD for Naphthalene was used.

(g) Developed in consultation with U.S. EPA Environmental Criteria and Assessment Office and the Region V RPM.

(h) Calculated by (Adult Daily Dose) / (RfD).

(i) Calculated by (Child Daily Dose) / (RfD).

(j) Calculated by (Total Lifetime Avg. Daily Dose) x (Slope Factor).

Table 6-29 (REVISED)

Risk from Sediment Ingestion

Chemical	Adult Daily Intake (mg/Kg/Day)	Child Daily Intake (mg/Kg/Day)	Total Lifetime Avg. Daily Dose (mg/Kg/Day)	Slope Factor (mg/Kg/Day) ⁻¹	Reference Dose (mg/Kg/Day)	Adult Hazard Index (g)	Child Hazard Index (h)	Excess Lifetime Cancer Risk (i)
2-butanone	8.30E-11	1.27E-09	1.26E-10	(b)	5.00E-02 (a)	1.7E-09	2.5E-08	
Benzoic acid	1.29E-08	1.98E-07	1.97E-08	(b)	4.00E+00 (a)	3.2E-09	4.9E-08	
TIC	1.66E-07	2.54E-06	2.53E-07	(b)	(b)			
Bis(2-ethylhexyl)phthalate	7.67E-09	1.17E-07	1.17E-08	1.40E-02 (a)	2.00E-02 (a)	3.8E-07	5.9E-06	1.6E-10
Benzo(b)fluoranthene (coelutes Benzo(k)fluoranthene)	2.11E-09	3.24E-08	3.22E-09	1.15E+01 (e)	(b)			3.7E-08
Chrysene	2.10E-09	3.21E-08	3.20E-09	1.15E+01 (e)	(b)			3.7E-08
Unknown hydrocarbon (TIC)	6.35E-07	9.73E-06	9.67E-07	(b)	(b)			
Fluoranthene	1.68E-09	2.57E-08	2.55E-09	(b)	4.00E-02 (a)	4.2E-08	6.4E-07	
Phenanthrene	2.07E-09	3.17E-08	3.15E-09	(b)	4.00E-03 (f)	5.2E-07	7.9E-06	
Pyrene	2.00E-09	3.06E-08	3.05E-09	(b)	3.00E-02 (a)	6.7E-08	1.0E-06	
Noncarcinogenic PAH (TIC)	2.04E-08	3.12E-07	3.10E-08	(b)	4.00E-03 (f)	5.1E-06	7.8E-05	
Cadmium	2.25E-07	3.45E-06	3.43E-07	(b)	5.00E-04 (d)	4.5E-04	6.9E-03	
Lead	5.03E-07	7.70E-06	7.66E-07	(b)	(b)			
					Summed	4.6E-04	7.0E-03	7.4E-08

STO-R9.MK1, JEG, 1991

28-Aug-91

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database).

(b) Value unavailable at this time.

(c) Not applicable.

(d) Value for cadmium in water used.

(e) U.S. EPA, 1988. Slope factor for Benzo(a)pyrene used.

(f) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd quarter. RfD for Naphthalene used.

(g) Calculated by (Adult Daily Intake) / (RfD).

(h) Calculated by (Child Daily Intake) / (RfD).

(i) Calculated by (Total Lifetime Avg. Daily Intake) x (Slope Factor).

Table 6-30 (REVISED)

Risk from Waste Ingestion

Chemical	Adult Daily Intake (mg/Kg/Day)	Child Daily Intake (mg/Kg/Day)	Total Lifetime Avg. Daily Intake (mg/Kg/Day)	Slope Factor (mg/Kg/Day) ⁻¹	Reference Dose (mg/Kg/Day)	Adult Hazard Index (f)	Child Hazard Index (g)	Excess Lifetime Cancer Risk (h)
Chloroform	3.91E-11	5.99E-10	5.96E-11	6.10E-03 (a)	1.00E-02 (d)	3.9E-09	6.0E-08	3.6E-13
Bis(2-ethylhexyl)phthalate	2.58E-09	3.96E-08	3.93E-09	1.40E-02 (a)	2.00E-02 (a)	1.3E-07	2.0E-06	5.5E-11
Butyl-n-benzyl phthalate	2.58E-09	3.96E-08	3.93E-09	(b)	2.00E-01 (a)	1.3E-08	2.0E-07	
Benzo(a)anthracene	9.72E-10	1.49E-08	1.48E-09	1.15E+01 (c)	(b)			1.7E-08
Benzo(b)fluoranthene	2.17E-09	3.32E-08	3.30E-09	1.15E+01 (c)	(b)			3.8E-08
(coelutes w/ Benzo(k)fluoranthene)								
Benzo(a)pyrene	9.68E-10	1.48E-08	1.47E-09	1.15E+01 (c)	(b)			1.7E-08
Chrysene	1.03E-09	1.58E-08	1.57E-09	1.15E+01 (c)	(b)			1.8E-08
Ideno(1,2,3-cd)pyrene	4.17E-10	6.39E-09	6.35E-10	1.15E+01 (c)	(b)			7.3E-09
Benzo(g,h,i)perylene	8.76E-10	1.34E-08	1.33E-09	(b)	4.00E-03 (e)	2.2E-07	3.4E-06	
Fluoranthene	1.10E-09	1.68E-08	1.67E-09	(b)	4.00E-02 (a)	2.7E-08	4.2E-07	
Pyrene	2.32E-09	3.56E-08	3.54E-09	(b)	3.00E-02 (a)	7.7E-08	1.2E-06	
Noncarcinogenic PAH (TIC)	3.66E-09	5.61E-08	5.58E-09	(b)	4.00E-03 (e)	9.2E-07	1.4E-05	
					Summed	1.4E-06	2.1E-05	9.7E-08

STO-R10.WK1, JEG, 1991

28-Aug-91

(a) = U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database)

(b) = Value unavailable at this time.

(c) U.S. EPA, IRIS, 1988. Slope factor for Benzo(a)pyrene used.

(d) U.S. EPA, 1990, Health Effects Assessment Summary Tables, 3rd quarter.

(e) U.S. EPA, 1990, Health Effects Assessment Summary Tables, 3rd quarter. Rfd for Naphthalene used.

(f) Calculated by (Adult Daily Intake) / (Rfd).

(g) Calculated by (Child Daily Intake) / (Rfd).

(h) Calculated by (Total Lifetime Avg. Daily Intake) x (Slope Factor).

Table 6-31 (REVISED)

Risk from Waste Dermal Exposure

Chemical	Adult Daily Dose (mg/Kg/Day)	Child Daily Dose (mg/Kg/Day)	Total Lifetime Avg. Daily Dose (mg/Kg/Day)	Adjusted Dermal Slope Factor (mg/Kg/Day) ⁻¹	Adjusted Dermal Reference Dose (mg/Kg/Day)	Adult Hazard Index (g)	Child Hazard Index (h)	Excess Lifetime Cancer Risk (i)
Chloroform	9.98E-10	1.03E-08	1.16E-09	6.56E-03 (a)	9.30E-03 (d)	1.1E-07	1.1E-06	7.6E-12
Bis(2-ethylhexyl)phthalate	6.38E-08	6.58E-07	7.43E-08	1.56E-02 (a)	1.80E-02 (a)	3.5E-06	3.7E-05	1.2E-09
Butyl-n-benzyl phthalate	5.24E-08	5.41E-07	6.11E-08	(b)	1.48E-01 (a)	3.5E-07	3.7E-06	
Benzo(a)anthracene	1.48E-09	1.53E-08	1.73E-09	2.88E+01 (c)	(b)			5.0E-08
Benzo(b)fluoranthene	3.30E-09	3.41E-08	3.85E-09	2.88E+01 (c)	(b)			1.1E-07
(coelutes w/ Benzo(k)fluoranthene)								
Benzo(a)pyrene	1.47E-09	1.52E-08	1.72E-09	2.88E+01 (c)	(b)			5.0E-08
Chrysene	1.57E-09	1.62E-08	1.83E-09	2.88E+01 (c)	(b)			5.3E-08
Ideno(1,2,3-cd)pyrene	6.35E-10	6.56E-09	7.41E-10	2.88E+01 (c)	(b)			2.1E-08
Benzo(g,h,i)perylene	1.34E-09	1.38E-08	1.56E-09	(b)	1.60E-03 (e)	8.3E-07	8.6E-06	
Fluoranthene	1.67E-09	1.73E-08	1.95E-09	(b)	1.60E-02 (a, f)	1.0E-07	1.1E-06	
Pyrene	3.54E-09	3.66E-08	4.13E-09	(b)	1.20E-02 (a, f)	3.0E-07	3.0E-06	
Noncarcinogenic PAH (TIC)	5.58E-09	5.76E-08	6.51E-09	(b)	1.60E-03 (e, f)	3.5E-06		
					Summed	8.7E-06	5.4E-05	2.9E-07

STO-R10.WK1, JEG, 1991

28-Aug-91

- (a) = U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database). Oral values were adjusted for dermal exposure.
 (b) = Value unavailable at this time.
 (c) U.S. EPA, IRIS, 1988. Slope factor for Benzo(a)pyrene used.
 (d) U.S. EPA, 1990, Health Effects Assessment Summary Tables, 3rd quarter.
 (e) U.S. EPA, 1990, Health Effects Assessment Summary Tables, 3rd quarter. RfD for Napthalene used.
 (f) Developed in consultation with U.S. EPA Environmental Criteria and Assessment Office and Region V RPM.
 (g) Calculated by (Adult Daily Dose)/(RfD).
 (h) Calculated by (Child Daily Dose)/(RfD).
 (i) Calculated by (Total Lifetime Avg. Daily Dose) x (Slope Factor).

Table 6-32 (REVISED FOR AVG. OF SAMPLE & REPLICATE -- 1 DETECT & 1 NON-DETECT @1/2 x METHOD DETECTION LIMIT)

Risk from Inhalation Exposure

Chemical	Adult Daily Intake (mg/Kg/Day)	Child Daily Intake (mg/Kg/Day)	Total Lifetime Avg. Daily Intake (mg/Kg/Day)	Slope Factor (mg/Kg/Day) ⁻¹	Adult Reference Dose (mg/Kg/Day)	Adult Hazard Index (e)	Child Reference Dose (mg/Kg/Day)	Child Hazard Index (f)	Excess Lifetime Cancer Risk (g)	HEAST RfD (mg/m ³)
1,2-dichloroethene (trans only)	1.50E-02	5.77E-02	1.05E-02		2.00E-02 (a)	7.5E-01	2.00E-02 (a)	2.9E+00		*****
Ethylbenzene	5.18E-03	1.99E-02	3.64E-03	(c)	2.86E-01 (b)	1.8E-02	1.10E+00 (c)	1.8E-02		1.00
Toluene	8.09E-03	3.11E-02	5.69E-03		5.71E-01 (b)	1.4E-02	2.20E+00 (c)	1.4E-02		2.00
Xylenes (total)	1.76E-02	6.76E-02	1.24E-02		8.57E-02 (b)	2.0E-01	3.30E-01 (c)	2.0E-01		0.30
					Summed	9.9E-01		3.1E+00		*****

STO-R2R.WK1, JEG, 1991

28-Aug-91

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database). Oral RfDs only were available.

(b) U.S. EPA, 1991, Health Effects Assessment Summary Tables (HEAST), Annual. Adult respiration rate and adult body weight shown in Table 6-21 used to convert mg/m³ to mg/kg/d.

(c) U.S. EPA, 1991, Health Effects Assessment Summary Tables (HEAST), Annual. Child respiration rate and child body weight shown in Table 6-21 used to convert mg/m³ to mg/kg/d.

(d) Not carcinogenic by this route of exposure.

(e) Calculated by (Adult Daily Intake) / (RfD).

(f) Calculated by (Child Daily Intake) / (RfD).

(g) Calculated by (Total Lifetime Avg. Daily Intake) x (Slope Factor).

