

Appendix D
GWSCREEN Output Files

The input parameters used in the GWSCREEN runs were taken from Appendix B.

Site dimensions are given in Table B-19.

Contaminant-specific reference doses and slope factors by exposure pathway are listed in Table B-20.

Contaminant-specific input parameters such as distribution coefficients, diffusivity, and solubility appear on Table B-21.

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ACKNOWLEDGEMENT OF GOVERNMENT SPONSORSHIP AND
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*
*   This output was produced by the model:
*
*           GWSCREEN
*   Version Control Copy, Version 2.02
*   A semi-analytical model for the assessment
*   of the groundwater pathway from the leaching
*   of surficial and buried contamination and
*   release of contaminants from percolation ponds
*           10-11-93
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*   Idaho National Engineering Laboratory
*           EG&G Idaho Inc.
*   Subsurface and Environmental Modeling Unit
*           PO Box 1625
*           Idaho Falls, Idaho 83415
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'Aroclor-1242 Group 1'

GAUSSIAN QUADRATURE SOLUTION
MODEL OPTIONS

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IMODE: 4
KFLAG: 1 (0) CONC VS TIME; (1) PEAK CONC AND LIMITING SOIL CONC
IMODEL: 1 (1) SURF OR BURIED SOURCE; (2) POND SOURCE; (3) TABULATED SOURCE FUNCTION
>>> INPUT DATA
*****
NUMBER OF RADIOACTIVE PROGENY                0
LENGTH OF SOURCE PARALLEL TO GW FLOW (m)     1.27E+02
WIDTH OF SOURCE PERPENDICULAR TO GW FLOW (m) 1.27E+02
THICKNESS OF SOURCE (m)                      3.01E+00
PERCOLATION RATE (darcy vel m/y)            1.00E-01
VOLUMETRIC WATER CONTENT IN SOURCE           4.10E-01
VOLUMETRIC WATER CONTENT IN UNSATURATED ZONE 4.10E-01
BULK DENSITY AT SOURCE (g/cm**3)            1.50E+00
SORPTION COEFFICIENT AT SOURCE (ml/g)       1.50E+03
BULK DENSITY IN UNSAT ZONE (g/cm**3)        1.90E+00
UNSATURATED ZONE THICKNESS (m)              5.80E+00
SORPTION COEFFICIENT IN UNSAT ZONE (ml/g)   1.50E+02
OPTIONAL LOSS RATE CONSTANT FOR SOURCE (y**-1) 0.00E+00
INITIAL MASS OR ACTIVITY (mg or Ci)          6.40E+04
MOLECULAR WEIGHT (g/mole)                   1.00E+00
SOLUBILITY LIMIT (mg/L)                     1.00E+06
HALF-LIFE(S) OF CONTAMINANT AND PROGENY (y) 1.00E+38
BULK DENSITY OF AQUIFER (g/cm**3)           1.90E+00
POROSITY OF AQUIFER                          1.00E-01
SORPTION COEFFICIENT(S) IN AQUIFER (ml/g)   1.50E+02
DISPERSIVITY X DIRECTION (m)                9.00E+00
DISPERSIVITY Y DIRECTION (m)                4.00E+00
PORE VELOCITY (m/y)                         5.70E+02
WELL SCREEN THICKNESS (m)                   1.50E+01
DISTANCE TO RECEPTOR ALONG X AXIS (m)     6.35E+01

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DISTANCE TO RECEPTOR ALONG Y AXIS (m) 0.00E+00
LIMITING CONTAMINANT GW CONCENTRATION (mg/L) 6.00E-03
UNITS OF CONTAMINANT mg

LIMITING SOIL CONCENTRATION CALCULATION

>>> VALUES CALCULATED IN SOURCE SUBROUTINE

LEACH RATE CONSTANT (1/y) 1.4763E-05
UNSATURATED PORE VELOCITY (m/y) 2.4390E-01
DECAY CONSTANT(S) (1/y) 6.9315E-39
RETARDATION FACTOR(S) (SATURATED) 2.8510E+03
RETARDATION FACTOR (UNSATURATED) 6.9612E+02
SOLUBILITY LIMITED MASS (mg) 1.0925E+17
SOLUBILITY LIMITED ACTIVITY (Ci) 0.0000E+00
TRANSIT TIME IN UNSAT ZONE (years) 1.6554E+04
FRACTION DECAYED DURING UNSAT TRANSPORT 0.0000E+00

>>> EXPOSURE DATA FOR LIMITING SOIL CONCENTRATION

INTEGRATION TIME (years) 30
BODY WEIGHT (kg) 7.000E+01
AVERAGING TIME (days) 2.550E+04
WATER INTAKE RATE (L/d) 2.000E+00
EXPOSURE FREQUENCY (days/year) 3.500E+02
EXPOSURE DURATION (years) 3.000E+01
RADIOLOGICAL DOSE LIMIT (rem/y) 4.000E-03
CARCINOGENIC RISK CRITERIA 1.000E-04
HAZARD QUOTIENT 1.000E+00

>>> RESULTS OF CALCULATIONS

MAXIMUM NON RADIOLOGICAL CONTAMINANT CALCULATION
MAXIMUM CONCENTRATION 8.33E-09 mg/L
AVERAGE CONCENTRATION 8.33E-09 mg/L
PEAK TIME (y): 1.803212E+04
LIMITING SOIL CONCENTRATION (mg/m**3): 9.490E+05
LIMITING SOIL CONCENTRATION (mg/kg): 6.327E+02
LIMITING INVENTORY IN SOIL (mg): 4.607E+10

'Arsenic Group 1'

GAUSSIAN QUADRATURE SOLUTION

MODEL OPTIONS

IMODE: 4

KFLAG: 1 (0) CONC VS TIME; (1) PEAK CONC AND LIMITING SOIL CONC

IMODEL:1 (1) SURF OR BURIED SOURCE; (2) POND SOURCE; (3) TABULATED SOURCE FUNCTION

>>> INPUT DATA

NUMBER OF RADIOACTIVE PROGENY 0
LENGTH OF SOURCE PARALLEL TO GW FLOW (m) 1.27E+02
WIDTH OF SOURCE PERPENDICULAR TO GW FLOW (m) 1.27E+02
THICKNESS OF SOURCE (m) 3.01E+00
PERCOLATION RATE (darcy vel m/y) 1.00E-01
VOLUMETRIC WATER CONTENT IN SOURCE 4.10E-01
VOLUMETRIC WATER CONTENT IN UNSATURATED ZONE 4.10E-01
BULK DENSITY AT SOURCE (g/cm**3) 1.50E+00
SORPTION COEFFICIENT AT SOURCE (ml/g) 3.00E+00
BULK DENSITY IN UNSAT ZONE (g/cm**3) 1.90E+00
UNSATURATED ZONE THICKNESS (m) 5.80E+00
SORPTION COEFFICIENT IN UNSAT ZONE (ml/g) 3.00E-01
OPTIONAL LOSS RATE CONSTANT FOR SOURCE (y**-1) 0.00E+00
INITIAL MASS OR ACTIVITY (mg or Ci) 6.08E+06
MOLECULAR WEIGHT (g/mole) 1.00E+00
SOLUBILITY LIMIT (mg/L) 1.00E+06
HALF-LIFE(S) OF CONTAMINANT AND PROGENY (y) 1.00E+38
BULK DENSITY OF AQUIFER (g/cm**3) 1.90E+00
POROSITY OF AQUIFER 1.00E-01
SORPTION COEFFICIENT(S) IN AQUIFER (ml/g) 3.00E-01
DISPERSIVITY X DIRECTION (m) 9.00E+00
DISPERSIVITY Y DIRECTION (m) 4.00E+00
PORE VELOCITY (m/y) 5.70E+02
WELL SCREEN THICKNESS (m) 1.50E+01
DISTANCE TO RECEPTOR ALONG X AXIS (m) 6.35E+01
DISTANCE TO RECEPTOR ALONG Y AXIS (m) 0.00E+00
LIMITING CONTAMINANT GW CONCENTRATION (mg/L) 6.00E-03
UNITS OF CONTAMINANT mg

LIMITING SOIL CONCENTRATION CALCULATION

>>> VALUES CALCULATED IN SOURCE SUBROUTINE

LEACH RATE CONSTANT (1/y) 6.7663E-03
UNSATURATED PORE VELOCITY (m/y) 2.4390E-01
DECAY CONSTANT(S) (1/y) 6.9315E-39
RETARDATION FACTOR(S) (SATURATED) 6.7000E+00
RETARDATION FACTOR (UNSATURATED) 2.3902E+00
SOLUBILITY LIMITED MASS (mg) 2.3837E+14
SOLUBILITY LIMITED ACTIVITY (Ci) 0.0000E+00
TRANSIT TIME IN UNSAT ZONE (years) 5.6840E+01
FRACTION DECAYED DURING UNSAT TRANSPORT 0.0000E+00

>>> EXPOSURE DATA FOR LIMITING SOIL CONCENTRATION

INTEGRATION TIME (years) 30
BODY WEIGHT (kg) 7.000E+01
AVERAGING TIME (days) 2.550E+04
WATER INTAKE RATE (L/d) 2.000E+00
EXPOSURE FREQUENCY (days/year) 3.500E+02
EXPOSURE DURATION (years) 3.000E+01
RADIOLOGICAL DOSE LIMIT (rem/y) 4.000E-03
CARCINOGENIC RISK CRITERIA 1.000E-04
HAZARD QUOTIENT 1.000E+00

>>> RESULTS OF CALCULATIONS

MAXIMUM NON RADIOLOGICAL CONTAMINANT CALCULATION
MAXIMUM CONCENTRATION 3.62E-04 mg/L
AVERAGE CONCENTRATION 3.25E-04 mg/L
PEAK TIME (y): 6.028106E+01
LIMITING SOIL CONCENTRATION (mg/m**3): 2.311E+03
LIMITING SOIL CONCENTRATION (mg/kg): 1.541E+00

LIMITING INVENTORY IN SOIL (mg): 1.122E+08

'Cadmium Group 1'

