May 6, 2002

Denise Gruben, Project Manager
Contract and Engineering Services Section
Operation Services Division
Finance and Operations Services Bureau
530 West Allegan Street
Lansing, MI 48933

SUBJECT: REPORT OF THE MEETING TO DISCUSS DOSE MODELING SCENARIO(S) IN CONNECTION WITH THE PREPARATION OF THE DECOMMISSIONING PLAN FOR THE MICHIGAN DEPARTMENT OF NATURAL RESOURCES SITE, BAY COUNTY, MI

Dear Ms. Gruben:

On April 9, 2002, the U.S. Nuclear Regulatory Commission staff met with the representatives of the Michigan Department of Natural Resources (MDNR) at the request of the MDNR staff to discuss radiological dose modeling scenario(s) and related issues in connection with the preparation of the decommissioning plan for the MDNR Site Decommissioning Management Plan (SDMP) site in Bay County, MI. You participated in the proceedings of the meeting via teleconference. On March 7, 2002, a public meeting notice was published announcing the April 9, 2002, meeting. NRC's Public Meeting Feedback Form No. 659 was distributed at the meeting. A report of this meeting including a list of the participants is enclosed.

If you have any questions concerning this report, please contact me at (301) 415-6694.

Sincerely,

/RA/

M. (Sam) Nalluswami, Project Manager
Facilities Decommissioning Section
Decommissioning Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

Enclosure: Meeting Report
cc: MDNR Distribution List

Docket No.: 40-9015
License No.: SUC-1581

MEETING REPORT

DATE: April 9, 2002

TIME: 10:00 a.m. - 1:00 p.m.

PLACE: U. S. Nuclear Regulatory Commission (NRC)
11545 Rockville Pike
Rockville, MD 20852
Room T-07C1

PURPOSE: To discuss radiological dose modeling scenario(s) in connection with the preparation of the decommissioning plan for the Michigan Department of Natural Resources (MDNR) Site, Bay County, Michigan.

ATTENDEES: See Attachment A.

BACKGROUND:

The MDNR's Site Decommissioning Management Plan (SDMP) site, located in Bay County, Michigan, is part of the former Hartley & Hartley Landfill, and is currently known as the Tobico Marsh State Game Area (SGA). The 3 acre landfill site is contaminated with thorium radionuclides from slag, covered with a 1.5 m (5 ft) thick clay cap, and encapsulated with 0.9 m (3 ft) thick bentonite slurry walls. The slurry walls and clay cap were installed in 1985, and they were primarily constructed to contain non-radioactive wastes. A scoping survey was performed in 1997, and the report on its results was released in 1998. A characterization survey was performed in 2000, and the report containing its results was released in 2001. The major effort of the work has been to characterize the materials within the slurry walls and to estimate the radiological dose in connection with the development of derived concentration guide line (DCGL) values for this SDMP site.

The NRC license (SUC-1581) is for possession only. In accordance with the amended License Condition 10A of the license, the decommissioning plan (DP) must be submitted no later than August 31, 2002.

DISCUSSION:

After the greetings and introductions, the NRC staff explained the open meeting policy including placement of the meeting report in the docket file and handling of any proprietary documents submitted by the licensee. The MDNR's consultant summarized the site background and the status of decommissioning to-date at the site.

Land Use Scenario

During the previous meeting on December 14, 2001, the licensee agreed to provide their proposed dose assessment scenarios for the MDNR site in an April 2002, meeting. Normally, the default land use is the resident farmer scenario. The licensee plans to propose a recreational/naturalist scenario over the default resident farmer scenario for the Bay County (MI)

ENCLOSURE

SDMP site. This scenario will yield a radiological dose only if the clay cap is violated or penetrated. The recreational/naturalist scenario will not have any water wells (i.e., no drinking water pathway). The NRC staff suggested that the licensee consider multiple scenarios - such as, slurry wall deteriorating, and State and Federal land use restrictions may not exist in 1000 years.

The licensee needs to address the integrity of the slurry wall. Will it be maintained in good condition during a 1000-year period? A discussion was held regarding the slurry wall failure and holes in the clay cap at the adjacent site. A discussion of whether this could happen at the MDNR site should be included during the next meeting to be scheduled in June 2002.

The licensee should also address reasonable land use scenarios during a 1000-year period. The site is part of a much larger State game area that the licensee believes will be maintained in the future as a State game area. This appears to be contradictory to the unrestricted use criteria for the land.

NRC Staff Issues:

The licensee's contractor/consultant provided handouts covering "site background" which addressed regional population trends, employment, aerial photographs and pictures which depict the site to be in the SGA, adjoining Tobico Marsh Wildlife Refuge. Items such as, the increase or decrease in recreational use, housing and businesses within a mile or two from the MDNR site should be addressed in the DP. The handout (Page 21) contained the National Natural Landmark (NNL) status designated in 1976. (**Note:** In addition, it should also be mentioned that the site is designated as a toxic chemical landfill owned by the MDNR and regulated by the Michigan Department of Environmental Quality (MDEQ) since the 1980's. The site was listed as a Michigan Superfund Site No. 09000015 (US EPA #MIE 000605956)).

The NRC staff discussed the chemical problems at the site. The response by the contractor/ consultant was that the purpose of the DP is to address only the radiological aspects and not the chemical problems. However, the chemical problems do apply and need to be considered in the decommissioning of this site as related to the non-radiological hazards for purposes of environmental assessment. In the presentation slide 31 (of 53), entitled Institutional Impediments to Development, it is stated that due to the level of chemical contamination, State of Michigan's Natural Resources and Environmental Protection Act, Public Act 451, Part 201 deed restrictions would be required.

The MDNR site, like the adjoining site owned by Waste Management, Inc., contains mixed wastes (presence of radiological wastes mixed with hazardous chemical wastes). This aspect should be included for discussion in the next meeting and considered for inclusion in the DP.

The second issue was a staff request for the monitoring well data taken inside this cell both before and after the characterization survey. The MDNR representatives stated that the monitoring wells do not extend beyond the depth of the underlying waste layer. The information is needed because the cell contains water, leachate, chemicals, oils, solvents, pesticides, etc. These liquids may continue to build-up in the cell. The only point of relief for the buildup in the cell is the leakage through the walls. The leachate collection system constructed on this site to solve this problem is not functioning.

Radiological Survey and Characterization Issues

NRC staff asked about the type of radiological survey that MDNR performed in April 1983. MDNR stated that the April 1983, radiological survey of the site that it performed in the presence of US EPA and Michigan Department of Public Health (MDPH), was not well documented and may have only been a screening survey.

NRC staff noted the Geoprobe sampling that MDNR had performed may have created conduits for contamination to spread. NRC staff wanted to know if MDNR had monitoring data that would provide information on movement of contaminants in environmental media or the performance of the slurry wall. NRC staff asked whether any material or contaminants were leaching out from the waste layer to the underlying glacial till and the deep aquifer. The MDNR representative said that it is not known whether any material or contaminants were leaching out.
NRC staff stated that the MDNR's characterization report appeared to be a screening or scoping report as opposed to a characterization report. The characterization sampling was not consistent with that recommended by MARSSIM. In addition, data validation was not addressed. The characterization report should adequately address the identification of the nuclide suite for modeling and quality of the data for viability of subsequent use in the data life cycle. This information will be important to the final status survey design. Further discussion on usability of the data should be addressed.

The NRC staff noted that the final status survey plan design and type of data to demonstrate compliance should also be addressed in the DP.

