

acehwcf.txt

TEST RUN OF THE ACEHWCF MODEL - USEPA MERCURY FISHER SCENARIO  
Input File: acehw.dat Output File: acehw.out

\* OUTPUT OF A

\*\*\*\*\* A C E H W C F --- ASSESSMENT OF CHEMICAL EXPOSURE FOR HAZARDOUS WASTE COMBUSTION

\*\*\* A MULTI-SOURCE, MULTI-POLLUTANT, MULTI-PATHWAY RISK ASSESSMENT MODEL

DEVELOPED BY APPLIED MODELING INC. \*\*\*

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\*\*\* INPUT MODELING PARAMETERS \*\*\*

DISPERSION MODELING OPTION =	0
RISK ASSESSMENT OPTION =	0
PRINT AIR CONCENTRATION OPTION =	1
DIAGNOSTIC OUTPUT FILE OPTION =	1
NUMBER OF RECEPTORS =	3
NUMBER OF SOURCES =	1
NUMBER OF POLLUTANTS =	6
NUMBER OF DISPERSION MODELING HOURS =	8760
NUMBER OF DISPERSION MODELING DAYS =	365

IDODIS = 0 ==> USER-SPECIFIED X/Q and DEP/Q

IDORISK = 0 ==> FULL MODEL RUN FOR RISK ASSESSMENT FROM ALL SOURCES AT ALL RECEPTORS

IDOPRC = 1 ==> PRINT AIR 1-HOUR & ANNUAL CONC. PERFORMED

IDOFIL > 0 ==> DIAGNOSTIC OUTPUT FILE CREATED FOR RECEPTOR # 1

IDENTIFICATION NUMBERS OF MODELED POLLUTANTS:

7439976 111 222 50328 7439921 1746016

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\*\*\* POLLUTANT-SPECIFIC TOXICITY DATA \*\*\*

NAME	CAS NUM	INH. URF (ug/m3)-1	ORAL CSF (mg/kg-d)-1	ACUTE IEC (mg/m3)	CHRONIC RfC (mg/m3)	CHRON RfD (mg/kg-d)	SUM	BO	CV
Mercury	7439976	-1.00E+00	0.00E+00	7.38E-02	3.00E-04	0.00E+00	1	0	0
Hg2+	111	-1.00E+00	-1.00E+00	1.00E+00	1.10E-03	3.00E-04	1	0	0
MHg	222	-1.00E+00	-1.00E+00	-1.00E+00	3.50E-04	1.00E-04	1	0	0
Benzo(a)pyrene	50328	2.10E-03	7.30E+00	1.00E+00	-1.00E+00	-1.00E+00	1	0	0
Lead	7439921	-1.00E+00	-1.00E+00	3.81E-02	-1.00E+00	-1.00E+00	1	0	0
TetraCDD-2,3,7,8	1746016	3.30E+01	1.50E+05	-1.00E+00	-1.00E+00	-1.00E+00	1	0	0