GAUSSIAN QUADRATURE SOLUTION

MODEL OPTIONS

IMODE: 4

KFLAG: 1 (0) CONC VS TIME; (1) PEAK CONC AND LIMITING SOIL CONC

IMODEL: 1 (1) SURF OR BURIED SOURCE; (2) POND SOURCE; (3) TABULATED SOURCE FUNCTION

>>> INPUT DATA

NUMBER OF RADIOACTIVE PROGENY 0
LENGTH OF SOURCE PARALLEL TO GW FLOW (m) 1.27E+02
WIDTH OF SOURCE PERPENDICULAR TO GW FLOW (m) 1.27E+02
THICKNESS OF SOURCE (m) 3.01E+00
PERCOLATION RATE (darcy vel m/y) 1.00E-01
VOLUMETRIC WATER CONTENT IN SOURCE 4.10E-01
VOLUMETRIC WATER CONTENT IN UNSATURATED ZONE 4.10E-01
BULK DENSITY AT SOURCE (g/cm**3) 1.50E+00
SORPTION COEFFICIENT AT SOURCE (ml/g) 6.00E+00
BULK DENSITY IN UNSAT ZONE (g/cm**3) 1.90E+00
UNSATURATED ZONE THICKNESS (m) 5.80E+00
SORPTION COEFFICIENT IN UNSAT ZONE (ml/g) 6.00E-01
OPTIONAL LOSS RATE CONSTANT FOR SOURCE (y**-1) 0.00E+00
INITIAL MASS OR ACTIVITY (mg or Ci) 4.63E+05
MOLECULAR WEIGHT (g/mole) 1.00E+00
SOLUBILITY LIMIT (mg/L) 1.00E+06
HALF-LIFE(S) OF CONTAMINANT AND PROGENY (y) 1.00E+38
BULK DENSITY OF AQUIFER (g/cm**3) 1.90E+00
POROSITY OF AQUIFER 1.00E-01
SORPTION COEFFICIENT(S) IN AQUIFER (ml/g) 6.00E-01
DISPERSIVITY X DIRECTION (m) 9.00E+00
DISPERSIVITY Y DIRECTION (m) 4.00E+00
PORE VELOCITY (m/y) 5.70E+02
WELL SCREEN THICKNESS (m) 1.50E+01
DISTANCE TO RECEPTOR ALONG X AXIS (m) 6.35E+01
DISTANCE TO RECEPTOR ALONG Y AXIS (m) 0.00E+00
LIMITING CONTAMINANT GW CONCENTRATION (mg/L) 6.00E-03
UNITS OF CONTAMINANT mg

LIMITING SOIL CONCENTRATION CALCULATION

>>> VALUES CALCULATED IN SOURCE SUBROUTINE

LEACH RATE CONSTANT (1/y) 3.5306E-03
UNSATURATED PORE VELOCITY (m/y) 2.4390E-01
DECAY CONSTANT(S) (1/y) 6.9315E-39
RETARDATION FACTOR(S) (SATURATED) 1.2400E+01
RETARDATION FACTOR (UNSATURATED) 3.7805E+00
SOLUBILITY LIMITED MASS (mg) 4.5684E+14
SOLUBILITY LIMITED ACTIVITY (Ci) 0.0000E+00
TRANSIT TIME IN UNSAT ZONE (years) 8.9900E+01
FRACTION DECAYED DURING UNSAT TRANSPORT 0.0000E+00

>>> EXPOSURE DATA FOR LIMITING SOIL CONCENTRATION

INTEGRATION TIME (years) 30
BODY WEIGHT (kg) 7.000E+01
AVERAGING TIME (days) 2.550E+04
WATER INTAKE RATE (L/d) 2.000E+00
EXPOSURE FREQUENCY (days/year) 3.500E+02
EXPOSURE DURATION (years) 3.000E+01
RADIOLOGICAL DOSE LIMIT (rem/y) 4.000E-03
CARCINOGENIC RISK CRITERIA 1.000E-04
HAZARD QUOTIENT 1.000E+00

>>> RESULTS OF CALCULATIONS

MAXIMUM NON RADIOLOGICAL CONTAMINANT CALCULATION
MAXIMUM CONCENTRATION 1.44E-05 mg/L
AVERAGE CONCENTRATION 1.32E-05 mg/L
PEAK TIME (y): 9.629427E+01
LIMITING SOIL CONCENTRATION (mg/m**3): 4.344E+03
LIMITING SOIL CONCENTRATION (mg/kg): 2.896E+00

LIMITING INVENTORY IN SOIL (mg): 2.109E+08

'Chloride Group 1'

GAUSSIAN QUADRATURE SOLUTION

MODEL OPTIONS

IMODE: 4

KFLAG: 1 (0) CONC VS TIME; (1) PEAK CONC AND LIMITING SOIL CONC

IMODEL:1 (1) SURF OR BURIED SOURCE; (2) POND SOURCE; (3) TABULATED SOURCE FUNCTION

>>> INPUT DATA

NUMBER OF RADIOACTIVE PROGENY 0
LENGTH OF SOURCE PARALLEL TO GW FLOW (m) 1.27E+02
WIDTH OF SOURCE PERPENDICULAR TO GW FLOW (m) 1.27E+02
THICKNESS OF SOURCE (m) 3.01E+00
PERCOLATION RATE (darcy vel m/y) 1.00E-01
VOLUMETRIC WATER CONTENT IN SOURCE 4.10E-01
VOLUMETRIC WATER CONTENT IN UNSATURATED ZONE 4.10E-01
BULK DENSITY AT SOURCE (g/cm**3) 1.50E+00
SORPTION COEFFICIENT AT SOURCE (ml/g) 0.00E+00
BULK DENSITY IN UNSAT ZONE (g/cm**3) 1.90E+00
UNSATURATED ZONE THICKNESS (m) 5.80E+00
SORPTION COEFFICIENT IN UNSAT ZONE (ml/g) 0.00E+00
OPTIONAL LOSS RATE CONSTANT FOR SOURCE (y**-1) 0.00E+00
INITIAL MASS OR ACTIVITY (mg or Ci) 3.33E+03
MOLECULAR WEIGHT (g/mole) 1.00E+00
SOLUBILITY LIMIT (mg/L) 1.00E+06
HALF-LIFE(S) OF CONTAMINANT AND PROGENY (y) 1.00E+38
BULK DENSITY OF AQUIFER (g/cm**3) 1.90E+00
POROSITY OF AQUIFER 1.00E-01
SORPTION COEFFICIENT(S) IN AQUIFER (ml/g) 0.00E+00
DISPERSIVITY X DIRECTION (m) 9.00E+00
DISPERSIVITY Y DIRECTION (m) 4.00E+00
PORE VELOCITY (m/y) 5.70E+02
WELL SCREEN THICKNESS (m) 1.50E+01
DISTANCE TO RECEPTOR ALONG X AXIS (m) 6.35E+01
DISTANCE TO RECEPTOR ALONG Y AXIS (m) 0.00E+00
LIMITING CONTAMINANT GW CONCENTRATION (mg/L) 6.00E-03
UNITS OF CONTAMINANT mg

LIMITING SOIL CONCENTRATION CALCULATION

>>> VALUES CALCULATED IN SOURCE SUBROUTINE

LEACH RATE CONSTANT (1/y) 8.1031E-02
UNSATURATED PORE VELOCITY (m/y) 2.4390E-01
DECAY CONSTANT(S) (1/y) 6.9315E-39
RETARDATION FACTOR(S) (SATURATED) 1.0000E+00
RETARDATION FACTOR (UNSATURATED) 1.0000E+00
SOLUBILITY LIMITED MASS (mg) 1.9905E+13
SOLUBILITY LIMITED ACTIVITY (Ci) 0.0000E+00
TRANSIT TIME IN UNSAT ZONE (years) 2.3780E+01
FRACTION DECAYED DURING UNSAT TRANSPORT 0.0000E+00

>>> EXPOSURE DATA FOR LIMITING SOIL CONCENTRATION

INTEGRATION TIME (years) 30
BODY WEIGHT (kg) 7.000E+01
AVERAGING TIME (days) 2.550E+04
WATER INTAKE RATE (L/d) 2.000E+00
EXPOSURE FREQUENCY (days/year) 3.500E+02
EXPOSURE DURATION (years) 3.000E+01
RADIOLOGICAL DOSE LIMIT (rem/y) 4.000E-03
CARCINOGENIC RISK CRITERIA 1.000E-04
HAZARD QUOTIENT 1.000E+00

>>> RESULTS OF CALCULATIONS

MAXIMUM NON RADIOLOGICAL CONTAMINANT CALCULATION
MAXIMUM CONCENTRATION 2.35E-06 mg/L
AVERAGE CONCENTRATION 9.08E-07 mg/L
PEAK TIME (y): 2.425002E+01
LIMITING SOIL CONCENTRATION (mg/m**3): 4.532E+02
LIMITING SOIL CONCENTRATION (mg/kg): 3.021E-01

LIMITING INVENTORY IN SOIL (mg):

2.200E+07

'Chromium Group 1'