Groundwater and Pathway Related Issues

The following were discussed based on the presentation:

-Supporting references should be provided on the extent and lithology of the glacial till, on the Belleville Soil Series, and on the hydrogeology and geology of the site and nearby area.

-The NRC staff discussed the licensee document that lists gross beta concentrations greater that 200 pCi/L for some groundwater samples over several sampling events. These gross beta concentrations indicate that beta or photon emitters may exceed US EPA's 4 mrem/year MCL for radionuclides in drinking water. The licensee needs to address this issue.

The suggested potential applicable scenarios (i.e., hunter, fisher, and naturalist), and their pathways and critical parameters were discussed. The following comments were made by the NRC staff:

-NRC staff asked how long the licensee expects the State, federal, and local restrictions on land use to be enforced. The radionuclides at this site have half lives much longer than the 1000-year time period used for dose assessment, as required by the NRC. Can the restrictions be maintained for 1000 years? NRC staff recommended that the licensee needs to stress the physical limitations at this site that might eliminate some

scenarios and pathways. Also, when legal restrictions are used to limit the scenarios, how does this differ from the restricted use release criteria.

-After some discussion, the NRC staff suggested that a triangular distribution may be more appropriate for the contaminated zone thickness than the bounded lognormal-N distribution.

-NRC staff indicated that the licensee needs to discuss why values other than the RESRAD default values are used for parameter distribution, such as thorium distribution coefficient (K_d).

-NRC staff indicated that the RESRAD probabilistic method can be used for calculating dose and performing sensitivity analyses, but it should not be used for calculating DCGLs. The RESRAD deterministic method should be used for the back calculations of the DCGLs.

The NRC staff will inform the licensee on NRC's position with respect to accepting State, federal, and local restrictions on land use as a limiting factor for potential scenarios.

ACTION ITEMS:

1. The MDNR will submit a separate characterization report with DCGL calculations prior to the submittal of the DP.
2. MDNR will address in the DP, the EPA's 4 mrem/year MCL for radionuclides in drinking water
3. NRC staff will inform the MDNR on NRC's position with respect to accepting State, federal or local government restrictions on land use as a limiting factor for potential scenarios - May 2002
4. MDNR will discuss, in the next meeting, the slurry wall failure and holes in the clay cap at the adjacent site, and whether this could happen at the MDNR site - June 2002
5. MDNR will submit the scenario/DCGL report with leachate collection data - June 2002
6. MDNR will submit a decommissioning plan - August 2002

ATTACHMENT:

A. Meeting Attendees
B. MDNR (Tobico Marsh SGA) Site Presentation Handouts

MEETING ATTENDEES

Topic: Scenario(s) for radiological dose modeling for the Michigan Department of Natural Resources Site

Date: April 9, 2002

NAME	AFFILIATION	PHONE NUMBER
Claudia Craig	NRC/DWM/DCB	301-415-6602
Mark Thaggard	NRC/DWM/EPAB	301-415-6718
Jon Peckenpaugh	NRC/DWM/EPAB	301-415-6753
Denise Gruben (by phone)	MDNR	517-335-4036
Rick Dunkin	Harding ESE	248-926-4008
Jeff Lively	Mactec	970-243-2861
Sam Nalluswami	NRC/DWM/DCB	301-415-6694
Amy Snyder	NRC/DWM/DCB	301-415-7644
Edward Kulzer	NRC/Region 3	630-829-9875
Phil Mazor (Observer)	Waste Management, Inc.	616-688-5777

Attachment A

MDNR (Tobico Marsh SGA) Site Presentation Handouts

Attachment B

MDNR (Tobico Marsh SGA) Site Presentation Handouts dated April 9, 2002

1. Cover Sheet: Tobico Marsh SGA Site, April 9, 2002
2. Meeting Topics - 3
3. Site Background
4. Site Location Map
5. Regional Population Trends - Projection
6. 1998 Employment In Bay County - Pie Chart
7. 1998 Aerial Photograph of Area
8. Northern Portion of Site - Photograph
9. Eastern Portion of Site - Photograph
10. Southern Portion of Site - Photograph
11. Western Portion of Site - Photograph
12. Historical Site Activities
13. Historical Site Activities (continued)
14. Historical Site Activities (continued)
15. Conceptual Cross-Section of the Site
16. Soil Characteristics of the Site
17. Soil Characteristics of Site (continued)
18. Soil Survey Map
19. Groundwater Not in an Aquifer - Information
20. Water Analytical Results for Radioactivity
21. Federal (Government) Restrictions
22. Federal (Government) Restrictions (continued)
23. State of Michigan Restrictions
24. Local (Government) Restrictions
25. Evaluation of Potential Future Use Scenarios
26. Potential Future Use Scenarios Screened
27. Potential Future Use Scenarios Screened (continued)
28. Natural Impediments to Development
29. Natural Impediments to Development (continued)
30. Natural Impediments to Development (continued)
31. Institutional Impediments to Development
32. Institutional Impediments to Development (continued)
33. Applicable Scenarios - 3
34. Pathways and Parameters of Applicable Scenarios
35. Exposure Pathways - Chart
36. Exposure Pathways (continued)
37. Exposure Pathways (continued)
38. Exposure Pathways (continued)
39. Source Term Parameters - Graph
40. Source Term Parameters - Graph (continued)
41. Source Term Parameters - Pie Chart (continued)
42. Site Parameters - Graph
43. Site Parameters - Graph (continued)
44. Site Parameters - Graph (continued)
45. Site Parameters - Graph (continued)
46. Site Parameters - Graph (continued)
47. Site Parameters - Graph (continued)
48. Receptor Exposure Parameters - Graph
49. Receptor Exposure Parameters - Graph (continued)
50. Receptor Exposure Parameters - Graph (continued)
51. Receptor Exposure Parameters - Graph (continued)
52. Receptor Exposure Parameters - Graph (continued)
53. Receptor Exposure Parameters - Graph (continued)

Tobico Marsh SGA Site

April 9, 2002

Meeting Topics

I. Site Background

II. Evaluation of Potential Scenarios

III. Pathways and Parameters for Applicable Scenarios

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Site Background

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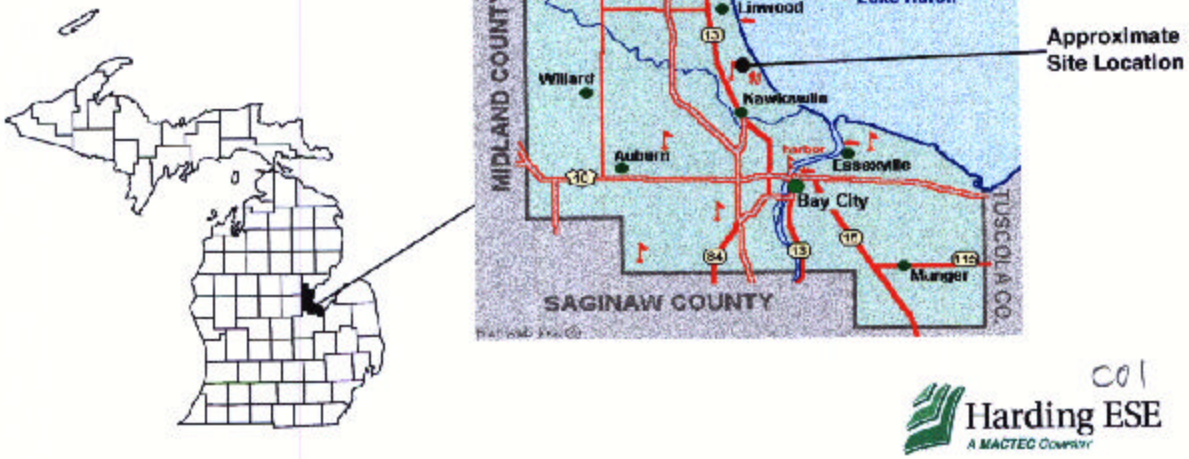
Site Location