TOTAL NUMBER OF MODELED POLLUTANTS = 6

NUMBER OF CARCINOGENIC POLLUTANTS = 2

50328 1746016

NUMBER OF MULTIPATHWAY POLLUTANTS = 4

111 222 50328 1746016

NUMBER OF POLLUTANTS WITH ACUTE NON-CANCER RISK = 4

7439976 111 50328 7439921

MAXIMUM NUMBER OF ACUTE TOXICOLOGICAL ENDPOINTS = 1

NUMBER OF POLLUTANTS WITH CHRONIC NON-CANCER RISK = 3

7439976 111 222

MAXIMUM NUMBER OF CHRONIC TOXICOLOGICAL ENDPOINTS = 2

REQUIRED TOTAL ARRAY SIZE = 221 WORDS

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\*\*\* COPC-SPECIFIC FATE AND TRANSPORT PARAMETERS \*\*\*\*

PARAMETER	Mercury	Hg2+	MHg	Benzo(a)p
MW (g/mole)	2.0059E+02	2.7152E+02	2.1600E+02	2.5230E+02
Tm (K)	2.3423E+02	5.5010E+02	-1.0000E+00	4.5200E+02
Vp (atm)	2.6300E-06	1.2000E-04	-1.0000E+00	6.4300E-10
S (mg/L)	5.6200E-02	6.9000E+04	-1.0000E+00	1.9400E-02
H (atm-m3/mol)	7.1000E-03	7.1000E-10	4.7000E-07	8.3600E-03
Da (cm2/s)	1.0900E-02	4.5300E-02	5.2800E-02	2.1800E-02
Dw (cm2/s)	3.0100E-05	5.2500E-06	6.1100E-06	5.8500E-06
Kow (unitless)	-1.0000E+00	6.1000E-01	-1.0000E+00	1.3500E+00
Koc (mL/g)	-1.0000E+00	-1.0000E+00	-1.0000E+00	9.6900E+00
Kds (cm3/g)	1.0000E+03	5.8000E+04	7.0000E+03	9.6900E+03
Kdsw (L/Kg)	1.0000E+03	1.0000E+05	1.0000E+05	7.2700E+03
Kdbs (cm3/g)	3.0000E+03	5.0000E+04	3.0000E+03	3.8700E+03
ksg (per yr)	0.0000E+00	0.0000E+00	0.0000E+00	4.7700E-02
Fv (unitless)	1.0000E+00	8.5000E-01	0.0000E+00	2.6462E-01
RCF (ug/g DWplt /ug/mLsoilH2O)	-1.0000E+00	-1.0000E+00	-1.0000E+00	1.2200E+00
Br_root (ug/g DWplt/ug/g soil)	-1.0000E+00	3.6000E-02	9.9000E-02	1.2600E+00
Br_ag (ug/g DW plt/ug/g soil)	-1.0000E+00	1.4500E-02	2.9400E-02	1.1100E-02
Br_forage (ug/gDWplt/ug/gsoil)	-1.0000E+00	0.0000E+00	0.0000E+00	1.1100E-02
Br_grain (ug/gDWplt/ug/gsoil)	-1.0000E+00	0.0000E+00	0.0000E+00	1.1100E-02
Bv_ag (ug/g DW plant/ug/g air)	-1.0000E+00	1.8000E+03	-1.0000E+00	2.2500E+00
Bv_forage(ug/g DWplt/ug/g air)	-1.0000E+00	1.8000E+03	-1.0000E+00	2.2500E+00
Ba_milk (day/kg FW)	-1.0000E+00	2.2600E-03	3.3800E-04	1.0700E-03
Ba_beef (day/kg FW)	-1.0000E+00	5.2200E-03	7.8000E-04	3.3800E-03
Ba_pork (day/kg FW)	-1.0000E+00	3.3900E-05	5.0700E-06	4.1000E-05
Ba_egg (day/kg FW)	-1.0000E+00	2.3900E-02	3.5800E-03	1.0700E+00
Ba_chicken (day/kg FW)	-1.0000E+00	2.3900E-02	3.5800E-03	2.6700E-03
BCF_fish (L/kg FW)	-1.0000E+00	-1.0000E+00	-1.0000E+00	-1.0000E+00
BAF_fish (L/kg FW)	-1.0000E+00	-1.0000E+00	6.8000E+06	9.9500E+06
BSAF_fish (unitless)	-1.0000E+00	-1.0000E+00	-1.0000E+00	-1.0000E+00
RfD (mg/kg/day)	8.6000E-05	3.0000E-04	1.0000E-04	-1.0000E+00
Oral CSF (mg/kg/day)-1	-1.0000E+00	-1.0000E+00	-1.0000E+00	7.3000E+00
RfC (mg/m3)	3.0000E-04	1.1000E-03	3.5000E-04	-1.0000E+00
Inhale URF (ug/m3)-1	-1.0000E+00	-1.0000E+00	-1.0000E+00	2.1000E-02
Inhale CSF (mg/kg/day)-1	-1.0000E+00	-1.0000E+00	-1.0000E+00	7.3000E+00
Acute IEC (mg/m3)	7.3800E-02	1.0000E+00	-1.0000E+00	1.0000E+00

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\*\*\* INPUT SOURCE EMISSION RATES \*\*\*\*

FOR SOURCE # 1 1 Stk1  
 OPERATING HOURS = 8760.00 SURFACE AREA (m2) = 1.000E+00 EMISSION ADJUST

POLLUTANT NAME POLLUTANT NUMBER 1-HOUR RATE  
 (g/s) (lb/hr)

Mercury	7439976	2.187E-05	1.736E-04	2.187
Hg2+	111	0.000E+00	0.000E+00	0.000
MHg	222	0.000E+00	0.000E+00	0.000
Benzo(a)pyrene	50328	1.000E-05	7.937E-05	1.000
Lead	7439921	1.000E-05	7.937E-05	1.000
TetraCDD-2,3,7,	1746016	1.000E-10	7.937E-10	1.000

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\*\*\* INPUT FACILITY-WIDE EMISSION RATES \*\*\*

POLLUTANT NAME	POLLUTANT NUMBER	1-HOUR RATE		
		(g/s)	(lb/hr)	(g/s)
Mercury	7439976	2.187E-05	1.736E-04	2.187
Hg2+	111	0.000E+00	0.000E+00	0.000
MHg	222	0.000E+00	0.000E+00	0.000
Benzo(a)pyrene	50328	1.000E-05	7.937E-05	1.000
Lead	7439921	1.000E-05	7.937E-05	1.000
TetraCDD-2,3,7,	1746016	1.000E-10	7.937E-10	1.000

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\*\*\* INPUT POLLUTANT BACKGROUND CONCENTRATIONS (ug/m3) \*\*\*\*

POLLUTANT NAME	POLLUTANT NUMBER	1-HOUR BACKG.	ANNUAL BACKG.
Mercury	7439976	0.000E+00	0.000E+00
Hg2+	111	0.000E+00	0.000E+00
MHg	222	0.000E+00	0.000E+00
Benzo(a)pyrene	50328	0.000E+00	0.000E+00
Lead	7439921	0.000E+00	0.000E+00
TetraCDD-2,3,7,	1746016	0.000E+00	0.000E+00

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\*\*\* INPUT RECEPTOR DATA \*\*\*