GAUSSIAN QUADRATURE SOLUTION

MODEL OPTIONS

IMODE: 4

KFLAG: 1 (0)CONC VS TIME; (1)PEAK CONC AND LIMITING SOIL CONC

IMODEL:1 (1) SURF OR BURIED SOURCE; (2)POND SOURCE; (3) TABULATED SOURCE FUNCTION

>>> INPUT DATA

NUMBER OF RADIOACTIVE PROGENY 0
LENGTH OF SOURCE PARALLEL TO GW FLOW (m) 1.27E+02
WIDTH OF SOURCE PERPENDICULAR TO GW FLOW (m) 1.27E+02
THICKNESS OF SOURCE (m) 3.01E+00
PERCOLATION RATE (darcy vel m/y) 1.00E-01
VOLUMETRIC WATER CONTENT IN SOURCE 4.10E-01
VOLUMETRIC WATER CONTENT IN UNSATURATED ZONE 4.10E-01
BULK DENSITY AT SOURCE (g/cm**3) 1.50E+00
SORPTION COEFFICIENT AT SOURCE (ml/g) 1.00E+00
BULK DENSITY IN UNSAT ZONE (g/cm**3) 1.90E+00
UNSATURATED ZONE THICKNESS (m) 5.80E+00
SORPTION COEFFICIENT IN UNSAT ZONE (ml/g) 1.00E-01
OPTIONAL LOSS RATE CONSTANT FOR SOURCE (y**-1) 0.00E+00
INITIAL MASS OR ACTIVITY (mg or Ci) 7.49E+06
MOLECULAR WEIGHT (g/mole) 1.00E+00
SOLUBILITY LIMIT (mg/L) 1.00E+06
HALF-LIFE(S) OF CONTAMINANT AND PROGENY (y) 1.00E+38
BULK DENSITY OF AQUIFER (g/cm**3) 1.90E+00
POROSITY OF AQUIFER 1.00E-01
SORPTION COEFFICIENT(S) IN AQUIFER (ml/g) 1.00E-01
DISPERSIVITY X DIRECTION (m) 9.00E+00
DISPERSIVITY Y DIRECTION (m) 4.00E+00
PORE VELOCITY (m/y) 5.70E+02
WELL SCREEN THICKNESS (m) 1.50E+01
DISTANCE TO RECEPTOR ALONG X AXIS (m) 6.35E+01
DISTANCE TO RECEPTOR ALONG Y AXIS (m) 0.00E+00
LIMITING CONTAMINANT GW CONCENTRATION (mg/L) 6.00E-03
UNITS OF CONTAMINANT mg

LIMITING SOIL CONCENTRATION CALCULATION

>>> VALUES CALCULATED IN SOURCE SUBROUTINE

LEACH RATE CONSTANT (1/y) 1.7394E-02
UNSATURATED PORE VELOCITY (m/y) 2.4390E-01
DECAY CONSTANT(S) (1/y) 6.9315E-39
RETARDATION FACTOR(S) (SATURATED) 2.9000E+00
RETARDATION FACTOR (UNSATURATED) 1.4634E+00
SOLUBILITY LIMITED MASS (mg) 9.2727E+13
SOLUBILITY LIMITED ACTIVITY (Ci) 0.0000E+00
TRANSIT TIME IN UNSAT ZONE (years) 3.4800E+01
FRACTION DECAYED DURING UNSAT TRANSPORT 0.0000E+00

>>> EXPOSURE DATA FOR LIMITING SOIL CONCENTRATION

INTEGRATION TIME (years) 30
BODY WEIGHT (kg) 7.000E+01
AVERAGING TIME (days) 2.550E+04
WATER INTAKE RATE (L/d) 2.000E+00
EXPOSURE FREQUENCY (days/year) 3.500E+02
EXPOSURE DURATION (years) 3.000E+01
RADIOLOGICAL DOSE LIMIT (rem/y) 4.000E-03
CARCINOGENIC RISK CRITERIA 1.000E-04
HAZARD QUOTIENT 1.000E+00

>>> RESULTS OF CALCULATIONS

MAXIMUM NON RADIOLOGICAL CONTAMINANT CALCULATION
MAXIMUM CONCENTRATION 1.15E-03 mg/L
AVERAGE CONCENTRATION 9.03E-04 mg/L
PEAK TIME (y): 3.625417E+01
LIMITING SOIL CONCENTRATION (mg/m**3): 1.025E+03
LIMITING SOIL CONCENTRATION (mg/kg): 6.834E-01

LIMITING INVENTORY IN SOIL (mg): 4.977E+07

'Copper Group 1'

GAUSSIAN QUADRATURE SOLUTION

MODEL OPTIONS

IMODE: 4

KFLAG: 1 (0) CONC VS TIME; (1) PEAK CONC AND LIMITING SOIL CONC

IMODEL: 1 (1) SURF OR BURIED SOURCE; (2) POND SOURCE; (3) TABULATED SOURCE FUNCTION

>>> INPUT DATA

NUMBER OF RADIOACTIVE PROGENY	0
LENGTH OF SOURCE PARALLEL TO GW FLOW (m)	1.27E+02
WIDTH OF SOURCE PERPENDICULAR TO GW FLOW (m)	1.27E+02
THICKNESS OF SOURCE (m)	3.01E+00
PERCOLATION RATE (darcy vel m/y)	1.00E-01
VOLUMETRIC WATER CONTENT IN SOURCE	4.10E-01
VOLUMETRIC WATER CONTENT IN UNSATURATED ZONE	4.10E-01
BULK DENSITY AT SOURCE (g/cm**3)	1.50E+00
SORPTION COEFFICIENT AT SOURCE (ml/g)	2.00E+01
BULK DENSITY IN UNSAT ZONE (g/cm**3)	1.90E+00
UNSATURATED ZONE THICKNESS (m)	5.80E+00
SORPTION COEFFICIENT IN UNSAT ZONE (ml/g)	2.00E+00
OPTIONAL LOSS RATE CONSTANT FOR SOURCE (y**-1)	0.00E+00
INITIAL MASS OR ACTIVITY (mg or Ci)	1.20E+07
MOLECULAR WEIGHT (g/mole)	1.00E+00
SOLUBILITY LIMIT (mg/L)	1.00E+06
HALF-LIFE(S) OF CONTAMINANT AND PROGENY (y)	1.00E+38
BULK DENSITY OF AQUIFER (g/cm**3)	1.90E+00
POROSITY OF AQUIFER	1.00E-01
SORPTION COEFFICIENT(S) IN AQUIFER (ml/g)	2.00E+00
DISPERSIVITY X DIRECTION (m)	9.00E+00
DISPERSIVITY Y DIRECTION (m)	4.00E+00
PORE VELOCITY (m/y)	5.70E+02
WELL SCREEN THICKNESS (m)	1.50E+01
DISTANCE TO RECEPTOR ALONG X AXIS (m)	6.35E+01
DISTANCE TO RECEPTOR ALONG Y AXIS (m)	0.00E+00
LIMITING CONTAMINANT GW CONCENTRATION (mg/L)	6.00E-03
UNITS OF CONTAMINANT	mg

LIMITING SOIL CONCENTRATION CALCULATION

>>> VALUES CALCULATED IN SOURCE SUBROUTINE

LEACH RATE CONSTANT (1/y)	1.0925E-03
UNSATURATED PORE VELOCITY (m/y)	2.4390E-01
DECAY CONSTANT(S) (1/y)	6.9315E-39
RETARDATION FACTOR(S) (SATURATED)	3.9000E+01
RETARDATION FACTOR (UNSATURATED)	1.0268E+01
SOLUBILITY LIMITED MASS (mg)	1.4764E+15
SOLUBILITY LIMITED ACTIVITY (Ci)	0.0000E+00
TRANSIT TIME IN UNSAT ZONE (years)	2.4418E+02
FRACTION DECAYED DURING UNSAT TRANSPORT	0.0000E+00

>>> EXPOSURE DATA FOR LIMITING SOIL CONCENTRATION

INTEGRATION TIME (years)	30
BODY WEIGHT (kg)	7.000E+01
AVERAGING TIME (days)	2.550E+04
WATER INTAKE RATE (L/d)	2.000E+00
EXPOSURE FREQUENCY (days/year)	3.500E+02
EXPOSURE DURATION (years)	3.000E+01
RADIOLOGICAL DOSE LIMIT (rem/y)	4.000E-03
CARCINOGENIC RISK CRITERIA	1.000E-04
HAZARD QUOTIENT	1.000E+00

>>> RESULTS OF CALCULATIONS

MAXIMUM NON RADIOLOGICAL CONTAMINANT CALCULATION

MAXIMUM CONCENTRATION	1.16E-04 mg/L
AVERAGE CONCENTRATION	1.10E-04 mg/L
PEAK TIME (y):	2.643660E+02
LIMITING SOIL CONCENTRATION (mg/m**3):	1.352E+04
LIMITING SOIL CONCENTRATION (mg/kg):	9.015E+00

LIMITING INVENTORY IN SOIL (mg): 6.565E+08

'Diethylether Group 1'

GAUSSIAN QUADRATURE SOLUTION

MODEL OPTIONS

IMODE: 4

KFLAG: 1 (0) CONC VS TIME; (1) PEAK CONC AND LIMITING SOIL CONC

IMODEL: 1 (1) SURF OR BURIED SOURCE; (2) POND SOURCE; (3) TABULATED SOURCE FUNCTION

>>> INPUT DATA

NUMBER OF RADIOACTIVE PROGENY 0
LENGTH OF SOURCE PARALLEL TO GW FLOW (m) 1.27E+02
WIDTH OF SOURCE PERPENDICULAR TO GW FLOW (m) 1.27E+02
THICKNESS OF SOURCE (m) 3.01E+00
PERCOLATION RATE (darcy vel m/y) 1.00E-01
VOLUMETRIC WATER CONTENT IN SOURCE 4.10E-01
VOLUMETRIC WATER CONTENT IN UNSATURATED ZONE 4.10E-01
BULK DENSITY AT SOURCE (g/cm**3) 1.50E+00
SORPTION COEFFICIENT AT SOURCE (ml/g) 0.00E+00
BULK DENSITY IN UNSAT ZONE (g/cm**3) 1.90E+00
UNSATURATED ZONE THICKNESS (m) 5.80E+00
SORPTION COEFFICIENT IN UNSAT ZONE (ml/g) 0.00E+00
OPTIONAL LOSS RATE CONSTANT FOR SOURCE (y**-1) 0.00E+00
INITIAL MASS OR ACTIVITY (mg or Ci) 1.46E+02
MOLECULAR WEIGHT (g/mole) 1.00E+00
SOLUBILITY LIMIT (mg/L) 1.00E+06
HALF-LIFE(S) OF CONTAMINANT AND PROGENY (y) 1.00E+38
BULK DENSITY OF AQUIFER (g/cm**3) 1.90E+00
POROSITY OF AQUIFER 1.00E-01
SORPTION COEFFICIENT(S) IN AQUIFER (ml/g) 0.00E+00
DISPERSIVITY X DIRECTION (m) 9.00E+00
DISPERSIVITY Y DIRECTION (m) 4.00E+00
PORE VELOCITY (m/y) 5.70E+02
WELL SCREEN THICKNESS (m) 1.50E+01
DISTANCE TO RECEPTOR ALONG X AXIS (m) 6.35E+01
DISTANCE TO RECEPTOR ALONG Y AXIS (m) 0.00E+00
LIMITING CONTAMINANT GW CONCENTRATION (mg/L) 6.00E-03
UNITS OF CONTAMINANT mg