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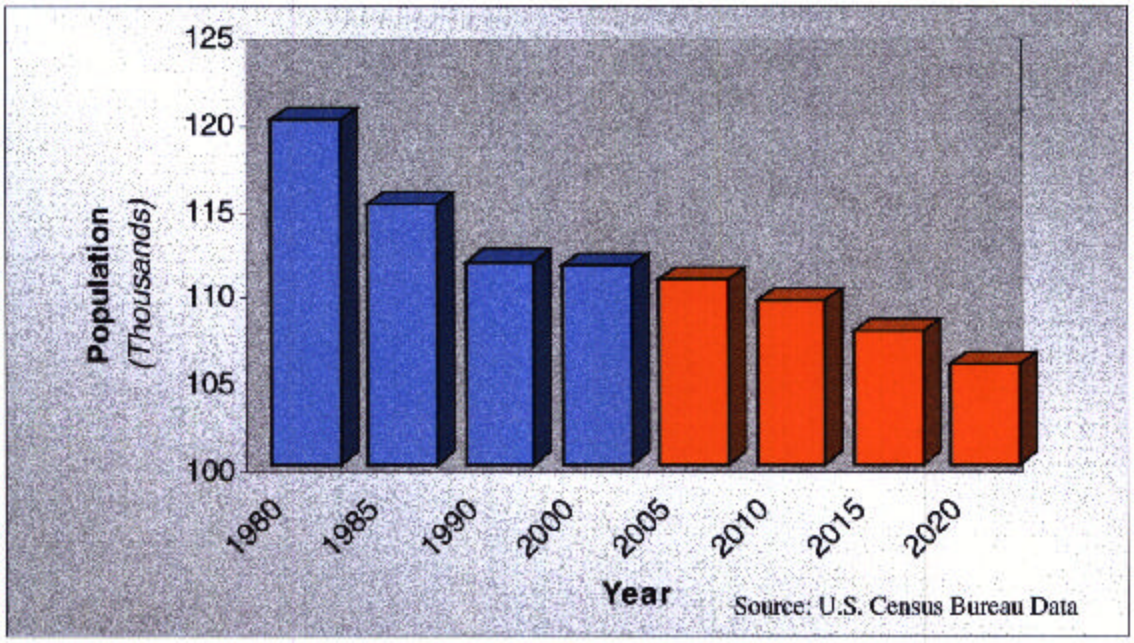
Regional Population Trends



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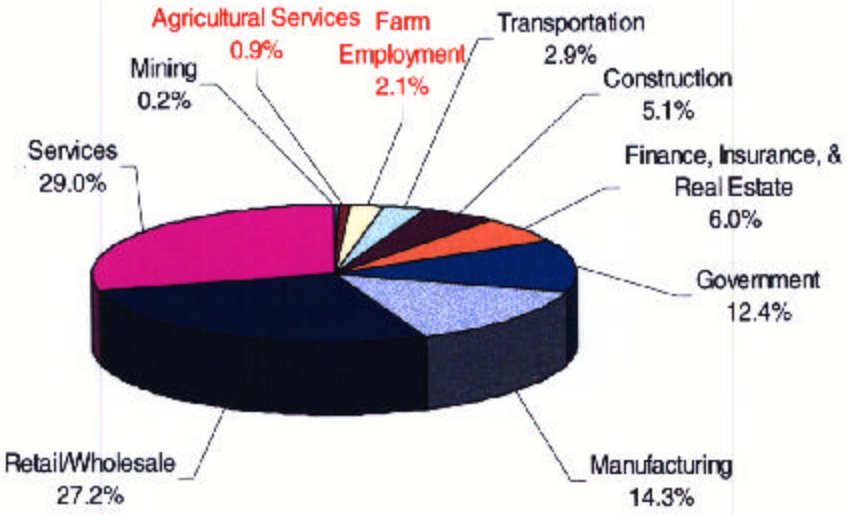
1998 Employment In Bay County



SUMMARY	
Farming/Agriculture Services	3%
(This trend is also decreasing)	
All Other Business Services	97%

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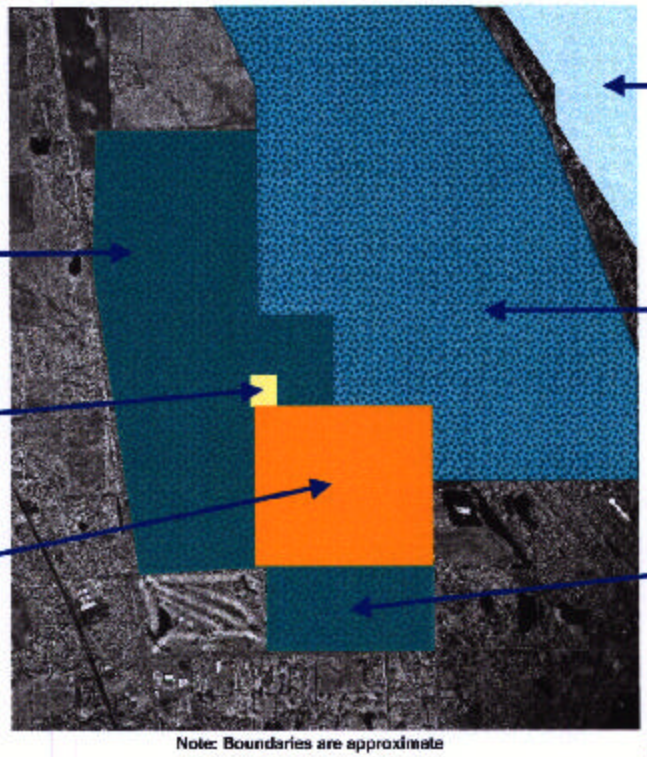
1998 Aerial Photograph of Area



Note: Boundaries are approximate

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Northern Portion of Site

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Eastern Portion of Site

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Southern Portion of Site

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Western Portion of Site

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Historical Site Activities

- 1955, Dow Chemical manufactured castings from both magnesium and magnesium-thorium alloy.
- Hartley & Hartley began waste disposal activities in the late 1950s.
- 1961, Dow leased magnesium-thorium foundry operations to Wellman Dynamics, who continued manufacturing operations through 1971.
- February 1969, inspectors discovered waste disposal activities began to trespass onto State of Michigan property.
- Illegal disposal activities continued into the early 1970s.
- April 1970, Hartley & Hartley began installing a sand cover over the site.
- September 1970, initial placement of magnesium-thorium slag on top of sand cover is believed to have occurred.

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Historical Site Activities

- August 1970, Wellman Dynamics applied to Michigan Department of Public Health (MDPH) to bury thorium-bearing wastes at the Hartley & Hartley site.
- January 1971, MDPH stated Hartley & Hartley would need written permission from the Atomic Energy Commission (AEC) to use their property as a radioactive waste disposal site.
- February 1971, Wellman Dynamics informed MDPH they would retain possession of the the material until burial and supervise the burial.
- June 1971, MDPH informed Wellman Dynamics that without AEC permission, material could only be buried on federal or state owned land and disposal must be handled through a commercial disposal company.
- April 1972, Wellman Dynamics requested that the AEC terminate its foundry operations license.