REC #	NAME	X-COORD	Y-COORD	ELEV	POP	GARDEN FR	EXPO	Chv	Ch
1	R1	622000.	3672000.	0.	0	0.00	5	1.026E+01	1.002E+0
2	Watershed	622000.	3672000.	0.	0	0.00	5	0.000E+00	0.000E+0
3	Water Body	627000.	3666000.	0.	0	0.00	5	0.000E+00	0.000E+0

\*\*\* SITE & PATHWAY-SPECIFIC DATA \*\*\*

\*\*\* RISK LEVELS \*\*\*

Significant risk level	1.00E-05
Zone of impact risk level	1.00E-06
Significant hazard index for acute exposure	0.25
Significant hazard index for chronic exposure	0.25
Significant lead concentration in air (ug/m3)	0.20
Significant lead concentration in soil (mg/kg)	100.0
Significant dioxin dose in mother milk (pg/kg-day)	60.0

\*\*\* INHALATION PATHWAY \*\*\*

Respiration rate (RR m3/hr)	- adult resident	0.63
	- child resident	0.30
	- subsistence farmer	0.63
	- subsistence farmer child	0.30
	- subsistence fisher	0.63
	- subsistence fisher child	0.30
Average body weight (ABW kg)	- adult resident	70.0
	- child resident	15.0
	- subsistence farmer	70.0
	- subsistence farmer child	15.0
	- subsistence fisher	70.0
	- subsistence fisher child	15.0
Exposure duration (ED yr)	- adult resident	30.0
	- child resident	6.0
	- subsistence farmer	40.0
	- subsistence farmer child	6.0
	- subsistence fisher	30.0
	- subsistence fisher child	6.0
Exposure frequency (EF days)		350.0
Averaging time for cancer (AT yr)		70.0
Daily exposure time (ET hr/d)		24.0
Exposure pathways	- adult resident	101111111111
(0 inactive; 1 active):	- child resident	101111111110
inhalation, dermal,soil,water,	- subsistence farmer	101111111111
vegetables, beef, milk, pork,	- subsistence farmer child	101111111110
egg, chicken, fish,	- subsistence fisher	101111111111
mother milk	- subsistence fisher child	101111111110

\*\*\* SOIL CONCENTRATION \*\*\*

Dry deposition velocity (Vdv cm/s)	3.0
Time period of combustion (tD yr)	100.0
Site-specific Soil mixing depth for human ingestion (Zs cm)	1.0
Soil bulk density (BD g/cm3)	1.5
Site-specific Annual runoff from pervious area (RO cm/yr)	100.0
Soil volumetric water content (Tsw mL/cm3)	0.2
Site-specific Annual precipitation (P cm/yr)	100.0
Site-specific Annual irrigation (I cm/yr)	100.0
Site-specific Annual evapotranspiration (Ev cm/yr)	100.0

Ambient air temperature (Ta degK)	298.0
Solids particle density (RHOS g/cm3)	2.7
*** DRINKING WATER CONCENTRATION ***	
Number of Receptors representing drinking water source	-1
Locations (receptor #) of drinking water source	-1
Method of treating watersource air parameters (0 avg; 1 max)	0
Number of Receptors representing watershed area	-1
Locations (receptor #) of watershed area	-1
Method of treating watershed air parameters (0 avg; 1 max)	0
Site-specific water body type (1 stream/river; 2 lake/pond)	1
Site-specific Soil mixing depth for watershed (Zs cm)	1.0
Site-specific water body surface area (AW m2)	-1.0
Site-specific impervious watershed area (AI m2)	-1.0
Site-specific total water area receiving deposition (AL m2)	-1.0
Site-specific soil volumetric water content (Tsw mL/cm3)	-1.0
Site-specific water body temperature (Twk degK)	298.0
Site-specific USLE rainfall/erosivity factor (RF per yr)	-1.0
Site-specific USLE erodibility factor (K)	-1.0
Site-specific USLE length-slope factor (LS)	-1.0
Site-specific USLE cover management factor (C)	-1.0
Site-specific USLE supporting practice factor (PF)	-1.0
Site-specific volumetric flow thru water body (Vfx m3/y)	-1.0
Site-specific depth of water column (dwc m)	-1.0
Site-specific depth of upper benthic sediment layer (dbs m)	-1.0
Site-specific totalsuspended solid concentration (TSS mg/L)	-1.0
Site-specific bed sediment concentration (Cbs kg/L)	1.0
Site-specific bed sediment porosity (Tbs)	0.6
Site-specific temperature correction factor (Theta)	1.026
Site-specific water current velocity (U m/s)	-1.0
Site-specific drag coefficient (Cd)	0.0011
Site-specific annual average wind speed (W m/s)	3.9
Air density (RHOa g/cm3)	0.0012
Water density (RHOW g/cm3)	1.0
Viscous sublayer thickness (LAMDAz)	4.0
Water viscosity (MUw g/cm-s)	1.6900E-02
Air viscosity (MUa g/cm-s)	1.8100E-04
von Karman constant (vk)	0.4
*** PRODUCE CONCENTRATION ***	
Location (receptor #) of crop source	-1
Site-specific Soil mixing depth for produce (Zs cm)	20.0
Interception fraction of plant edible portion (Rp)	0.39
Plant surface loss coefficient (kp)	18.0
Length of plant exposure to deposition (Tp yr)	0.164
Yield or standing cross biomass (Yp DW/m2)	2.24
*** ANIMAL PRODUCTS CONCENTRATION ***	
Location (receptor #) of animal farm	-1
Site-specific Soil mixing depth for animal (Zs cm)	1.0
Site-specific Soil mixing depth for forage (Zs cm)	1.0
Site-specific Soil mixing depth for silage/grain (Zs cm)	20.0
Interception fraction of plant edible portion (Rp)-forage	0.5
Interception fraction of plant edible portion (Rp)-silage	0.46
Plant surface loss coefficient (kp)-forage	18.0