LIMITING SOIL CONCENTRATION CALCULATION

>>> VALUES CALCULATED IN SOURCE SUBROUTINE

LEACH RATE CONSTANT (1/y) 8.1031E-02
UNSATURATED PORE VELOCITY (m/y) 2.4390E-01
DECAY CONSTANT(S) (1/y) 6.9315E-39
RETARDATION FACTOR(S) (SATURATED) 1.0000E+00
RETARDATION FACTOR (UNSATURATED) 1.0000E+00
SOLUBILITY LIMITED MASS (mg) 1.9905E+13
SOLUBILITY LIMITED ACTIVITY (Ci) 0.0000E+00
TRANSIT TIME IN UNSAT ZONE (years) 2.3780E+01
FRACTION DECAYED DURING UNSAT TRANSPORT 0.0000E+00

>>> EXPOSURE DATA FOR LIMITING SOIL CONCENTRATION

INTEGRATION TIME (years) 30
BODY WEIGHT (kg) 7.000E+01
AVERAGING TIME (days) 2.550E+04
WATER INTAKE RATE (L/d) 2.000E+00
EXPOSURE FREQUENCY (days/year) 3.500E+02
EXPOSURE DURATION (years) 3.000E+01
RADIOLOGICAL DOSE LIMIT (rem/y) 4.000E-03
CARCINOGENIC RISK CRITERIA 1.000E-04
HAZARD QUOTIENT 1.000E+00

>>> RESULTS OF CALCULATIONS

MAXIMUM NON RADIOLOGICAL CONTAMINANT CALCULATION
MAXIMUM CONCENTRATION 1.03E-07 mg/L
AVERAGE CONCENTRATION 3.98E-08 mg/L
PEAK TIME (y): 2.425002E+01
LIMITING SOIL CONCENTRATION (mg/m**3): 4.532E+02
LIMITING SOIL CONCENTRATION (mg/kg): 3.021E-01

LIMITING INVENTORY IN SOIL (mg): 2.200E+07

'Lead Group 1'

GAUSSIAN QUADRATURE SOLUTION

MODEL OPTIONS

IMODE: 4

KFLAG: 1 (0)CONC VS TIME; (1)PEAK CONC AND LIMITING SOIL CONC

IMODEL:1 (1) SURF OR BURIED SOURCE; (2)POND SOURCE; (3) TABULATED SOURCE FUNCTION

>>> INPUT DATA

NUMBER OF RADIOACTIVE PROGENY 0
LENGTH OF SOURCE PARALLEL TO GW FLOW (m) 1.27E+02
WIDTH OF SOURCE PERPENDICULAR TO GW FLOW (m) 1.27E+02
THICKNESS OF SOURCE (m) 3.01E+00
PERCOLATION RATE (darcy vel m/y) 1.00E-01
VOLUMETRIC WATER CONTENT IN SOURCE 4.10E-01
VOLUMETRIC WATER CONTENT IN UNSATURATED ZONE 4.10E-01
BULK DENSITY AT SOURCE (g/cm**3) 1.50E+00
SORPTION COEFFICIENT AT SOURCE (ml/g) 1.00E+02
BULK DENSITY IN UNSAT ZONE (g/cm**3) 1.90E+00
UNSATURATED ZONE THICKNESS (m) 5.80E+00
SORPTION COEFFICIENT IN UNSAT ZONE (ml/g) 1.00E+01
OPTIONAL LOSS RATE CONSTANT FOR SOURCE (y**-1) 0.00E+00
INITIAL MASS OR ACTIVITY (mg or Ci) 1.12E+07
MOLECULAR WEIGHT (g/mole) 1.00E+00
SOLUBILITY LIMIT (mg/L) 1.00E+06
HALF-LIFE(S) OF CONTAMINANT AND PROGENY (y) 1.00E+38
BULK DENSITY OF AQUIFER (g/cm**3) 1.90E+00
POROSITY OF AQUIFER 1.00E-01
SORPTION COEFFICIENT(S) IN AQUIFER (ml/g) 1.00E+01
DISPERSIVITY X DIRECTION (m) 9.00E+00
DISPERSIVITY Y DIRECTION (m) 4.00E+00
PORE VELOCITY (m/y) 5.70E+02
WELL SCREEN THICKNESS (m) 1.50E+01
DISTANCE TO RECEPTOR ALONG X AXIS (m) 6.35E+01
DISTANCE TO RECEPTOR ALONG Y AXIS (m) 0.00E+00
LIMITING CONTAMINANT GW CONCENTRATION (mg/L) 6.00E-03
UNITS OF CONTAMINANT mg

LIMITING SOIL CONCENTRATION CALCULATION

>>> VALUES CALCULATED IN SOURCE SUBROUTINE

LEACH RATE CONSTANT (1/y) 2.2088E-04
UNSATURATED PORE VELOCITY (m/y) 2.4390E-01
DECAY CONSTANT(S) (1/y) 6.9315E-39
RETARDATION FACTOR(S) (SATURATED) 1.9100E+02
RETARDATION FACTOR (UNSATURATED) 4.7341E+01
SOLUBILITY LIMITED MASS (mg) 7.3021E+15
SOLUBILITY LIMITED ACTIVITY (Ci) 0.0000E+00
TRANSIT TIME IN UNSAT ZONE (years) 1.1258E+03
FRACTION DECAYED DURING UNSAT TRANSPORT 0.0000E+00

>>> EXPOSURE DATA FOR LIMITING SOIL CONCENTRATION

INTEGRATION TIME (years) 30
BODY WEIGHT (kg) 7.000E+01
AVERAGING TIME (days) 2.550E+04
WATER INTAKE RATE (L/d) 2.000E+00
EXPOSURE FREQUENCY (days/year) 3.500E+02
EXPOSURE DURATION (years) 3.000E+01
RADIOLOGICAL DOSE LIMIT (rem/y) 4.000E-03
CARCINOGENIC RISK CRITERIA 1.000E-04
HAZARD QUOTIENT 1.000E+00

>>> RESULTS OF CALCULATIONS

MAXIMUM NON RADIOLOGICAL CONTAMINANT CALCULATION
MAXIMUM CONCENTRATION 2.18E-05 mg/L
AVERAGE CONCENTRATION 2.18E-05 mg/L
PEAK TIME (y): 1.224791E+03
LIMITING SOIL CONCENTRATION (mg/m**3): 6.348E+04
LIMITING SOIL CONCENTRATION (mg/kg): 4.232E+01

LIMITING INVENTORY IN SOIL (mg): 3.082E+09

'Nickel Group 1'

GAUSSIAN QUADRATURE SOLUTION

MODEL OPTIONS

IMODE: 4

KFLAG: 1 (0) CONC VS TIME; (1) PEAK CONC AND LIMITING SOIL CONC

IMODEL:1 (1) SURF OR BURIED SOURCE; (2) POND SOURCE; (3) TABULATED SOURCE FUNCTION

>>> INPUT DATA

NUMBER OF RADIOACTIVE PROGENY	0
LENGTH OF SOURCE PARALLEL TO GW FLOW (m)	1.27E+02
WIDTH OF SOURCE PERPENDICULAR TO GW FLOW (m)	1.27E+02
THICKNESS OF SOURCE (m)	3.01E+00
PERCOLATION RATE (darcy vel m/y)	1.00E-01
VOLUMETRIC WATER CONTENT IN SOURCE	4.10E-01
VOLUMETRIC WATER CONTENT IN UNSATURATED ZONE	4.10E-01
BULK DENSITY AT SOURCE (g/cm**3)	1.50E+00
SORPTION COEFFICIENT AT SOURCE (ml/g)	1.00E+02
BULK DENSITY IN UNSAT ZONE (g/cm**3)	1.90E+00
UNSATURATED ZONE THICKNESS (m)	5.80E+00
SORPTION COEFFICIENT IN UNSAT ZONE (ml/g)	1.00E+01
OPTIONAL LOSS RATE CONSTANT FOR SOURCE (y**-1)	0.00E+00
INITIAL MASS OR ACTIVITY (mg or Ci)	1.65E+07
MOLECULAR WEIGHT (g/mole)	1.00E+00
SOLUBILITY LIMIT (mg/L)	1.00E+06
HALF-LIFE(S) OF CONTAMINANT AND PROGENY (y)	1.00E+38
BULK DENSITY OF AQUIFER (g/cm**3)	1.90E+00
POROSITY OF AQUIFER	1.00E-01
SORPTION COEFFICIENT(S) IN AQUIFER (ml/g)	1.00E+01
DISPERSIVITY X DIRECTION (m)	9.00E+00
DISPERSIVITY Y DIRECTION (m)	4.00E+00
PORE VELOCITY (m/y)	5.70E+02
WELL SCREEN THICKNESS (m)	1.50E+01
DISTANCE TO RECEPTOR ALONG X AXIS (m)	6.35E+01
DISTANCE TO RECEPTOR ALONG Y AXIS (m)	0.00E+00
LIMITING CONTAMINANT GW CONCENTRATION (mg/L)	6.00E-03
UNITS OF CONTAMINANT	mg

