INSTRUCTIONS FOR TABLE 4

VALUES USED FOR DAILY INTAKE CALCULATIONS

PURPOSE OF THE TABLE: • To provide the exposure parameters used for intake calculations for each Exposure Pathway (Scenario Timeframe, Medium, Exposure Medium, Exposure Point, Receptor Population, Receptor Age, and Exposure Route) • To provide the intake equations or models used for each Exposure Route/Pathway.	
INFORMATION DOCUMENTED: • Values used for each intake equation for each Exposure Pathway and the reference/rationale for each • Intake equation or model used to calculate the intake for each Exposure Pathway.	
TABLE NUMBERING AND SUMMARY BOX INSTRUCTIONS: • Follow the instructions below to create separate sets of Table 4 for RME and CT where appropriate. • Complete one copy of Table 4 for each unique combination of the following three fields that will be quantitatively evaluated: Scenario Timeframe, Medium, and Exposure Medium. • Enter each combination of these three fields in the Summary Box in the upper left corner of the table. • Number each table uniquely, beginning with 4.1 and ending with 4.n, where "n" represents the total number of combinations of the three key fields. • Add the line "Reasonable Maximum Exposure" or "Central Tendency" to the table title. Add the extension .RME or .CT to the table number to the line indicate reasonable maximum exposure or central tendency.	***Information regarding intake calculations is specific to an Exposure Pathway. Thus, the Summary Box contains the first three identifiers used to specify an exposure pathway: Scenario Timeframe, Medium, and Exposure Medium.*** ***It is possible that some tables may contain the same data associated with different descriptions in the Summary Box in the upper left corner.*** ***Separate tables may be necessary to ensure transparency in data presentation for each Exposure Pathway. Replication of information is readily accomplished using spreadsheet software.*** ***Consult the EPA risk assessor for alternatives (e.g., footnotes) to preparing multiple tables with the same data.***
HOW TO COMPLETE/INTERPRET THE TABLE	
SUMMARY BOX IN UPPER LEFT CORNER	
Row 1 - Scenario Timeframe	
Definition: • The time period (current and/or future) being considered for the Exposure Pathway.	

INSTRUCTIONS FOR TABLE 4

VALUES USED FOR DAILY INTAKE CALCULATIONS (continued)

Instructions: • Choose from the picklist to the right.	***Current*** ***Future*** ***Current/Future*** ***Not Documented***

INSTRUCTIONS FOR TABLE 4

VALUES USED FOR DAILY INTAKE CALCULATIONS (continued)

Row 2 - Medium	
Definition: • The substance (e.g., air, water, soil) that is a potential source of contaminants in the Exposure Medium. (The Medium will sometimes = the Exposure Medium.) Usually, the Medium is that targeted for possible remediation. .	
Instructions: • Choose from the picklist to the right.	***Groundwater*** ***Leachate*** ***Sediment*** ***Sludge*** ***Soil*** ***Surface Water*** ***Debris*** ***Other*** ***Liquid Waste*** ***Solid Waste*** ***Air*** ***Surface Soil*** ***Subsurface Soil***
Row 3 - Exposure Medium	
Definition: • The contaminated environmental medium to which an individual may be exposed. Includes the transfer of contaminants from one Medium to another. ***For example:*** ***1) Contaminants in Groundwater (the Medium) remain in Groundwater (the Exposure Medium) and are available for exposure to receptors.*** ***2) Contaminants in Groundwater (the Medium) may be transferred to Air (the Exposure Medium) and are available for exposure to receptors.*** ***3) Contaminants in Sediment (the Medium) may be transferred to Fish Tissue (the Exposure Medium) and are available for exposure to receptors.***	

INSTRUCTIONS FOR TABLE 4

VALUES USED FOR DAILY INTAKE CALCULATIONS (continued)