STOUGHTON LANDFILL
SUMMARY OF REVISED RISK CALCULATIONS

28-Aug-91
STO-SUMR.WK1

EXPOSURE ROUTE	Adult Hazard Index	Child Hazard Index	Lifetime Cancer Risk	
SURFACE WATER				
Ingestion	NE	NE	NE	
Dermal Exposure	4.8E-06	1.4E-05	2.6E-11	
SEDIMENT				
Ingestion	4.6E-04	7.0E-03	7.4E-08	
Dermal Exposure	1.2E-02	1.3E-01	2.2E-07	
WASTE				
Ingestion	1.4E-06	2.1E-05	9.7E-08	
Dermal Exposure	8.7E-06	5.4E-05	2.9E-07	
SOIL				
Ingestion	2.0E-08	3.0E-07		
Dermal Exposure	5.4E-07	5.6E-06		
AIR				
Inhalation	1.6E+00	4.8E+00		PRP
Inhalation	9.9E-01	3.1E+00		EPA
SUBTOTAL				
Ingestion	4.6E-04	7.0E-03	1.7E-07	
Dermal Exposure	1.2E-02	1.3E-01	5.1E-07	
Inhalation	1.6E+00	4.8E+00		PRP
Inhalation	9.9E-01	3.1E+00		EPA
GROUNDWATER				
RME (95% UCL)				
Ingestion				
W	1.8E+00	3.0E+00	7.9E-05	PRP
NE	5.3E-02	8.6E-02		PRP
SE	7.7E-02	1.3E-01	7.4E-05	PRP
Dermal				
W	3.0E-03	4.3E-03	2.0E-09	PRP
NE	4.5E-02	6.5E-02		PRP
SE	1.4E-06	2.0E-06	1.3E-09	PRP
MAX @ INDIVIDUAL WELLS				
Ingestion				
W @ MW-4D	2.4E-01	3.8E-01	7.4E-05	EPA
NE @ MW-5S	5.3E-02	8.5E-02		EPA
SE @ MW-2S	1.3E-01	2.1E-01	9.7E-05	EPA
Dermal				
W @ MW-4D	1.4E-05	2.4E-05	7.3E-11	EPA
NE @ MW-5S	1.7E-03	2.7E-03		EPA
SE @ MW-2S	8.5E-08	1.4E-07	6.2E-11	EPA

STOUGHTON LANDFILL
SUMMARY OF REVISED RISK CALCULATIONS

28-Aug-91
STO-SUMR.WK1

EXPOSURE ROUTE	Adult Hazard Index	Child Hazard Index	Lifetime Cancer Risk	
SUBTOTAL INCLUDING GW				
RNE (95% UCL)				
Ingestion				
W	1.8E+00	3.0E+00	7.9E-05	PRP
NE	5.3E-02	9.3E-02	1.7E-07	PRP
SE	7.8E-02	1.3E-01	7.4E-05	PRP
Dermal				
W	3.4E-03	1.1E-02	1.7E-07	PRP
NE	4.5E-02	7.2E-02	1.7E-07	PRP
SE	4.6E-04	7.0E-03	1.7E-07	PRP
Inhalation	1.6E+00	4.8E+00		PRP
MAX @ INDIVIDUAL WELLS				
Ingestion				
W @ MW-4D	2.4E-01	3.9E-01	7.4E-05	EPA
NE @ MW-5S	5.3E-02	9.2E-02	1.7E-07	EPA
SE @ MW-2S	1.3E-01	2.2E-01	9.7E-05	EPA
Dermal				
W @ MW-4D	4.8E-04	7.0E-03	1.7E-07	EPA
NE @ MW-5S	2.2E-03	9.7E-03	1.7E-07	EPA
SE @ MW-2S	4.6E-04	7.0E-03	1.7E-07	EPA
Inhalation	9.9E-01	3.1E+00		EPA
TOTAL INCLUDING GW				
RNE (95% UCL)				
Ing + Derm + Inh				
W	3.4E+00	7.8E+00	7.9E-05	PRP
NE	1.7E+00	4.9E+00	3.4E-07	PRP
SE	1.6E+00	4.9E+00	7.4E-05	PRP
MAX @ INDIVIDUAL WELLS				
Ing + Derm + Inh				
W @ MW-4D	1.2E+00	3.5E+00	7.4E-05	EPA
NE @ MW-5S	1.0E+00	3.2E+00	3.4E-07	EPA
SE @ MW-2S	1.1E+00	3.3E+00	9.7E-05	EPA
=====				
MAXIMUM RISK	3.4E+00	7.8E+00	9.7E-05	

minimum risk	1.0E+00	3.2E+00	3.4E-07	

NE = Not Evaluated

Table 6-7 (REVISED)

Groundwater Ingestion Exposure
Adult Scenario

Chemical	Groundwater Concentration (ug/L)	Ingestion Rate (L/Day)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Gastrointestinal Absorption Adjustment Factor	Unit Correction Factor (mg/ug)	Body Weight (Kg)	Adult Daily Intake (mg/Kg/Day)
WESTERN SECTION (MW-3D)								
1,2-dichloroethene	2.5	2	365/365	30/70	1.00	1.00E-03	70	7.14E-05
Xylenes (total)	2.5	2	365/365	30/70	1.00	1.00E-03	70	7.14E-05
Dichlorodifluoromethane	87 J	2	365/365	30/70	1.00	1.00E-03	70	2.49E-03
Trichlorofluoromethane	0.2	2	365/365	30/70	1.00	1.00E-03	70	5.71E-06
Tetrahydrofuran	660 J	2	365/365	30/70	1.00	1.00E-03	70	1.89E-02
Bis(2-ethylhexyl)phthalate	3.0 J	2	365/365	30/70	1.00	1.00E-03	70	8.57E-05
Aluminum	100	2	365/365	30/70	1.00	1.00E-03	70	2.86E-03
Arsenic	1.4 J	2	365/365	30/70	1.00	1.00E-03	70	4.00E-05
Lead	2.5	2	365/365	30/70	1.00	1.00E-03	70	7.14E-05
Manganese	222	2	365/365	30/70	1.00	1.00E-03	70	6.34E-03
Nickel	20.0	2	365/365	30/70	0.50	1.00E-03	70	2.86E-04
Chromium	5.0	2	365/365	30/70	1.00	1.00E-03	70	1.43E-04
NORTHEAST SECTION (MW-5S)								
Benzoic Acid	25.0	2	365/365	30/70	1.00	1.00E-03	70	7.14E-04
Pentachlorophenol	25.0	2	365/365	30/70	1.00	1.00E-03	70	7.14E-04
Nickel	20.0	2	365/365	30/70	1.00	1.00E-03	70	5.71E-04
SOUTHEAST SECTION (MW-2S)								
Arsenic	3.4	2	365/365	30/70	1.00	1.00E-03	70	9.57E-05
Bis(2-ethylhexyl)phthalate	24.5	2	365/365	30/70	1.00	1.00E-03	70	7.00E-04

STO-R1R.WK1, JEG, 1991

29-Aug-91

Table 6-8 (REVISED)

Groundwater Ingestion Exposure
Child Scenario

Chemical WESTERN SECTION (MW-3D)	Groundwater Concentration (ug/L)	Ingestion Rate (L/Day)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Gastrointestinal Absorption Adjustment Factor	Unit Correction Factor- (mg/ug)	Body Weight (Kg)	Child Daily Intake (mg/Kg/Day)
1,2-dichloroethene	2.5	0.743	365/365	5/70	1.00	1.00E-03	16	1.16E-04
Xylenes (total)	2.5	0.743	365/365	5/70	1.00	1.00E-03	16	1.16E-04
Dichlorodifluoromethane	87 J	0.743	365/365	5/70	1.00	1.00E-03	16	4.04E-03
Trichlorofluoromethane	0.2	0.743	365/365	5/70	1.00	1.00E-03	16	9.29E-06
Tetrahydrofuran	660 J	0.743	365/365	5/70	1.00	1.00E-03	16	3.06E-02
Bis(2-ethylhexyl)phthalate	3.0 J	0.743	365/365	5/70	1.00	1.00E-03	16	1.39E-04
Aluminum	100	0.743	365/365	5/70	1.00	1.00E-03	16	4.64E-03
Arsenic	1.4 J	0.743	365/365	5/70	1.00	1.00E-03	16	6.50E-05
Lead	2.5	0.743	365/365	5/70	1.00	1.00E-03	16	1.16E-04
Manganese	222	0.743	365/365	5/70	1.00	1.00E-03	16	1.03E-02
Nickel	20.0	0.743	365/365	5/70	0.50	1.00E-03	16	4.64E-04
Chromium	5.0	0.743	365/365	5/70	1.00	1.00E-03	16	2.32E-04
NORTHEAST SECTION (MW-5S)								
Benzoic Acid	25.0	0.743	365/365	5/70	1.00	1.00E-03	16	1.16E-03
Pentachlorophenol	25.0	0.743	365/365	5/70	1.00	1.00E-03	16	1.16E-03
Nickel	20.0	0.743	365/365	5/70	1.00	1.00E-03	16	9.29E-04
SOUTHEAST SECTION (MW-2S)								
Arsenic	3.4	0.743	365/365	5/70	1.00	1.00E-03	16	1.56E-04
Bis(2-ethylhexyl)phthalate	24.5	0.743	365/365	5/70	1.00	1.00E-03	16	1.14E-03

STD-R1R.WK1, JEG, 1991

29-Aug-91

Table 6-9 (REVISED)

Dermal Contact with Groundwater
Adult Scenario

Chemical	Groundwater Concentration (ug/L)	Skin Surface (cm ²)	Dermal Permeability Constant (cm/Hour)	Exposure Time (Days)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Unit Adjustment Factor (L/cm ³) (mg/ug)	Body Weight (Kg)	Adult Daily Dose (a) (mg/Kg/Day)
WESTERN SECTION (MW-3D)									
1,2-dichloroethene	2.5	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	4.62E-09
Xylenes (total)	2.5	19400	9.00E-04	0.2/24	365/365	30/70	1.00E-06	70	5.20E-09
Dichlorodifluoromethane	87 J	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	1.61E-07
Trichlorofluoromethane	0.2	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	3.70E-10
Tetrahydrofuran	660 J	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	1.22E-06
Bis(2-ethylhexyl)phthalate	3.0 J	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	5.54E-09
Aluminum	100	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	1.66E-09
Arsenic	1.4 J	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	2.33E-11
Lead	2.5	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	4.16E-11
Chromium	222	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	3.69E-09
Manganese	20.0	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	3.33E-10
Nickel	5.0	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	8.31E-11
NORTHEAST SECTION (MW-5S)									
Benzoic Acid	25.0	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	4.62E-08
Pentachlorophenol	25.0	19400	6.00E-01	0.2/24	365/365	30/70	1.00E-06	70	3.46E-05
Nickel	20.0	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	3.33E-10
SOUTHEAST SECTION (MW-2S)									
Arsenic	3.4	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	5.57E-11
Bis(2-ethylhexyl)phthalate	24.5	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	4.07E-10

STO-R1R.WK1, JEG, 1991

29-Aug-91

(a) Absorbed dose.

Table 6-10 (REVISED)

Dermal Contact with Groundwater
Child Scenario

Chemical	Groundwater Concentration (ug/L)	Skin Surface (cm ²)	Dermal Permeability Constant (cm/Hour)	Exposure Time (Days)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Unit Adjustment Factor (L/cm ³) (mg/ug)	Body Weight (Kg)	Child Daily Dose (a) (mg/Kg/Day)
WESTERN SECTION (MW-3D)									
1,2-dichloroethene	2.5	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	7.58E-09
Xylenes (total)	2.5	7280	9.00E-04	0.2/24	365/365	5/70	1.00E-06	16	8.53E-09
Dichlorodifluoromethane	87 J	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	2.64E-07
Trichlorofluoromethane	0.2	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	6.07E-10
Tetrahydrofuran	660 J	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	2.00E-06
Bis(2-ethylhexyl)phthalate	3.0 J	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	9.10E-09
Aluminum	100	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	2.73E-09
Arsenic	1.4 J	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	3.82E-11
Lead	2.5	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	6.83E-11
Chromium	222	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	6.06E-09
Manganese	20.0	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	5.46E-10
Nickel	5.0	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	1.37E-10
NORTHEAST SECTION (MW-5S)									
Benzoic Acid	25.0	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	7.58E-08
Pentachlorophenol	25.0	7280	6.00E-01	0.2/24	365/365	5/70	1.00E-06	16	5.69E-05
Nickel	20.0	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	5.46E-10
SOUTHEAST SECTION (MW-2S)									
Arsenic	3.4	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	9.15E-11
Bis(2-ethylhexyl)phthalate	24.5	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	6.69E-10

STO-R1R.WK1, JEG, 1991 29-Aug-91

(a) Absorbed dose.

Table 6-24 (REVISED)

Risk from Groundwater Ingestion

Chemical	Adult Daily Intake (mg/Kg/Day)	Child Daily Intake (mg/Kg/Day)	Total Lifetime Avg. Daily Intake (mg/Kg/Day)	Slope Factor (mg/Kg/Day) ⁻¹	Reference Dose (mg/Kg/Day)	Adult Hazard Index (g)	Child Hazard Index (h)	Excess Lifetime Cancer Risk (i)
WESTERN SECTION (NW-3D)								
1,2-dichloroethene	7.14E-05	1.16E-04	3.89E-05	(e)	2.00E-02 (a)	3.6E-03	5.8E-03	
Xylenes (total)	7.14E-05	1.16E-04	3.89E-05	(e)	2.00E+00 (a)	3.6E-05	5.8E-05	
Dichlorodifluoromethane	2.49E-03	4.04E-03	1.35E-03	(e)	2.00E-01 (a)	1.2E-02	2.0E-02	
Trichlorofluoromethane	5.71E-06	9.29E-06	3.11E-06	(e)	3.00E-01 (a)	1.9E-05	3.1E-05	
Tetrahydrofuran	1.89E-02	3.06E-02	1.03E-02	(e)	2.00E-03 (d)	9.4E+00	1.5E+01	
Bis(2-ethylhexyl)phthalate	8.57E-05	1.39E-04	4.67E-05	1.40E-02 (a)	2.00E-02 (a)	4.3E-03	7.0E-03	6.5E-07
Aluminum	2.86E-03	4.64E-03	1.56E-03	(e)	(c)			
Arsenic	4.00E-05	6.50E-05	2.18E-05	1.75E+00 (f)	1.00E-03 (b)	4.0E-02	6.5E-02	3.8E-05
Lead	7.14E-05	1.16E-04	3.89E-05	(e)	(c)			
Manganese	6.34E-03	1.03E-02	3.45E-03	(e)	2.00E-01 (b)	3.2E-02	5.2E-02	
Nickel	2.86E-04	4.64E-04	1.56E-04	(c)	2.00E-02 (b)	1.4E-02	2.3E-02	
Chromium	1.43E-04	2.32E-04	7.78E-05	(e)	1.00E+00 (a)	1.4E-04	2.3E-04	
					Summed	9.5E+00	1.5E+01	3.9E-05
NORTHEAST SECTION (NW-5S)								
Benzoic Acid	7.14E-04	1.16E-03	3.89E-04	(e)	4.00E+00 (a)	1.8E-04	2.9E-04	
Pentachlorophenol	7.14E-04	1.16E-03	3.89E-04	(c)	3.00E-02 (a)	2.4E-02	3.9E-02	
Nickel	5.71E-04	9.29E-04	3.11E-04	(e)	2.00E-02 (b)	2.9E-02	4.6E-02	
					Summed	5.3E-02	8.5E-02	
SOUTHEAST SECTION (NW-2S)								
Arsenic	9.57E-05	1.56E-04	5.21E-05	1.75E+00 (f)	1.00E-03 (b)	9.6E-02	1.6E-01	9.1E-05
Bis(2-ethylhexyl)phthalate	7.00E-04	1.14E-03	3.81E-04	1.40E-02 (a)	2.00E-02 (a)	3.5E-02	5.7E-02	5.3E-06
					Summed	1.3E-01	2.1E-01	9.7E-05

STO-R1R.WK1, JEG, 1991 29-Aug-91

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database).