LIMITING SOIL CONCENTRATION CALCULATION

>>> VALUES CALCULATED IN SOURCE SUBROUTINE

LEACH RATE CONSTANT (1/y)	2.2088E-04
UNSATURATED PORE VELOCITY (m/y)	2.4390E-01
DECAY CONSTANT(S) (1/y)	6.9315E-39
RETARDATION FACTOR(S) (SATURATED)	1.9100E+02
RETARDATION FACTOR (UNSATURATED)	4.7341E+01
SOLUBILITY LIMITED MASS (mg)	7.3021E+15
SOLUBILITY LIMITED ACTIVITY (Ci)	0.0000E+00
TRANSIT TIME IN UNSAT ZONE (years)	1.1258E+03
FRACTION DECAYED DURING UNSAT TRANSPORT	0.0000E+00

>>> EXPOSURE DATA FOR LIMITING SOIL CONCENTRATION

INTEGRATION TIME (years)	30
BODY WEIGHT (kg)	7.000E+01
AVERAGING TIME (days)	2.550E+04
WATER INTAKE RATE (L/d)	2.000E+00
EXPOSURE FREQUENCY (days/year)	3.500E+02
EXPOSURE DURATION (years)	3.000E+01
RADIOLOGICAL DOSE LIMIT (rem/y)	4.000E-03
CARCINOGENIC RISK CRITERIA	1.000E-04
HAZARD QUOTIENT	1.000E+00

>>> RESULTS OF CALCULATIONS

MAXIMUM NON RADIOLOGICAL CONTAMINANT CALCULATION

MAXIMUM CONCENTRATION	3.21E-05 mg/L
AVERAGE CONCENTRATION	3.21E-05 mg/L
PEAK TIME (y):	1.224791E+03
LIMITING SOIL CONCENTRATION (mg/m**3):	6.348E+04
LIMITING SOIL CONCENTRATION (mg/kg):	4.232E+01

LIMITING INVENTORY IN SOIL (mg): 3.082E+09

'Silver Group 1'

GAUSSIAN QUADRATURE SOLUTION

MODEL OPTIONS

IMODE: 4

KFLAG: 1 (0) CONC VS TIME; (1) PEAK CONC AND LIMITING SOIL CONC

IMODEL: 1 (1) SURF OR BURIED SOURCE; (2) POND SOURCE; (3) TABULATED SOURCE FUNCTION

>>> INPUT DATA

NUMBER OF RADIOACTIVE PROGENY 0
LENGTH OF SOURCE PARALLEL TO GW FLOW (m) 1.27E+02
WIDTH OF SOURCE PERPENDICULAR TO GW FLOW (m) 1.27E+02
THICKNESS OF SOURCE (m) 3.01E+00
PERCOLATION RATE (darcy vel m/y) 1.00E-01
VOLUMETRIC WATER CONTENT IN SOURCE 4.10E-01
VOLUMETRIC WATER CONTENT IN UNSATURATED ZONE 4.10E-01
BULK DENSITY AT SOURCE (g/cm**3) 1.50E+00
SORPTION COEFFICIENT AT SOURCE (ml/g) 9.00E+01
BULK DENSITY IN UNSAT ZONE (g/cm**3) 1.90E+00
UNSATURATED ZONE THICKNESS (m) 5.80E+00
SORPTION COEFFICIENT IN UNSAT ZONE (ml/g) 9.00E+00
OPTIONAL LOSS RATE CONSTANT FOR SOURCE (y**-1) 0.00E+00
INITIAL MASS OR ACTIVITY (mg or Ci) 2.31E+06
MOLECULAR WEIGHT (g/mole) 1.00E+00
SOLUBILITY LIMIT (mg/L) 1.00E+06
HALF-LIFE(S) OF CONTAMINANT AND PROGENY (y) 1.00E+38
BULK DENSITY OF AQUIFER (g/cm**3) 1.90E+00
POROSITY OF AQUIFER 1.00E-01
SORPTION COEFFICIENT(S) IN AQUIFER (ml/g) 9.00E+00
DISPERSIVITY X DIRECTION (m) 9.00E+00
DISPERSIVITY Y DIRECTION (m) 4.00E+00
PORE VELOCITY (m/y) 5.70E+02
WELL SCREEN THICKNESS (m) 1.50E+01
DISTANCE TO RECEPTOR ALONG X AXIS (m) 6.35E+01
DISTANCE TO RECEPTOR ALONG Y AXIS (m) 0.00E+00
LIMITING CONTAMINANT GW CONCENTRATION (mg/L) 6.00E-03
UNITS OF CONTAMINANT mg

LIMITING SOIL CONCENTRATION CALCULATION

>>> VALUES CALCULATED IN SOURCE SUBROUTINE

LEACH RATE CONSTANT (1/y) 2.4535E-04
UNSATURATED PORE VELOCITY (m/y) 2.4390E-01
DECAY CONSTANT(S) (1/y) 6.9315E-39
RETARDATION FACTOR(S) (SATURATED) 1.7200E+02
RETARDATION FACTOR (UNSATURATED) 4.2707E+01
SOLUBILITY LIMITED MASS (mg) 6.5739E+15
SOLUBILITY LIMITED ACTIVITY (Ci) 0.0000E+00
TRANSIT TIME IN UNSAT ZONE (years) 1.0156E+03
FRACTION DECAYED DURING UNSAT TRANSPORT 0.0000E+00

>>> EXPOSURE DATA FOR LIMITING SOIL CONCENTRATION

INTEGRATION TIME (years) 30
BODY WEIGHT (kg) 7.000E+01
AVERAGING TIME (days) 2.550E+04
WATER INTAKE RATE (L/d) 2.000E+00
EXPOSURE FREQUENCY (days/year) 3.500E+02
EXPOSURE DURATION (years) 3.000E+01
RADIOLOGICAL DOSE LIMIT (rem/y) 4.000E-03
CARCINOGENIC RISK CRITERIA 1.000E-04
HAZARD QUOTIENT 1.000E+00

>>> RESULTS OF CALCULATIONS

MAXIMUM NON RADIOLOGICAL CONTAMINANT CALCULATION
MAXIMUM CONCENTRATION 5.00E-06 mg/L
AVERAGE CONCENTRATION 4.99E-06 mg/L
PEAK TIME (y): 1.104742E+03
LIMITING SOIL CONCENTRATION (mg/m**3): 5.716E+04
LIMITING SOIL CONCENTRATION (mg/kg): 3.810E+01

LIMITING INVENTORY IN SOIL (mg): 2.775E+09

'Sulfate Group 1'

GAUSSIAN QUADRATURE SOLUTION

MODEL OPTIONS

IMODE: 4

KFLAG: 1 (0) CONC VS TIME; (1) PEAK CONC AND LIMITING SOIL CONC

IMODEL: 1 (1) SURF OR BURIED SOURCE; (2) POND SOURCE; (3) TABULATED SOURCE FUNCTION

>>> INPUT DATA

NUMBER OF RADIOACTIVE PROGENY 0
LENGTH OF SOURCE PARALLEL TO GW FLOW (m) 1.27E+02
WIDTH OF SOURCE PERPENDICULAR TO GW FLOW (m) 1.27E+02
THICKNESS OF SOURCE (m) 3.01E+00
PERCOLATION RATE (darcy vel m/y) 1.00E-01
VOLUMETRIC WATER CONTENT IN SOURCE 4.10E-01
VOLUMETRIC WATER CONTENT IN UNSATURATED ZONE 4.10E-01
BULK DENSITY AT SOURCE (g/cm**3) 1.50E+00
SORPTION COEFFICIENT AT SOURCE (ml/g) 0.00E+00
BULK DENSITY IN UNSAT ZONE (g/cm**3) 1.90E+00
UNSATURATED ZONE THICKNESS (m) 5.80E+00
SORPTION COEFFICIENT IN UNSAT ZONE (ml/g) 0.00E+00
OPTIONAL LOSS RATE CONSTANT FOR SOURCE (y**-1) 0.00E+00
INITIAL MASS OR ACTIVITY (mg or Ci) 1.55E+04
MOLECULAR WEIGHT (g/mole) 1.00E+00
SOLUBILITY LIMIT (mg/L) 1.00E+06
HALF-LIFE(S) OF CONTAMINANT AND PROGENY (y) 1.00E+38
BULK DENSITY OF AQUIFER (g/cm**3) 1.90E+00
POROSITY OF AQUIFER 1.00E-01
SORPTION COEFFICIENT(S) IN AQUIFER (ml/g) 0.00E+00
DISPERSIVITY X DIRECTION (m) 9.00E+00
DISPERSIVITY Y DIRECTION (m) 4.00E+00
PORE VELOCITY (m/y) 5.70E+02
WELL SCREEN THICKNESS (m) 1.50E+01
DISTANCE TO RECEPTOR ALONG X AXIS (m) 6.35E+01
DISTANCE TO RECEPTOR ALONG Y AXIS (m) 0.00E+00
LIMITING CONTAMINANT GW CONCENTRATION (mg/L) 6.00E-03
UNITS OF CONTAMINANT mg

LIMITING SOIL CONCENTRATION CALCULATION

>>> VALUES CALCULATED IN SOURCE SUBROUTINE

LEACH RATE CONSTANT (1/y) 8.1031E-02
UNSATURATED PORE VELOCITY (m/y) 2.4390E-01
DECAY CONSTANT(S) (1/y) 6.9315E-39
RETARDATION FACTOR(S) (SATURATED) 1.0000E+00
RETARDATION FACTOR (UNSATURATED) 1.0000E+00
SOLUBILITY LIMITED MASS (mg) 1.9905E+13
SOLUBILITY LIMITED ACTIVITY (Ci) 0.0000E+00
TRANSIT TIME IN UNSAT ZONE (years) 2.3780E+01
FRACTION DECAYED DURING UNSAT TRANSPORT 0.0000E+00

>>> EXPOSURE DATA FOR LIMITING SOIL CONCENTRATION

INTEGRATION TIME (years) 30
BODY WEIGHT (kg) 7.000E+01
AVERAGING TIME (days) 2.550E+04
WATER INTAKE RATE (L/d) 2.000E+00
EXPOSURE FREQUENCY (days/year) 3.500E+02
EXPOSURE DURATION (years) 3.000E+01
RADIOLOGICAL DOSE LIMIT (rem/y) 4.000E-03
CARCINOGENIC RISK CRITERIA 1.000E-04
HAZARD QUOTIENT 1.000E+00