Instructions: • Choose from the picklist to the right.	***Groundwater*** ***Leachate*** ***Sediment*** ***Sludge*** ***Soil*** ***Surface Water*** ***Debris*** ***Other*** ***Liquid Waste*** ***Solid Waste*** ***Air*** ***Plant Tissue*** ***Animal Tissue*** ***Fish Tissue*** ***Spring Water*** ***Surface Soil*** ***Subsurface Soil*** ***Particulates*** ***Vapors***

INSTRUCTIONS FOR TABLE 4

VALUES USED FOR DAILY INTAKE CALCULATIONS (continued)

BODY OF THE TABLE	
Column 1 - Exposure Route	
Definition: • The way a chemical or radionuclide comes in contact with a person (e.g., by ingestion, inhalation, dermal contact).	
Instructions: • Choose from the picklist to the right.	***Inhalation*** ***Ingestion*** ***Combined (***i.e., Inhalation and Ingestion) ***Dermal*** ***Not Documented*** ***External (Radiation)***
Column 2 - Receptor Population	
Definition: • The exposed individual relative to the Exposure Pathway considered.	***For example, a resident (Receptor Population) who drinks contaminated groundwater.***
Instructions: • Choose from the picklist to the right.	***Resident*** ***Industrial Worker*** ***Commercial Worker*** ***Construction Worker*** ***Other Worker*** ***Golfer*** ***Jogger*** ***Fisher*** ***Hunter*** ***Fisher/Hunter*** ***Swimmer*** ***Other Recreational Person*** ***Child at School/Daycare/ Playground*** ***Trespasser/Visitor*** ***Farmer*** ***Gardener*** ***Gatherer*** ***Other***
Column 3 - Receptor Age	
Definition: • The description of the exposed individual as defined by the EPA Region or dictated by the site.	***For example, a resident (Receptor Population) who drinks contaminated groundwater.***

INSTRUCTIONS FOR TABLE 4

VALUES USED FOR DAILY INTAKE CALCULATIONS (continued)

Instructions: • Choose from the picklist to the right.	***Child*** ***Adult*** ***Adolescents (teens)*** ***Pre-Adolescents*** ***Not Documented*** ***Child/Adult*** ***Geriatric*** ***Sensitive*** ***Other*** ***Infant*** ***Toddler*** ***Pregnant***
Column 4 - Exposure Point	
Definition: • An exact location of potential contact between a person and a chemical or radionuclide within an Exposure Medium. ***For example:*** ***1) Contaminants are in Groundwater (the Medium and the Exposure Medium) and exposure to Aquifer 1 - Tap Water (the Exposure Point) is evaluated.*** ***2) Contaminants in Groundwater (the Medium) may be transferred to Air (the Exposure Medium) and exposure to Aquifer 1 - Water Vapors at Showerhead (the Exposure Point) is evaluated.*** ***3) Contaminants in Sediment (the Medium) may be transferred to Fish Tissue (the Exposure Medium) and Trout in Dean's Creek (the Exposure Point) is evaluated.***	
Instructions: • Provide the information as text in the table. Multiple Exposure Points may be recorded in the same cell/row in this table if all other aspects of their Exposure Pathways (Scenario Timeframe, Medium, Exposure Medium, Exposure Route, Receptor Population and Receptor Age) are the same.	***Exposure Points should be defined the same way ad was done in Planning Table 1.***
Column 5 - Parameter Code	
Definition: • The code used for parameters (exposure factors) in the intake equation.	

INSTRUCTIONS FOR TABLE 4

VALUES USED FOR DAILY INTAKE CALCULATIONS (continued)

Instructions:

- Enter the appropriate code for the intake parameter from the picklist below.
- Develop additional intake parameter codes as necessary; be sure that additional codes are unique and defined in this table.

Do not provide detailed information regarding parameter modeled intakes in this table. This information should be provided separately. Column 10 of this table should list the name of the model or the equation used with a footnote referencing supporting information regarding modeled intake development.