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Historical Site Activities

- May 1972, AEC terminated the license and the facility reverted back to Dow Chemical.
- Cessation of activities related to Wellman Dynamics' license ended radioactive disposal at the site.
- April 1983, prior to construction of the cap and slurry walls, MDNR performed a radiological survey of the site with representatives from the EPA and MDPH present.
- 1983, installation of clay cap and slurry walls.
- Oak Ridge Associated Universities, under contract from NRC Region III, conducted two radiological surveys; one in July 1984 and the other in June 1985.
- 1998, MDNR conducted Scoping Survey.
- 2000-2001, MDNR conducted Characterization Survey.

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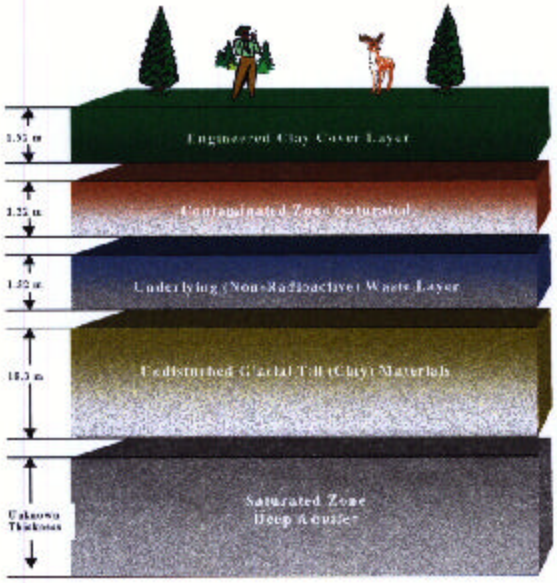
Conceptual Cross-Section



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Soil Characteristics

- U.S. Department of Agriculture, Soil Conservation Service's Soil Survey of Bay County, Michigan (1977) indicates the soil at and around the site is classified as the Belleville series.
- Belleville soil is characterized by a dark gray, loamy surface layer with a grayish-brown sand subsoil. The substratum is multicolored clay loam and loam. Permeability is high in the sandy upper part and low in the loamy lower part. In most Belleville soil areas, wetlands (ponded water, marsh vegetation) are present. It has potential for development as habitat for wetland wildlife. Due to the soil characteristics, other development options are economically infeasible or impractical.
- Belleville soils are either not suitable for growing typical agricultural products or these products are generally not grown in Belleville soils.

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Soil Characteristics

- Belleville soils have severe limitations for the following construction activities:
  - shallow excavations
  - dwellings without basements
  - dwellings with basements
  - small commercial buildings
  - local roads and streets
  - lawns and landscaping
- A severe limitation indicates that one or more soil properties or site features are so unfavorable or difficult to overcome that a major increase in construction effort, special design, or intensive maintenance is required. These special efforts may be cost prohibitive.
- Belleville soils have severe limitations for use as sanitary facilities such as septic tank adsorption fields or sewage lagoons.
- Belleville soils are considered poor to unsuitable options for use as road fill, sand, gravel, or topsoil.

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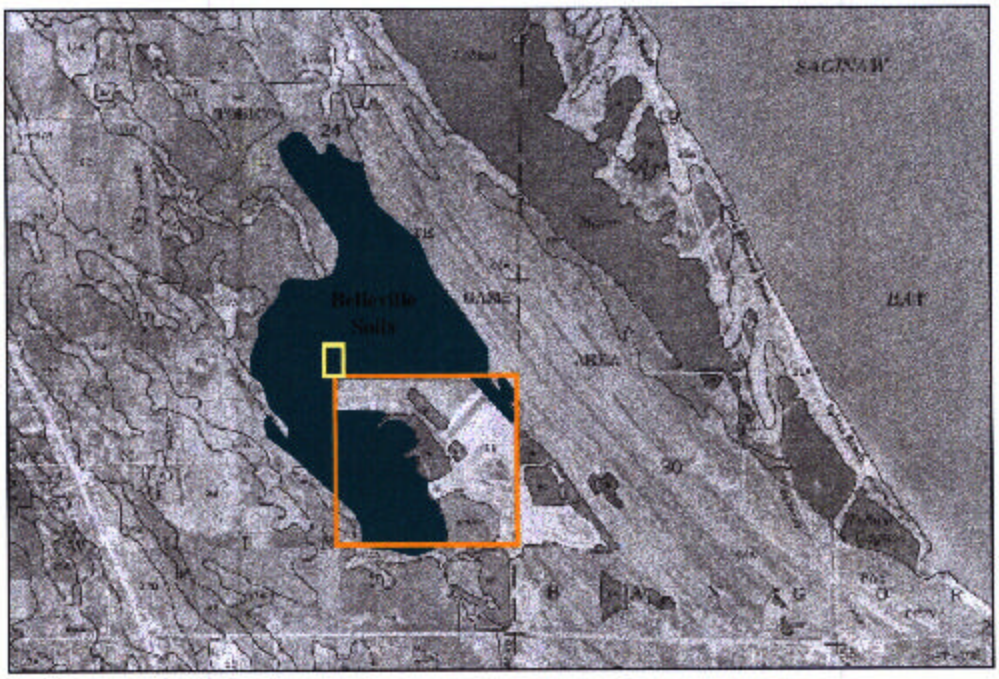
Soil Survey Map



Note: Boundaries are approximate

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Groundwater Not in an Aquifer

MDEQ letter dated March 6, 2002 determined that shallow groundwater at the site is not in an aquifer due to:

- Water-bearing unit is not likely to produce sustainable quantity of groundwater for usage.
- Shallow, saturated zone does not extend beyond 15 feet below ground surface.
- Clay aquiclude is 60 to 100 feet thick.
- Vertical migration to a deeper aquifer is unlikely because the predominant soil matrix at the site is clay. As a result, the Bay County Health Department would not allow drinking water wells to be installed.

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Federal Restrictions

Regulated Wetlands

- All activities at the Tobico Marsh Site require a joint permit application to the U.S. Army Corps of Engineers and the State of Michigan.
- Permits are reviewed based on:
  - The relevant extent of public and private needs
  - Where unresolved conflicts of resource use exist, the practicability of using reasonable alternative locations and methods to accomplish project purposes
  - The extent and permanence of the beneficial and/or detrimental effects the proposed project may have on public and private uses to which the area is suited
- No permit is granted if the proposal is found to be contrary to the public interest.

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Federal Restrictions

National Natural Landmark

- Tobico Marsh was designated a National Natural Landmark (NNL) in 1976. As a result, the site is 1 of 587 NNLs.
- A NNL is a nationally significant natural area that has been designated by the Secretary of the Interior. To be nationally significant, a site must be one of the best examples of a type of biotic community or geologic feature in its physiographic province.
- It is a goal of the NNL program to identify, recognize, and encourage the protection of sites containing the best remaining examples of ecological and geological components of the nation's landscape.
- An annual report is submitted to Congress on the condition of the Tobico Marsh.

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Water Analytical Results

Groundwater and Leachate samples on and around the Tobico Marsh SGA indicate concentration of radioactivity in groundwater are below EPA Regulatory Drinking Water Standards.

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State of Michigan Restrictions

State Game Area

- It is unlawful to construct or occupy improvements within a State Game Area.
- It is unlawful to destroy or damage vegetation (trees, shrubs, etc.) within a State Game Area.

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Local Restrictions

Saginaw Bay Watershed Protection Area

- The Saginaw Bay watershed, of which the Tobico Marsh system is a sensitive component, is strictly managed by the State of Michigan.
- Tobico Marsh is part of the largest contiguous freshwater wetlands in the United States.