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Length of plant exposure to deposition (Tp yr)-forage	0.12
Length of plant exposure to deposition (Tp yr)-silage	0.16
Yield or standing cross biomass (Yp DW/m2)-forage	0.24

Yield or standing cross biomass (Yp DW/m2)-silage	0.8
Empirical correction factor (VG)-forage	1.0
Empirical correction factor (VG)-silage	0.5
Fraction of contaminated plant ingested by beef-forage (F)	1.0
Fraction of contaminated plant ingested by beef-silage (F)	1.0
Fraction of contaminated plant ingested by beef-grain (F)	1.0
Daily quantity of conta. plant ingested by beef-forage (Qp)	8.8
Daily quantity of conta. plant ingested by beef-silage (Qp)	2.5
Daily quantity of conta. plant ingested by beef-grain (Qp)	0.47
Daily quantity of soil ingested by beef (Qs kg/day)	0.5
Soil bioavailability factor for beef	1.0
Fraction of contaminated plant ingested by milk-forage (F)	1.0
Fraction of contaminated plant ingested by milk-silage (F)	1.0
Fraction of contaminated plant ingested by milk-grain (F)	1.0
Daily quantity of conta. plant ingested by milk-forage (Qp)	13.2
Daily quantity of conta. plant ingested by milk-silage (Qp)	4.1
Daily quantity of conta. plant ingested by milk-grain (Qp)	3.0
Daily quantity of soil ingested by milk cow (Qs kg/day)	0.4
Soil bioavailability factor for milk cow	1.0
Fraction of contaminated plant ingested by pork-silage (F)	1.0
Fraction of contaminated plant ingested by pork-grain (F)	1.0
Daily quantity of conta. plant ingested by pork-silage (Qp)	1.4
Daily quantity of conta. plant ingested by pork-grain (Qp)	3.3
Daily quantity of soil ingested by pork (Qs kg/day)	0.37
Soil bioavailability factor for pork	1.0
Fraction of contaminated plant ingested by egg-grain (F)	1.0
Daily quantity of conta. plant ingested by egg-grain (Qp)	0.2
Daily quantity of soil ingested by egg (Qs kg/day)	0.022
Soil bioavailability factor for egg	1.0
Fraction of contaminated plant ingested by chicken-grain(F)	1.0
Daily quantity of conta. plant ingest. by chicken-grain(Qp)	0.2
Daily quantity of soil ingested by chicken (Qs kg/day)	0.022
Soil bioavailability factor for chicken	1.0
*** FISH PRODUCTS CONCENTRATION ***	
Number of Receptors representing fish source	1
Locations (receptor #) of fish source	3
Method of treating fishsource air parameters (0 avg; 1 max)	1
Number of Receptors representing watershed area	1
Locations (receptor #) of watershed area	2
Method of treating watershed air parameters (0 avg; 1 max)	1
Site-specific water body type (1 stream/river; 2 lake/pond)	2
Site-specific Soil mixing depth for waterbody (Zs cm)	1.0
Site-specific water body surface area (AW m2)	731328.097
Site-specific impervious watershed area (AI m2)	2.973193e5
Site-specific total water area receiving deposition (AL m2)	5946384.
Site-specific soil volumetric water content (Tsw mL/cm3)	0.2
Site-specific water body temperature (Twk degK)	298.0
Site-specific USLE rainfall/erosivity factor (RF per yr)	100.
Site-specific USLE erodibility factor (K)	0.36

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\* OUTPUT OF A

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Site-specific USLE length-slope factor (LS)	1.5
Site-specific USLE cover management factor (C)	0.5
Site-specific USLE supporting practice factor (PF)	1.0
Site-specific volumetric flow thru water body (Vfx m3/y)	0.0
Site-specific depth of water column (dwc m)	1.0
Site-specific depth of upper benthic sediment layer (dbs m)	0.03