(b) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd Quarter.

(c) Value unavailable at this time.

(d) Value derived by U.S. EPA, Environmental Criteria and Assessment Office.

(e) Not carcinogenic by this route of exposure.

(f) U. S. EPA, IRIS, 1988.

(g) Calculated by (Adult Daily Intake)/(RfD).

(h) Calculated by (Child Daily Intake)/(RfD).

(i) Calculated by (Total Lifetime Avg. Daily Intake) x (Slope Factor).

Table 6-25 (REVISED)

Risk from Dermal Groundwater Exposure

Chemical	Adult Daily Dose (mg/Kg/Day)	Child Daily Dose (mg/Kg/Day)	Total Lifetime Avg. Daily Dose (mg/Kg/Day)	Adjusted Dermal Slope Factor (mg/Kg/Day) ⁻¹	Adjusted Dermal Reference Dose (mg/Kg/Day)	Adult Hazard Index (g)	Child Hazard Index (h)	Excess Lifetime Cancer Risk (i)
WESTERN SECTION (MW-3D)								
1,2-dichloroethene	4.62E-09	7.58E-09	2.52E-09	(e)	2.00E-02 (a)	2.3E-07	3.8E-07	
Xylenes (total)	5.20E-09	8.53E-09	2.84E-09	(e)	1.79E+00 (a)	2.9E-09	4.8E-09	
Dichlorodifluoromethane	1.61E-07	2.64E-07	8.77E-08	(e)	2.00E-01 (a)	8.0E-07	1.3E-06	
Trichlorofluoromethane	3.70E-10	6.07E-10	2.02E-10	(e)	3.00E-01 (a)	1.2E-09	2.0E-09	
Tetrahydrofuran	1.22E-06	2.00E-06	6.66E-07	(e)	2.00E-03 (d)	6.1E-04	1.0E-03	
Bis(2-ethylhexyl)phthalate	5.54E-09	9.10E-09	3.03E-09	1.56E-02 (a)	1.80E-02 (a)	3.1E-07	5.1E-07	4.7E-11
Aluminum	1.66E-09	2.73E-09	9.08E-10	(e)	(c)			
Arsenic	2.33E-11	3.82E-11	1.27E-11	1.94E+00 (f)	9.00E-04 (b)	2.6E-08	4.2E-08	2.5E-11
Lead	4.16E-11	6.83E-11	2.27E-11	(e)	(c)			
Chromium	3.69E-09	6.06E-09	2.01E-09	(e)	5.30E-04 (a)	7.0E-06	1.1E-05	
Manganese	3.33E-10	5.46E-10	1.82E-10	(e)	6.00E-03 (b)	5.5E-08	9.1E-08	
Nickel	8.31E-11	1.37E-10	4.54E-11	(c)	1.00E-03 (b)	8.3E-08	1.4E-07	
					Summed	6.2E-04	1.0E-03	7.2E-11
NORTHEAST SECTION (MW-5S)								
Benzoic Acid	4.62E-08	7.58E-08	2.52E-08	(e)	3.88E+00 (a)	1.2E-08	2.0E-08	
Pentachlorophenol	3.46E-05	5.69E-05	1.89E-05	(c)	2.10E-02 (a)	1.6E-03	2.7E-03	
Nickel	3.33E-10	5.46E-10	1.82E-10	(e)	1.00E-03 (b)	3.3E-07	5.5E-07	
					Summed	1.7E-03	2.7E-03	
SOUTHEAST SECTION (MW-2S)								
Arsenic	5.57E-11	9.15E-11	3.04E-11	1.94E+00 (f)	9.00E-04 (b)	6.2E-08	1.0E-07	5.9E-11
Bis(2-ethylhexyl)phthalate	4.07E-10	6.69E-10	2.22E-10	1.56E-02 (a)	1.80E-02 (a)	2.3E-08	3.7E-08	3.5E-12
					Summed	8.5E-08	1.4E-07	6.2E-11

STO-R1R.WK1, JEG, 1991

29-Aug-91

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database).

(b) U.S. EPA, 1990. Health Effects Assessment Summary Tables, 3rd Quarter.

(c) Value unavailable at this time.

(d) Value derived by U. S. EPA, Environmental Criteria Assessment Office.

(e) Not carcinogenic by this route of exposure.

(f) U.S. EPA, IRIS, 1988.

(g) Calculated by (Adult Daily Dose) / (RfD).

(h) Calculated by (Child Daily Dose) / (RfD).

(i) Calculated by (Total Lifetime Avg. Daily Dose) x (Slope Factor).

STOUGHTON LANDFILL
SUMMARY OF REVISED RISK CALCULATIONS

29-Aug-91
STO-SUMS.WK1

EXPOSURE ROUTE	Adult Hazard Index	Child Hazard Index	Lifetime Cancer Risk	
SURFACE WATER				
Ingestion	NE	NE	NE	
Dermal Exposure	4.8E-06	1.4E-05	2.6E-11	

SEDIMENT				
Ingestion	4.6E-04	7.0E-03	7.4E-08	
Dermal Exposure	1.2E-02	1.3E-01	2.2E-07	

WASTE				
Ingestion	1.4E-06	2.1E-05	9.7E-08	
Dermal Exposure	8.7E-06	5.4E-05	2.9E-07	

SOIL				
Ingestion	2.0E-08	3.0E-07		
Dermal Exposure	5.4E-07	5.6E-06		

AIR				
Inhalation	1.6E+00	4.8E+00		PRP
Inhalation	9.9E-01	3.1E+00		EPA
=====				
SUBTOTAL				
Ingestion	4.6E-04	7.0E-03	1.7E-07	
Dermal Exposure	1.2E-02	1.3E-01	5.1E-07	
Inhalation	1.6E+00	4.8E+00		PRP
Inhalation	9.9E-01	3.1E+00		EPA
=====				
GROUNDWATER				
RME (95% UCL)				
Ingestion				
W	1.8E+00	3.0E+00	7.9E-05	PRP
NE	5.3E-02	8.6E-02		PRP
SE	7.7E-02	1.3E-01	7.4E-05	PRP
Dermal				
W	3.0E-03	4.3E-03	2.0E-09	PRP
NE	4.5E-02	6.5E-02		PRP
SE	1.4E-06	2.0E-06	1.3E-09	PRP

MAX @ INDIVIDUAL WELLS				
Ingestion				
W @ MW-3D	9.5E+00	1.5E+01	3.9E-05	EPA
NE @ MW-5S	5.3E-02	8.5E-02		EPA
SE @ MW-2S	1.3E-01	2.1E-01	9.7E-05	EPA
Dermal				
W @ MW-3D	6.2E-04	1.0E-03	7.2E-11	EPA
NE @ MW-5S	1.7E-03	2.7E-03		EPA
SE @ MW-2S	8.5E-08	1.4E-07	6.2E-11	EPA
=====				

STOUGHTON LANDFILL
SUMMARY OF REVISED RISK CALCULATIONS

29-Aug-91
STO-SUNS.WK1

EXPOSURE ROUTE	Adult Hazard Index	Child Hazard Index	Lifetime Cancer Risk	
SUBTOTAL INCLUDING GW				
RME (95% UCL)				
Ingestion				
W	1.8E+00	3.0E+00	7.9E-05	PRP
NE	5.3E-02	9.3E-02	1.7E-07	PRP
SE	7.8E-02	1.3E-01	7.4E-05	PRP
Dermal				
W	3.4E-03	1.1E-02	1.7E-07	PRP
NE	4.5E-02	7.2E-02	1.7E-07	PRP
SE	4.6E-04	7.0E-03	1.7E-07	PRP
Inhalation	1.6E+00	4.8E+00		PRP

MAX @ INDIVIDUAL WELLS				
Ingestion				
W @ MW-3D	9.5E+00	1.5E+01	3.9E-05	EPA
NE @ MW-5S	5.3E-02	9.2E-02	1.7E-07	EPA
SE @ MW-2S	1.3E-01	2.2E-01	9.7E-05	EPA
Dermal				
W @ MW-3D	1.1E-03	8.0E-03	1.7E-07	EPA
NE @ MW-5S	2.2E-03	9.7E-03	1.7E-07	EPA
SE @ MW-2S	4.6E-04	7.0E-03	1.7E-07	EPA
Inhalation	9.9E-01	3.1E+00		EPA
=====				
TOTAL INCLUDING GW				
RME (95% UCL)				
Ing + Derm + Inh				
W	3.4E+00	7.8E+00	7.9E-05	PRP
NE	1.7E+00	4.9E+00	3.4E-07	PRP
SE	1.6E+00	4.9E+00	7.4E-05	PRP

MAX @ INDIVIDUAL WELLS				
Ing + Derm + Inh				
W @ MW-3D	1.0E+01	1.8E+01	3.9E-05	EPA
NE @ MW-5S	1.0E+00	3.2E+00	3.4E-07	EPA
SE @ MW-2S	1.1E+00	3.3E+00	9.7E-05	EPA
+++++				
MAXIMUM RISK	1.0E+01	1.8E+01	9.7E-05	

minimum risk	1.0E+00	3.2E+00	3.4E-07	

NE = Not Evaluated

Table 6-24 (REVISED)

Risk from Groundwater Ingestion

Chemical	Adult Daily Intake (mg/Kg/Day)	Child Daily Intake (mg/Kg/Day)	Total Lifetime Avg. Daily Intake (mg/Kg/Day)	Slope Factor (mg/Kg/Day) ⁻¹	Reference Dose (mg/Kg/Day)	Adult Hazard Index (g)	Child Hazard Index (h)	Excess Lifetime Cancer Risk (i)
WESTERN SECTION (MW-4D)								
1,2-dichloroethene	7.14E-05	1.16E-04	3.89E-05	(e)	2.00E-02 (a)	3.6E-03	5.8E-03	
Xylenes (total)	5.00E-05	8.13E-05	2.72E-05	(e)	2.00E+00 (a)	2.5E-05	4.1E-05	
Dichlorodifluoromethane	2.14E-05	3.48E-05	1.17E-05	(e)	2.00E-01 (a)	1.1E-04	1.7E-04	
Trichlorofluoromethane	5.71E-06	9.29E-06	3.11E-06	(e)	3.00E-01 (a)	1.9E-05	3.1E-05	
Tetrahydrofuran	2.14E-04	3.48E-04	1.17E-04	(e)	6.80E-02 (d)	3.2E-03	5.1E-03	
Bis(2-ethylhexyl)phthalate	4.57E-05	7.43E-05	2.49E-05	1.40E-02 (a)	2.00E-02 (a)	2.3E-03	3.7E-03	3.5E-07
Aluminum	2.86E-03	4.64E-03	1.56E-03	(e)	(c)			
Arsenic	7.71E-05	1.25E-04	4.20E-05	1.75E+00 (f)	1.00E-03 (b)	7.7E-02	1.3E-01	7.4E-05
Lead	7.14E-05	1.16E-04	3.89E-05	(e)	(c)			
Manganese	6.20E-03	1.01E-02	3.38E-03	(e)	2.00E-01 (b)	3.1E-02	5.0E-02	
Nickel	2.86E-04	4.64E-04	1.56E-04	(c)	(c)			
Chromium	3.43E-05	5.57E-05	1.87E-05	(e)	1.00E+00 (a)	3.4E-05	5.6E-05	
					Summed	1.2E-01	1.9E-01	7.4E-05
NORTHEAST SECTION (MW-5S)								
Benzoic Acid	7.14E-04	1.16E-03	3.89E-04	(e)	4.00E+00 (a)	1.8E-04	2.9E-04	
Pentachlorophenol	7.14E-04	1.16E-03	3.89E-04	(c)	3.00E-02 (a)	2.4E-02	3.9E-02	
Nickel	5.71E-04	9.29E-04	3.11E-04	(e)	2.00E-02 (b)	2.9E-02	4.6E-02	
					Summed	5.3E-02	8.5E-02	
SOUTHEAST SECTION (MW-2S)								
Arsenic	9.57E-05	1.56E-04	5.21E-05	1.75E+00 (f)	1.00E-03 (b)	9.6E-02	1.6E-01	9.1E-05
Bis(2-ethylhexyl)phthalate	7.00E-04	1.14E-03	3.81E-04	1.40E-02 (a)	2.00E-02 (a)	3.5E-02	5.7E-02	5.3E-06
					Summed	1.3E-01	2.1E-01	9.7E-05

STO-R1.WK1, JEG, 1991

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database).

(b) U.S. EPA, 1989. Health Effects Assessment Summary Tables, 3rd Quarter.

(c) Value unavailable at this time.

(d) Value derived by U.S. EPA, Environmental Criteria and Assessment Office.

(e) Not carcinogenic by this route of exposure.

(f) U. S. EPA, IRIS, 1988.

(g) Calculated by (Adult Daily Intake)/(Rfd).

(h) Calculated by (Child Daily Intake)/(Rfd).

(i) Calculated by (Total Lifetime Avg. Daily Intake) x (Slope Factor).