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Evaluation of Potential Future Use Scenarios

Potential Future Use Scenarios Screened

A broad range of potential future use scenarios was considered and screened for applicability at the Tobico Marsh SGA Site.

- **Resident Farming**
  - Subsistence Family Farm
  - Family Farm
- **Residential**
- **Commercial/Light Industrial**
- **Recreational Land Use**

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Potential Future Use Scenarios Screened
(continued)

Each future use scenario screened, except for the recreational land use category of scenarios, requires substantial land development and improvement to be realized.

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Natural Impediments to Development

- Site soils are not suitable for:
  - Agricultural uses
  - Building site development
  - Sanitary facilities
  - Use as construction materials

- The area is part of a vast marshland influenced by the waters of the Saginaw Bay
  - Extraordinary and costly engineering measures (*e.g., dikes, levies, and pump stations or extensive filling*) would be necessary to reclaim the land from the influence of the Saginaw Bay such that development could occur.

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Natural Impediments to Development

(continued)

- The SGA site was part of the well known and well documented Hartley & Hartley former Industrial waste disposal site
  - Institutional and community knowledge of the former waste disposal activities at the site make it less likely that invasive development activities might be considered.
- Site Access is Limited
  - Marshland surrounds the site except for a narrow access through the existing adjacent to the Waste Management Site.
  - Extensive filling and road building would be required to establish alternate access.

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Natural Impediments to Development *(continued)*

- **Population in Bay County is Decreasing**
  - Is expected to continue to decrease in to the near future, indicating that people are moving out of Bay County.
- **Number of Farms in Bay County is Decreasing**
  - Bay County experienced a significant decrease (>10%) in the number of properties operated as farms in the 5-year period between 1992 and 1997.

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Institutional Impediments to Development

- **Co-located Chemical Waste Hazards**
  - Access to, and activities at, the SGA site are restricted by the Michigan Dept. of Environmental Quality (without regard for the presence of residual radioactivity) because of the chemical waste hazards that are present.
  - Due to the level of chemical contamination, State of Michigan's Natural Resources and Environmental Protection Act, Public Act 451, Part 201 deed restrictions would be required.

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Institutional Impediments to Development
(continued)

- State Game Area
- Wetlands
- Natural National Landmark
- Saginaw Bay Watershed Protection Area

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Applicable Scenarios

- Hunter
- Fisher
- Naturalist

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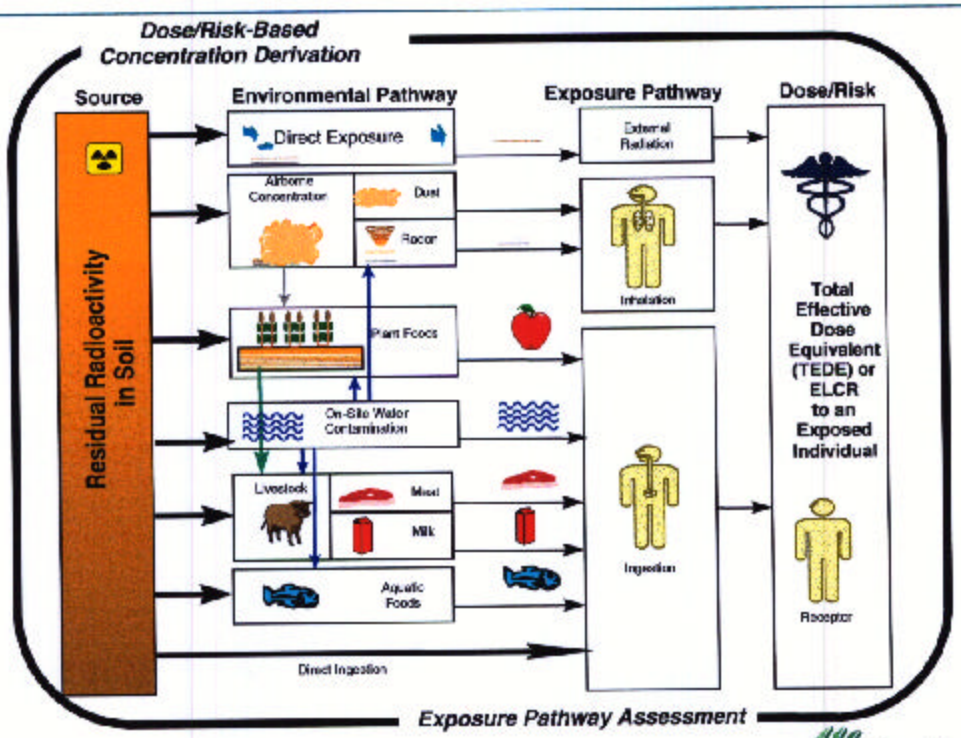
Pathways and Parameters of Applicable Scenarios

Exposure Pathways



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Exposure Pathways (*continued*)

Hunter Scenario

- Direct Exposure — Complete
- Particulate Inhalation — Potentially Complete
- Plant Ingestion — Incomplete
- Meat Ingestion — Potentially Complete
- Aquatic Foods Ingestion — Incomplete
- Direct Ingestion — Potentially Complete
- Drinking Water — Incomplete
- Milk Ingestion — Incomplete
- Radon — NA

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Exposure Pathways (*continued*)

Fisher Scenario

Direct Exposure	Complete
Particulate Inhalation	Potentially Complete
Plant Ingestion	Incomplete
Meat Ingestion	Incomplete
Aquatic Foods Ingestion	Potentially Complete
Direct Ingestion	Potentially Complete
Drinking Water	Incomplete
Milk Ingestion	Incomplete
Radon	NA

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Exposure Pathways (*continued*)

Naturalist Scenario

- **Direct Exposure** — **Complete**
- **Particulate Inhalation** — **Potentially Complete**
- **Plant Ingestion** — **Potentially Complete**
- **Meat Ingestion** — **Incomplete**
- **Aquatic Foods Ingestion** — **Incomplete**
- **Direct Ingestion** — **Potentially Complete**
- **Drinking Water** — **Incomplete**
- **Milk Ingestion** — **Incomplete**
- **Radon** — **NA**

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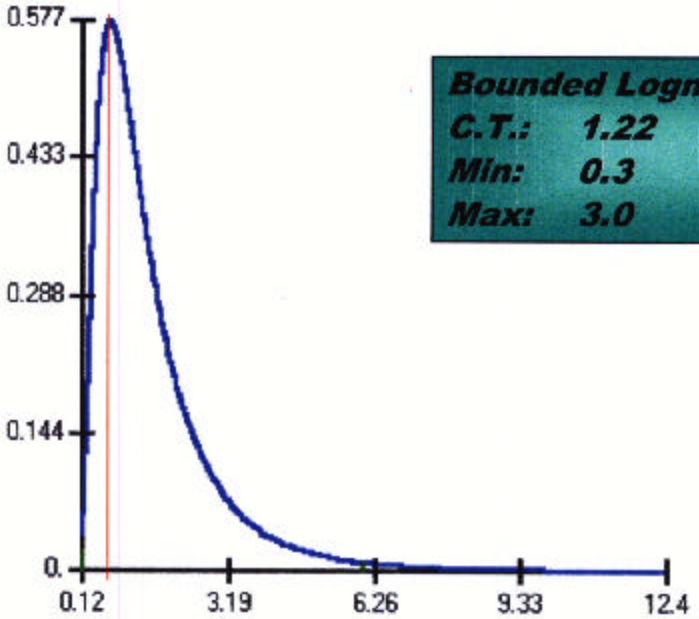
Source Term Parameters