>>> RESULTS OF CALCULATIONS

MAXIMUM NON RADIOLOGICAL CONTAMINANT CALCULATION
MAXIMUM CONCENTRATION 1.09E-05 mg/L
AVERAGE CONCENTRATION 4.23E-06 mg/L
PEAK TIME (y): 2.425002E+01
LIMITING SOIL CONCENTRATION (mg/m**3): 4.532E+02
LIMITING SOIL CONCENTRATION (mg/kg): 3.021E-01

LIMITING INVENTORY IN SOIL (mg): 2.200E+07

'Thallium Group 1'

GAUSSIAN QUADRATURE SOLUTION

MODEL OPTIONS

IMODE: 4

KFLAG: 1 (0) CONC VS TIME; (1) PEAK CONC AND LIMITING SOIL CONC

IMODEL: 1 (1) SURF OR BURIED SOURCE; (2) POND SOURCE; (3) TABULATED SOURCE FUNCTION

>>> INPUT DATA

NUMBER OF RADIOACTIVE PROGENY 0
LENGTH OF SOURCE PARALLEL TO GW FLOW (m) 1.27E+02
WIDTH OF SOURCE PERPENDICULAR TO GW FLOW (m) 1.27E+02
THICKNESS OF SOURCE (m) 3.01E+00
PERCOLATION RATE (darcy vel m/y) 1.00E-01
VOLUMETRIC WATER CONTENT IN SOURCE 4.10E-01
VOLUMETRIC WATER CONTENT IN UNSATURATED ZONE 4.10E-01
BULK DENSITY AT SOURCE (g/cm**3) 1.50E+00
SORPTION COEFFICIENT AT SOURCE (ml/g) 0.00E+00
BULK DENSITY IN UNSAT ZONE (g/cm**3) 1.90E+00
UNSATURATED ZONE THICKNESS (m) 5.80E+00
SORPTION COEFFICIENT IN UNSAT ZONE (ml/g) 0.00E+00
OPTIONAL LOSS RATE CONSTANT FOR SOURCE (y**-1) 0.00E+00
INITIAL MASS OR ACTIVITY (mg or Ci) 9.10E+06
MOLECULAR WEIGHT (g/mole) 1.00E+00
SOLUBILITY LIMIT (mg/L) 1.00E+06
HALF-LIFE(S) OF CONTAMINANT AND PROGENY (y) 1.00E+38
BULK DENSITY OF AQUIFER (g/cm**3) 1.90E+00
POROSITY OF AQUIFER 1.00E-01
SORPTION COEFFICIENT(S) IN AQUIFER (ml/g) 0.00E+00
DISPERSIVITY X DIRECTION (m) 9.00E+00
DISPERSIVITY Y DIRECTION (m) 4.00E+00
PORE VELOCITY (m/y) 5.70E+02
WELL SCREEN THICKNESS (m) 1.50E+01
DISTANCE TO RECEPTOR ALONG X AXIS (m) 6.35E+01
DISTANCE TO RECEPTOR ALONG Y AXIS (m) 0.00E+00
LIMITING CONTAMINANT GW CONCENTRATION (mg/L) 6.00E-03
UNITS OF CONTAMINANT mg

LIMITING SOIL CONCENTRATION CALCULATION

>>> VALUES CALCULATED IN SOURCE SUBROUTINE

LEACH RATE CONSTANT (1/y) 8.1031E-02
UNSATURATED PORE VELOCITY (m/y) 2.4390E-01
DECAY CONSTANT(S) (1/y) 6.9315E-39
RETARDATION FACTOR(S) (SATURATED) 1.0000E+00
RETARDATION FACTOR (UNSATURATED) 1.0000E+00
SOLUBILITY LIMITED MASS (mg) 1.9905E+13
SOLUBILITY LIMITED ACTIVITY (Ci) 0.0000E+00
TRANSIT TIME IN UNSAT ZONE (years) 2.3780E+01
FRACTION DECAYED DURING UNSAT TRANSPORT 0.0000E+00

>>> EXPOSURE DATA FOR LIMITING SOIL CONCENTRATION

INTEGRATION TIME (years) 30
BODY WEIGHT (kg) 7.000E+01
AVERAGING TIME (days) 2.550E+04
WATER INTAKE RATE (L/d) 2.000E+00
EXPOSURE FREQUENCY (days/year) 3.500E+02
EXPOSURE DURATION (years) 3.000E+01
RADIOLOGICAL DOSE LIMIT (rem/y) 4.000E-03
CARCINOGENIC RISK CRITERIA 1.000E-04
HAZARD QUOTIENT 1.000E+00

>>> RESULTS OF CALCULATIONS

MAXIMUM NON RADIOLOGICAL CONTAMINANT CALCULATION
MAXIMUM CONCENTRATION 6.42E-03 mg/L
AVERAGE CONCENTRATION 2.48E-03 mg/L
PEAK TIME (y): 2.425002E+01
LIMITING SOIL CONCENTRATION (mg/m**3): 4.532E+02
LIMITING SOIL CONCENTRATION (mg/kg): 3.021E-01

LIMITING INVENTORY IN SOIL (mg): 2.200E+07

'Ag-108m Group 1'

GAUSSIAN QUADRATURE SOLUTION

MODEL OPTIONS

IMODE: 3

KFLAG: 1 (0)CONC VS TIME; (1)PEAK CONC AND LIMITING SOIL CONC

IMODEL:1 (1) SURF OR BURIED SOURCE; (2) POND SOURCE; (3) TABULATED SOURCE FUNCTION

>>> INPUT DATA

NUMBER OF RADIOACTIVE PROGENY 0
LENGTH OF SOURCE PARALLEL TO GW FLOW (m) 1.27E+02
WIDTH OF SOURCE PERPENDICULAR TO GW FLOW (m) 1.27E+02
THICKNESS OF SOURCE (m) 3.01E+00
PERCOLATION RATE (darcy vel m/y) 1.00E-01
VOLUMETRIC WATER CONTENT IN SOURCE 4.10E-01
VOLUMETRIC WATER CONTENT IN UNSATURATED ZONE 4.10E-01
BULK DENSITY AT SOURCE (g/cm**3) 1.50E+00
SORPTION COEFFICIENT AT SOURCE (ml/g) 9.00E+01
BULK DENSITY IN UNSAT ZONE (g/cm**3) 1.90E+00
UNSATURATED ZONE THICKNESS (m) 5.80E+00
SORPTION COEFFICIENT IN UNSAT ZONE (ml/g) 9.00E+00
OPTIONAL LOSS RATE CONSTANT FOR SOURCE (y**-1) 0.00E+00
INITIAL MASS OR ACTIVITY (mg or Ci) 1.20E-09
MOLECULAR WEIGHT (g/mole) 1.00E+00
SOLUBILITY LIMIT (mg/L) 1.00E+06
HALF-LIFE(S) OF CONTAMINANT AND PROGENY (y) 1.00E+38
BULK DENSITY OF AQUIFER (g/cm**3) 1.90E+00
POROSITY OF AQUIFER 1.00E-01
SORPTION COEFFICIENT(S) IN AQUIFER (ml/g) 9.00E+00
DISPERSIVITY X DIRECTION (m) 9.00E+00
DISPERSIVITY Y DIRECTION (m) 4.00E+00
PORE VELOCITY (m/y) 5.70E+02
WELL SCREEN THICKNESS (m) 1.50E+01
DISTANCE TO RECEPTOR ALONG X AXIS (m) 6.35E+01
DISTANCE TO RECEPTOR ALONG Y AXIS (m) 0.00E+00
LIMITING RADIONUCLIDE GW CONCENTRATION (Ci/L) 6.00E-03
UNITS OF CONTAMINANT Ci

LIMITING SOIL CONCENTRATION CALCULATION

>>> INITIAL ACTIVITY CONVERTED TO MASS (mg) 3.35E+26

>>> VALUES CALCULATED IN SOURCE SUBROUTINE

LEACH RATE CONSTANT (1/y) 2.4535E-04
UNSATURATED PORE VELOCITY (m/y) 2.4390E-01
DECAY CONSTANT(S) (1/y) 6.9315E-39
RETARDATION FACTOR(S) (SATURATED) 1.7200E+02
RETARDATION FACTOR (UNSATURATED) 4.2707E+01
SOLUBILITY LIMITED MASS (mg) 6.5739E+15
SOLUBILITY LIMITED ACTIVITY (Ci) 2.3521E-20
TRANSIT TIME IN UNSAT ZONE (years) 1.0156E+03
FRACTION DECAYED DURING UNSAT TRANSPORT 0.0000E+00

>>> EXPOSURE DATA FOR LIMITING SOIL CONCENTRATION

INTEGRATION TIME (years) 30
BODY WEIGHT (kg) 7.000E+01
AVERAGING TIME (days) 2.550E+04
WATER INTAKE RATE (L/d) 2.000E+00
EXPOSURE FREQUENCY (days/year) 3.500E+02
EXPOSURE DURATION (years) 3.000E+01
RADIOLOGICAL DOSE LIMIT (rem/y) 4.000E-03
CARCINOGENIC RISK CRITERIA 1.000E-04
HAZARD QUOTIENT 1.000E+00

>>> RESULTS OF CALCULATIONS

MAXIMUM RADIONUCLIDE CONCENTRATION LIMIT CALCULATION

LIMITING PARENT GW CONCENTRATION ADJUSTED FOR PROGENY = 6.00E-03 Ci/L

MAXIMUM GW CONCENTRATION FOR MBR #1: 2.60E-21 Ci/L

AVERAGE GW CONCENTRATION FOR MBR #1: 2.59E-21 Ci/L

PEAK TIME (y): 1.104742E+03

LIMITING SOIL CONCENTRATION (Ci/m**3):	5.716E+04
LIMITING SOIL CONCENTRATION (Ci/kg):	3.810E+01
LIMITING INVENTORY IN SOIL (Ci):	2.775E+09
LIMITING INVENTORY IN SOIL (mg):	7.755E+44
SPECIFIC ACTIVITY (Ci/g):	3.578E-33