Table 6-25 (REVISED)

Risk from Dermal Groundwater Exposure

Chemical	Adult Daily Dose (mg/Kg/Day)	Child Daily Dose (mg/Kg/Day)	Total Lifetime Avg. Daily Dose (mg/Kg/Day)	Slope Factor (mg/Kg/Day) ⁻¹	Reference Dose (mg/Kg/Day)	Adult Hazard Index (g)	Child Hazard Index (h)	Excess Lifetime Cancer Risk (i)
WESTERN SECTION (MW-4D)								
1,2-dichloroethene	4.62E-09	7.58E-09	2.52E-09	(e)	2.00E-02 (a)	2.3E-07	3.8E-07	
Xylenes (total)	3.64E-09	5.97E-09	1.99E-09	(e)	2.00E+00 (a)	1.8E-09	3.0E-09	
Dichlorodifluoromethane	1.39E-09	2.28E-09	7.56E-10	(e)	2.00E-01 (a)	6.9E-09	1.1E-08	
Trichlorofluoromethane	3.70E-10	6.07E-10	2.02E-10	(e)	3.00E-01 (a)	1.2E-09	2.0E-09	
Tetrahydrofuran	1.39E-08	2.28E-08	7.56E-09	(e)	6.80E-02 (d)	2.0E-07	3.3E-07	
Bis(2-ethylhexyl)phthalate	2.96E-09	4.85E-09	1.61E-09	1.40E-02 (a)	2.00E-02 (a)	1.5E-07	2.4E-07	2.3E-11
Aluminum	1.66E-09	2.73E-09	9.08E-10	(e)	(c)			
Arsenic	4.49E-11	7.37E-11	2.45E-11	1.75E+00 (f)	1.00E-03 (b)	4.5E-08	7.4E-08	4.3E-11
Lead	4.16E-11	6.83E-11	2.27E-11	(e)	(c)			
Chromium	3.61E-09	5.92E-09	1.97E-09	(e)	1.00E+00 (a)	3.6E-09	5.9E-09	
Manganese	3.33E-10	5.46E-10	1.82E-10	(e)	2.00E-01 (b)	1.7E-09	2.7E-09	
Nickel	1.33E-10	2.18E-10	7.26E-11	(c)	(c)			
					Summed	6.4E-07	1.1E-06	6.5E-11
NORTHEAST SECTION (MW-5S)								
Benzoic Acid	4.62E-08	7.58E-08	2.52E-08	(e)	4.00E+00 (a)	1.2E-08	1.9E-08	
Pentachlorophenol	3.46E-05	5.69E-05	1.89E-05	(c)	3.00E-02 (a)	1.2E-03	1.9E-03	
Nickel	3.33E-10	5.46E-10	1.82E-10	(e)	2.00E-02 (b)	1.7E-08	2.7E-08	
					Summed	1.2E-03	1.9E-03	
SOUTHEAST SECTION (MW-2S)								
Arsenic	5.57E-11	9.15E-11	3.04E-11	1.75E+00 (f)	1.00E-03 (b)	5.6E-08	9.1E-08	5.3E-11
Bis(2-ethylhexyl)phthalate	4.07E-10	6.69E-10	2.22E-10	1.40E-02 (a)	2.00E-02 (a)	2.0E-08	3.3E-08	3.1E-12
					Summed	7.6E-08	1.2E-07	5.6E-11

STO-R1.WK1, JEG, 1991

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database).

(b) U.S. EPA, 1989. Health Effects Assessment Summary Tables, 3rd Quarter.

(c) Value unavailable at this time.

(d) Value derived by U. S. EPA, Environmental Criteria Assessment Office.

(e) Not carcinogenic by this route of exposure.

(f) U.S. EPA, IRIS, 1988.

(g) Calculated by (Adult Daily Dose) / (RfD).

(h) Calculated by (Child Daily Dose) / (RfD).

(i) Calculated by (Total Lifetime Avg. Daily Dose) x (Slope Factor).

Table 6-26 (REVISED)

Risk from Dermal Exposure to Surface Water

Chemical	Adult Daily Dose (mg/Kg/Day)	Child Daily Dose (mg/Kg/Day)	Total Lifetime Avg. Dose (mg/Kg/Day)	Slope Factor (mg/Kg/Day) ⁻¹	Reference Dose (mg/Kg/Day)	Adult Hazard Index (f)	Child Hazard Index (g)	Excess Lifetime Cancer Risk (h)
Dichlorodifluoromethane Semivolatile (TIC)	1.02E-09 3.05E-08	3.00E-09 8.99E-08	6.49E-10 1.95E-08	(c) (c)	2.00E-01 (a) 4.00E+00 (d)	5.1E-09 7.6E-09	1.5E-08 2.2E-08	
Lead	2.23E-10	6.59E-10	1.43E-10	(c)	(c)			
Vanadium	1.92E-10	5.66E-10	1.23E-10	(c)	7.00E-03 (b)	2.7E-08	8.1E-08	
Chromium	6.09E-11	1.80E-10	3.90E-11	(c)	1.00E+00 (a)	6.1E-11	1.8E-10	
Cobalt	8.07E-11	2.38E-10	5.16E-11	(c)	(c)			
Copper	1.06E-10	3.13E-10	6.78E-11	(c)	(c)			
Nickel	1.64E-10	4.84E-10	1.05E-10	(c)	2.00E-02 (b)	8.2E-09	2.4E-08	
Aluminum	5.36E-08	1.58E-07	3.43E-08	(c)	(c)			
Arsenic	2.13E-11	6.29E-11	1.36E-11	1.75E+00 (e)	1.00E-03 (b)	2.1E-08	6.3E-08	2.4E-11
Barium	1.79E-09	5.27E-09	1.14E-09	(c)	5.00E-02 (b)	3.6E-08	1.1E-07	
Manganese	1.53E-08	4.51E-08	9.78E-09	(c)	2.00E-01 (b)	7.6E-08	2.3E-07	
Zinc	7.94E-10	2.34E-09	5.07E-10	(c)	2.00E-01 (b)	4.0E-09	1.2E-08	
					Summed	1.9E-07	5.5E-07	2.4E-11

STO-R17.WK1, JEG, 1991

(a) U. S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database).

(b) U. S. EPA, 1989. Health Effects Assessment Summary Tables, 3rd Quarter.

(c) Value unavailable at this time.

(d) RfD for Benzoic Acid was used.

(e) U.S. EPA, IRIS, 1988.

(f) Calculated by (Adult Daily Dose) / (RfD).

(g) Calculated by (Child Daily Dose) / (RfD).

(h) Calculated by (Total Lifetime Avg. Daily Dose) x (Slope Factor).

Table 6-27 (REVISED)

Risk from Soil Dermal Absorption

Chemical	Adult Daily Dose (mg/Kg/Day)	Child Daily Dose (mg/Kg/Day)	Total Lifetime Avg. Daily Dose (mg/Kg/Day)	Slope Factor (mg/Kg/Day) ⁻¹	Reference Dose (mg/Kg/Day)	Adult Hazard Index (c)	Child Hazard Index (d)	Excess Lifetime Cancer Risk (e)
Alkane	2.03E-10	2.09E-09	2.36E-10	(a)	4.69E-01 (b)	4.3E-10	4.5E-09	

STO-R18.WK1,JEG,1990

- (a) This chemical is not considered carcinogenic by this route of exposure.
 (b) RfD calculated using the Threshold Limit Value for n-Heptane.
 (c) Calculated by (Adult Daily Dose) / (RfD).
 (d) Calculated by (Child Daily Dose) / (RfD).
 (e) Calculated by (Total Lifetime Avg. Daily Dose) x (Slope Factor).

Risk from Soil Ingestion

Chemical	Adult Daily Intake (mg/Kg/Day)	Child Daily Intake (mg/Kg/Day)	Total Lifetime Avg. Daily Intake (mg/Kg/Day)	Slope Factor (mg/Kg/Day) ⁻¹	Reference Dose (mg/Kg/Day)	Adult Hazard Index (c)	Child Hazard Index (d)	Excess Lifetime Cancer Risk (e)
Alkane	9.24E-09	1.41E-07	1.41E-08	(a)	4.69E-01 (b)	2.0E-08	3.0E-07	

STO-R18.WK1,JEG,1991

- (a) This chemical is not considered carcinogenic by this route exposure.
 (b) RfD calculated using Threshold Limit Value for n-Heptane.
 (c) Calculated by (Adult Daily Intake) / (RfD).
 (d) Calculated by (Child Daily Intake) / (RfD).
 (e) Calculated by (Total Lifetime Avg. Daily Intake) x (Slope Factor).

Table 6-28 (REVISED)

Risk from Sediment Dermal Exposure

Chemical	Adult Daily Dose (mg/Kg/Day)	Child Daily Dose (mg/Kg/Day)	Total Lifetime Avg. Daily Dose (mg/Kg/Day)	Slope Factor (mg/Kg/Day) ⁻¹	Reference Dose (mg/Kg/Day)	Adult Hazard Index (e)	Child Hazard Index (f)	Excess Lifetime Cancer Risk (g)
2-butanone	2.28E-09	2.35E-08	2.65E-09	(b)	5.00E-02 (a)	4.6E-08	4.7E-07	
Benzoic acid	3.54E-07	3.66E-06	4.13E-07	(b)	4.00E+00 (a)	8.9E-08	9.1E-07	
TIC	4.55E-06	4.70E-05	5.31E-06	(b)	4.00E+00 (c)	1.1E-06	1.2E-05	
Bis(2-ethylhexyl)phthalate	2.10E-07	2.17E-06	2.45E-07	1.40E-02 (a)	2.00E-02 (a)	1.1E-05	1.1E-04	3.4E-09
Benzo(b)fluoranthene (coelutes Benzo(k)fluoranthene)	6.44E-08	6.65E-07	7.51E-08	1.15E+01				8.6E-07
Chrysene	6.40E-08	6.60E-07	7.46E-08	(b)	(b)			
Unknown hydrocarbon (TIC)	1.74E-05	1.80E-04	2.03E-05	(b)				
Fluoranthene	5.11E-08	5.27E-07	5.96E-08		(b)			
Phenanthrene	6.31E-08	6.52E-07	7.36E-08		(b)			
Pyrene	6.10E-08	6.29E-07	7.11E-08	(b)	3.00E-02	2.0E-06	2.1E-05	
Noncarcinogenic PAH (TIC)	5.58E-07	5.76E-06	6.51E-07		(b)			
Cadmium	6.18E-06	6.38E-05	7.21E-06	(b)	5.00E-04 (d)	1.2E-02	1.3E-01	
Lead	4.60E-08	4.75E-07	5.36E-08	(b)	(b)			
					Summed	1.2E-02	1.3E-01	8.7E-07

STO-R9.MK1, JEG, 1991

- (a) = U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database)
 (b) Value unavailable at this time.
 (c) RfD for benzoic acid was used.
 (d) Value for cadmium in water used.
 (e) Calculated by (Adult Daily Dose) / (RfD).
 (f) Calculated by (Child Daily Dose) / (RfD).
 (g) Calculated by (Total Lifetime Avg. Daily Dose) x (Slope Factor).

Table 6-29 (REVISED)

Risk from Sediment Ingestion

Chemical	Adult Daily Intake (mg/Kg/Day)	Child Daily Intake (mg/Kg/Day)	Total Lifetime Avg. Daily Dose (mg/Kg/Day)	Slope Factor (mg/Kg/Day) ⁻¹	Reference Dose (mg/Kg/Day)	Adult Hazard Index (e)	Child Hazard Index (f)	Excess Lifetime Cancer Risk (g)
2-butanone	8.30E-11	1.27E-09	1.26E-10	(b)	5.00E-02 (a)	1.7E-09	2.5E-08	
Benzoic acid	1.29E-08	1.98E-07	1.97E-08	(b)	4.00E+00 (a)	3.2E-09	4.9E-08	
TIC	1.66E-07	2.54E-06	2.53E-07	(b)	4.00E+00 (c)	4.1E-08	6.4E-07	
Bis(2-ethylhexyl)phthalate	7.67E-09	1.17E-07	1.17E-08	1.40E-02 (a)	2.00E-02 (a)	3.8E-07	5.9E-06	1.6E-10
Benzo(b)fluoranthene (coelutes Benzo(k)fluoranthene)	2.11E-09	3.24E-08	3.22E-09	1.15E+01				3.7E-08
Chrysene	2.10E-09	3.21E-08	3.20E-09	(b)	(b)			
Unknown hydrocarbon (TIC)	6.35E-07	9.73E-06	9.67E-07	(b)				
Fluoranthene	1.68E-09	2.57E-08	2.55E-09		(b)			
Phenanthrene	2.07E-09	3.17E-08	3.15E-09		(b)			
Pyrene	2.00E-09	3.06E-08	3.05E-09	(b)	3.00E-02	6.7E-08	1.0E-06	
Noncarcinogenic TIC	2.04E-08	3.12E-07	3.10E-08		(b)			
Cadmium	2.25E-07	3.45E-06	3.43E-07	(b)	5.00E-04 (d)	4.5E-04	6.9E-03	
Lead	5.03E-07	7.70E-06	7.66E-07	(b)	(b)			
					Summed	4.5E-04	6.9E-03	3.7E-08

STD-R9.WK1, JEG, 1991

- (a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database).
 (b) Value unavailable at this time.
 (c) Value for benzoic used.
 (d) Value for cadmium in water used.
 (e) Calculated by (Adult Daily Intake) / (Rfd).
 (f) Calculated by (Child Daily Intake) / (Rfd).
 (g) Calculated by (Total Lifetime Avg. Daily Intake) x (Slope Factor).