Site-specific totalsuspended solid concentration (TSS mg/L)	10.0
Site-specific bed sediment concentration (Cbs kg/L)	1.0
Site-specific bed sediment porosity (Tbs)	0.6
Site-specific temperature correction factor (Theta)	1.026
Site-specific water current velocity (U m/s)	1.0
Site-specific drag coefficient (Cd)	0.0011
Site-specific annual average wind speed (W m/s)	1.0
Air density (RHOa g/cm3)	0.0012
Water density (RHOw g/cm3)	1.0
Viscous sublayer thickness (LAMDAz)	4.0
Water viscosity (MUw g/cm-s)	1.6900E-02
Air viscosity (MUa g/cm-s)	1.8100E-04
von Karman constant (vk)	0.4
Fish lipid content (f_lipid)	0.07
Fraction of organic carbon in bottom sediment (OC_sed)	0.04
*** SOIL INGESTION PATHWAY ***	
Daily soil consumption rate - adult resident	0.0001
(CR_soil kg/day) - child resident	0.0002
- subsistence farmer	0.0001
- subsistence farmer child	0.0002
- subsistence fisher	0.0001
- subsistence fisher child	0.0002
Soil fraction that is contaminated (Fsoil)	1.0
*** FOOD INGESTION - PLANT PRODUCTS PATHWAY ***	
Daily consumption rate of - adult resident	0.0003
aboveground produce - child resident	0.00042
(CR_ag kg/day) - subsistence farmer	0.0003
- subsistence farmer child	0.00042
- subsistence fisher	0.0003
- subsistence fisher child	0.00042
Daily consumption rate of - adult resident	0.00057
protected aboveground produce- child resident	0.00077
(CR_pg kg/day) - subsistence farmer	0.00057
- subsistence farmer child	0.00077
- subsistence fisher	0.00057
- subsistence fisher child	0.00077
Daily consumption rate of - adult resident	0.00014
belowground produce - child resident	0.00022
(CR_bg kg/day) - subsistence farmer	0.00014
- subsistence farmer child	0.00022
- subsistence fisher	0.00014
- subsistence fisher child	0.00022
Fraction of produce that is - adult resident	0.25
contaminated (F_ag) - child resident	0.25
- subsistence farmer	1.0
- subsistence farmer child	1.0

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- subsistence fisher	0.25
- subsistence fisher child	0.25
*** FOOD INGESTION - ANIMAL PRODUCTS PATHWAY ***	
Daily beef consumption rate - adult resident	0.00114
(CR_beef kg/kg-day) - child resident	0.00051
- subsistence farmer	0.00114
- subsistence farmer child	0.00051
- subsistence fisher	0.00114
- subsistence fisher child	0.00051

Daily milk consumption rate	- adult resident	0.00842
(CR_milk kg/kg-day)	- child resident	0.01857
	- subsistence farmer	0.00842
	- subsistence farmer child	0.01857
	- subsistence fisher	0.00842
	- subsistence fisher child	0.01857
Daily pork consumption rate	- adult resident	0.00053
(CR_pork kg/kg-day)	- child resident	0.000398
	- subsistence farmer	0.00053
	- subsistence farmer child	0.000398
	- subsistence fisher	0.00053
	- subsistence fisher child	0.000398
Daily egg consumption rate	- adult resident	0.00062
(CR_egg kg/kg-day)	- child resident	0.000438
	- subsistence farmer	0.00062
	- subsistence farmer child	0.000438
	- subsistence fisher	0.00062
	- subsistence fisher child	0.000438
Daily chicken consumption rate	- adult resident	0.00061
(CR_chicken kg/kg-day)	- child resident	0.000425
	- subsistence farmer	0.00061
	- subsistence farmer child	0.000425
	- subsistence fisher	0.00061
	- subsistence fisher child	0.000425
Fraction of contaminated beef (F_beef)		1.0
Fraction of contaminated milk (F_milk)		1.0
Fraction of contaminated pork (F_pork)		1.0
Fraction of contaminated egg (F_egg)		1.0
Fraction of contaminated chicken (F_chicken)		1.0
*** FISH INGESTION PATHWAY ***		
Daily fish consumption rate	- adult resident	0.00117
(CR_fish kg/kg-day)	- child resident	0.000759
	- subsistence farmer	0.00117
	- subsistence farmer child	0.000759
	- subsistence fisher	0.00117
	- subsistence fisher child	0.000759
Fraction of contaminated fish (F_fish)		1.0
*** DRINKING WATER INGESTION PATHWAY ***		
Daily water consumption rate	- adult resident	1.4
(CR_water L/day)	- child resident	0.67
	- subsistence farmer	1.4
	- subsistence farmer child	0.67
	- subsistence fisher	1.4

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\* OUTPUT OF A

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	- subsistence fisher child	0.67
Fraction of contaminated water (F_water)		1.0
*** MOTHER'S MILK PATHWAY ***		
Half-life of dioxin in adults (H_life days)		2555.0
Fraction of COPC stored in mother's fat (f1)		0.9
Fraction of mother weight that is fat (f2)		0.3
Fraction of mother milk that is fat (f3)		0.04
Fraction of ingested COPC that is absorbed (f4)		0.9
Infant ingestion rate of mother milk (IR_milk kg/day)		0.8
Infant exposure duration (ED yr)		1.0
Infant body weight (BW kg)		10.0
Infant exposure time (AT yr)		1.0

TEST RUN OF THE ACEHWCF MODEL - USEPA MERCURY FISHER SCENARIO \* OUTPUT OF A  
 Input File: acehw.dat Output File: acehw.out