- **Contaminated Zone Thickness (meters)**



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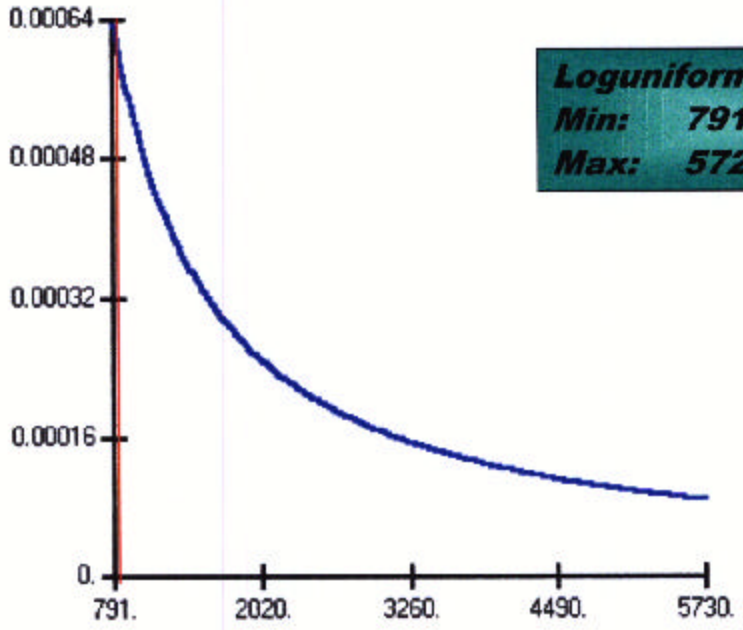
Source Term Parameters *(continued)*

- **Area (Size) of Contaminated Zone (Square Meters)**



Loguniform
Min: 791
Max: 5725

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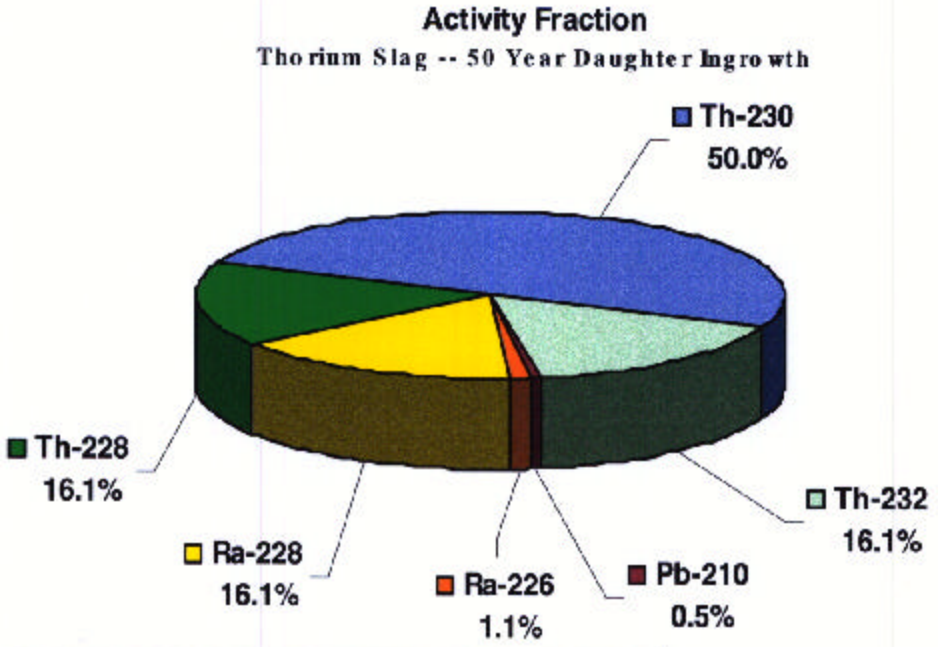
Source Term Parameters *(continued)*



Note: Thorium 230:232 ratios are based on actual data on a volumetric weighted average.
Th-228, Ra-228, Ra-226, Pb-210 represent 50-year ingrowth.

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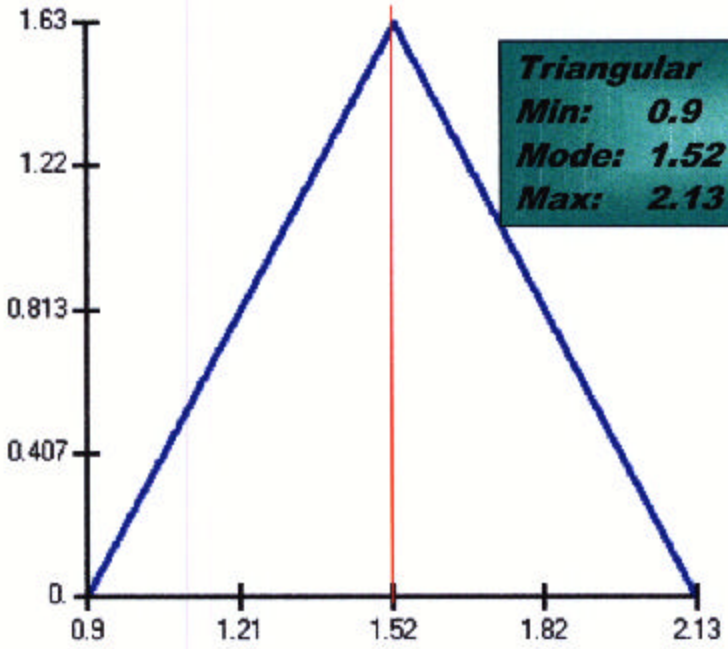
Site Parameters

- **Cover Thickness (Meters)**



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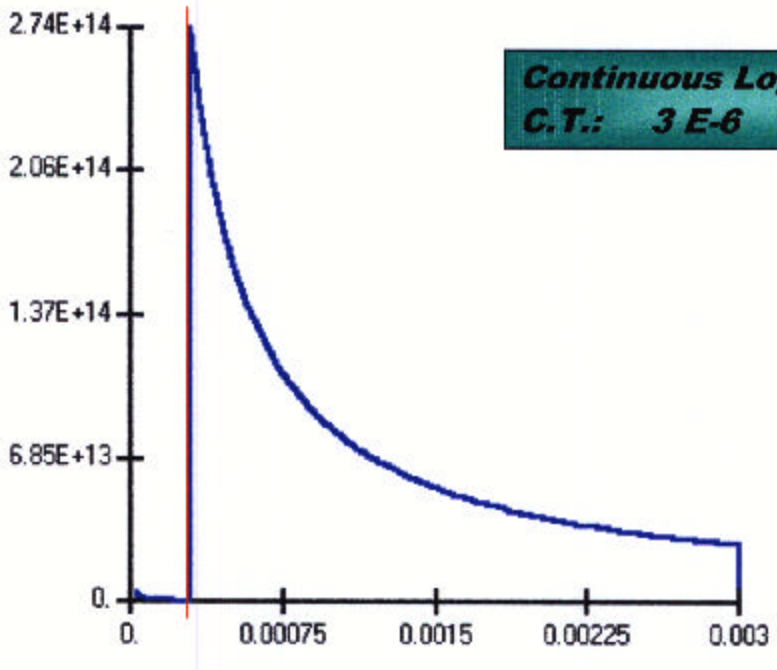
Site Parameters *(continued)*