Table 6-30 (REVISED)

Risk from Waste Dermal Exposure

Chemical	Adult Daily Dose (mg/Kg/Day)	Child Daily Dose (mg/Kg/Day)	Total Lifetime Avg. Daily Dose (mg/Kg/Day)	Slope Factor (mg/Kg/Day) ⁻¹	Reference Dose (mg/Kg/Day)	Adult Hazard Index (c)	Child Hazard Index (d)	Excess Lifetime Cancer Risk (e)
Chloroform	1.07E-09	1.11E-08	1.25E-09	6.10E-03 (a)	1.00E-02 (a)	1.1E-07	1.1E-06	7.6E-12
Bis(2-ethylhexyl)phthalate	7.08E-08	7.31E-07	8.26E-08	1.43E-02 (a)	2.00E-02 (a)	3.5E-06	3.7E-05	1.2E-09
Butyl-n-benzyl phthalate	7.08E-08	7.31E-07	8.26E-08	(b)	2.00E-01 (a)	3.5E-07	3.7E-06	
Benzo(a)anthracene	1.48E-09	1.53E-08	1.73E-09					
Benzo(b)fluoranthene (coelutes w/ Benzo(k)fluoranthene)	3.30E-09	3.41E-08	3.85E-09	(b)				
Benzo(a)pyrene	1.47E-09	1.52E-08	1.72E-09	(b)				
Chrysene	1.57E-09	1.62E-08	1.83E-09		(b)			
Ideno(1,2,3-cd)pyrene	6.35E-10	6.56E-09	7.41E-10					
Benzo(g,h,i)perylene	1.34E-09	1.38E-08	1.56E-09					
Fluoranthene	1.67E-09	1.73E-08	1.95E-09					
Pyrene	3.54E-09	3.66E-08	4.13E-09		(b)			
Noncarcinogenic PAH (TIC)	5.58E-09	5.76E-08	6.51E-09					
					Summed	4.0E-06	4.1E-05	1.2E-09

STO-R10.WK1, JEG, 1991

(a) = U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database)

(b) = Value unavailable at this time.

(c) Calculated by [(Adult Daily Dose) x (70/30)]/(RfD).

(d) Calculated by [(Child Daily Dose) x (70/5)]/(RfD).

(e) Calculated by (Total Lifetime Avg. Daily Dose) x (Slope Factor).

Table 6-31 (NEW)

Risk from Waste Ingestion

Chemical	Adult Daily Intake (mg/Kg/Day)	Child Daily Intake (mg/Kg/Day)	Total Lifetime Avg. Daily Intake (mg/Kg/Day)	Slope Factor (mg/Kg/Day) ⁻¹	Reference Dose (mg/Kg/Day)	Adult Hazard Index (c)	Child Hazard Index (d)	Excess Lifetime Cancer Risk (e)
Chloroform	3.91E-11	5.99E-10	5.96E-11	6.10E-03 (a)	1.00E-02 (a)	3.9E-09	6.0E-08	3.6E-13
Bis(2-ethylhexyl)phthalate	2.58E-09	3.96E-08	3.93E-09	1.43E-02 (a)	2.00E-02 (a)	1.3E-07	2.0E-06	5.6E-11
Butyl-n-benzyl phthalate	2.58E-09	3.96E-08	3.93E-09	(b)	2.00E-01 (a)	1.3E-08	2.0E-07	
Benzo(a)anthracene	9.72E-10	1.49E-08	1.48E-09	(b)				
Benzo(b)fluoranthene (coelutes w/ Benzo(k)fluoranthene)	2.17E-09	3.32E-08	3.30E-09	(b)				
Benzo(a)pyrene	9.68E-10	1.48E-08	1.47E-09	(b)				
Chrysene	1.03E-09	1.58E-08	1.57E-09		(b)			
Ideno(1,2,3-cd)pyrene	4.17E-10	6.39E-09	6.35E-10					
Benzo(g,h,i)perylene	8.76E-10	1.34E-08	1.33E-09					
Fluoranthene	1.10E-09	1.68E-08	1.67E-09					
Pyrene	2.32E-09	3.56E-08	3.54E-09		(b)			
Noncarcinogenic PAH (TIC)	3.66E-09	5.61E-08	5.58E-09					
					Summed	1.5E-07	2.2E-06	5.7E-11

STO-R10.WK1, JEG, 1991

(a) = U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database)

(b) = Value unavailable at this time.

(c) Calculated by (Adult Daily Intake) / (RfD).

(d) Calculated by (Child Daily Intake) / (RfD).

(e) Calculated by (Total Lifetime Avg. Daily Intake) x (Slope Factor).

Table 6-32 (REVISED)

Risk from Inhalation Exposure

Chemical	Adult Daily Intake (mg/Kg/Day)	Child Daily Intake (mg/Kg/Day)	Total Lifetime Avg. Daily Intake (mg/Kg/Day)	Slope Factor (mg/Kg/Day) ⁻¹	Reference Dose (mg/Kg/Day)	Adult Hazard Index (d)	Child Hazard Index (e)	Excess Lifetime Cancer Risk (f)
1,2-dichloroethene (trans only)	2.25E-02	8.65E-02	1.58E-02		2.00E-02 (a)	1.1E+00	4.3E+00	
Ethylbenzene	4.14E-03	1.60E-02	2.91E-03	(c)	1.00E-01 (b)	4.1E-02	1.6E-01	
Toluene	7.19E-03	2.77E-02	5.06E-03		3.00E-01 (b)	2.4E-02	9.2E-02	
Xylenes (total)	1.65E-02	6.36E-02	1.16E-02		2.00E+00 (b)	8.3E-03	3.2E-02	
					Summed	1.2E+00	4.6E+00	

STO-R2.WK1, JEG, 1991

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database).

(b) Oral RfDs only were available, IRIS, 1990.

(c) Not carcinogenic by this route of exposure.

(d) Calculated by (Adult Daily Intake) / (RfD).

(e) Calculated by (Child Daily Intake) / (RfD).

(f) Calculated by (Total Lifetime Avg. Daily Intake) x (Slope Factor).

Table 6-7 (Revised)

Groundwater Ingestion Exposure
Adult Scenario

Chemical	Groundwater Concentration (ug/L)	Ingestion Rate (L/Day)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Gastrointestinal Absorption Adjustment Factor	Unit Correction Factor (mg/ug)	Body Weight (Kg)	Adult Daily Intake (mg/Kg/Day)
WESTERN SECTION (RME)								
1,2-dichloroethene	1.4	2	365/365	30/70	1.00	1.00E-03	70	4.00E-05
Xylenes (total)	0.8	2	365/365	30/70	1.00	1.00E-03	70	2.29E-05
Dichlorodifluoromethane	47.9	2	365/365	30/70	1.00	1.00E-03	70	1.37E-03
Trichlorofluoromethane	4.8	2	365/365	30/70	1.00	1.00E-03	70	1.37E-04
Tetrahydrofuran	115.9	2	365/365	30/70	1.00	1.00E-03	70	3.31E-03
Bis(2-ethylhexyl)phthalate	1.6	2	365/365	30/70	1.00	1.00E-03	70	4.57E-05
Aluminum	64.8	2	365/365	30/70	1.00	1.00E-03	70	1.85E-03
Arsenic	2.9	2	365/365	30/70	1.00	1.00E-03	70	8.29E-05
Lead	1.4	2	365/365	30/70	1.00	1.00E-03	70	4.00E-05
Manganese	353.6	2	365/365	30/70	1.00	1.00E-03	70	1.01E-02
Nickel	7.7	2	365/365	30/70	0.50	1.00E-03	70	1.10E-04
Chromium	3.1	2	365/365	30/70	0.15	1.00E-03	70	1.33E-05
NORTHEAST SECTION (RME)								
Benzoic Acid	25	2	365/365	30/70	1.00	1.00E-03	70	7.14E-04
Pentachlorophenol	25	2	365/365	30/70	1.00	1.00E-03	70	7.14E-04
Nickel	20.1 J	2	365/365	30/70	1.00	1.00E-03	70	5.74E-04
SOUTHEAST SECTION (RME)								
Arsenic	2.7 J	2	365/365	30/70	1.00	1.00E-03	70	7.71E-05

STO-A1.WK1, JEG, 1991

J= Estimated Concentration

Table 6-8 (Revised)

Groundwater Ingestion Exposure
Child Scenario

Chemical WESTERN SECTION (RME)	Groundwater Concentration (ug/L)	Ingestion Rate (L/Day)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Gastrointestinal Absorption Adjustment Factor	Unit Correction Factor (mg/ug)	Body Weight (Kg)	Child Daily Intake (mg/Kg/Day)
1,2-dichloroethene	1.4	0.743	365/365	5/70	1.00	1.00E-03	16	6.50E-05
Xylenes (total)	0.8	0.743	365/365	5/70	1.00	1.00E-03	16	3.72E-05
Dichlorodifluoromethane	47.9	0.743	365/365	5/70	1.00	1.00E-03	16	2.22E-03
Trichlorofluoromethane	4.8	0.743	365/365	5/70	1.00	1.00E-03	16	2.23E-04
Tetrahydrofuran	115.9	0.743	365/365	5/70	1.00	1.00E-03	16	5.38E-03
Bis(2-ethylhexyl)phthalate	1.6	0.743	365/365	5/70	1.00	1.00E-03	16	7.43E-05
Aluminum	64.8	0.743	365/365	5/70	1.00	1.00E-03	16	3.01E-03
Arsenic	2.9	0.743	365/365	5/70	1.00	1.00E-03	16	1.35E-04
Lead	1.4	0.743	365/365	5/70	1.00	1.00E-03	16	6.50E-05
Manganese	353.6	0.743	365/365	5/70	1.00	1.00E-03	16	1.64E-02
Nickel	7.7	0.743	365/365	5/70	0.50	1.00E-03	16	1.79E-04
Chromium	3.1	0.743	365/365	5/70	0.15	1.00E-03	16	2.16E-05
NORTHEAST SECTION (RME)								
Benzoic Acid	25	0.743	365/365	5/70	1.00	1.00E-03	16	1.16E-03
Pentachlorophenol	25	0.743	365/365	5/70	1.00	1.00E-03	16	1.16E-03
Nickel	20.1 J	0.743	365/365	5/70	1.00	1.00E-03	16	9.33E-04
SOUTHEAST SECTION (RME)								
Arsenic	2.7 J	0.743	365/365	5/70	1.00	1.00E-03	16	1.25E-04

STO-A1.WK1, JEG, 1991

J= Estimated Concentration

Table 6-9 (Revised)

Dermal Contact with Groundwater
Adult Scenario

Chemical	Groundwater Concentration (ug/L)	Skin Surface (cm ²)	Dermal Permeability Constant (cm/Hour)	Exposure Time (Day)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Unit Adjustment Factor (L/cm ³) (mg/ug)	Body Weight (Kg)	Adult Daily Dose (a) (mg/Kg/Day)
WESTERN SECTION (RME)									
1,2-dichloroethene	1.4	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	2.59E-09
Xylenes (total)	0.8	19400	9.00E-04	0.2/24	365/365	30/70	1.00E-06	70	1.66E-09
Dichlorodifluoromethane	47.9	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	8.85E-08
Trichlorofluoromethane	4.8	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	8.87E-09
Tetrahydrofuran	115.9	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	2.14E-07
Bis(2-ethylhexyl)phthalate	1.6	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	2.96E-09
Aluminum	64.8	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	1.08E-09
Arsenic	2.9	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	4.82E-11
Lead	1.4	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	2.33E-11
Chromium	3.1	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	5.15E-11
Manganese	353.6	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	5.88E-09
Nickel	7.7	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	1.28E-10
NORTHEAST SECTION (RME)									
Benzoic Acid	25	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	4.62E-08
Pentachlorophenol	25	19400	6.00E-01	0.2/24	365/365	30/70	1.00E-06	70	3.46E-05
Nickel	20.1 J	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	3.34E-10
SOUTHEAST SECTION (RME)									
Arsenic	2.7 J	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	4.49E-11

STO-A1.WK1, JEG, 1991

J= Estimated Concentration
(a) Absorbed dose.

Table 6-10 (Revised)

Dermal Contact with Groundwater
Child Scenario

Chemical	Groundwater Concentration (ug/L)	Skin Surface (cm ²)	Dermal Permeability Constant (cm/Hour)	Exposure Time (Day)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Unit Adjustment Factor (L/cm ³) (mg/ug)	Body Weight (Kg)	Child Daily Dose (a) (mg/Kg/Day)
WESTERN SECTION (RME)									
1,2-dichloroethene	1.4	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	4.25E-09
Xylenes (total)	0.8	7280	9.00E-04	0.2/24	365/365	5/70	1.00E-06	16	2.73E-09
Dichlorodifluoromethane	47.9	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	1.45E-07
Trichlorofluoromethane	4.8	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	1.46E-08
Tetrahydrofuran	115.9	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	3.52E-07
Bis(2-ethylhexyl)phthalate	1.6	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	4.85E-09
Aluminum	64.8	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	1.77E-09
Arsenic	2.9	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	7.92E-11
Lead	1.4	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	3.82E-11
Chromium	3.1	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	8.46E-11
Manganese	353.6	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	9.65E-09
Nickel	7.7	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	2.10E-10
NORTHEAST SECTION (RME)									
Benzoic Acid	25	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	7.58E-08
Pentachlorophenol	25	7280	6.00E-01	0.2/24	365/365	5/70	1.00E-06	16	5.69E-05
Nickel	20.1 J	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	5.49E-10
SOUTHEAST SECTION (RME)									
Arsenic	2.7 J	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	7.37E-11

STO-A1.WK1, JEG, 1991

J= Estimated Concentration
(a) Absorbed dose.