\*\*\* PREDICTED 1-HOUR PEAK AIR CONCENTRATIONS (ug/m3) FROM ALL SOURCES \*\*\*

RECEPTOR	Mercury	Hg2+	MHg	Benzo(a)pyreLead	TetraCDD-2,3	
1	2.155E-07	0.000E+00	0.000E+00	1.009E-04	1.002E-04	1.014E-09
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

ABOVE CONCENTRATIONS DO NOT INCLUDE THE FOLLOWING BACKGROUND CONCENTRATIONS:

0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00

TEST RUN OF THE ACEHWCF MODEL - USEPA MERCURY FISHER SCENARIO \* OUTPUT OF A  
 Input File: acehw.dat Output File: acehw.out

\*\*\* PREDICTED ANNUAL AIR CONCENTRATIONS (ug/m3) FROM ALL SOURCES \*\*\*

RECEPTOR	Mercury	Hg2+	MHg	Benzo(a)pyreLead	TetraCDD-2,3	
1	2.894E-09	6.915E-07	0.000E+00	2.155E-07	5.500E-08	3.523E-12
2	2.686E-09	5.479E-07	0.000E+00	1.947E-07	4.377E-08	3.232E-12
3	2.151E-09	4.388E-07	0.000E+00	1.539E-07	3.240E-08	2.575E-12

ABOVE CONCENTRATIONS DO NOT INCLUDE THE FOLLOWING BACKGROUND CONCENTRATIONS:

0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00

TEST RUN OF THE ACEHWCF MODEL - USEPA MERCURY FISHER SCENARIO \* OUTPUT OF A  
 Input File: acehw.dat Output File: acehw.out

\*\*\*\* RECEPTOR TOTAL CANCER RISK AND EXCESS BURDEN \*\*\*\*

RECEPTOR	INHALE	DERMAL	SOIL	WATER	PLANTS	ANIMAL	FISH MOTHER	
1	4.891E-10	0.000E+00	4.102E-10	0.000E+00	0.000E+00	0.000E+00	1.865E-07	0.000
2	1.368E-10	0.000E+00	3.881E-10	0.000E+00	0.000E+00	0.000E+00	1.865E-07	0.000
3	1.096E-10	0.000E+00	3.041E-10	0.000E+00	0.000E+00	0.000E+00	1.865E-07	0.000

RECEPTOR # 1 HAS MAXIMUM PEAK RISK OF 1.874E-07  
 PEAK RECEPTOR LOCATED AT (X, Y) = 622000.000 3672000.000  
 RECEPTOR POPULATION = 0  
 RECEPTOR BURDEN = 0.000E+00

TOTAL CANCER EXCESS BURDEN FROM ALL RECEPTORS = 0.000E+00  
 BURDEN COMPUTED WITH ZONE OF IMPACT RISK LEVEL = 1.000E-06

TEST RUN OF THE ACEHWCF MODEL - USEPA MERCURY FISHER SCENARIO \* OUTPUT OF A  
 Input File: acehw.dat Output File: acehw.out

\*\*\* INDIVIDUAL CANCER RISK BY SOURCE FOR PEAK RECEPTOR # 1 -- Fisher\_Adu

SOURCE	INHALE	DERMAL	SOIL	WATER	PLANTS	ANIMAL	FISH
1	4.891E-10	0.000E+00	4.102E-10	0.000E+00	0.000E+00	0.000E+00	1.865E-07
SUM	4.891E-10	0.000E+00	4.102E-10	0.000E+00	0.000E+00	0.000E+00	1.865E-07

RECEPTOR RISK OF 1.874E-07 IS BELOW SIGNIFICANT RISK LEVEL OF 1.000E-05

RECEPTOR RISK OF 1.874E-07 IS BELOW IMPACT ZONE RISK LEVEL OF 1.000E-06

TEST RUN OF THE ACEHWCF MODEL - USEPA MERCURY FISHER SCENARIO \* OUTPUT OF A  
 Input File: acehw.dat Output File: acehw.out

\*\*\* INDIVIDUAL CANCER RISK BY POLLUTANT FOR PEAK RECEPTOR # 1 -- Fisher\_

POLLUTANT	INHALE	DERMAL	SOIL	WATER	PLANTS	ANIMAL
Benzo(a)pyrene	4.223E-10	0.000E+00	1.427E-10	0.000E+00	0.000E+00	0.000E+00
TetraCDD-2,3,7,	6.681E-11	0.000E+00	2.675E-10	0.000E+00	0.000E+00	0.000E+00
SUM	4.891E-10	0.000E+00	4.102E-10	0.000E+00	0.000E+00	0.000E+00

RECEPTOR RISK OF 1.874E-07 IS BELOW SIGNIFICANT RISK LEVEL OF 1.000E-05

RECEPTOR RISK OF 1.874E-07 IS BELOW IMPACT ZONE RISK LEVEL OF 1.000E-06

TEST RUN OF THE ACEHWCF MODEL - USEPA MERCURY FISHER SCENARIO \* OUTPUT OF A  
 Input File: acehw.dat Output File: acehw.out