- **Soil Erosion Rate (m/y)**



Continuous Logarithmic
C.T.: 3 E-6

C20

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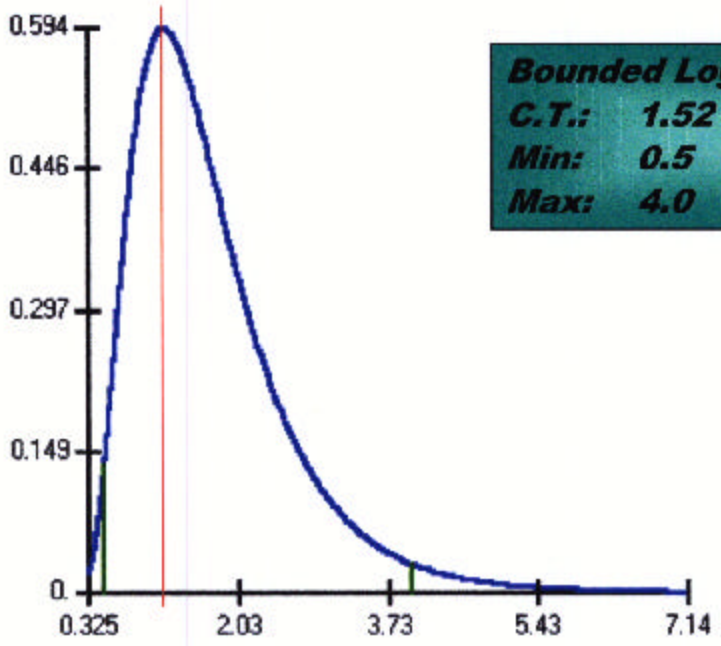
Site Parameters *(continued)*

- **Thickness of (Non-Radioactive) Waste Layer (meters)**



C21

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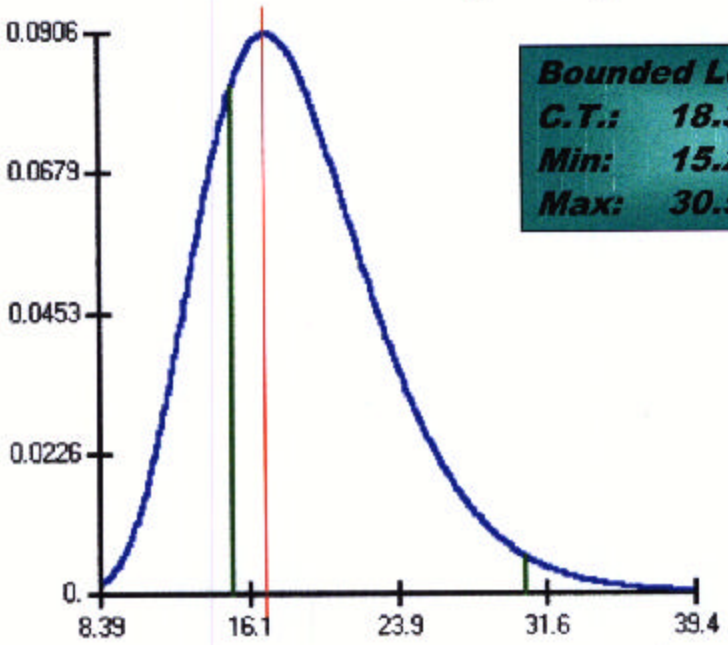
Site Parameters *(continued)*

- **Thickness of Undisturbed Glacial Till (Clay) Materials (meters)**



Bounded Lognormal-N
C.T.: 18.3 (60 ft.)
Min: 15.25 (50 ft.)
Max: 30.5 (100 ft.)

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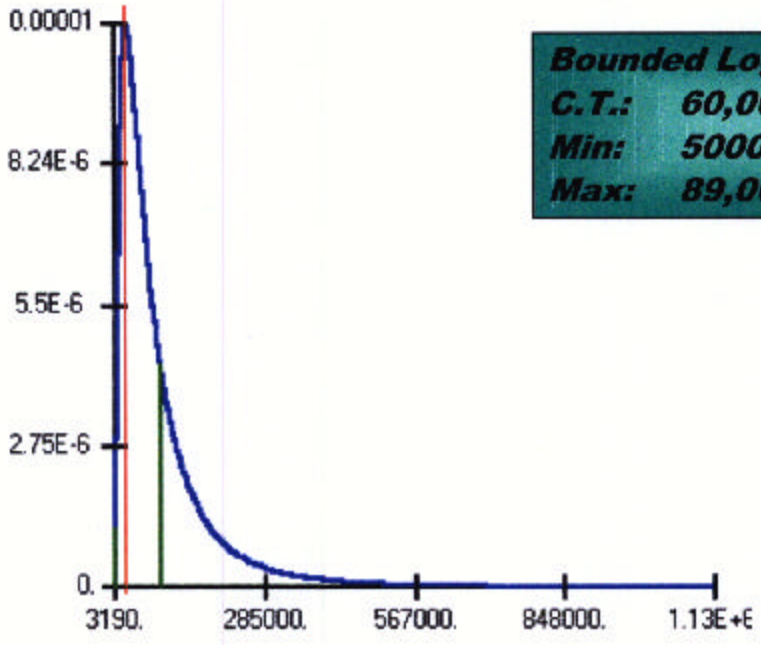
C22

Site Parameters *(continued)*

- **Thorium Distribution Coefficient (Kd, cm^3/g)**



C23

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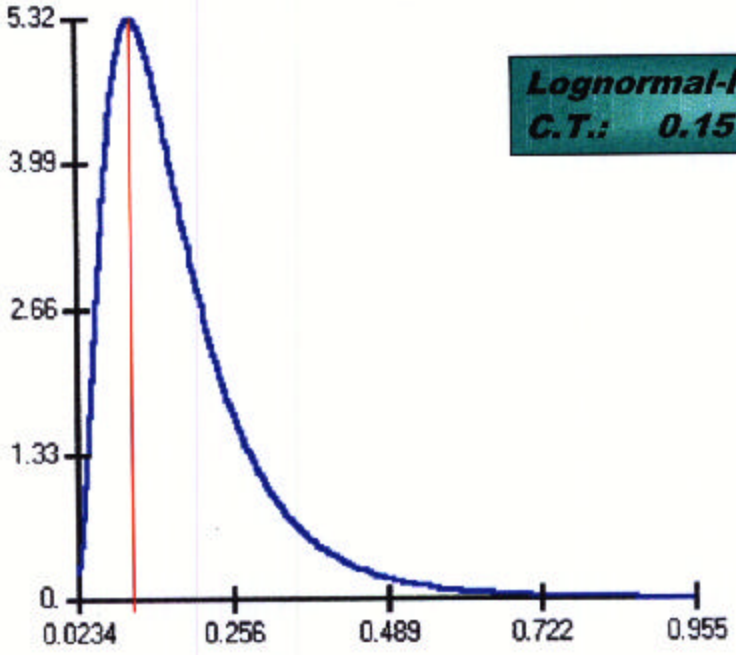
Site Parameters *(continued)*