'Am-241 Group 1'

GAUSSIAN QUADRATURE SOLUTION

MODEL OPTIONS

IMODE: 3

KFLAG: 1 (0) CONC VS TIME; (1) PEAK CONC AND LIMITING SOIL CONC

IMODEL: 1 (1) SURF OR BURIED SOURCE; (2) POND SOURCE; (3) TABULATED SOURCE FUNCTION

>>> INPUT DATA

NUMBER OF RADIOACTIVE PROGENY	0
LENGTH OF SOURCE PARALLEL TO GW FLOW (m)	1.27E+02
WIDTH OF SOURCE PERPENDICULAR TO GW FLOW (m)	1.27E+02
THICKNESS OF SOURCE (m)	3.01E+00
PERCOLATION RATE (darcy vel m/y)	1.00E-01
VOLUMETRIC WATER CONTENT IN SOURCE	4.10E-01
VOLUMETRIC WATER CONTENT IN UNSATURATED ZONE	4.10E-01
BULK DENSITY AT SOURCE (g/cm**3)	1.50E+00
SORPTION COEFFICIENT AT SOURCE (ml/g)	3.40E+02
BULK DENSITY IN UNSAT ZONE (g/cm**3)	1.90E+00
UNSATURATED ZONE THICKNESS (m)	5.80E+00
SORPTION COEFFICIENT IN UNSAT ZONE (ml/g)	3.40E+01
OPTIONAL LOSS RATE CONSTANT FOR SOURCE (y**-1)	0.00E+00
INITIAL MASS OR ACTIVITY (mg or Ci)	3.49E-07
MOLECULAR WEIGHT (g/mole)	1.00E+00
SOLUBILITY LIMIT (mg/L)	1.00E+06
HALF-LIFE(S) OF CONTAMINANT AND PROGENY (y)	1.00E+38
BULK DENSITY OF AQUIFER (g/cm**3)	1.90E+00
POROSITY OF AQUIFER	1.00E-01
SORPTION COEFFICIENT(S) IN AQUIFER (ml/g)	3.40E+01
DISPERSIVITY X DIRECTION (m)	9.00E+00
DISPERSIVITY Y DIRECTION (m)	4.00E+00
PORE VELOCITY (m/y)	5.70E+02
WELL SCREEN THICKNESS (m)	1.50E+01
DISTANCE TO RECEPTOR ALONG X AXIS (m)	6.35E+01
DISTANCE TO RECEPTOR ALONG Y AXIS (m)	0.00E+00
LIMITING RADIONUCLIDE GW CONCENTRATION (Ci/L)	6.00E-03
UNITS OF CONTAMINANT	Ci

LIMITING SOIL CONCENTRATION CALCULATION

>>> INITIAL ACTIVITY CONVERTED TO MASS (mg) 9.75E+28

>>> VALUES CALCULATED IN SOURCE SUBROUTINE

LEACH RATE CONSTANT (1/y)	6.5090E-05
UNSATURATED PORE VELOCITY (m/y)	2.4390E-01
DECAY CONSTANT(S) (1/y)	6.9315E-39
RETARDATION FACTOR(S) (SATURATED)	6.4700E+02
RETARDATION FACTOR (UNSATURATED)	1.5856E+02
SOLUBILITY LIMITED MASS (mg)	2.4780E+16
SOLUBILITY LIMITED ACTIVITY (Ci)	8.8659E-20
TRANSIT TIME IN UNSAT ZONE (years)	3.7706E+03
FRACTION DECAYED DURING UNSAT TRANSPORT	0.0000E+00

>>> EXPOSURE DATA FOR LIMITING SOIL CONCENTRATION

INTEGRATION TIME (years)	30
BODY WEIGHT (kg)	7.000E+01
AVERAGING TIME (days)	2.550E+04
WATER INTAKE RATE (L/d)	2.000E+00
EXPOSURE FREQUENCY (days/year)	3.500E+02
EXPOSURE DURATION (years)	3.000E+01
RADIOLOGICAL DOSE LIMIT (rem/y)	4.000E-03
CARCINOGENIC RISK CRITERIA	1.000E-04
HAZARD QUOTIENT	1.000E+00

>>> RESULTS OF CALCULATIONS

MAXIMUM RADIONUCLIDE CONCENTRATION LIMIT CALCULATION
LIMITING PARENT GW CONCENTRATION ADJUSTED FOR PROGENY = 6.00E-03 Ci/L
MAXIMUM GW CONCENTRATION FOR MBR #1: 2.00E-19 Ci/L
AVERAGE GW CONCENTRATION FOR MBR #1: 2.00E-19 Ci/L
PEAK TIME (y): 4.106072E+03

LIMITING SOIL CONCENTRATION (Ci/m**3):	2.153E+05
LIMITING SOIL CONCENTRATION (Ci/kg):	1.435E+02
LIMITING INVENTORY IN SOIL (Ci):	1.045E+10
LIMITING INVENTORY IN SOIL (mg):	2.921E+45
SPECIFIC ACTIVITY (Ci/g):	3.578E-33

'Co-60 Group 1'

GAUSSIAN QUADRATURE SOLUTION

MODEL OPTIONS

IMODE: 3

KFLAG: 1 (0)CONC VS TIME; (1)PEAK CONC AND LIMITING SOIL CONC

IMODEL:1 (1) SURF OR BURIED SOURCE; (2)POND SOURCE; (3) TABULATED SOURCE FUNCTION

>>> INPUT DATA

NUMBER OF RADIOACTIVE PROGENY 0
LENGTH OF SOURCE PARALLEL TO GW FLOW (m) 1.27E+02
WIDTH OF SOURCE PERPENDICULAR TO GW FLOW (m) 1.27E+02
THICKNESS OF SOURCE (m) 3.01E+00
PERCOLATION RATE (darcy vel m/y) 1.00E-01
VOLUMETRIC WATER CONTENT IN SOURCE 4.10E-01
VOLUMETRIC WATER CONTENT IN UNSATURATED ZONE 4.10E-01
BULK DENSITY AT SOURCE (g/cm**3) 1.50E+00
SORPTION COEFFICIENT AT SOURCE (ml/g) 1.00E+01
BULK DENSITY IN UNSAT ZONE (g/cm**3) 1.90E+00
UNSATURATED ZONE THICKNESS (m) 5.80E+00
SORPTION COEFFICIENT IN UNSAT ZONE (ml/g) 1.00E+00
OPTIONAL LOSS RATE CONSTANT FOR SOURCE (y**-1) 0.00E+00
INITIAL MASS OR ACTIVITY (mg or Ci) 3.43E-07
MOLECULAR WEIGHT (g/mole) 1.00E+00
SOLUBILITY LIMIT (mg/L) 1.00E+06
HALF-LIFE(S) OF CONTAMINANT AND PROGENY (y) 1.00E+38
BULK DENSITY OF AQUIFER (g/cm**3) 1.90E+00
POROSITY OF AQUIFER 1.00E-01
SORPTION COEFFICIENT(S) IN AQUIFER (ml/g) 1.00E+00
DISPERSIVITY X DIRECTION (m) 9.00E+00
DISPERSIVITY Y DIRECTION (m) 4.00E+00
PORE VELOCITY (m/y) 5.70E+02
WELL SCREEN THICKNESS (m) 1.50E+01
DISTANCE TO RECEPTOR ALONG X AXIS (m) 6.35E+01
DISTANCE TO RECEPTOR ALONG Y AXIS (m) 0.00E+00
LIMITING RADIONUCLIDE GW CONCENTRATION (Ci/L) 6.00E-03
UNITS OF CONTAMINANT Ci

LIMITING SOIL CONCENTRATION CALCULATION

>>> INITIAL ACTIVITY CONVERTED TO MASS (mg) 9.59E+28

>>> VALUES CALCULATED IN SOURCE SUBROUTINE

LEACH RATE CONSTANT (1/y) 2.1559E-03
UNSATURATED PORE VELOCITY (m/y) 2.4390E-01
DECAY CONSTANT(S) (1/y) 6.9315E-39
RETARDATION FACTOR(S) (SATURATED) 2.0000E+01
RETARDATION FACTOR (UNSATURATED) 5.6341E+00
SOLUBILITY LIMITED MASS (mg) 7.4813E+14
SOLUBILITY LIMITED ACTIVITY (Ci) 2.6767E-21
TRANSIT TIME IN UNSAT ZONE (years) 1.3398E+02
FRACTION DECAYED DURING UNSAT TRANSPORT 0.0000E+00

>>> EXPOSURE DATA FOR LIMITING SOIL CONCENTRATION

INTEGRATION TIME (years) 30
BODY WEIGHT (kg) 7.000E+01
AVERAGING TIME (days) 2.550E+04
WATER INTAKE RATE (L/d) 2.000E+00
EXPOSURE FREQUENCY (days/year) 3.500E+02
EXPOSURE DURATION (years) 3.000E+01
RADIOLOGICAL DOSE LIMIT (rem/y) 4.000E-03
CARCINOGENIC RISK CRITERIA 1.000E-04
HAZARD QUOTIENT 1.000E+00

>>> RESULTS OF CALCULATIONS

MAXIMUM RADIONUCLIDE CONCENTRATION LIMIT CALCULATION

LIMITING PARENT GW CONCENTRATION ADJUSTED FOR PROGENY = 6.00E-03 Ci/L

MAXIMUM GW CONCENTRATION FOR MBR #1: 6.52E-18 Ci/L

AVERAGE GW CONCENTRATION FOR MBR #1: 5.85E-18 Ci/L

PEAK TIME (y): 1.443141E+02

LIMITING SOIL CONCENTRATION (Ci/m**3):	7.244E+03
LIMITING SOIL CONCENTRATION (Ci/kg):	4.829E+00
LIMITING INVENTORY IN SOIL (Ci):	3.517E+08
LIMITING INVENTORY IN SOIL (mg):	9.829E+43
SPECIFIC ACTIVITY (Ci/g):	3.578E-33