\*\*\* INDIVIDUAL LIFETIME AVERAGE DAILY DOSE (mg/kg/d) BY POLLUTANT FOR PEAK

POLLUTANT	INHALE	DERMAL	SOIL	WATER	PLANTS	ANIMAL
Benzo(a)pyrene	5.745E-11	0.000E+00	1.955E-11	0.000E+00	0.000E+00	0.000E+00
TetraCDD-2,3,7,	5.784E-16	0.000E+00	1.783E-15	0.000E+00	0.000E+00	0.000E+00

TEST RUN OF THE ACEHWCF MODEL - USEPA MERCURY FISHER SCENARIO \* OUTPUT OF A  
 Input File: acehw.dat Output File: acehw.out

\*\*\* RECEPTOR INFANT AVERAGE DAILY DOSE (pg/kg-day) OF DIOXIN IN MOTHER MILK FROM

RECEPTOR	DAILY DOSE (pg/kg-day)	DAILY LIMIT (pg/kg-day)	RATIO
1	4.8079E-02	6.0000E+01	8.0132E-04
2	4.8070E-02	6.0000E+01	8.0117E-04
3	4.8043E-02	6.0000E+01	8.0071E-04

Receptor # 1 has max dioxin daily dose (pg/kg-day) = 0.4808E-01 and ratio = 0.8

TEST RUN OF THE ACEHWCF MODEL - USEPA MERCURY FISHER SCENARIO \* OUTPUT OF A  
 Input File: acehw.dat Output File: acehw.out

\*\*\* RECEPTOR ACUTE HAZARD INDICES BY TOXICOLOGICAL ENDPOINTS \*\*\*

FROM ALL SOURCES AND POLLUTANTS

RECEPTOR	TOTAL	CARD	DEVE	EYE	HEMA	IMMUN
1	2.734E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

RECEPTOR # 1 HAS MAXIMUM ACUTE HAZARD INDEX OF 2.734E-06

TEST RUN OF THE ACEHWCF MODEL - USEPA MERCURY FISHER SCENARIO \* OUTPUT OF A  
 Input File: acehw.dat Output File: acehw.out

\*\*\* ACUTE HAZARD INDEX BY POLLUTANT FOR PEAK RECEPTOR # 1 \*\*\*

POLLUTANT	CONC	BACKGR	AIEC	TOTAL	CARD	DEVE
-----------	------	--------	------	-------	------	------



TEST RUN OF THE ACEHWCF MODEL - USEPA MERCURY FISHER SCENARIO  
 Input File: acehw.dat Output File: acehw.out

\* OUTPUT OF A

\*\*\* RECEPTOR CHRONIC HAZARD INDICES BY TOXICOLOGICAL ENDPOINTS \*\*\*  
 FROM ALL SOURCES AND POLLUTANTS

RECEPTOR	TOTAL	BONE	CARD	DEVE	ENDO	EYE	HEMA
1	1.572E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	1.572E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	1.572E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

RECEPTOR # 1 HAS HIGHEST CHRONIC HAZARD INDEX OF 1.572E+01

TEST RUN OF THE ACEHWCF MODEL - USEPA MERCURY FISHER SCENARIO  
 Input File: acehw.dat Output File: acehw.out

\* OUTPUT OF A

\*\*\* CHRONIC HAZARD INDEX BY POLLUTANT FOR PEAK RECEPTOR # 1 -- Fisher\_Ad

POLLUTANT	ORAL RfD (mg/kg-d)	BACKGR (ug/m3)	RfC (mg/m3)	TOTAL	BONE	CARD	DEVE	ENDO	E
Mercury	0.00E+00	0.00E+00	3.00E-04	6.99E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+
Hg2+	3.00E-04	0.00E+00	1.10E-03	1.80E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+
MHg	1.00E-04	0.00E+00	3.50E-04	1.57E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+
				SUM = 1.57E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+

TEST RUN OF THE ACEHWCF MODEL - USEPA MERCURY FISHER SCENARIO  
 Input File: acehw.dat Output File: acehw.out

\* OUTPUT OF A

\*\*\* CHRONIC HAZARD INDEX BY SOURCE FOR PEAK RECEPTOR # 1 -- Fisher\_Adult

POLLUTANT Mercury CHRONIC RfC (mg/m3) = 3.000E-04 BACKG. (ug/m3) = 0.000E+00 CHRON

SOURCE #	TOTAL	BONE	CARD	DEVE	ENDO	EYE	HEM
1	6.993E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+0
SUM =		6.993E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+0

POLLUTANT Hg2+ CHRONIC RfC (mg/m3) = 1.100E-03 BACKG. (ug/m3) = 0.000E+00 CHRON

		TOTAL	BONE	CARD	DEVE	ENDO	EYE	HEM
SOURCE #	1	1.798E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	SUM =	1.798E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

POLLUTANT MHg CHRONIC RfC (mg/m3) = 3.500E-04 BACKG. (ug/m3) = 0.000E+00 CHRON

		TOTAL	BONE	CARD	DEVE	ENDO	EYE	HEM
SOURCE #	1	1.572E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	SUM =	1.572E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEST RUN OF THE ACEHWCF MODEL - USEPA MERCURY FISHER SCENARIO \* OUTPUT OF A  
 Input File: acehw.dat Output File: acehw.out