- **Plant Root Depth (meters)**



Lognormal-N
C.T.: 0.15

C24

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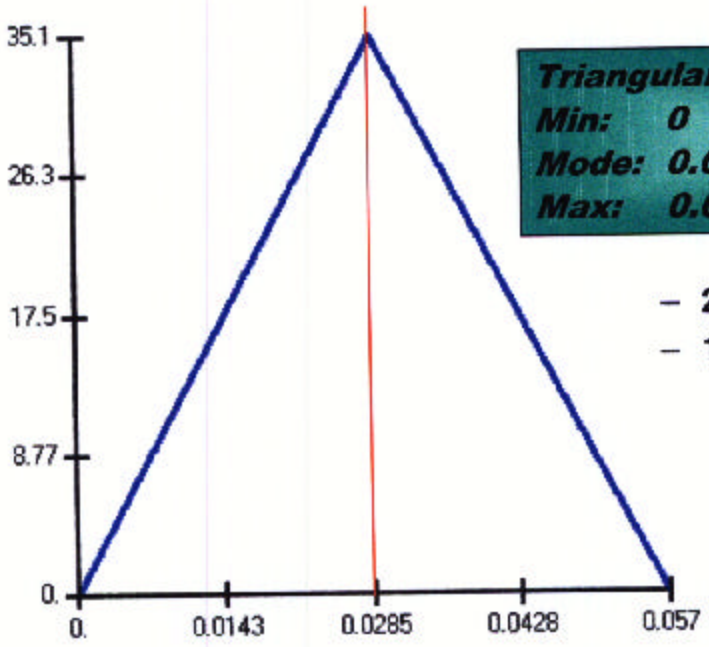
Receptor Exposure Parameters

- **Exposure Time, Fraction of a Year (Assumed all Outdoors)**



Triangular
Min: 0
Mode: 0.0285 (250 hr/y)
Max: 0.057 (500 hr/y)

- 25 Days per year
- 10 Hours per Day

C25

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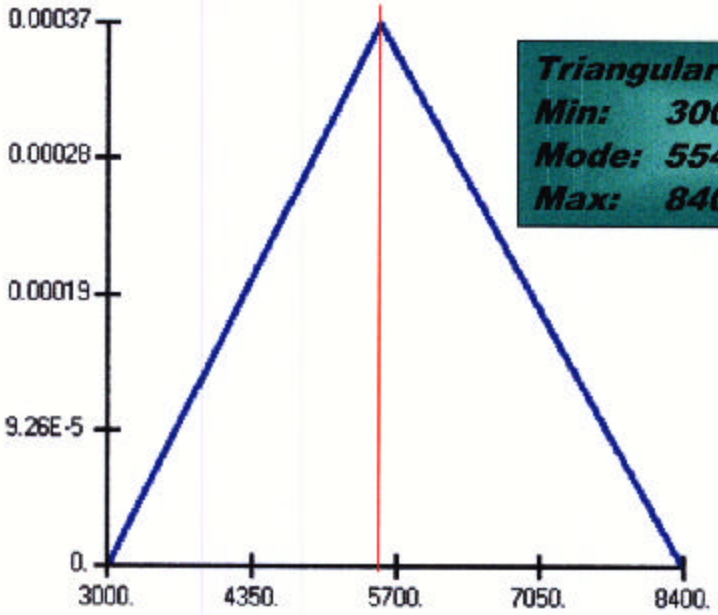
Receptor Exposure Parameters *(continued)*

- **Inhalation Rate (m^3/y)**



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C26

Receptor Exposure Parameters *(continued)*

- **Soil Ingestion Rate (g/y)**

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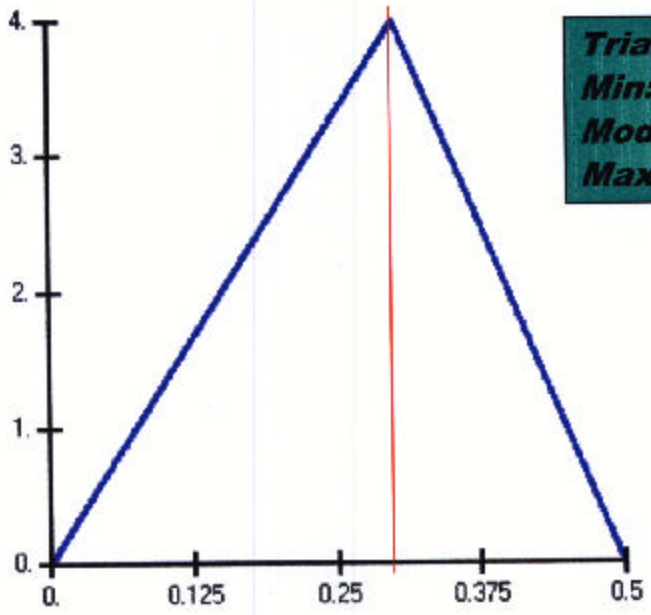
C27

Receptor Exposure Parameters *(continued)*

- **Contaminated Diet – Fraction of Total Meat (Hunter)**



Triangular
Min: 0
Mode: 0.3
Max: 0.5

C28

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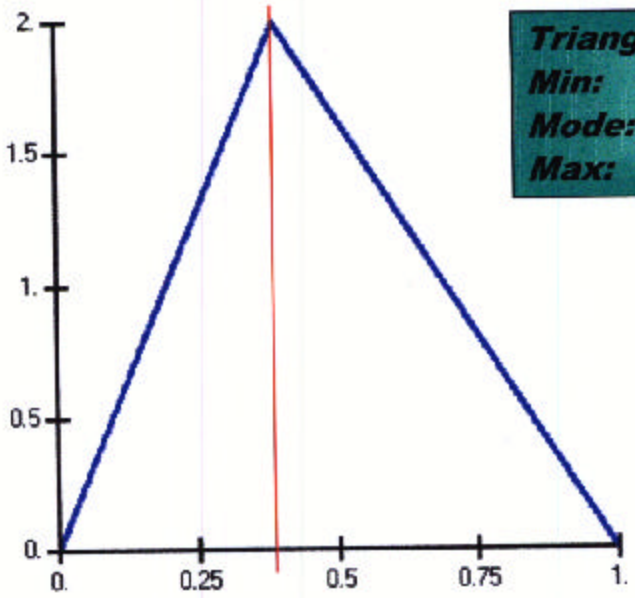
Receptor Exposure Parameters *(continued)*

- **Contaminated Diet – Fraction of Total Fish (Fisher)**



Triangular
Min: 0
Mode: 0.39
Max: 1.0

C29

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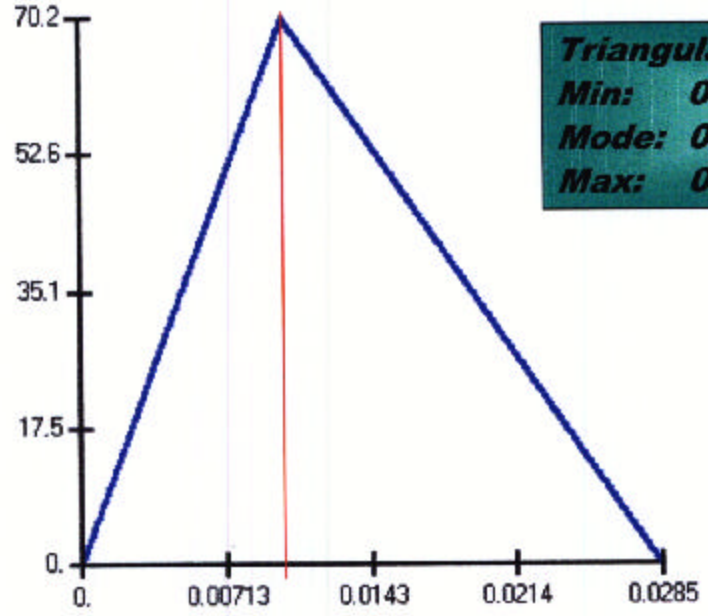
Receptor Exposure Parameters *(continued)*

- **Contaminated Diet – Fraction of Total Plants (Naturalist)**



Triangular
Min: 0
Mode: 0.01
Max: 0.0285

C30

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