Table 6-24 (Revised)

Risk from Groundwater Ingestion

Chemical	Adult Daily Intake (mg/Kg/Day)	Child Daily Intake (mg/Kg/Day)	Total Lifetime Avg. Daily Intake (mg/Kg/Day)	Slope Factor (mg/Kg/Day) ⁻¹	Reference Dose (mg/Kg/Day)	Adult Hazard Index (g)	Child Hazard Index (h)	Excess Lifetime Cancer Risk (i)
WESTERN SECTION (RME)								
1,2-dichloroethene	4.00E-05	6.50E-05	2.18E-05	(e)	2.00E-02 (a)	2.0E-03	3.3E-03	
Xylenes (total)	2.29E-05	3.72E-05	1.24E-05	(e)	2.00E+00 (a)	1.1E-05	1.9E-05	
Dichlorodifluoromethane	1.37E-03	2.22E-03	7.45E-04	(e)	2.00E-01 (a)	6.8E-03	1.1E-02	
Trichlorofluoromethane	1.37E-04	2.23E-04	7.47E-05	(e)	3.00E-01 (a)	4.6E-04	7.4E-04	
Tetrahydrofuran	3.31E-03	5.38E-03	1.80E-03	(e)	6.80E-02 (d)	4.9E-02	7.9E-02	
Bis(2-ethylhexyl)phthalate	4.57E-05	7.43E-05	2.49E-05	1.40E-02 (a)	2.00E-02 (a)	2.3E-03	3.7E-03	3.5E-07
Aluminum	1.85E-03	3.01E-03	1.01E-03	(e)	(c)			
Arsenic	8.29E-05	1.35E-04	4.51E-05	1.75E+00 (f)	1.00E-03 (b)	8.3E-02	1.3E-01	7.9E-05
Lead	4.00E-05	6.50E-05	2.18E-05	(e)	(c)			
Manganese	1.01E-02	1.64E-02	5.50E-03	(e)	2.00E-01 (b)	5.1E-02	8.2E-02	
Nickel	1.10E-04	1.79E-04	5.99E-05	(c)	(c)			
Chromium	1.33E-05	2.16E-05	7.24E-06	(e)	1.00E+00 (a)	1.3E-05	2.2E-05	
					Summed	1.9E-01	3.1E-01	7.9E-05
NORTHEAST SECTION (RME)								
Benzoic Acid	7.14E-04	1.16E-03	3.89E-04	(a)	4.00E+00 (a)	1.8E-04	2.9E-04	
Pentachlorophenol	7.14E-04	1.16E-03	3.89E-04	(c)	3.00E-02 (a)	2.4E-02	3.9E-02	
Nickel	5.74E-04	9.33E-04	3.13E-04	(e)	2.00E-02 (b)	2.9E-02	4.7E-02	
					Summed	5.3E-02	8.6E-02	
SOUTHEAST SECTION (RME)								
Arsenic	7.71E-05	1.25E-04	4.20E-05	1.75E+00 (f)	1.00E-03 (b)	7.7E-02	1.3E-01	7.4E-05
					Summed	7.7E-02	1.3E-01	7.4E-05

STO-A1.WK1, JEG, 1991

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database).

(b) U.S. EPA, 1989. Health Effects Assessment Summary Tables, 3rd Quarter.

(c) Value unavailable at this time.

(d) Value derived by U.S. EPA, Environmental Criteria and Assessment Office.

(e) Not carcinogenic by this route of exposure.

(f) U. S. EPA, IRIS, 1988.

(g) Calculated by (Adult Daily Intake) / (RfD).

(h) Calculated by (Child Daily Intake) / (RfD).

(i) Calculated by (Total Lifetime Avg. Daily Intake) x (Slope Factor).

Table 6-25 (Revised)

Risk from Dermal Groundwater Exposure

Chemical	Adult Daily Dose (mg/Kg/Day)	Child Daily Dose (mg/Kg/Day)	Total Lifetime Avg. Daily Dose (mg/Kg/Day)	Slope Factor (mg/Kg/Day) ⁻¹	Reference Dose (mg/Kg/Day)	Adult Hazard Index (g)	Child Hazard Index (h)	Excess Lifetime Cancer Risk (i)
WESTERN SECTION (RME)								
1,2-dichloroethene	2.59E-09	4.25E-09	1.41E-09	(e)	2.00E-02 (a)	1.3E-07	2.1E-07	
Xylenes (total)	1.66E-09	2.73E-09	9.08E-10	(e)	2.00E+00 (a)	8.3E-10	1.4E-09	
Dichlorodifluoromethane	8.85E-08	1.45E-07	4.83E-08	(e)	2.00E-01 (a)	4.4E-07	7.3E-07	
Trichlorofluoromethane	8.87E-09	1.46E-08	4.84E-09	(e)	3.00E-01 (a)	3.0E-08	4.9E-08	
Tetrahydrofuran	2.14E-07	3.52E-07	1.17E-07	(e)	6.80E-02 (d)	3.1E-06	5.2E-06	
Bis(2-ethylhexyl)phthalate	2.96E-09	4.85E-09	1.61E-09	1.40E-02 (a)	2.00E-02 (e)	1.5E-07	2.4E-07	2.3E-11
Aluminum	1.08E-09	1.77E-09	5.88E-10	(e)	(c)			
Arsenic	4.82E-11	7.92E-11	2.63E-11	1.75E+00 (f)	1.00E-03 (b)	4.8E-08	7.9E-08	4.6E-11
Lead	2.33E-11	3.82E-11	1.27E-11	(e)	(c)			
Chromium	5.15E-11	8.46E-11	2.81E-11	(e)	1.00E+00 (a)	5.2E-11	8.5E-11	
Manganese	5.88E-09	9.65E-09	3.21E-09	(e)	2.00E-01 (b)	2.9E-08	4.8E-08	
Nickel	1.28E-10	2.10E-10	6.99E-11	(c)	(c)			
					Summed	4.0E-06	6.5E-06	6.9E-11
NORTHEAST SECTION (RME)								
Benzoic Acid	4.62E-08	7.58E-08	2.52E-08	(e)	4.00E+00 (a)	1.2E-08	1.9E-08	
Pentachlorophenol	3.46E-05	5.69E-05	1.89E-05	(c)	3.00E-02 (a)	1.2E-03	1.9E-03	
Nickel	3.34E-10	5.49E-10	1.82E-10	(e)	2.00E-02 (b)	1.7E-08	2.7E-08	
					Summed	1.2E-03	1.9E-03	
SOUTHEAST SECTION (RME)								
Arsenic	4.49E-11	7.37E-11	2.45E-11	1.75E+00 (f)	1.00E-03 (b)	1.0E-07	1.0E-06	4.3E-11
					Summed	1.0E-07	1.0E-06	4.3E-11

STO-A1.WK1, JEG, 1991

(a) U.S. EPA, 1990. Integrated Risk Information System, (IRIS), (on-line database).

(b) U.S. EPA, 1989. Health Effects Assessment Summary Tables, 3rd Quarter.

(c) Value unavailable at this time.

(d) Value derived by U. S. EPA, Environmental Criteria Assessment Office.

(e) Not carcinogenic by this route of exposure.

(f) U.S. EPA, IRIS, 1988.

(g) Calculated by (Adult Daily Dose) / (RfD).

(h) Calculated by (Child Daily Dose) / (RfD).

(i) Calculated by (Total Lifetime Avg. Daily Dose) x (Slope Factor).

Table 6-15 (REVISED)

Sediment Ingestion Exposure
Child Scenario

Chemical	Sediment Concentration (ug/Kg)	Sediment Ingestion Rate (mg/Day)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Unit Adjustment Factor (Kg/ug)	Gastrointestinal Absorption Adjustment Factor	Body Weight (Kg)	Child Daily Intake (mg/Kg/Day)
2-butanone	5.3	200	7/365	5/70	1.00E-09	1	16	1.27E-09
Benzoic acid	825	200	7/365	5/70	1.00E-09	1	16	1.98E-07
TIC	10600 J	200	7/365	5/70	1.00E-09	1	16	2.54E-06
Bis(2-ethylhexyl)phthalate	490	200	7/365	5/70	1.00E-09	1	16	1.17E-07
Benzo(b)fluoranthene (coelutes Benzo(k)fluoranthene)	150	200	7/365 7/365	5/70 5/70	1.00E-09	0.9	16	3.24E-08
Chrysene	149	200	7/365	5/70	1.00E-09	0.9	16	3.21E-08
Unknown hydrocarbon TIC	40590	200	7/365	5/70	1.00E-09	1	16	9.73E-06
Fluoranthene	119	200	7/365	5/70	1.00E-09	0.9	16	2.57E-08
Phenanthrene	147	200	7/365	5/70	1.00E-09	0.9	16	3.17E-08
Pyrene	142	200	7/365	5/70	1.00E-09	0.9	16	3.06E-08
Noncarcinogenic TIC	1300 J	200	7/365	5/70	1.00E-09	1	16	3.12E-07
Cadmium	14400	200	7/365	5/70	1.00E-09	1	16	3.45E-06
Lead	107100	200	7/365	5/70	1.00E-09	0.3	16	7.70E-06

STO-R9.WK1, JEG, 1991

J= Estimated Concentration

Table 6-16 (REVISED)

Waste Dermal Exposure
Adult Scenario

Chemical	Waste Concentration (ug/Kg)	Exposed Skin (cm ² /Day)	Soil on Skin (mg/cm ²)	Unit Adjustment Factor (Kg/ug)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Dermal Absorption Adjustment Factor	Body Weight (Kg)	Adult Daily Dose (a) (mg/Kg/Day)
Chloroform	2.5	990	2.77	1.00E-09	4/365	30/70	1	70	1.07E-09
Bis(2-ethylhexyl)phthalate	165 J	990	2.77	1.00E-09	4/365	30/70	1	70	7.08E-08
Butyl-n-benzyl phthalate	165 J	990	2.77	1.00E-09	4/365	30/70	1	70	7.08E-08
Benzo(a)anthracene	69 J	990	2.77	1.00E-09	4/365	30/70	0.05	70	1.48E-09
Benzo(b)fluoranthene (coelutes w/ Benzo(k)fluoranthene)	153.7	990	2.77	1.00E-09	4/365	30/70	0.05	70	3.30E-09
Benzo(a)pyrene	68.7	990	2.77	1.00E-09	4/365	30/70	0.05	70	1.47E-09
Chrysene	73.2	990	2.77	1.00E-09	4/365	30/70	0.05	70	1.57E-09
Ideno(1,2,3-cd)pyrene	29.6	990	2.77	1.00E-09	4/365	30/70	0.05	70	6.35E-10
Benzo(g,h,i)perylene	62.2	990	2.77	1.00E-09	4/365	30/70	0.05	70	1.34E-09
Fluoranthene	78	990	2.77	1.00E-09	4/365	30/70	0.05	70	1.67E-09
Pyrene	165 J	990	2.77	1.00E-09	4/365	30/70	0.05	70	3.54E-09
Noncarcinogenic PAH (TIC)	260 J	990	2.77	1.00E-09	4/365	30/70	0.05	70	5.58E-09

STO-R10.WK1, JEG, 1991

J= Estimated Concentration

(a) Absorbed dose.

Table 6-17 (REVISED)

Waste Dermal Exposure
Child Scenario

Chemical	Waste Concentration (ug/Kg)	Exposed Skin (cm ² /Day)	Soil on Skin (mg/cm ²)	Unit Adjustment Factor (Kg/ug)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Dermal Absorption Adjustment Factor	Body Weight (Kg)	Child Daily Dose (a) (mg/Kg/Day)
Chloroform	2.5	1335	2.77	1.00E-09	7/365	5/70	1	16	1.11E-08
Bis(2-ethylhexyl)phthalate	165 J	1335	2.77	1.00E-09	7/365	5/70	1	16	7.31E-07
Butyl-n-benzyl phthalate	165 J	1335	2.77	1.00E-09	7/365	5/70	1	16	7.31E-07
Benzo(a)anthracene	69 J	1335	2.77	1.00E-09	7/365	5/70	0.05	16	1.53E-08
Benzo(b)fluoranthene (coelutes w/ Benzo(k)fluoranthene)	153.7	1335	2.77	1.00E-09	7/365	5/70	0.05	16	3.41E-08
Benzo(a)pyrene	68.7	1335	2.77	1.00E-09	7/365	5/70	0.05	16	1.52E-08
Chrysene	73.2	1335	2.77	1.00E-09	7/365	5/70	0.05	16	1.62E-08
Indeno(1,2,3-cd)pyrene	29.6	1335	2.77	1.00E-09	7/365	5/70	0.05	16	6.56E-09
Benzo(g,h,i)perylene	62.2	1335	2.77	1.00E-09	7/365	5/70	0.05	16	1.38E-08
Fluoranthene	78	1335	2.77	1.00E-09	7/365	5/70	0.05	16	1.73E-08
Pyrene	165 J	1335	2.77	1.00E-09	7/365	5/70	0.05	16	3.66E-08
Noncarcinogenic PAH (TIC)	260 J	1335	2.77	1.00E-09	7/365	5/70	0.05	16	5.76E-08

STO-R10.WK1, JEG, 1991
 J= Estimated Concentration
 (a) Absorbed dose.