\*\*\* INDIVIDUAL AVERAGE DAILY DOSE (mg/kg/d) BY POLLUTANT FOR PEAK RECEPTOR

POLLUTANT	INHALE	DERMAL	SOIL	WATER	PLANTS	ANIMAL
Mercury	5.994E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Hg2+	1.432E-10	0.000E+00	5.258E-09	0.000E+00	0.000E+00	0.000E+00
MHg	0.000E+00	0.000E+00	7.325E-11	0.000E+00	0.000E+00	0.000E+00

TEST RUN OF THE ACEHWCF MODEL - USEPA MERCURY FISHER SCENARIO \* OUTPUT OF A  
 Input File: acehw.dat Output File: acehw.out

\*\*\* RECEPTOR LEAD CONCENTRATIONS IN AIR AND SOIL FROM ALL SOURCES \*\*\*

RECEPTOR	AIR CONC (ug/m3)	AIR LIMIT (ug/m3)	AIR RATIO	SOIL CONC (mg/kg)	SOIL LIMIT (mg/kg)	SOIL RATIO
1	6.421E-07	2.000E-01	3.210E-06	8.150E-05	1.000E+02	8.150E-07
2	0.000E+00	2.000E-01	0.000E+00	8.835E-05	1.000E+02	8.835E-07
3	0.000E+00	2.000E-01	0.000E+00	6.447E-05	1.000E+02	6.447E-07

Receptor # 1 has max lead concentration in air (ug/m3) = 0.6421E-06 and ratio =

Receptor # 2 has max lead concentration in soil (mg/kg) = 0.8835E-04 and ratio =

TEST RUN OF THE ACEHWCF MODEL - USEPA MERCURY FISHER SCENARIO \* OUTPUT OF A  
 Input File: acehw.dat Output File: acehw.out

\*\*\* SUMMARY OF MAXIMUM PREDICTED RISKS \*\*\*

CANCER RISK ASSESSMENT  
-----

SIGNIFICANT RISK LEVEL = 1.000E-05  
IMPACT ZONE RISK LEVEL = 1.000E-06  
MAXIMUM PEAK RISK = 1.874E-07  
PREDICTED AT RECEPTOR # 1  
TOTAL EXCESS BURDEN = 0.000E+00

0 RECEPTORS WITH RISK EXCEEDING SIGNIFICANT RISK LEVEL OF 1.000E-05

ACUTE EXPOSURE TO NON-CANCER POLLUTANTS  
-----

SIGNIFICANT HAZARD INDEX = 0.2500  
MAXIMUM HAZARD INDEX FOR AN ENDPOINT = 2.7343E-06  
PREDICTED AT RECEPTOR # 1

0 RECEPTORS WITH HAZARD INDEX .GE. 0.2500 FOR ONE OR MORE TOXICOLOGICAL ENDPOINTS

CHRONIC EXPOSURE TO NON-CANCER POLLUTANTS  
-----

SIGNIFICANT HAZARD INDEX = 0.2500  
MAXIMUM HAZARD INDEX FOR AN ENDPOINT = 1.5719E+01  
PREDICTED AT RECEPTOR # 1

3 RECEPTORS WITH HAZARD INDEX .GE. 0.2500 FOR ONE OR MORE TOXICOLOGICAL ENDPOINTS

1 2 3

TEST RUN OF THE ACEHWCF MODEL - USEPA MERCURY FISHER SCENARIO \* OUTPUT OF A  
Input File: acehw.dat Output File: acehw.out

LEAD CONCENTRATION ASSESSMENT  
-----

SIGNIFICANT AIR CONCENTRATION (ug/m3) = 2.000E-01

MAXIMUM PEAK CONCENTRATION (ug/m3) = 6.421E-07  
MAXIMUM AIR CONCENTRATION RATIO = 3.210E-06  
PREDICTED AT RECEPTOR # 1

SIGNIFICANT SOIL CONCENTRATION (mg/kg) = 1.000E+02  
MAXIMUM PEAK CONCENTRATION (mg/kg) = 8.835E-05  
MAXIMUM SOIL CONCENTRATION RATIO = 8.835E-07  
PREDICTED AT RECEPTOR # 2

0 RECEPTORS WITH AIR CONCENTRATION .GE. 0.2000

0 RECEPTORS WITH SOIL CONCENTRATION .GE. 100.0000

DIOXIN INFANT DOSE ASSESSMENT  
-----

SIGNIFICANT DOSE LIMIT (pg/kd-day) = 6.000E+01  
MAXIMUM DAILY DOSE (pg/kg-day) = 4.808E-02  
MAXIMUM DAILY DOSE RATIO = 8.013E-04  
PREDICTED AT RECEPTOR # 1

0 RECEPTORS WITH DAILY DOSE .GE. 60.0000

TEST RUN OF THE ACEHWCF MODEL - USEPA MERCURY FISHER SCENARIO \* OUTPUT OF A  
Input File: acehw.dat Output File: acehw.out

\*\*\* END OF ACEHWCF SIMULATION \*\*\*