Parameter Code	*Parameter Definition*	*Units*
CS	*Chemical Concentration in Soil*	*mg/kg*
CW	*Chemical Concentration in Water*	*ug/l*
IR-W	*Ingestion Rate of Water*	*liters/day*
EF	*Exposure Frequency*	*days/year*
ED	*Exposure Duration*	*years*
CF1	*Conversion Factor 1*	*mg/ug*
BW	*Body Weight*	*kg*
AT-C	*Averaging Time (Cancer)*	*days*
AT-N	*Averaging Time (Non-Cancer)*	*days*
KP	*Permeability Constant (Dermal for Liquids)*	*cm/hr*
ET	*Exposure Time*	*hr/day*
CF2	*Conversion Factor 2*	*l/cm3*
SA	*Skin Surface Area Available for Contact*	*cm2*
IN	*Inhalation Rate*	*m^3/hr*
IR-SM	*Ingestion Rate (Swimming)*	*l/hr*
IR-S	*Ingestion Rate of Soil*	*mg/day*
DABS	*Dermal Absorption Factor (Solid)*	*--*
SSAF	*Soil to Skin Adherence Factor*	*mg/cm^2/event*
IR-F	*Ingestion Rate of Food*	*kg/meal*
EF-F	*Exposure Frequency (Food)*	*meals/year*

Column 6 - Parameter Definition

Definition:

- The name of the exposure factor (e.g., ingestion rate, body weight) used in the intake equation corresponding to the parameter entered in Column 5..

Instructions:

- Enter the parameter definition, consistent with the picklist defined under the Parameter Code column.
- Develop additional intake parameter definitions as necessary.

Do not provide detailed parameter information regarding modeled intakes in this table. This information should be provided separately. (See instructions for Column 5).

Column 7 - Value

Definition:

- The numeric value of the parameter recorded in Column 6 used for the intake calculation.

INSTRUCTIONS FOR TABLE 4

VALUES USED FOR DAILY INTAKE CALCULATIONS (continued)

Instructions: • Enter the values used for intake calculations. • For the CS and CW (chemical concentrations in soil and water, respectively) parameters, refer to Table 3.n or supporting documentation, as appropriate.	***Consult the EPA risk assessor for intake parameter values appropriate for each Exposure Pathway.***

INSTRUCTIONS FOR TABLE 4

VALUES USED FOR DAILY INTAKE CALCULATIONS (CONTINUED)

Column 8 - Units	
Definition: • The units for the parameter code used in the intake equation.	
Instructions: • Enter the units for each parameter code consistent with the picklist defined under Column 5. • Develop additional intake parameter units as necessary.	***Consult with the EPA risk assessor to determine if there is a preference regarding the units used for different matrices (e.g., mg/kg for soil, µg/L for groundwater). Choices include:*** ***mg/l µg/l ng/l*** ***pg/l % ppm*** ***ppb ppt g/kg*** ***mg/kg µg/kg ng/kg*** ***µg/g mg/m³ µg/m³*** ***fibers/l fibers/m³ fibers/kg*** ***lbs/day µg/100cm² mg/cm²*** ***µRem/hr Rem/yr pCi/g*** ***pCi/kg pCi/m³ pCi/l*** ***pCi/m²/sec Other*** ***Not Documented***
Column 9 - Rationale/Reference	
Definition: • The reason and reference for the parameter value used.	***This rationale may be based upon guidance or consultation with the EPA risk assessor.***
Instructions: • Enter the rationale and reference for the value. • If the value used is inconsistent with guidance values, provide a detailed explanation of the rationale and a complete reference for the value used.	***Provide sufficient detail that the reviewer can easily substantiate the value.***
Column 10 - Intake Equation/Model Name	
Definition: • The calculation, equation, or model used for intake estimates for each Exposure Route.	
Instructions: • Enter the intake calculation, equation, and/or model name. • Include a footnote providing a reference to the section of the risk assessment where information regarding modeled intake development is presented.	***For modeled intakes, the table should list the name of the model or the equation used.***