Table 6-18 (REVISED)

Waste Ingestion Exposure
Adult Scenario

Chemical	Waste Concentration (ug/Kg)	Ingestion Rate (mg/Day)	Unit Adjustment Factor (Kg/ug)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Gastrointestinal Absorption Adjustment Factor	Body Weight (Kg)	Adult Daily Intake (mg/Kg/Day)
Chloroform	2.5	100	1.00E-09	4/365	30/70	1	70	3.91E-11
Bis(2-ethylhexyl)phthalate	165 J	100	1.00E-09	4/365	30/70	1	70	2.58E-09
Butyl-n-benzyl phthalate	165 J	100	1.00E-09	4/365	30/70	1	70	2.58E-09
Benzo(a)anthracene	69 J	100	1.00E-09	4/365	30/70	0.9	70	9.72E-10
Benzo(b)fluoranthene (coelutes w/ benzo(k)fluoranthene)	153.7	100	1.00E-09	4/365	30/70	0.9	70	2.17E-09
Benzo(a)pyrene	68.7	100	1.00E-09	4/365	30/70	0.9	70	9.68E-10
Chrysene	73.2	100	1.00E-09	4/365	30/70	0.9	70	1.03E-09
Ideno(1,2,3-cd)pyrene	29.6	100	1.00E-09	4/365	30/70	0.9	70	4.17E-10
Benzo(g,h,i)perylene	62.2	100	1.00E-09	4/365	30/70	0.9	70	8.76E-10
Fluoranthene	78	100	1.00E-09	4/365	30/70	0.9	70	1.10E-09
Pyrene	165 J	100	1.00E-09	4/365	30/70	0.9	70	2.32E-09
Noncarcinogenic PAH (TIC)	260 J	100	1.00E-09	4/365	30/70	0.9	70	3.66E-09

STO-R10.WK1, JEG, 1991

J= Estimated Concentration

Table 6-19 (REVISED)

Waste Ingestion Exposure
Child Scenario

Chemical	Waste Concentration (ug/Kg)	Ingestion Rate (mg/Day)	Unit Adjustment Factor (Kg/ug)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Gastrointestinal Absorption Adjustment Factor	Body Weight (Kg)	Child Daily Intake (mg/Kg/Day)
Chloroform	2.5	200	1.00E-09	7/365	5/70	1	16	5.99E-10
Bis(2-ethylhexyl)phthalate	165 J	200	1.00E-09	7/365	5/70	1	16	3.96E-08
Butyl-n-benzyl phthalate	165 J	200	1.00E-09	7/365	5/70	1	16	3.96E-08
Benzo(a)anthracene	69 J	200	1.00E-09	7/365	5/70	0.9	16	1.49E-08
Benzo(b)fluoranthene	153.7	200	1.00E-09	7/365	5/70	0.9	16	3.32E-08
(coelutes w/ Benzo(k)fluoranthene)					5/70			
Benzo(a)pyrene	68.7	200	1.00E-09	7/365	5/70	0.9	16	1.48E-08
Chrysene	73.2	200	1.00E-09	7/365	5/70	0.9	16	1.58E-08
Ideno(1,2,3-cd)pyrene	29.6	200	1.00E-09	7/365	5/70	0.9	16	6.39E-09
Benzo(g,h,i)perylene	62.2	200	1.00E-09	7/365	5/70	0.9	16	1.34E-08
Fluoranthene	78	200	1.00E-09	7/365	5/70	0.9	16	1.68E-08
Pyrene	165 J	200	1.00E-09	7/365	5/70	0.9	16	3.56E-08
Noncarcinogenic PAH (TIC)	260 J	200	1.00E-09	7/365	5/70	0.9	16	5.61E-08

STO-R10.WK1, JEG, 1991
J= Estimated Concentration

Table 6-20 (REVISED)

Soil Dermal Absorption
Adult Scenario

Chemical	Soil Concentration (ug/Kg)	Exposed Skin (cm ² /Day)	Soil on Skin (mg/cm ²)	Unit Adjustment Factor (Kg/ug)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Dermal Absorption Adjustment Factor	Body Weight (Kg)	Adult Daily Dose (b) (mg/Kg/Day)
Alkane	590 J	990	2.77	1.00E-09	4/365	30/70	8.00E-04 (a)	70	2.03E-10

Soil Dermal Absorption
Child Scenario

Chemical	Soil Concentration (ug/Kg)	Exposed Skin (cm ² /Day)	Soil on Skin (mg/cm ²)	Unit Adjustment Factor (Kg/ug)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Dermal Absorption Adjustment Factor	Body Weight (Kg)	Child Daily Dose (b) (mg/Kg/Day)
Alkane	590 J	1335	2.77	1.00E-09	7/365	5/70	8.00E-04 (a)	16	2.09E-09

STO-R18.WK1,JEG,1991

(a) U. S. EPA. Superfund Exposure Assessment Manual, 1988.

(b) Absorbed dose.

J = Estimated Concentration

Soil Ingestion Exposure
Adult Scenario

Chemical	Soil Concentration (ug/Kg)	Ingestion Rate (mg/Day)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Unit Adjustment Factor (Kg/ug)	Gastrointestinal Absorption Adjustment Factor	Body Weight (Kg)	Adult Daily Intake (mg/Kg/Day)
Alkane	590 J	100	4/365	30/70	1.00E-09	1	70	9.24E-09

Soil Ingestion Exposure
Child Scenario

Chemical	Soil Concentration (ug/Kg)	Ingestion Rate (mg/Day)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Unit Adjustment Factor (Kg/ug)	Gastrointestinal Absorption Adjustment Factor	Body Weight (Kg)	Child Daily Intake (mg/Kg/Day)
Alkane	590 J	200	7/365	5/70	1.00E-09	1	16	1.41E-07

STO-R18.WK1,JEG,1991

J= Estimated Concentration

Table 6-21 (REVISED)

Inhalation Exposure
Adult Scenario

Chemical	Air Concentration (mg/M ³) (a)	Respiration Rate (M ³ /Day)	Daily Exposure Factor (Hrs/Hrs)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Lifetime)	Inhalation Absorption Adjustment Factor	Body Weight (Kg)	Adult Daily Intake (mg/Kg/Day)
1,2-dichloroethene (trans only)	0.236	20	8/24	365/365	30/70	1	70	2.25E-02
Ethylbenzene	0.087	20	8/24	365/365	30/70	0.5 (b)	70	4.14E-03
Toluene	0.151	20	8/24	365/365	30/70	0.5 (b)	70	7.19E-03
Xylenes (total)	0.347	20	8/24	365/365	30/70	0.5 (b)	70	1.65E-02

STO-R2.WK1, JEG, 1991

(a) ppm corrected to mg/M³ = (ppm * mol. wt.)/24.45

(b) Based on the RfD for Toluene

Inhalation Exposure
Child Scenario

Chemical	Air Concentration (mg/M ³) (a)	Respiration Rate (M ³ /Day)	Daily Exposure Factor (Hrs/Hrs)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Lifetime)	Inhalation Absorption Adjustment Factor	Body Weight (Kg)	Child Daily Intake (mg/Kg/Day)
1,2-dichloroethene (trans only)	0.236	17.6	8/24	365/365	5/70	1	16	8.65E-02
Ethylbenzene	0.087	17.6	8/24	365/365	5/70	0.5 (b)	16	1.60E-02
Toluene	0.151	17.6	8/24	365/365	5/70	0.5 (b)	16	2.77E-02
Xylenes (total)	0.347	17.6	8/24	365/365	5/70	0.5 (b)	16	6.36E-02

STO-R2.WK1, JEG, 1991

(a) ppm corrected to mg/M³ by mg/M³ = (ppm * mol. wt.)/24.45

(b) Based on the RfD for Toluene

Daily Intake = $\frac{AC \times RR \times EF \times IAAF}{BW}$

BW

AC = Air Concentration

RR = Respiration Rate

EF = Exposure Frequency (Day/Day)

ED = Exposure Duration (Yrs/Yrs)

IAAF = Inhalation Absorption Adjustment Factor

BW = Body Weight (70 kg adult, 16 kg child)

STOUGHTON LANDFILL
SUMMARY OF REVISED RISK CALCULATIONS

23-Jan-91

EXPOSURE ROUTE	Adult Hazard Index	Child Hazard Index	Lifetime Cancer Risk
SURFACE WATER			
Ingestion	NE	NE	NE
Dermal Exposure	1.9E-07	5.5E-07	2.4E-11

SEDIMENT			
Ingestion	4.5E-04	6.9E-03	3.7E-08
Dermal Exposure	1.2E-02	1.3E-01	8.7E-07

WASTE			
Ingestion	1.5E-07	2.2E-06	5.7E-11
Dermal Exposure	4.0E-06	4.1E-05	1.2E-09

SOIL			
Ingestion	2.0E-08	3.0E-07	
Dermal Exposure	4.3E-10	4.5E-09	

AIR			
Inhalation	1.2E+00	4.6E+00	
=====			
SUBTOTAL			
Ingestion	4.5E-04	6.9E-03	3.7E-08
Dermal Exposure	1.2E-02	1.3E-01	8.7E-07
Inhalation	1.2E+00	4.6E+00	
=====			
GROUNDWATER			
RME (95% UCL)			
Ingestion			
W	1.9E-01	3.1E-01	7.9E-05
NE	5.3E-02	8.6E-02	
SE	7.7E-02	1.3E-01	7.4E-05
Dermal			
W	4.0E-06	6.5E-06	6.9E-11
NE	1.2E-03	1.9E-03	
SE	1.0E-07	1.0E-06	4.3E-11

MAX @ INDIVIDUAL WELLS			
Ingestion			
W @ MW-4D	1.2E-01	1.9E-01	7.4E-05
NE @ MW-5S	5.3E-02	8.5E-02	
SE @ MW-2S	1.3E-01	2.1E-01	9.7E-05
Dermal			
W @ MW-4D	6.4E-07	1.1E-06	6.5E-11
NE @ MW-5S	1.2E-03	1.9E-03	
SE @ MW-2S	7.6E-08	1.2E-07	5.6E-11
=====			

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HAZARDOUS WASTE MANAGEMENT

STOUGHTON LANDFILL
SUMMARY OF REVISED RISK CALCULATIONS

23-Jan-91

EXPOSURE ROUTE	Adult Hazard Index	Child Hazard Index	Lifetime Cancer Risk
SUBTOTAL INCLUDING GW			
RME (95% UCL)			
Ingestion			
W	1.9E-01	3.2E-01	7.9E-05
NE	5.3E-02	9.3E-02	3.7E-08
SE	7.7E-02	1.4E-01	7.4E-05
Dermal			
W	4.5E-04	6.9E-03	3.7E-08
NE	1.7E-03	8.8E-03	3.7E-08
SE	4.5E-04	6.9E-03	3.7E-08
Inhalation	1.2E+00	4.6E+00	

MAX @ INDIVIDUAL WELLS			
Ingestion			
W @ MW-4D	1.2E-01	2.0E-01	7.4E-05
NE @ MW-5S	5.3E-02	9.2E-02	3.7E-08
SE @ MW-2S	1.3E-01	2.2E-01	9.7E-05
Dermal			
W @ MW-4D	4.5E-04	6.9E-03	3.7E-08
NE @ MW-5S	1.7E-03	8.8E-03	3.7E-08
SE @ MW-2S	4.5E-04	6.9E-03	3.7E-08
Inhalation	1.2E+00	4.6E+00	
=====			
TOTAL INCLUDING GW			
RME (95% UCL)			
Ing + Derm + Inh			
W	1.4E+00	4.9E+00	7.9E-05
NE	1.3E+00	4.7E+00	7.4E-08
SE	1.3E+00	4.7E+00	7.4E-05

MAX @ INDIVIDUAL WELLS			
Ing + Derm + Inh			
W @ MW-4D	1.3E+00	4.8E+00	7.4E-05
NE @ MW-5S	1.3E+00	4.7E+00	7.4E-08
SE @ MW-2S	1.3E+00	4.8E+00	9.7E-05
=====			
MAXIMUM RISK	1.4E+00	4.9E+00	9.7E-05

minimum risk	1.3E+00	4.7E+00	7.4E-08
=====			

NE = Not Evaluated

Table 6-7 (REVISED)

Groundwater Ingestion Exposure
Adult Scenario

Chemical WESTERN SECTION (MW-4D)	Groundwater Concentration (ug/L)	Ingestion Rate (L/Day)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Gastrointestinal Absorption Adjustment Factor	Unit Correction Factor (mg/ug)	Body Weight (Kg)	Adult Daily Intake (mg/Kg/Day)
1,2-dichloroethene	2.5	2	365/365	30/70	1.00	1.00E-03	70	7.14E-05
Xylenes (total)	1.8	2	365/365	30/70	1.00	1.00E-03	70	5.00E-05
Dichlorodifluoromethane	0.8	2	365/365	30/70	1.00	1.00E-03	70	2.14E-05
Trichlorofluoromethane	0.2	2	365/365	30/70	1.00	1.00E-03	70	5.71E-06
Tetrahydrofuran	7.5	2	365/365	30/70	1.00	1.00E-03	70	2.14E-04
Bis(2-ethylhexyl)phthalate	1.6	2	365/365	30/70	1.00	1.00E-03	70	4.57E-05
Aluminum	100.0	2	365/365	30/70	1.00	1.00E-03	70	2.86E-03
Arsenic	2.7	2	365/365	30/70	1.00	1.00E-03	70	7.71E-05
Lead	2.5	2	365/365	30/70	1.00	1.00E-03	70	7.14E-05
Manganese	217.0	2	365/365	30/70	1.00	1.00E-03	70	6.20E-03
Nickel	20.0	2	365/365	30/70	0.50	1.00E-03	70	2.86E-04
Chromium	8.0	2	365/365	30/70	0.15	1.00E-03	70	3.43E-05
NORTHEAST SECTION (MW-5S)								
Benzoic Acid	25.0	2	365/365	30/70	1.00	1.00E-03	70	7.14E-04
Pentachlorophenol	25.0	2	365/365	30/70	1.00	1.00E-03	70	7.14E-04
Nickel	20.0	2	365/365	30/70	1.00	1.00E-03	70	5.71E-04
SOUTHEAST SECTION (MW-2S)								
Arsenic	3.4	2	365/365	30/70	1.00	1.00E-03	70	9.57E-05
Bis(2-ethylhexyl)phthalate	24.5	2	365/365	30/70	1.00	1.00E-03	70	7.00E-04

STO-R1.WK1, JEG, 1991

Table 6-8 (REVISED)