'Cs-134 Group 1'

GAUSSIAN QUADRATURE SOLUTION

MODEL OPTIONS

IMODE: 3

KFLAG: 1 (0) CONC VS TIME; (1) PEAK CONC AND LIMITING SOIL CONC

IMODEL: 1 (1) SURF OR BURIED SOURCE; (2) POND SOURCE; (3) TABULATED SOURCE FUNCTION

>>> INPUT DATA

NUMBER OF RADIOACTIVE PROGENY 0
LENGTH OF SOURCE PARALLEL TO GW FLOW (m) 1.27E+02
WIDTH OF SOURCE PERPENDICULAR TO GW FLOW (m) 1.27E+02
THICKNESS OF SOURCE (m) 3.01E+00
PERCOLATION RATE (darcy vel m/y) 1.00E-01
VOLUMETRIC WATER CONTENT IN SOURCE 4.10E-01
VOLUMETRIC WATER CONTENT IN UNSATURATED ZONE 4.10E-01
BULK DENSITY AT SOURCE (g/cm**3) 1.50E+00
SORPTION COEFFICIENT AT SOURCE (ml/g) 5.00E+02
BULK DENSITY IN UNSAT ZONE (g/cm**3) 1.90E+00
UNSATURATED ZONE THICKNESS (m) 5.80E+00
SORPTION COEFFICIENT IN UNSAT ZONE (ml/g) 5.00E+01
OPTIONAL LOSS RATE CONSTANT FOR SOURCE (y**-1) 0.00E+00
INITIAL MASS OR ACTIVITY (mg or Ci) 2.77E-09
MOLECULAR WEIGHT (g/mole) 1.00E+00
SOLUBILITY LIMIT (mg/L) 1.00E+06
HALF-LIFE(S) OF CONTAMINANT AND PROGENY (y) 1.00E+38
BULK DENSITY OF AQUIFER (g/cm**3) 1.90E+00
POROSITY OF AQUIFER 1.00E-01
SORPTION COEFFICIENT(S) IN AQUIFER (ml/g) 5.00E+01
DISPERSIVITY X DIRECTION (m) 9.00E+00
DISPERSIVITY Y DIRECTION (m) 4.00E+00
PORE VELOCITY (m/y) 5.70E+02
WELL SCREEN THICKNESS (m) 1.50E+01
DISTANCE TO RECEPTOR ALONG X AXIS (m) 6.35E+01
DISTANCE TO RECEPTOR ALONG Y AXIS (m) 0.00E+00
LIMITING RADIONUCLIDE GW CONCENTRATION (Ci/L) 6.00E-03
UNITS OF CONTAMINANT Ci

LIMITING SOIL CONCENTRATION CALCULATION

>>> INITIAL ACTIVITY CONVERTED TO MASS (mg) 7.74E+26

>>> VALUES CALCULATED IN SOURCE SUBROUTINE

LEACH RATE CONSTANT (1/y) 4.4273E-05
UNSATURATED PORE VELOCITY (m/y) 2.4390E-01
DECAY CONSTANT(S) (1/y) 6.9315E-39
RETARDATION FACTOR(S) (SATURATED) 9.5100E+02
RETARDATION FACTOR (UNSATURATED) 2.3271E+02
SOLUBILITY LIMITED MASS (mg) 3.6431E+16
SOLUBILITY LIMITED ACTIVITY (Ci) 1.3035E-19
TRANSIT TIME IN UNSAT ZONE (years) 5.5338E+03
FRACTION DECAYED DURING UNSAT TRANSPORT 0.0000E+00

>>> EXPOSURE DATA FOR LIMITING SOIL CONCENTRATION

INTEGRATION TIME (years) 30
BODY WEIGHT (kg) 7.000E+01
AVERAGING TIME (days) 2.550E+04
WATER INTAKE RATE (L/d) 2.000E+00
EXPOSURE FREQUENCY (days/year) 3.500E+02
EXPOSURE DURATION (years) 3.000E+01
RADIOLOGICAL DOSE LIMIT (rem/y) 4.000E-03
CARCINOGENIC RISK CRITERIA 1.000E-04
HAZARD QUOTIENT 1.000E+00

>>> RESULTS OF CALCULATIONS

MAXIMUM RADIONUCLIDE CONCENTRATION LIMIT CALCULATION

LIMITING PARENT GW CONCENTRATION ADJUSTED FOR PROGENY = 6.00E-03 Ci/L

MAXIMUM GW CONCENTRATION FOR MBR #1: 1.08E-21 Ci/L

AVERAGE GW CONCENTRATION FOR MBR #1: 1.08E-21 Ci/L

PEAK TIME (y): 6.026907E+03

LIMITING SOIL CONCENTRATION (Ci/m**3):	3.165E+05
LIMITING SOIL CONCENTRATION (Ci/kg):	2.110E+02
LIMITING INVENTORY IN SOIL (Ci):	1.536E+10
LIMITING INVENTORY IN SOIL (mg):	4.294E+45
SPECIFIC ACTIVITY (Ci/g):	3.578E-33

'Ca-134 Group 1'

GAUSSIAN QUADRATURE SOLUTION

MODEL OPTIONS

IMODE: 3

KFLAG: 1 (0) CONC VS TIME; (1) PEAK CONC AND LIMITING SOIL CONC

IMODEL: 1 (1) SURF OR BURIED SOURCE; (2) POND SOURCE; (3) TABULATED SOURCE FUNCTION

>>> INPUT DATA

NUMBER OF RADIOACTIVE PROGENY	0
LENGTH OF SOURCE PARALLEL TO GW FLOW (m)	1.27E+02
WIDTH OF SOURCE PERPENDICULAR TO GW FLOW (m)	1.27E+02
THICKNESS OF SOURCE (m)	3.01E+00
PERCOLATION RATE (darcy vel m/y)	1.00E-01
VOLUMETRIC WATER CONTENT IN SOURCE	4.10E-01
VOLUMETRIC WATER CONTENT IN UNSATURATED ZONE	4.10E-01
BULK DENSITY AT SOURCE (g/cm**3)	1.50E+00
SORPTION COEFFICIENT AT SOURCE (ml/g)	5.00E+02
BULK DENSITY IN UNSAT ZONE (g/cm**3)	1.90E+00
UNSATURATED ZONE THICKNESS (m)	5.80E+00
SORPTION COEFFICIENT IN UNSAT ZONE (ml/g)	5.00E+01
OPTIONAL LOSS RATE CONSTANT FOR SOURCE (y**-1)	0.00E+00
INITIAL MASS OR ACTIVITY (mg or Ci)	2.77E-09
MOLECULAR WEIGHT (g/mole)	1.00E+00
SOLUBILITY LIMIT (mg/L)	1.00E+06
HALF-LIFE(S) OF CONTAMINANT AND PROGENY (y)	1.00E+38
BULK DENSITY OF AQUIFER (g/cm**3)	1.90E+00
POROSITY OF AQUIFER	1.00E-01
SORPTION COEFFICIENT(S) IN AQUIFER (ml/g)	5.00E+01
DISPERSIVITY X DIRECTION (m)	9.00E+00
DISPERSIVITY Y DIRECTION (m)	4.00E+00
PORE VELOCITY (m/y)	5.70E+02
WELL SCREEN THICKNESS (m)	1.50E+01
DISTANCE TO RECEPTOR ALONG X AXIS (m)	6.35E+01
DISTANCE TO RECEPTOR ALONG Y AXIS (m)	0.00E+00
LIMITING RADIONUCLIDE GW CONCENTRATION (Ci/L)	6.00E-03
UNITS OF CONTAMINANT	Ci

LIMITING SOIL CONCENTRATION CALCULATION

>>> INITIAL ACTIVITY CONVERTED TO MASS (mg) 7.74E+26

>>> VALUES CALCULATED IN SOURCE SUBROUTINE

LEACH RATE CONSTANT (1/y)	4.4273E-05
UNSATURATED PORE VELOCITY (m/y)	2.4390E-01
DECAY CONSTANT(S) (1/y)	6.9315E-39
RETARDATION FACTOR(S) (SATURATED)	9.5100E+02
RETARDATION FACTOR (UNSATURATED)	2.3271E+02
SOLUBILITY LIMITED MASS (mg)	3.6431E+16
SOLUBILITY LIMITED ACTIVITY (Ci)	1.3035E-19
TRANSIT TIME IN UNSAT ZONE (years)	5.5338E+03
FRACTION DECAYED DURING UNSAT TRANSPORT	0.0000E+00

>>> EXPOSURE DATA FOR LIMITING SOIL CONCENTRATION

INTEGRATION TIME (years)	30
BODY WEIGHT (kg)	7.000E+01
AVERAGING TIME (days)	2.550E+04
WATER INTAKE RATE (L/d)	2.000E+00
EXPOSURE FREQUENCY (days/year)	3.500E+02
EXPOSURE DURATION (years)	3.000E+01
RADIOLOGICAL DOSE LIMIT (rem/y)	4.000E-03
CARCINOGENIC RISK CRITERIA	1.000E-04
HAZARD QUOTIENT	1.000E+00

>>> RESULTS OF CALCULATIONS

MAXIMUM RADIONUCLIDE CONCENTRATION LIMIT CALCULATION

LIMITING PARENT GW CONCENTRATION ADJUSTED FOR PROGENY = 6.00E-03 Ci/L

MAXIMUM GW CONCENTRATION FOR MBR #1: 1.08E-21 Ci/L

AVERAGE GW CONCENTRATION FOR MBR #1: 1.08E-21 Ci/L

PEAK TIME (y): 6.026907E+03

LIMITING SOIL CONCENTRATION (Ci/m**3):	3.165E+05
LIMITING SOIL CONCENTRATION (Ci/kg):	2.110E+02
LIMITING INVENTORY IN SOIL (Ci):	1.536E+10
LIMITING INVENTORY IN SOIL (mg):	4.294E+45
SPECIFIC ACTIVITY (Ci/g):	3.578E-33