Groundwater Ingestion Exposure
Child Scenario

Chemical	Groundwater Concentration (ug/L)	Ingestion Rate (L/Day)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Gastrointestinal Absorption Adjustment Factor	Unit Correction Factor (mg/ug)	Body Weight (Kg)	Child Daily Intake (mg/Kg/Day)
WESTERN SECTION (MW-4D)								
1,2-dichloroethene	2.5	0.743	365/365	5/70	1.00	1.00E-03	16	1.16E-04
Xylenes (total)	1.8	0.743	365/365	5/70	1.00	1.00E-03	16	8.13E-05
Dichlorodifluoromethane	0.8	0.743	365/365	5/70	1.00	1.00E-03	16	3.48E-05
Trichlorofluoromethane	0.2	0.743	365/365	5/70	1.00	1.00E-03	16	9.29E-06
Tetrahydrofuran	7.5	0.743	365/365	5/70	1.00	1.00E-03	16	3.48E-04
Bis(2-ethylhexyl)phthalate	1.6	0.743	365/365	5/70	1.00	1.00E-03	16	7.43E-05
Aluminum	100.0	0.743	365/365	5/70	1.00	1.00E-03	16	4.64E-03
Arsenic	2.7	0.743	365/365	5/70	1.00	1.00E-03	16	1.25E-04
Lead	2.5	0.743	365/365	5/70	1.00	1.00E-03	16	1.16E-04
Manganese	217.0	0.743	365/365	5/70	1.00	1.00E-03	16	1.01E-02
Nickel	20.0	0.743	365/365	5/70	0.50	1.00E-03	16	4.64E-04
Chromium	8.0	0.743	365/365	5/70	0.15	1.00E-03	16	5.57E-05
NORTHEAST SECTION (MW-5S)								
Benzoic Acid	25.0	0.743	365/365	5/70	1.00	1.00E-03	16	1.16E-03
Pentachlorophenol	25.0	0.743	365/365	5/70	1.00	1.00E-03	16	1.16E-03
Nickel	20.0	0.743	365/365	5/70	1.00	1.00E-03	16	9.29E-04
SOUTHEAST SECTION (MW-2S)								
Arsenic	3.4	0.743	365/365	5/70	1.00	1.00E-03	16	1.56E-04
Bis(2-ethylhexyl)phthalate	24.5	0.743	365/365	5/70	1.00	1.00E-03	16	1.14E-03

STO-R1.WK1, JEG, 1991

Table 6-9 (REVISED)

Dermal Contact with Groundwater
Adult Scenario

Chemical	Groundwater Concentration (ug/L)	Skin Surface (cm ²)	Dermal Permeability Constant (cm/Hour)	Exposure Time (Days)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Unit Adjustment Factor (L/cm ³) (mg/ug)	Body Weight (Kg)	Adult Daily Dose (a) (mg/Kg/Day)
WESTERN SECTION (MW-4D)									
1,2-dichloroethene	2.5	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	4.62E-09
Xylenes (total)	1.8	19400	9.00E-04	0.2/24	365/365	30/70	1.00E-06	70	3.64E-09
Dichlorodifluoromethane	0.8	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	1.39E-09
Trichlorofluoromethane	0.2	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	3.70E-10
Tetrahydrofuran	7.5	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	1.39E-08
Bis(2-ethylhexyl)phthalate	1.6	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	2.96E-09
Aluminum	100.0	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	1.66E-09
Arsenic	2.7	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	4.49E-11
Lead	2.5	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	4.16E-11
Chromium	217.0	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	3.61E-09
Manganese	20.0	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	3.33E-10
Nickel	8.0	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	1.33E-10
NORTHEAST SECTION (MW-5S)									
Benzoic Acid	25.0	19400	8.00E-04	0.2/24	365/365	30/70	1.00E-06	70	4.62E-08
Pentachlorophenol	25.0	19400	6.00E-01	0.2/24	365/365	30/70	1.00E-06	70	3.46E-05
Nickel	20.0	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	3.33E-10
SOUTHEAST SECTION (MW-2S)									
Arsenic	3.4	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	5.57E-11
Bis(2-ethylhexyl)phthalate	24.5	19400	7.20E-06	0.2/24	365/365	30/70	1.00E-06	70	4.07E-10

STO-R1.WK1, JEG, 1991

(a) Absorbed dose.

Table 6-10 (REVISED)

Dermal Contact with Groundwater
Child Scenario

Chemical	Groundwater Concentration (ug/L)	Skin Surface (cm ²)	Dermal Permeability Constant (cm/Hour)	Exposure Time (Days)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Unit Adjustment Factor (L/cm ³) (mg/ug)	Body Weight (Kg)	Child Daily Dose (a) (mg/Kg/Day)
WESTERN SECTION (MW-40)									
1,2-dichloroethene	2.5	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	7.58E-09
Xylenes (total)	1.8	7280	9.00E-04	0.2/24	365/365	5/70	1.00E-06	16	5.97E-09
Dichlorodifluoromethane	0.8	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	2.28E-09
Trichlorofluoromethane	0.2	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	6.07E-10
Tetrahydrofuran	7.5	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	2.28E-08
Bis(2-ethylhexyl)phthalate	1.6	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	4.85E-09
Aluminum	100.0	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	2.73E-09
Arsenic	2.7	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	7.37E-11
Lead	2.5	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	6.83E-11
Chromium	217.0	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	5.92E-09
Manganese	20.0	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	5.46E-10
Nickel	8.0	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	2.18E-10
NORTHEAST SECTION (MW-5S)									
Benzoic Acid	25.0	7280	8.00E-04	0.2/24	365/365	5/70	1.00E-06	16	7.58E-08
Pentachlorophenol	25.0	7280	6.00E-01	0.2/24	365/365	5/70	1.00E-06	16	5.69E-05
Nickel	20.0	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	5.46E-10
SOUTHEAST SECTION (MW-2S)									
Arsenic	3.4	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	9.15E-11
Bis(2-ethylhexyl)phthalate	24.5	7280	7.20E-06	0.2/24	365/365	5/70	1.00E-06	16	6.69E-10

STO-R1.WK1, JEG, 1991

(a) Absorbed dose.

Table 6-11 (REVISED)

Dermal Contact with Surface Water
Adult Scenario

Chemical	Surface Water Concentration (ug/L)	Skin Surface (cm ²)	Dermal Permeability Constant (cm/Hr)	Exposure Time (Hrs/Day)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Unit Adjustment Factor (L/cm ³) (mg/ug)	Body Weight (Kg)	Adult Daily Dose (b) (mg/Kg/Day)
Dichlorodifluoromethane	1.8	990	8.00E-04	2.6	7/365	30/70	1.00E-06	70	1.02E-09
Semivolatile TIC	54 J	990	8.00E-04	2.6	7/365	30/70	1.00E-06	70	3.05E-08
Lead	44	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	2.23E-10
Vanadium	37.8	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	1.92E-10
Chromium	12	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	6.09E-11
Cobalt	15.9	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	8.07E-11
Copper	20.9	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	1.06E-10
Nickel	32.3	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	1.64E-10
Aluminum	10558	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	5.36E-08
Arsenic	4.2	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	2.13E-11
Barium	352	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	1.79E-09
Manganese	3012	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	1.53E-08
Zinc	156.3	990	7.20E-06 (a)	2.6	7/365	30/70	1.00E-06	70	7.94E-10

STO-R17.WK1, JEG, 1991

(a) Permeability Constant for Al, SEAM, 1988.

(b) Absorbed dose.

J= Estimated Concentration

Table 6-11 (REVISED, continued)

Dermal Contact with Surface Water
Child Scenario

Chemical	Surface Water Concentration (ug/L)	Skin Surface (cm ²)	Dermal Permeability Constant (cm/Hr)	Exposure Time (Hrs/Day)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Unit Adjustment Factor (L/cm ³) (mg/ug)	Body Weight (Kg)	Child Daily Dose (b) (mg/Kg/Day)
Dichlorodifluoromethane	1.8	1335	8.00E-04	1.3	7/365	5/70	1.00E-06	16	3.00E-09
Semivolatile TIC	54 J	1335	8.00E-04	1.3	7/365	5/70	1.00E-06	16	8.99E-08
Lead	44	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	6.59E-10
Vanadium	37.8	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	5.66E-10
Chromium	12	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	1.80E-10
Cobalt	15.9	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	2.38E-10
Copper	20.9	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	3.13E-10
Nickel	32.3	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	4.84E-10
Aluminum	10558	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	1.58E-07
Arsenic	4.2	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	6.29E-11
Barium	352	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	5.27E-09
Manganese	3012	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	4.51E-08
Zinc	156.3	1335	7.20E-06 (a)	1.3	7/365	5/70	1.00E-06	16	2.34E-09

STO-R17.WK1, JEG, 1991

(a) Permeability Constant for Al, SEAM, 1988.

(b) Absorbed dose.

J= Estimated Concentration

Table 6-12 (REVISED)

Sediment Dermal Exposure
Adult Scenario

Chemical	Sediment Concentration (ug/Kg)	Exposed Skin (cm ² /Day)	Soil on Skin (mg/cm ²)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Unit Adjustment Factor (Kg/ug)	Dermal Absorption Adjustment Factor	Body Weight (Kg)	Adult Daily Dose (a) (mg/Kg/Day)
2-butanone	5.3	990	2.77	4/365	30/70	1.00E-09	1	70	2.28E-09
Benzoic acid	825	990	2.77	4/365	30/70	1.00E-09	1	70	3.54E-07
TIC	10600 J	990	2.77	4/365	30/70	1.00E-09	1	70	4.55E-06
Bis(2-ethylhexyl)phthalate	490	990	2.77	4/365	30/70	1.00E-09	1	70	2.10E-07
Benzo(b)fluoranthene (coelutes Benzo(k)fluoranthene)	150	990	2.77	4/365	30/70 30/70	1.00E-09	1	70	6.44E-08
Chrysene	149	990	2.77	4/365	30/70	1.00E-09	1	70	6.40E-08
Unknown hydrocarbons (TIC)	40590	990	2.77	4/365	30/70	1.00E-09	1	70	1.74E-05
Fluoranthene	119	990	2.77	4/365	30/70	1.00E-09	1	70	5.11E-08
Phenanthrene	147	990	2.77	4/365	30/70	1.00E-09	1	70	6.31E-08
Pyrene	142	990	2.77	4/365	30/70	1.00E-09	1	70	6.10E-08
Noncarcinogenic (TIC)	1300 J	990	2.77	4/365	30/70	1.00E-09	1	70	5.58E-07
Cadmium	14400	990	2.77	4/365	30/70	1.00E-09	1	70	6.18E-06
Lead	107100	990	2.77	4/365	30/70	1.00E-09	0.001	70	4.60E-08

STO-R9.WK1, JEG, 1991

J= Estimated Concentration
(a) Absorbed dose.

Table 6-13 (REVISED)

Sediment Dermal Exposure
Child Scenario

Chemical	Sediment Concentration (ug/Kg)	Exposed Skin (cm ² /Day)	Soil on Skin (mg/cm ²)	Exposure Frequency (Days/Days)	Exposure Duration (Years/Years)	Unit Adjustment Factor (Kg/ug)	Dermal Absorption Adjustment Factor	Body Weight (Kg)	Child Daily Dose (a) (mg/Kg/Day)
2-butanone	5.3	1335	2.77	7/365	5/70	1.00E-09	1	16	2.35E-08
Benzoic acid	825	1335	2.77	7/365	5/70	1.00E-09	1	16	3.66E-06
TIC	10600 J	1335	2.77	7/365	5/70	1.00E-09	1	16	4.70E-05
Bis(2-ethylhexyl)phthalate	490	1335	2.77	7/365	5/70	1.00E-09	1	16	2.17E-06
Benzo(b)fluoranthene (coelutes Benzo(k)fluoranthene)	150	1335	2.77	7/365	5/70 5/70	1.00E-09	1	16	6.65E-07
Chrysene	149	1335	2.77	7/365	5/70	1.00E-09	1	16	6.60E-07
Unknown hydrocarbon (TIC)	40590	1335	2.77	7/365	5/70	1.00E-09	1	16	1.80E-04
Fluoranthene	119	1335	2.77	7/365	5/70	1.00E-09	1	16	5.27E-07
Phenanthrene	147	1335	2.77	7/365	5/70	1.00E-09	1	16	6.52E-07
Pyrene	142	1335	2.77	7/365	5/70	1.00E-09	1	16	6.29E-07
Noncarcinogenic PAH (TIC)	1300 J	1335	2.77	7/365	5/70	1.00E-09	1	16	5.76E-06
Cadmium	14400	1335	2.77	7/365	5/70	1.00E-09	1	16	6.38E-05
Lead	107100	1335	2.77	7/365	5/70	1.00E-09	0.001	16	4.75E-07

STO-R9.WK1, JEG, 1991

J= Estimated concentration
(a) Absorbed dose.

Table 6-14 (REVISED)

Sediment Ingestion Exposure
Adult Scenario

Chemical	Sediment Concentration (ug/Kg)	Sediment Ingestion Rate (mg/Day)	Exposure Frequency (Days/Year)	Exposure Duration (Years/Lifetime)	Unit Adjustment Factor (Kg/ug)	Gastrointestinal Absorption Adjustment Factor	Body Weight (Kg)	Adult Daily Intake (mg/Kg/Day)
2-butanone	5.3	100	4/365	30/70	1.00E-09	1	70	8.30E-11
Benzoic acid	825	100	4/365	30/70	1.00E-09	1	70	1.29E-08
TIC	10600 J	100	4/365	30/70	1.00E-09	1	70	1.66E-07
Bis(2-ethylhexyl)phthalate	490	100	4/365	30/70	1.00E-09	1	70	7.67E-09
Benzo(b)fluoranthene (coelutes Benzo(k)fluoranthene)	150	100	4/365	30/70 30/70	1.00E-09	0.9	70	2.11E-09
Chrysene	149	100	4/365	30/70	1.00E-09	0.9	70	2.10E-09
Unknown hydrocarbon TIC	40590	100	4/365	30/70	1.00E-09	1	70	6.35E-07
Fluoranthene	119	100	4/365	30/70	1.00E-09	0.9	70	1.68E-09
Phenanthrene	147	100	4/365	30/70	1.00E-09	0.9	70	2.07E-09
Pyrene	142	100	4/365	30/70	1.00E-09	0.9	70	2.00E-09
Noncarcinogenic TIC	1300 J	100	4/365	30/70	1.00E-09	1	70	2.04E-08
Cadmium	14400	100	4/365	30/70	1.00E-09	1	70	2.25E-07
Lead	107100	100	4/365	30/70	1.00E-09	0.3	70	5.03E-07

STO-R9.WK1, JEG, 1991

J= Estimated Concentration